

ANALYTICAL REPORT

Job Number: 280-123221-1

Job Description: Leidos RFP# 001088 - Ravenna AAP-66

For:

Leidos, Inc.

Picatinny Arsenal

356 Ninth Avenue

Suite 106

Dover, NJ 07801

Attention: Rita Schmon-Stasik



Approved for release.
Nathan A Lewis
Project Manager I
6/7/2019 4:28 PM

Designee for
Donna R Rydberg, Senior Project Manager
4955 Yarrow Street, Arvada, CO, 80002
(303)736-0192
donna.rydberg@testamericainc.com
06/07/2019

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The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

Eurofins TestAmerica, Denver

4955 Yarrow Street, Arvada, CO 80002

Tel (303) 736-0100 Fax (303) 431-7171 www.testamericainc.com

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Definitions/Glossary

Client: Leidos, Inc.

Job ID: 280-123221-1

Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
J1	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
M	Manual integrated compound.
Q	One or more quality control criteria failed.
U	Undetected at the Limit of Detection.

GC/MS Semi VOA

Qualifier	Qualifier Description
M	Manual integrated compound.
Q	One or more quality control criteria failed.
U	Undetected at the Limit of Detection.

GC Semi VOA

Qualifier	Qualifier Description
M	Manual integrated compound.
U	Undetected at the Limit of Detection.

HPLC/IC

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J1	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
M	Manual integrated compound.
Q	One or more quality control criteria failed.
U	Undetected at the Limit of Detection.

Metals

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
Q	One or more quality control criteria failed.
U	Undetected at the Limit of Detection.

General Chemistry

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit

Definitions/Glossary

Client: Leidos, Inc.

Job ID: 280-123221-1

Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

CASE NARRATIVE
Client: Leidos, Inc.
Project: Leidos RFP# 001088 - Ravenna AAP-66
Report Number: 280-123221-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) resulting from a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are an unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes within the calibration range of the instrument or that reduces the interferences thereby enabling the quantification of target analytes.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 05/01/2019; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was The temperatures of the 6 coolers at receipt time were 0.6° C, 0.6° C, 0.7° C, 0.7° C, 2.4° C and 4.8° C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

VOLATILE ORGANIC COMPOUNDS (GC)

Samples DET-003-190401-GW (280-123221-4), DET-003-190402-GW (280-123221-5), FWGTB-191001-TB (280-123221-6) and DET-004-190401-GW (280-123221-7) were analyzed for volatile organic compounds (GC) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 05/08/2019 and 05/09/2019.

Bromomethane failed the recovery criteria high for LCS 280-457521/33. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

Bromomethane failed the recovery criteria high for the MS/MSD of sample DET-003-190401-GWMSMS (280-123221-4) in batch 280-457521. Chloromethane and Vinyl chloride failed the precision criteria for the MS/MSD of sample DET-003-190401-GWMSMS (280-123221-4) in batch 280-457521. Data have been qualified and reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ORGANOCHLORINE PESTICIDES

Samples DET-003-190401-GW (280-123221-4), DET-003-190402-GW (280-123221-5) and DET-004-190401-GW (280-123221-7) were analyzed for organochlorine pesticides in accordance with 8081B. The samples were prepared on 05/06/2019 and analyzed on 05/17/2019.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples NTAmw-120-190401-GW (280-123221-1), DET-003-190401-GW (280-123221-4) and DET-004-190401-GW (280-123221-7) were analyzed for semivolatile organic compounds (GC-MS) in accordance with 8270D. The samples were prepared on 05/03/2019 and 05/07/2019 and analyzed on 05/15/2019.

The continuing calibration verification (CCV) associated with batch 280-458321 recovered above the upper control limit for 4-Nitrophenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 280-456902. An LCSD was analyzed to assess batch precision.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 280-457323. An LCSD was analyzed to assess batch precision.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS - SELECTED ION MODE (SIM)

Samples NTAmw-119-190401-GW (280-123221-2), DET-003-190401-GW (280-123221-4) and DET-004-190401-GW (280-123221-7) were analyzed for semivolatile organic compounds - Selected Ion Mode (SIM) in accordance with 8270D SIM. The samples were prepared on 05/06/2019 and 05/07/2019 and analyzed on 05/14/2019 and 05/16/2019.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 280-457182. An LCSD was analyzed to assess batch precision.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

POLYCHLORINATED BIPHENYLS (PCBS)

Samples DET-003-190401-GW (280-123221-4), DET-003-190402-GW (280-123221-5) and DET-004-190401-GW (280-123221-7) were analyzed for polychlorinated biphenyls (PCBs) in accordance with SW846 8082A. The samples were prepared on 05/06/2019 and analyzed on 05/23/2019.

The following samples in preparation batch 280-457201 and analytical batch 280-459265 required a sulfuric acid clean-up, via EPA Method 3665A, to reduce matrix interferences: DET-003-190401-GW (280-123221-4), DET-003-190401-GWMS (280-123221-4[MS]), DET-003-190401-GWMSD (280-123221-4[MSD]), DET-003-190402-GW (280-123221-5), DET-004-190401-GW (280-123221-7), (LCS 280-457201/3-A) and (MB 280-457201/1-A). Reagent lot 189631 was used for clean-up.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

EXPLOSIVES

Samples NTAmw-119-190401-GW (280-123221-2), NTAmw-119-190402-GW (280-123221-3), DET-003-190401-GW (280-123221-4), DET-003-190402-GW (280-123221-5), DET-004-190401-GW (280-123221-7), FWGmw-007-190401-GW (280-123221-8), WBGmw-020-190401-GW (280-123221-9), WBGmw-006-190401-GW (280-123221-10), WBGmw-021-190401-GW (280-123221-11), WBGmw-009-190401-GW (280-123221-12) and FWGmw-016-190401-GW (280-123221-13) were analyzed for explosives in accordance with 8330B. The samples were prepared on 05/04/2019, 05/10/2019 and 05/11/2019 and analyzed on 05/10/2019, 05/13/2019, 05/15/2019, 05/16/2019 and 05/17/2019.

2-Nitrotoluene failed the recovery criteria low for LCS 280-456980/2-A. Samples were subsequently re-extracted out of holding time and both results reported and qualified as necessary.

2-Nitrotoluene, 3-Nitrotoluene and 4-Nitrotoluene failed the recovery criteria low for the MS and/or MSD of sample NTAmw-119-190401-GWMSMS (280-123221-2) in batch 280-457634. 2-Nitrotoluene and 3-Nitrotoluene failed the recovery criteria low for the MS/MSD of sample DET-003-190401-GWMSMS (280-123221-4) in batch 280-457634. Data have been qualified and reported.

Surrogate recovery for the following sample was outside control limits: FWGmw-016-190401-GW (280-123221-13). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 280-457818. An LCSD was analyzed to assess batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL METALS (ICP)

Samples NTAmw-119-190401-GW (280-123221-2), DET-003-190401-GW (280-123221-4), DET-003-190402-GW (280-123221-5), DET-004-190401-GW (280-123221-7), FWGmw-007-190401-GW (280-123221-8), WBGmw-020-190401-GW (280-123221-9), WBGmw-006-190401-GW (280-123221-10), WBGmw-021-190401-GW (280-123221-11), WBGmw-009-190401-GW (280-123221-12) and FWGmw-016-190401-GW (280-123221-13) were analyzed for total metals (ICP) in accordance with 6010C. The samples were prepared on 05/09/2019 and analyzed on 05/13/2019 and 05/14/2019.

The interference check standard solution (ICSA) associated with the following samples in preparation batch 457070 and analytical batch 458211 showed results for Sodium at a level greater than the limit of detection (LOD). It is believed that the ICSA solution contains trace impurities of this element and the results are not due to matrix interference. These results are consistent with those found by analysis by the laboratory. NTAmw-119-190401-GW (280-123221-2), DET-003-190401-GW (280-123221-4), DET-003-190402-GW (280-123221-5), DET-004-190401-GW (280-123221-7), FWGmw-007-190401-GW (280-123221-8), WBGmw-020-190401-GW (280-123221-9), WBGmw-006-190401-GW (280-123221-10), WBGmw-021-190401-GW (280-123221-11), WBGmw-009-190401-GW (280-123221-12), FWGmw-016-190401-GW (280-123221-13), (ICSA 280-458211/17), (LCS 280-457070/2-A), (LCSD 280-457070/3-A), (MB 280-457070/1-A), (280-123205-A-5-A), (280-123205-A-5-B MS), (280-123205-A-5-C MSD), (280-123205-A-5-A PDS) and (280-123205-A-5-A SD ^5). Data have been qualified and reported.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)

Samples NTAmw-119-190401-GW (280-123221-2), DET-003-190401-GW (280-123221-4), DET-003-190402-GW (280-123221-5), DET-004-190401-GW (280-123221-7), FWGmw-007-190401-GW (280-123221-8), WBGmw-020-190401-GW (280-123221-9), WBGmw-006-190401-GW (280-123221-10), WBGmw-021-190401-GW (280-123221-11), WBGmw-009-190401-GW (280-123221-12) and FWGmw-016-190401-GW (280-123221-13) were analyzed for Metals (ICP) in accordance with 6020A. The samples were

prepared on 05/09/2019 and analyzed on 05/14/2019.

The interference check standard solution (ICSA) associated with batches 280-458135 and 280-458262 had results for Cobalt at a level greater than the limit of detection (LOD). It is believed that the ICSA solution contains trace impurities of this element and the results are not due to matrix interference.

The low level continuing calibration verification (CCVL) associated with batch 280-458262 recovered above the upper control limit for Vanadium. The samples associated with this CCVL were <DL for the affected analytes; therefore, the data have been qualified and reported.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

MERCURY

Samples NTAmw-119-190401-GW (280-123221-2), DET-003-190401-GW (280-123221-4), DET-003-190402-GW (280-123221-5), DET-004-190401-GW (280-123221-7), FWGmw-007-190401-GW (280-123221-8), WBGmw-020-190401-GW (280-123221-9), WBGmw-006-190401-GW (280-123221-10), WBGmw-021-190401-GW (280-123221-11), WBGmw-009-190401-GW (280-123221-12) and FWGmw-016-190401-GW (280-123221-13) were analyzed for mercury in accordance with EPA SW-846 Method 7470A. The samples were prepared and analyzed on 05/13/2019.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL CYANIDE

Samples DET-003-190401-GW (280-123221-4), DET-003-190402-GW (280-123221-5) and DET-004-190401-GW (280-123221-7) were analyzed for total cyanide in accordance with 9012B. The samples were prepared on 05/12/2019 and analyzed on 05/13/2019.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Leidos, Inc.

Job ID: 280-123221-1

Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Client Sample ID: NTAmw-120-190401-GW

Lab Sample ID: 280-123221-1

No Detections.

Client Sample ID: NTAmw-119-190401-GW

Lab Sample ID: 280-123221-2

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil	Fac	D	Method	Prep Type
Aluminum	32	J	300	70	18	ug/L	1			6010C	Total/NA
Calcium	85000		1000	160	78	ug/L	1			6010C	Total/NA
Iron	970		100	85	22	ug/L	1			6010C	Total/NA
Magnesium	21000		500	60	26	ug/L	1			6010C	Total/NA
Potassium	1400	J	3000	940	240	ug/L	1			6010C	Total/NA
Sodium	6400	Q	5000	160	54	ug/L	1			6010C	Total/NA
Arsenic	6.0		5.0	1.0	0.33	ug/L	1			6020A	Total/NA
Barium	83		3.0	0.95	0.29	ug/L	1			6020A	Total/NA
Manganese	330		3.5	0.95	0.31	ug/L	1			6020A	Total/NA

Client Sample ID: NTAmw-119-190402-GW

Lab Sample ID: 280-123221-3

No Detections.

Client Sample ID: DET-003-190401-GW

Lab Sample ID: 280-123221-4

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil	Fac	D	Method	Prep Type
Acetone	2.8	J	10	6.4	1.9	ug/L	1			8260B	Total/NA
Calcium	90000		1000	160	78	ug/L	1			6010C	Total/NA
Iron	1900		100	85	22	ug/L	1			6010C	Total/NA
Magnesium	33000		500	60	26	ug/L	1			6010C	Total/NA
Potassium	1900	J	3000	940	240	ug/L	1			6010C	Total/NA
Sodium	12000	Q	5000	160	54	ug/L	1			6010C	Total/NA
Arsenic	9.2		5.0	1.0	0.33	ug/L	1			6020A	Total/NA
Barium	43		3.0	0.95	0.29	ug/L	1			6020A	Total/NA
Cobalt	0.29	J Q	1.0	0.20	0.054	ug/L	1			6020A	Total/NA
Manganese	240		3.5	0.95	0.31	ug/L	1			6020A	Total/NA

Client Sample ID: DET-003-190402-GW

Lab Sample ID: 280-123221-5

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil	Fac	D	Method	Prep Type
Acetone	2.4	J	10	6.4	1.9	ug/L	1			8260B	Total/NA
Calcium	91000		1000	160	78	ug/L	1			6010C	Total/NA
Iron	1900		100	85	22	ug/L	1			6010C	Total/NA
Magnesium	33000		500	60	26	ug/L	1			6010C	Total/NA
Potassium	1900	J	3000	940	240	ug/L	1			6010C	Total/NA
Sodium	12000	Q	5000	160	54	ug/L	1			6010C	Total/NA
Arsenic	9.3		5.0	1.0	0.33	ug/L	1			6020A	Total/NA
Barium	42		3.0	0.95	0.29	ug/L	1			6020A	Total/NA
Cobalt	0.24	J Q	1.0	0.20	0.054	ug/L	1			6020A	Total/NA
Manganese	240		3.5	0.95	0.31	ug/L	1			6020A	Total/NA

Client Sample ID: FWGTB-191001-TB

Lab Sample ID: 280-123221-6

No Detections.

Client Sample ID: DET-004-190401-GW

Lab Sample ID: 280-123221-7

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil	Fac	D	Method	Prep Type
Acetone	5.1	J	10	6.4	1.9	ug/L	1			8260B	Total/NA
HMX	1.6	M	0.41	0.21	0.090	ug/L	1			8330B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Detection Summary

Client: Leidos, Inc.

Job ID: 280-123221-1

Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Client Sample ID: DET-004-190401-GW (Continued)

Lab Sample ID: 280-123221-7

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
RDX	1.4	M	0.41	0.41	0.16	ug/L	1		8330B	Total/NA
HMX - RE	1.5	H M	0.41	0.21	0.091	ug/L	1		8330B	Total/NA
RDX - RE	1.5	H M	0.41	0.41	0.16	ug/L	1		8330B	Total/NA
Calcium	120000		1000	160	78	ug/L	1		6010C	Total/NA
Magnesium	24000		500	60	26	ug/L	1		6010C	Total/NA
Potassium	1200	J	3000	940	240	ug/L	1		6010C	Total/NA
Sodium	2200	J Q	5000	160	54	ug/L	1		6010C	Total/NA
Barium	58		3.0	0.95	0.29	ug/L	1		6020A	Total/NA
Chromium	0.55	J	10	1.8	0.50	ug/L	1		6020A	Total/NA
Copper	1.5	J	2.0	1.8	0.56	ug/L	1		6020A	Total/NA
Manganese	0.63	J	3.5	0.95	0.31	ug/L	1		6020A	Total/NA
Zinc	14	J	20	8.0	2.0	ug/L	1		6020A	Total/NA

Client Sample ID: FWGmw-007-190401-GW

Lab Sample ID: 280-123221-8

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	32	J	300	70	18	ug/L	1		6010C	Total/NA
Calcium	130000		1000	160	78	ug/L	1		6010C	Total/NA
Iron	160		100	85	22	ug/L	1		6010C	Total/NA
Magnesium	66000		500	60	26	ug/L	1		6010C	Total/NA
Potassium	2500	J	3000	940	240	ug/L	1		6010C	Total/NA
Sodium	11000		5000	160	54	ug/L	1		6010C	Total/NA
Barium	20		3.0	0.95	0.29	ug/L	1		6020A	Total/NA
Chromium	0.51	J	10	1.8	0.50	ug/L	1		6020A	Total/NA
Cobalt	0.42	J Q	1.0	0.20	0.054	ug/L	1		6020A	Total/NA
Lead	0.22	J	3.0	0.70	0.18	ug/L	1		6020A	Total/NA
Manganese	130		3.5	0.95	0.31	ug/L	1		6020A	Total/NA
Nickel	1.2	J	3.0	1.0	0.30	ug/L	1		6020A	Total/NA
Zinc	2.7	J	20	8.0	2.0	ug/L	1		6020A	Total/NA

Client Sample ID: WBGmw-020-190401-GW

Lab Sample ID: 280-123221-9

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Calcium	31000		1000	160	78	ug/L	1		6010C	Total/NA
Iron	3400		100	85	22	ug/L	1		6010C	Total/NA
Magnesium	10000		500	60	26	ug/L	1		6010C	Total/NA
Potassium	800	J	3000	940	240	ug/L	1		6010C	Total/NA
Sodium	3900	J Q	5000	160	54	ug/L	1		6010C	Total/NA
Arsenic	1.2	J	5.0	1.0	0.33	ug/L	1		6020A	Total/NA
Barium	15		3.0	0.95	0.29	ug/L	1		6020A	Total/NA
Beryllium	0.082	J	1.0	0.30	0.080	ug/L	1		6020A	Total/NA
Cobalt	0.38	J Q	1.0	0.20	0.054	ug/L	1		6020A	Total/NA
Manganese	220		3.5	0.95	0.31	ug/L	1		6020A	Total/NA
Nickel	2.2	J	3.0	1.0	0.30	ug/L	1		6020A	Total/NA

Client Sample ID: WBGmw-006-190401-GW

Lab Sample ID: 280-123221-10

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
HMX	3.4	M	0.39	0.20	0.086	ug/L	1		8330B	Total/NA
RDX	11		0.39	0.39	0.16	ug/L	1		8330B	Total/NA
HMX - RE	3.4	H M	0.40	0.20	0.088	ug/L	1		8330B	Total/NA
RDX - RE	11	H	0.40	0.40	0.16	ug/L	1		8330B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Detection Summary

Client: Leidos, Inc.

Job ID: 280-123221-1

Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Client Sample ID: WBGmw-006-190401-GW (Continued)

Lab Sample ID: 280-123221-10

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	19	J	300	70	18	ug/L	1		6010C	Total/NA
Calcium	79000		1000	160	78	ug/L	1		6010C	Total/NA
Iron	46	J	100	85	22	ug/L	1		6010C	Total/NA
Magnesium	26000		500	60	26	ug/L	1		6010C	Total/NA
Potassium	860	J	3000	940	240	ug/L	1		6010C	Total/NA
Sodium	5500	Q	5000	160	54	ug/L	1		6010C	Total/NA
Barium	21		3.0	0.95	0.29	ug/L	1		6020A	Total/NA
Cobalt	0.29	J Q	1.0	0.20	0.054	ug/L	1		6020A	Total/NA
Manganese	99		3.5	0.95	0.31	ug/L	1		6020A	Total/NA
Nickel	0.33	J	3.0	1.0	0.30	ug/L	1		6020A	Total/NA

Client Sample ID: WBGmw-021-190401-GW

Lab Sample ID: 280-123221-11

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Calcium	77000		1000	160	78	ug/L	1		6010C	Total/NA
Iron	820		100	85	22	ug/L	1		6010C	Total/NA
Magnesium	19000		500	60	26	ug/L	1		6010C	Total/NA
Potassium	1400	J	3000	940	240	ug/L	1		6010C	Total/NA
Sodium	4800	J Q	5000	160	54	ug/L	1		6010C	Total/NA
Arsenic	6.8		5.0	1.0	0.33	ug/L	1		6020A	Total/NA
Barium	62		3.0	0.95	0.29	ug/L	1		6020A	Total/NA
Cobalt	0.15	J Q	1.0	0.20	0.054	ug/L	1		6020A	Total/NA
Manganese	370		3.5	0.95	0.31	ug/L	1		6020A	Total/NA
Nickel	0.36	J	3.0	1.0	0.30	ug/L	1		6020A	Total/NA

Client Sample ID: WBGmw-009-190401-GW

Lab Sample ID: 280-123221-12

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
HMX	0.67	M	0.42	0.21	0.091	ug/L	1		8330B	Total/NA
RDX	1.6	M	0.42	0.42	0.16	ug/L	1		8330B	Total/NA
HMX - RE	0.68	H M	0.41	0.20	0.089	ug/L	1		8330B	Total/NA
RDX - RE	1.8	H M	0.41	0.41	0.16	ug/L	1		8330B	Total/NA
Aluminum	19	J	300	70	18	ug/L	1		6010C	Total/NA
Calcium	49000		1000	160	78	ug/L	1		6010C	Total/NA
Iron	58	J	100	85	22	ug/L	1		6010C	Total/NA
Magnesium	12000		500	60	26	ug/L	1		6010C	Total/NA
Potassium	610	J	3000	940	240	ug/L	1		6010C	Total/NA
Sodium	3300	J Q	5000	160	54	ug/L	1		6010C	Total/NA
Barium	30		3.0	0.95	0.29	ug/L	1		6020A	Total/NA
Cobalt	0.62	J Q	1.0	0.20	0.054	ug/L	1		6020A	Total/NA
Manganese	180		3.5	0.95	0.31	ug/L	1		6020A	Total/NA
Nickel	2.7	J	3.0	1.0	0.30	ug/L	1		6020A	Total/NA

Client Sample ID: FWGmw-016-190401-GW

Lab Sample ID: 280-123221-13

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Calcium	110000		1000	160	78	ug/L	1		6010C	Total/NA
Iron	630		100	85	22	ug/L	1		6010C	Total/NA
Magnesium	28000		500	60	26	ug/L	1		6010C	Total/NA
Potassium	2400	J	3000	940	240	ug/L	1		6010C	Total/NA
Sodium	11000	Q	5000	160	54	ug/L	1		6010C	Total/NA
Arsenic	4.5	J	5.0	1.0	0.33	ug/L	1		6020A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

Detection Summary

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Client Sample ID: FWGmw-016-190401-GW (Continued)

Lab Sample ID: 280-123221-13

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Barium	59		3.0	0.95	0.29	ug/L	1		6020A	Total/NA
Manganese	220		3.5	0.95	0.31	ug/L	1		6020A	Total/NA

Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: DET-003-190401-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-4

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.40	U	1.0	0.40	0.16	ug/L		05/08/19 22:53	1
1,1,2,2-Tetrachloroethane	0.80	U	1.0	0.80	0.21	ug/L		05/08/19 22:53	1
1,1,2-Trichloroethane	0.80	U	1.0	0.80	0.27	ug/L		05/08/19 22:53	1
1,1-Dichloroethane	0.80	U	1.0	0.80	0.22	ug/L		05/08/19 22:53	1
1,1-Dichloroethene	0.80	U	1.0	0.80	0.23	ug/L		05/08/19 22:53	1
1,2-Dibromoethane	0.40	U	1.0	0.40	0.18	ug/L		05/08/19 22:53	1
1,2-Dichloroethane	0.40	U	1.0	0.40	0.13	ug/L		05/08/19 22:53	1
1,2-Dichloroethene, Total	0.40	U	1.0	0.40	0.15	ug/L		05/08/19 22:53	1
1,2-Dichloropropane	0.40	U	1.0	0.40	0.18	ug/L		05/08/19 22:53	1
2-Butanone (MEK)	4.0	U	6.0	4.0	2.0	ug/L		05/08/19 22:53	1
2-Hexanone	4.0	U	5.0	4.0	1.7	ug/L		05/08/19 22:53	1
4-Methyl-2-pentanone (MIBK)	3.2	U	5.0	3.2	0.98	ug/L		05/08/19 22:53	1
Acetone	2.8	J	10	6.4	1.9	ug/L		05/08/19 22:53	1
Benzene	0.40	U	1.0	0.40	0.16	ug/L		05/08/19 22:53	1
Bromobenzene	0.40	U	1.0	0.40	0.17	ug/L		05/08/19 22:53	1
Bromochloromethane	0.20	U	1.0	0.20	0.10	ug/L		05/08/19 22:53	1
Bromodichloromethane	0.40	U	1.0	0.40	0.17	ug/L		05/08/19 22:53	1
Bromoform	1.0	U	1.0	1.0	0.46	ug/L		05/08/19 22:53	1
Bromomethane	0.80	U Q J1	2.0	0.80	0.21	ug/L		05/08/19 22:53	1
Carbon disulfide	0.80	U	2.0	0.80	0.17	ug/L		05/08/19 22:53	1
Carbon tetrachloride	0.40	U	2.0	0.40	0.19	ug/L		05/08/19 22:53	1
Chlorobenzene	0.40	U	1.0	0.40	0.17	ug/L		05/08/19 22:53	1
Chloroethane	1.6	U	2.0	1.6	0.41	ug/L		05/08/19 22:53	1
Chloroform	0.40	U	1.0	0.40	0.16	ug/L		05/08/19 22:53	1
Chloromethane	0.80	U J1	2.0	0.80	0.30	ug/L		05/08/19 22:53	1
cis-1,3-Dichloropropene	0.40	U	1.0	0.40	0.16	ug/L		05/08/19 22:53	1
Dibromochloromethane	0.40	U	1.0	0.40	0.17	ug/L		05/08/19 22:53	1
Ethylbenzene	0.40	U	1.0	0.40	0.16	ug/L		05/08/19 22:53	1
Methylene Chloride	2.0	U	5.0	2.0	0.94	ug/L		05/08/19 22:53	1
Styrene	0.80	U	1.0	0.80	0.36	ug/L		05/08/19 22:53	1
Tetrachloroethene	0.40	U	1.0	0.40	0.20	ug/L		05/08/19 22:53	1
Toluene	0.40	U	1.0	0.40	0.17	ug/L		05/08/19 22:53	1
trans-1,3-Dichloropropene	0.40	U	1.0	0.40	0.19	ug/L		05/08/19 22:53	1
Trichloroethene	0.40	U	1.0	0.40	0.16	ug/L		05/08/19 22:53	1
Vinyl chloride	0.20	U J1	1.5	0.20	0.10	ug/L		05/08/19 22:53	1
Xylenes, Total	0.80	U	1.0	0.80	0.19	ug/L		05/08/19 22:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		81 - 118		05/08/19 22:53	1
4-Bromofluorobenzene (Surr)	96		85 - 114		05/08/19 22:53	1
Dibromofluoromethane (Surr)	97		80 - 119		05/08/19 22:53	1
Toluene-d8 (Surr)	99		89 - 112		05/08/19 22:53	1

Client Sample ID: DET-003-190402-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-5

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.40	U	1.0	0.40	0.16	ug/L		05/09/19 00:20	1
1,1,2,2-Tetrachloroethane	0.80	U	1.0	0.80	0.21	ug/L		05/09/19 00:20	1
1,1,2-Trichloroethane	0.80	U	1.0	0.80	0.27	ug/L		05/09/19 00:20	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: DET-003-190402-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-5

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1-Dichloroethane	0.80	U	1.0	0.80	0.22	ug/L		05/09/19 00:20	1
1,1-Dichloroethene	0.80	U	1.0	0.80	0.23	ug/L		05/09/19 00:20	1
1,2-Dibromoethane	0.40	U	1.0	0.40	0.18	ug/L		05/09/19 00:20	1
1,2-Dichloroethane	0.40	U	1.0	0.40	0.13	ug/L		05/09/19 00:20	1
1,2-Dichloroethene, Total	0.40	U	1.0	0.40	0.15	ug/L		05/09/19 00:20	1
1,2-Dichloropropane	0.40	U	1.0	0.40	0.18	ug/L		05/09/19 00:20	1
2-Butanone (MEK)	4.0	U	6.0	4.0	2.0	ug/L		05/09/19 00:20	1
2-Hexanone	4.0	U	5.0	4.0	1.7	ug/L		05/09/19 00:20	1
4-Methyl-2-pentanone (MIBK)	3.2	U	5.0	3.2	0.98	ug/L		05/09/19 00:20	1
Acetone	2.4	J	10	6.4	1.9	ug/L		05/09/19 00:20	1
Benzene	0.40	U	1.0	0.40	0.16	ug/L		05/09/19 00:20	1
Bromobenzene	0.40	U	1.0	0.40	0.17	ug/L		05/09/19 00:20	1
Bromochloromethane	0.20	U	1.0	0.20	0.10	ug/L		05/09/19 00:20	1
Bromodichloromethane	0.40	U	1.0	0.40	0.17	ug/L		05/09/19 00:20	1
Bromoform	1.0	U	1.0	1.0	0.46	ug/L		05/09/19 00:20	1
Bromomethane	0.80	U Q	2.0	0.80	0.21	ug/L		05/09/19 00:20	1
Carbon disulfide	0.80	U	2.0	0.80	0.17	ug/L		05/09/19 00:20	1
Carbon tetrachloride	0.40	U	2.0	0.40	0.19	ug/L		05/09/19 00:20	1
Chlorobenzene	0.40	U	1.0	0.40	0.17	ug/L		05/09/19 00:20	1
Chloroethane	1.6	U	2.0	1.6	0.41	ug/L		05/09/19 00:20	1
Chloroform	0.40	U	1.0	0.40	0.16	ug/L		05/09/19 00:20	1
Chloromethane	0.80	U	2.0	0.80	0.30	ug/L		05/09/19 00:20	1
cis-1,3-Dichloropropene	0.40	U	1.0	0.40	0.16	ug/L		05/09/19 00:20	1
Dibromochloromethane	0.40	U	1.0	0.40	0.17	ug/L		05/09/19 00:20	1
Ethylbenzene	0.40	U	1.0	0.40	0.16	ug/L		05/09/19 00:20	1
Methylene Chloride	2.0	U	5.0	2.0	0.94	ug/L		05/09/19 00:20	1
Styrene	0.80	U	1.0	0.80	0.36	ug/L		05/09/19 00:20	1
Tetrachloroethene	0.40	U	1.0	0.40	0.20	ug/L		05/09/19 00:20	1
Toluene	0.40	U	1.0	0.40	0.17	ug/L		05/09/19 00:20	1
trans-1,3-Dichloropropene	0.40	U	1.0	0.40	0.19	ug/L		05/09/19 00:20	1
Trichloroethene	0.40	U	1.0	0.40	0.16	ug/L		05/09/19 00:20	1
Vinyl chloride	0.20	U	1.5	0.20	0.10	ug/L		05/09/19 00:20	1
Xylenes, Total	0.80	U	1.0	0.80	0.19	ug/L		05/09/19 00:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		81 - 118		05/09/19 00:20	1
4-Bromofluorobenzene (Surr)	96		85 - 114		05/09/19 00:20	1
Dibromofluoromethane (Surr)	98		80 - 119		05/09/19 00:20	1
Toluene-d8 (Surr)	97		89 - 112		05/09/19 00:20	1

Client Sample ID: FWGTB-191001-TB

Date Collected: 04/29/19 09:00

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-6

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.40	U	1.0	0.40	0.16	ug/L		05/09/19 00:42	1
1,1,2,2-Tetrachloroethane	0.80	U	1.0	0.80	0.21	ug/L		05/09/19 00:42	1
1,1,2-Trichloroethane	0.80	U	1.0	0.80	0.27	ug/L		05/09/19 00:42	1
1,1-Dichloroethane	0.80	U	1.0	0.80	0.22	ug/L		05/09/19 00:42	1
1,1-Dichloroethene	0.80	U	1.0	0.80	0.23	ug/L		05/09/19 00:42	1
1,2-Dibromoethane	0.40	U	1.0	0.40	0.18	ug/L		05/09/19 00:42	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: FWGTB-191001-TB

Date Collected: 04/29/19 09:00

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-6

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,2-Dichloroethane	0.40	U	1.0	0.40	0.13	ug/L		05/09/19 00:42	1
1,2-Dichloroethene, Total	0.40	U	1.0	0.40	0.15	ug/L		05/09/19 00:42	1
1,2-Dichloropropane	0.40	U	1.0	0.40	0.18	ug/L		05/09/19 00:42	1
2-Butanone (MEK)	4.0	U	6.0	4.0	2.0	ug/L		05/09/19 00:42	1
2-Hexanone	4.0	U	5.0	4.0	1.7	ug/L		05/09/19 00:42	1
4-Methyl-2-pentanone (MIBK)	3.2	U	5.0	3.2	0.98	ug/L		05/09/19 00:42	1
Acetone	6.4	U	10	6.4	1.9	ug/L		05/09/19 00:42	1
Benzene	0.40	U	1.0	0.40	0.16	ug/L		05/09/19 00:42	1
Bromobenzene	0.40	U	1.0	0.40	0.17	ug/L		05/09/19 00:42	1
Bromochloromethane	0.20	U	1.0	0.20	0.10	ug/L		05/09/19 00:42	1
Bromodichloromethane	0.40	U	1.0	0.40	0.17	ug/L		05/09/19 00:42	1
Bromoform	1.0	U	1.0	1.0	0.46	ug/L		05/09/19 00:42	1
Bromomethane	0.80	U Q	2.0	0.80	0.21	ug/L		05/09/19 00:42	1
Carbon disulfide	0.80	U	2.0	0.80	0.17	ug/L		05/09/19 00:42	1
Carbon tetrachloride	0.40	U	2.0	0.40	0.19	ug/L		05/09/19 00:42	1
Chlorobenzene	0.40	U	1.0	0.40	0.17	ug/L		05/09/19 00:42	1
Chloroethane	1.6	U	2.0	1.6	0.41	ug/L		05/09/19 00:42	1
Chloroform	0.40	U	1.0	0.40	0.16	ug/L		05/09/19 00:42	1
Chloromethane	0.80	U	2.0	0.80	0.30	ug/L		05/09/19 00:42	1
cis-1,3-Dichloropropene	0.40	U	1.0	0.40	0.16	ug/L		05/09/19 00:42	1
Dibromochloromethane	0.40	U	1.0	0.40	0.17	ug/L		05/09/19 00:42	1
Ethylbenzene	0.40	U	1.0	0.40	0.16	ug/L		05/09/19 00:42	1
Methylene Chloride	2.0	U	5.0	2.0	0.94	ug/L		05/09/19 00:42	1
Styrene	0.80	U	1.0	0.80	0.36	ug/L		05/09/19 00:42	1
Tetrachloroethene	0.40	U	1.0	0.40	0.20	ug/L		05/09/19 00:42	1
Toluene	0.40	U	1.0	0.40	0.17	ug/L		05/09/19 00:42	1
trans-1,3-Dichloropropene	0.40	U	1.0	0.40	0.19	ug/L		05/09/19 00:42	1
Trichloroethene	0.40	U	1.0	0.40	0.16	ug/L		05/09/19 00:42	1
Vinyl chloride	0.20	U	1.5	0.20	0.10	ug/L		05/09/19 00:42	1
Xylenes, Total	0.80	U	1.0	0.80	0.19	ug/L		05/09/19 00:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		81 - 118		05/09/19 00:42	1
4-Bromofluorobenzene (Surr)	95		85 - 114		05/09/19 00:42	1
Dibromofluoromethane (Surr)	98		80 - 119		05/09/19 00:42	1
Toluene-d8 (Surr)	99		89 - 112		05/09/19 00:42	1

Client Sample ID: DET-004-190401-GW

Date Collected: 04/29/19 10:04

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-7

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.40	U	1.0	0.40	0.16	ug/L		05/09/19 02:08	1
1,1,2,2-Tetrachloroethane	0.80	U	1.0	0.80	0.21	ug/L		05/09/19 02:08	1
1,1,2-Trichloroethane	0.80	U	1.0	0.80	0.27	ug/L		05/09/19 02:08	1
1,1-Dichloroethane	0.80	U	1.0	0.80	0.22	ug/L		05/09/19 02:08	1
1,1-Dichloroethene	0.80	U	1.0	0.80	0.23	ug/L		05/09/19 02:08	1
1,2-Dibromoethane	0.40	U	1.0	0.40	0.18	ug/L		05/09/19 02:08	1
1,2-Dichloroethane	0.40	U	1.0	0.40	0.13	ug/L		05/09/19 02:08	1
1,2-Dichloroethene, Total	0.40	U	1.0	0.40	0.15	ug/L		05/09/19 02:08	1
1,2-Dichloropropane	0.40	U	1.0	0.40	0.18	ug/L		05/09/19 02:08	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: DET-004-190401-GW

Date Collected: 04/29/19 10:04

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-7

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2-Butanone (MEK)	4.0	U	6.0	4.0	2.0	ug/L		05/09/19 02:08	1
2-Hexanone	4.0	U	5.0	4.0	1.7	ug/L		05/09/19 02:08	1
4-Methyl-2-pentanone (MIBK)	3.2	U	5.0	3.2	0.98	ug/L		05/09/19 02:08	1
Acetone	5.1	J	10	6.4	1.9	ug/L		05/09/19 02:08	1
Benzene	0.40	U	1.0	0.40	0.16	ug/L		05/09/19 02:08	1
Bromobenzene	0.40	U	1.0	0.40	0.17	ug/L		05/09/19 02:08	1
Bromochloromethane	0.20	U	1.0	0.20	0.10	ug/L		05/09/19 02:08	1
Bromodichloromethane	0.40	U	1.0	0.40	0.17	ug/L		05/09/19 02:08	1
Bromoform	1.0	U	1.0	1.0	0.46	ug/L		05/09/19 02:08	1
Bromomethane	0.80	U Q	2.0	0.80	0.21	ug/L		05/09/19 02:08	1
Carbon disulfide	0.80	U	2.0	0.80	0.17	ug/L		05/09/19 02:08	1
Carbon tetrachloride	0.40	U	2.0	0.40	0.19	ug/L		05/09/19 02:08	1
Chlorobenzene	0.40	U	1.0	0.40	0.17	ug/L		05/09/19 02:08	1
Chloroethane	1.6	U	2.0	1.6	0.41	ug/L		05/09/19 02:08	1
Chloroform	0.40	U	1.0	0.40	0.16	ug/L		05/09/19 02:08	1
Chloromethane	0.80	U	2.0	0.80	0.30	ug/L		05/09/19 02:08	1
cis-1,3-Dichloropropene	0.40	U	1.0	0.40	0.16	ug/L		05/09/19 02:08	1
Dibromochloromethane	0.40	U	1.0	0.40	0.17	ug/L		05/09/19 02:08	1
Ethylbenzene	0.40	U	1.0	0.40	0.16	ug/L		05/09/19 02:08	1
Methylene Chloride	2.0	U M	5.0	2.0	0.94	ug/L		05/09/19 02:08	1
Styrene	0.80	U	1.0	0.80	0.36	ug/L		05/09/19 02:08	1
Tetrachloroethene	0.40	U	1.0	0.40	0.20	ug/L		05/09/19 02:08	1
Toluene	0.40	U	1.0	0.40	0.17	ug/L		05/09/19 02:08	1
trans-1,3-Dichloropropene	0.40	U	1.0	0.40	0.19	ug/L		05/09/19 02:08	1
Trichloroethene	0.40	U	1.0	0.40	0.16	ug/L		05/09/19 02:08	1
Vinyl chloride	0.20	U	1.5	0.20	0.10	ug/L		05/09/19 02:08	1
Xylenes, Total	0.80	U	1.0	0.80	0.19	ug/L		05/09/19 02:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		81 - 118		05/09/19 02:08	1
4-Bromofluorobenzene (Surr)	95		85 - 114		05/09/19 02:08	1
Dibromofluoromethane (Surr)	98		80 - 119		05/09/19 02:08	1
Toluene-d8 (Surr)	99		89 - 112		05/09/19 02:08	1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Client Sample ID: NTAmw-119-190401-GW

Date Collected: 04/30/19 10:45

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-2

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1-Methylnaphthalene	0.044	U	0.11	0.044	0.020	ug/L		05/14/19 01:50	1
2-Methylnaphthalene	0.055	U	0.11	0.055	0.023	ug/L		05/14/19 01:50	1
Acenaphthene	0.044	U	0.11	0.044	0.0046	ug/L		05/14/19 01:50	1
Acenaphthylene	0.044	U	0.11	0.044	0.0056	ug/L		05/14/19 01:50	1
Anthracene	0.11	U	0.11	0.11	0.034	ug/L		05/14/19 01:50	1
Benzo[a]anthracene	0.11	U	0.11	0.11	0.031	ug/L		05/14/19 01:50	1
Benzo[a]pyrene	0.055	U	0.11	0.055	0.027	ug/L		05/14/19 01:50	1
Benzo[b]fluoranthene	0.11	U	0.11	0.11	0.043	ug/L		05/14/19 01:50	1
Benzo[g,h,i]perylene	0.11	U	0.11	0.11	0.041	ug/L		05/14/19 01:50	1
Benzo[k]fluoranthene	0.055	U	0.11	0.055	0.025	ug/L		05/14/19 01:50	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Client Sample ID: NTAmw-119-190401-GW

Date Collected: 04/30/19 10:45

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-2

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chrysene	0.11	U	0.11	0.11	0.036	ug/L		05/14/19 01:50	1
Dibenz(a,h)anthracene	0.11	U	0.11	0.11	0.030	ug/L		05/14/19 01:50	1
Fluoranthene	0.11	U	0.11	0.11	0.053	ug/L		05/14/19 01:50	1
Fluorene	0.044	U	0.11	0.044	0.021	ug/L		05/14/19 01:50	1
Indeno[1,2,3-cd]pyrene	0.11	U	0.11	0.11	0.043	ug/L		05/14/19 01:50	1
Naphthalene	0.055	U	0.11	0.055	0.025	ug/L		05/14/19 01:50	1
Phenanthrene	0.11	U	0.11	0.11	0.054	ug/L		05/14/19 01:50	1
Pyrene	0.11	U	0.11	0.11	0.049	ug/L		05/14/19 01:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	79		53 - 106	05/07/19 06:23	05/14/19 01:50	1
Nitrobenzene-d5	78		55 - 111	05/07/19 06:23	05/14/19 01:50	1
Terphenyl-d14	88		58 - 132	05/07/19 06:23	05/14/19 01:50	1

Client Sample ID: DET-003-190401-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-4

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1-Methylnaphthalene	0.044	U	0.11	0.044	0.020	ug/L		05/16/19 16:41	1
2-Methylnaphthalene	0.055	U	0.11	0.055	0.023	ug/L		05/16/19 16:41	1
Acenaphthene	0.044	U	0.11	0.044	0.0046	ug/L		05/16/19 16:41	1
Acenaphthylene	0.044	U	0.11	0.044	0.0056	ug/L		05/16/19 16:41	1
Anthracene	0.11	U	0.11	0.11	0.034	ug/L		05/16/19 16:41	1
Benzo[a]anthracene	0.11	U	0.11	0.11	0.031	ug/L		05/16/19 16:41	1
Benzo[a]pyrene	0.055	U	0.11	0.055	0.027	ug/L		05/16/19 16:41	1
Benzo[b]fluoranthene	0.11	U	0.11	0.11	0.043	ug/L		05/16/19 16:41	1
Benzo[g,h,i]perylene	0.11	U	0.11	0.11	0.041	ug/L		05/16/19 16:41	1
Benzo[k]fluoranthene	0.055	U	0.11	0.055	0.025	ug/L		05/16/19 16:41	1
Chrysene	0.11	U	0.11	0.11	0.036	ug/L		05/16/19 16:41	1
Dibenz(a,h)anthracene	0.11	U	0.11	0.11	0.030	ug/L		05/16/19 16:41	1
Fluoranthene	0.11	U	0.11	0.11	0.053	ug/L		05/16/19 16:41	1
Fluorene	0.044	U	0.11	0.044	0.021	ug/L		05/16/19 16:41	1
Indeno[1,2,3-cd]pyrene	0.11	U	0.11	0.11	0.043	ug/L		05/16/19 16:41	1
Naphthalene	0.055	U	0.11	0.055	0.025	ug/L		05/16/19 16:41	1
Phenanthrene	0.11	U	0.11	0.11	0.054	ug/L		05/16/19 16:41	1
Pyrene	0.11	U	0.11	0.11	0.049	ug/L		05/16/19 16:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	91		53 - 106	05/06/19 12:22	05/16/19 16:41	1
Nitrobenzene-d5	88		55 - 111	05/06/19 12:22	05/16/19 16:41	1
Terphenyl-d14	99		58 - 132	05/06/19 12:22	05/16/19 16:41	1

Client Sample ID: DET-004-190401-GW

Date Collected: 04/29/19 10:04

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-7

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1-Methylnaphthalene	0.043	U	0.11	0.043	0.019	ug/L		05/16/19 17:11	1
2-Methylnaphthalene	0.053	U	0.11	0.053	0.023	ug/L		05/16/19 17:11	1
Acenaphthene	0.043	U	0.11	0.043	0.0045	ug/L		05/16/19 17:11	1
Acenaphthylene	0.043	U	0.11	0.043	0.0054	ug/L		05/16/19 17:11	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Client Sample ID: DET-004-190401-GW

Date Collected: 04/29/19 10:04

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-7

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Anthracene	0.11	U	0.11	0.11	0.033	ug/L		05/16/19 17:11	1
Benzo[a]anthracene	0.11	U	0.11	0.11	0.030	ug/L		05/16/19 17:11	1
Benzo[a]pyrene	0.053	U	0.11	0.053	0.026	ug/L		05/16/19 17:11	1
Benzo[b]fluoranthene	0.11	U	0.11	0.11	0.042	ug/L		05/16/19 17:11	1
Benzo[g,h,i]perylene	0.11	U	0.11	0.11	0.040	ug/L		05/16/19 17:11	1
Benzo[k]fluoranthene	0.053	U	0.11	0.053	0.024	ug/L		05/16/19 17:11	1
Chrysene	0.11	U	0.11	0.11	0.035	ug/L		05/16/19 17:11	1
Dibenz(a,h)anthracene	0.11	U	0.11	0.11	0.029	ug/L		05/16/19 17:11	1
Fluoranthene	0.11	U	0.11	0.11	0.052	ug/L		05/16/19 17:11	1
Fluorene	0.043	U	0.11	0.043	0.020	ug/L		05/16/19 17:11	1
Indeno[1,2,3-cd]pyrene	0.11	U	0.11	0.11	0.042	ug/L		05/16/19 17:11	1
Naphthalene	0.053	U	0.11	0.053	0.024	ug/L		05/16/19 17:11	1
Phenanthrene	0.11	U	0.11	0.11	0.053	ug/L		05/16/19 17:11	1
Pyrene	0.11	U	0.11	0.11	0.048	ug/L		05/16/19 17:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	83		53 - 106	05/06/19 12:22	05/16/19 17:11	1
Nitrobenzene-d5	81		55 - 111	05/06/19 12:22	05/16/19 17:11	1
Terphenyl-d14	108		58 - 132	05/06/19 12:22	05/16/19 17:11	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Client Sample ID: NTAmw-120-190401-GW

Date Collected: 04/30/19 10:48

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-1

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hexachlorocyclopentadiene	9.8	U	49	9.8	3.0	ug/L		05/15/19 21:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	72		43 - 140	05/07/19 16:07	05/15/19 21:46	1
2-Fluorobiphenyl	72		44 - 119	05/07/19 16:07	05/15/19 21:46	1
2-Fluorophenol (Surr)	74		19 - 119	05/07/19 16:07	05/15/19 21:46	1
Nitrobenzene-d5 (Surr)	75		44 - 120	05/07/19 16:07	05/15/19 21:46	1
Phenol-d5 (Surr)	71		10 - 115	05/07/19 16:07	05/15/19 21:46	1
Terphenyl-d14 (Surr)	75		50 - 134	05/07/19 16:07	05/15/19 21:46	1

Client Sample ID: DET-003-190401-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-4

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2,4,5-Trichlorophenol	4.4	U	20	4.4	2.1	ug/L		05/15/19 23:14	1
2,4,6-Trichlorophenol	1.0	U	20	1.0	0.29	ug/L		05/15/19 23:14	1
2,4-Dichlorophenol	2.0	U	10	2.0	0.65	ug/L		05/15/19 23:14	1
2,4-Dimethylphenol	2.0	U	10	2.0	0.59	ug/L		05/15/19 23:14	1
2,4-Dinitrophenol	30	U	81	30	10	ug/L		05/15/19 23:14	1
2,4-Dinitrotoluene	4.4	U	20	4.4	1.7	ug/L		05/15/19 23:14	1
2,6-Dinitrotoluene	4.4	U	20	4.4	1.9	ug/L		05/15/19 23:14	1
2-Chlorophenol	4.4	U	10	4.4	2.0	ug/L		05/15/19 23:14	1
2-Methylphenol	2.0	U	10	2.0	0.99	ug/L		05/15/19 23:14	1
2-Nitrophenol	1.0	U	20	1.0	0.39	ug/L		05/15/19 23:14	1
3 & 4 Methylphenol	0.51	U	20	0.51	0.25	ug/L		05/15/19 23:14	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: DET-003-190401-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-4

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,6-Dinitro-2-methylphenol	8.9	U	81	8.9	4.0	ug/L		05/15/19 23:14	1
4-Chloro-3-methylphenol	5.1	U	20	5.1	2.4	ug/L		05/15/19 23:14	1
4-Nitrophenol	4.0	U Q	51	4.0	1.2	ug/L		05/15/19 23:14	1
Bis(2-ethylhexyl) phthalate	2.0	U	10	2.0	0.57	ug/L		05/15/19 23:14	1
Butyl benzyl phthalate	2.0	U	20	2.0	1.0	ug/L		05/15/19 23:14	1
Diethyl phthalate	1.0	U	20	1.0	0.38	ug/L		05/15/19 23:14	1
Dimethyl phthalate	0.51	U	20	0.51	0.21	ug/L		05/15/19 23:14	1
Di-n-butyl phthalate	4.4	U	20	4.4	1.2	ug/L		05/15/19 23:14	1
Di-n-octyl phthalate	1.0	U	20	1.0	0.35	ug/L		05/15/19 23:14	1
Nitrobenzene	2.0	U	20	2.0	0.82	ug/L		05/15/19 23:14	1
Pentachlorophenol	61	U	81	61	20	ug/L		05/15/19 23:14	1
Phenol	4.4	U	10	4.4	2.0	ug/L		05/15/19 23:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	79		43 - 140	05/03/19 12:42	05/15/19 23:14	1
2-Fluorobiphenyl	80		44 - 119	05/03/19 12:42	05/15/19 23:14	1
2-Fluorophenol (Surr)	83		19 - 119	05/03/19 12:42	05/15/19 23:14	1
Nitrobenzene-d5 (Surr)	83		44 - 120	05/03/19 12:42	05/15/19 23:14	1
Phenol-d5 (Surr)	82		10 - 115	05/03/19 12:42	05/15/19 23:14	1
Terphenyl-d14 (Surr)	92		50 - 134	05/03/19 12:42	05/15/19 23:14	1

Client Sample ID: DET-004-190401-GW

Date Collected: 04/29/19 10:04

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-7

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2,4,5-Trichlorophenol	4.4	U	20	4.4	2.0	ug/L		05/15/19 23:44	1
2,4,6-Trichlorophenol	0.99	U	20	0.99	0.29	ug/L		05/15/19 23:44	1
2,4-Dichlorophenol	2.0	U	9.9	2.0	0.63	ug/L		05/15/19 23:44	1
2,4-Dimethylphenol	2.0	U	9.9	2.0	0.57	ug/L		05/15/19 23:44	1
2,4-Dinitrophenol	30	U	79	30	9.9	ug/L		05/15/19 23:44	1
2,4-Dinitrotoluene	4.4	U	20	4.4	1.6	ug/L		05/15/19 23:44	1
2,6-Dinitrotoluene	4.4	U	20	4.4	1.9	ug/L		05/15/19 23:44	1
2-Chlorophenol	4.4	U	9.9	4.4	2.0	ug/L		05/15/19 23:44	1
2-Methylphenol	2.0	U	9.9	2.0	0.97	ug/L		05/15/19 23:44	1
2-Nitrophenol	0.99	U	20	0.99	0.39	ug/L		05/15/19 23:44	1
3 & 4 Methylphenol	0.49	U	20	0.49	0.25	ug/L		05/15/19 23:44	1
4,6-Dinitro-2-methylphenol	8.7	U	79	8.7	4.0	ug/L		05/15/19 23:44	1
4-Chloro-3-methylphenol	4.9	U	20	4.9	2.4	ug/L		05/15/19 23:44	1
4-Nitrophenol	4.0	U Q	49	4.0	1.2	ug/L		05/15/19 23:44	1
Bis(2-ethylhexyl) phthalate	2.0	U	9.9	2.0	0.55	ug/L		05/15/19 23:44	1
Butyl benzyl phthalate	2.0	U	20	2.0	0.99	ug/L		05/15/19 23:44	1
Diethyl phthalate	0.99	U	20	0.99	0.38	ug/L		05/15/19 23:44	1
Dimethyl phthalate	0.49	U	20	0.49	0.21	ug/L		05/15/19 23:44	1
Di-n-butyl phthalate	4.4	U	20	4.4	1.1	ug/L		05/15/19 23:44	1
Di-n-octyl phthalate	0.99	U	20	0.99	0.35	ug/L		05/15/19 23:44	1
Nitrobenzene	2.0	U M	20	2.0	0.80	ug/L		05/15/19 23:44	1
Pentachlorophenol	59	U	79	59	20	ug/L		05/15/19 23:44	1
Phenol	4.4	U	9.9	4.4	2.0	ug/L		05/15/19 23:44	1

Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	79		43 - 140	05/03/19 12:42	05/15/19 23:44	1
2-Fluorobiphenyl	77		44 - 119	05/03/19 12:42	05/15/19 23:44	1
2-Fluorophenol (Surr)	70		19 - 119	05/03/19 12:42	05/15/19 23:44	1
Nitrobenzene-d5 (Surr)	69		44 - 120	05/03/19 12:42	05/15/19 23:44	1
Phenol-d5 (Surr)	71		10 - 115	05/03/19 12:42	05/15/19 23:44	1
Terphenyl-d14 (Surr)	88		50 - 134	05/03/19 12:42	05/15/19 23:44	1

Method: 8081B - Organochlorine Pesticides (GC)

Client Sample ID: DET-003-190401-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-4

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.022	U	0.054	0.022	0.0083	ug/L		05/17/19 17:41	1
4,4'-DDE	0.022	U	0.054	0.022	0.0081	ug/L		05/17/19 17:41	1
4,4'-DDT	0.054	U	0.054	0.054	0.016	ug/L		05/17/19 17:41	1
Aldrin	0.022	U	0.054	0.022	0.0064	ug/L		05/17/19 17:41	1
alpha-BHC	0.022	U	0.054	0.022	0.0057	ug/L		05/17/19 17:41	1
alpha-Chlordane	0.022	U	0.054	0.022	0.0057	ug/L		05/17/19 17:41	1
beta-BHC	0.022	U	0.054	0.022	0.0094	ug/L		05/17/19 17:41	1
delta-BHC	0.022	U	0.054	0.022	0.0063	ug/L		05/17/19 17:41	1
Dieldrin	0.022	U	0.054	0.022	0.0068	ug/L		05/17/19 17:41	1
Endosulfan I	0.022	U	0.054	0.022	0.0063	ug/L		05/17/19 17:41	1
Endosulfan II	0.022	U	0.054	0.022	0.0075	ug/L		05/17/19 17:41	1
Endosulfan sulfate	0.022	U	0.054	0.022	0.0061	ug/L		05/17/19 17:41	1
Endrin	0.022	U	0.054	0.022	0.0085	ug/L		05/17/19 17:41	1
Endrin aldehyde	0.022	U	0.054	0.022	0.0095	ug/L		05/17/19 17:41	1
Endrin ketone	0.022	U	0.054	0.022	0.0075	ug/L		05/17/19 17:41	1
gamma-BHC (Lindane)	0.022	U	0.054	0.022	0.0074	ug/L		05/17/19 17:41	1
gamma-Chlordane	0.022	U	0.054	0.022	0.0098	ug/L		05/17/19 17:41	1
Heptachlor	0.022	U	0.054	0.022	0.0083	ug/L		05/17/19 17:41	1
Heptachlor epoxide	0.022	U	0.054	0.022	0.0081	ug/L		05/17/19 17:41	1
Methoxychlor	0.054	U	0.054	0.054	0.014	ug/L		05/17/19 17:41	1
Toxaphene	0.86	U	2.2	0.86	0.40	ug/L		05/17/19 17:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	81		34 - 122	05/06/19 15:29	05/17/19 17:41	1
Tetrachloro-m-xylene	72		44 - 124	05/06/19 15:29	05/17/19 17:41	1

Client Sample ID: DET-003-190402-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-5

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.022	U	0.055	0.022	0.0085	ug/L		05/17/19 19:08	1
4,4'-DDE	0.022	U	0.055	0.022	0.0083	ug/L		05/17/19 19:08	1
4,4'-DDT	0.055	U	0.055	0.055	0.016	ug/L		05/17/19 19:08	1
Aldrin	0.022	U	0.055	0.022	0.0065	ug/L		05/17/19 19:08	1
alpha-BHC	0.022	U	0.055	0.022	0.0059	ug/L		05/17/19 19:08	1
alpha-Chlordane	0.022	U	0.055	0.022	0.0059	ug/L		05/17/19 19:08	1
beta-BHC	0.022	U	0.055	0.022	0.0097	ug/L		05/17/19 19:08	1
delta-BHC	0.022	U	0.055	0.022	0.0064	ug/L		05/17/19 19:08	1
Dieldrin	0.022	U	0.055	0.022	0.0070	ug/L		05/17/19 19:08	1
Endosulfan I	0.022	U	0.055	0.022	0.0064	ug/L		05/17/19 19:08	1

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Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Client Sample ID: DET-003-190402-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-5

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Endosulfan II	0.022	U	0.055	0.022	0.0078	ug/L		05/17/19 19:08	1
Endosulfan sulfate	0.022	U	0.055	0.022	0.0063	ug/L		05/17/19 19:08	1
Endrin	0.022	U	0.055	0.022	0.0088	ug/L		05/17/19 19:08	1
Endrin aldehyde	0.022	U	0.055	0.022	0.0098	ug/L		05/17/19 19:08	1
Endrin ketone	0.022	U	0.055	0.022	0.0078	ug/L		05/17/19 19:08	1
gamma-BHC (Lindane)	0.022	U	0.055	0.022	0.0077	ug/L		05/17/19 19:08	1
gamma-Chlordane	0.022	U	0.055	0.022	0.010	ug/L		05/17/19 19:08	1
Heptachlor	0.022	U	0.055	0.022	0.0085	ug/L		05/17/19 19:08	1
Heptachlor epoxide	0.022	U	0.055	0.022	0.0083	ug/L		05/17/19 19:08	1
Methoxychlor	0.055	U	0.055	0.055	0.014	ug/L		05/17/19 19:08	1
Toxaphene	0.89	U	2.2	0.89	0.41	ug/L		05/17/19 19:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	85		34 - 122	05/06/19 15:29	05/17/19 19:08	1
Tetrachloro-m-xylene	75		44 - 124	05/06/19 15:29	05/17/19 19:08	1

Client Sample ID: DET-004-190401-GW

Date Collected: 04/29/19 10:04

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-7

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.020	U	0.050	0.020	0.0077	ug/L		05/17/19 19:25	1
4,4'-DDE	0.020	U	0.050	0.020	0.0075	ug/L		05/17/19 19:25	1
4,4'-DDT	0.050	U	0.050	0.050	0.015	ug/L		05/17/19 19:25	1
Aldrin	0.020	U	0.050	0.020	0.0059	ug/L		05/17/19 19:25	1
alpha-BHC	0.020	U	0.050	0.020	0.0053	ug/L		05/17/19 19:25	1
alpha-Chlordane	0.020	U	0.050	0.020	0.0053	ug/L		05/17/19 19:25	1
beta-BHC	0.020	U	0.050	0.020	0.0087	ug/L		05/17/19 19:25	1
delta-BHC	0.020	U	0.050	0.020	0.0058	ug/L		05/17/19 19:25	1
Dieldrin	0.020	U	0.050	0.020	0.0063	ug/L		05/17/19 19:25	1
Endosulfan I	0.020	U	0.050	0.020	0.0058	ug/L		05/17/19 19:25	1
Endosulfan II	0.020	U	0.050	0.020	0.0070	ug/L		05/17/19 19:25	1
Endosulfan sulfate	0.020	U	0.050	0.020	0.0057	ug/L		05/17/19 19:25	1
Endrin	0.020	U	0.050	0.020	0.0079	ug/L		05/17/19 19:25	1
Endrin aldehyde	0.020	U	0.050	0.020	0.0088	ug/L		05/17/19 19:25	1
Endrin ketone	0.020	U	0.050	0.020	0.0070	ug/L		05/17/19 19:25	1
gamma-BHC (Lindane)	0.020	U	0.050	0.020	0.0069	ug/L		05/17/19 19:25	1
gamma-Chlordane	0.020	U	0.050	0.020	0.0091	ug/L		05/17/19 19:25	1
Heptachlor	0.020	U	0.050	0.020	0.0077	ug/L		05/17/19 19:25	1
Heptachlor epoxide	0.020	U	0.050	0.020	0.0075	ug/L		05/17/19 19:25	1
Methoxychlor	0.050	U	0.050	0.050	0.013	ug/L		05/17/19 19:25	1
Toxaphene	0.80	U	2.0	0.80	0.37	ug/L		05/17/19 19:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	87		34 - 122	05/06/19 15:29	05/17/19 19:25	1
Tetrachloro-m-xylene	72		44 - 124	05/06/19 15:29	05/17/19 19:25	1

Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Client Sample ID: DET-003-190401-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-4

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
PCB-1016	0.43	U M	1.1	0.43	0.13	ug/L		05/23/19 15:58	1
PCB-1221	0.27	U M	1.1	0.27	0.23	ug/L		05/23/19 15:58	1
PCB-1232	0.65	U M	1.1	0.65	0.18	ug/L		05/23/19 15:58	1
PCB-1242	1.1	U	1.1	1.1	0.45	ug/L		05/23/19 15:58	1
PCB-1248	0.32	U	1.1	0.32	0.099	ug/L		05/23/19 15:58	1
PCB-1254	0.27	U	1.1	0.27	0.12	ug/L		05/23/19 15:58	1
PCB-1260	0.43	U	1.1	0.43	0.17	ug/L		05/23/19 15:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	78		25 - 120	05/06/19 15:29	05/23/19 15:58	1
DCB Decachlorobiphenyl	84		30 - 136	05/06/19 15:29	05/23/19 15:58	1

Client Sample ID: DET-003-190402-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-5

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
PCB-1016	0.44	U M	1.1	0.44	0.14	ug/L		05/23/19 17:03	1
PCB-1221	0.28	U M	1.1	0.28	0.24	ug/L		05/23/19 17:03	1
PCB-1232	0.67	U M	1.1	0.67	0.18	ug/L		05/23/19 17:03	1
PCB-1242	1.1	U M	1.1	1.1	0.46	ug/L		05/23/19 17:03	1
PCB-1248	0.33	U M	1.1	0.33	0.10	ug/L		05/23/19 17:03	1
PCB-1254	0.28	U M	1.1	0.28	0.13	ug/L		05/23/19 17:03	1
PCB-1260	0.44	U M	1.1	0.44	0.18	ug/L		05/23/19 17:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	85		25 - 120	05/06/19 15:29	05/23/19 17:03	1
DCB Decachlorobiphenyl	92		30 - 136	05/06/19 15:29	05/23/19 17:03	1

Client Sample ID: DET-004-190401-GW

Date Collected: 04/29/19 10:04

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-7

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
PCB-1016	0.40	U M	1.0	0.40	0.12	ug/L		05/23/19 17:25	1
PCB-1221	0.25	U M	1.0	0.25	0.21	ug/L		05/23/19 17:25	1
PCB-1232	0.60	U M	1.0	0.60	0.17	ug/L		05/23/19 17:25	1
PCB-1242	1.0	U M	1.0	1.0	0.42	ug/L		05/23/19 17:25	1
PCB-1248	0.30	U M	1.0	0.30	0.092	ug/L		05/23/19 17:25	1
PCB-1254	0.25	U M	1.0	0.25	0.11	ug/L		05/23/19 17:25	1
PCB-1260	0.40	U M	1.0	0.40	0.16	ug/L		05/23/19 17:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	88		25 - 120	05/06/19 15:29	05/23/19 17:25	1
DCB Decachlorobiphenyl	101		30 - 136	05/06/19 15:29	05/23/19 17:25	1

Method: 8330B - Nitroaromatics and Nitramines (HPLC)

Client Sample ID: NTAmw-119-190401-GW

Date Collected: 04/30/19 10:45

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-2

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.43	U	1.1	0.43	0.22	ug/L		05/10/19 05:26	1

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Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8330B - Nitroaromatics and Nitramines (HPLC) (Continued)

Client Sample ID: NTAmw-119-190401-GW

Date Collected: 04/30/19 10:45

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-2

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3-Dinitrobenzene	0.22	U	0.43	0.22	0.096	ug/L		05/10/19 05:26	1
2,4,6-Trinitrotoluene	0.43	U	0.43	0.43	0.17	ug/L		05/10/19 05:26	1
2,4-Dinitrotoluene	0.22	U	0.43	0.22	0.091	ug/L		05/10/19 05:26	1
2,6-Dinitrotoluene	0.22	U	0.22	0.22	0.070	ug/L		05/10/19 05:26	1
2-Amino-4,6-dinitrotoluene	0.13	U	0.22	0.13	0.055	ug/L		05/10/19 05:26	1
2-Nitrotoluene	0.22	U J1 Q	0.43	0.22	0.092	ug/L		05/10/19 05:26	1
3-Nitrotoluene	0.43	U J1	0.43	0.43	0.21	ug/L		05/10/19 05:26	1
4-Amino-2,6-dinitrotoluene	0.13	U	0.22	0.13	0.062	ug/L		05/10/19 05:26	1
4-Nitrotoluene	0.43	U J1	1.1	0.43	0.22	ug/L		05/10/19 05:26	1
HMX	0.22	U	0.43	0.22	0.095	ug/L		05/10/19 05:26	1
Nitrobenzene	0.22	U	0.43	0.22	0.098	ug/L		05/10/19 05:26	1
Nitroglycerin	2.2	U	3.2	2.2	1.0	ug/L		05/10/19 05:26	1
PETN	4.3	U	4.3	4.3	2.1	ug/L		05/10/19 05:26	1
RDX	0.43	U	0.43	0.43	0.17	ug/L		05/10/19 05:26	1
Tetryl	0.22	U	0.26	0.22	0.086	ug/L		05/10/19 05:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	94		83 - 119	05/04/19 15:00	05/10/19 05:26	1

Client Sample ID: NTAmw-119-190402-GW

Date Collected: 04/30/19 10:45

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-3

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.43	U	1.1	0.43	0.21	ug/L		05/10/19 06:38	1
1,3-Dinitrobenzene	0.21	U	0.43	0.21	0.094	ug/L		05/10/19 06:38	1
2,4,6-Trinitrotoluene	0.43	U	0.43	0.43	0.17	ug/L		05/10/19 06:38	1
2,4-Dinitrotoluene	0.21	U	0.43	0.21	0.089	ug/L		05/10/19 06:38	1
2,6-Dinitrotoluene	0.21	U	0.21	0.21	0.069	ug/L		05/10/19 06:38	1
2-Amino-4,6-dinitrotoluene	0.13	U	0.21	0.13	0.054	ug/L		05/10/19 06:38	1
2-Nitrotoluene	0.21	U Q	0.43	0.21	0.091	ug/L		05/10/19 06:38	1
3-Nitrotoluene	0.43	U	0.43	0.43	0.21	ug/L		05/10/19 06:38	1
4-Amino-2,6-dinitrotoluene	0.13	U	0.21	0.13	0.061	ug/L		05/10/19 06:38	1
4-Nitrotoluene	0.43	U	1.1	0.43	0.21	ug/L		05/10/19 06:38	1
HMX	0.21	U	0.43	0.21	0.093	ug/L		05/10/19 06:38	1
Nitrobenzene	0.21	U	0.43	0.21	0.097	ug/L		05/10/19 06:38	1
Nitroglycerin	2.1	U	3.2	2.1	0.98	ug/L		05/10/19 06:38	1
PETN	4.3	U	4.3	4.3	2.1	ug/L		05/10/19 06:38	1
RDX	0.43	U	0.43	0.43	0.17	ug/L		05/10/19 06:38	1
Tetryl	0.21	U	0.26	0.21	0.084	ug/L		05/10/19 06:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	90		83 - 119	05/04/19 15:00	05/10/19 06:38	1

Client Sample ID: DET-003-190401-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-4

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.45	U	1.1	0.45	0.22	ug/L		05/10/19 07:02	1
1,3-Dinitrobenzene	0.22	U	0.45	0.22	0.099	ug/L		05/10/19 07:02	1
2,4,6-Trinitrotoluene	0.45	U	0.45	0.45	0.18	ug/L		05/10/19 07:02	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8330B - Nitroaromatics and Nitramines (HPLC) (Continued)

Client Sample ID: DET-003-190401-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-4

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2,4-Dinitrotoluene	0.22	U	0.45	0.22	0.094	ug/L		05/10/19 07:02	1
2,6-Dinitrotoluene	0.22	U	0.22	0.22	0.072	ug/L		05/10/19 07:02	1
2-Amino-4,6-dinitrotoluene	0.13	U	0.22	0.13	0.057	ug/L		05/10/19 07:02	1
2-Nitrotoluene	0.22	U Q J1	0.45	0.22	0.096	ug/L		05/10/19 07:02	1
3-Nitrotoluene	0.45	U J1	0.45	0.45	0.22	ug/L		05/10/19 07:02	1
4-Amino-2,6-dinitrotoluene	0.13	U	0.22	0.13	0.065	ug/L		05/10/19 07:02	1
4-Nitrotoluene	0.45	U	1.1	0.45	0.22	ug/L		05/10/19 07:02	1
HMX	0.22	U	0.45	0.22	0.098	ug/L		05/10/19 07:02	1
Nitrobenzene	0.22	U	0.45	0.22	0.10	ug/L		05/10/19 07:02	1
Nitroglycerin	2.2	U	3.4	2.2	1.0	ug/L		05/10/19 07:02	1
PETN	4.5	U	4.5	4.5	2.2	ug/L		05/10/19 07:02	1
RDX	0.45	U	0.45	0.45	0.18	ug/L		05/10/19 07:02	1
Tetryl	0.22	U	0.27	0.22	0.089	ug/L		05/10/19 07:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	92		83 - 119	05/04/19 15:00	05/10/19 07:02	1

Client Sample ID: DET-003-190402-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-5

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.44	U	1.1	0.44	0.22	ug/L		05/10/19 09:24	1
1,3-Dinitrobenzene	0.22	U	0.44	0.22	0.097	ug/L		05/10/19 09:24	1
2,4,6-Trinitrotoluene	0.44	U	0.44	0.44	0.18	ug/L		05/10/19 09:24	1
2,4-Dinitrotoluene	0.22	U	0.44	0.22	0.092	ug/L		05/10/19 09:24	1
2,6-Dinitrotoluene	0.22	U	0.22	0.22	0.071	ug/L		05/10/19 09:24	1
2-Amino-4,6-dinitrotoluene	0.13	U	0.22	0.13	0.056	ug/L		05/10/19 09:24	1
2-Nitrotoluene	0.22	U Q	0.44	0.22	0.094	ug/L		05/10/19 09:24	1
3-Nitrotoluene	0.44	U	0.44	0.44	0.21	ug/L		05/10/19 09:24	1
4-Amino-2,6-dinitrotoluene	0.13	U	0.22	0.13	0.063	ug/L		05/10/19 09:24	1
4-Nitrotoluene	0.44	U	1.1	0.44	0.22	ug/L		05/10/19 09:24	1
HMX	0.22	U	0.44	0.22	0.096	ug/L		05/10/19 09:24	1
Nitrobenzene	0.22	U	0.44	0.22	0.10	ug/L		05/10/19 09:24	1
Nitroglycerin	2.2	U	3.3	2.2	1.0	ug/L		05/10/19 09:24	1
PETN	4.4	U	4.4	4.4	2.1	ug/L		05/10/19 09:24	1
RDX	0.44	U	0.44	0.44	0.17	ug/L		05/10/19 09:24	1
Tetryl	0.22	U	0.26	0.22	0.087	ug/L		05/10/19 09:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	88		83 - 119	05/04/19 15:00	05/10/19 09:24	1

Client Sample ID: DET-004-190401-GW

Date Collected: 04/29/19 10:04

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-7

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.41	U	1.0	0.41	0.21	ug/L		05/10/19 09:48	1
1,3-Dinitrobenzene	0.21	U	0.41	0.21	0.092	ug/L		05/10/19 09:48	1
2,4,6-Trinitrotoluene	0.41	U	0.41	0.41	0.17	ug/L		05/10/19 09:48	1
2,4-Dinitrotoluene	0.21	U	0.41	0.21	0.086	ug/L		05/10/19 09:48	1
2,6-Dinitrotoluene	0.21	U	0.21	0.21	0.067	ug/L		05/10/19 09:48	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8330B - Nitroaromatics and Nitramines (HPLC) (Continued)

Client Sample ID: DET-004-190401-GW

Date Collected: 04/29/19 10:04

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-7

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2-Amino-4,6-dinitrotoluene	0.12	U	0.21	0.12	0.052	ug/L		05/10/19 09:48	1
2-Nitrotoluene	0.21	U Q	0.41	0.21	0.088	ug/L		05/10/19 09:48	1
3-Nitrotoluene	0.41	U	0.41	0.41	0.20	ug/L		05/10/19 09:48	1
4-Amino-2,6-dinitrotoluene	0.12	U	0.21	0.12	0.060	ug/L		05/10/19 09:48	1
4-Nitrotoluene	0.41	U	1.0	0.41	0.21	ug/L		05/10/19 09:48	1
HMX	1.6	M	0.41	0.21	0.090	ug/L		05/10/19 09:48	1
Nitrobenzene	0.21	U	0.41	0.21	0.094	ug/L		05/10/19 09:48	1
Nitroglycerin	2.1	U	3.1	2.1	0.95	ug/L		05/10/19 09:48	1
PETN	4.1	U	4.1	4.1	2.0	ug/L		05/10/19 09:48	1
RDX	1.4	M	0.41	0.41	0.16	ug/L		05/10/19 09:48	1
Tetryl	0.21	U	0.25	0.21	0.082	ug/L		05/10/19 09:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	90		83 - 119	05/04/19 15:00	05/10/19 09:48	1

Client Sample ID: FWGmw-007-190401-GW

Date Collected: 04/30/19 13:35

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-8

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.44	U	1.1	0.44	0.22	ug/L		05/10/19 10:12	1
1,3-Dinitrobenzene	0.22	U	0.44	0.22	0.097	ug/L		05/10/19 10:12	1
2,4,6-Trinitrotoluene	0.44	U	0.44	0.44	0.18	ug/L		05/10/19 10:12	1
2,4-Dinitrotoluene	0.22	U	0.44	0.22	0.092	ug/L		05/10/19 10:12	1
2,6-Dinitrotoluene	0.22	U	0.22	0.22	0.071	ug/L		05/10/19 10:12	1
2-Amino-4,6-dinitrotoluene	0.13	U	0.22	0.13	0.056	ug/L		05/10/19 10:12	1
2-Nitrotoluene	0.22	U Q	0.44	0.22	0.094	ug/L		05/10/19 10:12	1
3-Nitrotoluene	0.44	U	0.44	0.44	0.21	ug/L		05/10/19 10:12	1
4-Amino-2,6-dinitrotoluene	0.13	U	0.22	0.13	0.063	ug/L		05/10/19 10:12	1
4-Nitrotoluene	0.44	U	1.1	0.44	0.22	ug/L		05/10/19 10:12	1
HMX	0.22	U	0.44	0.22	0.096	ug/L		05/10/19 10:12	1
Nitrobenzene	0.22	U	0.44	0.22	0.10	ug/L		05/10/19 10:12	1
Nitroglycerin	2.2	U	3.3	2.2	1.0	ug/L		05/10/19 10:12	1
PETN	4.4	U	4.4	4.4	2.1	ug/L		05/10/19 10:12	1
RDX	0.44	U	0.44	0.44	0.17	ug/L		05/10/19 10:12	1
Tetryl	0.22	U	0.26	0.22	0.087	ug/L		05/10/19 10:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	86		83 - 119	05/04/19 15:00	05/10/19 10:12	1

Client Sample ID: WBGmw-020-190401-GW

Date Collected: 04/30/19 11:50

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-9

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.39	U	0.96	0.39	0.19	ug/L		05/10/19 10:35	1
1,3-Dinitrobenzene	0.19	U	0.39	0.19	0.086	ug/L		05/10/19 10:35	1
2,4,6-Trinitrotoluene	0.39	U	0.39	0.39	0.15	ug/L		05/10/19 10:35	1
2,4-Dinitrotoluene	0.19	U	0.39	0.19	0.081	ug/L		05/10/19 10:35	1
2,6-Dinitrotoluene	0.19	U	0.19	0.19	0.062	ug/L		05/10/19 10:35	1
2-Amino-4,6-dinitrotoluene	0.12	U	0.19	0.12	0.049	ug/L		05/10/19 10:35	1
2-Nitrotoluene	0.19	U Q	0.39	0.19	0.082	ug/L		05/10/19 10:35	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8330B - Nitroaromatics and Nitramines (HPLC) (Continued)

Client Sample ID: WBGmw-020-190401-GW

Date Collected: 04/30/19 11:50

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-9

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
3-Nitrotoluene	0.39	U	0.39	0.39	0.19	ug/L		05/10/19 10:35	1
4-Amino-2,6-dinitrotoluene	0.12	U	0.19	0.12	0.056	ug/L		05/10/19 10:35	1
4-Nitrotoluene	0.39	U	0.96	0.39	0.19	ug/L		05/10/19 10:35	1
HMX	0.19	U	0.39	0.19	0.084	ug/L		05/10/19 10:35	1
Nitrobenzene	0.19	U	0.39	0.19	0.088	ug/L		05/10/19 10:35	1
Nitroglycerin	1.9	U	2.9	1.9	0.89	ug/L		05/10/19 10:35	1
PETN	3.9	U	3.9	3.9	1.9	ug/L		05/10/19 10:35	1
RDX	0.39	U	0.39	0.39	0.15	ug/L		05/10/19 10:35	1
Tetryl	0.19	U	0.23	0.19	0.076	ug/L		05/10/19 10:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	86		83 - 119	05/04/19 15:00	05/10/19 10:35	1

Client Sample ID: WBGmw-006-190401-GW

Date Collected: 04/30/19 09:10

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-10

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.39	U	0.98	0.39	0.20	ug/L		05/10/19 10:59	1
1,3-Dinitrobenzene	0.20	U	0.39	0.20	0.087	ug/L		05/13/19 23:35	1
2,4,6-Trinitrotoluene	0.39	U	0.39	0.39	0.16	ug/L		05/10/19 10:59	1
2,4-Dinitrotoluene	0.20	U	0.39	0.20	0.082	ug/L		05/10/19 10:59	1
2,6-Dinitrotoluene	0.20	U	0.20	0.20	0.063	ug/L		05/10/19 10:59	1
2-Amino-4,6-dinitrotoluene	0.12	U	0.20	0.12	0.050	ug/L		05/10/19 10:59	1
2-Nitrotoluene	0.20	U Q	0.39	0.20	0.084	ug/L		05/10/19 10:59	1
3-Nitrotoluene	0.39	U	0.39	0.39	0.19	ug/L		05/10/19 10:59	1
4-Amino-2,6-dinitrotoluene	0.12	U	0.20	0.12	0.057	ug/L		05/10/19 10:59	1
4-Nitrotoluene	0.39	U	0.98	0.39	0.20	ug/L		05/10/19 10:59	1
HMX	3.4	M	0.39	0.20	0.086	ug/L		05/10/19 10:59	1
Nitrobenzene	0.20	U	0.39	0.20	0.089	ug/L		05/10/19 10:59	1
Nitroglycerin	2.0	U	2.9	2.0	0.90	ug/L		05/10/19 10:59	1
PETN	3.9	U	3.9	3.9	1.9	ug/L		05/10/19 10:59	1
RDX	11		0.39	0.39	0.16	ug/L		05/10/19 10:59	1
Tetryl	0.20	U	0.24	0.20	0.078	ug/L		05/10/19 10:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	99		83 - 119	05/04/19 15:00	05/10/19 10:59	1
1,2-Dinitrobenzene	95		83 - 119	05/04/19 15:00	05/13/19 23:35	1

Client Sample ID: WBGmw-021-190401-GW

Date Collected: 04/30/19 09:45

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-11

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.44	U	1.1	0.44	0.22	ug/L		05/10/19 11:23	1
1,3-Dinitrobenzene	0.22	U	0.44	0.22	0.098	ug/L		05/10/19 11:23	1
2,4,6-Trinitrotoluene	0.44	U	0.44	0.44	0.18	ug/L		05/10/19 11:23	1
2,4-Dinitrotoluene	0.22	U	0.44	0.22	0.092	ug/L		05/10/19 11:23	1
2,6-Dinitrotoluene	0.22	U	0.22	0.22	0.071	ug/L		05/10/19 11:23	1
2-Amino-4,6-dinitrotoluene	0.13	U	0.22	0.13	0.056	ug/L		05/10/19 11:23	1
2-Nitrotoluene	0.22	U Q	0.44	0.22	0.094	ug/L		05/10/19 11:23	1
3-Nitrotoluene	0.44	U	0.44	0.44	0.21	ug/L		05/10/19 11:23	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8330B - Nitroaromatics and Nitramines (HPLC) (Continued)

Client Sample ID: WBGmw-021-190401-GW

Date Collected: 04/30/19 09:45

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-11

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4-Amino-2,6-dinitrotoluene	0.13	U	0.22	0.13	0.064	ug/L		05/10/19 11:23	1
4-Nitrotoluene	0.44	U	1.1	0.44	0.22	ug/L		05/10/19 11:23	1
HMX	0.22	U	0.44	0.22	0.097	ug/L		05/10/19 11:23	1
Nitrobenzene	0.22	U	0.44	0.22	0.10	ug/L		05/10/19 11:23	1
Nitroglycerin	2.2	U	3.3	2.2	1.0	ug/L		05/10/19 11:23	1
PETN	4.4	U	4.4	4.4	2.1	ug/L		05/10/19 11:23	1
RDX	0.44	U	0.44	0.44	0.17	ug/L		05/10/19 11:23	1
Tetryl	0.22	U	0.26	0.22	0.087	ug/L		05/10/19 11:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	84		83 - 119	05/04/19 15:00	05/10/19 11:23	1

Client Sample ID: WBGmw-009-190401-GW

Date Collected: 04/30/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-12

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.42	U	1.0	0.42	0.21	ug/L		05/10/19 11:47	1
1,3-Dinitrobenzene	0.21	U	0.42	0.21	0.092	ug/L		05/10/19 11:47	1
2,4,6-Trinitrotoluene	0.42	U	0.42	0.42	0.17	ug/L		05/10/19 11:47	1
2,4-Dinitrotoluene	0.21	U	0.42	0.21	0.087	ug/L		05/10/19 11:47	1
2,6-Dinitrotoluene	0.21	U	0.21	0.21	0.067	ug/L		05/10/19 11:47	1
2-Amino-4,6-dinitrotoluene	0.13	U	0.21	0.13	0.053	ug/L		05/10/19 11:47	1
2-Nitrotoluene	0.21	U Q	0.42	0.21	0.089	ug/L		05/10/19 11:47	1
3-Nitrotoluene	0.42	U	0.42	0.42	0.20	ug/L		05/10/19 11:47	1
4-Amino-2,6-dinitrotoluene	0.13	U	0.21	0.13	0.060	ug/L		05/10/19 11:47	1
4-Nitrotoluene	0.42	U	1.0	0.42	0.21	ug/L		05/10/19 11:47	1
HMX	0.67	M	0.42	0.21	0.091	ug/L		05/10/19 11:47	1
Nitrobenzene	0.21	U	0.42	0.21	0.095	ug/L		05/10/19 11:47	1
Nitroglycerin	2.1	U	3.1	2.1	0.96	ug/L		05/10/19 11:47	1
PETN	4.2	U	4.2	4.2	2.0	ug/L		05/10/19 11:47	1
RDX	1.6	M	0.42	0.42	0.16	ug/L		05/10/19 11:47	1
Tetryl	0.21	U	0.25	0.21	0.083	ug/L		05/10/19 11:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	93		83 - 119	05/04/19 15:00	05/10/19 11:47	1

Client Sample ID: FWGmw-016-190401-GW

Date Collected: 04/29/19 15:20

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-13

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.40	U	1.0	0.40	0.20	ug/L		05/10/19 12:11	1
1,3-Dinitrobenzene	0.20	U	0.40	0.20	0.088	ug/L		05/10/19 12:11	1
2,4,6-Trinitrotoluene	0.40	U	0.40	0.40	0.16	ug/L		05/10/19 12:11	1
2,4-Dinitrotoluene	0.20	U	0.40	0.20	0.083	ug/L		05/10/19 12:11	1
2,6-Dinitrotoluene	0.20	U	0.20	0.20	0.064	ug/L		05/10/19 12:11	1
2-Amino-4,6-dinitrotoluene	0.12	U	0.20	0.12	0.050	ug/L		05/10/19 12:11	1
2-Nitrotoluene	0.20	U Q	0.40	0.20	0.085	ug/L		05/10/19 12:11	1
3-Nitrotoluene	0.40	U	0.40	0.40	0.19	ug/L		05/10/19 12:11	1
4-Amino-2,6-dinitrotoluene	0.12	U	0.20	0.12	0.057	ug/L		05/10/19 12:11	1
4-Nitrotoluene	0.40	U	1.0	0.40	0.20	ug/L		05/10/19 12:11	1

Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8330B - Nitroaromatics and Nitramines (HPLC) (Continued)

Client Sample ID: FWGmw-016-190401-GW

Date Collected: 04/29/19 15:20

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-13

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
HMX	0.20	U	0.40	0.20	0.087	ug/L		05/10/19 12:11	1
Nitrobenzene	0.20	U	0.40	0.20	0.091	ug/L		05/10/19 12:11	1
Nitroglycerin	2.0	U	3.0	2.0	0.92	ug/L		05/10/19 12:11	1
PETN	4.0	U	4.0	4.0	1.9	ug/L		05/10/19 12:11	1
RDX	0.40	U	0.40	0.40	0.16	ug/L		05/10/19 12:11	1
Tetryl	0.20	U	0.24	0.20	0.079	ug/L		05/10/19 12:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	84		83 - 119	05/04/19 15:00	05/10/19 12:11	1

Method: 8330B - Nitroaromatics and Nitramines (HPLC) - RE

Client Sample ID: NTAmw-119-190401-GW

Date Collected: 04/30/19 10:45

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-2

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.43	U H	1.1	0.43	0.22	ug/L		05/15/19 17:56	1
1,3-Dinitrobenzene	0.22	U H	0.43	0.22	0.096	ug/L		05/15/19 17:56	1
2,4,6-Trinitrotoluene	0.43	U H	0.43	0.43	0.17	ug/L		05/15/19 17:56	1
2,4-Dinitrotoluene	0.22	U H	0.43	0.22	0.091	ug/L		05/15/19 17:56	1
2,6-Dinitrotoluene	0.22	U H	0.22	0.22	0.070	ug/L		05/15/19 17:56	1
2-Amino-4,6-dinitrotoluene	0.13	U H	0.22	0.13	0.055	ug/L		05/15/19 17:56	1
2-Nitrotoluene	0.22	U H	0.43	0.22	0.093	ug/L		05/15/19 17:56	1
3-Nitrotoluene	0.43	U H	0.43	0.43	0.21	ug/L		05/15/19 17:56	1
4-Amino-2,6-dinitrotoluene	0.13	U H	0.22	0.13	0.063	ug/L		05/15/19 17:56	1
4-Nitrotoluene	0.43	U H	1.1	0.43	0.22	ug/L		05/15/19 17:56	1
HMX	0.22	U H	0.43	0.22	0.095	ug/L		05/15/19 17:56	1
Nitrobenzene	0.22	U H	0.43	0.22	0.099	ug/L		05/15/19 17:56	1
Nitroglycerin	2.2	U H	3.3	2.2	1.0	ug/L		05/15/19 17:56	1
PETN	4.3	U H	4.3	4.3	2.1	ug/L		05/15/19 17:56	1
RDX	0.43	U H	0.43	0.43	0.17	ug/L		05/15/19 17:56	1
Tetryl	0.22	U H	0.26	0.22	0.086	ug/L		05/15/19 17:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	92		83 - 119	05/10/19 16:21	05/15/19 17:56	1

Client Sample ID: NTAmw-119-190402-GW

Date Collected: 04/30/19 10:45

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-3

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.43	U H	1.1	0.43	0.22	ug/L		05/15/19 19:08	1
1,3-Dinitrobenzene	0.22	U H	0.43	0.22	0.096	ug/L		05/15/19 19:08	1
2,4,6-Trinitrotoluene	0.43	U H	0.43	0.43	0.17	ug/L		05/15/19 19:08	1
2,4-Dinitrotoluene	0.22	U H	0.43	0.22	0.091	ug/L		05/15/19 19:08	1
2,6-Dinitrotoluene	0.22	U H	0.22	0.22	0.070	ug/L		05/15/19 19:08	1
2-Amino-4,6-dinitrotoluene	0.13	U H	0.22	0.13	0.055	ug/L		05/15/19 19:08	1
2-Nitrotoluene	0.22	U H	0.43	0.22	0.093	ug/L		05/15/19 19:08	1
3-Nitrotoluene	0.43	U H	0.43	0.43	0.21	ug/L		05/15/19 19:08	1
4-Amino-2,6-dinitrotoluene	0.13	U H	0.22	0.13	0.062	ug/L		05/15/19 19:08	1
4-Nitrotoluene	0.43	U H	1.1	0.43	0.22	ug/L		05/15/19 19:08	1
HMX	0.22	U H	0.43	0.22	0.095	ug/L		05/15/19 19:08	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8330B - Nitroaromatics and Nitramines (HPLC) - RE (Continued)

Client Sample ID: NTAmw-119-190402-GW

Date Collected: 04/30/19 10:45

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-3

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrobenzene	0.22	U H	0.43	0.22	0.099	ug/L		05/15/19 19:08	1
Nitroglycerin	2.2	U H	3.2	2.2	1.0	ug/L		05/15/19 19:08	1
PETN	4.3	U H	4.3	4.3	2.1	ug/L		05/15/19 19:08	1
RDX	0.43	U H	0.43	0.43	0.17	ug/L		05/15/19 19:08	1
Tetryl	0.22	U H	0.26	0.22	0.086	ug/L		05/15/19 19:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	88		83 - 119	05/10/19 16:21	05/15/19 19:08	1

Client Sample ID: DET-003-190401-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-4

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.44	U H	1.1	0.44	0.22	ug/L		05/15/19 19:32	1
1,3-Dinitrobenzene	0.22	U H	0.44	0.22	0.098	ug/L		05/15/19 19:32	1
2,4,6-Trinitrotoluene	0.44	U H	0.44	0.44	0.18	ug/L		05/15/19 19:32	1
2,4-Dinitrotoluene	0.22	U H	0.44	0.22	0.092	ug/L		05/15/19 19:32	1
2,6-Dinitrotoluene	0.22	U H	0.22	0.22	0.071	ug/L		05/15/19 19:32	1
2-Amino-4,6-dinitrotoluene	0.13	U H	0.22	0.13	0.056	ug/L		05/15/19 19:32	1
2-Nitrotoluene	0.22	U H	0.44	0.22	0.094	ug/L		05/15/19 19:32	1
3-Nitrotoluene	0.44	U H	0.44	0.44	0.22	ug/L		05/15/19 19:32	1
4-Amino-2,6-dinitrotoluene	0.13	U H	0.22	0.13	0.064	ug/L		05/15/19 19:32	1
4-Nitrotoluene	0.44	U H	1.1	0.44	0.22	ug/L		05/15/19 19:32	1
HMX	0.22	U H	0.44	0.22	0.097	ug/L		05/15/19 19:32	1
Nitrobenzene	0.22	U H	0.44	0.22	0.10	ug/L		05/15/19 19:32	1
Nitroglycerin	2.2	U H	3.3	2.2	1.0	ug/L		05/15/19 19:32	1
PETN	4.4	U H	4.4	4.4	2.1	ug/L		05/15/19 19:32	1
RDX	0.44	U H	0.44	0.44	0.17	ug/L		05/15/19 19:32	1
Tetryl	0.22	U H	0.26	0.22	0.087	ug/L		05/15/19 19:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	93		83 - 119	05/10/19 16:21	05/15/19 19:32	1

Client Sample ID: DET-003-190402-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-5

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.44	U H	1.1	0.44	0.22	ug/L		05/15/19 21:54	1
1,3-Dinitrobenzene	0.22	U H	0.44	0.22	0.097	ug/L		05/15/19 21:54	1
2,4,6-Trinitrotoluene	0.44	U H	0.44	0.44	0.17	ug/L		05/15/19 21:54	1
2,4-Dinitrotoluene	0.22	U H	0.44	0.22	0.092	ug/L		05/15/19 21:54	1
2,6-Dinitrotoluene	0.22	U H	0.22	0.22	0.071	ug/L		05/15/19 21:54	1
2-Amino-4,6-dinitrotoluene	0.13	U H	0.22	0.13	0.055	ug/L		05/15/19 21:54	1
2-Nitrotoluene	0.22	U H	0.44	0.22	0.094	ug/L		05/15/19 21:54	1
3-Nitrotoluene	0.44	U H	0.44	0.44	0.21	ug/L		05/15/19 21:54	1
4-Amino-2,6-dinitrotoluene	0.13	U H	0.22	0.13	0.063	ug/L		05/15/19 21:54	1
4-Nitrotoluene	0.44	U H	1.1	0.44	0.22	ug/L		05/15/19 21:54	1
HMX	0.22	U H	0.44	0.22	0.096	ug/L		05/15/19 21:54	1
Nitrobenzene	0.22	U H	0.44	0.22	0.10	ug/L		05/15/19 21:54	1
Nitroglycerin	2.2	U H	3.3	2.2	1.0	ug/L		05/15/19 21:54	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8330B - Nitroaromatics and Nitramines (HPLC) - RE (Continued)

Client Sample ID: DET-003-190402-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-5

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
PETN	4.4	U H	4.4	4.4	2.1	ug/L		05/15/19 21:54	1
RDX	0.44	U H	0.44	0.44	0.17	ug/L		05/15/19 21:54	1
Tetryl	0.22	U H	0.26	0.22	0.087	ug/L		05/15/19 21:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	96		83 - 119				05/10/19 16:21	05/15/19 21:54	1

Client Sample ID: DET-004-190401-GW

Date Collected: 04/29/19 10:04

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-7

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.41	U H	1.0	0.41	0.21	ug/L		05/15/19 22:18	1
1,3-Dinitrobenzene	0.21	U H	0.41	0.21	0.092	ug/L		05/15/19 22:18	1
2,4,6-Trinitrotoluene	0.41	U H	0.41	0.41	0.17	ug/L		05/15/19 22:18	1
2,4-Dinitrotoluene	0.21	U H	0.41	0.21	0.087	ug/L		05/15/19 22:18	1
2,6-Dinitrotoluene	0.21	U H	0.21	0.21	0.067	ug/L		05/15/19 22:18	1
2-Amino-4,6-dinitrotoluene	0.12	U H	0.21	0.12	0.053	ug/L		05/15/19 22:18	1
2-Nitrotoluene	0.21	U H	0.41	0.21	0.089	ug/L		05/15/19 22:18	1
3-Nitrotoluene	0.41	U H M	0.41	0.41	0.20	ug/L		05/15/19 22:18	1
4-Amino-2,6-dinitrotoluene	0.12	U H	0.21	0.12	0.060	ug/L		05/15/19 22:18	1
4-Nitrotoluene	0.41	U H	1.0	0.41	0.21	ug/L		05/15/19 22:18	1
HMX	1.5	H M	0.41	0.21	0.091	ug/L		05/15/19 22:18	1
Nitrobenzene	0.21	U H	0.41	0.21	0.094	ug/L		05/15/19 22:18	1
Nitroglycerin	2.1	U H	3.1	2.1	0.95	ug/L		05/15/19 22:18	1
PETN	4.1	U H	4.1	4.1	2.0	ug/L		05/15/19 22:18	1
RDX	1.5	H M	0.41	0.41	0.16	ug/L		05/15/19 22:18	1
Tetryl	0.21	U H	0.25	0.21	0.082	ug/L		05/15/19 22:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	96		83 - 119				05/10/19 16:21	05/15/19 22:18	1

Client Sample ID: FWGmw-007-190401-GW

Date Collected: 04/30/19 13:35

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-8

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.42	U H	1.0	0.42	0.21	ug/L		05/15/19 22:42	1
1,3-Dinitrobenzene	0.21	U H	0.42	0.21	0.092	ug/L		05/15/19 22:42	1
2,4,6-Trinitrotoluene	0.42	U H	0.42	0.42	0.17	ug/L		05/15/19 22:42	1
2,4-Dinitrotoluene	0.21	U H	0.42	0.21	0.087	ug/L		05/15/19 22:42	1
2,6-Dinitrotoluene	0.21	U H	0.21	0.21	0.067	ug/L		05/15/19 22:42	1
2-Amino-4,6-dinitrotoluene	0.12	U H	0.21	0.12	0.053	ug/L		05/15/19 22:42	1
2-Nitrotoluene	0.21	U H	0.42	0.21	0.089	ug/L		05/15/19 22:42	1
3-Nitrotoluene	0.42	U H	0.42	0.42	0.20	ug/L		05/15/19 22:42	1
4-Amino-2,6-dinitrotoluene	0.12	U H	0.21	0.12	0.060	ug/L		05/15/19 22:42	1
4-Nitrotoluene	0.42	U H	1.0	0.42	0.21	ug/L		05/15/19 22:42	1
HMX	0.21	U H	0.42	0.21	0.091	ug/L		05/15/19 22:42	1
Nitrobenzene	0.21	U H	0.42	0.21	0.094	ug/L		05/15/19 22:42	1
Nitroglycerin	2.1	U H	3.1	2.1	0.96	ug/L		05/15/19 22:42	1
PETN	4.2	U H	4.2	4.2	2.0	ug/L		05/15/19 22:42	1
RDX	0.42	U H	0.42	0.42	0.16	ug/L		05/15/19 22:42	1

Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8330B - Nitroaromatics and Nitramines (HPLC) - RE (Continued)

Client Sample ID: FWGmw-007-190401-GW

Date Collected: 04/30/19 13:35

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-8

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac	
Tetryl	0.21	U H	0.25	0.21	0.082	ug/L		05/15/19 22:42	1	
Surrogate	%Recovery	Qualifier	Limits					Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	92		83 - 119					05/10/19 16:21	05/15/19 22:42	1

Client Sample ID: WBGmw-020-190401-GW

Date Collected: 04/30/19 11:50

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-9

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.40	U H	1.0	0.40	0.20	ug/L		05/15/19 23:05	1
1,3-Dinitrobenzene	0.20	U H	0.40	0.20	0.088	ug/L		05/15/19 23:05	1
2,4,6-Trinitrotoluene	0.40	U H	0.40	0.40	0.16	ug/L		05/15/19 23:05	1
2,4-Dinitrotoluene	0.20	U H	0.40	0.20	0.084	ug/L		05/15/19 23:05	1
2,6-Dinitrotoluene	0.20	U H	0.20	0.20	0.064	ug/L		05/15/19 23:05	1
2-Amino-4,6-dinitrotoluene	0.12	U H	0.20	0.12	0.051	ug/L		05/15/19 23:05	1
2-Nitrotoluene	0.20	U H	0.40	0.20	0.085	ug/L		05/15/19 23:05	1
3-Nitrotoluene	0.40	U H	0.40	0.40	0.19	ug/L		05/15/19 23:05	1
4-Amino-2,6-dinitrotoluene	0.12	U H	0.20	0.12	0.058	ug/L		05/15/19 23:05	1
4-Nitrotoluene	0.40	U H	1.0	0.40	0.20	ug/L		05/15/19 23:05	1
HMX	0.20	U H	0.40	0.20	0.087	ug/L		05/15/19 23:05	1
Nitrobenzene	0.20	U H	0.40	0.20	0.091	ug/L		05/15/19 23:05	1
Nitroglycerin	2.0	U H	3.0	2.0	0.92	ug/L		05/15/19 23:05	1
PETN	4.0	U H	4.0	4.0	1.9	ug/L		05/15/19 23:05	1
RDX	0.40	U H	0.40	0.40	0.16	ug/L		05/15/19 23:05	1
Tetryl	0.20	U H	0.24	0.20	0.079	ug/L		05/15/19 23:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	95		83 - 119				05/10/19 16:21	05/15/19 23:05	1

Client Sample ID: WBGmw-006-190401-GW

Date Collected: 04/30/19 09:10

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-10

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.40	U H	1.0	0.40	0.20	ug/L		05/15/19 23:29	1
1,3-Dinitrobenzene	0.20	U H	0.40	0.20	0.089	ug/L		05/16/19 18:32	1
2,4,6-Trinitrotoluene	0.40	U H	0.40	0.40	0.16	ug/L		05/15/19 23:29	1
2,4-Dinitrotoluene	0.20	U H	0.40	0.20	0.084	ug/L		05/15/19 23:29	1
2,6-Dinitrotoluene	0.20	U H	0.20	0.20	0.065	ug/L		05/15/19 23:29	1
2-Amino-4,6-dinitrotoluene	0.12	U H	0.20	0.12	0.051	ug/L		05/15/19 23:29	1
2-Nitrotoluene	0.20	U H	0.40	0.20	0.086	ug/L		05/15/19 23:29	1
3-Nitrotoluene	0.40	U H	0.40	0.40	0.20	ug/L		05/15/19 23:29	1
4-Amino-2,6-dinitrotoluene	0.12	U H	0.20	0.12	0.058	ug/L		05/15/19 23:29	1
4-Nitrotoluene	0.40	U H	1.0	0.40	0.20	ug/L		05/15/19 23:29	1
HMX	3.4	H M	0.40	0.20	0.088	ug/L		05/15/19 23:29	1
Nitrobenzene	0.20	U H	0.40	0.20	0.092	ug/L		05/15/19 23:29	1
Nitroglycerin	2.0	U H	3.0	2.0	0.93	ug/L		05/15/19 23:29	1
PETN	4.0	U H	4.0	4.0	2.0	ug/L		05/15/19 23:29	1
RDX	11	H	0.40	0.40	0.16	ug/L		05/15/19 23:29	1
Tetryl	0.20	U H	0.24	0.20	0.080	ug/L		05/15/19 23:29	1

Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8330B - Nitroaromatics and Nitramines (HPLC) - RE (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	97		83 - 119	05/10/19 16:21	05/15/19 23:29	1
1,2-Dinitrobenzene	96		83 - 119	05/10/19 16:21	05/16/19 18:32	1

Client Sample ID: WBGmw-021-190401-GW

Lab Sample ID: 280-123221-11

Date Collected: 04/30/19 09:45

Matrix: Water

Date Received: 05/01/19 09:15

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.48	U H	1.2	0.48	0.24	ug/L		05/15/19 23:53	1
1,3-Dinitrobenzene	0.24	U H	0.48	0.24	0.11	ug/L		05/15/19 23:53	1
2,4,6-Trinitrotoluene	0.48	U H	0.48	0.48	0.19	ug/L		05/15/19 23:53	1
2,4-Dinitrotoluene	0.24	U H	0.48	0.24	0.10	ug/L		05/15/19 23:53	1
2,6-Dinitrotoluene	0.24	U H	0.24	0.24	0.077	ug/L		05/15/19 23:53	1
2-Amino-4,6-dinitrotoluene	0.14	U H	0.24	0.14	0.061	ug/L		05/15/19 23:53	1
2-Nitrotoluene	0.24	U H	0.48	0.24	0.10	ug/L		05/15/19 23:53	1
3-Nitrotoluene	0.48	U H	0.48	0.48	0.23	ug/L		05/15/19 23:53	1
4-Amino-2,6-dinitrotoluene	0.14	U H	0.24	0.14	0.069	ug/L		05/15/19 23:53	1
4-Nitrotoluene	0.48	U H	1.2	0.48	0.24	ug/L		05/15/19 23:53	1
HMX	0.24	U H	0.48	0.24	0.10	ug/L		05/15/19 23:53	1
Nitrobenzene	0.24	U H	0.48	0.24	0.11	ug/L		05/15/19 23:53	1
Nitroglycerin	2.4	U H	3.6	2.4	1.1	ug/L		05/15/19 23:53	1
PETN	4.8	U H	4.8	4.8	2.3	ug/L		05/15/19 23:53	1
RDX	0.48	U H	0.48	0.48	0.19	ug/L		05/15/19 23:53	1
Tetryl	0.24	U H	0.29	0.24	0.095	ug/L		05/15/19 23:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	94		83 - 119	05/10/19 16:21	05/15/19 23:53	1

Client Sample ID: WBGmw-009-190401-GW

Lab Sample ID: 280-123221-12

Date Collected: 04/30/19 10:53

Matrix: Water

Date Received: 05/01/19 09:15

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.41	U H	1.0	0.41	0.20	ug/L		05/17/19 11:59	1
1,3-Dinitrobenzene	0.20	U H	0.41	0.20	0.091	ug/L		05/17/19 11:59	1
2,4,6-Trinitrotoluene	0.41	U H	0.41	0.41	0.16	ug/L		05/17/19 11:59	1
2,4-Dinitrotoluene	0.20	U H	0.41	0.20	0.086	ug/L		05/17/19 11:59	1
2,6-Dinitrotoluene	0.20	U H	0.20	0.20	0.066	ug/L		05/17/19 11:59	1
2-Amino-4,6-dinitrotoluene	0.12	U H	0.20	0.12	0.052	ug/L		05/17/19 11:59	1
2-Nitrotoluene	0.20	U H	0.41	0.20	0.087	ug/L		05/17/19 11:59	1
3-Nitrotoluene	0.41	U H	0.41	0.41	0.20	ug/L		05/17/19 11:59	1
4-Amino-2,6-dinitrotoluene	0.12	U H	0.20	0.12	0.059	ug/L		05/17/19 11:59	1
4-Nitrotoluene	0.41	U H	1.0	0.41	0.20	ug/L		05/17/19 11:59	1
HMX	0.68	H M	0.41	0.20	0.089	ug/L		05/17/19 11:59	1
Nitrobenzene	0.20	U H	0.41	0.20	0.093	ug/L		05/17/19 11:59	1
Nitroglycerin	2.0	U H	3.1	2.0	0.94	ug/L		05/17/19 11:59	1
PETN	4.1	U H	4.1	4.1	2.0	ug/L		05/17/19 11:59	1
RDX	1.8	H M	0.41	0.41	0.16	ug/L		05/17/19 11:59	1
Tetryl	0.20	U H	0.25	0.20	0.081	ug/L		05/17/19 11:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	98		83 - 119	05/11/19 15:37	05/17/19 11:59	1

Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8330B - Nitroaromatics and Nitramines (HPLC) - RE

Client Sample ID: FWGmw-016-190401-GW

Date Collected: 04/29/19 15:20

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-13

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.41	U H Q	1.0	0.41	0.20	ug/L		05/17/19 12:23	1
1,3-Dinitrobenzene	0.20	U H Q	0.41	0.20	0.090	ug/L		05/17/19 12:23	1
2,4,6-Trinitrotoluene	0.41	U H Q	0.41	0.41	0.16	ug/L		05/17/19 12:23	1
2,4-Dinitrotoluene	0.20	U H Q	0.41	0.20	0.085	ug/L		05/17/19 12:23	1
2,6-Dinitrotoluene	0.20	U H Q	0.20	0.20	0.066	ug/L		05/17/19 12:23	1
2-Amino-4,6-dinitrotoluene	0.12	U H Q	0.20	0.12	0.052	ug/L		05/17/19 12:23	1
2-Nitrotoluene	0.20	U H Q	0.41	0.20	0.087	ug/L		05/17/19 12:23	1
3-Nitrotoluene	0.41	U H Q	0.41	0.41	0.20	ug/L		05/17/19 12:23	1
4-Amino-2,6-dinitrotoluene	0.12	U H Q	0.20	0.12	0.059	ug/L		05/17/19 12:23	1
4-Nitrotoluene	0.41	U H Q	1.0	0.41	0.20	ug/L		05/17/19 12:23	1
HMX	0.20	U H Q	0.41	0.20	0.089	ug/L		05/17/19 12:23	1
Nitrobenzene	0.20	U H Q	0.41	0.20	0.093	ug/L		05/17/19 12:23	1
Nitroglycerin	2.0	U H Q	3.1	2.0	0.94	ug/L		05/17/19 12:23	1
PETN	4.1	U H Q	4.1	4.1	2.0	ug/L		05/17/19 12:23	1
RDX	0.41	U H Q	0.41	0.41	0.16	ug/L		05/17/19 12:23	1
Tetryl	0.20	U H Q	0.24	0.20	0.081	ug/L		05/17/19 12:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	77	Q	83 - 119	05/11/19 15:37	05/17/19 12:23	1

Method: 6010C - Metals (ICP)

Client Sample ID: NTAmw-119-190401-GW

Date Collected: 04/30/19 10:45

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-2

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	32	J	300	70	18	ug/L		05/14/19 12:08	1
Calcium	85000		1000	160	78	ug/L		05/13/19 13:03	1
Iron	970		100	85	22	ug/L		05/14/19 12:08	1
Magnesium	21000		500	60	26	ug/L		05/13/19 13:03	1
Potassium	1400	J	3000	940	240	ug/L		05/13/19 13:03	1
Sodium	6400	Q	5000	160	54	ug/L		05/14/19 12:08	1

Client Sample ID: DET-003-190401-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-4

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	70	U	300	70	18	ug/L		05/14/19 12:11	1
Calcium	90000		1000	160	78	ug/L		05/13/19 13:06	1
Iron	1900		100	85	22	ug/L		05/14/19 12:11	1
Magnesium	33000		500	60	26	ug/L		05/13/19 13:06	1
Potassium	1900	J	3000	940	240	ug/L		05/13/19 13:06	1
Sodium	12000	Q	5000	160	54	ug/L		05/14/19 12:11	1

Client Sample ID: DET-003-190402-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-5

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	70	U	300	70	18	ug/L		05/14/19 12:14	1
Calcium	91000		1000	160	78	ug/L		05/13/19 13:08	1
Iron	1900		100	85	22	ug/L		05/14/19 12:14	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 6010C - Metals (ICP) (Continued)

Client Sample ID: DET-003-190402-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-5

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Magnesium	33000		500	60	26	ug/L		05/13/19 13:08	1
Potassium	1900	J	3000	940	240	ug/L		05/13/19 13:08	1
Sodium	12000	Q	5000	160	54	ug/L		05/14/19 12:14	1

Client Sample ID: DET-004-190401-GW

Date Collected: 04/29/19 10:04

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-7

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	70	U	300	70	18	ug/L		05/14/19 12:16	1
Calcium	120000		1000	160	78	ug/L		05/13/19 13:11	1
Iron	85	U	100	85	22	ug/L		05/14/19 12:16	1
Magnesium	24000		500	60	26	ug/L		05/13/19 13:11	1
Potassium	1200	J	3000	940	240	ug/L		05/13/19 13:11	1
Sodium	2200	J Q	5000	160	54	ug/L		05/14/19 12:16	1

Client Sample ID: FWGmw-007-190401-GW

Date Collected: 04/30/19 13:35

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-8

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	32	J	300	70	18	ug/L		05/14/19 12:19	1
Calcium	130000		1000	160	78	ug/L		05/13/19 13:13	1
Iron	160		100	85	22	ug/L		05/14/19 12:19	1
Magnesium	66000		500	60	26	ug/L		05/13/19 13:13	1
Potassium	2500	J	3000	940	240	ug/L		05/13/19 13:13	1
Sodium	11000		5000	160	54	ug/L		05/14/19 12:19	1

Client Sample ID: WBGmw-020-190401-GW

Date Collected: 04/30/19 11:50

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-9

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	70	U	300	70	18	ug/L		05/14/19 12:21	1
Calcium	31000		1000	160	78	ug/L		05/13/19 13:16	1
Iron	3400		100	85	22	ug/L		05/14/19 12:21	1
Magnesium	10000		500	60	26	ug/L		05/13/19 13:16	1
Potassium	800	J	3000	940	240	ug/L		05/13/19 13:16	1
Sodium	3900	J Q	5000	160	54	ug/L		05/14/19 12:21	1

Client Sample ID: WBGmw-006-190401-GW

Date Collected: 04/30/19 09:10

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-10

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	19	J	300	70	18	ug/L		05/14/19 12:24	1
Calcium	79000		1000	160	78	ug/L		05/13/19 13:18	1
Iron	46	J	100	85	22	ug/L		05/14/19 12:24	1
Magnesium	26000		500	60	26	ug/L		05/13/19 13:18	1
Potassium	860	J	3000	940	240	ug/L		05/13/19 13:18	1
Sodium	5500	Q	5000	160	54	ug/L		05/14/19 12:24	1

Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 6010C - Metals (ICP)

Client Sample ID: WBGmw-021-190401-GW

Date Collected: 04/30/19 09:45

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-11

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	70	U	300	70	18	ug/L		05/14/19 12:26	1
Calcium	77000		1000	160	78	ug/L		05/13/19 13:21	1
Iron	820		100	85	22	ug/L		05/14/19 12:26	1
Magnesium	19000		500	60	26	ug/L		05/13/19 13:21	1
Potassium	1400	J	3000	940	240	ug/L		05/13/19 13:21	1
Sodium	4800	J Q	5000	160	54	ug/L		05/14/19 12:26	1

Client Sample ID: WBGmw-009-190401-GW

Date Collected: 04/30/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-12

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	19	J	300	70	18	ug/L		05/14/19 12:29	1
Calcium	49000		1000	160	78	ug/L		05/13/19 13:24	1
Iron	58	J	100	85	22	ug/L		05/14/19 12:29	1
Magnesium	12000		500	60	26	ug/L		05/13/19 13:24	1
Potassium	610	J	3000	940	240	ug/L		05/13/19 13:24	1
Sodium	3300	J Q	5000	160	54	ug/L		05/14/19 12:29	1

Client Sample ID: FWGmw-016-190401-GW

Date Collected: 04/29/19 15:20

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-13

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	70	U	300	70	18	ug/L		05/14/19 12:31	1
Calcium	110000		1000	160	78	ug/L		05/13/19 13:37	1
Iron	630		100	85	22	ug/L		05/14/19 12:31	1
Magnesium	28000		500	60	26	ug/L		05/13/19 13:37	1
Potassium	2400	J	3000	940	240	ug/L		05/13/19 13:37	1
Sodium	11000	Q	5000	160	54	ug/L		05/14/19 12:31	1

Method: 6020A - Metals (ICP/MS)

Client Sample ID: NTAmw-119-190401-GW

Date Collected: 04/30/19 10:45

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-2

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Antimony	1.0	U	6.0	1.0	0.40	ug/L		05/14/19 09:32	1
Arsenic	6.0		5.0	1.0	0.33	ug/L		05/14/19 09:32	1
Barium	83		3.0	0.95	0.29	ug/L		05/14/19 09:32	1
Beryllium	0.30	U	1.0	0.30	0.080	ug/L		05/14/19 09:32	1
Cadmium	1.0	U	1.0	1.0	0.27	ug/L		05/14/19 09:32	1
Chromium	1.8	U	10	1.8	0.50	ug/L		05/14/19 09:32	1
Cobalt	0.20	U Q	1.0	0.20	0.054	ug/L		05/14/19 09:32	1
Copper	1.8	U	2.0	1.8	0.56	ug/L		05/14/19 09:32	1
Lead	0.70	U	3.0	0.70	0.18	ug/L		05/14/19 16:52	1
Manganese	330		3.5	0.95	0.31	ug/L		05/14/19 09:32	1
Nickel	1.0	U	3.0	1.0	0.30	ug/L		05/14/19 09:32	1
Selenium	1.0	U	5.0	1.0	0.37	ug/L		05/14/19 09:32	1
Silver	0.10	U	5.0	0.10	0.033	ug/L		05/14/19 09:32	1
Thallium	0.20	U	1.0	0.20	0.089	ug/L		05/14/19 09:32	1
Vanadium	3.0	U	6.0	3.0	1.2	ug/L		05/14/19 09:32	1

Client Sample Results

Client: Leidos, Inc.

Job ID: 280-123221-1

Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Method: 6020A - Metals (ICP/MS) (Continued)

Client Sample ID: NTAmw-119-190401-GW

Date Collected: 04/30/19 10:45

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-2

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Zinc	8.0	U	20	8.0	2.0	ug/L		05/14/19 09:32	1

Client Sample ID: DET-003-190401-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-4

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Antimony	1.0	U	6.0	1.0	0.40	ug/L		05/14/19 09:36	1
Arsenic	9.2		5.0	1.0	0.33	ug/L		05/14/19 09:36	1
Barium	43		3.0	0.95	0.29	ug/L		05/14/19 09:36	1
Beryllium	0.30	U	1.0	0.30	0.080	ug/L		05/14/19 09:36	1
Cadmium	1.0	U	1.0	1.0	0.27	ug/L		05/14/19 09:36	1
Chromium	1.8	U	10	1.8	0.50	ug/L		05/14/19 09:36	1
Cobalt	0.29	J Q	1.0	0.20	0.054	ug/L		05/14/19 09:36	1
Copper	1.8	U	2.0	1.8	0.56	ug/L		05/14/19 09:36	1
Lead	0.70	U	3.0	0.70	0.18	ug/L		05/14/19 16:56	1
Manganese	240		3.5	0.95	0.31	ug/L		05/14/19 09:36	1
Nickel	1.0	U	3.0	1.0	0.30	ug/L		05/14/19 09:36	1
Selenium	1.0	U	5.0	1.0	0.37	ug/L		05/14/19 09:36	1
Silver	0.10	U	5.0	0.10	0.033	ug/L		05/14/19 09:36	1
Thallium	0.20	U	1.0	0.20	0.089	ug/L		05/14/19 09:36	1
Vanadium	3.0	U	6.0	3.0	1.2	ug/L		05/14/19 09:36	1
Zinc	8.0	U	20	8.0	2.0	ug/L		05/14/19 09:36	1

Client Sample ID: DET-003-190402-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-5

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Antimony	1.0	U	6.0	1.0	0.40	ug/L		05/14/19 09:39	1
Arsenic	9.3		5.0	1.0	0.33	ug/L		05/14/19 09:39	1
Barium	42		3.0	0.95	0.29	ug/L		05/14/19 09:39	1
Beryllium	0.30	U	1.0	0.30	0.080	ug/L		05/14/19 09:39	1
Cadmium	1.0	U	1.0	1.0	0.27	ug/L		05/14/19 09:39	1
Chromium	1.8	U	10	1.8	0.50	ug/L		05/14/19 09:39	1
Cobalt	0.24	J Q	1.0	0.20	0.054	ug/L		05/14/19 09:39	1
Copper	1.8	U	2.0	1.8	0.56	ug/L		05/14/19 09:39	1
Lead	0.70	U	3.0	0.70	0.18	ug/L		05/14/19 17:00	1
Manganese	240		3.5	0.95	0.31	ug/L		05/14/19 09:39	1
Nickel	1.0	U	3.0	1.0	0.30	ug/L		05/14/19 09:39	1
Selenium	1.0	U	5.0	1.0	0.37	ug/L		05/14/19 09:39	1
Silver	0.10	U	5.0	0.10	0.033	ug/L		05/14/19 09:39	1
Thallium	0.20	U	1.0	0.20	0.089	ug/L		05/14/19 09:39	1
Vanadium	3.0	U	6.0	3.0	1.2	ug/L		05/14/19 09:39	1
Zinc	8.0	U	20	8.0	2.0	ug/L		05/14/19 09:39	1

Client Sample ID: DET-004-190401-GW

Date Collected: 04/29/19 10:04

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-7

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Antimony	1.0	U	6.0	1.0	0.40	ug/L		05/14/19 09:43	1
Arsenic	1.0	U	5.0	1.0	0.33	ug/L		05/14/19 09:43	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 6020A - Metals (ICP/MS) (Continued)

Client Sample ID: DET-004-190401-GW

Date Collected: 04/29/19 10:04

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-7

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Barium	58		3.0	0.95	0.29	ug/L		05/14/19 09:43	1
Beryllium	0.30	U	1.0	0.30	0.080	ug/L		05/14/19 09:43	1
Cadmium	1.0	U	1.0	1.0	0.27	ug/L		05/14/19 09:43	1
Chromium	0.55	J	10	1.8	0.50	ug/L		05/14/19 09:43	1
Cobalt	0.20	U Q	1.0	0.20	0.054	ug/L		05/14/19 09:43	1
Copper	1.5	J	2.0	1.8	0.56	ug/L		05/14/19 09:43	1
Lead	0.70	U	3.0	0.70	0.18	ug/L		05/14/19 17:03	1
Manganese	0.63	J	3.5	0.95	0.31	ug/L		05/14/19 09:43	1
Nickel	1.0	U	3.0	1.0	0.30	ug/L		05/14/19 09:43	1
Selenium	1.0	U	5.0	1.0	0.37	ug/L		05/14/19 09:43	1
Silver	0.10	U	5.0	0.10	0.033	ug/L		05/14/19 09:43	1
Thallium	0.20	U	1.0	0.20	0.089	ug/L		05/14/19 09:43	1
Vanadium	3.0	U	6.0	3.0	1.2	ug/L		05/14/19 09:43	1
Zinc	14	J	20	8.0	2.0	ug/L		05/14/19 09:43	1

Client Sample ID: FWGmw-007-190401-GW

Date Collected: 04/30/19 13:35

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-8

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Antimony	1.0	U	6.0	1.0	0.40	ug/L		05/14/19 09:57	1
Arsenic	1.0	U	5.0	1.0	0.33	ug/L		05/14/19 09:57	1
Barium	20		3.0	0.95	0.29	ug/L		05/14/19 09:57	1
Beryllium	0.30	U	1.0	0.30	0.080	ug/L		05/14/19 09:57	1
Cadmium	1.0	U	1.0	1.0	0.27	ug/L		05/14/19 09:57	1
Chromium	0.51	J	10	1.8	0.50	ug/L		05/14/19 09:57	1
Cobalt	0.42	J Q	1.0	0.20	0.054	ug/L		05/14/19 09:57	1
Copper	1.8	U	2.0	1.8	0.56	ug/L		05/14/19 09:57	1
Lead	0.22	J	3.0	0.70	0.18	ug/L		05/14/19 17:17	1
Manganese	130		3.5	0.95	0.31	ug/L		05/14/19 09:57	1
Nickel	1.2	J	3.0	1.0	0.30	ug/L		05/14/19 09:57	1
Selenium	1.0	U	5.0	1.0	0.37	ug/L		05/14/19 09:57	1
Silver	0.10	U	5.0	0.10	0.033	ug/L		05/14/19 09:57	1
Thallium	0.20	U	1.0	0.20	0.089	ug/L		05/14/19 09:57	1
Vanadium	3.0	U	6.0	3.0	1.2	ug/L		05/14/19 09:57	1
Zinc	2.7	J	20	8.0	2.0	ug/L		05/14/19 09:57	1

Client Sample ID: WBGmw-020-190401-GW

Date Collected: 04/30/19 11:50

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-9

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Antimony	1.0	U	6.0	1.0	0.40	ug/L		05/14/19 10:00	1
Arsenic	1.2	J	5.0	1.0	0.33	ug/L		05/14/19 10:00	1
Barium	15		3.0	0.95	0.29	ug/L		05/14/19 10:00	1
Beryllium	0.082	J	1.0	0.30	0.080	ug/L		05/14/19 10:00	1
Cadmium	1.0	U	1.0	1.0	0.27	ug/L		05/14/19 10:00	1
Chromium	1.8	U	10	1.8	0.50	ug/L		05/14/19 10:00	1
Cobalt	0.38	J Q	1.0	0.20	0.054	ug/L		05/14/19 10:00	1
Copper	1.8	U	2.0	1.8	0.56	ug/L		05/14/19 10:00	1
Lead	0.70	U	3.0	0.70	0.18	ug/L		05/14/19 17:21	1
Manganese	220		3.5	0.95	0.31	ug/L		05/14/19 10:00	1

Eurofins TestAmerica, Denver

Client Sample Results

Client: Leidos, Inc.

Job ID: 280-123221-1

Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Method: 6020A - Metals (ICP/MS) (Continued)

Client Sample ID: WBGmw-020-190401-GW

Date Collected: 04/30/19 11:50

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-9

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nickel	2.2	J	3.0	1.0	0.30	ug/L		05/14/19 10:00	1
Selenium	1.0	U	5.0	1.0	0.37	ug/L		05/14/19 10:00	1
Silver	0.10	U	5.0	0.10	0.033	ug/L		05/14/19 10:00	1
Thallium	0.20	U	1.0	0.20	0.089	ug/L		05/14/19 10:00	1
Vanadium	3.0	U	6.0	3.0	1.2	ug/L		05/14/19 10:00	1
Zinc	8.0	U	20	8.0	2.0	ug/L		05/14/19 10:00	1

Client Sample ID: WBGmw-006-190401-GW

Date Collected: 04/30/19 09:10

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-10

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Antimony	1.0	U	6.0	1.0	0.40	ug/L		05/14/19 10:04	1
Arsenic	1.0	U	5.0	1.0	0.33	ug/L		05/14/19 10:04	1
Barium	21		3.0	0.95	0.29	ug/L		05/14/19 10:04	1
Beryllium	0.30	U	1.0	0.30	0.080	ug/L		05/14/19 10:04	1
Cadmium	1.0	U	1.0	1.0	0.27	ug/L		05/14/19 10:04	1
Chromium	1.8	U	10	1.8	0.50	ug/L		05/14/19 10:04	1
Cobalt	0.29	J Q	1.0	0.20	0.054	ug/L		05/14/19 10:04	1
Copper	1.8	U	2.0	1.8	0.56	ug/L		05/14/19 10:04	1
Lead	0.70	U	3.0	0.70	0.18	ug/L		05/14/19 17:24	1
Manganese	99		3.5	0.95	0.31	ug/L		05/14/19 10:04	1
Nickel	0.33	J	3.0	1.0	0.30	ug/L		05/14/19 10:04	1
Selenium	1.0	U	5.0	1.0	0.37	ug/L		05/14/19 10:04	1
Silver	0.10	U	5.0	0.10	0.033	ug/L		05/14/19 10:04	1
Thallium	0.20	U	1.0	0.20	0.089	ug/L		05/14/19 10:04	1
Vanadium	3.0	U	6.0	3.0	1.2	ug/L		05/14/19 10:04	1
Zinc	8.0	U	20	8.0	2.0	ug/L		05/14/19 10:04	1

Client Sample ID: WBGmw-021-190401-GW

Date Collected: 04/30/19 09:45

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-11

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Antimony	1.0	U	6.0	1.0	0.40	ug/L		05/14/19 17:28	1
Arsenic	6.8		5.0	1.0	0.33	ug/L		05/14/19 17:28	1
Barium	62		3.0	0.95	0.29	ug/L		05/14/19 17:28	1
Beryllium	0.30	U	1.0	0.30	0.080	ug/L		05/14/19 17:28	1
Cadmium	1.0	U	1.0	1.0	0.27	ug/L		05/14/19 17:28	1
Chromium	1.8	U	10	1.8	0.50	ug/L		05/14/19 17:28	1
Cobalt	0.15	J Q	1.0	0.20	0.054	ug/L		05/14/19 17:28	1
Copper	1.8	U	2.0	1.8	0.56	ug/L		05/14/19 17:28	1
Lead	0.70	U	3.0	0.70	0.18	ug/L		05/14/19 17:28	1
Manganese	370		3.5	0.95	0.31	ug/L		05/14/19 17:28	1
Nickel	0.36	J	3.0	1.0	0.30	ug/L		05/14/19 17:28	1
Selenium	1.0	U	5.0	1.0	0.37	ug/L		05/14/19 17:28	1
Silver	0.10	U	5.0	0.10	0.033	ug/L		05/14/19 17:28	1
Thallium	0.20	U	1.0	0.20	0.089	ug/L		05/14/19 17:28	1
Vanadium	3.0	U Q	6.0	3.0	1.2	ug/L		05/14/19 17:28	1
Zinc	8.0	U	20	8.0	2.0	ug/L		05/14/19 17:28	1

Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 6020A - Metals (ICP/MS)

Client Sample ID: WBGmw-009-190401-GW

Date Collected: 04/30/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-12

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Antimony	1.0	U	6.0	1.0	0.40	ug/L		05/14/19 17:31	1
Arsenic	1.0	U	5.0	1.0	0.33	ug/L		05/14/19 17:31	1
Barium	30		3.0	0.95	0.29	ug/L		05/14/19 17:31	1
Beryllium	0.30	U	1.0	0.30	0.080	ug/L		05/14/19 17:31	1
Cadmium	1.0	U	1.0	1.0	0.27	ug/L		05/14/19 17:31	1
Chromium	1.8	U	10	1.8	0.50	ug/L		05/14/19 17:31	1
Cobalt	0.62	J Q	1.0	0.20	0.054	ug/L		05/14/19 17:31	1
Copper	1.8	U	2.0	1.8	0.56	ug/L		05/14/19 17:31	1
Lead	0.70	U	3.0	0.70	0.18	ug/L		05/14/19 17:31	1
Manganese	180		3.5	0.95	0.31	ug/L		05/14/19 17:31	1
Nickel	2.7	J	3.0	1.0	0.30	ug/L		05/14/19 17:31	1
Selenium	1.0	U	5.0	1.0	0.37	ug/L		05/14/19 17:31	1
Silver	0.10	U	5.0	0.10	0.033	ug/L		05/14/19 17:31	1
Thallium	0.20	U	1.0	0.20	0.089	ug/L		05/14/19 17:31	1
Vanadium	3.0	U Q	6.0	3.0	1.2	ug/L		05/14/19 17:31	1
Zinc	8.0	U	20	8.0	2.0	ug/L		05/14/19 17:31	1

Client Sample ID: FWGmw-016-190401-GW

Date Collected: 04/29/19 15:20

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-13

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Antimony	1.0	U	6.0	1.0	0.40	ug/L		05/14/19 17:35	1
Arsenic	4.5	J	5.0	1.0	0.33	ug/L		05/14/19 17:35	1
Barium	59		3.0	0.95	0.29	ug/L		05/14/19 17:35	1
Beryllium	0.30	U	1.0	0.30	0.080	ug/L		05/14/19 17:35	1
Cadmium	1.0	U	1.0	1.0	0.27	ug/L		05/14/19 17:35	1
Chromium	1.8	U	10	1.8	0.50	ug/L		05/14/19 17:35	1
Cobalt	0.20	U Q	1.0	0.20	0.054	ug/L		05/14/19 17:35	1
Copper	1.8	U	2.0	1.8	0.56	ug/L		05/14/19 17:35	1
Lead	0.70	U	3.0	0.70	0.18	ug/L		05/14/19 17:35	1
Manganese	220		3.5	0.95	0.31	ug/L		05/14/19 17:35	1
Nickel	1.0	U	3.0	1.0	0.30	ug/L		05/14/19 17:35	1
Selenium	1.0	U	5.0	1.0	0.37	ug/L		05/14/19 17:35	1
Silver	0.10	U	5.0	0.10	0.033	ug/L		05/14/19 17:35	1
Thallium	0.20	U	1.0	0.20	0.089	ug/L		05/14/19 17:35	1
Vanadium	3.0	U Q	6.0	3.0	1.2	ug/L		05/14/19 17:35	1
Zinc	8.0	U	20	8.0	2.0	ug/L		05/14/19 17:35	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: NTAmw-119-190401-GW

Date Collected: 04/30/19 10:45

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-2

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.080	0.027	ug/L		05/13/19 21:37	1

Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 7470A - Mercury (CVAA)

Client Sample ID: DET-003-190401-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-4

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.080	0.027	ug/L	-	05/13/19 21:43	1

Client Sample ID: DET-003-190402-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-5

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.080	0.027	ug/L	-	05/13/19 21:46	1

Client Sample ID: DET-004-190401-GW

Date Collected: 04/29/19 10:04

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-7

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.080	0.027	ug/L	-	05/13/19 21:48	1

Client Sample ID: FWGmw-007-190401-GW

Date Collected: 04/30/19 13:35

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-8

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.080	0.027	ug/L	-	05/13/19 21:50	1

Client Sample ID: WBGmw-020-190401-GW

Date Collected: 04/30/19 11:50

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-9

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.080	0.027	ug/L	-	05/13/19 21:52	1

Client Sample ID: WBGmw-006-190401-GW

Date Collected: 04/30/19 09:10

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-10

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.080	0.027	ug/L	-	05/13/19 21:54	1

Client Sample ID: WBGmw-021-190401-GW

Date Collected: 04/30/19 09:45

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-11

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.080	0.027	ug/L	-	05/13/19 21:57	1

Client Sample ID: WBGmw-009-190401-GW

Date Collected: 04/30/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-12

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.080	0.027	ug/L	-	05/13/19 21:59	1

Client Sample ID: FWGmw-016-190401-GW

Date Collected: 04/29/19 15:20

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-13

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.080	0.027	ug/L	-	05/13/19 22:01	1

Client Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

General Chemistry

Client Sample ID: DET-003-190401-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-4

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.010	0.0050	mg/L	—	05/13/19 13:54	1

Client Sample ID: DET-003-190402-GW

Date Collected: 04/29/19 10:53

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-5

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.010	0.0050	mg/L	—	05/13/19 14:06	1

Client Sample ID: DET-004-190401-GW

Date Collected: 04/29/19 10:04

Date Received: 05/01/19 09:15

Lab Sample ID: 280-123221-7

Matrix: Water

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.010	0.0050	mg/L	—	05/13/19 14:07	1

Default Detection Limits

Client: Leidos, Inc.

Job ID: 280-123221-1

Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	LOQ	DL	Units
1,1,1-Trichloroethane	1.0	0.16	ug/L
1,1,2,2-Tetrachloroethane	1.0	0.21	ug/L
1,1,2-Trichloroethane	1.0	0.27	ug/L
1,1-Dichloroethane	1.0	0.22	ug/L
1,1-Dichloroethene	1.0	0.23	ug/L
1,2-Dibromoethane	1.0	0.18	ug/L
1,2-Dichloroethane	1.0	0.13	ug/L
1,2-Dichloroethene, Total	1.0	0.15	ug/L
1,2-Dichloropropane	1.0	0.18	ug/L
2-Butanone (MEK)	6.0	2.0	ug/L
2-Hexanone	5.0	1.7	ug/L
4-Methyl-2-pentanone (MIBK)	5.0	0.98	ug/L
Acetone	10	1.9	ug/L
Benzene	1.0	0.16	ug/L
Bromobenzene	1.0	0.17	ug/L
Bromochloromethane	1.0	0.10	ug/L
Bromodichloromethane	1.0	0.17	ug/L
Bromoform	1.0	0.46	ug/L
Bromomethane	2.0	0.21	ug/L
Carbon disulfide	2.0	0.17	ug/L
Carbon tetrachloride	2.0	0.19	ug/L
Chlorobenzene	1.0	0.17	ug/L
Chloroethane	2.0	0.41	ug/L
Chloroform	1.0	0.16	ug/L
Chloromethane	2.0	0.30	ug/L
cis-1,3-Dichloropropene	1.0	0.16	ug/L
Dibromochloromethane	1.0	0.17	ug/L
Ethylbenzene	1.0	0.16	ug/L
Methylene Chloride	5.0	0.94	ug/L
Styrene	1.0	0.36	ug/L
Tetrachloroethene	1.0	0.20	ug/L
Toluene	1.0	0.17	ug/L
trans-1,3-Dichloropropene	1.0	0.19	ug/L
Trichloroethene	1.0	0.16	ug/L
Vinyl chloride	1.5	0.10	ug/L
Xylenes, Total	1.0	0.19	ug/L

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Prep: 3510C

Analyte	LOQ	DL	Units
1-Methylnaphthalene	0.10	0.018	ug/L
2-Methylnaphthalene	0.10	0.021	ug/L
Acenaphthene	0.10	0.0042	ug/L
Acenaphthylene	0.10	0.0051	ug/L
Anthracene	0.10	0.031	ug/L
Benzo[a]anthracene	0.10	0.028	ug/L
Benzo[a]pyrene	0.10	0.025	ug/L
Benzo[b]fluoranthene	0.10	0.040	ug/L
Benzo[g,h,i]perylene	0.10	0.037	ug/L
Benzo[k]fluoranthene	0.10	0.023	ug/L
Chrysene	0.10	0.033	ug/L
Dibenz(a,h)anthracene	0.10	0.028	ug/L

Default Detection Limits

Client: Leidos, Inc.

Job ID: 280-123221-1

Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Prep: 3510C

Analyte	LOQ	DL	Units
Fluoranthene	0.10	0.049	ug/L
Fluorene	0.10	0.019	ug/L
Indeno[1,2,3-cd]pyrene	0.10	0.039	ug/L
Naphthalene	0.10	0.023	ug/L
Phenanthrene	0.10	0.049	ug/L
Pyrene	0.10	0.045	ug/L

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Prep: 3520C

Analyte	LOQ	DL	Units
2,4,5-Trichlorophenol	20	2.1	ug/L
2,4,6-Trichlorophenol	20	0.29	ug/L
2,4-Dichlorophenol	10	0.64	ug/L
2,4-Dimethylphenol	10	0.58	ug/L
2,4-Dinitrophenol	80	10	ug/L
2,4-Dinitrotoluene	20	1.7	ug/L
2,6-Dinitrotoluene	20	1.9	ug/L
2-Chlorophenol	10	2.0	ug/L
2-Methylphenol	10	0.98	ug/L
2-Nitrophenol	20	0.39	ug/L
3 & 4 Methylphenol	20	0.25	ug/L
4,6-Dinitro-2-methylphenol	80	4.0	ug/L
4-Chloro-3-methylphenol	20	2.4	ug/L
4-Nitrophenol	50	1.2	ug/L
Bis(2-ethylhexyl) phthalate	10	0.56	ug/L
Butyl benzyl phthalate	20	1.0	ug/L
Diethyl phthalate	20	0.38	ug/L
Dimethyl phthalate	20	0.21	ug/L
Di-n-butyl phthalate	20	1.2	ug/L
Di-n-octyl phthalate	20	0.35	ug/L
Hexachlorocyclopentadiene	50	3.1	ug/L
Nitrobenzene	20	0.81	ug/L
Pentachlorophenol	80	20	ug/L
Phenol	10	2.0	ug/L

Method: 8081B - Organochlorine Pesticides (GC)

Prep: 3510C

Analyte	LOQ	DL	Units
4,4'-DDD	0.050	0.0077	ug/L
4,4'-DDE	0.050	0.0075	ug/L
4,4'-DDT	0.050	0.015	ug/L
Aldrin	0.050	0.0059	ug/L
alpha-BHC	0.050	0.0053	ug/L
alpha-Chlordane	0.050	0.0053	ug/L
beta-BHC	0.050	0.0087	ug/L
delta-BHC	0.050	0.0058	ug/L
Dieldrin	0.050	0.0063	ug/L
Endosulfan I	0.050	0.0058	ug/L
Endosulfan II	0.050	0.0070	ug/L
Endosulfan sulfate	0.050	0.0057	ug/L
Endrin	0.050	0.0079	ug/L

Default Detection Limits

Client: Leidos, Inc.

Job ID: 280-123221-1

Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Prep: 3510C

Analyte	LOQ	DL	Units
Endrin aldehyde	0.050	0.0088	ug/L
Endrin ketone	0.050	0.0070	ug/L
gamma-BHC (Lindane)	0.050	0.0069	ug/L
gamma-Chlordane	0.050	0.0091	ug/L
Heptachlor	0.050	0.0077	ug/L
Heptachlor epoxide	0.050	0.0075	ug/L
Methoxychlor	0.050	0.013	ug/L
Toxaphene	2.0	0.37	ug/L

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Prep: 3510C

Analyte	LOQ	DL	Units
PCB-1016	1.0	0.12	ug/L
PCB-1221	1.0	0.21	ug/L
PCB-1232	1.0	0.17	ug/L
PCB-1242	1.0	0.42	ug/L
PCB-1248	1.0	0.092	ug/L
PCB-1254	1.0	0.11	ug/L
PCB-1260	1.0	0.16	ug/L

Method: 8330B - Nitroaromatics and Nitramines (HPLC)

Prep: 3535

Analyte	LOQ	DL	Units
1,3,5-Trinitrobenzene	1.0	0.20	ug/L
1,3-Dinitrobenzene	0.40	0.089	ug/L
2,4,6-Trinitrotoluene	0.40	0.16	ug/L
2,4-Dinitrotoluene	0.40	0.084	ug/L
2,6-Dinitrotoluene	0.20	0.065	ug/L
2-Amino-4,6-dinitrotoluene	0.20	0.051	ug/L
2-Nitrotoluene	0.40	0.086	ug/L
3-Nitrotoluene	0.40	0.20	ug/L
4-Amino-2,6-dinitrotoluene	0.20	0.058	ug/L
4-Nitrotoluene	1.0	0.20	ug/L
HMX	0.40	0.088	ug/L
Nitrobenzene	0.40	0.091	ug/L
Nitroglycerin	3.0	0.92	ug/L
PETN	4.0	1.9	ug/L
RDX	0.40	0.16	ug/L
Tetryl	0.24	0.079	ug/L

Method: 6010C - Metals (ICP)

Prep: 3010A

Analyte	LOQ	DL	Units
Aluminum	300	18	ug/L
Calcium	1000	78	ug/L
Iron	100	22	ug/L
Magnesium	500	26	ug/L
Potassium	3000	240	ug/L
Sodium	5000	54	ug/L

Method: 6020A - Metals (ICP/MS)

Default Detection Limits

Client: Leidos, Inc.

Job ID: 280-123221-1

Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Method: 6020A - Metals (ICP/MS)

Prep: 3020A

Analyte	LOQ	DL	Units
Antimony	6.0	0.40	ug/L
Arsenic	5.0	0.33	ug/L
Barium	3.0	0.29	ug/L
Beryllium	1.0	0.080	ug/L
Cadmium	1.0	0.27	ug/L
Chromium	10	0.50	ug/L
Cobalt	1.0	0.054	ug/L
Copper	2.0	0.56	ug/L
Lead	3.0	0.18	ug/L
Manganese	3.5	0.31	ug/L
Nickel	3.0	0.30	ug/L
Selenium	5.0	0.37	ug/L
Silver	5.0	0.033	ug/L
Thallium	1.0	0.089	ug/L
Vanadium	6.0	1.2	ug/L
Zinc	20	2.0	ug/L

Method: 7470A - Mercury (CVAA)

Prep: 7470A

Analyte	LOQ	DL	Units
Mercury	0.20	0.027	ug/L

General Chemistry

Prep: 9012B

Analyte	LOQ	DL	Units
Cyanide, Total	0.010	0.0050	mg/L

Surrogate Summary

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (81-118)	BFB (85-114)	DBFM (80-119)	TOL (89-112)
280-123221-4	DET-003-190401-GW	94	96	97	99
280-123221-4 MS	DET-003-190401-GWMS	95	96	99	100
280-123221-4 MSD	DET-003-190401-GWMSD	94	96	99	98
280-123221-5	DET-003-190402-GW	93	96	98	97
280-123221-6	FWGTB-191001-TB	95	95	98	99
280-123221-7	DET-004-190401-GW	93	95	98	99
LCS 280-457521/33	Lab Control Sample	94	95	99	97
MB 280-457521/8	Method Blank	93	97	97	98

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TBP (43-140)	FBP (44-119)	2FP (19-119)	NBZ (44-120)	PHL (10-115)	TPHL (50-134)
280-123221-1	NTAmw-120-190401-GW	72	72	74	75	71	75
280-123221-4	DET-003-190401-GW	79	80	83	83	82	92
280-123221-7	DET-004-190401-GW	79	77	70	69	71	88
LCS 280-456902/2-A	Lab Control Sample	81	77	77	80	77	86
LCS 280-457323/2-A	Lab Control Sample	77	79	74	76	74	81
LCSD 280-456902/3-A	Lab Control Sample Dup	82	82	74	79	76	87
LCSD 280-457323/3-A	Lab Control Sample Dup	80	83	79	81	79	85
MB 280-456902/1-A	Method Blank	82	82	83	86	81	87
MB 280-457323/1-A	Method Blank	80	86	82	84	81	91

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)

FBP = 2-Fluorobiphenyl

2FP = 2-Fluorophenol (Surr)

NBZ = Nitrobenzene-d5 (Surr)

PHL = Phenol-d5 (Surr)

TPHL = Terphenyl-d14 (Surr)

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		FBP (53-106)	NBZ (55-111)	TPHL (58-132)
280-123221-2	NTAmw-119-190401-GW	79	78	88
280-123221-4	DET-003-190401-GW	91	88	99
280-123221-7	DET-004-190401-GW	83	81	108
LCS 280-457182/2-A	Lab Control Sample	87	80	93
LCS 280-457236/2-A	Lab Control Sample	77	76	84
LCSD 280-457182/3-A	Lab Control Sample Dup	81	78	88

Surrogate Summary

Client: Leidos, Inc.

Job ID: 280-123221-1

Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		FBP (53-106)	NBZ (55-111)	TPHL (58-132)
MB 280-457182/1-A	Method Blank	90	80	87
MB 280-457236/1-A	Method Blank	81	81	87

Surrogate Legend

FBP = 2-Fluorobiphenyl

NBZ = Nitrobenzene-d5

TPHL = Terphenyl-d14

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		DCBP1 (34-122)	TCX1 (44-124)
280-123221-4	DET-003-190401-GW	81	72
280-123221-4 MS	DET-003-190401-GWMS	82	75
280-123221-4 MSD	DET-003-190401-GWMSD	79	75
280-123221-5	DET-003-190402-GW	85	75
280-123221-7	DET-004-190401-GW	87	72
LCS 280-457201/2-A	Lab Control Sample	86	76
LCS 280-457201/4-A	Lab Control Sample	88	69
MB 280-457201/1-A	Method Blank	82	78

Surrogate Legend

DCBP = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		TCX2 (25-120)	DCBP2 (30-136)
280-123221-4	DET-003-190401-GW	78	84
280-123221-4 MS	DET-003-190401-GWMS	92	87
280-123221-4 MSD	DET-003-190401-GWMSD	84	79
280-123221-5	DET-003-190402-GW	85	92
280-123221-7	DET-004-190401-GW	88	101
LCS 280-457201/3-A	Lab Control Sample	85	90
MB 280-457201/1-A	Method Blank	90	87

Surrogate Legend

TCX = Tetrachloro-m-xylene

DCBP = DCB Decachlorobiphenyl

Method: 8330B - Nitroaromatics and Nitramines (HPLC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		12DNB1 (83-119)
280-123221-2	NTAmw-119-190401-GW	94
280-123221-2 - RE	NTAmw-119-190401-GW	92

Surrogate Summary

Client: Leidos, Inc.

Job ID: 280-123221-1

Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Method: 8330B - Nitroaromatics and Nitramines (HPLC) (Continued)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)				
Lab Sample ID	Client Sample ID	12DNB1 (83-119)				
280-123221-2 MS	NTAmw-119-190401-GWMS	90				
280-123221-2 MS - RE	NTAmw-119-190401-GWMS	94				
280-123221-2 MSD	NTAmw-119-190401-GWMSD	86				
280-123221-2 MSD - RE	NTAmw-119-190401-GWMSD	93				
280-123221-3	NTAmw-119-190402-GW	90				
280-123221-3 - RE	NTAmw-119-190402-GW	88				
280-123221-4	DET-003-190401-GW	92				
280-123221-4 - RE	DET-003-190401-GW	93				
280-123221-4 MS	DET-003-190401-GWMS	88				
280-123221-4 MS - RE	DET-003-190401-GWMS	97				
280-123221-4 MSD	DET-003-190401-GWMSD	85				
280-123221-4 MSD - RE	DET-003-190401-GWMSD	93				
280-123221-5	DET-003-190402-GW	88				
280-123221-5 - RE	DET-003-190402-GW	96				
280-123221-7	DET-004-190401-GW	90				
280-123221-7 - RE	DET-004-190401-GW	96				
280-123221-8	FWGmw-007-190401-GW	86				
280-123221-8 - RE	FWGmw-007-190401-GW	92				
280-123221-9	WBGmw-020-190401-GW	86				
280-123221-9 - RE	WBGmw-020-190401-GW	95				
280-123221-10	WBGmw-006-190401-GW	99				
280-123221-10	WBGmw-006-190401-GW	95				
280-123221-10 - RE	WBGmw-006-190401-GW	97				
280-123221-10 - RE	WBGmw-006-190401-GW	96				
280-123221-11	WBGmw-021-190401-GW	84				
280-123221-11 - RE	WBGmw-021-190401-GW	94				
280-123221-12	WBGmw-009-190401-GW	93				
280-123221-12 - RE	WBGmw-009-190401-GW	98				
280-123221-13	FWGmw-016-190401-GW	84				
280-123221-13 - RE	FWGmw-016-190401-GW	77 Q				
LCS 280-456980/2-A	Lab Control Sample	91				
LCS 280-457741/2-A	Lab Control Sample	96				
LCS 280-457818/2-A	Lab Control Sample	94				
LCSD 280-457818/3-A	Lab Control Sample Dup	94				
MB 280-456980/1-A	Method Blank	89				
MB 280-457741/1-A	Method Blank	99				
MB 280-457818/1-A	Method Blank	95				

Surrogate Legend

12DNB = 1,2-Dinitrobenzene

QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 280-457521/8
Matrix: Water
Analysis Batch: 457521

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.40	U	1.0	0.40	0.16	ug/L		05/08/19 22:31	1
1,1,2,2-Tetrachloroethane	0.80	U	1.0	0.80	0.21	ug/L		05/08/19 22:31	1
1,1,2-Trichloroethane	0.80	U	1.0	0.80	0.27	ug/L		05/08/19 22:31	1
1,1-Dichloroethane	0.80	U	1.0	0.80	0.22	ug/L		05/08/19 22:31	1
1,1-Dichloroethene	0.80	U	1.0	0.80	0.23	ug/L		05/08/19 22:31	1
1,2-Dibromoethane	0.40	U	1.0	0.40	0.18	ug/L		05/08/19 22:31	1
1,2-Dichloroethane	0.40	U	1.0	0.40	0.13	ug/L		05/08/19 22:31	1
1,2-Dichloroethene, Total	0.40	U	1.0	0.40	0.15	ug/L		05/08/19 22:31	1
1,2-Dichloropropane	0.40	U	1.0	0.40	0.18	ug/L		05/08/19 22:31	1
2-Butanone (MEK)	4.0	U	6.0	4.0	2.0	ug/L		05/08/19 22:31	1
2-Hexanone	4.0	U	5.0	4.0	1.7	ug/L		05/08/19 22:31	1
4-Methyl-2-pentanone (MIBK)	3.2	U	5.0	3.2	0.98	ug/L		05/08/19 22:31	1
Acetone	6.4	U	10	6.4	1.9	ug/L		05/08/19 22:31	1
Benzene	0.40	U	1.0	0.40	0.16	ug/L		05/08/19 22:31	1
Bromobenzene	0.40	U	1.0	0.40	0.17	ug/L		05/08/19 22:31	1
Bromochloromethane	0.20	U	1.0	0.20	0.10	ug/L		05/08/19 22:31	1
Bromodichloromethane	0.40	U	1.0	0.40	0.17	ug/L		05/08/19 22:31	1
Bromoform	1.0	U	1.0	1.0	0.46	ug/L		05/08/19 22:31	1
Bromomethane	0.80	U	2.0	0.80	0.21	ug/L		05/08/19 22:31	1
Carbon disulfide	0.80	U	2.0	0.80	0.17	ug/L		05/08/19 22:31	1
Carbon tetrachloride	0.40	U	2.0	0.40	0.19	ug/L		05/08/19 22:31	1
Chlorobenzene	0.40	U	1.0	0.40	0.17	ug/L		05/08/19 22:31	1
Chloroethane	1.6	U	2.0	1.6	0.41	ug/L		05/08/19 22:31	1
Chloroform	0.40	U	1.0	0.40	0.16	ug/L		05/08/19 22:31	1
Chloromethane	0.80	U	2.0	0.80	0.30	ug/L		05/08/19 22:31	1
cis-1,3-Dichloropropene	0.40	U	1.0	0.40	0.16	ug/L		05/08/19 22:31	1
Dibromochloromethane	0.40	U	1.0	0.40	0.17	ug/L		05/08/19 22:31	1
Ethylbenzene	0.40	U	1.0	0.40	0.16	ug/L		05/08/19 22:31	1
Methylene Chloride	2.0	U	5.0	2.0	0.94	ug/L		05/08/19 22:31	1
Styrene	0.80	U	1.0	0.80	0.36	ug/L		05/08/19 22:31	1
Tetrachloroethene	0.40	U	1.0	0.40	0.20	ug/L		05/08/19 22:31	1
Toluene	0.40	U	1.0	0.40	0.17	ug/L		05/08/19 22:31	1
trans-1,3-Dichloropropene	0.40	U	1.0	0.40	0.19	ug/L		05/08/19 22:31	1
Trichloroethene	0.40	U	1.0	0.40	0.16	ug/L		05/08/19 22:31	1
Vinyl chloride	0.20	U	1.5	0.20	0.10	ug/L		05/08/19 22:31	1
Xylenes, Total	0.80	U	1.0	0.80	0.19	ug/L		05/08/19 22:31	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		81 - 118		05/08/19 22:31	1
4-Bromofluorobenzene (Surr)	97		85 - 114		05/08/19 22:31	1
Dibromofluoromethane (Surr)	97		80 - 119		05/08/19 22:31	1
Toluene-d8 (Surr)	98		89 - 112		05/08/19 22:31	1

QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 280-457521/33

Matrix: Water

Analysis Batch: 457521

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	25.0	23.5		ug/L		94	74 - 131
1,1,2,2-Tetrachloroethane	25.0	22.7		ug/L		91	71 - 121
1,1,2-Trichloroethane	25.0	23.6		ug/L		94	80 - 119
1,1-Dichloroethane	25.0	22.9		ug/L		91	77 - 125
1,1-Dichloroethene	25.0	24.3		ug/L		97	71 - 131
1,2-Dibromoethane	25.0	23.7		ug/L		95	77 - 121
1,2-Dichloroethane	25.0	21.1		ug/L		85	73 - 128
1,2-Dichloropropane	25.0	23.7		ug/L		95	78 - 122
2-Butanone (MEK)	100	90.7		ug/L		91	56 - 143
2-Hexanone	100	91.1		ug/L		91	57 - 139
4-Methyl-2-pentanone (MIBK)	100	91.7		ug/L		92	67 - 130
Acetone	100	95.2		ug/L		95	39 - 160
Benzene	25.0	23.4		ug/L		94	79 - 120
Bromobenzene	25.0	23.2		ug/L		93	80 - 120
Bromochloromethane	25.0	25.7		ug/L		103	78 - 123
Bromodichloromethane	25.0	23.5		ug/L		94	79 - 125
Bromoform	25.0	19.5		ug/L		78	66 - 130
Bromomethane	25.0	59.5	Q	ug/L		238	53 - 141
Carbon disulfide	25.0	22.8		ug/L		91	64 - 133
Carbon tetrachloride	25.0	21.1		ug/L		84	72 - 136
Chlorobenzene	25.0	23.3		ug/L		93	82 - 118
Chloroethane	25.0	27.5		ug/L		110	60 - 138
Chloroform	25.0	23.1		ug/L		92	79 - 124
Chloromethane	25.0	19.9		ug/L		80	50 - 139
cis-1,3-Dichloropropene	25.0	23.2		ug/L		93	75 - 124
Dibromochloromethane	25.0	23.5		ug/L		94	74 - 126
Ethylbenzene	25.0	23.3		ug/L		93	79 - 121
Methylene Chloride	25.0	24.8		ug/L		99	74 - 124
Styrene	25.0	24.2		ug/L		97	78 - 123
Tetrachloroethene	25.0	24.0		ug/L		96	74 - 129
Toluene	25.0	23.5		ug/L		94	80 - 121
trans-1,3-Dichloropropene	25.0	23.4		ug/L		94	73 - 127
Trichloroethene	25.0	23.6		ug/L		94	79 - 123
Vinyl chloride	25.0	23.7		ug/L		95	58 - 137
Xylenes, Total	50.0	47.2		ug/L		94	79 - 121

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		81 - 118
4-Bromofluorobenzene (Surr)	95		85 - 114
Dibromofluoromethane (Surr)	99		80 - 119
Toluene-d8 (Surr)	97		89 - 112

Lab Sample ID: 280-123221-4 MS

Matrix: Water

Analysis Batch: 457521

Client Sample ID: DET-003-190401-GWMS

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	0.40	U	25.0	24.9		ug/L		99	74 - 131

Eurofins TestAmerica, Denver

QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-123221-4 MS

Matrix: Water

Analysis Batch: 457521

Client Sample ID: DET-003-190401-GWMS

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2,2-Tetrachloroethane	0.80	U	25.0	25.7		ug/L		103	71 - 121
1,1,2-Trichloroethane	0.80	U	25.0	26.0		ug/L		104	80 - 119
1,1-Dichloroethane	0.80	U	25.0	24.6		ug/L		98	77 - 125
1,1-Dichloroethene	0.80	U	25.0	25.3		ug/L		101	71 - 131
1,2-Dibromoethane	0.40	U	25.0	26.4		ug/L		106	77 - 121
1,2-Dichloroethane	0.40	U	25.0	23.6		ug/L		94	73 - 128
1,2-Dichloropropane	0.40	U	25.0	25.8		ug/L		103	78 - 122
2-Butanone (MEK)	4.0	U	100	96.3		ug/L		96	56 - 143
2-Hexanone	4.0	U	100	99.5		ug/L		100	57 - 139
4-Methyl-2-pentanone (MIBK)	3.2	U	100	98.3		ug/L		98	67 - 130
Acetone	2.8	J	100	102		ug/L		99	39 - 160
Benzene	0.40	U	25.0	25.2		ug/L		101	79 - 120
Bromobenzene	0.40	U	25.0	25.3		ug/L		101	80 - 120
Bromochloromethane	0.20	U	25.0	27.6		ug/L		111	78 - 123
Bromodichloromethane	0.40	U	25.0	26.0		ug/L		104	79 - 125
Bromoform	1.0	U	25.0	22.3		ug/L		89	66 - 130
Bromomethane	0.80	U Q J1	25.0	63.4	J1	ug/L		254	53 - 141
Carbon disulfide	0.80	U	25.0	24.6		ug/L		99	64 - 133
Carbon tetrachloride	0.40	U	25.0	22.0		ug/L		88	72 - 136
Chlorobenzene	0.40	U	25.0	25.5		ug/L		102	82 - 118
Chloroethane	1.6	U	25.0	28.8		ug/L		115	60 - 138
Chloroform	0.40	U	25.0	24.9		ug/L		100	79 - 124
Chloromethane	0.80	U J1	25.0	21.7		ug/L		87	50 - 139
cis-1,3-Dichloropropene	0.40	U	25.0	26.0		ug/L		104	75 - 124
Dibromochloromethane	0.40	U	25.0	26.7		ug/L		107	74 - 126
Ethylbenzene	0.40	U	25.0	25.4		ug/L		101	79 - 121
Methylene Chloride	2.0	U	25.0	26.7		ug/L		107	74 - 124
Styrene	0.80	U	25.0	26.6		ug/L		106	78 - 123
Tetrachloroethene	0.40	U	25.0	25.4		ug/L		102	74 - 129
Toluene	0.40	U	25.0	25.3		ug/L		101	80 - 121
trans-1,3-Dichloropropene	0.40	U	25.0	26.0		ug/L		104	73 - 127
Trichloroethene	0.40	U	25.0	25.1		ug/L		100	79 - 123
Vinyl chloride	0.20	U J1	25.0	25.0		ug/L		100	58 - 137
Xylenes, Total	0.80	U	50.0	51.5		ug/L		103	79 - 121

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		81 - 118
4-Bromofluorobenzene (Surr)	96		85 - 114
Dibromofluoromethane (Surr)	99		80 - 119
Toluene-d8 (Surr)	100		89 - 112

Lab Sample ID: 280-123221-4 MSD

Matrix: Water

Analysis Batch: 457521

Client Sample ID: DET-003-190401-GWMSD

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	0.40	U	25.0	21.4		ug/L		86	74 - 131	15	20
1,1,2,2-Tetrachloroethane	0.80	U	25.0	21.8		ug/L		87	71 - 121	16	20

Eurofins TestAmerica, Denver

QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-123221-4 MSD

Matrix: Water

Analysis Batch: 457521

Client Sample ID: DET-003-190401-GWMSD

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2-Trichloroethane	0.80	U	25.0	22.1		ug/L		89	80 - 119	16	20
1,1-Dichloroethane	0.80	U	25.0	21.2		ug/L		85	77 - 125	15	20
1,1-Dichloroethene	0.80	U	25.0	22.0		ug/L		88	71 - 131	14	20
1,2-Dibromoethane	0.40	U	25.0	22.2		ug/L		89	77 - 121	17	20
1,2-Dichloroethane	0.40	U	25.0	20.3		ug/L		81	73 - 128	15	20
1,2-Dichloropropane	0.40	U	25.0	22.1		ug/L		88	78 - 122	15	20
2-Butanone (MEK)	4.0	U	100	83.0		ug/L		83	56 - 143	15	20
2-Hexanone	4.0	U	100	84.0		ug/L		84	57 - 139	17	20
4-Methyl-2-pentanone (MIBK)	3.2	U	100	83.9		ug/L		84	67 - 130	16	20
Acetone	2.8	J	100	87.6		ug/L		85	39 - 160	15	20
Benzene	0.40	U	25.0	21.8		ug/L		87	79 - 120	14	20
Bromobenzene	0.40	U	25.0	21.9		ug/L		88	80 - 120	14	20
Bromochloromethane	0.20	U	25.0	24.0		ug/L		96	78 - 123	14	20
Bromodichloromethane	0.40	U	25.0	22.4		ug/L		90	79 - 125	15	20
Bromoform	1.0	U	25.0	18.9		ug/L		76	66 - 130	16	20
Bromomethane	0.80	U Q J1	25.0	52.4	J1	ug/L		210	53 - 141	19	20
Carbon disulfide	0.80	U	25.0	21.7		ug/L		87	64 - 133	13	20
Carbon tetrachloride	0.40	U	25.0	19.3		ug/L		77	72 - 136	13	20
Chlorobenzene	0.40	U	25.0	21.9		ug/L		88	82 - 118	15	20
Chloroethane	1.6	U	25.0	27.1		ug/L		108	60 - 138	6	20
Chloroform	0.40	U	25.0	21.5		ug/L		86	79 - 124	15	20
Chloromethane	0.80	U J1	25.0	16.6	J1	ug/L		67	50 - 139	26	20
cis-1,3-Dichloropropene	0.40	U	25.0	22.0		ug/L		88	75 - 124	17	20
Dibromochloromethane	0.40	U	25.0	22.5		ug/L		90	74 - 126	17	20
Ethylbenzene	0.40	U	25.0	21.8		ug/L		87	79 - 121	15	20
Methylene Chloride	2.0	U	25.0	23.2		ug/L		93	74 - 124	14	20
Styrene	0.80	U	25.0	22.9		ug/L		91	78 - 123	15	20
Tetrachloroethene	0.40	U	25.0	21.9		ug/L		88	74 - 129	15	20
Toluene	0.40	U	25.0	21.7		ug/L		87	80 - 121	15	20
trans-1,3-Dichloropropene	0.40	U	25.0	22.0		ug/L		88	73 - 127	17	20
Trichloroethene	0.40	U	25.0	21.5		ug/L		86	79 - 123	15	20
Vinyl chloride	0.20	U J1	25.0	19.1	J1	ug/L		76	58 - 137	27	20
Xylenes, Total	0.80	U	50.0	44.2		ug/L		88	79 - 121	15	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		81 - 118
4-Bromofluorobenzene (Surr)	96		85 - 114
Dibromofluoromethane (Surr)	99		80 - 119
Toluene-d8 (Surr)	98		89 - 112

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 280-456902/1-A

Matrix: Water

Analysis Batch: 458321

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 456902

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2,4,5-Trichlorophenol	4.4	U	20	4.4	2.1	ug/L		05/15/19 19:18	1
2,4,6-Trichlorophenol	1.0	U	20	1.0	0.29	ug/L		05/15/19 19:18	1

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QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 280-456902/1-A

Matrix: Water

Analysis Batch: 458321

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 456902

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2,4-Dichlorophenol	2.0	U	10	2.0	0.64	ug/L		05/15/19 19:18	1
2,4-Dimethylphenol	2.0	U	10	2.0	0.58	ug/L		05/15/19 19:18	1
2,4-Dinitrophenol	30	U	80	30	10	ug/L		05/15/19 19:18	1
2,4-Dinitrotoluene	4.4	U	20	4.4	1.7	ug/L		05/15/19 19:18	1
2,6-Dinitrotoluene	4.4	U	20	4.4	1.9	ug/L		05/15/19 19:18	1
2-Chlorophenol	4.4	U	10	4.4	2.0	ug/L		05/15/19 19:18	1
2-Methylphenol	2.0	U	10	2.0	0.98	ug/L		05/15/19 19:18	1
2-Nitrophenol	1.0	U	20	1.0	0.39	ug/L		05/15/19 19:18	1
3 & 4 Methylphenol	0.50	U	20	0.50	0.25	ug/L		05/15/19 19:18	1
4,6-Dinitro-2-methylphenol	8.8	U	80	8.8	4.0	ug/L		05/15/19 19:18	1
4-Chloro-3-methylphenol	5.0	U	20	5.0	2.4	ug/L		05/15/19 19:18	1
4-Nitrophenol	4.0	U	50	4.0	1.2	ug/L		05/15/19 19:18	1
Bis(2-ethylhexyl) phthalate	2.0	U	10	2.0	0.56	ug/L		05/15/19 19:18	1
Butyl benzyl phthalate	2.0	U	20	2.0	1.0	ug/L		05/15/19 19:18	1
Diethyl phthalate	1.0	U	20	1.0	0.38	ug/L		05/15/19 19:18	1
Dimethyl phthalate	0.50	U	20	0.50	0.21	ug/L		05/15/19 19:18	1
Di-n-butyl phthalate	4.4	U	20	4.4	1.2	ug/L		05/15/19 19:18	1
Di-n-octyl phthalate	1.0	U	20	1.0	0.35	ug/L		05/15/19 19:18	1
Nitrobenzene	2.0	U	20	2.0	0.81	ug/L		05/15/19 19:18	1
Pentachlorophenol	60	U	80	60	20	ug/L		05/15/19 19:18	1
Phenol	4.4	U	10	4.4	2.0	ug/L		05/15/19 19:18	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	82		43 - 140	05/03/19 12:42	05/15/19 19:18	1
2-Fluorobiphenyl	82		44 - 119	05/03/19 12:42	05/15/19 19:18	1
2-Fluorophenol (Surr)	83		19 - 119	05/03/19 12:42	05/15/19 19:18	1
Nitrobenzene-d5 (Surr)	86		44 - 120	05/03/19 12:42	05/15/19 19:18	1
Phenol-d5 (Surr)	81		10 - 115	05/03/19 12:42	05/15/19 19:18	1
Terphenyl-d14 (Surr)	87		50 - 134	05/03/19 12:42	05/15/19 19:18	1

Lab Sample ID: LCS 280-456902/2-A

Matrix: Water

Analysis Batch: 458321

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 456902

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4,5-Trichlorophenol	80.0	67.6		ug/L		85	53 - 123
2,4,6-Trichlorophenol	80.0	70.1		ug/L		88	50 - 125
2,4-Dichlorophenol	80.0	67.3		ug/L		84	47 - 121
2,4-Dimethylphenol	80.0	59.8		ug/L		75	31 - 124
2,4-Dinitrophenol	160	148		ug/L		92	23 - 143
2,4-Dinitrotoluene	80.0	70.6		ug/L		88	57 - 128
2,6-Dinitrotoluene	80.0	68.7		ug/L		86	57 - 124
2-Chlorophenol	80.0	63.3		ug/L		79	38 - 117
2-Methylphenol	80.0	64.8		ug/L		81	30 - 117
2-Nitrophenol	80.0	67.6		ug/L		85	47 - 123
3 & 4 Methylphenol	80.0	64.6		ug/L		81	29 - 110
4,6-Dinitro-2-methylphenol	160	146		ug/L		91	44 - 137
4-Chloro-3-methylphenol	80.0	67.2		ug/L		84	52 - 119

Eurofins TestAmerica, Denver

QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 280-456902/2-A

Matrix: Water

Analysis Batch: 458321

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 456902

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Nitrophenol	160	143		ug/L		89	59 - 129
Bis(2-ethylhexyl) phthalate	80.0	69.9		ug/L		87	55 - 135
Butyl benzyl phthalate	80.0	71.1		ug/L		89	53 - 134
Diethyl phthalate	80.0	69.7		ug/L		87	56 - 125
Dimethyl phthalate	80.0	68.5		ug/L		86	45 - 127
Di-n-butyl phthalate	80.0	70.7		ug/L		88	59 - 127
Di-n-octyl phthalate	80.0	70.3		ug/L		88	51 - 140
Nitrobenzene	80.0	61.3		ug/L		77	45 - 121
Pentachlorophenol	160	132		ug/L		82	35 - 138
Phenol	80.0	62.2		ug/L		78	61 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	81		43 - 140
2-Fluorobiphenyl	77		44 - 119
2-Fluorophenol (Surr)	77		19 - 119
Nitrobenzene-d5 (Surr)	80		44 - 120
Phenol-d5 (Surr)	77		10 - 115
Terphenyl-d14 (Surr)	86		50 - 134

Lab Sample ID: LCSD 280-456902/3-A

Matrix: Water

Analysis Batch: 458321

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 456902

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
2,4,5-Trichlorophenol	80.0	69.0		ug/L		86	53 - 123	2	20
2,4,6-Trichlorophenol	80.0	70.2		ug/L		88	50 - 125	0	20
2,4-Dichlorophenol	80.0	68.4		ug/L		85	47 - 121	2	20
2,4-Dimethylphenol	80.0	58.7		ug/L		73	31 - 124	2	20
2,4-Dinitrophenol	160	148		ug/L		93	23 - 143	1	20
2,4-Dinitrotoluene	80.0	69.4		ug/L		87	57 - 128	2	20
2,6-Dinitrotoluene	80.0	69.2		ug/L		87	57 - 124	1	20
2-Chlorophenol	80.0	60.8		ug/L		76	38 - 117	4	20
2-Methylphenol	80.0	61.2		ug/L		77	30 - 117	6	20
2-Nitrophenol	80.0	69.4		ug/L		87	47 - 123	3	20
3 & 4 Methylphenol	80.0	62.6		ug/L		78	29 - 110	3	20
4,6-Dinitro-2-methylphenol	160	143		ug/L		89	44 - 137	2	20
4-Chloro-3-methylphenol	80.0	67.6		ug/L		84	52 - 119	1	20
4-Nitrophenol	160	141		ug/L		88	59 - 129	1	20
Bis(2-ethylhexyl) phthalate	80.0	69.4		ug/L		87	55 - 135	1	20
Butyl benzyl phthalate	80.0	71.9		ug/L		90	53 - 134	1	20
Diethyl phthalate	80.0	69.8		ug/L		87	56 - 125	0	20
Dimethyl phthalate	80.0	66.6		ug/L		83	45 - 127	3	20
Di-n-butyl phthalate	80.0	70.3		ug/L		88	59 - 127	1	20
Di-n-octyl phthalate	80.0	70.5		ug/L		88	51 - 140	0	20
Nitrobenzene	80.0	62.4		ug/L		78	45 - 121	2	20
Pentachlorophenol	160	131		ug/L		82	35 - 138	0	20
Phenol	80.0	61.8		ug/L		77	61 - 120	1	20

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QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 280-456902/3-A
Matrix: Water
Analysis Batch: 458321

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 456902

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2,4,6-Tribromophenol (Surr)	82		43 - 140
2-Fluorobiphenyl	82		44 - 119
2-Fluorophenol (Surr)	74		19 - 119
Nitrobenzene-d5 (Surr)	79		44 - 120
Phenol-d5 (Surr)	76		10 - 115
Terphenyl-d14 (Surr)	87		50 - 134

Lab Sample ID: MB 280-457323/1-A
Matrix: Water
Analysis Batch: 458321

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 457323

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Hexachlorocyclopentadiene	10	U	50	10	3.1	ug/L		05/15/19 17:49	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	80		43 - 140	05/07/19 16:07	05/15/19 17:49	1
2-Fluorobiphenyl	86		44 - 119	05/07/19 16:07	05/15/19 17:49	1
2-Fluorophenol (Surr)	82		19 - 119	05/07/19 16:07	05/15/19 17:49	1
Nitrobenzene-d5 (Surr)	84		44 - 120	05/07/19 16:07	05/15/19 17:49	1
Phenol-d5 (Surr)	81		10 - 115	05/07/19 16:07	05/15/19 17:49	1
Terphenyl-d14 (Surr)	91		50 - 134	05/07/19 16:07	05/15/19 17:49	1

Lab Sample ID: LCS 280-457323/2-A
Matrix: Water
Analysis Batch: 458321

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 457323

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hexachlorocyclopentadiene	160	90.9		ug/L		57	10 - 106

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	77		43 - 140
2-Fluorobiphenyl	79		44 - 119
2-Fluorophenol (Surr)	74		19 - 119
Nitrobenzene-d5 (Surr)	76		44 - 120
Phenol-d5 (Surr)	74		10 - 115
Terphenyl-d14 (Surr)	81		50 - 134

Lab Sample ID: LCSD 280-457323/3-A
Matrix: Water
Analysis Batch: 458321

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 457323

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hexachlorocyclopentadiene	160	93.0		ug/L		58	10 - 106	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2,4,6-Tribromophenol (Surr)	80		43 - 140
2-Fluorobiphenyl	83		44 - 119

QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 280-457323/3-A
Matrix: Water
Analysis Batch: 458321

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 457323

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2-Fluorophenol (Surr)	79		19 - 119
Nitrobenzene-d5 (Surr)	81		44 - 120
Phenol-d5 (Surr)	79		10 - 115
Terphenyl-d14 (Surr)	85		50 - 134

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 280-457182/1-A
Matrix: Water
Analysis Batch: 457763

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 457182

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1-Methylnaphthalene	0.040	U	0.10	0.040	0.018	ug/L		05/10/19 20:33	1
2-Methylnaphthalene	0.050	U	0.10	0.050	0.021	ug/L		05/10/19 20:33	1
Acenaphthene	0.040	U	0.10	0.040	0.0042	ug/L		05/10/19 20:33	1
Acenaphthylene	0.040	U	0.10	0.040	0.0051	ug/L		05/10/19 20:33	1
Anthracene	0.10	U	0.10	0.10	0.031	ug/L		05/10/19 20:33	1
Benzo[a]anthracene	0.10	U	0.10	0.10	0.028	ug/L		05/10/19 20:33	1
Benzo[a]pyrene	0.050	U	0.10	0.050	0.025	ug/L		05/10/19 20:33	1
Benzo[b]fluoranthene	0.10	U	0.10	0.10	0.040	ug/L		05/10/19 20:33	1
Benzo[g,h,i]perylene	0.10	U	0.10	0.10	0.037	ug/L		05/10/19 20:33	1
Benzo[k]fluoranthene	0.050	U	0.10	0.050	0.023	ug/L		05/10/19 20:33	1
Chrysene	0.10	U	0.10	0.10	0.033	ug/L		05/10/19 20:33	1
Dibenz(a,h)anthracene	0.10	U	0.10	0.10	0.028	ug/L		05/10/19 20:33	1
Fluoranthene	0.10	U	0.10	0.10	0.049	ug/L		05/10/19 20:33	1
Fluorene	0.040	U	0.10	0.040	0.019	ug/L		05/10/19 20:33	1
Indeno[1,2,3-cd]pyrene	0.10	U	0.10	0.10	0.039	ug/L		05/10/19 20:33	1
Naphthalene	0.050	U	0.10	0.050	0.023	ug/L		05/10/19 20:33	1
Phenanthrene	0.10	U	0.10	0.10	0.049	ug/L		05/10/19 20:33	1
Pyrene	0.10	U	0.10	0.10	0.045	ug/L		05/10/19 20:33	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	90		53 - 106	05/06/19 12:22	05/10/19 20:33	1
Nitrobenzene-d5	80		55 - 111	05/06/19 12:22	05/10/19 20:33	1
Terphenyl-d14	87		58 - 132	05/06/19 12:22	05/10/19 20:33	1

Lab Sample ID: LCS 280-457182/2-A
Matrix: Water
Analysis Batch: 457763

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 457182

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1-Methylnaphthalene	0.900	0.827		ug/L		92	41 - 115
2-Methylnaphthalene	0.900	0.805		ug/L		89	39 - 114
Acenaphthene	0.900	0.874		ug/L		97	48 - 114
Acenaphthylene	0.900	0.739		ug/L		82	35 - 121
Anthracene	0.900	0.869		ug/L		97	53 - 119
Benzo[a]anthracene	0.900	0.673		ug/L		75	59 - 120
Benzo[a]pyrene	0.900	0.622		ug/L		69	53 - 120

Eurofins TestAmerica, Denver

QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCS 280-457182/2-A

Matrix: Water

Analysis Batch: 457763

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 457182

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[b]fluoranthene	0.900	0.674		ug/L		75	53 - 126
Benzo[g,h,i]perylene	0.900	0.708		ug/L		79	44 - 128
Benzo[k]fluoranthene	0.900	0.786		ug/L		87	54 - 125
Chrysene	0.900	1.01		ug/L		112	57 - 120
Dibenz(a,h)anthracene	0.900	0.635		ug/L		71	44 - 131
Fluoranthene	0.900	0.845		ug/L		94	58 - 120
Fluorene	0.900	0.878		ug/L		98	50 - 118
Indeno[1,2,3-cd]pyrene	0.900	0.575		ug/L		64	48 - 130
Naphthalene	0.900	0.827		ug/L		92	43 - 114
Phenanthrene	0.900	0.840		ug/L		93	53 - 115
Pyrene	0.900	0.819		ug/L		91	53 - 121

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	87		53 - 106
Nitrobenzene-d5	80		55 - 111
Terphenyl-d14	93		58 - 132

Lab Sample ID: LCSD 280-457182/3-A

Matrix: Water

Analysis Batch: 457763

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 457182

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1-Methylnaphthalene	0.900	0.815		ug/L		91	41 - 115	1	20
2-Methylnaphthalene	0.900	0.748		ug/L		83	39 - 114	7	20
Acenaphthene	0.900	0.794		ug/L		88	48 - 114	10	20
Acenaphthylene	0.900	0.678		ug/L		75	35 - 121	9	20
Anthracene	0.900	0.821		ug/L		91	53 - 119	6	20
Benzo[a]anthracene	0.900	0.659		ug/L		73	59 - 120	2	20
Benzo[a]pyrene	0.900	0.588		ug/L		65	53 - 120	6	20
Benzo[b]fluoranthene	0.900	0.646		ug/L		72	53 - 126	4	20
Benzo[g,h,i]perylene	0.900	0.700		ug/L		78	44 - 128	1	20
Benzo[k]fluoranthene	0.900	0.747		ug/L		83	54 - 125	5	20
Chrysene	0.900	0.965		ug/L		107	57 - 120	4	20
Dibenz(a,h)anthracene	0.900	0.581		ug/L		65	44 - 131	9	20
Fluoranthene	0.900	0.818		ug/L		91	58 - 120	3	20
Fluorene	0.900	0.813		ug/L		90	50 - 118	8	20
Indeno[1,2,3-cd]pyrene	0.900	0.559		ug/L		62	48 - 130	3	20
Naphthalene	0.900	0.773		ug/L		86	43 - 114	7	20
Phenanthrene	0.900	0.798		ug/L		89	53 - 115	5	20
Pyrene	0.900	0.812		ug/L		90	53 - 121	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2-Fluorobiphenyl	81		53 - 106
Nitrobenzene-d5	78		55 - 111
Terphenyl-d14	88		58 - 132

QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: MB 280-457236/1-A

Matrix: Water

Analysis Batch: 458021

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 457236

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1-Methylnaphthalene	0.040	U	0.10	0.040	0.018	ug/L		05/13/19 21:50	1
2-Methylnaphthalene	0.050	U	0.10	0.050	0.021	ug/L		05/13/19 21:50	1
Acenaphthene	0.040	U	0.10	0.040	0.0042	ug/L		05/13/19 21:50	1
Acenaphthylene	0.040	U	0.10	0.040	0.0051	ug/L		05/13/19 21:50	1
Anthracene	0.10	U	0.10	0.10	0.031	ug/L		05/13/19 21:50	1
Benzo[a]anthracene	0.10	U	0.10	0.10	0.028	ug/L		05/13/19 21:50	1
Benzo[a]pyrene	0.050	U	0.10	0.050	0.025	ug/L		05/13/19 21:50	1
Benzo[b]fluoranthene	0.10	U	0.10	0.10	0.040	ug/L		05/13/19 21:50	1
Benzo[g,h,i]perylene	0.10	U	0.10	0.10	0.037	ug/L		05/13/19 21:50	1
Benzo[k]fluoranthene	0.050	U	0.10	0.050	0.023	ug/L		05/13/19 21:50	1
Chrysene	0.10	U	0.10	0.10	0.033	ug/L		05/13/19 21:50	1
Dibenz(a,h)anthracene	0.10	U	0.10	0.10	0.028	ug/L		05/13/19 21:50	1
Fluoranthene	0.10	U	0.10	0.10	0.049	ug/L		05/13/19 21:50	1
Fluorene	0.040	U	0.10	0.040	0.019	ug/L		05/13/19 21:50	1
Indeno[1,2,3-cd]pyrene	0.10	U	0.10	0.10	0.039	ug/L		05/13/19 21:50	1
Naphthalene	0.050	U	0.10	0.050	0.023	ug/L		05/13/19 21:50	1
Phenanthrene	0.10	U	0.10	0.10	0.049	ug/L		05/13/19 21:50	1
Pyrene	0.10	U	0.10	0.10	0.045	ug/L		05/13/19 21:50	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	81		53 - 106	05/07/19 06:23	05/13/19 21:50	1
Nitrobenzene-d5	81		55 - 111	05/07/19 06:23	05/13/19 21:50	1
Terphenyl-d14	87		58 - 132	05/07/19 06:23	05/13/19 21:50	1

Lab Sample ID: LCS 280-457236/2-A

Matrix: Water

Analysis Batch: 458021

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 457236

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1-Methylnaphthalene	0.900	0.777		ug/L		86	41 - 115
2-Methylnaphthalene	0.900	0.746		ug/L		83	39 - 114
Acenaphthene	0.900	0.787		ug/L		87	48 - 114
Acenaphthylene	0.900	0.703		ug/L		78	35 - 121
Anthracene	0.900	0.810		ug/L		90	53 - 119
Benzo[a]anthracene	0.900	0.707		ug/L		79	59 - 120
Benzo[a]pyrene	0.900	0.772		ug/L		86	53 - 120
Benzo[b]fluoranthene	0.900	0.782		ug/L		87	53 - 126
Benzo[g,h,i]perylene	0.900	0.814		ug/L		90	44 - 128
Benzo[k]fluoranthene	0.900	0.748		ug/L		83	54 - 125
Chrysene	0.900	0.849		ug/L		94	57 - 120
Dibenz(a,h)anthracene	0.900	0.726		ug/L		81	44 - 131
Fluoranthene	0.900	0.822		ug/L		91	58 - 120
Fluorene	0.900	0.771		ug/L		86	50 - 118
Indeno[1,2,3-cd]pyrene	0.900	0.795		ug/L		88	48 - 130
Naphthalene	0.900	0.764		ug/L		85	43 - 114
Phenanthrene	0.900	0.780		ug/L		87	53 - 115
Pyrene	0.900	0.820		ug/L		91	53 - 121

Eurofins TestAmerica, Denver

QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCS 280-457236/2-A

Matrix: Water

Analysis Batch: 458021

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 457236

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	77		53 - 106
Nitrobenzene-d5	76		55 - 111
Terphenyl-d14	84		58 - 132

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 280-457201/1-A

Matrix: Water

Analysis Batch: 458587

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 457201

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
4,4'-DDD	0.020	U	0.050	0.020	0.0077	ug/L		05/17/19 17:06	1
4,4'-DDE	0.020	U	0.050	0.020	0.0075	ug/L		05/17/19 17:06	1
4,4'-DDT	0.050	U	0.050	0.050	0.015	ug/L		05/17/19 17:06	1
Aldrin	0.020	U	0.050	0.020	0.0059	ug/L		05/17/19 17:06	1
alpha-BHC	0.020	U	0.050	0.020	0.0053	ug/L		05/17/19 17:06	1
alpha-Chlordane	0.020	U	0.050	0.020	0.0053	ug/L		05/17/19 17:06	1
beta-BHC	0.020	U	0.050	0.020	0.0087	ug/L		05/17/19 17:06	1
delta-BHC	0.020	U	0.050	0.020	0.0058	ug/L		05/17/19 17:06	1
Dieldrin	0.020	U	0.050	0.020	0.0063	ug/L		05/17/19 17:06	1
Endosulfan I	0.020	U	0.050	0.020	0.0058	ug/L		05/17/19 17:06	1
Endosulfan II	0.020	U	0.050	0.020	0.0070	ug/L		05/17/19 17:06	1
Endosulfan sulfate	0.020	U	0.050	0.020	0.0057	ug/L		05/17/19 17:06	1
Endrin	0.020	U	0.050	0.020	0.0079	ug/L		05/17/19 17:06	1
Endrin aldehyde	0.020	U	0.050	0.020	0.0088	ug/L		05/17/19 17:06	1
Endrin ketone	0.020	U	0.050	0.020	0.0070	ug/L		05/17/19 17:06	1
gamma-BHC (Lindane)	0.020	U	0.050	0.020	0.0069	ug/L		05/17/19 17:06	1
gamma-Chlordane	0.020	U	0.050	0.020	0.0091	ug/L		05/17/19 17:06	1
Heptachlor	0.020	U	0.050	0.020	0.0077	ug/L		05/17/19 17:06	1
Heptachlor epoxide	0.020	U	0.050	0.020	0.0075	ug/L		05/17/19 17:06	1
Methoxychlor	0.050	U	0.050	0.050	0.013	ug/L		05/17/19 17:06	1
Toxaphene	0.80	U	2.0	0.80	0.37	ug/L		05/17/19 17:06	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	82		34 - 122	05/06/19 15:29	05/17/19 17:06	1
Tetrachloro-m-xylene	78		44 - 124	05/06/19 15:29	05/17/19 17:06	1

Lab Sample ID: LCS 280-457201/2-A

Matrix: Water

Analysis Batch: 458587

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 457201

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4,4'-DDD	0.500	0.445		ug/L		89	56 - 143
4,4'-DDE	0.500	0.450		ug/L		90	57 - 135
4,4'-DDT	0.500	0.518		ug/L		104	51 - 143
Aldrin	0.500	0.375		ug/L		75	45 - 134
alpha-BHC	0.500	0.449		ug/L		90	54 - 138
alpha-Chlordane	0.500	0.438		ug/L		88	60 - 129

Eurofins TestAmerica, Denver

QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 280-457201/2-A

Matrix: Water

Analysis Batch: 458587

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 457201

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
beta-BHC	0.500	0.448		ug/L		90	56 - 136
delta-BHC	0.500	0.451		ug/L		90	52 - 142
Dieldrin	0.500	0.445		ug/L		89	60 - 136
Endosulfan I	0.500	0.431		ug/L		86	62 - 126
Endosulfan II	0.500	0.411		ug/L		82	52 - 135
Endosulfan sulfate	0.500	0.446		ug/L		89	62 - 133
Endrin	0.500	0.450		ug/L		90	60 - 138
Endrin aldehyde	0.500	0.385		ug/L		77	51 - 132
Endrin ketone	0.500	0.444		ug/L		89	58 - 134
gamma-BHC (Lindane)	0.500	0.457		ug/L		91	59 - 134
gamma-Chlordane	0.500	0.440		ug/L		88	56 - 136
Heptachlor	0.500	0.430		ug/L		86	54 - 130
Heptachlor epoxide	0.500	0.448		ug/L		90	61 - 133
Methoxychlor	0.500	0.486		ug/L		97	54 - 145

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	86		34 - 122
Tetrachloro-m-xylene	76		44 - 124

Lab Sample ID: LCS 280-457201/4-A

Matrix: Water

Analysis Batch: 458587

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 457201

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Toxaphene	20.0	15.8		ug/L		79	33 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	88		34 - 122
Tetrachloro-m-xylene	69		44 - 124

Lab Sample ID: 280-123221-4 MS

Matrix: Water

Analysis Batch: 458587

Client Sample ID: DET-003-190401-GWMS

Prep Type: Total/NA

Prep Batch: 457201

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
4,4'-DDD	0.022	U	0.523	0.457		ug/L		87	56 - 143
4,4'-DDE	0.022	U	0.523	0.475		ug/L		91	57 - 135
4,4'-DDT	0.054	U	0.523	0.540		ug/L		103	51 - 143
Aldrin	0.022	U	0.523	0.369		ug/L		71	45 - 134
alpha-BHC	0.022	U	0.523	0.477		ug/L		91	54 - 138
alpha-Chlordane	0.022	U	0.523	0.459		ug/L		88	60 - 129
beta-BHC	0.022	U	0.523	0.474		ug/L		91	56 - 136
delta-BHC	0.022	U	0.523	0.471		ug/L		90	52 - 142
Dieldrin	0.022	U	0.523	0.469		ug/L		90	60 - 136
Endosulfan I	0.022	U	0.523	0.456		ug/L		87	62 - 126
Endosulfan II	0.022	U	0.523	0.432		ug/L		83	52 - 135
Endosulfan sulfate	0.022	U	0.523	0.469		ug/L		90	62 - 133
Endrin	0.022	U	0.523	0.459		ug/L		88	60 - 138

Eurofins TestAmerica, Denver

QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 280-123221-4 MS

Matrix: Water

Analysis Batch: 458587

Client Sample ID: DET-003-190401-GWMS

Prep Type: Total/NA

Prep Batch: 457201

	Sample	Sample	Spike	MS	MS			%Rec.		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Endrin aldehyde	0.022	U	0.523	0.384		ug/L		74	51 - 132	
Endrin ketone	0.022	U	0.523	0.471		ug/L		90	58 - 134	
gamma-BHC (Lindane)	0.022	U	0.523	0.482		ug/L		92	59 - 134	
gamma-Chlordane	0.022	U	0.523	0.459		ug/L		88	56 - 136	
Heptachlor	0.022	U	0.523	0.428		ug/L		82	54 - 130	
Heptachlor epoxide	0.022	U	0.523	0.470		ug/L		90	61 - 133	
Methoxychlor	0.054	U	0.523	0.498		ug/L		95	54 - 145	

Lab Sample ID: 280-123221-4 MS

Matrix: Water

Analysis Batch: 458587

Client Sample ID: DET-003-190401-GWMS

Prep Type: Total/NA

Prep Batch: 457201

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Toxaphene	0.86	U	20.6	18.6		ug/L		90	33 - 134

Lab Sample ID: 280-123221-4 MSD

Matrix: Water

Analysis Batch: 458587

Client Sample ID: DET-003-190401-GWMSD

Prep Type: Total/NA

Prep Batch: 457201

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
4,4'-DDD	0.022	U	0.524	0.460		ug/L		88	56 - 143	0	30
4,4'-DDE	0.022	U	0.524	0.475		ug/L		91	57 - 135	0	30
4,4'-DDT	0.054	U	0.524	0.542		ug/L		103	51 - 143	0	30
Aldrin	0.022	U	0.524	0.395		ug/L		75	45 - 134	7	30
alpha-BHC	0.022	U	0.524	0.476		ug/L		91	54 - 138	0	30
alpha-Chlordane	0.022	U	0.524	0.466		ug/L		89	60 - 129	1	30
beta-BHC	0.022	U	0.524	0.477		ug/L		91	56 - 136	1	30
delta-BHC	0.022	U	0.524	0.476		ug/L		91	52 - 142	1	30
Dieldrin	0.022	U	0.524	0.471		ug/L		90	60 - 136	0	30
Endosulfan I	0.022	U	0.524	0.459		ug/L		88	62 - 126	1	30
Endosulfan II	0.022	U	0.524	0.435		ug/L		83	52 - 135	1	30
Endosulfan sulfate	0.022	U	0.524	0.476		ug/L		91	62 - 133	2	30
Endrin	0.022	U	0.524	0.468		ug/L		89	60 - 138	2	30
Endrin aldehyde	0.022	U	0.524	0.404		ug/L		77	51 - 132	5	30
Endrin ketone	0.022	U	0.524	0.475		ug/L		91	58 - 134	1	30
gamma-BHC (Lindane)	0.022	U	0.524	0.485		ug/L		93	59 - 134	1	30
gamma-Chlordane	0.022	U	0.524	0.467		ug/L		89	56 - 136	2	30
Heptachlor	0.022	U	0.524	0.450		ug/L		86	54 - 130	5	30
Heptachlor epoxide	0.022	U	0.524	0.474		ug/L		90	61 - 133	1	30
Methoxychlor	0.054	U	0.524	0.501		ug/L		96	54 - 145	1	30
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
DCB Decachlorobiphenyl	79		34 - 122								
Tetrachloro-m-xylene	75		44 - 124								

Eurofins TestAmerica, Denver

QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 280-123221-4 MSD

Matrix: Water

Analysis Batch: 458587

Client Sample ID: DET-003-190401-GWMSD

Prep Type: Total/NA

Prep Batch: 457201

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Toxaphene	0.86	U	22.1	19.2		ug/L		87	33 - 134	3	30

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 280-457201/1-A

Matrix: Water

Analysis Batch: 459265

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 457201

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
PCB-1016	0.40	U M	1.0	0.40	0.12	ug/L		05/23/19 15:14	1
PCB-1221	0.25	U M	1.0	0.25	0.21	ug/L		05/23/19 15:14	1
PCB-1232	0.60	U M	1.0	0.60	0.17	ug/L		05/23/19 15:14	1
PCB-1242	1.0	U M	1.0	1.0	0.42	ug/L		05/23/19 15:14	1
PCB-1248	0.30	U M	1.0	0.30	0.092	ug/L		05/23/19 15:14	1
PCB-1254	0.25	U M	1.0	0.25	0.11	ug/L		05/23/19 15:14	1
PCB-1260	0.40	U M	1.0	0.40	0.16	ug/L		05/23/19 15:14	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	90		25 - 120	05/06/19 15:29	05/23/19 15:14	1
DCB Decachlorobiphenyl	87		30 - 136	05/06/19 15:29	05/23/19 15:14	1

Lab Sample ID: LCS 280-457201/3-A

Matrix: Water

Analysis Batch: 459265

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 457201

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	2.00	1.88		ug/L		94	46 - 129
PCB-1260	2.00	2.00		ug/L		100	45 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	85		25 - 120
DCB Decachlorobiphenyl	90		30 - 136

Lab Sample ID: 280-123221-4 MS

Matrix: Water

Analysis Batch: 459265

Client Sample ID: DET-003-190401-GWMS

Prep Type: Total/NA

Prep Batch: 457201

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	0.43	U M	2.19	2.31		ug/L		105	46 - 129
PCB-1260	0.43	U	2.19	2.37		ug/L		108	45 - 134

Surrogate	MS %Recovery	MS Qualifier	Limits
Tetrachloro-m-xylene	92		25 - 120
DCB Decachlorobiphenyl	87		30 - 136

QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: 280-123221-4 MSD

Matrix: Water

Analysis Batch: 459265

Client Sample ID: DET-003-190401-GWMSD

Prep Type: Total/NA

Prep Batch: 457201

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	0.43	U M	2.12	2.01		ug/L		95	46 - 129	14	30
PCB-1260	0.43	U	2.12	2.01		ug/L		95	45 - 134	16	30
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
Tetrachloro-m-xylene	84		25 - 120								
DCB Decachlorobiphenyl	79		30 - 136								

Method: 8330B - Nitroaromatics and Nitramines (HPLC)

Lab Sample ID: MB 280-456980/1-A

Matrix: Water

Analysis Batch: 457634

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 456980

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.40	U M	1.0	0.40	0.20	ug/L		05/10/19 03:52	1
1,3-Dinitrobenzene	0.20	U	0.40	0.20	0.089	ug/L		05/10/19 03:52	1
2,4,6-Trinitrotoluene	0.40	U	0.40	0.40	0.16	ug/L		05/10/19 03:52	1
2,4-Dinitrotoluene	0.20	U	0.40	0.20	0.084	ug/L		05/10/19 03:52	1
2,6-Dinitrotoluene	0.20	U	0.20	0.20	0.065	ug/L		05/10/19 03:52	1
2-Amino-4,6-dinitrotoluene	0.12	U	0.20	0.12	0.051	ug/L		05/10/19 03:52	1
2-Nitrotoluene	0.20	U	0.40	0.20	0.086	ug/L		05/10/19 03:52	1
3-Nitrotoluene	0.40	U	0.40	0.40	0.20	ug/L		05/10/19 03:52	1
4-Amino-2,6-dinitrotoluene	0.12	U	0.20	0.12	0.058	ug/L		05/10/19 03:52	1
4-Nitrotoluene	0.40	U	1.0	0.40	0.20	ug/L		05/10/19 03:52	1
HMX	0.20	U	0.40	0.20	0.088	ug/L		05/10/19 03:52	1
Nitrobenzene	0.20	U	0.40	0.20	0.091	ug/L		05/10/19 03:52	1
Nitroglycerin	2.0	U	3.0	2.0	0.92	ug/L		05/10/19 03:52	1
PETN	4.0	U	4.0	4.0	1.9	ug/L		05/10/19 03:52	1
RDX	0.40	U	0.40	0.40	0.16	ug/L		05/10/19 03:52	1
Tetryl	0.20	U	0.24	0.20	0.079	ug/L		05/10/19 03:52	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	89		83 - 119				05/04/19 15:00	05/10/19 03:52	1

Lab Sample ID: LCS 280-456980/2-A

Matrix: Water

Analysis Batch: 457634

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 456980

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trinitrobenzene	2.00	2.16		ug/L		108	73 - 125
1,3-Dinitrobenzene	2.00	1.90		ug/L		95	78 - 120
2,4,6-Trinitrotoluene	2.00	1.72		ug/L		86	71 - 123
2,4-Dinitrotoluene	2.00	1.86		ug/L		93	78 - 120
2,6-Dinitrotoluene	2.00	1.87		ug/L		93	77 - 127
2-Amino-4,6-dinitrotoluene	2.00	1.76		ug/L		88	79 - 120
2-Nitrotoluene	2.00	1.37	Q	ug/L		68	70 - 127
3-Nitrotoluene	2.00	1.51		ug/L		75	73 - 125
4-Amino-2,6-dinitrotoluene	2.00	1.68		ug/L		84	76 - 125

Eurofins TestAmerica, Denver

QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8330B - Nitroaromatics and Nitramines (HPLC) (Continued)

Lab Sample ID: LCS 280-456980/2-A

Matrix: Water

Analysis Batch: 457634

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 456980

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Nitrotoluene	2.00	1.57		ug/L		78	71 - 127
HMX	2.00	2.07		ug/L		104	65 - 135
Nitrobenzene	2.00	1.64		ug/L		82	65 - 134
Nitroglycerin	20.0	19.2		ug/L		96	74 - 127
PETN	20.0	18.4		ug/L		92	73 - 127
RDX	2.00	1.97		ug/L		98	68 - 130
Tetryl	2.00	1.80		ug/L		90	64 - 128

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dinitrobenzene	91		83 - 119

Lab Sample ID: 280-123221-2 MS

Matrix: Water

Analysis Batch: 457634

Client Sample ID: NTAmw-119-190401-GWMS

Prep Type: Total/NA

Prep Batch: 456980

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trinitrobenzene	0.43	U	2.18	2.16		ug/L		99	73 - 125
1,3-Dinitrobenzene	0.22	U	2.18	1.96		ug/L		90	78 - 120
2,4,6-Trinitrotoluene	0.43	U	2.18	1.78		ug/L		82	71 - 123
2,4-Dinitrotoluene	0.22	U	2.18	1.86		ug/L		85	78 - 120
2,6-Dinitrotoluene	0.22	U	2.18	1.82		ug/L		84	77 - 127
2-Amino-4,6-dinitrotoluene	0.13	U	2.18	1.80		ug/L		83	79 - 120
2-Nitrotoluene	0.22	U J1 Q	2.18	1.19	J1	ug/L		55	70 - 127
3-Nitrotoluene	0.43	U J1	2.18	1.30	J1	ug/L		60	73 - 125
4-Amino-2,6-dinitrotoluene	0.13	U	2.18	1.67		ug/L		77	76 - 125
4-Nitrotoluene	0.43	U J1	2.18	1.41	J1	ug/L		65	71 - 127
HMX	0.22	U	2.18	1.95	M	ug/L		90	65 - 135
Nitrobenzene	0.22	U	2.18	1.48		ug/L		68	65 - 134
Nitroglycerin	2.2	U	21.8	20.2		ug/L		93	74 - 127
PETN	4.3	U	21.8	18.9		ug/L		87	73 - 127
RDX	0.43	U	2.18	1.99		ug/L		92	68 - 130
Tetryl	0.22	U	2.18	1.93		ug/L		89	64 - 128

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dinitrobenzene	90		83 - 119

Lab Sample ID: 280-123221-2 MSD

Matrix: Water

Analysis Batch: 457634

Client Sample ID: NTAmw-119-190401-GWMSD

Prep Type: Total/NA

Prep Batch: 456980

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3,5-Trinitrobenzene	0.43	U	2.18	2.17		ug/L		100	73 - 125	0	20
1,3-Dinitrobenzene	0.22	U	2.18	2.06		ug/L		95	78 - 120	5	20
2,4,6-Trinitrotoluene	0.43	U	2.18	1.86		ug/L		85	71 - 123	4	20
2,4-Dinitrotoluene	0.22	U	2.18	1.95		ug/L		90	78 - 120	5	20
2,6-Dinitrotoluene	0.22	U	2.18	1.96		ug/L		90	77 - 127	8	20
2-Amino-4,6-dinitrotoluene	0.13	U	2.18	1.87		ug/L		86	79 - 120	4	20
2-Nitrotoluene	0.22	U J1 Q	2.18	1.36	J1	ug/L		62	70 - 127	13	20

Eurofins TestAmerica, Denver

QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8330B - Nitroaromatics and Nitramines (HPLC) (Continued)

Lab Sample ID: 280-123221-2 MSD

Matrix: Water

Analysis Batch: 457634

Client Sample ID: NTAmw-119-190401-GWMSD

Prep Type: Total/NA

Prep Batch: 456980

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
3-Nitrotoluene	0.43	U J1	2.18	1.50	J1	ug/L		69	73 - 125	14	20
4-Amino-2,6-dinitrotoluene	0.13	U	2.18	1.75		ug/L		80	76 - 125	4	20
4-Nitrotoluene	0.43	U J1	2.18	1.61		ug/L		74	71 - 127	13	20
HMX	0.22	U	2.18	2.02	M	ug/L		93	65 - 135	4	20
Nitrobenzene	0.22	U	2.18	1.66	M	ug/L		76	65 - 134	12	20
Nitroglycerin	2.2	U	21.8	21.0		ug/L		96	74 - 127	4	20
PETN	4.3	U	21.8	20.1		ug/L		92	73 - 127	6	20
RDX	0.43	U	2.18	2.17		ug/L		100	68 - 130	9	20
Tetryl	0.22	U	2.18	1.85		ug/L		85	64 - 128	4	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dinitrobenzene	86		83 - 119

Lab Sample ID: 280-123221-4 MS

Matrix: Water

Analysis Batch: 457634

Client Sample ID: DET-003-190401-GWMS

Prep Type: Total/NA

Prep Batch: 456980

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3,5-Trinitrobenzene	0.45	U	2.04	2.06		ug/L		101	73 - 125		
1,3-Dinitrobenzene	0.22	U	2.04	1.91		ug/L		94	78 - 120		
2,4,6-Trinitrotoluene	0.45	U	2.04	1.70		ug/L		83	71 - 123		
2,4-Dinitrotoluene	0.22	U	2.04	1.83		ug/L		90	78 - 120		
2,6-Dinitrotoluene	0.22	U	2.04	1.79		ug/L		88	77 - 127		
2-Amino-4,6-dinitrotoluene	0.13	U	2.04	1.78		ug/L		87	79 - 120		
2-Nitrotoluene	0.22	U Q J1	2.04	1.37	J1	ug/L		67	70 - 127		
3-Nitrotoluene	0.45	U J1	2.04	1.45	J1	ug/L		71	73 - 125		
4-Amino-2,6-dinitrotoluene	0.13	U	2.04	1.68		ug/L		82	76 - 125		
4-Nitrotoluene	0.45	U	2.04	1.52		ug/L		74	71 - 127		
HMX	0.22	U	2.04	1.89	M	ug/L		93	65 - 135		
Nitrobenzene	0.22	U	2.04	1.65		ug/L		81	65 - 134		
Nitroglycerin	2.2	U	20.4	19.0		ug/L		93	74 - 127		
PETN	4.5	U	20.4	17.7		ug/L		87	73 - 127		
RDX	0.45	U	2.04	2.02		ug/L		99	68 - 130		
Tetryl	0.22	U	2.04	1.69		ug/L		83	64 - 128		

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dinitrobenzene	88		83 - 119

Lab Sample ID: 280-123221-4 MSD

Matrix: Water

Analysis Batch: 457634

Client Sample ID: DET-003-190401-GWMSD

Prep Type: Total/NA

Prep Batch: 456980

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3,5-Trinitrobenzene	0.45	U	2.18	2.14		ug/L		98	73 - 125	4	20
1,3-Dinitrobenzene	0.22	U	2.18	1.98		ug/L		91	78 - 120	3	20
2,4,6-Trinitrotoluene	0.45	U	2.18	1.78		ug/L		82	71 - 123	5	20
2,4-Dinitrotoluene	0.22	U	2.18	1.88		ug/L		86	78 - 120	3	20
2,6-Dinitrotoluene	0.22	U	2.18	1.90		ug/L		87	77 - 127	6	20

Eurofins TestAmerica, Denver

QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8330B - Nitroaromatics and Nitramines (HPLC) (Continued)

Lab Sample ID: 280-123221-4 MSD

Matrix: Water

Analysis Batch: 457634

Client Sample ID: DET-003-190401-GWMSD

Prep Type: Total/NA

Prep Batch: 456980

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Amino-4,6-dinitrotoluene	0.13	U	2.18	1.82		ug/L		84	79 - 120	2	20
2-Nitrotoluene	0.22	U Q J1	2.18	1.51	J1	ug/L		69	70 - 127	9	20
3-Nitrotoluene	0.45	U J1	2.18	1.56	J1	ug/L		72	73 - 125	7	20
4-Amino-2,6-dinitrotoluene	0.13	U	2.18	1.72		ug/L		79	76 - 125	3	20
4-Nitrotoluene	0.45	U	2.18	1.64		ug/L		75	71 - 127	8	20
HMX	0.22	U	2.18	2.00	M	ug/L		92	65 - 135	5	20
Nitrobenzene	0.22	U	2.18	1.76		ug/L		81	65 - 134	6	20
Nitroglycerin	2.2	U	21.8	20.1		ug/L		92	74 - 127	6	20
PETN	4.5	U	21.8	19.0		ug/L		87	73 - 127	7	20
RDX	0.45	U	2.18	2.09		ug/L		96	68 - 130	3	20
Tetryl	0.22	U	2.18	1.83		ug/L		84	64 - 128	8	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dinitrobenzene	85		83 - 119

Lab Sample ID: MB 280-457741/1-A

Matrix: Water

Analysis Batch: 458152

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 457741

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.40	U	1.0	0.40	0.20	ug/L		05/15/19 11:12	1
1,3-Dinitrobenzene	0.20	U	0.40	0.20	0.089	ug/L		05/15/19 11:12	1
2,4,6-Trinitrotoluene	0.40	U	0.40	0.40	0.16	ug/L		05/15/19 11:12	1
2,4-Dinitrotoluene	0.20	U	0.40	0.20	0.084	ug/L		05/15/19 11:12	1
2,6-Dinitrotoluene	0.20	U	0.20	0.20	0.065	ug/L		05/15/19 11:12	1
2-Amino-4,6-dinitrotoluene	0.12	U	0.20	0.12	0.051	ug/L		05/15/19 11:12	1
2-Nitrotoluene	0.20	U	0.40	0.20	0.086	ug/L		05/15/19 11:12	1
3-Nitrotoluene	0.40	U	0.40	0.40	0.20	ug/L		05/15/19 11:12	1
4-Amino-2,6-dinitrotoluene	0.12	U	0.20	0.12	0.058	ug/L		05/15/19 11:12	1
4-Nitrotoluene	0.40	U	1.0	0.40	0.20	ug/L		05/15/19 11:12	1
HMX	0.20	U	0.40	0.20	0.088	ug/L		05/15/19 11:12	1
Nitrobenzene	0.20	U	0.40	0.20	0.091	ug/L		05/15/19 11:12	1
Nitroglycerin	2.0	U	3.0	2.0	0.92	ug/L		05/15/19 11:12	1
PETN	4.0	U	4.0	4.0	1.9	ug/L		05/15/19 11:12	1
RDX	0.40	U	0.40	0.40	0.16	ug/L		05/15/19 11:12	1
Tetryl	0.20	U	0.24	0.20	0.079	ug/L		05/15/19 11:12	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	99		83 - 119	05/10/19 16:21	05/15/19 11:12	1

Lab Sample ID: LCS 280-457741/2-A

Matrix: Water

Analysis Batch: 458152

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 457741

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trinitrobenzene	2.00	2.10		ug/L		105	73 - 125
1,3-Dinitrobenzene	2.00	2.04		ug/L		102	78 - 120
2,4,6-Trinitrotoluene	2.00	1.85		ug/L		92	71 - 123

Eurofins TestAmerica, Denver

QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8330B - Nitroaromatics and Nitramines (HPLC) (Continued)

Lab Sample ID: LCS 280-457741/2-A

Matrix: Water

Analysis Batch: 458152

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 457741

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-Dinitrotoluene	2.00	1.97		ug/L		98	78 - 120
2,6-Dinitrotoluene	2.00	1.95		ug/L		97	77 - 127
2-Amino-4,6-dinitrotoluene	2.00	1.87		ug/L		93	79 - 120
2-Nitrotoluene	2.00	1.72		ug/L		86	70 - 127
3-Nitrotoluene	2.00	1.74		ug/L		87	73 - 125
4-Amino-2,6-dinitrotoluene	2.00	1.74		ug/L		87	76 - 125
4-Nitrotoluene	2.00	1.75		ug/L		87	71 - 127
HMX	2.00	1.91	M	ug/L		96	65 - 135
Nitrobenzene	2.00	1.89		ug/L		95	65 - 134
Nitroglycerin	20.0	20.2		ug/L		101	74 - 127
PETN	20.0	19.6		ug/L		98	73 - 127
RDX	2.00	2.03		ug/L		101	68 - 130
Tetryl	2.00	1.99		ug/L		99	64 - 128

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dinitrobenzene	96		83 - 119

Lab Sample ID: MB 280-457818/1-A

Matrix: Water

Analysis Batch: 458457

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 457818

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	40	U	100	40	20	ug/L		05/16/19 15:48	1
1,3-Dinitrobenzene	20	U	40	20	8.9	ug/L		05/16/19 15:48	1
2,4,6-Trinitrotoluene	40	U	40	40	16	ug/L		05/16/19 15:48	1
2,4-Dinitrotoluene	20	U	40	20	8.4	ug/L		05/16/19 15:48	1
2,6-Dinitrotoluene	20	U	20	20	6.5	ug/L		05/16/19 15:48	1
2-Amino-4,6-dinitrotoluene	12	U	20	12	5.1	ug/L		05/16/19 15:48	1
2-Nitrotoluene	20	U	40	20	8.6	ug/L		05/16/19 15:48	1
3-Nitrotoluene	40	U M	40	40	20	ug/L		05/16/19 15:48	1
4-Amino-2,6-dinitrotoluene	12	U	20	12	5.8	ug/L		05/16/19 15:48	1
4-Nitrotoluene	40	U	100	40	20	ug/L		05/16/19 15:48	1
HMX	20	U	40	20	8.8	ug/L		05/16/19 15:48	1
Nitrobenzene	20	U	40	20	9.1	ug/L		05/16/19 15:48	1
Nitroglycerin	200	U	300	200	92	ug/L		05/16/19 15:48	1
PETN	400	U	400	400	190	ug/L		05/16/19 15:48	1
RDX	40	U	40	40	16	ug/L		05/16/19 15:48	1
Tetryl	20	U	24	20	7.9	ug/L		05/16/19 15:48	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	95		83 - 119	05/11/19 15:37	05/16/19 15:48	1

Lab Sample ID: LCS 280-457818/2-A

Matrix: Water

Analysis Batch: 458457

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 457818

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trinitrobenzene	200	202		ug/L		101	73 - 125

Eurofins TestAmerica, Denver

QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8330B - Nitroaromatics and Nitramines (HPLC) (Continued)

Lab Sample ID: LCS 280-457818/2-A

Matrix: Water

Analysis Batch: 458457

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 457818

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dinitrobenzene	200	192		ug/L		96	78 - 120
2,4,6-Trinitrotoluene	200	179		ug/L		89	71 - 123
2,4-Dinitrotoluene	200	187		ug/L		94	78 - 120
2,6-Dinitrotoluene	200	183		ug/L		91	77 - 127
2-Amino-4,6-dinitrotoluene	200	175		ug/L		87	79 - 120
2-Nitrotoluene	200	159		ug/L		79	70 - 127
3-Nitrotoluene	200	162		ug/L		81	73 - 125
4-Amino-2,6-dinitrotoluene	200	162		ug/L		81	76 - 125
4-Nitrotoluene	200	160		ug/L		80	71 - 127
HMX	200	181	M	ug/L		90	65 - 135
Nitrobenzene	200	176		ug/L		88	65 - 134
Nitroglycerin	2000	1960		ug/L		98	74 - 127
PETN	2000	1960		ug/L		98	73 - 127
RDX	200	197		ug/L		99	68 - 130
Tetryl	200	199		ug/L		100	64 - 128

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dinitrobenzene	94		83 - 119

Lab Sample ID: LCSD 280-457818/3-A

Matrix: Water

Analysis Batch: 458457

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 457818

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3,5-Trinitrobenzene	200	205		ug/L		102	73 - 125	2	20
1,3-Dinitrobenzene	200	194		ug/L		97	78 - 120	1	20
2,4,6-Trinitrotoluene	200	181		ug/L		90	71 - 123	1	20
2,4-Dinitrotoluene	200	188		ug/L		94	78 - 120	0	20
2,6-Dinitrotoluene	200	184		ug/L		92	77 - 127	1	20
2-Amino-4,6-dinitrotoluene	200	179		ug/L		90	79 - 120	3	20
2-Nitrotoluene	200	158		ug/L		79	70 - 127	0	20
3-Nitrotoluene	200	163		ug/L		81	73 - 125	0	20
4-Amino-2,6-dinitrotoluene	200	165		ug/L		83	76 - 125	2	20
4-Nitrotoluene	200	164		ug/L		82	71 - 127	2	20
HMX	200	186	M	ug/L		93	65 - 135	3	20
Nitrobenzene	200	176		ug/L		88	65 - 134	0	20
Nitroglycerin	2000	1970		ug/L		99	74 - 127	1	20
PETN	2000	1970		ug/L		99	73 - 127	0	20
RDX	200	197		ug/L		99	68 - 130	0	20
Tetryl	200	201		ug/L		100	64 - 128	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dinitrobenzene	94		83 - 119

QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8330B - Nitroaromatics and Nitramines (HPLC) - RE

Lab Sample ID: 280-123221-2 MS

Matrix: Water

Analysis Batch: 458152

Client Sample ID: NTAmw-119-190401-GWMS

Prep Type: Total/NA

Prep Batch: 457741

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
1,3,5-Trinitrobenzene - RE	0.43	U H	2.16	2.18	H	ug/L		101	73 - 125
1,3-Dinitrobenzene - RE	0.22	U H	2.16	2.09	H	ug/L		97	78 - 120
2,4,6-Trinitrotoluene - RE	0.43	U H	2.16	1.95	H	ug/L		90	71 - 123
2,4-Dinitrotoluene - RE	0.22	U H	2.16	1.97	H	ug/L		91	78 - 120
2,6-Dinitrotoluene - RE	0.22	U H	2.16	1.93	H	ug/L		89	77 - 127
2-Amino-4,6-dinitrotoluene - RE	0.13	U H	2.16	1.87	H	ug/L		87	79 - 120
2-Nitrotoluene - RE	0.22	U H	2.16	1.63	H	ug/L		75	70 - 127
3-Nitrotoluene - RE	0.43	U H	2.16	1.63	H	ug/L		75	73 - 125
4-Amino-2,6-dinitrotoluene - RE	0.13	U H	2.16	1.69	H	ug/L		79	76 - 125
4-Nitrotoluene - RE	0.43	U H	2.16	1.63	H	ug/L		75	71 - 127
HMX - RE	0.22	U H	2.16	2.00	H M	ug/L		93	65 - 135
Nitrobenzene - RE	0.22	U H	2.16	1.84	H M	ug/L		85	65 - 134
Nitroglycerin - RE	2.2	U H	21.6	22.0	H	ug/L		102	74 - 127
PETN - RE	4.3	U H	21.6	21.2	H	ug/L		98	73 - 127
RDX - RE	0.43	U H	2.16	2.19	H	ug/L		102	68 - 130
Tetryl - RE	0.22	U H	2.16	2.14	H	ug/L		99	64 - 128

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dinitrobenzene - RE	94		83 - 119

Lab Sample ID: 280-123221-2 MSD

Matrix: Water

Analysis Batch: 458152

Client Sample ID: NTAmw-119-190401-GWMSD

Prep Type: Total/NA

Prep Batch: 457741

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,3,5-Trinitrobenzene - RE	0.43	U H	2.15	2.18	H	ug/L		101	73 - 125	0	20
1,3-Dinitrobenzene - RE	0.22	U H	2.15	2.12	H	ug/L		99	78 - 120	1	20
2,4,6-Trinitrotoluene - RE	0.43	U H	2.15	1.93	H	ug/L		90	71 - 123	1	20
2,4-Dinitrotoluene - RE	0.22	U H	2.15	2.01	H	ug/L		94	78 - 120	2	20
2,6-Dinitrotoluene - RE	0.22	U H	2.15	1.99	H	ug/L		93	77 - 127	3	20
2-Amino-4,6-dinitrotoluene - RE	0.13	U H	2.15	1.89	H	ug/L		88	79 - 120	1	20
2-Nitrotoluene - RE	0.22	U H	2.15	1.75	H	ug/L		82	70 - 127	7	20
3-Nitrotoluene - RE	0.43	U H	2.15	1.71	H	ug/L		80	73 - 125	5	20
4-Amino-2,6-dinitrotoluene - RE	0.13	U H	2.15	1.80	H	ug/L		84	76 - 125	6	20
4-Nitrotoluene - RE	0.43	U H	2.15	1.78	H	ug/L		83	71 - 127	9	20
HMX - RE	0.22	U H	2.15	2.03	H M	ug/L		94	65 - 135	1	20
Nitrobenzene - RE	0.22	U H	2.15	1.94	H M	ug/L		90	65 - 134	5	20
Nitroglycerin - RE	2.2	U H	21.5	21.5	H	ug/L		100	74 - 127	2	20
PETN - RE	4.3	U H	21.5	21.2	H	ug/L		99	73 - 127	0	20
RDX - RE	0.43	U H	2.15	2.20	H	ug/L		102	68 - 130	0	20
Tetryl - RE	0.22	U H	2.15	2.17	H M	ug/L		101	64 - 128	1	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dinitrobenzene - RE	93		83 - 119

QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 8330B - Nitroaromatics and Nitramines (HPLC) - RE (Continued)

Lab Sample ID: 280-123221-4 MS

Matrix: Water

Analysis Batch: 458152

Client Sample ID: DET-003-190401-GWMS

Prep Type: Total/NA

Prep Batch: 457741

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trinitrobenzene - RE	0.44	U H	2.11	2.21	H	ug/L		105	73 - 125
1,3-Dinitrobenzene - RE	0.22	U H	2.11	2.17	H	ug/L		103	78 - 120
2,4,6-Trinitrotoluene - RE	0.44	U H	2.11	1.96	H	ug/L		93	71 - 123
2,4-Dinitrotoluene - RE	0.22	U H	2.11	2.05	H	ug/L		97	78 - 120
2,6-Dinitrotoluene - RE	0.22	U H	2.11	2.03	H	ug/L		96	77 - 127
2-Amino-4,6-dinitrotoluene - RE	0.13	U H	2.11	1.95	H	ug/L		92	79 - 120
2-Nitrotoluene - RE	0.22	U H	2.11	1.78	H	ug/L		84	70 - 127
3-Nitrotoluene - RE	0.44	U H	2.11	1.85	H	ug/L		88	73 - 125
4-Amino-2,6-dinitrotoluene - RE	0.13	U H	2.11	1.80	H	ug/L		85	76 - 125
4-Nitrotoluene - RE	0.44	U H	2.11	1.84	H	ug/L		87	71 - 127
HMX - RE	0.22	U H	2.11	2.07	H M	ug/L		98	65 - 135
Nitrobenzene - RE	0.22	U H	2.11	1.96	H	ug/L		93	65 - 134
Nitroglycerin - RE	2.2	U H	21.1	21.9	H	ug/L		103	74 - 127
PETN - RE	4.4	U H	21.1	21.2	H	ug/L		100	73 - 127
RDX - RE	0.44	U H	2.11	2.27	H	ug/L		108	68 - 130
Tetryl - RE	0.22	U H	2.11	2.23	H	ug/L		105	64 - 128

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dinitrobenzene - RE	97		83 - 119

Lab Sample ID: 280-123221-4 MSD

Matrix: Water

Analysis Batch: 458152

Client Sample ID: DET-003-190401-GWMSD

Prep Type: Total/NA

Prep Batch: 457741

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3,5-Trinitrobenzene - RE	0.44	U H	2.24	2.29	H	ug/L		102	73 - 125	3	20
1,3-Dinitrobenzene - RE	0.22	U H	2.24	2.19	H	ug/L		97	78 - 120	1	20
2,4,6-Trinitrotoluene - RE	0.44	U H	2.24	1.99	H	ug/L		89	71 - 123	2	20
2,4-Dinitrotoluene - RE	0.22	U H	2.24	2.07	H	ug/L		92	78 - 120	1	20
2,6-Dinitrotoluene - RE	0.22	U H	2.24	1.97	H	ug/L		88	77 - 127	3	20
2-Amino-4,6-dinitrotoluene - RE	0.13	U H	2.24	2.01	H	ug/L		89	79 - 120	3	20
2-Nitrotoluene - RE	0.22	U H	2.24	1.72	H	ug/L		77	70 - 127	3	20
3-Nitrotoluene - RE	0.44	U H	2.24	1.70	H	ug/L		76	73 - 125	9	20
4-Amino-2,6-dinitrotoluene - RE	0.13	U H	2.24	1.86	H	ug/L		83	76 - 125	3	20
4-Nitrotoluene - RE	0.44	U H	2.24	1.72	H	ug/L		77	71 - 127	7	20
HMX - RE	0.22	U H	2.24	2.13	H M	ug/L		95	65 - 135	3	20
Nitrobenzene - RE	0.22	U H	2.24	1.92	H	ug/L		86	65 - 134	2	20
Nitroglycerin - RE	2.2	U H	22.4	22.1	H	ug/L		98	74 - 127	1	20
PETN - RE	4.4	U H	22.4	21.7	H	ug/L		97	73 - 127	2	20
RDX - RE	0.44	U H	2.24	2.36	H	ug/L		105	68 - 130	4	20
Tetryl - RE	0.22	U H	2.24	2.20	H	ug/L		98	64 - 128	1	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dinitrobenzene - RE	93		83 - 119

QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-457070/1-A
Matrix: Water
Analysis Batch: 458049

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 457070

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Calcium	160	U	1000	160	78	ug/L		05/13/19 12:31	1
Magnesium	60	U	500	60	26	ug/L		05/13/19 12:31	1
Potassium	940	U	3000	940	240	ug/L		05/13/19 12:31	1

Lab Sample ID: MB 280-457070/1-A
Matrix: Water
Analysis Batch: 458211

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 457070

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Aluminum	70	U	300	70	18	ug/L		05/14/19 11:36	1
Iron	85	U	100	85	22	ug/L		05/14/19 11:36	1
Sodium	160	U Q	5000	160	54	ug/L		05/14/19 11:36	1

Lab Sample ID: LCS 280-457070/2-A
Matrix: Water
Analysis Batch: 458049

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 457070
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Calcium	50000	50600		ug/L		101	87 - 113
Magnesium	50000	49900		ug/L		100	85 - 113
Potassium	50000	52100		ug/L		104	86 - 114

Lab Sample ID: LCS 280-457070/2-A
Matrix: Water
Analysis Batch: 458211

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 457070
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Aluminum	10000	9780		ug/L		98	86 - 115
Iron	10000	9500		ug/L		95	87 - 115
Sodium	50000	48700	Q	ug/L		97	87 - 115

Lab Sample ID: LCSD 280-457070/3-A
Matrix: Water
Analysis Batch: 458049

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 457070
%Rec.

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Calcium	50000	51400		ug/L		103	87 - 113	2	20
Magnesium	50000	50500		ug/L		101	85 - 113	1	20
Potassium	50000	52800		ug/L		106	86 - 114	1	20

Lab Sample ID: LCSD 280-457070/3-A
Matrix: Water
Analysis Batch: 458211

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 457070
%Rec.

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Aluminum	10000	9980		ug/L		100	86 - 115	2	20
Iron	10000	9850		ug/L		98	87 - 115	4	20
Sodium	50000	49800	Q	ug/L		100	87 - 115	2	20

QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 280-457081/1-A
Matrix: Water
Analysis Batch: 458135

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 457081

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Antimony	1.0	U	6.0	1.0	0.40	ug/L		05/14/19 08:32	1
Arsenic	1.0	U	5.0	1.0	0.33	ug/L		05/14/19 08:32	1
Barium	0.95	U	3.0	0.95	0.29	ug/L		05/14/19 08:32	1
Beryllium	0.30	U	1.0	0.30	0.080	ug/L		05/14/19 08:32	1
Cadmium	1.0	U	1.0	1.0	0.27	ug/L		05/14/19 08:32	1
Chromium	1.8	U	10	1.8	0.50	ug/L		05/14/19 08:32	1
Cobalt	0.20	U Q	1.0	0.20	0.054	ug/L		05/14/19 08:32	1
Copper	1.8	U	2.0	1.8	0.56	ug/L		05/14/19 08:32	1
Manganese	0.95	U	3.5	0.95	0.31	ug/L		05/14/19 08:32	1
Nickel	1.0	U	3.0	1.0	0.30	ug/L		05/14/19 08:32	1
Selenium	1.0	U	5.0	1.0	0.37	ug/L		05/14/19 08:32	1
Silver	0.10	U	5.0	0.10	0.033	ug/L		05/14/19 08:32	1
Thallium	0.20	U	1.0	0.20	0.089	ug/L		05/14/19 08:32	1
Vanadium	3.0	U	6.0	3.0	1.2	ug/L		05/14/19 08:32	1
Zinc	8.0	U	20	8.0	2.0	ug/L		05/14/19 08:32	1

Lab Sample ID: MB 280-457081/1-A
Matrix: Water
Analysis Batch: 458262

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 457081

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Lead	0.70	U	3.0	0.70	0.18	ug/L		05/14/19 15:52	1

Lab Sample ID: LCS 280-457081/2-A
Matrix: Water
Analysis Batch: 458135

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 457081

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	40.0	38.2		ug/L		96	85 - 117
Arsenic	40.0	35.7		ug/L		89	84 - 116
Barium	40.0	39.5		ug/L		99	86 - 114
Beryllium	40.0	38.8		ug/L		97	83 - 121
Cadmium	40.0	38.6		ug/L		97	87 - 115
Chromium	40.0	39.1		ug/L		98	85 - 116
Cobalt	40.0	38.7	Q	ug/L		97	86 - 115
Copper	40.0	37.6		ug/L		94	85 - 118
Manganese	40.0	39.1		ug/L		98	87 - 115
Nickel	40.0	39.0		ug/L		98	85 - 117
Selenium	40.0	36.4		ug/L		91	80 - 120
Silver	40.0	39.0		ug/L		97	85 - 116
Thallium	40.0	39.5		ug/L		99	82 - 116
Vanadium	40.0	35.8		ug/L		90	86 - 115
Zinc	40.0	36.7		ug/L		92	83 - 119

QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 280-457081/2-A
Matrix: Water
Analysis Batch: 458262

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 457081
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Lead	40.0	39.0		ug/L		97	88 - 115

Lab Sample ID: LCSD 280-457081/3-A
Matrix: Water
Analysis Batch: 458135

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 457081
%Rec. RPD

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	40.0	37.7		ug/L		94	85 - 117	1	20
Arsenic	40.0	35.9		ug/L		90	84 - 116	1	20
Barium	40.0	37.7		ug/L		94	86 - 114	5	20
Beryllium	40.0	37.6		ug/L		94	83 - 121	3	20
Cadmium	40.0	37.9		ug/L		95	87 - 115	2	20
Chromium	40.0	38.4		ug/L		96	85 - 116	2	20
Cobalt	40.0	38.9	Q	ug/L		97	86 - 115	0	20
Copper	40.0	38.8		ug/L		97	85 - 118	3	20
Manganese	40.0	39.2		ug/L		98	87 - 115	0	20
Nickel	40.0	39.5		ug/L		99	85 - 117	1	20
Selenium	40.0	35.1		ug/L		88	80 - 120	4	20
Silver	40.0	38.0		ug/L		95	85 - 116	3	20
Thallium	40.0	37.7		ug/L		94	82 - 116	5	20
Vanadium	40.0	36.0		ug/L		90	86 - 115	0	20
Zinc	40.0	37.3		ug/L		93	83 - 119	2	20

Lab Sample ID: LCSD 280-457081/3-A
Matrix: Water
Analysis Batch: 458262

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 457081
%Rec. RPD

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Lead	40.0	38.8		ug/L		97	88 - 115	0	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-457916/1-A
Matrix: Water
Analysis Batch: 458130

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 457916

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.080	0.027	ug/L		05/13/19 21:01	1

Lab Sample ID: LCS 280-457916/2-A
Matrix: Water
Analysis Batch: 458130

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 457916
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	5.00	4.40		ug/L		88	82 - 119

QC Sample Results

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCSD 280-457916/3-A
Matrix: Water
Analysis Batch: 458130

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 457916

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	5.00	4.80		ug/L		96	82 - 119	9	20

Method: 9012B - Cyanide, Total and/or Amenable

Lab Sample ID: MB 280-457850/4-A
Matrix: Water
Analysis Batch: 458020

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 457850

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.010	0.0050	mg/L		05/13/19 13:45	1

Lab Sample ID: HLCS 280-457850/1-A
Matrix: Water
Analysis Batch: 458020

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 457850

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.350	0.368		mg/L		105	90 - 110

Lab Sample ID: LCS 280-457850/3-A
Matrix: Water
Analysis Batch: 458020

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 457850

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.100	0.104		mg/L		104	83 - 116

Lab Sample ID: LLCS 280-457850/2-A
Matrix: Water
Analysis Batch: 458020

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 457850

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.100	0.106		mg/L		106	44 - 167

Lab Sample ID: 280-123221-4 MS
Matrix: Water
Analysis Batch: 458020

Client Sample ID: DET-003-190401-GWMS
Prep Type: Total/NA
Prep Batch: 457850

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.010	U	0.100	0.0990		mg/L		99	83 - 116

Lab Sample ID: 280-123221-4 MSD
Matrix: Water
Analysis Batch: 458020

Client Sample ID: DET-003-190401-GWMSD
Prep Type: Total/NA
Prep Batch: 457850

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	0.010	U	0.100	0.0970		mg/L		97	83 - 116	2	20

QC Association Summary

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

GC/MS VOA

Analysis Batch: 457521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-4	DET-003-190401-GW	Total/NA	Water	8260B	
280-123221-5	DET-003-190402-GW	Total/NA	Water	8260B	
280-123221-6	FWGTB-191001-TB	Total/NA	Water	8260B	
280-123221-7	DET-004-190401-GW	Total/NA	Water	8260B	
MB 280-457521/8	Method Blank	Total/NA	Water	8260B	
LCS 280-457521/33	Lab Control Sample	Total/NA	Water	8260B	
280-123221-4 MS	DET-003-190401-GWMS	Total/NA	Water	8260B	
280-123221-4 MSD	DET-003-190401-GWMSD	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 456902

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-4	DET-003-190401-GW	Total/NA	Water	3520C	
280-123221-7	DET-004-190401-GW	Total/NA	Water	3520C	
MB 280-456902/1-A	Method Blank	Total/NA	Water	3520C	
LCS 280-456902/2-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 280-456902/3-A	Lab Control Sample Dup	Total/NA	Water	3520C	

Prep Batch: 457182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-4	DET-003-190401-GW	Total/NA	Water	3510C	
280-123221-7	DET-004-190401-GW	Total/NA	Water	3510C	
MB 280-457182/1-A	Method Blank	Total/NA	Water	3510C	
LCS 280-457182/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 280-457182/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Prep Batch: 457236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-2	NTAmw-119-190401-GW	Total/NA	Water	3510C	
MB 280-457236/1-A	Method Blank	Total/NA	Water	3510C	
LCS 280-457236/2-A	Lab Control Sample	Total/NA	Water	3510C	

Prep Batch: 457323

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-1	NTAmw-120-190401-GW	Total/NA	Water	3520C	
MB 280-457323/1-A	Method Blank	Total/NA	Water	3520C	
LCS 280-457323/2-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 280-457323/3-A	Lab Control Sample Dup	Total/NA	Water	3520C	

Analysis Batch: 457763

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-457182/1-A	Method Blank	Total/NA	Water	8270D SIM	457182
LCS 280-457182/2-A	Lab Control Sample	Total/NA	Water	8270D SIM	457182
LCSD 280-457182/3-A	Lab Control Sample Dup	Total/NA	Water	8270D SIM	457182

Analysis Batch: 458021

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-2	NTAmw-119-190401-GW	Total/NA	Water	8270D SIM	457236
MB 280-457236/1-A	Method Blank	Total/NA	Water	8270D SIM	457236
LCS 280-457236/2-A	Lab Control Sample	Total/NA	Water	8270D SIM	457236

QC Association Summary

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

GC/MS Semi VOA

Analysis Batch: 458321

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-1	NTAmw-120-190401-GW	Total/NA	Water	8270D	457323
280-123221-4	DET-003-190401-GW	Total/NA	Water	8270D	456902
280-123221-7	DET-004-190401-GW	Total/NA	Water	8270D	456902
MB 280-456902/1-A	Method Blank	Total/NA	Water	8270D	456902
MB 280-457323/1-A	Method Blank	Total/NA	Water	8270D	457323
LCS 280-456902/2-A	Lab Control Sample	Total/NA	Water	8270D	456902
LCS 280-457323/2-A	Lab Control Sample	Total/NA	Water	8270D	457323
LCSD 280-456902/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	456902
LCSD 280-457323/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	457323

Analysis Batch: 458474

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-4	DET-003-190401-GW	Total/NA	Water	8270D SIM	457182
280-123221-7	DET-004-190401-GW	Total/NA	Water	8270D SIM	457182

GC Semi VOA

Prep Batch: 457201

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-4	DET-003-190401-GW	Total/NA	Water	3510C	
280-123221-5	DET-003-190402-GW	Total/NA	Water	3510C	
280-123221-7	DET-004-190401-GW	Total/NA	Water	3510C	
MB 280-457201/1-A	Method Blank	Total/NA	Water	3510C	
LCS 280-457201/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 280-457201/3-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 280-457201/4-A	Lab Control Sample	Total/NA	Water	3510C	
280-123221-4 MS	DET-003-190401-GWMS	Total/NA	Water	3510C	
280-123221-4 MS	DET-003-190401-GWMS	Total/NA	Water	3510C	
280-123221-4 MS	DET-003-190401-GWMS	Total/NA	Water	3510C	
280-123221-4 MSD	DET-003-190401-GWMSD	Total/NA	Water	3510C	
280-123221-4 MSD	DET-003-190401-GWMSD	Total/NA	Water	3510C	
280-123221-4 MSD	DET-003-190401-GWMSD	Total/NA	Water	3510C	

Analysis Batch: 458587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-4	DET-003-190401-GW	Total/NA	Water	8081B	457201
280-123221-5	DET-003-190402-GW	Total/NA	Water	8081B	457201
280-123221-7	DET-004-190401-GW	Total/NA	Water	8081B	457201
MB 280-457201/1-A	Method Blank	Total/NA	Water	8081B	457201
LCS 280-457201/2-A	Lab Control Sample	Total/NA	Water	8081B	457201
LCS 280-457201/4-A	Lab Control Sample	Total/NA	Water	8081B	457201
280-123221-4 MS	DET-003-190401-GWMS	Total/NA	Water	8081B	457201
280-123221-4 MS	DET-003-190401-GWMS	Total/NA	Water	8081B	457201
280-123221-4 MSD	DET-003-190401-GWMSD	Total/NA	Water	8081B	457201
280-123221-4 MSD	DET-003-190401-GWMSD	Total/NA	Water	8081B	457201

Analysis Batch: 459265

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-4	DET-003-190401-GW	Total/NA	Water	8082A	457201
280-123221-5	DET-003-190402-GW	Total/NA	Water	8082A	457201
280-123221-7	DET-004-190401-GW	Total/NA	Water	8082A	457201

Eurofins TestAmerica, Denver

QC Association Summary

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

GC Semi VOA (Continued)

Analysis Batch: 459265 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-457201/1-A	Method Blank	Total/NA	Water	8082A	457201
LCS 280-457201/3-A	Lab Control Sample	Total/NA	Water	8082A	457201
280-123221-4 MS	DET-003-190401-GWMS	Total/NA	Water	8082A	457201
280-123221-4 MSD	DET-003-190401-GWMSD	Total/NA	Water	8082A	457201

HPLC/IC

Prep Batch: 456980

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-2	NTAmw-119-190401-GW	Total/NA	Water	3535	
280-123221-3	NTAmw-119-190402-GW	Total/NA	Water	3535	
280-123221-4	DET-003-190401-GW	Total/NA	Water	3535	
280-123221-5	DET-003-190402-GW	Total/NA	Water	3535	
280-123221-7	DET-004-190401-GW	Total/NA	Water	3535	
280-123221-8	FWGmw-007-190401-GW	Total/NA	Water	3535	
280-123221-9	WBGmw-020-190401-GW	Total/NA	Water	3535	
280-123221-10	WBGmw-006-190401-GW	Total/NA	Water	3535	
280-123221-11	WBGmw-021-190401-GW	Total/NA	Water	3535	
280-123221-12	WBGmw-009-190401-GW	Total/NA	Water	3535	
280-123221-13	FWGmw-016-190401-GW	Total/NA	Water	3535	
MB 280-456980/1-A	Method Blank	Total/NA	Water	3535	
LCS 280-456980/2-A	Lab Control Sample	Total/NA	Water	3535	
280-123221-2 MS	NTAmw-119-190401-GWMS	Total/NA	Water	3535	
280-123221-2 MSD	NTAmw-119-190401-GWMSD	Total/NA	Water	3535	
280-123221-4 MS	DET-003-190401-GWMS	Total/NA	Water	3535	
280-123221-4 MSD	DET-003-190401-GWMSD	Total/NA	Water	3535	

Analysis Batch: 457634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-2	NTAmw-119-190401-GW	Total/NA	Water	8330B	456980
280-123221-3	NTAmw-119-190402-GW	Total/NA	Water	8330B	456980
280-123221-4	DET-003-190401-GW	Total/NA	Water	8330B	456980
280-123221-5	DET-003-190402-GW	Total/NA	Water	8330B	456980
280-123221-7	DET-004-190401-GW	Total/NA	Water	8330B	456980
280-123221-8	FWGmw-007-190401-GW	Total/NA	Water	8330B	456980
280-123221-9	WBGmw-020-190401-GW	Total/NA	Water	8330B	456980
280-123221-10	WBGmw-006-190401-GW	Total/NA	Water	8330B	456980
280-123221-11	WBGmw-021-190401-GW	Total/NA	Water	8330B	456980
280-123221-12	WBGmw-009-190401-GW	Total/NA	Water	8330B	456980
280-123221-13	FWGmw-016-190401-GW	Total/NA	Water	8330B	456980
MB 280-456980/1-A	Method Blank	Total/NA	Water	8330B	456980
LCS 280-456980/2-A	Lab Control Sample	Total/NA	Water	8330B	456980
280-123221-2 MS	NTAmw-119-190401-GWMS	Total/NA	Water	8330B	456980
280-123221-2 MSD	NTAmw-119-190401-GWMSD	Total/NA	Water	8330B	456980
280-123221-4 MS	DET-003-190401-GWMS	Total/NA	Water	8330B	456980
280-123221-4 MSD	DET-003-190401-GWMSD	Total/NA	Water	8330B	456980

Prep Batch: 457741

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-2 - RE	NTAmw-119-190401-GW	Total/NA	Water	3535	
280-123221-3 - RE	NTAmw-119-190402-GW	Total/NA	Water	3535	

QC Association Summary

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

HPLC/IC (Continued)

Prep Batch: 457741 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-4 - RE	DET-003-190401-GW	Total/NA	Water	3535	
280-123221-5 - RE	DET-003-190402-GW	Total/NA	Water	3535	
280-123221-7 - RE	DET-004-190401-GW	Total/NA	Water	3535	
280-123221-8 - RE	FWGmw-007-190401-GW	Total/NA	Water	3535	
280-123221-9 - RE	WBGmw-020-190401-GW	Total/NA	Water	3535	
280-123221-10 - RE	WBGmw-006-190401-GW	Total/NA	Water	3535	
280-123221-11 - RE	WBGmw-021-190401-GW	Total/NA	Water	3535	
MB 280-457741/1-A	Method Blank	Total/NA	Water	3535	
LCS 280-457741/2-A	Lab Control Sample	Total/NA	Water	3535	
280-123221-2 MS - RE	NTAmw-119-190401-GWMS	Total/NA	Water	3535	
280-123221-2 MSD - RE	NTAmw-119-190401-GWMSD	Total/NA	Water	3535	
280-123221-4 MS - RE	DET-003-190401-GWMS	Total/NA	Water	3535	
280-123221-4 MSD - RE	DET-003-190401-GWMSD	Total/NA	Water	3535	

Prep Batch: 457818

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-12 - RE	WBGmw-009-190401-GW	Total/NA	Water	3535	
280-123221-13 - RE	FWGmw-016-190401-GW	Total/NA	Water	3535	
MB 280-457818/1-A	Method Blank	Total/NA	Water	3535	
LCS 280-457818/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 280-457818/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 457992

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-10	WBGmw-006-190401-GW	Total/NA	Water	8330B	456980

Analysis Batch: 458152

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-2 - RE	NTAmw-119-190401-GW	Total/NA	Water	8330B	457741
280-123221-3 - RE	NTAmw-119-190402-GW	Total/NA	Water	8330B	457741
280-123221-4 - RE	DET-003-190401-GW	Total/NA	Water	8330B	457741
280-123221-5 - RE	DET-003-190402-GW	Total/NA	Water	8330B	457741
280-123221-7 - RE	DET-004-190401-GW	Total/NA	Water	8330B	457741
280-123221-8 - RE	FWGmw-007-190401-GW	Total/NA	Water	8330B	457741
280-123221-9 - RE	WBGmw-020-190401-GW	Total/NA	Water	8330B	457741
280-123221-10 - RE	WBGmw-006-190401-GW	Total/NA	Water	8330B	457741
280-123221-11 - RE	WBGmw-021-190401-GW	Total/NA	Water	8330B	457741
MB 280-457741/1-A	Method Blank	Total/NA	Water	8330B	457741
LCS 280-457741/2-A	Lab Control Sample	Total/NA	Water	8330B	457741
280-123221-2 MS - RE	NTAmw-119-190401-GWMS	Total/NA	Water	8330B	457741
280-123221-2 MSD - RE	NTAmw-119-190401-GWMSD	Total/NA	Water	8330B	457741
280-123221-4 MS - RE	DET-003-190401-GWMS	Total/NA	Water	8330B	457741
280-123221-4 MSD - RE	DET-003-190401-GWMSD	Total/NA	Water	8330B	457741

Analysis Batch: 458394

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-10 - RE	WBGmw-006-190401-GW	Total/NA	Water	8330B	457741

Analysis Batch: 458457

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-457818/1-A	Method Blank	Total/NA	Water	8330B	457818

QC Association Summary

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

HPLC/IC (Continued)

Analysis Batch: 458457 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 280-457818/2-A	Lab Control Sample	Total/NA	Water	8330B	457818
LCSD 280-457818/3-A	Lab Control Sample Dup	Total/NA	Water	8330B	457818

Analysis Batch: 458533

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-12 - RE	WBGmw-009-190401-GW	Total/NA	Water	8330B	457818
280-123221-13 - RE	FWGmw-016-190401-GW	Total/NA	Water	8330B	457818

Metals

Prep Batch: 457070

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-2	NTAmw-119-190401-GW	Total/NA	Water	3010A	
280-123221-4	DET-003-190401-GW	Total/NA	Water	3010A	
280-123221-5	DET-003-190402-GW	Total/NA	Water	3010A	
280-123221-7	DET-004-190401-GW	Total/NA	Water	3010A	
280-123221-8	FWGmw-007-190401-GW	Total/NA	Water	3010A	
280-123221-9	WBGmw-020-190401-GW	Total/NA	Water	3010A	
280-123221-10	WBGmw-006-190401-GW	Total/NA	Water	3010A	
280-123221-11	WBGmw-021-190401-GW	Total/NA	Water	3010A	
280-123221-12	WBGmw-009-190401-GW	Total/NA	Water	3010A	
280-123221-13	FWGmw-016-190401-GW	Total/NA	Water	3010A	
MB 280-457070/1-A	Method Blank	Total/NA	Water	3010A	
LCS 280-457070/2-A	Lab Control Sample	Total/NA	Water	3010A	
LCSD 280-457070/3-A	Lab Control Sample Dup	Total/NA	Water	3010A	

Prep Batch: 457081

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-2	NTAmw-119-190401-GW	Total/NA	Water	3020A	
280-123221-4	DET-003-190401-GW	Total/NA	Water	3020A	
280-123221-5	DET-003-190402-GW	Total/NA	Water	3020A	
280-123221-7	DET-004-190401-GW	Total/NA	Water	3020A	
280-123221-8	FWGmw-007-190401-GW	Total/NA	Water	3020A	
280-123221-9	WBGmw-020-190401-GW	Total/NA	Water	3020A	
280-123221-10	WBGmw-006-190401-GW	Total/NA	Water	3020A	
280-123221-11	WBGmw-021-190401-GW	Total/NA	Water	3020A	
280-123221-12	WBGmw-009-190401-GW	Total/NA	Water	3020A	
280-123221-13	FWGmw-016-190401-GW	Total/NA	Water	3020A	
MB 280-457081/1-A	Method Blank	Total/NA	Water	3020A	
LCS 280-457081/2-A	Lab Control Sample	Total/NA	Water	3020A	
LCSD 280-457081/3-A	Lab Control Sample Dup	Total/NA	Water	3020A	

Prep Batch: 457916

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-2	NTAmw-119-190401-GW	Total/NA	Water	7470A	
280-123221-4	DET-003-190401-GW	Total/NA	Water	7470A	
280-123221-5	DET-003-190402-GW	Total/NA	Water	7470A	
280-123221-7	DET-004-190401-GW	Total/NA	Water	7470A	
280-123221-8	FWGmw-007-190401-GW	Total/NA	Water	7470A	
280-123221-9	WBGmw-020-190401-GW	Total/NA	Water	7470A	
280-123221-10	WBGmw-006-190401-GW	Total/NA	Water	7470A	

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QC Association Summary

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Metals (Continued)

Prep Batch: 457916 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-11	WBGmw-021-190401-GW	Total/NA	Water	7470A	
280-123221-12	WBGmw-009-190401-GW	Total/NA	Water	7470A	
280-123221-13	FWGmw-016-190401-GW	Total/NA	Water	7470A	
MB 280-457916/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-457916/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 280-457916/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	

Analysis Batch: 458049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-2	NTAmw-119-190401-GW	Total/NA	Water	6010C	457070
280-123221-4	DET-003-190401-GW	Total/NA	Water	6010C	457070
280-123221-5	DET-003-190402-GW	Total/NA	Water	6010C	457070
280-123221-7	DET-004-190401-GW	Total/NA	Water	6010C	457070
280-123221-8	FWGmw-007-190401-GW	Total/NA	Water	6010C	457070
280-123221-9	WBGmw-020-190401-GW	Total/NA	Water	6010C	457070
280-123221-10	WBGmw-006-190401-GW	Total/NA	Water	6010C	457070
280-123221-11	WBGmw-021-190401-GW	Total/NA	Water	6010C	457070
280-123221-12	WBGmw-009-190401-GW	Total/NA	Water	6010C	457070
280-123221-13	FWGmw-016-190401-GW	Total/NA	Water	6010C	457070
MB 280-457070/1-A	Method Blank	Total/NA	Water	6010C	457070
LCS 280-457070/2-A	Lab Control Sample	Total/NA	Water	6010C	457070
LCSD 280-457070/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	457070

Analysis Batch: 458130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-2	NTAmw-119-190401-GW	Total/NA	Water	7470A	457916
280-123221-4	DET-003-190401-GW	Total/NA	Water	7470A	457916
280-123221-5	DET-003-190402-GW	Total/NA	Water	7470A	457916
280-123221-7	DET-004-190401-GW	Total/NA	Water	7470A	457916
280-123221-8	FWGmw-007-190401-GW	Total/NA	Water	7470A	457916
280-123221-9	WBGmw-020-190401-GW	Total/NA	Water	7470A	457916
280-123221-10	WBGmw-006-190401-GW	Total/NA	Water	7470A	457916
280-123221-11	WBGmw-021-190401-GW	Total/NA	Water	7470A	457916
280-123221-12	WBGmw-009-190401-GW	Total/NA	Water	7470A	457916
280-123221-13	FWGmw-016-190401-GW	Total/NA	Water	7470A	457916
MB 280-457916/1-A	Method Blank	Total/NA	Water	7470A	457916
LCS 280-457916/2-A	Lab Control Sample	Total/NA	Water	7470A	457916
LCSD 280-457916/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	457916

Analysis Batch: 458135

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-2	NTAmw-119-190401-GW	Total/NA	Water	6020A	457081
280-123221-4	DET-003-190401-GW	Total/NA	Water	6020A	457081
280-123221-5	DET-003-190402-GW	Total/NA	Water	6020A	457081
280-123221-7	DET-004-190401-GW	Total/NA	Water	6020A	457081
280-123221-8	FWGmw-007-190401-GW	Total/NA	Water	6020A	457081
280-123221-9	WBGmw-020-190401-GW	Total/NA	Water	6020A	457081
280-123221-10	WBGmw-006-190401-GW	Total/NA	Water	6020A	457081
MB 280-457081/1-A	Method Blank	Total/NA	Water	6020A	457081
LCS 280-457081/2-A	Lab Control Sample	Total/NA	Water	6020A	457081
LCSD 280-457081/3-A	Lab Control Sample Dup	Total/NA	Water	6020A	457081

QC Association Summary

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Metals

Analysis Batch: 458211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-2	NTAmw-119-190401-GW	Total/NA	Water	6010C	457070
280-123221-4	DET-003-190401-GW	Total/NA	Water	6010C	457070
280-123221-5	DET-003-190402-GW	Total/NA	Water	6010C	457070
280-123221-7	DET-004-190401-GW	Total/NA	Water	6010C	457070
280-123221-8	FWGmw-007-190401-GW	Total/NA	Water	6010C	457070
280-123221-9	WBGmw-020-190401-GW	Total/NA	Water	6010C	457070
280-123221-10	WBGmw-006-190401-GW	Total/NA	Water	6010C	457070
280-123221-11	WBGmw-021-190401-GW	Total/NA	Water	6010C	457070
280-123221-12	WBGmw-009-190401-GW	Total/NA	Water	6010C	457070
280-123221-13	FWGmw-016-190401-GW	Total/NA	Water	6010C	457070
MB 280-457070/1-A	Method Blank	Total/NA	Water	6010C	457070
LCS 280-457070/2-A	Lab Control Sample	Total/NA	Water	6010C	457070
LCSD 280-457070/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	457070

Analysis Batch: 458262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-2	NTAmw-119-190401-GW	Total/NA	Water	6020A	457081
280-123221-4	DET-003-190401-GW	Total/NA	Water	6020A	457081
280-123221-5	DET-003-190402-GW	Total/NA	Water	6020A	457081
280-123221-7	DET-004-190401-GW	Total/NA	Water	6020A	457081
280-123221-8	FWGmw-007-190401-GW	Total/NA	Water	6020A	457081
280-123221-9	WBGmw-020-190401-GW	Total/NA	Water	6020A	457081
280-123221-10	WBGmw-006-190401-GW	Total/NA	Water	6020A	457081
280-123221-11	WBGmw-021-190401-GW	Total/NA	Water	6020A	457081
280-123221-12	WBGmw-009-190401-GW	Total/NA	Water	6020A	457081
280-123221-13	FWGmw-016-190401-GW	Total/NA	Water	6020A	457081
MB 280-457081/1-A	Method Blank	Total/NA	Water	6020A	457081
LCS 280-457081/2-A	Lab Control Sample	Total/NA	Water	6020A	457081
LCSD 280-457081/3-A	Lab Control Sample Dup	Total/NA	Water	6020A	457081

General Chemistry

Prep Batch: 457850

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-4	DET-003-190401-GW	Total/NA	Water	9012B	
280-123221-5	DET-003-190402-GW	Total/NA	Water	9012B	
280-123221-7	DET-004-190401-GW	Total/NA	Water	9012B	
MB 280-457850/4-A	Method Blank	Total/NA	Water	9012B	
HLCS 280-457850/1-A	Lab Control Sample	Total/NA	Water	9012B	
LCS 280-457850/3-A	Lab Control Sample	Total/NA	Water	9012B	
LLCS 280-457850/2-A	Lab Control Sample	Total/NA	Water	9012B	
280-123221-4 MS	DET-003-190401-GWMS	Total/NA	Water	9012B	
280-123221-4 MSD	DET-003-190401-GWMSD	Total/NA	Water	9012B	

Analysis Batch: 458020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-123221-4	DET-003-190401-GW	Total/NA	Water	9012B	457850
280-123221-5	DET-003-190402-GW	Total/NA	Water	9012B	457850
280-123221-7	DET-004-190401-GW	Total/NA	Water	9012B	457850
MB 280-457850/4-A	Method Blank	Total/NA	Water	9012B	457850
HLCS 280-457850/1-A	Lab Control Sample	Total/NA	Water	9012B	457850

QC Association Summary

Client: Leidos, Inc.

Job ID: 280-123221-1

Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

General Chemistry (Continued)

Analysis Batch: 458020 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 280-457850/3-A	Lab Control Sample	Total/NA	Water	9012B	457850
LLCS 280-457850/2-A	Lab Control Sample	Total/NA	Water	9012B	457850
280-123221-4 MS	DET-003-190401-GWMS	Total/NA	Water	9012B	457850
280-123221-4 MSD	DET-003-190401-GWMSD	Total/NA	Water	9012B	457850

Lab Chronicle

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Client Sample ID: NTAmw-120-190401-GW

Lab Sample ID: 280-123221-1

Date Collected: 04/30/19 10:48

Matrix: Water

Date Received: 05/01/19 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			1017.3 mL	1 mL	457323	05/07/19 16:07	VNV	TAL DEN
Total/NA	Analysis	8270D		1			458321	05/15/19 21:46	AFH	TAL DEN

Client Sample ID: NTAmw-119-190401-GW

Lab Sample ID: 280-123221-2

Date Collected: 04/30/19 10:45

Matrix: Water

Date Received: 05/01/19 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			228.8 mL	1 mL	457236	05/07/19 06:23	JT	TAL DEN
Total/NA	Analysis	8270D SIM		1			458021	05/14/19 01:50	MKW	TAL DEN
Total/NA	Prep	3535			462.7 mL	5 mL	456980	05/04/19 15:00	KSA	TAL DEN
Total/NA	Analysis	8330B		1			457634	05/10/19 05:26	HKF	TAL DEN
Total/NA	Prep	3535	RE		461.4 mL	5 mL	457741	05/10/19 16:21	KSA	TAL DEN
Total/NA	Analysis	8330B	RE	1			458152	05/15/19 17:56	HKF	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	457070	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6010C		1			458049	05/13/19 13:03	CRR	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	457070	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6010C		1			458211	05/14/19 12:08	CRR	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	457081	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6020A		1			458135	05/14/19 09:32	LMT	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	457081	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6020A		1			458262	05/14/19 16:52	LMT	TAL DEN
Total/NA	Prep	7470A			30 mL	50 mL	457916	05/13/19 12:45	CML	TAL DEN
Total/NA	Analysis	7470A		1			458130	05/13/19 21:37	CML	TAL DEN

Client Sample ID: NTAmw-119-190402-GW

Lab Sample ID: 280-123221-3

Date Collected: 04/30/19 10:45

Matrix: Water

Date Received: 05/01/19 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			470.1 mL	5 mL	456980	05/04/19 15:00	KSA	TAL DEN
Total/NA	Analysis	8330B		1			457634	05/10/19 06:38	HKF	TAL DEN
Total/NA	Prep	3535	RE		461.8 mL	5 mL	457741	05/10/19 16:21	KSA	TAL DEN
Total/NA	Analysis	8330B	RE	1			458152	05/15/19 19:08	HKF	TAL DEN

Client Sample ID: DET-003-190401-GW

Lab Sample ID: 280-123221-4

Date Collected: 04/29/19 10:53

Matrix: Water

Date Received: 05/01/19 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	457521	05/08/19 22:53	GO	TAL DEN
Total/NA	Prep	3520C			989.5 mL	1 mL	456902	05/03/19 12:42	KJS	TAL DEN
Total/NA	Analysis	8270D		1			458321	05/15/19 23:14	AFH	TAL DEN
Total/NA	Prep	3510C			228.3 mL	1 mL	457182	05/06/19 12:22	AJE	TAL DEN
Total/NA	Analysis	8270D SIM		1			458474	05/16/19 16:41	MKW	TAL DEN

Eurofins TestAmerica, Denver

Lab Chronicle

Client: Leidos, Inc.

Job ID: 280-123221-1

Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Client Sample ID: DET-003-190401-GW

Lab Sample ID: 280-123221-4

Date Collected: 04/29/19 10:53

Matrix: Water

Date Received: 05/01/19 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			927.8 mL	10 mL	457201	05/06/19 15:29	AJE	TAL DEN
Total/NA	Analysis	8081B		1			458587	05/17/19 17:41	TEM	TAL DEN
Total/NA	Prep	3510C			927.8 mL	10 mL	457201	05/06/19 15:29	AJE	TAL DEN
Total/NA	Analysis	8082A		1			459265	05/23/19 15:58	TEM	TAL DEN
Total/NA	Prep	3535			446.1 mL	5 mL	456980	05/04/19 15:00	KSA	TAL DEN
Total/NA	Analysis	8330B		1			457634	05/10/19 07:02	HKF	TAL DEN
Total/NA	Prep	3535	RE		453.4 mL	5 mL	457741	05/10/19 16:21	KSA	TAL DEN
Total/NA	Analysis	8330B	RE	1			458152	05/15/19 19:32	HKF	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	457070	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6010C		1			458049	05/13/19 13:06	CRR	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	457070	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6010C		1			458211	05/14/19 12:11	CRR	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	457081	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6020A		1			458135	05/14/19 09:36	LMT	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	457081	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6020A		1			458262	05/14/19 16:56	LMT	TAL DEN
Total/NA	Prep	7470A			30 mL	50 mL	457916	05/13/19 12:45	CML	TAL DEN
Total/NA	Analysis	7470A		1			458130	05/13/19 21:43	CML	TAL DEN
Total/NA	Prep	9012B			50 mL	50 mL	457850	05/12/19 07:53	RK	TAL DEN
Total/NA	Analysis	9012B		1	50 mL	50 mL	458020	05/13/19 13:54	RK	TAL DEN

Client Sample ID: DET-003-190402-GW

Lab Sample ID: 280-123221-5

Date Collected: 04/29/19 10:53

Matrix: Water

Date Received: 05/01/19 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	457521	05/09/19 00:20	GO	TAL DEN
Total/NA	Prep	3510C			901.2 mL	10 mL	457201	05/06/19 15:29	AJE	TAL DEN
Total/NA	Analysis	8081B		1			458587	05/17/19 19:08	TEM	TAL DEN
Total/NA	Prep	3510C			901.2 mL	10 mL	457201	05/06/19 15:29	AJE	TAL DEN
Total/NA	Analysis	8082A		1			459265	05/23/19 17:03	TEM	TAL DEN
Total/NA	Prep	3535			456.3 mL	5 mL	456980	05/04/19 15:00	KSA	TAL DEN
Total/NA	Analysis	8330B		1			457634	05/10/19 09:24	HKF	TAL DEN
Total/NA	Prep	3535	RE		457.2 mL	5 mL	457741	05/10/19 16:21	KSA	TAL DEN
Total/NA	Analysis	8330B	RE	1			458152	05/15/19 21:54	HKF	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	457070	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6010C		1			458049	05/13/19 13:08	CRR	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	457070	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6010C		1			458211	05/14/19 12:14	CRR	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	457081	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6020A		1			458135	05/14/19 09:39	LMT	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	457081	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6020A		1			458262	05/14/19 17:00	LMT	TAL DEN

Eurofins TestAmerica, Denver

Lab Chronicle

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Client Sample ID: DET-003-190402-GW

Lab Sample ID: 280-123221-5

Date Collected: 04/29/19 10:53

Matrix: Water

Date Received: 05/01/19 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			30 mL	50 mL	457916	05/13/19 12:45	CML	TAL DEN
Total/NA	Analysis	7470A		1			458130	05/13/19 21:46	CML	TAL DEN
Total/NA	Prep	9012B			50 mL	50 mL	457850	05/12/19 07:53	RK	TAL DEN
Total/NA	Analysis	9012B		1	50 mL	50 mL	458020	05/13/19 14:06	RK	TAL DEN

Client Sample ID: FWGTB-191001-TB

Lab Sample ID: 280-123221-6

Date Collected: 04/29/19 09:00

Matrix: Water

Date Received: 05/01/19 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	457521	05/09/19 00:42	GO	TAL DEN

Client Sample ID: DET-004-190401-GW

Lab Sample ID: 280-123221-7

Date Collected: 04/29/19 10:04

Matrix: Water

Date Received: 05/01/19 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	457521	05/09/19 02:08	GO	TAL DEN
Total/NA	Prep	3520C			1010.9 mL	1 mL	456902	05/03/19 12:42	KJS	TAL DEN
Total/NA	Analysis	8270D		1			458321	05/15/19 23:44	AFH	TAL DEN
Total/NA	Prep	3510C			235.2 mL	1 mL	457182	05/06/19 12:22	AJE	TAL DEN
Total/NA	Analysis	8270D SIM		1			458474	05/16/19 17:11	MKW	TAL DEN
Total/NA	Prep	3510C			996.4 mL	10 mL	457201	05/06/19 15:29	AJE	TAL DEN
Total/NA	Analysis	8081B		1			458587	05/17/19 19:25	TEM	TAL DEN
Total/NA	Prep	3510C			996.4 mL	10 mL	457201	05/06/19 15:29	AJE	TAL DEN
Total/NA	Analysis	8082A		1			459265	05/23/19 17:25	TEM	TAL DEN
Total/NA	Prep	3535			484.4 mL	5 mL	456980	05/04/19 15:00	KSA	TAL DEN
Total/NA	Analysis	8330B		1			457634	05/10/19 09:48	HKF	TAL DEN
Total/NA	Prep	3535	RE		482.6 mL	5 mL	457741	05/10/19 16:21	KSA	TAL DEN
Total/NA	Analysis	8330B	RE	1			458152	05/15/19 22:18	HKF	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	457070	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6010C		1			458049	05/13/19 13:11	CRR	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	457070	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6010C		1			458211	05/14/19 12:16	CRR	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	457081	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6020A		1			458135	05/14/19 09:43	LMT	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	457081	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6020A		1			458262	05/14/19 17:03	LMT	TAL DEN
Total/NA	Prep	7470A			30 mL	50 mL	457916	05/13/19 12:45	CML	TAL DEN
Total/NA	Analysis	7470A		1			458130	05/13/19 21:48	CML	TAL DEN
Total/NA	Prep	9012B			50 mL	50 mL	457850	05/12/19 07:53	RK	TAL DEN
Total/NA	Analysis	9012B		1	50 mL	50 mL	458020	05/13/19 14:07	RK	TAL DEN

Lab Chronicle

Client: Leidos, Inc.

Job ID: 280-123221-1

Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Client Sample ID: FWGmw-007-190401-GW

Lab Sample ID: 280-123221-8

Date Collected: 04/30/19 13:35

Matrix: Water

Date Received: 05/01/19 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			456.1 mL	5 mL	456980	05/04/19 15:00	KSA	TAL DEN
Total/NA	Analysis	8330B		1			457634	05/10/19 10:12	HKF	TAL DEN
Total/NA	Prep	3535	RE		481.5 mL	5 mL	457741	05/10/19 16:21	KSA	TAL DEN
Total/NA	Analysis	8330B	RE	1			458152	05/15/19 22:42	HKF	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	457070	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6010C		1			458049	05/13/19 13:13	CRR	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	457070	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6010C		1			458211	05/14/19 12:19	CRR	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	457081	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6020A		1			458135	05/14/19 09:57	LMT	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	457081	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6020A		1			458262	05/14/19 17:17	LMT	TAL DEN
Total/NA	Prep	7470A			30 mL	50 mL	457916	05/13/19 12:45	CML	TAL DEN
Total/NA	Analysis	7470A		1			458130	05/13/19 21:50	CML	TAL DEN

Client Sample ID: WBGmw-020-190401-GW

Lab Sample ID: 280-123221-9

Date Collected: 04/30/19 11:50

Matrix: Water

Date Received: 05/01/19 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			518.7 mL	5 mL	456980	05/04/19 15:00	KSA	TAL DEN
Total/NA	Analysis	8330B		1			457634	05/10/19 10:35	HKF	TAL DEN
Total/NA	Prep	3535	RE		501.5 mL	5 mL	457741	05/10/19 16:21	KSA	TAL DEN
Total/NA	Analysis	8330B	RE	1			458152	05/15/19 23:05	HKF	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	457070	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6010C		1			458049	05/13/19 13:16	CRR	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	457070	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6010C		1			458211	05/14/19 12:21	CRR	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	457081	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6020A		1			458135	05/14/19 10:00	LMT	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	457081	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6020A		1			458262	05/14/19 17:21	LMT	TAL DEN
Total/NA	Prep	7470A			30 mL	50 mL	457916	05/13/19 12:45	CML	TAL DEN
Total/NA	Analysis	7470A		1			458130	05/13/19 21:52	CML	TAL DEN

Client Sample ID: WBGmw-006-190401-GW

Lab Sample ID: 280-123221-10

Date Collected: 04/30/19 09:10

Matrix: Water

Date Received: 05/01/19 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			509.6 mL	5 mL	456980	05/04/19 15:00	KSA	TAL DEN
Total/NA	Analysis	8330B		1			457992	05/13/19 23:35	HKF	TAL DEN
Total/NA	Prep	3535	RE		496.4 mL	5 mL	457741	05/10/19 16:21	KSA	TAL DEN
Total/NA	Analysis	8330B	RE	1			458394	05/16/19 18:32	HKF	TAL DEN

Eurofins TestAmerica, Denver

Lab Chronicle

Client: Leidos, Inc.

Job ID: 280-123221-1

Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Client Sample ID: WBGmw-006-190401-GW

Lab Sample ID: 280-123221-10

Date Collected: 04/30/19 09:10

Matrix: Water

Date Received: 05/01/19 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			509.6 mL	5 mL	456980	05/04/19 15:00	KSA	TAL DEN
Total/NA	Analysis	8330B		1			457634	05/10/19 10:59	HKF	TAL DEN
Total/NA	Prep	3535	RE		496.4 mL	5 mL	457741	05/10/19 16:21	KSA	TAL DEN
Total/NA	Analysis	8330B	RE	1			458152	05/15/19 23:29	HKF	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	457070	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6010C		1			458049	05/13/19 13:18	CRR	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	457070	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6010C		1			458211	05/14/19 12:24	CRR	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	457081	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6020A		1			458135	05/14/19 10:04	LMT	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	457081	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6020A		1			458262	05/14/19 17:24	LMT	TAL DEN
Total/NA	Prep	7470A			30 mL	50 mL	457916	05/13/19 12:45	CML	TAL DEN
Total/NA	Analysis	7470A		1			458130	05/13/19 21:54	CML	TAL DEN

Client Sample ID: WBGmw-021-190401-GW

Lab Sample ID: 280-123221-11

Date Collected: 04/30/19 09:45

Matrix: Water

Date Received: 05/01/19 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			453.6 mL	5 mL	456980	05/04/19 15:00	KSA	TAL DEN
Total/NA	Analysis	8330B		1			457634	05/10/19 11:23	HKF	TAL DEN
Total/NA	Prep	3535	RE		418.9 mL	5 mL	457741	05/10/19 16:21	KSA	TAL DEN
Total/NA	Analysis	8330B	RE	1			458152	05/15/19 23:53	HKF	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	457070	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6010C		1			458049	05/13/19 13:21	CRR	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	457070	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6010C		1			458211	05/14/19 12:26	CRR	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	457081	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6020A		1			458262	05/14/19 17:28	LMT	TAL DEN
Total/NA	Prep	7470A			30 mL	50 mL	457916	05/13/19 12:45	CML	TAL DEN
Total/NA	Analysis	7470A		1			458130	05/13/19 21:57	CML	TAL DEN

Client Sample ID: WBGmw-009-190401-GW

Lab Sample ID: 280-123221-12

Date Collected: 04/30/19 10:53

Matrix: Water

Date Received: 05/01/19 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			479.9 mL	5 mL	456980	05/04/19 15:00	KSA	TAL DEN
Total/NA	Analysis	8330B		1			457634	05/10/19 11:47	HKF	TAL DEN
Total/NA	Prep	3535	RE		489.6 mL	5 mL	457818	05/11/19 15:37	KSA	TAL DEN
Total/NA	Analysis	8330B	RE	1			458533	05/17/19 11:59	HKF	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	457070	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6010C		1			458049	05/13/19 13:24	CRR	TAL DEN

Eurofins TestAmerica, Denver

Lab Chronicle

Client: Leidos, Inc.

Job ID: 280-123221-1

Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Client Sample ID: WBGmw-009-190401-GW

Lab Sample ID: 280-123221-12

Date Collected: 04/30/19 10:53

Matrix: Water

Date Received: 05/01/19 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	457070	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6010C		1			458211	05/14/19 12:29	CRR	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	457081	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6020A		1			458262	05/14/19 17:31	LMT	TAL DEN
Total/NA	Prep	7470A			30 mL	50 mL	457916	05/13/19 12:45	CML	TAL DEN
Total/NA	Analysis	7470A		1			458130	05/13/19 21:59	CML	TAL DEN

Client Sample ID: FWGmw-016-190401-GW

Lab Sample ID: 280-123221-13

Date Collected: 04/29/19 15:20

Matrix: Water

Date Received: 05/01/19 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			502.5 mL	5 mL	456980	05/04/19 15:00	KSA	TAL DEN
Total/NA	Analysis	8330B		1			457634	05/10/19 12:11	HKF	TAL DEN
Total/NA	Prep	3535	RE		490.9 mL	5 mL	457818	05/11/19 15:37	KSA	TAL DEN
Total/NA	Analysis	8330B	RE	1			458533	05/17/19 12:23	HKF	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	457070	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6010C		1			458049	05/13/19 13:37	CRR	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	457070	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6010C		1			458211	05/14/19 12:31	CRR	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	457081	05/09/19 17:15	DAL	TAL DEN
Total/NA	Analysis	6020A		1			458262	05/14/19 17:35	LMT	TAL DEN
Total/NA	Prep	7470A			30 mL	50 mL	457916	05/13/19 12:45	CML	TAL DEN
Total/NA	Analysis	7470A		1			458130	05/13/19 22:01	CML	TAL DEN

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Accreditation/Certification Summary

Client: Leidos, Inc.
Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Job ID: 280-123221-1

Laboratory: Eurofins TestAmerica, Denver

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	DoD		2907.01	10-31-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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Method Summary

Client: Leidos, Inc.

Job ID: 280-123221-1

Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL DEN
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL DEN
8270D SIM	Semivolatile Organic Compounds (GC/MS SIM)	SW846	TAL DEN
8081B	Organochlorine Pesticides (GC)	SW846	TAL DEN
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL DEN
8330B	Nitroaromatics and Nitramines (HPLC)	EPA	TAL DEN
6010C	Metals (ICP)	SW846	TAL DEN
6020A	Metals (ICP/MS)	SW846	TAL DEN
7470A	Mercury (CVAA)	SW846	TAL DEN
9012B	Cyanide, Total and/or Amenable	EPA	TAL DEN
3010A	Preparation, Total Metals	SW846	TAL DEN
3020A	Preparation, Total Metals	SW846	TAL DEN
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL DEN
3520C	Liquid-Liquid Extraction (Continuous)	SW846	TAL DEN
3535	Solid-Phase Extraction (SPE)	SW846	TAL DEN
5030B	Purge and Trap	SW846	TAL DEN
7470A	Preparation, Mercury	SW846	TAL DEN
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	TAL DEN

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Leidos, Inc.

Job ID: 280-123221-1

Project/Site: Leidos RFP# 001088 - Ravenna AAP-66

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
280-123221-1	NTAmw-120-190401-GW	Water	04/30/19 10:48	05/01/19 09:15	
280-123221-2	NTAmw-119-190401-GW	Water	04/30/19 10:45	05/01/19 09:15	
280-123221-3	NTAmw-119-190402-GW	Water	04/30/19 10:45	05/01/19 09:15	
280-123221-4	DET-003-190401-GW	Water	04/29/19 10:53	05/01/19 09:15	
280-123221-5	DET-003-190402-GW	Water	04/29/19 10:53	05/01/19 09:15	
280-123221-6	FWGTB-191001-TB	Water	04/29/19 09:00	05/01/19 09:15	
280-123221-7	DET-004-190401-GW	Water	04/29/19 10:04	05/01/19 09:15	
280-123221-8	FWGmw-007-190401-GW	Water	04/30/19 13:35	05/01/19 09:15	
280-123221-9	WBGmw-020-190401-GW	Water	04/30/19 11:50	05/01/19 09:15	
280-123221-10	WBGmw-006-190401-GW	Water	04/30/19 09:10	05/01/19 09:15	
280-123221-11	WBGmw-021-190401-GW	Water	04/30/19 09:45	05/01/19 09:15	
280-123221-12	WBGmw-009-190401-GW	Water	04/30/19 10:53	05/01/19 09:15	
280-123221-13	FWGmw-016-190401-GW	Water	04/29/19 15:20	05/01/19 09:15	

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: VMS_MS9 Analysis Batch Number: 457270Lab Sample ID: STD01 280-457270/17 IC Client Sample ID: _____Date Analyzed: 05/07/19 14:10 Lab File ID: ms9_1609.D GC Column: RXI-624SilMS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Bromomethane	2.22	Assign Peak	newcomer	05/07/19 14:44

Lab Sample ID: STD005 280-457270/18 IC Client Sample ID: _____Date Analyzed: 05/07/19 14:32 Lab File ID: ms9_1610.D GC Column: RXI-624SilMS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Bromomethane	2.21	Assign Peak	newcomer	05/07/19 14:47

Lab Sample ID: STD200 280-457270/20 IC Client Sample ID: _____Date Analyzed: 05/07/19 15:15 Lab File ID: ms9_1612.D GC Column: RXI-624SilMS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Fluorobenzene	5.09	Assign Peak	newcomer	05/08/19 07:22
1,2,3-Trichloropropane	8.89	Assign Peak	newcomer	05/08/19 07:22

Lab Sample ID: STD100 280-457270/21 IC Client Sample ID: _____Date Analyzed: 05/07/19 15:37 Lab File ID: ms9_1613.D GC Column: RXI-624SilMS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3-Trichloropropane	8.89	Assign Peak	newcomer	05/08/19 07:24

Lab Sample ID: ICIS 280-457270/22 Client Sample ID: _____Date Analyzed: 05/07/19 15:58 Lab File ID: ms9_1614.D GC Column: RXI-624SilMS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3-Trichloropropane	8.89	Assign Peak	newcomer	05/08/19 07:25

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: VMS_MS9 Analysis Batch Number: 457270Lab Sample ID: STD20 280-457270/23 IC Client Sample ID: _____Date Analyzed: 05/07/19 16:20 Lab File ID: ms9_1615.D GC Column: RXI-624SilMS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,3-Dichloropropane	6.90	Assign Peak	newcomer	05/08/19 07:26
1,2,3-Trichloropropane	8.89	Assign Peak	newcomer	05/08/19 07:26

Lab Sample ID: STD10 280-457270/24 IC Client Sample ID: _____Date Analyzed: 05/07/19 16:41 Lab File ID: ms9_1616.D GC Column: RXI-624SilMS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3-Trichloropropane	8.89	Assign Peak	newcomer	05/08/19 07:27

Lab Sample ID: STD05 280-457270/25 IC Client Sample ID: _____Date Analyzed: 05/07/19 17:03 Lab File ID: ms9_1617.D GC Column: RXI-624SilMS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,3-Dichloropropane	6.90	Assign Peak	newcomer	05/08/19 07:28
1,2,3-Trichloropropane	8.89	Assign Peak	newcomer	05/08/19 07:28

Lab Sample ID: STD02 280-457270/26 IC Client Sample ID: _____Date Analyzed: 05/07/19 17:25 Lab File ID: ms9_1618.D GC Column: RXI-624SilMS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1-Chlorohexane	7.60	Assign Peak	newcomer	05/08/19 07:29
1,2,3-Trichloropropane	8.89	Assign Peak	newcomer	05/08/19 07:30

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: VMS_MS9 Analysis Batch Number: 457270Lab Sample ID: STD01 280-457270/27 IC Client Sample ID: _____Date Analyzed: 05/07/19 17:46 Lab File ID: ms9_1619.D GC Column: RXI-624SilMS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2-Dichloropropane	5.58	Assign Peak	newcomer	05/08/19 07:30
1-Chlorohexane	7.60	Assign Peak	newcomer	05/08/19 07:31
Bromoform	8.40	Assign Peak	newcomer	05/08/19 07:31
1,2,3-Trichloropropane	8.89	Assign Peak	newcomer	05/08/19 07:31

Lab Sample ID: STD005 280-457270/28 IC Client Sample ID: _____Date Analyzed: 05/07/19 18:08 Lab File ID: ms9_1620.D GC Column: RXI-624SilMS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Bromoform	8.40	Assign Peak	newcomer	05/08/19 07:33
1,2,3-Trichloropropane	8.89	Assign Peak	newcomer	05/08/19 07:33
tert-Butylbenzene	9.42	Assign Peak	newcomer	05/08/19 07:33
1,2-Dibromo-3-Chloropropane	11.00	Assign Peak	newcomer	05/08/19 07:33

Lab Sample ID: ICV 280-457270/29 Client Sample ID: _____Date Analyzed: 05/07/19 18:30 Lab File ID: ms9_1621.D GC Column: RXI-624SilMS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3-Trichloropropane	8.89	Assign Peak	newcomer	05/08/19 07:35

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: VMS_MS9 Analysis Batch Number: 457521Lab Sample ID: CCV 280-457521/3 Client Sample ID: _____Date Analyzed: 05/08/19 20:33 Lab File ID: ms9_1656.D GC Column: RXI-624SilMS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3-Trichloropropane	8.89	Peak assignment corrected	ornelasg	05/09/19 18:03

Lab Sample ID: 280-123221-7 Client Sample ID: DET-004-190401-GWDate Analyzed: 05/09/19 02:08 Lab File ID: ms9_1671.D GC Column: RXI-624SilMS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Methylene Chloride		Invalid Compound ID	ornelasg	05/09/19 18:07

Lab Sample ID: CCVC 280-457521/25 Client Sample ID: _____Date Analyzed: 05/09/19 05:02 Lab File ID: ms9_1679.D GC Column: RXI-624SilMS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2,3-Trichloropropane	8.89	Peak assignment corrected	ornelasg	05/09/19 21:34

GC/MS SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SMS_D Analysis Batch Number: 452848Lab Sample ID: STD004 280-452848/4 IC Client Sample ID: _____Date Analyzed: 04/03/19 08:17 Lab File ID: D32381.D GC Column: Rxi-5Sil MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Benzoic acid	5.59	Assign Peak	kiekeld	04/03/19 08:54

Lab Sample ID: STD010 280-452848/5 IC Client Sample ID: _____Date Analyzed: 04/03/19 08:47 Lab File ID: D32382.D GC Column: Rxi-5Sil MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,4-Dioxane	2.25	Baseline	kiekeld	04/03/19 09:22
Benzoic acid	5.61	Wrong peak	kiekeld	04/03/19 09:23

Lab Sample ID: STD020 280-452848/6 IC Client Sample ID: _____Date Analyzed: 04/03/19 09:16 Lab File ID: D32383.D GC Column: Rxi-5Sil MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Benzoic acid	5.62	Assign Peak	kiekeld	04/03/19 10:04

Lab Sample ID: STD050 280-452848/7 IC Client Sample ID: _____Date Analyzed: 04/03/19 09:45 Lab File ID: D32384.D GC Column: Rxi-5Sil MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Benzoic acid	5.65	Wrong peak	kiekeld	04/03/19 10:52
Caprolactam	6.30	Split Peak	kiekeld	04/03/19 10:52

Lab Sample ID: STD120 280-452848/8 IC Client Sample ID: _____Date Analyzed: 04/03/19 10:15 Lab File ID: D32385.D GC Column: Rxi-5Sil MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Caprolactam	6.32	Split Peak	kiekeld	04/03/19 10:53

GC/MS SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SMS_D Analysis Batch Number: 452848Lab Sample ID: STD160 280-452848/9 IC Client Sample ID: _____Date Analyzed: 04/03/19 10:44 Lab File ID: D32386.D GC Column: Rxi-5Sil MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Caprolactam	6.33	Split Peak	kiekeld	04/03/19 11:14
Indeno[1,2,3-cd]pyrene	20.54	Shouldering	kiekeld	04/03/19 11:15

Lab Sample ID: STD200 280-452848/10 IC Client Sample ID: _____Date Analyzed: 04/03/19 11:14 Lab File ID: D32387.D GC Column: Rxi-5Sil MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Caprolactam	6.35	Split Peak	kiekeld	04/03/19 11:42
Indeno[1,2,3-cd]pyrene	20.56	Split Peak	kiekeld	04/03/19 11:42

GC/MS SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SMS_D Analysis Batch Number: 458321Lab Sample ID: 280-123221-7 Client Sample ID: DET-004-190401-GWDate Analyzed: 05/15/19 23:44 Lab File ID: D33128.D GC Column: Rxi-5Sil MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Nitrobenzene		Invalid Compound ID	wickhamm	05/17/19 22:06

Lab Sample ID: CCVC 280-458321/24 Client Sample ID: _____Date Analyzed: 05/16/19 03:06 Lab File ID: D33135.D GC Column: Rxi-5Sil MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
4-Nitrophenol	7.66	Peak assignment corrected	wickhamm	05/17/19 22:13

GC/MS SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SMS_X4 Analysis Batch Number: 451426Lab Sample ID: STD0001 280-451426/3 IC Client Sample ID: _____Date Analyzed: 03/21/19 20:15 Lab File ID: X4_7421.D GC Column: Rxi-5Sil MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Nitrobenzene-d5 (Surr)	4.96	Incomplete Integration	wickhamm	03/21/19 20:45
Naphthalene	5.69	Incomplete Integration	wickhamm	03/21/19 20:45
1-Methylnaphthalene	6.47	Peak assignment corrected	wickhamm	03/21/19 20:44
Acenaphthylene	7.26	Incomplete Integration	wickhamm	03/21/19 20:45
Fluorene	7.95	Incomplete Integration	wickhamm	03/21/19 20:45
Phenanthrene	8.91	Peak assignment corrected	wickhamm	03/21/19 20:44
Anthracene	8.97	Peak assignment corrected	wickhamm	03/21/19 20:44
Fluoranthene	10.23	Incomplete Integration	wickhamm	03/21/19 20:45
Pyrene	10.55	Incomplete Integration	wickhamm	03/21/19 20:46
Benzo[b]fluoranthene	15.51	Incomplete Integration	wickhamm	03/21/19 20:46
Benzo[g,h,i]perylene	20.36	Incomplete Integration	wickhamm	03/21/19 20:45

Lab Sample ID: STD0002 280-451426/4 IC Client Sample ID: _____Date Analyzed: 03/21/19 20:45 Lab File ID: X4_7422.D GC Column: Rxi-5Sil MS ID: 0.25 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Fluorene	7.95	Peak assignment corrected	wickhamm	03/22/19 07:21

PESTICIDES MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P1 Analysis Batch Number: 453267

Lab Sample ID: STD6 280-453267/16 IC Client Sample ID: _____

Date Analyzed: 04/04/19 17:49 Lab File ID: 04040016.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.11	Unspecified	mooret	04/05/19 13:45
Toxaphene Peak 2	6.80	Baseline Smoothing	mooret	04/05/19 13:35
Toxaphene Peak 3	7.12	Baseline Smoothing	mooret	04/05/19 13:35
Toxaphene Peak 4	7.49	Baseline Smoothing	mooret	04/05/19 13:35
Toxaphene Peak 5	7.84	Baseline Smoothing	mooret	04/05/19 13:35

Lab Sample ID: STD5 280-453267/17 IC Client Sample ID: _____

Date Analyzed: 04/04/19 18:06 Lab File ID: 04040017.D GC Column: CLP1 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.26	Baseline Smoothing	mooret	04/05/19 13:35
Toxaphene Peak 2	6.84	Baseline Smoothing	mooret	04/05/19 13:35
Toxaphene Peak 3	7.07	Baseline Smoothing	mooret	04/05/19 13:35
Toxaphene Peak 4	7.52	Baseline Smoothing	mooret	04/05/19 13:35
Toxaphene Peak 5	7.72	Baseline Smoothing	mooret	04/05/19 13:35

Lab Sample ID: STD5 280-453267/17 IC Client Sample ID: _____

Date Analyzed: 04/04/19 18:06 Lab File ID: 04040017.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.11	Peak assignment corrected	mooret	04/05/19 13:45

Lab Sample ID: STD4 280-453267/18 IC Client Sample ID: _____

Date Analyzed: 04/04/19 18:22 Lab File ID: 04040018.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.11	Peak assignment corrected	mooret	04/05/19 13:44

PESTICIDES MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P1 Analysis Batch Number: 453267Lab Sample ID: STD3 280-453267/19 IC Client Sample ID: _____Date Analyzed: 04/04/19 18:39 Lab File ID: 04040019.D GC Column: CLP1 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.26	Baseline Smoothing	mooret	04/05/19 13:35
Toxaphene Peak 2	6.84	Baseline Smoothing	mooret	04/05/19 13:35
Toxaphene Peak 3	7.07	Baseline Smoothing	mooret	04/05/19 13:35
Toxaphene Peak 4	7.52	Baseline Smoothing	mooret	04/05/19 13:35
Toxaphene Peak 5	7.72	Baseline Smoothing	mooret	04/05/19 13:35

Lab Sample ID: STD3 280-453267/19 IC Client Sample ID: _____Date Analyzed: 04/04/19 18:39 Lab File ID: 04040019.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.11	Unspecified	mooret	04/05/19 13:45
Toxaphene Peak 2	6.80	Baseline Smoothing	mooret	04/05/19 13:36
Toxaphene Peak 3	7.11	Baseline Smoothing	mooret	04/05/19 13:36
Toxaphene Peak 4	7.49	Baseline Smoothing	mooret	04/05/19 13:36
Toxaphene Peak 5	7.84	Baseline Smoothing	mooret	04/05/19 13:36

Lab Sample ID: STD2 280-453267/20 IC Client Sample ID: _____Date Analyzed: 04/04/19 18:56 Lab File ID: 04040020.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.11	Peak assignment corrected	mooret	04/05/19 13:46

PESTICIDES MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P1 Analysis Batch Number: 453267

Lab Sample ID: STD1 280-453267/21 IC Client Sample ID: _____

Date Analyzed: 04/04/19 19:13 Lab File ID: 04040021.D GC Column: CLP1 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.26	Baseline Smoothing	mooret	04/05/19 13:36
Toxaphene Peak 2	6.84	Baseline Smoothing	mooret	04/05/19 13:36
Toxaphene Peak 3	7.07	Baseline Smoothing	mooret	04/05/19 13:36
Toxaphene Peak 4	7.52	Baseline Smoothing	mooret	04/05/19 13:36
Toxaphene Peak 5	7.73	Baseline Smoothing	mooret	04/05/19 13:36

Lab Sample ID: STD1 280-453267/21 IC Client Sample ID: _____

Date Analyzed: 04/04/19 19:13 Lab File ID: 04040021.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.11	Unspecified	mooret	04/05/19 13:46
Toxaphene Peak 2	6.80	Baseline Smoothing	mooret	04/05/19 13:41
Toxaphene Peak 3	7.12	Baseline Smoothing	mooret	04/05/19 13:41
Toxaphene Peak 4	7.49	Baseline Smoothing	mooret	04/05/19 13:41
Toxaphene Peak 5	7.84	Baseline Smoothing	mooret	04/05/19 13:41

Lab Sample ID: STD5 280-453267/28 IC Client Sample ID: _____

Date Analyzed: 04/04/19 21:10 Lab File ID: 04040028.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Tetrachloro-m-xylene	3.77	Incomplete Integration	mooret	04/05/19 12:47

PESTICIDES MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P1 Analysis Batch Number: 453267

Lab Sample ID: ICV 280-453267/34 Client Sample ID: _____

Date Analyzed: 04/04/19 22:51 Lab File ID: 04040034.D GC Column: CLP1 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.25	Baseline Smoothing	mooret	04/05/19 13:46
Toxaphene Peak 2	6.84	Baseline Smoothing	mooret	04/05/19 13:46
Toxaphene Peak 3	7.07	Baseline Smoothing	mooret	04/05/19 13:46
Toxaphene Peak 4	7.52	Baseline Smoothing	mooret	04/05/19 13:46
Toxaphene Peak 5	7.73	Baseline Smoothing	mooret	04/05/19 13:46

Lab Sample ID: ICV 280-453267/34 Client Sample ID: _____

Date Analyzed: 04/04/19 22:51 Lab File ID: 04040034.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.11	Baseline Smoothing	mooret	04/05/19 13:46
Toxaphene Peak 2	6.80	Baseline Smoothing	mooret	04/05/19 13:46
Toxaphene Peak 3	7.11	Baseline Smoothing	mooret	04/05/19 13:46
Toxaphene Peak 4	7.49	Baseline Smoothing	mooret	04/05/19 13:46
Toxaphene Peak 5	7.84	Baseline Smoothing	mooret	04/05/19 13:46

PESTICIDES MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P1 Analysis Batch Number: 458587

Lab Sample ID: 280-123221-4 MS Client Sample ID: DET-003-190401-GWMS MS

Date Analyzed: 05/17/19 18:33 Lab File ID: 05170019.D GC Column: CLP1 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.22	Baseline Smoothing	mooret	05/29/19 17:21
Toxaphene Peak 2	6.82	Baseline Smoothing	mooret	05/29/19 17:21
Toxaphene Peak 3	7.04	Baseline Smoothing	mooret	05/29/19 17:21
Toxaphene Peak 4	7.49	Baseline Smoothing	mooret	05/29/19 17:21
Toxaphene Peak 5	7.70	Baseline Smoothing	mooret	05/29/19 17:21
DCB Decachlorobiphenyl	9.15	Baseline Smoothing	mooret	05/29/19 17:21

Lab Sample ID: 280-123221-4 MSD Client Sample ID: DET-003-190401-GWMSD MSD

Date Analyzed: 05/17/19 18:50 Lab File ID: 05170020.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.11	Baseline Smoothing	mooret	05/29/19 17:22
Toxaphene Peak 2	6.80	Baseline Smoothing	mooret	05/29/19 17:22
Toxaphene Peak 3	7.11	Baseline Smoothing	mooret	05/29/19 17:22
Toxaphene Peak 4	7.49	Baseline Smoothing	mooret	05/29/19 17:22
Toxaphene Peak 5	7.84	Baseline Smoothing	mooret	05/29/19 17:22

Lab Sample ID: CCV 280-458587/26 Client Sample ID: _____

Date Analyzed: 05/17/19 20:35 Lab File ID: 05170026.D GC Column: CLP1 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.23	Baseline Smoothing	mooret	05/20/19 19:06
Toxaphene Peak 2	6.82	Baseline Smoothing	mooret	05/20/19 19:06
Toxaphene Peak 3	7.04	Baseline Smoothing	mooret	05/20/19 19:06
Toxaphene Peak 4	7.49	Baseline Smoothing	mooret	05/20/19 19:06
Toxaphene Peak 5	7.70	Baseline Smoothing	mooret	05/20/19 19:06

PESTICIDES MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P1 Analysis Batch Number: 458587

Lab Sample ID: CCV 280-458587/26 Client Sample ID: _____

Date Analyzed: 05/17/19 20:35 Lab File ID: 05170026.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toxaphene Peak 1	6.11	Baseline Smoothing	mooret	05/20/19 19:06
Toxaphene Peak 2	6.80	Baseline Smoothing	mooret	05/20/19 19:06
Toxaphene Peak 3	7.11	Baseline Smoothing	mooret	05/20/19 19:06
Toxaphene Peak 4	7.49	Baseline Smoothing	mooret	05/20/19 19:06
Toxaphene Peak 5	7.84	Baseline Smoothing	mooret	05/20/19 19:06

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P3 Analysis Batch Number: 459083Lab Sample ID: STD1 280-459083/10 IC Client Sample ID: _____Date Analyzed: 05/21/19 15:29 Lab File ID: 010B1101.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1221 Peak 1	3.10	Baseline Smoothing	mooret	05/22/19 19:35
PCB-1221 Peak 2	3.23	Baseline Smoothing	mooret	05/22/19 19:35
PCB-1221 Peak 3	3.29	Baseline Smoothing	mooret	05/22/19 19:35

Lab Sample ID: STD2 280-459083/11 IC Client Sample ID: _____Date Analyzed: 05/21/19 15:51 Lab File ID: 011B1201.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1221 Peak 1	3.11	Baseline Smoothing	mooret	05/22/19 19:36
PCB-1221 Peak 2	3.24	Baseline Smoothing	mooret	05/22/19 19:36
PCB-1221 Peak 3	3.29	Baseline Smoothing	mooret	05/22/19 19:36

Lab Sample ID: STD3 280-459083/12 IC Client Sample ID: _____Date Analyzed: 05/21/19 16:12 Lab File ID: 012B1301.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1221 Peak 1	3.10	Baseline Smoothing	mooret	05/22/19 19:38
PCB-1221 Peak 2	3.23	Baseline Smoothing	mooret	05/22/19 19:38
PCB-1221 Peak 3	3.29	Baseline Smoothing	mooret	05/22/19 19:38

Lab Sample ID: STD4 280-459083/13 IC Client Sample ID: _____Date Analyzed: 05/21/19 16:34 Lab File ID: 013B1401.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1221 Peak 1	3.10	Baseline Smoothing	mooret	05/22/19 19:42
PCB-1221 Peak 2	3.23	Baseline Smoothing	mooret	05/22/19 19:42
PCB-1221 Peak 3	3.29	Baseline Smoothing	mooret	05/22/19 19:42

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P3 Analysis Batch Number: 459083Lab Sample ID: STD5 280-459083/14 IC Client Sample ID: _____Date Analyzed: 05/21/19 16:56 Lab File ID: 014B1501.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1221 Peak 1	3.10	Baseline Smoothing	mooret	05/22/19 19:43
PCB-1221 Peak 2	3.23	Baseline Smoothing	mooret	05/22/19 19:43
PCB-1221 Peak 3	3.29	Baseline Smoothing	mooret	05/22/19 19:43

Lab Sample ID: STD1 280-459083/24 IC Client Sample ID: _____Date Analyzed: 05/21/19 20:35 Lab File ID: 024B2501.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1232 Peak 1	3.29	Baseline Smoothing	mooret	05/22/19 19:57

Lab Sample ID: STD2 280-459083/25 IC Client Sample ID: _____Date Analyzed: 05/21/19 20:57 Lab File ID: 025B2601.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1232 Peak 1	3.29	Baseline Smoothing	mooret	05/22/19 19:58

Lab Sample ID: STD3 280-459083/26 IC Client Sample ID: _____Date Analyzed: 05/21/19 21:19 Lab File ID: 026B2701.D GC Column: CLP1 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1232 Peak 3	4.00	Baseline Smoothing	mooret	05/22/19 20:06
PCB-1232 Peak 4	4.14	Baseline Smoothing	mooret	05/22/19 20:06

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P3 Analysis Batch Number: 459083Lab Sample ID: STD3 280-459083/26 IC Client Sample ID: _____Date Analyzed: 05/21/19 21:19 Lab File ID: 026B2701.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1232 Peak 1	3.29	Baseline Smoothing	mooret	05/22/19 19:58

Lab Sample ID: STD4 280-459083/27 IC Client Sample ID: _____Date Analyzed: 05/21/19 21:41 Lab File ID: 027B2801.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1232 Peak 1	3.29	Baseline Smoothing	mooret	05/22/19 19:58

Lab Sample ID: STD5 280-459083/28 IC Client Sample ID: _____Date Analyzed: 05/21/19 22:03 Lab File ID: 028B2901.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1232 Peak 2	3.69	Baseline Smoothing	mooret	05/22/19 19:56
PCB-1232 Peak 3	4.15	Baseline Smoothing	mooret	05/22/19 19:56
PCB-1232 Peak 4	4.30	Baseline Smoothing	mooret	05/22/19 19:56
PCB-1232 Peak 5	4.53	Baseline Smoothing	mooret	05/22/19 19:56

Lab Sample ID: STD7 280-459083/30 IC Client Sample ID: _____Date Analyzed: 05/21/19 22:46 Lab File ID: 030B3101.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1232 Peak 1	3.29	Baseline Smoothing	mooret	05/22/19 19:59
PCB-1232 Peak 2	3.69	Baseline Smoothing	mooret	05/22/19 19:59
PCB-1232 Peak 3	4.15	Baseline Smoothing	mooret	05/22/19 19:59
PCB-1232 Peak 4	4.30	Baseline Smoothing	mooret	05/22/19 19:59
PCB-1232 Peak 5	4.53	Baseline Smoothing	mooret	05/22/19 19:59

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P3 Analysis Batch Number: 459083Lab Sample ID: ICV 280-459083/39 Client Sample ID: _____Date Analyzed: 05/22/19 02:03 Lab File ID: 039B4001.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1221 Peak 1	3.10	Baseline Smoothing	mooret	05/22/19 19:46
PCB-1221 Peak 2	3.23	Baseline Smoothing	mooret	05/22/19 19:46
PCB-1221 Peak 3	3.29	Baseline Smoothing	mooret	05/22/19 19:46

Lab Sample ID: ICV 280-459083/40 Client Sample ID: _____Date Analyzed: 05/22/19 02:25 Lab File ID: 040B4101.D GC Column: CLP1 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1260 Peak 5	8.14	Incomplete Integration	mooret	05/22/19 19:01

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P3 Analysis Batch Number: 459265Lab Sample ID: MB 280-457201/1-A Client Sample ID: _____Date Analyzed: 05/23/19 15:14 Lab File ID: 005B0601.D GC Column: CLP1 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1016		Unspecified		
PCB-1221		Unspecified		
PCB-1232		Unspecified		
PCB-1242		Unspecified		
PCB-1248		Unspecified		
PCB-1254		Unspecified		
PCB-1260		Unspecified		
PCB-1016 Peak 1		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1016 Peak 2		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1016 Peak 3		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1016 Peak 4		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1016 Peak 5		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1221 Peak 1		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1221 Peak 2		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1221 Peak 3		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1232 Peak 1		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1232 Peak 2		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1232 Peak 3		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1232 Peak 4		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1232 Peak 5		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1242 Peak 1		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1242 Peak 2		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1242 Peak 3		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1242 Peak 4		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1242 Peak 5		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1248 Peak 1		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1248 Peak 2		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1248 Peak 3		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1248 Peak 4		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1248 Peak 5		Invalid Compound ID	mooret	05/28/19 10:06

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P3 Analysis Batch Number: 459265Lab Sample ID: MB 280-457201/1-A Client Sample ID: _____Date Analyzed: 05/23/19 15:14 Lab File ID: 005B0601.D GC Column: CLP1 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1254 Peak 1		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1254 Peak 2		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1254 Peak 3		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1254 Peak 4		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1254 Peak 5		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1260 Peak 1		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1260 Peak 2		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1260 Peak 3		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1260 Peak 4		Invalid Compound ID	mooret	05/28/19 10:06
PCB-1260 Peak 5		Invalid Compound ID	mooret	05/28/19 10:06

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P3 Analysis Batch Number: 459265Lab Sample ID: MB 280-457201/1-A Client Sample ID: _____Date Analyzed: 05/23/19 15:14 Lab File ID: 005B0601.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1016		Unspecified		
PCB-1221		Unspecified		
PCB-1232		Unspecified		
PCB-1242		Unspecified		
PCB-1248		Unspecified		
PCB-1254		Unspecified		
PCB-1260		Unspecified		
PCB-1016 Peak 1		Unspecified		
PCB-1016 Peak 2		Unspecified		
PCB-1016 Peak 3		Unspecified		
PCB-1016 Peak 4		Unspecified		
PCB-1016 Peak 5		Unspecified		
PCB-1221 Peak 1		Unspecified		
PCB-1221 Peak 2		Unspecified		
PCB-1221 Peak 3		Unspecified		
PCB-1232 Peak 1		Unspecified		
PCB-1232 Peak 2		Unspecified		
PCB-1232 Peak 3		Unspecified		
PCB-1232 Peak 4		Unspecified		
PCB-1232 Peak 5		Unspecified		
PCB-1242 Peak 1		Unspecified		
PCB-1242 Peak 2		Unspecified		
PCB-1242 Peak 3		Unspecified		
PCB-1242 Peak 4		Unspecified		
PCB-1242 Peak 5		Unspecified		
PCB-1248 Peak 1		Unspecified		
PCB-1248 Peak 2		Unspecified		
PCB-1248 Peak 3		Unspecified		
PCB-1248 Peak 4		Unspecified		
PCB-1248 Peak 5		Unspecified		

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P3 Analysis Batch Number: 459265Lab Sample ID: MB 280-457201/1-A Client Sample ID: _____Date Analyzed: 05/23/19 15:14 Lab File ID: 005B0601.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1254 Peak 1		Unspecified		
PCB-1254 Peak 2		Unspecified		
PCB-1254 Peak 3		Unspecified		
PCB-1254 Peak 4		Unspecified		
PCB-1254 Peak 5		Unspecified		
PCB-1260 Peak 1		Unspecified		
PCB-1260 Peak 2		Unspecified		
PCB-1260 Peak 3		Unspecified		
PCB-1260 Peak 4		Unspecified		
PCB-1260 Peak 5		Unspecified		

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P3 Analysis Batch Number: 459265Lab Sample ID: 280-123221-4 Client Sample ID: DET-003-190401-GWDate Analyzed: 05/23/19 15:58 Lab File ID: 007B0801.D GC Column: CLP1 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1016		Unspecified		
PCB-1221		Unspecified		
PCB-1232		Unspecified		
PCB-1016 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1016 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1016 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1016 Peak 4		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1016 Peak 5		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1221 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1221 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1221 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1232 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1232 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1232 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1232 Peak 4		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1232 Peak 5		Invalid Compound ID	mooret	05/28/19 09:56

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P3 Analysis Batch Number: 459265Lab Sample ID: 280-123221-4 Client Sample ID: DET-003-190401-GWDate Analyzed: 05/23/19 15:58 Lab File ID: 007B0801.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1016		Unspecified		
PCB-1221		Unspecified		
PCB-1232		Unspecified		
PCB-1016 Peak 1		Unspecified		
PCB-1016 Peak 2		Unspecified		
PCB-1016 Peak 3		Unspecified		
PCB-1016 Peak 4		Unspecified		
PCB-1016 Peak 5		Unspecified		
PCB-1221 Peak 1		Unspecified		
PCB-1221 Peak 2		Unspecified		
PCB-1221 Peak 3		Unspecified		
PCB-1232 Peak 1		Unspecified		
PCB-1232 Peak 2		Unspecified		
PCB-1232 Peak 3		Unspecified		
PCB-1232 Peak 4		Unspecified		
PCB-1232 Peak 5		Unspecified		

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P3 Analysis Batch Number: 459265Lab Sample ID: 280-123221-4 MS Client Sample ID: DET-003-190401-GWMS MSDate Analyzed: 05/23/19 16:19 Lab File ID: 008B0901.D GC Column: CLP1 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1221		Unspecified		
PCB-1232		Unspecified		
PCB-1242		Unspecified		
PCB-1248		Unspecified		
PCB-1254		Unspecified		
PCB-1221 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1221 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1221 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1232 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1232 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1232 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1232 Peak 4		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1232 Peak 5		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1242 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1242 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1242 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1242 Peak 4		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1242 Peak 5		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1248 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1248 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1248 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1248 Peak 4		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1248 Peak 5		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1254 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1254 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1254 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1254 Peak 4		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1254 Peak 5		Invalid Compound ID	mooret	05/28/19 09:56

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P3 Analysis Batch Number: 459265Lab Sample ID: 280-123221-4 MS Client Sample ID: DET-003-190401-GWMS MSDate Analyzed: 05/23/19 16:19 Lab File ID: 008B0901.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1221		Unspecified		
PCB-1232		Unspecified		
PCB-1242		Unspecified		
PCB-1248		Unspecified		
PCB-1254		Unspecified		
PCB-1221 Peak 1		Unspecified		
PCB-1221 Peak 2		Unspecified		
PCB-1221 Peak 3		Unspecified		
PCB-1232 Peak 1		Unspecified		
PCB-1232 Peak 2		Unspecified		
PCB-1232 Peak 3		Unspecified		
PCB-1232 Peak 4		Unspecified		
PCB-1232 Peak 5		Unspecified		
PCB-1242 Peak 1		Unspecified		
PCB-1242 Peak 2		Unspecified		
PCB-1242 Peak 3		Unspecified		
PCB-1242 Peak 4		Unspecified		
PCB-1242 Peak 5		Unspecified		
PCB-1248 Peak 1		Unspecified		
PCB-1248 Peak 2		Unspecified		
PCB-1248 Peak 3		Unspecified		
PCB-1248 Peak 4		Unspecified		
PCB-1248 Peak 5		Unspecified		
PCB-1254 Peak 1		Unspecified		
PCB-1254 Peak 2		Unspecified		
PCB-1254 Peak 3		Unspecified		
PCB-1254 Peak 4		Unspecified		
PCB-1254 Peak 5		Unspecified		

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P3 Analysis Batch Number: 459265Lab Sample ID: 280-123221-4 MSD Client Sample ID: DET-003-190401-GWMSD MSDDate Analyzed: 05/23/19 16:41 Lab File ID: 009B1001.D GC Column: CLP1 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1221		Unspecified		
PCB-1232		Unspecified		
PCB-1242		Unspecified		
PCB-1248		Unspecified		
PCB-1254		Unspecified		
PCB-1221 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1221 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1221 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1232 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1232 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1232 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1232 Peak 4		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1232 Peak 5		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1242 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1242 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1242 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1242 Peak 4		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1242 Peak 5		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1248 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1248 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1248 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1248 Peak 4		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1248 Peak 5		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1254 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1254 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1254 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1254 Peak 4		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1254 Peak 5		Invalid Compound ID	mooret	05/28/19 09:56

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P3 Analysis Batch Number: 459265Lab Sample ID: 280-123221-4 MSD Client Sample ID: DET-003-190401-GWMSD MSDDate Analyzed: 05/23/19 16:41 Lab File ID: 009B1001.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1221		Unspecified		
PCB-1232		Unspecified		
PCB-1242		Unspecified		
PCB-1248		Unspecified		
PCB-1254		Unspecified		
PCB-1221 Peak 1		Unspecified		
PCB-1221 Peak 2		Unspecified		
PCB-1221 Peak 3		Unspecified		
PCB-1232 Peak 1		Unspecified		
PCB-1232 Peak 2		Unspecified		
PCB-1232 Peak 3		Unspecified		
PCB-1232 Peak 4		Unspecified		
PCB-1232 Peak 5		Unspecified		
PCB-1242 Peak 1		Unspecified		
PCB-1242 Peak 2		Unspecified		
PCB-1242 Peak 3		Unspecified		
PCB-1242 Peak 4		Unspecified		
PCB-1242 Peak 5		Unspecified		
PCB-1248 Peak 1		Unspecified		
PCB-1248 Peak 2		Unspecified		
PCB-1248 Peak 3		Unspecified		
PCB-1248 Peak 4		Unspecified		
PCB-1248 Peak 5		Unspecified		
PCB-1254 Peak 1		Unspecified		
PCB-1254 Peak 2		Unspecified		
PCB-1254 Peak 3		Unspecified		
PCB-1254 Peak 4		Unspecified		
PCB-1254 Peak 5		Unspecified		

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P3 Analysis Batch Number: 459265Lab Sample ID: 280-123221-5 Client Sample ID: DET-003-190402-GWDate Analyzed: 05/23/19 17:03 Lab File ID: 010B1101.D GC Column: CLP1 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1016		Unspecified		
PCB-1221		Unspecified		
PCB-1232		Unspecified		
PCB-1242		Unspecified		
PCB-1248		Unspecified		
PCB-1254		Unspecified		
PCB-1260		Unspecified		
PCB-1016 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1016 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1016 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1016 Peak 4		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1016 Peak 5		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1221 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1221 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1221 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1232 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1232 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1232 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1232 Peak 4		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1232 Peak 5		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1242 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1242 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1242 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1242 Peak 4		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1242 Peak 5		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1248 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1248 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1248 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1248 Peak 4		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1248 Peak 5		Invalid Compound ID	mooret	05/28/19 09:56

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P3 Analysis Batch Number: 459265Lab Sample ID: 280-123221-5 Client Sample ID: DET-003-190402-GWDate Analyzed: 05/23/19 17:03 Lab File ID: 010B1101.D GC Column: CLP1 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1254 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1254 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1254 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1254 Peak 4		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1254 Peak 5		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1260 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1260 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1260 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1260 Peak 4		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1260 Peak 5		Invalid Compound ID	mooret	05/28/19 09:56

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P3 Analysis Batch Number: 459265Lab Sample ID: 280-123221-5 Client Sample ID: DET-003-190402-GWDate Analyzed: 05/23/19 17:03 Lab File ID: 010B1101.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1016		Unspecified		
PCB-1221		Unspecified		
PCB-1232		Unspecified		
PCB-1242		Unspecified		
PCB-1248		Unspecified		
PCB-1254		Unspecified		
PCB-1260		Unspecified		
PCB-1016 Peak 1		Unspecified		
PCB-1016 Peak 2		Unspecified		
PCB-1016 Peak 3		Unspecified		
PCB-1016 Peak 4		Unspecified		
PCB-1016 Peak 5		Unspecified		
PCB-1221 Peak 1		Unspecified		
PCB-1221 Peak 2		Unspecified		
PCB-1221 Peak 3		Unspecified		
PCB-1232 Peak 1		Unspecified		
PCB-1232 Peak 2		Unspecified		
PCB-1232 Peak 3		Unspecified		
PCB-1232 Peak 4		Unspecified		
PCB-1232 Peak 5		Unspecified		
PCB-1242 Peak 1		Unspecified		
PCB-1242 Peak 2		Unspecified		
PCB-1242 Peak 3		Unspecified		
PCB-1242 Peak 4		Unspecified		
PCB-1242 Peak 5		Unspecified		
PCB-1248 Peak 1		Unspecified		
PCB-1248 Peak 2		Unspecified		
PCB-1248 Peak 3		Unspecified		
PCB-1248 Peak 4		Unspecified		
PCB-1248 Peak 5		Unspecified		

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P3 Analysis Batch Number: 459265Lab Sample ID: 280-123221-5 Client Sample ID: DET-003-190402-GWDate Analyzed: 05/23/19 17:03 Lab File ID: 010B1101.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1254 Peak 1		Unspecified		
PCB-1254 Peak 2		Unspecified		
PCB-1254 Peak 3		Unspecified		
PCB-1254 Peak 4		Unspecified		
PCB-1254 Peak 5		Unspecified		
PCB-1260 Peak 1		Unspecified		
PCB-1260 Peak 2		Unspecified		
PCB-1260 Peak 3		Unspecified		
PCB-1260 Peak 4		Unspecified		
PCB-1260 Peak 5		Unspecified		

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P3 Analysis Batch Number: 459265Lab Sample ID: 280-123221-7 Client Sample ID: DET-004-190401-GWDate Analyzed: 05/23/19 17:25 Lab File ID: 011B1201.D GC Column: CLP1 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1016		Unspecified		
PCB-1221		Unspecified		
PCB-1232		Unspecified		
PCB-1242		Unspecified		
PCB-1248		Unspecified		
PCB-1254		Unspecified		
PCB-1260		Unspecified		
PCB-1016 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1016 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1016 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1016 Peak 4		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1016 Peak 5		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1221 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1221 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1221 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1232 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1232 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1232 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1232 Peak 4		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1232 Peak 5		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1242 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1242 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1242 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1242 Peak 4		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1242 Peak 5		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1248 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1248 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1248 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1248 Peak 4		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1248 Peak 5		Invalid Compound ID	mooret	05/28/19 09:56

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P3 Analysis Batch Number: 459265Lab Sample ID: 280-123221-7 Client Sample ID: DET-004-190401-GWDate Analyzed: 05/23/19 17:25 Lab File ID: 011B1201.D GC Column: CLP1 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1254 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1254 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1254 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1254 Peak 4		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1254 Peak 5		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1260 Peak 1		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1260 Peak 2		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1260 Peak 3		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1260 Peak 4		Invalid Compound ID	mooret	05/28/19 09:56
PCB-1260 Peak 5		Invalid Compound ID	mooret	05/28/19 09:56

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P3 Analysis Batch Number: 459265Lab Sample ID: 280-123221-7 Client Sample ID: DET-004-190401-GWDate Analyzed: 05/23/19 17:25 Lab File ID: 011B1201.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1016		Unspecified		
PCB-1221		Unspecified		
PCB-1232		Unspecified		
PCB-1242		Unspecified		
PCB-1248		Unspecified		
PCB-1254		Unspecified		
PCB-1260		Unspecified		
PCB-1016 Peak 1		Unspecified		
PCB-1016 Peak 2		Unspecified		
PCB-1016 Peak 3		Unspecified		
PCB-1016 Peak 4		Unspecified		
PCB-1016 Peak 5		Unspecified		
PCB-1221 Peak 1		Unspecified		
PCB-1221 Peak 2		Unspecified		
PCB-1221 Peak 3		Unspecified		
PCB-1232 Peak 1		Unspecified		
PCB-1232 Peak 2		Unspecified		
PCB-1232 Peak 3		Unspecified		
PCB-1232 Peak 4		Unspecified		
PCB-1232 Peak 5		Unspecified		
PCB-1242 Peak 1		Unspecified		
PCB-1242 Peak 2		Unspecified		
PCB-1242 Peak 3		Unspecified		
PCB-1242 Peak 4		Unspecified		
PCB-1242 Peak 5		Unspecified		
PCB-1248 Peak 1		Unspecified		
PCB-1248 Peak 2		Unspecified		
PCB-1248 Peak 3		Unspecified		
PCB-1248 Peak 4		Unspecified		
PCB-1248 Peak 5		Unspecified		

PCBS MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P3 Analysis Batch Number: 459265Lab Sample ID: 280-123221-7 Client Sample ID: DET-004-190401-GWDate Analyzed: 05/23/19 17:25 Lab File ID: 011B1201.D GC Column: CLP2 ID: 0.32 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PCB-1254 Peak 1		Unspecified		
PCB-1254 Peak 2		Unspecified		
PCB-1254 Peak 3		Unspecified		
PCB-1254 Peak 4		Unspecified		
PCB-1254 Peak 5		Unspecified		
PCB-1260 Peak 1		Unspecified		
PCB-1260 Peak 2		Unspecified		
PCB-1260 Peak 3		Unspecified		
PCB-1260 Peak 4		Unspecified		
PCB-1260 Peak 5		Unspecified		

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: CHHPLC_G2_LUNA Analysis Batch Number: 457315Lab Sample ID: IC 280-457315/7 Client Sample ID: _____Date Analyzed: 05/07/19 15:08 Lab File ID: 05070007.D GC Column: Luna-phenylhe ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Picric acid	5.64	Peak assignment corrected	fiedlerh	05/08/19 09:04

Lab Sample ID: IC 280-457315/13 Client Sample ID: _____Date Analyzed: 05/07/19 18:38 Lab File ID: 05070013.D GC Column: Luna-phenylhe ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Picric acid	6.15	Peak assignment corrected	fiedlerh	05/08/19 09:04

Lab Sample ID: IC 280-457315/14 Client Sample ID: _____Date Analyzed: 05/07/19 19:13 Lab File ID: 05070014.D GC Column: Luna-phenylhe ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Picric acid	6.21	Peak assignment corrected	fiedlerh	05/08/19 09:04
PETN	25.37	Baseline Smoothing	fiedlerh	05/08/19 09:10

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: CHHPLC_G2_LUNA Analysis Batch Number: 457992Lab Sample ID: 280-123221-7 Client Sample ID: DET-004-190401-GWDate Analyzed: 05/13/19 23:00 Lab File ID: 05130013.D GC Column: Luna-phenylhe ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
3-Nitrotoluene		Invalid Compound ID	fiedlerh	05/14/19 10:11
PETN	25.33	Baseline Smoothing	fiedlerh	05/14/19 10:11

Lab Sample ID: 280-123221-10 Client Sample ID: WBGmw-006-190401-GWDate Analyzed: 05/13/19 23:35 Lab File ID: 05130014.D GC Column: Luna-phenylhe ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
3-Nitrotoluene		Invalid Compound ID	fiedlerh	05/14/19 10:11

Lab Sample ID: 280-123221-12 Client Sample ID: WBGmw-009-190401-GWDate Analyzed: 05/14/19 00:10 Lab File ID: 05130015.D GC Column: Luna-phenylhe ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
3-Nitrotoluene		Invalid Compound ID	fiedlerh	05/14/19 10:11

Lab Sample ID: CCV 280-457992/19 Client Sample ID: _____Date Analyzed: 05/14/19 02:30 Lab File ID: 05130019.D GC Column: Luna-phenylhe ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Picric acid	4.96	Peak assignment corrected	fiedlerh	05/14/19 10:14

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: CHHPLC_G2_LUNA Analysis Batch Number: 458394Lab Sample ID: 280-123221-7 RE Client Sample ID: DET-004-190401-GW REDate Analyzed: 05/16/19 17:57 Lab File ID: 05160015.D GC Column: Luna-phenylhe ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	7.23	Baseline Smoothing	fiedlerh	05/17/19 08:51
3-Nitrotoluene		Invalid Compound ID	fiedlerh	05/17/19 08:51
PETN		Invalid Compound ID	fiedlerh	05/17/19 08:51

Lab Sample ID: 280-123221-10 RE Client Sample ID: WBGmw-006-190401-GW REDate Analyzed: 05/16/19 18:32 Lab File ID: 05160016.D GC Column: Luna-phenylhe ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
3-Nitrotoluene		Invalid Compound ID	fiedlerh	05/17/19 08:52

Lab Sample ID: CCV 280-458394/17 Client Sample ID: _____Date Analyzed: 05/16/19 19:07 Lab File ID: 05160017.D GC Column: Luna-phenylhe ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Picric acid	5.18	Peak assignment corrected	fiedlerh	05/17/19 08:53

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: CHHPLC_G2_LUNA Analysis Batch Number: 458794Lab Sample ID: 280-123221-12 RE Client Sample ID: WBGmw-009-190401-GW REDate Analyzed: 05/20/19 15:51 Lab File ID: 05200009.D GC Column: Luna-phenylhe ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
4-Nitrotoluene		Invalid Compound ID	fiedlerh	05/21/19 10:32
3-Nitrotoluene	17.88	Baseline Smoothing	fiedlerh	05/21/19 10:33

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: CHHPLC_X3 Analysis Batch Number: 445350Lab Sample ID: IC 280-445350/13 Client Sample ID: _____Date Analyzed: 01/24/19 18:55 Lab File ID: 01240013.D GC Column: UltraCarb5uOD ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PETN	14.97	Baseline Smoothing	fiedlerh	01/25/19 09:50

Lab Sample ID: IC 280-445350/14 Client Sample ID: _____Date Analyzed: 01/24/19 19:18 Lab File ID: 01240014.D GC Column: UltraCarb5uOD ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
PETN	15.01	Baseline Smoothing	fiedlerh	01/25/19 09:50

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: CHHPLC_X3 Analysis Batch Number: 457634Lab Sample ID: MB 280-456980/1-A Client Sample ID: _____Date Analyzed: 05/10/19 03:52 Lab File ID: 0509B035.D GC Column: UltraCarb5uOD ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,3,5-Trinitrobenzene		Invalid Compound ID	fiedlerh	05/10/19 08:41

Lab Sample ID: 280-123221-2 MS Client Sample ID: NTAmw-119-190401-GWMS MSDate Analyzed: 05/10/19 05:50 Lab File ID: 0509B040.D GC Column: UltraCarb5uOD ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	6.65	Baseline Smoothing	fiedlerh	05/10/19 08:41

Lab Sample ID: 280-123221-2 MSD Client Sample ID: NTAmw-119-190401-GWMSD MSDDate Analyzed: 05/10/19 06:14 Lab File ID: 0509B041.D GC Column: UltraCarb5uOD ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	6.65	Baseline Smoothing	fiedlerh	05/10/19 08:42
Nitrobenzene	9.93	Baseline Smoothing	fiedlerh	05/10/19 08:42

Lab Sample ID: 280-123221-4 MS Client Sample ID: DET-003-190401-GWMS MSDate Analyzed: 05/10/19 07:25 Lab File ID: 0509B044.D GC Column: UltraCarb5uOD ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	6.64	Baseline Smoothing	fiedlerh	05/10/19 08:42

Lab Sample ID: 280-123221-4 MSD Client Sample ID: DET-003-190401-GWMSD MSDDate Analyzed: 05/10/19 09:01 Lab File ID: 0509B048.D GC Column: UltraCarb5uOD ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	6.64	Baseline Smoothing	fiedlerh	05/10/19 17:35

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: CHHPLC_X3 Analysis Batch Number: 457634Lab Sample ID: 280-123221-7 Client Sample ID: DET-004-190401-GWDate Analyzed: 05/10/19 09:48 Lab File ID: 0509B050.D GC Column: UltraCarb5uOD ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	6.64	Baseline Smoothing	fiedlerh	05/10/19 17:35
RDX	7.73	Baseline Smoothing	fiedlerh	05/10/19 17:35

Lab Sample ID: 280-123221-10 Client Sample ID: WBGmw-006-190401-GWDate Analyzed: 05/10/19 10:59 Lab File ID: 0509B053.D GC Column: UltraCarb5uOD ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	6.64	Baseline Smoothing	fiedlerh	05/10/19 17:36

Lab Sample ID: 280-123221-12 Client Sample ID: WBGmw-009-190401-GWDate Analyzed: 05/10/19 11:47 Lab File ID: 0509B055.D GC Column: UltraCarb5uOD ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	6.64	Baseline Smoothing	fiedlerh	05/10/19 17:36
RDX	7.73	Baseline Smoothing	fiedlerh	05/10/19 17:36

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: CHHPLC_X3 Analysis Batch Number: 458150Lab Sample ID: IC 280-458150/7 Client Sample ID: _____Date Analyzed: 05/14/19 15:49 Lab File ID: 0514B007.D GC Column: UltraCarb5uOD ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2,4,6-Trinitrotoluene	11.24	Baseline Smoothing	fiedlerh	05/15/19 10:08

Lab Sample ID: IC 280-458150/8 Client Sample ID: _____Date Analyzed: 05/14/19 16:13 Lab File ID: 0514B008.D GC Column: UltraCarb5uOD ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
3-Nitrotoluene	13.93	Baseline Smoothing	fiedlerh	05/15/19 10:09

Lab Sample ID: IC 280-458150/13 Client Sample ID: _____Date Analyzed: 05/14/19 18:11 Lab File ID: 0514B013.D GC Column: UltraCarb5uOD ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2-Amino-4,6-dinitrotoluene	11.72	Unspecified		
2,6-Dinitrotoluene	11.85	Unspecified		

Lab Sample ID: IC 280-458150/14 Client Sample ID: _____Date Analyzed: 05/14/19 18:35 Lab File ID: 0514B014.D GC Column: UltraCarb5uOD ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2-Amino-4,6-dinitrotoluene	11.74	Baseline Smoothing	fiedlerh	05/15/19 10:11
2,6-Dinitrotoluene	11.87	Unspecified		

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: CHHPLC_X3 Analysis Batch Number: 458152Lab Sample ID: LCS 280-457741/2-A Client Sample ID: _____Date Analyzed: 05/15/19 11:36 Lab File ID: 0514B057.D GC Column: UltraCarb5uOD ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	6.65	Baseline Smoothing	fiedlerh	05/15/19 12:35

Lab Sample ID: 280-123221-2 MS RE Client Sample ID: NTAmw-119-190401-GWMS MS REDate Analyzed: 05/15/19 18:20 Lab File ID: 0514B074.D GC Column: UltraCarb5uOD ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	6.65	Baseline Smoothing	fiedlerh	05/16/19 08:18
Nitrobenzene	9.96	Baseline Smoothing	fiedlerh	05/16/19 08:18

Lab Sample ID: 280-123221-2 MSD RE Client Sample ID: NTAmw-119-190401-GWMSD MSD REDate Analyzed: 05/15/19 18:44 Lab File ID: 0514B075.D GC Column: UltraCarb5uOD ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	6.65	Baseline Smoothing	fiedlerh	05/16/19 08:18
Nitrobenzene	9.96	Baseline Smoothing	fiedlerh	05/16/19 08:18
Tetryl	10.28	Baseline Smoothing	fiedlerh	05/16/19 08:19

Lab Sample ID: 280-123221-4 MS RE Client Sample ID: DET-003-190401-GWMS MS REDate Analyzed: 05/15/19 19:56 Lab File ID: 0514B078.D GC Column: UltraCarb5uOD ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	6.65	Baseline Smoothing	fiedlerh	05/16/19 08:19

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: CHHPLC_X3 Analysis Batch Number: 458152Lab Sample ID: 280-123221-4 MSD RE Client Sample ID: DET-003-190401-GWMSD MSD REDate Analyzed: 05/15/19 21:31 Lab File ID: 0514B082.D GC Column: UltraCarb5uOD ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	6.65	Baseline Smoothing	fiedlerh	05/16/19 08:20

Lab Sample ID: 280-123221-7 RE Client Sample ID: DET-004-190401-GW REDate Analyzed: 05/15/19 22:18 Lab File ID: 0514B084.D GC Column: UltraCarb5uOD ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	6.65	Baseline Smoothing	fiedlerh	05/16/19 08:21
RDX	7.76	Baseline Smoothing	fiedlerh	05/16/19 08:21
3-Nitrotoluene		Invalid Compound ID	fiedlerh	05/16/19 08:21

Lab Sample ID: 280-123221-10 RE Client Sample ID: WBGmw-006-190401-GW REDate Analyzed: 05/15/19 23:29 Lab File ID: 0514B087.D GC Column: UltraCarb5uOD ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	6.65	Baseline Smoothing	fiedlerh	05/16/19 08:22

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: CHHPLC_X3 Analysis Batch Number: 458457Lab Sample ID: MB 280-457818/1-A Client Sample ID: _____Date Analyzed: 05/16/19 15:48 Lab File ID: 0516B010.D GC Column: UltraCarb5uOD ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
3-Nitrotoluene		Invalid Compound ID	fiedlerh	05/17/19 08:09

Lab Sample ID: LCS 280-457818/2-A Client Sample ID: _____Date Analyzed: 05/16/19 16:11 Lab File ID: 0516B011.D GC Column: UltraCarb5uOD ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	6.66	Baseline Smoothing	fiedlerh	05/20/19 11:22

Lab Sample ID: LCSD 280-457818/3-A Client Sample ID: _____Date Analyzed: 05/16/19 16:35 Lab File ID: 0516B012.D GC Column: UltraCarb5uOD ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	6.66	Baseline Smoothing	fiedlerh	05/20/19 11:22

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: CHHPLC_X3 Analysis Batch Number: 458533Lab Sample ID: 280-123221-12 RE Client Sample ID: WBGmw-009-190401-GW REDate Analyzed: 05/17/19 11:59 Lab File ID: 05170011.D GC Column: UltraCarb5uOD ID: 4.6 (mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	6.66	Baseline Smoothing	fiedlerh	05/20/19 10:04
RDX	7.78	Baseline Smoothing	fiedlerh	05/20/19 10:04

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
8081 LCS_00474	05/09/19	05/02/19	P&T Methanol, Lot MethanolP&T_00230	50 mL	8081HCBPrim_00003	0.5 mL	Hexachlorobenzene	0.5 ug/mL
					8081LCSPrim_00046	0.5 mL	4,4'-DDD	0.5 ug/mL
							4,4'-DDE	0.5 ug/mL
							4,4'-DDT	0.5 ug/mL
							Aldrin	0.5 ug/mL
							alpha-BHC	0.5 ug/mL
							alpha-Chlordane	0.5 ug/mL
							beta-BHC	0.5 ug/mL
							delta-BHC	0.5 ug/mL
							Dieldrin	0.5 ug/mL
							Endosulfan I	0.5 ug/mL
							Endosulfan II	0.5 ug/mL
							Endosulfan sulfate	0.5 ug/mL
							Endrin	0.5 ug/mL
							Endrin aldehyde	0.5 ug/mL
							Endrin ketone	0.5 ug/mL
							gamma-BHC (Lindane)	0.5 ug/mL
							gamma-Chlordane	0.5 ug/mL
							Heptachlor	0.5 ug/mL
Heptachlor epoxide	0.5 ug/mL							
Methoxychlor	0.5 ug/mL							
.8081HCBPrim_00003	09/05/19	03/05/19	Hexane, Lot Hexane Cycl 00055	10 mL	8081HCBStkSS_00039	0.5 mL	Hexachlorobenzene	50 ug/mL
..8081HCBStkSS_00039	12/31/21	Ultra Scientific, Lot CR-5129			(Purchased Reagent)		Hexachlorobenzene	1000 ug/mL
.8081LCSPrim_00046	08/21/19	02/21/19	Hexane, Lot Hexane_Cycl_00053	10 mL	8081ABResPS_00030	0.25 mL	4,4'-DDD	50 ug/mL
							4,4'-DDE	50 ug/mL
							4,4'-DDT	50 ug/mL
							Aldrin	50 ug/mL
							alpha-BHC	50 ug/mL
							alpha-Chlordane	50 ug/mL
							beta-BHC	50 ug/mL
							delta-BHC	50 ug/mL
							Dieldrin	50 ug/mL
							Endosulfan I	50 ug/mL
							Endosulfan II	50 ug/mL
							Endosulfan sulfate	50 ug/mL
							Endrin	50 ug/mL
							Endrin aldehyde	50 ug/mL
							Endrin ketone	50 ug/mL
							gamma-BHC (Lindane)	50 ug/mL
							gamma-Chlordane	50 ug/mL
							Heptachlor	50 ug/mL
							Heptachlor epoxide	50 ug/mL
Methoxychlor	50 ug/mL							
..8081ABResPS_00030	10/30/19	Restek, Lot A0133751			(Purchased Reagent)		4,4'-DDD	2000 ug/mL
						4,4'-DDE	2000 ug/mL	

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							4,4'-DDT	2000 ug/mL
							Aldrin	2000 ug/mL
							alpha-BHC	2000 ug/mL
							alpha-Chlordane	2000 ug/mL
							beta-BHC	2000 ug/mL
							delta-BHC	2000 ug/mL
							Dieldrin	2000 ug/mL
							Endosulfan I	2000 ug/mL
							Endosulfan II	2000 ug/mL
							Endosulfan sulfate	2000 ug/mL
							Endrin	2000 ug/mL
							Endrin aldehyde	2000 ug/mL
							Endrin ketone	2000 ug/mL
							gamma-BHC (Lindane)	2000 ug/mL
							gamma-Chlordane	2000 ug/mL
							Heptachlor	2000 ug/mL
							Heptachlor epoxide	2000 ug/mL
							Methoxychlor	2000 ug/mL
8081/82 Surr_00111	11/06/19	05/06/19	ACETONE, Lot Acetone_000273	1000 mL	AR_SURR_RES_00105	1 mL	DCB Decachlorobiphenyl	0.2 ug/mL
.AR_SURR_RES_00105	11/30/24		RESTEK, Lot A0141110		(Purchased Reagent)		Tetrachloro-m-xylene	0.2 ug/mL
							DCB Decachlorobiphenyl	200 ug/mL
							Tetrachloro-m-xylene	200 ug/mL
8081_EvalBPem_00014	07/05/19	02/28/19	Hexane, Lot 195843	100 mL	8081EvalBStk2_00022	20 uL	4,4'-DDT	0.04 ug/mL
.8081EvalBStk2_00022	07/05/19		AccuStandard, Inc, Lot 217101288-01		(Purchased Reagent)		Endrin	0.04 ug/mL
							4,4'-DDT	200 ug/mL
							Endrin	200 ug/mL
8081_IS_00011	10/04/19	04/04/19	Hexane, Lot 195843	500 mL	BNB stock_00021	0.75 mL	1-Bromo-2-nitrobenzene	1.5 ug/mL
.BNB stock_00021	10/04/19		Restek, Lot A0127264		(Purchased Reagent)		1-Bromo-2-nitrobenzene	1000 ug/mL
8081ABICVL3_00036	06/01/19	02/20/19	Hexane, Lot 190112	100 mL	8081ABICVStk_00035	2.5 mL	4,4'-DDD	25 ng/mL
							4,4'-DDE	25 ng/mL
							4,4'-DDT	25 ng/mL
							Aldrin	25 ng/mL
							alpha-BHC	25 ng/mL
							alpha-Chlordane	25 ng/mL
							beta-BHC	25 ng/mL
							delta-BHC	25 ng/mL
							Dieldrin	25 ng/mL
							Endosulfan I	25 ng/mL
							Endosulfan II	25 ng/mL
							Endosulfan sulfate	25 ng/mL
							Endrin	25 ng/mL
							Endrin aldehyde	25 ng/mL
							Endrin ketone	25 ng/mL
							gamma-BHC (Lindane)	25 ng/mL
							gamma-Chlordane	25 ng/mL
							Heptachlor	25 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Heptachlor epoxide	25 ng/mL
							Methoxychlor	25 ng/mL
							DCB Decachlorobiphenyl	25 ng/mL
							Tetrachloro-m-xylene	25 ng/mL
.8081ABICVStk_00035	06/01/19	02/20/19	Hexane, Lot 190112	50 mL	8081ABResSS_00014	0.025 mL	4,4'-DDD	1000 ng/mL
							4,4'-DDE	1000 ng/mL
							4,4'-DDT	1000 ng/mL
							Aldrin	1000 ng/mL
							alpha-BHC	1000 ng/mL
							alpha-Chlordane	1000 ng/mL
							beta-BHC	1000 ng/mL
							delta-BHC	1000 ng/mL
							Dieldrin	1000 ng/mL
							Endosulfan I	1000 ng/mL
							Endosulfan II	1000 ng/mL
							Endosulfan sulfate	1000 ng/mL
							Endrin	1000 ng/mL
							Endrin aldehyde	1000 ng/mL
							Endrin ketone	1000 ng/mL
							gamma-BHC (Lindane)	1000 ng/mL
							gamma-Chlordane	1000 ng/mL
							Heptachlor	1000 ng/mL
							Heptachlor epoxide	1000 ng/mL
							Methoxychlor	1000 ng/mL
					AR_SURR_RES_00089	0.25 mL	DCB Decachlorobiphenyl	1000 ng/mL
							Tetrachloro-m-xylene	1000 ng/mL
..8081ABResSS_00014	06/01/19		Restek, Lot A0108854		(Purchased Reagent)		4,4'-DDD	2000 ug/mL
							4,4'-DDE	2000 ug/mL
							4,4'-DDT	2000 ug/mL
							Aldrin	2000 ug/mL
							alpha-BHC	2000 ug/mL
							alpha-Chlordane	2000 ug/mL
							beta-BHC	2000 ug/mL
							delta-BHC	2000 ug/mL
							Dieldrin	2000 ug/mL
							Endosulfan I	2000 ug/mL
							Endosulfan II	2000 ug/mL
							Endosulfan sulfate	2000 ug/mL
							Endrin	2000 ug/mL
							Endrin aldehyde	2000 ug/mL
							Endrin ketone	2000 ug/mL
							gamma-BHC (Lindane)	2000 ug/mL
							gamma-Chlordane	2000 ug/mL
							Heptachlor	2000 ug/mL
							Heptachlor epoxide	2000 ug/mL
							Methoxychlor	2000 ug/mL
..AR_SURR_RES_00089	11/30/23		RESTEK, Lot A0130424		(Purchased Reagent)		DCB Decachlorobiphenyl	200 ug/mL
							Tetrachloro-m-xylene	200 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
8081IcalL1_00026	06/20/19	12/21/18	Hexane, Lot 194963	100 mL	8081ABCalStk_00035	0.4 mL	4,4'-DDD	4 ng/mL
							4,4'-DDE	4 ng/mL
							4,4'-DDT	4 ng/mL
							Aldrin	4 ng/mL
							alpha-BHC	4 ng/mL
							alpha-Chlordane	4 ng/mL
							beta-BHC	4 ng/mL
							delta-BHC	4 ng/mL
							Dieldrin	4 ng/mL
							Endosulfan I	4 ng/mL
							Endosulfan II	4 ng/mL
							Endosulfan sulfate	4 ng/mL
							Endrin	4 ng/mL
							Endrin aldehyde	4 ng/mL
							Endrin ketone	4 ng/mL
							gamma-BHC (Lindane)	4 ng/mL
							gamma-Chlordane	4 ng/mL
							Heptachlor	4 ng/mL
							Heptachlor epoxide	4 ng/mL
							Methoxychlor	4 ng/mL
.8081ABCalStk_00035	06/20/19	12/21/18	Hexane, Lot 194963	100 mL	8081ABResPS_00027	0.05 mL	4,4'-DDD	1000 ng/mL
							4,4'-DDE	1000 ng/mL
							4,4'-DDT	1000 ng/mL
							Aldrin	1000 ng/mL
							alpha-BHC	1000 ng/mL
							alpha-Chlordane	1000 ng/mL
							beta-BHC	1000 ng/mL
							delta-BHC	1000 ng/mL
							Dieldrin	1000 ng/mL
							Endosulfan I	1000 ng/mL
							Endosulfan II	1000 ng/mL
							Endosulfan sulfate	1000 ng/mL
							Endrin	1000 ng/mL
							Endrin aldehyde	1000 ng/mL
							Endrin ketone	1000 ng/mL
							gamma-BHC (Lindane)	1000 ng/mL
							gamma-Chlordane	1000 ng/mL
							Heptachlor	1000 ng/mL
							Heptachlor epoxide	1000 ng/mL
							Methoxychlor	1000 ng/mL
..8081ABResPS_00027	07/31/21		Restek, Lot A0129369		8081HCBStkPS_00024	1 mL	Hexachlorobenzene	1000 ng/mL
					AR_SURR_RES_00101	0.5 mL	DCB Decachlorobiphenyl	1000 ng/mL
							Tetrachloro-m-xylene	1000 ng/mL
					(Purchased Reagent)		4,4'-DDD	2000 ug/mL
							4,4'-DDE	2000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							4,4'-DDT	2000 ug/mL
							Aldrin	2000 ug/mL
							alpha-BHC	2000 ug/mL
							alpha-Chlordane	2000 ug/mL
							beta-BHC	2000 ug/mL
							delta-BHC	2000 ug/mL
							Dieldrin	2000 ug/mL
							Endosulfan I	2000 ug/mL
							Endosulfan II	2000 ug/mL
							Endosulfan sulfate	2000 ug/mL
							Endrin	2000 ug/mL
							Endrin aldehyde	2000 ug/mL
							Endrin ketone	2000 ug/mL
							gamma-BHC (Lindane)	2000 ug/mL
							gamma-Chlordane	2000 ug/mL
							Heptachlor	2000 ug/mL
							Heptachlor epoxide	2000 ug/mL
							Methoxychlor	2000 ug/mL
..8081HCBStkPS_00024	10/27/26		Accustandard, Inc., Lot 216101319		(Purchased Reagent)		Hexachlorobenzene	100 ug/mL
..AR_SURR_RES_00101	11/30/24		RESTEK, Lot A0141110		(Purchased Reagent)		DCB Decachlorobiphenyl	200 ug/mL
							Tetrachloro-m-xylene	200 ug/mL
8081Icall2_00026	06/20/19	12/21/18	Hexane, Lot 194963	100 mL	8081ABCalStk_00035	1 mL	4,4'-DDD	10 ng/mL
							4,4'-DDE	10 ng/mL
							4,4'-DDT	10 ng/mL
							Aldrin	10 ng/mL
							alpha-BHC	10 ng/mL
							alpha-Chlordane	10 ng/mL
							beta-BHC	10 ng/mL
							delta-BHC	10 ng/mL
							Dieldrin	10 ng/mL
							Endosulfan I	10 ng/mL
							Endosulfan II	10 ng/mL
							Endosulfan sulfate	10 ng/mL
							Endrin	10 ng/mL
							Endrin aldehyde	10 ng/mL
							Endrin ketone	10 ng/mL
							gamma-BHC (Lindane)	10 ng/mL
							gamma-Chlordane	10 ng/mL
							Heptachlor	10 ng/mL
							Heptachlor epoxide	10 ng/mL
							Methoxychlor	10 ng/mL
							Hexachlorobenzene	10 ng/mL
							DCB Decachlorobiphenyl	10 ng/mL
							Tetrachloro-m-xylene	10 ng/mL
.8081ABCalStk_00035	06/20/19	12/21/18	Hexane, Lot 194963	100 mL	8081ABResPS_00027	0.05 mL	4,4'-DDD	1000 ng/mL
							4,4'-DDE	1000 ng/mL
							4,4'-DDT	1000 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Aldrin	1000 ng/mL
							alpha-BHC	1000 ng/mL
							alpha-Chlordane	1000 ng/mL
							beta-BHC	1000 ng/mL
							delta-BHC	1000 ng/mL
							Dieldrin	1000 ng/mL
							Endosulfan I	1000 ng/mL
							Endosulfan II	1000 ng/mL
							Endosulfan sulfate	1000 ng/mL
							Endrin	1000 ng/mL
							Endrin aldehyde	1000 ng/mL
							Endrin ketone	1000 ng/mL
							gamma-BHC (Lindane)	1000 ng/mL
							gamma-Chlordane	1000 ng/mL
							Heptachlor	1000 ng/mL
					Heptachlor epoxide	1000 ng/mL		
					Methoxychlor	1000 ng/mL		
					8081HCBStkPS_00024	1 mL	Hexachlorobenzene	1000 ng/mL
AR_SURR_RES_00101	0.5 mL	DCB Decachlorobiphenyl	1000 ng/mL					
		Tetrachloro-m-xylene	1000 ng/mL					
..8081ABResPS_00027	07/31/21	Restek, Lot A0129369			(Purchased Reagent)		4,4'-DDD	2000 ug/mL
						4,4'-DDE	2000 ug/mL	
						4,4'-DDT	2000 ug/mL	
						Aldrin	2000 ug/mL	
						alpha-BHC	2000 ug/mL	
						alpha-Chlordane	2000 ug/mL	
						beta-BHC	2000 ug/mL	
						delta-BHC	2000 ug/mL	
						Dieldrin	2000 ug/mL	
						Endosulfan I	2000 ug/mL	
						Endosulfan II	2000 ug/mL	
						Endosulfan sulfate	2000 ug/mL	
						Endrin	2000 ug/mL	
						Endrin aldehyde	2000 ug/mL	
						Endrin ketone	2000 ug/mL	
						gamma-BHC (Lindane)	2000 ug/mL	
						gamma-Chlordane	2000 ug/mL	
						Heptachlor	2000 ug/mL	
						Heptachlor epoxide	2000 ug/mL	
						Methoxychlor	2000 ug/mL	
..8081HCBStkPS_00024	10/27/26	Accustandard, Inc., Lot 216101319			(Purchased Reagent)		Hexachlorobenzene	100 ug/mL
..AR_SURR_RES_00101	11/30/24	RESTEK, Lot A0141110			(Purchased Reagent)		DCB Decachlorobiphenyl	200 ug/mL
							Tetrachloro-m-xylene	200 ug/mL
8081IcalL3_00029	06/20/19	12/21/18	Hexane, Lot 194963	100 mL	8081ABCalStk_00035	2.5 mL	4,4'-DDD	25 ng/mL
							4,4'-DDE	25 ng/mL
							4,4'-DDT	25 ng/mL
							Aldrin	25 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							alpha-BHC	25 ng/mL
							alpha-Chlordane	25 ng/mL
							beta-BHC	25 ng/mL
							delta-BHC	25 ng/mL
							Dieldrin	25 ng/mL
							Endosulfan I	25 ng/mL
							Endosulfan II	25 ng/mL
							Endosulfan sulfate	25 ng/mL
							Endrin	25 ng/mL
							Endrin aldehyde	25 ng/mL
							Endrin ketone	25 ng/mL
							gamma-BHC (Lindane)	25 ng/mL
							gamma-Chlordane	25 ng/mL
							Heptachlor	25 ng/mL
							Heptachlor epoxide	25 ng/mL
							Methoxychlor	25 ng/mL
							Hexachlorobenzene	25 ng/mL
DCB Decachlorobiphenyl	25 ng/mL							
Tetrachloro-m-xylene	25 ng/mL							
.8081ABCalStk_00035	06/20/19	12/21/18	Hexane, Lot 194963	100 mL	8081ABResPS_00027	0.05 mL	4,4'-DDD	1000 ng/mL
							4,4'-DDE	1000 ng/mL
							4,4'-DDT	1000 ng/mL
							Aldrin	1000 ng/mL
							alpha-BHC	1000 ng/mL
							alpha-Chlordane	1000 ng/mL
							beta-BHC	1000 ng/mL
							delta-BHC	1000 ng/mL
							Dieldrin	1000 ng/mL
							Endosulfan I	1000 ng/mL
							Endosulfan II	1000 ng/mL
							Endosulfan sulfate	1000 ng/mL
							Endrin	1000 ng/mL
							Endrin aldehyde	1000 ng/mL
							Endrin ketone	1000 ng/mL
							gamma-BHC (Lindane)	1000 ng/mL
							gamma-Chlordane	1000 ng/mL
							Heptachlor	1000 ng/mL
							Heptachlor epoxide	1000 ng/mL
							Methoxychlor	1000 ng/mL
					8081HCBStkPS_00024	1 mL	Hexachlorobenzene	1000 ng/mL
					AR_SURR_RES_00101	0.5 mL	DCB Decachlorobiphenyl	1000 ng/mL
					Tetrachloro-m-xylene	1000 ng/mL		
..8081ABResPS_00027	07/31/21	Restek, Lot A0129369			(Purchased Reagent)		4,4'-DDD	2000 ug/mL
							4,4'-DDE	2000 ug/mL
							4,4'-DDT	2000 ug/mL
							Aldrin	2000 ug/mL
							alpha-BHC	2000 ug/mL
							alpha-Chlordane	2000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							beta-BHC	2000 ug/mL
							delta-BHC	2000 ug/mL
							Dieldrin	2000 ug/mL
							Endosulfan I	2000 ug/mL
							Endosulfan II	2000 ug/mL
							Endosulfan sulfate	2000 ug/mL
							Endrin	2000 ug/mL
							Endrin aldehyde	2000 ug/mL
							Endrin ketone	2000 ug/mL
							gamma-BHC (Lindane)	2000 ug/mL
							gamma-Chlordane	2000 ug/mL
							Heptachlor	2000 ug/mL
							Heptachlor epoxide	2000 ug/mL
							Methoxychlor	2000 ug/mL
..8081HCBStkPS_00024	10/27/26		Accustandard, Inc., Lot 216101319		(Purchased Reagent)		Hexachlorobenzene	100 ug/mL
..AR_SURR_RES_00101	11/30/24		RESTEK, Lot A0141110		(Purchased Reagent)		DCB Decachlorobiphenyl	200 ug/mL
							Tetrachloro-m-xylene	200 ug/mL
8081IcalL4_00033	06/20/19	12/21/18	Hexane, Lot 194963	500 mL	8081ABCalStk_00035	25 mL	4,4'-DDD	50 ng/mL
							4,4'-DDE	50 ng/mL
							4,4'-DDT	50 ng/mL
							Aldrin	50 ng/mL
							alpha-BHC	50 ng/mL
							alpha-Chlordane	50 ng/mL
							beta-BHC	50 ng/mL
							delta-BHC	50 ng/mL
							Dieldrin	50 ng/mL
							Endosulfan I	50 ng/mL
							Endosulfan II	50 ng/mL
							Endosulfan sulfate	50 ng/mL
							Endrin	50 ng/mL
							Endrin aldehyde	50 ng/mL
							Endrin ketone	50 ng/mL
							gamma-BHC (Lindane)	50 ng/mL
							gamma-Chlordane	50 ng/mL
							Heptachlor	50 ng/mL
							Heptachlor epoxide	50 ng/mL
							Methoxychlor	50 ng/mL
							Hexachlorobenzene	50 ng/mL
							DCB Decachlorobiphenyl	50 ng/mL
							Tetrachloro-m-xylene	50 ng/mL
.8081ABCalStk_00035	06/20/19	12/21/18	Hexane, Lot 194963	100 mL	8081ABResPS_00027	0.05 mL	4,4'-DDD	1000 ng/mL
							4,4'-DDE	1000 ng/mL
							4,4'-DDT	1000 ng/mL
							Aldrin	1000 ng/mL
							alpha-BHC	1000 ng/mL
							alpha-Chlordane	1000 ng/mL
							beta-BHC	1000 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							delta-BHC	1000 ng/mL
							Dieldrin	1000 ng/mL
							Endosulfan I	1000 ng/mL
							Endosulfan II	1000 ng/mL
							Endosulfan sulfate	1000 ng/mL
							Endrin	1000 ng/mL
							Endrin aldehyde	1000 ng/mL
							Endrin ketone	1000 ng/mL
							gamma-BHC (Lindane)	1000 ng/mL
							gamma-Chlordane	1000 ng/mL
							Heptachlor	1000 ng/mL
							Heptachlor epoxide	1000 ng/mL
							Methoxychlor	1000 ng/mL
					8081HCBStkPS_00024	1 mL	Hexachlorobenzene	1000 ng/mL
					AR_SURR_RES_00101	0.5 mL	DCB Decachlorobiphenyl	1000 ng/mL
							Tetrachloro-m-xylene	1000 ng/mL
..8081ABResPS_00027	07/31/21		Restek, Lot A0129369		(Purchased Reagent)		4,4'-DDD	2000 ug/mL
							4,4'-DDE	2000 ug/mL
							4,4'-DDT	2000 ug/mL
							Aldrin	2000 ug/mL
							alpha-BHC	2000 ug/mL
							alpha-Chlordane	2000 ug/mL
							beta-BHC	2000 ug/mL
							delta-BHC	2000 ug/mL
							Dieldrin	2000 ug/mL
							Endosulfan I	2000 ug/mL
							Endosulfan II	2000 ug/mL
							Endosulfan sulfate	2000 ug/mL
							Endrin	2000 ug/mL
							Endrin aldehyde	2000 ug/mL
							Endrin ketone	2000 ug/mL
							gamma-BHC (Lindane)	2000 ug/mL
							gamma-Chlordane	2000 ug/mL
							Heptachlor	2000 ug/mL
							Heptachlor epoxide	2000 ug/mL
							Methoxychlor	2000 ug/mL
..8081HCBStkPS_00024	10/27/26		Accustandard, Inc., Lot 216101319		(Purchased Reagent)		Hexachlorobenzene	100 ug/mL
..AR_SURR_RES_00101	11/30/24		RESTEK, Lot A0141110		(Purchased Reagent)		DCB Decachlorobiphenyl	200 ug/mL
							Tetrachloro-m-xylene	200 ug/mL
8081Icall5_00027	06/20/19	12/21/18	Hexane, Lot 194963	100 mL	8081ABCalStk_00035	7.5 mL	4,4'-DDD	75 ng/mL
							4,4'-DDE	75 ng/mL
							4,4'-DDT	75 ng/mL
							Aldrin	75 ng/mL
							alpha-BHC	75 ng/mL
							alpha-Chlordane	75 ng/mL
							beta-BHC	75 ng/mL
							delta-BHC	75 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Dieldrin	75 ng/mL
							Endosulfan I	75 ng/mL
							Endosulfan II	75 ng/mL
							Endosulfan sulfate	75 ng/mL
							Endrin	75 ng/mL
							Endrin aldehyde	75 ng/mL
							Endrin ketone	75 ng/mL
							gamma-BHC (Lindane)	75 ng/mL
							gamma-Chlordane	75 ng/mL
							Heptachlor	75 ng/mL
							Heptachlor epoxide	75 ng/mL
							Methoxychlor	75 ng/mL
							Hexachlorobenzene	75 ng/mL
							DCB Decachlorobiphenyl	75 ng/mL
							Tetrachloro-m-xylene	75 ng/mL
.8081ABCaIstk_00035	06/20/19	12/21/18	Hexane, Lot 194963	100 mL	8081ABResPS_00027	0.05 mL	4,4'-DDD	1000 ng/mL
							4,4'-DDE	1000 ng/mL
							4,4'-DDT	1000 ng/mL
							Aldrin	1000 ng/mL
							alpha-BHC	1000 ng/mL
							alpha-Chlordane	1000 ng/mL
							beta-BHC	1000 ng/mL
							delta-BHC	1000 ng/mL
							Dieldrin	1000 ng/mL
							Endosulfan I	1000 ng/mL
							Endosulfan II	1000 ng/mL
							Endosulfan sulfate	1000 ng/mL
							Endrin	1000 ng/mL
							Endrin aldehyde	1000 ng/mL
							Endrin ketone	1000 ng/mL
							gamma-BHC (Lindane)	1000 ng/mL
							gamma-Chlordane	1000 ng/mL
							Heptachlor	1000 ng/mL
							Heptachlor epoxide	1000 ng/mL
							Methoxychlor	1000 ng/mL
					8081HCBStkPS_00024	1 mL	Hexachlorobenzene	1000 ng/mL
					AR_SURR_RES_00101	0.5 mL	DCB Decachlorobiphenyl	1000 ng/mL
							Tetrachloro-m-xylene	1000 ng/mL
..8081ABResPS_00027	07/31/21		Restek, Lot A0129369		(Purchased Reagent)		4,4'-DDD	2000 ug/mL
							4,4'-DDE	2000 ug/mL
							4,4'-DDT	2000 ug/mL
							Aldrin	2000 ug/mL
							alpha-BHC	2000 ug/mL
							alpha-Chlordane	2000 ug/mL
							beta-BHC	2000 ug/mL
							delta-BHC	2000 ug/mL
							Dieldrin	2000 ug/mL
							Endosulfan I	2000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Endosulfan II	2000 ug/mL
							Endosulfan sulfate	2000 ug/mL
							Endrin	2000 ug/mL
							Endrin aldehyde	2000 ug/mL
							Endrin ketone	2000 ug/mL
							gamma-BHC (Lindane)	2000 ug/mL
							gamma-Chlordane	2000 ug/mL
							Heptachlor	2000 ug/mL
							Heptachlor epoxide	2000 ug/mL
							Methoxychlor	2000 ug/mL
..8081HCBStkPS_00024	10/27/26		Accustandard, Inc., Lot 216101319		(Purchased Reagent)		Hexachlorobenzene	100 ug/mL
..AR_SURR_RES_00101	11/30/24		RESTEK, Lot A0141110		(Purchased Reagent)		DCB Decachlorobiphenyl	200 ug/mL
							Tetrachloro-m-xylene	200 ug/mL
8081IcalL6_00026	06/20/19	12/21/18	Hexane, Lot 194963	100 mL	8081ABCalStk_00035	10 mL	4,4'-DDD	100 ng/mL
							4,4'-DDE	100 ng/mL
							4,4'-DDT	100 ng/mL
							Aldrin	100 ng/mL
							alpha-BHC	100 ng/mL
							alpha-Chlordane	100 ng/mL
							beta-BHC	100 ng/mL
							delta-BHC	100 ng/mL
							Dieldrin	100 ng/mL
							Endosulfan I	100 ng/mL
							Endosulfan II	100 ng/mL
							Endosulfan sulfate	100 ng/mL
							Endrin	100 ng/mL
							Endrin aldehyde	100 ng/mL
							Endrin ketone	100 ng/mL
							gamma-BHC (Lindane)	100 ng/mL
							gamma-Chlordane	100 ng/mL
							Heptachlor	100 ng/mL
							Heptachlor epoxide	100 ng/mL
							Methoxychlor	100 ng/mL
							Hexachlorobenzene	100 ng/mL
							DCB Decachlorobiphenyl	100 ng/mL
							Tetrachloro-m-xylene	100 ng/mL
.8081ABCalStk_00035	06/20/19	12/21/18	Hexane, Lot 194963	100 mL	8081ABResPS_00027	0.05 mL	4,4'-DDD	1000 ng/mL
							4,4'-DDE	1000 ng/mL
							4,4'-DDT	1000 ng/mL
							Aldrin	1000 ng/mL
							alpha-BHC	1000 ng/mL
							alpha-Chlordane	1000 ng/mL
							beta-BHC	1000 ng/mL
							delta-BHC	1000 ng/mL
							Dieldrin	1000 ng/mL
							Endosulfan I	1000 ng/mL
							Endosulfan II	1000 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Endosulfan sulfate	1000 ng/mL
							Endrin	1000 ng/mL
							Endrin aldehyde	1000 ng/mL
							Endrin ketone	1000 ng/mL
							gamma-BHC (Lindane)	1000 ng/mL
							gamma-Chlordane	1000 ng/mL
							Heptachlor	1000 ng/mL
							Heptachlor epoxide	1000 ng/mL
							Methoxychlor	1000 ng/mL
					8081HCBStkPS_00024	1 mL	Hexachlorobenzene	1000 ng/mL
					AR_SURR_RES_00101	0.5 mL	DCB Decachlorobiphenyl	1000 ng/mL
							Tetrachloro-m-xylene	1000 ng/mL
..8081ABResPS_00027	07/31/21		Restek, Lot A0129369		(Purchased Reagent)		4,4'-DDD	2000 ug/mL
							4,4'-DDE	2000 ug/mL
							4,4'-DDT	2000 ug/mL
							Aldrin	2000 ug/mL
							alpha-BHC	2000 ug/mL
							alpha-Chlordane	2000 ug/mL
							beta-BHC	2000 ug/mL
							delta-BHC	2000 ug/mL
							Dieldrin	2000 ug/mL
							Endosulfan I	2000 ug/mL
							Endosulfan II	2000 ug/mL
							Endosulfan sulfate	2000 ug/mL
							Endrin	2000 ug/mL
							Endrin aldehyde	2000 ug/mL
							Endrin ketone	2000 ug/mL
							gamma-BHC (Lindane)	2000 ug/mL
							gamma-Chlordane	2000 ug/mL
							Heptachlor	2000 ug/mL
							Heptachlor epoxide	2000 ug/mL
							Methoxychlor	2000 ug/mL
..8081HCBStkPS_00024	10/27/26		Accustandard, Inc., Lot 216101319		(Purchased Reagent)		Hexachlorobenzene	100 ug/mL
..AR_SURR_RES_00101	11/30/24		RESTEK, Lot A0141110		(Purchased Reagent)		DCB Decachlorobiphenyl	200 ug/mL
							Tetrachloro-m-xylene	200 ug/mL
8081Toxaphene_00035	10/04/19	04/04/19	ACETONE, Lot Acetone_00267	100 mL	8081 ToxStock_00015	1 mL	Toxaphene	20 ug/mL
					8081 ToxStock_00016	1 mL	Toxaphene	20 ug/mL
.8081 ToxStock_00015	01/19/22		AccuStandard, Lot 212011251		(Purchased Reagent)		Toxaphene	1000 ug/mL
.8081 ToxStock_00016	01/19/22		AccuStandard, Lot 212011251		(Purchased Reagent)		Toxaphene	1000 ug/mL
8081TOXCCVL4_00015	05/12/19	11/12/18	Hexane, Lot 189045	250 mL	8081ToxPS_00039	0.1 mL	Toxaphene Peak 1	2000 ng/mL
							Toxaphene Peak 2	2000 ng/mL
							Toxaphene Peak 3	2000 ng/mL
							Toxaphene Peak 4	2000 ng/mL
							Toxaphene Peak 5	2000 ng/mL
.8081ToxPS_00039	05/12/19		Restek, Lot A0128388		(Purchased Reagent)		Toxaphene Peak 1	5000 ug/mL
							Toxaphene Peak 2	5000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Toxaphene Peak 3	5000 ug/mL
							Toxaphene Peak 4	5000 ug/mL
							Toxaphene Peak 5	5000 ug/mL
8081TOXCCVL4_00016	11/14/19	05/14/19	Hexane, Lot 203464	250 mL	8081ToxPS_00040	0.1 mL	Toxaphene	2000 ng/mL
.8081ToxPS_00040	11/14/19		Restek, Lot A0135137		(Purchased Reagent)		Toxaphene	5000 ug/mL
8081ToxICVL3_00014	09/20/19	03/20/19	Hexane, Lot 195843	100 mL	8081ToxSS_00021	0.1 mL	Toxaphene	1000 ng/mL
.8081ToxSS_00021	03/20/21		Accustandard, Inc., Lot 217071319		(Purchased Reagent)		Toxaphene	1000 ug/mL
8081ToxL1_00021	05/12/19	11/12/18	Hexane, Lot 189045	100 mL	8081ToxPS_00039	0.004 mL	Toxaphene Peak 1	200 ng/mL
							Toxaphene Peak 2	200 ng/mL
							Toxaphene Peak 3	200 ng/mL
							Toxaphene Peak 4	200 ng/mL
							Toxaphene Peak 5	200 ng/mL
.8081ToxPS_00039	05/12/19		Restek, Lot A0128388		(Purchased Reagent)		Toxaphene Peak 1	5000 ug/mL
							Toxaphene Peak 2	5000 ug/mL
							Toxaphene Peak 3	5000 ug/mL
							Toxaphene Peak 4	5000 ug/mL
							Toxaphene Peak 5	5000 ug/mL
8081ToxL2_00022	05/12/19	11/12/18	Hexane, Lot 116331	100 mL	8081ToxPS_00039	0.01 mL	Toxaphene Peak 1	500 ng/mL
							Toxaphene Peak 2	500 ng/mL
							Toxaphene Peak 3	500 ng/mL
							Toxaphene Peak 4	500 ng/mL
							Toxaphene Peak 5	500 ng/mL
.8081ToxPS_00039	05/12/19		Restek, Lot A0128388		(Purchased Reagent)		Toxaphene Peak 1	5000 ug/mL
							Toxaphene Peak 2	5000 ug/mL
							Toxaphene Peak 3	5000 ug/mL
							Toxaphene Peak 4	5000 ug/mL
							Toxaphene Peak 5	5000 ug/mL
8081ToxL3_00021	05/12/19	11/12/18	Hexane, Lot 65259	100 mL	8081ToxPS_00039	0.02 mL	Toxaphene Peak 1	1000 ng/mL
							Toxaphene Peak 2	1000 ng/mL
							Toxaphene Peak 3	1000 ng/mL
							Toxaphene Peak 4	1000 ng/mL
							Toxaphene Peak 5	1000 ng/mL
.8081ToxPS_00039	05/12/19		Restek, Lot A0128388		(Purchased Reagent)		Toxaphene Peak 1	5000 ug/mL
							Toxaphene Peak 2	5000 ug/mL
							Toxaphene Peak 3	5000 ug/mL
							Toxaphene Peak 4	5000 ug/mL
							Toxaphene Peak 5	5000 ug/mL
8081ToxL5_00022	05/12/19	11/12/18	Hexane, Lot 116331	100 mL	8081ToxPS_00039	0.1 mL	Toxaphene Peak 1	5000 ng/mL
							Toxaphene Peak 2	5000 ng/mL
							Toxaphene Peak 3	5000 ng/mL
							Toxaphene Peak 4	5000 ng/mL
							Toxaphene Peak 5	5000 ng/mL
.8081ToxPS_00039	05/12/19		Restek, Lot A0128388		(Purchased Reagent)		Toxaphene Peak 1	5000 ug/mL
							Toxaphene Peak 2	5000 ug/mL
							Toxaphene Peak 3	5000 ug/mL
							Toxaphene Peak 4	5000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Toxaphene Peak 5	5000 ug/mL
8081ToxL6_00024	05/12/19	11/12/18	Hexane, Lot 189045	100 mL	8081ToxPS_00039	0.2 mL	Toxaphene Peak 1	10000 ng/mL
							Toxaphene Peak 2	10000 ng/mL
							Toxaphene Peak 3	10000 ng/mL
							Toxaphene Peak 4	10000 ng/mL
							Toxaphene Peak 5	10000 ng/mL
.8081ToxPS_00039	05/12/19		Restek, Lot A0128388		(Purchased Reagent)		Toxaphene Peak 1	5000 ug/mL
							Toxaphene Peak 2	5000 ug/mL
							Toxaphene Peak 3	5000 ug/mL
							Toxaphene Peak 4	5000 ug/mL
							Toxaphene Peak 5	5000 ug/mL
8082 LCS_00051	09/23/19	03/23/19	ACETONE, Lot Acetone_00263	500 mL	8082LCSSTOCK_00042	0.7 mL	PCB-1016	2 ug/mL
							PCB-1260	2 ug/mL
					8082LCSSTOCK_00043	0.3 mL	PCB-1016	2 ug/mL
							PCB-1260	2 ug/mL
.8082LCSSTOCK_00042	11/20/19		RESTEK, Lot A0139779		(Purchased Reagent)		PCB-1016	1000 ug/mL
							PCB-1260	1000 ug/mL
.8082LCSSTOCK_00043	10/31/24		RESTEK, Lot A0139779		(Purchased Reagent)		PCB-1016	1000 ug/mL
							PCB-1260	1000 ug/mL
8270 LCS_Main_00061	05/31/19	03/29/19	P&T Methanol, Lot MethanolP&T_00227	500 mL	571995_00058	5 mL	1,1'-Biphenyl	80 ug/mL
							1,2,4,5-Tetrachlorobenzene	80 ug/mL
							1,2,4-Trichlorobenzene	80 ug/mL
							1,2-Dichlorobenzene	80 ug/mL
							1,2-Diphenylhydrazine	80.878 ug/mL
							1,3-Dichlorobenzene	80 ug/mL
							1,3-Dinitrobenzene	80 ug/mL
							1,4-Dichlorobenzene	80 ug/mL
							1,4-Dioxane	80 ug/mL
							1-Methylnaphthalene	80 ug/mL
							2,2'-oxybis[1-chloropropane]	80 ug/mL
							2,3,4,6-Tetrachlorophenol	80 ug/mL
							2,4,5-Trichlorophenol	80 ug/mL
							2,4,6-Trichlorophenol	80 ug/mL
							2,4-Dichlorophenol	80 ug/mL
							2,4-Dimethylphenol	80 ug/mL
							2,4-Dinitrophenol	160 ug/mL
							2,4-Dinitrotoluene	80 ug/mL
							2,6-Dichlorophenol	80 ug/mL
							2,6-Dinitrotoluene	80 ug/mL
							2-Chloronaphthalene	80 ug/mL
							2-Chlorophenol	80 ug/mL
							2-Methylnaphthalene	80 ug/mL
							2-Methylphenol	80 ug/mL
							2-Nitroaniline	80 ug/mL
							2-Nitrophenol	80 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							3 & 4 Methylphenol	80 ug/mL
							3-Methylphenol	80 ug/mL
							3-Nitroaniline	80 ug/mL
							4,6-Dinitro-2-methylphenol	160 ug/mL
							4-Bromophenyl phenyl ether	80 ug/mL
							4-Chloro-3-methylphenol	80 ug/mL
							4-Chloroaniline	80 ug/mL
							4-Chlorophenyl phenyl ether	80 ug/mL
							4-Methylphenol	80 ug/mL
							4-Nitroaniline	80 ug/mL
							4-Nitrophenol	160 ug/mL
							Acenaphthene	80 ug/mL
							Acenaphthylene	80 ug/mL
							Acetophenone	80 ug/mL
							Aniline	80 ug/mL
							Anthracene	80 ug/mL
							Azobenzene	80 ug/mL
							Benzo[a]anthracene	80 ug/mL
							Benzo[a]pyrene	80 ug/mL
							Benzo[b]fluoranthene	80 ug/mL
							Benzo[g,h,i]perylene	80 ug/mL
							Benzo[k]fluoranthene	80 ug/mL
							Benzyl alcohol	80 ug/mL
							Bis (2-chloroethoxy)methane	80 ug/mL
							Bis (2-chloroethyl) ether	80 ug/mL
							Bis (2-ethylhexyl) phthalate	80 ug/mL
							Butyl benzyl phthalate	80 ug/mL
							Carbazole	80 ug/mL
							Chrysene	80 ug/mL
							Di-n-butyl phthalate	80 ug/mL
							Di-n-octyl phthalate	80 ug/mL
							Dibenz (a,h) anthracene	80 ug/mL
							Dibenzofuran	80 ug/mL
							Diethyl phthalate	80 ug/mL
							Dimethyl phthalate	80 ug/mL
							Diphenylamine	68 ug/mL
							Fluoranthene	80 ug/mL
							Fluorene	80 ug/mL
							Hexachlorobenzene	80 ug/mL
							Hexachlorobutadiene	80 ug/mL
							Hexachlorocyclopentadiene	160 ug/mL
							Hexachloroethane	80 ug/mL
							Hexadecane	80 ug/mL
							Indeno[1,2,3-cd]pyrene	80 ug/mL
							Isophorone	80 ug/mL
							n-Decane	80 ug/mL
							N-Nitrosodi-n-propylamine	80 ug/mL
							N-Nitrosodimethylamine	80 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							N-Nitrosodiphenylamine	80 ug/mL
							n-Octadecane	80 ug/mL
							Naphthalene	80 ug/mL
							Nitrobenzene	80 ug/mL
							Pentachlorophenol	160 ug/mL
							Phenanthrene	80 ug/mL
							Phenol	80 ug/mL
							Pyrene	80 ug/mL
							Pyridine	160 ug/mL
					571995_00059	5 mL	1,1'-Biphenyl	80 ug/mL
							1,2,4,5-Tetrachlorobenzene	80 ug/mL
							1,2,4-Trichlorobenzene	80 ug/mL
							1,2-Dichlorobenzene	80 ug/mL
							1,2-Diphenylhydrazine	80.878 ug/mL
							1,3-Dichlorobenzene	80 ug/mL
							1,3-Dinitrobenzene	80 ug/mL
							1,4-Dichlorobenzene	80 ug/mL
							1,4-Dioxane	80 ug/mL
							1-Methylnaphthalene	80 ug/mL
							2,2'-oxybis[1-chloropropane]	80 ug/mL
							2,3,4,6-Tetrachlorophenol	80 ug/mL
							2,4,5-Trichlorophenol	80 ug/mL
							2,4,6-Trichlorophenol	80 ug/mL
							2,4-Dichlorophenol	80 ug/mL
							2,4-Dimethylphenol	80 ug/mL
							2,4-Dinitrophenol	160 ug/mL
							2,4-Dinitrotoluene	80 ug/mL
							2,6-Dichlorophenol	80 ug/mL
							2,6-Dinitrotoluene	80 ug/mL
							2-Chloronaphthalene	80 ug/mL
							2-Chlorophenol	80 ug/mL
							2-Methylnaphthalene	80 ug/mL
							2-Methylphenol	80 ug/mL
							2-Nitroaniline	80 ug/mL
							2-Nitrophenol	80 ug/mL
							3 & 4 Methylphenol	80 ug/mL
							3-Methylphenol	80 ug/mL
							3-Nitroaniline	80 ug/mL
							4,6-Dinitro-2-methylphenol	160 ug/mL
							4-Bromophenyl phenyl ether	80 ug/mL
							4-Chloro-3-methylphenol	80 ug/mL
							4-Chloroaniline	80 ug/mL
							4-Chlorophenyl phenyl ether	80 ug/mL
							4-Methylphenol	80 ug/mL
							4-Nitroaniline	80 ug/mL
							4-Nitrophenol	160 ug/mL
							Acenaphthene	80 ug/mL
							Acenaphthylene	80 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Acetophenone	80 ug/mL
							Aniline	80 ug/mL
							Anthracene	80 ug/mL
							Azobenzene	80 ug/mL
							Benzo[a]anthracene	80 ug/mL
							Benzo[a]pyrene	80 ug/mL
							Benzo[b]fluoranthene	80 ug/mL
							Benzo[g,h,i]perylene	80 ug/mL
							Benzo[k]fluoranthene	80 ug/mL
							Benzyl alcohol	80 ug/mL
							Bis (2-chloroethoxy)methane	80 ug/mL
							Bis (2-chloroethyl) ether	80 ug/mL
							Bis (2-ethylhexyl) phthalate	80 ug/mL
							Butyl benzyl phthalate	80 ug/mL
							Carbazole	80 ug/mL
							Chrysene	80 ug/mL
							Di-n-butyl phthalate	80 ug/mL
							Di-n-octyl phthalate	80 ug/mL
							Dibenz (a,h) anthracene	80 ug/mL
							Dibenzofuran	80 ug/mL
							Diethyl phthalate	80 ug/mL
							Dimethyl phthalate	80 ug/mL
							Diphenylamine	68 ug/mL
							Fluoranthene	80 ug/mL
							Fluorene	80 ug/mL
							Hexachlorobenzene	80 ug/mL
							Hexachlorobutadiene	80 ug/mL
							Hexachlorocyclopentadiene	160 ug/mL
							Hexachloroethane	80 ug/mL
							Hexadecane	80 ug/mL
							Indeno[1,2,3-cd]pyrene	80 ug/mL
							Isophorone	80 ug/mL
							n-Decane	80 ug/mL
							N-Nitrosodi-n-propylamine	80 ug/mL
							N-Nitrosodimethylamine	80 ug/mL
							N-Nitrosodiphenylamine	80 ug/mL
							n-Octadecane	80 ug/mL
							Naphthalene	80 ug/mL
							Nitrobenzene	80 ug/mL
							Pentachlorophenol	160 ug/mL
							Phenanthrene	80 ug/mL
							Phenol	80 ug/mL
							Pyrene	80 ug/mL
							Pyridine	160 ug/mL
					571995_00060	5 mL	1,1'-Biphenyl	80 ug/mL
							1,2,4,5-Tetrachlorobenzene	80 ug/mL
							1,2,4-Trichlorobenzene	80 ug/mL
							1,2-Dichlorobenzene	80 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2-Diphenylhydrazine	80.878 ug/mL
							1,3-Dichlorobenzene	80 ug/mL
							1,3-Dinitrobenzene	80 ug/mL
							1,4-Dichlorobenzene	80 ug/mL
							1,4-Dioxane	80 ug/mL
							1-Methylnaphthalene	80 ug/mL
							2,2'-oxybis[1-chloropropane]	80 ug/mL
							2,3,4,6-Tetrachlorophenol	80 ug/mL
							2,4,5-Trichlorophenol	80 ug/mL
							2,4,6-Trichlorophenol	80 ug/mL
							2,4-Dichlorophenol	80 ug/mL
							2,4-Dimethylphenol	80 ug/mL
							2,4-Dinitrophenol	160 ug/mL
							2,4-Dinitrotoluene	80 ug/mL
							2,6-Dichlorophenol	80 ug/mL
							2,6-Dinitrotoluene	80 ug/mL
							2-Chloronaphthalene	80 ug/mL
							2-Chlorophenol	80 ug/mL
							2-Methylnaphthalene	80 ug/mL
							2-Methylphenol	80 ug/mL
							2-Nitroaniline	80 ug/mL
							2-Nitrophenol	80 ug/mL
							3 & 4 Methylphenol	80 ug/mL
							3-Methylphenol	80 ug/mL
							3-Nitroaniline	80 ug/mL
							4,6-Dinitro-2-methylphenol	160 ug/mL
							4-Bromophenyl phenyl ether	80 ug/mL
							4-Chloro-3-methylphenol	80 ug/mL
							4-Chloroaniline	80 ug/mL
							4-Chlorophenyl phenyl ether	80 ug/mL
							4-Methylphenol	80 ug/mL
							4-Nitroaniline	80 ug/mL
							4-Nitrophenol	160 ug/mL
							Acenaphthene	80 ug/mL
							Acenaphthylene	80 ug/mL
							Acetophenone	80 ug/mL
							Aniline	80 ug/mL
							Anthracene	80 ug/mL
							Azobenzene	80 ug/mL
							Benzo[a]anthracene	80 ug/mL
							Benzo[a]pyrene	80 ug/mL
							Benzo[b]fluoranthene	80 ug/mL
							Benzo[g,h,i]perylene	80 ug/mL
							Benzo[k]fluoranthene	80 ug/mL
							Benzyl alcohol	80 ug/mL
							Bis (2-chloroethoxy)methane	80 ug/mL
							Bis (2-chloroethyl) ether	80 ug/mL
							Bis (2-ethylhexyl) phthalate	80 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Butyl benzyl phthalate	80 ug/mL
							Carbazole	80 ug/mL
							Chrysene	80 ug/mL
							Di-n-butyl phthalate	80 ug/mL
							Di-n-octyl phthalate	80 ug/mL
							Dibenz(a,h)anthracene	80 ug/mL
							Dibenzofuran	80 ug/mL
							Diethyl phthalate	80 ug/mL
							Dimethyl phthalate	80 ug/mL
							Diphenylamine	68 ug/mL
							Fluoranthene	80 ug/mL
							Fluorene	80 ug/mL
							Hexachlorobenzene	80 ug/mL
							Hexachlorobutadiene	80 ug/mL
							Hexachlorocyclopentadiene	160 ug/mL
							Hexachloroethane	80 ug/mL
							Hexadecane	80 ug/mL
							Indeno[1,2,3-cd]pyrene	80 ug/mL
							Isophorone	80 ug/mL
							n-Decane	80 ug/mL
							N-Nitrosodi-n-propylamine	80 ug/mL
							N-Nitrosodimethylamine	80 ug/mL
							N-Nitrosodiphenylamine	80 ug/mL
							n-Octadecane	80 ug/mL
							Naphthalene	80 ug/mL
							Nitrobenzene	80 ug/mL
							Pentachlorophenol	160 ug/mL
							Phenanthrene	80 ug/mL
							Phenol	80 ug/mL
							Pyrene	80 ug/mL
							Pyridine	160 ug/mL
					571995_00090	5 mL	1,1'-Biphenyl	80 ug/mL
							1,2,4,5-Tetrachlorobenzene	80 ug/mL
							1,2,4-Trichlorobenzene	80 ug/mL
							1,2-Dichlorobenzene	80 ug/mL
							1,2-Diphenylhydrazine	80.878 ug/mL
							1,3-Dichlorobenzene	80 ug/mL
							1,3-Dinitrobenzene	80 ug/mL
							1,4-Dichlorobenzene	80 ug/mL
							1,4-Dioxane	80 ug/mL
							1-Methylnaphthalene	80 ug/mL
							2,2'-oxybis[1-chloropropane]	80 ug/mL
							2,3,4,6-Tetrachlorophenol	80 ug/mL
							2,4,5-Trichlorophenol	80 ug/mL
							2,4,6-Trichlorophenol	80 ug/mL
							2,4-Dichlorophenol	80 ug/mL
							2,4-Dimethylphenol	80 ug/mL
							2,4-Dinitrophenol	160 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,4-Dinitrotoluene	80 ug/mL
							2,6-Dichlorophenol	80 ug/mL
							2,6-Dinitrotoluene	80 ug/mL
							2-Chloronaphthalene	80 ug/mL
							2-Chlorophenol	80 ug/mL
							2-Methylnaphthalene	80 ug/mL
							2-Methylphenol	80 ug/mL
							2-Nitroaniline	80 ug/mL
							2-Nitrophenol	80 ug/mL
							3 & 4 Methylphenol	80 ug/mL
							3-Methylphenol	80 ug/mL
							3-Nitroaniline	80 ug/mL
							4,6-Dinitro-2-methylphenol	160 ug/mL
							4-Bromophenyl phenyl ether	80 ug/mL
							4-Chloro-3-methylphenol	80 ug/mL
							4-Chloroaniline	80 ug/mL
							4-Chlorophenyl phenyl ether	80 ug/mL
							4-Methylphenol	80 ug/mL
							4-Nitroaniline	80 ug/mL
							4-Nitrophenol	160 ug/mL
							Acenaphthene	80 ug/mL
							Acenaphthylene	80 ug/mL
							Acetophenone	80 ug/mL
							Aniline	80 ug/mL
							Anthracene	80 ug/mL
							Azobenzene	80 ug/mL
							Benzo[a]anthracene	80 ug/mL
							Benzo[a]pyrene	80 ug/mL
							Benzo[b]fluoranthene	80 ug/mL
							Benzo[g,h,i]perylene	80 ug/mL
							Benzo[k]fluoranthene	80 ug/mL
							Benzyl alcohol	80 ug/mL
							Bis (2-chloroethoxy)methane	80 ug/mL
							Bis (2-chloroethyl) ether	80 ug/mL
							Bis (2-ethylhexyl) phthalate	80 ug/mL
							Butyl benzyl phthalate	80 ug/mL
							Carbazole	80 ug/mL
							Chrysene	80 ug/mL
							Di-n-butyl phthalate	80 ug/mL
							Di-n-octyl phthalate	80 ug/mL
							Dibenz (a,h) anthracene	80 ug/mL
							Dibenzofuran	80 ug/mL
							Diethyl phthalate	80 ug/mL
							Dimethyl phthalate	80 ug/mL
							Diphenylamine	68 ug/mL
							Fluoranthene	80 ug/mL
							Fluorene	80 ug/mL
							Hexachlorobenzene	80 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Hexachlorobutadiene	80 ug/mL
							Hexachlorocyclopentadiene	160 ug/mL
							Hexachloroethane	80 ug/mL
							Hexadecane	80 ug/mL
							Indeno[1,2,3-cd]pyrene	80 ug/mL
							Isophorone	80 ug/mL
							n-Decane	80 ug/mL
							N-Nitrosodi-n-propylamine	80 ug/mL
							N-Nitrosodimethylamine	80 ug/mL
							N-Nitrosodiphenylamine	80 ug/mL
							n-Octadecane	80 ug/mL
							Naphthalene	80 ug/mL
							Nitrobenzene	80 ug/mL
							Pentachlorophenol	160 ug/mL
							Phenanthrene	80 ug/mL
							Phenol	80 ug/mL
							Pyrene	80 ug/mL
							Pyridine	160 ug/mL
					571995_00099	5 mL	1,1'-Biphenyl	80 ug/mL
							1,2,4,5-Tetrachlorobenzene	80 ug/mL
							1,2,4-Trichlorobenzene	80 ug/mL
							1,2-Dichlorobenzene	80 ug/mL
							1,2-Diphenylhydrazine	80.878 ug/mL
							1,3-Dichlorobenzene	80 ug/mL
							1,3-Dinitrobenzene	80 ug/mL
							1,4-Dichlorobenzene	80 ug/mL
							1,4-Dioxane	80 ug/mL
							1-Methylnaphthalene	80 ug/mL
							2,2'-oxybis[1-chloropropane]	80 ug/mL
							2,3,4,6-Tetrachlorophenol	80 ug/mL
							2,4,5-Trichlorophenol	80 ug/mL
							2,4,6-Trichlorophenol	80 ug/mL
							2,4-Dichlorophenol	80 ug/mL
							2,4-Dimethylphenol	80 ug/mL
							2,4-Dinitrophenol	160 ug/mL
							2,4-Dinitrotoluene	80 ug/mL
							2,6-Dichlorophenol	80 ug/mL
							2,6-Dinitrotoluene	80 ug/mL
							2-Chloronaphthalene	80 ug/mL
							2-Chlorophenol	80 ug/mL
							2-Methylnaphthalene	80 ug/mL
							2-Methylphenol	80 ug/mL
							2-Nitroaniline	80 ug/mL
							2-Nitrophenol	80 ug/mL
							3 & 4 Methylphenol	80 ug/mL
							3-Methylphenol	80 ug/mL
							3-Nitroaniline	80 ug/mL
							4,6-Dinitro-2-methylphenol	160 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							4-Bromophenyl phenyl ether	80 ug/mL
							4-Chloro-3-methylphenol	80 ug/mL
							4-Chloroaniline	80 ug/mL
							4-Chlorophenyl phenyl ether	80 ug/mL
							4-Methylphenol	80 ug/mL
							4-Nitroaniline	80 ug/mL
							4-Nitrophenol	160 ug/mL
							Acenaphthene	80 ug/mL
							Acenaphthylene	80 ug/mL
							Acetophenone	80 ug/mL
							Aniline	80 ug/mL
							Anthracene	80 ug/mL
							Azobenzene	80 ug/mL
							Benzo[a]anthracene	80 ug/mL
							Benzo[a]pyrene	80 ug/mL
							Benzo[b]fluoranthene	80 ug/mL
							Benzo[g,h,i]perylene	80 ug/mL
							Benzo[k]fluoranthene	80 ug/mL
							Benzyl alcohol	80 ug/mL
							Bis (2-chloroethoxy)methane	80 ug/mL
							Bis (2-chloroethyl) ether	80 ug/mL
							Bis (2-ethylhexyl) phthalate	80 ug/mL
							Butyl benzyl phthalate	80 ug/mL
							Carbazole	80 ug/mL
							Chrysene	80 ug/mL
							Di-n-butyl phthalate	80 ug/mL
							Di-n-octyl phthalate	80 ug/mL
							Dibenz (a,h) anthracene	80 ug/mL
							Dibenzofuran	80 ug/mL
							Diethyl phthalate	80 ug/mL
							Dimethyl phthalate	80 ug/mL
							Diphenylamine	68 ug/mL
							Fluoranthene	80 ug/mL
							Fluorene	80 ug/mL
							Hexachlorobenzene	80 ug/mL
							Hexachlorobutadiene	80 ug/mL
							Hexachlorocyclopentadiene	160 ug/mL
							Hexachloroethane	80 ug/mL
							Hexadecane	80 ug/mL
							Indeno[1,2,3-cd]pyrene	80 ug/mL
							Isophorone	80 ug/mL
							n-Decane	80 ug/mL
							N-Nitrosodi-n-propylamine	80 ug/mL
							N-Nitrosodimethylamine	80 ug/mL
							N-Nitrosodiphenylamine	80 ug/mL
							n-Octadecane	80 ug/mL
							Naphthalene	80 ug/mL
							Nitrobenzene	80 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					571995_00100	5 mL	Pentachlorophenol	160 ug/mL
							Phenanthrene	80 ug/mL
							Phenol	80 ug/mL
							Pyrene	80 ug/mL
							Pyridine	160 ug/mL
							1,1'-Biphenyl	80 ug/mL
							1,2,4,5-Tetrachlorobenzene	80 ug/mL
							1,2,4-Trichlorobenzene	80 ug/mL
							1,2-Dichlorobenzene	80 ug/mL
							1,2-Diphenylhydrazine	80.878 ug/mL
							1,3-Dichlorobenzene	80 ug/mL
							1,3-Dinitrobenzene	80 ug/mL
							1,4-Dichlorobenzene	80 ug/mL
							1,4-Dioxane	80 ug/mL
							1-Methylnaphthalene	80 ug/mL
							2,2'-oxybis[1-chloropropane]	80 ug/mL
							2,3,4,6-Tetrachlorophenol	80 ug/mL
							2,4,5-Trichlorophenol	80 ug/mL
							2,4,6-Trichlorophenol	80 ug/mL
							2,4-Dichlorophenol	80 ug/mL
							2,4-Dimethylphenol	80 ug/mL
							2,4-Dinitrophenol	160 ug/mL
							2,4-Dinitrotoluene	80 ug/mL
							2,6-Dichlorophenol	80 ug/mL
							2,6-Dinitrotoluene	80 ug/mL
							2-Chloronaphthalene	80 ug/mL
							2-Chlorophenol	80 ug/mL
							2-Methylnaphthalene	80 ug/mL
							2-Methylphenol	80 ug/mL
							2-Nitroaniline	80 ug/mL
							2-Nitrophenol	80 ug/mL
							3 & 4 Methylphenol	80 ug/mL
							3-Methylphenol	80 ug/mL
							3-Nitroaniline	80 ug/mL
							4,6-Dinitro-2-methylphenol	160 ug/mL
							4-Bromophenyl phenyl ether	80 ug/mL
							4-Chloro-3-methylphenol	80 ug/mL
							4-Chloroaniline	80 ug/mL
							4-Chlorophenyl phenyl ether	80 ug/mL
							4-Methylphenol	80 ug/mL
							4-Nitroaniline	80 ug/mL
							4-Nitrophenol	160 ug/mL
							Acenaphthene	80 ug/mL
							Acenaphthylene	80 ug/mL
							Acetophenone	80 ug/mL
							Aniline	80 ug/mL
							Anthracene	80 ug/mL
							Azobenzene	80 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Benzo[a]anthracene	80 ug/mL
							Benzo[a]pyrene	80 ug/mL
							Benzo[b]fluoranthene	80 ug/mL
							Benzo[g,h,i]perylene	80 ug/mL
							Benzo[k]fluoranthene	80 ug/mL
							Benzyl alcohol	80 ug/mL
							Bis (2-chloroethoxy)methane	80 ug/mL
							Bis (2-chloroethyl) ether	80 ug/mL
							Bis (2-ethylhexyl) phthalate	80 ug/mL
							Butyl benzyl phthalate	80 ug/mL
							Carbazole	80 ug/mL
							Chrysene	80 ug/mL
							Di-n-butyl phthalate	80 ug/mL
							Di-n-octyl phthalate	80 ug/mL
							Dibenz (a, h) anthracene	80 ug/mL
							Dibenzofuran	80 ug/mL
							Diethyl phthalate	80 ug/mL
							Dimethyl phthalate	80 ug/mL
							Diphenylamine	68 ug/mL
							Fluoranthene	80 ug/mL
							Fluorene	80 ug/mL
							Hexachlorobenzene	80 ug/mL
							Hexachlorobutadiene	80 ug/mL
							Hexachlorocyclopentadiene	160 ug/mL
							Hexachloroethane	80 ug/mL
							Hexadecane	80 ug/mL
							Indeno[1,2,3-cd]pyrene	80 ug/mL
							Isophorone	80 ug/mL
							n-Decane	80 ug/mL
							N-Nitrosodi-n-propylamine	80 ug/mL
							N-Nitrosodimethylamine	80 ug/mL
							N-Nitrosodiphenylamine	80 ug/mL
					n-Octadecane	80 ug/mL		
					Naphthalene	80 ug/mL		
					Nitrobenzene	80 ug/mL		
					Pentachlorophenol	160 ug/mL		
					Phenanthrene	80 ug/mL		
					Phenol	80 ug/mL		
					Pyrene	80 ug/mL		
					Pyridine	160 ug/mL		
					571995_00101	5 mL	1,1'-Biphenyl	80 ug/mL
							1,2,4,5-Tetrachlorobenzene	80 ug/mL
							1,2,4-Trichlorobenzene	80 ug/mL
							1,2-Dichlorobenzene	80 ug/mL
							1,2-Diphenylhydrazine	80.878 ug/mL
							1,3-Dichlorobenzene	80 ug/mL
							1,3-Dinitrobenzene	80 ug/mL
							1,4-Dichlorobenzene	80 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,4-Dioxane	80 ug/mL
							1-Methylnaphthalene	80 ug/mL
							2,2'-oxybis[1-chloropropane]	80 ug/mL
							2,3,4,6-Tetrachlorophenol	80 ug/mL
							2,4,5-Trichlorophenol	80 ug/mL
							2,4,6-Trichlorophenol	80 ug/mL
							2,4-Dichlorophenol	80 ug/mL
							2,4-Dimethylphenol	80 ug/mL
							2,4-Dinitrophenol	160 ug/mL
							2,4-Dinitrotoluene	80 ug/mL
							2,6-Dichlorophenol	80 ug/mL
							2,6-Dinitrotoluene	80 ug/mL
							2-Chloronaphthalene	80 ug/mL
							2-Chlorophenol	80 ug/mL
							2-Methylnaphthalene	80 ug/mL
							2-Methylphenol	80 ug/mL
							2-Nitroaniline	80 ug/mL
							2-Nitrophenol	80 ug/mL
							3 & 4 Methylphenol	80 ug/mL
							3-Methylphenol	80 ug/mL
							3-Nitroaniline	80 ug/mL
							4,6-Dinitro-2-methylphenol	160 ug/mL
							4-Bromophenyl phenyl ether	80 ug/mL
							4-Chloro-3-methylphenol	80 ug/mL
							4-Chloroaniline	80 ug/mL
							4-Chlorophenyl phenyl ether	80 ug/mL
							4-Methylphenol	80 ug/mL
							4-Nitroaniline	80 ug/mL
							4-Nitrophenol	160 ug/mL
							Acenaphthene	80 ug/mL
							Acenaphthylene	80 ug/mL
							Acetophenone	80 ug/mL
							Aniline	80 ug/mL
							Anthracene	80 ug/mL
							Azobenzene	80 ug/mL
							Benzo[a]anthracene	80 ug/mL
							Benzo[a]pyrene	80 ug/mL
							Benzo[b]fluoranthene	80 ug/mL
							Benzo[g,h,i]perylene	80 ug/mL
							Benzo[k]fluoranthene	80 ug/mL
							Benzyl alcohol	80 ug/mL
							Bis (2-chloroethoxy)methane	80 ug/mL
							Bis (2-chloroethyl) ether	80 ug/mL
							Bis (2-ethylhexyl) phthalate	80 ug/mL
							Butyl benzyl phthalate	80 ug/mL
							Carbazole	80 ug/mL
							Chrysene	80 ug/mL
							Di-n-butyl phthalate	80 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Di-n-octyl phthalate	80 ug/mL
							Dibenz(a,h)anthracene	80 ug/mL
							Dibenzofuran	80 ug/mL
							Diethyl phthalate	80 ug/mL
							Dimethyl phthalate	80 ug/mL
							Diphenylamine	68 ug/mL
							Fluoranthene	80 ug/mL
							Fluorene	80 ug/mL
							Hexachlorobenzene	80 ug/mL
							Hexachlorobutadiene	80 ug/mL
							Hexachlorocyclopentadiene	160 ug/mL
							Hexachloroethane	80 ug/mL
							Hexadecane	80 ug/mL
							Indeno[1,2,3-cd]pyrene	80 ug/mL
							Isophorone	80 ug/mL
							n-Decane	80 ug/mL
							N-Nitrosodi-n-propylamine	80 ug/mL
							N-Nitrosodimethylamine	80 ug/mL
							N-Nitrosodiphenylamine	80 ug/mL
							n-Octadecane	80 ug/mL
							Naphthalene	80 ug/mL
							Nitrobenzene	80 ug/mL
							Pentachlorophenol	160 ug/mL
							Phenanthrene	80 ug/mL
							Phenol	80 ug/mL
							Pyrene	80 ug/mL
							Pyridine	160 ug/mL
					571995_00102	5 mL	1,1'-Biphenyl	80 ug/mL
							1,2,4,5-Tetrachlorobenzene	80 ug/mL
							1,2,4-Trichlorobenzene	80 ug/mL
							1,2-Dichlorobenzene	80 ug/mL
							1,2-Diphenylhydrazine	80.878 ug/mL
							1,3-Dichlorobenzene	80 ug/mL
							1,3-Dinitrobenzene	80 ug/mL
							1,4-Dichlorobenzene	80 ug/mL
							1,4-Dioxane	80 ug/mL
							1-Methylnaphthalene	80 ug/mL
							2,2'-oxybis[1-chloropropane]	80 ug/mL
							2,3,4,6-Tetrachlorophenol	80 ug/mL
							2,4,5-Trichlorophenol	80 ug/mL
							2,4,6-Trichlorophenol	80 ug/mL
							2,4-Dichlorophenol	80 ug/mL
							2,4-Dimethylphenol	80 ug/mL
							2,4-Dinitrophenol	160 ug/mL
							2,4-Dinitrotoluene	80 ug/mL
							2,6-Dichlorophenol	80 ug/mL
							2,6-Dinitrotoluene	80 ug/mL
							2-Chloronaphthalene	80 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2-Chlorophenol	80 ug/mL
							2-Methylnaphthalene	80 ug/mL
							2-Methylphenol	80 ug/mL
							2-Nitroaniline	80 ug/mL
							2-Nitrophenol	80 ug/mL
							3 & 4 Methylphenol	80 ug/mL
							3-Methylphenol	80 ug/mL
							3-Nitroaniline	80 ug/mL
							4,6-Dinitro-2-methylphenol	160 ug/mL
							4-Bromophenyl phenyl ether	80 ug/mL
							4-Chloro-3-methylphenol	80 ug/mL
							4-Chloroaniline	80 ug/mL
							4-Chlorophenyl phenyl ether	80 ug/mL
							4-Methylphenol	80 ug/mL
							4-Nitroaniline	80 ug/mL
							4-Nitrophenol	160 ug/mL
							Acenaphthene	80 ug/mL
							Acenaphthylene	80 ug/mL
							Acetophenone	80 ug/mL
							Aniline	80 ug/mL
							Anthracene	80 ug/mL
							Azobenzene	80 ug/mL
							Benzo[a]anthracene	80 ug/mL
							Benzo[a]pyrene	80 ug/mL
							Benzo[b]fluoranthene	80 ug/mL
							Benzo[g,h,i]perylene	80 ug/mL
							Benzo[k]fluoranthene	80 ug/mL
							Benzyl alcohol	80 ug/mL
							Bis (2-chloroethoxy)methane	80 ug/mL
							Bis (2-chloroethyl) ether	80 ug/mL
							Bis (2-ethylhexyl) phthalate	80 ug/mL
							Butyl benzyl phthalate	80 ug/mL
							Carbazole	80 ug/mL
							Chrysene	80 ug/mL
							Di-n-butyl phthalate	80 ug/mL
							Di-n-octyl phthalate	80 ug/mL
							Dibenz (a,h) anthracene	80 ug/mL
							Dibenzofuran	80 ug/mL
							Diethyl phthalate	80 ug/mL
							Dimethyl phthalate	80 ug/mL
							Diphenylamine	68 ug/mL
							Fluoranthene	80 ug/mL
							Fluorene	80 ug/mL
							Hexachlorobenzene	80 ug/mL
							Hexachlorobutadiene	80 ug/mL
							Hexachlorocyclopentadiene	160 ug/mL
							Hexachloroethane	80 ug/mL
							Hexadecane	80 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Indeno[1,2,3-cd]pyrene	80 ug/mL
							Isophorone	80 ug/mL
							n-Decane	80 ug/mL
							N-Nitrosodi-n-propylamine	80 ug/mL
							N-Nitrosodimethylamine	80 ug/mL
							N-Nitrosodiphenylamine	80 ug/mL
							n-Octadecane	80 ug/mL
							Naphthalene	80 ug/mL
							Nitrobenzene	80 ug/mL
							Pentachlorophenol	160 ug/mL
							Phenanthrene	80 ug/mL
							Phenol	80 ug/mL
							Pyrene	80 ug/mL
							Pyridine	160 ug/mL
					OP-569731_00001	5 mL	Benzoic acid	80 ug/mL
							Indene	80 ug/mL
					OP-569731_00002	5 mL	Benzoic acid	80 ug/mL
		Indene	80 ug/mL					
OP-569731_00003	5 mL	Benzoic acid	80 ug/mL					
		Indene	80 ug/mL					
OP-569731_00005	5 mL	Benzoic acid	80 ug/mL					
		Indene	80 ug/mL					
OP-572556_00021	5 mL	Hexachlorocyclopentadiene	160 ug/mL					
OP-572556_00031	5 mL	Hexachlorocyclopentadiene	160 ug/mL					
.571995_00058	01/31/20	Restek, Lot A0140111			(Purchased Reagent)		1,1'-Biphenyl	1000 ug/mL
						1,2,4,5-Tetrachlorobenzene	1000 ug/mL	
						1,2,4-Trichlorobenzene	1000 ug/mL	
						1,2-Dichlorobenzene	1000 ug/mL	
						1,2-Diphenylhydrazine	1010.97 ug/mL	
						1,3-Dichlorobenzene	1000 ug/mL	
						1,3-Dinitrobenzene	1000 ug/mL	
						1,4-Dichlorobenzene	1000 ug/mL	
						1,4-Dioxane	1000 ug/mL	
						1-Methylnaphthalene	1000 ug/mL	
						2,2'-oxybis[1-chloropropane]	1000 ug/mL	
						2,3,4,6-Tetrachlorophenol	1000 ug/mL	
						2,4,5-Trichlorophenol	1000 ug/mL	
						2,4,6-Trichlorophenol	1000 ug/mL	
						2,4-Dichlorophenol	1000 ug/mL	
						2,4-Dimethylphenol	1000 ug/mL	
						2,4-Dinitrophenol	2000 ug/mL	
						2,4-Dinitrotoluene	1000 ug/mL	
						2,6-Dichlorophenol	1000 ug/mL	
						2,6-Dinitrotoluene	1000 ug/mL	
						2-Chloronaphthalene	1000 ug/mL	
						2-Chlorophenol	1000 ug/mL	
						2-Methylnaphthalene	1000 ug/mL	
						2-Methylphenol	1000 ug/mL	

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Methylphenol	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Acetophenone	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis (2-chloroethoxy)methane	1000 ug/mL
							Bis (2-chloroethyl) ether	1000 ug/mL
							Bis (2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz (a,h) anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Diphenylamine	850 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Hexadecane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							n-Decane	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							n-Octadecane	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
.571995_00059	01/31/20		Restek, Lot A0140111		(Purchased Reagent)		Pyridine	2000 ug/mL
							1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,2-Diphenylhydrazine	1010.97 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							1,4-Dioxane	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Methylphenol	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Acetophenone	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis(2-chloroethoxy)methane	1000 ug/mL
							Bis(2-chloroethyl)ether	1000 ug/mL
							Bis(2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz(a,h)anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Diphenylamine	850 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Hexadecane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							n-Decane	1000 ug/mL
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							n-Octadecane	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
							Pyridine	2000 ug/mL
.571995_00060	01/31/20		Restek, Lot A0140111		(Purchased Reagent)		1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,2-Diphenylhydrazine	1010.97 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							1,4-Dioxane	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Methylphenol	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Acetophenone	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis(2-chloroethoxy)methane	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Bis (2-chloroethyl) ether	1000 ug/mL
							Bis (2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz (a,h) anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Diphenylamine	850 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Hexadecane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							n-Decane	1000 ug/mL
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							n-Octadecane	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
							Pyridine	2000 ug/mL
.571995_00090	09/30/19		Restek, Lot A0136052		(Purchased Reagent)		1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,2-Diphenylhydrazine	1010.97 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							1,4-Dioxane	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Methylphenol	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Acetophenone	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis(2-chloroethoxy)methane	1000 ug/mL
							Bis(2-chloroethyl)ether	1000 ug/mL
							Bis(2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz(a,h)anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Diphenylamine	850 ug/mL
							Fluoranthene	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Hexadecane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							n-Decane	1000 ug/mL
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							n-Octadecane	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
							Pyridine	2000 ug/mL
.571995_00099	01/01/20		Restek, Lot A0140111		(Purchased Reagent)		1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,2-Diphenylhydrazine	1010.97 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							1,4-Dioxane	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Methylphenol	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Methylphenol	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Acetophenone	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis (2-chloroethoxy)methane	1000 ug/mL
							Bis (2-chloroethyl) ether	1000 ug/mL
							Bis (2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz (a,h) anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Diphenylamine	850 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Hexadecane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							n-Decane	1000 ug/mL
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							n-Octadecane	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
							Pyridine	2000 ug/mL
.571995_00100	01/01/20		Restek, Lot A0140111		(Purchased Reagent)		1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,2-Diphenylhydrazine	1010.97 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							1,4-Dioxane	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Methylphenol	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Acetophenone	1000 ug/mL
							Aniline	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis (2-chloroethoxy)methane	1000 ug/mL
							Bis (2-chloroethyl) ether	1000 ug/mL
							Bis (2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz (a,h) anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Diphenylamine	850 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Hexadecane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							n-Decane	1000 ug/mL
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							n-Octadecane	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
							Pyridine	2000 ug/mL
.571995_00101	01/01/20	Restek, Lot A0140111			(Purchased Reagent)		1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,2-Diphenylhydrazine	1010.97 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							1,4-Dioxane	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Methylphenol	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Acetophenone	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis(2-chloroethoxy)methane	1000 ug/mL
							Bis(2-chloroethyl)ether	1000 ug/mL
							Bis(2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz(a,h)anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Diphenylamine	850 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Hexadecane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							n-Decane	1000 ug/mL
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							n-Octadecane	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
							Pyridine	2000 ug/mL
.571995_00102	01/01/20	Restek, Lot A0140111			(Purchased Reagent)		1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,2-Diphenylhydrazine	1010.97 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							1,4-Dioxane	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dichlorophenol	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Methylphenol	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Acetophenone	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis(2-chloroethoxy)methane	1000 ug/mL
							Bis(2-chloroethyl)ether	1000 ug/mL
							Bis(2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz(a,h)anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Diphenylamine	850 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Hexachloroethane	1000 ug/mL
							Hexadecane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							n-Decane	1000 ug/mL
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							n-Octadecane	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
							Pyridine	2000 ug/mL
.OP-569731_00001	10/31/19		Restek, Lot A0136865		(Purchased Reagent)		Benzoic acid	2000 ug/mL
							Indene	2000 ug/mL
.OP-569731_00002	10/31/19		Restek, Lot A0136865		(Purchased Reagent)		Benzoic acid	2000 ug/mL
							Indene	2000 ug/mL
.OP-569731_00003	10/31/19		Restek, Lot A0136865		(Purchased Reagent)		Benzoic acid	2000 ug/mL
							Indene	2000 ug/mL
.OP-569731_00005	10/31/19		Restek, Lot A0136865		(Purchased Reagent)		Benzoic acid	2000 ug/mL
							Indene	2000 ug/mL
.OP-572556_00021	11/30/22		Restek, Lot A0143533		(Purchased Reagent)		Hexachlorocyclopentadiene	4000 ug/mL
.OP-572556_00031	11/30/22		Restek, Lot A0143533		(Purchased Reagent)		Hexachlorocyclopentadiene	4000 ug/mL
8270_LCS_Supp_00341	05/07/19	04/30/19	P&T Methanol, Lot MethanolP&T_00230	50 mL	OP-569732_00021	2 mL	Atrazine	80 ug/mL
							Benzaldehyde	80 ug/mL
							Caprolactam	80 ug/mL
					OP-CustBenz_00033	2 mL	3,3'-Dichlorobenzidine	160 ug/mL
							Benzdine	160 ug/mL
.OP-569732_00021	10/31/19		Restek, Lot A0137125		(Purchased Reagent)		Atrazine	2000 ug/mL
							Benzaldehyde	2000 ug/mL
							Caprolactam	2000 ug/mL
.OP-CustBenz_00033	01/31/23		Restek, Lot A0144729		(Purchased Reagent)		3,3'-Dichlorobenzidine	4000 ug/mL
							Benzdine	4000 ug/mL
8270BO-SIMLCS_00033	12/26/19	03/21/19	P&T Methanol, Lot MethanolP&T_00225	250 mL	571995_00061	225 uL	1,1'-Biphenyl	0.9 ug/mL
							1,2,4,5-Tetrachlorobenzene	0.9 ug/mL
							1,2,4-Trichlorobenzene	0.9 ug/mL
							1,2-Dichlorobenzene	0.9 ug/mL
							1,2-Diphenylhydrazine	0.909877 ug/mL
							1,3-Dichlorobenzene	0.9 ug/mL
							1,3-Dinitrobenzene	0.9 ug/mL
							1,4-Dichlorobenzene	0.9 ug/mL
							1,4-Dioxane	0.9 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1-Methylnaphthalene	0.9 ug/mL
							2,2'-oxybis[1-chloropropane]	0.9 ug/mL
							2,3,4,6-Tetrachlorophenol	0.9 ug/mL
							2,4,5-Trichlorophenol	0.9 ug/mL
							2,4,6-Trichlorophenol	0.9 ug/mL
							2,4-Dichlorophenol	0.9 ug/mL
							2,4-Dimethylphenol	0.9 ug/mL
							2,4-Dinitrophenol	1.8 ug/mL
							2,4-Dinitrotoluene	0.9 ug/mL
							2,6-Dichlorophenol	0.9 ug/mL
							2,6-Dinitrotoluene	0.9 ug/mL
							2-Chloronaphthalene	0.9 ug/mL
							2-Chlorophenol	0.9 ug/mL
							2-Methylnaphthalene	0.9 ug/mL
							2-Methylphenol	0.9 ug/mL
							2-Nitroaniline	0.9 ug/mL
							2-Nitrophenol	0.9 ug/mL
							3 & 4 Methylphenol	0.9 ug/mL
							3-Methylphenol	0.9 ug/mL
							3-Nitroaniline	0.9 ug/mL
							4,6-Dinitro-2-methylphenol	1.8 ug/mL
							4-Bromophenyl phenyl ether	0.9 ug/mL
							4-Chloro-3-methylphenol	0.9 ug/mL
							4-Chloroaniline	0.9 ug/mL
							4-Chlorophenyl phenyl ether	0.9 ug/mL
							4-Methylphenol	0.9 ug/mL
							4-Nitroaniline	0.9 ug/mL
							4-Nitrophenol	1.8 ug/mL
							Acenaphthene	0.9 ug/mL
							Acenaphthylene	0.9 ug/mL
							Acetophenone	0.9 ug/mL
							Aniline	0.9 ug/mL
							Anthracene	0.9 ug/mL
							Azobenzene	0.9 ug/mL
							Benzo[a]anthracene	0.9 ug/mL
							Benzo[a]pyrene	0.9 ug/mL
							Benzo[b]fluoranthene	0.9 ug/mL
							Benzo[g,h,i]perylene	0.9 ug/mL
							Benzo[k]fluoranthene	0.9 ug/mL
							Benzyl alcohol	0.9 ug/mL
							Bis(2-chloroethoxy)methane	0.9 ug/mL
							Bis(2-chloroethyl)ether	0.9 ug/mL
							Bis(2-ethylhexyl) phthalate	0.9 ug/mL
							Butyl benzyl phthalate	0.9 ug/mL
							Carbazole	0.9 ug/mL
							Chrysene	0.9 ug/mL
							Di-n-butyl phthalate	0.9 ug/mL
							Di-n-octyl phthalate	0.9 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Dibenz(a,h)anthracene	0.9 ug/mL
							Dibenzofuran	0.9 ug/mL
							Diethyl phthalate	0.9 ug/mL
							Dimethyl phthalate	0.9 ug/mL
							Diphenylamine	0.765 ug/mL
							Fluoranthene	0.9 ug/mL
							Fluorene	0.9 ug/mL
							Hexachlorobenzene	0.9 ug/mL
							Hexachlorobutadiene	0.9 ug/mL
							Hexachlorocyclopentadiene	0.9 ug/mL
							Hexachloroethane	0.9 ug/mL
							Hexadecane	0.9 ug/mL
							Indeno[1,2,3-cd]pyrene	0.9 ug/mL
							Isophorone	0.9 ug/mL
							n-Decane	0.9 ug/mL
							N-Nitrosodi-n-propylamine	0.9 ug/mL
							N-Nitrosodimethylamine	0.9 ug/mL
							N-Nitrosodiphenylamine	0.9 ug/mL
							n-Octadecane	0.9 ug/mL
							Naphthalene	0.9 ug/mL
							Nitrobenzene	0.9 ug/mL
							Pentachlorophenol	1.8 ug/mL
							Phenanthrene	0.9 ug/mL
							Phenol	0.9 ug/mL
							Pyrene	0.9 ug/mL
							Pyridine	1.8 ug/mL
.571995_00061	12/26/19		Restek, Lot A0140111		(Purchased Reagent)		1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,2-Diphenylhydrazine	1010.97 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							1,4-Dioxane	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Methylphenol	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Acetophenone	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis (2-chloroethoxy)methane	1000 ug/mL
							Bis (2-chloroethyl) ether	1000 ug/mL
							Bis (2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz (a,h) anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Diphenylamine	850 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Hexadecane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Isophorone	1000 ug/mL
							n-Decane	1000 ug/mL
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							n-Octadecane	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
							Pyridine	2000 ug/mL
8270Surrogate_00133	04/21/20	04/21/19	ACETONE, Lot Acetone_00269	500 mL	8270SurStkHL_00323	5 mL	2,4,6 - Tribromophenol	100 ug/mL
							2,4,6-Tribromophenol (Surr)	100 ug/mL
							2-Fluorobiphenyl	100 ug/mL
							2-Fluorophenol (Surr)	100 ug/mL
							Nitrobenzene-d5	100 ug/mL
							Phenol-d5 (Surr)	100 ug/mL
							Phenol-d6	100 ug/mL
							Terphenyl-d14	100 ug/mL
					8270SurStkHL_00324	5 mL	2,4,6 - Tribromophenol	100 ug/mL
							2,4,6-Tribromophenol (Surr)	100 ug/mL
							2-Fluorobiphenyl	100 ug/mL
							2-Fluorophenol (Surr)	100 ug/mL
							Nitrobenzene-d5	100 ug/mL
							Phenol-d5 (Surr)	100 ug/mL
							Phenol-d6	100 ug/mL
							Terphenyl-d14	100 ug/mL
.8270SurStkHL_00323	12/30/23	Restek, Lot A0143524			(Purchased Reagent)		2,4,6 - Tribromophenol	5000 ug/mL
							2,4,6-Tribromophenol (Surr)	5000 ug/mL
							2-Fluorobiphenyl	5000 ug/mL
							2-Fluorophenol (Surr)	5000 ug/mL
							Nitrobenzene-d5	5000 ug/mL
							Phenol-d5 (Surr)	5000 ug/mL
							Phenol-d6	5000 ug/mL
							Terphenyl-d14	5000 ug/mL
.8270SurStkHL_00324	11/30/23	Restek, Lot A0143524			(Purchased Reagent)		2,4,6 - Tribromophenol	5000 ug/mL
							2,4,6-Tribromophenol (Surr)	5000 ug/mL
							2-Fluorobiphenyl	5000 ug/mL
							2-Fluorophenol (Surr)	5000 ug/mL
							Nitrobenzene-d5	5000 ug/mL
							Phenol-d5 (Surr)	5000 ug/mL
							Phenol-d6	5000 ug/mL
							Terphenyl-d14	5000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
8330 LCS_00084	05/16/19	11/16/18	Acetonitrile, Lot ACN_00215	100 mL	8330 LCSMix2_00101	1 mL	2,6-Dinitrotoluene	10 ug/mL
							2-Amino-4,6-dinitrotoluene	10 ug/mL
							2-Nitrotoluene	10 ug/mL
							3-Nitrotoluene	10 ug/mL
							4-Amino-2,6-dinitrotoluene	10 ug/mL
							4-Nitrotoluene	10 ug/mL
							Tetryl	10 ug/mL
					8330 NG_Stk_00058	1 mL	Nitroglycerin	100 ug/mL
					8330 NG_Stk_00059	1 mL	Nitroglycerin	100 ug/mL
					8330 PETN_Stk_00067	1 mL	PETN	100 ug/mL
					8330 PETN_Stk_00068	1 mL	PETN	100 ug/mL
					8330LCSMix1_00104	1 mL	1,3,5-Trinitrobenzene	10 ug/mL
							1,3-Dinitrobenzene	10 ug/mL
							2,4,6-Trinitrotoluene	10 ug/mL
							2,4-Dinitrotoluene	10 ug/mL
							HMX	10 ug/mL
							Nitrobenzene	10 ug/mL
.8330 LCSMix2_00101	11/16/19		Restek, Lot A0122699		(Purchased Reagent)		2,6-Dinitrotoluene	1000 ug/mL
							2-Amino-4,6-dinitrotoluene	1000 ug/mL
							2-Nitrotoluene	1000 ug/mL
							3-Nitrotoluene	1000 ug/mL
							4-Amino-2,6-dinitrotoluene	1000 ug/mL
							4-Nitrotoluene	1000 ug/mL
.8330 NG_Stk_00058	07/31/19		Restek, Lot A0128695		(Purchased Reagent)		Tetryl	1000 ug/mL
							Nitroglycerin	5000 ug/mL
							Nitroglycerin	5000 ug/mL
							PETN	5000 ug/mL
							PETN	5000 ug/mL
							PETN	5000 ug/mL
.8330 PETN_Stk_00067	09/07/19		Restek, Lot A0127970		(Purchased Reagent)		1,3,5-Trinitrobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							2,4,6-Trinitrotoluene	1000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							HMX	1000 ug/mL
							Nitrobenzene	1000 ug/mL
.8330 PETN_Stk_00068	09/07/19		Restek, Lot A0127970		(Purchased Reagent)		RDX	1000 ug/mL
							1,3,5-Trinitrobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							2,4,6-Trinitrotoluene	1000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							HMX	1000 ug/mL
.8330LCSMix1_00104	11/16/19		Restek, Lot A0128688		(Purchased Reagent)		Nitrobenzene	1000 ug/mL
							RDX	1000 ug/mL
							1,3,5-Trinitrobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							2,4,6-Trinitrotoluene	1000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
8330 LCS_00086	06/14/19	01/14/19	Acetonitrile, Lot ACN_00219	100 mL	8330 LCSMix2_00099	1 mL	2,6-Dinitrotoluene	10 ug/mL
							2-Amino-4,6-dinitrotoluene	10 ug/mL
							2-Nitrotoluene	10 ug/mL
							3-Nitrotoluene	10 ug/mL
							4-Amino-2,6-dinitrotoluene	10 ug/mL
							4-Nitrotoluene	10 ug/mL
							Tetryl	10 ug/mL
					8330 NG_Stk_00050	1 mL	Nitroglycerin	100 ug/mL
					8330 NG_Stk_00056	1 mL	Nitroglycerin	100 ug/mL
					8330_PETN_Stk_00073	1 mL	PETN	100 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					8330 PETN Stk 00074	1 mL	PETN	100 ug/mL
					8330LCSMix1_00103	1 mL	1,3,5-Trinitrobenzene	10 ug/mL
							1,3-Dinitrobenzene	10 ug/mL
							2,4,6-Trinitrotoluene	10 ug/mL
							2,4-Dinitrotoluene	10 ug/mL
							HMX	10 ug/mL
							Nitrobenzene	10 ug/mL
							RDX	10 ug/mL
.8330 LCSMix2_00099	11/30/21		Restek, Lot A0122699		(Purchased Reagent)		2,6-Dinitrotoluene	1000 ug/mL
							2-Amino-4,6-dinitrotoluene	1000 ug/mL
							2-Nitrotoluene	1000 ug/mL
							3-Nitrotoluene	1000 ug/mL
							4-Amino-2,6-dinitrotoluene	1000 ug/mL
							4-Nitrotoluene	1000 ug/mL
							Tetryl	1000 ug/mL
.8330 NG Stk 00050	01/01/20		Restek, Lot A0124122		(Purchased Reagent)		Nitroglycerin	5000 ug/mL
.8330 NG Stk 00056	01/01/20		Restek, Lot A0124122		(Purchased Reagent)		Nitroglycerin	5000 ug/mL
.8330 PETN Stk 00073	03/31/21		Restek, Lot A0136306		(Purchased Reagent)		PETN	5000 ug/mL
.8330 PETN Stk 00074	03/31/21		Restek, Lot A0136306		(Purchased Reagent)		PETN	5000 ug/mL
.8330LCSMix1_00103	06/20/22		Restek, Lot A0128688		(Purchased Reagent)		1,3,5-Trinitrobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							2,4,6-Trinitrotoluene	1000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							HMX	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							RDX	1000 ug/mL
8330 LCS_00088	07/31/19	03/19/19	Acetonitrile, Lot ACN_00219	100 mL	8330 LCSMix2_00099	0.1 mL	2,6-Dinitrotoluene	10 ug/mL
							2-Amino-4,6-dinitrotoluene	10 ug/mL
							2-Nitrotoluene	10 ug/mL
							3-Nitrotoluene	10 ug/mL
							4-Amino-2,6-dinitrotoluene	10 ug/mL
							4-Nitrotoluene	10 ug/mL
							Tetryl	10 ug/mL
					8330 LCSMix2_00107	0.9 mL	2,6-Dinitrotoluene	10 ug/mL
							2-Amino-4,6-dinitrotoluene	10 ug/mL
							2-Nitrotoluene	10 ug/mL
							3-Nitrotoluene	10 ug/mL
							4-Amino-2,6-dinitrotoluene	10 ug/mL
							4-Nitrotoluene	10 ug/mL
							Tetryl	10 ug/mL
					8330 NG Stk 00056	0.3 mL	Nitroglycerin	100 ug/mL
					8330 NG Stk 00059	1.2 mL	Nitroglycerin	100 ug/mL
					8330 NG Stk 00060	0.5 mL	Nitroglycerin	100 ug/mL
					8330 PETN Stk 00064	0.4 mL	PETN	100 ug/mL
					8330 PETN Stk 00068	0.9 mL	PETN	100 ug/mL
					8330 PETN Stk 00073	0.4 mL	PETN	100 ug/mL
					8330_PETN_Stk_00075	0.3 mL	PETN	100 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					8330LCSMix1_00101	1 mL	1,3,5-Trinitrobenzene	10 ug/mL
							1,3-Dinitrobenzene	10 ug/mL
							2,4,6-Trinitrotoluene	10 ug/mL
							2,4-Dinitrotoluene	10 ug/mL
							HMX	10 ug/mL
							Nitrobenzene	10 ug/mL
							RDX	10 ug/mL
					PicricARestek_00082	1 mL	2,4,6-Trinitrophenol	10 ug/mL
.8330 LCSMix2_00099	11/30/21		Restek, Lot A0122699		(Purchased Reagent)		2,6-Dinitrotoluene	1000 ug/mL
							2-Amino-4,6-dinitrotoluene	1000 ug/mL
							2-Nitrotoluene	1000 ug/mL
							3-Nitrotoluene	1000 ug/mL
							4-Amino-2,6-dinitrotoluene	1000 ug/mL
							4-Nitrotoluene	1000 ug/mL
							Tetryl	1000 ug/mL
.8330 LCSMix2_00107	08/19/23		Restek, Lot A0141002		(Purchased Reagent)		2,6-Dinitrotoluene	1000 ug/mL
							2-Amino-4,6-dinitrotoluene	1000 ug/mL
							2-Nitrotoluene	1000 ug/mL
							3-Nitrotoluene	1000 ug/mL
							4-Amino-2,6-dinitrotoluene	1000 ug/mL
							4-Nitrotoluene	1000 ug/mL
							Tetryl	1000 ug/mL
.8330 NG Stk 00056	01/01/20		Restek, Lot A0124122		(Purchased Reagent)		Nitroglycerin	5000 ug/mL
.8330 NG Stk 00059	07/31/19		Restek, Lot A0128695		(Purchased Reagent)		Nitroglycerin	5000 ug/mL
.8330 NG Stk 00060	01/22/20		Restek, Lot A0128695		(Purchased Reagent)		Nitroglycerin	5000 ug/mL
.8330 PETN Stk 00064	05/31/20		Restek, Lot A0127970		(Purchased Reagent)		PETN	5000 ug/mL
.8330 PETN Stk 00068	09/07/19		Restek, Lot A0127970		(Purchased Reagent)		PETN	5000 ug/mL
.8330 PETN Stk 00073	03/31/21		Restek, Lot A0136306		(Purchased Reagent)		PETN	5000 ug/mL
.8330 PETN Stk 00075	03/31/21		Restek, Lot A0136306		(Purchased Reagent)		PETN	5000 ug/mL
.8330LCSMix1_00101	06/20/22		Restek, Lot A0128688		(Purchased Reagent)		1,3,5-Trinitrobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							2,4,6-Trinitrotoluene	1000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							HMX	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							RDX	1000 ug/mL
.PicricARestek_00082	11/30/23		Restek, Lot A0143208		(Purchased Reagent)		2,4,6-Trinitrophenol	1000 ug/mL
8330 LCS_00089	11/08/19	05/08/19	Acetonitrile, Lot ACN_00030	100 mL	8330_NG_Stk_00071	1 mL	Nitroglycerin	100 ug/mL
					8330_NG_Stk_00073	1 mL	Nitroglycerin	100 ug/mL
					8330_PETN_Stk_00076	1 mL	PETN	100 ug/mL
					8330_PETN_Stk_00077	1 mL	PETN	100 ug/mL
					8330LCSMix1_00109	1 mL	1,3,5-Trinitrobenzene	10 ug/mL
							1,3-Dinitrobenzene	10 ug/mL
							2,4,6-Trinitrotoluene	10 ug/mL
							2,4-Dinitrotoluene	10 ug/mL
							HMX	10 ug/mL
							Nitrobenzene	10 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					8330LCSmix2_00008	1 mL	RDX	10 ug/mL
							2,6-Dinitrotoluene	10 ug/mL
							2-Amino-4,6-dinitrotoluene	10 ug/mL
							2-Nitrotoluene	10 ug/mL
							3-Nitrotoluene	10 ug/mL
							4-Amino-2,6-dinitrotoluene	10 ug/mL
							4-Nitrotoluene	10 ug/mL
							Tetryl	10 ug/mL
.8330 NG Stk 00071	07/31/20		Restek, Lot A0129124		(Purchased Reagent)		Nitroglycerin	5000 ug/mL
.8330 NG Stk 00073	07/31/20		Restek, Lot A0129124		(Purchased Reagent)		Nitroglycerin	5000 ug/mL
.8330 PETN Stk 00076	03/31/21		Restek, Lot A0136306		(Purchased Reagent)		PETN	5000 ug/mL
.8330 PETN Stk 00077	03/31/21		Restek, Lot A0136306		(Purchased Reagent)		PETN	5000 ug/mL
.8330LCSMIX1_00109	10/31/22		Restek, Lot A0131772		(Purchased Reagent)		1,3,5-Trinitrobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							2,4,6-Trinitrotoluene	1000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							HMX	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							RDX	1000 ug/mL
.8330LCSmix2_00008	08/31/23		Restek, Lot A0141002		(Purchased Reagent)		2,6-Dinitrotoluene	1000 ug/mL
							2-Amino-4,6-dinitrotoluene	1000 ug/mL
							2-Nitrotoluene	1000 ug/mL
							3-Nitrotoluene	1000 ug/mL
							4-Amino-2,6-dinitrotoluene	1000 ug/mL
							4-Nitrotoluene	1000 ug/mL
							Tetryl	1000 ug/mL
8330_ADDs_00021	05/11/19	05/02/19	Acetonitrile, Lot 200488	5 mL	833035DNASTk_00036	1 mL	3,5-Dinitroaniline	20 ug/mL
.833035DNASTk_00036	05/11/19		Accustandard, Lot 217071230		(Purchased Reagent)		3,5-Dinitroaniline	100 ug/mL
8330IntermStk_00057	11/30/19	11/30/18	Acetonitrile, Lot 200488	10 mL	8330_NG_Stk_00051	200 uL	Nitroglycerin	100 ug/mL
					8330 PETN Stk 00053	200 uL	PETN	100 ug/mL
					8330ICALStock_00029	1 mL	1,3,5-Trinitrobenzene	10 ug/mL
							1,3-Dinitrobenzene	10.01 ug/mL
							2,4,6-Trinitrotoluene	10.04 ug/mL
							2,4-Dinitrotoluene	10.02 ug/mL
							2,6-Dinitrotoluene	10.03 ug/mL
							2-Amino-4,6-dinitrotoluene	10.03 ug/mL
							2-Nitrotoluene	10.03 ug/mL
							3-Nitrotoluene	10.04 ug/mL
							4-Amino-2,6-dinitrotoluene	10.03 ug/mL
							4-Nitrotoluene	10.04 ug/mL
							HMX	10 ug/mL
							Nitrobenzene	10.02 ug/mL
							RDX	10 ug/mL
							Tetryl	10 ug/mL
							1,2-Dinitrobenzene	10 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.8330 NG_Stk_00051	01/01/20		Restek, Lot A0124122		8330PASTkPS_00057	1 mL	2,4,6-Trinitrophenol	10 ug/mL
.8330 PETN_Stk_00053	01/01/20		Restek, Lot A0124124		(Purchased Reagent)		Nitroglycerin	5000 ug/mL
.8330ICALStock_00029	11/30/19	11/30/18	Acetonitrile, Lot 200488	10 mL	8330 Stock_TS_00012	1 mL	1,3,5-Trinitrobenzene	100 ug/mL
							1,3-Dinitrobenzene	100.1 ug/mL
							2,4,6-Trinitrotoluene	100.4 ug/mL
							2,4-Dinitrotoluene	100.2 ug/mL
							2,6-Dinitrotoluene	100.3 ug/mL
							2-Amino-4,6-dinitrotoluene	100.3 ug/mL
							2-Nitrotoluene	100.3 ug/mL
							3-Nitrotoluene	100.4 ug/mL
							4-Amino-2,6-dinitrotoluene	100.3 ug/mL
							4-Nitrotoluene	100.4 ug/mL
							HMX	100 ug/mL
							Nitrobenzene	100.2 ug/mL
							RDX	100 ug/mL
							Tetryl	100 ug/mL
					8330SurrStock_00163	1 mL	1,2-Dinitrobenzene	100 ug/mL
..8330 Stock_TS_00012	04/30/20		Ultra Scientific, Lot CR-1002		(Purchased Reagent)		1,3,5-Trinitrobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1001 ug/mL
							2,4,6-Trinitrotoluene	1004 ug/mL
							2,4-Dinitrotoluene	1002 ug/mL
							2,6-Dinitrotoluene	1003 ug/mL
							2-Amino-4,6-dinitrotoluene	1003 ug/mL
							2-Nitrotoluene	1003 ug/mL
							3-Nitrotoluene	1004 ug/mL
							4-Amino-2,6-dinitrotoluene	1003 ug/mL
							4-Nitrotoluene	1004 ug/mL
							HMX	1000 ug/mL
							Nitrobenzene	1002 ug/mL
							RDX	1000 ug/mL
							Tetryl	1000 ug/mL
..8330SurrStock_00163	08/15/24		AccuStandard, Lot 216071012		(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
.8330PASTkPS_00057	04/12/20		AccuStandard, Lot 218031154		(Purchased Reagent)		2,4,6-Trinitrophenol	100 ug/mL
8330IntermStk_00058	07/19/19	05/07/19	Acetonitrile, Lot 200488	5 mL	8330_NG_Stk_00052	200 uL	Nitroglycerin	200 ug/mL
					8330_PETN_Stk_00056	200 uL	PETN	200 ug/mL
					8330ICALStock_00029	1 mL	1,3,5-Trinitrobenzene	20 ug/mL
							1,3-Dinitrobenzene	20.02 ug/mL
							2,4,6-Trinitrotoluene	20.08 ug/mL
							2,4-Dinitrotoluene	20.04 ug/mL
							2,6-Dinitrotoluene	20.06 ug/mL
							2-Amino-4,6-dinitrotoluene	20.06 ug/mL
							2-Nitrotoluene	20.06 ug/mL
							3-Nitrotoluene	20.08 ug/mL
							4-Amino-2,6-dinitrotoluene	20.06 ug/mL
							4-Nitrotoluene	20.08 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							HMX	20 ug/mL
							Nitrobenzene	20.04 ug/mL
							RDX	20 ug/mL
							Tetryl	20 ug/mL
							1,2-Dinitrobenzene	20 ug/mL
					8330PASTkPS_00058	1 mL	2,4,6-Trinitrophenol	20 ug/mL
.8330 NG Stk 00052	01/01/20		Restek, Lot A0124122		(Purchased Reagent)		Nitroglycerin	5000 ug/mL
.8330 PETN Stk 00056	01/01/20		Restek, Lot A0124124		(Purchased Reagent)		PETN	5000 ug/mL
.8330ICALStock_00029	11/30/19	11/30/18	Acetonitrile, Lot 200488	10 mL	8330 Stock_TS_00012	1 mL	1,3,5-Trinitrobenzene	100 ug/mL
							1,3-Dinitrobenzene	100.1 ug/mL
							2,4,6-Trinitrotoluene	100.4 ug/mL
							2,4-Dinitrotoluene	100.2 ug/mL
							2,6-Dinitrotoluene	100.3 ug/mL
							2-Amino-4,6-dinitrotoluene	100.3 ug/mL
							2-Nitrotoluene	100.3 ug/mL
							3-Nitrotoluene	100.4 ug/mL
							4-Amino-2,6-dinitrotoluene	100.3 ug/mL
							4-Nitrotoluene	100.4 ug/mL
							HMX	100 ug/mL
							Nitrobenzene	100.2 ug/mL
							RDX	100 ug/mL
							Tetryl	100 ug/mL
					8330SurrStock_00163	1 mL	1,2-Dinitrobenzene	100 ug/mL
..8330 Stock_TS_00012	04/30/20		Ultra Scientific, Lot CR-1002		(Purchased Reagent)		1,3,5-Trinitrobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1001 ug/mL
							2,4,6-Trinitrotoluene	1004 ug/mL
							2,4-Dinitrotoluene	1002 ug/mL
							2,6-Dinitrotoluene	1003 ug/mL
							2-Amino-4,6-dinitrotoluene	1003 ug/mL
							2-Nitrotoluene	1003 ug/mL
							3-Nitrotoluene	1004 ug/mL
							4-Amino-2,6-dinitrotoluene	1003 ug/mL
							4-Nitrotoluene	1004 ug/mL
							HMX	1000 ug/mL
							Nitrobenzene	1002 ug/mL
							RDX	1000 ug/mL
							Tetryl	1000 ug/mL
..8330SurrStock_00163	08/15/24		AccuStandard, Lot 216071012		(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
.8330PASTkPS_00058	07/19/19		AccuStandard, Lot 216061376-01		(Purchased Reagent)		2,4,6-Trinitrophenol	100 ug/mL
8330Surrogate_00102	05/07/19	12/07/18	Acetonitrile, Lot ACN_00019	500 mL	8330SurrStkSS_00128	1 mL	1,2-Dinitrobenzene	10 ug/mL
					8330SurrStkSS_00129	1 mL	1,2-Dinitrobenzene	10 ug/mL
					8330SurrStkSS_00151	1 mL	1,2-Dinitrobenzene	10 ug/mL
					8330SurrStkSS_00154	1 mL	1,2-Dinitrobenzene	10 ug/mL
					8330SurrStkSS_00156	1 mL	1,2-Dinitrobenzene	10 ug/mL
.8330SurrStkSS_00128	02/28/22		Restek, Lot A0124792		(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
.8330SurrStkSS_00129	02/28/22		Restek, Lot A0124792		(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.8330SurrStkSS_00151	07/31/23		Restek, Lot A0139489		(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
.8330SurrStkSS_00154	07/31/23		Restek, Lot A0139489		(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
.8330SurrStkSS_00156	07/31/23		Restek, Lot A0139489		(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
8330Surrogate_00103	12/04/19	03/17/19	Acetonitrile, Lot ACN_00219	500 mL	8330SurrStkSS_00134	1.25 mL	1,2-Dinitrobenzene	10 ug/mL
							1,2-Dinitrobenzene (Surr)	10 ug/mL
					8330SurrStkSS_00135	1.25 mL	1,2-Dinitrobenzene	10 ug/mL
							1,2-Dinitrobenzene (Surr)	10 ug/mL
					8330SurrStkSS_00152	1.25 mL	1,2-Dinitrobenzene	10 ug/mL
							1,2-Dinitrobenzene (Surr)	10 ug/mL
					8330SurrStkSS_00153	1.25 mL	1,2-Dinitrobenzene	10 ug/mL
							1,2-Dinitrobenzene (Surr)	10 ug/mL
.8330SurrStkSS_00134	02/28/22		Restek, Lot A0124792		(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
							1,2-Dinitrobenzene (Surr)	1000 ug/mL
.8330SurrStkSS_00135	02/28/22		Restek, Lot A0124792		(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
							1,2-Dinitrobenzene (Surr)	1000 ug/mL
.8330SurrStkSS_00152	07/31/23		Restek, Lot A0139489		(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
							1,2-Dinitrobenzene (Surr)	1000 ug/mL
.8330SurrStkSS_00153	07/31/23		Restek, Lot A0139489		(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
							1,2-Dinitrobenzene (Surr)	1000 ug/mL
AR_1248_ICV_00014	06/06/19	12/06/18	Hexane, Lot 186983	100 mL	AR_1248_RESss_00011	25 uL	PCB-1248	250 ng/mL
.AR_1248_RESss_00011	12/06/19		RESTEK, Lot A0124143		(Purchased Reagent)		PCB-1248	1000 ug/mL
AR_1248_I7_00018	07/08/19	01/08/19	Hexane, Lot 192742	100 mL	AR_1248_RES_00013	100 uL	PCB-1248 Peak 1	1 ug/mL
							PCB-1248 Peak 2	1 ug/mL
							PCB-1248 Peak 3	1 ug/mL
							PCB-1248 Peak 4	1 ug/mL
							PCB-1248 Peak 5	1 ug/mL
.AR_1248_RES_00013	07/08/19		RESTEK, Lot A0130978		(Purchased Reagent)		PCB-1248 Peak 1	1000 ug/mL
							PCB-1248 Peak 2	1000 ug/mL
							PCB-1248 Peak 3	1000 ug/mL
							PCB-1248 Peak 4	1000 ug/mL
							PCB-1248 Peak 5	1000 ug/mL
AR_1660_ICV_00015	06/06/19	12/06/18	Hexane, Lot 186983	100 mL	AR_1660_RESss_00011	25 uL	PCB-1016	250 ng/mL
							PCB-1260	250 ng/mL
.AR_1660_RESss_00011	12/06/19		RESTEK, Lot A0133256		(Purchased Reagent)		PCB-1016	1000 ug/mL
							PCB-1260	1000 ug/mL
AR_1660_I7_00028	07/08/19	01/08/19	Hexane, Lot 192742	100 mL	AR_1660_RES_00002	100 uL	PCB-1016 Peak 1	1 ug/mL
							PCB-1016 Peak 2	1 ug/mL
							PCB-1016 Peak 3	1 ug/mL
							PCB-1016 Peak 4	1 ug/mL
							PCB-1016 Peak 5	1 ug/mL
							PCB-1260 Peak 1	1 ug/mL
							PCB-1260 Peak 2	1 ug/mL
							PCB-1260 Peak 3	1 ug/mL
							PCB-1260 Peak 4	1 ug/mL
							PCB-1260 Peak 5	1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					AR_SURR_RES_00102	25 uL	DCB Decachlorobiphenyl	0.05 ug/mL
.AR_1660_RES_00002	07/08/19	RESTEK, Lot A0134815			(Purchased Reagent)		Tetrachloro-m-xylene	0.05 ug/mL
							PCB-1016 Peak 1	1000 ug/mL
							PCB-1016 Peak 2	1000 ug/mL
							PCB-1016 Peak 3	1000 ug/mL
							PCB-1016 Peak 4	1000 ug/mL
							PCB-1016 Peak 5	1000 ug/mL
							PCB-1260 Peak 1	1000 ug/mL
							PCB-1260 Peak 2	1000 ug/mL
							PCB-1260 Peak 3	1000 ug/mL
							PCB-1260 Peak 4	1000 ug/mL
PCB-1260 Peak 5	1000 ug/mL							
.AR_SURR_RES_00102	07/08/20	RESTEK, Lot A0141110			(Purchased Reagent)		DCB Decachlorobiphenyl	200 ug/mL
							Tetrachloro-m-xylene	200 ug/mL
AR_1660_L7_00028	07/08/19	01/08/19	Hexane, Lot 192742	100 mL	AR_1660_RES_00002	100 uL	PCB-1016	1 ug/mL
							PCB-1260	1 ug/mL
.AR_1660_RES_00002	07/08/19	RESTEK, Lot A0134815			(Purchased Reagent)		PCB-1016	1000 ug/mL
							PCB-1260	1000 ug/mL
AR_2154_ICV_00015	06/06/19	12/06/18	Hexane, Lot 186983	100 mL	AR_2154_RESss_00002	25 uL	PCB-1221	250 ng/mL
							PCB-1254	250 ng/mL
.AR_2154_RESss_00002	12/06/19	RESTEK, Lot A0131779			(Purchased Reagent)		PCB-1221	1000 ug/mL
							PCB-1254	1000 ug/mL
AR_2154_L7_00022	07/08/19	01/08/19	Hexane, Lot 192742	100 mL	AR_2154_RES_00002	100 uL	PCB-1221 Peak 1	1 ug/mL
							PCB-1221 Peak 2	1 ug/mL
							PCB-1221 Peak 3	1 ug/mL
							PCB-1254 Peak 1	1 ug/mL
							PCB-1254 Peak 2	1 ug/mL
							PCB-1254 Peak 3	1 ug/mL
							PCB-1254 Peak 4	1 ug/mL
							PCB-1254 Peak 5	1 ug/mL
.AR_2154_RES_00002	07/08/19	RESTEK, Lot A0131802			(Purchased Reagent)		PCB-1221 Peak 1	1000 ug/mL
							PCB-1221 Peak 2	1000 ug/mL
							PCB-1221 Peak 3	1000 ug/mL
							PCB-1254 Peak 1	1000 ug/mL
							PCB-1254 Peak 2	1000 ug/mL
							PCB-1254 Peak 3	1000 ug/mL
							PCB-1254 Peak 4	1000 ug/mL
							PCB-1254 Peak 5	1000 ug/mL
AR_3262_ICV_00015	11/06/19	05/06/19	Hexane, Lot Hexane cycl 00057	100 mL	AR_3262_RESss_00003	25 uL	PCB-1232	250 ng/mL
.AR_3262_RESss_00003	11/06/19	RESTEK, Lot A0134307			(Purchased Reagent)		PCB-1232	1000 ug/mL
AR_3262_L7_00018	07/08/19	01/08/19	Hexane, Lot 192742	100 mL	AR_3262_RES_00002	100 uL	PCB-1232 Peak 1	1 ug/mL
							PCB-1232 Peak 2	1 ug/mL
							PCB-1232 Peak 3	1 ug/mL
							PCB-1232 Peak 4	1 ug/mL
							PCB-1232 Peak 5	1 ug/mL
							PCB-1262 Peak 1	1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							PCB-1262 Peak 2	1 ug/mL
							PCB-1262 Peak 3	1 ug/mL
							PCB-1262 Peak 4	1 ug/mL
							PCB-1262 Peak 5	1 ug/mL
.AR_3262_RES_00002	07/08/19		RESTEK, Lot A0132023		(Purchased Reagent)		PCB-1232 Peak 1	1000 ug/mL
							PCB-1232 Peak 2	1000 ug/mL
							PCB-1232 Peak 3	1000 ug/mL
							PCB-1232 Peak 4	1000 ug/mL
							PCB-1232 Peak 5	1000 ug/mL
							PCB-1262 Peak 1	1000 ug/mL
							PCB-1262 Peak 2	1000 ug/mL
							PCB-1262 Peak 3	1000 ug/mL
							PCB-1262 Peak 4	1000 ug/mL
							PCB-1262 Peak 5	1000 ug/mL
AR_4268_ICV_00015	11/06/19	05/06/19	Hexane, Lot Hexane cycl 00057	100 mL	AR_4268_RESss_00003	25 uL	PCB-1242	250 ng/mL
.AR_4268_RESss_00003	11/06/19		RESTEK, Lot A0133202		(Purchased Reagent)		PCB-1242	1000 ug/mL
AR_4268_I7_00017	07/08/19	01/08/19	Hexane, Lot 192742	100 mL	AR_4268_RES_00002	100 uL	PCB-1242 Peak 1	1 ug/mL
							PCB-1242 Peak 2	1 ug/mL
							PCB-1242 Peak 3	1 ug/mL
							PCB-1242 Peak 4	1 ug/mL
							PCB-1242 Peak 5	1 ug/mL
							PCB-1268 Peak 1	1 ug/mL
							PCB-1268 Peak 2	1 ug/mL
							PCB-1268 Peak 3	1 ug/mL
							PCB-1268 Peak 4	1 ug/mL
							PCB-1268 Peak 5	1 ug/mL
.AR_4268_RES_00002	07/08/19		RESTEK, Lot A0133093		(Purchased Reagent)		PCB-1242 Peak 1	1000 ug/mL
							PCB-1242 Peak 2	1000 ug/mL
							PCB-1242 Peak 3	1000 ug/mL
							PCB-1242 Peak 4	1000 ug/mL
							PCB-1242 Peak 5	1000 ug/mL
							PCB-1268 Peak 1	1000 ug/mL
							PCB-1268 Peak 2	1000 ug/mL
							PCB-1268 Peak 3	1000 ug/mL
							PCB-1268 Peak 4	1000 ug/mL
							PCB-1268 Peak 5	1000 ug/mL
BNB IS 00013	07/04/19	01/04/19	Hexane, Lot 192742	500 mL	BNB stock 00017	0.5 mL	1-Bromo-2-nitrobenzene	1000 ng/mL
.BNB stock 00017	07/04/19		Restek, Lot A0127264		(Purchased Reagent)		1-Bromo-2-nitrobenzene	1000 ug/mL
CN 10ppm_00347	05/13/19	05/06/19	2% NaOH, Lot 1% NaOH_00322	100 mg/L	CN CAL Std_00067	1 mL	Cyanide, Amenable	10 mg/L
							Cyanide, Free	10 mg/L
							Cyanide, Non-amenable	10 mg/L
							Cyanide, Total	10 mg/L
							Cyanide, Weak Acid Dissociable	10 mg/L
.CN CAL Std_00067	07/31/19		Ricca, Lot 4901A12		(Purchased Reagent)		Cyanide, Amenable	1000 mg/L
							Cyanide, Free	1000 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Cyanide, Non-amenable	1000 mg/L
							Cyanide, Total	1000 mg/L
							Cyanide, Weak Acid Dissociable	1000 mg/L
CN CAL 1 ppm 01522	05/14/19	05/13/19	1% NaOH, Lot N/A	100 mL	CN 10ppm 00348	10 mL	Cyanide, Total	1 mg/L
.CN 10ppm_00348	05/20/19	05/13/19	2% NaOH, Lot 1% NaOH 00322	100 mg/L	CN CAL Std_00067	1 mL	Cyanide, Total	10 mg/L
..CN CAL Std_00067	07/31/19		Ricca, Lot 4901A12		(Purchased Reagent)		Cyanide, Total	1000 mg/L
CN ICV Daily 01288	05/14/19	05/13/19	2% NaOH, Lot N/A	100 mL	CN ICV Int_00537	1 mL	Cyanide, Total	0.1 mg/L
.CN ICV Int_00537	05/20/19	05/13/19	1% NaOH, Lot 1% NaOH 00322	100 mL	CN ICV Std_00057	1 mL	Cyanide, Total	10 mg/L
..CN ICV Std_00057	05/30/19		SPEX, Lot 13-79YPX		(Purchased Reagent)		Cyanide, Total	1000 mg/L
CN ICV Int_00536	05/13/19	05/06/19	1% NaOH, Lot 1% NaOH_00322	100 mL	CN ICV Std_00057	1 mL	Cyanide, Amenable	10 mg/L
							Cyanide, Free	10 mg/L
							Cyanide, Non-amenable	0 mg/L
							Cyanide, Total	10 mg/L
							Cyanide, Weak Acid Dissociable	10 mg/L
.CN ICV Std_00057	05/30/19		SPEX, Lot 13-79YPX		(Purchased Reagent)		Cyanide, Amenable	1000 mg/L
							Cyanide, Free	1000 mg/L
							Cyanide, Non-amenable	0 mg/L
							Cyanide, Total	1000 mg/L
							Cyanide, Weak Acid Dissociable	1000 mg/L
Hg Biwk ICV 00273	05/14/19	04/30/19	1% HNO3, Lot K23022	100 mL	Hg ICV Stock_00011	0.4 mL	Mercury	0.4 mg/L
.Hg ICV Stock_00011	09/05/19		Inorganic Ventures, Lot M2-HG659091		(Purchased Reagent)		Mercury	100 mg/L
Hg Daily Spk 02406	05/14/19	05/13/19	1% HNO3, Lot K23022	100 mL	Hg Mnth Spike_00140	1 mL	Mercury	0.1 mg/L
.Hg Mnth Spike_00140	05/30/19	04/30/19	1% HNO3, Lot K23022	100 mL	Hg Ultra Prim_00014	1 mL	Mercury	10 mg/L
..Hg Ultra Prim_00014	09/08/19		Ultra Scientific, Lot CR-3231		(Purchased Reagent)		Mercury	1000 mg/L
ICP CCV_00376	06/04/19	05/08/19	5%/5% HCL/HNO3, Lot SEE LOGBOOK	500 mL	ICP ICAL1A_00835	250 mL	Aluminum	0.5 mg/L
							Calcium	5 mg/L
							Iron	2.5 mg/L
							Magnesium	20 mg/L
							Potassium	50 mg/L
							Sodium	5 mg/L
.ICP ICAL1A_00835	06/04/19	04/29/19	5%/5% HCL/HNO3, Lot SEE LOGBOOK	1000 mL	Icp cal std 3_00018	10 mL	Aluminum	1 mg/L
							Calcium	10 mg/L
							Iron	5 mg/L
							Magnesium	40 mg/L
							Potassium	100 mg/L
							Sodium	10 mg/L
..Icp cal std 3_00018	08/23/19		Inorganic Ventures, Lot M2-MEB663620		(Purchased Reagent)		Aluminum	100 mg/L
							Calcium	1000 mg/L
							Iron	500 mg/L
							Magnesium	4000 mg/L
							Potassium	10000 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Sodium	1000 mg/L
ICP CCV_00377	06/04/19	05/13/19	5%/5% HCL/HNO3, Lot SEE LOGBOOK	500 mL	ICP ICAL1A_00837	250 mL	Aluminum	0.5 mg/L
							Calcium	5 mg/L
							Iron	2.5 mg/L
							Magnesium	20 mg/L
							Potassium	50 mg/L
.ICP ICAL1A_00837	06/04/19	05/13/19	5%/5% HCL/HNO3, Lot SEE LOGBOOK	1000 mL	Icp cal std 3_00018	10 mL	Sodium	5 mg/L
							Aluminum	1 mg/L
							Calcium	10 mg/L
							Iron	5 mg/L
							Magnesium	40 mg/L
..Icp cal std 3_00018	08/23/19	Inorganic Ventures, Lot M2-MEB663620	(Purchased Reagent)	Aluminum	100 mg/L			
				Calcium	1000 mg/L			
				Iron	500 mg/L			
				Magnesium	4000 mg/L			
				Potassium	10000 mg/L			
							Sodium	1000 mg/L
ICP CCVH_00637	06/07/19	05/08/19	5%/5% HCL/HNO3, Lot SEE LOGBOOK	500 mL	ICP ICAL2A_00537	250 mL	Aluminum	50 mg/L
							Iron	50 mg/L
							Sodium	250 mg/L
.ICP ICAL2A_00537	06/07/19	05/08/19	5%HCl/5% HNO3, Lot see reagent log	1000 mL	10000 Al_00018	10 mL	Aluminum	100 mg/L
					10000 Fe 00022	10 mL	Iron	100 mg/L
					10000 Na 00070	50 mL	Sodium	500 mg/L
..10000 Al 00018	06/26/19	Inorganic Ventures, Lot K2-AL			(Purchased Reagent)		Aluminum	10000 mg/L
..10000 Fe 00022	02/18/20	Inorganic Ventures, Lot M2-FE659835			(Purchased Reagent)		Iron	10000 mg/L
..10000 Na 00070	03/06/20	CPI, Lot 752887-20			(Purchased Reagent)		Sodium	10000 mg/L
ICP CCVH_00639	06/07/19	05/13/19	5%/5% HCL/HNO3, Lot SEE LOGBOOK	500 mL	ICP ICAL2A_00538	250 mL	Aluminum	50 mg/L
							Iron	50 mg/L
							Sodium	250 mg/L
.ICP ICAL2A_00538	06/07/19	05/13/19	5%HCl/5% HNO3, Lot see reagent log	1000 mL	10000 Al_00018	10 mL	Aluminum	100 mg/L
					10000 Fe 00022	10 mL	Iron	100 mg/L
					10000 Na 00070	50 mL	Sodium	500 mg/L
..10000 Al 00018	06/26/19	Inorganic Ventures, Lot K2-AL			(Purchased Reagent)		Aluminum	10000 mg/L
..10000 Fe 00022	02/18/20	Inorganic Ventures, Lot M2-FE659835			(Purchased Reagent)		Iron	10000 mg/L
..10000 Na 00070	03/06/20	CPI, Lot 752887-20			(Purchased Reagent)		Sodium	10000 mg/L
ICP ICSA_00185	03/18/20	05/03/19	5%/5% HCL/HNO3, Lot SEE LOGBOOK	250 mL	Icp stk ICSA_00029	25 mL	Aluminum	500 mg/L
							Calcium	500 mg/L
							Iron	200 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Magnesium	500 mg/L
.Icp stk ICSA_00029	03/18/20		CPI, Lot 982821-1		(Purchased Reagent)		Aluminum	5000 mg/L
							Calcium	5000 mg/L
							Iron	2000 mg/L
							Magnesium	5000 mg/L
ICP ICSAB_00211	06/03/19	05/01/19	5%/5% HCL/HNO3, Lot SEE LOGBOOK	250 mL	1000 Li_00040	0.25 mL	Li	1 mg/L
					ICP ICSAB 1_00001	2.5 mL	Antimony	1 mg/L
							Mo	1 mg/L
							Si	10 mg/L
							SiO2	21.4 mg/L
							Sn	1 mg/L
							Ti	1 mg/L
					ICP ICSAB 2_00001	2.5 mL	Arsenic	1 mg/L
							B	10 mg/L
							Barium	1 mg/L
							Beryllium	0.5 mg/L
							Cadmium	1 mg/L
							Chromium	1 mg/L
							Cobalt	1 mg/L
							Copper	1 mg/L
							Lead	1 mg/L
							Manganese	1 mg/L
							Nickel	1 mg/L
							P	10 mg/L
							Potassium	10 mg/L
							Selenium	1 mg/L
							Silver	1 mg/L
							Sodium	10 mg/L
							Sr	1 mg/L
							Thallium	1 mg/L
							Vanadium	1 mg/L
							Zinc	1 mg/L
					Icp stk ICSA_00029	25 mL	Aluminum	500 mg/L
							Calcium	500 mg/L
							Iron	200 mg/L
							Magnesium	500 mg/L
.1000 Li 00040	05/16/20		CPI, Lot 751942-43		(Purchased Reagent)		Li	1000 mg/L
.ICP ICSAB 1_00001	06/03/19		CPI, Lot 990624-2		(Purchased Reagent)		Antimony	100 mg/L
							Mo	100 mg/L
							Si	1000 mg/L
							SiO2	2140 mg/L
							Sn	100 mg/L
							Ti	100 mg/L
.ICP ICSAB 2_00001	06/03/19		CPI, Lot 990626-2		(Purchased Reagent)		Arsenic	100 mg/L
							B	1000 mg/L
							Barium	100 mg/L
							Beryllium	50 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Cadmium	100 mg/L
							Chromium	100 mg/L
							Cobalt	100 mg/L
							Copper	100 mg/L
							Lead	100 mg/L
							Manganese	100 mg/L
							Nickel	100 mg/L
							P	1000 mg/L
							Potassium	1000 mg/L
							Selenium	100 mg/L
							Silver	100 mg/L
							Sodium	1000 mg/L
							Sr	100 mg/L
							Thallium	100 mg/L
							Vanadium	100 mg/L
							Zinc	100 mg/L
.Icp stk ICSA_00029	03/18/20		CPI, Lot 982821-1		(Purchased Reagent)		Aluminum	5000 mg/L
							Calcium	5000 mg/L
							Iron	2000 mg/L
							Magnesium	5000 mg/L
ICP ICV_00813	10/01/19	05/13/19	5%HNO3/5% HCl, Lot SEE LOGBOOK	100 mL	ICP CAL STD 4_00002	0.25 mL	Aluminum	0.25 ppm
							Calcium	2.5 ppm
							Iron	1.25 ppm
							Magnesium	10 ppm
							Potassium	25 ppm
							Sodium	12.5 ppm
.ICP CAL STD 4_00002	09/22/20		CPI, Lot 10094465-2		(Purchased Reagent)		Aluminum	100 mg/L
							Calcium	1000 mg/L
							Iron	500 mg/L
							Magnesium	4000 mg/L
							Potassium	10000 mg/L
							Sodium	5000 mg/L
ICP ICV_00814	10/01/19	05/14/19	5%HNO3/5% HCl, Lot SEE LOGBOOK	100 mL	ICP CAL STD 4_00002	0.25 mL	Aluminum	0.25 ppm
							Calcium	2.5 ppm
							Iron	1.25 ppm
							Magnesium	10 ppm
							Potassium	25 ppm
							Sodium	12.5 ppm
.ICP CAL STD 4_00002	09/22/20		CPI, Lot 10094465-2		(Purchased Reagent)		Aluminum	100 mg/L
							Calcium	1000 mg/L
							Iron	500 mg/L
							Magnesium	4000 mg/L
							Potassium	10000 mg/L
							Sodium	5000 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
ICP ICVH_00931	11/01/19	05/13/19	5%HNO3/5% HCl, Lot SEE LOGBOOK	100 mL	Icp ICVH_00851	1 mL	Aluminum	40 mg/L
							Iron	80 mg/L
							Sodium	40 mg/L
.Icp ICVH_00851	04/19/20	CPI, Lot 10091556-1			(Purchased Reagent)		Aluminum	4000 mg/L
							Iron	8000 mg/L
							Sodium	4000 mg/L
ICP ICVH_00932	11/01/19	05/14/19	5%HNO3/5% HCl, Lot SEE LOGBOOK	100 mL	Icp ICVH_00851	1 mL	Aluminum	40 mg/L
							Iron	80 mg/L
							Sodium	40 mg/L
.Icp ICVH_00851	04/19/20	CPI, Lot 10091556-1			(Purchased Reagent)		Aluminum	4000 mg/L
							Iron	8000 mg/L
							Sodium	4000 mg/L
ICP LLCCV_02540	05/14/19	05/13/19	5%HNO3/5% HCl, Lot SEE LOGBOOK	100 mL	ICP LLCCV-4_00010	1 mL	Aluminum	100 ppb
							Calcium	200 ppb
							Iron	100 ppb
							Magnesium	200 ppb
							Potassium	3000 ppb
							Sodium	1000 ppb
.ICP LLCCV-4_00010	05/19/19	CPI, Lot 10088791-2			(Purchased Reagent)		Aluminum	10 mg/L
							Calcium	20 mg/L
							Iron	10 mg/L
							Magnesium	20 mg/L
							Potassium	300 mg/L
							Sodium	100 mg/L
ICP LLCCV_02541	05/15/19	05/14/19	5%HNO3/5% HCl, Lot SEE LOGBOOK	100 mL	ICP LLCCV-4_00010	1 mL	Aluminum	100 ppb
							Calcium	200 ppb
							Iron	100 ppb
							Magnesium	200 ppb
							Potassium	3000 ppb
							Sodium	1000 ppb
.ICP LLCCV-4_00010	05/19/19	CPI, Lot 10088791-2			(Purchased Reagent)		Aluminum	10 mg/L
							Calcium	20 mg/L
							Iron	10 mg/L
							Magnesium	20 mg/L
							Potassium	300 mg/L
							Sodium	100 mg/L
ms 77 RL_01925	05/14/19	05/13/19	2%HNO3/0.5% HCl, Lot 216908/217157	50 mL	ms 77 cal std_02032	0.5 mL	Antimony	1 ppb
							Arsenic	1 ppb
							Beryllium	1 ppb
							Cadmium	1 ppb
							Chromium	1 ppb
							Cobalt	1 ppb

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Lead	1 ppb
							Selenium	1 ppb
							Thallium	1 ppb
							Vanadium	1 ppb
							Silver	1 ppb
.ms 77 cal std_02032	05/14/19	05/13/19	2%HNO3/0.5% HCl, Lot 216908/217157	250 mL	MS CALSTD-1_00132	0.25 mL	Antimony	100 ug/L
							Arsenic	100 ug/L
							Beryllium	100 ug/L
							Cadmium	100 ug/L
							Chromium	100 ug/L
							Cobalt	100 ug/L
							Lead	100 ug/L
							Selenium	100 ug/L
							Thallium	100 ug/L
							Vanadium	100 ug/L
					MS CALSTD-4 00001	0.25 mL	Silver	100 ug/L
..MS CALSTD-1_00132	04/10/20	CPI, Lot 982731-1			(Purchased Reagent)		Antimony	100 mg/L
							Arsenic	100 mg/L
							Beryllium	100 mg/L
							Cadmium	100 mg/L
							Chromium	100 mg/L
							Cobalt	100 mg/L
							Lead	100 mg/L
							Selenium	100 mg/L
							Thallium	100 mg/L
							Vanadium	100 mg/L
..MS CALSTD-4 00001	05/21/20	CPI, Lot 10088633-9			(Purchased Reagent)		Silver	100 mg/L
ms 77 RL_01926	05/15/19	05/14/19	2%HNO3/0.5% HCl, Lot 216908/217157	50 mL	ms 77 cal std_02033	0.5 mL	Antimony	1 ppb
							Arsenic	1 ppb
							Barium	1 ppb
							Beryllium	1 ppb
							Cadmium	1 ppb
							Chromium	1 ppb
							Cobalt	1 ppb
							Copper	1 ppb
							Lead	1 ppb
							Manganese	1 ppb
							Nickel	1 ppb
							Selenium	1 ppb
							Thallium	1 ppb
							Silver	1 ppb
.ms 77 cal std_02033	05/15/19	05/14/19	2%HNO3/0.5% HCl, Lot 216908/217157	250 mL	MS CALSTD-1_00132	0.25 mL	Antimony	100 ug/L
							Arsenic	100 ug/L
							Barium	100 ug/L
							Beryllium	100 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Cadmium	100 ug/L
							Chromium	100 ug/L
							Cobalt	100 ug/L
							Copper	100 ug/L
							Lead	100 ug/L
							Manganese	100 ug/L
							Nickel	100 ug/L
							Selenium	100 ug/L
							Thallium	100 ug/L
					MS CALSTD-4_00001	0.25 mL	Silver	100 ug/L
..MS CALSTD-1_00132	04/10/20	CPI, Lot 982731-1			(Purchased Reagent)		Antimony	100 mg/L
							Arsenic	100 mg/L
							Barium	100 mg/L
							Beryllium	100 mg/L
							Cadmium	100 mg/L
							Chromium	100 mg/L
							Cobalt	100 mg/L
							Copper	100 mg/L
							Lead	100 mg/L
							Manganese	100 mg/L
							Nickel	100 mg/L
							Selenium	100 mg/L
							Thallium	100 mg/L
..MS CALSTD-4_00001	05/21/20	CPI, Lot 10088633-9			(Purchased Reagent)		Silver	100 mg/L
ms 77 cal std_02032	05/14/19	05/13/19	2%HNO3/0.5% HCl, Lot 216908/217157	250 mL	MS CALSTD-1_00132	0.25 mL	Antimony	100 ug/L
							Arsenic	100 ug/L
							Barium	100 ug/L
							Beryllium	100 ug/L
							Cadmium	100 ug/L
							Chromium	100 ug/L
							Cobalt	100 ug/L
							Copper	100 ug/L
							Lead	100 ug/L
							Manganese	100 ug/L
							Nickel	100 ug/L
							Selenium	100 ug/L
							Thallium	100 ug/L
							Vanadium	100 ug/L
					MS CALSTD-4_00001	0.25 mL	Silver	100 ug/L
					Zinc	100 ug/L		
.MS CALSTD-1_00132	04/10/20	CPI, Lot 982731-1			(Purchased Reagent)		Antimony	100 mg/L
							Arsenic	100 mg/L
							Barium	100 mg/L
							Beryllium	100 mg/L
							Cadmium	100 mg/L
							Chromium	100 mg/L
							Cobalt	100 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration					
					Reagent ID	Volume Added							
							Copper	100 mg/L					
							Lead	100 mg/L					
							Manganese	100 mg/L					
							Nickel	100 mg/L					
							Selenium	100 mg/L					
							Thallium	100 mg/L					
							Vanadium	100 mg/L					
.MS CALSTD-4_00001	05/21/20	CPI, Lot 10088633-9			(Purchased Reagent)		Silver	100 mg/L					
						Zinc	100 mg/L						
ms 77 cal std_02033	05/15/19	05/14/19	2%HNO3/0.5% HCl, Lot 216908/217157	250 mL	MS CALSTD-1_00132	0.25 mL	Antimony	100 ug/L					
							Arsenic	100 ug/L					
							Barium	100 ug/L					
							Beryllium	100 ug/L					
							Cadmium	100 ug/L					
							Chromium	100 ug/L					
							Cobalt	100 ug/L					
							Copper	100 ug/L					
							Lead	100 ug/L					
							Manganese	100 ug/L					
							Nickel	100 ug/L					
							Selenium	100 ug/L					
							Thallium	100 ug/L					
							Vanadium	100 ug/L					
					MS CALSTD-4_00001	0.25 mL	Silver	100 ug/L					
							Zinc	100 ug/L					
					.MS CALSTD-1_00132	04/10/20		CPI, Lot 982731-1		(Purchased Reagent)		Antimony	100 mg/L
												Arsenic	100 mg/L
Barium	100 mg/L												
Beryllium	100 mg/L												
Cadmium	100 mg/L												
Chromium	100 mg/L												
Cobalt	100 mg/L												
Copper	100 mg/L												
Lead	100 mg/L												
Manganese	100 mg/L												
Nickel	100 mg/L												
Selenium	100 mg/L												
Thallium	100 mg/L												
Vanadium	100 mg/L												
.MS CALSTD-4_00001	05/21/20		CPI, Lot 10088633-9									(Purchased Reagent)	
					Zinc	100 mg/L							
ms 77 ccv_02043	05/14/19	05/13/19	2%HNO3/0.5% HCl, Lot 216908/217157	200 mL	ms 77 cal std_02032	100 mL	Antimony	50 ug/L					
							Arsenic	50 ug/L					
							Barium	50 ug/L					
							Beryllium	50 ug/L					

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Cadmium	50 ug/L
							Chromium	50 ug/L
							Cobalt	50 ug/L
							Copper	50 ug/L
							Lead	50 ug/L
							Manganese	50 ug/L
							Nickel	50 ug/L
							Selenium	50 ug/L
							Thallium	50 ug/L
							Vanadium	50 ug/L
							Silver	50 ug/L
							Zinc	50 ug/L
.ms 77 cal std_02032	05/14/19	05/13/19	2%HNO3/0.5% HCl, Lot 216908/217157	250 mL	MS CALSTD-1_00132	0.25 mL	Antimony	100 ug/L
							Arsenic	100 ug/L
							Barium	100 ug/L
							Beryllium	100 ug/L
							Cadmium	100 ug/L
							Chromium	100 ug/L
							Cobalt	100 ug/L
							Copper	100 ug/L
							Lead	100 ug/L
							Manganese	100 ug/L
							Nickel	100 ug/L
							Selenium	100 ug/L
							Thallium	100 ug/L
							Vanadium	100 ug/L
					MS CALSTD-4_00001	0.25 mL	Silver	100 ug/L
							Zinc	100 ug/L
..MS CALSTD-1_00132	04/10/20		CPI, Lot 982731-1		(Purchased Reagent)		Antimony	100 mg/L
							Arsenic	100 mg/L
							Barium	100 mg/L
							Beryllium	100 mg/L
							Cadmium	100 mg/L
							Chromium	100 mg/L
							Cobalt	100 mg/L
							Copper	100 mg/L
							Lead	100 mg/L
							Manganese	100 mg/L
							Nickel	100 mg/L
							Selenium	100 mg/L
							Thallium	100 mg/L
							Vanadium	100 mg/L
..MS CALSTD-4_00001	05/21/20		CPI, Lot 10088633-9		(Purchased Reagent)		Silver	100 mg/L
							Zinc	100 mg/L
ms 77 ccv_02044	05/15/19	05/14/19	2%HNO3/0.5% HCl, Lot 216908/217157	200 mL	ms 77 cal std_02033	100 mL	Antimony	50 ug/L
							Arsenic	50 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Barium	50 ug/L
							Beryllium	50 ug/L
							Cadmium	50 ug/L
							Chromium	50 ug/L
							Cobalt	50 ug/L
							Copper	50 ug/L
							Lead	50 ug/L
							Manganese	50 ug/L
							Nickel	50 ug/L
							Selenium	50 ug/L
							Thallium	50 ug/L
							Vanadium	50 ug/L
							Silver	50 ug/L
							Zinc	50 ug/L
.ms 77 cal std_02033	05/15/19	05/14/19	2%HNO3/0.5% HCl, Lot 216908/217157	250 mL	MS CALSTD-1_00132	0.25 mL	Antimony	100 ug/L
							Arsenic	100 ug/L
							Barium	100 ug/L
							Beryllium	100 ug/L
							Cadmium	100 ug/L
							Chromium	100 ug/L
							Cobalt	100 ug/L
							Copper	100 ug/L
							Lead	100 ug/L
							Manganese	100 ug/L
							Nickel	100 ug/L
							Selenium	100 ug/L
							Thallium	100 ug/L
							Vanadium	100 ug/L
					MS CALSTD-4_00001	0.25 mL	Silver	100 ug/L
							Zinc	100 ug/L
..MS CALSTD-1_00132	04/10/20	CPI, Lot 982731-1			(Purchased Reagent)		Antimony	100 mg/L
							Arsenic	100 mg/L
							Barium	100 mg/L
							Beryllium	100 mg/L
							Cadmium	100 mg/L
							Chromium	100 mg/L
							Cobalt	100 mg/L
							Copper	100 mg/L
							Lead	100 mg/L
							Manganese	100 mg/L
							Nickel	100 mg/L
							Selenium	100 mg/L
							Thallium	100 mg/L
							Vanadium	100 mg/L
..MS CALSTD-4_00001	05/21/20	CPI, Lot 10088633-9			(Purchased Reagent)		Silver	100 mg/L
							Zinc	100 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
ms 77 icsa_00418	05/17/19	05/10/19	2%HNO3/0.5% HCl, Lot 200458/198300	100 mL	MS ICSA STOCK_00033	10 mL	Mo	2 mg/L
.MS ICSA STOCK 00033	07/24/21	cpi, Lot 992328-1			(Purchased Reagent)		Mo	20 mg/L
ms 77 icsab_00418	05/17/19	05/10/19	2%HNO3/0.5% HCl, Lot 200458/198300	100 mL	MS ICSA STOCK_00033	10 mL	Mo	2.1 mg/L
					MS ICVMIX--4_00001	0.1 mL	Silver	0.1 mg/L
							Zinc	0.1 mg/L
					MS icvMIX-1_00001	0.1 mL	Antimony	0.1 mg/L
							Arsenic	0.1 mg/L
							Barium	0.1 mg/L
							Beryllium	0.1 mg/L
							Cadmium	0.1 mg/L
							Chromium	0.1 mg/L
							Cobalt	0.1 mg/L
							Copper	0.1 mg/L
							Lead	0.1 mg/L
							Manganese	0.1 mg/L
							Mo	2.1 mg/L
							Nickel	0.1 mg/L
							Selenium	0.1 mg/L
							Thallium	0.1 mg/L
							Vanadium	0.1 mg/L
.MS ICSA STOCK 00033	07/24/21	cpi, Lot 992328-1					(Purchased Reagent)	
.MS ICVMIX--4_00001	05/21/20	CPI, Lot 10088633-10			(Purchased Reagent)		Silver	100 mg/L
.MS icvMIX-1_00001	04/15/20	CPI, Lot 982733-1	(Purchased Reagent)		Antimony	100 mg/L		
					Arsenic	100 mg/L		
					Barium	100 mg/L		
					Beryllium	100 mg/L		
					Cadmium	100 mg/L		
					Chromium	100 mg/L		
					Cobalt	100 mg/L		
					Copper	100 mg/L		
					Lead	100 mg/L		
					Manganese	100 mg/L		
					Mo	100 mg/L		
					Nickel	100 mg/L		
					Selenium	100 mg/L		
					Thallium	100 mg/L		
Vanadium	100 mg/L							
ms 77 icv_02039	05/14/19	05/13/19	2%HNO3/0.5% HCl, Lot 216908/217157	250 mL	MS ICVMIX--4_00001	0.1 mL	Silver	40 ug/L
					MS icvMIX-1_00001	0.1 mL	Zinc	40 ug/L
							Antimony	40 ug/L
							Arsenic	40 ug/L
							Barium	40 ug/L
							Beryllium	40 ug/L
							Cadmium	40 ug/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Chromium	40 ug/L
							Cobalt	40 ug/L
							Copper	40 ug/L
							Lead	40 ug/L
							Manganese	40 ug/L
							Nickel	40 ug/L
							Selenium	40 ug/L
							Thallium	40 ug/L
Vanadium	40 ug/L							
.MS ICVMIX--4_00001	05/21/20	CPI, Lot 10088633-10			(Purchased Reagent)		Silver	100 mg/L
						Zinc	100 mg/L	
.MS icvMIX-1_00001	04/15/20	CPI, Lot 982733-1			(Purchased Reagent)		Antimony	100 mg/L
						Arsenic	100 mg/L	
						Barium	100 mg/L	
						Beryllium	100 mg/L	
						Cadmium	100 mg/L	
						Chromium	100 mg/L	
						Cobalt	100 mg/L	
						Copper	100 mg/L	
						Lead	100 mg/L	
						Manganese	100 mg/L	
						Nickel	100 mg/L	
						Selenium	100 mg/L	
						Thallium	100 mg/L	
						Vanadium	100 mg/L	
ms 77 icv_02040	05/15/19	05/14/19	2%HNO3/0.5% HCl, Lot 216908/217157	250 mL	MS ICVMIX--4_00001	0.1 mL	Silver	40 ug/L
							Zinc	40 ug/L
					MS icvMIX-1_00001	0.1 mL	Antimony	40 ug/L
							Arsenic	40 ug/L
							Barium	40 ug/L
							Beryllium	40 ug/L
							Cadmium	40 ug/L
							Chromium	40 ug/L
							Cobalt	40 ug/L
							Copper	40 ug/L
							Lead	40 ug/L
							Manganese	40 ug/L
							Nickel	40 ug/L
							Selenium	40 ug/L
							Thallium	40 ug/L
							Vanadium	40 ug/L
.MS ICVMIX--4_00001	05/21/20	CPI, Lot 10088633-10			(Purchased Reagent)		Silver	100 mg/L
						Zinc	100 mg/L	
.MS icvMIX-1_00001	04/15/20	CPI, Lot 982733-1			(Purchased Reagent)		Antimony	100 mg/L
						Arsenic	100 mg/L	
						Barium	100 mg/L	
						Beryllium	100 mg/L	

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Cadmium	100 mg/L
							Chromium	100 mg/L
							Cobalt	100 mg/L
							Copper	100 mg/L
							Lead	100 mg/L
							Manganese	100 mg/L
							Nickel	100 mg/L
							Selenium	100 mg/L
							Thallium	100 mg/L
							Vanadium	100 mg/L
MS 77 LLCCV_01846	05/14/19	05/13/19	2%HNO3/0.5% HCl, Lot 216908/217157	100 mL	MS LLCCV_00001	1 mL	Antimony	0.002 mg/L
							Arsenic	0.005 mg/L
							Barium	0.001 mg/L
							Beryllium	0.001 mg/L
							Cadmium	0.001 mg/L
							Chromium	0.002 mg/L
							Cobalt	0.001 mg/L
							Copper	0.002 mg/L
							Lead	0.001 mg/L
							Manganese	0.001 mg/L
							Nickel	0.0015 mg/L
							Selenium	0.005 mg/L
							Silver	0.005 mg/L
							Thallium	0.001 mg/L
							Vanadium	0.005 mg/L
.MS LLCCV_00001	05/15/20		CPI, Lot 10088633-8		(Purchased Reagent)		Zinc	0.01 mg/L
							Antimony	0.2 mg/L
							Arsenic	0.5 mg/L
							Barium	0.1 mg/L
							Beryllium	0.1 mg/L
							Cadmium	0.1 mg/L
							Chromium	0.2 mg/L
							Cobalt	0.1 mg/L
							Copper	0.2 mg/L
							Lead	0.1 mg/L
							Manganese	0.1 mg/L
							Nickel	0.15 mg/L
							Selenium	0.5 mg/L
							Silver	0.5 mg/L
							Thallium	0.1 mg/L
							Vanadium	0.5 mg/L
MS 77 LLCCV_01847	05/15/19	05/14/19	2%HNO3/0.5% HCl, Lot 216908/217157	100 mL	MS LLCCV_00001	1 mL	Zinc	1 mg/L
							Antimony	0.002 mg/L
							Arsenic	0.005 mg/L
							Barium	0.001 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Beryllium	0.001 mg/L
							Cadmium	0.001 mg/L
							Chromium	0.002 mg/L
							Cobalt	0.001 mg/L
							Copper	0.002 mg/L
							Lead	0.001 mg/L
							Manganese	0.001 mg/L
							Nickel	0.0015 mg/L
							Selenium	0.005 mg/L
							Silver	0.005 mg/L
							Thallium	0.001 mg/L
							Vanadium	0.005 mg/L
							Zinc	0.01 mg/L
.MS LLCCV_00001	05/15/20	CPI, Lot 10088633-8			(Purchased Reagent)		Antimony	0.2 mg/L
							Arsenic	0.5 mg/L
							Barium	0.1 mg/L
							Beryllium	0.1 mg/L
							Cadmium	0.1 mg/L
							Chromium	0.2 mg/L
							Cobalt	0.1 mg/L
							Copper	0.2 mg/L
							Lead	0.1 mg/L
							Manganese	0.1 mg/L
							Nickel	0.15 mg/L
							Selenium	0.5 mg/L
							Silver	0.5 mg/L
							Thallium	0.1 mg/L
							Vanadium	0.5 mg/L
							Zinc	1 mg/L
ms 78 alt CRI_00010	05/15/19	05/13/19	2%HNO3/0.5% HCl, Lot 216908/217157	50 mL	1 ppm V_00019	0.25 mL	Vanadium	5 ppb
					1 ppm Zn 00017	0.5 mL	Zinc	10 ppb
.1 ppm V 00019	08/31/19	04/11/19	1% HNO3, Lot 216908	50 mL	1000 V 00015	0.05 mL	Vanadium	1 mg/L
..1000 V 00015	08/31/19	Inorganoc Ventures, Lot K2-V651103			(Purchased Reagent)		Vanadium	1000 mg/L
.1 ppm Zn 00017	08/24/19	04/11/19	1% HNO3, Lot 216908	50 mL	1000 Zn 00020	0.05 mL	Zinc	1 mg/L
..1000 Zn 00020	08/24/19	Inorganic Ventures, Lot M2-ZN656655			(Purchased Reagent)		Zinc	1000 mg/L
ms 78 alt RL_00488	05/14/19	05/13/19	2%HNO3/0.5% HCl, Lot 216908/217157	50 mL	1 ppm Ba_00011	0.05 mL	Barium	1 ppb
					1 ppm Cu 00008	0.1 mL	Copper	2 ppb
					1 ppm Mn 00008	0.05 mL	Manganese	1 ppb
					1 ppm Ni 00009	0.1 mL	Nickel	2 ppb
					1 ppm Zn 00017	0.5 mL	Zinc	10 ppb
.1 ppm Ba_00011	08/24/19	04/19/19	2%HNO3/0.5% HCl, Lot 185595/187518	50 mL	1000 Ba_00013	0.05 mL	Barium	1 mg/L
..1000 Ba_00013	08/24/19	Inorganic Ventures, Lot m2-BA658823			(Purchased Reagent)		Barium	1000 mg/L
.1 ppm Cu_00008	08/24/19	04/03/19	2%HNO3/0.5% HCl, Lot 185595/187518	50 mL	1000 Cu_00013	0.05 mL	Copper	1 mg/L
..1000 Cu_00013	08/24/19	Inorganic Ventures, Lot M2-CU656225			(Purchased Reagent)		Copper	1000 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.1 ppm Mn_00008	06/14/19	12/14/18	1% HNO3, Lot 200458	50 mL	1000 Mn_00017	0.05 mL	Manganese	1 mg/L
..1000 Mn_00017	08/31/19		Inorganoc Ventures, Lot K2-V651103		(Purchased Reagent)		Manganese	1000 mg/L
.1 ppm Ni_00009	08/31/19	04/12/19	1% HNO3, Lot 216908	50 mL	1000 Ni_00011	0.05 mL	Nickel	1 mg/L
..1000 Ni_00011	08/31/19		Inorganic Ventures, Lot K2-NI652587		(Purchased Reagent)		Nickel	1000 mg/L
.1 ppm Zn_00017	08/24/19	04/11/19	1% HNO3, Lot 216908	50 mL	1000 Zn_00020	0.05 mL	Zinc	1 mg/L
..1000 Zn_00020	08/24/19		Inorganic Ventures, Lot M2-ZN656655		(Purchased Reagent)		Zinc	1000 mg/L
MS CALSTD-1_00136	04/01/20		Inorganic Ventures, Lot P2-MEB675675		(Purchased Reagent)		Arsenic	20 mg/L
							Barium	20 mg/L
							Beryllium	20 mg/L
							Cadmium	20 mg/L
							Chromium	20 mg/L
							Cobalt	20 mg/L
							Copper	20 mg/L
							Lead	20 mg/L
							Manganese	20 mg/L
							Nickel	20 mg/L
							Selenium	20 mg/L
							Silver	20 mg/L
							Th	20 mg/L
							Thallium	20 mg/L
							U	20 mg/L
							Vanadium	20 mg/L
							Zinc	20 mg/L
MS spike 2_00080	07/06/19	04/26/19	1% HNO3, Lot 192582	250 mL	1000 B_00017	5 mL	B	20 mg/L
					1000 Li_00040	10 mL	Li	40 mg/L
					1000 Mo_00013	5 mL	Mo	20 mg/L
					1000 Sb_00019	5 mL	Antimony	20 mg/L
					1000 Sn_00016	5 mL	Sn	20 mg/L
					1000 Sr_00011	5 mL	Sr	20 mg/L
					1000 W_IV_00014	5 mL	W	20 mg/L
					1000 Zr_00019	5 mL	Zr	20 mg/L
					10000 Al_00019	5 mL	Aluminum	200 mg/L
					10000 Fe_00021	5 mL	Iron	200 mg/L
.1000 B_00017	07/25/19		Inorganic Ventures, Lot M2-B663296		(Purchased Reagent)		B	1000 mg/L
.1000 Li_00040	05/16/20		CPI, Lot 751942-43		(Purchased Reagent)		Li	1000 mg/L
.1000 Mo_00013	08/31/19		Inorganic Ventures, Lot M2-M0657085		(Purchased Reagent)		Mo	1000 mg/L
.1000 Sb_00019	11/30/19		Inorganic Ventures, Lot N2-SB665459		(Purchased Reagent)		Antimony	1000 mg/L
.1000 Sn_00016	07/06/21		Inorganic Ventures, Lot M2-SN659324		(Purchased Reagent)		Sn	1000 mg/L
.1000 Sr_00011	08/24/19		Inorganic Ventures, Lot M2-SR658331		(Purchased Reagent)		Sr	1000 mg/L
.1000 W_IV_00014	07/06/19		Inorganic Ventures, Lot n2-w664865		(Purchased Reagent)		W	1000 mg/L
.1000 Zr_00019	12/11/19		CPI, Lot 171418-22		(Purchased Reagent)		Zr	1000 mg/L
.10000 Al_00019	04/15/20		Inorganic Ventures, Lot K2-AL653003		(Purchased Reagent)		Aluminum	10000 mg/L
.10000 Fe_00021	08/08/19		Inorganic Ventures, Lot M2-FE659835		(Purchased Reagent)		Iron	10000 mg/L
MS-AFCACCV080_00081	10/31/19	03/19/19	Methylene Chloride, Lot 203837	0.5 mL	MS-IS_00015	50 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
.MS-IS_00015	11/23/19	11/23/18	Methylene Chloride, Lot 203837	250 mL	MS-567684_00019	45 mL	1,4-Dichlorobenzene-d4	400 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Naphthalene-d8	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
					MS-567684_00021	5 mL	1,4-Dichlorobenzene-d4	400 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Naphthalene-d8	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
..MS-567684_00019	07/31/20	Restek, Lot A0112833			(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
					Acenaphthene-d10	2000 ug/mL		
					Chrysene-d12	2000 ug/mL		
					Naphthalene-d8	2000 ug/mL		
					Perylene-d12	2000 ug/mL		
					Phenanthrene-d10	2000 ug/mL		
..MS-567684_00021	12/31/22	Restek, Lot A0129635			(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
					Acenaphthene-d10	2000 ug/mL		
					Chrysene-d12	2000 ug/mL		
					Naphthalene-d8	2000 ug/mL		
					Perylene-d12	2000 ug/mL		
					Phenanthrene-d10	2000 ug/mL		
MS-DFTPP_00048							Acenaphthene-d10	
							Chrysene-d12	
							Perylene-d12	
							Phenanthrene-d10	
					MS-47548-U_00015	1 mL	TPAH	
							4,4'-DDD	0.05 ug/mL
							4,4'-DDE	0.05 ug/mL
							4,4'-DDT	50 ug/mL
							Benzidine_T	50 ug/mL
							DFTPP	50 ug/mL
.MS-47548-U_00015	03/31/19	Supelco, Lot XA19099V			(Purchased Reagent)		Pentachlorophenol_T	50 ug/mL
					4,4'-DDD	1 ug/mL		
					4,4'-DDE	1 ug/mL		
					4,4'-DDT	1000 ug/mL		
					Benzidine_T	1000 ug/mL		
MS-DFTPP_00049							DFTPP	1000 ug/mL
							Pentachlorophenol_T	1000 ug/mL
MS-DFTPP_00049							Acenaphthene-d10	
							Aramite, Total	

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Chrysene-d12	
							Diallate	
							Isosafrole	
							Methyl Phenols, Total	
							Perylene-d12	
							Phenanthrene-d10	
							Phthalic acid	
							Tentatively Identified Compound	
							Total Cresols	
							TPAH	
							4,4'-DDD	0.05 ug/mL
							4,4'-DDE	0.05 ug/mL
							4,4'-DDT	50 ug/mL
.MS-47548-U_00016	09/30/21	Supelco, Lot LRAC0485			(Purchased Reagent)		Benzidine_T	50 ug/mL
							DFTPP	50 ug/mL
							Pentachlorophenol_T	50 ug/mL
							4,4'-DDD	1 ug/mL
							4,4'-DDE	1 ug/mL
							4,4'-DDT	1000 ug/mL
MS-HSLA004_00044	10/31/19	04/01/19	Methylene Chloride, Lot 203837	0.5 mL	MS-HSLA_STK_00055	10 uL	Benzidine_T	1000 ug/mL
							DFTPP	1000 ug/mL
							Pentachlorophenol_T	1000 ug/mL
							2,4,6-Tribromophenol (Surr)	4 ug/mL
							2-Fluorobiphenyl	4 ug/mL
							2-Fluorophenol (Surr)	4 ug/mL
							Nitrobenzene-d5	4 ug/mL
							Phenol-d5 (Surr)	4 ug/mL
							Terphenyl-d14	4 ug/mL
							Alachlor	4 ug/mL
							3,3'-Dichlorobenzidine	4 ug/mL
							Benzoic acid	8 ug/mL
							Atrazine	4 ug/mL
							Caprolactam	4 ug/mL
							1,1'-Biphenyl	4 ug/mL
							1,2,4,5-Tetrachlorobenzene	4 ug/mL
							1,2,4-Trichlorobenzene	4 ug/mL
							1,2-Dichlorobenzene	4 ug/mL
							1,2-Diphenylhydrazine	4.0439 ug/mL
							1,3-Dichlorobenzene	4 ug/mL
							1,3-Dinitrobenzene	4 ug/mL
							1,4-Dichlorobenzene	4 ug/mL
							1,4-Dioxane	4 ug/mL
							1-Methylnaphthalene	4 ug/mL
							2,2'-oxybis[1-chloropropane]	4 ug/mL
							2,3,4,6-Tetrachlorophenol	4 ug/mL
							2,4,5-Trichlorophenol	4 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,4,6-Trichlorophenol	4 ug/mL
							2,4-Dichlorophenol	4 ug/mL
							2,4-Dimethylphenol	4 ug/mL
							2,4-Dinitrophenol	8 ug/mL
							2,4-Dinitrotoluene	4 ug/mL
							2,6-Dichlorophenol	4 ug/mL
							2,6-Dinitrotoluene	4 ug/mL
							2-Chloronaphthalene	4 ug/mL
							2-Chlorophenol	4 ug/mL
							2-Methylnaphthalene	4 ug/mL
							2-Methylphenol	4 ug/mL
							2-Nitroaniline	4 ug/mL
							2-Nitrophenol	4 ug/mL
							3 & 4 Methylphenol	4 ug/mL
							3-Nitroaniline	4 ug/mL
							4,6-Dinitro-2-methylphenol	8 ug/mL
							4-Bromophenyl phenyl ether	4 ug/mL
							4-Chloro-3-methylphenol	4 ug/mL
							4-Chloroaniline	4 ug/mL
							4-Chlorophenyl phenyl ether	4 ug/mL
							4-Nitroaniline	4 ug/mL
							4-Nitrophenol	8 ug/mL
							Acenaphthene	4 ug/mL
							Acenaphthylene	4 ug/mL
							Acetophenone	4 ug/mL
							Aniline	4 ug/mL
							Anthracene	4 ug/mL
							Azobenzene	4 ug/mL
							Benzo[a]anthracene	4 ug/mL
							Benzo[a]pyrene	4 ug/mL
							Benzo[b]fluoranthene	4 ug/mL
							Benzo[g,h,i]perylene	4 ug/mL
							Benzo[k]fluoranthene	4 ug/mL
							Benzyl alcohol	4 ug/mL
							Bis (2-chloroethoxy)methane	4 ug/mL
							Bis (2-chloroethyl) ether	4 ug/mL
							Bis (2-ethylhexyl) phthalate	4 ug/mL
							Butyl benzyl phthalate	4 ug/mL
							Carbazole	4 ug/mL
							Chrysene	4 ug/mL
							Di-n-butyl phthalate	4 ug/mL
							Di-n-octyl phthalate	4 ug/mL
							Dibenz (a,h) anthracene	4 ug/mL
							Dibenzofuran	4 ug/mL
							Diethyl phthalate	4 ug/mL
							Dimethyl phthalate	4 ug/mL
							Diphenylamine	3.4 ug/mL
							Fluoranthene	4 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Fluorene	4 ug/mL
							Hexachlorobenzene	4 ug/mL
							Hexachlorobutadiene	4 ug/mL
							Hexachlorocyclopentadiene	4 ug/mL
							Hexachloroethane	4 ug/mL
							Indeno[1,2,3-cd]pyrene	4 ug/mL
							Isophorone	4 ug/mL
							N-Nitrosodi-n-propylamine	4 ug/mL
							N-Nitrosodimethylamine	4 ug/mL
							N-Nitrosodiphenylamine	4 ug/mL
							Naphthalene	4 ug/mL
							Nitrobenzene	4 ug/mL
							Pentachlorophenol	8 ug/mL
							Phenanthrene	4 ug/mL
							Phenol	4 ug/mL
							Pyrene	4 ug/mL
							Pyridine	8 ug/mL
					MS-IS_00015	50 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
.MS-HSLA_STK_00055	10/31/19	03/21/19	Methylene Chloride, Lot 203837	10 mL	MS-567685_00006	0.4 mL	2,4,6-Tribromophenol (Surr)	200 ug/mL
							2-Fluorobiphenyl	200 ug/mL
							2-Fluorophenol (Surr)	200 ug/mL
							Nitrobenzene-d5	200 ug/mL
							Phenol-d5 (Surr)	200 ug/mL
							Terphenyl-d14	200 ug/mL
					MS-568033_00029	0.5 mL	Alachlor	200 ug/mL
					MS-569730 HSL_00008	1 mL	3,3'-Dichlorobenzidine	200 ug/mL
					MS-569731_00107	2 mL	Benzoic acid	400 ug/mL
					MS-569732 HSL_00006	1 mL	Atrazine	200 ug/mL
					Caprolactam	200 ug/mL		
					MS-571995_00003	2 mL	1,1'-Biphenyl	200 ug/mL
							1,2,4,5-Tetrachlorobenzene	200 ug/mL
							1,2,4-Trichlorobenzene	200 ug/mL
							1,2-Dichlorobenzene	200 ug/mL
							1,2-Diphenylhydrazine	202.195 ug/mL
							1,3-Dichlorobenzene	200 ug/mL
							1,3-Dinitrobenzene	200 ug/mL
							1,4-Dichlorobenzene	200 ug/mL
							1,4-Dioxane	200 ug/mL
							1-Methylnaphthalene	200 ug/mL
							2,2'-oxybis[1-chloropropane]	200 ug/mL
							2,3,4,6-Tetrachlorophenol	200 ug/mL
							2,4,5-Trichlorophenol	200 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,4,6-Trichlorophenol	200 ug/mL
							2,4-Dichlorophenol	200 ug/mL
							2,4-Dimethylphenol	200 ug/mL
							2,4-Dinitrophenol	400 ug/mL
							2,4-Dinitrotoluene	200 ug/mL
							2,6-Dichlorophenol	200 ug/mL
							2,6-Dinitrotoluene	200 ug/mL
							2-Chloronaphthalene	200 ug/mL
							2-Chlorophenol	200 ug/mL
							2-Methylnaphthalene	200 ug/mL
							2-Methylphenol	200 ug/mL
							2-Nitroaniline	200 ug/mL
							2-Nitrophenol	200 ug/mL
							3 & 4 Methylphenol	200 ug/mL
							3-Nitroaniline	200 ug/mL
							4,6-Dinitro-2-methylphenol	400 ug/mL
							4-Bromophenyl phenyl ether	200 ug/mL
							4-Chloro-3-methylphenol	200 ug/mL
							4-Chloroaniline	200 ug/mL
							4-Chlorophenyl phenyl ether	200 ug/mL
							4-Nitroaniline	200 ug/mL
							4-Nitrophenol	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Acetophenone	200 ug/mL
							Aniline	200 ug/mL
							Anthracene	200 ug/mL
							Azobenzene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Benzyl alcohol	200 ug/mL
							Bis (2-chloroethoxy)methane	200 ug/mL
							Bis (2-chloroethyl) ether	200 ug/mL
							Bis (2-ethylhexyl) phthalate	200 ug/mL
							Butyl benzyl phthalate	200 ug/mL
							Carbazole	200 ug/mL
							Chrysene	200 ug/mL
							Di-n-butyl phthalate	200 ug/mL
							Di-n-octyl phthalate	200 ug/mL
							Dibenz (a,h) anthracene	200 ug/mL
							Dibenzofuran	200 ug/mL
							Diethyl phthalate	200 ug/mL
							Dimethyl phthalate	200 ug/mL
							Diphenylamine	170 ug/mL
							Fluoranthene	200 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Fluorene	200 ug/mL
							Hexachlorobenzene	200 ug/mL
							Hexachlorobutadiene	200 ug/mL
							Hexachlorocyclopentadiene	200 ug/mL
							Hexachloroethane	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Isophorone	200 ug/mL
							N-Nitrosodi-n-propylamine	200 ug/mL
							N-Nitrosodimethylamine	200 ug/mL
							N-Nitrosodiphenylamine	200 ug/mL
							Naphthalene	200 ug/mL
							Nitrobenzene	200 ug/mL
							Pentachlorophenol	400 ug/mL
							Phenanthrene	200 ug/mL
							Phenol	200 ug/mL
							Pyrene	200 ug/mL
							Pyridine	400 ug/mL
..MS-567685_00006	09/30/23		Restek, Lot A0141581		(Purchased Reagent)		2,4,6-Tribromophenol (Surr)	5000 ug/mL
							2-Fluorobiphenyl	5000 ug/mL
							2-Fluorophenol (Surr)	5000 ug/mL
							Nitrobenzene-d5	5000 ug/mL
							Phenol-d5 (Surr)	5000 ug/mL
							Terphenyl-d14	5000 ug/mL
..MS-568033_00029	06/30/20		Restek, Lot A0144277		(Purchased Reagent)		Alachlor	4000 ug/mL
..MS-569730_HSL_00008	10/31/19		Restek, Lot A0137351		(Purchased Reagent)		3,3'-Dichlorobenzidine	2000 ug/mL
..MS-569731_00107	10/31/19		Restek, Lot A0136865		(Purchased Reagent)		Benzoic acid	2000 ug/mL
..MS-569732_HSL_00006	10/31/19		Restek, Lot A0137125		(Purchased Reagent)		Atrazine	2000 ug/mL
							Caprolactam	2000 ug/mL
..MS-571995_00003	01/31/20		Restek, Lot A0140111		(Purchased Reagent)		1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,2-Diphenylhydrazine	1010.97 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							1,4-Dioxane	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Acetophenone	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis (2-chloroethoxy)methane	1000 ug/mL
							Bis (2-chloroethyl) ether	1000 ug/mL
							Bis (2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz (a,h) anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Diphenylamine	850 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
							Pyridine	2000 ug/mL
.MS-IS_00015	11/23/19	11/23/18	Methylene Chloride, Lot 203837	250 mL	MS-567684_00019	45 mL	1,4-Dichlorobenzene-d4	400 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Naphthalene-d8	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
					MS-567684_00021	5 mL	1,4-Dichlorobenzene-d4	400 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Naphthalene-d8	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
..MS-567684_00019	07/31/20	Restek, Lot A0112833	(Purchased Reagent)	1,4-Dichlorobenzene-d4	2000 ug/mL			
				Acenaphthene-d10	2000 ug/mL			
				Chrysene-d12	2000 ug/mL			
				Naphthalene-d8	2000 ug/mL			
				Perylene-d12	2000 ug/mL			
				Phenanthrene-d10	2000 ug/mL			
..MS-567684_00021	12/31/22	Restek, Lot A0129635	(Purchased Reagent)	1,4-Dichlorobenzene-d4	2000 ug/mL			
				Acenaphthene-d10	2000 ug/mL			
				Chrysene-d12	2000 ug/mL			
				Naphthalene-d8	2000 ug/mL			
				Perylene-d12	2000 ug/mL			
				Phenanthrene-d10	2000 ug/mL			
MS-HSLA010_00042	10/31/19	04/01/19	Methylene Chloride, Lot 203837	0.5 mL	MS-HSLA_STK_00055	25 uL	2,4,6-Tribromophenol (Surr)	10 ug/mL
							2-Fluorobiphenyl	10 ug/mL
							2-Fluorophenol (Surr)	10 ug/mL
							Nitrobenzene-d5	10 ug/mL
							Phenol-d5 (Surr)	10 ug/mL
							Terphenyl-d14	10 ug/mL
							Alachlor	10 ug/mL
							3,3'-Dichlorobenzidine	10 ug/mL
							Benzoic acid	20 ug/mL
							Atrazine	10 ug/mL
							Caprolactam	10 ug/mL
							1,1'-Biphenyl	10 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,4,5-Tetrachlorobenzene	10 ug/mL
							1,2,4-Trichlorobenzene	10 ug/mL
							1,2-Dichlorobenzene	10 ug/mL
							1,2-Diphenylhydrazine	10.1097 ug/mL
							1,3-Dichlorobenzene	10 ug/mL
							1,3-Dinitrobenzene	10 ug/mL
							1,4-Dichlorobenzene	10 ug/mL
							1,4-Dioxane	10 ug/mL
							1-Methylnaphthalene	10 ug/mL
							2,2'-oxybis[1-chloropropane]	10 ug/mL
							2,3,4,6-Tetrachlorophenol	10 ug/mL
							2,4,5-Trichlorophenol	10 ug/mL
							2,4,6-Trichlorophenol	10 ug/mL
							2,4-Dichlorophenol	10 ug/mL
							2,4-Dimethylphenol	10 ug/mL
							2,4-Dinitrophenol	20 ug/mL
							2,4-Dinitrotoluene	10 ug/mL
							2,6-Dichlorophenol	10 ug/mL
							2,6-Dinitrotoluene	10 ug/mL
							2-Chloronaphthalene	10 ug/mL
							2-Chlorophenol	10 ug/mL
							2-Methylnaphthalene	10 ug/mL
							2-Methylphenol	10 ug/mL
							2-Nitroaniline	10 ug/mL
							2-Nitrophenol	10 ug/mL
							3 & 4 Methylphenol	10 ug/mL
							3-Nitroaniline	10 ug/mL
							4,6-Dinitro-2-methylphenol	20 ug/mL
							4-Bromophenyl phenyl ether	10 ug/mL
							4-Chloro-3-methylphenol	10 ug/mL
							4-Chloroaniline	10 ug/mL
							4-Chlorophenyl phenyl ether	10 ug/mL
							4-Nitroaniline	10 ug/mL
							4-Nitrophenol	20 ug/mL
							Acenaphthene	10 ug/mL
							Acenaphthylene	10 ug/mL
							Acetophenone	10 ug/mL
							Aniline	10 ug/mL
							Anthracene	10 ug/mL
							Azobenzene	10 ug/mL
							Benzo[a]anthracene	10 ug/mL
							Benzo[a]pyrene	10 ug/mL
							Benzo[b]fluoranthene	10 ug/mL
							Benzo[g,h,i]perylene	10 ug/mL
							Benzo[k]fluoranthene	10 ug/mL
							Benzyl alcohol	10 ug/mL
							Bis (2-chloroethoxy)methane	10 ug/mL
							Bis (2-chloroethyl) ether	10 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Bis(2-ethylhexyl) phthalate	10 ug/mL
							Butyl benzyl phthalate	10 ug/mL
							Carbazole	10 ug/mL
							Chrysene	10 ug/mL
							Di-n-butyl phthalate	10 ug/mL
							Di-n-octyl phthalate	10 ug/mL
							Dibenz(a,h)anthracene	10 ug/mL
							Dibenzofuran	10 ug/mL
							Diethyl phthalate	10 ug/mL
							Dimethyl phthalate	10 ug/mL
							Diphenylamine	8.5 ug/mL
							Fluoranthene	10 ug/mL
							Fluorene	10 ug/mL
							Hexachlorobenzene	10 ug/mL
							Hexachlorobutadiene	10 ug/mL
							Hexachlorocyclopentadiene	10 ug/mL
							Hexachloroethane	10 ug/mL
							Indeno[1,2,3-cd]pyrene	10 ug/mL
							Isophorone	10 ug/mL
							N-Nitrosodi-n-propylamine	10 ug/mL
							N-Nitrosodimethylamine	10 ug/mL
							N-Nitrosodiphenylamine	10 ug/mL
							Naphthalene	10 ug/mL
							Nitrobenzene	10 ug/mL
							Pentachlorophenol	20 ug/mL
							Phenanthrene	10 ug/mL
							Phenol	10 ug/mL
							Pyrene	10 ug/mL
							Pyridine	20 ug/mL
					MS-IS_00015	50 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
.MS-HSLA_STK_00055	10/31/19	03/21/19	Methylene Chloride, Lot 203837	10 mL	MS-567685_00006	0.4 mL	2,4,6-Tribromophenol (Surr)	200 ug/mL
							2-Fluorobiphenyl	200 ug/mL
							2-Fluorophenol (Surr)	200 ug/mL
							Nitrobenzene-d5	200 ug/mL
							Phenol-d5 (Surr)	200 ug/mL
							Terphenyl-d14	200 ug/mL
					MS-568033_00029	0.5 mL	Alachlor	200 ug/mL
					MS-569730 HSL_00008	1 mL	3,3'-Dichlorobenzidine	200 ug/mL
					MS-569731_00107	2 mL	Benzoic acid	400 ug/mL
					MS-569732 HSL_00006	1 mL	Atrazine	200 ug/mL
							Caprolactam	200 ug/mL
							1,1'-Biphenyl	200 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,4,5-Tetrachlorobenzene	200 ug/mL
							1,2,4-Trichlorobenzene	200 ug/mL
							1,2-Dichlorobenzene	200 ug/mL
							1,2-Diphenylhydrazine	202.195 ug/mL
							1,3-Dichlorobenzene	200 ug/mL
							1,3-Dinitrobenzene	200 ug/mL
							1,4-Dichlorobenzene	200 ug/mL
							1,4-Dioxane	200 ug/mL
							1-Methylnaphthalene	200 ug/mL
							2,2'-oxybis[1-chloropropane]	200 ug/mL
							2,3,4,6-Tetrachlorophenol	200 ug/mL
							2,4,5-Trichlorophenol	200 ug/mL
							2,4,6-Trichlorophenol	200 ug/mL
							2,4-Dichlorophenol	200 ug/mL
							2,4-Dimethylphenol	200 ug/mL
							2,4-Dinitrophenol	400 ug/mL
							2,4-Dinitrotoluene	200 ug/mL
							2,6-Dichlorophenol	200 ug/mL
							2,6-Dinitrotoluene	200 ug/mL
							2-Chloronaphthalene	200 ug/mL
							2-Chlorophenol	200 ug/mL
							2-Methylnaphthalene	200 ug/mL
							2-Methylphenol	200 ug/mL
							2-Nitroaniline	200 ug/mL
							2-Nitrophenol	200 ug/mL
							3 & 4 Methylphenol	200 ug/mL
							3-Nitroaniline	200 ug/mL
							4,6-Dinitro-2-methylphenol	400 ug/mL
							4-Bromophenyl phenyl ether	200 ug/mL
							4-Chloro-3-methylphenol	200 ug/mL
							4-Chloroaniline	200 ug/mL
							4-Chlorophenyl phenyl ether	200 ug/mL
							4-Nitroaniline	200 ug/mL
							4-Nitrophenol	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Acetophenone	200 ug/mL
							Aniline	200 ug/mL
							Anthracene	200 ug/mL
							Azobenzene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Benzyl alcohol	200 ug/mL
							Bis (2-chloroethoxy)methane	200 ug/mL
							Bis (2-chloroethyl) ether	200 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Bis(2-ethylhexyl) phthalate	200 ug/mL
							Butyl benzyl phthalate	200 ug/mL
							Carbazole	200 ug/mL
							Chrysene	200 ug/mL
							Di-n-butyl phthalate	200 ug/mL
							Di-n-octyl phthalate	200 ug/mL
							Dibenz(a,h)anthracene	200 ug/mL
							Dibenzofuran	200 ug/mL
							Diethyl phthalate	200 ug/mL
							Dimethyl phthalate	200 ug/mL
							Diphenylamine	170 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Hexachlorobenzene	200 ug/mL
							Hexachlorobutadiene	200 ug/mL
							Hexachlorocyclopentadiene	200 ug/mL
							Hexachloroethane	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Isophorone	200 ug/mL
							N-Nitrosodi-n-propylamine	200 ug/mL
							N-Nitrosodimethylamine	200 ug/mL
							N-Nitrosodiphenylamine	200 ug/mL
							Naphthalene	200 ug/mL
							Nitrobenzene	200 ug/mL
							Pentachlorophenol	400 ug/mL
							Phenanthrene	200 ug/mL
							Phenol	200 ug/mL
							Pyrene	200 ug/mL
							Pyridine	400 ug/mL
..MS-567685_00006	09/30/23		Restek, Lot A0141581		(Purchased Reagent)		2,4,6-Tribromophenol (Surr)	5000 ug/mL
							2-Fluorobiphenyl	5000 ug/mL
							2-Fluorophenol (Surr)	5000 ug/mL
							Nitrobenzene-d5	5000 ug/mL
							Phenol-d5 (Surr)	5000 ug/mL
							Terphenyl-d14	5000 ug/mL
..MS-568033_00029	06/30/20		Restek, Lot A0144277		(Purchased Reagent)		Alachlor	4000 ug/mL
..MS-569730_HSL_00008	10/31/19		Restek, Lot A0137351		(Purchased Reagent)		3,3'-Dichlorobenzidine	2000 ug/mL
..MS-569731_00107	10/31/19		Restek, Lot A0136865		(Purchased Reagent)		Benzoic acid	2000 ug/mL
..MS-569732_HSL_00006	10/31/19		Restek, Lot A0137125		(Purchased Reagent)		Atrazine	2000 ug/mL
							Caprolactam	2000 ug/mL
..MS-571995_00003	01/31/20		Restek, Lot A0140111		(Purchased Reagent)		1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,2-Diphenylhydrazine	1010.97 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,4-Dioxane	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Acetophenone	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis(2-chloroethoxy)methane	1000 ug/mL
							Bis(2-chloroethyl)ether	1000 ug/mL
							Bis(2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz(a,h)anthracene	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Diphenylamine	850 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
							Pyridine	2000 ug/mL
.MS-IS_00015	11/23/19	11/23/18	Methylene Chloride, Lot 203837	250 mL	MS-567684_00019	45 mL	1,4-Dichlorobenzene-d4	400 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Naphthalene-d8	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
					MS-567684_00021	5 mL	1,4-Dichlorobenzene-d4	400 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Naphthalene-d8	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
..MS-567684_00019	07/31/20		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
..MS-567684_00021	12/31/22		Restek, Lot A0129635		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
MS-HSLA020_00042	10/31/19	04/01/19	Methylene Chloride, Lot 203837	0.5 mL	MS-HSLA_STK_00055	50 uL	2,4,6-Tribromophenol (Surr)	20 ug/mL
							2-Fluorobiphenyl	20 ug/mL
							2-Fluorophenol (Surr)	20 ug/mL
							Nitrobenzene-d5	20 ug/mL
							Phenol-d5 (Surr)	20 ug/mL
							Terphenyl-d14	20 ug/mL
							Alachlor	20 ug/mL
							3,3'-Dichlorobenzidine	20 ug/mL
							Benzoic acid	40 ug/mL
							Atrazine	20 ug/mL
							Caprolactam	20 ug/mL
							1,1'-Biphenyl	20 ug/mL
							1,2,4,5-Tetrachlorobenzene	20 ug/mL
							1,2,4-Trichlorobenzene	20 ug/mL
							1,2-Dichlorobenzene	20 ug/mL
							1,2-Diphenylhydrazine	20.2195 ug/mL
							1,3-Dichlorobenzene	20 ug/mL
							1,3-Dinitrobenzene	20 ug/mL
							1,4-Dichlorobenzene	20 ug/mL
							1,4-Dioxane	20 ug/mL
							1-Methylnaphthalene	20 ug/mL
							2,2'-oxybis[1-chloropropane]	20 ug/mL
							2,3,4,6-Tetrachlorophenol	20 ug/mL
							2,4,5-Trichlorophenol	20 ug/mL
							2,4,6-Trichlorophenol	20 ug/mL
							2,4-Dichlorophenol	20 ug/mL
							2,4-Dimethylphenol	20 ug/mL
							2,4-Dinitrophenol	40 ug/mL
							2,4-Dinitrotoluene	20 ug/mL
							2,6-Dichlorophenol	20 ug/mL
							2,6-Dinitrotoluene	20 ug/mL
							2-Chloronaphthalene	20 ug/mL
							2-Chlorophenol	20 ug/mL
							2-Methylnaphthalene	20 ug/mL
							2-Methylphenol	20 ug/mL
							2-Nitroaniline	20 ug/mL
							2-Nitrophenol	20 ug/mL
							3 & 4 Methylphenol	20 ug/mL
							3-Nitroaniline	20 ug/mL
							4,6-Dinitro-2-methylphenol	40 ug/mL
							4-Bromophenyl phenyl ether	20 ug/mL
							4-Chloro-3-methylphenol	20 ug/mL
							4-Chloroaniline	20 ug/mL
							4-Chlorophenyl phenyl ether	20 ug/mL
							4-Nitroaniline	20 ug/mL
							4-Nitrophenol	40 ug/mL
							Acenaphthene	20 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Acenaphthylene	20 ug/mL
							Acetophenone	20 ug/mL
							Aniline	20 ug/mL
							Anthracene	20 ug/mL
							Azobenzene	20 ug/mL
							Benzo[a]anthracene	20 ug/mL
							Benzo[a]pyrene	20 ug/mL
							Benzo[b]fluoranthene	20 ug/mL
							Benzo[g,h,i]perylene	20 ug/mL
							Benzo[k]fluoranthene	20 ug/mL
							Benzyl alcohol	20 ug/mL
							Bis(2-chloroethoxy)methane	20 ug/mL
							Bis(2-chloroethyl)ether	20 ug/mL
							Bis(2-ethylhexyl) phthalate	20 ug/mL
							Butyl benzyl phthalate	20 ug/mL
							Carbazole	20 ug/mL
							Chrysene	20 ug/mL
							Di-n-butyl phthalate	20 ug/mL
							Di-n-octyl phthalate	20 ug/mL
							Dibenz(a,h)anthracene	20 ug/mL
							Dibenzofuran	20 ug/mL
							Diethyl phthalate	20 ug/mL
							Dimethyl phthalate	20 ug/mL
							Diphenylamine	17 ug/mL
							Fluoranthene	20 ug/mL
							Fluorene	20 ug/mL
							Hexachlorobenzene	20 ug/mL
							Hexachlorobutadiene	20 ug/mL
							Hexachlorocyclopentadiene	20 ug/mL
							Hexachloroethane	20 ug/mL
							Indeno[1,2,3-cd]pyrene	20 ug/mL
							Isophorone	20 ug/mL
							N-Nitrosodi-n-propylamine	20 ug/mL
							N-Nitrosodimethylamine	20 ug/mL
							N-Nitrosodiphenylamine	20 ug/mL
							Naphthalene	20 ug/mL
							Nitrobenzene	20 ug/mL
							Pentachlorophenol	40 ug/mL
							Phenanthrene	20 ug/mL
							Phenol	20 ug/mL
							Pyrene	20 ug/mL
							Pyridine	40 ug/mL
					MS-IS_00015	50 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.MS-HSLA_STK_00055	10/31/19	03/21/19	Methylene Chloride, Lot 203837	10 mL	MS-567685_00006	0.4 mL	2,4,6-Tribromophenol (Surr)	200 ug/mL
							2-Fluorobiphenyl	200 ug/mL
							2-Fluorophenol (Surr)	200 ug/mL
							Nitrobenzene-d5	200 ug/mL
							Phenol-d5 (Surr)	200 ug/mL
							Terphenyl-d14	200 ug/mL
					MS-568033_00029	0.5 mL	Alachlor	200 ug/mL
					MS-569730_HSL_00008	1 mL	3,3'-Dichlorobenzidine	200 ug/mL
					MS-569731_00107	2 mL	Benzoic acid	400 ug/mL
					MS-569732_HSL_00006	1 mL	Atrazine	200 ug/mL
							Caprolactam	200 ug/mL
					MS-571995_00003	2 mL	1,1'-Biphenyl	200 ug/mL
							1,2,4,5-Tetrachlorobenzene	200 ug/mL
							1,2,4-Trichlorobenzene	200 ug/mL
							1,2-Dichlorobenzene	200 ug/mL
							1,2-Diphenylhydrazine	202.195 ug/mL
							1,3-Dichlorobenzene	200 ug/mL
							1,3-Dinitrobenzene	200 ug/mL
							1,4-Dichlorobenzene	200 ug/mL
							1,4-Dioxane	200 ug/mL
							1-Methylnaphthalene	200 ug/mL
							2,2'-oxybis[1-chloropropane]	200 ug/mL
							2,3,4,6-Tetrachlorophenol	200 ug/mL
							2,4,5-Trichlorophenol	200 ug/mL
							2,4,6-Trichlorophenol	200 ug/mL
							2,4-Dichlorophenol	200 ug/mL
							2,4-Dimethylphenol	200 ug/mL
							2,4-Dinitrophenol	400 ug/mL
							2,4-Dinitrotoluene	200 ug/mL
							2,6-Dichlorophenol	200 ug/mL
							2,6-Dinitrotoluene	200 ug/mL
							2-Chloronaphthalene	200 ug/mL
							2-Chlorophenol	200 ug/mL
							2-Methylnaphthalene	200 ug/mL
							2-Methylphenol	200 ug/mL
							2-Nitroaniline	200 ug/mL
							2-Nitrophenol	200 ug/mL
							3 & 4 Methylphenol	200 ug/mL
							3-Nitroaniline	200 ug/mL
							4,6-Dinitro-2-methylphenol	400 ug/mL
							4-Bromophenyl phenyl ether	200 ug/mL
							4-Chloro-3-methylphenol	200 ug/mL
							4-Chloroaniline	200 ug/mL
							4-Chlorophenyl phenyl ether	200 ug/mL
							4-Nitroaniline	200 ug/mL
							4-Nitrophenol	400 ug/mL
							Acenaphthene	200 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Acenaphthylene	200 ug/mL
							Acetophenone	200 ug/mL
							Aniline	200 ug/mL
							Anthracene	200 ug/mL
							Azobenzene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Benzyl alcohol	200 ug/mL
							Bis (2-chloroethoxy)methane	200 ug/mL
							Bis (2-chloroethyl) ether	200 ug/mL
							Bis (2-ethylhexyl) phthalate	200 ug/mL
							Butyl benzyl phthalate	200 ug/mL
							Carbazole	200 ug/mL
							Chrysene	200 ug/mL
							Di-n-butyl phthalate	200 ug/mL
							Di-n-octyl phthalate	200 ug/mL
							Dibenz (a,h) anthracene	200 ug/mL
							Dibenzofuran	200 ug/mL
							Diethyl phthalate	200 ug/mL
							Dimethyl phthalate	200 ug/mL
							Diphenylamine	170 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Hexachlorobenzene	200 ug/mL
							Hexachlorobutadiene	200 ug/mL
							Hexachlorocyclopentadiene	200 ug/mL
							Hexachloroethane	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Isophorone	200 ug/mL
							N-Nitrosodi-n-propylamine	200 ug/mL
							N-Nitrosodimethylamine	200 ug/mL
							N-Nitrosodiphenylamine	200 ug/mL
							Naphthalene	200 ug/mL
							Nitrobenzene	200 ug/mL
							Pentachlorophenol	400 ug/mL
							Phenanthrene	200 ug/mL
							Phenol	200 ug/mL
							Pyrene	200 ug/mL
							Pyridine	400 ug/mL
..MS-567685_00006	09/30/23	Restek, Lot A0141581			(Purchased Reagent)		2,4,6-Tribromophenol (Surr)	5000 ug/mL
							2-Fluorobiphenyl	5000 ug/mL
							2-Fluorophenol (Surr)	5000 ug/mL
							Nitrobenzene-d5	5000 ug/mL
							Phenol-d5 (Surr)	5000 ug/mL
							Terphenyl-d14	5000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MS-568033_00029	06/30/20		Restek, Lot A0144277		(Purchased Reagent)		Alachlor	4000 ug/mL
..MS-569730_HSL_00008	10/31/19		Restek, Lot A0137351		(Purchased Reagent)		3,3'-Dichlorobenzidine	2000 ug/mL
..MS-569731_00107	10/31/19		Restek, Lot A0136865		(Purchased Reagent)		Benzoic acid	2000 ug/mL
..MS-569732_HSL_00006	10/31/19		Restek, Lot A0137125		(Purchased Reagent)		Atrazine	2000 ug/mL
..MS-571995_00003	01/31/20		Restek, Lot A0140111		(Purchased Reagent)		Caprolactam	2000 ug/mL
							1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,2-Diphenylhydrazine	1010.97 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							1,4-Dioxane	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Acetophenone	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis(2-chloroethoxy)methane	1000 ug/mL
							Bis(2-chloroethyl)ether	1000 ug/mL
							Bis(2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz(a,h)anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Diphenylamine	850 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
							Pyridine	2000 ug/mL
.MS-IS_00015	11/23/19	11/23/18	Methylene Chloride, Lot 203837	250 mL	MS-567684_00019	45 mL	1,4-Dichlorobenzene-d4	400 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Naphthalene-d8	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
					MS-567684_00021	5 mL	1,4-Dichlorobenzene-d4	400 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Naphthalene-d8	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MS-567684_00019	07/31/20		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
..MS-567684_00021	12/31/22		Restek, Lot A0129635		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
MS-HSLA050_00043	10/31/19	04/01/19	Methylene Chloride, Lot 203837	0.5 mL	MS-HSLA_STK_00055	125 uL	2,4,6-Tribromophenol (Surr)	50 ug/mL
							2-Fluorobiphenyl	50 ug/mL
							2-Fluorophenol (Surr)	50 ug/mL
							Nitrobenzene-d5	50 ug/mL
							Phenol-d5 (Surr)	50 ug/mL
							Terphenyl-d14	50 ug/mL
							Alachlor	50 ug/mL
							3,3'-Dichlorobenzidine	50 ug/mL
							Benzoic acid	100 ug/mL
							Atrazine	50 ug/mL
							Caprolactam	50 ug/mL
							1,1'-Biphenyl	50 ug/mL
							1,2,4,5-Tetrachlorobenzene	50 ug/mL
							1,2,4-Trichlorobenzene	50 ug/mL
							1,2-Dichlorobenzene	50 ug/mL
							1,2-Diphenylhydrazine	50.5487 ug/mL
							1,3-Dichlorobenzene	50 ug/mL
							1,3-Dinitrobenzene	50 ug/mL
							1,4-Dichlorobenzene	50 ug/mL
							1,4-Dioxane	50 ug/mL
							1-Methylnaphthalene	50 ug/mL
							2,2'-oxybis[1-chloropropane]	50 ug/mL
							2,3,4,6-Tetrachlorophenol	50 ug/mL
							2,4,5-Trichlorophenol	50 ug/mL
							2,4,6-Trichlorophenol	50 ug/mL
							2,4-Dichlorophenol	50 ug/mL
							2,4-Dimethylphenol	50 ug/mL
							2,4-Dinitrophenol	100 ug/mL
							2,4-Dinitrotoluene	50 ug/mL
							2,6-Dichlorophenol	50 ug/mL
							2,6-Dinitrotoluene	50 ug/mL
							2-Chloronaphthalene	50 ug/mL
							2-Chlorophenol	50 ug/mL
							2-Methylnaphthalene	50 ug/mL
							2-Methylphenol	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2-Nitroaniline	50 ug/mL
							2-Nitrophenol	50 ug/mL
							3 & 4 Methylphenol	50 ug/mL
							3-Nitroaniline	50 ug/mL
							4,6-Dinitro-2-methylphenol	100 ug/mL
							4-Bromophenyl phenyl ether	50 ug/mL
							4-Chloro-3-methylphenol	50 ug/mL
							4-Chloroaniline	50 ug/mL
							4-Chlorophenyl phenyl ether	50 ug/mL
							4-Nitroaniline	50 ug/mL
							4-Nitrophenol	100 ug/mL
							Acenaphthene	50 ug/mL
							Acenaphthylene	50 ug/mL
							Acetophenone	50 ug/mL
							Aniline	50 ug/mL
							Anthracene	50 ug/mL
							Azobenzene	50 ug/mL
							Benzo[a]anthracene	50 ug/mL
							Benzo[a]pyrene	50 ug/mL
							Benzo[b]fluoranthene	50 ug/mL
							Benzo[g,h,i]perylene	50 ug/mL
							Benzo[k]fluoranthene	50 ug/mL
							Benzyl alcohol	50 ug/mL
							Bis (2-chloroethoxy)methane	50 ug/mL
							Bis (2-chloroethyl) ether	50 ug/mL
							Bis (2-ethylhexyl) phthalate	50 ug/mL
							Butyl benzyl phthalate	50 ug/mL
							Carbazole	50 ug/mL
							Chrysene	50 ug/mL
							Di-n-butyl phthalate	50 ug/mL
							Di-n-octyl phthalate	50 ug/mL
							Dibenz (a,h) anthracene	50 ug/mL
							Dibenzofuran	50 ug/mL
							Diethyl phthalate	50 ug/mL
							Dimethyl phthalate	50 ug/mL
							Diphenylamine	42.5 ug/mL
							Fluoranthene	50 ug/mL
							Fluorene	50 ug/mL
							Hexachlorobenzene	50 ug/mL
							Hexachlorobutadiene	50 ug/mL
							Hexachlorocyclopentadiene	50 ug/mL
							Hexachloroethane	50 ug/mL
							Indeno[1,2,3-cd]pyrene	50 ug/mL
							Isophorone	50 ug/mL
							N-Nitrosodi-n-propylamine	50 ug/mL
							N-Nitrosodimethylamine	50 ug/mL
							N-Nitrosodiphenylamine	50 ug/mL
							Naphthalene	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Nitrobenzene	50 ug/mL
							Pentachlorophenol	100 ug/mL
							Phenanthrene	50 ug/mL
							Phenol	50 ug/mL
							Pyrene	50 ug/mL
							Pyridine	100 ug/mL
					MS-IS_00015	50 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
.MS-HSLA_STK_00055	10/31/19	03/21/19	Methylene Chloride, Lot 203837	10 mL	MS-567685_00006	0.4 mL	2,4,6-Tribromophenol (Surr)	200 ug/mL
							2-Fluorobiphenyl	200 ug/mL
							2-Fluorophenol (Surr)	200 ug/mL
							Nitrobenzene-d5	200 ug/mL
							Phenol-d5 (Surr)	200 ug/mL
							Terphenyl-d14	200 ug/mL
					MS-568033_00029	0.5 mL	Alachlor	200 ug/mL
					MS-569730_HSL_00008	1 mL	3,3'-Dichlorobenzidine	200 ug/mL
					MS-569731_00107	2 mL	Benzoic acid	400 ug/mL
					MS-569732_HSL_00006	1 mL	Atrazine	200 ug/mL
							Caprolactam	200 ug/mL
					MS-571995_00003	2 mL	1,1'-Biphenyl	200 ug/mL
							1,2,4,5-Tetrachlorobenzene	200 ug/mL
							1,2,4-Trichlorobenzene	200 ug/mL
							1,2-Dichlorobenzene	200 ug/mL
							1,2-Diphenylhydrazine	202.195 ug/mL
							1,3-Dichlorobenzene	200 ug/mL
							1,3-Dinitrobenzene	200 ug/mL
							1,4-Dichlorobenzene	200 ug/mL
							1,4-Dioxane	200 ug/mL
							1-Methylnaphthalene	200 ug/mL
							2,2'-oxybis[1-chloropropane]	200 ug/mL
							2,3,4,6-Tetrachlorophenol	200 ug/mL
							2,4,5-Trichlorophenol	200 ug/mL
							2,4,6-Trichlorophenol	200 ug/mL
							2,4-Dichlorophenol	200 ug/mL
							2,4-Dimethylphenol	200 ug/mL
							2,4-Dinitrophenol	400 ug/mL
							2,4-Dinitrotoluene	200 ug/mL
							2,6-Dichlorophenol	200 ug/mL
							2,6-Dinitrotoluene	200 ug/mL
							2-Chloronaphthalene	200 ug/mL
							2-Chlorophenol	200 ug/mL
							2-Methylnaphthalene	200 ug/mL
							2-Methylphenol	200 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2-Nitroaniline	200 ug/mL
							2-Nitrophenol	200 ug/mL
							3 & 4 Methylphenol	200 ug/mL
							3-Nitroaniline	200 ug/mL
							4,6-Dinitro-2-methylphenol	400 ug/mL
							4-Bromophenyl phenyl ether	200 ug/mL
							4-Chloro-3-methylphenol	200 ug/mL
							4-Chloroaniline	200 ug/mL
							4-Chlorophenyl phenyl ether	200 ug/mL
							4-Nitroaniline	200 ug/mL
							4-Nitrophenol	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Acetophenone	200 ug/mL
							Aniline	200 ug/mL
							Anthracene	200 ug/mL
							Azobenzene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Benzyl alcohol	200 ug/mL
							Bis (2-chloroethoxy)methane	200 ug/mL
							Bis (2-chloroethyl) ether	200 ug/mL
							Bis (2-ethylhexyl) phthalate	200 ug/mL
							Butyl benzyl phthalate	200 ug/mL
							Carbazole	200 ug/mL
							Chrysene	200 ug/mL
							Di-n-butyl phthalate	200 ug/mL
							Di-n-octyl phthalate	200 ug/mL
							Dibenz (a,h) anthracene	200 ug/mL
							Dibenzofuran	200 ug/mL
							Diethyl phthalate	200 ug/mL
							Dimethyl phthalate	200 ug/mL
							Diphenylamine	170 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Hexachlorobenzene	200 ug/mL
							Hexachlorobutadiene	200 ug/mL
							Hexachlorocyclopentadiene	200 ug/mL
							Hexachloroethane	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Isophorone	200 ug/mL
							N-Nitrosodi-n-propylamine	200 ug/mL
							N-Nitrosodimethylamine	200 ug/mL
							N-Nitrosodiphenylamine	200 ug/mL
							Naphthalene	200 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Nitrobenzene	200 ug/mL
							Pentachlorophenol	400 ug/mL
							Phenanthrene	200 ug/mL
							Phenol	200 ug/mL
							Pyrene	200 ug/mL
							Pyridine	400 ug/mL
..MS-567685_00006	09/30/23		Restek, Lot A0141581		(Purchased Reagent)		2,4,6-Tribromophenol (Surr)	5000 ug/mL
							2-Fluorobiphenyl	5000 ug/mL
							2-Fluorophenol (Surr)	5000 ug/mL
							Nitrobenzene-d5	5000 ug/mL
							Phenol-d5 (Surr)	5000 ug/mL
							Terphenyl-d14	5000 ug/mL
..MS-568033_00029	06/30/20		Restek, Lot A0144277		(Purchased Reagent)		Alachlor	4000 ug/mL
..MS-569730_HSL_00008	10/31/19		Restek, Lot A0137351		(Purchased Reagent)		3,3'-Dichlorobenzidine	2000 ug/mL
..MS-569731_00107	10/31/19		Restek, Lot A0136865		(Purchased Reagent)		Benzoic acid	2000 ug/mL
..MS-569732_HSL_00006	10/31/19		Restek, Lot A0137125		(Purchased Reagent)		Atrazine	2000 ug/mL
							Caprolactam	2000 ug/mL
..MS-571995_00003	01/31/20		Restek, Lot A0140111		(Purchased Reagent)		1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,2-Diphenylhydrazine	1010.97 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							1,4-Dioxane	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Acetophenone	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis (2-chloroethoxy) methane	1000 ug/mL
							Bis (2-chloroethyl) ether	1000 ug/mL
							Bis (2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz (a,h) anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Diphenylamine	850 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
							Pyridine	2000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.MS-IS_00015	11/23/19	11/23/18	Methylene Chloride, Lot 203837	250 mL	MS-567684_00019	45 mL	1,4-Dichlorobenzene-d4	400 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Naphthalene-d8	400 ug/mL
							Perylene-d12	400 ug/mL
					MS-567684_00021	5 mL	Phenanthrene-d10	400 ug/mL
							1,4-Dichlorobenzene-d4	400 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Naphthalene-d8	400 ug/mL
..MS-567684_00019	07/31/20	Restek, Lot A0112833			(Purchased Reagent)		Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
							1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
..MS-567684_00021	12/31/22	Restek, Lot A0129635			(Purchased Reagent)		Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
							1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
MS-HSLA080_00042	10/31/19	04/01/19	Methylene Chloride, Lot 203837	0.5 mL	MS-HSLA_STK_00055	200 uL	Phenanthrene-d10	2000 ug/mL
							1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							2,4,6-Tribromophenol (Surr)	80 ug/mL
							2-Fluorobiphenyl	80 ug/mL
							2-Fluorophenol (Surr)	80 ug/mL
							Nitrobenzene-d5	80 ug/mL
							Phenol-d5 (Surr)	80 ug/mL
							Terphenyl-d14	80 ug/mL
							Alachlor	80 ug/mL
							3,3'-Dichlorobenzidine	80 ug/mL
							Benzoic acid	160 ug/mL
							Atrazine	80 ug/mL
							Caprolactam	80 ug/mL
							1,1'-Biphenyl	80 ug/mL
							1,2,4,5-Tetrachlorobenzene	80 ug/mL
							1,2,4-Trichlorobenzene	80 ug/mL
							1,2-Dichlorobenzene	80 ug/mL
							1,2-Diphenylhydrazine	80.878 ug/mL
							1,3-Dichlorobenzene	80 ug/mL
							1,3-Dinitrobenzene	80 ug/mL
							1,4-Dichlorobenzene	80 ug/mL
							1,4-Dioxane	80 ug/mL
							1-Methylnaphthalene	80 ug/mL
							2,2'-oxybis[1-chloropropane]	80 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,3,4,6-Tetrachlorophenol	80 ug/mL
							2,4,5-Trichlorophenol	80 ug/mL
							2,4,6-Trichlorophenol	80 ug/mL
							2,4-Dichlorophenol	80 ug/mL
							2,4-Dimethylphenol	80 ug/mL
							2,4-Dinitrophenol	160 ug/mL
							2,4-Dinitrotoluene	80 ug/mL
							2,6-Dichlorophenol	80 ug/mL
							2,6-Dinitrotoluene	80 ug/mL
							2-Chloronaphthalene	80 ug/mL
							2-Chlorophenol	80 ug/mL
							2-Methylnaphthalene	80 ug/mL
							2-Methylphenol	80 ug/mL
							2-Nitroaniline	80 ug/mL
							2-Nitrophenol	80 ug/mL
							3 & 4 Methylphenol	80 ug/mL
							3-Nitroaniline	80 ug/mL
							4,6-Dinitro-2-methylphenol	160 ug/mL
							4-Bromophenyl phenyl ether	80 ug/mL
							4-Chloro-3-methylphenol	80 ug/mL
							4-Chloroaniline	80 ug/mL
							4-Chlorophenyl phenyl ether	80 ug/mL
							4-Nitroaniline	80 ug/mL
							4-Nitrophenol	160 ug/mL
							Acenaphthene	80 ug/mL
							Acenaphthylene	80 ug/mL
							Acetophenone	80 ug/mL
							Aniline	80 ug/mL
							Anthracene	80 ug/mL
							Azobenzene	80 ug/mL
							Benzo[a]anthracene	80 ug/mL
							Benzo[a]pyrene	80 ug/mL
							Benzo[b]fluoranthene	80 ug/mL
							Benzo[g,h,i]perylene	80 ug/mL
							Benzo[k]fluoranthene	80 ug/mL
							Benzyl alcohol	80 ug/mL
							Bis(2-chloroethoxy)methane	80 ug/mL
							Bis(2-chloroethyl)ether	80 ug/mL
							Bis(2-ethylhexyl) phthalate	80 ug/mL
							Butyl benzyl phthalate	80 ug/mL
							Carbazole	80 ug/mL
							Chrysene	80 ug/mL
							Di-n-butyl phthalate	80 ug/mL
							Di-n-octyl phthalate	80 ug/mL
							Dibenz(a,h)anthracene	80 ug/mL
							Dibenzofuran	80 ug/mL
							Diethyl phthalate	80 ug/mL
							Dimethyl phthalate	80 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Diphenylamine	68 ug/mL
							Fluoranthene	80 ug/mL
							Fluorene	80 ug/mL
							Hexachlorobenzene	80 ug/mL
							Hexachlorobutadiene	80 ug/mL
							Hexachlorocyclopentadiene	80 ug/mL
							Hexachloroethane	80 ug/mL
							Indeno[1,2,3-cd]pyrene	80 ug/mL
							Isophorone	80 ug/mL
							N-Nitrosodi-n-propylamine	80 ug/mL
							N-Nitrosodimethylamine	80 ug/mL
							N-Nitrosodiphenylamine	80 ug/mL
							Naphthalene	80 ug/mL
							Nitrobenzene	80 ug/mL
							Pentachlorophenol	160 ug/mL
							Phenanthrene	80 ug/mL
							Phenol	80 ug/mL
							Pyrene	80 ug/mL
							Pyridine	160 ug/mL
					MS-IS_00015	50 uL	1,4-Dichlorobenzene-d4	40 ug/mL
.MS-HSLA_STK_00055	10/31/19	03/21/19	Methylene Chloride, Lot 203837	10 mL	MS-567685_00006	0.4 mL	Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
							2,4,6-Tribromophenol (Surr)	200 ug/mL
					MS-568033_00029	0.5 mL	2-Fluorobiphenyl	200 ug/mL
							2-Fluorophenol (Surr)	200 ug/mL
							Nitrobenzene-d5	200 ug/mL
							Phenol-d5 (Surr)	200 ug/mL
							Terphenyl-d14	200 ug/mL
					MS-569730 HSL_00008	1 mL	Alachlor	200 ug/mL
					MS-569731_00107	2 mL	3,3'-Dichlorobenzidine	200 ug/mL
					MS-569732 HSL_00006	1 mL	Benzoic acid	400 ug/mL
					MS-571995_00003	2 mL	Atrazine	200 ug/mL
							Caprolactam	200 ug/mL
							1,1'-Biphenyl	200 ug/mL
							1,2,4,5-Tetrachlorobenzene	200 ug/mL
							1,2,4-Trichlorobenzene	200 ug/mL
							1,2-Dichlorobenzene	200 ug/mL
							1,2-Diphenylhydrazine	202.195 ug/mL
							1,3-Dichlorobenzene	200 ug/mL
							1,3-Dinitrobenzene	200 ug/mL
							1,4-Dichlorobenzene	200 ug/mL
							1,4-Dioxane	200 ug/mL
							1-Methylnaphthalene	200 ug/mL
							2,2'-oxybis[1-chloropropane]	200 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,3,4,6-Tetrachlorophenol	200 ug/mL
							2,4,5-Trichlorophenol	200 ug/mL
							2,4,6-Trichlorophenol	200 ug/mL
							2,4-Dichlorophenol	200 ug/mL
							2,4-Dimethylphenol	200 ug/mL
							2,4-Dinitrophenol	400 ug/mL
							2,4-Dinitrotoluene	200 ug/mL
							2,6-Dichlorophenol	200 ug/mL
							2,6-Dinitrotoluene	200 ug/mL
							2-Chloronaphthalene	200 ug/mL
							2-Chlorophenol	200 ug/mL
							2-Methylnaphthalene	200 ug/mL
							2-Methylphenol	200 ug/mL
							2-Nitroaniline	200 ug/mL
							2-Nitrophenol	200 ug/mL
							3 & 4 Methylphenol	200 ug/mL
							3-Nitroaniline	200 ug/mL
							4,6-Dinitro-2-methylphenol	400 ug/mL
							4-Bromophenyl phenyl ether	200 ug/mL
							4-Chloro-3-methylphenol	200 ug/mL
							4-Chloroaniline	200 ug/mL
							4-Chlorophenyl phenyl ether	200 ug/mL
							4-Nitroaniline	200 ug/mL
							4-Nitrophenol	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Acetophenone	200 ug/mL
							Aniline	200 ug/mL
							Anthracene	200 ug/mL
							Azobenzene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Benzyl alcohol	200 ug/mL
							Bis(2-chloroethoxy)methane	200 ug/mL
							Bis(2-chloroethyl)ether	200 ug/mL
							Bis(2-ethylhexyl) phthalate	200 ug/mL
							Butyl benzyl phthalate	200 ug/mL
							Carbazole	200 ug/mL
							Chrysene	200 ug/mL
							Di-n-butyl phthalate	200 ug/mL
							Di-n-octyl phthalate	200 ug/mL
							Dibenz(a,h)anthracene	200 ug/mL
							Dibenzofuran	200 ug/mL
							Diethyl phthalate	200 ug/mL
							Dimethyl phthalate	200 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Diphenylamine	170 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Hexachlorobenzene	200 ug/mL
							Hexachlorobutadiene	200 ug/mL
							Hexachlorocyclopentadiene	200 ug/mL
							Hexachloroethane	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Isophorone	200 ug/mL
							N-Nitrosodi-n-propylamine	200 ug/mL
							N-Nitrosodimethylamine	200 ug/mL
							N-Nitrosodiphenylamine	200 ug/mL
							Naphthalene	200 ug/mL
							Nitrobenzene	200 ug/mL
							Pentachlorophenol	400 ug/mL
							Phenanthrene	200 ug/mL
							Phenol	200 ug/mL
							Pyrene	200 ug/mL
							Pyridine	400 ug/mL
..MS-567685_00006	09/30/23		Restek, Lot A0141581		(Purchased Reagent)		2,4,6-Tribromophenol (Surr)	5000 ug/mL
							2-Fluorobiphenyl	5000 ug/mL
							2-Fluorophenol (Surr)	5000 ug/mL
							Nitrobenzene-d5	5000 ug/mL
							Phenol-d5 (Surr)	5000 ug/mL
							Terphenyl-d14	5000 ug/mL
..MS-568033_00029	06/30/20		Restek, Lot A0144277		(Purchased Reagent)		Alachlor	4000 ug/mL
..MS-569730_HSL_00008	10/31/19		Restek, Lot A0137351		(Purchased Reagent)		3,3'-Dichlorobenzidine	2000 ug/mL
..MS-569731_00107	10/31/19		Restek, Lot A0136865		(Purchased Reagent)		Benzoic acid	2000 ug/mL
..MS-569732_HSL_00006	10/31/19		Restek, Lot A0137125		(Purchased Reagent)		Atrazine	2000 ug/mL
							Caprolactam	2000 ug/mL
..MS-571995_00003	01/31/20		Restek, Lot A0140111		(Purchased Reagent)		1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,2-Diphenylhydrazine	1010.97 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							1,4-Dioxane	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Acetophenone	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis (2-chloroethoxy)methane	1000 ug/mL
							Bis (2-chloroethyl) ether	1000 ug/mL
							Bis (2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz (a,h) anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Diphenylamine	850 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
							Pyridine	2000 ug/mL
.MS-IS_00015	11/23/19	11/23/18	Methylene Chloride, Lot 203837	250 mL	MS-567684_00019	45 mL	1,4-Dichlorobenzene-d4	400 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Naphthalene-d8	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
					MS-567684_00021	5 mL	1,4-Dichlorobenzene-d4	400 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Naphthalene-d8	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
..MS-567684_00019	07/31/20	Restek, Lot A0112833	(Purchased Reagent)	1,4-Dichlorobenzene-d4	2000 ug/mL			
				Acenaphthene-d10	2000 ug/mL			
				Chrysene-d12	2000 ug/mL			
				Naphthalene-d8	2000 ug/mL			
				Perylene-d12	2000 ug/mL			
				Phenanthrene-d10	2000 ug/mL			
..MS-567684_00021	12/31/22	Restek, Lot A0129635	(Purchased Reagent)	1,4-Dichlorobenzene-d4	2000 ug/mL			
				Acenaphthene-d10	2000 ug/mL			
				Chrysene-d12	2000 ug/mL			
				Naphthalene-d8	2000 ug/mL			
				Perylene-d12	2000 ug/mL			
				Phenanthrene-d10	2000 ug/mL			
MS-HSLA120_00042	10/31/19	04/01/19	Methylene Chloride, Lot 203837	0.5 mL	MS-HSLA_STK_00055	300 uL	2,4,6-Tribromophenol (Surr)	120 ug/mL
							2-Fluorobiphenyl	120 ug/mL
							2-Fluorophenol (Surr)	120 ug/mL
							Nitrobenzene-d5	120 ug/mL
							Phenol-d5 (Surr)	120 ug/mL
							Terphenyl-d14	120 ug/mL
							Alachlor	120 ug/mL
							3,3'-Dichlorobenzidine	120 ug/mL
							Benzoic acid	240 ug/mL
							Atrazine	120 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Caprolactam	120 ug/mL
							1,1'-Biphenyl	120 ug/mL
							1,2,4,5-Tetrachlorobenzene	120 ug/mL
							1,2,4-Trichlorobenzene	120 ug/mL
							1,2-Dichlorobenzene	120 ug/mL
							1,2-Diphenylhydrazine	121.317 ug/mL
							1,3-Dichlorobenzene	120 ug/mL
							1,3-Dinitrobenzene	120 ug/mL
							1,4-Dichlorobenzene	120 ug/mL
							1,4-Dioxane	120 ug/mL
							1-Methylnaphthalene	120 ug/mL
							2,2'-oxybis[1-chloropropane]	120 ug/mL
							2,3,4,6-Tetrachlorophenol	120 ug/mL
							2,4,5-Trichlorophenol	120 ug/mL
							2,4,6-Trichlorophenol	120 ug/mL
							2,4-Dichlorophenol	120 ug/mL
							2,4-Dimethylphenol	120 ug/mL
							2,4-Dinitrophenol	240 ug/mL
							2,4-Dinitrotoluene	120 ug/mL
							2,6-Dichlorophenol	120 ug/mL
							2,6-Dinitrotoluene	120 ug/mL
							2-Chloronaphthalene	120 ug/mL
							2-Chlorophenol	120 ug/mL
							2-Methylnaphthalene	120 ug/mL
							2-Methylphenol	120 ug/mL
							2-Nitroaniline	120 ug/mL
							2-Nitrophenol	120 ug/mL
							3 & 4 Methylphenol	120 ug/mL
							3-Nitroaniline	120 ug/mL
							4,6-Dinitro-2-methylphenol	240 ug/mL
							4-Bromophenyl phenyl ether	120 ug/mL
							4-Chloro-3-methylphenol	120 ug/mL
							4-Chloroaniline	120 ug/mL
							4-Chlorophenyl phenyl ether	120 ug/mL
							4-Nitroaniline	120 ug/mL
							4-Nitrophenol	240 ug/mL
							Acenaphthene	120 ug/mL
							Acenaphthylene	120 ug/mL
							Acetophenone	120 ug/mL
							Aniline	120 ug/mL
							Anthracene	120 ug/mL
							Azobenzene	120 ug/mL
							Benzo[a]anthracene	120 ug/mL
							Benzo[a]pyrene	120 ug/mL
							Benzo[b]fluoranthene	120 ug/mL
							Benzo[g,h,i]perylene	120 ug/mL
							Benzo[k]fluoranthene	120 ug/mL
							Benzyl alcohol	120 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Bis (2-chloroethoxy)methane	120 ug/mL
							Bis (2-chloroethyl) ether	120 ug/mL
							Bis (2-ethylhexyl) phthalate	120 ug/mL
							Butyl benzyl phthalate	120 ug/mL
							Carbazole	120 ug/mL
							Chrysene	120 ug/mL
							Di-n-butyl phthalate	120 ug/mL
							Di-n-octyl phthalate	120 ug/mL
							Dibenz (a,h) anthracene	120 ug/mL
							Dibenzofuran	120 ug/mL
							Diethyl phthalate	120 ug/mL
							Dimethyl phthalate	120 ug/mL
							Diphenylamine	102 ug/mL
							Fluoranthene	120 ug/mL
							Fluorene	120 ug/mL
							Hexachlorobenzene	120 ug/mL
							Hexachlorobutadiene	120 ug/mL
							Hexachlorocyclopentadiene	120 ug/mL
							Hexachloroethane	120 ug/mL
							Indeno[1,2,3-cd]pyrene	120 ug/mL
							Isophorone	120 ug/mL
							N-Nitrosodi-n-propylamine	120 ug/mL
							N-Nitrosodimethylamine	120 ug/mL
							N-Nitrosodiphenylamine	120 ug/mL
							Naphthalene	120 ug/mL
							Nitrobenzene	120 ug/mL
							Pentachlorophenol	240 ug/mL
							Phenanthrene	120 ug/mL
							Phenol	120 ug/mL
							Pyrene	120 ug/mL
							Pyridine	240 ug/mL
					MS-IS_00015	50 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
.MS-HSLA_STK_00055	10/31/19	03/21/19	Methylene Chloride, Lot 203837	10 mL	MS-567685_00006	0.4 mL	2,4,6-Tribromophenol (Surr)	200 ug/mL
							2-Fluorobiphenyl	200 ug/mL
							2-Fluorophenol (Surr)	200 ug/mL
							Nitrobenzene-d5	200 ug/mL
							Phenol-d5 (Surr)	200 ug/mL
							Terphenyl-d14	200 ug/mL
					MS-568033_00029	0.5 mL	Alachlor	200 ug/mL
					MS-569730 HSL_00008	1 mL	3,3'-Dichlorobenzidine	200 ug/mL
					MS-569731_00107	2 mL	Benzoic acid	400 ug/mL
					MS-569732 HSL_00006	1 mL	Atrazine	200 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MS-571995_00003	2 mL	Caprolactam	200 ug/mL
							1,1'-Biphenyl	200 ug/mL
							1,2,4,5-Tetrachlorobenzene	200 ug/mL
							1,2,4-Trichlorobenzene	200 ug/mL
							1,2-Dichlorobenzene	200 ug/mL
							1,2-Diphenylhydrazine	202.195 ug/mL
							1,3-Dichlorobenzene	200 ug/mL
							1,3-Dinitrobenzene	200 ug/mL
							1,4-Dichlorobenzene	200 ug/mL
							1,4-Dioxane	200 ug/mL
							1-Methylnaphthalene	200 ug/mL
							2,2'-oxybis[1-chloropropane]	200 ug/mL
							2,3,4,6-Tetrachlorophenol	200 ug/mL
							2,4,5-Trichlorophenol	200 ug/mL
							2,4,6-Trichlorophenol	200 ug/mL
							2,4-Dichlorophenol	200 ug/mL
							2,4-Dimethylphenol	200 ug/mL
							2,4-Dinitrophenol	400 ug/mL
							2,4-Dinitrotoluene	200 ug/mL
							2,6-Dichlorophenol	200 ug/mL
							2,6-Dinitrotoluene	200 ug/mL
							2-Chloronaphthalene	200 ug/mL
							2-Chlorophenol	200 ug/mL
							2-Methylnaphthalene	200 ug/mL
							2-Methylphenol	200 ug/mL
							2-Nitroaniline	200 ug/mL
							2-Nitrophenol	200 ug/mL
							3 & 4 Methylphenol	200 ug/mL
							3-Nitroaniline	200 ug/mL
							4,6-Dinitro-2-methylphenol	400 ug/mL
							4-Bromophenyl phenyl ether	200 ug/mL
							4-Chloro-3-methylphenol	200 ug/mL
							4-Chloroaniline	200 ug/mL
							4-Chlorophenyl phenyl ether	200 ug/mL
							4-Nitroaniline	200 ug/mL
							4-Nitrophenol	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Acetophenone	200 ug/mL
							Aniline	200 ug/mL
							Anthracene	200 ug/mL
							Azobenzene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Benzyl alcohol	200 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Bis (2-chloroethoxy)methane	200 ug/mL
							Bis (2-chloroethyl) ether	200 ug/mL
							Bis (2-ethylhexyl) phthalate	200 ug/mL
							Butyl benzyl phthalate	200 ug/mL
							Carbazole	200 ug/mL
							Chrysene	200 ug/mL
							Di-n-butyl phthalate	200 ug/mL
							Di-n-octyl phthalate	200 ug/mL
							Dibenz (a,h) anthracene	200 ug/mL
							Dibenzofuran	200 ug/mL
							Diethyl phthalate	200 ug/mL
							Dimethyl phthalate	200 ug/mL
							Diphenylamine	170 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Hexachlorobenzene	200 ug/mL
							Hexachlorobutadiene	200 ug/mL
							Hexachlorocyclopentadiene	200 ug/mL
							Hexachloroethane	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Isophorone	200 ug/mL
							N-Nitrosodi-n-propylamine	200 ug/mL
							N-Nitrosodimethylamine	200 ug/mL
							N-Nitrosodiphenylamine	200 ug/mL
							Naphthalene	200 ug/mL
							Nitrobenzene	200 ug/mL
							Pentachlorophenol	400 ug/mL
							Phenanthrene	200 ug/mL
							Phenol	200 ug/mL
							Pyrene	200 ug/mL
							Pyridine	400 ug/mL
..MS-567685_00006	09/30/23		Restek, Lot A0141581		(Purchased Reagent)		2,4,6-Tribromophenol (Surr)	5000 ug/mL
							2-Fluorobiphenyl	5000 ug/mL
							2-Fluorophenol (Surr)	5000 ug/mL
							Nitrobenzene-d5	5000 ug/mL
							Phenol-d5 (Surr)	5000 ug/mL
							Terphenyl-d14	5000 ug/mL
..MS-568033_00029	06/30/20		Restek, Lot A0144277		(Purchased Reagent)		Alachlor	4000 ug/mL
..MS-569730_HSL_00008	10/31/19		Restek, Lot A0137351		(Purchased Reagent)		3,3'-Dichlorobenzidine	2000 ug/mL
..MS-569731_00107	10/31/19		Restek, Lot A0136865		(Purchased Reagent)		Benzoic acid	2000 ug/mL
..MS-569732_HSL_00006	10/31/19		Restek, Lot A0137125		(Purchased Reagent)		Atrazine	2000 ug/mL
							Caprolactam	2000 ug/mL
..MS-571995_00003	01/31/20		Restek, Lot A0140111		(Purchased Reagent)		1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,2-Diphenylhydrazine	1010.97 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							1,4-Dioxane	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Acetophenone	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis (2-chloroethoxy)methane	1000 ug/mL
							Bis (2-chloroethyl) ether	1000 ug/mL
							Bis (2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz(a,h)anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Diphenylamine	850 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
							Pyridine	2000 ug/mL
.MS-IS_00015	11/23/19	11/23/18	Methylene Chloride, Lot 203837	250 mL	MS-567684_00019	45 mL	1,4-Dichlorobenzene-d4	400 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Naphthalene-d8	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
					MS-567684_00021	5 mL	1,4-Dichlorobenzene-d4	400 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Naphthalene-d8	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
..MS-567684_00019	07/31/20		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
..MS-567684_00021	12/31/22		Restek, Lot A0129635		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Phenanthrene-d10	2000 ug/mL
MS-HSLA160_00042	10/31/19	04/01/19	Methylene Chloride, Lot 203837	0.5 mL	MS-HSLA_STK_00055	400 uL	2,4,6-Tribromophenol (Surr)	160 ug/mL
							2-Fluorobiphenyl	160 ug/mL
							2-Fluorophenol (Surr)	160 ug/mL
							Nitrobenzene-d5	160 ug/mL
							Phenol-d5 (Surr)	160 ug/mL
							Terphenyl-d14	160 ug/mL
							Alachlor	160 ug/mL
							3,3'-Dichlorobenzidine	160 ug/mL
							Benzoic acid	320 ug/mL
							Atrazine	160 ug/mL
							Caprolactam	160 ug/mL
							1,1'-Biphenyl	160 ug/mL
							1,2,4,5-Tetrachlorobenzene	160 ug/mL
							1,2,4-Trichlorobenzene	160 ug/mL
							1,2-Dichlorobenzene	160 ug/mL
							1,2-Diphenylhydrazine	161.756 ug/mL
							1,3-Dichlorobenzene	160 ug/mL
							1,3-Dinitrobenzene	160 ug/mL
							1,4-Dichlorobenzene	160 ug/mL
							1,4-Dioxane	160 ug/mL
							1-Methylnaphthalene	160 ug/mL
							2,2'-oxybis[1-chloropropane]	160 ug/mL
							2,3,4,6-Tetrachlorophenol	160 ug/mL
							2,4,5-Trichlorophenol	160 ug/mL
							2,4,6-Trichlorophenol	160 ug/mL
							2,4-Dichlorophenol	160 ug/mL
							2,4-Dimethylphenol	160 ug/mL
							2,4-Dinitrophenol	320 ug/mL
							2,4-Dinitrotoluene	160 ug/mL
							2,6-Dichlorophenol	160 ug/mL
							2,6-Dinitrotoluene	160 ug/mL
							2-Chloronaphthalene	160 ug/mL
							2-Chlorophenol	160 ug/mL
							2-Methylnaphthalene	160 ug/mL
							2-Methylphenol	160 ug/mL
							2-Nitroaniline	160 ug/mL
							2-Nitrophenol	160 ug/mL
							3 & 4 Methylphenol	160 ug/mL
							3-Nitroaniline	160 ug/mL
							4,6-Dinitro-2-methylphenol	320 ug/mL
							4-Bromophenyl phenyl ether	160 ug/mL
							4-Chloro-3-methylphenol	160 ug/mL
							4-Chloroaniline	160 ug/mL
							4-Chlorophenyl phenyl ether	160 ug/mL
							4-Nitroaniline	160 ug/mL
							4-Nitrophenol	320 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Acenaphthene	160 ug/mL
							Acenaphthylene	160 ug/mL
							Acetophenone	160 ug/mL
							Aniline	160 ug/mL
							Anthracene	160 ug/mL
							Azobenzene	160 ug/mL
							Benzo[a]anthracene	160 ug/mL
							Benzo[a]pyrene	160 ug/mL
							Benzo[b]fluoranthene	160 ug/mL
							Benzo[g,h,i]perylene	160 ug/mL
							Benzo[k]fluoranthene	160 ug/mL
							Benzyl alcohol	160 ug/mL
							Bis(2-chloroethoxy)methane	160 ug/mL
							Bis(2-chloroethyl) ether	160 ug/mL
							Bis(2-ethylhexyl) phthalate	160 ug/mL
							Butyl benzyl phthalate	160 ug/mL
							Carbazole	160 ug/mL
							Chrysene	160 ug/mL
							Di-n-butyl phthalate	160 ug/mL
							Di-n-octyl phthalate	160 ug/mL
							Dibenz(a,h)anthracene	160 ug/mL
							Dibenzofuran	160 ug/mL
							Diethyl phthalate	160 ug/mL
							Dimethyl phthalate	160 ug/mL
							Diphenylamine	136 ug/mL
							Fluoranthene	160 ug/mL
							Fluorene	160 ug/mL
							Hexachlorobenzene	160 ug/mL
							Hexachlorobutadiene	160 ug/mL
							Hexachlorocyclopentadiene	160 ug/mL
							Hexachloroethane	160 ug/mL
							Indeno[1,2,3-cd]pyrene	160 ug/mL
							Isophorone	160 ug/mL
							N-Nitrosodi-n-propylamine	160 ug/mL
							N-Nitrosodimethylamine	160 ug/mL
							N-Nitrosodiphenylamine	160 ug/mL
							Naphthalene	160 ug/mL
							Nitrobenzene	160 ug/mL
							Pentachlorophenol	320 ug/mL
							Phenanthrene	160 ug/mL
							Phenol	160 ug/mL
							Pyrene	160 ug/mL
							Pyridine	320 ug/mL
					MS-IS_00015	50 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.MS-HSLA_STK_00055	10/31/19	03/21/19	Methylene Chloride, Lot 203837	10 mL	MS-567685_00006	0.4 mL	Phenanthrene-d10	40 ug/mL
							2,4,6-Tribromophenol (Surr)	200 ug/mL
							2-Fluorobiphenyl	200 ug/mL
							2-Fluorophenol (Surr)	200 ug/mL
							Nitrobenzene-d5	200 ug/mL
							Phenol-d5 (Surr)	200 ug/mL
					MS-568033_00029	0.5 mL	Terphenyl-d14	200 ug/mL
							Alachlor	200 ug/mL
							3,3'-Dichlorobenzidine	200 ug/mL
					MS-569730_HSL_00008	1 mL	Benzoic acid	400 ug/mL
					MS-569731_00107	2 mL	Atrazine	200 ug/mL
					MS-569732_HSL_00006	1 mL	Caprolactam	200 ug/mL
					MS-571995_00003	2 mL	1,1'-Biphenyl	200 ug/mL
							1,2,4,5-Tetrachlorobenzene	200 ug/mL
							1,2,4-Trichlorobenzene	200 ug/mL
							1,2-Dichlorobenzene	200 ug/mL
							1,2-Diphenylhydrazine	202.195 ug/mL
							1,3-Dichlorobenzene	200 ug/mL
							1,3-Dinitrobenzene	200 ug/mL
							1,4-Dichlorobenzene	200 ug/mL
							1,4-Dioxane	200 ug/mL
							1-Methylnaphthalene	200 ug/mL
							2,2'-oxybis[1-chloropropane]	200 ug/mL
							2,3,4,6-Tetrachlorophenol	200 ug/mL
							2,4,5-Trichlorophenol	200 ug/mL
							2,4,6-Trichlorophenol	200 ug/mL
							2,4-Dichlorophenol	200 ug/mL
							2,4-Dimethylphenol	200 ug/mL
							2,4-Dinitrophenol	400 ug/mL
							2,4-Dinitrotoluene	200 ug/mL
							2,6-Dichlorophenol	200 ug/mL
							2,6-Dinitrotoluene	200 ug/mL
							2-Chloronaphthalene	200 ug/mL
							2-Chlorophenol	200 ug/mL
							2-Methylnaphthalene	200 ug/mL
							2-Methylphenol	200 ug/mL
							2-Nitroaniline	200 ug/mL
							2-Nitrophenol	200 ug/mL
							3 & 4 Methylphenol	200 ug/mL
							3-Nitroaniline	200 ug/mL
							4,6-Dinitro-2-methylphenol	400 ug/mL
							4-Bromophenyl phenyl ether	200 ug/mL
							4-Chloro-3-methylphenol	200 ug/mL
							4-Chloroaniline	200 ug/mL
							4-Chlorophenyl phenyl ether	200 ug/mL
							4-Nitroaniline	200 ug/mL
							4-Nitrophenol	400 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Acetophenone	200 ug/mL
							Aniline	200 ug/mL
							Anthracene	200 ug/mL
							Azobenzene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Benzyl alcohol	200 ug/mL
							Bis (2-chloroethoxy)methane	200 ug/mL
							Bis (2-chloroethyl) ether	200 ug/mL
							Bis (2-ethylhexyl) phthalate	200 ug/mL
							Butyl benzyl phthalate	200 ug/mL
							Carbazole	200 ug/mL
							Chrysene	200 ug/mL
							Di-n-butyl phthalate	200 ug/mL
							Di-n-octyl phthalate	200 ug/mL
							Dibenz (a,h) anthracene	200 ug/mL
							Dibenzofuran	200 ug/mL
							Diethyl phthalate	200 ug/mL
							Dimethyl phthalate	200 ug/mL
							Diphenylamine	170 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Hexachlorobenzene	200 ug/mL
							Hexachlorobutadiene	200 ug/mL
							Hexachlorocyclopentadiene	200 ug/mL
							Hexachloroethane	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Isophorone	200 ug/mL
							N-Nitrosodi-n-propylamine	200 ug/mL
							N-Nitrosodimethylamine	200 ug/mL
							N-Nitrosodiphenylamine	200 ug/mL
							Naphthalene	200 ug/mL
							Nitrobenzene	200 ug/mL
							Pentachlorophenol	400 ug/mL
							Phenanthrene	200 ug/mL
							Phenol	200 ug/mL
							Pyrene	200 ug/mL
							Pyridine	400 ug/mL
..MS-567685_00006	09/30/23		Restek, Lot A0141581		(Purchased Reagent)		2,4,6-Tribromophenol (Surr)	5000 ug/mL
							2-Fluorobiphenyl	5000 ug/mL
							2-Fluorophenol (Surr)	5000 ug/mL
							Nitrobenzene-d5	5000 ug/mL
							Phenol-d5 (Surr)	5000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MS-568033_00029	06/30/20		Restek, Lot A0144277		(Purchased Reagent)		Terphenyl-d14	5000 ug/mL
..MS-569730_HSL_00008	10/31/19		Restek, Lot A0137351		(Purchased Reagent)		Alachlor	4000 ug/mL
..MS-569731_00107	10/31/19		Restek, Lot A0136865		(Purchased Reagent)		3,3'-Dichlorobenzidine	2000 ug/mL
..MS-569732_HSL_00006	10/31/19		Restek, Lot A0137125		(Purchased Reagent)		Benzoic acid	2000 ug/mL
..MS-571995_00003	01/31/20		Restek, Lot A0140111		(Purchased Reagent)		Atrazine	2000 ug/mL
							Caprolactam	2000 ug/mL
							1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,2-Diphenylhydrazine	1010.97 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							1,4-Dioxane	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Acetophenone	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis (2-chloroethoxy)methane	1000 ug/mL
							Bis (2-chloroethyl) ether	1000 ug/mL
							Bis (2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz (a,h) anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Diphenylamine	850 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
							Pyridine	2000 ug/mL
.MS-IS_00015	11/23/19	11/23/18	Methylene Chloride, Lot 203837	250 mL	MS-567684_00019	45 mL	1,4-Dichlorobenzene-d4	400 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Naphthalene-d8	400 ug/mL
							Perylene-d12	400 ug/mL
					MS-567684_00021	5 mL	Phenanthrene-d10	400 ug/mL
							1,4-Dichlorobenzene-d4	400 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Naphthalene-d8	400 ug/mL
							Perylene-d12	400 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MS-567684_00019	07/31/20		Restek, Lot A0112833		(Purchased Reagent)		Phenanthrene-d10	400 ug/mL
							1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
..MS-567684_00021	12/31/22		Restek, Lot A0129635		(Purchased Reagent)		Phenanthrene-d10	2000 ug/mL
							1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
MS-HSLA200_00042	10/31/19	04/01/19	Methylene Chloride, Lot 203837	0.5 mL	MS-HSLA_STK_00055	500 uL	2,4,6-Tribromophenol (Surr)	200 ug/mL
							2-Fluorobiphenyl	200 ug/mL
							2-Fluorophenol (Surr)	200 ug/mL
							Nitrobenzene-d5	200 ug/mL
							Phenol-d5 (Surr)	200 ug/mL
							Terphenyl-d14	200 ug/mL
							Alachlor	200 ug/mL
							3,3'-Dichlorobenzidine	200 ug/mL
							Benzoic acid	400 ug/mL
							Atrazine	200 ug/mL
							Caprolactam	200 ug/mL
							1,1'-Biphenyl	200 ug/mL
							1,2,4,5-Tetrachlorobenzene	200 ug/mL
							1,2,4-Trichlorobenzene	200 ug/mL
							1,2-Dichlorobenzene	200 ug/mL
							1,2-Diphenylhydrazine	202.195 ug/mL
							1,3-Dichlorobenzene	200 ug/mL
							1,3-Dinitrobenzene	200 ug/mL
							1,4-Dichlorobenzene	200 ug/mL
							1,4-Dioxane	200 ug/mL
							1-Methylnaphthalene	200 ug/mL
							2,2'-oxybis[1-chloropropane]	200 ug/mL
							2,3,4,6-Tetrachlorophenol	200 ug/mL
							2,4,5-Trichlorophenol	200 ug/mL
							2,4,6-Trichlorophenol	200 ug/mL
							2,4-Dichlorophenol	200 ug/mL
							2,4-Dimethylphenol	200 ug/mL
							2,4-Dinitrophenol	400 ug/mL
							2,4-Dinitrotoluene	200 ug/mL
							2,6-Dichlorophenol	200 ug/mL
							2,6-Dinitrotoluene	200 ug/mL
							2-Chloronaphthalene	200 ug/mL
							2-Chlorophenol	200 ug/mL
							2-Methylnaphthalene	200 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2-Methylphenol	200 ug/mL
							2-Nitroaniline	200 ug/mL
							2-Nitrophenol	200 ug/mL
							3 & 4 Methylphenol	200 ug/mL
							3-Nitroaniline	200 ug/mL
							4,6-Dinitro-2-methylphenol	400 ug/mL
							4-Bromophenyl phenyl ether	200 ug/mL
							4-Chloro-3-methylphenol	200 ug/mL
							4-Chloroaniline	200 ug/mL
							4-Chlorophenyl phenyl ether	200 ug/mL
							4-Nitroaniline	200 ug/mL
							4-Nitrophenol	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Acetophenone	200 ug/mL
							Aniline	200 ug/mL
							Anthracene	200 ug/mL
							Azobenzene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Benzyl alcohol	200 ug/mL
							Bis (2-chloroethoxy)methane	200 ug/mL
							Bis (2-chloroethyl) ether	200 ug/mL
							Bis (2-ethylhexyl) phthalate	200 ug/mL
							Butyl benzyl phthalate	200 ug/mL
							Carbazole	200 ug/mL
							Chrysene	200 ug/mL
							Di-n-butyl phthalate	200 ug/mL
							Di-n-octyl phthalate	200 ug/mL
							Dibenz (a,h) anthracene	200 ug/mL
							Dibenzofuran	200 ug/mL
							Diethyl phthalate	200 ug/mL
							Dimethyl phthalate	200 ug/mL
							Diphenylamine	170 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Hexachlorobenzene	200 ug/mL
							Hexachlorobutadiene	200 ug/mL
							Hexachlorocyclopentadiene	200 ug/mL
							Hexachloroethane	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Isophorone	200 ug/mL
							N-Nitrosodi-n-propylamine	200 ug/mL
							N-Nitrosodimethylamine	200 ug/mL
							N-Nitrosodiphenylamine	200 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Naphthalene	200 ug/mL
							Nitrobenzene	200 ug/mL
							Pentachlorophenol	400 ug/mL
							Phenanthrene	200 ug/mL
							Phenol	200 ug/mL
							Pyrene	200 ug/mL
							Pyridine	400 ug/mL
					MS-IS_00015	50 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
.MS-HSLA_STK_00055	10/31/19	03/21/19	Methylene Chloride, Lot 203837	10 mL	MS-567685_00006	0.4 mL	2,4,6-Tribromophenol (Surr)	200 ug/mL
							2-Fluorobiphenyl	200 ug/mL
							2-Fluorophenol (Surr)	200 ug/mL
							Nitrobenzene-d5	200 ug/mL
							Phenol-d5 (Surr)	200 ug/mL
							Terphenyl-d14	200 ug/mL
					MS-568033_00029	0.5 mL	Alachlor	200 ug/mL
					MS-569730 HSL_00008	1 mL	3,3'-Dichlorobenzidine	200 ug/mL
					MS-569731_00107	2 mL	Benzoic acid	400 ug/mL
					MS-569732 HSL_00006	1 mL	Atrazine	200 ug/mL
					MS-571995_00003	2 mL	Caprolactam	200 ug/mL
							1,1'-Biphenyl	200 ug/mL
							1,2,4,5-Tetrachlorobenzene	200 ug/mL
							1,2,4-Trichlorobenzene	200 ug/mL
							1,2-Dichlorobenzene	200 ug/mL
							1,2-Diphenylhydrazine	202.195 ug/mL
							1,3-Dichlorobenzene	200 ug/mL
							1,3-Dinitrobenzene	200 ug/mL
							1,4-Dichlorobenzene	200 ug/mL
							1,4-Dioxane	200 ug/mL
							1-Methylnaphthalene	200 ug/mL
							2,2'-oxybis[1-chloropropane]	200 ug/mL
							2,3,4,6-Tetrachlorophenol	200 ug/mL
							2,4,5-Trichlorophenol	200 ug/mL
							2,4,6-Trichlorophenol	200 ug/mL
							2,4-Dichlorophenol	200 ug/mL
							2,4-Dimethylphenol	200 ug/mL
							2,4-Dinitrophenol	400 ug/mL
							2,4-Dinitrotoluene	200 ug/mL
							2,6-Dichlorophenol	200 ug/mL
							2,6-Dinitrotoluene	200 ug/mL
							2-Chloronaphthalene	200 ug/mL
							2-Chlorophenol	200 ug/mL
							2-Methylnaphthalene	200 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2-Methylphenol	200 ug/mL
							2-Nitroaniline	200 ug/mL
							2-Nitrophenol	200 ug/mL
							3 & 4 Methylphenol	200 ug/mL
							3-Nitroaniline	200 ug/mL
							4,6-Dinitro-2-methylphenol	400 ug/mL
							4-Bromophenyl phenyl ether	200 ug/mL
							4-Chloro-3-methylphenol	200 ug/mL
							4-Chloroaniline	200 ug/mL
							4-Chlorophenyl phenyl ether	200 ug/mL
							4-Nitroaniline	200 ug/mL
							4-Nitrophenol	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Acetophenone	200 ug/mL
							Aniline	200 ug/mL
							Anthracene	200 ug/mL
							Azobenzene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Benzyl alcohol	200 ug/mL
							Bis (2-chloroethoxy)methane	200 ug/mL
							Bis (2-chloroethyl) ether	200 ug/mL
							Bis (2-ethylhexyl) phthalate	200 ug/mL
							Butyl benzyl phthalate	200 ug/mL
							Carbazole	200 ug/mL
							Chrysene	200 ug/mL
							Di-n-butyl phthalate	200 ug/mL
							Di-n-octyl phthalate	200 ug/mL
							Dibenz (a,h) anthracene	200 ug/mL
							Dibenzofuran	200 ug/mL
							Diethyl phthalate	200 ug/mL
							Dimethyl phthalate	200 ug/mL
							Diphenylamine	170 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Hexachlorobenzene	200 ug/mL
							Hexachlorobutadiene	200 ug/mL
							Hexachlorocyclopentadiene	200 ug/mL
							Hexachloroethane	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Isophorone	200 ug/mL
							N-Nitrosodi-n-propylamine	200 ug/mL
							N-Nitrosodimethylamine	200 ug/mL
							N-Nitrosodiphenylamine	200 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Naphthalene	200 ug/mL
							Nitrobenzene	200 ug/mL
							Pentachlorophenol	400 ug/mL
							Phenanthrene	200 ug/mL
							Phenol	200 ug/mL
							Pyrene	200 ug/mL
							Pyridine	400 ug/mL
..MS-567685_00006	09/30/23		Restek, Lot A0141581		(Purchased Reagent)		2,4,6-Tribromophenol (Surr)	5000 ug/mL
							2-Fluorobiphenyl	5000 ug/mL
							2-Fluorophenol (Surr)	5000 ug/mL
							Nitrobenzene-d5	5000 ug/mL
							Phenol-d5 (Surr)	5000 ug/mL
							Terphenyl-d14	5000 ug/mL
..MS-568033_00029	06/30/20		Restek, Lot A0144277		(Purchased Reagent)		Alachlor	4000 ug/mL
..MS-569730_HSL_00008	10/31/19		Restek, Lot A0137351		(Purchased Reagent)		3,3'-Dichlorobenzidine	2000 ug/mL
..MS-569731_00107	10/31/19		Restek, Lot A0136865		(Purchased Reagent)		Benzoic acid	2000 ug/mL
..MS-569732_HSL_00006	10/31/19		Restek, Lot A0137125		(Purchased Reagent)		Atrazine	2000 ug/mL
							Caprolactam	2000 ug/mL
..MS-571995_00003	01/31/20		Restek, Lot A0140111		(Purchased Reagent)		1,1'-Biphenyl	1000 ug/mL
							1,2,4,5-Tetrachlorobenzene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,2-Diphenylhydrazine	1010.97 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							1,4-Dioxane	1000 ug/mL
							1-Methylnaphthalene	1000 ug/mL
							2,2'-oxybis[1-chloropropane]	1000 ug/mL
							2,3,4,6-Tetrachlorophenol	1000 ug/mL
							2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dichlorophenol	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chloronaphthalene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitroaniline	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							3-Nitroaniline	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Bromophenyl phenyl ether	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Chloroaniline	1000 ug/mL
							4-Chlorophenyl phenyl ether	1000 ug/mL
							4-Nitroaniline	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Acetophenone	1000 ug/mL
							Aniline	1000 ug/mL
							Anthracene	1000 ug/mL
							Azobenzene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Benzyl alcohol	1000 ug/mL
							Bis (2-chloroethoxy)methane	1000 ug/mL
							Bis (2-chloroethyl) ether	1000 ug/mL
							Bis (2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Carbazole	1000 ug/mL
							Chrysene	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Dibenz (a,h) anthracene	1000 ug/mL
							Dibenzofuran	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Diphenylamine	850 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Hexachlorobenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Hexachloroethane	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Isophorone	1000 ug/mL
							N-Nitrosodi-n-propylamine	1000 ug/mL
							N-Nitrosodimethylamine	1000 ug/mL
							N-Nitrosodiphenylamine	1000 ug/mL
							Naphthalene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenanthrene	1000 ug/mL
							Phenol	1000 ug/mL
							Pyrene	1000 ug/mL
							Pyridine	2000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.MS-IS_00015	11/23/19	11/23/18	Methylene Chloride, Lot 203837	250 mL	MS-567684_00019	45 mL	1,4-Dichlorobenzene-d4	400 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Naphthalene-d8	400 ug/mL
							Perylene-d12	400 ug/mL
					MS-567684_00021	5 mL	1,4-Dichlorobenzene-d4	400 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Naphthalene-d8	400 ug/mL
							Perylene-d12	400 ug/mL
..MS-567684_00019	07/31/20	Restek, Lot A0112833	(Purchased Reagent)	1,4-Dichlorobenzene-d4	2000 ug/mL			
				Acenaphthene-d10	2000 ug/mL			
				Chrysene-d12	2000 ug/mL			
				Naphthalene-d8	2000 ug/mL			
				Perylene-d12	2000 ug/mL			
..MS-567684_00021	12/31/22	Restek, Lot A0129635	(Purchased Reagent)	1,4-Dichlorobenzene-d4	2000 ug/mL			
				Acenaphthene-d10	2000 ug/mL			
				Chrysene-d12	2000 ug/mL			
				Naphthalene-d8	2000 ug/mL			
				Perylene-d12	2000 ug/mL			
MS-HSLACCV080_00186	10/31/19	04/01/19	Methylene Chloride, Lot 203837	0.5 mL	MS-IS_00015	50 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
.MS-IS_00015	11/23/19	11/23/18	Methylene Chloride, Lot 203837	250 mL	MS-567684_00019	45 mL	1,4-Dichlorobenzene-d4	400 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Naphthalene-d8	400 ug/mL
							Perylene-d12	400 ug/mL
					MS-567684_00021	5 mL	1,4-Dichlorobenzene-d4	400 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Naphthalene-d8	400 ug/mL
							Perylene-d12	400 ug/mL
..MS-567684_00019	07/31/20	Restek, Lot A0112833	(Purchased Reagent)	1,4-Dichlorobenzene-d4	2000 ug/mL			
				Acenaphthene-d10	2000 ug/mL			
				Chrysene-d12	2000 ug/mL			

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MS-567684_00021	12/31/22		Restek, Lot A0129635		(Purchased Reagent)		Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
							1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
MS-HSLACCV080_00186	10/31/19	04/01/19	Methylene Chloride, Lot 203837	0.5 mL	MS-HSLA_STK_00055	200 uL	Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
							2,4,6-Tribromophenol (Surr)	80 ug/mL
							2-Fluorobiphenyl	80 ug/mL
							2-Fluorophenol (Surr)	80 ug/mL
							Nitrobenzene-d5	80 ug/mL
							Phenol-d5 (Surr)	80 ug/mL
							Terphenyl-d14	80 ug/mL
							2,4,5-Trichlorophenol	80 ug/mL
							2,4,6-Trichlorophenol	80 ug/mL
							2,4-Dichlorophenol	80 ug/mL
							2,4-Dimethylphenol	80 ug/mL
							2,4-Dinitrophenol	160 ug/mL
							2,4-Dinitrotoluene	80 ug/mL
							2,6-Dinitrotoluene	80 ug/mL
							2-Chlorophenol	80 ug/mL
							2-Methylphenol	80 ug/mL
							2-Nitrophenol	80 ug/mL
							3 & 4 Methylphenol	80 ug/mL
							4,6-Dinitro-2-methylphenol	160 ug/mL
							4-Chloro-3-methylphenol	80 ug/mL
							4-Nitrophenol	160 ug/mL
							Bis(2-ethylhexyl) phthalate	80 ug/mL
							Butyl benzyl phthalate	80 ug/mL
							Di-n-butyl phthalate	80 ug/mL
							Di-n-octyl phthalate	80 ug/mL
							Diethyl phthalate	80 ug/mL
							Dimethyl phthalate	80 ug/mL
							Hexachlorocyclopentadiene	80 ug/mL
							Nitrobenzene	80 ug/mL
							Pentachlorophenol	160 ug/mL
							Phenol	80 ug/mL
.MS-HSLA_STK_00055	10/31/19	03/21/19	Methylene Chloride, Lot 203837	10 mL	MS-567685_00006	0.4 mL	2,4,6-Tribromophenol (Surr)	200 ug/mL
							2-Fluorobiphenyl	200 ug/mL
							2-Fluorophenol (Surr)	200 ug/mL
							Nitrobenzene-d5	200 ug/mL
							Phenol-d5 (Surr)	200 ug/mL
							Terphenyl-d14	200 ug/mL
					MS-571995_00003	2 mL	2,4,5-Trichlorophenol	200 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,4,6-Trichlorophenol	200 ug/mL
							2,4-Dichlorophenol	200 ug/mL
							2,4-Dimethylphenol	200 ug/mL
							2,4-Dinitrophenol	400 ug/mL
							2,4-Dinitrotoluene	200 ug/mL
							2,6-Dinitrotoluene	200 ug/mL
							2-Chlorophenol	200 ug/mL
							2-Methylphenol	200 ug/mL
							2-Nitrophenol	200 ug/mL
							3 & 4 Methylphenol	200 ug/mL
							4,6-Dinitro-2-methylphenol	400 ug/mL
							4-Chloro-3-methylphenol	200 ug/mL
							4-Nitrophenol	400 ug/mL
							Bis(2-ethylhexyl) phthalate	200 ug/mL
							Butyl benzyl phthalate	200 ug/mL
							Di-n-butyl phthalate	200 ug/mL
							Di-n-octyl phthalate	200 ug/mL
							Diethyl phthalate	200 ug/mL
							Dimethyl phthalate	200 ug/mL
							Hexachlorocyclopentadiene	200 ug/mL
							Nitrobenzene	200 ug/mL
							Pentachlorophenol	400 ug/mL
							Phenol	200 ug/mL
..MS-567685_00006	09/30/23		Restek, Lot A0141581		(Purchased Reagent)		2,4,6-Tribromophenol (Surr)	5000 ug/mL
							2-Fluorobiphenyl	5000 ug/mL
							2-Fluorophenol (Surr)	5000 ug/mL
							Nitrobenzene-d5	5000 ug/mL
							Phenol-d5 (Surr)	5000 ug/mL
							Terphenyl-d14	5000 ug/mL
..MS-571995_00003	01/31/20		Restek, Lot A0140111		(Purchased Reagent)		2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylphenol	1000 ug/mL
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Bis(2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Diethyl phthalate	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Dimethyl phthalate	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenol	1000 ug/mL
MS-HSLB1B3SSV_00055	08/31/19	04/01/19	Methylene Chloride, Lot 203837	0.5 mL	MS-IS_00015	50 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
.MS-IS_00015	11/23/19	11/23/18	Methylene Chloride, Lot 203837	250 mL	MS-567684_00019	45 mL	1,4-Dichlorobenzene-d4	400 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Naphthalene-d8	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
					MS-567684_00021	5 mL	1,4-Dichlorobenzene-d4	400 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Naphthalene-d8	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
..MS-567684_00019	07/31/20		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
..MS-567684_00021	12/31/22		Restek, Lot A0129635		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
MS-HSLB1B3SSV_00055	08/31/19	04/01/19	Methylene Chloride, Lot 203837	0.5 mL	MS-HSLB1_STK_00013	250 uL	2,4,5-Trichlorophenol	100 ug/mL
							2,4,6-Trichlorophenol	100 ug/mL
							2,4-Dichlorophenol	100 ug/mL
							2,4-Dimethylphenol	100 ug/mL
							2,4-Dinitrophenol	200 ug/mL
							2,4-Dinitrotoluene	100 ug/mL
							2,6-Dinitrotoluene	100 ug/mL
							2-Chlorophenol	100 ug/mL
							2-Methylphenol	100 ug/mL
							2-Nitrophenol	100 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							3 & 4 Methylphenol	100 ug/mL
							4,6-Dinitro-2-methylphenol	200 ug/mL
							4-Chloro-3-methylphenol	100 ug/mL
							4-Nitrophenol	200 ug/mL
							Bis(2-ethylhexyl) phthalate	100 ug/mL
							Butyl benzyl phthalate	100 ug/mL
							Di-n-butyl phthalate	100 ug/mL
							Di-n-octyl phthalate	100 ug/mL
							Diethyl phthalate	100 ug/mL
							Dimethyl phthalate	100 ug/mL
							Hexachlorocyclopentadiene	100 ug/mL
							Nitrobenzene	100 ug/mL
							Pentachlorophenol	200 ug/mL
							Phenol	100 ug/mL
.MS-HSLB1_STK_00013	12/31/19	03/12/19	Methylene Chloride, Lot 203837	10 mL	MS-571995.SEC_00003	2 mL	2,4,5-Trichlorophenol	200 ug/mL
							2,4,6-Trichlorophenol	200 ug/mL
							2,4-Dichlorophenol	200 ug/mL
							2,4-Dimethylphenol	200 ug/mL
							2,4-Dinitrophenol	400 ug/mL
							2,4-Dinitrotoluene	200 ug/mL
							2,6-Dinitrotoluene	200 ug/mL
							2-Chlorophenol	200 ug/mL
							2-Methylphenol	200 ug/mL
							2-Nitrophenol	200 ug/mL
							3 & 4 Methylphenol	200 ug/mL
							4,6-Dinitro-2-methylphenol	400 ug/mL
							4-Chloro-3-methylphenol	200 ug/mL
							4-Nitrophenol	400 ug/mL
							Bis(2-ethylhexyl) phthalate	200 ug/mL
							Butyl benzyl phthalate	200 ug/mL
							Di-n-butyl phthalate	200 ug/mL
							Di-n-octyl phthalate	200 ug/mL
							Diethyl phthalate	200 ug/mL
							Dimethyl phthalate	200 ug/mL
							Hexachlorocyclopentadiene	200 ug/mL
							Nitrobenzene	200 ug/mL
							Pentachlorophenol	400 ug/mL
							Phenol	200 ug/mL
..MS-571995.SEC_00003	12/31/19		Restek, Lot A0138890		(Purchased Reagent)		2,4,5-Trichlorophenol	1000 ug/mL
							2,4,6-Trichlorophenol	1000 ug/mL
							2,4-Dichlorophenol	1000 ug/mL
							2,4-Dimethylphenol	1000 ug/mL
							2,4-Dinitrophenol	2000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Chlorophenol	1000 ug/mL
							2-Methylphenol	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2-Nitrophenol	1000 ug/mL
							3 & 4 Methylphenol	1000 ug/mL
							4,6-Dinitro-2-methylphenol	2000 ug/mL
							4-Chloro-3-methylphenol	1000 ug/mL
							4-Nitrophenol	2000 ug/mL
							Bis(2-ethylhexyl) phthalate	1000 ug/mL
							Butyl benzyl phthalate	1000 ug/mL
							Di-n-butyl phthalate	1000 ug/mL
							Di-n-octyl phthalate	1000 ug/mL
							Diethyl phthalate	1000 ug/mL
							Dimethyl phthalate	1000 ug/mL
							Hexachlorocyclopentadiene	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							Pentachlorophenol	2000 ug/mL
							Phenol	1000 ug/mL
MS-HSLB2SSV_00050	11/23/19	04/01/19	Methylene Chloride, Lot 203837	0.5 mL	MS-IS_00015	50 uL	1,4-Dichlorobenzene-d4	40 ug/mL
							Acenaphthene-d10	40 ug/mL
							Chrysene-d12	40 ug/mL
							Naphthalene-d8	40 ug/mL
							Perylene-d12	40 ug/mL
							Phenanthrene-d10	40 ug/mL
.MS-IS_00015	11/23/19	11/23/18	Methylene Chloride, Lot 203837	250 mL	MS-567684_00019	45 mL	1,4-Dichlorobenzene-d4	400 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Naphthalene-d8	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
					MS-567684_00021	5 mL	1,4-Dichlorobenzene-d4	400 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Naphthalene-d8	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
..MS-567684_00019	07/31/20		Restek, Lot A0112833		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
..MS-567684_00021	12/31/22		Restek, Lot A0129635		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Naphthalene-d8	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration							
					Reagent ID	Volume Added									
MS-IS_00015	11/23/19	11/23/18	Methylene Chloride, Lot 203837	250 mL	MS-567684_00019	45 mL	1,4-Dichlorobenzene-d4	400 ug/mL							
							Acenaphthene-d10	400 ug/mL							
							Chrysene-d12	400 ug/mL							
							Naphthalene-d8	400 ug/mL							
							Perylene-d12	400 ug/mL							
					MS-567684_00021	5 mL	1,4-Dichlorobenzene-d4	400 ug/mL							
							Acenaphthene-d10	400 ug/mL							
							Chrysene-d12	400 ug/mL							
							Naphthalene-d8	400 ug/mL							
							Perylene-d12	400 ug/mL							
.MS-567684_00019	07/31/20	Restek, Lot A0112833			(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL							
							Acenaphthene-d10	2000 ug/mL							
							Chrysene-d12	2000 ug/mL							
							Naphthalene-d8	2000 ug/mL							
							Perylene-d12	2000 ug/mL							
							Phenanthrene-d10	2000 ug/mL							
							.MS-567684_00021	12/31/22	Restek, Lot A0129635			(Purchased Reagent)		1,4-Dichlorobenzene-d4	2000 ug/mL
														Acenaphthene-d10	2000 ug/mL
														Chrysene-d12	2000 ug/mL
														Naphthalene-d8	2000 ug/mL
Perylene-d12	2000 ug/mL														
Phenanthrene-d10	2000 ug/mL														
MS-SIM CCV_00084	07/30/19	04/01/19	Methylene Chloride, Lot 203837	1000 uL	MS-SIM IS_00034	100 uL								Acenaphthene-d10	0.6 ug/mL
														Chrysene-d12	0.6 ug/mL
														Perylene-d12	0.6 ug/mL
														Phenanthrene-d10	0.6 ug/mL
.MS-SIM IS_00034	11/23/19	12/03/18	Methylene Chloride, Lot 209578	100 mL	MS-IS_00015	1500 uL	Acenaphthene-d10	6 ug/mL							
							Chrysene-d12	6 ug/mL							
							Perylene-d12	6 ug/mL							
							Phenanthrene-d10	6 ug/mL							
..MS-IS_00015	11/23/19	11/23/18	Methylene Chloride, Lot 203837	250 mL	MS-567684_00019	45 mL	Acenaphthene-d10	400 ug/mL							
							Chrysene-d12	400 ug/mL							
							Perylene-d12	400 ug/mL							
							Phenanthrene-d10	400 ug/mL							
					MS-567684_00021	5 mL	Acenaphthene-d10	400 ug/mL							
							Chrysene-d12	400 ug/mL							
							Perylene-d12	400 ug/mL							
							Phenanthrene-d10	400 ug/mL							
...MS-567684_00019	07/31/20	Restek, Lot A0112833			(Purchased Reagent)		Acenaphthene-d10	2000 ug/mL							
							Chrysene-d12	2000 ug/mL							
							Perylene-d12	2000 ug/mL							
							Phenanthrene-d10	2000 ug/mL							

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...MS-567684_00021	12/31/22		Restek, Lot A0129635		(Purchased Reagent)		Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
MS-SIM CCV_00084	07/30/19	04/01/19	Methylene Chloride, Lot 203837	1000 uL	MS-SIMSL_00031	30 uL	2-methylnaphthalene-d10	0.6 ug/mL
							Fluoranthene-d10	0.6 ug/mL
							2-Methylnaphthalene	1.2 ug/mL
							1-Methylnaphthalene	0.6 ug/mL
							Acenaphthene	0.6 ug/mL
							Acenaphthylene	0.6 ug/mL
							Anthracene	0.6 ug/mL
							Benzo[a]anthracene	0.6 ug/mL
							Benzo[a]pyrene	0.6 ug/mL
							Benzo[b]fluoranthene	0.6 ug/mL
							Benzo[g,h,i]perylene	0.6 ug/mL
							Benzo[k]fluoranthene	0.6 ug/mL
							Chrysene	0.6 ug/mL
							Dibenz(a,h)anthracene	0.6 ug/mL
							Fluoranthene	0.6 ug/mL
							Fluorene	0.6 ug/mL
							Indeno[1,2,3-cd]pyrene	0.6 ug/mL
							Naphthalene	0.6 ug/mL
							Phenanthrene	0.6 ug/mL
							Pyrene	0.6 ug/mL
							2-Fluorobiphenyl	0.6 ug/mL
							Nitrobenzene-d5	0.6 ug/mL
							Terphenyl-d14	0.6 ug/mL
.MS-SIMSL_00031	07/30/19	04/01/19	Methylene Chloride, Lot 203837	10 mL	DOD_ADD_SURR_00004	200 uL	2-methylnaphthalene-d10	20 ug/mL
							Fluoranthene-d10	20 ug/mL
					MS-SIM SL_Stk_00021	1 mL	2-Methylnaphthalene	40 ug/mL
							1-Methylnaphthalene	20 ug/mL
							Acenaphthene	20 ug/mL
							Acenaphthylene	20 ug/mL
							Anthracene	20 ug/mL
							Benzo[a]anthracene	20 ug/mL
							Benzo[a]pyrene	20 ug/mL
							Benzo[b]fluoranthene	20 ug/mL
							Benzo[g,h,i]perylene	20 ug/mL
							Benzo[k]fluoranthene	20 ug/mL
							Chrysene	20 ug/mL
							Dibenz(a,h)anthracene	20 ug/mL
							Fluoranthene	20 ug/mL
							Fluorene	20 ug/mL
							Indeno[1,2,3-cd]pyrene	20 ug/mL
							Naphthalene	20 ug/mL
							Phenanthrene	20 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					MS-SIMSurrInt_00009	0.2 mL	Pyrene	20 ug/mL
							2-Fluorobiphenyl	20 ug/mL
							Nitrobenzene-d5	20 ug/mL
							Terphenyl-d14	20 ug/mL
..DOD_ADD_SURR_00004	01/22/20		O2SI, Lot 334026		(Purchased Reagent)		2-methylnaphthalene-d10	1000 mg/L
							Fluoranthene-d10	1000 mg/L
..MS-SIM SL_Stk_00021	03/31/20	04/01/19	Methylene Chloride, Lot 203837	5 mL	MS-31010_00013	0.5 mL	2-Methylnaphthalene	400 ug/mL
					MS-31995_00006	0.5 mL	1-Methylnaphthalene	200 ug/mL
							2-Methylnaphthalene	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Anthracene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Chrysene	200 ug/mL
							Dibenz(a,h)anthracene	200 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Naphthalene	200 ug/mL
							Phenanthrene	200 ug/mL
							Pyrene	200 ug/mL
...MS-31010_00013	10/31/21		Restek, Lot A0139726		(Purchased Reagent)		2-Methylnaphthalene	2000 ug/mL
...MS-31995_00006	07/31/24		Restek, Lot A0140782		(Purchased Reagent)		1-Methylnaphthalene	2000 ug/mL
							2-Methylnaphthalene	2000 ug/mL
							Acenaphthene	2000 ug/mL
							Acenaphthylene	2000 ug/mL
							Anthracene	2000 ug/mL
							Benzo[a]anthracene	2000 ug/mL
							Benzo[a]pyrene	2000 ug/mL
							Benzo[b]fluoranthene	2000 ug/mL
							Benzo[g,h,i]perylene	2000 ug/mL
							Benzo[k]fluoranthene	2000 ug/mL
							Chrysene	2000 ug/mL
							Dibenz(a,h)anthracene	2000 ug/mL
							Fluoranthene	2000 ug/mL
							Fluorene	2000 ug/mL
							Indeno[1,2,3-cd]pyrene	2000 ug/mL
							Naphthalene	2000 ug/mL
							Phenanthrene	2000 ug/mL
							Pyrene	2000 ug/mL
..MS-SIMSurrInt_00009	07/30/19	01/30/19	Methylene Chloride, Lot 209578	1 mL	MS-567685_00005	200 uL	2-Fluorobiphenyl	1000 ug/mL
							Nitrobenzene-d5	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Terphenyl-d14	1000 ug/mL
...MS-567685_00005	07/30/19		Restek, Lot A0130500		(Purchased Reagent)		2-Fluorobiphenyl	5000 ug/mL
							Nitrobenzene-d5	5000 ug/mL
							Terphenyl-d14	5000 ug/mL
MS-SIM IS_00034	11/23/19	12/03/18	Methylene Chloride, Lot 209578	100 mL	MS-IS_00015	1500 uL	Acenaphthene-d10	6 ug/mL
							Chrysene-d12	6 ug/mL
							Perylene-d12	6 ug/mL
							Phenanthrene-d10	6 ug/mL
.MS-IS_00015	11/23/19	11/23/18	Methylene Chloride, Lot 203837	250 mL	MS-567684_00019	45 mL	Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
					MS-567684_00021	5 mL	Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
..MS-567684_00019	07/31/20		Restek, Lot A0112833		(Purchased Reagent)	Acenaphthene-d10	2000 ug/mL	
						Chrysene-d12	2000 ug/mL	
						Perylene-d12	2000 ug/mL	
						Phenanthrene-d10	2000 ug/mL	
..MS-567684_00021	12/31/22		Restek, Lot A0129635		(Purchased Reagent)	Acenaphthene-d10	2000 ug/mL	
						Chrysene-d12	2000 ug/mL	
						Perylene-d12	2000 ug/mL	
						Phenanthrene-d10	2000 ug/mL	
MS-SIM SSV2_00010	03/31/19	02/27/19	Methylene Chloride, Lot 203837	1000 uL	MS-SIM IS_00034	100 uL	Acenaphthene-d10	0.6 ug/mL
							Chrysene-d12	0.6 ug/mL
							Perylene-d12	0.6 ug/mL
							Phenanthrene-d10	0.6 ug/mL
.MS-SIM IS_00034	11/23/19	12/03/18	Methylene Chloride, Lot 209578	100 mL	MS-IS_00015	1500 uL	Acenaphthene-d10	6 ug/mL
							Chrysene-d12	6 ug/mL
							Perylene-d12	6 ug/mL
							Phenanthrene-d10	6 ug/mL
..MS-IS_00015	11/23/19	11/23/18	Methylene Chloride, Lot 203837	250 mL	MS-567684_00019	45 mL	Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
					MS-567684_00021	5 mL	Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
...MS-567684_00019	07/31/20		Restek, Lot A0112833		(Purchased Reagent)	Acenaphthene-d10	2000 ug/mL	
						Chrysene-d12	2000 ug/mL	
						Perylene-d12	2000 ug/mL	

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Phenanthrene-d10	2000 ug/mL
...MS-567684_00021	12/31/22	Restek, Lot A0129635			(Purchased Reagent)		Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
MS-SIM SSV2_00010	03/31/19	02/27/19	Methylene Chloride, Lot 203837	1000 uL	MS-SIM SSV_00130	30 uL	1-Methylnaphthalene	0.6 ug/mL
							2-Methylnaphthalene	0.6 ug/mL
							Acenaphthene	0.6 ug/mL
							Acenaphthylene	0.6 ug/mL
							Anthracene	0.6 ug/mL
							Benzo[a]anthracene	0.6 ug/mL
							Benzo[a]pyrene	0.6 ug/mL
							Benzo[b]fluoranthene	0.6 ug/mL
							Benzo[g,h,i]perylene	0.6 ug/mL
							Benzo[k]fluoranthene	0.6 ug/mL
							Chrysene	0.6 ug/mL
							Dibenz (a,h) anthracene	0.6 ug/mL
							Fluoranthene	0.6 ug/mL
							Fluorene	0.6 ug/mL
							Indeno[1,2,3-cd]pyrene	0.6 ug/mL
							Naphthalene	0.6 ug/mL
							Phenanthrene	0.6 ug/mL
							Pyrene	0.6 ug/mL
.MS-SIM SSV_00130	03/31/19	07/02/18	Methylene Chloride, Lot 187286	10 mL	MS-HSLB1_STK_00012	1 mL	1-Methylnaphthalene	20 ug/mL
							2-Methylnaphthalene	20 ug/mL
							Acenaphthene	20 ug/mL
							Acenaphthylene	20 ug/mL
							Anthracene	20 ug/mL
							Benzo[a]anthracene	20 ug/mL
							Benzo[a]pyrene	20 ug/mL
							Benzo[b]fluoranthene	20 ug/mL
							Benzo[g,h,i]perylene	20 ug/mL
							Benzo[k]fluoranthene	20 ug/mL
							Chrysene	20 ug/mL
							Dibenz (a,h) anthracene	20 ug/mL
							Fluoranthene	20 ug/mL
							Fluorene	20 ug/mL
							Indeno[1,2,3-cd]pyrene	20 ug/mL
Naphthalene	20 ug/mL							
Phenanthrene	20 ug/mL							
Pyrene	20 ug/mL							
..MS-HSLB1_STK_00012	03/31/19	06/18/18	Methylene Chloride, Lot 187286	5 mL	MS-571995.SEC_00002	1 mL	1-Methylnaphthalene	200 ug/mL
							2-Methylnaphthalene	200 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Anthracene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Chrysene	200 ug/mL
							Dibenz(a,h)anthracene	200 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Naphthalene	200 ug/mL
							Phenanthrene	200 ug/mL
							Pyrene	200 ug/mL
...MS-571995.SEC_00002	03/31/19	Restek, Lot A0131190			(Purchased Reagent)		1-Methylnaphthalene	1000 ug/mL
							2-Methylnaphthalene	1000 ug/mL
							Acenaphthene	1000 ug/mL
							Acenaphthylene	1000 ug/mL
							Anthracene	1000 ug/mL
							Benzo[a]anthracene	1000 ug/mL
							Benzo[a]pyrene	1000 ug/mL
							Benzo[b]fluoranthene	1000 ug/mL
							Benzo[g,h,i]perylene	1000 ug/mL
							Benzo[k]fluoranthene	1000 ug/mL
							Chrysene	1000 ug/mL
							Dibenz(a,h)anthracene	1000 ug/mL
							Fluoranthene	1000 ug/mL
							Fluorene	1000 ug/mL
							Indeno[1,2,3-cd]pyrene	1000 ug/mL
							Naphthalene	1000 ug/mL
							Phenanthrene	1000 ug/mL
							Pyrene	1000 ug/mL
MS-SIMSL 0.01_00008	03/31/19	02/01/19	Methylene Chloride, Lot 203837	1000 uL	MS-SIM IS_00034	100 uL	Acenaphthene-d10	0.6 ug/mL
							Chrysene-d12	0.6 ug/mL
							Perylene-d12	0.6 ug/mL
							Phenanthrene-d10	0.6 ug/mL
					MS-SIMSL Int._00028	5 uL	2-methylnaphthalene-d10	0.01 ug/mL
							Fluoranthene-d10	0.01 ug/mL
							2-Methylnaphthalene	0.02 ug/mL
							1-Methylnaphthalene	0.01 ug/mL
							Acenaphthene	0.01 ug/mL
							Acenaphthylene	0.01 ug/mL
							Anthracene	0.01 ug/mL
							Benzo[a]anthracene	0.01 ug/mL
							Benzo[a]pyrene	0.01 ug/mL
							Benzo[b]fluoranthene	0.01 ug/mL
							Benzo[g,h,i]perylene	0.01 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Benzo[k]fluoranthene	0.01 ug/mL
							Chrysene	0.01 ug/mL
							Dibenz(a,h)anthracene	0.01 ug/mL
							Fluoranthene	0.01 ug/mL
							Fluorene	0.01 ug/mL
							Indeno[1,2,3-cd]pyrene	0.01 ug/mL
							Naphthalene	0.01 ug/mL
							Phenanthrene	0.01 ug/mL
							Pyrene	0.01 ug/mL
							2-Fluorobiphenyl	0.01 ug/mL
.MS-SIM IS_00034	11/23/19	12/03/18	Methylene Chloride, Lot 209578	100 mL	MS-IS_00015	1500 uL	Nitrobenzene-d5	0.01 ug/mL
							Terphenyl-d14	0.01 ug/mL
							Acenaphthene-d10	6 ug/mL
							Chrysene-d12	6 ug/mL
							Perylene-d12	6 ug/mL
..MS-IS_00015	11/23/19	11/23/18	Methylene Chloride, Lot 203837	250 mL	MS-567684_00019	45 mL	Phenanthrene-d10	6 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Perylene-d12	400 ug/mL
				5 mL	MS-567684_00021		Phenanthrene-d10	400 ug/mL
							Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Perylene-d12	400 ug/mL
...MS-567684_00019	07/31/20		Restek, Lot A0112833		(Purchased Reagent)		Phenanthrene-d10	400 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Perylene-d12	2000 ug/mL
...MS-567684_00021	12/31/22		Restek, Lot A0129635		(Purchased Reagent)		Phenanthrene-d10	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Perylene-d12	2000 ug/mL
.MS-SIMSL Int._00028	03/31/19	01/30/19	Methylene Chloride, Lot 209578	10 mL	MS-SIMSL_00030	1 mL	Phenanthrene-d10	2000 ug/mL
							2-methylnaphthalene-d10	2 ug/mL
							Fluoranthene-d10	2 ug/mL
							2-Methylnaphthalene	4 ug/mL
							1-Methylnaphthalene	2 ug/mL
							Acenaphthene	2 ug/mL
							Acenaphthylene	2 ug/mL
							Anthracene	2 ug/mL
							Benzo[a]anthracene	2 ug/mL
							Benzo[a]pyrene	2 ug/mL
							Benzo[b]fluoranthene	2 ug/mL
							Benzo[g,h,i]perylene	2 ug/mL
							Benzo[k]fluoranthene	2 ug/mL
							Chrysene	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Dibenz (a,h)anthracene	2 ug/mL
							Fluoranthene	2 ug/mL
							Fluorene	2 ug/mL
							Indeno[1,2,3-cd]pyrene	2 ug/mL
							Naphthalene	2 ug/mL
							Phenanthrene	2 ug/mL
							Pyrene	2 ug/mL
							2-Fluorobiphenyl	2 ug/mL
							Nitrobenzene-d5	2 ug/mL
							Terphenyl-d14	2 ug/mL
..MS-SIMSL_00030	03/31/19	01/30/19	Methylene Chloride, Lot 209578	10 mL	DOD_ADD_SURR_00002	200 uL	2-methylnaphthalene-d10	20 ug/mL
							Fluoranthene-d10	20 ug/mL
					MS-SIM SL_Stk_00020	1 mL	2-Methylnaphthalene	40 ug/mL
							1-Methylnaphthalene	20 ug/mL
							Acenaphthene	20 ug/mL
							Acenaphthylene	20 ug/mL
							Anthracene	20 ug/mL
							Benzo[a]anthracene	20 ug/mL
							Benzo[a]pyrene	20 ug/mL
							Benzo[b]fluoranthene	20 ug/mL
							Benzo[g,h,i]perylene	20 ug/mL
							Benzo[k]fluoranthene	20 ug/mL
							Chrysene	20 ug/mL
							Dibenz (a,h)anthracene	20 ug/mL
							Fluoranthene	20 ug/mL
							Fluorene	20 ug/mL
							Indeno[1,2,3-cd]pyrene	20 ug/mL
							Naphthalene	20 ug/mL
							Phenanthrene	20 ug/mL
							Pyrene	20 ug/mL
					MS-SIMSurInt_00009	0.2 mL	2-Fluorobiphenyl	20 ug/mL
							Nitrobenzene-d5	20 ug/mL
							Terphenyl-d14	20 ug/mL
...DOD_ADD_SURR_00002	05/22/19		O2SI, Lot 334026		(Purchased Reagent)		2-methylnaphthalene-d10	1000 mg/L
							Fluoranthene-d10	1000 mg/L
...MS-SIM SL_Stk_00020	03/31/19	08/01/18	Methylene Chloride, Lot 187286	5 mL	MS-31010_00011	0.5 mL	2-Methylnaphthalene	400 ug/mL
					MS-31995_00005	0.5 mL	1-Methylnaphthalene	200 ug/mL
							2-Methylnaphthalene	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Anthracene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Chrysene	200 ug/mL
							Dibenz (a,h) anthracene	200 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Naphthalene	200 ug/mL
							Phenanthrene	200 ug/mL
							Pyrene	200 ug/mL
....MS-31010_00011	03/31/19		Restek, Lot A0116027		(Purchased Reagent)		2-Methylnaphthalene	2000 ug/mL
....MS-31995_00005	01/31/21		Restek, Lot A0108907		(Purchased Reagent)		1-Methylnaphthalene	2000 ug/mL
							2-Methylnaphthalene	2000 ug/mL
							Acenaphthene	2000 ug/mL
							Acenaphthylene	2000 ug/mL
							Anthracene	2000 ug/mL
							Benzo[a]anthracene	2000 ug/mL
							Benzo[a]pyrene	2000 ug/mL
							Benzo[b]fluoranthene	2000 ug/mL
							Benzo[g,h,i]perylene	2000 ug/mL
							Benzo[k]fluoranthene	2000 ug/mL
							Chrysene	2000 ug/mL
							Dibenz (a,h) anthracene	2000 ug/mL
							Fluoranthene	2000 ug/mL
							Fluorene	2000 ug/mL
							Indeno[1,2,3-cd]pyrene	2000 ug/mL
							Naphthalene	2000 ug/mL
							Phenanthrene	2000 ug/mL
							Pyrene	2000 ug/mL
...MS-SIMSurrInt_00009	07/30/19	01/30/19	Methylene Chloride, Lot 209578	1 mL	MS-567685_00005	200 uL	2-Fluorobiphenyl	1000 ug/mL
							Nitrobenzene-d5	1000 ug/mL
							Terphenyl-d14	1000 ug/mL
....MS-567685_00005	07/30/19		Restek, Lot A0130500		(Purchased Reagent)		2-Fluorobiphenyl	5000 ug/mL
							Nitrobenzene-d5	5000 ug/mL
							Terphenyl-d14	5000 ug/mL
MS-SIMSL 0.02_00081	03/31/19	02/01/19	Methylene Chloride, Lot 203837	1000 uL	MS-SIM IS_00034	100 uL	Acenaphthene-d10	0.6 ug/mL
							Chrysene-d12	0.6 ug/mL
							Perylene-d12	0.6 ug/mL
							Phenanthrene-d10	0.6 ug/mL
					MS-SIMSL Int._00028	10 uL	2-methylnaphthalene-d10	0.02 ug/mL
							Fluoranthene-d10	0.02 ug/mL
							2-Methylnaphthalene	0.04 ug/mL
							1-Methylnaphthalene	0.02 ug/mL
							Acenaphthene	0.02 ug/mL
							Acenaphthylene	0.02 ug/mL
							Anthracene	0.02 ug/mL
							Benzo[a]anthracene	0.02 ug/mL
							Benzo[a]pyrene	0.02 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Benzo[b]fluoranthene	0.02 ug/mL
							Benzo[g,h,i]perylene	0.02 ug/mL
							Benzo[k]fluoranthene	0.02 ug/mL
							Chrysene	0.02 ug/mL
							Dibenz(a,h)anthracene	0.02 ug/mL
							Fluoranthene	0.02 ug/mL
							Fluorene	0.02 ug/mL
							Indeno[1,2,3-cd]pyrene	0.02 ug/mL
							Naphthalene	0.02 ug/mL
							Phenanthrene	0.02 ug/mL
							Pyrene	0.02 ug/mL
							2-Fluorobiphenyl	0.02 ug/mL
							Nitrobenzene-d5	0.02 ug/mL
							Terphenyl-d14	0.02 ug/mL
.MS-SIM IS_00034	11/23/19	12/03/18	Methylene Chloride, Lot 209578	100 mL	MS-IS_00015	1500 uL	Acenaphthene-d10	6 ug/mL
							Chrysene-d12	6 ug/mL
							Perylene-d12	6 ug/mL
							Phenanthrene-d10	6 ug/mL
..MS-IS_00015	11/23/19	11/23/18	Methylene Chloride, Lot 203837	250 mL	MS-567684_00019	45 mL	Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
					MS-567684_00021	5 mL	Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
...MS-567684_00019	07/31/20		Restek, Lot A0112833		(Purchased Reagent)		Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
...MS-567684_00021	12/31/22		Restek, Lot A0129635		(Purchased Reagent)		Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
.MS-SIMSL Int._00028	03/31/19	01/30/19	Methylene Chloride, Lot 209578	10 mL	MS-SIMSL_00030	1 mL	2-methylnaphthalene-d10	2 ug/mL
							Fluoranthene-d10	2 ug/mL
							2-Methylnaphthalene	4 ug/mL
							1-Methylnaphthalene	2 ug/mL
							Acenaphthene	2 ug/mL
							Acenaphthylene	2 ug/mL
							Anthracene	2 ug/mL
							Benzo[a]anthracene	2 ug/mL
							Benzo[a]pyrene	2 ug/mL
							Benzo[b]fluoranthene	2 ug/mL
							Benzo[g,h,i]perylene	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Benzo[k]fluoranthene	2 ug/mL
							Chrysene	2 ug/mL
							Dibenz(a,h)anthracene	2 ug/mL
							Fluoranthene	2 ug/mL
							Fluorene	2 ug/mL
							Indeno[1,2,3-cd]pyrene	2 ug/mL
							Naphthalene	2 ug/mL
							Phenanthrene	2 ug/mL
							Pyrene	2 ug/mL
							2-Fluorobiphenyl	2 ug/mL
							Nitrobenzene-d5	2 ug/mL
Terphenyl-d14	2 ug/mL							
..MS-SIMSL_00030	03/31/19	01/30/19	Methylene Chloride, Lot 209578	10 mL	DOD_ADD_SURR_00002	200 uL	2-methylnaphthalene-d10	20 ug/mL
					MS-SIM SL_Stk_00020	1 mL	Fluoranthene-d10	20 ug/mL
							2-Methylnaphthalene	40 ug/mL
							1-Methylnaphthalene	20 ug/mL
							Acenaphthene	20 ug/mL
							Acenaphthylene	20 ug/mL
							Anthracene	20 ug/mL
							Benzo[a]anthracene	20 ug/mL
							Benzo[a]pyrene	20 ug/mL
							Benzo[b]fluoranthene	20 ug/mL
							Benzo[g,h,i]perylene	20 ug/mL
							Benzo[k]fluoranthene	20 ug/mL
							Chrysene	20 ug/mL
							Dibenz(a,h)anthracene	20 ug/mL
							Fluoranthene	20 ug/mL
							Fluorene	20 ug/mL
							Indeno[1,2,3-cd]pyrene	20 ug/mL
							Naphthalene	20 ug/mL
							Phenanthrene	20 ug/mL
					Pyrene	20 ug/mL		
					MS-SIMSurrInt_00009	0.2 mL	2-Fluorobiphenyl	20 ug/mL
					Nitrobenzene-d5	20 ug/mL		
					Terphenyl-d14	20 ug/mL		
					...DOD_ADD_SURR_00002	05/22/19	O2SI, Lot 334026	
		Fluoranthene-d10	1000 mg/L					
...MS-SIM SL_Stk_00020	03/31/19	08/01/18	Methylene Chloride, Lot 187286	5 mL	MS-31010_00011	0.5 mL	2-Methylnaphthalene	400 ug/mL
					MS-31995_00005	0.5 mL	1-Methylnaphthalene	200 ug/mL
							2-Methylnaphthalene	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Anthracene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Chrysene	200 ug/mL
							Dibenz(a,h)anthracene	200 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Naphthalene	200 ug/mL
							Phenanthrene	200 ug/mL
							Pyrene	200 ug/mL
....MS-31010_00011	03/31/19		Restek, Lot A0116027		(Purchased Reagent)		2-Methylnaphthalene	2000 ug/mL
....MS-31995_00005	01/31/21		Restek, Lot A0108907		(Purchased Reagent)		1-Methylnaphthalene	2000 ug/mL
							2-Methylnaphthalene	2000 ug/mL
							Acenaphthene	2000 ug/mL
							Acenaphthylene	2000 ug/mL
							Anthracene	2000 ug/mL
							Benzo[a]anthracene	2000 ug/mL
							Benzo[a]pyrene	2000 ug/mL
							Benzo[b]fluoranthene	2000 ug/mL
							Benzo[g,h,i]perylene	2000 ug/mL
							Benzo[k]fluoranthene	2000 ug/mL
							Chrysene	2000 ug/mL
							Dibenz(a,h)anthracene	2000 ug/mL
							Fluoranthene	2000 ug/mL
							Fluorene	2000 ug/mL
							Indeno[1,2,3-cd]pyrene	2000 ug/mL
							Naphthalene	2000 ug/mL
							Phenanthrene	2000 ug/mL
							Pyrene	2000 ug/mL
...MS-SIMSurrInt_00009	07/30/19	01/30/19	Methylene Chloride, Lot 209578	1 mL	MS-567685_00005	200 uL	2-Fluorobiphenyl	1000 ug/mL
							Nitrobenzene-d5	1000 ug/mL
							Terphenyl-d14	1000 ug/mL
....MS-567685_00005	07/30/19		Restek, Lot A0130500		(Purchased Reagent)		2-Fluorobiphenyl	5000 ug/mL
							Nitrobenzene-d5	5000 ug/mL
							Terphenyl-d14	5000 ug/mL
MS-SIMSL 0.05_00009	03/31/19	02/01/19	Methylene Chloride, Lot 203837	1000 uL	MS-SIM IS_00034	100 uL	Acenaphthene-d10	0.6 ug/mL
							Chrysene-d12	0.6 ug/mL
							Perylene-d12	0.6 ug/mL
							Phenanthrene-d10	0.6 ug/mL
					MS-SIMSL Int._00028	25 uL	2-methylnaphthalene-d10	0.05 ug/mL
							Fluoranthene-d10	0.05 ug/mL
							2-Methylnaphthalene	0.1 ug/mL
							1-Methylnaphthalene	0.05 ug/mL
							Acenaphthene	0.05 ug/mL
							Acenaphthylene	0.05 ug/mL
							Anthracene	0.05 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Benzo[a]anthracene	0.05 ug/mL
							Benzo[a]pyrene	0.05 ug/mL
							Benzo[b]fluoranthene	0.05 ug/mL
							Benzo[g,h,i]perylene	0.05 ug/mL
							Benzo[k]fluoranthene	0.05 ug/mL
							Chrysene	0.05 ug/mL
							Dibenz(a,h)anthracene	0.05 ug/mL
							Fluoranthene	0.05 ug/mL
							Fluorene	0.05 ug/mL
							Indeno[1,2,3-cd]pyrene	0.05 ug/mL
							Naphthalene	0.05 ug/mL
							Phenanthrene	0.05 ug/mL
							Pyrene	0.05 ug/mL
							2-Fluorobiphenyl	0.05 ug/mL
							Nitrobenzene-d5	0.05 ug/mL
							Terphenyl-d14	0.05 ug/mL
.MS-SIM IS_00034	11/23/19	12/03/18	Methylene Chloride, Lot 209578	100 mL	MS-IS_00015	1500 uL	Acenaphthene-d10	6 ug/mL
							Chrysene-d12	6 ug/mL
							Perylene-d12	6 ug/mL
							Phenanthrene-d10	6 ug/mL
..MS-IS_00015	11/23/19	11/23/18	Methylene Chloride, Lot 203837	250 mL	MS-567684_00019	45 mL	Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
					MS-567684_00021	5 mL	Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
...MS-567684_00019	07/31/20		Restek, Lot A0112833		(Purchased Reagent)		Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
...MS-567684_00021	12/31/22		Restek, Lot A0129635		(Purchased Reagent)		Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
.MS-SIMSL Int._00028	03/31/19	01/30/19	Methylene Chloride, Lot 209578	10 mL	MS-SIMSL_00030	1 mL	2-methylnaphthalene-d10	2 ug/mL
							Fluoranthene-d10	2 ug/mL
							2-Methylnaphthalene	4 ug/mL
							1-Methylnaphthalene	2 ug/mL
							Acenaphthene	2 ug/mL
							Acenaphthylene	2 ug/mL
							Anthracene	2 ug/mL
							Benzo[a]anthracene	2 ug/mL
							Benzo[a]pyrene	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Benzo[b]fluoranthene	2 ug/mL
							Benzo[g,h,i]perylene	2 ug/mL
							Benzo[k]fluoranthene	2 ug/mL
							Chrysene	2 ug/mL
							Dibenz(a,h)anthracene	2 ug/mL
							Fluoranthene	2 ug/mL
							Fluorene	2 ug/mL
							Indeno[1,2,3-cd]pyrene	2 ug/mL
							Naphthalene	2 ug/mL
							Phenanthrene	2 ug/mL
							Pyrene	2 ug/mL
							2-Fluorobiphenyl	2 ug/mL
							Nitrobenzene-d5	2 ug/mL
							Terphenyl-d14	2 ug/mL
..MS-SIMSL_00030	03/31/19	01/30/19	Methylene Chloride, Lot 209578	10 mL	DOD_ADD_SURR_00002	200 uL	2-methylnaphthalene-d10	20 ug/mL
							Fluoranthene-d10	20 ug/mL
					MS-SIM SL_Stk_00020	1 mL	2-Methylnaphthalene	40 ug/mL
							1-Methylnaphthalene	20 ug/mL
							Acenaphthene	20 ug/mL
							Acenaphthylene	20 ug/mL
							Anthracene	20 ug/mL
							Benzo[a]anthracene	20 ug/mL
							Benzo[a]pyrene	20 ug/mL
							Benzo[b]fluoranthene	20 ug/mL
							Benzo[g,h,i]perylene	20 ug/mL
							Benzo[k]fluoranthene	20 ug/mL
							Chrysene	20 ug/mL
							Dibenz(a,h)anthracene	20 ug/mL
							Fluoranthene	20 ug/mL
							Fluorene	20 ug/mL
							Indeno[1,2,3-cd]pyrene	20 ug/mL
							Naphthalene	20 ug/mL
							Phenanthrene	20 ug/mL
							Pyrene	20 ug/mL
					MS-SIMSurInt_00009	0.2 mL	2-Fluorobiphenyl	20 ug/mL
							Nitrobenzene-d5	20 ug/mL
							Terphenyl-d14	20 ug/mL
...DOD_ADD_SURR_00002	05/22/19		O2SI, Lot 334026		(Purchased Reagent)		2-methylnaphthalene-d10	1000 mg/L
							Fluoranthene-d10	1000 mg/L
...MS-SIM SL_Stk_00020	03/31/19	08/01/18	Methylene Chloride, Lot 187286	5 mL	MS-31010_00011	0.5 mL	2-Methylnaphthalene	400 ug/mL
					MS-31995_00005	0.5 mL	1-Methylnaphthalene	200 ug/mL
							2-Methylnaphthalene	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Anthracene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Chrysene	200 ug/mL
							Dibenz(a,h)anthracene	200 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Naphthalene	200 ug/mL
							Phenanthrene	200 ug/mL
							Pyrene	200 ug/mL
...MS-31010_00011	03/31/19		Restek, Lot A0116027		(Purchased Reagent)		2-Methylnaphthalene	2000 ug/mL
....MS-31995_00005	01/31/21		Restek, Lot A0108907		(Purchased Reagent)		1-Methylnaphthalene	2000 ug/mL
							2-Methylnaphthalene	2000 ug/mL
							Acenaphthene	2000 ug/mL
							Acenaphthylene	2000 ug/mL
							Anthracene	2000 ug/mL
							Benzo[a]anthracene	2000 ug/mL
							Benzo[a]pyrene	2000 ug/mL
							Benzo[b]fluoranthene	2000 ug/mL
							Benzo[g,h,i]perylene	2000 ug/mL
							Benzo[k]fluoranthene	2000 ug/mL
							Chrysene	2000 ug/mL
							Dibenz(a,h)anthracene	2000 ug/mL
							Fluoranthene	2000 ug/mL
							Fluorene	2000 ug/mL
							Indeno[1,2,3-cd]pyrene	2000 ug/mL
							Naphthalene	2000 ug/mL
							Phenanthrene	2000 ug/mL
							Pyrene	2000 ug/mL
...MS-SIMSurrInt_00009	07/30/19	01/30/19	Methylene Chloride, Lot 209578	1 mL	MS-567685_00005	200 uL	2-Fluorobiphenyl	1000 ug/mL
							Nitrobenzene-d5	1000 ug/mL
							Terphenyl-d14	1000 ug/mL
....MS-567685_00005	07/30/19		Restek, Lot A0130500		(Purchased Reagent)		2-Fluorobiphenyl	5000 ug/mL
							Nitrobenzene-d5	5000 ug/mL
							Terphenyl-d14	5000 ug/mL
MS-SIMSL 0.1_00077	03/31/19	02/01/19	Methylene Chloride, Lot 203837	1000 uL	MS-SIM IS_00034	100 uL	Acenaphthene-d10	0.6 ug/mL
							Chrysene-d12	0.6 ug/mL
							Perylene-d12	0.6 ug/mL
							Phenanthrene-d10	0.6 ug/mL
					MS-SIMSL Int._00028	50 uL	2-methylnaphthalene-d10	0.1 ug/mL
							Fluoranthene-d10	0.1 ug/mL
							2-Methylnaphthalene	0.2 ug/mL
							1-Methylnaphthalene	0.1 ug/mL
							Acenaphthene	0.1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Acenaphthylene	0.1 ug/mL
							Anthracene	0.1 ug/mL
							Benzo[a]anthracene	0.1 ug/mL
							Benzo[a]pyrene	0.1 ug/mL
							Benzo[b]fluoranthene	0.1 ug/mL
							Benzo[g,h,i]perylene	0.1 ug/mL
							Benzo[k]fluoranthene	0.1 ug/mL
							Chrysene	0.1 ug/mL
							Dibenz (a,h) anthracene	0.1 ug/mL
							Fluoranthene	0.1 ug/mL
							Fluorene	0.1 ug/mL
							Indeno[1,2,3-cd]pyrene	0.1 ug/mL
							Naphthalene	0.1 ug/mL
							Phenanthrene	0.1 ug/mL
							Pyrene	0.1 ug/mL
							2-Fluorobiphenyl	0.1 ug/mL
							Nitrobenzene-d5	0.1 ug/mL
							Terphenyl-d14	0.1 ug/mL
.MS-SIM IS_00034	11/23/19	12/03/18	Methylene Chloride, Lot 209578	100 mL	MS-IS_00015	1500 uL	Acenaphthene-d10	6 ug/mL
							Chrysene-d12	6 ug/mL
							Perylene-d12	6 ug/mL
							Phenanthrene-d10	6 ug/mL
..MS-IS_00015	11/23/19	11/23/18	Methylene Chloride, Lot 203837	250 mL	MS-567684_00019	45 mL	Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
					MS-567684_00021	5 mL	Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
...MS-567684_00019	07/31/20		Restek, Lot A0112833		(Purchased Reagent)		Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
...MS-567684_00021	12/31/22		Restek, Lot A0129635		(Purchased Reagent)		Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
.MS-SIMSL Int._00028	03/31/19	01/30/19	Methylene Chloride, Lot 209578	10 mL	MS-SIMSL_00030	1 mL	2-methylnaphthalene-d10	2 ug/mL
							Fluoranthene-d10	2 ug/mL
							2-Methylnaphthalene	4 ug/mL
							1-Methylnaphthalene	2 ug/mL
							Acenaphthene	2 ug/mL
							Acenaphthylene	2 ug/mL
							Anthracene	2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Benzo[a]anthracene	2 ug/mL
							Benzo[a]pyrene	2 ug/mL
							Benzo[b]fluoranthene	2 ug/mL
							Benzo[g,h,i]perylene	2 ug/mL
							Benzo[k]fluoranthene	2 ug/mL
							Chrysene	2 ug/mL
							Dibenz(a,h)anthracene	2 ug/mL
							Fluoranthene	2 ug/mL
							Fluorene	2 ug/mL
							Indeno[1,2,3-cd]pyrene	2 ug/mL
							Naphthalene	2 ug/mL
							Phenanthrene	2 ug/mL
							Pyrene	2 ug/mL
							2-Fluorobiphenyl	2 ug/mL
							Nitrobenzene-d5	2 ug/mL
							Terphenyl-d14	2 ug/mL
..MS-SIMSL_00030	03/31/19	01/30/19	Methylene Chloride, Lot 209578	10 mL	DOD_ADD_SURR_00002	200 uL	2-methylnaphthalene-d10	20 ug/mL
							Fluoranthene-d10	20 ug/mL
					MS-SIM SL_Stk_00020	1 mL	2-Methylnaphthalene	40 ug/mL
							1-Methylnaphthalene	20 ug/mL
							Acenaphthene	20 ug/mL
							Acenaphthylene	20 ug/mL
							Anthracene	20 ug/mL
							Benzo[a]anthracene	20 ug/mL
							Benzo[a]pyrene	20 ug/mL
							Benzo[b]fluoranthene	20 ug/mL
							Benzo[g,h,i]perylene	20 ug/mL
							Benzo[k]fluoranthene	20 ug/mL
							Chrysene	20 ug/mL
							Dibenz(a,h)anthracene	20 ug/mL
							Fluoranthene	20 ug/mL
							Fluorene	20 ug/mL
							Indeno[1,2,3-cd]pyrene	20 ug/mL
							Naphthalene	20 ug/mL
							Phenanthrene	20 ug/mL
							Pyrene	20 ug/mL
					MS-SIMSurrInt_00009	0.2 mL	2-Fluorobiphenyl	20 ug/mL
							Nitrobenzene-d5	20 ug/mL
							Terphenyl-d14	20 ug/mL
...DOD_ADD_SURR_00002	05/22/19		O2SI, Lot 334026		(Purchased Reagent)		2-methylnaphthalene-d10	1000 mg/L
							Fluoranthene-d10	1000 mg/L
...MS-SIM SL_Stk_00020	03/31/19	08/01/18	Methylene Chloride, Lot 187286	5 mL	MS-31010_00011	0.5 mL	2-Methylnaphthalene	400 ug/mL
					MS-31995_00005	0.5 mL	1-Methylnaphthalene	200 ug/mL
							2-Methylnaphthalene	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Anthracene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Chrysene	200 ug/mL
							Dibenz(a,h)anthracene	200 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Naphthalene	200 ug/mL
							Phenanthrene	200 ug/mL
							Pyrene	200 ug/mL
...MS-31010_00011	03/31/19		Restek, Lot A0116027		(Purchased Reagent)		2-Methylnaphthalene	2000 ug/mL
....MS-31995_00005	01/31/21		Restek, Lot A0108907		(Purchased Reagent)		1-Methylnaphthalene	2000 ug/mL
							2-Methylnaphthalene	2000 ug/mL
							Acenaphthene	2000 ug/mL
							Acenaphthylene	2000 ug/mL
							Anthracene	2000 ug/mL
							Benzo[a]anthracene	2000 ug/mL
							Benzo[a]pyrene	2000 ug/mL
							Benzo[b]fluoranthene	2000 ug/mL
							Benzo[g,h,i]perylene	2000 ug/mL
							Benzo[k]fluoranthene	2000 ug/mL
							Chrysene	2000 ug/mL
							Dibenz(a,h)anthracene	2000 ug/mL
							Fluoranthene	2000 ug/mL
							Fluorene	2000 ug/mL
							Indeno[1,2,3-cd]pyrene	2000 ug/mL
							Naphthalene	2000 ug/mL
							Phenanthrene	2000 ug/mL
							Pyrene	2000 ug/mL
...MS-SIMSurInt_00009	07/30/19	01/30/19	Methylene Chloride, Lot 209578	1 mL	MS-567685_00005	200 uL	2-Fluorobiphenyl	1000 ug/mL
							Nitrobenzene-d5	1000 ug/mL
							Terphenyl-d14	1000 ug/mL
....MS-567685_00005	07/30/19		Restek, Lot A0130500		(Purchased Reagent)		2-Fluorobiphenyl	5000 ug/mL
							Nitrobenzene-d5	5000 ug/mL
							Terphenyl-d14	5000 ug/mL
MS-SIMSL 0.3_00076	03/31/19	02/01/19	Methylene Chloride, Lot 203837	1000 uL	MS-SIM IS_00034	100 uL	Acenaphthene-d10	0.6 ug/mL
							Chrysene-d12	0.6 ug/mL
							Perylene-d12	0.6 ug/mL
							Phenanthrene-d10	0.6 ug/mL
					MS-SIMSL Int._00028	150 uL	2-methylnaphthalene-d10	0.3 ug/mL
							Fluoranthene-d10	0.3 ug/mL
							2-Methylnaphthalene	0.6 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1-Methylnaphthalene	0.3 ug/mL
							Acenaphthene	0.3 ug/mL
							Acenaphthylene	0.3 ug/mL
							Anthracene	0.3 ug/mL
							Benzo[a]anthracene	0.3 ug/mL
							Benzo[a]pyrene	0.3 ug/mL
							Benzo[b]fluoranthene	0.3 ug/mL
							Benzo[g,h,i]perylene	0.3 ug/mL
							Benzo[k]fluoranthene	0.3 ug/mL
							Chrysene	0.3 ug/mL
							Dibenz(a,h)anthracene	0.3 ug/mL
							Fluoranthene	0.3 ug/mL
							Fluorene	0.3 ug/mL
							Indeno[1,2,3-cd]pyrene	0.3 ug/mL
							Naphthalene	0.3 ug/mL
							Phenanthrene	0.3 ug/mL
							Pyrene	0.3 ug/mL
							2-Fluorobiphenyl	0.3 ug/mL
							Nitrobenzene-d5	0.3 ug/mL
							Terphenyl-d14	0.3 ug/mL
.MS-SIM IS_00034	11/23/19	12/03/18	Methylene Chloride, Lot 209578	100 mL	MS-IS_00015	1500 uL	Acenaphthene-d10	6 ug/mL
							Chrysene-d12	6 ug/mL
							Perylene-d12	6 ug/mL
							Phenanthrene-d10	6 ug/mL
..MS-IS_00015	11/23/19	11/23/18	Methylene Chloride, Lot 203837	250 mL	MS-567684_00019	45 mL	Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
					MS-567684_00021	5 mL	Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
...MS-567684_00019	07/31/20		Restek, Lot A0112833		(Purchased Reagent)		Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
...MS-567684_00021	12/31/22		Restek, Lot A0129635		(Purchased Reagent)		Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
.MS-SIMSL Int._00028	03/31/19	01/30/19	Methylene Chloride, Lot 209578	10 mL	MS-SIMSL_00030	1 mL	2-methylnaphthalene-d10	2 ug/mL
							Fluoranthene-d10	2 ug/mL
							2-Methylnaphthalene	4 ug/mL
							1-Methylnaphthalene	2 ug/mL
							Acenaphthene	2 ug/mL

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

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REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Anthracene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Chrysene	200 ug/mL
							Dibenz(a,h)anthracene	200 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Naphthalene	200 ug/mL
							Phenanthrene	200 ug/mL
							Pyrene	200 ug/mL
...MS-31010_00011	03/31/19		Restek, Lot A0116027		(Purchased Reagent)		2-Methylnaphthalene	2000 ug/mL
....MS-31995_00005	01/31/21		Restek, Lot A0108907		(Purchased Reagent)		1-Methylnaphthalene	2000 ug/mL
							2-Methylnaphthalene	2000 ug/mL
							Acenaphthene	2000 ug/mL
							Acenaphthylene	2000 ug/mL
							Anthracene	2000 ug/mL
							Benzo[a]anthracene	2000 ug/mL
							Benzo[a]pyrene	2000 ug/mL
							Benzo[b]fluoranthene	2000 ug/mL
							Benzo[g,h,i]perylene	2000 ug/mL
							Benzo[k]fluoranthene	2000 ug/mL
							Chrysene	2000 ug/mL
							Dibenz(a,h)anthracene	2000 ug/mL
							Fluoranthene	2000 ug/mL
							Fluorene	2000 ug/mL
							Indeno[1,2,3-cd]pyrene	2000 ug/mL
							Naphthalene	2000 ug/mL
							Phenanthrene	2000 ug/mL
							Pyrene	2000 ug/mL
...MS-SIMSurrInt_00009	07/30/19	01/30/19	Methylene Chloride, Lot 209578	1 mL	MS-567685_00005	200 uL	2-Fluorobiphenyl	1000 ug/mL
							Nitrobenzene-d5	1000 ug/mL
							Terphenyl-d14	1000 ug/mL
....MS-567685_00005	07/30/19		Restek, Lot A0130500		(Purchased Reagent)		2-Fluorobiphenyl	5000 ug/mL
							Nitrobenzene-d5	5000 ug/mL
							Terphenyl-d14	5000 ug/mL
MS-SIMSL 0.6_00146	03/31/19	02/01/19	Methylene Chloride, Lot 203837	1000 uL	MS-SIM IS_00034	100 uL	Acenaphthene-d10	0.6 ug/mL
							Chrysene-d12	0.6 ug/mL
							Perylene-d12	0.6 ug/mL
							Phenanthrene-d10	0.6 ug/mL
					MS-SIMSL_00030	30 uL	2-methylnaphthalene-d10	0.6 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Fluoranthene-d10	0.6 ug/mL
							2-Methylnaphthalene	1.2 ug/mL
							1-Methylnaphthalene	0.6 ug/mL
							Acenaphthene	0.6 ug/mL
							Acenaphthylene	0.6 ug/mL
							Anthracene	0.6 ug/mL
							Benzo[a]anthracene	0.6 ug/mL
							Benzo[a]pyrene	0.6 ug/mL
							Benzo[b]fluoranthene	0.6 ug/mL
							Benzo[g,h,i]perylene	0.6 ug/mL
							Benzo[k]fluoranthene	0.6 ug/mL
							Chrysene	0.6 ug/mL
							Dibenz(a,h)anthracene	0.6 ug/mL
							Fluoranthene	0.6 ug/mL
							Fluorene	0.6 ug/mL
							Indeno[1,2,3-cd]pyrene	0.6 ug/mL
							Naphthalene	0.6 ug/mL
							Phenanthrene	0.6 ug/mL
							Pyrene	0.6 ug/mL
							2-Fluorobiphenyl	0.6 ug/mL
							Nitrobenzene-d5	0.6 ug/mL
							Terphenyl-d14	0.6 ug/mL
.MS-SIM IS_00034	11/23/19	12/03/18	Methylene Chloride, Lot 209578	100 mL	MS-IS_00015	1500 uL	Acenaphthene-d10	6 ug/mL
							Chrysene-d12	6 ug/mL
							Perylene-d12	6 ug/mL
							Phenanthrene-d10	6 ug/mL
..MS-IS_00015	11/23/19	11/23/18	Methylene Chloride, Lot 203837	250 mL	MS-567684_00019	45 mL	Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
					MS-567684_00021	5 mL	Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
...MS-567684_00019	07/31/20		Restek, Lot A0112833		(Purchased Reagent)		Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
...MS-567684_00021	12/31/22		Restek, Lot A0129635		(Purchased Reagent)		Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
.MS-SIMSL_00030	03/31/19	01/30/19	Methylene Chloride, Lot 209578	10 mL	DOD_ADD_SURR_00002	200 uL	2-methylnaphthalene-d10	20 ug/mL
							Fluoranthene-d10	20 ug/mL
					MS-SIM SL_Stk_00020	1 mL	2-Methylnaphthalene	40 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1-Methylnaphthalene	20 ug/mL
							Acenaphthene	20 ug/mL
							Acenaphthylene	20 ug/mL
							Anthracene	20 ug/mL
							Benzo[a]anthracene	20 ug/mL
							Benzo[a]pyrene	20 ug/mL
							Benzo[b]fluoranthene	20 ug/mL
							Benzo[g,h,i]perylene	20 ug/mL
							Benzo[k]fluoranthene	20 ug/mL
							Chrysene	20 ug/mL
							Dibenz(a,h)anthracene	20 ug/mL
							Fluoranthene	20 ug/mL
							Fluorene	20 ug/mL
							Indeno[1,2,3-cd]pyrene	20 ug/mL
							Naphthalene	20 ug/mL
							Phenanthrene	20 ug/mL
							Pyrene	20 ug/mL
					MS-SIMSurrInt_00009	0.2 mL	2-Fluorobiphenyl	20 ug/mL
							Nitrobenzene-d5	20 ug/mL
							Terphenyl-d14	20 ug/mL
..DOD_ADD_SURR_00002	05/22/19	O2SI, Lot 334026			(Purchased Reagent)		2-methylnaphthalene-d10	1000 mg/L
							Fluoranthene-d10	1000 mg/L
..MS-SIM SL_Stk_00020	03/31/19	08/01/18	Methylene Chloride, Lot 187286	5 mL	MS-31010_00011	0.5 mL	2-Methylnaphthalene	400 ug/mL
							1-Methylnaphthalene	200 ug/mL
							2-Methylnaphthalene	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Anthracene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Chrysene	200 ug/mL
							Dibenz(a,h)anthracene	200 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Naphthalene	200 ug/mL
							Phenanthrene	200 ug/mL
							Pyrene	200 ug/mL
...MS-31010_00011	03/31/19	Restek, Lot A0116027			(Purchased Reagent)		2-Methylnaphthalene	2000 ug/mL
...MS-31995_00005	01/31/21	Restek, Lot A0108907			(Purchased Reagent)		1-Methylnaphthalene	2000 ug/mL
							2-Methylnaphthalene	2000 ug/mL
							Acenaphthene	2000 ug/mL
							Acenaphthylene	2000 ug/mL
							Anthracene	2000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Benzo[a]anthracene	2000 ug/mL
							Benzo[a]pyrene	2000 ug/mL
							Benzo[b]fluoranthene	2000 ug/mL
							Benzo[g,h,i]perylene	2000 ug/mL
							Benzo[k]fluoranthene	2000 ug/mL
							Chrysene	2000 ug/mL
							Dibenz(a,h)anthracene	2000 ug/mL
							Fluoranthene	2000 ug/mL
							Fluorene	2000 ug/mL
							Indeno[1,2,3-cd]pyrene	2000 ug/mL
							Naphthalene	2000 ug/mL
							Phenanthrene	2000 ug/mL
..MS-SIMSurInt_00009	07/30/19	01/30/19	Methylene Chloride, Lot 209578	1 mL	MS-567685_00005	200 uL	Pyrene	2000 ug/mL
							2-Fluorobiphenyl	1000 ug/mL
							Nitrobenzene-d5	1000 ug/mL
...MS-567685_00005	07/30/19		Restek, Lot A0130500		(Purchased Reagent)		Terphenyl-d14	1000 ug/mL
							2-Fluorobiphenyl	5000 ug/mL
							Nitrobenzene-d5	5000 ug/mL
MS-SIMSL 1.2_00079	03/31/19	03/21/19	Methylene Chloride, Lot 203837	1000 uL	MS-SIM IS_00034	100 uL	Terphenyl-d14	5000 ug/mL
							Acenaphthene-d10	0.6 ug/mL
							Chrysene-d12	0.6 ug/mL
							Perylene-d12	0.6 ug/mL
					MS-SIMSL_00030	60 uL	Phenanthrene-d10	0.6 ug/mL
							2-methylnaphthalene-d10	1.2 ug/mL
							Fluoranthene-d10	1.2 ug/mL
							2-Methylnaphthalene	2.4 ug/mL
							1-Methylnaphthalene	1.2 ug/mL
							Acenaphthene	1.2 ug/mL
							Acenaphthylene	1.2 ug/mL
							Anthracene	1.2 ug/mL
							Benzo[a]anthracene	1.2 ug/mL
							Benzo[a]pyrene	1.2 ug/mL
							Benzo[b]fluoranthene	1.2 ug/mL
							Benzo[g,h,i]perylene	1.2 ug/mL
							Benzo[k]fluoranthene	1.2 ug/mL
							Chrysene	1.2 ug/mL
							Dibenz(a,h)anthracene	1.2 ug/mL
							Fluoranthene	1.2 ug/mL
							Fluorene	1.2 ug/mL
							Indeno[1,2,3-cd]pyrene	1.2 ug/mL
							Naphthalene	1.2 ug/mL
							Phenanthrene	1.2 ug/mL
							Pyrene	1.2 ug/mL
							2-Fluorobiphenyl	1.2 ug/mL
							Nitrobenzene-d5	1.2 ug/mL
							Terphenyl-d14	1.2 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.MS-SIM IS_00034	11/23/19	12/03/18	Methylene Chloride, Lot 209578	100 mL	MS-IS_00015	1500 uL	Acenaphthene-d10	6 ug/mL
							Chrysene-d12	6 ug/mL
							Perylene-d12	6 ug/mL
							Phenanthrene-d10	6 ug/mL
..MS-IS_00015	11/23/19	11/23/18	Methylene Chloride, Lot 203837	250 mL	MS-567684_00019	45 mL	Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
					MS-567684_00021	5 mL	Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
...MS-567684_00019	07/31/20	Restek, Lot A0112833			(Purchased Reagent)		Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
...MS-567684_00021	12/31/22	Restek, Lot A0129635			(Purchased Reagent)		Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
.MS-SIMSL_00030	03/31/19	01/30/19	Methylene Chloride, Lot 209578	10 mL	DOD_ADD_SURR_00002	200 uL	2-methylnaphthalene-d10	20 ug/mL
							Fluoranthene-d10	20 ug/mL
					MS-SIM SL_Stk_00020	1 mL	2-Methylnaphthalene	40 ug/mL
							1-Methylnaphthalene	20 ug/mL
							Acenaphthene	20 ug/mL
							Acenaphthylene	20 ug/mL
							Anthracene	20 ug/mL
							Benzo[a]anthracene	20 ug/mL
							Benzo[a]pyrene	20 ug/mL
							Benzo[b]fluoranthene	20 ug/mL
							Benzo[g,h,i]perylene	20 ug/mL
							Benzo[k]fluoranthene	20 ug/mL
							Chrysene	20 ug/mL
							Dibenz(a,h)anthracene	20 ug/mL
							Fluoranthene	20 ug/mL
							Fluorene	20 ug/mL
							Indeno[1,2,3-cd]pyrene	20 ug/mL
							Naphthalene	20 ug/mL
							Phenanthrene	20 ug/mL
							Pyrene	20 ug/mL
					MS-SIMSurrInt_00009	0.2 mL	2-Fluorobiphenyl	20 ug/mL
							Nitrobenzene-d5	20 ug/mL
							Terphenyl-d14	20 ug/mL
					..DOD_ADD_SURR_00002	05/22/19	O2SI, Lot 334026	
Fluoranthene-d10	1000 mg/L							

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..MS-SIM SL_Stk_00020	03/31/19	08/01/18	Methylene Chloride, Lot 187286	5 mL	MS-31010_00011	0.5 mL	2-Methylnaphthalene	400 ug/mL
					MS-31995_00005	0.5 mL	1-Methylnaphthalene	200 ug/mL
							2-Methylnaphthalene	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Anthracene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Chrysene	200 ug/mL
							Dibenz(a,h)anthracene	200 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Naphthalene	200 ug/mL
							Phenanthrene	200 ug/mL
							Pyrene	200 ug/mL
...MS-31010_00011	03/31/19	Restek, Lot A0116027			(Purchased Reagent)		2-Methylnaphthalene	2000 ug/mL
...MS-31995_00005	01/31/21	Restek, Lot A0108907			(Purchased Reagent)		1-Methylnaphthalene	2000 ug/mL
							2-Methylnaphthalene	2000 ug/mL
							Acenaphthene	2000 ug/mL
							Acenaphthylene	2000 ug/mL
							Anthracene	2000 ug/mL
							Benzo[a]anthracene	2000 ug/mL
							Benzo[a]pyrene	2000 ug/mL
							Benzo[b]fluoranthene	2000 ug/mL
							Benzo[g,h,i]perylene	2000 ug/mL
							Benzo[k]fluoranthene	2000 ug/mL
							Chrysene	2000 ug/mL
							Dibenz(a,h)anthracene	2000 ug/mL
							Fluoranthene	2000 ug/mL
							Fluorene	2000 ug/mL
							Indeno[1,2,3-cd]pyrene	2000 ug/mL
							Naphthalene	2000 ug/mL
							Phenanthrene	2000 ug/mL
							Pyrene	2000 ug/mL
							..MS-SIMSurrInt_00009	07/30/19
Nitrobenzene-d5	1000 ug/mL							
Terphenyl-d14	1000 ug/mL							
...MS-567685_00005	07/30/19	Restek, Lot A0130500			(Purchased Reagent)		2-Fluorobiphenyl	5000 ug/mL
							Nitrobenzene-d5	5000 ug/mL
							Terphenyl-d14	5000 ug/mL
MS-SIMSL 2.5_00077	03/31/19	03/21/19	Methylene Chloride, Lot 203837	1000 uL	MS-SIM IS_00034	100 uL	Acenaphthene-d10	0.6 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Chrysene-d12	0.6 ug/mL
							Perylene-d12	0.6 ug/mL
							Phenanthrene-d10	0.6 ug/mL
					MS-SIMSL_00030	125 uL	2-methylnaphthalene-d10	2.5 ug/mL
							Fluoranthene-d10	2.5 ug/mL
							2-Methylnaphthalene	5 ug/mL
							1-Methylnaphthalene	2.5 ug/mL
							Acenaphthene	2.5 ug/mL
							Acenaphthylene	2.5 ug/mL
							Anthracene	2.5 ug/mL
							Benzo[a]anthracene	2.5 ug/mL
							Benzo[a]pyrene	2.5 ug/mL
							Benzo[b]fluoranthene	2.5 ug/mL
							Benzo[g,h,i]perylene	2.5 ug/mL
							Benzo[k]fluoranthene	2.5 ug/mL
							Chrysene	2.5 ug/mL
							Dibenz(a,h)anthracene	2.5 ug/mL
							Fluoranthene	2.5 ug/mL
							Fluorene	2.5 ug/mL
							Indeno[1,2,3-cd]pyrene	2.5 ug/mL
							Naphthalene	2.5 ug/mL
							Phenanthrene	2.5 ug/mL
							Pyrene	2.5 ug/mL
							2-Fluorobiphenyl	2.5 ug/mL
							Nitrobenzene-d5	2.5 ug/mL
							Terphenyl-d14	2.5 ug/mL
.MS-SIM IS_00034	11/23/19	12/03/18	Methylene Chloride, Lot 209578	100 mL	MS-IS_00015	1500 uL	Acenaphthene-d10	6 ug/mL
							Chrysene-d12	6 ug/mL
							Perylene-d12	6 ug/mL
							Phenanthrene-d10	6 ug/mL
..MS-IS_00015	11/23/19	11/23/18	Methylene Chloride, Lot 203837	250 mL	MS-567684_00019	45 mL	Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
				250 mL	MS-567684_00021	5 mL	Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Perylene-d12	400 ug/mL
...MS-567684_00019	07/31/20		Restek, Lot A0112833		(Purchased Reagent)		Phenanthrene-d10	400 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Perylene-d12	2000 ug/mL
...MS-567684_00021	12/31/22		Restek, Lot A0129635		(Purchased Reagent)		Phenanthrene-d10	2000 ug/mL
							Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Perylene-d12	2000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.MS-SIMSL_00030	03/31/19	01/30/19	Methylene Chloride, Lot 209578	10 mL	DOD_ADD_SURR_00002	200 uL	2-methylnaphthalene-d10	20 ug/mL
					MS-SIM SL_Stk_00020	1 mL	Fluoranthene-d10	20 ug/mL
							2-Methylnaphthalene	40 ug/mL
							1-Methylnaphthalene	20 ug/mL
							Acenaphthene	20 ug/mL
							Acenaphthylene	20 ug/mL
							Anthracene	20 ug/mL
							Benzo[a]anthracene	20 ug/mL
							Benzo[a]pyrene	20 ug/mL
							Benzo[b]fluoranthene	20 ug/mL
							Benzo[g,h,i]perylene	20 ug/mL
							Benzo[k]fluoranthene	20 ug/mL
							Chrysene	20 ug/mL
							Dibenz(a,h)anthracene	20 ug/mL
							Fluoranthene	20 ug/mL
							Fluorene	20 ug/mL
							Indeno[1,2,3-cd]pyrene	20 ug/mL
							Naphthalene	20 ug/mL
							Phenanthrene	20 ug/mL
					Pyrene	20 ug/mL		
					MS-SIMSurrInt_00009	0.2 mL	2-Fluorobiphenyl	20 ug/mL
					Nitrobenzene-d5	20 ug/mL		
					Terphenyl-d14	20 ug/mL		
..DOD_ADD_SURR_00002	05/22/19	O2SI, Lot 334026			(Purchased Reagent)		2-methylnaphthalene-d10	1000 mg/L
						Fluoranthene-d10	1000 mg/L	
..MS-SIM SL_Stk_00020	03/31/19	08/01/18	Methylene Chloride, Lot 187286	5 mL	MS-31010_00011	0.5 mL	2-Methylnaphthalene	400 ug/mL
					MS-31995_00005	0.5 mL	1-Methylnaphthalene	200 ug/mL
							2-Methylnaphthalene	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Anthracene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Chrysene	200 ug/mL
							Dibenz(a,h)anthracene	200 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Naphthalene	200 ug/mL
							Phenanthrene	200 ug/mL
							Pyrene	200 ug/mL
...MS-31010_00011	03/31/19	Restek, Lot A0116027			(Purchased Reagent)		2-Methylnaphthalene	2000 ug/mL
...MS-31995_00005	01/31/21	Restek, Lot A0108907			(Purchased Reagent)		1-Methylnaphthalene	2000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2-Methylnaphthalene	2000 ug/mL
							Acenaphthene	2000 ug/mL
							Acenaphthylene	2000 ug/mL
							Anthracene	2000 ug/mL
							Benzo[a]anthracene	2000 ug/mL
							Benzo[a]pyrene	2000 ug/mL
							Benzo[b]fluoranthene	2000 ug/mL
							Benzo[g,h,i]perylene	2000 ug/mL
							Benzo[k]fluoranthene	2000 ug/mL
							Chrysene	2000 ug/mL
							Dibenz(a,h)anthracene	2000 ug/mL
							Fluoranthene	2000 ug/mL
							Fluorene	2000 ug/mL
							Indeno[1,2,3-cd]pyrene	2000 ug/mL
							Naphthalene	2000 ug/mL
..MS-SIMSurrInt_00009	07/30/19	01/30/19	Methylene Chloride, Lot 209578	1 mL	MS-567685_00005	200 uL	2-Fluorobiphenyl	1000 ug/mL
							Nitrobenzene-d5	1000 ug/mL
...MS-567685_00005	07/30/19		Restek, Lot A0130500		(Purchased Reagent)		Terphenyl-d14	1000 ug/mL
							2-Fluorobiphenyl	5000 ug/mL
							Nitrobenzene-d5	5000 ug/mL
MS-SIMSL 5_00079	03/31/19	03/21/19	Methylene Chloride, Lot 203837	1000 uL	MS-SIM IS_00034	100 uL	Acenaphthene-d10	0.6 ug/mL
							Chrysene-d12	0.6 ug/mL
							Perylene-d12	0.6 ug/mL
							Phenanthrene-d10	0.6 ug/mL
					MS-SIMSL_00030	250 uL	2-methylnaphthalene-d10	5 ug/mL
							Fluoranthene-d10	5 ug/mL
							2-Methylnaphthalene	10 ug/mL
							1-Methylnaphthalene	5 ug/mL
							Acenaphthene	5 ug/mL
							Acenaphthylene	5 ug/mL
							Anthracene	5 ug/mL
							Benzo[a]anthracene	5 ug/mL
							Benzo[a]pyrene	5 ug/mL
							Benzo[b]fluoranthene	5 ug/mL
							Benzo[g,h,i]perylene	5 ug/mL
							Benzo[k]fluoranthene	5 ug/mL
							Chrysene	5 ug/mL
							Dibenz(a,h)anthracene	5 ug/mL
							Fluoranthene	5 ug/mL
							Fluorene	5 ug/mL
							Indeno[1,2,3-cd]pyrene	5 ug/mL
							Naphthalene	5 ug/mL
							Phenanthrene	5 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Pyrene	5 ug/mL
							2-Fluorobiphenyl	5 ug/mL
							Nitrobenzene-d5	5 ug/mL
							Terphenyl-d14	5 ug/mL
.MS-SIM IS_00034	11/23/19	12/03/18	Methylene Chloride, Lot 209578	100 mL	MS-IS_00015	1500 uL	Acenaphthene-d10	6 ug/mL
							Chrysene-d12	6 ug/mL
							Perylene-d12	6 ug/mL
							Phenanthrene-d10	6 ug/mL
..MS-IS_00015	11/23/19	11/23/18	Methylene Chloride, Lot 203837	250 mL	MS-567684_00019	45 mL	Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
					MS-567684_00021	5 mL	Acenaphthene-d10	400 ug/mL
							Chrysene-d12	400 ug/mL
							Perylene-d12	400 ug/mL
							Phenanthrene-d10	400 ug/mL
...MS-567684_00019	07/31/20		Restek, Lot A0112833		(Purchased Reagent)		Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
...MS-567684_00021	12/31/22		Restek, Lot A0129635		(Purchased Reagent)		Acenaphthene-d10	2000 ug/mL
							Chrysene-d12	2000 ug/mL
							Perylene-d12	2000 ug/mL
							Phenanthrene-d10	2000 ug/mL
.MS-SIMSL_00030	03/31/19	01/30/19	Methylene Chloride, Lot 209578	10 mL	DOD_ADD_SURR_00002	200 uL	2-methylnaphthalene-d10	20 ug/mL
							Fluoranthene-d10	20 ug/mL
					MS-SIM SL_Stk_00020	1 mL	2-Methylnaphthalene	40 ug/mL
							1-Methylnaphthalene	20 ug/mL
							Acenaphthene	20 ug/mL
							Acenaphthylene	20 ug/mL
							Anthracene	20 ug/mL
							Benzo[a]anthracene	20 ug/mL
							Benzo[a]pyrene	20 ug/mL
							Benzo[b]fluoranthene	20 ug/mL
							Benzo[g,h,i]perylene	20 ug/mL
							Benzo[k]fluoranthene	20 ug/mL
							Chrysene	20 ug/mL
							Dibenz(a,h)anthracene	20 ug/mL
							Fluoranthene	20 ug/mL
							Fluorene	20 ug/mL
							Indeno[1,2,3-cd]pyrene	20 ug/mL
							Naphthalene	20 ug/mL
							Phenanthrene	20 ug/mL
							Pyrene	20 ug/mL
					MS-SIMSurrInt_00009	0.2 mL	2-Fluorobiphenyl	20 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Nitrobenzene-d5	20 ug/mL
							Terphenyl-d14	20 ug/mL
..DOD_ADD_SURR_00002	05/22/19		O2SI, Lot 334026		(Purchased Reagent)		2-methylnaphthalene-d10	1000 mg/L
							Fluoranthene-d10	1000 mg/L
..MS-SIM SL_Stk_00020	03/31/19	08/01/18	Methylene Chloride, Lot 187286	5 mL	MS-31010_00011	0.5 mL	2-Methylnaphthalene	400 ug/mL
					MS-31995_00005	0.5 mL	1-Methylnaphthalene	200 ug/mL
							2-Methylnaphthalene	400 ug/mL
							Acenaphthene	200 ug/mL
							Acenaphthylene	200 ug/mL
							Anthracene	200 ug/mL
							Benzo[a]anthracene	200 ug/mL
							Benzo[a]pyrene	200 ug/mL
							Benzo[b]fluoranthene	200 ug/mL
							Benzo[g,h,i]perylene	200 ug/mL
							Benzo[k]fluoranthene	200 ug/mL
							Chrysene	200 ug/mL
							Dibenz(a,h)anthracene	200 ug/mL
							Fluoranthene	200 ug/mL
							Fluorene	200 ug/mL
							Indeno[1,2,3-cd]pyrene	200 ug/mL
							Naphthalene	200 ug/mL
							Phenanthrene	200 ug/mL
							Pyrene	200 ug/mL
...MS-31010_00011	03/31/19		Restek, Lot A0116027		(Purchased Reagent)		2-Methylnaphthalene	2000 ug/mL
...MS-31995_00005	01/31/21		Restek, Lot A0108907		(Purchased Reagent)		1-Methylnaphthalene	2000 ug/mL
							2-Methylnaphthalene	2000 ug/mL
							Acenaphthene	2000 ug/mL
							Acenaphthylene	2000 ug/mL
							Anthracene	2000 ug/mL
							Benzo[a]anthracene	2000 ug/mL
							Benzo[a]pyrene	2000 ug/mL
							Benzo[b]fluoranthene	2000 ug/mL
							Benzo[g,h,i]perylene	2000 ug/mL
							Benzo[k]fluoranthene	2000 ug/mL
							Chrysene	2000 ug/mL
							Dibenz(a,h)anthracene	2000 ug/mL
							Fluoranthene	2000 ug/mL
							Fluorene	2000 ug/mL
							Indeno[1,2,3-cd]pyrene	2000 ug/mL
							Naphthalene	2000 ug/mL
							Phenanthrene	2000 ug/mL
							Pyrene	2000 ug/mL
..MS-SIMSurrInt_00009	07/30/19	01/30/19	Methylene Chloride, Lot 209578	1 mL	MS-567685_00005	200 uL	2-Fluorobiphenyl	1000 ug/mL
							Nitrobenzene-d5	1000 ug/mL
							Terphenyl-d14	1000 ug/mL
...MS-567685_00005	07/30/19		Restek, Lot A0130500		(Purchased Reagent)		2-Fluorobiphenyl	5000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Nitrobenzene-d5	5000 ug/mL
							Terphenyl-d14	5000 ug/mL
MV-BFB_00028							1,2-Dichloroethene, Total	
							1,2-Dichloroethene, Total (URS)	
							1,3-Dichloropropene, Total	
							TAH	
							Tentatively Identified Compound	
							Total BTEX	
							Trihalomethanes, Total	
							Xylenes, Total	
							Xylenes, Total (URS)	
					MV-ST5110N1_00066	1.25 mL	BFB	25 ug/mL
.MV-ST5110N1_00066	10/31/19		Ultra Scientific, Lot CH-3248Z		(Purchased Reagent)		BFB	2000 ug/mL
mv-Cent IS/SS_00002	03/26/20	03/07/19	P&T Methanol, Lot 1996628	5 mL	mv-8260 IS/SS_00001	1 mL	1,2-Dichloroethane-d4 (Surr)	50 ug/mL
							1,4-Dichlorobenzene-d4	50 ug/mL
							4-Bromofluorobenzene (Surr)	50 ug/mL
							Chlorobenzene-d5	50 ug/mL
							Dibromofluoromethane (Surr)	50 ug/mL
							Fluorobenzene	50 ug/mL
							TBA-d9 (IS)	1000 ug/mL
							Toluene-d8 (Surr)	50 ug/mL
.mv-8260 IS/SS_00001	10/31/22		Restek, Lot A0131478		(Purchased Reagent)		1,2-Dichloroethane-d4 (Surr)	250 ug/mL
							1,4-Dichlorobenzene-d4	250 ug/mL
							4-Bromofluorobenzene (Surr)	250 ug/mL
							Chlorobenzene-d5	250 ug/mL
							Dibromofluoromethane (Surr)	250 ug/mL
							Fluorobenzene	250 ug/mL
							TBA-d9 (IS)	5000 ug/mL
							Toluene-d8 (Surr)	250 ug/mL
mv-Cent IS_00002	05/12/19	04/04/19	P&T Methanol, Lot 1996628	5 mL	MV-568718-D_00016	1 mL	1,4-Dichlorobenzene-d4	50 ug/mL
							Chlorobenzene-d5	50 ug/mL
							Fluorobenzene	50 ug/mL
							TBA-d9 (IS)	1000 ug/mL
.MV-568718-D_00016	07/31/23		RESTEK, Lot A0139459		(Purchased Reagent)		1,4-Dichlorobenzene-d4	250 ug/mL
							Chlorobenzene-d5	250 ug/mL
							Fluorobenzene	250 ug/mL
							TBA-d9 (IS)	5000 ug/mL
MV-Gas A_00023	05/10/19	05/03/19	P&T Methanol, Lot 198123	25 mL	MV-569722_00010	500 uL	Bromomethane	50 ug/mL
							Chloroethane	50 ug/mL
							Chloromethane	50 ug/mL
							Dichlorodifluoromethane	50 ug/mL
							Dichlorofluoromethane	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.MV-569722_00010	11/30/21		RESTEK, Lot A0143158		MV-569723_00005	500 uL	Trichlorofluoromethane	50 ug/mL
							Vinyl chloride	50 ug/mL
							2-Chloroethyl vinyl ether	50 ug/mL
							Bromomethane	2500 ug/mL
							Chloroethane	2500 ug/mL
							Chloromethane	2500 ug/mL
							Dichlorodifluoromethane	2500 ug/mL
							Dichlorofluoromethane	2500 ug/mL
.MV-569723_00005	10/31/21		RESTEK, Lot A0142584		(Purchased Reagent)		Trichlorofluoromethane	2500 ug/mL
							Vinyl chloride	2500 ug/mL
							2-Chloroethyl vinyl ether	2500 ug/mL
							Bromomethane	50 ug/mL
							Chloroethane	50 ug/mL
							Chloromethane	50 ug/mL
							Vinyl chloride	50 ug/mL
							Bromomethane	2500 ug/mL
.MV-569722.sec_00010	10/31/21		RESTEK, Lot A0142594		(Purchased Reagent)		Chloroethane	2500 ug/mL
							Chloromethane	2500 ug/mL
							Vinyl chloride	2500 ug/mL
							Bromomethane	2500 ug/mL
							Chloroethane	2500 ug/mL
							Chloromethane	2500 ug/mL
							Vinyl chloride	2500 ug/mL
							Bromomethane	50 ug/mL
MV-MegaMain B_00012	05/31/19	04/10/19	P&T Methanol, Lot 181124	50 mL	MV-569721.sec_00005	800 uL	2-Butanone (MEK)	200 ug/mL
							2-Hexanone	200 ug/mL
							4-Methyl-2-pentanone (MIBK)	200 ug/mL
							Acetone	200 ug/mL
					MV-571992.sec_00002	1000 uL	1,1,1-Trichloroethane	50 ug/mL
							1,1,2,2-Tetrachloroethane	50 ug/mL
							1,1,2-Trichloroethane	50 ug/mL
							1,1-Dichloroethane	50 ug/mL
							1,1-Dichloroethene	50 ug/mL
							1,2-Dibromoethane	50 ug/mL
							1,2-Dichloroethane	50 ug/mL
							1,2-Dichloroethene, Total	100 ug/mL
							1,2-Dichloropropane	50 ug/mL
							Benzene	50 ug/mL
							Bromobenzene	50 ug/mL
							Bromochloromethane	50 ug/mL
							Bromodichloromethane	50 ug/mL
							Bromoform	50 ug/mL
							Carbon disulfide	50 ug/mL
							Carbon tetrachloride	50 ug/mL
							Chlorobenzene	50 ug/mL
							Chloroform	50 ug/mL
							cis-1,3-Dichloropropene	50 ug/mL
							Dibromochloromethane	50 ug/mL
							Ethylbenzene	50 ug/mL
							Methylene Chloride	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Styrene	50 ug/mL
							Tetrachloroethene	50 ug/mL
							Toluene	50 ug/mL
							trans-1,3-Dichloropropene	50 ug/mL
							Trichloroethene	50 ug/mL
							Xylenes, Total	100 ug/mL
.MV-569721.sec_00005	01/31/20	RESTEK, Lot A0113880			(Purchased Reagent)		2-Butanone (MEK)	12500 ug/mL
							2-Hexanone	12500 ug/mL
							4-Methyl-2-pentanone (MIBK)	12500 ug/mL
							Acetone	12500 ug/mL
.MV-571992.sec_00002	06/30/19	RESTEK, Lot A0123775			(Purchased Reagent)		1,1,1-Trichloroethane	2500 ug/mL
							1,1,2,2-Tetrachloroethane	2500 ug/mL
							1,1,2-Trichloroethane	2500 ug/mL
							1,1-Dichloroethane	2500 ug/mL
							1,1-Dichloroethene	2500 ug/mL
							1,2-Dibromoethane	2500 ug/mL
							1,2-Dichloroethane	2500 ug/mL
							1,2-Dichloroethene, Total	5000 ug/mL
							1,2-Dichloropropane	2500 ug/mL
							Benzene	2500 ug/mL
							Bromobenzene	2500 ug/mL
							Bromochloromethane	2500 ug/mL
							Bromodichloromethane	2500 ug/mL
							Bromoform	2500 ug/mL
							Carbon disulfide	2500 ug/mL
							Carbon tetrachloride	2500 ug/mL
							Chlorobenzene	2500 ug/mL
							Chloroform	2500 ug/mL
							cis-1,3-Dichloropropene	2500 ug/mL
							Dibromochloromethane	2500 ug/mL
							Ethylbenzene	2500 ug/mL
							Methylene Chloride	2500 ug/mL
							Styrene	2500 ug/mL
							Tetrachloroethene	2500 ug/mL
							Toluene	2500 ug/mL
							trans-1,3-Dichloropropene	2500 ug/mL
							Trichloroethene	2500 ug/mL
							Xylenes, Total	5000 ug/mL
MV-MegaMainA_00014	05/31/19	04/18/19	P&T Methanol, Lot 181124	50 mL	MV-568720_00024	1250 uL	Acrolein	493.75 ug/mL
					MV-569721_00006	800 uL	2-Butanone (MEK)	200 ug/mL
							2-Hexanone	200 ug/mL
							4-Methyl-2-pentanone (MIBK)	200 ug/mL
							Acetone	200 ug/mL
					MV-569724_00019	1000 uL	Vinyl acetate	100 ug/mL
					MV-569727_00008	4000 uL	Cyclohexanone	2000 ug/mL
					MV-571992_00002	1000 uL	1,1,1,2-Tetrachloroethane	50 ug/mL
							1,1,1-Trichloroethane	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,1,2,2-Tetrachloroethane	50 ug/mL
							1,1,2-Trichloro-1,2,2-trifluoroethane	50 ug/mL
							1,1,2-Trichloroethane	50 ug/mL
							1,1-Dichloroethane	50 ug/mL
							1,1-Dichloroethene	50 ug/mL
							1,1-Dichloropropene	50 ug/mL
							1,2,3-Trichlorobenzene	50 ug/mL
							1,2,3-Trichloropropane	50 ug/mL
							1,2,4-Trichlorobenzene	50 ug/mL
							1,2,4-Trimethylbenzene	50 ug/mL
							1,2-Dibromo-3-Chloropropane	50 ug/mL
							1,2-Dibromoethane	50 ug/mL
							1,2-Dichlorobenzene	50 ug/mL
							1,2-Dichloroethane	50 ug/mL
							1,2-Dichloropropane	50 ug/mL
							1,3,5-Trimethylbenzene	50 ug/mL
							1,3-Dichlorobenzene	50 ug/mL
							1,3-Dichloropropane	50 ug/mL
							1,4-Dichlorobenzene	50 ug/mL
							1,4-Dioxane	1000 ug/mL
							2,2-Dichloropropane	50 ug/mL
							2-Chlorotoluene	50 ug/mL
							2-Methyl-2-propanol	500 ug/mL
							3-Chloro-1-propene	50 ug/mL
							4-Chlorotoluene	50 ug/mL
							4-Isopropyltoluene	50 ug/mL
							Acrylonitrile	500 ug/mL
							Benzene	50 ug/mL
							Bromobenzene	50 ug/mL
							Bromochloromethane	50 ug/mL
							Bromodichloromethane	50 ug/mL
							Bromoform	50 ug/mL
							Carbon disulfide	50 ug/mL
							Carbon tetrachloride	50 ug/mL
							Chlorobenzene	50 ug/mL
							Chloroform	50 ug/mL
							cis-1,2-Dichloroethene	50 ug/mL
							cis-1,3-Dichloropropene	50 ug/mL
							Cyclohexane	50 ug/mL
							Dibromochloromethane	50 ug/mL
							Dibromomethane	50 ug/mL
							Ethyl ether	50 ug/mL
							Ethyl methacrylate	50 ug/mL
							Ethylbenzene	50 ug/mL
							Hexachlorobutadiene	50 ug/mL
							Hexane	50 ug/mL
							Iodomethane	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Isobutyl alcohol	1250 ug/mL
							Isopropylbenzene	50 ug/mL
							m-Xylene & p-Xylene	50 ug/mL
							Methyl acetate	100 ug/mL
							Methyl tert-butyl ether	50 ug/mL
							Methylcyclohexane	50 ug/mL
							Methylene Chloride	50 ug/mL
							n-Butylbenzene	50 ug/mL
							N-Propylbenzene	50 ug/mL
							Naphthalene	50 ug/mL
							o-Xylene	50 ug/mL
							sec-Butylbenzene	50 ug/mL
							Styrene	50 ug/mL
							tert-Butylbenzene	50 ug/mL
							Tetrachloroethene	50 ug/mL
							Tetrahydrofuran	100 ug/mL
							Toluene	50 ug/mL
							trans-1,2-Dichloroethene	50 ug/mL
							trans-1,3-Dichloropropene	50 ug/mL
					trans-1,4-Dichloro-2-butene	50 ug/mL		
					Trichloroethene	50 ug/mL		
					MV-CUS17739_00004	2500 uL	1-Chlorohexane	50 ug/mL
							2-Pentanone	200 ug/mL
		sec-Butyl Alcohol	1500 ug/mL					
.MV-568720_00024	05/31/19	RESTEK, Lot A01413013			(Purchased Reagent)		Acrolein	19750 ug/mL
.MV-569721_00006	10/31/20	RESTEK, Lot A0131486			(Purchased Reagent)		2-Butanone (MEK)	12500 ug/mL
						2-Hexanone	12500 ug/mL	
						4-Methyl-2-pentanone (MIBK)	12500 ug/mL	
						Acetone	12500 ug/mL	
.MV-569724_00019	07/31/19	RESTEK, Lot A0144661			(Purchased Reagent)		Vinyl acetate	5000 ug/mL
.MV-569727_00008	08/31/21	RESTEK, Lot A0140237			(Purchased Reagent)		Cyclohexanone	25000 ug/mL
.MV-571992_00002	08/31/19	RESTEK, Lot A0123711			(Purchased Reagent)		1,1,1,2-Tetrachloroethane	2500 ug/mL
						1,1,1-Trichloroethane	2500 ug/mL	
						1,1,2,2-Tetrachloroethane	2500 ug/mL	
						1,1,2-Trichloro-1,2,2-trifluor oethane	2500 ug/mL	
						1,1,2-Trichloroethane	2500 ug/mL	
						1,1-Dichloroethane	2500 ug/mL	
						1,1-Dichloroethene	2500 ug/mL	
						1,1-Dichloropropene	2500 ug/mL	
						1,2,3-Trichlorobenzene	2500 ug/mL	
						1,2,3-Trichloropropane	2500 ug/mL	
						1,2,4-Trichlorobenzene	2500 ug/mL	
						1,2,4-Trimethylbenzene	2500 ug/mL	
						1,2-Dibromo-3-Chloropropane	2500 ug/mL	
						1,2-Dibromoethane	2500 ug/mL	
						1,2-Dichlorobenzene	2500 ug/mL	
						1,2-Dichloroethane	2500 ug/mL	

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2-Dichloropropane	2500 ug/mL
							1,3,5-Trimethylbenzene	2500 ug/mL
							1,3-Dichlorobenzene	2500 ug/mL
							1,3-Dichloropropane	2500 ug/mL
							1,4-Dichlorobenzene	2500 ug/mL
							1,4-Dioxane	50000 ug/mL
							2,2-Dichloropropane	2500 ug/mL
							2-Chlorotoluene	2500 ug/mL
							2-Methyl-2-propanol	25000 ug/mL
							3-Chloro-1-propene	2500 ug/mL
							4-Chlorotoluene	2500 ug/mL
							4-Isopropyltoluene	2500 ug/mL
							Acrylonitrile	25000 ug/mL
							Benzene	2500 ug/mL
							Bromobenzene	2500 ug/mL
							Bromochloromethane	2500 ug/mL
							Bromodichloromethane	2500 ug/mL
							Bromoform	2500 ug/mL
							Carbon disulfide	2500 ug/mL
							Carbon tetrachloride	2500 ug/mL
							Chlorobenzene	2500 ug/mL
							Chloroform	2500 ug/mL
							cis-1,2-Dichloroethene	2500 ug/mL
							cis-1,3-Dichloropropene	2500 ug/mL
							Cyclohexane	2500 ug/mL
							Dibromochloromethane	2500 ug/mL
							Dibromomethane	2500 ug/mL
							Ethyl ether	2500 ug/mL
							Ethyl methacrylate	2500 ug/mL
							Ethylbenzene	2500 ug/mL
							Hexachlorobutadiene	2500 ug/mL
							Hexane	2500 ug/mL
							Iodomethane	2500 ug/mL
							Isobutyl alcohol	62500 ug/mL
							Isopropylbenzene	2500 ug/mL
							m-Xylene & p-Xylene	2500 ug/mL
							Methyl acetate	5000 ug/mL
							Methyl tert-butyl ether	2500 ug/mL
							Methylcyclohexane	2500 ug/mL
							Methylene Chloride	2500 ug/mL
							n-Butylbenzene	2500 ug/mL
							N-Propylbenzene	2500 ug/mL
							Naphthalene	2500 ug/mL
							o-Xylene	2500 ug/mL
							sec-Butylbenzene	2500 ug/mL
							Styrene	2500 ug/mL
							tert-Butylbenzene	2500 ug/mL
							Tetrachloroethene	2500 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Tetrahydrofuran	5000 ug/mL
							Toluene	2500 ug/mL
							trans-1,2-Dichloroethene	2500 ug/mL
							trans-1,3-Dichloropropene	2500 ug/mL
							trans-1,4-Dichloro-2-butene	2500 ug/mL
							Trichloroethene	2500 ug/mL
.MV-CUS17739_00004	10/31/20		Ultra, Lot CS-4707		(Purchased Reagent)		1-Chlorohexane	1000 ug/mL
							2-Pentanone	4000 ug/mL
							sec-Butyl Alcohol	30000 ug/mL
MV-MegaMainA_00014	05/31/19	04/18/19	P&T Methanol, Lot 181124	50 mL	MV-571992_00002	1000 uL	1,2-Dichloroethene, Total	100 ug/mL
							Xylenes, Total	100 ug/mL
.MV-571992_00002	08/31/19		RESTEK, Lot A0123711		(Purchased Reagent)		1,2-Dichloroethene, Total	5000 ug/mL
							Xylenes, Total	5000 ug/mL
PREP SPK 1_00007	04/17/20		CPI, Lot 993218-1		(Purchased Reagent)		Arsenic	200 mg/L
							Barium	200 mg/L
							Beryllium	100 mg/L
							Cadmium	100 mg/L
							Chromium	100 mg/L
							Cobalt	100 mg/L
							Copper	100 mg/L
							Lead	100 mg/L
							Li	100 mg/L
							Manganese	100 mg/L
							Mo	100 mg/L
							Nickel	100 mg/L
							Selenium	200 mg/L
							Si	200 mg/L
							SiO2	428 mg/L
							Sn	200 mg/L
							Sr	100 mg/L
							Thallium	200 mg/L
							Ti	100 mg/L
							Vanadium	100 mg/L
PREP SPK 2_00003	04/17/20		CPI, Lot 982744-1		(Purchased Reagent)		Aluminum	1000 mg/L
							Calcium	5000 mg/L
							Iron	1000 mg/L
							Magnesium	5000 mg/L
							Potassium	5000 mg/L
							Sodium	5000 mg/L
PREP SPK 3_00003	04/17/20		CPI, Lot 982745-1		(Purchased Reagent)		P	2000 mg/L
							Sulfur	1000 mg/L
							U	200 mg/L
							W	100 mg/L
PREP SPK 4_00004	05/08/20		CPI, Lot 10094085-3		(Purchased Reagent)		B	100 mg/L
							Bi	200 mg/L
							Th	100 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Zinc	50 mg/L
							Zr	50 mg/L
PREP SPK 4B_00001	04/16/20		CPI, Lot 10094085-2		(Purchased Reagent)		Silver	5 mg/L
PREP SPK 5_00002	10/10/19	04/10/19	5% HNO3, Lot 216908	250 mL	1000 Sb_00020	25 mL	Antimony	100 mg/L
.1000 Sb_00020	03/08/20		CPI, Lot 153992-34		(Purchased Reagent)		Antimony	1000 mg/L
SIM_LVI_SURR_00008	03/25/20	04/03/19	ACETONE, Lot Acetone_00266	500 mL	8270SIMSurStk_00012	1 mL	2,4,6 - Tribromophenol	2 ug/mL
							2,4,6-Tribromophenol (Surr)	2 ug/mL
							2-Fluorobiphenyl	2 ug/mL
							2-Fluorophenol (Surr)	2 ug/mL
							2-methylnaphthalene-d10	2 ug/mL
							Fluoranthene-d10	2 ug/mL
							Fluoranthene-d10 (Surr)	2 ug/mL
							Nitrobenzene-d5	2 ug/mL
							Phenol-d5 (Surr)	2 ug/mL
							Phenol-d6	2 ug/mL
							Terphenyl-d14	2 ug/mL
.8270SIMSurStk_00012	03/25/20		o2si, Lot 369966		(Purchased Reagent)		2,4,6 - Tribromophenol	1000 mg/L
							2,4,6-Tribromophenol (Surr)	1000 mg/L
							2-Fluorobiphenyl	1000 mg/L
							2-Fluorophenol (Surr)	1000 mg/L
							2-methylnaphthalene-d10	1000 mg/L
							Fluoranthene-d10	1000 mg/L
							Fluoranthene-d10 (Surr)	1000 mg/L
							Nitrobenzene-d5	1000 mg/L
							Phenol-d5 (Surr)	1000 mg/L
							Phenol-d6	1000 mg/L
							Terphenyl-d14	1000 mg/L

Reagent

1000 B_00017

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.869.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 18, 2017

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- December 18, 2021

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Michael Z Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines



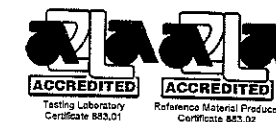
300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

ISO 9001:2015 CERTIFIED
ID: 5405853030
Info: inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution

Catalog Number: CGB1

Lot Number: M2-B663296

Matrix: H2O

Value / Analyte(s): 1 000 µg/mL ea:
Boron

Starting Material: Recrystallized Boric Acid

Starting Material Lot#: M2-B02142

Starting Material Purity: 100.0000%

4938584
ID: 1000 B_00017
Exp: 12/18/21 Pp: 3/5
1000 B IV

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1000 ± 5 µg/mL

Density: 1.001 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1 998 ± 4 µg/mL
ICP Assay NIST SRM 3107 Lot Number: 110830

Assay Method #2 1004 ± 5 µg/mL
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods Characterization of CRM by one method

M - Checked by ICP-MS O - Checked by ICP-OES I - Spectral Interference
n - Not Checked For s - Solution Standard Element

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$$

X_a = mean of Assay Method A with standard uncertainty $u_{char a}$
 X_b = mean of Assay Method B with standard uncertainty $u_{char b}$
 w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:
$$w_a = (1/u_{char a})^2 / ((1/u_{char a})^2 + (1/u_{char b})^2)$$

$$w_b = (1/u_{char b})^2 / ((1/u_{char a})^2 + (1/u_{char b})^2)$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k(u_{char a}^2 + u_{char b}^2 + u_{bb}^2 + u_{ts}^2 + u_{ts}^2)^{1/2}$$

 k = coverage factor = 2 in all cases at Inorganic Ventures
 $u_{char a \& b} = [(w_a)^2(u_{char a})^2 + (w_b)^2(u_{char b})^2]^{1/2}$ where $u_{char a}$ and $u_{char b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume
 u_{bb} = bottle to bottle homogeneity standard uncertainty
 u_{ts} = long term stability standard uncertainty (storage)
 u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = \text{mean of Assay Method A with standard uncertainty } u_{char a}$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k(u_{char a}^2 + u_{bb}^2 + u_{ts}^2 + u_{ts}^2)^{1/2}$$

 k = coverage factor = 2 in all cases at Inorganic Ventures
 $u_{char a}$ = square root of the sum of the squares of the errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume
 u_{bb} = bottle to bottle homogeneity standard uncertainty
 u_{ts} = long term stability standard uncertainty (storage)
 u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.000108	M Eu < 0.000108	O Na < 0.006144	M Se < 0.001738	M Zn < 0.000509
O Al < 0.030720	M Fe < 0.004779	M Nb < 0.000108	O Si < 0.001028	M Zr < 0.000217
M As < 0.000869	M Ga < 0.000108	M Nd < 0.000108	M Sm < 0.000108	
M Au < 0.000108	M Gd < 0.000108	M Ni < 0.001303	M Sn < 0.000325	
s B < 0.000108	M Ge < 0.000434	M Os < 0.003039	M Sr < 0.000108	
M Ba < 0.000217	M Hf < 0.000108	i P < 0.000001	M Ta < 0.000108	
O Be < 0.000409	M Hg < 0.000217	M Pb < 0.000108	M Tb < 0.000108	
M Bi < 0.000108	M Ho < 0.000108	M Pd < 0.000108	M Te < 0.000325	
O Ca < 0.000864	M In < 0.000108	M Pr < 0.000108	M Th < 0.000108	
M Cd < 0.000108	M Ir < 0.000108	M Pt < 0.000108	M Ti < 0.000651	
M Ce < 0.000108	O K < 0.010240	M Rb < 0.000108	M Tl < 0.000108	
M Co < 0.000108	M La < 0.000108	M Re < 0.000108	M Tm < 0.000108	
M Cr < 0.000434	M Li < 0.000108	M Rh < 0.000108	M U < 0.000108	
M Cs < 0.000108	M Lu < 0.000108	M Ru < 0.000108	M V < 0.004128	
M Cu < 0.000434	O Mg < 0.000019	i S < 0.000001	M W < 0.000108	
M Dy < 0.000108	M Mn < 0.000217	M Sb < 0.000434	M Y < 0.000108	
M Er < 0.000108	M Mo < 0.000217	M Sc < 0.001955	M Yb < 0.000108	

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT.

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 10.81 +3 4 B(OH)3 and B(OH)4-1

Chemical Compatibility -Moderately soluble in HCl, HNO3, H2SO4 and HF aqueous matrices and very soluble in NH4OH . Stable with all metals and inorganic anions at low to moderate ppm levels.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-1,000 ppm solutions chemically stable for years in 1% HNO3 / LDPE container. 1000 -10,000 ppm stable for years in dilute NH4OH / LDPE container.

B Containing Samples (Preparation and Solution) -Metal (Crystalline form is scarcely attacked by acids or alkaline solutions; amorphous form is soluble in conc. HNO3 or H2SO4); B(OH)3 (water soluble); Ores(avoid acid digestions and use caustic fusions in PtE); Organic Matrices (dry ash mixed with Na2CO3 in PtE at 450EC then increase heat to 1000EC to fuse; or perform a Na2O2 fusion in a NiE crucible / Parr bomb).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 11 amu	700 ppt	N/A	
ICP-OES 208.959 nm	0.007/0.0005 µg/mL	1	Mo
ICP-OES 249.678 nm	0.004/0.003 µg/mL	1	Os, W, Co, Cr, Hf
ICP-OES 249.773 nm	0.003/0.001 µg/mL	1	W, Ce, Co, Th, Ta, Mn, Mo, Fe

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

Reagent

1000 Ba_00013

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.888.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 15, 2017

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- June 15, 2021

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Chemist, Technical Manager

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGBA1
Lot Number: M2-BA658823
Matrix: 0.1% (v/v) HNO3
Value / Analyte(s): 1 000 µg/mL ea:
Barium
Starting Material: Ba(NO3)2
Starting Material Lot#: 1894
Starting Material Purity: 99.9986%

4954175
ID: 1000 Ba_00013
Exp: 06/15/21 Ppdt: SJS
1000 Ba IV

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 5 µg/mL
Density: 1.000 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1 1000 ± 4 µg/mL
ICP Assay NIST SRM 3104a Lot Number: 140909
Assay Method #2 1001 ± 3 µg/mL
Gravimetric NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$$
$$X_a = \text{mean of Assay Method A with standard uncertainty } u_{char a}$$
$$X_b = \text{mean of Assay Method B with standard uncertainty } u_{char b}$$
$$w_a \text{ and } w_b = \text{the weighting factors for each method calculated using the inverse square of the variance:}$$
$$w_a = (1/u_{char a}^2) / ((1/u_{char a}^2) + (1/u_{char b}^2))$$
$$w_b = (1/u_{char b}^2) / ((1/u_{char a}^2) + (1/u_{char b}^2))$$
$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k(u_{char a}^2 + u_{char b}^2 + u_{ts}^2 + u_{bb}^2)^{1/2}$$
$$k = \text{coverage factor} = 2 \text{ in all cases at Inorganic Ventures}$$
$$u_{char a \& b} = [(w_a)^2(u_{char a}^2) + (w_b)^2(u_{char b}^2)]^{1/2} \text{ where } u_{char a} \text{ and } u_{char b} \text{ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume}$$
$$u_{bb} = \text{bottle to bottle homogeneity standard uncertainty}$$
$$u_{ts} = \text{long term stability standard uncertainty (storage)}$$
$$u_{ts} = \text{transport stability standard uncertainty}$$

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = \text{mean of Assay Method A with standard uncertainty } u_{char a}$$
$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k(u_{char a}^2 + u_{bb}^2 + u_{ts}^2 + u_{ts}^2)^{1/2}$$
$$k = \text{coverage factor} = 2 \text{ in all cases at Inorganic Ventures}$$
$$u_{char a} = \text{square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume}$$
$$u_{bb} = \text{bottle to bottle homogeneity standard uncertainty}$$
$$u_{ts} = \text{long term stability standard uncertainty (storage)}$$
$$u_{ts} = \text{transport stability standard uncertainty}$$

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.002004	O Eu < 0.002078	O Na < 0.000887	O Se < 0.024936	O Zn < 0.000520
O Al < 0.004156	O Fe < 0.000151	M Nb < 0.000200	O Si < 0.004156	M Zr < 0.000801
O As < 0.008312	M Ga < 0.000200	M Nd < 0.000401	O Sm < 0.010390	
M Au < 0.001002	M Gd < 0.000200	O Ni < 0.001559	M Sn < 0.000200	
O B < 0.001039	M Ge < 0.001202	n Os <	O Sr < 0.011227	
s Ba <	M Hf < 0.001202	O P < 0.031170	M Ta < 0.000200	
O Be < 0.000208	O Hg < 0.002598	M Pb < 0.001202	M Tb < 0.000200	
M Bi < 0.000601	M Ho < 0.000200	M Pd < 0.000200	M Te < 0.003005	
O Ca < 0.000719	M In < 0.000166	M Pr < 0.000200	M Th < 0.004007	
M Cd < 0.000200	M Ir < 0.000200	M Pt < 0.000200	O Ti < 0.001039	
M Ce < 0.000200	O K < 0.031170	M Rb < 0.001002	M Tl < 0.000200	
M Co < 0.000401	O La < 0.007273	M Re < 0.000200	M Tm < 0.001002	
O Cr < 0.002078	M Li < 0.000801	M Rh < 0.000200	M U < 0.000200	
M Cs < 0.000200	M Lu < 0.000200	O Ru < 0.003117	O V < 0.001559	
O Cu < 0.001247	O Mg < 0.000054	O S < 0.013943	M W < 0.001002	
M Dy < 0.000200	O Mn < 0.000312	M Sb < 0.000200	O Y < 0.000831	
M Er < 0.000200	O Mo < 0.001766	O Sc < 0.000208	M Yb < 0.000601	

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

-While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 137.33 +2 6 Ba(H2O)6+2
Chemical Compatibility - Soluble in HCl, and HNO3. Avoid H2SO4, HF and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate, iodate, molybdate, sulfite and tungstate in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1 -10,000 ppm solutions chemically stable for years in 1-3.5% HNO3 / LDPE container.

Ba Containing Samples (Preparation and Solution) -Metal(is best dissolved in diluted HNO3); Ores(Carbonate fusion in PtO followed by HCl dissolution. If sulfate is present dissolve the fuseate using HCl / tartaric acid to prevent BaSO4 precipitate); Organic Matrices (dry ash and dissolve in dilute HCl.)

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 138 amu	1 ppt	N/A	122Sn16O, 122Te16O
ICP-OES 230.424 nm	0.004/0.0005 µg/mL	1	Mo, Ir, Co
ICP-OES 233.527 nm	0.004/0.0003 µg/mL	1	
ICP-OES 455.403 nm	0.002/0.0001 µg/mL	1	Zr, U

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

Reagent

1000 Cu_00013

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.569.6799; 540.585.3030; Fax: 540.565.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 06, 2017

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- March 06, 2021

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

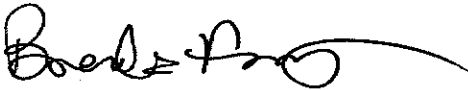
- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

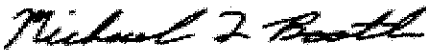
Certificate Prepared By:

Brenda Francis
Product Documentation Technician



Certificate Approved By:

Michael Booth
Supervisor, Quality Control



Certifying Officer:

Paul Gaines
CEO, Senior Technical Director



CERTIFICATE OF ANALYSIS

tel: 800.569.6799 • 540.585.3030
fax: 540.565.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGCU1
Lot Number: M2-CU656225
Matrix: 3% (v/v) HNO3
Value / Analyte(s): 1 000 µg/mL ea:
Copper
Starting Material: Cu shot
Starting Material Lot#: 1718
Starting Material Purity: 100.0000%

4780773
ID: 1000 Cu_00013
Exp: 03/06/21 Prpd: SJS
1000 Cu IV

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 5 µg/mL
Certified Density: 1.017 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 1001 ± 4 µg/mL
ICP Assay NIST SRM 3114 Lot Number: 121207
Assay Method #2 1002 ± 3 µg/mL
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$$
$$X_a = \text{mean of Assay Method A with standard uncertainty } u_{char a}$$
$$X_b = \text{mean of Assay Method B with standard uncertainty } u_{char b}$$
$$w_a \text{ and } w_b = \text{the weighting factors for each method calculated using the inverse square of the variance:}$$
$$w_a = (1/u_{char a}^2) / ((1/u_{char a}^2) + (1/u_{char b}^2))$$
$$w_b = (1/u_{char b}^2) / ((1/u_{char a}^2) + (1/u_{char b}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k(u_{char a\&b}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$
$$k = \text{coverage factor} = 2 \text{ in all cases at Inorganic Ventures}$$
$$u_{char a\&b} = [(w_a)^2(u_{char a}^2) + (w_b)^2(u_{char b}^2)]^{1/2} \text{ where } u_{char a} \text{ and } u_{char b} \text{ are the square root of the sum of the squares of errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume}$$
$$u_{bb} = \text{bottle to bottle homogeneity standard uncertainty}$$
$$u_{lts} = \text{long term stability standard uncertainty (storage)}$$
$$u_{ts} = \text{transport stability standard uncertainty}$$

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.017868	M Eu < 0.026802	O Na < 0.000168	M Se < 0.071472	O Zn < 0.010000
O Al < 0.000900	O Fe < 0.001100	M Nb < 0.004467	O Si < 0.003400	M Zr < 0.044670
M As < 0.089340	M Ga < 0.008934	M Nd < 0.017868	M Sm < 0.008934	
M Au < 0.026802	M Gd < 0.008934	O Ni < 0.003000	O Sn < 0.004000	
M B < 0.625382	M Ge < 0.053604	n Os <	M Sr < 0.004467	
M Ba < 0.089340	M Hf < 0.017868	O P < 0.002600	M Ta < 0.062538	
M Be < 0.004467	O Hg < 0.015000	O Pb < 0.010000	M Tb < 0.002680	
M Bi < 0.003573	M Ho < 0.004467	M Pd < 0.044670	M Te < 0.268021	
O Ca < 0.000078	M In < 0.089340	M Pr < 0.002680	M Th < 0.008934	
M Cd < 0.026802	M Ir < 0.044670	M Pt < 0.017868	M Ti < 0.446701	
M Ce < 0.044670	O K < 0.000224	M Rb < 0.008934	M Tl < 0.008934	
M Co < 0.026802	M La < 0.004467	M Re < 0.008934	M Tm < 0.003573	
M Cr < 0.044670	O Li < 0.000020	M Rh < 0.008934	M U < 0.017868	
M Cs < 0.002680	M Lu < 0.003573	M Ru < 0.017868	O V < 0.003000	
s Cu <	O Mg < 0.000003	n S <	M W < 0.089340	
M Dy < 0.053604	O Mn < 0.000200	M Sb < 0.004467	M Y < 0.357361	
M Er < 0.044670	M Mo < 0.017868	M Sc < 0.089340	M Yb < 0.008934	

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 63.55 +2 6 Cu(H2O)62+

Chemical Compatibility -Stable in HCl, HNO3, H2SO4, HF, H3PO4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.

Cu Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 63 amu	10 ppt	n/a	40Ar23Na 47Ti16O, 14N12C37Cl, 16O12C35Cl, 23Na40Ca
ICP-OES 219.958 nm	0.01/.002 µg/mL	1	Th, Ta, Nb, U, Hf
ICP-OES 224.700 nm	0.01/.001 µg/mL	1	Pb, Ir, Ni, W
ICP-OES 324.754 nm	0.06/.001 µg/mL		Nb, U, Th, Mo, Hf

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

Reagent

1000 Li_00040



CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: TA-1000291

SE Std Lithium (Li) – 1000 µg/mL

Lot #: 751942-43

Matrix: 5% HNO₃

Element	Certified Concentration & Uncertainty
Li	1002 ± 3 µg/mL (w/v)
	993 ± 3 µg/g (w/w)

5658289
ID: 1000 LI_00040
Exp: 05/16/20 Ppdt: CRR Opm: 03/26/19
1000 LI CPI

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to ISO 9001, ISO 17034, and ISO/IEC 17025. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure lithium carbonate (Li₂CO₃) dissolved in high purity nitric acid (HNO₃) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to NIST SRM 3129a, lot #100714. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)									
Ag	35	Co	<1	Ge	<0.5	Mg	<5	Pd	<0.5
Al	9	Cs	7	Hf	<0.2	Mn	<1	Pr	<0.2
As	<2	Cr	<0.5	Hg	30	Mo	<0.5	Pt	<0.5
Au	<0.5	Cu	<1	Ho	<0.2	Na	<25	Rb	2
B	<5	Dy	<0.2	In	nd	Nb	<0.5	Re	<0.2
Ba	2	Er	<0.2	Ir	<0.2	Nd	<0.2	Rh	<0.5
Bi	<0.2	Eu	<0.2	K	<25	Ni	<2	Ru	<0.5
Ca	<25	Fe	<10	La	<0.5	Os	<0.5	Sb	<0.5
Cd	<0.5	Ga	<0.5	Li	MAJOR	P	<100	Sc	<5
Ce	<0.2	Gd	<0.2	Lu	<0.2	Pb	<1	Se	<2
								Ti	<0.5
								Tm	<0.2
								V	<1
								W	<0.5
								Y	<0.5
								Yb	<0.2
								Zn	<2

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for 18 months from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau, Certifying Officer

November 16, 2018
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

USA
5580 Skylane Boulevard
Santa Rosa, CA 95403
P: 707.525.5788
F: 707.545.7901

www.cpiinternational.com
Page 1 of 2

Europe
Nieuwe Hemweg 7P
1013BG Amsterdam
The Netherlands
P: +31 20 638 05 97
F: +31 20 420 28 36

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
 - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

1000 Mn_00017

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
 Catalog Number: CGMN1
 Lot Number: K2-MN651112
 Matrix: 3% (v/v) HNO₃
 Value / Analyte(s): 1 000 µg/mL ea:
 Manganese
 Starting Material: Mn Flake
 Starting Material Lot#: 1909 and 1573
 Starting Material Purity: 99.9920%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 995 ± 4 µg/mL
Certified Density: 1.016 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1	996 ± 4 µg/mL ICP Assay NIST SRM 3132 Lot Number: 050429
Assay Method #2	995 ± 3 µg/mL EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two Methods

Certified Value, $X_{\text{CRM/RM}}$, where two methods of characterization are used is the weighted mean of the two results:

$$X_{\text{CRM/RM}} = [(w_a)(X_a) + (w_b)(X_b)]$$

X_a = mean of Assay Method A with standard uncertainty $u_{\text{char a}}$

X_b = mean of Assay Method B with standard uncertainty $u_{\text{char b}}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$$w_a = (1/u_{\text{char a}})^2 / ((1/u_{\text{char a}})^2 + (1/u_{\text{char b}})^2)$$

$$w_b = (1/u_{\text{char b}})^2 / ((1/u_{\text{char a}})^2 + (1/u_{\text{char b}})^2)$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k (u_{\text{char a\&b}}^2 + u_{\text{bb}}^2 + u_{\text{its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{\text{char a\&b}} = [(w_a)^2 (u_{\text{char a}})^2 + (w_b)^2 (u_{\text{char b}})^2]^{1/2}$ where $u_{\text{char a}}$ and $u_{\text{char b}}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{\text{CRM/RM}}$, where one method of characterization is used is the mean of individual results:

$$X_{\text{CRM/RM}} = \text{mean of Assay Method A with standard uncertainty } u_{\text{char a}}$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k (u_{\text{char a}}^2 + u_{\text{bb}}^2 + u_{\text{its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{\text{char a}}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.000671	M Eu < 0.000671	O Na 0.012155	M Se < 0.014098	O Zn < 0.023580
O Al 0.003665	O Fe 0.000937	M Nb < 0.000671	O Si 0.012827	M Zr < 0.004699
M As < 0.006713	M Ga <	M Nd < 0.006713	M Sm < 0.004028	
M Au < 0.000671	M Gd < 0.006713	M Ni 0.001426	M Sn < 0.004028	
M B 0.011628	M Ge < 0.100699	M Os < 0.000650	O Sr 0.000157	
M Ba < 0.003357	M Hf < 0.000671	i P <	M Ta < 0.000671	
M Be < 0.001343	M Hg < 0.003249	M Pb 0.001101	M Tb < 0.000671	
M Bi < 0.000671	M Ho < 0.000671	M Pd < 0.006713	M Te < 0.040280	
O Ca 0.005090	M In < 0.000671	M Pr < 0.002685	M Th < 0.000671	
M Cd < 0.001343	M Ir < 0.000650	M Pt < 0.000671	O Ti < 0.001179	
M Ce < 0.013427	O K 0.001934	M Rb < 0.010741	M Tl < 0.000671	
M Co 0.001971	M La < 0.006713	M Re < 0.000671	M Tm < 0.000671	
M Cr 0.000927	O Li 0.000081	M Rh < 0.020140	M U < 0.004028	
M Cs < 0.000671	M Lu < 0.000671	M Ru < 0.000650	M V < 0.000671	
M Cu 0.001333	O Mg 0.037056	i S <	M W < 0.006713	
M Dy < 0.003357	s Mn <	M Sb < 0.013427	M Y < 0.033566	
M Er < 0.003357	O Mo < 0.011790	O Sc < 0.001179	M Yb < 0.002014	

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 54.94 +2 6 Mn(H₂O)₆²⁺

Chemical Compatibility -Stable in HCl, HNO₃, H₂SO₄, HF, H₃PO₄. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5 % HNO₃/LDPE container.

Mn Containing Samples (Preparation and Solution) -Metal (Soluble in dilute acids); Oxides (Soluble in dilute acids); Ores (Dissolve with HCl. If silica is present add HF and then fume off silica by adding H₂SO₄ and heat to SO₃ fumes - dense white fumes).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 55 amu	10 ppt	n/a	40Ar14N1H,39K16 O,37Cl18O,40Ar15 N,38Ar17O,36Ar18O 1H ,38Ar16O1H,37Cl17 O1H,23Na32S
ICP-OES 257.610 nm	0.0014 / 0.00002 µg/mL	1	Ce, W, Re
ICP-OES 259.373 nm	0.0016 / 0.00002 µg/mL	1	U, Ta, Mo, Fe, Nb
ICP-OES 260.569 nm	0.0021 / 0.00002 µg/mL	1	Co

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 22, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **August 22, 2020**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

James King Jr
Chemist, Technical Manager



Certificate Approved By:

Michael Booth
Supervisor, Quality Control



Certifying Officer:

Paul Gaines
CEO, Senior Technical Director



Reagent

1000 Mo_00013

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGAS1
Lot Number: M2-AS657780
Matrix: 2% (v/v) HNO3
Value / Analyte(s): 1 000 µg/mL ea:
Arsenic
Starting Material: As Metal
Starting Material Lot#: 1971 and 1851
Starting Material Purity: 99.9991%

4938580
ID: 1000 As_00020
Exp: 05/24/21 Prpt: SUS
1000 As IV

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 999 ± 5 µg/mL
Certified Density: 1.011 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 999 ± 4 µg/mL
ICP Assay NIST SRM 3103a Lot Number: 100818

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$$

$$X_a = \text{mean of Assay Method A with standard uncertainty } u_{char\ a}$$

$$X_b = \text{mean of Assay Method B with standard uncertainty } u_{char\ b}$$

$$w_a \text{ and } w_b = \text{the weighting factors for each method calculated using the inverse square of the variance:}$$

$$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2)$$

$$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2)$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$$

$$k = \text{coverage factor} = 2 \text{ in all cases at Inorganic Ventures}$$

$$u_{char\ a\&b} = [(w_a)^2(u_{char\ a})^2 + (w_b)^2(u_{char\ b})^2]^{1/2} \text{ where } u_{char\ a} \text{ and } u_{char\ b} \text{ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume}$$

$$u_{bb} = \text{bottle to bottle homogeneity standard uncertainty}$$

$$u_{lts} = \text{long term stability standard uncertainty (storage)}$$

$$u_{ts} = \text{transport stability standard uncertainty}$$

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = \text{mean of Assay Method A with standard uncertainty } u_{char\ a}$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$$

$$k = \text{coverage factor} = 2 \text{ in all cases at Inorganic Ventures}$$

$$u_{char\ a} = \text{square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume}$$

$$u_{bb} = \text{bottle to bottle homogeneity standard uncertainty}$$

$$u_{lts} = \text{long term stability standard uncertainty (storage)}$$

$$u_{ts} = \text{transport stability standard uncertainty}$$

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

O Ag < 0.002234	M Eu < 0.000466	O Na < 0.000767	M Se < 0.002797	O Zn < 0.000370
O Al < 0.001986	O Fe < 0.000079	O Nb < 0.005585	O Si < 0.004236	M Zr < 0.001865
s As < 0.000466	M Ga < 0.000466	M Nd < 0.000466	M Sm < 0.000466	
M Au < 0.002796	M Gd < 0.000466	M Ni < 0.000486	M Sn < 0.000932	
O B < 0.000556	M Ge < 0.000932	M Os < 0.000466	M Sr < 0.001865	
O Ba < 0.000670	M Hf < 0.000466	O P < 0.027925	M Ta < 0.000466	
O Be < 0.000111	M Hg < 0.009321	M Pb < 0.002797	M Tb < 0.000466	
M Bi < 0.000466	M Ho < 0.000466	M Pd < 0.000466	M Te < 0.004663	
O Ca < 0.000503	M In < 0.023315	M Pr < 0.000466	M Th < 0.000466	
M Cd < 0.000466	M Ir < 0.000466	M Pt < 0.000466	O Ti < 0.000052	
M Ce < 0.000466	O K < 0.000185	M Rb < 0.001865	M Tl < 0.000466	
M Co < 0.000466	M La < 0.000466	M Re < 0.000466	M Tm < 0.000466	
O Cr < 0.002122	O Li < 0.000111	M Rh < 0.000466	M U < 0.000466	
M Cs < 0.000932	M Lu < 0.000466	M Ru < 0.000466	M V < 0.001865	
O Cu < 0.002904	O Mg < 0.000034	O S < 0.017872	M W < 0.004663	
M Dy < 0.000466	O Mn < 0.000018	M Sb < 0.000466	O Y < 0.000558	
M Er < 0.000466	M Mo < 0.000466	O Sc < 0.001005	M Yb < 0.000466	

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 24, 2017

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- May 24, 2021

- The date after which this CRM/RM should not be used.
- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

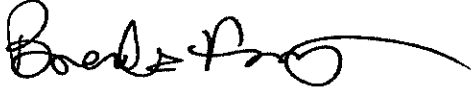
11.3 Period of Validity

- Sealed TCT Bag Open Date: _____
- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician



Certificate Approved By:

Michael Booth
Supervisor, Quality Control



Certifying Officer:

Paul Gaines
CEO, Senior Technical Director



6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 74.92 ; mix of +3 and +5 ; 6 ; H3AsO4 and HAsO2

Chemical Compatibility - Arsenic has no cationic chemistry. It is soluble in HCl, HNO3, H3PO4, H2SO4 and HF aqueous matrices water and NH4OH . It is stable with most inorganic anions (forms arsenate when boiled with chromate) but many cationic metals form the insoluble arsenates under pH neutral conditions. When fluorinated and / or under acidic conditions arsenate formation is typically not a problem at moderate to low concentrations.

Stability - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO3 / LDPE container.

As Containing Samples (Preparation and Solution) - Metal (soluble in 1:1 H2O / HNO3); Oxides (the oxide exists in crystalline and amorphous forms where the amorphous form is more water soluble. The oxides typically dissolve in dilute acidic solutions when boiled); Minerals (one gram of powdered sample is fused in a Ni crucible with 10 grams of a 1:1 mix of K2CO3 and KNO3 and the melt extracted with hot water); Organic Matrices (0.2 to 0.5 grams of sample are fused with 15 grams of a 1:1 Na2CO3 / Na2O2 mix in a Ni crucible. The fuseate is extracted with water and acidified with HNO3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 75 amu	20 ppt	N/A	40Ar35Cl, 59Co16O, 36Ar38Ar1H,8Ar37C I,Ar39K, 150Nd2+,150Sm2+
ICP-OES 189.042 nm	0.05/0.005 µg/mL	1	Cr
ICP-OES 193.696 nm	0.1/0.01 µg/mL	1	V, Ge
ICP-OES 228.812 nm	0.1/0.01 µg/mL	1	Cd, Pt, Ir, Co

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$$

$$X_a = \text{mean of Assay Method A with standard uncertainty } u_{char\ a}$$

$$X_b = \text{mean of Assay Method B with standard uncertainty } u_{char\ b}$$

$$w_a \text{ and } w_b = \text{the weighting factors for each method calculated using the inverse square of the variance:}$$

$$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2)$$

$$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2)$$

$$CRM/RM \text{ Expanded Uncertainty } (z) = U_{CRM/RM} = k(u^2_{char\ a\&b} + u^2_{bb} + u^2_{its} + u^2_{ts})^{1/2}$$

$$k = \text{coverage factor} = 2 \text{ in all cases at Inorganic Ventures}$$

$$u_{char\ a\&b} = [(w_a)^2(u_{char\ a})^2 + (w_b)^2(u_{char\ b})^2]^{1/2} \text{ where } u_{char\ a} \text{ and } u_{char\ b} \text{ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume}$$

$$u_{bb} = \text{bottle to bottle homogeneity standard uncertainty}$$

$$u_{its} = \text{long term stability standard uncertainty (storage)}$$

$$u_{ts} = \text{transport stability standard uncertainty}$$

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = \text{mean of Assay Method A with standard uncertainty } u_{char\ a}$$

$$CRM/RM \text{ Expanded Uncertainty } (z) = U_{CRM/RM} = k(u^2_{char\ a} + u^2_{bb} + u^2_{its} + u^2_{ts})^{1/2}$$

$$k = \text{coverage factor} = 2 \text{ in all cases at Inorganic Ventures}$$

$$u_{char\ a} = \text{square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume}$$

$$u_{bb} = \text{bottle to bottle homogeneity standard uncertainty}$$

$$u_{its} = \text{long term stability standard uncertainty (storage)}$$

$$u_{ts} = \text{transport stability standard uncertainty}$$

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

O Ag < 0.002234	M Eu < 0.000466	O Na < 0.000767	M Se < 0.002797	O Zn < 0.000370
O Al < 0.001986	O Fe < 0.000079	O Nb < 0.005585	O Si < 0.004236	M Zr < 0.001865
s As < 0.000466	M Ga < 0.000466	M Nd < 0.000466	M Sm < 0.000466	
M Au < 0.002796	M Gd < 0.000466	M Ni < 0.000486	M Sn < 0.000932	
O B < 0.000556	M Ge < 0.000932	M Os < 0.000466	M Sr < 0.001865	
O Ba < 0.000670	M Hf < 0.000466	O P < 0.027925	M Ta < 0.000466	
O Be < 0.000111	M Hg < 0.009321	M Pb < 0.002797	M Tb < 0.000466	
M Bi < 0.000466	M Ho < 0.000466	M Pd < 0.000466	M Te < 0.004663	
O Ca < 0.000503	M In < 0.023315	M Pr < 0.000466	M Th < 0.000466	
M Cd < 0.000466	M Ir < 0.000466	M Pt < 0.000466	O Ti < 0.000052	
M Ce < 0.000466	O K < 0.000185	M Rb < 0.001865	M Tl < 0.000466	
M Co < 0.000466	M La < 0.000466	M Re < 0.000466	M Tm < 0.000466	
O Cr < 0.002122	O Li < 0.000111	M Rh < 0.000466	M U < 0.000466	
M Cs < 0.000932	M Lu < 0.000466	M Ru < 0.000466	M V < 0.001865	
O Cu < 0.002904	O Mg < 0.000034	O S < 0.017872	M W < 0.004663	
M Dy < 0.000466	O Mn < 0.000018	M Sb < 0.000466	O Y < 0.000558	
M Er < 0.000466	M Mo < 0.000466	O Sc < 0.001005	M Yb < 0.000466	

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGAS1
Lot Number: M2-AS657780
Matrix: 2% (v/v) HNO3
Value / Analyte(s): 1 000 µg/mL ea:
Arsenic
Starting Material: As Metal
Starting Material Lot#: 1971 and 1851
Starting Material Purity: 99.9991%

4938580
ID: 1000 As_00020
Exp: 05/24/21 Pp'd: SJS
1000 As IV

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 999 ± 5 µg/mL
Certified Density: 1.011 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 999 ± 4 µg/mL
ICP Assay NIST SRM 3103a Lot Number: 100818

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Reagent

1000 Ni_00011

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030; Fax: 540.585.3012; info@inorganicventures.com; inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

October 25, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- October 25, 2020

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Michael J Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines



CERTIFICATE OF ANALYSIS

300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com
Tel: 800.669.6799 • 540.585.3030
Fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution

Catalog Number: CGNI1

Lot Number: K2-NI652587

Matrix: 2% (v/v) HNO₃

Value / Analyte(s): 1 000 µg/mL ea:
Nickel

Starting Material: Ni Pieces

Starting Material Lot#: 1847

Starting Material Purity: 99.9991%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1006 ± 5 µg/mL

Certified Density: 1.011 g/mL (measured at 20 ± 1 °C)

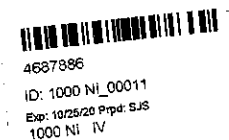
Assay Information:

Assay Method #1 1007 ± 3 µg/mL
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 1006 ± 4 µg/mL
ICP Assay NIST SRM 3136 Lot Number: 120619

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.



Characterization of CRM by two independent methods

Characterization of CRM by one method

M - Checked by ICP-MS O - Checked by ICP-OES I - Spectral Interference
n - Not Checked For s - Solution Standard Element

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$$

X_a = mean of Assay Method A with standard uncertainty $u_{char a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$$w_a = (1/u_{char a})^2 / ((1/u_{char a})^2 + (1/u_{char b})^2)$$

$$w_b = (1/u_{char b})^2 / ((1/u_{char a})^2 + (1/u_{char b})^2)$$

$$CRM/RM \text{ Expanded Uncertainty } (z) = U_{CRM/RM} = k(u_{char a \& b}^2 + u_{bb}^2 + u_{ts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char a \& b} = [(w_a)^2(u_{char a})^2 + (w_b)^2(u_{char b})^2]^{1/2}$ where $u_{char a}$ and $u_{char b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{ts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = \text{mean of Assay Method A with standard uncertainty } u_{char a}$$

$$CRM/RM \text{ Expanded Uncertainty } (z) = U_{CRM/RM} = k(u_{char a}^2 + u_{bb}^2 + u_{ts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{ts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.039015	M Eu < 0.000650	O Na < 0.000755	M Se < 0.032513	O Zn < 0.000320
O Al < 0.024400	O Fe < 0.001144	M Nb < 0.003251	O Si < 0.001601	M Zr < 0.032513
O As < 0.012200	M Ga < 0.000650	M Nd < 0.000650	M Sm < 0.000650	
M Au < 0.000650	M Gd < 0.000650	s Ni <	M Sn < 0.019508	
M B < 0.013005	M Ge < 0.006503	n Os <	M Sr < 0.001301	
M Ba < 0.000650	M Hf < 0.000650	i P <	M Ta < 0.000650	
M Be < 0.003251	O Hg < 0.004880	M Pb < 0.000951	M Tb < 0.000650	
M Bi < 0.019508	M Ho < 0.000650	M Pd < 0.000650	M Te < 0.019508	
O Ca < 0.000800	M In < 0.013005	M Pr < 0.000650	M Th < 0.001301	
M Cd < 0.013005	M Ir < 0.032513	M Pt < 0.000650	O Ti < 0.003659	
M Ce < 0.001301	O K < 0.001601	M Rb < 0.000650	M Tl < 0.000650	
O Co < 0.012200	M La < 0.001301	M Re < 0.032513	M Tm < 0.000650	
O Cr < 0.002440	O Li < 0.000073	M Rh < 0.001301	M U < 0.000650	
M Cs < 0.000650	M Lu < 0.000650	M Ru < 0.006503	M V < 0.001951	
O Cu < 0.000366	O Mg < 0.000030	O S < 0.061000	M W < 0.013005	
M Dy < 0.000650	O Mn < 0.000610	M Sb < 0.032513	M Y < 0.000650	
M Er < 0.000650	O Mo < 0.006100	M Sc < 0.001951	M Yb < 0.000650	

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 58.69 +2 6 Ni(H₂O)₆²⁺

Chemical Compatibility -Stable in HCl, HNO₃, H₂SO₄, HF, H₃PO₄. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO₃ / LDPE container.

Ni Containing Samples (Preparation and Solution) -Metal (Soluble in HNO₃); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO₃).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 60 amu	100 ppt	n/a	43Ca16O1H, 44Ca16O, 23Na37Cl
ICP-OES 221.647 nm	0.01 / 0.0009 µg/mL	1	Si
ICP-OES 231.604 nm	0.02 / 0.002 µg/mL	1	Sb, Ta, Co
ICP-OES 232.003 nm	0.02 / 0.006 µg/mL	1	Cr, Re, Os, Nb, Ag, Pt, Fe

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

-Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

Reagent

1000 Sb_00019

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 02, 2018

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- March 02, 2022

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Michael Z Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines



CERTIFICATE OF ANALYSIS

ISO 9001:2015 CERTIFIED
540.585.3030
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGSB1
Lot Number: N2-SB665459
Matrix: 1% (v/v) HNO3
3% (v/v) Tartaric Acid
Value / Analyte(s): 1 000 µg/mL ea:
Antimony
Starting Material: Sb Metal
Starting Material Lot#: 2382
Starting Material Purity: 99.9861%

5108868
ID: 1000 Sb_00019
Exp: 03/02/22 Prod: SJS
1000 Sb IV

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 7 µg/mL
Density: 1.020 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1 1003 ± 4 µg/mL
ICP Assay NIST SRM 3102a Lot Number: 140911
Assay Method #2 999 ± 5 µg/mL
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$$

X_a = mean of Assay Method A with standard uncertainty $u_{char a}$
 X_b = mean of Assay Method B with standard uncertainty $u_{char b}$
 w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:
$$w_a = (1/u_{char a}^2) / ((1/u_{char a}^2) + (1/u_{char b}^2))$$

$$w_b = (1/u_{char b}^2) / ((1/u_{char a}^2) + (1/u_{char b}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (z) = U_{CRM/RM} = k(u_{char a \& b}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

 k = coverage factor = 2 in all cases at Inorganic Ventures
 $u_{char a \& b} = [(w_a)^2(u_{char a}^2) + (w_b)^2(u_{char b}^2)]^{1/2}$ where $u_{char a}$ and $u_{char b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume
 u_{bb} = bottle to bottle homogeneity standard uncertainty
 u_{lts} = long term stability standard uncertainty (storage)
 u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = \text{mean of Assay Method A with standard uncertainty } u_{char a}$$

$$CRM/RM \text{ Expanded Uncertainty } (z) = U_{CRM/RM} = k(u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

 k = coverage factor = 2 in all cases at Inorganic Ventures
 $u_{char a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume
 u_{bb} = bottle to bottle homogeneity standard uncertainty
 u_{lts} = long term stability standard uncertainty (storage)
 u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000100	M	Eu	<	0.000100	O	Na	0.004839	M	Se	<	0.003417	M	Zn	0.000488
O	Al	<	0.003189	O	Fe	0.001979	M	Nb	<	0.004623	O	Si	0.004179	M	Zr	<	0.003417
M	As	<	0.011256	M	Ga	<	0.000100	M	Nd	<	0.000100	M	Sm	<	0.000100		
M	Au	<	0.001006	M	Gd	<	0.000100	M	Ni	0.000696	M	Sn	<	0.003015			
O	B	0.000879	M	Ge	<	0.000502	M	Os	<	0.000100	M	Sr	<	0.000100			
O	Ba	<	0.000956	M	Hf	<	0.001407	O	P	0.062145	M	Ta	<	0.003417			
O	Be	<	0.000212	M	Hg	<	0.000402	M	Pb	<	0.000402	M	Tb	<	0.000100		
M	Bi	<	0.000402	M	Ho	<	0.000100	M	Pd	<	0.000100	M	Te	<	0.000402		
O	Ca	0.000769	M	In	<	0.000100	M	Pr	<	0.000804	M	Th	<	0.000100			
M	Cd	<	0.000100	M	Ir	<	0.001006	M	Pt	<	0.000100	M	Ti	0.001279			
M	Ce	<	0.008241	O	K	0.056755	M	Rb	<	0.003216	M	Tl	<	0.000100			
M	Co	<	0.000100	O	La	<	0.004252	M	Re	<	0.000100	M	Tm	<	0.000100		
O	Cr	0.010229	O	Li	<	0.000053	M	Rh	<	0.000100	M	U	<	0.000100			
M	Cs	<	0.000603	M	Lu	<	0.000100	M	Ru	<	0.000402	M	V	<	0.000100		
M	Cu	<	0.000301	O	Mg	0.000219	n	S	<		M	W	<	0.001809			
M	Dy	<	0.000100	M	Mn	0.000187	s	Sb	<		M	Y	<	0.000100			
M	Er	<	0.000100	M	Mo	0.000332	O	Sc	<	0.000744	M	Yb	<	0.000100			

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

-While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 121.75 +3 6 Sb(O)C4H4O6-1
Chemical Compatibility -Stable in conc. HCl, dilute or conc. HF. Stable in dilute HNO3 as the fluoride or tartrate complex. Avoid basic media. Stable with most metals and inorganic anions in acidic media as the tartrate provided the acidity is not too high or the acid is oxidizing causing loss of the stabilizing tartrate ion. The fluoride complex of antimony is stable in strong acid but you should only mix with other metals that are fluorinated.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-2% HNO3 / LDPE container.

Sb Containing Samples (Preparation and Solution) -Metal and alloys (Soluble in H2O / HF / HNO3 mixture); Oxides (Soluble in HCl and tartaric acid or H2O / HF / HNO3 mixtures); Ores (fusion with Na2CO3 in PtO followed by dissolving the fuseate in a H2O / HF / HNO3 mixture); Organic based (sulfuric acid / hydrogen peroxide digestion)

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 121 amu	5 ppt	N/A	105Pd16O, 89Y16O2
ICP-OES 206.833 nm	0.03/0.003 µg/mL	1	Ta, Cr, Ge, Hf
ICP-OES 217.581 nm	0.05/0.005 µg/mL	1	Nb, W, Re, Fe
ICP-OES 231.147 nm	0.06/0.006 µg/mL	1	Ni, Co, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

Reagent

1000 Sb_00020



CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

SE Std Antimony (Sb) – 1000 µg/mL

Matrix: 5% HNO₃/tr. HF

5522333

ID: 1000 Sb_00020

Exp: 06/17/19 Prod: SJS

1000 Sb CPI

Product #: TA-100023

Lot #: 153992-34

Element	Certified Concentration & Uncertainty
Sb	1000 ± 5 µg/mL (w/v)
	977 ± 5 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to ISO 9001, ISO 17034, and ISO/IEC 17025. This CRM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.999% pure antimony (Sb) metal dissolved in high purity nitric acid (HNO₃), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to NIST SRM 3102a, lot #140911. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag <0.5	Co <1	Ge <0.5	Mg <5	Pd <0.5	Si <1000	V <1
Al <2	Cs <0.5	Hf <0.2	Mn <1	Pr <0.2	Sm <0.2	W <0.5
As <2	Cr <0.5	Hg <0.5	Mo <0.5	Pt <0.5	Sn <0.5	Y <0.5
Au <0.5	Cu <1	Ho <0.2	Na <25	Rb <0.5	Sr <1	Yb <0.2
B <5	Dy <0.2	In nd	Nb 0.6	Re <0.2	Ta <0.5	Zn <2
Ba <1	Er <0.2	Ir <0.2	Nd <0.2	Rh <0.5	Tb <0.5	
Bi <0.2	Eu <0.2	K <25	Ni <2	Ru <0.5	Te <1	
Ca <25	Fe <10	La 4	Os <0.5	Sb MAJOR	Ti <2	
Cd <0.5	Ga <0.5	Li <2	P <100	Sc <5	Tl <0.5	
Ce <0.2	Gd <0.2	Lu <0.2	Pb <1	Se <2	Tm <0.2	

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for 18 months from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

January 17, 2019

Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

USA

5580 Skyline Boulevard
Santa Rosa, CA 95403

P: 707.525.5788
F: 707.525.5788

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Europe

Nieuwe Hemweg 7P P: +31 20 638 05 97

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
 - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

1000 Sn_00016

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.869.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 06, 2017

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- July 06, 2021

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Michael Z Booth

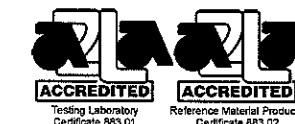
Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines

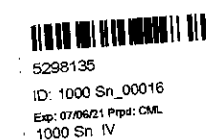
1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGSN1
Lot Number: M2-SN659324
Matrix: tr. HNO3
tr. HF
Value / Analyte(s): 1 000 µg/mL ea:
Tin
Starting Material: Sn shot
Starting Material Lot#: 1789
Starting Material Purity: 99.9976%



3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 998 ± 6 µg/mL
Density: 1.001 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1 998 ± 3 µg/mL
ICP Assay NIST SRM 3161a Lot Number: 140917

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$$

X_a = mean of Assay Method A with standard uncertainty $u_{char a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char b}$

w_a and w_b = the weighing factors for each method calculated using the inverse square of the variance:

$$w_a = (1/u_{char a}^2) / [(1/u_{char a}^2) + (1/u_{char b}^2)]$$

$$w_b = (1/u_{char b}^2) / [(1/u_{char a}^2) + (1/u_{char b}^2)]$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k(u_{char a}^2 + u_{char b}^2 + u_{ts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char a \& b} = [(w_a)^2(u_{char a}^2) + (w_b)^2(u_{char b}^2)]^{1/2}$ where $u_{char a}$ and $u_{char b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{ts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = \text{mean of Assay Method A with standard uncertainty } u_{char a}$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k(u_{char a}^2 + u_{bb}^2 + u_{ts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{ts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.000100	M Eu < 0.000100	O Na < 0.000683	M Se < 0.005701	O Zn < 0.000308
O Al < 0.004116	O Fe < 0.000989	M Nb < 0.000200	O Si < 0.012513	O Zr < 0.000514
M As < 0.001100	M Ga < 0.000100	M Nd < 0.000100	M Sm < 0.000100	
M Au < 0.000199	M Gd < 0.000500	O Ni < 0.001234	s Sn < 0.000025	
O B < 0.001296	M Ge < 0.000700	M Os < 0.000099	O Sr < 0.000025	
O Ba < 0.000246	M Hf < 0.001600	O P < 0.020580	O Ta < 0.009261	
O Be < 0.000102	M Hg < 0.000996	M Pb < 0.003700	M Tb < 0.000100	
M Bi < 0.000337	M Ho < 0.000100	M Pd < 0.000100	M Te < 0.001800	
O Ca < 0.000470	O In < 0.005468	M Pr < 0.006001	M Th < 0.000100	
O Cd < 0.000284	M Ir < 0.000099	M Pt < 0.000200	O Ti < 0.000514	
M Ce < 0.010001	O K < 0.003447	M Rb < 0.000500	M Tl < 0.000100	
O Co < 0.001337	O La < 0.001025	M Re < 0.000100	M Tm < 0.000100	
O Cr < 0.001029	O Li < 0.000077	M Rh < 0.000100	M U < 0.000100	
M Cs < 0.030005	M Lu < 0.000200	M Ru < 0.000099	M V < 0.000500	
O Cu < 0.002058	O Mg < 0.000037	n S < 0.000100	M W < 0.000100	
M Dy < 0.000100	M Mn < 0.000100	O Sb < 0.020580	M Y < 0.000100	
M Er < 0.000100	M Mo < 0.000100	O Sc < 0.000164	M Yb < 0.000100	

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 118.71 +4 4,5, 6,7,8

Sn(OH)xHy2-

Chemical Compatibility -Soluble in HCl and dilute HF / HNO3. Avoid neutral to basic media. Unstable at ppm levels with metals that would pull F- away. (i.e. Do not mix with Alkaline or Rare Earths or high levels of transition elements unless they are fluorinated.) Stable with most inorganic anions provided it is in the chemical form shown above.

Stability - 2-100 ppb levels stable (alone or mixed with all other metals that are at comparable levels) as the Sn(OH)xHy2- for 1 year in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the Sn(OH)xHy2- chemically stable for years in 2-5% HNO3 / trace HF in a LDPE container.

Sn Containing Samples (Preparation and Solution) - Metal (Soluble in HF / HNO3 or HCl); Oxides - SnO (soluble in HCl), SnO2 -very resistant to all acids including HF(Fusion with equal parts of Na2CO3 and S. It is then soluble in water or dilute acids as the thiostannate.); Alloys (Treat first 0.1 g with 10 mL conc. H2SO4 to boiling until the alloy disintegrates and nearly all of the sulfuric acid is expelled. Then add 100 mL O2 free water and 50 mL of conc HCl or transfer to a plastic container and add 1 mL HF in either case warming gently to bring about solution.); Organic Matrices (Volatility and precipitation of the insoluble stannic oxide are problems. Consultation of the literature should be made for individual matrices / Sn compounds.)

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 120 amu	5 ppt	N/A	120Te, 104Ru16O, 104Pd16O
ICP-OES 189.989 nm	0.03 / 0.003 µg/mL	1	
ICP-OES 242.949 nm	0.1 / 0.01 µg/mL	1	W, Mo, Rh ,Ta, Co

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

Reagent

1000 Sr_00011

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 14, 2017

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- June 14, 2021

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Michael Z Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines



CERTIFICATE OF ANALYSIS

USE 800-669-6799 • 540-585-3030
Fax: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGSR1
Lot Number: M2-SR658331
Matrix: 0.1% (v/v) HNO3
Value / Analyte(s): 1 000 µg/mL ea:
Strontium
Starting Material: SrCO3
Starting Material Lot#: 1716 1967 1966
Starting Material Purity: 99.9937%

4938582
ID: 1000 Sr_00011
Exp: 06/14/18 Prod: SJS
1000 Sr IV

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1002 ± 5 µg/mL
Density: 1.001 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1 1002 ± 3 µg/mL
ICP Assay NIST SRM 3153a Lot Number: 990906

Assay Method #2 1001 ± 3 µg/mL
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$
 X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$
 w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:
$$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2)$$

$$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2)$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a\&b}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2 in all cases at Inorganic Ventures
 $u_{char\ a\&b} = [(w_a)^2(u_{char\ a})^2 + (w_b)^2(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume
 u_{bb} = bottle to bottle homogeneity standard uncertainty
 u_{lts} = long term stability standard uncertainty (storage)
 u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

O	Ag	<	0.003318	M	Eu	<	0.000995	O	Na	<	0.000474	M	Se	<	0.023047	O	Zn	<	0.000121
O	Al	<	0.000486	O	Fe	<	0.000826	M	Nb	<	0.000497	O	Si	<	0.001483	M	Zr	<	0.007967
M	As	<	0.001493	M	Ga	<	0.001991	M	Nd	<	0.000497	M	Sm	<	0.000497				
M	Au	<	0.005394	M	Gd	<	0.002987	M	Ni	<	0.001357	M	Sn	<	0.000306				
O	B	<	0.005530	M	Ge	<	0.004979	M	Os	<	0.000490	s	Sr	<					
M	Ba	<	0.104336	M	Hf	<	0.000497	O	P	<	0.033180	M	Ta	<	0.000497				
O	Be	<	0.000132	M	Hg	<	0.000980	M	Pb	<	0.001160	M	Tb	<	0.000497				
M	Bi	<	0.000350	M	Ho	<	0.000497	M	Pd	<	0.002451	O	Te	<	0.022120				
O	Ca	<	0.003185	M	In	<	0.000497	M	Pr	<	0.000995	M	Th	<	0.000497				
M	Cd	<	0.000153	M	Ir	<	0.000490	M	Pt	<	0.002987	M	Ti	<	0.000186				
M	Ce	<	0.001193	O	K	<	0.001945	M	Rb	<	0.006971	M	Tl	<	0.000497				
M	Co	<	0.000153	M	La	<	0.003983	M	Re	<	0.000497	M	Tm	<	0.000497				
O	Cr	<	0.005530	O	Li	<	0.004202	O	Rh	<	0.006636	M	U	<	0.000497				
M	Cs	<	0.001991	M	Lu	<	0.000497	M	Ru	<	0.000980	M	V	<	0.001991				
O	Cu	<	0.006636	O	Mg	<	0.000126	O	S	<	0.055300	M	W	<	0.001493				
M	Dy	<	0.000497	M	Mn	<	0.000120	M	Sb	<	0.003983	O	Y	<	0.003318				
M	Er	<	0.000497	M	Mo	<	0.006971	O	Sc	<	0.003318	M	Yb	<	0.000043				

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

-While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 87.62 +2 6 Sr(H₂O)₆+2

Chemical Compatibility - Soluble in HCl, and HNO₃. Avoid H₂SO₄, HF and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate and tungstate in neutral aqueous media.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1 - 3.5% HNO₃ / LDPE container.

Sr Containing Samples (Preparation and Solution) -Metal (Best dissolved in diluted HNO₃); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Dry ash and dissolution in dilute HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 88 amu	1200 ppt	N/A	72Ge16O, 176Yb+2, 176Lu+2, 176Hf+2
ICP-OES 407.771 nm	0.0004 / 0.00006 µg/mL	.1	U, Ce
ICP-OES 421.552 nm	0.0008 / 0.00004 µg/mL	1	Rb
ICP-OES 460.733 nm	0.07 / 0.003 µg/mL	1	Ce

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

Reagent

1000 V_00015

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGV1
Lot Number: K2-V651103
Matrix: 2% (v/v) HNO₃
Value / Analyte(s): 1 000 µg/mL ea:
Vanadium

4780772
ID: 1000 V_00015
Exp. 06/22/20 Pp: 5/5
1000 V IV

Starting Material: V2O₅

Starting Material Lot#: 1782

Starting Material Purity: 99.9947%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1000 ± 5 µg/mL

Certified Density: 1.016 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 1001 ± 3 µg/mL
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 999 ± 5 µg/mL
ICP Assay NIST SRM 3165 Lot Number: 992706

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$$

X_a = mean of Assay Method A with standard uncertainty $u_{char a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$$w_a = (1/u_{char a}^2) / ((1/u_{char a}^2) + (1/u_{char b}^2))$$

$$w_b = (1/u_{char b}^2) / ((1/u_{char a}^2) + (1/u_{char b}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k(u_{char a\&b}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char a\&b} = [(w_a)^2(u_{char a}^2) + (w_b)^2(u_{char b}^2)]^{1/2}$ where $u_{char a}$ and $u_{char b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = \text{mean of Assay Method A with standard uncertainty } u_{char a}$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k(u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000199	M	Eu	<	0.000099	O	Na	0.007915	M	Se	<	0.006683	O	Zn	<	0.006624
M	Al		0.009352	O	Fe		0.033582	M	Nb	0.001127	O	Si		0.002638	M	Zr	<	0.001995
M	As	<	0.001596	M	Ga		0.000433	M	Nd	<	0.000399	M	Sm	<	0.000099			
M	Au	<	0.000300	M	Gd	<	0.000099	M	Ni	<	0.006982	M	Sn	<	0.001396			
M	B	<	0.016458	M	Ge	<	0.000399	M	Os	<	0.000100	O	Sr		0.000143			
M	Ba		0.000184	M	Hf	<	0.000099	O	P	<	0.055200	M	Ta	<	0.000099			
M	Be	<	0.000498	M	Hg	<	0.008001	M	Pb		0.000238	M	Tb	<	0.000099			
M	Bi	<	0.000399	M	Ho	<	0.000099	M	Pd	<	0.000099	M	Te	<	0.001197			
O	Ca		0.011993	M	In	<	0.000099	M	Pr	<	0.000099	M	Th	<	0.000199			
M	Cd	<	0.000099	M	Ir	<	0.000100	M	Pt	<	0.000199	M	Ti		0.001452			
M	Ce	<	0.000399	O	K	<	0.110400	M	Rb	<	0.000598	M	Tl	<	0.001396			
M	Co	<	0.000099	M	La	<	0.000199	M	Re	<	0.000099	M	Tm	<	0.000099			
O	Cr		0.016311	O	Li	<	0.003312	M	Rh	<	0.000399	M	U	<	0.000199			
M	Cs	<	0.006184	M	Lu	<	0.000099	M	Ru	<	0.000100	s	V	<				
M	Cu	<	0.002793	O	Mg	<	0.033120	n	S	<		M	W		0.000368			
M	Dy	<	0.000099	M	Mn		0.000650	M	Sb		0.009363	M	Y	<	0.000099			
M	Er	<	0.000099	M	Mo		0.011021	M	Sc	<	0.000498	M	Yb	<	0.000099			

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

-While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 50.94 +5 6 H2V10O284-

Chemical Compatibility -Soluble in HCl, HNO3, H2SO4, HF, H3PO4 and strong basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.

V Containing Samples (Preparation and Solution) -Metal (Fusion with NaOH or KOH in NiO or Na2CO3 / KNO3); Oxides (V2O3 - use HCl, V2O4 - use HCl or HNO3, V2O5 - use concentrated acids); Ores (Na2CO3 / KNO3 in Pto caution - nitrates attack Pto followed by water extraction of fuseate); Organic Matrices (Ash at 450 EC followed by dissolving according to V2O5 above) .

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 51 amu	4 ppt	N/A	34S16O1H, 35Cl16O, 38Ar13C, 36Ar15N, 36Ar14N1H, 37Cl14N,36S15N, 33S18O, 34S17O, 102Ru+2,02Pd+2
ICP-OES 290.882 nm	0.008 / 0.0008 µg/mL	1	Hf, Nb
ICP-OES 292.402 nm	0.006 / 0.001 µg/mL	1	Th
ICP-OES 309.311 nm	0.005 / 0.001 µg/mL	1	Mg, U, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.869.6799; 540.585.9030; Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 22, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- August 22, 2020

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

NAMES AND SIGNATURES OF CERTIFYING OFFICERS

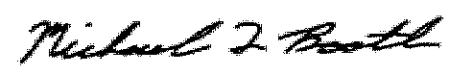
Certificate Prepared By:

James King Jr
Chemist, Technical Manager



Certificate Approved By:

Michael Booth
Supervisor, Quality Control



Certifying Officer:

Paul Gaines
CEO, Senior Technical Director



Reagent

1000 W IV_00014



300 Technology Drive
Christiansburg, VA 24073 - USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 • 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

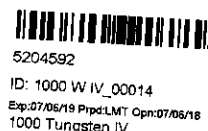
1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGW1
Lot Number: N2-W664865
Matrix: 0.2% (v/v) HNO₃
2% (v/v) HF
Value / Analyte(s): 1 000 µg/mL ea:
Tungsten
Starting Material: W Powder
Starting Material Lot#: 1898
Starting Material Purity: 99.9941%



3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 998 ± 6 µg/mL
Density: 1.007 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1 999 ± 6 µg/mL
ICP Assay NIST SRM 3163 Lot Number: 140606

Assay Method #2 997 ± 7 µg/mL
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$$

X_a = mean of Assay Method A with standard uncertainty $u_{char a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$$w_a = (1/u_{char a}^2) / ((1/u_{char a}^2) + (1/u_{char b}^2))$$

$$w_b = (1/u_{char b}^2) / ((1/u_{char a}^2) + (1/u_{char b}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a \& b}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char a \& b} = [(w_a)^2 (u_{char a}^2) + (w_b)^2 (u_{char b}^2)]^{1/2}$ where $u_{char a}$ and $u_{char b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = \text{mean of Assay Method A with standard uncertainty } u_{char a}$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.001202	M Eu < 0.000200	O Na < 0.001960	M Se < 0.004000	M Zn < 0.002074
O Al < 0.033570	M Fe < 0.079372	M Nb < 0.180390	i Si < 0.005595	O Zr < 0.005595
M As < 0.010422	M Ga < 0.000200	M Nd < 0.000200	M Sm < 0.000200	
M Au < 0.030804	M Gd < 0.000200	M Ni < 0.017638	M Sn < 0.000266	
M B < 0.003808	M Ge < 0.001403	M Os < 0.000200	M Sr < 0.000801	
M Ba < 0.002004	M Hf < 0.000288	i P < 0.011947	M Ta < 0.011947	
M Be < 0.000601	i Hg < 0.000200	M Pb < 0.005612	M Tb < 0.000200	
M Bi < 0.009219	M Ho < 0.000200	M Pd < 0.001800	M Te < 0.001603	
O Ca < 0.004290	M In < 0.000200	M Pr < 0.000601	M Th < 0.012426	
M Cd < 0.000200	M Ir < 0.000200	M Pt < 0.001603	M Ti < 0.004115	
M Ce < 0.000200	O K < 0.039229	M Rb < 0.001603	M Tl < 0.003206	
M Co < 0.000200	M La < 0.000200	M Re < 0.300651	M Tm < 0.000200	
O Cr < 0.011190	O Li < 0.000434	M Rh < 0.000200	M U < 0.001202	
M Cs < 0.000088	M Lu < 0.000200	M Ru < 0.000200	M V < 0.009219	
M Cu < 0.003607	M Mg < 0.000632	i S < 0.008819	s W < 0.000200	
M Dy < 0.000200	M Mn < 0.005211	M Sb < 0.000543	M Y < 0.000200	
M Er < 0.000200	M Mo < 0.000232	O Sc < 0.000543	M Yb < 0.000200	

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.
- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 183.85 +6 6,7,8,9
WOF5-2(chemical form as received)

Chemical Compatibility -W is very readily hydrolyzed requiring 0.1 to 1% HF solutions for stabile acidic solutions. The [WOF5]-2 is soluble in % levels of HCl and HNO3 provided it is in the [WOF5]-2 form. Stable at ppm levels with some metals provided it is fluorinated. <U>Do not mix with Alkaline or Rare Earths</U>. W is best to be mixed only with other fluorinated metals (Ti, Zr, Hf, Nb, Ta, Mo, Si, Sn, Ge). Look for yellow WO3 precipitate if mixed with other transitions at higher levels indicating instability. The yellow WO3 will form over a period of weeks even in trace HF, therefore, <U>HF levels of W multi-element blends should be ∼ 1%</U>.

Stability - 2-100 ppb levels stable (alone or mixed with all other metals that are at comparable levels) as the [WOF5]-2 for months in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the [WOF5]-2 chemically stable for years in 1% HF in a LDPE container.

W Containing Samples (Preparation and Solution) -Metal (Soluble in HF / HNO3); Oxide (soluble in HF or NH4OH) ; Organic Matrices (dry ash at 450 0C in Pt0 and dissolve oxide with HF).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 182 amu	5 ppt	N/A	166Er16O
ICP-OES 207.911 nm	0.03/0.001 µg/mL	1	Ru, In
ICP-OES 209.475 nm	0.05/0.008 µg/mL	1	Mo
ICP-OES 224.875 nm	0.05/0.005 µg/mL	1	Co, Rh, Ag

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.699.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 19, 2018

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **February 19, 2022**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Brenda Francis
Product Documentation Technician



Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Michael J Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines

Reagent

1000 Zn_00020

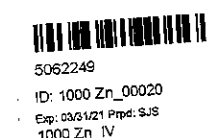
1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGZN1
Lot Number: M2-ZN656655
Matrix: 2% (v/v) HNO₃
Value / Analyte(s): 1 000 µg/mL ea:
Zinc
Starting Material: Zn Shot
Starting Material Lot#: 1887
Starting Material Purity: 99.9994%



3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 5 µg/mL
Density: 1.011 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1	1002 ± 3 µg/mL ICP Assay NIST SRM 3168a Lot Number: 120629
Assay Method #2	1001 ± 3 µg/mL EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$$

$$X_a = \text{mean of Assay Method A with standard uncertainty } u_{char\ a}$$

$$X_b = \text{mean of Assay Method B with standard uncertainty } u_{char\ b}$$

$$w_a \text{ and } w_b = \text{the weighting factors for each method calculated using the inverse square of the variance:}$$

$$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2)$$

$$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2)$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a\&b}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$$k = \text{coverage factor} = 2 \text{ in all cases at Inorganic Ventures}$$

$$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{1/2} \text{ where } u_{char\ a} \text{ and } u_{char\ b} \text{ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume}$$

$$u_{bb} = \text{bottle to bottle homogeneity standard uncertainty}$$

$$u_{lts} = \text{long term stability standard uncertainty (storage)}$$

$$u_{ts} = \text{transport stability standard uncertainty}$$

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = \text{mean of Assay Method A with standard uncertainty } u_{char\ a}$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

$$k = \text{coverage factor} = 2 \text{ in all cases at Inorganic Ventures}$$

$$u_{char\ a} = \text{square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume}$$

$$u_{bb} = \text{bottle to bottle homogeneity standard uncertainty}$$

$$u_{lts} = \text{long term stability standard uncertainty (storage)}$$

$$u_{ts} = \text{transport stability standard uncertainty}$$

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.001528	M Eu < 0.000509	O Na < 0.000719	M Se < 0.050920	s Zn < 0.001130
O Al < 0.011300	O Fe < 0.000471	M Nb < 0.000509	O Si < 0.022600	O Zr < 0.001130
M As < 0.005092	M Ga < 0.005092	M Nd < 0.001018	M Sm < 0.000509	
M Au < 0.000509	M Gd < 0.002037	O Ni < 0.000904	M Sn < 0.000509	
O B < 0.001130	M Ge < 0.001018	n Os < 0.000009	O Sr < 0.000009	
O Ba < 0.001130	M Hf < 0.000509	O P < 0.033900	M Ta < 0.000509	
O Be < 0.000113	O Hg < 0.002260	O Pb < 0.004240	M Tb < 0.000509	
M Bi < 0.010184	M Ho < 0.000509	M Pd < 0.000509	M Te < 0.005092	
O Ca < 0.000603	M In < 0.000509	M Pr < 0.000509	M Th < 0.000509	
O Cd < 0.000290	M Ir < 0.000509	M Pt < 0.000509	O Ti < 0.000565	
M Ce < 0.000509	O K < 0.000322	M Rb < 0.000509	M Tl < 0.000313	
M Co < 0.000509	M La < 0.000509	M Re < 0.000509	O Tm < 0.000379	
O Cr < 0.002260	O Li < 0.000565	M Rh < 0.000509	M U < 0.000509	
M Cs < 0.001528	M Lu < 0.000509	O Ru < 0.006780	O V < 0.001130	
O Cu < 0.000149	O Mg < 0.000023	O S < 0.011300	M W < 0.000509	
M Dy < 0.000509	O Mn < 0.000226	M Sb < 0.000509	O Y < 0.000082	
M Er < 0.000509	M Mo < 0.001528	O Sc < 0.000565	M Yb < 0.000509	

10.0 **QUALITY STANDARD DOCUMENTATION**

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030; Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 **CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY**

11.1 Certification Issue Date

March 31, 2017

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- March 31, 2021

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 **NAMES AND SIGNATURES OF CERTIFYING OFFICERS**

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Michael Z Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines

Revision1: Added 30mL statements 091917JAK

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 65.39 +2 4 Zn(OH)(aq)1+

Chemical Compatibility -Stable in HCl, HNO3, H2SO4 ,HF, H3PO4. Avoid basic media forming insoluble carbonate and hydroxide. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.

Zn Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO3); Organic based (dry ash at 4500C and dissolve ash in HCl) (sulfuric/peroxide acid digestion)

Atomic Spectroscopic Information (ICP-OES D.L.s are given as <u>radial/axial</u> view):			
Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 66 amu	7 ppt	N/A	50Ti16O,50Cr16O, 50V16O, 34S16O2, 32S16O18O, 32S17O2, 33S16O17O, 32S34S, 33S2
ICP-OES 202.548 nm	0.004/0.0002 µg/mL	1	Nb, Cu, Co, Hf
ICP-OES 206.200 nm	0.006/0.0006 µg/mL	1	Sb, Ta, Bi, Os
ICP-OES 213.856 nm	0.002/0.0004 µg/mL	1	Ni, Cu, V

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

Reagent

1000 Zr_00019

REPORT OF ANALYSIS

Single-Element Aqueous RM

Product #: S4400-1000691

Zirconium (Zr) – 1000 µg/mL

Lot #: 171418-22

Matrix: 2% HNO₃

Element	Certified Concentration
Zr	1001 µg/mL (w/v)
	996 µg/g (w/w)

Intended Use: This solution is intended for use as a reference material (RM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This RM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to ISO 9001, ISO Guide 34, and ISO/IEC 17025. This RM was prepared to a nominal concentration of 1000 µg/mL by gravimetric methods using 99.994% pure zirconium dinitrate oxide hydrate (ZrO₂·xH₂O) dissolved in high purity nitric acid (HNO₃) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this RM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration was determined based upon gravimetric procedures. Secondary verification of the certified concentration was performed using ICP-OES and is traceable to NIST SRM 3169. The uncertainty associated with the certified concentration is ±0.5% relative, which is the sum of the estimated errors due to the purity of the raw materials, the gravimetric preparation of the solution, and transpiration through the container. This represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	8	Ce	<0.2	Gd	<0.2	Lu	2	Pb	<1	Se	<2	Tl	<0.5
Al	23	Co	<1	Ge	<0.5	Mg	<5	Pd	<0.5	Si	<100	Tm	<0.2
As	<2	Cs	<0.5	Hf	28	Mn	<1	Pr	<0.2	Sm	<0.2	U	<0.5
Au	<0.5	Cr	2	Hg	<0.5	Mo	<0.5	Pt	<0.5	Sn	<0.5	V	<1
B	<5	Cu	<1	Ho	<0.2	Na	<25	Rb	<0.5	Sr	<1	W	<0.5
Ba	<1	Dy	<0.2	In	nd	Nb	0.9	Re	<0.2	Ta	<0.5	Y	<0.5
Be	<0.5	Er	<0.2	Ir	<0.2	Nd	<0.2	Rh	<0.5	Tb	<0.5	Yb	<0.2
Bi	<0.2	Eu	<0.2	K	<25	Ni	<2	Ru	<0.5	Te	<1	Zn	<2
Ca	<25	Fe	22	La	<0.5	Os	<0.5	Sb	<0.5	Th	<0.5	Zr	MAJOR
Cd	<0.5	Ga	<0.5	Li	<2	P	<100	Sc	<10	Ti	<2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the RM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original RM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for 18 months from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.



Chuck Goudreau, Certifying Officer

November 16, 2018
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

USA
5580 Skylane Boulevard P: 707.525.5788
Santa Rosa, CA 95403 P: 800.878.7654
F: 707.545.7901

www.cpiinternational.com
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Europe
Nieuwe Hemweg 7P P: +31 20 638 05 97
1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

Reagent

10000 A1_00018

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.869.6798; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 08, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- November 08, 2020

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Michael Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R. Gaines



300 Technology Drive
Christiansburg, VA 24073 - USA
info@inorganicventures.com

CERTIFICATE OF ANALYSIS

Lot: 10000 AI_00013
ID: 10000 AI_00013
Exp: 11/08/20 Prpd: CML
10000 AI IV

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGAL10
Lot Number: K2-AL653003
Matrix: 7% (v/v) HNO3
Value / Analyte(s): 10 000 µg/mL ea:
Aluminum

Starting Material: AI Shot

Starting Material Lot#: 1834

Starting Material Purity: 99.9965%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10030 ± 33 µg/mL
Certified Density: 1.083 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1 10008 ± 39 µg/mL
ICP Assay NIST SRM 3101a Lot Number: 140903

Assay Method #2 10039 ± 26 µg/mL
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods

Characterization of CRM by one method

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$$

X_a = mean of Assay Method A with standard uncertainty $u_{char a}$
 X_b = mean of Assay Method B with standard uncertainty $u_{char b}$
 w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:
$$w_a = (1/u_{char a}^2) / [(1/u_{char a}^2) + (1/u_{char b}^2)]$$

$$w_b = (1/u_{char b}^2) / [(1/u_{char a}^2) + (1/u_{char b}^2)]$$

CRM/RM Expanded Uncertainty (U) = $U_{CRM/RM} = k(u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char a}$ = $[(w_a)^2(u_{char a}^2) + (w_b)^2(u_{char b}^2)]^{1/2}$ where $u_{char a}$ and $u_{char b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char a}$

CRM/RM Expanded Uncertainty (U) = $U_{CRM/RM} = k(u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.000521	M Eu < 0.000521	O Na 0.039566	M Se < 0.003648	M Zn 0.030987
s Al < 0.000521	O Fe 0.031494	M Nb < 0.000521	O Si 0.185691	O Zr 0.000399
M As < 0.012509	M Ga 0.002264	M Nd 0.004290	M Sm < 0.002085	
M Au < 0.000518	M Gd < 0.004170	O Ni < 0.012890	M Sn < 0.005212	
O B 0.008253	M Ge < 0.002606	M Os < 0.000518	O Sr 0.000202	
O Ba < 0.000659	M Hf < 0.000521	n P < 0.000521	M Ta < 0.000521	
O Be < 0.000258	M Hg < 0.001555	M Pb 0.001549	M Tb < 0.000521	
M Bi < 0.005212	M Ho < 0.000521	M Pd < 0.000521	M Te < 0.014072	
O Ca 0.013185	M In < 0.002085	M Pr 0.000953	M Th < 0.007297	
M Cd < 0.004170	M Ir < 0.000518	M Pt < 0.000521	O Ti 0.001589	
M Ce 0.011680	O K 0.026175	M Rb < 0.000521	M Tl 0.003099	
M Co < 0.000521	O La 0.007115	M Re < 0.000521	M Tm < 0.000521	
O Cr 0.001038	O Li < 0.000103	M Rh < 0.000521	M U < 0.005212	
M Cs < 0.000521	M Lu < 0.000521	M Ru < 0.000518	M V 0.001549	
O Cu 0.030608	O Mg 0.016615	i S < 0.000521	M W < 0.000521	
M Dy < 0.003127	O Mn 0.000589	M Sb < 0.018763	O Y < 0.002578	
M Er 0.000834	M Mo < 0.002085	O Sc 0.000548	M Yb < 0.000521	

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 26.98 +3 6 Al(H₂O)₆+3

Chemical Compatibility -Soluble in HCl, HNO₃, HF and H₂SO₄. Avoid neutral media. Soluble in strongly basic NaOH forming the Al(OH)₄(H₂O)₂- species. Stable with most metals and inorganic anions. The phosphate is insoluble in water and only slightly soluble in acid.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO₃ / LDPE container.

Al Containing Samples (Preparation and Solution) -Metal (Best dissolved in HCl / HNO₃); a- Al₂O₃ (Na₂CO₃ fusion in Pt0);

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 27 amu	30 ppt	N/A	12C15N, 13C14N, 1H12C14N, 11B16O, 54Cr2+, 54Fe2+
ICP-OES 167.078 nm	0.1/0.009 µg/mL	1	Fe
ICP-OES 394.401 nm	0.05/0.006 µg/mL	1	U, Ce
ICP-OES 396.152 nm	0.03/0.006 µg/mL	1	Mo, Zr, Ce

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

Reagent

10000 A1_00019

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030; Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 08, 2016

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- November 08, 2020

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year from the date of removal from the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being handled and stored in accordance with the instructions given in Sec 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Donna Senn
Product Documentation Technician

Donna Senn

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Michael Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R. Gaines



CERTIFICATE OF ANALYSIS

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073-1100
USA
800.669.6799
540.585.3030
Fax: 540.585.3012
inorganicventures.com
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGAL10
Lot Number: K2-AL653003
Matrix: 7% (v/v) HNO3
Value / Analyte(s): 10 000 µg/mL ea:
Aluminum

5203473
ID: 10000 AL_00019
Exp: 11/08/20 Prep: SJS
10000 AL IV

Starting Material: Al Shot

Starting Material Lot#: 1834

Starting Material Purity: 99.9965%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10030 ± 33 µg/mL
Certified Density: 1.083 g/mL (measured at 20 ± 1 °C)

Assay Information:

Assay Method #1	10008 ± 39 µg/mL ICP Assay NIST SRM 3101a Lot Number: 140903
Assay Method #2	10039 ± 26 µg/mL EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods ——— Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$$

X_a = mean of Assay Method A with standard uncertainty $u_{char a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$$w_a = (1/u_{char a}^2) / ((1/u_{char a}^2) + (1/u_{char b}^2))$$

$$w_b = (1/u_{char b}^2) / ((1/u_{char a}^2) + (1/u_{char b}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a \& b}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char a \& b} = [(w_a)^2 (u_{char a}^2) + (w_b)^2 (u_{char b}^2)]^{1/2}$ where $u_{char a}$ and $u_{char b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = \text{mean of Assay Method A with standard uncertainty } u_{char a}$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.000521	M Eu < 0.000521	O Na 0.039566	M Se < 0.003648	M Zn 0.030987
s Al <	O Fe 0.031494	M Nb < 0.000521	O Si 0.185691	O Zr 0.000399
M As < 0.012509	M Ga 0.002264	M Nd 0.004290	M Sm < 0.002085	
M Au < 0.000518	M Gd < 0.004170	O Ni < 0.012890	M Sn < 0.005212	
O B 0.008253	M Ge < 0.002606	M Os < 0.000518	O Sr 0.000202	
O Ba < 0.000659	M Hf < 0.000521	n P <	M Ta < 0.000521	
O Be < 0.000258	M Hg < 0.001555	M Pb 0.001549	M Tb < 0.000521	
M Bi < 0.005212	M Ho < 0.000521	M Pd < 0.000521	M Te < 0.014072	
O Ca 0.013185	M In < 0.002085	M Pr 0.000953	M Th < 0.007297	
M Cd < 0.004170	M Ir < 0.000518	M Pt < 0.000521	O Ti 0.001589	
M Ce 0.011680	O K 0.026175	M Rb < 0.000521	M Tl 0.003099	
M Co < 0.000521	O La 0.007115	M Re < 0.000521	M Tm < 0.000521	
O Cr 0.001038	O Li < 0.000103	M Rh < 0.000521	M U < 0.005212	
M Cs < 0.000521	M Lu < 0.000521	M Ru < 0.000518	M V 0.001549	
O Cu 0.030608	O Mg 0.016615	i S <	M W < 0.000521	
M Dy < 0.003127	O Mn 0.000589	M Sb < 0.018763	O Y < 0.002578	
M Er 0.000834	M Mo < 0.002085	O Sc 0.000548	M Yb < 0.000521	

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag keep cap tightly sealed when not in use. Store and use at 20° ± 4° C. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 26.98 ± 3 6 Al(H₂O)₆+3

Chemical Compatibility -Soluble in HCl, HNO₃, HF and H₂SO₄. Avoid neutral media. Soluble in strongly basic NaOH forming the Al(OH)₄(H₂O)₂⁻ species. Stable with most metals and inorganic anions. The phosphate is insoluble in water and only slightly soluble in acid.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO₃ / LDPE container.

Al Containing Samples (Preparation and Solution) -Metal (Best dissolved in HCl / HNO₃); a- Al₂O₃ (Na₂CO₃ fusion in PtO);

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 27 amu	30 ppt	N/A	12C15N, 13C14N, 1H12C14N, 11B16O, 54Cr2+, 54Fe2+
ICP-OES 167.078 nm	0.1/0.009 µg/mL	1	Fe
ICP-OES 394.401 nm	0.05/0.006 µg/mL	1	U, Ce
ICP-OES 396.152 nm	0.03/0.006 µg/mL	1	Mo, Zr, Ce

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

Reagent

10000 Fe_00021

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 12, 2017

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- July 12, 2021

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Michael Z Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines

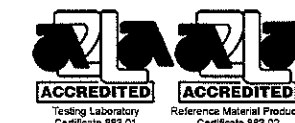


CERTIFICATE OF ANALYSIS

Lab: 600-779-7377 • 540.585.3030
Fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGFE10
Lot Number: M2-FE659835
Matrix: 5% (v/v) HNO3
Value / Analyte(s): 10 000 µg/mL ea:
Iron
Starting Material: Iron Metal
Starting Material Lot#: 2031 & 2146
Starting Material Purity: 99.9919%

4954179
ID: 10000 Fe_00021
Exp: 07/12/21 Prod: SJS
10000 Fe IV

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9993 ± 25 µg/mL
Density: 1.040 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1 10014 ± 52 µg/mL
ICP Assay NIST SRM 3126a Lot Number: 140812
Assay Method #2 9988 ± 25 µg/mL
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$$

X_a = mean of Assay Method A with standard uncertainty $u_{char a}$
 X_b = mean of Assay Method B with standard uncertainty $u_{char b}$
 w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:
$$w_a = (1/u_{char a})^2 / ((1/u_{char a})^2 + (1/u_{char b})^2)$$

$$w_b = (1/u_{char b})^2 / ((1/u_{char a})^2 + (1/u_{char b})^2)$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k(u_{char a\&b}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

 k = coverage factor = 2 in all cases at Inorganic Ventures
 $u_{char a\&b} = [(w_a)^2(u_{char a})^2 + (w_b)^2(u_{char b})^2]^{1/2}$ where $u_{char a}$ and $u_{char b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume
 u_{bb} = bottle to bottle homogeneity standard uncertainty
 u_{lts} = long term stability standard uncertainty (storage)
 u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = \text{mean of Assay Method A with standard uncertainty } u_{char a}$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k(u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

 k = coverage factor = 2 in all cases at Inorganic Ventures
 $u_{char a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume
 u_{bb} = bottle to bottle homogeneity standard uncertainty
 u_{lts} = long term stability standard uncertainty (storage)
 u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag <	0.000607	M Eu <	0.000607	O Na	0.009866	M Se <	0.032805	O Zn	0.119626
M Al	0.009492	s Fe <		M Nb <	0.000607	O Si	0.035517	M Zr <	0.002430
M As	0.060562	M Ga <	0.048601	M Nd <	0.000607	M Sm <	0.000607		
M Au <	0.008508	M Gd <	0.000607	O Ni	0.182522	M Sn <	0.012150		
M B <	0.015187	M Ge	0.060202	M Os <	0.001215	O Sr <	0.000997		
O Ba <	0.002494	M Hf <	0.000607	i P <	0.000001	M Ta <	0.000607		
M Be <	0.000607	M Hg <	0.001215	M Pb	0.001321	M Tb <	0.000607		
M Bi <	0.000607	M Ho <	0.000607	M Pd <	0.000607	M Te <	0.001822		
O Ca	0.022445	M In <	0.000607	M Pr <	0.000607	M Th <	0.001215		
M Cd <	0.000607	M Ir <	0.006685	M Pt <	0.000607	M Ti <	0.009720		
M Ce <	0.000607	O K	0.003453	M Rb <	0.000607	M Tl <	0.000607		
O Co	0.254052	M La <	0.000607	M Re <	0.000607	M Tm <	0.000607		
O Cr	0.034284	O Li <	0.000124	M Rh <	0.000607	M U <	0.002430		
M Cs <	0.000607	M Lu <	0.000607	M Ru <	0.000607	M V <	0.003645		
O Cu	0.019732	O Mg	0.001973	O S	0.032064	M W <	0.003645		
M Dy <	0.000607	O Mn	0.073995	M Sb	0.043139	M Y <	0.000607		
M Er <	0.000607	M Mo	0.012016	M Sc <	0.001822	M Yb <	0.000607		

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 55.85 +3 6 Fe(H₂O)₆³⁺
Chemical Compatibility -Stable in HCl, HNO₃, H₂SO₄, HF and H₃PO₄. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO₃ / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO₃ / LDPE container.

Fe Containing Samples (Preparation and Solution) - Metal (Soluble in HCl); Oxides (If the oxide has been at high temperature then Na₂CO₃ fusion in Pt0 followed by HCl dissolution otherwise dissolve in dilute HCl); Ores (See Oxides above using only the fusion approach).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 56 amu	970 ppt	N/A	40Ar15N1H, 40Ar16O, 36Ar17O1H , 38Ar18O, 37Cl18O1H, 40Ca16O
ICP-OES 238.204 nm	0.005/0.001 µg/mL	1	Ru, Co
ICP-OES 239.562 nm	0.005/0.001 µg/mL	1	Co, W, Cr
ICP-OES 259.940 nm	0.006/0.001 µg/mL	1	Hf, Nb

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

Reagent

10000 Fe_00022

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030; Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 12, 2017

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- July 12, 2021

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Michael Z Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines



CERTIFICATE OF ANALYSIS

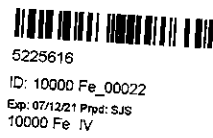
1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Custom Grade Solution
Catalog Number: CGFE10
Lot Number: M2-FE659835
Matrix: 5% (v/v) HNO3
Value / Analyte(s): 10 000 µg/mL ea:
Iron
Starting Material: Iron Metal
Starting Material Lot#: 2031 & 2146
Starting Material Purity: 99.9919%



3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9993 ± 25 µg/mL
Density: 1.040 g/mL (measured at 20 ± 4 °C)

Assay Information:

Assay Method #1 10014 ± 52 µg/mL
ICP Assay NIST SRM 3126a Lot Number: 140812
Assay Method #2 9988 ± 25 µg/mL
EDTA NIST SRM 928 Lot Number: 928

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM by two independent methods—Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$$

X_a = mean of Assay Method A with standard uncertainty $u_{char a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$$w_a = (1/u_{char a}^2) / ((1/u_{char a}^2) + (1/u_{char b}^2))$$

$$w_b = (1/u_{char b}^2) / ((1/u_{char a}^2) + (1/u_{char b}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{char b}^2 + u_{ts}^2 + u_{bb}^2)^{1/2}$$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char a \& b} = [(w_a)^2 (u_{char a}^2) + (w_b)^2 (u_{char b}^2)]^{1/2}$ where $u_{char a}$ and $u_{char b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{ts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = \text{mean of Assay Method A with standard uncertainty } u_{char a}$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{ts}^2 + u_{bb}^2)^{1/2}$$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{ts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag < 0.000607	M Eu < 0.000607	O Na < 0.009866	M Se < 0.032805	O Zn < 0.119626
M Al < 0.009492	s Fe < 0.000607	M Nb < 0.000607	O Si < 0.035517	M Zr < 0.002430
M As < 0.060562	M Ga < 0.048601	M Nd < 0.000607	M Sm < 0.000607	
M Au < 0.008508	M Gd < 0.000607	O Ni < 0.182522	M Sn < 0.012150	
M B < 0.015187	M Ge < 0.060202	M Os < 0.001215	O Sr < 0.000997	
O Ba < 0.002494	M Hf < 0.000607	i P < 0.000001	M Ta < 0.000607	
M Be < 0.000607	M Hg < 0.001215	M Pb < 0.001321	M Tb < 0.000607	
M Bi < 0.000607	M Ho < 0.000607	M Pd < 0.000607	M Te < 0.001822	
O Ca < 0.022445	M In < 0.000607	M Pr < 0.000607	M Th < 0.001215	
M Cd < 0.000607	M Ir < 0.008685	M Pt < 0.000607	M Ti < 0.009720	
M Ce < 0.000607	O K < 0.003453	M Rb < 0.000607	M Tl < 0.000607	
O Co < 0.254052	M La < 0.000607	M Re < 0.000607	M Tm < 0.000607	
O Cr < 0.034284	O Li < 0.000124	M Rh < 0.000607	M U < 0.002430	
M Cs < 0.000607	M Lu < 0.000607	M Ru < 0.000607	M V < 0.003645	
O Cu < 0.019732	O Mg < 0.001973	O S < 0.032064	M W < 0.003645	
M Dy < 0.000607	O Mn < 0.073995	M Sb < 0.043139	M Y < 0.000607	
M Er < 0.000607	M Mo < 0.012016	M Sc < 0.001822	M Yb < 0.000607	

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 55.85 +3 6 Fe(H2O)63+

Chemical Compatibility -Stable in HCl, HNO3, H2SO4 ,HF and H3PO4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.

Fe Containing Samples (Preparation and Solution) - Metal (Soluble in HCl); Oxides (If the oxide has been at high temperature then Na2CO3 fusion in PtO followed by HCl dissolution otherwise dissolve in dilute HCl); Ores (See Oxides above using only the fusion approach).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 56 amu	970 ppt	N/A	40Ar15N1H, 40Ar16O, 36Ar17O1H , 38Ar18O, 37Cl18O1H, 40Ca16O
ICP-OES 238.204 nm	0.005/0.001 µg/mL	1	Ru, Co
ICP-OES 239.562 nm	0.005/0.001 µg/mL	1	Co, W, Cr
ICP-OES 259.940 nm	0.006/0.001 µg/mL	1	Hf, Nb

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

Reagent

10000 Na_00070



CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

SE Std Sodium (Na) – 10,000 µg/mL

Matrix: 5% HNO₃



5571087
ID: 10000 Na_00070
Exp. 08/21/20 Prpd: SJS
10000 Na CPI

Product #: TA-10M521

Lot #: 752887-20

Element	Certified Concentration & Uncertainty
Na	10,070 ± 20 µg/mL (w/v)
	9771 ± 24 µg/g (w/w)

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 10,000 µg/mL by gravimetric methods using 99.997% pure sodium carbonate (Na₂CO₃) dissolved in high purity nitric acid (HNO₃) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3152a, lot #120715**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Indicative Values: ICP-MS was used to determine trace metal concentrations for this product (nd = not determined).

Trace Concentrations (µg/L)

Ag	<5	Co	<10	Ge	<5	Mg	<50	Pd	<5	Si	<1000	V	<10
Al	<20	Cs	11	Hf	<2	Mn	<10	Pr	<2	Sm	<2	W	<5
As	<20	Cr	<5	Hg	<5	Mo	<5	Pt	<5	Sn	<5	Y	<5
Au	<5	Cu	<10	Ho	<2	Na	MAJOR	Rb	70	Sr	14	Yb	<2
B	<50	Dy	<2	In	nd	Nb	<5	Re	<2	Ta	<5	Zn	<20
Ba	26	Er	<2	Ir	<2	Nd	<2	Rh	<5	Tb	<5		
Bi	<2	Eu	<2	K	<250	Ni	<20	Ru	<5	Te	<10		
Ca	<250	Fe	<100	La	<5	Os	<5	Sb	<5	Ti	<20		
Cd	<5	Ga	<5	Li	<20	P	<1000	Sc	<50	Tl	<5		
Ce	<2	Gd	<2	Lu	<2	Pb	<10	Se	<20	Tm	<2		

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau, Certifying Officer

February 21, 2019
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

USA
5580 Skylane Boulevard P: 707.525.5788
Santa Rosa, CA 95403 P: 800.878.7654
F: 707.545.7901

Europe
Nieuwe Hemweg 7P P: +31 20 638 05 97
1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
 - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Reagent

571995_00058



CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 571995 Lot No.: A0140111

Description : 8270 List 1 / Std #1 MegaMix (2017)

8270 List 1 / Std #1 MegaMix (2017) 500-2,000µg/mL, Methylene chloride, 5mL/ampul

Container Size : 10 mL Pkg Amt: > 5 mL

Expiration Date : January 31, 2020 Storage: 0°C or colder

Handling: Carcinogen/reproductive toxin. Photosensitive. Sonicate.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1,4-Dioxane CAS # 123-91-1 (Lot SHBJ5124) Purity 99%	1,006.6 µg/mL	+/- 5.8525 µg/mL Gravimetric +/- 12.0330 µg/mL Unstressed +/- 19.1503 µg/mL Stressed
2	N-Nitrosodimethylamine CAS # 62-75-9 (Lot 180322JLM) Purity 99%	1,005.1 µg/mL	+/- 5.8437 µg/mL Gravimetric +/- 12.0150 µg/mL Unstressed +/- 19.1217 µg/mL Stressed
3	Pyridine CAS # 110-86-1 (Lot SHBC7174V) Purity 99%	2,012.7 µg/mL	+/- 11.7020 µg/mL Gravimetric +/- 24.0599 µg/mL Unstressed +/- 38.2910 µg/mL Stressed
4	Phenol CAS # 108-95-2 (Lot SHBF9719V) Purity 99%	1,008.6 µg/mL	+/- 5.8641 µg/mL Gravimetric +/- 12.0569 µg/mL Unstressed +/- 19.1883 µg/mL Stressed
5	Aniline CAS # 62-53-3 (Lot K22Z462) Purity 99%	1,006.2 µg/mL	+/- 5.8501 µg/mL Gravimetric +/- 12.0282 µg/mL Unstressed +/- 19.1427 µg/mL Stressed
6	Bis(2-chloroethyl)ether CAS # 111-44-4 (Lot SHBD4430V) Purity 99%	1,009.5 µg/mL	+/- 5.8693 µg/mL Gravimetric +/- 12.0676 µg/mL Unstressed +/- 19.2054 µg/mL Stressed
7	n-Decane (C10) CAS # 124-18-5 (Lot SHBJ8526) Purity 99%	1,010.0 µg/mL	+/- 5.8722 µg/mL Gravimetric +/- 12.0736 µg/mL Unstressed +/- 19.2150 µg/mL Stressed

24	Bis(2-chloroethoxy)methane CAS # 111-91-1 Purity 99%	(Lot 5670100)	1,009.6 µg/mL	+/-	5.8699	µg/mL	Gravimetric
				+/-	12.0688	µg/mL	Unstressed
				+/-	19.2073	µg/mL	Stressed
25	2,4-Dichlorophenol CAS # 120-83-2 Purity 99%	(Lot BCBJ8113V)	1,009.0 µg/mL	+/-	5.8664	µg/mL	Gravimetric
				+/-	12.0616	µg/mL	Unstressed
				+/-	19.1959	µg/mL	Stressed
26	1,2,4-Trichlorobenzene CAS # 120-82-1 Purity 99%	(Lot SHBJ0905)	1,008.4 µg/mL	+/-	5.8629	µg/mL	Gravimetric
				+/-	12.0545	µg/mL	Unstressed
				+/-	19.1845	µg/mL	Stressed
27	Naphthalene CAS # 91-20-3 Purity 99%	(Lot MKBW2603V)	1,008.3 µg/mL	+/-	5.8623	µg/mL	Gravimetric
				+/-	12.0533	µg/mL	Unstressed
				+/-	19.1826	µg/mL	Stressed
28	2,6-Dichlorophenol CAS # 87-65-0 Purity 99%	(Lot MKBP8620V)	1,006.8 µg/mL	+/-	5.8536	µg/mL	Gravimetric
				+/-	12.0353	µg/mL	Unstressed
				+/-	19.1541	µg/mL	Stressed
29	4-Chloroaniline CAS # 106-47-8 Purity 99%	(Lot BCBJ1580V)	1,005.3 µg/mL	+/-	5.8449	µg/mL	Gravimetric
				+/-	12.0174	µg/mL	Unstressed
				+/-	19.1255	µg/mL	Stressed
30	Hexachlorobutadiene CAS # 87-68-3 Purity 99%	(Lot J31X013)	1,008.6 µg/mL	+/-	5.8641	µg/mL	Gravimetric
				+/-	12.0569	µg/mL	Unstressed
				+/-	19.1883	µg/mL	Stressed
31	4-Chloro-3-methylphenol CAS # 59-50-7 Purity 99%	(Lot STBC7309V)	1,006.2 µg/mL	+/-	5.8501	µg/mL	Gravimetric
				+/-	12.0282	µg/mL	Unstressed
				+/-	19.1427	µg/mL	Stressed
32	2-Methylnaphthalene CAS # 91-57-6 Purity 96%	(Lot STBF0201V)	1,005.5 µg/mL	+/-	5.8461	µg/mL	Gravimetric
				+/-	12.0199	µg/mL	Unstressed
				+/-	19.1294	µg/mL	Stressed
33	1-Methylnaphthalene CAS # 90-12-0 Purity 98%	(Lot 523400-9)	1,002.4 µg/mL	+/-	5.8283	µg/mL	Gravimetric
				+/-	11.9833	µg/mL	Unstressed
				+/-	19.0712	µg/mL	Stressed
34	1,2,4,5-Tetrachlorobenzene CAS # 95-94-3 Purity 99%	(Lot MKBW7717V)	1,007.2 µg/mL	+/-	5.8559	µg/mL	Gravimetric
				+/-	12.0401	µg/mL	Unstressed
				+/-	19.1617	µg/mL	Stressed
35	Hexachlorocyclopentadiene CAS # 77-47-4 Purity 99%	(Lot 0012015)	1,006.6 µg/mL	+/-	5.8525	µg/mL	Gravimetric
				+/-	12.0330	µg/mL	Unstressed
				+/-	19.1503	µg/mL	Stressed
36	2,4,6-Trichlorophenol CAS # 88-06-2 Purity 99%	(Lot STBF3742V)	1,009.3 µg/mL	+/-	5.8682	µg/mL	Gravimetric
				+/-	12.0652	µg/mL	Unstressed
				+/-	19.2016	µg/mL	Stressed
37	2,4,5-Trichlorophenol CAS # 95-95-4 Purity 99%	(Lot FHN01)	1,009.2 µg/mL	+/-	5.8676	µg/mL	Gravimetric
				+/-	12.0640	µg/mL	Unstressed
				+/-	19.1997	µg/mL	Stressed
38	2-Chloronaphthalene CAS # 91-58-7 Purity 99%	(Lot AJ2UI)	1,006.8 µg/mL	+/-	5.8536	µg/mL	Gravimetric
				+/-	12.0353	µg/mL	Unstressed
				+/-	19.1541	µg/mL	Stressed
39	Biphenyl CAS # 92-52-4 Purity 99%	(Lot MKBV9808V)	1,006.3 µg/mL	+/-	5.8507	µg/mL	Gravimetric
				+/-	12.0294	µg/mL	Unstressed
				+/-	19.1446	µg/mL	Stressed

56	4-Nitroaniline CAS # 100-01-6 Purity 98%	(Lot BCBG4702V)	1,007.5 µg/mL	+/-	5.8579	µg/mL	Gravimetric
				+/-	12.0442	µg/mL	Unstressed
				+/-	19.1681	µg/mL	Stressed
57	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol) CAS # 534-52-1 Purity 99%	(Lot B180716L)	2,012.4 µg/mL	+/-	11.7003	µg/mL	Gravimetric
				+/-	24.0564	µg/mL	Unstressed
				+/-	38.2853	µg/mL	Stressed
58	Diphenylamine CAS # 122-39-4 Purity 99%	(Lot MKBN8295V)	856.1 µg/mL	+/-	4.9889	µg/mL	Gravimetric
				+/-	10.2395	µg/mL	Unstressed
				+/-	16.2906	µg/mL	Stressed
59	Azobenzene CAS # 103-33-3 Purity 97%	(Lot BCBS6535V)	1,009.8 µg/mL	+/-	5.8709	µg/mL	Gravimetric
				+/-	12.0709	µg/mL	Unstressed
				+/-	19.2106	µg/mL	Stressed
60	4-Bromophenyl phenyl ether CAS # 101-55-3 Purity 99%	(Lot STBB9729V)	1,007.6 µg/mL	+/-	5.8583	µg/mL	Gravimetric
				+/-	12.0449	µg/mL	Unstressed
				+/-	19.1693	µg/mL	Stressed
61	Hexachlorobenzene CAS # 118-74-1 Purity 99%	(Lot LRAB8468)	1,006.6 µg/mL	+/-	5.8525	µg/mL	Gravimetric
				+/-	12.0330	µg/mL	Unstressed
				+/-	19.1503	µg/mL	Stressed
62	Pentachlorophenol CAS # 87-86-5 Purity 99%	(Lot 170717KJA)	2,005.9 µg/mL	+/-	11.6625	µg/mL	Gravimetric
				+/-	23.9787	µg/mL	Unstressed
				+/-	38.1617	µg/mL	Stressed
63	n-Octadecane (C18) CAS # 593-45-3 Purity 99%	(Lot T7N4E)	1,004.8 µg/mL	+/-	5.8420	µg/mL	Gravimetric
				+/-	12.0114	µg/mL	Unstressed
				+/-	19.1160	µg/mL	Stressed
64	Phenanthrene CAS # 85-01-8 Purity 99%	(Lot MKCB1762V)	1,005.3 µg/mL	+/-	5.8449	µg/mL	Gravimetric
				+/-	12.0174	µg/mL	Unstressed
				+/-	19.1255	µg/mL	Stressed
65	Anthracene CAS # 120-12-7 Purity 99%	(Lot MKBR2268V)	1,006.2 µg/mL	+/-	5.8501	µg/mL	Gravimetric
				+/-	12.0282	µg/mL	Unstressed
				+/-	19.1427	µg/mL	Stressed
66	Carbazole CAS # 86-74-8 Purity 99%	(Lot 7528800)	1,002.7 µg/mL	+/-	5.8298	µg/mL	Gravimetric
				+/-	11.9863	µg/mL	Unstressed
				+/-	19.0761	µg/mL	Stressed
67	Di-n-butylphthalate CAS # 84-74-2 Purity 99%	(Lot MKBT0244V)	1,005.6 µg/mL	+/-	5.8466	µg/mL	Gravimetric
				+/-	12.0210	µg/mL	Unstressed
				+/-	19.1312	µg/mL	Stressed
68	Fluoranthene CAS # 206-44-0 Purity 98%	(Lot MKBQ6360V)	1,002.6 µg/mL	+/-	5.8294	µg/mL	Gravimetric
				+/-	11.9856	µg/mL	Unstressed
				+/-	19.0749	µg/mL	Stressed
69	Pyrene CAS # 129-00-0 Purity 99%	(Lot BCBT5695)	1,009.3 µg/mL	+/-	5.8682	µg/mL	Gravimetric
				+/-	12.0652	µg/mL	Unstressed
				+/-	19.2016	µg/mL	Stressed
70	Benzyl butyl phthalate CAS # 85-68-7 Purity 99%	(Lot MKCF0058)	1,006.6 µg/mL	+/-	5.8525	µg/mL	Gravimetric
				+/-	12.0330	µg/mL	Unstressed
				+/-	19.1503	µg/mL	Stressed
71	Benz(a)anthracene CAS # 56-55-3 Purity 96%	(Lot 0012018)	1,004.8 µg/mL	+/-	5.8422	µg/mL	Gravimetric
				+/-	12.0118	µg/mL	Unstressed
				+/-	19.1166	µg/mL	Stressed

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant flow 1.8 mL/min.

Temp. Program:

80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.85 min.)

Inj. Temp:

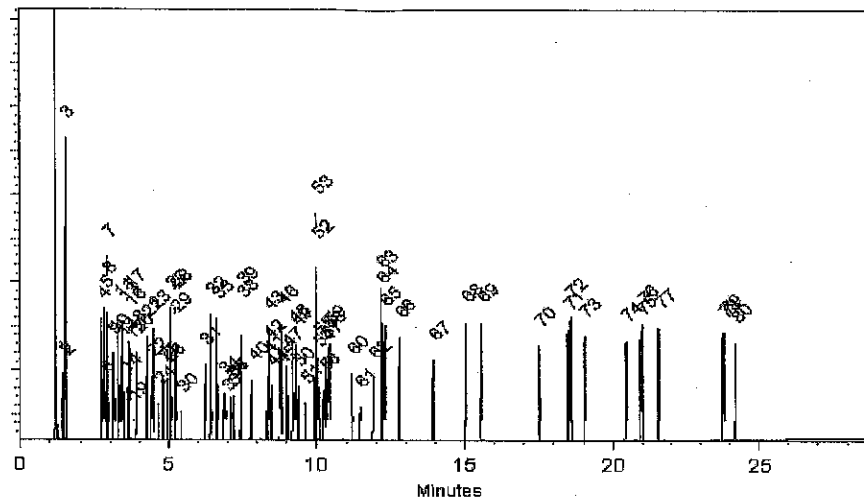
250°C

Det. Temp:

340°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cydnei L. Crust
Cydnei L. Crust - Mix Technician

Date Mixed: 30-Jul-2018

Balance: B442140311

Jennifer J. Pollino
Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 02-Aug-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/ μ ECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

72	Chrysene CAS # 218-01-9 Purity 99%	(Lot 012015)	1,009.4 µg/mL	+/- 5.8687 +/- 12.0664 +/- 19.2035	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
73	Bis(2-ethylhexyl)phthalate CAS # 117-81-7 Purity 99%	(Lot MKBZ3868V)	1,007.3 µg/mL	+/- 5.8565 +/- 12.0413 +/- 19.1636	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
74	Di-n-octyl phthalate CAS # 117-84-0 Purity 99%	(Lot 7170200)	1,007.0 µg/mL	+/- 5.8548 +/- 12.0377 +/- 19.1579	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
75	Benzo(b)fluoranthene CAS # 205-99-2 Purity 99%	(Lot 012012B)	1,003.7 µg/mL	+/- 5.8356 +/- 11.9983 +/- 19.0951	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
76	Benzo(k)fluoranthene CAS # 207-08-9 Purity 99%	(Lot 012012K)	1,005.7 µg/mL	+/- 5.8472 +/- 12.0222 +/- 19.1332	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
77	Benzo(a)pyrene CAS # 50-32-8 Purity 99%	(Lot ER071309-02)	1,008.8 µg/mL	+/- 5.8653 +/- 12.0593 +/- 19.1921	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
78	Indeno(1,2,3-cd)pyrene CAS # 193-39-5 Purity 99%	(Lot ER082107-02)	1,006.9 µg/mL	+/- 5.8542 +/- 12.0365 +/- 19.1560	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
79	Dibenz(a,h)anthracene CAS # 53-70-3 Purity 99%	(Lot ER032211-01)	1,008.7 µg/mL	+/- 5.8647 +/- 12.0581 +/- 19.1902	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
80	Benzo(g,h,i)perylene CAS # 191-24-2 Purity 99%	(Lot ER05121401)	1,000.2 µg/mL	+/- 5.8152 +/- 11.9565 +/- 19.0285	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
Solvent: Methylene chloride CAS # 75-09-2 Purity 99%						

Specific Reference Material Notes:

N-nitrosodiphenylamine 1000 ug/mL equivalent when used for GC analysis. Actual formulation is diphenylamine 855 ug/mL.

N-Nitrosodiphenylamine is prone to breakdown in the injection port and will be converted to diphenylamine.

N-Nitrosodiphenylamine is also a reactive species that can initiate premature decomposition of other compounds in the mix. For these reasons diphenylamine is used in the preparation of this mixture. When comparing the response of this compound to mixtures manufactured using N-nitrosodiphenylamine, a difference in response will be observed.

This lot was approved even though the %D for 4,6-DN-2-MP was greater than 10%.

40	2-Nitroaniline CAS # 88-74-4 Purity 99%	(Lot MKBK7597V)	1,007.5 µg/mL	+/- 5.8577 +/- 12.0437 +/- 19.1674	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
41	Acenaphthylene CAS # 208-96-8 Purity 97%	(Lot O03R)	1,007.2 µg/mL	+/- 5.8557 +/- 12.0395 +/- 19.1608	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
42	1,3-Dinitrobenzene CAS # 99-65-0 Purity 99%	(Lot BCBN4329V)	1,008.9 µg/mL	+/- 5.8658 +/- 12.0605 +/- 19.1940	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
43	Dimethylphthalate CAS # 131-11-3 Purity 99%	(Lot 10117699)	1,009.2 µg/mL	+/- 5.8676 +/- 12.0640 +/- 19.1997	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
44	2,6-Dinitrotoluene CAS # 606-20-2 Purity 99%	(Lot 1437483V)	1,009.1 µg/mL	+/- 5.8670 +/- 12.0628 +/- 19.1978	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
45	3-Nitroaniline CAS # 99-09-2 Purity 99%	(Lot MKBX1283V)	1,009.8 µg/mL	+/- 5.8711 +/- 12.0712 +/- 19.2112	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
46	Acenaphthene CAS # 83-32-9 Purity 99%	(Lot MKCC8329)	1,008.1 µg/mL	+/- 5.8612 +/- 12.0509 +/- 19.1788	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
47	2,4-Dinitrophenol CAS # 51-28-5 Purity 99%	(Lot STBG3580V)	2,013.2 µg/mL	+/- 11.7049 +/- 24.0659 +/- 38.3005	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
48	Dibenzofuran CAS # 132-64-9 Purity 99%	(Lot MKCD9952)	1,007.0 µg/mL	+/- 5.8548 +/- 12.0377 +/- 19.1579	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
49	4-Nitrophenol CAS # 100-02-7 Purity 99%	(Lot MKBK1842V)	2,015.4 µg/mL	+/- 11.7177 +/- 24.0922 +/- 38.3424	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
50	2,4-Dinitrotoluene CAS # 121-14-2 Purity 99%	(Lot MKAA0690V)	1,009.5 µg/mL	+/- 5.8693 +/- 12.0676 +/- 19.2054	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
51	2,3,4,6-Tetrachlorophenol CAS # 58-90-2 Purity 99%	(Lot PR-30126)	1,005.3 µg/mL	+/- 5.8449 +/- 12.0174 +/- 19.1255	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
52	Fluorene CAS # 86-73-7 Purity 98%	(Lot 10174662)	1,007.7 µg/mL	+/- 5.8591 +/- 12.0465 +/- 19.1718	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
53	n-Hexadecane (C16) CAS # 544-76-3 Purity 99%	(Lot SHBJ3997)	1,009.8 µg/mL	+/- 5.8711 +/- 12.0712 +/- 19.2112	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
54	Diethylphthalate CAS # 84-66-2 Purity 99%	(Lot MKCB0810V)	1,007.4 µg/mL	+/- 5.8571 +/- 12.0425 +/- 19.1655	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
55	4-Chlorophenyl phenyl ether CAS # 7005-72-3 Purity 99%	(Lot MKBX5225V)	1,006.7 µg/mL	+/- 5.8530 +/- 12.0342 +/- 19.1522	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

8	2-Chlorophenol CAS # 95-57-8 Purity 99%	(Lot STBF2690V)	1,005.6 µg/mL	+/-	5.8466	µg/mL	Gravimetric
				+/-	12.0210	µg/mL	Unstressed
				+/-	19.1312	µg/mL	Stressed
9	1,3-Dichlorobenzene CAS # 541-73-1 Purity 99%	(Lot BCBQ7100V)	1,009.7 µg/mL	+/-	5.8705	µg/mL	Gravimetric
				+/-	12.0700	µg/mL	Unstressed
				+/-	19.2092	µg/mL	Stressed
10	1,4-Dichlorobenzene CAS # 106-46-7 Purity 99%	(Lot MKBS4401V)	1,007.6 µg/mL	+/-	5.8583	µg/mL	Gravimetric
				+/-	12.0449	µg/mL	Unstressed
				+/-	19.1693	µg/mL	Stressed
11	Benzyl alcohol CAS # 100-51-6 Purity 99%	(Lot SHBJ0534)	1,009.6 µg/mL	+/-	5.8699	µg/mL	Gravimetric
				+/-	12.0688	µg/mL	Unstressed
				+/-	19.2073	µg/mL	Stressed
12	1,2-Dichlorobenzene CAS # 95-50-1 Purity 99%	(Lot SHBG3111V)	1,007.7 µg/mL	+/-	5.8589	µg/mL	Gravimetric
				+/-	12.0461	µg/mL	Unstressed
				+/-	19.1712	µg/mL	Stressed
13	2-Methylphenol (o-cresol) CAS # 95-48-7 Purity 99%	(Lot SHBH6379)	1,008.4 µg/mL	+/-	5.8629	µg/mL	Gravimetric
				+/-	12.0545	µg/mL	Unstressed
				+/-	19.1845	µg/mL	Stressed
14	2,2'-oxybis(1-chloropropane) CAS # 108-60-1 Purity 99%	(Lot 7577400)	1,007.6 µg/mL	+/-	5.8583	µg/mL	Gravimetric
				+/-	12.0449	µg/mL	Unstressed
				+/-	19.1693	µg/mL	Stressed
15	Acetophenone CAS # 98-86-2 Purity 99%	(Lot STBG8586)	1,009.4 µg/mL	+/-	5.8687	µg/mL	Gravimetric
				+/-	12.0664	µg/mL	Unstressed
				+/-	19.2035	µg/mL	Stressed
16	3-Methylphenol (m-cresol) CAS # 108-39-4 Purity 99%	(Lot SHBD0627V)	504.9 µg/mL	+/-	2.9423	µg/mL	Gravimetric
				+/-	6.0389	µg/mL	Unstressed
				+/-	9.6077	µg/mL	Stressed
17	4-Methylphenol (p-cresol) CAS # 106-44-5 Purity 99%	(Lot 49396APV)	501.8 µg/mL	+/-	2.9242	µg/mL	Gravimetric
				+/-	6.0018	µg/mL	Unstressed
				+/-	9.5487	µg/mL	Stressed
18	N-Nitroso-di-n-propylamine CAS # 621-64-7 Purity 99%	(Lot OPAGF)	1,006.6 µg/mL	+/-	5.8525	µg/mL	Gravimetric
				+/-	12.0330	µg/mL	Unstressed
				+/-	19.1503	µg/mL	Stressed
19	Hexachloroethane CAS # 67-72-1 Purity 99%	(Lot 4H3SF)	1,001.4 µg/mL	+/-	5.8222	µg/mL	Gravimetric
				+/-	11.9708	µg/mL	Unstressed
				+/-	19.0513	µg/mL	Stressed
20	Nitrobenzene CAS # 98-95-3 Purity 99%	(Lot SHBG5577V)	1,005.9 µg/mL	+/-	5.8484	µg/mL	Gravimetric
				+/-	12.0246	µg/mL	Unstressed
				+/-	19.1370	µg/mL	Stressed
21	Isophorone CAS # 78-59-1 Purity 98%	(Lot MKBG2442V)	1,009.1 µg/mL	+/-	5.8670	µg/mL	Gravimetric
				+/-	12.0629	µg/mL	Unstressed
				+/-	19.1979	µg/mL	Stressed
22	2-Nitrophenol CAS # 88-75-5 Purity 99%	(Lot BCBH7602V)	1,008.7 µg/mL	+/-	5.8647	µg/mL	Gravimetric
				+/-	12.0581	µg/mL	Unstressed
				+/-	19.1902	µg/mL	Stressed
23	2,4-Dimethylphenol CAS # 105-67-9 Purity 99%	(Lot 10165155)	1,008.6 µg/mL	+/-	5.8641	µg/mL	Gravimetric
				+/-	12.0569	µg/mL	Unstressed
				+/-	19.1883	µg/mL	Stressed

Reagent

571995_00059



CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 571995 Lot No.: A0140111
Description : 8270 List 1 / Std #1 MegaMix (2017)
8270 List 1 / Std #1 MegaMix (2017) 500-2,000µg/mL, Methylene chloride, 5mL/ampul
Container Size : 10 mL Pkg Amt: > 5 mL
Expiration Date : January 31, 2020 Storage: 0°C or colder
Handling: Carcinogen/reproductive toxin. Photosensitive. Sonicate.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1,4-Dioxane CAS # 123-91-1 (Lot SHBJ5124) Purity 99%	1,006.6 µg/mL	+/- 5.8525 µg/mL Gravimetric +/- 12.0330 µg/mL Unstressed +/- 19.1503 µg/mL Stressed
2	N-Nitrosodimethylamine CAS # 62-75-9 (Lot 180322JLM) Purity 99%	1,005.1 µg/mL	+/- 5.8437 µg/mL Gravimetric +/- 12.0150 µg/mL Unstressed +/- 19.1217 µg/mL Stressed
3	Pyridine CAS # 110-86-1 (Lot SHBC7174V) Purity 99%	2,012.7 µg/mL	+/- 11.7020 µg/mL Gravimetric +/- 24.0599 µg/mL Unstressed +/- 38.2910 µg/mL Stressed
4	Phenol CAS # 108-95-2 (Lot SHBF9719V) Purity 99%	1,008.6 µg/mL	+/- 5.8641 µg/mL Gravimetric +/- 12.0569 µg/mL Unstressed +/- 19.1883 µg/mL Stressed
5	Aniline CAS # 62-53-3 (Lot K22Z462) Purity 99%	1,006.2 µg/mL	+/- 5.8501 µg/mL Gravimetric +/- 12.0282 µg/mL Unstressed +/- 19.1427 µg/mL Stressed
6	Bis(2-chloroethyl)ether CAS # 111-44-4 (Lot SHBD4430V) Purity 99%	1,009.5 µg/mL	+/- 5.8693 µg/mL Gravimetric +/- 12.0676 µg/mL Unstressed +/- 19.2054 µg/mL Stressed
7	n-Decane (C10) CAS # 124-18-5 (Lot SHBJ8526) Purity 99%	1,010.0 µg/mL	+/- 5.8722 µg/mL Gravimetric +/- 12.0736 µg/mL Unstressed +/- 19.2150 µg/mL Stressed

24	Bis(2-chloroethoxy)methane CAS # 111-91-1 Purity 99%	(Lot 5670100)	1,009.6 µg/mL	+/-	5.8699	µg/mL	Gravimetric
				+/-	12.0688	µg/mL	Unstressed
				+/-	19.2073	µg/mL	Stressed
25	2,4-Dichlorophenol CAS # 120-83-2 Purity 99%	(Lot BCBJ8113V)	1,009.0 µg/mL	+/-	5.8664	µg/mL	Gravimetric
				+/-	12.0616	µg/mL	Unstressed
				+/-	19.1959	µg/mL	Stressed
26	1,2,4-Trichlorobenzene CAS # 120-82-1 Purity 99%	(Lot SHBJ0905)	1,008.4 µg/mL	+/-	5.8629	µg/mL	Gravimetric
				+/-	12.0545	µg/mL	Unstressed
				+/-	19.1845	µg/mL	Stressed
27	Naphthalene CAS # 91-20-3 Purity 99%	(Lot MKBW2603V)	1,008.3 µg/mL	+/-	5.8623	µg/mL	Gravimetric
				+/-	12.0533	µg/mL	Unstressed
				+/-	19.1826	µg/mL	Stressed
28	2,6-Dichlorophenol CAS # 87-65-0 Purity 99%	(Lot MKBP8620V)	1,006.8 µg/mL	+/-	5.8536	µg/mL	Gravimetric
				+/-	12.0353	µg/mL	Unstressed
				+/-	19.1541	µg/mL	Stressed
29	4-Chloroaniline CAS # 106-47-8 Purity 99%	(Lot BCBJ1580V)	1,005.3 µg/mL	+/-	5.8449	µg/mL	Gravimetric
				+/-	12.0174	µg/mL	Unstressed
				+/-	19.1255	µg/mL	Stressed
30	Hexachlorobutadiene CAS # 87-68-3 Purity 99%	(Lot J31X013)	1,008.6 µg/mL	+/-	5.8641	µg/mL	Gravimetric
				+/-	12.0569	µg/mL	Unstressed
				+/-	19.1883	µg/mL	Stressed
31	4-Chloro-3-methylphenol CAS # 59-50-7 Purity 99%	(Lot STBC7309V)	1,006.2 µg/mL	+/-	5.8501	µg/mL	Gravimetric
				+/-	12.0282	µg/mL	Unstressed
				+/-	19.1427	µg/mL	Stressed
32	2-Methylnaphthalene CAS # 91-57-6 Purity 96%	(Lot STBF0201V)	1,005.5 µg/mL	+/-	5.8461	µg/mL	Gravimetric
				+/-	12.0199	µg/mL	Unstressed
				+/-	19.1294	µg/mL	Stressed
33	1-Methylnaphthalene CAS # 90-12-0 Purity 98%	(Lot 523400-9)	1,002.4 µg/mL	+/-	5.8283	µg/mL	Gravimetric
				+/-	11.9833	µg/mL	Unstressed
				+/-	19.0712	µg/mL	Stressed
34	1,2,4,5-Tetrachlorobenzene CAS # 95-94-3 Purity 99%	(Lot MKBW7717V)	1,007.2 µg/mL	+/-	5.8559	µg/mL	Gravimetric
				+/-	12.0401	µg/mL	Unstressed
				+/-	19.1617	µg/mL	Stressed
35	Hexachlorocyclopentadiene CAS # 77-47-4 Purity 99%	(Lot 0012015)	1,006.6 µg/mL	+/-	5.8525	µg/mL	Gravimetric
				+/-	12.0330	µg/mL	Unstressed
				+/-	19.1503	µg/mL	Stressed
36	2,4,6-Trichlorophenol CAS # 88-06-2 Purity 99%	(Lot STBF3742V)	1,009.3 µg/mL	+/-	5.8682	µg/mL	Gravimetric
				+/-	12.0652	µg/mL	Unstressed
				+/-	19.2016	µg/mL	Stressed
37	2,4,5-Trichlorophenol CAS # 95-95-4 Purity 99%	(Lot FHN01)	1,009.2 µg/mL	+/-	5.8676	µg/mL	Gravimetric
				+/-	12.0640	µg/mL	Unstressed
				+/-	19.1997	µg/mL	Stressed
38	2-Chloronaphthalene CAS # 91-58-7 Purity 99%	(Lot AJ2UI)	1,006.8 µg/mL	+/-	5.8536	µg/mL	Gravimetric
				+/-	12.0353	µg/mL	Unstressed
				+/-	19.1541	µg/mL	Stressed
39	Biphenyl CAS # 92-52-4 Purity 99%	(Lot MKBV9808V)	1,006.3 µg/mL	+/-	5.8507	µg/mL	Gravimetric
				+/-	12.0294	µg/mL	Unstressed
				+/-	19.1446	µg/mL	Stressed

56	4-Nitroaniline CAS # 100-01-6 Purity 98%	(Lot BCBG4702V)	1,007.5 µg/mL	+/-	5.8579	µg/mL	Gravimetric
				+/-	12.0442	µg/mL	Unstressed
				+/-	19.1681	µg/mL	Stressed
57	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol) CAS # 534-52-1 Purity 99%	(Lot B180716L)	2,012.4 µg/mL	+/-	11.7003	µg/mL	Gravimetric
				+/-	24.0564	µg/mL	Unstressed
				+/-	38.2853	µg/mL	Stressed
58	Diphenylamine CAS # 122-39-4 Purity 99%	(Lot MKBN8295V)	856.1 µg/mL	+/-	4.9889	µg/mL	Gravimetric
				+/-	10.2395	µg/mL	Unstressed
				+/-	16.2906	µg/mL	Stressed
59	Azobenzene CAS # 103-33-3 Purity 97%	(Lot BCBS6535V)	1,009.8 µg/mL	+/-	5.8709	µg/mL	Gravimetric
				+/-	12.0709	µg/mL	Unstressed
				+/-	19.2106	µg/mL	Stressed
60	4-Bromophenyl phenyl ether CAS # 101-55-3 Purity 99%	(Lot STBB9729V)	1,007.6 µg/mL	+/-	5.8583	µg/mL	Gravimetric
				+/-	12.0449	µg/mL	Unstressed
				+/-	19.1693	µg/mL	Stressed
61	Hexachlorobenzene CAS # 118-74-1 Purity 99%	(Lot LRAB8468)	1,006.6 µg/mL	+/-	5.8525	µg/mL	Gravimetric
				+/-	12.0330	µg/mL	Unstressed
				+/-	19.1503	µg/mL	Stressed
62	Pentachlorophenol CAS # 87-86-5 Purity 99%	(Lot 170717KJA)	2,005.9 µg/mL	+/-	11.6625	µg/mL	Gravimetric
				+/-	23.9787	µg/mL	Unstressed
				+/-	38.1617	µg/mL	Stressed
63	n-Octadecane (C18) CAS # 593-45-3 Purity 99%	(Lot T7N4E)	1,004.8 µg/mL	+/-	5.8420	µg/mL	Gravimetric
				+/-	12.0114	µg/mL	Unstressed
				+/-	19.1160	µg/mL	Stressed
64	Phenanthrene CAS # 85-01-8 Purity 99%	(Lot MKCB1762V)	1,005.3 µg/mL	+/-	5.8449	µg/mL	Gravimetric
				+/-	12.0174	µg/mL	Unstressed
				+/-	19.1255	µg/mL	Stressed
65	Anthracene CAS # 120-12-7 Purity 99%	(Lot MKBR2268V)	1,006.2 µg/mL	+/-	5.8501	µg/mL	Gravimetric
				+/-	12.0282	µg/mL	Unstressed
				+/-	19.1427	µg/mL	Stressed
66	Carbazole CAS # 86-74-8 Purity 99%	(Lot 7528800)	1,002.7 µg/mL	+/-	5.8298	µg/mL	Gravimetric
				+/-	11.9863	µg/mL	Unstressed
				+/-	19.0761	µg/mL	Stressed
67	Di-n-butylphthalate CAS # 84-74-2 Purity 99%	(Lot MKBT0244V)	1,005.6 µg/mL	+/-	5.8466	µg/mL	Gravimetric
				+/-	12.0210	µg/mL	Unstressed
				+/-	19.1312	µg/mL	Stressed
68	Fluoranthene CAS # 206-44-0 Purity 98%	(Lot MKBQ6360V)	1,002.6 µg/mL	+/-	5.8294	µg/mL	Gravimetric
				+/-	11.9856	µg/mL	Unstressed
				+/-	19.0749	µg/mL	Stressed
69	Pyrene CAS # 129-00-0 Purity 99%	(Lot BCBT5695)	1,009.3 µg/mL	+/-	5.8682	µg/mL	Gravimetric
				+/-	12.0652	µg/mL	Unstressed
				+/-	19.2016	µg/mL	Stressed
70	Benzyl butyl phthalate CAS # 85-68-7 Purity 99%	(Lot MKCF0058)	1,006.6 µg/mL	+/-	5.8525	µg/mL	Gravimetric
				+/-	12.0330	µg/mL	Unstressed
				+/-	19.1503	µg/mL	Stressed
71	Benz(a)anthracene CAS # 56-55-3 Purity 96%	(Lot 0012018)	1,004.8 µg/mL	+/-	5.8422	µg/mL	Gravimetric
				+/-	12.0118	µg/mL	Unstressed
				+/-	19.1166	µg/mL	Stressed

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant flow 1.8 mL/min.

Temp. Program:

80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.85 min.)

Inj. Temp:

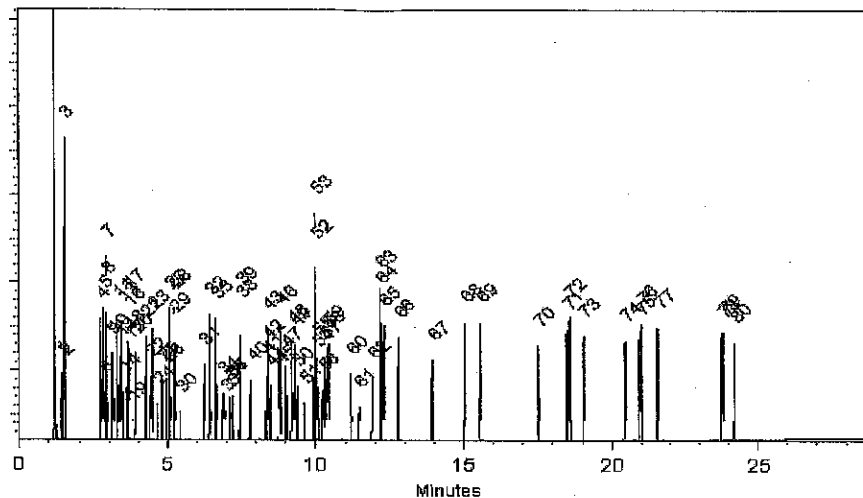
250°C

Det. Temp:

340°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cydnei L. Crust
Cydnei L. Crust - Mix Technician

Date Mixed: 30-Jul-2018

Balance: B442140311

Jennifer J. Pollino
Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 02-Aug-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/ μ ECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

72	Chrysene		1,009.4	µg/mL	+/-	5.8687	µg/mL	Gravimetric
	CAS #	218-01-9 (Lot 012015)			+/-	12.0664	µg/mL	Unstressed
	Purity	99%			+/-	19.2035	µg/mL	Stressed
73	Bis(2-ethylhexyl)phthalate		1,007.3	µg/mL	+/-	5.8565	µg/mL	Gravimetric
	CAS #	117-81-7 (Lot MKBZ3868V)			+/-	12.0413	µg/mL	Unstressed
	Purity	99%			+/-	19.1636	µg/mL	Stressed
74	Di-n-octyl phthalate		1,007.0	µg/mL	+/-	5.8548	µg/mL	Gravimetric
	CAS #	117-84-0 (Lot 7170200)			+/-	12.0377	µg/mL	Unstressed
	Purity	99%			+/-	19.1579	µg/mL	Stressed
75	Benzo(b)fluoranthene		1,003.7	µg/mL	+/-	5.8356	µg/mL	Gravimetric
	CAS #	205-99-2 (Lot 012012B)			+/-	11.9983	µg/mL	Unstressed
	Purity	99%			+/-	19.0951	µg/mL	Stressed
76	Benzo(k)fluoranthene		1,005.7	µg/mL	+/-	5.8472	µg/mL	Gravimetric
	CAS #	207-08-9 (Lot 012012K)			+/-	12.0222	µg/mL	Unstressed
	Purity	99%			+/-	19.1332	µg/mL	Stressed
77	Benzo(a)pyrene		1,008.8	µg/mL	+/-	5.8653	µg/mL	Gravimetric
	CAS #	50-32-8 (Lot ER071309-02)			+/-	12.0593	µg/mL	Unstressed
	Purity	99%			+/-	19.1921	µg/mL	Stressed
78	Indeno(1,2,3-cd)pyrene		1,006.9	µg/mL	+/-	5.8542	µg/mL	Gravimetric
	CAS #	193-39-5 (Lot ER082107-02)			+/-	12.0365	µg/mL	Unstressed
	Purity	99%			+/-	19.1560	µg/mL	Stressed
79	Dibenz(a,h)anthracene		1,008.7	µg/mL	+/-	5.8647	µg/mL	Gravimetric
	CAS #	53-70-3 (Lot ER032211-01)			+/-	12.0581	µg/mL	Unstressed
	Purity	99%			+/-	19.1902	µg/mL	Stressed
80	Benzo(g,h,i)perylene		1,000.2	µg/mL	+/-	5.8152	µg/mL	Gravimetric
	CAS #	191-24-2 (Lot ER05121401)			+/-	11.9565	µg/mL	Unstressed
	Purity	99%			+/-	19.0285	µg/mL	Stressed
Solvent: Methylene chloride								
	CAS #	75-09-2						
	Purity	99%						

Specific Reference Material Notes:

N-nitrosodiphenylamine 1000 ug/mL equivalent when used for GC analysis. Actual formulation is diphenylamine 855 ug/mL.

N-Nitrosodiphenylamine is prone to breakdown in the injection port and will be converted to diphenylamine.

N-Nitrosodiphenylamine is also a reactive species that can initiate premature decomposition of other compounds in the mix. For these reasons diphenylamine is used in the preparation of this mixture. When comparing the response of this compound to mixtures manufactured using N-nitrosodiphenylamine, a difference in response will be observed.

This lot was approved even though the %D for 4,6-DN-2-MP was greater than 10%.

40	2-Nitroaniline CAS # 88-74-4 Purity 99%	(Lot MKBK7597V)	1,007.5 µg/mL	+/- 5.8577 +/- 12.0437 +/- 19.1674	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
41	Acenaphthylene CAS # 208-96-8 Purity 97%	(Lot O03R)	1,007.2 µg/mL	+/- 5.8557 +/- 12.0395 +/- 19.1608	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
42	1,3-Dinitrobenzene CAS # 99-65-0 Purity 99%	(Lot BCBN4329V)	1,008.9 µg/mL	+/- 5.8658 +/- 12.0605 +/- 19.1940	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
43	Dimethylphthalate CAS # 131-11-3 Purity 99%	(Lot 10117699)	1,009.2 µg/mL	+/- 5.8676 +/- 12.0640 +/- 19.1997	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
44	2,6-Dinitrotoluene CAS # 606-20-2 Purity 99%	(Lot 1437483V)	1,009.1 µg/mL	+/- 5.8670 +/- 12.0628 +/- 19.1978	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
45	3-Nitroaniline CAS # 99-09-2 Purity 99%	(Lot MKBX1283V)	1,009.8 µg/mL	+/- 5.8711 +/- 12.0712 +/- 19.2112	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
46	Acenaphthene CAS # 83-32-9 Purity 99%	(Lot MKCC8329)	1,008.1 µg/mL	+/- 5.8612 +/- 12.0509 +/- 19.1788	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
47	2,4-Dinitrophenol CAS # 51-28-5 Purity 99%	(Lot STBG3580V)	2,013.2 µg/mL	+/- 11.7049 +/- 24.0659 +/- 38.3005	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
48	Dibenzofuran CAS # 132-64-9 Purity 99%	(Lot MKCD9952)	1,007.0 µg/mL	+/- 5.8548 +/- 12.0377 +/- 19.1579	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
49	4-Nitrophenol CAS # 100-02-7 Purity 99%	(Lot MKBK1842V)	2,015.4 µg/mL	+/- 11.7177 +/- 24.0922 +/- 38.3424	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
50	2,4-Dinitrotoluene CAS # 121-14-2 Purity 99%	(Lot MKAA0690V)	1,009.5 µg/mL	+/- 5.8693 +/- 12.0676 +/- 19.2054	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
51	2,3,4,6-Tetrachlorophenol CAS # 58-90-2 Purity 99%	(Lot PR-30126)	1,005.3 µg/mL	+/- 5.8449 +/- 12.0174 +/- 19.1255	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
52	Fluorene CAS # 86-73-7 Purity 98%	(Lot 10174662)	1,007.7 µg/mL	+/- 5.8591 +/- 12.0465 +/- 19.1718	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
53	n-Hexadecane (C16) CAS # 544-76-3 Purity 99%	(Lot SHBJ3997)	1,009.8 µg/mL	+/- 5.8711 +/- 12.0712 +/- 19.2112	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
54	Diethylphthalate CAS # 84-66-2 Purity 99%	(Lot MKCB0810V)	1,007.4 µg/mL	+/- 5.8571 +/- 12.0425 +/- 19.1655	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
55	4-Chlorophenyl phenyl ether CAS # 7005-72-3 Purity 99%	(Lot MKBX5225V)	1,006.7 µg/mL	+/- 5.8530 +/- 12.0342 +/- 19.1522	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

8	2-Chlorophenol		1,005.6	µg/mL	+/-	5.8466	µg/mL	Gravimetric
	CAS # 95-57-8	(Lot STBF2690V)			+/-	12.0210	µg/mL	Unstressed
	Purity 99%				+/-	19.1312	µg/mL	Stressed
9	1,3-Dichlorobenzene		1,009.7	µg/mL	+/-	5.8705	µg/mL	Gravimetric
	CAS # 541-73-1	(Lot BCBQ7100V)			+/-	12.0700	µg/mL	Unstressed
	Purity 99%				+/-	19.2092	µg/mL	Stressed
10	1,4-Dichlorobenzene		1,007.6	µg/mL	+/-	5.8583	µg/mL	Gravimetric
	CAS # 106-46-7	(Lot MKBS4401V)			+/-	12.0449	µg/mL	Unstressed
	Purity 99%				+/-	19.1693	µg/mL	Stressed
11	Benzyl alcohol		1,009.6	µg/mL	+/-	5.8699	µg/mL	Gravimetric
	CAS # 100-51-6	(Lot SHBJ0534)			+/-	12.0688	µg/mL	Unstressed
	Purity 99%				+/-	19.2073	µg/mL	Stressed
12	1,2-Dichlorobenzene		1,007.7	µg/mL	+/-	5.8589	µg/mL	Gravimetric
	CAS # 95-50-1	(Lot SHBG3111V)			+/-	12.0461	µg/mL	Unstressed
	Purity 99%				+/-	19.1712	µg/mL	Stressed
13	2-Methylphenol (o-cresol)		1,008.4	µg/mL	+/-	5.8629	µg/mL	Gravimetric
	CAS # 95-48-7	(Lot SHBH6379)			+/-	12.0545	µg/mL	Unstressed
	Purity 99%				+/-	19.1845	µg/mL	Stressed
14	2,2'-oxybis(1-chloropropane)		1,007.6	µg/mL	+/-	5.8583	µg/mL	Gravimetric
	CAS # 108-60-1	(Lot 7577400)			+/-	12.0449	µg/mL	Unstressed
	Purity 99%				+/-	19.1693	µg/mL	Stressed
15	Acetophenone		1,009.4	µg/mL	+/-	5.8687	µg/mL	Gravimetric
	CAS # 98-86-2	(Lot STBG8586)			+/-	12.0664	µg/mL	Unstressed
	Purity 99%				+/-	19.2035	µg/mL	Stressed
16	3-Methylphenol (m-cresol)		504.9	µg/mL	+/-	2.9423	µg/mL	Gravimetric
	CAS # 108-39-4	(Lot SHBD0627V)			+/-	6.0389	µg/mL	Unstressed
	Purity 99%				+/-	9.6077	µg/mL	Stressed
17	4-Methylphenol (p-cresol)		501.8	µg/mL	+/-	2.9242	µg/mL	Gravimetric
	CAS # 106-44-5	(Lot 49396APV)			+/-	6.0018	µg/mL	Unstressed
	Purity 99%				+/-	9.5487	µg/mL	Stressed
18	N-Nitroso-di-n-propylamine		1,006.6	µg/mL	+/-	5.8525	µg/mL	Gravimetric
	CAS # 621-64-7	(Lot OPAGF)			+/-	12.0330	µg/mL	Unstressed
	Purity 99%				+/-	19.1503	µg/mL	Stressed
19	Hexachloroethane		1,001.4	µg/mL	+/-	5.8222	µg/mL	Gravimetric
	CAS # 67-72-1	(Lot 4H3SF)			+/-	11.9708	µg/mL	Unstressed
	Purity 99%				+/-	19.0513	µg/mL	Stressed
20	Nitrobenzene		1,005.9	µg/mL	+/-	5.8484	µg/mL	Gravimetric
	CAS # 98-95-3	(Lot SHBG5577V)			+/-	12.0246	µg/mL	Unstressed
	Purity 99%				+/-	19.1370	µg/mL	Stressed
21	Isophorone		1,009.1	µg/mL	+/-	5.8670	µg/mL	Gravimetric
	CAS # 78-59-1	(Lot MKBG2442V)			+/-	12.0629	µg/mL	Unstressed
	Purity 98%				+/-	19.1979	µg/mL	Stressed
22	2-Nitrophenol		1,008.7	µg/mL	+/-	5.8647	µg/mL	Gravimetric
	CAS # 88-75-5	(Lot BCBH7602V)			+/-	12.0581	µg/mL	Unstressed
	Purity 99%				+/-	19.1902	µg/mL	Stressed
23	2,4-Dimethylphenol		1,008.6	µg/mL	+/-	5.8641	µg/mL	Gravimetric
	CAS # 105-67-9	(Lot 10165155)			+/-	12.0569	µg/mL	Unstressed
	Purity 99%				+/-	19.1883	µg/mL	Stressed

Reagent

571995_00060



CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 571995 Lot No.: A0140111
Description : 8270 List 1 / Std #1 MegaMix (2017)
8270 List 1 / Std #1 MegaMix (2017) 500-2,000µg/mL, Methylene chloride, 5mL/ampul
Container Size : 10 mL Pkg Amt: > 5 mL
Expiration Date : January 31, 2020 Storage: 0°C or colder
Handling: Carcinogen/reproductive toxin. Photosensitive. Sonicate.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1,4-Dioxane CAS # 123-91-1 (Lot SHBJ5124) Purity 99%	1,006.6 µg/mL	+/- 5.8525 µg/mL Gravimetric +/- 12.0330 µg/mL Unstressed +/- 19.1503 µg/mL Stressed
2	N-Nitrosodimethylamine CAS # 62-75-9 (Lot 180322JLM) Purity 99%	1,005.1 µg/mL	+/- 5.8437 µg/mL Gravimetric +/- 12.0150 µg/mL Unstressed +/- 19.1217 µg/mL Stressed
3	Pyridine CAS # 110-86-1 (Lot SHBC7174V) Purity 99%	2,012.7 µg/mL	+/- 11.7020 µg/mL Gravimetric +/- 24.0599 µg/mL Unstressed +/- 38.2910 µg/mL Stressed
4	Phenol CAS # 108-95-2 (Lot SHBF9719V) Purity 99%	1,008.6 µg/mL	+/- 5.8641 µg/mL Gravimetric +/- 12.0569 µg/mL Unstressed +/- 19.1883 µg/mL Stressed
5	Aniline CAS # 62-53-3 (Lot K22Z462) Purity 99%	1,006.2 µg/mL	+/- 5.8501 µg/mL Gravimetric +/- 12.0282 µg/mL Unstressed +/- 19.1427 µg/mL Stressed
6	Bis(2-chloroethyl)ether CAS # 111-44-4 (Lot SHBD4430V) Purity 99%	1,009.5 µg/mL	+/- 5.8693 µg/mL Gravimetric +/- 12.0676 µg/mL Unstressed +/- 19.2054 µg/mL Stressed
7	n-Decane (C10) CAS # 124-18-5 (Lot SHBJ8526) Purity 99%	1,010.0 µg/mL	+/- 5.8722 µg/mL Gravimetric +/- 12.0736 µg/mL Unstressed +/- 19.2150 µg/mL Stressed

24	Bis(2-chloroethoxy)methane CAS # 111-91-1 Purity 99%	(Lot 5670100)	1,009.6 µg/mL	+/-	5.8699	µg/mL	Gravimetric
				+/-	12.0688	µg/mL	Unstressed
				+/-	19.2073	µg/mL	Stressed
25	2,4-Dichlorophenol CAS # 120-83-2 Purity 99%	(Lot BCBJ8113V)	1,009.0 µg/mL	+/-	5.8664	µg/mL	Gravimetric
				+/-	12.0616	µg/mL	Unstressed
				+/-	19.1959	µg/mL	Stressed
26	1,2,4-Trichlorobenzene CAS # 120-82-1 Purity 99%	(Lot SHBJ0905)	1,008.4 µg/mL	+/-	5.8629	µg/mL	Gravimetric
				+/-	12.0545	µg/mL	Unstressed
				+/-	19.1845	µg/mL	Stressed
27	Naphthalene CAS # 91-20-3 Purity 99%	(Lot MKBW2603V)	1,008.3 µg/mL	+/-	5.8623	µg/mL	Gravimetric
				+/-	12.0533	µg/mL	Unstressed
				+/-	19.1826	µg/mL	Stressed
28	2,6-Dichlorophenol CAS # 87-65-0 Purity 99%	(Lot MKBP8620V)	1,006.8 µg/mL	+/-	5.8536	µg/mL	Gravimetric
				+/-	12.0353	µg/mL	Unstressed
				+/-	19.1541	µg/mL	Stressed
29	4-Chloroaniline CAS # 106-47-8 Purity 99%	(Lot BCBJ1580V)	1,005.3 µg/mL	+/-	5.8449	µg/mL	Gravimetric
				+/-	12.0174	µg/mL	Unstressed
				+/-	19.1255	µg/mL	Stressed
30	Hexachlorobutadiene CAS # 87-68-3 Purity 99%	(Lot J31X013)	1,008.6 µg/mL	+/-	5.8641	µg/mL	Gravimetric
				+/-	12.0569	µg/mL	Unstressed
				+/-	19.1883	µg/mL	Stressed
31	4-Chloro-3-methylphenol CAS # 59-50-7 Purity 99%	(Lot STBC7309V)	1,006.2 µg/mL	+/-	5.8501	µg/mL	Gravimetric
				+/-	12.0282	µg/mL	Unstressed
				+/-	19.1427	µg/mL	Stressed
32	2-Methylnaphthalene CAS # 91-57-6 Purity 96%	(Lot STBF0201V)	1,005.5 µg/mL	+/-	5.8461	µg/mL	Gravimetric
				+/-	12.0199	µg/mL	Unstressed
				+/-	19.1294	µg/mL	Stressed
33	1-Methylnaphthalene CAS # 90-12-0 Purity 98%	(Lot 523400-9)	1,002.4 µg/mL	+/-	5.8283	µg/mL	Gravimetric
				+/-	11.9833	µg/mL	Unstressed
				+/-	19.0712	µg/mL	Stressed
34	1,2,4,5-Tetrachlorobenzene CAS # 95-94-3 Purity 99%	(Lot MKBW7717V)	1,007.2 µg/mL	+/-	5.8559	µg/mL	Gravimetric
				+/-	12.0401	µg/mL	Unstressed
				+/-	19.1617	µg/mL	Stressed
35	Hexachlorocyclopentadiene CAS # 77-47-4 Purity 99%	(Lot 0012015)	1,006.6 µg/mL	+/-	5.8525	µg/mL	Gravimetric
				+/-	12.0330	µg/mL	Unstressed
				+/-	19.1503	µg/mL	Stressed
36	2,4,6-Trichlorophenol CAS # 88-06-2 Purity 99%	(Lot STBF3742V)	1,009.3 µg/mL	+/-	5.8682	µg/mL	Gravimetric
				+/-	12.0652	µg/mL	Unstressed
				+/-	19.2016	µg/mL	Stressed
37	2,4,5-Trichlorophenol CAS # 95-95-4 Purity 99%	(Lot FHN01)	1,009.2 µg/mL	+/-	5.8676	µg/mL	Gravimetric
				+/-	12.0640	µg/mL	Unstressed
				+/-	19.1997	µg/mL	Stressed
38	2-Chloronaphthalene CAS # 91-58-7 Purity 99%	(Lot AJ2UI)	1,006.8 µg/mL	+/-	5.8536	µg/mL	Gravimetric
				+/-	12.0353	µg/mL	Unstressed
				+/-	19.1541	µg/mL	Stressed
39	Biphenyl CAS # 92-52-4 Purity 99%	(Lot MKBV9808V)	1,006.3 µg/mL	+/-	5.8507	µg/mL	Gravimetric
				+/-	12.0294	µg/mL	Unstressed
				+/-	19.1446	µg/mL	Stressed

56	4-Nitroaniline CAS # 100-01-6 Purity 98%	(Lot BCBG4702V)	1,007.5 µg/mL	+/-	5.8579	µg/mL	Gravimetric
				+/-	12.0442	µg/mL	Unstressed
				+/-	19.1681	µg/mL	Stressed
57	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol) CAS # 534-52-1 Purity 99%	(Lot B180716L)	2,012.4 µg/mL	+/-	11.7003	µg/mL	Gravimetric
				+/-	24.0564	µg/mL	Unstressed
				+/-	38.2853	µg/mL	Stressed
58	Diphenylamine CAS # 122-39-4 Purity 99%	(Lot MKBN8295V)	856.1 µg/mL	+/-	4.9889	µg/mL	Gravimetric
				+/-	10.2395	µg/mL	Unstressed
				+/-	16.2906	µg/mL	Stressed
59	Azobenzene CAS # 103-33-3 Purity 97%	(Lot BCBS6535V)	1,009.8 µg/mL	+/-	5.8709	µg/mL	Gravimetric
				+/-	12.0709	µg/mL	Unstressed
				+/-	19.2106	µg/mL	Stressed
60	4-Bromophenyl phenyl ether CAS # 101-55-3 Purity 99%	(Lot STBB9729V)	1,007.6 µg/mL	+/-	5.8583	µg/mL	Gravimetric
				+/-	12.0449	µg/mL	Unstressed
				+/-	19.1693	µg/mL	Stressed
61	Hexachlorobenzene CAS # 118-74-1 Purity 99%	(Lot LRAB8468)	1,006.6 µg/mL	+/-	5.8525	µg/mL	Gravimetric
				+/-	12.0330	µg/mL	Unstressed
				+/-	19.1503	µg/mL	Stressed
62	Pentachlorophenol CAS # 87-86-5 Purity 99%	(Lot 170717KJA)	2,005.9 µg/mL	+/-	11.6625	µg/mL	Gravimetric
				+/-	23.9787	µg/mL	Unstressed
				+/-	38.1617	µg/mL	Stressed
63	n-Octadecane (C18) CAS # 593-45-3 Purity 99%	(Lot T7N4E)	1,004.8 µg/mL	+/-	5.8420	µg/mL	Gravimetric
				+/-	12.0114	µg/mL	Unstressed
				+/-	19.1160	µg/mL	Stressed
64	Phenanthrene CAS # 85-01-8 Purity 99%	(Lot MKCB1762V)	1,005.3 µg/mL	+/-	5.8449	µg/mL	Gravimetric
				+/-	12.0174	µg/mL	Unstressed
				+/-	19.1255	µg/mL	Stressed
65	Anthracene CAS # 120-12-7 Purity 99%	(Lot MKBR2268V)	1,006.2 µg/mL	+/-	5.8501	µg/mL	Gravimetric
				+/-	12.0282	µg/mL	Unstressed
				+/-	19.1427	µg/mL	Stressed
66	Carbazole CAS # 86-74-8 Purity 99%	(Lot 7528800)	1,002.7 µg/mL	+/-	5.8298	µg/mL	Gravimetric
				+/-	11.9863	µg/mL	Unstressed
				+/-	19.0761	µg/mL	Stressed
67	Di-n-butylphthalate CAS # 84-74-2 Purity 99%	(Lot MKBT0244V)	1,005.6 µg/mL	+/-	5.8466	µg/mL	Gravimetric
				+/-	12.0210	µg/mL	Unstressed
				+/-	19.1312	µg/mL	Stressed
68	Fluoranthene CAS # 206-44-0 Purity 98%	(Lot MKBQ6360V)	1,002.6 µg/mL	+/-	5.8294	µg/mL	Gravimetric
				+/-	11.9856	µg/mL	Unstressed
				+/-	19.0749	µg/mL	Stressed
69	Pyrene CAS # 129-00-0 Purity 99%	(Lot BCBT5695)	1,009.3 µg/mL	+/-	5.8682	µg/mL	Gravimetric
				+/-	12.0652	µg/mL	Unstressed
				+/-	19.2016	µg/mL	Stressed
70	Benzyl butyl phthalate CAS # 85-68-7 Purity 99%	(Lot MKCF0058)	1,006.6 µg/mL	+/-	5.8525	µg/mL	Gravimetric
				+/-	12.0330	µg/mL	Unstressed
				+/-	19.1503	µg/mL	Stressed
71	Benz(a)anthracene CAS # 56-55-3 Purity 96%	(Lot 0012018)	1,004.8 µg/mL	+/-	5.8422	µg/mL	Gravimetric
				+/-	12.0118	µg/mL	Unstressed
				+/-	19.1166	µg/mL	Stressed

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant flow 1.8 mL/min.

Temp. Program:

80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

Inj. Temp:

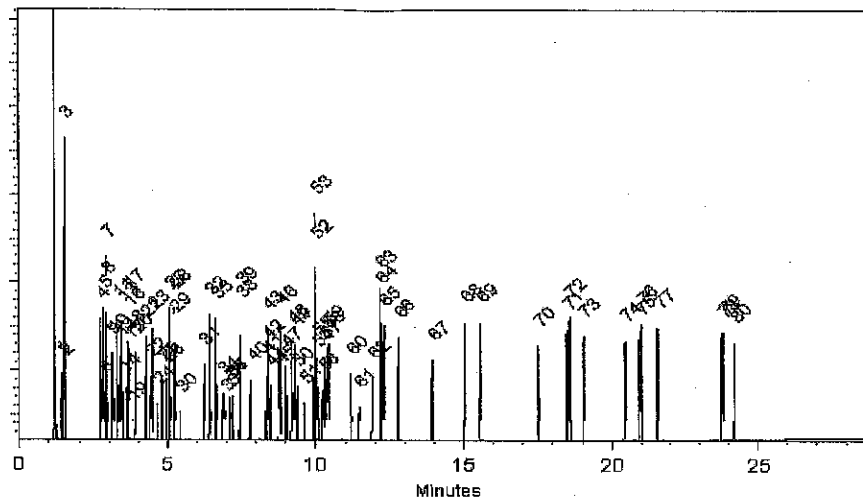
250°C

Det. Temp:

340°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cydnei L. Crust
Cydnei L. Crust - Mix Technician

Date Mixed: 30-Jul-2018

Balance: B442140311

Jennifer J. Pollino
Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 02-Aug-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

72	Chrysene		1,009.4	µg/mL	+/-	5.8687	µg/mL	Gravimetric
	CAS #	218-01-9 (Lot 012015)			+/-	12.0664	µg/mL	Unstressed
	Purity	99%			+/-	19.2035	µg/mL	Stressed
73	Bis(2-ethylhexyl)phthalate		1,007.3	µg/mL	+/-	5.8565	µg/mL	Gravimetric
	CAS #	117-81-7 (Lot MKBZ3868V)			+/-	12.0413	µg/mL	Unstressed
	Purity	99%			+/-	19.1636	µg/mL	Stressed
74	Di-n-octyl phthalate		1,007.0	µg/mL	+/-	5.8548	µg/mL	Gravimetric
	CAS #	117-84-0 (Lot 7170200)			+/-	12.0377	µg/mL	Unstressed
	Purity	99%			+/-	19.1579	µg/mL	Stressed
75	Benzo(b)fluoranthene		1,003.7	µg/mL	+/-	5.8356	µg/mL	Gravimetric
	CAS #	205-99-2 (Lot 012012B)			+/-	11.9983	µg/mL	Unstressed
	Purity	99%			+/-	19.0951	µg/mL	Stressed
76	Benzo(k)fluoranthene		1,005.7	µg/mL	+/-	5.8472	µg/mL	Gravimetric
	CAS #	207-08-9 (Lot 012012K)			+/-	12.0222	µg/mL	Unstressed
	Purity	99%			+/-	19.1332	µg/mL	Stressed
77	Benzo(a)pyrene		1,008.8	µg/mL	+/-	5.8653	µg/mL	Gravimetric
	CAS #	50-32-8 (Lot ER071309-02)			+/-	12.0593	µg/mL	Unstressed
	Purity	99%			+/-	19.1921	µg/mL	Stressed
78	Indeno(1,2,3-cd)pyrene		1,006.9	µg/mL	+/-	5.8542	µg/mL	Gravimetric
	CAS #	193-39-5 (Lot ER082107-02)			+/-	12.0365	µg/mL	Unstressed
	Purity	99%			+/-	19.1560	µg/mL	Stressed
79	Dibenz(a,h)anthracene		1,008.7	µg/mL	+/-	5.8647	µg/mL	Gravimetric
	CAS #	53-70-3 (Lot ER032211-01)			+/-	12.0581	µg/mL	Unstressed
	Purity	99%			+/-	19.1902	µg/mL	Stressed
80	Benzo(g,h,i)perylene		1,000.2	µg/mL	+/-	5.8152	µg/mL	Gravimetric
	CAS #	191-24-2 (Lot ER05121401)			+/-	11.9565	µg/mL	Unstressed
	Purity	99%			+/-	19.0285	µg/mL	Stressed
Solvent: Methylene chloride								
	CAS #	75-09-2						
	Purity	99%						

Specific Reference Material Notes:

N-nitrosodiphenylamine 1000 ug/mL equivalent when used for GC analysis. Actual formulation is diphenylamine 855 ug/mL.

N-Nitrosodiphenylamine is prone to breakdown in the injection port and will be converted to diphenylamine.

N-Nitrosodiphenylamine is also a reactive species that can initiate premature decomposition of other compounds in the mix. For these reasons diphenylamine is used in the preparation of this mixture. When comparing the response of this compound to mixtures manufactured using N-nitrosodiphenylamine, a difference in response will be observed.

This lot was approved even though the %D for 4,6-DN-2-MP was greater than 10%.

40	2-Nitroaniline CAS # 88-74-4 Purity 99%	(Lot MKBK7597V)	1,007.5 µg/mL	+/- 5.8577 +/- 12.0437 +/- 19.1674	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
41	Acenaphthylene CAS # 208-96-8 Purity 97%	(Lot O03R)	1,007.2 µg/mL	+/- 5.8557 +/- 12.0395 +/- 19.1608	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
42	1,3-Dinitrobenzene CAS # 99-65-0 Purity 99%	(Lot BCBN4329V)	1,008.9 µg/mL	+/- 5.8658 +/- 12.0605 +/- 19.1940	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
43	Dimethylphthalate CAS # 131-11-3 Purity 99%	(Lot 10117699)	1,009.2 µg/mL	+/- 5.8676 +/- 12.0640 +/- 19.1997	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
44	2,6-Dinitrotoluene CAS # 606-20-2 Purity 99%	(Lot 1437483V)	1,009.1 µg/mL	+/- 5.8670 +/- 12.0628 +/- 19.1978	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
45	3-Nitroaniline CAS # 99-09-2 Purity 99%	(Lot MKBX1283V)	1,009.8 µg/mL	+/- 5.8711 +/- 12.0712 +/- 19.2112	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
46	Acenaphthene CAS # 83-32-9 Purity 99%	(Lot MKCC8329)	1,008.1 µg/mL	+/- 5.8612 +/- 12.0509 +/- 19.1788	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
47	2,4-Dinitrophenol CAS # 51-28-5 Purity 99%	(Lot STBG3580V)	2,013.2 µg/mL	+/- 11.7049 +/- 24.0659 +/- 38.3005	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
48	Dibenzofuran CAS # 132-64-9 Purity 99%	(Lot MKCD9952)	1,007.0 µg/mL	+/- 5.8548 +/- 12.0377 +/- 19.1579	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
49	4-Nitrophenol CAS # 100-02-7 Purity 99%	(Lot MKBK1842V)	2,015.4 µg/mL	+/- 11.7177 +/- 24.0922 +/- 38.3424	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
50	2,4-Dinitrotoluene CAS # 121-14-2 Purity 99%	(Lot MKAA0690V)	1,009.5 µg/mL	+/- 5.8693 +/- 12.0676 +/- 19.2054	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
51	2,3,4,6-Tetrachlorophenol CAS # 58-90-2 Purity 99%	(Lot PR-30126)	1,005.3 µg/mL	+/- 5.8449 +/- 12.0174 +/- 19.1255	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
52	Fluorene CAS # 86-73-7 Purity 98%	(Lot 10174662)	1,007.7 µg/mL	+/- 5.8591 +/- 12.0465 +/- 19.1718	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
53	n-Hexadecane (C16) CAS # 544-76-3 Purity 99%	(Lot SHBJ3997)	1,009.8 µg/mL	+/- 5.8711 +/- 12.0712 +/- 19.2112	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
54	Diethylphthalate CAS # 84-66-2 Purity 99%	(Lot MKCB0810V)	1,007.4 µg/mL	+/- 5.8571 +/- 12.0425 +/- 19.1655	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
55	4-Chlorophenyl phenyl ether CAS # 7005-72-3 Purity 99%	(Lot MKBX5225V)	1,006.7 µg/mL	+/- 5.8530 +/- 12.0342 +/- 19.1522	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

8	2-Chlorophenol		1,005.6	µg/mL	+/-	5.8466	µg/mL	Gravimetric
	CAS # 95-57-8	(Lot STBF2690V)			+/-	12.0210	µg/mL	Unstressed
	Purity 99%				+/-	19.1312	µg/mL	Stressed
9	1,3-Dichlorobenzene		1,009.7	µg/mL	+/-	5.8705	µg/mL	Gravimetric
	CAS # 541-73-1	(Lot BCBQ7100V)			+/-	12.0700	µg/mL	Unstressed
	Purity 99%				+/-	19.2092	µg/mL	Stressed
10	1,4-Dichlorobenzene		1,007.6	µg/mL	+/-	5.8583	µg/mL	Gravimetric
	CAS # 106-46-7	(Lot MKBS4401V)			+/-	12.0449	µg/mL	Unstressed
	Purity 99%				+/-	19.1693	µg/mL	Stressed
11	Benzyl alcohol		1,009.6	µg/mL	+/-	5.8699	µg/mL	Gravimetric
	CAS # 100-51-6	(Lot SHBJ0534)			+/-	12.0688	µg/mL	Unstressed
	Purity 99%				+/-	19.2073	µg/mL	Stressed
12	1,2-Dichlorobenzene		1,007.7	µg/mL	+/-	5.8589	µg/mL	Gravimetric
	CAS # 95-50-1	(Lot SHBG3111V)			+/-	12.0461	µg/mL	Unstressed
	Purity 99%				+/-	19.1712	µg/mL	Stressed
13	2-Methylphenol (o-cresol)		1,008.4	µg/mL	+/-	5.8629	µg/mL	Gravimetric
	CAS # 95-48-7	(Lot SHBH6379)			+/-	12.0545	µg/mL	Unstressed
	Purity 99%				+/-	19.1845	µg/mL	Stressed
14	2,2'-oxybis(1-chloropropane)		1,007.6	µg/mL	+/-	5.8583	µg/mL	Gravimetric
	CAS # 108-60-1	(Lot 7577400)			+/-	12.0449	µg/mL	Unstressed
	Purity 99%				+/-	19.1693	µg/mL	Stressed
15	Acetophenone		1,009.4	µg/mL	+/-	5.8687	µg/mL	Gravimetric
	CAS # 98-86-2	(Lot STBG8586)			+/-	12.0664	µg/mL	Unstressed
	Purity 99%				+/-	19.2035	µg/mL	Stressed
16	3-Methylphenol (m-cresol)		504.9	µg/mL	+/-	2.9423	µg/mL	Gravimetric
	CAS # 108-39-4	(Lot SHBD0627V)			+/-	6.0389	µg/mL	Unstressed
	Purity 99%				+/-	9.6077	µg/mL	Stressed
17	4-Methylphenol (p-cresol)		501.8	µg/mL	+/-	2.9242	µg/mL	Gravimetric
	CAS # 106-44-5	(Lot 49396APV)			+/-	6.0018	µg/mL	Unstressed
	Purity 99%				+/-	9.5487	µg/mL	Stressed
18	N-Nitroso-di-n-propylamine		1,006.6	µg/mL	+/-	5.8525	µg/mL	Gravimetric
	CAS # 621-64-7	(Lot OPAGF)			+/-	12.0330	µg/mL	Unstressed
	Purity 99%				+/-	19.1503	µg/mL	Stressed
19	Hexachloroethane		1,001.4	µg/mL	+/-	5.8222	µg/mL	Gravimetric
	CAS # 67-72-1	(Lot 4H3SF)			+/-	11.9708	µg/mL	Unstressed
	Purity 99%				+/-	19.0513	µg/mL	Stressed
20	Nitrobenzene		1,005.9	µg/mL	+/-	5.8484	µg/mL	Gravimetric
	CAS # 98-95-3	(Lot SHBG5577V)			+/-	12.0246	µg/mL	Unstressed
	Purity 99%				+/-	19.1370	µg/mL	Stressed
21	Isophorone		1,009.1	µg/mL	+/-	5.8670	µg/mL	Gravimetric
	CAS # 78-59-1	(Lot MKBG2442V)			+/-	12.0629	µg/mL	Unstressed
	Purity 98%				+/-	19.1979	µg/mL	Stressed
22	2-Nitrophenol		1,008.7	µg/mL	+/-	5.8647	µg/mL	Gravimetric
	CAS # 88-75-5	(Lot BCBH7602V)			+/-	12.0581	µg/mL	Unstressed
	Purity 99%				+/-	19.1902	µg/mL	Stressed
23	2,4-Dimethylphenol		1,008.6	µg/mL	+/-	5.8641	µg/mL	Gravimetric
	CAS # 105-67-9	(Lot 10165155)			+/-	12.0569	µg/mL	Unstressed
	Purity 99%				+/-	19.1883	µg/mL	Stressed

Reagent

571995_00061



CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 571995 Lot No.: A0140111
Description : 8270 List 1 / Std #1 MegaMix (2017)
8270 List 1 / Std #1 MegaMix (2017) 500-2,000µg/mL, Methylene chloride, 5mL/ampul
Container Size : 10 mL Pkg Amt: > 5 mL
Expiration Date : January 31, 2020 Storage: 0°C or colder
Handling: Carcinogen/reproductive toxin. Photosensitive. Sonicate.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1,4-Dioxane CAS # 123-91-1 (Lot SHBJ5124) Purity 99%	1,006.6 µg/mL	+/- 5.8525 µg/mL Gravimetric +/- 12.0330 µg/mL Unstressed +/- 19.1503 µg/mL Stressed
2	N-Nitrosodimethylamine CAS # 62-75-9 (Lot 180322JLM) Purity 99%	1,005.1 µg/mL	+/- 5.8437 µg/mL Gravimetric +/- 12.0150 µg/mL Unstressed +/- 19.1217 µg/mL Stressed
3	Pyridine CAS # 110-86-1 (Lot SHBC7174V) Purity 99%	2,012.7 µg/mL	+/- 11.7020 µg/mL Gravimetric +/- 24.0599 µg/mL Unstressed +/- 38.2910 µg/mL Stressed
4	Phenol CAS # 108-95-2 (Lot SHBF9719V) Purity 99%	1,008.6 µg/mL	+/- 5.8641 µg/mL Gravimetric +/- 12.0569 µg/mL Unstressed +/- 19.1883 µg/mL Stressed
5	Aniline CAS # 62-53-3 (Lot K22Z462) Purity 99%	1,006.2 µg/mL	+/- 5.8501 µg/mL Gravimetric +/- 12.0282 µg/mL Unstressed +/- 19.1427 µg/mL Stressed
6	Bis(2-chloroethyl)ether CAS # 111-44-4 (Lot SHBD4430V) Purity 99%	1,009.5 µg/mL	+/- 5.8693 µg/mL Gravimetric +/- 12.0676 µg/mL Unstressed +/- 19.2054 µg/mL Stressed
7	n-Decane (C10) CAS # 124-18-5 (Lot SHBJ8526) Purity 99%	1,010.0 µg/mL	+/- 5.8722 µg/mL Gravimetric +/- 12.0736 µg/mL Unstressed +/- 19.2150 µg/mL Stressed

24	Bis(2-chloroethoxy)methane CAS # 111-91-1 Purity 99%	(Lot 5670100)	1,009.6 µg/mL	+/-	5.8699	µg/mL	Gravimetric
				+/-	12.0688	µg/mL	Unstressed
				+/-	19.2073	µg/mL	Stressed
25	2,4-Dichlorophenol CAS # 120-83-2 Purity 99%	(Lot BCBJ8113V)	1,009.0 µg/mL	+/-	5.8664	µg/mL	Gravimetric
				+/-	12.0616	µg/mL	Unstressed
				+/-	19.1959	µg/mL	Stressed
26	1,2,4-Trichlorobenzene CAS # 120-82-1 Purity 99%	(Lot SHBJ0905)	1,008.4 µg/mL	+/-	5.8629	µg/mL	Gravimetric
				+/-	12.0545	µg/mL	Unstressed
				+/-	19.1845	µg/mL	Stressed
27	Naphthalene CAS # 91-20-3 Purity 99%	(Lot MKBW2603V)	1,008.3 µg/mL	+/-	5.8623	µg/mL	Gravimetric
				+/-	12.0533	µg/mL	Unstressed
				+/-	19.1826	µg/mL	Stressed
28	2,6-Dichlorophenol CAS # 87-65-0 Purity 99%	(Lot MKBP8620V)	1,006.8 µg/mL	+/-	5.8536	µg/mL	Gravimetric
				+/-	12.0353	µg/mL	Unstressed
				+/-	19.1541	µg/mL	Stressed
29	4-Chloroaniline CAS # 106-47-8 Purity 99%	(Lot BCBJ1580V)	1,005.3 µg/mL	+/-	5.8449	µg/mL	Gravimetric
				+/-	12.0174	µg/mL	Unstressed
				+/-	19.1255	µg/mL	Stressed
30	Hexachlorobutadiene CAS # 87-68-3 Purity 99%	(Lot J31X013)	1,008.6 µg/mL	+/-	5.8641	µg/mL	Gravimetric
				+/-	12.0569	µg/mL	Unstressed
				+/-	19.1883	µg/mL	Stressed
31	4-Chloro-3-methylphenol CAS # 59-50-7 Purity 99%	(Lot STBC7309V)	1,006.2 µg/mL	+/-	5.8501	µg/mL	Gravimetric
				+/-	12.0282	µg/mL	Unstressed
				+/-	19.1427	µg/mL	Stressed
32	2-Methylnaphthalene CAS # 91-57-6 Purity 96%	(Lot STBF0201V)	1,005.5 µg/mL	+/-	5.8461	µg/mL	Gravimetric
				+/-	12.0199	µg/mL	Unstressed
				+/-	19.1294	µg/mL	Stressed
33	1-Methylnaphthalene CAS # 90-12-0 Purity 98%	(Lot 523400-9)	1,002.4 µg/mL	+/-	5.8283	µg/mL	Gravimetric
				+/-	11.9833	µg/mL	Unstressed
				+/-	19.0712	µg/mL	Stressed
34	1,2,4,5-Tetrachlorobenzene CAS # 95-94-3 Purity 99%	(Lot MKBW7717V)	1,007.2 µg/mL	+/-	5.8559	µg/mL	Gravimetric
				+/-	12.0401	µg/mL	Unstressed
				+/-	19.1617	µg/mL	Stressed
35	Hexachlorocyclopentadiene CAS # 77-47-4 Purity 99%	(Lot 0012015)	1,006.6 µg/mL	+/-	5.8525	µg/mL	Gravimetric
				+/-	12.0330	µg/mL	Unstressed
				+/-	19.1503	µg/mL	Stressed
36	2,4,6-Trichlorophenol CAS # 88-06-2 Purity 99%	(Lot STBF3742V)	1,009.3 µg/mL	+/-	5.8682	µg/mL	Gravimetric
				+/-	12.0652	µg/mL	Unstressed
				+/-	19.2016	µg/mL	Stressed
37	2,4,5-Trichlorophenol CAS # 95-95-4 Purity 99%	(Lot FHN01)	1,009.2 µg/mL	+/-	5.8676	µg/mL	Gravimetric
				+/-	12.0640	µg/mL	Unstressed
				+/-	19.1997	µg/mL	Stressed
38	2-Chloronaphthalene CAS # 91-58-7 Purity 99%	(Lot AJ2UI)	1,006.8 µg/mL	+/-	5.8536	µg/mL	Gravimetric
				+/-	12.0353	µg/mL	Unstressed
				+/-	19.1541	µg/mL	Stressed
39	Biphenyl CAS # 92-52-4 Purity 99%	(Lot MKBV9808V)	1,006.3 µg/mL	+/-	5.8507	µg/mL	Gravimetric
				+/-	12.0294	µg/mL	Unstressed
				+/-	19.1446	µg/mL	Stressed

56	4-Nitroaniline CAS # 100-01-6 Purity 98%	(Lot BCBG4702V)	1,007.5 µg/mL	+/-	5.8579	µg/mL	Gravimetric
				+/-	12.0442	µg/mL	Unstressed
				+/-	19.1681	µg/mL	Stressed
57	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol) CAS # 534-52-1 Purity 99%	(Lot B180716L)	2,012.4 µg/mL	+/-	11.7003	µg/mL	Gravimetric
				+/-	24.0564	µg/mL	Unstressed
				+/-	38.2853	µg/mL	Stressed
58	Diphenylamine CAS # 122-39-4 Purity 99%	(Lot MKBN8295V)	856.1 µg/mL	+/-	4.9889	µg/mL	Gravimetric
				+/-	10.2395	µg/mL	Unstressed
				+/-	16.2906	µg/mL	Stressed
59	Azobenzene CAS # 103-33-3 Purity 97%	(Lot BCBS6535V)	1,009.8 µg/mL	+/-	5.8709	µg/mL	Gravimetric
				+/-	12.0709	µg/mL	Unstressed
				+/-	19.2106	µg/mL	Stressed
60	4-Bromophenyl phenyl ether CAS # 101-55-3 Purity 99%	(Lot STBB9729V)	1,007.6 µg/mL	+/-	5.8583	µg/mL	Gravimetric
				+/-	12.0449	µg/mL	Unstressed
				+/-	19.1693	µg/mL	Stressed
61	Hexachlorobenzene CAS # 118-74-1 Purity 99%	(Lot LRAB8468)	1,006.6 µg/mL	+/-	5.8525	µg/mL	Gravimetric
				+/-	12.0330	µg/mL	Unstressed
				+/-	19.1503	µg/mL	Stressed
62	Pentachlorophenol CAS # 87-86-5 Purity 99%	(Lot 170717KJA)	2,005.9 µg/mL	+/-	11.6625	µg/mL	Gravimetric
				+/-	23.9787	µg/mL	Unstressed
				+/-	38.1617	µg/mL	Stressed
63	n-Octadecane (C18) CAS # 593-45-3 Purity 99%	(Lot T7N4E)	1,004.8 µg/mL	+/-	5.8420	µg/mL	Gravimetric
				+/-	12.0114	µg/mL	Unstressed
				+/-	19.1160	µg/mL	Stressed
64	Phenanthrene CAS # 85-01-8 Purity 99%	(Lot MKCB1762V)	1,005.3 µg/mL	+/-	5.8449	µg/mL	Gravimetric
				+/-	12.0174	µg/mL	Unstressed
				+/-	19.1255	µg/mL	Stressed
65	Anthracene CAS # 120-12-7 Purity 99%	(Lot MKBR2268V)	1,006.2 µg/mL	+/-	5.8501	µg/mL	Gravimetric
				+/-	12.0282	µg/mL	Unstressed
				+/-	19.1427	µg/mL	Stressed
66	Carbazole CAS # 86-74-8 Purity 99%	(Lot 7528800)	1,002.7 µg/mL	+/-	5.8298	µg/mL	Gravimetric
				+/-	11.9863	µg/mL	Unstressed
				+/-	19.0761	µg/mL	Stressed
67	Di-n-butylphthalate CAS # 84-74-2 Purity 99%	(Lot MKBT0244V)	1,005.6 µg/mL	+/-	5.8466	µg/mL	Gravimetric
				+/-	12.0210	µg/mL	Unstressed
				+/-	19.1312	µg/mL	Stressed
68	Fluoranthene CAS # 206-44-0 Purity 98%	(Lot MKBQ6360V)	1,002.6 µg/mL	+/-	5.8294	µg/mL	Gravimetric
				+/-	11.9856	µg/mL	Unstressed
				+/-	19.0749	µg/mL	Stressed
69	Pyrene CAS # 129-00-0 Purity 99%	(Lot BCBT5695)	1,009.3 µg/mL	+/-	5.8682	µg/mL	Gravimetric
				+/-	12.0652	µg/mL	Unstressed
				+/-	19.2016	µg/mL	Stressed
70	Benzyl butyl phthalate CAS # 85-68-7 Purity 99%	(Lot MKCF0058)	1,006.6 µg/mL	+/-	5.8525	µg/mL	Gravimetric
				+/-	12.0330	µg/mL	Unstressed
				+/-	19.1503	µg/mL	Stressed
71	Benz(a)anthracene CAS # 56-55-3 Purity 96%	(Lot 0012018)	1,004.8 µg/mL	+/-	5.8422	µg/mL	Gravimetric
				+/-	12.0118	µg/mL	Unstressed
				+/-	19.1166	µg/mL	Stressed

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant flow 1.8 mL/min.

Temp. Program:

80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.85 min.)

Inj. Temp:

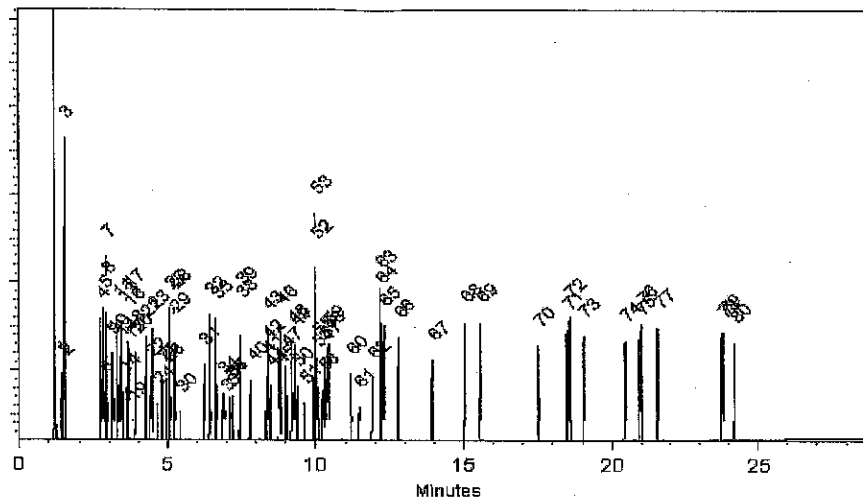
250°C

Det. Temp:

340°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cydnei L. Crust
Cydnei L. Crust - Mix Technician

Date Mixed: 30-Jul-2018

Balance: B442140311

Jennifer J. Pollino
Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 02-Aug-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/ μ ECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

72	Chrysene		1,009.4	µg/mL	+/-	5.8687	µg/mL	Gravimetric
	CAS #	218-01-9 (Lot 012015)			+/-	12.0664	µg/mL	Unstressed
	Purity	99%			+/-	19.2035	µg/mL	Stressed
73	Bis(2-ethylhexyl)phthalate		1,007.3	µg/mL	+/-	5.8565	µg/mL	Gravimetric
	CAS #	117-81-7 (Lot MKBZ3868V)			+/-	12.0413	µg/mL	Unstressed
	Purity	99%			+/-	19.1636	µg/mL	Stressed
74	Di-n-octyl phthalate		1,007.0	µg/mL	+/-	5.8548	µg/mL	Gravimetric
	CAS #	117-84-0 (Lot 7170200)			+/-	12.0377	µg/mL	Unstressed
	Purity	99%			+/-	19.1579	µg/mL	Stressed
75	Benzo(b)fluoranthene		1,003.7	µg/mL	+/-	5.8356	µg/mL	Gravimetric
	CAS #	205-99-2 (Lot 012012B)			+/-	11.9983	µg/mL	Unstressed
	Purity	99%			+/-	19.0951	µg/mL	Stressed
76	Benzo(k)fluoranthene		1,005.7	µg/mL	+/-	5.8472	µg/mL	Gravimetric
	CAS #	207-08-9 (Lot 012012K)			+/-	12.0222	µg/mL	Unstressed
	Purity	99%			+/-	19.1332	µg/mL	Stressed
77	Benzo(a)pyrene		1,008.8	µg/mL	+/-	5.8653	µg/mL	Gravimetric
	CAS #	50-32-8 (Lot ER071309-02)			+/-	12.0593	µg/mL	Unstressed
	Purity	99%			+/-	19.1921	µg/mL	Stressed
78	Indeno(1,2,3-cd)pyrene		1,006.9	µg/mL	+/-	5.8542	µg/mL	Gravimetric
	CAS #	193-39-5 (Lot ER082107-02)			+/-	12.0365	µg/mL	Unstressed
	Purity	99%			+/-	19.1560	µg/mL	Stressed
79	Dibenz(a,h)anthracene		1,008.7	µg/mL	+/-	5.8647	µg/mL	Gravimetric
	CAS #	53-70-3 (Lot ER032211-01)			+/-	12.0581	µg/mL	Unstressed
	Purity	99%			+/-	19.1902	µg/mL	Stressed
80	Benzo(g,h,i)perylene		1,000.2	µg/mL	+/-	5.8152	µg/mL	Gravimetric
	CAS #	191-24-2 (Lot ER05121401)			+/-	11.9565	µg/mL	Unstressed
	Purity	99%			+/-	19.0285	µg/mL	Stressed
Solvent: Methylene chloride								
	CAS #	75-09-2						
	Purity	99%						

Specific Reference Material Notes:

N-nitrosodiphenylamine 1000 ug/mL equivalent when used for GC analysis. Actual formulation is diphenylamine 855 ug/mL.

N-Nitrosodiphenylamine is prone to breakdown in the injection port and will be converted to diphenylamine.

N-Nitrosodiphenylamine is also a reactive species that can initiate premature decomposition of other compounds in the mix. For these reasons diphenylamine is used in the preparation of this mixture. When comparing the response of this compound to mixtures manufactured using N-nitrosodiphenylamine, a difference in response will be observed.

This lot was approved even though the %D for 4,6-DN-2-MP was greater than 10%.

40	2-Nitroaniline CAS # 88-74-4 Purity 99%	(Lot MKBK7597V)	1,007.5 µg/mL	+/- 5.8577 +/- 12.0437 +/- 19.1674	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
41	Acenaphthylene CAS # 208-96-8 Purity 97%	(Lot O03R)	1,007.2 µg/mL	+/- 5.8557 +/- 12.0395 +/- 19.1608	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
42	1,3-Dinitrobenzene CAS # 99-65-0 Purity 99%	(Lot BCBN4329V)	1,008.9 µg/mL	+/- 5.8658 +/- 12.0605 +/- 19.1940	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
43	Dimethylphthalate CAS # 131-11-3 Purity 99%	(Lot 10117699)	1,009.2 µg/mL	+/- 5.8676 +/- 12.0640 +/- 19.1997	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
44	2,6-Dinitrotoluene CAS # 606-20-2 Purity 99%	(Lot 1437483V)	1,009.1 µg/mL	+/- 5.8670 +/- 12.0628 +/- 19.1978	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
45	3-Nitroaniline CAS # 99-09-2 Purity 99%	(Lot MKBX1283V)	1,009.8 µg/mL	+/- 5.8711 +/- 12.0712 +/- 19.2112	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
46	Acenaphthene CAS # 83-32-9 Purity 99%	(Lot MKCC8329)	1,008.1 µg/mL	+/- 5.8612 +/- 12.0509 +/- 19.1788	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
47	2,4-Dinitrophenol CAS # 51-28-5 Purity 99%	(Lot STBG3580V)	2,013.2 µg/mL	+/- 11.7049 +/- 24.0659 +/- 38.3005	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
48	Dibenzofuran CAS # 132-64-9 Purity 99%	(Lot MKCD9952)	1,007.0 µg/mL	+/- 5.8548 +/- 12.0377 +/- 19.1579	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
49	4-Nitrophenol CAS # 100-02-7 Purity 99%	(Lot MKBK1842V)	2,015.4 µg/mL	+/- 11.7177 +/- 24.0922 +/- 38.3424	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
50	2,4-Dinitrotoluene CAS # 121-14-2 Purity 99%	(Lot MKAA0690V)	1,009.5 µg/mL	+/- 5.8693 +/- 12.0676 +/- 19.2054	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
51	2,3,4,6-Tetrachlorophenol CAS # 58-90-2 Purity 99%	(Lot PR-30126)	1,005.3 µg/mL	+/- 5.8449 +/- 12.0174 +/- 19.1255	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
52	Fluorene CAS # 86-73-7 Purity 98%	(Lot 10174662)	1,007.7 µg/mL	+/- 5.8591 +/- 12.0465 +/- 19.1718	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
53	n-Hexadecane (C16) CAS # 544-76-3 Purity 99%	(Lot SHBJ3997)	1,009.8 µg/mL	+/- 5.8711 +/- 12.0712 +/- 19.2112	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
54	Diethylphthalate CAS # 84-66-2 Purity 99%	(Lot MKCB0810V)	1,007.4 µg/mL	+/- 5.8571 +/- 12.0425 +/- 19.1655	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
55	4-Chlorophenyl phenyl ether CAS # 7005-72-3 Purity 99%	(Lot MKBX5225V)	1,006.7 µg/mL	+/- 5.8530 +/- 12.0342 +/- 19.1522	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

8	2-Chlorophenol		1,005.6	µg/mL	+/-	5.8466	µg/mL	Gravimetric
	CAS # 95-57-8	(Lot STBF2690V)			+/-	12.0210	µg/mL	Unstressed
	Purity 99%				+/-	19.1312	µg/mL	Stressed
9	1,3-Dichlorobenzene		1,009.7	µg/mL	+/-	5.8705	µg/mL	Gravimetric
	CAS # 541-73-1	(Lot BCBQ7100V)			+/-	12.0700	µg/mL	Unstressed
	Purity 99%				+/-	19.2092	µg/mL	Stressed
10	1,4-Dichlorobenzene		1,007.6	µg/mL	+/-	5.8583	µg/mL	Gravimetric
	CAS # 106-46-7	(Lot MKBS4401V)			+/-	12.0449	µg/mL	Unstressed
	Purity 99%				+/-	19.1693	µg/mL	Stressed
11	Benzyl alcohol		1,009.6	µg/mL	+/-	5.8699	µg/mL	Gravimetric
	CAS # 100-51-6	(Lot SHBJ0534)			+/-	12.0688	µg/mL	Unstressed
	Purity 99%				+/-	19.2073	µg/mL	Stressed
12	1,2-Dichlorobenzene		1,007.7	µg/mL	+/-	5.8589	µg/mL	Gravimetric
	CAS # 95-50-1	(Lot SHBG3111V)			+/-	12.0461	µg/mL	Unstressed
	Purity 99%				+/-	19.1712	µg/mL	Stressed
13	2-Methylphenol (o-cresol)		1,008.4	µg/mL	+/-	5.8629	µg/mL	Gravimetric
	CAS # 95-48-7	(Lot SHBH6379)			+/-	12.0545	µg/mL	Unstressed
	Purity 99%				+/-	19.1845	µg/mL	Stressed
14	2,2'-oxybis(1-chloropropane)		1,007.6	µg/mL	+/-	5.8583	µg/mL	Gravimetric
	CAS # 108-60-1	(Lot 7577400)			+/-	12.0449	µg/mL	Unstressed
	Purity 99%				+/-	19.1693	µg/mL	Stressed
15	Acetophenone		1,009.4	µg/mL	+/-	5.8687	µg/mL	Gravimetric
	CAS # 98-86-2	(Lot STBG8586)			+/-	12.0664	µg/mL	Unstressed
	Purity 99%				+/-	19.2035	µg/mL	Stressed
16	3-Methylphenol (m-cresol)		504.9	µg/mL	+/-	2.9423	µg/mL	Gravimetric
	CAS # 108-39-4	(Lot SHBD0627V)			+/-	6.0389	µg/mL	Unstressed
	Purity 99%				+/-	9.6077	µg/mL	Stressed
17	4-Methylphenol (p-cresol)		501.8	µg/mL	+/-	2.9242	µg/mL	Gravimetric
	CAS # 106-44-5	(Lot 49396APV)			+/-	6.0018	µg/mL	Unstressed
	Purity 99%				+/-	9.5487	µg/mL	Stressed
18	N-Nitroso-di-n-propylamine		1,006.6	µg/mL	+/-	5.8525	µg/mL	Gravimetric
	CAS # 621-64-7	(Lot OPAGF)			+/-	12.0330	µg/mL	Unstressed
	Purity 99%				+/-	19.1503	µg/mL	Stressed
19	Hexachloroethane		1,001.4	µg/mL	+/-	5.8222	µg/mL	Gravimetric
	CAS # 67-72-1	(Lot 4H3SF)			+/-	11.9708	µg/mL	Unstressed
	Purity 99%				+/-	19.0513	µg/mL	Stressed
20	Nitrobenzene		1,005.9	µg/mL	+/-	5.8484	µg/mL	Gravimetric
	CAS # 98-95-3	(Lot SHBG5577V)			+/-	12.0246	µg/mL	Unstressed
	Purity 99%				+/-	19.1370	µg/mL	Stressed
21	Isophorone		1,009.1	µg/mL	+/-	5.8670	µg/mL	Gravimetric
	CAS # 78-59-1	(Lot MKBG2442V)			+/-	12.0629	µg/mL	Unstressed
	Purity 98%				+/-	19.1979	µg/mL	Stressed
22	2-Nitrophenol		1,008.7	µg/mL	+/-	5.8647	µg/mL	Gravimetric
	CAS # 88-75-5	(Lot BCBH7602V)			+/-	12.0581	µg/mL	Unstressed
	Purity 99%				+/-	19.1902	µg/mL	Stressed
23	2,4-Dimethylphenol		1,008.6	µg/mL	+/-	5.8641	µg/mL	Gravimetric
	CAS # 105-67-9	(Lot 10165155)			+/-	12.0569	µg/mL	Unstressed
	Purity 99%				+/-	19.1883	µg/mL	Stressed

Reagent

571995_00090



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 571995 **Lot No.:** A0136052

Description : 8270 List 1 / Std #1 MegaMix (2017)

8270 List 1 / Std #1 MegaMix (2017) 500-2,000µg/mL, Methylene chloride, 5mL/ampul

Container Size : 10 mL **Pkg Amt:** > 5 mL

Expiration Date : September 30, 2019 **Storage:** 0°C or colder

Handling: Carcinogen/reproductive toxin. Photosensitive. Sonicate.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1,4-Dioxane CAS # 123-91-1 (Lot SHBH5677) Purity 99%	1,002.0 µg/mL	+/- 5.8257 µg/mL +/- 11.9780 µg/mL +/- 19.0628 µg/mL
2	N-Nitrosodimethylamine CAS # 62-75-9 (Lot 161108JLM) Purity 99%	1,002.0 µg/mL	+/- 5.8257 µg/mL +/- 11.9780 µg/mL +/- 19.0628 µg/mL
3	Pyridine CAS # 110-86-1 (Lot SHBC7174V) Purity 99%	2,011.2 µg/mL	+/- 11.6933 µg/mL +/- 24.0420 µg/mL +/- 38.2625 µg/mL
4	Phenol CAS # 108-95-2 (Lot SHBF1351V) Purity 99%	1,005.1 µg/mL	+/- 5.8439 µg/mL +/- 12.0154 µg/mL +/- 19.1224 µg/mL
5	Aniline CAS # 62-53-3 (Lot K22Z462) Purity 99%	1,002.6 µg/mL	+/- 5.8292 µg/mL +/- 11.9851 µg/mL +/- 19.0742 µg/mL
6	Bis(2-chloroethyl)ether CAS # 111-44-4 (Lot SHBD4430V) Purity 99%	1,001.4 µg/mL	+/- 5.8222 µg/mL +/- 11.9708 µg/mL +/- 19.0513 µg/mL
7	n-Decane (C10) CAS # 124-18-5 (Lot SHBH3926V) Purity 99%	1,000.7 µg/mL	+/- 5.8180 µg/mL +/- 11.9620 µg/mL +/- 19.0374 µg/mL

8	2-Chlorophenol CAS # 95-57-8 Purity 99%	(Lot STBF2690V)	1,007.1 µg/mL	+/- 5.8552 +/- 12.0385 +/- 19.1592	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
9	1,3-Dichlorobenzene CAS # 541-73-1 Purity 99%	(Lot BCBM5751V)	1,001.0 µg/mL	+/- 5.8199 +/- 11.9660 +/- 19.0437	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
10	1,4-Dichlorobenzene CAS # 106-46-7 Purity 99%	(Lot MKBS4401V)	1,004.4 µg/mL	+/- 5.8397 +/- 12.0067 +/- 19.1084	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
11	Benzyl alcohol CAS # 100-51-6 Purity 99%	(Lot SHBC1850V)	1,005.2 µg/mL	+/- 5.8443 +/- 12.0162 +/- 19.1236	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
12	1,2-Dichlorobenzene CAS # 95-50-1 Purity 99%	(Lot 68996CMV)	1,001.2 µg/mL	+/- 5.8211 +/- 11.9684 +/- 19.0475	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
13	2-Methylphenol (o-cresol) CAS # 95-48-7 Purity 99%	(Lot SHBH6379)	1,001.6 µg/mL	+/- 5.8234 +/- 11.9732 +/- 19.0551	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
14	2,2'-oxybis(1-chloropropane) CAS # 108-60-1 Purity 98%	(Lot 5510800)	1,006.7 µg/mL	+/- 5.8528 +/- 12.0336 +/- 19.1513	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
15	Acetophenone CAS # 98-86-2 Purity 99%	(Lot STBG7113)	1,005.5 µg/mL	+/- 5.8459 +/- 12.0194 +/- 19.1287	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
16	3-Methylphenol (m-cresol) CAS # 108-39-4 Purity 99%	(Lot SHBD0627V)	501.0 µg/mL	+/- 2.9196 +/- 5.9923 +/- 9.5334	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
17	4-Methylphenol (p-cresol) CAS # 106-44-5 Purity 99%	(Lot 49396APV)	501.7 µg/mL	+/- 2.9235 +/- 6.0002 +/- 9.5461	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
18	N-Nitroso-di-n-propylamine CAS # 621-64-7 Purity 99%	(Lot NOPCF)	1,003.1 µg/mL	+/- 5.8323 +/- 11.9915 +/- 19.0843	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
19	Hexachloroethane CAS # 67-72-1 Purity 99%	(Lot 4H3SF)	1,003.4 µg/mL	+/- 5.8339 +/- 11.9947 +/- 19.0894	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
20	Nitrobenzene CAS # 98-95-3 Purity 99%	(Lot SHBG5577V)	1,002.3 µg/mL	+/- 5.8273 +/- 11.9812 +/- 19.0678	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
21	Isophorone CAS # 78-59-1 Purity 98%	(Lot MKBG2442V)	1,003.3 µg/mL	+/- 5.8334 +/- 11.9938 +/- 19.0879	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
22	2-Nitrophenol CAS # 88-75-5 Purity 99%	(Lot BCBH7602V)	1,007.7 µg/mL	+/- 5.8587 +/- 12.0457 +/- 19.1706	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
23	2,4-Dimethylphenol CAS # 105-67-9 Purity 99%	(Lot 10165155)	1,000.9 µg/mL	+/- 5.8191 +/- 11.9644 +/- 19.0412	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

24	Bis(2-chloroethoxy)methane CAS # 111-91-1 Purity 99%	(Lot 4621000)	1,001.3 µg/mL	+/-	5.8215	µg/mL	Gravimetric
				+/-	11.9692	µg/mL	Unstressed
				+/-	19.0488	µg/mL	Stressed
25	2,4-Dichlorophenol CAS # 120-83-2 Purity 99%	(Lot BCBH1617V)	1,003.1 µg/mL	+/-	5.8323	µg/mL	Gravimetric
				+/-	11.9915	µg/mL	Unstressed
				+/-	19.0843	µg/mL	Stressed
26	1,2,4-Trichlorobenzene CAS # 120-82-1 Purity 99%	(Lot SHBJ0905)	1,005.0 µg/mL	+/-	5.8432	µg/mL	Gravimetric
				+/-	12.0138	µg/mL	Unstressed
				+/-	19.1198	µg/mL	Stressed
27	Naphthalene CAS # 91-20-3 Purity 99%	(Lot MKBW2603V)	1,000.5 µg/mL	+/-	5.8168	µg/mL	Gravimetric
				+/-	11.9596	µg/mL	Unstressed
				+/-	19.0336	µg/mL	Stressed
28	2,6-Dichlorophenol CAS # 87-65-0 Purity 99%	(Lot MKBP8620V)	1,001.3 µg/mL	+/-	5.8215	µg/mL	Gravimetric
				+/-	11.9692	µg/mL	Unstressed
				+/-	19.0488	µg/mL	Stressed
29	4-Chloroaniline CAS # 106-47-8 Purity 99%	(Lot BCBJ1580V)	1,001.3 µg/mL	+/-	5.8215	µg/mL	Gravimetric
				+/-	11.9692	µg/mL	Unstressed
				+/-	19.0488	µg/mL	Stressed
30	Hexachlorobutadiene CAS # 87-68-3 Purity 99%	(Lot J31X013)	1,002.5 µg/mL	+/-	5.8284	µg/mL	Gravimetric
				+/-	11.9835	µg/mL	Unstressed
				+/-	19.0716	µg/mL	Stressed
31	4-Chloro-3-methylphenol CAS # 59-50-7 Purity 99%	(Lot STBC7309V)	1,006.2 µg/mL	+/-	5.8501	µg/mL	Gravimetric
				+/-	12.0282	µg/mL	Unstressed
				+/-	19.1427	µg/mL	Stressed
32	2-Methylnaphthalene CAS # 91-57-6 Purity 96%	(Lot STBG8884)	1,007.7 µg/mL	+/-	5.8587	µg/mL	Gravimetric
				+/-	12.0459	µg/mL	Unstressed
				+/-	19.1708	µg/mL	Stressed
33	1-Methylnaphthalene CAS # 90-12-0 Purity 99%	(Lot 525000-9)	1,005.5 µg/mL	+/-	5.8463	µg/mL	Gravimetric
				+/-	12.0202	µg/mL	Unstressed
				+/-	19.1300	µg/mL	Stressed
34	1,2,4,5-Tetrachlorobenzene CAS # 95-94-3 Purity 99%	(Lot MKBW7717V)	1,004.3 µg/mL	+/-	5.8389	µg/mL	Gravimetric
				+/-	12.0051	µg/mL	Unstressed
				+/-	19.1059	µg/mL	Stressed
35	Hexachlorocyclopentadiene CAS # 77-47-4 Purity 99%	(Lot 0012017H)	1,007.1 µg/mL	+/-	5.8552	µg/mL	Gravimetric
				+/-	12.0385	µg/mL	Unstressed
				+/-	19.1592	µg/mL	Stressed
36	2,4,6-Trichlorophenol CAS # 88-06-2 Purity 99%	(Lot STBF3742V)	1,003.5 µg/mL	+/-	5.8342	µg/mL	Gravimetric
				+/-	11.9955	µg/mL	Unstressed
				+/-	19.0907	µg/mL	Stressed
37	2,4,5-Trichlorophenol CAS # 95-95-4 Purity 99%	(Lot FHN01)	1,006.4 µg/mL	+/-	5.8513	µg/mL	Gravimetric
				+/-	12.0306	µg/mL	Unstressed
				+/-	19.1465	µg/mL	Stressed
38	2-Chloronaphthalene CAS # 91-58-7 Purity 99%	(Lot AJ2UI)	1,002.9 µg/mL	+/-	5.8308	µg/mL	Gravimetric
				+/-	11.9883	µg/mL	Unstressed
				+/-	19.0792	µg/mL	Stressed
39	Biphenyl CAS # 92-52-4 Purity 99%	(Lot MKBV9808V)	1,001.2 µg/mL	+/-	5.8211	µg/mL	Gravimetric
				+/-	11.9684	µg/mL	Unstressed
				+/-	19.0475	µg/mL	Stressed

40	2-Nitroaniline CAS # 88-74-4 Purity 99%	(Lot MKBK7597V)	1,004.5 µg/mL	+/-	5.8401	µg/mL	Gravimetric
				+/-	12.0075	µg/mL	Unstressed
				+/-	19.1097	µg/mL	Stressed
41	Acenaphthylene CAS # 208-96-8 Purity 97%	(Lot O03R)	1,006.0 µg/mL	+/-	5.8491	µg/mL	Gravimetric
				+/-	12.0260	µg/mL	Unstressed
				+/-	19.1392	µg/mL	Stressed
42	1,3-Dinitrobenzene CAS # 99-65-0 Purity 99%	(Lot BCBN4329V)	1,001.8 µg/mL	+/-	5.8246	µg/mL	Gravimetric
				+/-	11.9756	µg/mL	Unstressed
				+/-	19.0590	µg/mL	Stressed
43	Dimethylphthalate CAS # 131-11-3 Purity 99%	(Lot 10117699)	1,003.7 µg/mL	+/-	5.8358	µg/mL	Gravimetric
				+/-	11.9987	µg/mL	Unstressed
				+/-	19.0957	µg/mL	Stressed
44	2,6-Dinitrotoluene CAS # 606-20-2 Purity 99%	(Lot BCBB8606V)	1,000.7 µg/mL	+/-	5.8183	µg/mL	Gravimetric
				+/-	11.9628	µg/mL	Unstressed
				+/-	19.0387	µg/mL	Stressed
45	3-Nitroaniline CAS # 99-09-2 Purity 99%	(Lot MKBX1283V)	1,005.2 µg/mL	+/-	5.8443	µg/mL	Gravimetric
				+/-	12.0162	µg/mL	Unstressed
				+/-	19.1236	µg/mL	Stressed
46	Acenaphthene CAS # 83-32-9 Purity 99%	(Lot MKCC8329)	1,005.9 µg/mL	+/-	5.8482	µg/mL	Gravimetric
				+/-	12.0242	µg/mL	Unstressed
				+/-	19.1363	µg/mL	Stressed
47	2,4-Dinitrophenol CAS # 51-28-5 Purity 99%	(Lot STBF9439V)	2,008.3 µg/mL	+/-	11.6766	µg/mL	Gravimetric
				+/-	24.0077	µg/mL	Unstressed
				+/-	38.2080	µg/mL	Stressed
48	Dibenzofuran CAS # 132-64-9 Purity 99%	(Lot MKBW2691V)	1,005.5 µg/mL	+/-	5.8463	µg/mL	Gravimetric
				+/-	12.0202	µg/mL	Unstressed
				+/-	19.1300	µg/mL	Stressed
49	4-Nitrophenol CAS # 100-02-7 Purity 99%	(Lot MKBV0501V)	2,009.3 µg/mL	+/-	11.6824	µg/mL	Gravimetric
				+/-	24.0197	µg/mL	Unstressed
				+/-	38.2270	µg/mL	Stressed
50	2,4-Dinitrotoluene CAS # 121-14-2 Purity 99%	(Lot MKAA0690V)	1,003.9 µg/mL	+/-	5.8366	µg/mL	Gravimetric
				+/-	12.0003	µg/mL	Unstressed
				+/-	19.0983	µg/mL	Stressed
51	2,3,4,6-Tetrachlorophenol CAS # 58-90-2 Purity 99%	(Lot B180305L)	1,001.9 µg/mL	+/-	5.8253	µg/mL	Gravimetric
				+/-	11.9772	µg/mL	Unstressed
				+/-	19.0615	µg/mL	Stressed
52	Fluorene CAS # 86-73-7 Purity 99%	(Lot 10193329)	1,002.0 µg/mL	+/-	5.8257	µg/mL	Gravimetric
				+/-	11.9780	µg/mL	Unstressed
				+/-	19.0628	µg/mL	Stressed
53	n-Hexadecane (C16) CAS # 544-76-3 Purity 99%	(Lot SHBG2582V)	1,001.6 µg/mL	+/-	5.8234	µg/mL	Gravimetric
				+/-	11.9732	µg/mL	Unstressed
				+/-	19.0551	µg/mL	Stressed
54	Diethylphthalate CAS # 84-66-2 Purity 99%	(Lot MKBV9622V)	1,003.3 µg/mL	+/-	5.8335	µg/mL	Gravimetric
				+/-	11.9939	µg/mL	Unstressed
				+/-	19.0881	µg/mL	Stressed
55	4-Chlorophenyl phenyl ether CAS # 7005-72-3 Purity 99%	(Lot MKBX5225V)	1,001.1 µg/mL	+/-	5.8203	µg/mL	Gravimetric
				+/-	11.9668	µg/mL	Unstressed
				+/-	19.0450	µg/mL	Stressed

56	4-Nitroaniline CAS # 100-01-6 Purity 98%	(Lot BCBG4702V)	1,003.1 µg/mL	+/- 5.8319 +/- 11.9907 +/- 19.0830	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
57	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol) CAS # 534-52-1 Purity 99%	(Lot LC25844V)	2,003.7 µg/mL	+/- 11.6495 +/- 23.9520 +/- 38.1192	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
58	Diphenylamine CAS # 122-39-4 Purity 99%	(Lot MKBN8295V)	852.3 µg/mL	+/- 4.9555 +/- 10.1888 +/- 16.2154	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
59	Azobenzene CAS # 103-33-3 Purity 99%	(Lot BCBQ0927V)	1,005.5 µg/mL	+/- 5.8463 +/- 12.0202 +/- 19.1300	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
60	4-Bromophenyl phenyl ether CAS # 101-55-3 Purity 99%	(Lot STBB9729V)	1,022.3 µg/mL	+/- 5.9439 +/- 12.2210 +/- 19.4496	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
61	Hexachlorobenzene CAS # 118-74-1 Purity 99%	(Lot 7013600)	1,002.5 µg/mL	+/- 5.8288 +/- 11.9843 +/- 19.0729	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
62	Pentachlorophenol CAS # 87-86-5 Purity 99%	(Lot 170306KJA)	2,002.1 µg/mL	+/- 11.6406 +/- 23.9336 +/- 38.0900	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
63	n-Octadecane (C18) CAS # 593-45-3 Purity 99%	(Lot OGCDK)	1,002.9 µg/mL	+/- 5.8308 +/- 11.9883 +/- 19.0792	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
64	Phenanthrene CAS # 85-01-8 Purity 99%	(Lot MKCB1762V)	1,001.1 µg/mL	+/- 5.8203 +/- 11.9668 +/- 19.0450	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
65	Anthracene CAS # 120-12-7 Purity 99%	(Lot MKBV7759V)	1,000.3 µg/mL	+/- 5.8156 +/- 11.9573 +/- 19.0298	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
66	Carbazole CAS # 86-74-8 Purity 99%	(Lot 6489700)	1,000.5 µg/mL	+/- 5.8168 +/- 11.9596 +/- 19.0336	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
67	Di-n-butylphthalate CAS # 84-74-2 Purity 99%	(Lot MKBT0244V)	1,005.7 µg/mL	+/- 5.8470 +/- 12.0218 +/- 19.1325	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
68	Fluoranthene CAS # 206-44-0 Purity 98%	(Lot MKBQ6360V)	1,005.5 µg/mL	+/- 5.8463 +/- 12.0204 +/- 19.1302	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
69	Pyrene CAS # 129-00-0 Purity 99%	(Lot BCBT5695)	1,005.8 µg/mL	+/- 5.8478 +/- 12.0234 +/- 19.1351	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
70	Benzyl butyl phthalate CAS # 85-68-7 Purity 98%	(Lot MKBZ4553V)	1,000.3 µg/mL	+/- 5.8156 +/- 11.9571 +/- 19.0295	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
71	Benz(a)anthracene CAS # 56-55-3 Purity 98%	(Lot 0012012)	1,003.1 µg/mL	+/- 5.8323 +/- 11.9915 +/- 19.0842	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

72	Chrysene CAS # 218-01-9 Purity 99%	(Lot 012015)	1,004.6 µg/mL	+/- 5.8408 +/- 12.0091 +/- 19.1122	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
73	Bis(2-ethylhexyl)phthalate CAS # 117-81-7 Purity 99%	(Lot MKBZ3868V)	1,002.7 µg/mL	+/- 5.8296 +/- 11.9859 +/- 19.0754	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
74	Di-n-octyl phthalate CAS # 117-84-0 Purity 99%	(Lot 6016000)	1,007.9 µg/mL	+/- 5.8602 +/- 12.0489 +/- 19.1756	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
75	Benzo(b)fluoranthene CAS # 205-99-2 Purity 99%	(Lot 012012B)	1,003.6 µg/mL	+/- 5.8350 +/- 11.9971 +/- 19.0932	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
76	Benzo(k)fluoranthene CAS # 207-08-9 Purity 99%	(Lot 012017K)	1,006.2 µg/mL	+/- 5.8501 +/- 12.0282 +/- 19.1427	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
77	Benzo(a)pyrene CAS # 50-32-8 Purity 99%	(Lot ER071309-02)	1,002.1 µg/mL	+/- 5.8261 +/- 11.9788 +/- 19.0640	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
78	Indeno(1,2,3-cd)pyrene CAS # 193-39-5 Purity 99%	(Lot ER082107-02)	1,004.0 µg/mL	+/- 5.8373 +/- 12.0019 +/- 19.1008	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
79	Dibenz(a,h)anthracene CAS # 53-70-3 Purity 99%	(Lot ER032211-01)	1,001.9 µg/mL	+/- 5.8249 +/- 11.9764 +/- 19.0602	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
80	Benzo(g,h,i)perylene CAS # 191-24-2 Purity 99%	(Lot ER05121401)	1,000.9 µg/mL	+/- 5.8195 +/- 11.9652 +/- 19.0425	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
Solvent: Methylene chloride CAS # 75-09-2 Purity 99%						

Specific Reference Material Notes:

N-nitrosodiphenylamine 1000 ug/mL equivalent when used for GC analysis. Actual formulation is diphenylamine 855 ug/mL.

N-Nitrosodiphenylamine is prone to breakdown in the injection port and will be converted to diphenylamine.

N-Nitrosodiphenylamine is also a reactive species that can initiate premature decomposition of other compounds in the mix. For these reasons diphenylamine is used in the preparation of this mixture. When comparing the response of this compound to mixtures manufactured using N-nitrosodiphenylamine, a difference in response will be observed.

This lot was approved even though the %D for 4,6-DN-2-MP was greater than 10%.

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant flow 1.8 mL/min.

Temp. Program:

80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

Inj. Temp:

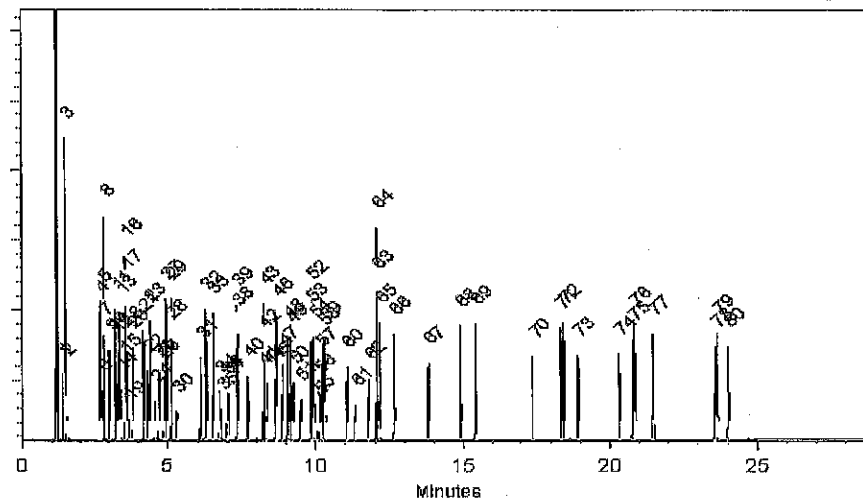
250°C

Det. Temp:

340°C

Det. Type:

FID

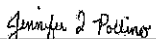


This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Joseph Jaglowski - Mix Technician

Date Mixed: 12-Mar-2018

Balance: 1128360905


Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 27-Mar-2018

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

Reagent

571995_00099



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569732 **Lot No.:** A0137125
Description : 8270 List 1 / Std #11
8270 List 1 / Std #11 2,000µg/mL, Methylene chloride, 5mL/ampul
Container Size : 5 mL **Pkg Amt:** > 5 mL
Expiration Date : October 31, 2019 **Storage:** 10°C or colder
Handling: This product is photosensitive.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)			
1	Benzaldehyde	2,001.1 µg/mL	+/-	11.6345	µg/mL	Gravimetric
	CAS # 100-52-7 (Lot SHBG8690V)		+/-	64.1460	µg/mL	Unstressed
	Purity 99%		+/-	74.5673	µg/mL	Stressed
2	epsilon-Caprolactam	2,002.0 µg/mL	+/-	11.6398	µg/mL	Gravimetric
	CAS # 105-60-2 (Lot I16X016)		+/-	64.1754	µg/mL	Unstressed
	Purity 99%		+/-	74.6014	µg/mL	Stressed
3	Atrazine	2,002.6 µg/mL	+/-	11.6432	µg/mL	Gravimetric
	CAS # 1912-24-9 (Lot 77P7D)		+/-	64.1941	µg/mL	Unstressed
	Purity 99%		+/-	74.6232	µg/mL	Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:

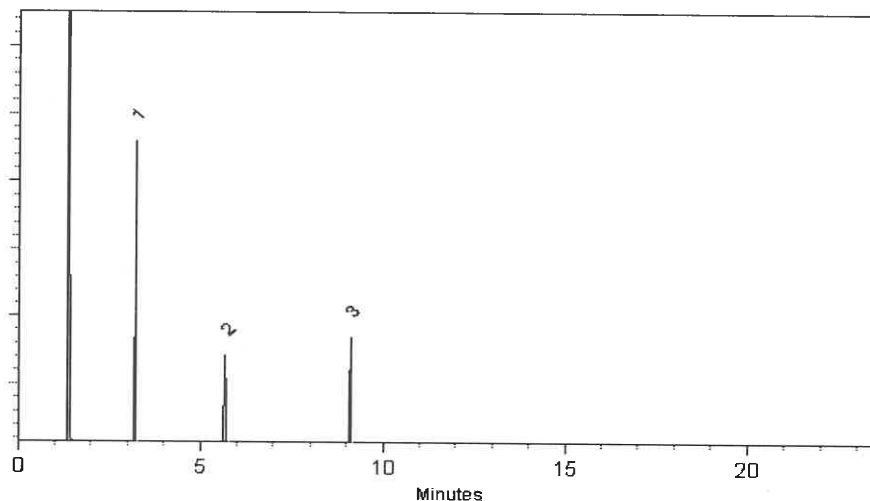
250°C

Det. Temp:

330°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

F. Joseph Tallon
F. Joseph Tallon - Mix Technician

Date Mixed: 12-Apr-2018

Balance: B442140311

Jennifer A. Pollino
Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 16-Apr-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

Reagent

571995_00100



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569732 **Lot No.:** A0137125
Description : 8270 List 1 / Std #11
8270 List 1 / Std #11 2,000µg/mL, Methylene chloride, 5mL/ampul
Container Size : 5 mL **Pkg Amt:** > 5 mL
Expiration Date : October 31, 2019 **Storage:** 10°C or colder
Handling: This product is photosensitive.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)			
1	Benzaldehyde	2,001.1 µg/mL	+/-	11.6345	µg/mL	Gravimetric
	CAS # 100-52-7 (Lot SHBG8690V)		+/-	64.1460	µg/mL	Unstressed
	Purity 99%		+/-	74.5673	µg/mL	Stressed
2	epsilon-Caprolactam	2,002.0 µg/mL	+/-	11.6398	µg/mL	Gravimetric
	CAS # 105-60-2 (Lot I16X016)		+/-	64.1754	µg/mL	Unstressed
	Purity 99%		+/-	74.6014	µg/mL	Stressed
3	Atrazine	2,002.6 µg/mL	+/-	11.6432	µg/mL	Gravimetric
	CAS # 1912-24-9 (Lot 77P7D)		+/-	64.1941	µg/mL	Unstressed
	Purity 99%		+/-	74.6232	µg/mL	Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:

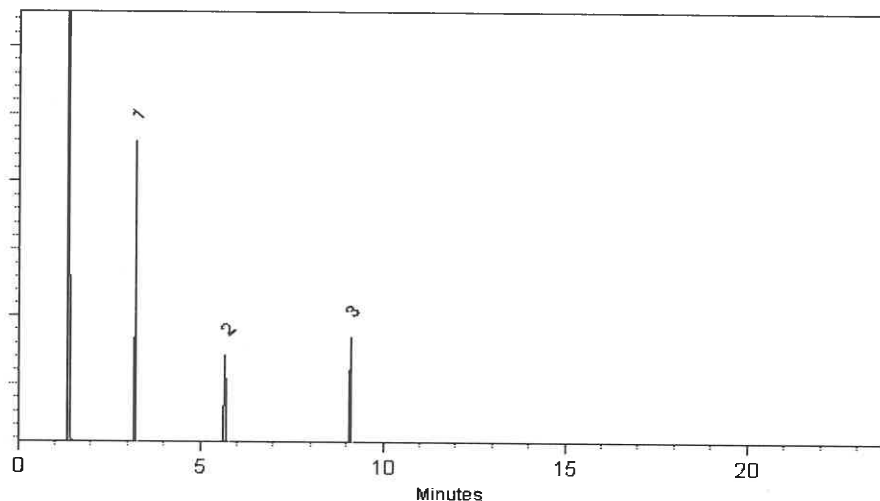
250°C

Det. Temp:

330°C

Det. Type:

FID



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F. Joseph Tallon
F. Joseph Tallon - Mix Technician

Date Mixed: 12-Apr-2018

Balance: B442140311

Jennifer Pollino
Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 16-Apr-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

Reagent

571995_00101



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Fax: (814)353-1309

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569732 **Lot No.:** A0137125
Description : 8270 List 1 / Std #11
8270 List 1 / Std #11 2,000µg/mL, Methylene chloride, 5mL/ampul
Container Size : 5 mL **Pkg Amt:** > 5 mL
Expiration Date : October 31, 2019 **Storage:** 10°C or colder
Handling: This product is photosensitive.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)			
1	Benzaldehyde	2,001.1 µg/mL	+/-	11.6345	µg/mL	Gravimetric
	CAS # 100-52-7 (Lot SHBG8690V)		+/-	64.1460	µg/mL	Unstressed
	Purity 99%		+/-	74.5673	µg/mL	Stressed
2	epsilon-Caprolactam	2,002.0 µg/mL	+/-	11.6398	µg/mL	Gravimetric
	CAS # 105-60-2 (Lot I16X016)		+/-	64.1754	µg/mL	Unstressed
	Purity 99%		+/-	74.6014	µg/mL	Stressed
3	Atrazine	2,002.6 µg/mL	+/-	11.6432	µg/mL	Gravimetric
	CAS # 1912-24-9 (Lot 77P7D)		+/-	64.1941	µg/mL	Unstressed
	Purity 99%		+/-	74.6232	µg/mL	Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:

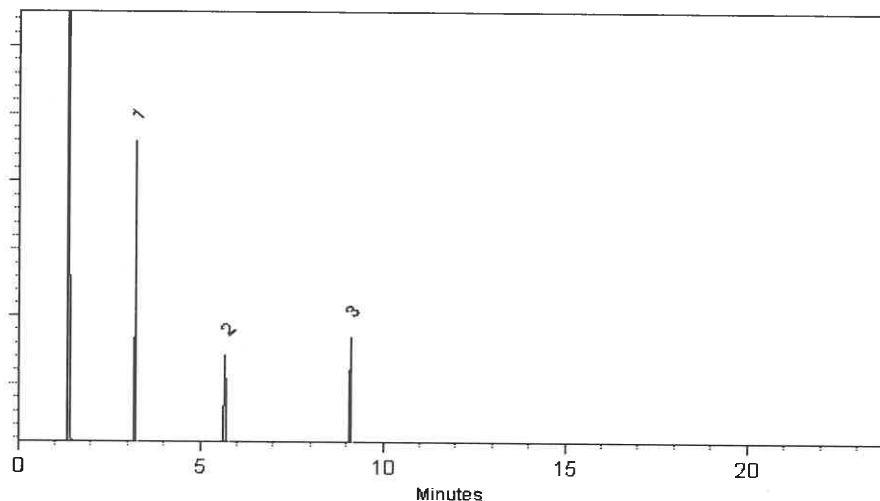
250°C

Det. Temp:

330°C

Det. Type:

FID



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F. Joseph Tallon
F. Joseph Tallon - Mix Technician

Date Mixed: 12-Apr-2018

Balance: B442140311

Jennifer A. Pollino
Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 16-Apr-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

Reagent

571995_00102



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569732 **Lot No.:** A0137125
Description : 8270 List 1 / Std #11
8270 List 1 / Std #11 2,000µg/mL, Methylene chloride, 5mL/ampul
Container Size : 5 mL **Pkg Amt:** > 5 mL
Expiration Date : October 31, 2019 **Storage:** 10°C or colder
Handling: This product is photosensitive.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)			
1	Benzaldehyde	2,001.1 µg/mL	+/-	11.6345	µg/mL	Gravimetric
	CAS # 100-52-7 (Lot SHBG8690V)		+/-	64.1460	µg/mL	Unstressed
	Purity 99%		+/-	74.5673	µg/mL	Stressed
2	epsilon-Caprolactam	2,002.0 µg/mL	+/-	11.6398	µg/mL	Gravimetric
	CAS # 105-60-2 (Lot I16X016)		+/-	64.1754	µg/mL	Unstressed
	Purity 99%		+/-	74.6014	µg/mL	Stressed
3	Atrazine	2,002.6 µg/mL	+/-	11.6432	µg/mL	Gravimetric
	CAS # 1912-24-9 (Lot 77P7D)		+/-	64.1941	µg/mL	Unstressed
	Purity 99%		+/-	74.6232	µg/mL	Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:

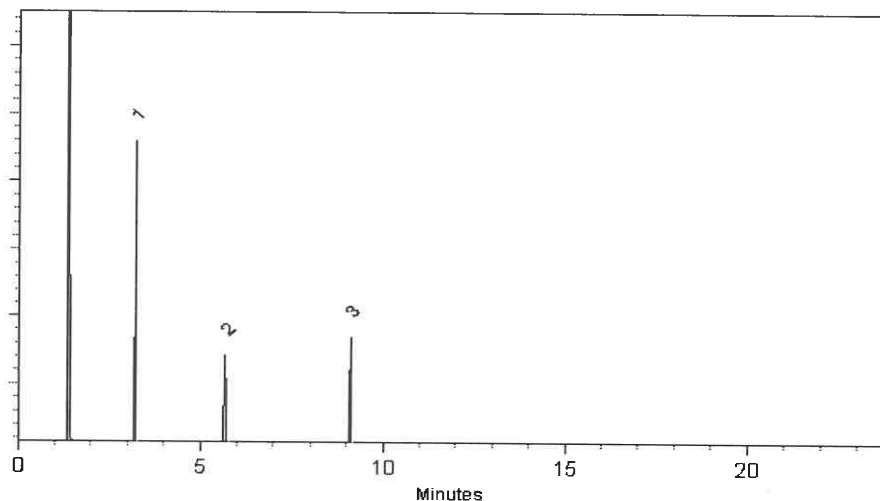
250°C

Det. Temp:

330°C

Det. Type:

FID



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F. Joseph Tallon
F. Joseph Tallon - Mix Technician

Date Mixed: 12-Apr-2018

Balance: B442140311

Jennifer A. Pollino
Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 16-Apr-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

Reagent

8081 ToxStock_00015



CERTIFICATE OF ANALYSIS

Catalog No: P-093S-H-10X

Description: Toxaphene

Lot: 212011251

Solvent: Hexane

8-28

Date Certified: Jan 19, 2012

Expiration: Jan 19, 2022

Sample Size: 1 mL

Storage Condition: Ambient

Hazards: HIGHLY FLAMMABLE

☒ Included on ISO/IEC 17025 Scope of Accreditation

☒ Included on ISO Guide 34 Scope of Accreditation

Component	CAS #	Purity % (GC/MS)	Prepared Concentration ¹ (µg/mL)	Certified Analyte Concentration ² (µg/mL)
Toxaphene	8001-35-2	Tech Mix	1000	1000

AccuStandard follows U.S. conventions in reporting numerical values on both certificates and labels:

A comma (,) is used to separate units of one-thousand or greater.

A period (.) is used as a decimal place marker.

1. All weights are traceable through NIST, Test No.822-275872-11
2. Certified Analyte Concentration = Purity x Prepared Concentration. The Uncertainty associated with the gravimetric values reported on this certificate is $\pm 0.24\%$. The CRM Uncertainty calculated for this product is $\pm 5\%$. These values are the expanded uncertainty and represent an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of $K=2$ is chosen using approximately a 95% confidence level.
3. A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot# has had its expiration date extended and is identical to the same lot# without the suffix.

For use in routine laboratory analysis.

See reverse side for additional information
Refer to the MSDS for additional safety information

Certified by: R. Cooper
Russ Cooper, QC Manager

Reagent

8081 ToxStock_00016



CERTIFICATE OF ANALYSIS

Catalog No: P-093S-H-10X

Description: Toxaphene

Lot: 212011251

Solvent: Hexane

8-28

Date Certified: Jan 19, 2012

Expiration: Jan 19, 2022

Sample Size: 1 mL

Storage Condition: Ambient

Hazards: HIGHLY FLAMMABLE

☒ Included on ISO/IEC 17025 Scope of Accreditation

☒ Included on ISO Guide 34 Scope of Accreditation

Component	CAS #	Purity %	Prepared Concentration ¹	Certified Analyte Concentration ²
		(GC/MS)	(µg/mL)	(µg/mL)
Toxaphene	8001-35-2	Tech Mix	1000	1000

AccuStandard follows U.S. conventions in reporting numerical values on both certificates and labels:

A comma (,) is used to separate units of one-thousand or greater.

A period (.) is used as a decimal place marker.

1. All weights are traceable through NIST, Test No.822-275872-11
2. Certified Analyte Concentration = Purity x Prepared Concentration. The Uncertainty associated with the gravimetric values reported on this certificate is $\pm 0.24\%$. The CRM Uncertainty calculated for this product is $\pm 5\%$. These values are the expanded uncertainty and represent an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.
3. A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot# has had its expiration date extended and is identical to the same lot# without the suffix.

For use in routine laboratory analysis.

See reverse side for additional information
Refer to the MSDS for additional safety information

Certified by: R. Cooper
Russ Cooper, QC Manager

Reagent

8081ABResPS_00027



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 32415 Lot No.: A0129369

Description : Organochlorine Pesticide Mix AB #3

Organochlorine Pesticide Mix AB #3 2,000 µg/mL, Hexane/Toluene (
50:50), 1mL/ampul

Container Size : 2 mL Pkg Amt: > 1 mL

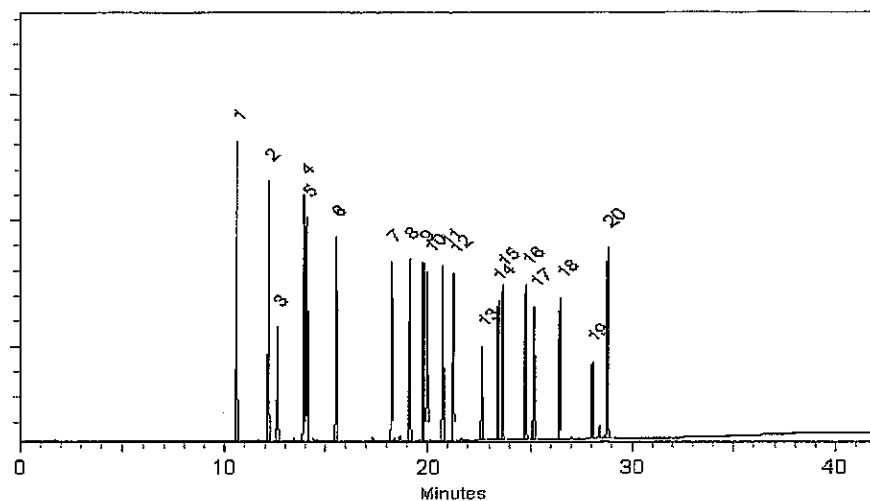
Expiration Date : July 31, 2021 Storage: 10°C or colder

Handling: Sonicate prior to use.

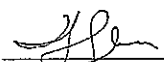
CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	alpha-BHC CAS # 319-84-6 (Lot 0911942) Purity 99%	2,012.0 µg/mL	+/- 11.8075 µg/mL Gravimetric +/- 91.6450 µg/mL Unstressed +/- 132.3230 µg/mL Stressed
2	gamma-BHC (Lindane) CAS # 58-89-9 (Lot 6357300) Purity 99%	2,010.5 µg/mL	+/- 11.7987 µg/mL Gravimetric +/- 91.5767 µg/mL Unstressed +/- 132.2244 µg/mL Stressed
3	beta-BHC CAS # 319-85-7 (Lot SZBD116XV) Purity 98%	2,011.9 µg/mL	+/- 11.8072 µg/mL Gravimetric +/- 91.6423 µg/mL Unstressed +/- 132.3191 µg/mL Stressed
4	delta-BHC CAS # 319-86-8 (Lot ER02101401) Purity 99%	2,017.0 µg/mL	+/- 11.8369 µg/mL Gravimetric +/- 91.8728 µg/mL Unstressed +/- 132.6518 µg/mL Stressed
5	Heptachlor CAS # 76-44-8 (Lot NT056422) Purity 99%	2,011.5 µg/mL	+/- 11.8046 µg/mL Gravimetric +/- 91.6223 µg/mL Unstressed +/- 132.2901 µg/mL Stressed
6	Aldrin CAS # 309-00-2 (Lot 5923100) Purity 98%	2,009.0 µg/mL	+/- 11.7899 µg/mL Gravimetric +/- 91.5084 µg/mL Unstressed +/- 132.1257 µg/mL Stressed
7	Heptachlor epoxide (isomer B) CAS # 1024-57-3 (Lot ER121511-01) Purity 99%	2,007.0 µg/mL	+/- 11.7782 µg/mL Gravimetric +/- 91.4173 µg/mL Unstressed +/- 131.9942 µg/mL Stressed

Column:
 30m x .25mm x .2um
 Rtx-CLP II (cat.# 11323)
Carrier Gas:
 helium-constant pressure 20 psi.
Temp. Program:
 150°C to 300°C
 @ 4°C/min. (hold 5 min.)
Inj. Temp:
 200°C
Det. Temp:
 300°C
Det. Type:
 ECD

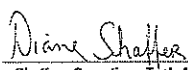


This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


 Tom Suckal - Mix Technician

Date Mixed: 24-Jul-2017

Balance: B442140311


 Diane Shaffer - Operations Tech-ARM QC

Date Passed: 25-Jul-2017

Manufactured under Restek's ISO 9001:2008
 Registered Quality System
 Certificate #FM 80397

8	trans-Chlordane		2,007.0	µg/mL	+/-	11.7782	µg/mL	Gravimetric
	CAS # 5103-74-2	(Lot ER061906-04)			+/-	91.4173	µg/mL	Unstressed
	Purity 99%				+/-	131.9942	µg/mL	Stressed
9	cis-Chlordane		2,006.0	µg/mL	+/-	11.7723	µg/mL	Gravimetric
	CAS # 5103-71-9	(Lot ER062410-01)			+/-	91.3717	µg/mL	Unstressed
	Purity 99%				+/-	131.9284	µg/mL	Stressed
10	Endosulfan I		2,013.0	µg/mL	+/-	11.8134	µg/mL	Gravimetric
	CAS # 959-98-8	(Lot ER012105-02)			+/-	91.6906	µg/mL	Unstressed
	Purity 99%				+/-	132.3888	µg/mL	Stressed
11	4,4'-DDE		2,008.5	µg/mL	+/-	11.7870	µg/mL	Gravimetric
	CAS # 72-55-9	(Lot GHYQG)			+/-	91.4856	µg/mL	Unstressed
	Purity 99%				+/-	132.0928	µg/mL	Stressed
12	Dieldrin		2,006.0	µg/mL	+/-	11.7723	µg/mL	Gravimetric
	CAS # 60-57-1	(Lot ER030105-03)			+/-	91.3717	µg/mL	Unstressed
	Purity 99%				+/-	131.9284	µg/mL	Stressed
13	Endrin		2,019.3	µg/mL	+/-	11.8503	µg/mL	Gravimetric
	CAS # 72-20-8	(Lot 6429800)			+/-	91.9771	µg/mL	Unstressed
	Purity 98%				+/-	132.8025	µg/mL	Stressed
14	4,4'-DDD		2,014.9	µg/mL	+/-	11.8244	µg/mL	Gravimetric
	CAS # 72-54-8	(Lot ER061207-01)			+/-	91.7762	µg/mL	Unstressed
	Purity 98%				+/-	132.5124	µg/mL	Stressed
15	Endosulfan II		2,007.5	µg/mL	+/-	11.7811	µg/mL	Gravimetric
	CAS # 33213-65-9	(Lot ER102407-02)			+/-	91.4401	µg/mL	Unstressed
	Purity 99%				+/-	132.0271	µg/mL	Stressed
16	Endrin aldehyde		2,008.5	µg/mL	+/-	11.7870	µg/mL	Gravimetric
	CAS # 7421-93-4	(Lot ER082306-01)			+/-	91.4856	µg/mL	Unstressed
	Purity 99%				+/-	132.0928	µg/mL	Stressed
17	4,4'-DDT		2,009.0	µg/mL	+/-	11.7899	µg/mL	Gravimetric
	CAS # 50-29-3	(Lot S37912V)			+/-	91.5084	µg/mL	Unstressed
	Purity 99%				+/-	132.1257	µg/mL	Stressed
18	Endosulfan sulfate		2,009.3	µg/mL	+/-	11.7916	µg/mL	Gravimetric
	CAS # 1031-07-8	(Lot SZBC213XV)			+/-	91.5211	µg/mL	Unstressed
	Purity 96%				+/-	132.1441	µg/mL	Stressed
19	Methoxychlor		2,015.4	µg/mL	+/-	11.8273	µg/mL	Gravimetric
	CAS # 72-43-5	(Lot 6429900)			+/-	91.7985	µg/mL	Unstressed
	Purity 98%				+/-	132.5446	µg/mL	Stressed
20	Endrin ketone		2,007.5	µg/mL	+/-	11.7811	µg/mL	Gravimetric
	CAS # 53494-70-5	(Lot 160405JLM)			+/-	91.4401	µg/mL	Unstressed
	Purity 99%				+/-	132.0271	µg/mL	Stressed
Solvent: Hexane/Toluene (50:50)								
	CAS # 110-54-3/108-88-3							
	Purity 99%							

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8081ABResPS_00030



110 Benner Circle
 Bellefonte, PA 16823-8812
 Tel: (800)356-1688
 Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 32415 Lot No.: A0133751

Description: Organochlorine Pesticide Mix AB #3

Organochlorine Pesticide Mix AB #3 2,000 µg/mL, Hexane/Toluene (50:50), 1mL/ampul

Container Size: 2 mL Pkg Amt: > 1 mL

Expiration Date: April 30, 2022 Storage: 10°C or colder

Handling: Sonicate prior to use.

1x 1mL
 Received 8/13/18
 AMB

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	alpha-BHC CAS # 319-84-6 (Lot 0911942) Purity 99%	2,017.5 µg/mL	+/- 11.8398 µg/mL +/- 91.8956 µg/mL +/- 132.6847 µg/mL
2	gamma-BHC (Lindane) CAS # 58-89-9 (Lot 6815700) Purity 99%	2,010.5 µg/mL	+/- 11.7987 µg/mL +/- 91.5767 µg/mL +/- 132.2244 µg/mL
3	beta-BHC CAS # 319-85-7 (Lot BCBS8692V) Purity 98%	2,014.9 µg/mL	+/- 11.8244 µg/mL +/- 91.7762 µg/mL +/- 132.5124 µg/mL
4	delta-BHC CAS # 319-86-8 (Lot ER02101401) Purity 99%	2,010.0 µg/mL	+/- 11.7958 µg/mL +/- 91.5539 µg/mL +/- 132.1915 µg/mL
5	Heptachlor CAS # 76-44-8 (Lot NT057754) Purity 99%	2,016.5 µg/mL	+/- 11.8340 µg/mL +/- 91.8500 µg/mL +/- 132.6190 µg/mL
6	Aldrin CAS # 309-00-2 (Lot 6869200) Purity 97%	2,010.8 µg/mL	+/- 11.8006 µg/mL +/- 91.5908 µg/mL +/- 132.2447 µg/mL
7	Heptachlor epoxide (isomer B) CAS # 1024-57-3 (Lot ER121511-01) Purity 99%	2,017.5 µg/mL	+/- 11.8398 µg/mL +/- 91.8956 µg/mL +/- 132.6847 µg/mL

8	trans-Chlordane CAS # 5103-74-2 Purity 99%	(Lot ER061906-04)	2,012.5 µg/mL	+/- 11.8105 +/- 91.6678 +/- 132.3559	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
9	cis-Chlordane CAS # 5103-71-9 Purity 99%	(Lot ER062410-01)	2,014.0 µg/mL	+/- 11.8193 +/- 91.7361 +/- 132.4545	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
10	Endosulfan I CAS # 959-98-8 Purity 99%	(Lot ER012105-02)	2,010.0 µg/mL	+/- 11.7958 +/- 91.5539 +/- 132.1915	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
11	4,4'-DDE CAS # 72-55-9 Purity 99%	(Lot ER011106-01)	2,011.0 µg/mL	+/- 11.8017 +/- 91.5995 +/- 132.2572	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
12	Dieldrin CAS # 60-57-1 Purity 99%	(Lot 5416800)	2,011.0 µg/mL	+/- 11.8017 +/- 91.5995 +/- 132.2572	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
13	Endrin CAS # 72-20-8 Purity 98%	(Lot 6898800)	2,016.4 µg/mL	+/- 11.8331 +/- 91.8432 +/- 132.6091	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
14	4,4'-DDD CAS # 72-54-8 Purity 99%	(Lot HAN02-KNCK)	2,010.5 µg/mL	+/- 11.7987 +/- 91.5767 +/- 132.2244	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
15	Endosulfan II CAS # 33213-65-9 Purity 99%	(Lot 6815600)	2,009.5 µg/mL	+/- 11.7929 +/- 91.5312 +/- 132.1586	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
16	Endrin aldehyde CAS # 7421-93-4 Purity 99%	(Lot ER082306-01)	2,007.5 µg/mL	+/- 11.7811 +/- 91.4401 +/- 132.0271	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
17	4,4'-DDT CAS # 50-29-3 Purity 99%	(Lot S37912V)	2,012.5 µg/mL	+/- 11.8105 +/- 91.6678 +/- 132.3559	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
18	Endosulfan sulfate CAS # 1031-07-8 Purity 99%	(Lot BCBR9875V)	2,020.0 µg/mL	+/- 11.8545 +/- 92.0094 +/- 132.8491	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
19	Methoxychlor CAS # 72-43-5 Purity 99%	(Lot 6736800)	2,018.5 µg/mL	+/- 11.8457 +/- 91.9411 +/- 132.7505	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
20	Endrin ketone CAS # 53494-70-5 Purity 99%	(Lot 160405JLM)	2,015.5 µg/mL	+/- 11.8281 +/- 91.8045 +/- 132.5532	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
Solvent: Hexane/Toluene (50:50) CAS # 110-54-3/108-88-3 Purity 99%						

Column:

30m x .25mm x .2um
Rtx-CLP II (cat.# 11323)

Carrier Gas:

helium-constant pressure 20 psi.

Temp. Program:

150°C to 300°C
@ 4°C/min. (hold 5 min.)

Inj. Temp:

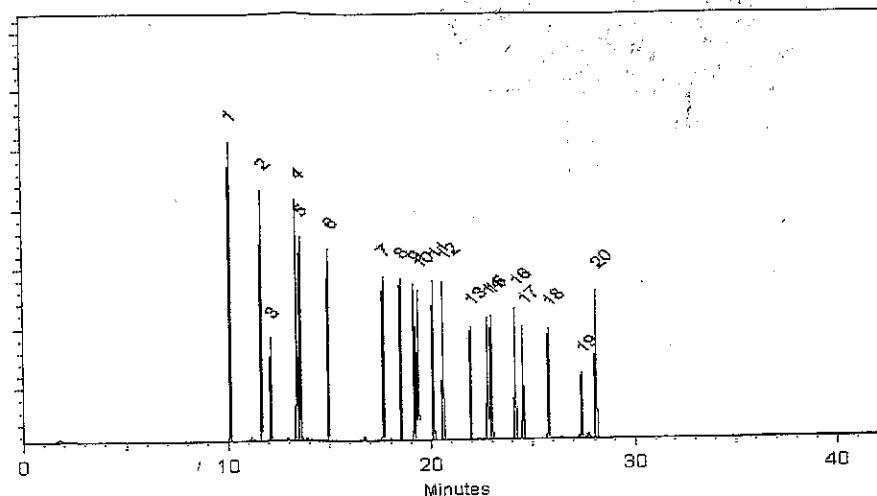
200°C

Det. Temp:

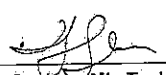
300°C

Det. Type:

ECD

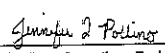


This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Tom Suckar - Mix Technician

Date Mixed: 27-Dec-2017

Balance: B442140311


Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 02-Jan-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8081ABResSS_00014



CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 32415.sec **Lot No.:** A0108854

Description : Organochlorine Pesticide Mix AB #3

Organochlorine Pesticide Mix AB #3 2,000µg/mL, Hexane/Toluene (50:50), 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : June 30, 2019 **Storage:** 10°C or colder

Handling: Sonicate prior to use.

CERTIFIED VALUES

Elution Order	Compound			Grav. Conc. (weight/volume)		Expanded Uncertainty (95% C.L.; K=2)			
1	alpha-BHC			2,009.5	µg/mL	+/-	11.7929	µg/mL	Gravimetric
	CAS #	319-84-6.SEC	(Lot 1623900)			+/-	78.6071	µg/mL	Unstressed
	Purity	99%				+/-	124.7419	µg/mL	Stressed
2	gamma-BHC (Lindane)			2,010.0	µg/mL	+/-	11.7958	µg/mL	Gravimetric
	CAS #	58-89-9.SEC	(Lot LC00563V)			+/-	78.6267	µg/mL	Unstressed
	Purity	99%				+/-	124.7729	µg/mL	Stressed
3	beta-BHC			2,003.1	µg/mL	+/-	11.7554	µg/mL	Gravimetric
	CAS #	319-85-7.SEC	(Lot 1808700)			+/-	78.3575	µg/mL	Unstressed
	Purity	98%				+/-	124.3458	µg/mL	Stressed
4	delta-BHC			2,003.5	µg/mL	+/-	11.7577	µg/mL	Gravimetric
	CAS #	319-86-8.SEC	(Lot 1912200)			+/-	78.3724	µg/mL	Unstressed
	Purity	99%				+/-	124.3694	µg/mL	Stressed
5	Heptachlor			2,000.5	µg/mL	+/-	11.7401	µg/mL	Gravimetric
	CAS #	76-44-8.SEC	(Lot 1745400)			+/-	78.2551	µg/mL	Unstressed
	Purity	99%				+/-	124.1832	µg/mL	Stressed
6	Aldrin			2,004.1	µg/mL	+/-	11.7612	µg/mL	Gravimetric
	CAS #	309-00-2.SEC	(Lot ER062311-01)			+/-	78.3959	µg/mL	Unstressed
	Purity	98%				+/-	124.4067	µg/mL	Stressed
7	Heptachlor epoxide (isomer B)			2,006.0	µg/mL	+/-	11.7723	µg/mL	Gravimetric
	CAS #	1024-57-3.SEC	(Lot 3352500)			+/-	78.4702	µg/mL	Unstressed
	Purity	99%				+/-	124.5246	µg/mL	Stressed

8	trans-Chlordane CAS # 5103-74-2.SEC Purity 99%	(Lot LC06193V)	2,006.0	µg/mL	+/- +/- +/-	11.7723 78.4702 124.5246	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
9	cis-Chlordane CAS # 5103-71-9.SEC Purity 99%	(Lot 24407)	2,009.0	µg/mL	+/- +/- +/-	11.7899 78.5876 124.7108	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
10	Endosulfan I CAS # 959-98-8.SEC Purity 98%	(Lot 1710200)	2,002.1	µg/mL	+/- +/- +/-	11.7497 78.3192 124.2850	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
11	4,4'-DDE CAS # 72-55-9.SEC Purity 99%	(Lot 1833500)	2,001.5	µg/mL	+/- +/- +/-	11.7459 78.2942 124.2453	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
12	Dieldrin CAS # 60-57-1.SEC Purity 98%	(Lot 1274700)	1,995.3	µg/mL	+/- +/- +/-	11.7094 78.0509 123.8591	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
13	Endrin CAS # 72-20-8 * Purity 99%	(Lot LC06045V)	2,000.0	µg/mL	+/- +/- +/-	11.7371 78.2355 124.1521	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
14	4,4'-DDD CAS # 72-54-8.SEC Purity 98%	(Lot 1141700)	2,009.0	µg/mL	+/- +/- +/-	11.7899 78.5876 124.7108	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
15	Endosulfan II CAS # 33213-65-9.SEC Purity 99%	(Lot 3437500)	2,010.0	µg/mL	+/- +/- +/-	11.7958 78.6267 124.7729	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
16	Endrin aldehyde CAS # 7421-93-4.SEC Purity 98%	(Lot 21752)	2,016.4	µg/mL	+/- +/- +/-	11.8331 78.8751 125.1671	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
17	4,4'-DDT CAS # 50-29-3.SEC Purity 99%	(Lot 3478000)	2,016.5	µg/mL	+/- +/- +/-	11.8340 78.8809 125.1764	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
18	Endosulfan sulfate CAS # 1031-07-8.SEC Purity 98%	(Lot 1888900)	2,007.5	µg/mL	+/- +/- +/-	11.7813 78.5301 124.6196	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
19	Methoxychlor CAS # 72-43-5.SEC Purity 99%	(Lot LC09014V)	2,007.0	µg/mL	+/- +/- +/-	11.7782 78.5093 124.5867	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
20	Endrin ketone CAS # 53494-70-5.SEC Purity 98%	(Lot 091307RD)	2,007.5	µg/mL	+/- +/- +/-	11.7813 78.5301 124.6196	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
Solvent: Hexane/Toluene (50:50) CAS # 110-54-3/108-88-3 Purity 99%								

* Restek is unable to identify a reliable and/or acceptable second source for this material - the same batch of neat material may have been used to produce both the primary and secondary standard. The primary and secondary standards were prepared using different equipment and personnel.

Column:
30m x .25mm x .2um
Rtx-CLP II (cat.# 11323)

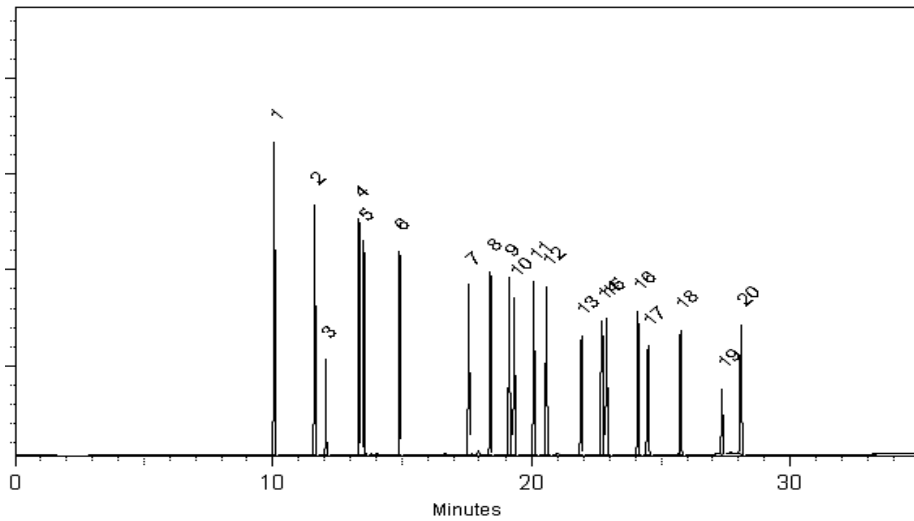
Carrier Gas:
helium-constant pressure 20 psi.

Temp. Program:
150°C to 300°C
@ 4°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
300°C

Det. Type:
ECD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Lane Kibe
Lane Kibe - Mix Technician

Date Mixed: 04-Feb-2015 **Balance:** B345965662

Diane Shaffer
Diane Shaffer - Operations Tech-ARM QC

Date Passed: 12-Feb-2015

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8081EvalBStk2_00022



CERTIFICATE OF ANALYSIS

Catalog No: M-8081-DS
Description: 4,4'-DDT & Endrin
Lot: 217101288-01

Solvent: Hexane

Hazards: Refer to SDS for complete safety information

Date Certified: Jun 5, 2018

Expiration: Jul 5, 2019

Sample Size: 1 mL

Components: 2

Storage Condition: Ambient (>5 °C)

Included on ISO/IEC 17025 Scope of Accreditation: Yes

Included on ISO 17034 Scope of Accreditation: Yes



Signal Word: Danger

Component	CAS #	Purity %	Prepared Concentration ¹	Certified Analyte Concentration ²
		(GC/MS)	(µg/mL)	(µg/mL)
4,4'-DDT	50-29-3	98.2	200.6	197.0
Endrin	72-20-8	98.1	200.8	197.0

A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

¹ All weights are traceable through NIST Test No. 822-275872-11

² Certified Analyte Concentration = Purity x Prepared Concentration.

The Uncertainty associated with the certified concentration reported on this certificate is $\pm 2.4\%$. This value is the combined expanded uncertainty and represents an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Labels and certificates follow U.S. Conventions in reporting numerical values: A comma (,) is used to separate units of one-thousand or greater. A period (.) is used as a decimal place marker.

The information on this certificate may not be reproduced without the express permission of the manufacturer. See reverse side for additional information

Certified By:

Larry Decker, Organic QC Manager

1. Quality Standards:

ISO 17034 – General Requirements for the Competence of Reference Material Producers ANAB Certificate Number AR-1463

ISO/IEC 17025 – General Requirements for the Competence of Testing And Calibration Laboratories ANAB Certificate Number AT-1339

ISO 9001:2015 – Quality Management System – Requirements Eagle Registrations Certificate Number 3774



- 2. Intended Use:** The product covered by this certificate is designed for calibration or for use in quality control procedures for the specified chemical compounds listed on the reverse side. This product can be used for quantification and/or identification. This product can also be used as a reference material to validate analytical procedures, subject to the conditions under Section 11.
- 3. Manufacturing:** All balances are calibrated daily using an in-house procedure with weights that are compared annually to master weights and traceable to NIST. The balances are also calibrated annually by an ISO/IEC 17025 accredited calibration laboratory. Please refer to the NIST test number listed on the front of this certificate. Class A glassware is used in the manufacture and quality control of all standards and calibrated using an in-house procedure. Good Laboratory Practices have been used throughout the preparation of this CRM.
- 4. Homogeneity:** This product is sufficiently homogeneous and any sample size would be within the uncertainty budget.
- 5. Stability:** The manufacturer guarantees the stability of this solution through the expiration date stated on the label, when handled and stored according to the conditions stated on the label.
- 6. Uncertainty:** The uncertainty values as stated on the face of this certificate have been determined using the EURACHEM/CITAC Guide. We report a combined expanded uncertainty equal to the positive square root of the total variance of the uncertainty of the components using the following formula: $u_m = \sqrt{(u(P))^2 + (u(m))^2 + (u(V))^2}$. The expanded uncertainty, U_{CRM} assumes a normal distribution and a coverage factor of $k=2$ is chosen using approximately a 95% confidence level.
- 7. Legal Notice and Limit of Liability:** This product is for routine laboratory analysis and research purposes only. The company's liability will be limited to replacement of product or refund of purchase price. Notice of claims must be made within thirty (30) days from date of delivery.

Reagent

8081HCBStkPS_00024



CERTIFICATE OF ANALYSIS

Catalog No: APP-9-112

Description: Hexachlorobenzene

Lot: 216101319

Solvent: Methanol

Hazards: Refer to SDS for complete safety information

Date Certified: Oct 27, 2016

Expiration: Oct 27, 2026

Sample Size: 1 mL

Components: 1

Storage Condition: Ambient (>5 °C)

Included on ISO/IEC 17025 Scope of Accreditation: Yes

Included on ISO Guide 34 Scope of Accreditation: Yes



Signal Word: Danger

Component	CAS #	Purity %	Prepared Concentration ¹	Certified Analyte Concentration ²
		(GC/MS)	(µg/mL)	(µg/mL)
Hexachlorobenzene	118-74-1	99.2	100.8	100.0

A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

¹ All weights are traceable through NIST, Test No: 822-275872-11

² Certified Analyte Concentration = Purity x Prepared Concentration.

The Uncertainty associated with the gravimetric values reported on this certificate is $\pm 0.24\%$. This value is the expanded uncertainty and represents an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Labels and certificates follow U.S. Conventions in reporting numerical values: A comma (,) is used to separate units of one-thousand or greater. A period (.) is used as a decimal place marker.

See reverse side for additional information

Certified By:

Larry Decker, Organic QC Manager

Reagent

8081HCBStkSS_00039

Hexachlorobenzene Solution

Product Number: EPA-1125

Page: 1 of 1

Lot Number: CR-5129

Lot Issue Date: 08-Nov-2017

Expiration Date: 31-Dec-2021

This ISO Guide 34 Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
hexachlorobenzene	000118-74-1	RM03125	1003 ± 5 µg/mL

Matrix: acetone

Storage: Store at Room Temperature (15° to 30°C).

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

Reagent

8081ToxPS_00039



CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 32071 **Lot No.:** A0128388
Description : Toxaphene Standard
Toxaphene Standard 5,000 µg/mL, Isooctane, 1mL/ampul
Container Size : 2 mL **Pkg Amt:** > 1 mL
Expiration Date : September 30, 2021 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Toxaphene	5,034.0 µg/mL	+/- 29.5423 µg/mL Gravimetric
	CAS # 8001-35-2 (Lot NT057448)		+/- 159.5474 µg/mL Unstressed
	Purity ----%		+/- 208.4220 µg/mL Stressed

Solvent: Isooctane
CAS # 540-84-1
Purity 99%

Column:
30m x .25mm x .2um
Rtx-CLP II (cat.# 11323)

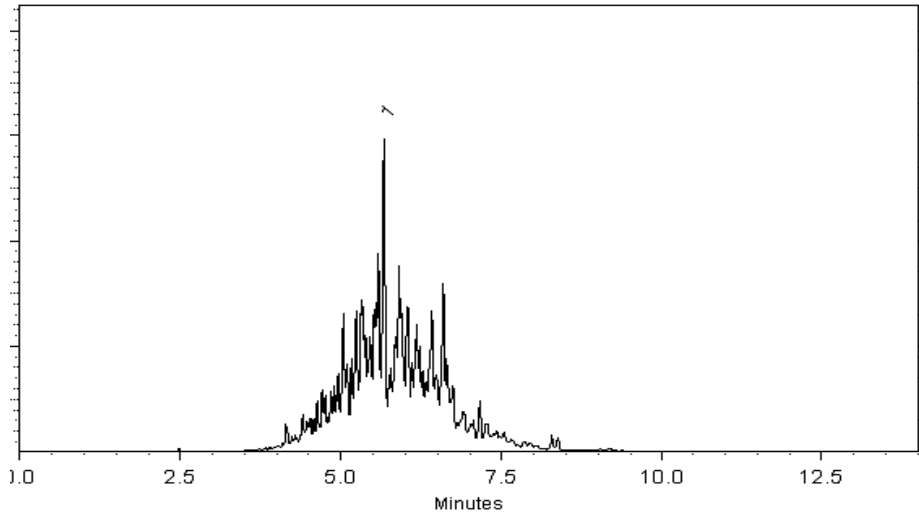
Carrier Gas:
helium-constant pressure 20 psi.

Temp. Program:
200°C to 300°C
@ 25°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
300°C

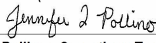
Det. Type:
ECD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Joseph Jaglowski - Mix Technician

Date Mixed: 12-Jun-2017 Balance: B707717271


Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 03-Jul-2017

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8081ToxSS_00021



CERTIFICATE OF ANALYSIS

Catalog No: P-093S-H-10X

Description: Toxaphene

Lot: 217071319

Solvent: Hexane

Hazards: Refer to SDS for complete safety information

Date Certified: Jul 20, 2017

Expiration: Jul 20, 2027

Sample Size: 1 mL

Components: 1

Storage Condition: Ambient (>5 °C)

Included on ISO/IEC 17025 Scope of Accreditation: Yes

Included on ISO Guide 34 Scope of Accreditation: Yes



Signal Word: Danger

Component	CAS #	Purity % (GC/MS)	Prepared Concentration ¹ (µg/mL)	Certified Analyte Concentration ² (µg/mL)
Toxaphene	8001-35-2	Tech Mix	1002	1002

Received
03-28-18
KDK

A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

¹ All weights are traceable through NIST, Test No. 822-275872-11

² Certified Analyte Concentration = Purity x Prepared Concentration.

The Uncertainty associated with the certified concentration reported on this certificate is $\pm 2.4\%$. This value is the combined expanded uncertainty and represents an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Labels and certificates follow U.S. Conventions in reporting numerical values: A comma (,) is used to separate units of one-thousand or greater. A period (.) is used as a decimal place marker.

See reverse side for additional information

Certified By:

Larry Decker, Organic QC Manager

Reagent

8082LCSSTOCK_00042

Column:

30m x .25mm x .2um
Rtx-CLP II (cat.# 11323)

Carrier Gas:

helium-constant pressure 20 psi.

Temp. Program:

200°C to 300°C

@ 25°C/min. (hold 10 min.)

Inj. Temp:

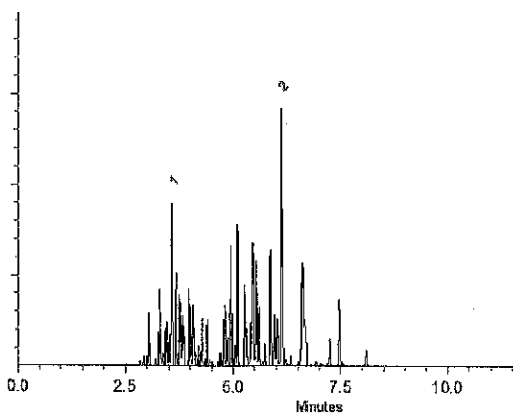
250°C

Det. Temp:

300°C

Det. Type:

ECD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Alice Brooks

Alice Brooks - Mix Technician

Date Mixed: 18-Jul-2018

Balance: B251644995

Justin Albertson
Justin Albertson - Operations Tech-ARM QC

Date Passed: 23-Jul-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 32039 Lot No.: A0139779
Description : Aroclor® 1016/1260 Mix
Aroclor® 1016/1260 Mix 1,000 µg/mL, Hexane, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : October 31, 2024 Storage: 25°C nominal
Handling: This product contains PCBs.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Aroclor 1016	1,005.4 µg/mL	+/- 5.8590 µg/mL Gravimetric
	CAS # 12674-11-2 (Lot 766071)		+/- 31.8575 µg/mL Unstressed
	Purity -----%		+/- 41.6206 µg/mL Stressed
2	Aroclor 1260	1,009.8 µg/mL	+/- 5.8846 µg/mL Gravimetric
	CAS # 11096-82-5 (Lot 855895)		+/- 31.9969 µg/mL Unstressed
	Purity -----%		+/- 41.8028 µg/mL Stressed

Solvent: Hexane
CAS # 110-54-3
Purity 99%

Reagent

8082LCSSTOCK_00043

Column:

30m x .25mm x .2um
Rtx-CLP II (cat.# 11323)

Carrier Gas:

helium-constant pressure 20 psi.

Temp. Program:

200°C to 300°C

@ 25°C/min. (hold 10 min.)

Inj. Temp:

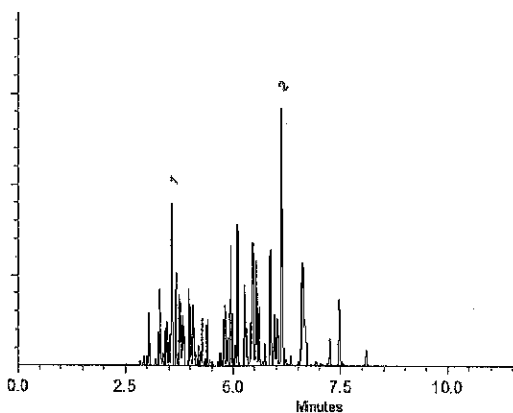
250°C

Det. Temp:

300°C

Det. Type:

ECD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Alice Brooks

Alice Brooks - Mix Technician

Date Mixed: 18-Jul-2018

Balance: B251644995

Justin Albertson
Justin Albertson - Operations Tech-ARM QC

Date Passed: 23-Jul-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

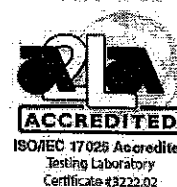


110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 32039 Lot No.: A0139779
Description : Aroclor® 1016/1260 Mix
Aroclor® 1016/1260 Mix 1,000 µg/mL, Hexane, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : October 31, 2024 Storage: 25°C nominal
Handling: This product contains PCBs.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Aroclor 1016 CAS # 12674-11-2 (Lot 766071) Purity ----%	1,005.4 µg/mL	+/- 5.8590 µg/mL Gravimetric +/- 31.8575 µg/mL Unstressed +/- 41.6206 µg/mL Stressed
2	Aroclor 1260 CAS # 11096-82-5 (Lot 855895) Purity ----%	1,009.8 µg/mL	+/- 5.8846 µg/mL Gravimetric +/- 31.9969 µg/mL Unstressed +/- 41.8028 µg/mL Stressed

Solvent: Hexane
CAS # 110-54-3
Purity 99%

Reagent

8270_LCS_Main_00061



Reagent ID: 8270_LCS_Main_00061

Description:	USE IN CONJUNCTION WITH 8270_LCS_S	Expiration Date:	05/31/2019
No. of Bottles:	4	Laboratory:	TestAmerica Denver
Storage Location:	North Prep	Prepared By:	Bourger, David F
Reagent Volume:	500.000 mL	Solvent:	P&T Methanol
Creation Date:	03/29/2019	Solvent Lot:	MethanolP&T_00227
Open Date:			
Container(s):	5613799, 5613800, 5613801, 5613802		
Comment:	Make full volume. Place all stocks in a sonication bath for 5 minutes before use. Dilute to 500mL in P&T MeOH 40mL of MS-570666 or 571995 "8270 List 1 Std 1 MegaMix" 20mL of MS-569731 "Benzoic Acid" 10mL of "OP-572556" HCP 1 year expiration Exchange /MeCl2 verification All Standards in fridge.		

Standard fridge

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
1,1'-Biphenyl	571995_00058	01/31/2020	1000.00000	ug/mL	80.00000	ug/mL
1,2,4,5-Tetrachlorobenzene	571995_00058	01/31/2020	1000.00000	ug/mL	80.00000	ug/mL
1,2,4-Trichlorobenzene	571995_00058	01/31/2020	1000.00000	ug/mL	80.00000	ug/mL
1,2-Dichlorobenzene	571995_00058	01/31/2020	1000.00000	ug/mL	80.00000	ug/mL
1,2-Diphenylhydrazine	571995_00058	01/31/2020	1010.97500	ug/mL	80.87796	ug/mL
1,3-Dichlorobenzene	571995_00058	01/31/2020	1000.00000	ug/mL	80.00000	ug/mL
1,3-Dinitrobenzene	571995_00058	01/31/2020	1000.00000	ug/mL	80.00000	ug/mL
1,4-Dichlorobenzene	571995_00058	01/31/2020	1000.00000	ug/mL	80.00000	ug/mL
1,4-Dioxane	571995_00058	01/31/2020	1000.00000	ug/mL	80.00000	ug/mL
1-Methylnaphthalene	571995_00058	01/31/2020	1000.00000	ug/mL	80.00000	ug/mL
2,2'-oxybis[1-chloropropane]	571995_00058	01/31/2020	1000.00000	ug/mL	80.00000	ug/mL
2,3,4,6-Tetrachlorophenol	571995_00058	01/31/2020	1000.00000	ug/mL	80.00000	ug/mL
2,4,5-Trichlorophenol	571995_00058	01/31/2020	1000.00000	ug/mL	80.00000	ug/mL
2,4,6-Trichlorophenol	571995_00058	01/31/2020	1000.00000	ug/mL	80.00000	ug/mL
2,4-Dichlorophenol	571995_00058	01/31/2020	1000.00000	ug/mL	80.00000	ug/mL

Preliminary Report

TestAmerica Denver

LCS, Lab Control Sample Report

Sample Path: \\chromna\Denver\ChromData\SMS_G6\20190401-80451.b\G6_38258.D

Lims ID: 8270_LCS_Main_00061

Inj. Date: 01-Apr-2019 16:13:30

Worklist ID: 280-0080451-007

Instrument: SMS_G6

Method: SMSG6_8270C

Compound	Amount Added	Amount Recovered	%Rec	Limits: 1 3550C
20 1,4-Dioxane	80.0	63.7	79.6	41-103
21 N-Nitrosodimethylamine	80.0	65.8	82.2	37-120
22 Pyridine	160.0	124.2	77.7	43-120
34 Phenol	80.0	68.4	85.5	37-112
35 Aniline	80.0	65.0	81.3	37-100
37 Bis(2-chloroethyl)ether	80.0	68.4	85.4	35-120
39 n-Decane	80.0	65.3	81.6	28-120
41 2-Chlorophenol	80.0	67.7	84.7	34-120
42 1,3-Dichlorobenzene	80.0	65.2	81.5	23-120
43 1,4-Dichlorobenzene	80.0	65.7	82.2	24-120
44 Benzyl alcohol	80.0	67.6	84.5	
45 1,2-Dichlorobenzene	80.0	66.7	83.3	32-120
46 2-Methylphenol	80.0	67.5	84.4	38-120
47 2,2'-oxybis[1-chloropro	80.0	67.9	84.9	37-120
48 Indene	80.0	69.4	86.7	
49 3 & 4 Methylphenol	80.0	66.4	83.0	50-150
50 3-Methylphenol	80.0	66.4	83.0	
51 N-Nitrosodi-n-propylami	80.0	70.3	87.9	50-120
52 4-Methylphenol	80.0	66.4	83.0	42-120
55 Acetophenone	80.0	66.5	83.2	30-130
58 Hexachloroethane	80.0	68.0	85.1	40-113
60 Nitrobenzene	80.0	67.9	84.9	46-120
63 Isophorone	80.0	69.5	86.9	50-120
65 2-Nitrophenol	80.0	69.0	86.2	47-120
66 2,4-Dimethylphenol	80.0	68.9	86.1	44-119
69 Bis(2-chloroethoxy)meth	80.0	68.3	85.4	50-120
70 Benzoic acid	80.0	67.2	84.0	41-120
75 2,4-Dichlorophenol	80.0	68.2	85.3	46-120
77 1,2,4-Trichlorobenzene	80.0	66.6	83.3	44-120
79 Naphthalene	80.0	67.2	84.0	37-120
80 4-Chloroaniline	80.0	64.9	81.2	
81 2,6-Dichlorophenol	80.0	67.0	83.8	
83 Hexachlorobutadiene	80.0	67.6	84.5	27-116
90 4-Chloro-3-methylphenol	80.0	70.2	87.8	57-120
94 2-Methylnaphthalene	80.0	67.7	84.6	
96 1-Methylnaphthalene	80.0	67.5	84.4	
97 Hexachlorocyclopentadie	160.0	115.9	72.5	10-120
98 1,2,4,5-Tetrachlorobenz	80.0	65.3	81.7	
101 2,4,6-Trichlorophenol	80.0	69.7	87.1	51-120
103 2,4,5-Trichlorophenol	80.0	68.1	85.1	51-120
105 1,1'-Biphenyl	80.0	66.6	83.2	

Preliminary Report

Sample Path: \\chromna\Denver\ChromData\SMS_G6\20190401-80451.b\G6_38258.D

Compound	Amount Added	Amount Recovered	%Rec	Limits 1 3550C
107 2-Chloronaphthalene	80.0	65.9	82.4	60-118
109 2-Nitroaniline	80.0	68.5	85.7	
112 Dimethyl phthalate	80.0	67.0	83.8	58-112
113 1,3-Dinitrobenzene	80.0	68.5	85.6	
114 2,6-Dinitrotoluene	80.0	67.6	84.5	56-120
115 Acenaphthylene	80.0	66.3	82.8	33-120
116 3-Nitroaniline	80.0	65.9	82.4	
117 Acenaphthene	80.0	66.6	83.2	47-120
118 2,4-Dinitrophenol	160.0	120.5	75.3	20-121
120 4-Nitrophenol	160.0	136.9	85.5	53-120
122 2,4-Dinitrotoluene	80.0	68.2	85.3	57-120
123 Dibenzofuran	80.0	65.7	82.1	
127 2,3,4,6-Tetrachlorophen	80.0	65.0	81.3	
128 Hexadecane	80.0	68.3	85.4	
130 Diethyl phthalate	80.0	69.3	86.7	59-114
135 4-Chlorophenyl phenyl e	80.0	66.4	83.0	51-120
136 Fluorene	80.0	66.7	83.3	59-120
139 4-Nitroaniline	80.0	65.4	81.7	
140 4,6-Dinitro-2-methylphe	160.0	128.1	80.1	40-120
142 Diphenylamine	68.0	56.0	82.3	
143 N-Nitrosodiphenylamine	80.0	64.4	80.5	46-203
144 Azobenzene	80.0	68.3	85.3	
145 1,2-Diphenylhydrazine	80.9	69.0	85.3	50-150
157 4-Bromophenyl phenyl et	80.0	64.2	80.2	53-120
158 Hexachlorobenzene	80.0	63.8	79.8	53-120
162 n-Octadecane	80.0	68.5	85.6	49-120
164 Pentachlorophenol	160.0	121.6	76.0	46-120
169 Phenanthrene	80.0	64.4	80.4	54-120
170 Anthracene	80.0	64.7	80.9	52-120
171 Carbazole	80.0	65.0	81.2	53-120
175 Di-n-butyl phthalate	80.0	66.8	83.5	57-118
182 Fluoranthene	80.0	64.5	80.6	58-120
185 Pyrene	80.0	63.4	79.3	55-115
193 Butyl benzyl phthalate	80.0	66.3	82.9	53-120
198 Benzo[a]anthracene	80.0	62.4	78.0	54-120
199 Bis(2-ethylhexyl) phtha	80.0	67.8	84.7	56-120
200 Chrysene	80.0	63.4	79.3	51-120
202 Di-n-octyl phthalate	80.0	67.3	84.2	56-120
204 Benzo[b]fluoranthene	80.0	63.1	78.8	51-120
205 Benzo[k]fluoranthene	80.0	66.0	82.5	49-120
208 Benzo[a]pyrene	80.0	63.1	78.9	39-120
214 Indeno[1,2,3-cd]pyrene	80.0	59.2	74.0	50-120
215 Dibenz(a,h)anthracene	80.0	63.3	79.1	45-120
216 Benzo[g,h,i]perylene	80.0	63.2	79.0	48-120

Reagent

8270BO-SIMLCS_00033

Preliminary Report

TestAmerica Denver

LCS, Lab Control Sample Report

Sample Path: \\chromna\Denver\ChromData\SMS_X4\20190326-80230.b\X4_7468.D

Lims ID: 8270BO-SIMLCS_00033

Inj. Date: 26-Mar-2019 13:39:30

Worklist ID: 280-0080230-007

Instrument: SMS_X4

Method: SMS_X4_SIMX_5.1

Compound	Amount Added	Amount Recovered	%Rec	Limits 1 3510C
9 1,4-Dioxane	900.0	874.6	97.2	
10 N-Nitrosodimethylamine	900.0	913.8	101.5	
11 Naphthalene	900.0	943.3	104.8	43-114
12 2-Methylnaphthalene	900.0	929.3	103.3	39-114
13 1-Methylnaphthalene	900.0	1006.9	111.9	41-115
14 Dimethyl phthalate	900.0	961.5	106.8	
15 Acenaphthylene	900.0	856.0	95.1	35-121
16 Acenaphthene	900.0	926.2	102.9	48-114
17 Dibenzofuran	900.0	973.0	108.1	
18 Diethyl phthalate	900.0	*ND	0.0	
20 Fluorene	900.0	969.8	107.8	50-118
19 N-Nitrosodiphenylamine	900.0	925.4	102.8	
21 Phenanthrene	900.0	917.1	101.9	53-115
22 Anthracene	900.0	900.3	100.0	53-119
23 Di-n-butyl phthalate	900.0	759.6	84.4	
24 Fluoranthene	900.0	840.7	93.4	58-120
25 Pyrene	900.0	884.4	98.3	53-121
26 Butyl benzyl phthalate	900.0	564.3	62.7	
28 Benzo[a]anthracene	900.0	744.1	82.7	59-120
29 Chrysene	900.0	1016.6	113.0	57-120
27 Bis(2-ethylhexyl) phtha	900.0	630.6	70.1	
30 Di-n-octyl phthalate	900.0	574.5	63.8	
31 Benzo[b]fluoranthene	900.0	845.4	93.9	53-126
32 Benzo[k]fluoranthene	900.0	932.8	103.6	54-125
33 Benzo[a]pyrene	900.0	812.6	90.3	53-120
34 Indeno[1,2,3-cd]pyrene	900.0	794.1	88.2	48-130
35 Dibenz(a,h)anthracene	900.0	919.9	102.2	44-131
36 Benzo[g,h,i]perylene	900.0	911.5	101.3	44-128
37 N-Nitrosodi-n-propylami	900.0	*ND	0.0	

Samples for Limit Group: 1, Lims Prep Method: 3510C

280-121082-F-1-A

280-121082-C-3-A

280-121082-A-5-A

550-119457-K-9-A

550-119457-K-10-A

550-119457-J-11-A

550-119457-K-12-A

550-119457-M-13-A

280-121181-F-1-A

280-121181-B-3-A

Reagent

8270SIMSurStk_00012

Date Received: _____

Certificate of Analysis

Rev 0

Page 1 of 1

Catalog No.:	Lot No.:	Storage:	Solvent:	Exp. Date:	Description:
112220-01	369966	≤ -10 °C	Methylene Chloride	25-Mar-2020	Custom Surrogate Mix, 8-2220, 1000 mg/L, 5 x 1 ml
-5PAK					

Compound	CAS No.	Purity (%)	Neat Material Lot No.	Concentration
fluoranthene-d ₁₀	93951-69-0	98	1458.12.1P	989.8 +/- 11.22 mg/l
2-fluorobiphenyl	321-60-8	99.7	8.7.1P	999.5 +/- 12.84 mg/l
2-fluorophenol	367-12-4	99.8	10.7.3.1P	1003 +/- 12.89 mg/L
2-methylnaphthalene-d ₁₀	7297-45-2	98	1457.18.1P	994.7 +/- 50.01 mg/l
nitrobenzene-d ₅	4165-60-0	99.66	7.9.1P	999.5 +/- 12.81 mg/l
phenol-d ₅	4165-62-2	98	11.12.4P	999.2 +/- 16.24 mg/L
p-terphenyl-d ₁₄	1718-51-0	100	9.12.8.1P	999.5 +/- 12.84 mg/l
2,4,6-tribromophenol	118-79-6	99.8	12.1.5P	1004 +/- 16.32 mg/L

Jarrett Howard

Certified By: _____

Jarrett Howard

Manufacture Date 6-Mar-2019

Follow all storage requirements, keep tightly closed when not in use, and use good laboratory practices when handling.
This Reference Material was manufactured, produced, and/or certified under a quality management system that is accredited to ISO 17034 and ISO/IEC 17025.

All weights are traceable through N. I. S. T. Test No. 822/264157-00. Concentration (correct for purity) and uncertainty (95% confidence) values listed are determined gravimetrically.

The stated uncertainty is the expanded uncertainty with a coverage factor of two to give a 95% confidence level.

Reagent

8270SurStkHL_00323



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 567685 **Lot No.:** A0143524

Description : 8270 Surrogate Standard
8270 Surrogate Standard 5,000µg/mL, Methylene chloride, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : November 30, 2023 **Storage:** 10°C or colder

Handling: Sonicate prior to use.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)			
1	2-Fluorophenol	4,998.8 µg/mL	+/-	29.0635	µg/mL	Gravimetric
	CAS # 367-12-4 (Lot STBF3761V)		+/-	145.8817	µg/mL	Unstressed
	Purity 99%		+/-	177.0219	µg/mL	Stressed
2	Phenol-d5	5,018.9 µg/mL	+/-	29.1801	µg/mL	Gravimetric
	CAS # 4165-62-2 (Lot CD-105)		+/-	146.4674	µg/mL	Unstressed
	Purity 99%		+/-	177.7325	µg/mL	Stressed
3	Nitrobenzene-d5	5,009.3 µg/mL	+/-	29.1243	µg/mL	Gravimetric
	CAS # 4165-60-0 (Lot PR-29603)		+/-	146.1872	µg/mL	Unstressed
	Purity 99%		+/-	177.3925	µg/mL	Stressed
4	2-Fluorobiphenyl	5,024.7 µg/mL	+/-	29.2138	µg/mL	Gravimetric
	CAS # 321-60-8 (Lot M09E045)		+/-	146.6366	µg/mL	Unstressed
	Purity 99%		+/-	177.9379	µg/mL	Stressed
5	2,4,6-Tribromophenol	5,012.1 µg/mL	+/-	29.1410	µg/mL	Gravimetric
	CAS # 118-79-6 (Lot 29699MJV)		+/-	146.2708	µg/mL	Unstressed
	Purity 99%		+/-	177.4940	µg/mL	Stressed
6	p-Terphenyl-d14	5,022.9 µg/mL	+/-	29.2038	µg/mL	Gravimetric
	CAS # 1718-51-0 (Lot B180320L)		+/-	146.5860	µg/mL	Unstressed
	Purity 99%		+/-	177.8765	µg/mL	Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Tech Tips:

Due to the limited solubility of p-terphenyl-d14 in methanol, we do not recommend that this mixture be diluted in methanol.

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

Inj. Temp:

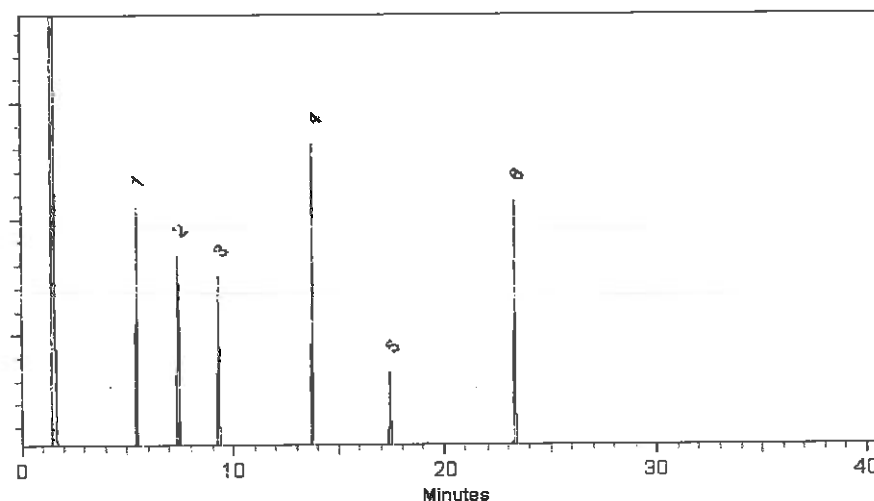
250°C

Det. Temp:

330°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Clara Windle
Clara Windle - Operations Technician I

Date Mixed: 27-Nov-2018

Balance: 1128353505

Diane Shaffer
Diane Shaffer - Operations Tech-ARM QC

Date Passed: 29-Nov-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8270SurStkHL_00324



CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 567685 **Lot No.:** A0143524

Description : 8270 Surrogate Standard

8270 Surrogate Standard 5,000µg/mL, Methylene chloride, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : November 30, 2023 **Storage:** 10°C or colder

Handling: Sonicate prior to use.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)			
1	2-Fluorophenol	4,998.8 µg/mL	+/-	29.0635	µg/mL	Gravimetric
	CAS # 367-12-4 (Lot STBF3761V)		+/-	145.8817	µg/mL	Unstressed
	Purity 99%		+/-	177.0219	µg/mL	Stressed
2	Phenol-d5	5,018.9 µg/mL	+/-	29.1801	µg/mL	Gravimetric
	CAS # 4165-62-2 (Lot CD-105)		+/-	146.4674	µg/mL	Unstressed
	Purity 99%		+/-	177.7325	µg/mL	Stressed
3	Nitrobenzene-d5	5,009.3 µg/mL	+/-	29.1243	µg/mL	Gravimetric
	CAS # 4165-60-0 (Lot PR-29603)		+/-	146.1872	µg/mL	Unstressed
	Purity 99%		+/-	177.3925	µg/mL	Stressed
4	2-Fluorobiphenyl	5,024.7 µg/mL	+/-	29.2138	µg/mL	Gravimetric
	CAS # 321-60-8 (Lot M09E045)		+/-	146.6366	µg/mL	Unstressed
	Purity 99%		+/-	177.9379	µg/mL	Stressed
5	2,4,6-Tribromophenol	5,012.1 µg/mL	+/-	29.1410	µg/mL	Gravimetric
	CAS # 118-79-6 (Lot 29699MJV)		+/-	146.2708	µg/mL	Unstressed
	Purity 99%		+/-	177.4940	µg/mL	Stressed
6	p-Terphenyl-d14	5,022.9 µg/mL	+/-	29.2038	µg/mL	Gravimetric
	CAS # 1718-51-0 (Lot B180320L)		+/-	146.5860	µg/mL	Unstressed
	Purity 99%		+/-	177.8765	µg/mL	Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Tech Tips:

Due to the limited solubility of p-terphenyl-d14 in methanol, we do not recommend that this mixture be diluted in methanol.

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

Inj. Temp:

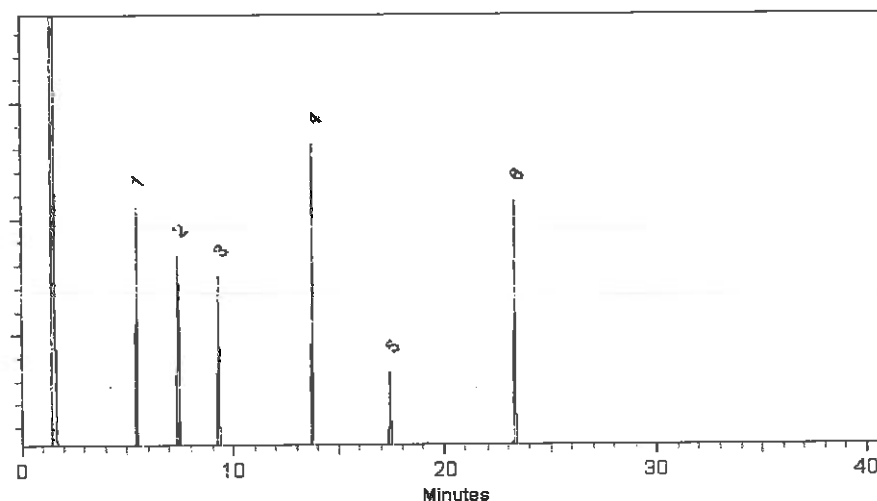
250°C

Det. Temp:

330°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Clara Windle
Clara Windle - Operations Technician I

Date Mixed: 27-Nov-2018

Balance: 1128353505

Diane Shaffer
Diane Shaffer - Operations Tech-ARM QC

Date Passed: 29-Nov-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330 LCSM~~i~~x2_00099



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31451 Lot No.: A0122699
Description : 8330 Calibration Mix #2
8330 Calibration Std #2 1000µg/mL, Acetonitrile, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : November 30, 2021 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Tetryl CAS # 479-45-8 (Lot 091120JLM) Purity 99%	1,000.0 µg/mL	+/- 5.9397 µg/mL Gravimetric +/- 54.7830 µg/mL Unstressed +/- 63.8824 µg/mL Stressed
2	4-Amino-2,6-dinitrotoluene CAS # 19406-51-0 (Lot ER070908-01) Purity 99%	1,002.0 µg/mL	+/- 5.9516 µg/mL Gravimetric +/- 54.8926 µg/mL Unstressed +/- 64.0101 µg/mL Stressed
3	2-Amino-4,6-dinitrotoluene CAS # 35572-78-2 (Lot 29550-55) Purity 99%	1,001.0 µg/mL	+/- 5.9456 µg/mL Gravimetric +/- 54.8378 µg/mL Unstressed +/- 63.9463 µg/mL Stressed
4	2,6-Dinitrotoluene CAS # 606-20-2 (Lot 1437483V) Purity 99%	1,001.0 µg/mL	+/- 5.9456 µg/mL Gravimetric +/- 54.8378 µg/mL Unstressed +/- 63.9463 µg/mL Stressed
5	2-Nitrotoluene CAS # 88-72-2 (Lot GA01) Purity 99%	1,001.0 µg/mL	+/- 5.9456 µg/mL Gravimetric +/- 54.8378 µg/mL Unstressed +/- 63.9463 µg/mL Stressed
6	4-Nitrotoluene CAS # 99-99-0 (Lot FAU01) Purity 97%	1,001.0 µg/mL	+/- 5.9459 µg/mL Gravimetric +/- 54.8400 µg/mL Unstressed +/- 63.9488 µg/mL Stressed
7	3-Nitrotoluene CAS # 99-08-1 (Lot 07329LG) Purity 99%	1,001.0 µg/mL	+/- 5.9456 µg/mL Gravimetric +/- 54.8378 µg/mL Unstressed +/- 63.9463 µg/mL Stressed

Reagent

8330 LCSM~~i~~x2_00101



110 Benner Circle
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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31451 Lot No.: A0122699
Description : 8330 Calibration Mix #2
8330 Calibration Std #2 1000µg/mL, Acetonitrile, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : November 30, 2021 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Tetryl CAS # 479-45-8 (Lot 091120JLM) Purity 99%	1,000.0 µg/mL	+/- 5.9397 µg/mL Gravimetric +/- 54.7830 µg/mL Unstressed +/- 63.8824 µg/mL Stressed
2	4-Amino-2,6-dinitrotoluene CAS # 19406-51-0 (Lot ER070908-01) Purity 99%	1,002.0 µg/mL	+/- 5.9516 µg/mL Gravimetric +/- 54.8926 µg/mL Unstressed +/- 64.0101 µg/mL Stressed
3	2-Amino-4,6-dinitrotoluene CAS # 35572-78-2 (Lot 29550-55) Purity 99%	1,001.0 µg/mL	+/- 5.9456 µg/mL Gravimetric +/- 54.8378 µg/mL Unstressed +/- 63.9463 µg/mL Stressed
4	2,6-Dinitrotoluene CAS # 606-20-2 (Lot 1437483V) Purity 99%	1,001.0 µg/mL	+/- 5.9456 µg/mL Gravimetric +/- 54.8378 µg/mL Unstressed +/- 63.9463 µg/mL Stressed
5	2-Nitrotoluene CAS # 88-72-2 (Lot GA01) Purity 99%	1,001.0 µg/mL	+/- 5.9456 µg/mL Gravimetric +/- 54.8378 µg/mL Unstressed +/- 63.9463 µg/mL Stressed
6	4-Nitrotoluene CAS # 99-99-0 (Lot FAU01) Purity 97%	1,001.0 µg/mL	+/- 5.9459 µg/mL Gravimetric +/- 54.8400 µg/mL Unstressed +/- 63.9488 µg/mL Stressed
7	3-Nitrotoluene CAS # 99-08-1 (Lot 07329LG) Purity 99%	1,001.0 µg/mL	+/- 5.9456 µg/mL Gravimetric +/- 54.8378 µg/mL Unstressed +/- 63.9463 µg/mL Stressed

Reagent

8330 LCSM~~i~~x2_00107



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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31451 Lot No.: A0141002
Description : 8330 Calibration Mix #2
8330 Calibration Std #2 1000µg/mL, Acetonitrile, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : August 31, 2023 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Tetryl CAS # 479-45-8 Purity 99% (Lot 091120JLM)	1,000.0 µg/mL	+/- 5.9397	µg/mL	Gravimetric
			+/- 54.7830	µg/mL	Unstressed
			+/- 63.8824	µg/mL	Stressed
2	4-Amino-2,6-dinitrotoluene CAS # 19406-51-0 Purity 99% (Lot ER070908-01)	1,002.0 µg/mL	+/- 5.9516	µg/mL	Gravimetric
			+/- 54.8926	µg/mL	Unstressed
			+/- 64.0101	µg/mL	Stressed
3	2-Amino-4,6-dinitrotoluene CAS # 35572-78-2 Purity 98% (Lot 29550-55)	1,007.4 µg/mL	+/- 5.9839	µg/mL	Gravimetric
			+/- 55.1906	µg/mL	Unstressed
			+/- 64.3577	µg/mL	Stressed
4	2,6-Dinitrotoluene CAS # 606-20-2 Purity 99% (Lot BCBB8606V)	1,000.0 µg/mL	+/- 5.9397	µg/mL	Gravimetric
			+/- 54.7830	µg/mL	Unstressed
			+/- 63.8824	µg/mL	Stressed
5	2-Nitrotoluene CAS # 88-72-2 Purity 99% (Lot GA01)	1,004.0 µg/mL	+/- 5.9635	µg/mL	Gravimetric
			+/- 55.0021	µg/mL	Unstressed
			+/- 64.1379	µg/mL	Stressed
6	4-Nitrotoluene CAS # 99-99-0 Purity 99% (Lot FAU01)	1,002.0 µg/mL	+/- 5.9516	µg/mL	Gravimetric
			+/- 54.8926	µg/mL	Unstressed
			+/- 64.0101	µg/mL	Stressed
7	3-Nitrotoluene CAS # 99-08-1 Purity 98% (Lot FBO01)	1,003.5 µg/mL	+/- 5.9606	µg/mL	Gravimetric
			+/- 54.9758	µg/mL	Unstressed
			+/- 64.1072	µg/mL	Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

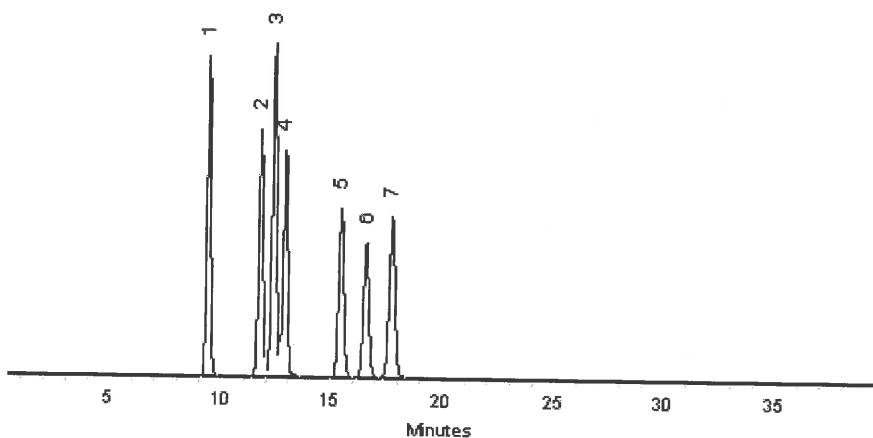
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

Mobile Phase B:

Mobile Phase Composition:
100%A

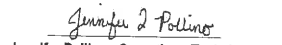
Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Matt Fragassi - Mix Technician

Date Mixed: 23-Aug-2018 Balance: B345965662


Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 28-Aug-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

Reagent

8330 Stock_TS_00012

Certificate of Analysis



Combined Stock Solution

Product Number: NAIM-833E

Page: 1 of 1

Lot Number: CR-1002

Lot Issue Date: 10-Mar-2017

Expiration Date: 30-Apr-2020

This ISO Guide 34 Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
HMX	002691-41-0	RM06237	1000 ± 5 µg/mL
RDX	000121-82-4	RM10915	1000 ± 5 µg/mL
1,3,5-trinitrobenzene	000099-35-4	RM06608	1000 ± 5 µg/mL
m-dinitrobenzene	000099-65-0	RM04448	1001 ± 5 µg/mL
nitrobenzene	000098-95-3	RM11472	1002 ± 5 µg/mL
2,4,6-trinitrotoluene (TNT)	000118-96-7	RM11972	1004 ± 5 µg/mL
2,4-dinitrotoluene	000121-14-2	RM01209	1002 ± 5 µg/mL
tetryl	000479-45-8	RM12295	1000 ± 5 µg/mL
2,6-dinitrotoluene	000606-20-2	RM10763	1003 ± 5 µg/mL
2-nitrotoluene	000088-72-2	NT01996	1003 ± 5 µg/mL
3-nitrotoluene	000099-08-1	NT02212	1004 ± 5 µg/mL
4-nitrotoluene	000099-99-0	NT02096	1004 ± 5 µg/mL
2-amino-4,6-dinitrotoluene	035572-78-2	RM04229	1003 ± 5 µg/mL
4-amino-2,6-dinitrotoluene	019406-51-0	RM04226	1003 ± 5 µg/mL

Matrix: acetonitrile

Storage: Store at Room Temperature (15° to 30°C).

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCCL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.



ISO 9001
Registered
TUV USA, Inc.

John Russo
President

Monica Bourgeois
Director of QA/RA

Reagent

8330_NG_Stk_00051



CERTIFIED REFERENCE MATERIAL

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Certificate of Composition



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 568871 **Lot No.:** A0124122
Description : Custom Nitroglycerin Standard
Custom Nitroglycerin Standard 5,000µg/mL, Acetonitrile, 1mL/ampul
Container Size : 2 mL **Pkg Amt:** > 1 mL
Expiration Date : January 31, 2020 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Nitroglycerin CAS # 55-63-0 Purity 99% (Lot 150612JLM)	5,016.0 µg/mL	+/- 46.6461 µg/mL Gravimetric +/- 277.1256 µg/mL Unstressed +/- 322.4378 µg/mL Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

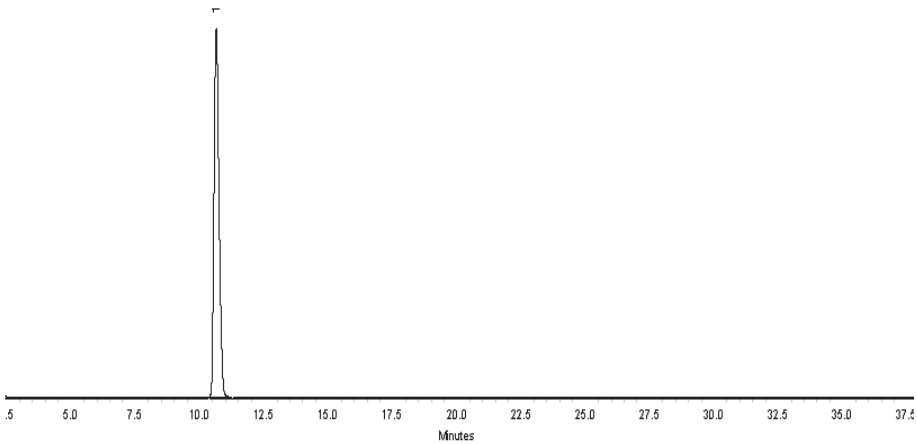
Flow Rate:
1.0 ml/min.

Mobile Phase A:
-

Mobile Phase B:
water:methanol (44:56 V/V)

Mobile Phase Composition:
100%B

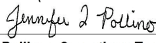
Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Kendra Jozefick - Mix Technician

Date Mixed: 12-Jan-2017 **Balance:** B442140311


Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 17-Jan-2017

REVIEWED
By: Jennifer Pollino on 1/17/2017, 10:17 AM

**Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397**

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330_NG_Stk_00052



CERTIFIED REFERENCE MATERIAL

110 Benner Circle
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Fax: (814)353-1309

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Certificate of Composition



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 568871 **Lot No.:** A0124122
Description : Custom Nitroglycerin Standard
Custom Nitroglycerin Standard 5,000µg/mL, Acetonitrile, 1mL/ampul
Container Size : 2 mL **Pkg Amt:** > 1 mL
Expiration Date : January 31, 2020 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Nitroglycerin CAS # 55-63-0 Purity 99% (Lot 150612JLM)	5,016.0 µg/mL	+/- 46.6461 µg/mL Gravimetric +/- 277.1256 µg/mL Unstressed +/- 322.4378 µg/mL Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

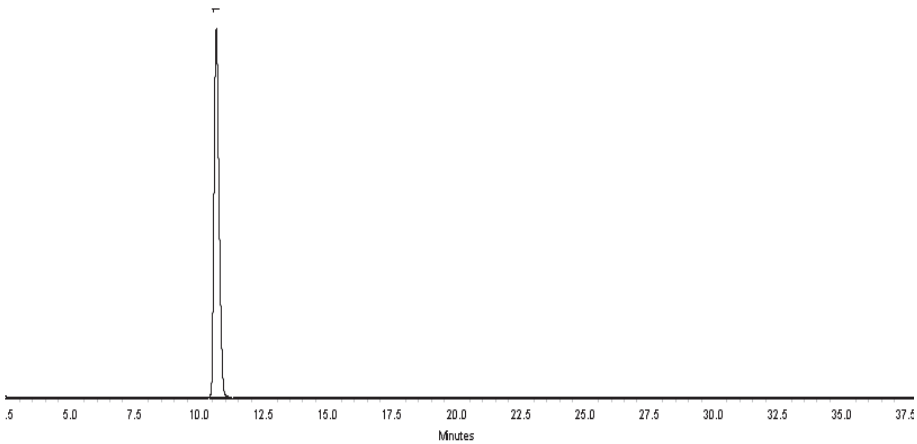
Flow Rate:
1.0 ml/min.

Mobile Phase A:
-

Mobile Phase B:
water:methanol (44:56 V/V)

Mobile Phase Composition:
100%B

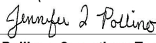
Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Kendra Jozefick - Mix Technician

Date Mixed: 12-Jan-2017 **Balance:** B442140311


Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 17-Jan-2017 

**Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397**

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330_NG_Stk_00058

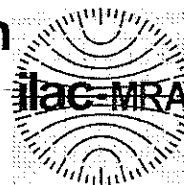


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Fax: (814)353-1309

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CERTIFIED REFERENCE MATERIAL

Certificate of Composition



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 568871 Lot No.: A0128695
Description : Custom Nitroglycerin Standard
Custom Nitroglycerin Standard 5,000µg/mL, Acetonitrile, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : June 30, 2020 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Nitroglycerin CAS # 55-63-0 Purity 99% (Lot 170616JLM)	5,012.0 µg/mL	+/- 46.6089 µg/mL Gravimetric +/- 276.9046 µg/mL Unstressed +/- 322.1807 µg/mL Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Reagent

8330_NG_Stk_00059

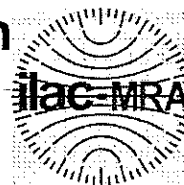


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CERTIFIED REFERENCE MATERIAL

Certificate of Composition



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 568871 Lot No.: A0128695
Description : Custom Nitroglycerin Standard
Custom Nitroglycerin Standard 5,000µg/mL, Acetonitrile, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : June 30, 2020 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Nitroglycerin CAS # 55-63-0 Purity 99% (Lot 170616JLM)	5,012.0 µg/mL	+/- 46.6089 µg/mL Gravimetric +/- 276.9046 µg/mL Unstressed +/- 322.1807 µg/mL Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Reagent

8330_NG_Stk_00060

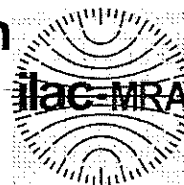


110 Benner Circle
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Tel: (800)356-1688
Fax: (814)353-1309

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CERTIFIED REFERENCE MATERIAL

Certificate of Composition



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 568871 Lot No.: A0128695
Description : Custom Nitroglycerin Standard
Custom Nitroglycerin Standard 5,000µg/mL, Acetonitrile, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : June 30, 2020 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Nitroglycerin CAS # 55-63-0 Purity 99% (Lot 170616JLM)	5,012.0 µg/mL	+/- 46.6089 µg/mL Gravimetric +/- 276.9046 µg/mL Unstressed +/- 322.1807 µg/mL Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Reagent

8330_NG_Stk_00071



CERTIFIED REFERENCE MATERIAL

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Certificate of Composition



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 568871 Lot No.: A0129124
Description : Custom Nitroglycerin Standard
Custom Nitroglycerin Standard 5,000µg/mL, Acetonitrile, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : July 31, 2020 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Nitroglycerin CAS # 55-63-0 Purity 99% (Lot 170616JLM)	5,008.0 µg/mL	 +/- 46.5717 µg/mL Gravimetric +/- 276.6836 µg/mL Unstressed +/- 321.9236 µg/mL Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Reagent

8330_NG_Stk_00073



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CERTIFIED REFERENCE MATERIAL

Certificate of Composition



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 568871 Lot No.: A0129124
Description : Custom Nitroglycerin Standard
Custom Nitroglycerin Standard 5,000µg/mL, Acetonitrile, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : July 31, 2020 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Nitroglycerin	5,008.0 µg/mL	+/- 46.5717 µg/mL Gravimetric
	CAS # 55-63-0 (Lot 170616JLM)		+/- 276.6836 µg/mL Unstressed
	Purity 99%		+/- 321.9236 µg/mL Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Reagent

8330_PETN_Stk_00053



CERTIFIED REFERENCE MATERIAL

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Tel: (800)356-1688
Fax: (814)353-1309

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Certificate of Composition



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 568872 **Lot No.:** A0124124
Description : Custom PETN Standard
Custom PETN Standard 5000 µg/mL, Acetonitrile, 1mL/ampul
Container Size : 2 mL **Pkg Amt:** > 1 mL
Expiration Date : January 31, 2020 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	PETN	5,024.0 µg/mL	+/- 46.7205 µg/mL Gravimetric
	CAS # 78-11-5 (Lot 051108JLM)		+/- 277.5676 µg/mL Unstressed
	Purity 99%		+/- 322.9521 µg/mL Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

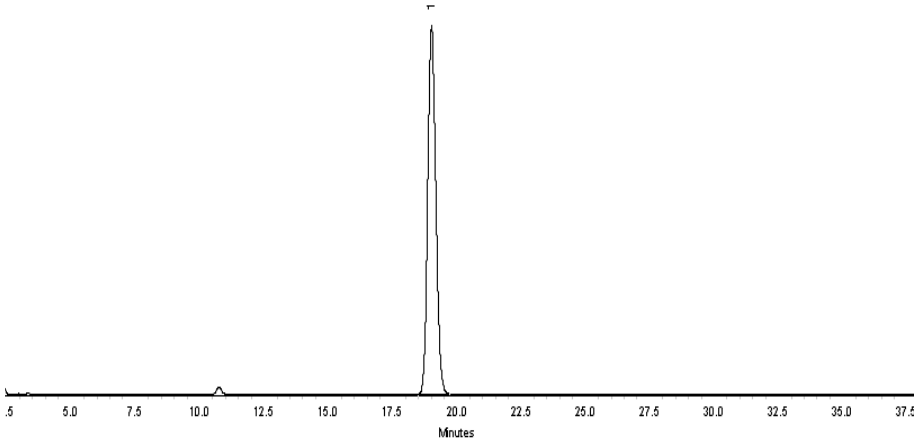
Flow Rate:
1.0 ml/min.

Mobile Phase A:
-

Mobile Phase B:
water:methanol (44:56 V/V)

Mobile Phase Composition:
100%B

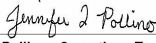
Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Kendra Jozefick - Mix Technician

Date Mixed: 12-Jan-2017 **Balance:** B442140311


Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 17-Jan-2017

REVIEWED
By Amanda Miller at 3:54 pm, Jan 17, 2017

**Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397**

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330_PETN_Stk_00056



CERTIFIED REFERENCE MATERIAL

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Certificate of Composition



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 568872 **Lot No.:** A0124124
Description : Custom PETN Standard
Custom PETN Standard 5000 µg/mL, Acetonitrile, 1mL/ampul
Container Size : 2 mL **Pkg Amt:** > 1 mL
Expiration Date : January 31, 2020 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	PETN		5,024.0 µg/mL	+/- 46.7205	µg/mL	Gravimetric
	CAS #	78-11-5		+/- 277.5676	µg/mL	Unstressed
	Purity	99%		+/- 322.9521	µg/mL	Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

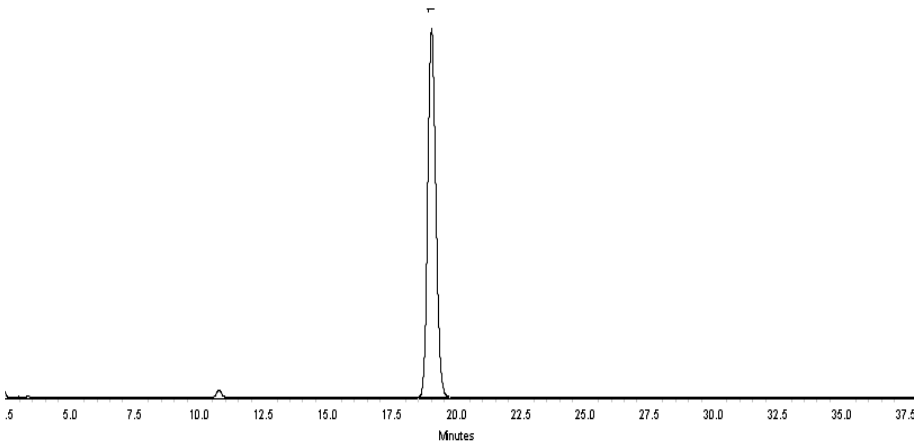
Flow Rate:
1.0 ml/min.

Mobile Phase A:
-

Mobile Phase B:
water:methanol (44:56 V/V)

Mobile Phase Composition:
100%B

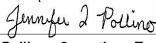
Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Kendra Jozefick - Mix Technician

Date Mixed: 12-Jan-2017 **Balance:** B442140311


Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 17-Jan-2017

REVIEWED
By Amanda Miller at 3:54 pm, Jan 17, 2017

**Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397**

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330_PETN_Stk_00064



110 Benner Circle
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Fax: (814)353-1309

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CERTIFIED REFERENCE MATERIAL

Certificate of Composition



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 568872 Lot No.: A0127970
Description: Custom PETN Standard
Custom PETN Standard 5000 µg/mL, Acetonitrile, 1mL/ampul
Container Size: 2 mL Pkg Amt: > 1 mL
Expiration Date: May 31, 2020 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	PETN CAS # 78-11-5 Purity 99% (Lot 051108JLM)	5,028.0 µg/mL	+/- 46.7577 µg/mL Gravimetric +/- 277.7886 µg/mL Unstressed +/- 323.2092 µg/mL Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Reagent

8330_PETN_Stk_00067



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Fax: (814)353-1309

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CERTIFIED REFERENCE MATERIAL

Certificate of Composition



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 568872 Lot No.: A0127970
Description: Custom PETN Standard
Custom PETN Standard 5000 µg/mL, Acetonitrile, 1mL/ampul
Container Size: 2 mL Pkg Amt: > 1 mL
Expiration Date: May 31, 2020 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	PETN CAS # 78-11-5 Purity 99% (Lot 051108JLM)	5,028.0 µg/mL	 +/- 46.7577 µg/mL Gravimetric +/- 277.7886 µg/mL Unstressed +/- 323.2092 µg/mL Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Reagent

8330_PETN_Stk_00068



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CERTIFIED REFERENCE MATERIAL

Certificate of Composition



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 568872 Lot No.: A0127970
Description: Custom PETN Standard
Custom PETN Standard 5000 µg/mL, Acetonitrile, 1mL/ampul
Container Size: 2 mL Pkg Amt: > 1 mL
Expiration Date: May 31, 2020 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	PETN CAS # 78-11-5 Purity 99% (Lot 051108JLM)	5,028.0 µg/mL	+/- 46.7577 µg/mL Gravimetric +/- 277.7886 µg/mL Unstressed +/- 323.2092 µg/mL Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Reagent

8330_PETN_Stk_00073



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CERTIFIED REFERENCE MATERIAL

Certificate of Composition



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 568872 Lot No.: A0136306
Description : Custom PETN Standard
Custom PETN Standard 5,000µg/mL, Acetonitrile, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : March 31, 2021 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	PETN CAS # 78-11-5 Purity 99% (Lot 051108JLM)	5,028.0 µg/mL	+/- 46.7577	µg/mL	Gravimetric
			+/- 277.7886	µg/mL	Unstressed
			+/- 323.2092	µg/mL	Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

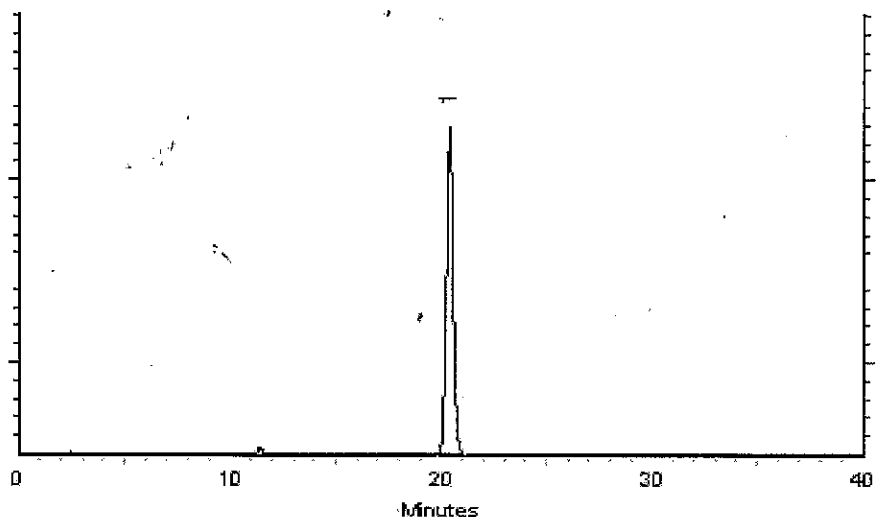
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

Mobile Phase B:

Mobile Phase Composition:
100%A

Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cyndee L. Crust
Cyndee L. Crust - Mix Technician

Date Mixed: 19-Mar-2018 **Balance:** 1128360905

Jennifer L. Pollino
Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 23-Mar-2018

REVIEWED: 11-03-2018
By: [Signature]

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely

Reagent

8330_PETN_Stk_00074



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Fax: (814)353-1309

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CERTIFIED REFERENCE MATERIAL

Certificate of Composition



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 568872 Lot No.: A0136306
Description : Custom PETN Standard
Custom PETN Standard 5,000µg/mL, Acetonitrile, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : March 31, 2021 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	PETN CAS # 78-11-5 Purity 99% (Lot 051108JLM)	5,028.0 µg/mL	+/- 46.7577	µg/mL	Gravimetric
			+/- 277.7886	µg/mL	Unstressed
			+/- 323.2092	µg/mL	Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

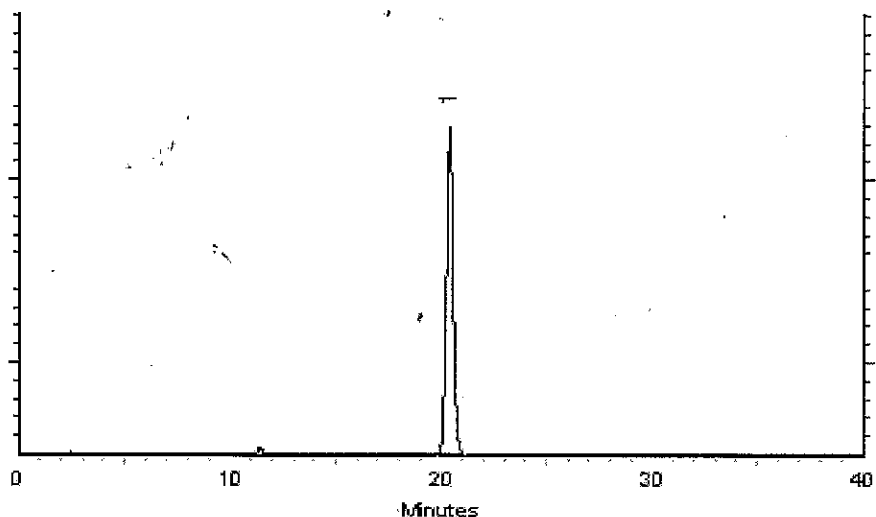
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

Mobile Phase B:

Mobile Phase Composition:
100%A

Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cyndee L. Crust
Cyndee L. Crust - Mix Technician

Date Mixed: 19-Mar-2018 **Balance:** 1128360905

Jennifer L. Pollino
Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 23-Mar-2018

REVIEWED: 11-03-2018
By: [Signature]

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely

Reagent

8330_PETN_Stk_00075



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Composition



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 568872 Lot No.: A0136306
Description: Custom PETN Standard
Custom PETN Standard 5,000µg/mL, Acetonitrile, 1mL/ampul
Container Size: 2 mL Pkg Amt: > 1 mL
Expiration Date: March 31, 2021 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	PETN CAS # 78-11-5 Purity 99% (Lot 051108JLM)	5,028.0 µg/mL	+/- 46.7577	µg/mL	Gravimetric
			+/- 277.7886	µg/mL	Unstressed
			+/- 323.2092	µg/mL	Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

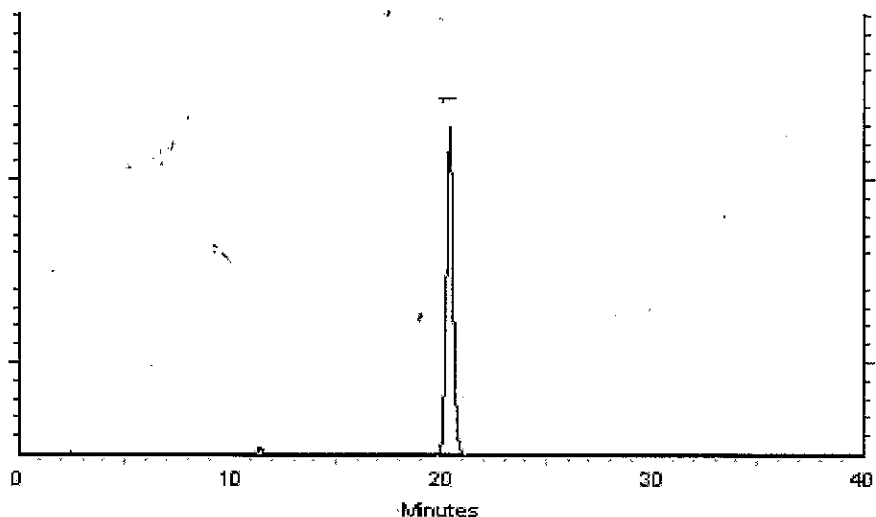
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

Mobile Phase B:

Mobile Phase Composition:
100%A

Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cyndee L. Crust
Cyndee L. Crust - Mix Technician

Date Mixed: 19-Mar-2018 **Balance:** 1128360905

Jennifer L. Pollino
Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 23-Mar-2018



Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely

Reagent

8330_PETN_Stk_00076



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Fax: (814)353-1309

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CERTIFIED REFERENCE MATERIAL

Certificate of Composition



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 568872 Lot No.: A0136306
Description: Custom PETN Standard
Custom PETN Standard 5,000µg/mL, Acetonitrile, 1mL/ampul
Container Size: 2 mL Pkg Amt: > 1 mL
Expiration Date: March 31, 2021 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	PETN CAS # 78-11-5 Purity 99% (Lot 051108JLM)	5,028.0 µg/mL	+/- 46.7577	µg/mL	Gravimetric
			+/- 277.7886	µg/mL	Unstressed
			+/- 323.2092	µg/mL	Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

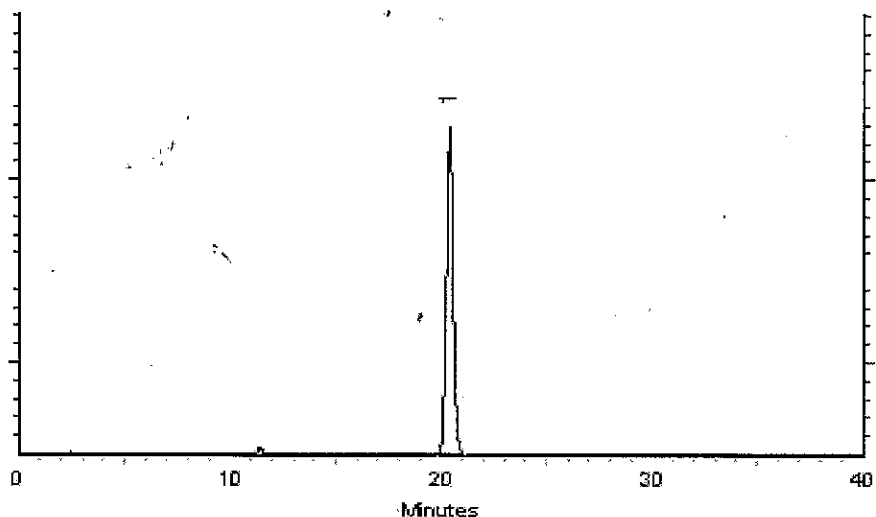
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

Mobile Phase B:

Mobile Phase Composition:
100%A

Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cyndee L. Crust
Cyndee L. Crust - Mix Technician

Date Mixed: 19-Mar-2018 **Balance:** 1128360905

Jennifer L. Pollino
Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 23-Mar-2018

REVIEWED: 11-03-2018
By: [Signature]

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
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0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely

Reagent

8330_PETN_Stk_00077



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CERTIFIED REFERENCE MATERIAL

Certificate of Composition



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 568872 Lot No.: A0136306
Description: Custom PETN Standard
Custom PETN Standard 5,000µg/mL, Acetonitrile, 1mL/ampul
Container Size: 2 mL Pkg Amt: > 1 mL
Expiration Date: March 31, 2021 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	PETN CAS # 78-11-5 Purity 99% (Lot 051108JLM)	5,028.0 µg/mL	+/- 46.7577	µg/mL	Gravimetric
			+/- 277.7886	µg/mL	Unstressed
			+/- 323.2092	µg/mL	Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

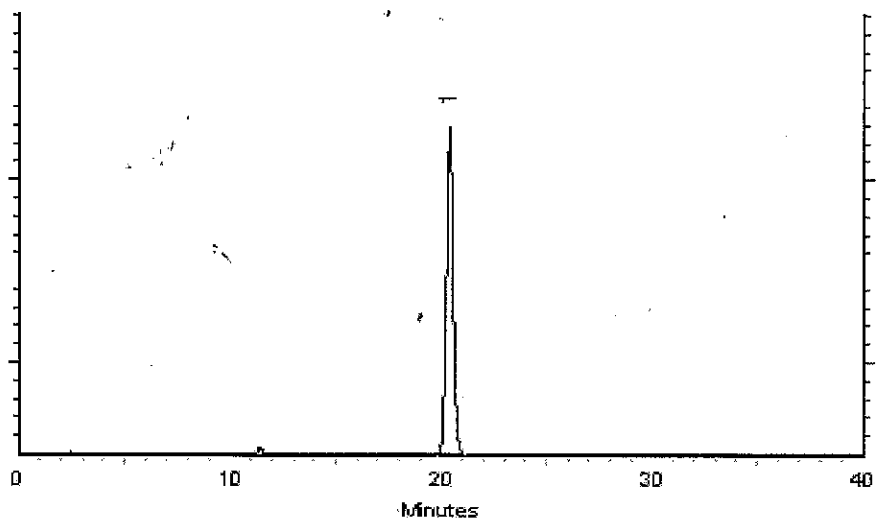
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

Mobile Phase B:

Mobile Phase Composition:
100%A

Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cydnei L. Crust
Cydnei L. Crust - Mix Technician

Date Mixed: 19-Mar-2018 **Balance:** 1128360905

Jennifer L. Pollino
Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 23-Mar-2018



Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely

Reagent

833035DNASTk_00036



CERTIFICATE OF ANALYSIS

Catalog No: M-8330-ADD-4
Description: 3,5-Dinitroaniline
Lot: 217071230-01

Solvent: Methanol (50%)
Acetonitrile (50%)

Hazards: Refer to SDS for complete safety information



Signal Word: Danger

Date Certified: Apr 11, 2018

Expiration: May 11, 2019

Sample Size: 1 mL

Components: 1

Storage Condition: Ambient (>5 °C)

Included on ISO/IEC 17025 Scope of Accreditation: Yes

Included on ISO Guide 34 Scope of Accreditation: Yes

Component	CAS #	Purity % (GC/MS)	Prepared Concentration ¹ (µg/mL)	Certified Analyte Concentration ² (µg/mL)
3,5-Dinitroaniline	618-87-1	99.3	100.6	99.9

A product with a suffix (-1A, -2B, etc., or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

¹ All weights are traceable through NIST, Test No. 822-275872-11

² Certified Analyte Concentration = Purity X Prepared Concentration.

The Uncertainty associated with the certified concentration reported on this certificate is $\pm 2.4\%$. This value is the combined expanded uncertainty and represents an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Labels and certificates follow U.S. Conventions in reporting numerical values: A comma (,) is used to separate units of one-thousand or greater. A period (.) is used as a decimal place marker.

The information on this certificate may not be reproduced without the express permission of the manufacturer. See reverse side for additional information

Certified By:

Larry Decker, Organic QC Manager

Reagent

8330LCSMix1_00101

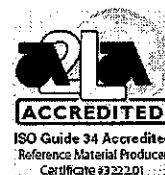


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Fax: (814)353-1309

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31450 **Lot No.:** A0128688
Description : 8330 Calibration Mix #1
8330 Calibration Std #1 1000µg/mL, Acetonitrile, 1mL/ampul
Container Size : 2 mL **Pkg Amt:** > 1 mL
Expiration Date : June 30, 2022 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	HMX CAS # 2691-41-0 Purity 98% (Lot 111005JLM)	1,002.5 µg/mL	+/- 5.9548 µg/mL +/- 54.9222 µg/mL +/- 64.0446 µg/mL	Gravimetric Unstressed Stressed
2	RDX CAS # 121-82-4 Purity 99% (Lot 080220JLM)	1,008.0 µg/mL	+/- 5.9872 µg/mL +/- 55.2213 µg/mL +/- 64.3934 µg/mL	Gravimetric Unstressed Stressed
3	1,3,5-Trinitrobenzene CAS # 99-35-4 Purity 97% (Lot DJ5QO)	1,004.9 µg/mL	+/- 5.9689 µg/mL +/- 55.0525 µg/mL +/- 64.1967 µg/mL	Gravimetric Unstressed Stressed
4	1,3-Dinitrobenzene CAS # 99-65-0 Purity 99% (Lot BCBN4329V)	1,007.0 µg/mL	+/- 5.9813 µg/mL +/- 55.1665 µg/mL +/- 64.3295 µg/mL	Gravimetric Unstressed Stressed
5	Nitrobenzene CAS # 98-95-3 Purity 99% (Lot SHBG5577V)	1,007.0 µg/mL	+/- 5.9813 µg/mL +/- 55.1665 µg/mL +/- 64.3295 µg/mL	Gravimetric Unstressed Stressed
6	2,4,6-Trinitrotoluene CAS # 118-96-7 Purity 99% (Lot 2554100)	1,004.0 µg/mL	+/- 5.9635 µg/mL +/- 55.0021 µg/mL +/- 64.1379 µg/mL	Gravimetric Unstressed Stressed
7	2,4-Dinitrotoluene CAS # 121-14-2 Purity 99% (Lot MKAA0690V)	1,007.0 µg/mL	+/- 5.9813 µg/mL +/- 55.1665 µg/mL +/- 64.3295 µg/mL	Gravimetric Unstressed Stressed

Reagent

8330LCSMix1_00103

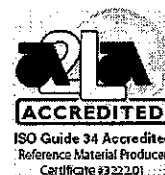


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CERTIFIED REFERENCE MATERIAL

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Catalog No.: 31450 Lot No.: A0128688
Description: 8330 Calibration Mix #1
8330 Calibration Std #1 1000µg/mL, Acetonitrile, 1mL/ampul
Container Size: 2 mL Pkg Amt: > 1 mL
Expiration Date: June 30, 2022 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	HMX CAS # 2691-41-0 Purity 98% (Lot 111005JLM)	1,002.5 µg/mL	+/- 5.9548 µg/mL +/- 54.9222 µg/mL +/- 64.0446 µg/mL	Gravimetric Unstressed Stressed
2	RDX CAS # 121-82-4 Purity 99% (Lot 080220JLM)	1,008.0 µg/mL	+/- 5.9872 µg/mL +/- 55.2213 µg/mL +/- 64.3934 µg/mL	Gravimetric Unstressed Stressed
3	1,3,5-Trinitrobenzene CAS # 99-35-4 Purity 97% (Lot DJ5QO)	1,004.9 µg/mL	+/- 5.9689 µg/mL +/- 55.0525 µg/mL +/- 64.1967 µg/mL	Gravimetric Unstressed Stressed
4	1,3-Dinitrobenzene CAS # 99-65-0 Purity 99% (Lot BCBN4329V)	1,007.0 µg/mL	+/- 5.9813 µg/mL +/- 55.1665 µg/mL +/- 64.3295 µg/mL	Gravimetric Unstressed Stressed
5	Nitrobenzene CAS # 98-95-3 Purity 99% (Lot SHBG5577V)	1,007.0 µg/mL	+/- 5.9813 µg/mL +/- 55.1665 µg/mL +/- 64.3295 µg/mL	Gravimetric Unstressed Stressed
6	2,4,6-Trinitrotoluene CAS # 118-96-7 Purity 99% (Lot 2554100)	1,004.0 µg/mL	+/- 5.9635 µg/mL +/- 55.0021 µg/mL +/- 64.1379 µg/mL	Gravimetric Unstressed Stressed
7	2,4-Dinitrotoluene CAS # 121-14-2 Purity 99% (Lot MKAA0690V)	1,007.0 µg/mL	+/- 5.9813 µg/mL +/- 55.1665 µg/mL +/- 64.3295 µg/mL	Gravimetric Unstressed Stressed

Reagent

8330LCSMix1_00104

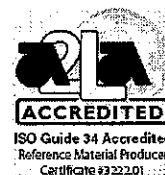


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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31450 **Lot No.:** A0128688
Description : 8330 Calibration Mix #1
8330 Calibration Std #1 1000µg/mL, Acetonitrile, 1mL/ampul
Container Size : 2 mL **Pkg Amt:** > 1 mL
Expiration Date : June 30, 2022 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	HMX CAS # 2691-41-0 Purity 98% (Lot 111005JLM)	1,002.5 µg/mL	+/- 5.9548 µg/mL +/- 54.9222 µg/mL +/- 64.0446 µg/mL	Gravimetric Unstressed Stressed
2	RDX CAS # 121-82-4 Purity 99% (Lot 080220JLM)	1,008.0 µg/mL	+/- 5.9872 µg/mL +/- 55.2213 µg/mL +/- 64.3934 µg/mL	Gravimetric Unstressed Stressed
3	1,3,5-Trinitrobenzene CAS # 99-35-4 Purity 97% (Lot DJ5QO)	1,004.9 µg/mL	+/- 5.9689 µg/mL +/- 55.0525 µg/mL +/- 64.1967 µg/mL	Gravimetric Unstressed Stressed
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5	Nitrobenzene CAS # 98-95-3 Purity 99% (Lot SHBG5577V)	1,007.0 µg/mL	+/- 5.9813 µg/mL +/- 55.1665 µg/mL +/- 64.3295 µg/mL	Gravimetric Unstressed Stressed
6	2,4,6-Trinitrotoluene CAS # 118-96-7 Purity 99% (Lot 2554100)	1,004.0 µg/mL	+/- 5.9635 µg/mL +/- 55.0021 µg/mL +/- 64.1379 µg/mL	Gravimetric Unstressed Stressed
7	2,4-Dinitrotoluene CAS # 121-14-2 Purity 99% (Lot MKAA0690V)	1,007.0 µg/mL	+/- 5.9813 µg/mL +/- 55.1665 µg/mL +/- 64.3295 µg/mL	Gravimetric Unstressed Stressed

Reagent

8330LCSMix1_00109



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www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31450 **Lot No.:** A0131772
Description : 8330 Calibration Mix #1
8330 Calibration Std #1 1000µg/mL, Acetonitrile, 1mL/ampul
Container Size : 2 mL **Pkg Amt:** > 1 mL
Expiration Date : October 31, 2022 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	HMX	(Lot 111005JLM)	1,009.4 µg/mL	+/- 5.9955	µg/mL	Gravimetric
	CAS # 2691-41-0			+/- 55.2980	µg/mL	Unstressed
	Purity 98%			+/- 64.4829	µg/mL	Stressed
2	RDX	(Lot 080220JLM)	1,005.0 µg/mL	+/- 5.9694	µg/mL	Gravimetric
	CAS # 121-82-4			+/- 55.0569	µg/mL	Unstressed
	Purity 99%			+/- 64.2018	µg/mL	Stressed
3	1,3,5-Trinitrobenzene	(Lot DJ5QO)	1,009.8 µg/mL	+/- 5.9977	µg/mL	Gravimetric
	CAS # 99-35-4			+/- 55.3182	µg/mL	Unstressed
	Purity 97%			+/- 64.5065	µg/mL	Stressed
4	1,3-Dinitrobenzene	(Lot BCBB1436V)	1,008.0 µg/mL	+/- 5.9872	µg/mL	Gravimetric
	CAS # 99-65-0			+/- 55.2213	µg/mL	Unstressed
	Purity 99%			+/- 64.3934	µg/mL	Stressed
5	Nitrobenzene	(Lot SHBF2348V)	1,002.0 µg/mL	+/- 5.9516	µg/mL	Gravimetric
	CAS # 98-95-3			+/- 54.8926	µg/mL	Unstressed
	Purity 99%			+/- 64.0101	µg/mL	Stressed
6	2,4,6-Trinitrotoluene	(Lot 2554100)	1,008.0 µg/mL	+/- 5.9872	µg/mL	Gravimetric
	CAS # 118-96-7			+/- 55.2213	µg/mL	Unstressed
	Purity 99%			+/- 64.3934	µg/mL	Stressed
7	2,4-Dinitrotoluene	(Lot MKAA0690V)	1,005.0 µg/mL	+/- 5.9694	µg/mL	Gravimetric
	CAS # 121-14-2			+/- 55.0569	µg/mL	Unstressed
	Purity 99%			+/- 64.2018	µg/mL	Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

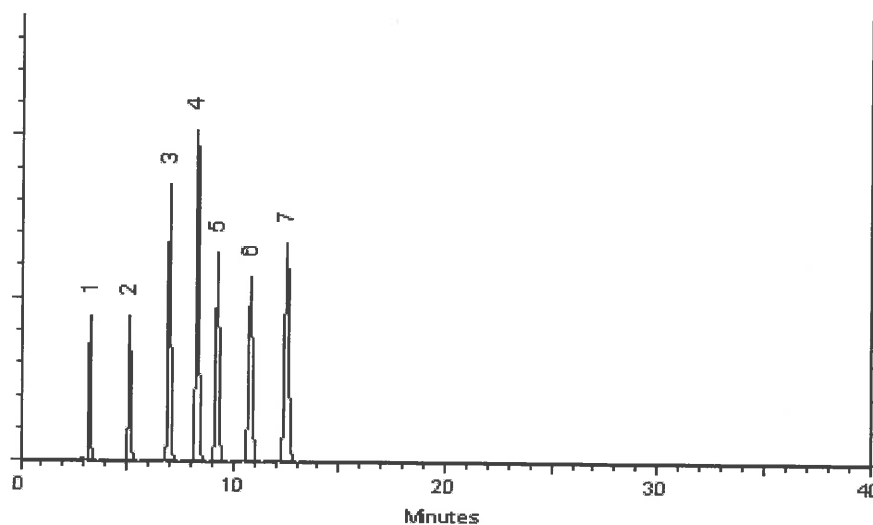
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

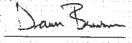
Mobile Phase B:

Mobile Phase Composition:
100%A

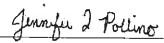
Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Dawn Brownson - Mix Technician

Date Mixed: 19-Oct-2017 **Balance:** B707717271


Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 23-Oct-2017

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

Reagent

8330LCSmix2_00008



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31451 Lot No.: A0141002
Description : 8330 Calibration Mix #2
8330 Calibration Std #2 1000µg/mL, Acetonitrile, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : August 31, 2023 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Tetryl CAS # 479-45-8 Purity 99% (Lot 091120JLM)	1,000.0 µg/mL	+/- 5.9397	µg/mL	Gravimetric
			+/- 54.7830	µg/mL	Unstressed
			+/- 63.8824	µg/mL	Stressed
2	4-Amino-2,6-dinitrotoluene CAS # 19406-51-0 Purity 99% (Lot ER070908-01)	1,002.0 µg/mL	+/- 5.9516	µg/mL	Gravimetric
			+/- 54.8926	µg/mL	Unstressed
			+/- 64.0101	µg/mL	Stressed
3	2-Amino-4,6-dinitrotoluene CAS # 35572-78-2 Purity 98% (Lot 29550-55)	1,007.4 µg/mL	+/- 5.9839	µg/mL	Gravimetric
			+/- 55.1906	µg/mL	Unstressed
			+/- 64.3577	µg/mL	Stressed
4	2,6-Dinitrotoluene CAS # 606-20-2 Purity 99% (Lot BCBB8606V)	1,000.0 µg/mL	+/- 5.9397	µg/mL	Gravimetric
			+/- 54.7830	µg/mL	Unstressed
			+/- 63.8824	µg/mL	Stressed
5	2-Nitrotoluene CAS # 88-72-2 Purity 99% (Lot GA01)	1,004.0 µg/mL	+/- 5.9635	µg/mL	Gravimetric
			+/- 55.0021	µg/mL	Unstressed
			+/- 64.1379	µg/mL	Stressed
6	4-Nitrotoluene CAS # 99-99-0 Purity 99% (Lot FAU01)	1,002.0 µg/mL	+/- 5.9516	µg/mL	Gravimetric
			+/- 54.8926	µg/mL	Unstressed
			+/- 64.0101	µg/mL	Stressed
7	3-Nitrotoluene CAS # 99-08-1 Purity 98% (Lot FBO01)	1,003.5 µg/mL	+/- 5.9606	µg/mL	Gravimetric
			+/- 54.9758	µg/mL	Unstressed
			+/- 64.1072	µg/mL	Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

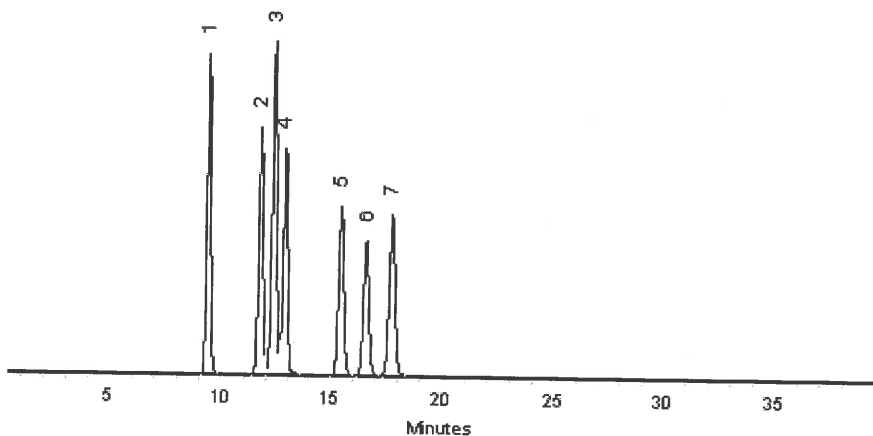
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

Mobile Phase B:

Mobile Phase Composition:
100%A

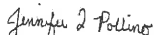
Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Matt Fragassi - Mix Technician

Date Mixed: 23-Aug-2018 Balance: B345965662


Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 28-Aug-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

Reagent

8330PAsTkPS_00057



CERTIFICATE OF ANALYSIS

Catalog No: M-8330-ADD-3

Description: Picric acid

Lot: 218031154

Solvent: Acetonitrile (50%)

Methanol (50%)

Hazards: Refer to SDS for complete safety information

Date Certified: Mar 12, 2018

Expiration: Apr 12, 2020

Sample Size: 1 mL

Components: 1

Storage Condition: Ambient (>5 °C)

Included on ISO/IEC 17025 Scope of Accreditation: Yes

Included on ISO Guide 34 Scope of Accreditation: Yes



Signal Word: Danger

Component	CAS #	Purity % (HPLC)	Prepared Concentration ¹ (µg/mL)	Certified Analyte Concentration ² (µg/mL)
Picric acid	88-89-1	99.1	100.1	99.2

A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

¹ All weights are traceable through NIST Test No. 822-275872-11

² Certified Analyte Concentration = Purity x Prepared Concentration.

The Uncertainty associated with the certified concentration reported on this certificate is $\pm 2.4\%$. This value is the combined expanded uncertainty and represents an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Labels and certificates follow U.S. Conventions in reporting numerical values: A comma (,) is used to separate units of one-thousand or greater. A period (.) is used as a decimal place marker.

The information on this certificate may not be reproduced without the express permission of the manufacturer. See reverse side for additional information

Certified By:

Larry Decker, Organic QC Manager

Reagent

8330PAsTkPS_00058



CERTIFICATE OF ANALYSIS

Catalog No: M-8330-ADD-3

Description: Picric acid

Lot: 216061376-01

Solvent: Acetonitrile (50%)

Methanol (50%)

Hazards: Refer to SDS for complete safety information

Date Certified: Jun 19, 2017

Expiration: Jul 19, 2019

Sample Size: 1 mL

Components: 1

Storage Condition: Ambient (>5 °C)

Included on ISO/IEC 17025 Scope of Accreditation: Yes

Included on ISO Guide 34 Scope of Accreditation: Yes



Signal Word: Danger

Component	CAS #	Purity % (HPLC)	Prepared Concentration ¹ (µg/mL)	Certified Analyte Concentration ² (µg/mL)
Picric acid	88-89-1	99.1	100.1	99.2

A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

¹ All weights are traceable through NIST, Test No. 822-275872-11

² Certified Analyte Concentration = Purity x Prepared Concentration.

The Uncertainty associated with the gravimetric values reported on this certificate is $\pm 0.24\%$. This value is the expanded uncertainty and represents an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Labels and certificates follow U.S. Conventions in reporting numerical values: A comma (,) is used to separate units of one-thousand or greater. A period (.) is used as a decimal place marker.

See reverse side for additional information

Certified By:

Larry Decker, Organic QC Manager

Reagent

8330SurrStkSS_00128



CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 31453 Lot No.: A0124792
Description: 8330 Surrogate Mix
8330 Surrogate Std 1, 2-Dinitrobenzene 1000µg/mL, Methanol, 1mL/ampul
Container Size: 2 mL Pkg Amt: > 1 mL
Expiration Date: February 28, 2022 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1,2-Dinitrobenzene CAS # 528-29-0 Purity 99% (Lot MKBW2921V)	1,006.0 µg/mL	+/- 5.9753 µg/mL Gravimetric +/- 56.4187 µg/mL Unstressed +/- 57.7382 µg/mL Stressed

Solvent: Methanol
CAS # 67-56-1
Purity 99%

Reagent

8330SurrStkSS_00129



CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 31453 Lot No.: A0124792
Description: 8330 Surrogate Mix
8330 Surrogate Std 1, 2-Dinitrobenzene 1000µg/mL, Methanol, 1mL/ampul
Container Size: 2 mL Pkg Amt: > 1 mL
Expiration Date: February 28, 2022 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1,2-Dinitrobenzene CAS # 528-29-0 Purity 99% (Lot MKBW2921V)	1,006.0 µg/mL	+/- 5.9753 µg/mL Gravimetric +/- 56.4187 µg/mL Unstressed +/- 57.7382 µg/mL Stressed

Solvent: Methanol
CAS # 67-56-1
Purity 99%

Reagent

8330SurrStkSS_00134



CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31453 **Lot No.:** A0124792

Description : 8330 Surrogate Mix

8330 Surrogate Std 1, 2-Dinitrobenzene 1000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : February 28, 2022 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1,2-Dinitrobenzene CAS # 528-29-0 Purity 99% (Lot MKBW2921V)	1,006.0 µg/mL	+/- 5.9753 µg/mL Gravimetric +/- 56.4187 µg/mL Unstressed +/- 57.7382 µg/mL Stressed

Solvent: Methanol
CAS # 67-56-1
Purity 99%

Reagent

8330SurrStkSS_00135



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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 31453 Lot No.: A0124792
Description: 8330 Surrogate Mix
8330 Surrogate Std 1, 2-Dinitrobenzene 1000µg/mL, Methanol, 1mL/ampul
Container Size: 2 mL Pkg Amt: > 1 mL
Expiration Date: February 28, 2022 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1,2-Dinitrobenzene CAS # 528-29-0 Purity 99% (Lot MKBW2921V)	1,006.0 µg/mL	 +/- 5.9753 µg/mL Gravimetric +/- 56.4187 µg/mL Unstressed +/- 57.7382 µg/mL Stressed

Solvent: Methanol
CAS # 67-56-1
Purity 99%

Reagent

8330SurrStkSS_00151



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31453 Lot No.: A0139489
Description : 8330 Surrogate Mix
8330 Surrogate Mix 1000 µg/mL, Methanol, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : July 31, 2023 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L., K=2)			
1	1,2-Dinitrobenzene CAS # 528-29-0 Purity 99% (Lot MKBW2921V)	1,001.0 µg/mL	+/- 5.9456	µg/mL	Gravimetric	
			+/- 56.1383	µg/mL	Unstressed	
			+/- 57.4512	µg/mL	Stressed	

Solvent: Methanol
CAS # 67-56-1
Purity 99%

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

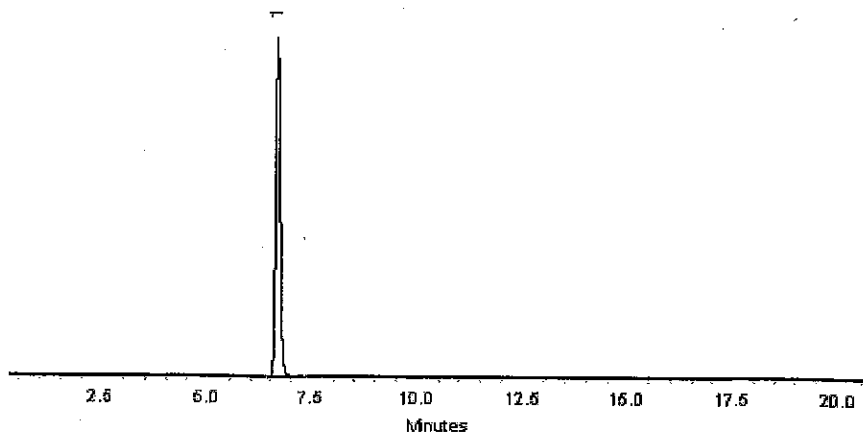
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

Mobile Phase B:

Mobile Phase Composition:
100%A

Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Joseph Jaglowski
Joseph Jaglowski - Mix Technician

Date Mixed: 10-Jul-2018

Balance: B707717271

Jennifer Pollino
Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 17-Jul-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

Reagent

8330SurrStkSS_00152



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31453 Lot No.: A0139489
Description : 8330 Surrogate Mix
8330 Surrogate Mix 1000 µg/mL, Methanol, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : July 31, 2023 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L., K=2)			
1	1,2-Dinitrobenzene CAS # 528-29-0 Purity 99% (Lot MKBW2921V)	1,001.0 µg/mL	+/- 5.9456	µg/mL	Gravimetric	
			+/- 56.1383	µg/mL	Unstressed	
			+/- 57.4512	µg/mL	Stressed	

Solvent: Methanol
CAS # 67-56-1
Purity 99%

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

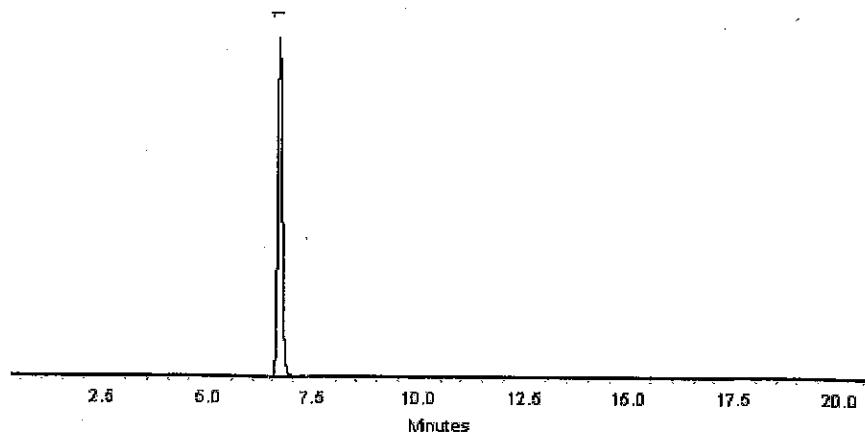
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

Mobile Phase B:

Mobile Phase Composition:
100%A

Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Joseph Jaglowski
Joseph Jaglowski - Mix Technician

Date Mixed: 10-Jul-2018

Balance: B707717271

Jennifer Pollino
Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 17-Jul-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

Reagent

8330SurrStkSS_00153



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31453 Lot No.: A0139489
Description : 8330 Surrogate Mix
8330 Surrogate Mix 1000 µg/mL, Methanol, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : July 31, 2023 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L., K=2)			
1	1,2-Dinitrobenzene CAS # 528-29-0 Purity 99% (Lot MKBW2921V)	1,001.0 µg/mL	+/- 5.9456	µg/mL	Gravimetric	
			+/- 56.1383	µg/mL	Unstressed	
			+/- 57.4512	µg/mL	Stressed	

Solvent: Methanol
CAS # 67-56-1
Purity 99%

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

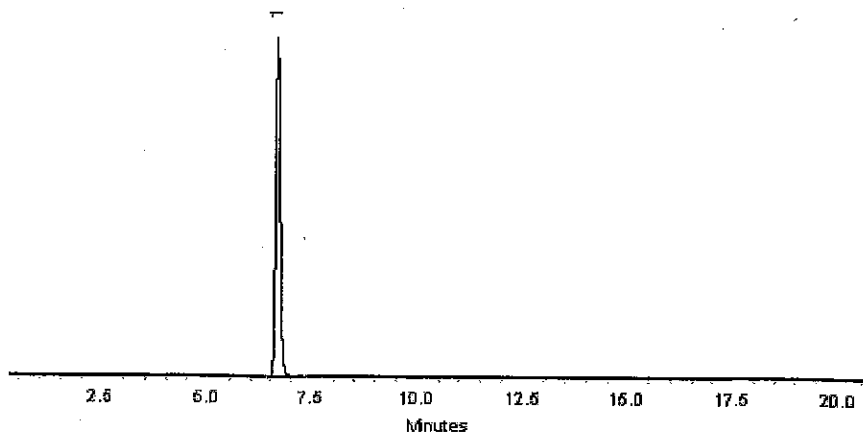
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

Mobile Phase B:

Mobile Phase Composition:
100%A

Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Joseph Jaglowski
Joseph Jaglowski - Mix Technician

Date Mixed: 10-Jul-2018

Balance: B707717271

Jennifer Pollino
Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 17-Jul-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

Reagent

8330SurrStkSS_00154



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31453 Lot No.: A0139489
Description : 8330 Surrogate Mix
8330 Surrogate Mix 1000 µg/mL, Methanol, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : July 31, 2023 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L., K=2)			
1	1,2-Dinitrobenzene CAS # 528-29-0 Purity 99% (Lot MKBW2921V)	1,001.0 µg/mL	+/- 5.9456	µg/mL	Gravimetric	
			+/- 56.1383	µg/mL	Unstressed	
			+/- 57.4512	µg/mL	Stressed	

Solvent: Methanol
CAS # 67-56-1
Purity 99%

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

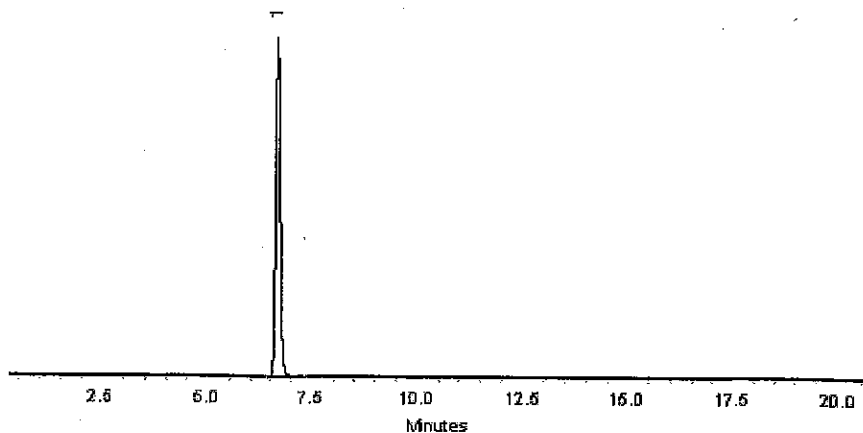
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

Mobile Phase B:

Mobile Phase Composition:
100%A

Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Joseph Jaglowski
Joseph Jaglowski - Mix Technician

Date Mixed: 10-Jul-2018

Balance: B707717271

Jennifer Pollino
Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 17-Jul-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

Reagent

8330SurrStkSS_00156



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31453 Lot No.: A0139489
Description : 8330 Surrogate Mix
8330 Surrogate Mix 1000 µg/mL, Methanol, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : July 31, 2023 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L., K=2)			
1	1,2-Dinitrobenzene CAS # 528-29-0 Purity 99% (Lot MKBW2921V)	1,001.0 µg/mL	+/- 5.9456	µg/mL	Gravimetric	
			+/- 56.1383	µg/mL	Unstressed	
			+/- 57.4512	µg/mL	Stressed	

Solvent: Methanol
CAS # 67-56-1
Purity 99%

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

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- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

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$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

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0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

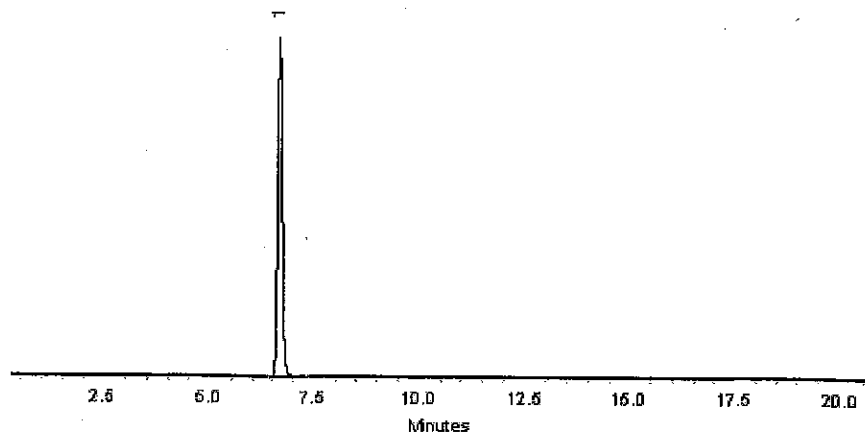
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

Mobile Phase B:

Mobile Phase Composition:
100%A

Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Joseph Jaglowski
Joseph Jaglowski - Mix Technician

Date Mixed: 10-Jul-2018

Balance: B707717271

Jennifer Pollino
Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 17-Jul-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

Reagent

8330SurrStock_00163



CERTIFICATE OF ANALYSIS

Catalog No: M-8330-SS

Description: 1,2-Dinitrobenzene

Lot: 216071012

Solvent: Methanol

Hazards: **HIGHLY FLAMMABLE** - Refer to SDS for safety info

Date Certified: Jul 1, 2016

Expiration: Jul 1, 2026

Sample Size: 1 mL

Components: 1

Storage Condition: Ambient (>5 °C)

Included on ISO/IEC 17025 Scope of Accreditation: Yes

Included on ISO Guide 34 Scope of Accreditation: Yes



Danger 2

Component	CAS #	Purity % (GC/FID)	Prepared Concentration ¹ (µg/mL)	Certified Analyte Concentration ² (µg/mL)
1,2-Dinitrobenzene	528-29-0	100.0	100.1	1001

A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

¹ All weights are traceable through NIST, Test No. 622-275872-11

² Certified Analyte Concentration = Purity x Prepared Concentration. The Uncertainty associated with the gravimetric values reported on this certificate is ±0.24%. The CRM Uncertainty calculated for this product is ±5%. These values are the expanded uncertainty and represent an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Labels and certificates follow U.S. Conventions in reporting numerical values: A comma (,) is used to separate units of one-thousand or greater. A period (.) is used as a decimal place marker.

See reverse side for additional information

Certified By:

Larry Dacker, Organic QC Manager

Reagent

AR_1248_RES_00013



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 32010 Lot No.: A0130978
Description : Aroclor® 1248 Standard
Aroclor® 1248 Standard 1,000µg/mL, Hexane, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : December 31, 2023 Storage: 25°C nominal
Handling: This product contains PCBs.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Aroclor 1248	1,001.6 µg/mL	+/- 5.8779 µg/mL	Gravimetric
	CAS # 12672-29-6 (Lot W-108-07)		+/- 31.7447 µg/mL	Unstressed
	Purity ----%		+/- 41.4691 µg/mL	Stressed

Solvent: Hexane
CAS # 110-54-3
Purity 99%

Reagent

AR_1248_RESss_00011

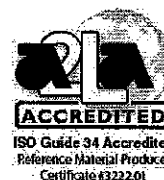


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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 32010.SEC Lot No.: A0124143
Description : Aroclor® 1248 Standard
Aroclor® 1248 Standard 1,000µg/mL, Hexane, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : April 30, 2023 Storage: 25°C nominal
Handling: This product contains PCBs.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Aroclor 1248	1,008.0 µg/mL	+/- 5.9872 µg/mL Gravimetric
	CAS # 12672-29-6.SEC (Lot 106-248)		+/- 31.9609 µg/mL Unstressed
	Purity ----%		+/- 41.7443 µg/mL Stressed

Solvent: Hexane
CAS # 110-54-3
Purity 99%

Reagent

AR_1660_RES_00002



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 32039 **Lot No.:** A0134815

Description : Aroclor® 1016/1260 Mix
Aroclor® 1016/1260 Mix 1,000 µg/mL, Hexane, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : May 31, 2024 **Storage:** 25°C nominal

Handling: This product contains PCBs.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Aroclor 1016 CAS # 12674-11-2 (Lot 164887) Purity ----%	1,001.3 µg/mL	+/- 5.8348 µg/mL Gravimetric +/- 31.7260 µg/mL Unstressed +/- 41.4488 µg/mL Stressed
2	Aroclor 1260 CAS # 11096-82-5 (Lot 155463) Purity ----%	1,000.0 µg/mL	+/- 5.8275 µg/mL Gravimetric +/- 31.6864 µg/mL Unstressed +/- 41.3971 µg/mL Stressed

Solvent: Hexane
CAS # 110-54-3
Purity 99%

Reagent

AR_1660_RESss_00011

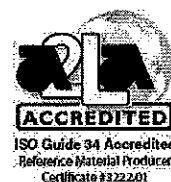


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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 32039.SEC Lot No.: A0133256
Description : Aroclor® 1016/1260 Mix
Aroclor® 1016/1260 Mix 1,000µg/mL, Hexane, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : March 31, 2024 Storage: 25°C nominal
Handling: This product contains PCBs.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Aroclor 1016	1,008.0 µg/mL	+/- 5.9872	µg/mL Gravimetric
	CAS # 12674-11-2.SEC (Lot NTO1016)		+/- 31.9609	µg/mL Unstressed
	Purity ----%		+/- 41.7443	µg/mL Stressed
2	Aroclor 1260	1,004.0 µg/mL	+/- 5.9635	µg/mL Gravimetric
	CAS # 11096-82-5.SEC (Lot 021-020-1A)		+/- 31.8340	µg/mL Unstressed
	Purity ----%		+/- 41.5787	µg/mL Stressed

Solvent: Hexane
CAS # 110-54-3
Purity 99%

Reagent

AR_2154_RES_00002



110 Benner Circle
 Bellefonte, PA 16823-8812
 Tel: (800)356-1688
 Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569745 Lot No.: A0131802
 Description : PCB-1221/1254 Standard
PCB-1221/1254 Standard 1,000µg/mL, Hexane, 1mL/ampul
 Container Size : 2 mL Pkg Amt: > 1 mL
 Expiration Date : January 31, 2024 Storage: 25°C nominal
 Handling: This product contains PCBs.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)			
1	Aroclor 1221	1,006.0 µg/mL	+/-	5.9753	µg/mL	Gravimetric
	CAS # 11104-28-2 (Lot 2781200)		+/-	31.8975	µg/mL	Unstressed
	Purity ---%		+/-	41.6615	µg/mL	Stressed
2	Aroclor 1254	1,002.0 µg/mL	+/-	5.9516	µg/mL	Gravimetric
	CAS # 11097-69-1 (Lot 124-191-B)		+/-	31.7706	µg/mL	Unstressed
	Purity ---%		+/-	41.4958	µg/mL	Stressed

Solvent: Hexane
 CAS # 110-54-3
 Purity 99%

Reagent

AR_2154_RESss_00002



110 Benner Circle
 Bellefonte, PA 16823-8812
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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569745.SEC **Lot No.:** A0131779

Description : PCB-1221/1254 Standard
 PCB-1221/1254 Standard 1,000µg/mL, Hexane, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : January 31, 2024 **Storage:** 25°C nominal

Handling: This product contains PCBs.

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)			
1	Aroclor 1221		1,000.0 μg/mL	+/-	5.9397	μg/mL	Gravimetric
	CAS #	11104-28-2.SEC (Lot W-126-07)		+/-	31.7072	μg/mL	Unstressed
	Purity	----%		+/-	41.4130	μg/mL	Stressed
2	Aroclor 1254		1,002.0 μg/mL	+/-	5.9516	μg/mL	Gravimetric
	CAS #	11097-69-1.SEC (Lot RM00922)		+/-	31.7706	μg/mL	Unstressed
	Purity	----%		+/-	41.4958	μg/mL	Stressed
Solvent:	Hexane						
	CAS #	110-54-3					
	Purity	99%					

Reagent

AR_3262_RES_00002

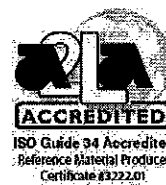


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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



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Catalog No. : 569746 **Lot No.:** A0132023

Description : PCB-1232/1262 Standard
PCB-1232/1262 Standard 1,000µg/mL, Hexane, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : January 31, 2024 **Storage:** 25°C nominal

Handling: This product contains PCBs.

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)				
1	Aroclor 1232		1,004.0 μg/mL	+/-	5.9635	μg/mL	Gravimetric	
	CAS #	11141-16-5		(Lot W-107-05)	+/-	31.8340	μg/mL	Unstressed
	Purity	----%			+/-	41.5787	μg/mL	Stressed
2	Aroclor 1262		1,002.0 μg/mL	+/-	5.9516	μg/mL	Gravimetric	
	CAS #	37324-23-5		(Lot 3067100)	+/-	31.7706	μg/mL	Unstressed
	Purity	----%			+/-	41.4958	μg/mL	Stressed
Solvent:		Hexane						
	CAS #	110-54-3						
	Purity	99%						

Reagent

AR_4268_RES_00002



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569747 Lot No.: A0133093
Description : PCB-1242/1268 Standard
PCB-1242/1268 Standard 1,000µg/mL, Hexane, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : March 31, 2024 Storage: 25°C nominal
Handling: This product contains PCBs.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)			
1	Aroclor 1242	1,008.0 µg/mL	+/-	5.9872	µg/mL	Gravimetric
	CAS # 53469-21-9 (Lot 01141-A)		+/-	31.9609	µg/mL	Unstressed
	Purity ----%		+/-	41.7443	µg/mL	Stressed
2	Aroclor 1268	1,000.0 µg/mL	+/-	5.9397	µg/mL	Gravimetric
	CAS # 11100-14-4 (Lot 2743900)		+/-	31.7072	µg/mL	Unstressed
	Purity ----%		+/-	41.4130	µg/mL	Stressed
Solvent:	Hexane					
	CAS # 110-54-3					
	Purity 99%					

Reagent

AR_SURR_RES_00089



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 32000 Lot No.: A0130424
Description : Pesticide Surrogate Mix
Pesticide Surrogate Mix 200 µg/mL, Acetone, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : November 30, 2023 Storage: 10°C or colder
Handling: Contains PCBs - sonicate prior to use.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)			
1	2,4,5,6-Tetrachloro-m-xylene	201.2 µg/mL	+/-	1.1725	µg/mL	Gravimetric
	CAS # 877-09-8 (Lot 0052481)		+/-	6.3751	µg/mL	Unstressed
	Purity 98%		+/-	8.3288	µg/mL	Stressed
2	Decachlorobiphenyl (BZ# 209)	201.5 µg/mL	+/-	1.1742	µg/mL	Gravimetric
	CAS # 2051-24-3 (Lot ER071509-01)		+/-	6.3848	µg/mL	Unstressed
	Purity 99%		+/-	8.3415	µg/mL	Stressed

Solvent: Acetone
CAS # 67-64-1
Purity 99%

1-19-18

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

AR_SURR_RES_00101



CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 32000 Lot No.: A0141110
Description: Pesticide Surrogate Mix
Pesticide Surrogate Mix 200 µg/mL, Acetone, 1mL/ampul
Container Size: 2 mL Pkg Amt: > 1 mL
Expiration Date: November 30, 2024 Storage: 10°C or colder
Handling: Contains PCBs - sonicate prior to use.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)			
1	2,4,5,6-Tetrachloro-m-xylene	201.4 µg/mL				
	CAS # 877-09-8 (Lot 0052481)		+/-	1.1736	µg/mL	Gravimetric
	Purity 98%		+/-	6.3813	µg/mL	Unstressed
			+/-	8.3370	µg/mL	Stressed
2	Decachlorobiphenyl (BZ# 209)	200.6 µg/mL				
	CAS # 2051-24-3 (Lot ER071509-01)		+/-	1.1690	µg/mL	Gravimetric
	Purity 99%		+/-	6.3563	µg/mL	Unstressed
			+/-	8.3043	µg/mL	Stressed
Solvent:	Acetone					
	CAS # 67-64-1					
	Purity 99%					

Column:

30m x .25mm x .2um
Rtx-CLP II (cat.# 11323)

Carrier Gas:

helium-constant pressure 20 psi.

Temp. Program:

200°C to 300°C
@ 25°C/min. (hold 10 min.)

Inj. Temp:

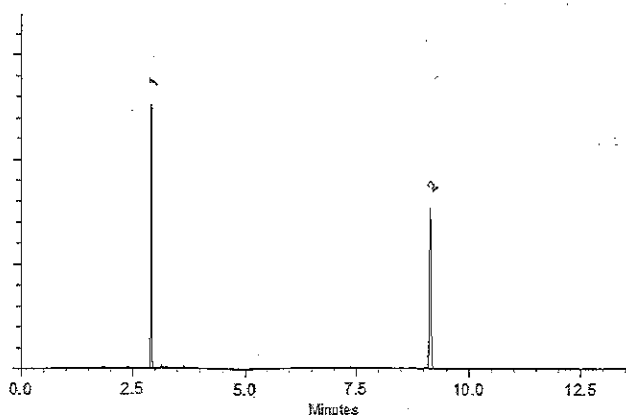
250°C

Det. Temp:

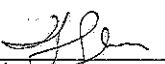
300°C

Det. Type:

ECD

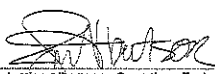


This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Tom Suckar - Mix Technician

Date Mixed: 29-Aug-2018

Balance: B707717271


Justin Albertson - Operations Tech-AROM GC

Date Passed: 04-Sep-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/ μ ECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

AR_SURR_RES_00105



CERTIFIED REFERENCE MATERIAL

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Fax: (814)353-1309

www.restek.com

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 32000 Lot No.: A0141110
Description : Pesticide Surrogate Mix
Pesticide Surrogate Mix 200 µg/mL, Acetone, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : November 30, 2024 Storage: 10°C or colder
Handling: Contains PCBs - sonicate prior to use.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)			
1	2,4,5,6-Tetrachloro-m-xylene	201.4 µg/mL	+/- 1.1736	µg/mL	Gravimetric	
	CAS # 877-09-8 (Lot 0052481)		+/- 6.3813	µg/mL	Unstressed	
	Purity 98%		+/- 8.3370	µg/mL	Stressed	
2	Decachlorobiphenyl (BZ# 209)	200.6 µg/mL	+/- 1.1690	µg/mL	Gravimetric	
	CAS # 2051-24-3 (Lot ER071509-01)		+/- 6.3563	µg/mL	Unstressed	
	Purity 99%		+/- 8.3043	µg/mL	Stressed	

Solvent: Acetone
CAS # 67-64-1
Purity 99%

Column:

30m x .25mm x .2um
Rtx-CLP II (cat.# 11323)

Carrier Gas:

helium-constant pressure 20 psi.

Temp. Program:

200°C to 300°C
@ 25°C/min. (hold 10 min.)

Inj. Temp:

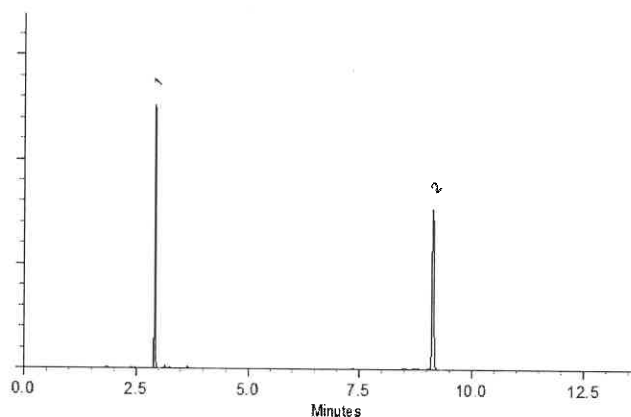
250°C

Det. Temp:

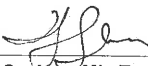
300°C

Det. Type:

ECD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Tom Suckar - Mix Technician

Date Mixed: 29-Aug-2018

Balance: B707717271


Justine Albertson - Operations Tech-ARM QC

Date Passed: 04-Sep-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

Reagent

BNB stock_00017



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 32279 Lot No.: A0127264
Description : 1-Bromo-2-nitrobenzene Standard
1-Bromo-2-nitrobenzene Standard 1000 µg/mL, Acetone, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : August 31, 2020 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1-Bromo-2-nitrobenzene CAS # 577-19-5 (Lot 643872/1) Purity 99%	1,004.0 µg/mL	+/- 5.9635 µg/mL Gravimetric +/- 56.3065 µg/mL Unstressed +/- 57.6234 µg/mL Stressed

Solvent: Acetone
CAS # 67-64-1
Purity 99%

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

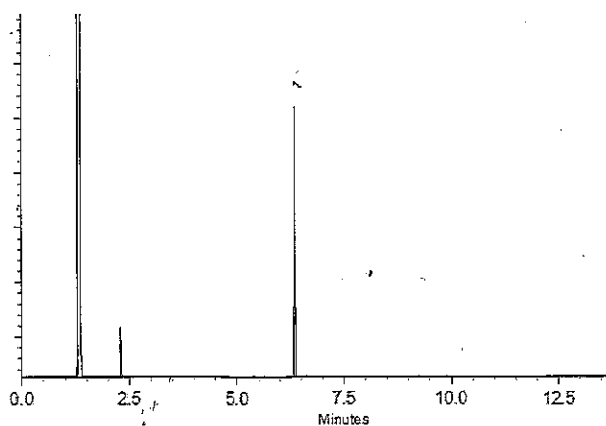
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

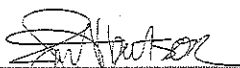
Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Matt Fragassi - Mix Technician

Date Mixed: 03-May-2017 Balance: B345965662


Justine Albertson - Operations Tech-ARM QC

Date Passed: 05-May-2017

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

CN CAL Std_00067

Certificate of Analysis

Cyanide Standard, 1000 ppm CN⁻

Lot Number: 4901A12

Product Number: 2543

Manufacture Date: JAN 11, 2019

Expiration Date: JUL 2019

This standard is prepared using accurate volumetric techniques from material that has been assayed against Silver Nitrate solution certified traceable to NIST Standard Reference Material 999. The certified value reported is the prepared value based upon the method of preparation of the material. The uncertainty in the prepared value is the combined uncertainty based on the stability of the assayed Potassium Cyanide, and the uncertainty in the mass and volume measurements.

Use 0.16% (w/v) (0.04 N) Sodium Hydroxide or 0.225 % (w/v) (0.04 N) Potassium Hydroxide to make dilutions of this standard. Restandardize weekly if extreme accuracy is required.

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Potassium Cyanide	151-50-8	ACS
Sodium Hydroxide	1310-73-2	Reagent

Test	Specification	Result
Appearance	Colorless liquid	Passed
Cyanide (CN ⁻)	995-1005 ppm	1000 ppm

Specification	Reference
Stock Standard Cyanide Solution	APHA (4500-CN- F)
Stock Cyanide Solution	APHA (4500-CN- E)
Stock Cyanide Solution	APHA (4500-CN- K)
Stock Cyanide Solution	APHA (4500-CN- H)
Cyanide Reference Solution (1000 mg/L)	EPA (SW-846) (7.3.3.2)
Cyanide Calibration Stock Solution (1,000 mg/L CN ⁻)	EPA (SW-846) (9213)
Stock Cyanide Solution	EPA (335.3)
Stock Cyanide Solution	EPA (335.2)
Cyanide Solution Stock	ASTM (D 4282)
Simple Cyanide Solution, Stock (1.0 g/L CN ⁻)	ASTM (D 4374)

Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
2543-16	500 mL amber poly	6 months
2543-4	120 mL amber poly	6 months

Recommended Storage: 2°C - 8°C (36°F - 46°F)



Jim Gibbs (01/11/2019)

Quality Control Supervisor

This Certificate of Analysis is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."

This test report shall not be reproduced, except in full, without the written approval of Ricca Chemical Company.

Reagent

CN ICV Std_00057



SPEXertificate®

Certificate of Reference Material



Catalog Number: RSCN9-2X

Lot No. 13-79YPX

Description: 1000 µg/mL Simple Cyanide

Matrix: 2% KOH

This Cyanide Certified Reference Material, CRM, is intended primarily for use as a calibration standard or quality control standard for titrimetric method. It can be employed in USEPA, ASTM and other methods relevant to the certified properties listed below.

Certified Value: 1000 µg/mL ±50 µg/mL

The CRM is prepared gravimetrically using high purity Potassium Cyanide, Lot# 09181E. See side 2 for details of certification.

Certified By:

Titration with AgNO₃ using Rhodanine as indicator. AgNO₃ standardized against NaCl NIST SRM #919b.

Uncertified Properties:

Trace Impurities in the Solution (derived from starting material):

Ion	µg/mL	Ion	µg/mL
Cl ⁻	<0.5	SCN ⁻	<0.3
PO ₄ ⁻³	<0.1	SO ₄ ⁻²	<0.3
S ⁻²	<0.01		

Balances are calibrated regularly with weight sets traceable to NIST #32856, #32867 and others. This CRM is guaranteed stable and accurate to ±5% of certified concentration for a period of three months from the date of certification. This includes uncertainty components associated with measurements, homogeneity by the most precise method, and short-term and long-term stability. For these solutions, we use high purity reagents, 18 megohm double deionized water, and triple rinsed bottles. All glassware used is Class A. This guarantee is valid only when the material is kept tightly capped and stored under ambient laboratory conditions.

Date of Certification: _____

Certifying Officer: _____

Katherine Cullinan
Katherine Cullinan, QC Manager

Page 1 of 2
Rev. 0

Report of Certification

This Certified Reference Material (CRM) has been prepared and certified under an ISO 9001 (certified by DQS), ISO 17025 (accredited by A2LA) and ISO 17034 (accredited by A2LA) quality system consistent with the following guides:

- ISO 9001: Quality management systems – Requirements
- ISO/IEC 17025: General requirements for the competence of testing and calibration laboratories
- ISO 17034: General requirements for the competence of reference material producers
- ISO Guide 30: Reference Materials – Selected terms and definitions
- ISO Guide 31: Reference Materials – Contents of certificates and labels
- ISO Guide 35: Reference Materials – General and principals for certification
- Guide to the Expression of Uncertainty in Measurement, 2008
- EURACHEM/CITAC Guide: Qualifying Uncertainty in Analytical Measurement – Third Edition
- NIST Technical Note 1297

Material Source:

All analytes and matrix materials are obtained and verified by SPEX CertiPrep from pre-qualified vendors as per ISO 9001, ISO 17025, and ISO 17034 guidelines. Vendor identifications are proprietary; however, sources of all materials used in the preparation and testing of SPEX CertiPrep CRMs are tracked and documented. For further assistance, please contact Sales Support at crmsales@spexcsp.com.

Instructions for Use:

Primary usage of this CRM is in neat form or diluted serially with matrix of a purity at or greater than the purity of the original matrix solution. If dilution is required, the diluent must be compatible with all certified analytes and contain stabilizers appropriate for the period of intended use. The CRM can also be used as a spike or with a spike, again with appropriate compatibility considerations. All solutions should be thoroughly mixed, by shaking, prior to use and never pipetted directly from the bottle. Do not return excess solution to the bottle. All surfaces that come in contact with the solution must be thoroughly cleaned and leached prior to use. Dilutions should be performed only with Class A volumetric glassware. See SDS for health and safety information.

Method of Preparation:

Clean laboratory procedures and techniques have been used throughout the preparation. All materials, equipment, analytical instrumentation and personnel have been qualified prior to use. The highest purity acids applicable, 18 megohm, double deionized water, acid-leached triple-rinsed bottles (where appropriate), and Class A/calibrated volumetrics have been used in all preparations.

Homogeneity:

The homogeneity of the CRM has been confirmed by procedures consistent with ISO 17025, ISO 17034, and ASTM D6362-98 Appendix X2. Random, replicate samples of the final, packaged material have been analyzed to prove homogeneity in accordance with our internal procedure 4600-HOMOGEN-1A. Since the product is highly homogeneous, any sample size taken for analysis would be within the uncertainty budget. This is consistent with the intended use of the CRM.

Statistical Estimator and Confidence Limits:

The certified value 'X' listed on the reverse of this document is at the 95% level of confidence and can be expressed as:

- $X = x \pm U$ where X=certified value, U=expanded uncertainty, x=property value
- $U = k u_c$ where k=2 is the coverage factor at the 95% confidence level
- u_c =combined standard uncertainty obtained by combining the individual element standard uncertainty components u_i , and $u_c = \sqrt{\sum u_i^2}$

Certification Report:

All certified values reported were derived from the Certification Report, SPEX CertiPrep's traceability documentation, identified by the lot number of this CRM. During the stated period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution. For further assistance, please contact Sales Support at crmsales@spexcsp.com.

Legal Notice:

SPEX CertiPrep reference materials are not for any cosmetic, drug or household application and are to be used only by qualified individuals who are trained in appropriate procedures. No claims against SPEX CertiPrep, LLC. of any kind whatsoever, whether based on breach of warranty, alleged negligence, or otherwise, with respect to this Reference Material shall be greater than the purchase price. In no event shall SPEX CertiPrep, LLC. be liable for any loss of profits or any incidental, special, or consequential damages.

SPEX CertiPrep 

Your Science is Our Passion.®

203 Norcross Ave, Metuchen, NJ 08840
www.spexcrtiprep.com • E-mail: crmsales@spexcsp.com
Phone: 1-800-LAB-SPEX • Fax: 732-603-9647
Page 652 of 3784



Reagent

DOD_ADD_SURR_00002

Date Received: _____

Certificate of Analysis

Rev 0

Page 1 of 1

Catalog No.:	Lot No.:	Storage:	Solvent:	Exp. Date:	Description:
116210-03	334026	≤ -10 °C	Methylene Chloride	22-Jan-2020	2-Methylnaphthalene-d10 and Fluoranthene-d10 Solution, 1,000 mg/L, 1 mL

Compound	CAS No.	Purity (%)	Neat Material Lot No.	Concentration
fluoranthene-d ₁₀	93951-69-0	98	1458.12.1P	994.7 +/- 11.26 mg/L
2-methylnaphthalene-d ₁₀	7297-45-2	98	1457.18.1P	994.7 +/- 50.01 mg/L

Certified By: _____

Jarrett Howard

Jarrett Howard

Manufacture Date 22-Jan-2018

Follow all storage requirements, keep tightly closed when not in use, and use good laboratory practices when handling.
This Reference Material was manufactured, produced, and/or certified under a quality management system that is accredited to ISO 17034 and ISO/IEC 17025.

All weights are traceable through N. I. S. T. Test No. 822/264157-00.
Concentration (correct for purity) and uncertainty (95% confidence) values listed are determined gravimetrically.

The stated uncertainty is the expanded uncertainty with a coverage factor of two to give a 95% confidence level.

Reagent

DOD_ADD_SURR_00004



Quality System Audited & Registered
by NSF-ISR to ISO 9001:2008

2030 Savage Road
Charleston, South Carolina 29407
Phone: 866.272.0932
Fax: 866.509.5146
www.o2si.com



ISO 17025 Accredited Chemical Testing Lab
Cert. No. 3031.01

Date Received: _____

Certificate of Analysis

Rev 0

Page 1 of 1

Catalog No.:	Lot No.:	Storage:	Solvent:	Exp. Date:	Description:
116210-03	334026	≤ -10 °C	Methylene Chloride	22-Jan-2020	2-Methylnaphthalene-d10 and Fluoranthene-d10 Solution, 1,000 mg/L, 1 mL

Compound	CAS No.	Purity (%)	Neat Material Lot No.	Concentration
fluoranthene-d ₁₀	93951-69-0	98	1458.12.1P	994.7 +/- 11.26 mg/L
2-methylnaphthalene-d ₁₀	7297-45-2	98	1457.18.1P	994.7 +/- 50.01 mg/L

Jarrett Howard

Certified By: _____

Jarrett Howard

Manufacture Date 22-Jan-2018

Follow all storage requirements, keep tightly closed when not in use,
and use good laboratory practices when handling.
*This Reference Material was manufactured, produced, and/or certified
under a quality management system that is accredited to ISO 17034
and ISO/IEC 17025.*

All weights are traceable through N. I. S. T. Test No. 822/264157-00.
Concentration (correct for purity) and uncertainty (95% confidence) values
listed are determined gravimetrically.

The stated uncertainty is the expanded uncertainty with a coverage factor of
two to give a 95% confidence level.

Reagent

Hg ICV Stock_00011

Standard Verification Form

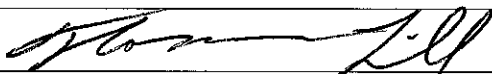
Standard Information			
Vendor Standard Name	MSHG-100PPM		
Vendor	INORGANIC VENTURES		
Lot number	M2-HG659091		
Initial Verification	☐	Re-Verification	☒

TALS "Reagent" Information	
TALS Standard ID	H ₂ IGV STOCK (00011)
COA Reviewed against what is in TALS	☒

Verification Information and Data			
Verified by	MS	Instrument ID	033
Verification Date	3/1/19	Method Reference	7470A
ID of Standard Used for Verification	H ₂ ULTRA PRIM (00014)	Batch # / Chrom Work List #	445491
Attach to this form: formulary report, COA and data used for verification Attach to standard in TALS: this form and all supporting documentation including the original CoA			
See Acceptance Criteria Below:			
Approved for Use	☒	Not Approved for Use	☐
New expiration date can be no greater than 1/2 the designated standards shelf life from the date of re-verification. Standards can only be re-verified one time.			
New Expiration Date:			

1st Level Review MS Date: 3/5/19

2nd Level Review D6 Date: 3/5/19

QA Review (Re-verification only)		Date: <u>3/5/19</u>
-------------------------------------	--	---------------------

Acceptance Criteria		
Department	Standard Analytes	Poor Performers* and Esterified Analytes
GC/HPLC	≤ 15 %D	≤ 35 %D or ≤ 50 %D for dinoseb
GCMS/LCMS	≤ 35 %D	≤ 55 %D
MSVOA	≤ 25 %D	≤ 55 %D
Metals	≤ 8 %D	NA
Wet Chemistry	≤ 5 %D	NA

*See analytical SOP for details on poor performing analytes.



3301a Technology Drive
Christiansburg, VA 24043-1133A
inorganic@inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 540.469.6779 • fax: 540.562.3030
fax: 540.562.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Single Analyte Mass Spec Solution
Catalog Number: MSHG-100PPM
Lot Number: M2-HG659091
Matrix: 10% (v/v) HCl
Value / Analyte(s): 100 µg/mL ea:
Mercury
Starting Material: Hg metal
Starting Material Lot#: 05214TX, R307HGA1, 1780
Starting Material Purity: 99.9994%

4064859
ID: Hg ICV Stock_00010
Exp: 06/19/21 Ppd: CDH
Hg ICV Stock Inorganic Ve
4064859

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 100.10 ± 0.43 µg/mL
Density: 1.021 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Hg	ICP Assay	3133	061204
Hg	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

Characterization of CRM by two independent methods Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$$

X_a = mean of Assay Method A with standard uncertainty $u_{char a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$$w_a = (1/u_{char a})^2 / ((1/u_{char a})^2 + (1/u_{char b})^2)$$

$$w_b = (1/u_{char b})^2 / ((1/u_{char a})^2 + (1/u_{char b})^2)$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k(u^2_{char a+b} + u^2_{bb} + u^2_{ts} + u^2_{ts})^{1/2}$$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char a+b} = [(w_a)^2(u_{char a})^2 + (w_b)^2(u_{char b})^2]^{1/2}$ where $u_{char a}$ and $u_{char b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{ts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = \text{mean of Assay Method A with standard uncertainty } u_{char a}$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k(u^2_{char a} + u^2_{bb} + u^2_{ts} + u^2_{ts})^{1/2}$$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{ts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M Ag	0.000171	M Eu	< 0.000203	O Na	0.000076	M Se	< 0.013813	O Zn	0.000012
O Al	0.000016	O Fe	0.000014	M Nb	< 0.000203	O Si	0.000044	M Zr	< 0.001218
M As	< 0.002844	M Ga	< 0.000203	M Nd	< 0.000203	M Sm	< 0.000203		
O Au	< 0.003219	M Gd	< 0.000203	O Ni	< 0.001812	M Sn	< 0.000203		
O B	< 0.002478	M Ge	< 0.000609	M Os	< 0.000201	O Sr	< 0.000152		
M Ba	< 0.000203	M Hf	< 0.000203	O P	< 0.010730	M Ta	< 0.000203		
O Be	< 0.000321	s Hg	< 0.000203	M Pb	< 0.000203	M Tb	< 0.000203		
M Bi	< 0.013001	M Ho	< 0.000203	M Pd	< 0.000403	M Te	< 0.001422		
O Ca	0.000177	M In	< 0.004062	M Pr	< 0.000203	M Th	< 0.000203		
M Cd	0.000007	M Ir	< 0.000201	M Pt	< 0.000203	O Ti	< 0.000530		
M Ce	< 0.000203	M K	0.000043	M Rb	< 0.001218	O Tl	< 0.002787		
M Co	< 0.000406	M La	< 0.000203	M Re	< 0.001015	M Tm	< 0.000203		
O Cr	0.000016	O Li	< 0.000180	M Rh	< 0.000203	M U	< 0.000812		
M Cs	< 0.000203	M Lu	< 0.000203	M Ru	< 0.000201	M V	< 0.000406		
M Cu	< 0.000406	O Mg	0.000037	O S	< 0.023508	M W	< 0.000609		
M Dy	< 0.000203	M Mn	< 0.000203	O Sb	< 0.009657	M Y	< 0.000203		
M Er	< 0.000203	O Mo	< 0.002152	M Sc	< 0.000406	M Yb	< 0.000203		

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 200.59 +2 4 Hg(OH)(aq) 1+
Chemical Compatibility - Stable in HNO₃. Avoid basic media forming insoluble carbonate. The sulfide, basic carbonate, oxalate, phosphate, arsenite, arsenate and iodide are insoluble in water.

Stability - 2-100 ppb levels not stable in 1% HNO₃ / LDPE container, stable in 10% HNO₃ packaged in borosilicate glass. 1-100 ppm levels stable in 7% HNO₃ packaged in borosilicate glass. 1000-10,000 ppm solutions are chemically stable for years in 5-10% HNO₃ / LDPE container.

Hg Containing Samples (Preparation and Solution) - Metal (soluble in HNO₃); Oxide (Soluble in HNO₃); Ores and Organic based (The literature has more references to the preparation of Hg containing samples than any other element. Please consult the literature for your specific sample type, since such preparations are prone to error. Or e-mail our technical staff and we will contact you to discuss your particular sample preparation questions in further detail.).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	Estimated D.L.	Order	Interferences (underlined indicates severe)
ICP-MS 202 amu	9 ppt	n/a	186W16O
ICP-OES 184.950 nm	0.03 / 0.005 µg/mL	1	
ICP-OES 194.227 nm	0.03 / 0.005 µg/mL	1	V
ICP-OES 253.652 nm	0.1 / 0.03 µg/mL	1	Ta, Co, Th, Rh, Fe, U

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 19, 2017

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- June 19, 2021

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control



Certifying Officer:

Paul Gaines
CEO, Senior Technical Director





Reagent ID: Hg Biwk ICV_00268

Description:	Hg Biweekly 400ppb ICV Intermediate	Expiration Date:	03/05/2019
No. of Bottles:	1	Laboratory:	TestAmerica Denver
Storage Location:	Mercury	Prepared By:	Perry, Tara H
Reagent Volume:	100.000 mL	Solvent:	1% HNO3
Creation Date:	02/19/2019	Solvent Lot:	K23022
Open Date:			
Container(s):	5555669		
Comment:	Use 0.4ml of Hg ICV Stock into 100ml of 1% HNO3.		

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Hg	Hg ICV Stock_00010	03/05/2019	100.00000	mg/L	0.40000	mg/L

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Hg ICV Stock_00010	Hg ICV Stock Inorganic Ventures 100PPM	ASTD	03/05/19	Inorganic Ventures	H2-HG02113R	MSHG-100PPM	0.40000	mL

Report Generated By CETAC QuickTrace

Analyst: denmet

Worksheet file: C:\Program Files\QuickTrace\Worksheets\190301-33a.wsz

Date Started: 3/1/2019 11:58:39 AM

Comment:

Results

Sample Name	Type	Date/Time	Conc (ppb)	µAbs	%RSD	Flags	Wt. ODF	Vol.
IC 280-449351/1-A	STD	03/01/19 02:06:05 pm	0.000	17	15.15		1.00 1.00	1.00
IC 280-449351/2-A	STD	03/01/19 02:08:18 pm	0.060	1184	0.20		1.00 1.00	1.00
IC 280-449351/3-A	STD	03/01/19 02:10:32 pm	0.120	2386	0.27		1.00 1.00	1.00
IC 280-449351/4-A	STD	03/01/19 02:12:47 pm	0.300	5831	0.10		1.00 1.00	1.00
IC 280-449351/5-A	STD	03/01/19 02:15:02 pm	0.600	11824	0.13		1.00 1.00	1.00
IC 280-449351/6-A	STD	03/01/19 02:17:17 pm	1.200	23145	0.19		1.00 1.00	1.00
IC 280-449351/7-A	STD	03/01/19 02:19:34 pm	3.000	57866	0.14		1.00 1.00	1.00
IC 280-449351/8-A	STD	03/01/19 02:21:50 pm	6.000	114226	0.15		1.00 1.00	1.00

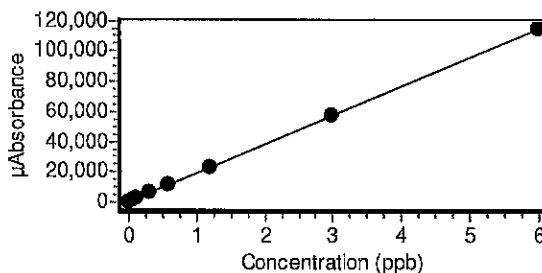
Calibration

Equation: $A = 195.561 + 19052.700C$

R2: 0.99996

SEE: 277.2932

Flags:



ICV 280-449351/9-A	ICV	03/01/19 02:24:30 pm	2.361	45185	0.47		1.00 1.00	1.00
% Recovery								
98.39								
ICB 280-449351/10-A	ICB	03/01/19 02:26:43 pm	-0.011	-8	40.57		1.00 1.00	1.00

Sample Name	Type	Date/Time	Conc (ppb)	µAbs	%RSD	Flags	Wt. ODF	Vol.
CRA 280-449351/11-A	CRDL	03/01/19 02:28:57 pm	0.115	2392	0.31		1.00	1.00
% Recovery 96.05							1.00	
CCV 280-449351/12-A	CCV	03/01/19 02:31:13 pm	3.027	57873	0.18		1.00	1.00
% Recovery 100.91							1.00	
CCB 280-449351/13-A	CCB	03/01/19 02:33:26 pm	-0.011	-14	10.09		1.00	1.00
							1.00	
MB 280-449327/1-A	UNK	03/01/19 02:35:38 pm	-0.009	22	8.05		1.00	1.00
							1.00	
280-120453-C-1-A MDLV	UNK	03/01/19 02:37:50 pm	0.039	942	0.30		1.00	1.00
							1.00	
280-120453-A-2-A MDLV	UNK	03/01/19 02:40:02 pm	0.041	971	0.17		1.00	1.00
							1.00	
280-120453-A-3-A LOQV	UNK	03/01/19 02:42:15 pm	0.113	2347	0.26		1.00	1.00
							1.00	
MB 280-449346/1-A	UNK	03/01/19 02:44:28 pm	-0.009	21	13.48		1.00	1.00
							1.00	
LCS 280-449346/2-A	UNK	03/01/19 02:46:41 pm	3.052	58349	0.23		1.00	1.00
							1.00	
280-120566-A-2-E	UNK	03/01/19 02:48:55 pm	-0.010	12	11.46		1.00	1.00
							1.00	
280-120566-A-3-E	UNK	03/01/19 02:51:09 pm	-0.009	33	7.40		1.00	1.00
							1.00	
280-120566-C-5-C	UNK	03/01/19 02:53:23 pm	-0.008	35	3.65		1.00	1.00
							1.00	
280-120566-A-6-C	UNK	03/01/19 02:55:38 pm	-0.009	30	6.75		1.00	1.00
							1.00	
CCV 280-449351/12-A	CCV	03/01/19 02:57:54 pm	3.041	58141	0.43		1.00	1.00
% Recovery 101.38							1.00	
CCB 280-449351/13-A	CCB	03/01/19 03:00:06 pm	-0.010	-2	70.91		1.00	1.00
							1.00	
280-120566-A-7-C	UNK	03/01/19 03:02:21 pm	-0.007	68	10.51		1.00	1.00
							1.00	
280-120566-A-7-D MS	UNK	03/01/19 03:04:37 pm	2.979	56960	0.53		1.00	1.00
							1.00	

Reagent

Hg Ultra Prim_00014

Standard Verification Form

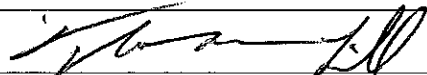
Standard Information			
Vendor Standard Name	MERCURY STANDARD ICP-080		
Vendor	ULTRA		
Lot number	CR-3231		
Initial Verification	☐	Re-Verification	☒

TALS "Reagent" Information	
TALS Standard ID	H ₂ ULTRAPRIM (00014)
COA Reviewed against what is in TALS	☒

Verification Information and Data			
Verified by	MJ	Instrument ID	033
Verification Date	3/1/19	Method Reference	7470A
ID of Standard Used for Verification	H ₂ ICPV STOCK (00011)	Batch # / Chrom Work List #	449491
Attach to this form: formulary report , COA and data used for verification Attach to standard in TALS: this form and all supporting documentation including the original CoA			
See Acceptance Criteria Below:			
Approved for Use	☒	Not Approved for Use	☐
New expiration date can be no greater than 1/2 the designated standards shelf life from the date of re-verification. Standards can only be re-verified one time.			
New Expiration Date:			

1st Level Review MJ Date: 3/5/19

2nd Level Review D6 Date: 3/5/19

QA Review (Re-verification only)		Date: <u>3/5/19</u>
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Acceptance Criteria		
Department	Standard Analytes	Poor Performers* and Esterified Analytes
GC/HPLC	≤ 15 %D	≤ 35 %D or ≤ 50 %D for dinoseb
GCMS/LCMS	≤ 35 %D	≤ 55 %D
MSVOA	≤ 25 %D	≤ 55 %D
Metals	≤ 8 %D	NA
Wet Chemistry	≤ 5 %D	NA

*See analytical SOP for details on poor performing analytes.

Certificate of Analysis



ISO Guide 34 Reference Material

Product Number: ICP-080
Lot Number: CR-3231

Lot Issue Date: 14-Jul 2017
Expiration Date: 31-Aug 2024

Storage: Store at Room Temperature (15° to 30°C).

Traceability:

Traceability has been established through an unbroken chain of comparisons, each having stated uncertainties. Comparisons are based on appropriate physical or chemical measurements, including gravimetric or volumetric dilution, where the mass or volume of a solution before and after dilution is measured. The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1, ISO 9001, ISO 17025, and ISO Guide 34. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 819.

Estimation of Uncertainties:

The true value is reported, with its uncertainty value calculated at the 95% confidence level.

Homogeneity:

This RM was formulated and unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:

This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods and continuing calibration verification.

Instructions for Use:

Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening and should be processed without delay for the true value to be valid within the stated uncertainties. Do not pipet from the bottle. Do not return any material removed for pipetting to the bottle. Tightly cap the bottle after removing any material and store according to the instructions noted above.

Hazards:

Refer to the Safety Data Sheet for information regarding this RM.

Expiration of Certification:

The certification of this RM is valid, within the measurement uncertainty specified, until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

Maintenance of Certification:

The real-time, long term stability of the RM may be monitored over the lifetime of the certification. If substantive changes occur that affect the certification before the expiration of this certificate, ULTRA Scientific will notify the purchaser.


John Russo
President


Monica Bourgeois
Director of QA/RA



ISO 9001 Registered Quality System – TUV USA

Page 2 of 2



Reagent ID: Hg Mnth Spike_00137

Description:	Hg Monthly 10mg/L Spike stock	Expiration Date:	03/04/2019
No. of Bottles:	1	Laboratory:	TestAmerica Denver
Storage Location:	Mercury	Prepared By:	Jones, Micaela R
Reagent Volume:	100.000 mL	Solvent:	1% HNO3
Creation Date:	02/04/2019	Solvent Lot:	K23022
Open Date:			
Container(s):	5537382		
Comment:	1ml Ultra Primary source into 100ml of 1% HNO3		

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Hg	Hg Ultra Prim_00012	03/09/2019	1000.00000	mg/L	10.00000	mg/L

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Hg Ultra Prim_00012	Ultra 1000 ppm Hg primary stock	ASTD	03/09/19	Ultra Scientific	T00602	ICP-080	1.00000	mL



Reagent ID: Hg Daily Spk_02362

Description:	Hg Daily Spike Solution	Expiration Date:	03/02/2019
No. of Bottles:	1	Laboratory:	TestAmerica Denver
Storage Location:	Mercury	Prepared By:	Jones, Micaela R
Reagent Volume:	100.000 mL	Solvent:	1% HNO3
Creation Date:	03/01/2019	Solvent Lot:	K23022
Open Date:			
Container(s):	5568730		
Comment:	1ml of 10ppm Hg Mnth Spike into 100ml 1% HNO3		

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Hg	Hg Mnth Spike_00137	03/04/2019	10.00000	mg/L	0.10000	mg/L

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
Hg Mnth Spike_00137	Hg Monthly 10mg/L Spike stock		03/04/19				1.00000	mL

Report Generated By CETAC QuickTrace

Analyst: denmet

Worksheet file: C:\Program Files\QuickTrace\Worksheets\190301-33a.wsz

Date Started: 3/1/2019 11:58:39 AM

Comment:

Results

Sample Name	Type	Date/Time	Conc (ppb)	µAbs	%RSD	Flags	Wt. ODF	Vol.
IC 280-449351/1-A	STD	03/01/19 02:06:05 pm	0.000	17	15.15		1.00 1.00	1.00
IC 280-449351/2-A	STD	03/01/19 02:08:18 pm	0.060	1184	0.20		1.00 1.00	1.00
IC 280-449351/3-A	STD	03/01/19 02:10:32 pm	0.120	2386	0.27		1.00 1.00	1.00
IC 280-449351/4-A	STD	03/01/19 02:12:47 pm	0.300	5831	0.10		1.00 1.00	1.00
IC 280-449351/5-A	STD	03/01/19 02:15:02 pm	0.600	11824	0.13		1.00 1.00	1.00
IC 280-449351/6-A	STD	03/01/19 02:17:17 pm	1.200	23145	0.19		1.00 1.00	1.00
IC 280-449351/7-A	STD	03/01/19 02:19:34 pm	3.000	57866	0.14		1.00 1.00	1.00
IC 280-449351/8-A	STD	03/01/19 02:21:50 pm	6.000	114226	0.15		1.00 1.00	1.00

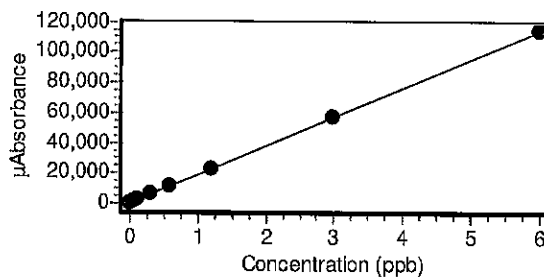
Calibration

Equation: $A = 195.561 + 19052.700C$

R2: 0.99996

SEE: 277.2932

Flags:



ICV 280-449351/9-A	ICV	03/01/19 02:24:30 pm	2.361	45185	0.47		1.00 1.00	1.00
% Recovery								
98.39								
ICB 280-449351/10-A	ICB	03/01/19 02:26:43 pm	-0.011	-8	40.57		1.00 1.00	1.00

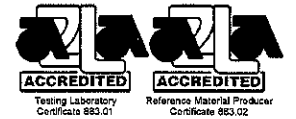
Sample Name	Type	Date/Time	Conc (ppb)	µAbs	%RSD	Flags	Wt. ODF	Vol.
CRA 280-449351/11-A	CRDL	03/01/19 02:28:57 pm	0.115	2392	0.31		1.00	1.00
% Recovery 96.05							1.00	
CCV 280-449351/12-A	CCV	03/01/19 02:31:13 pm	3.027	57873	0.18		1.00	1.00
% Recovery 100.91							1.00	
CCB 280-449351/13-A	CCB	03/01/19 02:33:26 pm	-0.011	-14	10.09		1.00	1.00
							1.00	
MB 280-449327/1-A	UNK	03/01/19 02:35:38 pm	-0.009	22	8.05		1.00	1.00
							1.00	
280-120453-C-1-A MDLV	UNK	03/01/19 02:37:50 pm	0.039	942	0.30		1.00	1.00
							1.00	
280-120453-A-2-A MDLV	UNK	03/01/19 02:40:02 pm	0.041	971	0.17		1.00	1.00
							1.00	
280-120453-A-3-A LOQV	UNK	03/01/19 02:42:15 pm	0.113	2347	0.26		1.00	1.00
							1.00	
MB 280-449346/1-A	UNK	03/01/19 02:44:28 pm	-0.009	21	13.48		1.00	1.00
							1.00	
LCS 280-449346/2-A	UNK	03/01/19 02:46:41 pm	3.052	58349	0.23		1.00	1.00
							1.00	
280-120566-A-2-E	UNK	03/01/19 02:48:55 pm	-0.010	12	11.46		1.00	1.00
							1.00	
280-120566-A-3-E	UNK	03/01/19 02:51:09 pm	-0.009	33	7.40		1.00	1.00
							1.00	
280-120566-C-5-C	UNK	03/01/19 02:53:23 pm	-0.008	35	3.65		1.00	1.00
							1.00	
280-120566-A-6-C	UNK	03/01/19 02:55:38 pm	-0.009	30	6.75		1.00	1.00
							1.00	
CCV 280-449351/12-A	CCV	03/01/19 02:57:54 pm	3.041	58141	0.43		1.00	1.00
% Recovery 101.38							1.00	
CCB 280-449351/13-A	CCB	03/01/19 03:00:06 pm	-0.010	-2	70.91		1.00	1.00
							1.00	
280-120566-A-7-C	UNK	03/01/19 03:02:21 pm	-0.007	68	10.51		1.00	1.00
							1.00	
280-120566-A-7-D MS	UNK	03/01/19 03:04:37 pm	2.979	56960	0.53		1.00	1.00
							1.00	

Reagent

Icp cal std 3_00018

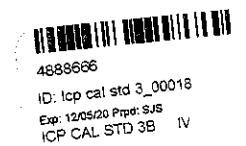
1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
Catalog Number: STLDEN-STD-3B
Lot Number: M2-MEB663620
Matrix: 5% (v/v) HNO3
Value / Analyte(s): 10 000 µg/mL ea:
Potassium,
4 000 µg/mL ea:
Magnesium,
1 000 µg/mL ea:
Calcium, Sodium,
500 µg/mL ea:
Iron,
200 µg/mL ea:
Lithium, Phosphorus,
100 µg/mL ea:
Strontium, Vanadium,
Manganese, Cadmium,
Chromium, Copper,
Aluminum, Boron,
Beryllium, Nickel, Zinc,
Cobalt,
Silver,
Barium,



3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	100.0 ± 0.5 µg/mL	Barium, Ba	100.0 ± 0.5 µg/mL
Beryllium, Be	100.0 ± 0.7 µg/mL	Boron, B	100.0 ± 0.6 µg/mL
Cadmium, Cd	100.0 ± 0.5 µg/mL	Calcium, Ca	1 000 ± 4 µg/mL
Chromium, Cr	100.0 ± 0.6 µg/mL	Cobalt, Co	100.0 ± 0.5 µg/mL
Copper, Cu	100.0 ± 0.4 µg/mL	Iron, Fe	500.0 ± 2.0 µg/mL
Lithium, Li	200.0 ± 0.7 µg/mL	Magnesium, Mg	4 000 ± 16 µg/mL
Manganese, Mn	100.0 ± 0.4 µg/mL	Nickel, Ni	100.0 ± 0.4 µg/mL
Phosphorus, P	200.0 ± 0.9 µg/mL	Potassium, K	10 000.0 ± 40.0 µg/mL
Silver, Ag	100.0 ± 0.4 µg/mL	Sodium, Na	1 000 ± 4 µg/mL
Strontium, Sr	100.0 ± 0.4 µg/mL	Vanadium, V	100.0 ± 0.4 µg/mL
Zinc, Zn	100.0 ± 0.4 µg/mL		

Density: 1.074 g/mL (measured at 20 ± 4 °C)

Assay Information:

Characterization of CRM by two independent methods Characterization of CRM by one method

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2)$$

$$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2)$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k(u_{char\ a\&b}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2(u_{char\ a})^2 + (w_b)^2(u_{char\ b})^2]^{1/2}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = \text{mean of Assay Method A with standard uncertainty } u_{char\ a}$$

$$CRM/RM \text{ Expanded Uncertainty } (\pm) = U_{CRM/RM} = k(u_{char\ a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 10CFR50 Appendix B - Nuclear Regulatory Commission

- Domestic Licensing of Production and Utilization Facilities

10.2 10CFR21 - Nuclear Regulatory Commission

- Reporting defects and Non-Compliance

10.3 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.4 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.5 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 05, 2017

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- December 05, 2020

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Michael Z Booth

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Paul R Gaines

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	992212
Ag	Volhard	999c	999c
Al	ICP Assay	3101a	060502
Al	EDTA	928	928
B	ICP Assay	3107	110830
Ba	ICP Assay	3104a	070222
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Cd	ICP Assay	3108	060531
Cd	EDTA	928	928
Co	ICP Assay	3113	000630 Co
Co	EDTA	928	928
Cr	ICP Assay	3112a	030730Cr3
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Li	ICP Assay	3129a	100714
Li	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	050302
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Sr	EDTA	928	928
Sr	ICP Assay	3153a	990906
V	EDTA	928	928
V	ICP Assay	3165	992706
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Reagent

ICP CAL STD 4_00002



5617886
ID: ICP CAL STD 4_00002
Exp: 09/22/19 Pripd: SJS
ICP CAL STD 4 SECONDARY

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-CM-FEB19-DEN1-SS

Custom ISO G34 Second Source Standard

Lot #: 10094465-2

Matrix: 2% HNO₃

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Ag	100.0 ± 0.5 µg/mL	Ca	999.9 ± 5.0 µg/mL	Na	5000 ± 25 µg/mL
Al	99.98 ± 0.50 µg/mL	Fe	500.1 ± 2.5 µg/mL	Zn	100.0 ± 0.5 µg/mL
B	100.0 ± 0.5 µg/mL	K	10,000 ± 50 µg/mL	Zr	100.0 ± 0.5 µg/mL
Bi	200.0 ± 1.0 µg/mL	Mg	4000 ± 20 µg/mL		

Intended Use: This solution is intended for use as a second source certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO₃) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau, Certifying Officer

March 22, 2019

Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

USA
5580 Skylane Boulevard P: 707.525.5788
Santa Rosa, CA 95403 P: 800.878.7654
F: 707.545.7901

Europe
Nieuwe Hemweg 7P P: +31 20 638 05 97
1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
 - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	1077a	Hf	3122	—	S	3154	2770
Al	3101a	1075a	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	—	Sc	3148a	3148a
Au	3121	—	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	1066a
Ba	3104a	1051b	La	3127a	3127a	Sm	3147a	—
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	1057b
Bi	3106	3106	Lu	3130a	—	SO ₄ ²⁻	3181	—
Br	3184	—	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	—
Cd	3108	1053a	Mo	3134	3134	Tb	3157a	—
Ce	3110	3110	Na	3152a	3152a	Te	3156	—
Cl	3182	1818a	Nb	3137	—	Th	3159	—
Co	3113	3113	Nd	3135a	—	Ti	3162a	3162a
Cr	3112a	1078b	Ni	3136	1065b	Tl	3158	3158
Cs	3111a	—	NO ₃ ⁻	3185	—	Tm	3160a	—
Cu	3114	1080a	P	3139a	3139a	U	3164	—
Dy	3115a	—	Pb	3128	3128	V	3165	1052b
Er	3116a	—	Pd	3138	—	W	3163	3163
Eu	3117a	—	PO ₄ ³⁻	3186	—	Y	3167a	3167a
F	3183	—	Pr	3142a	—	Yb	3166a	—
Fe	3126a	1079b	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	—	Rb	3145a	—	Zr	3169	3169
Gd	3118a	—	Re	3143	—			
Ge	3120a	—	Rh	3144	3144			

Reagent

ICP ICSAB 1_00001



CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

ICP ICSAB Mix Solution 1

Matrix: 5% HNO₃/0.5% HF



5471540

ID: ICP ICSAB 1_00001

Exp: 06/03/19 Prpd: SJS

ICP ICSAB 1 CPI

Product #: TA-ICP-ICSAB-1

Lot #: 990624-2

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Mo	100.0 ± 0.5 mg/L	Si	1000 ± 5 mg/L	Ti	100.0 ± 0.5 mg/L
Sb	100.0 ± 0.5 mg/L	Sn	100.0 ± 0.5 mg/L		

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to ISO 9001, ISO 17034, and ISO/IEC 17025. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to NIST SRMs (see reverse side). The solution was stabilized using high purity nitric acid (HNO₃), hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against NIST SRMs (see reverse side). The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau, Certifying Officer

December 3, 2018

Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

USA

5580 Skylane Boulevard P: 707.525.5788
Santa Rosa, CA 95403 P: 800.878.7654
F: 707.545.7901

Europe

Nieuwe Hemweg 7P P: +31 20 638 05 97
1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
 - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	1077a	Hf	3122	—	S	3154	2770
Al	3101a	1075a	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	—	Sc	3148a	3148a
Au	3121	—	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	1066a
Ba	3104a	1051b	La	3127a	3127a	Sm	3147a	—
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	1057b
Bi	3106	3106	Lu	3130a	—	SO ₄ ²⁻	3181	—
Br	3184	—	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	—
Cd	3108	1053a	Mo	3134	3134	Tb	3157a	—
Ce	3110	3110	Na	3152a	3152a	Te	3156	—
Cl	3182	1818a	Nb	3137	—	Th	3159	—
Co	3113	3113	Nd	3135a	—	Ti	3162a	3162a
Cr	3112a	1078b	Ni	3136	1065b	Tl	3158	3158
Cs	3111a	—	NO ₃ ⁻	3185	—	Tm	3160a	—
Cu	3114	1080a	P	3139a	3139a	U	3164	—
Dy	3115a	—	Pb	3128	3128	V	3165	1052b
Er	3116a	—	Pd	3138	—	W	3163	3163
Eu	3117a	—	PO ₄ ³⁻	3186	—	Y	3167a	3167a
F	3183	—	Pr	3142a	—	Yb	3166a	—
Fe	3126a	1079b	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	—	Rb	3145a	—	Zr	3169	3169
Gd	3118a	—	Re	3143	—			
Ge	3120a	—	Rh	3144	3144			

Standard Verification Form

Standard Information			
Vendor Standard Name	TA-ICP-IC5AB-1		
Vendor	CPI		
Lot number	990624-2		
Initial Verification	☒	Re-Verification	☐

TALS "Reagent" Information	
TALS Standard ID	ICPICSAB 1-00001
COA Reviewed against what is in TALS	☒

Verification Information and Data			
Verified by	CR	Instrument ID	MT-025
Verification Date	1/30/19	Method Reference	U010B
ID of Standard Used for Verification	5528932/5528182	Batch # / Chrom Work List #	445975

Attach to this form: formulary report, COA and data used for verification

Attach to standard in TALS: this form and all supporting documentation including the original CoA

See Acceptance Criteria Below:

Approved for Use	☒	Not Approved for Use	☐
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New expiration date can be no greater than 1/2 the designated standards shelf life from the date of re-verification. Standards can only be re-verified one time.

New Expiration Date:	N/A
----------------------	-----

1st Level Review

CL

Date:

1/31/19

2nd Level Review

DB

Date:

1/31/19

QA Review (Re-verification only)		Date:
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Acceptance Criteria		
Department	Standard Analytes	Poor Performers* and Esterified Analytes
GC/HPLC	≤ 15 %D	≤ 35 %D or ≤ 50 %D for dinoseb
GCMS/LCMS	≤ 35 %D	≤ 55 %D
MSVOA	≤ 25 %D	≤ 55 %D
Metals	≤ 8 %D	NA
Wet Chemistry	≤ 5 %D	NA

*See analytical SOP for details on poor performing analytes.



Reagent ID: ICP ICSAB 1_00001

Type: ASTD
Description: ICP ICSAB 1 CPI
No. of Bottles: 1
Storage Location: ICP
Reagent Volume: 250.000 mL
Creation Date: 12/21/2017
Open Date: 01/29/2019
Container(s): 5471540
Comment:

Expiration Date: 06/03/2019
Laboratory: TestAmerica Denver
Prepared By: Scott, Samantha J
Vendor: CPI
Vendor Lot #: 990624-2
Vendor Cat #: TA-ICP-ICSAB-1

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Mo					100.00000	mg/L
Sb					100.00000	mg/L
Si					1000.00000	mg/L
Sn					100.00000	mg/L
Ti					100.00000	mg/L

Sample Name: xICSAB sol 1 100x Acquired: 1/30/2019 11:16:24 Type: Unk
Method: 6500_025(v9) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: reagent bottle check

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 {74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.02433	.01266	.01718	.01887	.00044	.02174	.47181	.00071
Stddev	.00004	.00024	.00489	.00084	.00010	.00012	.00685	.00076	.00006
%RSD	7.0663	.98064	38.631	4.8888	.52301	27.840	31.508	.16192	8.4479
#1	.00053	.02450	.01612	.01658	.01880	.00035	.02659	.47235	.00067
#2	.00058	.02416	.00920	.01777	.01894	.00052	.01690	.47127	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									
Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 {44}	670.784 {50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00410	.00242	.00153	.02006	.56757	.01037	.47512	.00496	1.0133
Stddev	.00010	.00025	.00005	.00110	.03642	.00435	.00725	.00001	.0039
%RSD	2.5510	10.211	3.1263	5.4797	6.4175	42.012	1.5261	.23393	.38063
#1	.00417	.00225	.00150	.02084	.54181	.00729	.47000	.00497	1.0160
#2	.00403	.00260	.00157	.01928	.59333	.01345	.48025	.00496	1.0106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									
Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 {57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49431	.00430	.08410	.01084	.03507	.99570	.01580	9.9173	21.223
Stddev	.00501	.00053	.00063	.00088	.00283	.00482	.00254	.0370	.079
%RSD	1.0130	12.416	.75155	8.1609	8.0821	.48413	16.067	.37264	.37264
#1	.49077	.00468	.08455	.01146	.03707	.99230	.01760	9.8912	21.167
#2	.49785	.00392	.08365	.01021	.03306	.99911	.01401	9.9434	21.279
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									
Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 {83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 {91}	292.402 {115}	206.200 {163}	339.198 {99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0648	.00964	.01036	1.0237	.01971	.02237	.00551	.00635	.00546
Stddev	.0013	.00014	.00233	.0003	.00077	.01226	.00033	.00030	.00002
%RSD	.12116	1.4717	22.449	.02853	3.9220	54.809	6.0687	4.7932	.32279
#1	1.0658	.00954	.00871	1.0239	.02026	.03104	.00575	.00656	.00548
#2	1.0639	.00974	.01200	1.0235	.01916	.01370	.00527	.00613	.00545
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									
Int. Std.	Y_2243	Y_3600	Y_3774						
Line	224.306 {450}	360.073 {94}	377.433 {89}						
Units	Cts/S	Cts/S	Cts/S						
Avg	4001.5	55629.	4846.2						
Stddev	8.9	65.	20.9						
%RSD	.22316	.11631	.43220						
#1	3995.2	55583.	4861.0						
#2	4007.8	55674.	4831.4						

Reagent

ICP ICSAB 2_00001

Standard Verification Form

Standard Information			
Vendor Standard Name	TA-ICP-ICSAB-2		
Vendor	CPI		
Lot number	990626-2		
Initial Verification	☒	Re-Verification	☐

TALS "Reagent" Information	
TALS Standard ID	ICP ICSAB 2-00001
COA Reviewed against what is in TALS	☒

Verification Information and Data			
Verified by	CL/CR	Instrument ID	MT052 MT05
Verification Date	1/21/19 1/29/19	Method Reference	WD103
ID of Standard Used for Verification	Calibration SDS	Batch # / Chrom Work List #	444958/445894
Attach to this form: formulary report, COA and data used for verification Attach to standard in TALS: this form and all supporting documentation including the original CoA			
See Acceptance Criteria Below:			
Approved for Use	☒	Not Approved for Use	☐
New expiration date can be no greater than 1/2 the designated standards shelf life from the date of re-verification. Standards can only be re-verified one time.			
New Expiration Date:			

1st Level Review CL Date: 1/31/19

2nd Level Review DB Date: 1/31/19

QA Review (Re-verification only)		Date:
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Acceptance Criteria		
Department	Standard Analytes	Poor Performers* and Esterified Analytes
GC/HPLC	≤ 15 %D	≤ 35 %D or ≤ 50 %D for dinoseb
GCMS/LCMS	≤ 35 %D	≤ 55 %D
MSVOA	≤ 25 %D	≤ 55 %D
Metals	≤ 8 %D	NA
Wet Chemistry	≤ 5 %D	NA

*See analytical SOP for details on poor performing analytes.



Reagent ID: ICP ICSAB 2_00001

Type: ASTD
Description: ICP ICSAB 2 CPI
No. of Bottles: 1
Storage Location: ICP
Reagent Volume: 250.000 mL
Creation Date: 12/21/2017
Open Date: 01/29/2019
Container(s): 5471537
Comment:

Expiration Date: 06/03/2019
Laboratory: TestAmerica Denver
Prepared By: Scott, Samantha J
Vendor: CPI
Vendor Lot #: 990626-2
Vendor Cat #: TA-ICP-ICSAB-2

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
Ag					100.00000	mg/L
As					100.00000	mg/L
B					1000.00000	mg/L
Ba					100.00000	mg/L
Be					50.00000	mg/L
Cd					100.00000	mg/L
Co					100.00000	mg/L
Cr					100.00000	mg/L
Cu					100.00000	mg/L
K					1000.00000	mg/L
Mn					100.00000	mg/L
Na					1000.00000	mg/L
Ni					100.00000	mg/L
P					1000.00000	mg/L
Pb					100.00000	mg/L
Se					100.00000	mg/L
Sr					100.00000	mg/L
Tl					100.00000	mg/L
V					100.00000	mg/L
Zn					100.00000	mg/L

Sample Name: ICSAB 2

100X

Date: 1/21/2019 2:07:16 PM

Rack/Tube: 1:90

Weight (g): 1

Volume (mL): 1

Dilution: 1

Analyte Results

Label	Solution Concentration	Unit	SD	%RSD	Intensity	Internal Standard
✓ Ag (328.068 nm)	0.966867	ppm	0.002732	0.28	27113.200000	Y 377.433
✓ Al (394.401 nm)	-0.018589 u	ppm	0.000377	2.03	120.753000	Y 377.433
✓ Al H (396.152 nm)	-0.080631 u	ppm	0.000855	1.06	12.478800	Y_R 377.433
✓ As (188.980 nm)	0.937518	ppm	0.002548	0.27	1229.410000	Y 242.219
✓ B (249.678 nm)	9.446880	ppm	0.011734	0.12	33938.900000	Y 242.219
✓ Ba (493.408 nm)	0.969569	ppm	0.001606	0.17	87740.300000	Y_R 488.368
✓ Be (234.861 nm)	0.466384	ppm	0.000072	0.02	26151.800000	Y_R 488.368
✓ Bi (223.061 nm)	0.001837	ppm	0.002483	> 100.00	44.091400	Y 377.433
✓ Ca (315.887 nm)	-0.003106 u	ppm	0.007441	> 100.00	18.818785	Y_R 377.433
✓ Cd (214.439 nm)	0.974802	ppm	0.002985	0.31	25402.900000	Y 377.433
✓ Co (228.615 nm)	0.978758	ppm	0.004920	0.50	20392.400000	Y 242.219
✓ Cr (205.560 nm)	0.948655	ppm	0.001917	0.20	3826.770000	Y 377.433
✓ Cu (324.754 nm)	0.971137	ppm	0.002614	0.27	45503.100000	Y 377.433
✓ Fe (238.204 nm)	-0.000041 u	ppm	0.005163	> 100.00	10.116548	Y_R 377.433
✓ Fe H (259.940 nm)	-0.222218 u	ppm	0.000618	0.28	1.482800	Y_R 377.433
✓ K (766.491 nm)	9.955440	ppm	0.046489	0.47	11734.600000	Y_R2 488.368
✓ Li (670.783 nm)	0.002338	ppm	0.002398	> 100.00	-636.367000	Y_R2 488.368
✓ Mg (279.078 nm)	-0.004893 u	ppm	0.001386	28.33	1.042300	Y 377.433
✓ Mn (257.610 nm)	0.984512	ppm	0.002227	0.23	189159.000000	Y 377.433
✓ Mo (202.032 nm)	0.000102 u	ppm	0.000717	> 100.00	21.118500	Y 377.433
✓ Na (589.592 nm)	9.389940	ppm	0.127054	1.35	4480.750000	Y_R2 488.368
✓ Na H (589.593 nm)	7.370639 u	ppm	0.011086	0.15	3061.539033	Y_R4
✓ Ni (231.604 nm)	0.972725	ppm	0.002305	0.24	3493.420000	Y 377.433
✓ P (213.618 nm)	9.363070	ppm	0.023289	0.25	9381.970000	Y 242.219
✓ Pb (220.353 nm)	0.994713	ppm	0.002048	0.21	2187.470000	Y 242.219
✓ S (181.972 nm)	-0.017508 u	ppm	0.000015	0.09	2.280092	Y 377.433
✓ Sb (206.834 nm)	0.001746 u	ppm	0.003005	> 100.00	29.044800	Y 377.433
X Se (196.026 nm)	0.894485	ppm	0.006733	0.75	1281.770000	Y 242.219
✓ Si (288.158 nm)	-0.001748 u	ppm	0.000507	29.01	377.617000	Y 377.433
✓ Sn (189.925 nm)	-0.004588 u	ppm	0.000168	3.65	-1.654320	Y 377.433
✓ Sr (421.552 nm)	0.967161	ppm	0.001611	0.17	106421.982008	Y_R 488.368
✓ Th (288.505 nm)	-0.048933 u	ppm	0.005261	10.75	-112.903000	Y 377.433
✓ Ti (336.122 nm)	0.000456	ppm	0.000097	21.34	-304.249000	Y 377.433
✓ Tl (190.794 nm)	0.993837	ppm	0.000436	0.04	568.452000	Y 377.433
✓ U (409.013 nm)	0.002082 u	ppm	0.006736	> 100.00	238.011000	Y 377.433
✓ V (292.401 nm)	0.964201	ppm	0.002968	0.31	41257.400000	Y 377.433
✓ Zn (206.200 nm)	0.992230	ppm	0.004980	0.50	3092.660000	Y 377.433
✓ Zr (343.823 nm)	0.000098 u	ppm	0.000260	> 100.00	-51.254600	Y 377.433

Sample Name: ICSAB Sol 2 Acquired: 1/29/2019 15:38:12 Type: Unk
 Method: 6500_025(v9) Mode: CONC Corr. Factor: 1.000000
 User: rhoadesc Prep Date: Custom ID2: Custom ID3:
 Comment: 100x

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 {74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W .96906	-.00340	1.0112	9.4842	1.0100	.49999	.00175	-.06604	.95028
Stddev	.00070	.00005	.0084	.0140	.0002	.00072	.00805	.00493	.00089
%RSD	.07261	1.5359	.83124	.14767	.02300	.14445	460.44	7.4694	.09328

#1	.96857	-.00336	1.0053	9.4941	1.0102	.50051	.00744	-.06255	.95091
#2	.96956	-.00344	1.0172	9.4743	1.0099	.49948	-.00394	-.06953	.94966

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.10000								
Low Limit	-.02000								

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 {44}	670.784 {50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97510	.98255	1.0095	-.00152	10.088	.00379	-.00580	.91712	.00092
Stddev	.00391	.00157	.0019	.00267	.030	.00092	.00435	.00154	.00057
%RSD	.40132	.16023	.18807	175.43	.29831	24.241	75.007	.16823	61.615

#1	.97787	.98367	1.0108	-.00342	10.109	.00443	-.00887	.91821	.00052
#2	.97233	.98144	1.0081	.00037	10.067	.00314	-.00272	.91603	.00133

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Line	589.592 {57}	818.326 {41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.062	W 10.363	.97101	9.3122	.99342	.01022	-.00250	1.0041	-.01800
Stddev	.003	.128	.00214	.0214	.00289	.00320	.00030	.0007	.00696
%RSD	.02670	1.2361	.22005	.22968	.29093	31.312	12.156	.06617	38.635

#1	10.060	10.273	.97252	9.3273	.99546	.01248	-.00271	1.0037	-.02292
#2	10.064	10.454	.96950	9.2970	.99137	.00795	-.00228	1.0046	-.01309

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		500.00							
Low Limit		11.000							

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062
Line	288.158 {117}2	189.989 {477}	407.771 {83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 {91}	292.402 {115}	206.200 {163}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.03853	-.00056	1.0257	.00369	.00020	1.0532	.01005	.92759	.89480
Stddev	.01489	.00053	.0020	.00219	.00018	.0029	.01643	.00224	.00413
%RSD	38.635	93.658	.19274	59.457	90.526	.27479	163.59	.24111	.46200

#1	-.04905	-.00019	1.0271	.00524	.00032	1.0552	-.00157	.92917	.89772
#2	-.02800	-.00094	1.0243	.00214	.00007	1.0511	.02166	.92601	.89188

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Zr3391
Line	339.198 {99}
Units	ppm
Avg	.00366
Stddev	.00163
%RSD	44.615

#1	.00251
#2	.00482

Check ?	Chk Pass
High Limit	
Low Limit	



CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-ICP-ICSAB-2

ICP ICSAB Mix Solution 2

Lot #: 990626-2

Matrix: 5% HNO₃



5471537

ID: ICP ICSAB 2_00001

Exp: 06/03/19 Ppdt: SUS

ICP ICSAB 2 CPI

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Ag ✓	100.0 ± 0.5 mg/L	Cr ✓	99.98 ± 0.50 mg/L	Pb ✓	100.0 ± 0.5 mg/L
As ✓	100.0 ± 0.5 mg/L	Cu ✓	100.0 ± 0.5 mg/L	Se ✓	100.0 ± 0.5 mg/L
B ✓	1000 ± 5 mg/L	K ✓	1000 ± 5 mg/L	Sr ✓	100.0 ± 0.5 mg/L
Ba ✓	100.1 ± 0.5 mg/L	Mn ✓	100.1 ± 0.5 mg/L	Tl ✓	100.0 ± 0.5 mg/L
Be ✓	50.02 ± 0.25 mg/L	Na ✓	1000 ± 5 mg/L	V ✓	100.0 ± 0.5 mg/L
Cd ✓	100.0 ± 0.5 mg/L	Ni ✓	100.1 ± 0.5 mg/L	Zn ✓	100.1 ± 0.5 mg/L
Co ✓	100.0 ± 0.5 mg/L	P ✓	1000 ± 5 mg/L		

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO₃) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau, Certifying Officer

December 3, 2018

Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

USA
5580 Skylane Boulevard P: 707.525.5788
Santa Rosa, CA 95403 P: 800.878.7654
F: 707.545.7901

Europe
Nieuwe Hemweg 7P P: +31 20 638 05 97
1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
 - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	1077a	Hf	3122	—	S	3154	2770
Al	3101a	1075a	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	—	Sc	3148a	3148a
Au	3121	—	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	1066a
Ba	3104a	1051b	La	3127a	3127a	Sm	3147a	—
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	1057b
Bi	3106	3106	Lu	3130a	—	SO ₄ ²⁻	3181	—
Br	3184	—	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	—
Cd	3108	1053a	Mo	3134	3134	Tb	3157a	—
Ce	3110	3110	Na	3152a	3152a	Te	3156	—
Cl	3182	1818a	Nb	3137	—	Th	3159	—
Co	3113	3113	Nd	3135a	—	Ti	3162a	3162a
Cr	3112a	1078b	Ni	3136	1065b	Tl	3158	3158
Cs	3111a	—	NO ₃ ⁻	3185	—	Tm	3160a	—
Cu	3114	1080a	P	3139a	3139a	U	3164	—
Dy	3115a	—	Pb	3128	3128	V	3165	1052b
Er	3116a	—	Pd	3138	—	W	3163	3163
Eu	3117a	—	PO ₄ ³⁻	3186	—	Y	3167a	3167a
F	3183	—	Pr	3142a	—	Yb	3166a	—
Fe	3126a	1079b	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	—	Rb	3145a	—	Zr	3169	3169
Gd	3118a	—	Re	3143	—			
Ge	3120a	—	Rh	3144	3144			

Reagent

Icp ICVH_00851



5531815
ID: Icp ICVH_00851
Exp: 07/22/19 Prpd: SJS
ICP ICVH CPI

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-CM-OCT18-DEN2-250

Custom ICP ICVH Second Source

Lot #: 10091556-1

Matrix: 2% HNO₃

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Al	4000 ± 20 µg/mL	Na	3999 ± 20 µg/mL	U	500.1 ± 2.5 µg/mL
Bi	50.05 ± 0.25 µg/mL	S	400.0 ± 2.0 µg/mL		
Fe	8000 ± 40 µg/mL	Th	300.1 ± 1.5 µg/mL		

Intended Use: This solution is intended for use as a second source certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO₃) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau, Certifying Officer

January 22, 2019

Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

USA
5580 Skylane Boulevard P: 707.525.5788
Santa Rosa, CA 95403 P: 800.878.7654
F: 707.545.7901

Europe
Nieuwe Hemweg 7P P: +31 20 638 05 97
1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
 - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	1077a	Hf	3122	—	S	3154	2770
Al	3101a	1075a	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	—	Sc	3148a	3148a
Au	3121	—	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	1066a
Ba	3104a	1051b	La	3127a	3127a	Sm	3147a	—
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	1057b
Bi	3106	3106	Lu	3130a	—	SO ₄ ²⁻	3181	—
Br	3184	—	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	—
Cd	3108	1053a	Mo	3134	3134	Tb	3157a	—
Ce	3110	3110	Na	3152a	3152a	Te	3156	—
Cl	3182	1818a	Nb	3137	—	Th	3159	—
Co	3113	3113	Nd	3135a	—	Ti	3162a	3162a
Cr	3112a	1078b	Ni	3136	1065b	Tl	3158	3158
Cs	3111a	—	NO ₃ ⁻	3185	—	Tm	3160a	—
Cu	3114	1080a	P	3139a	3139a	U	3164	—
Dy	3115a	—	Pb	3128	3128	V	3165	1052b
Er	3116a	—	Pd	3138	—	W	3163	3163
Eu	3117a	—	PO ₄ ³⁻	3186	—	Y	3167a	3167a
F ⁻	3183	—	Pr	3142a	—	Yb	3166a	—
Fe	3126a	1079b	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	—	Rb	3145a	—	Zr	3169	3169
Gd	3118a	—	Re	3143	—			
Ge	3120a	—	Rh	3144	3144			

Reagent

ICP LLCCV-4_00010

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous RM

Product #: TA-CM-OCT18-DEN6-250

ICP LLCCV STD 4

Lot #: 10088791-2

Matrix: 2% HNO₃

Element	Certified Concentration	Element	Certified Concentration	Element	Certified Concentration
Ag	1.0 µg/mL	Cr	1.0 µg/mL	Pb	0.9 µg/mL
Al	10.0 µg/mL	Cu	1.5 µg/mL	Se	2.0 µg/mL
As	1.5 µg/mL	Fe	10.0 µg/mL	Sr	1.0 µg/mL
Ba	1.0 µg/mL	K	300 µg/mL	Th	1.5 µg/mL
Be	0.1 µg/mL	Li	2.0 µg/mL	Tl	1.5 µg/mL
Bi	10.0 µg/mL	Mg	20.0 µg/mL	U	6.0 µg/mL
Ca	20.0 µg/mL	Mn	1.0 µg/mL	V	1.0 µg/mL
Cd	0.5 µg/mL	Na	100 µg/mL	Zn	2.0 µg/mL
Co	1.0 µg/mL	Ni	4.0 µg/mL		

Intended Use: This solution is intended for use as a reference material (RM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This RM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This RM was prepared to the certified concentrations shown above by gravimetric methods using single-element concentrates, and was stabilized using high purity nitric acid (HNO₃), and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this RM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with the certified concentration is ±0.5% relative, which is the sum of the estimated errors due to the purity of the raw materials, the gravimetric preparation of the solution, and transpiration through the container. This represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the RM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original RM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.



Chuck Goudreau, Certifying Officer

November 19, 2018

Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

This RM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	1077a	Hf	3122	—	S	3154	2770
Al	3101a	1075a	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	—	Sc	3148a	3148a
Au	3121	—	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	1066a
Ba	3104a	1051b	La	3127a	3127a	Sm	3147a	—
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	1057b
Bi	3106	3106	Lu	3130a	—	SO ₄ ²⁻	3181	—
Br	3184	—	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	—
Cd	3108	1053a	Mo	3134	3134	Tb	3157a	—
Ce	3110	3110	Na	3152a	3152a	Te	3156	—
Cl	3182	1818a	Nb	3137	—	Th	3159	—
Co	3113	3113	Nd	3135a	—	Ti	3162a	3162a
Cr	3112a	1078b	Ni	3136	1065b	Tl	3158	3158
Cs	3111a	—	NO ₃ ⁻	3185	—	Tm	3160a	—
Cu	3114	1080a	P	3139a	3139a	U	3164	—
Dy	3115a	—	Pb	3128	3128	V	3165	1052b
Er	3116a	—	Pd	3138	—	W	3163	3163
Eu	3117a	—	PO ₄ ³⁻	3186	—	Y	3167a	3167a
F ⁻	3183	—	Pr	3142a	—	Yb	3166a	—
Fe	3126a	1079b	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	—	Rb	3145a	—	Zr	3169	3169
Gd	3118a	—	Re	3143	—			
Ge	3120a	—	Rh	3144	3144			

Standard Verification Form

TA-CM-OCT18-PEN6-

250

Standard Information			
Vendor Standard Name	ICP LLCCV STD4		
Vendor	CPI International		
Lot number	10088791-2		
Initial Verification	☒	Re-Verification	☐

TALS "Reagent" Information	
TALS Standard ID	ICP LLCCV4-00010
COA Reviewed against what is in TALS	☒

Verification Information and Data			
Verified by	SS/CR	Instrument ID	MT-25
Verification Date	1/30/19	Method Reference	6010C
ID of Standard Used for Verification	ICP LLCCV4-00010	Batch # / Chrom Work List #	445975
Attach to this form: formulary report, COA and data used for verification			
Attach to standard in TALS: this form and all supporting documentation including the original CoA			
See Acceptance Criteria Below:			
Approved for Use	☒	Not Approved for Use	☐
New expiration date can be no greater than 1/2 the designated standards shelf life from the date of re-verification. Standards can only be re-verified one time.			
New Expiration Date:	5/19/19		

1st Level Review

SS

Date:

5/31/19 1/30/19 SS

2nd Level Review

DB

Date:

1/31/19

QA Review (Re-verification only)		Date:
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Acceptance Criteria		
Department	Standard Analytes	Poor Performers* and Esterified Analytes
GC/HPLC	≤ 15 %D	≤ 35 %D or ≤ 50 %D for dinoseb
GCMS/LCMS	≤ 35 %D	≤ 55 %D
MSVOA	≤ 25 %D	≤ 55 %D
Metals	≤ 8 %D	NA
Wet Chemistry	≤ 5 %D	NA

*See analytical SOP for details on poor performing analytes.

Sample Name: LLCCV-4 Acquired: 1/30/2019 16:34:39 Type: Unk
Method: 6500_025(v9) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}
Units	ppm	ppm	ppm	ppm	ppm
Avg	W .10444	1.0770	.15491	.00436	.10385
Stddev	.00008	.0083	.00077	.00005	.00084
%RSD	.07667	.77261	.49700	1.2239	.81065

#1	.10450	1.0829	.15436	.00432	.10444
#2	.10439	1.0711	.15545	.00439	.10325

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.10000				
Low Limit	-.02000				

Elem	Be3130	Bi2230	Ca3179	Cd2288	Co2286
Line	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}	228.616 {447}
Units	ppm	ppm	ppm	ppm	ppm
Avg	.01007	1.0873	2.0962	.05041	.10400
Stddev	.00012	.0087	.0181	.00018	.00136
%RSD	1.2342	.79880	.86391	.36036	1.3032

#1	.01016	1.0934	2.1090	.05029	.10496
#2	.00998	1.0812	2.0834	.05054	.10304

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2055	Cu3247	Fe2599	K_7664	Li6707
Line	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}
Units	ppm	ppm	ppm	ppm	ppm
Avg	.10513	.15740	1.0755	31.340	.21501
Stddev	.00039	.00034	.0096	.070	.00615
%RSD	.37429	.21799	.89562	.22379	2.8606

#1	.10541	.15715	1.0824	31.390	.21066
#2	.10485	.15764	1.0687	31.291	.21936

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: LLCCV-4 Acquired: 1/30/2019 16:34:39 Type: Unk
Method: 6500_025(v9) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Na8183
Line	279.079 {121}2	257.610 {131}	202.030 {467}	589.592 { 57}	818.326 { 41}
Units	ppm	ppm	ppm	ppm	ppm
Avg	1.9724	.10039	-.00029	10.378	11.231
Stddev	.0049	.00001	.00006	.077	.282
%RSD	.24616	.01362	19.643	.73919	2.5141

#1	1.9758	.10038	-.00025	10.432	11.431
#2	1.9689	.10040	-.00033	10.323	11.031

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Line	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}
Units	ppm	ppm	ppm	ppm	ppm
Avg	.41560	.00327	.09509	.00383	.00245
Stddev	.00231	.00163	.00143	.00325	.00131
%RSD	.55688	49.724	1.5072	84.660	53.508

#1	.41723	.00443	.09408	.00613	.00152
#2	.41396	.00212	.09610	.00154	.00338

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077
Line	196.090 {472}	288.158 {117}	288.158 {117}2	189.989 {477}	407.771 { 83}
Units	ppm	ppm	ppm	ppm	ppm
Avg	.20995	.10074	.21559	.00091	.10697
Stddev	.00459	.02585	.05533	.00056	.00056
%RSD	2.1854	25.663	25.663	62.403	.52225

#1	.21319	.11903	.25471	.00130	.10736
#2	.20670	.08246	.17647	.00051	.10657

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: LLCCV-4 Acquired: 1/30/2019 16:34:39 Type: Unk
Method: 6500_025(v9) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Th2837	Ti3349	Ti1908	U_3701	V_2924
Line	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}
Units	ppm	ppm	ppm	ppm	ppm
Avg	.15615	-.00015	.16046	.63137	.10163
Stddev	.00112	.00019	.00021	.01468	.00020
%RSD	.71651	127.79	.13168	2.3245	.19995

#1	.15536	-.00001	.16032	.62100	.10178
#2	.15694	-.00028	.16061	.64175	.10149

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Zn2062	Zr3391
Line	206.200 {163}	339.198 { 99}
Units	ppm	ppm
Avg	.21345	.00215
Stddev	.00064	.00183
%RSD	.30047	84.858

#1	.21300	.00086
#2	.21390	.00344

Check ?	Chk Pass	Chk Pass
High Limit		
Low Limit		

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3736.2	53615.	4683.8
Stddev	32.5	7.	20.1
%RSD	.86976	.01221	.42907

#1	3759.2	53610.	4669.6
#2	3713.2	53619.	4698.0

Reagent

Icp stk ICSA_00029



5514208
ID: Icp stk ICSA_00027
Exp: 07/08/19 Ppd: SJS
ICP stock ICSA solution

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-ICP-ICSA

ICP ICSA Mix

Lot #: 982821-1

Matrix: 5% HNO₃

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Al	5000 ± 25 mg/L	Fe	2000 ± 10 mg/L
Ca	5000 ± 25 mg/L	Mg	5000 ± 25 mg/L

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO₃) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau, Certifying Officer

January 8, 2019
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
 - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	1077a	Hf	3122	—	S	3154	2770
Al	3101a	1075a	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	—	Sc	3148a	3148a
Au	3121	—	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	1066a
Ba	3104a	1051b	La	3127a	3127a	Sm	3147a	—
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	1057b
Bi	3106	3106	Lu	3130a	—	SO ₄ ²⁻	3181	—
Br	3184	—	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	—
Cd	3108	1053a	Mo	3134	3134	Tb	3157a	—
Ce	3110	3110	Na	3152a	3152a	Te	3156	—
Cl	3182	1818a	Nb	3137	—	Th	3159	—
Co	3113	3113	Nd	3135a	—	Ti	3162a	3162a
Cr	3112a	1078b	Ni	3136	1065b	Tl	3158	3158
Cs	3111a	—	NO ₃ ⁻	3185	—	Tm	3160a	—
Cu	3114	1080a	P	3139a	3139a	U	3164	—
Dy	3115a	—	Pb	3128	3128	V	3165	1052b
Er	3116a	—	Pd	3138	—	W	3163	3163
Eu	3117a	—	PO ₄ ³⁻	3186	—	Y	3167a	3167a
F	3183	—	Pr	3142a	—	Yb	3166a	—
Fe	3126a	1079b	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	—	Rb	3145a	—	Zr	3169	3169
Gd	3118a	—	Re	3143	—			
Ge	3120a	—	Rh	3144	3144			

Reagent

MS CALSTD-1_00132

Standard Verification Form

Standard Information			
Vendor Standard Name	ICP ICPMS CAL Mix 1		
Vendor	CPI		
Lot number	982731-1		
Initial Verification	☒	Re-Verification	☐

TALS "Reagent" Information	
TALS Standard ID	MS CAL STD 1 5364523
COA Reviewed against what is in TALS	☒

Verification Information and Data			
Verified by	LMW	Instrument ID	078
Verification Date	12/26/18	Method Reference	6020
ID of Standard Used for Verification	5495405	Batch # / Chrom Work List #	442617

Attach to this form: formulary report, COA and data used for verification
 Attach to standard in TALS: this form and all supporting documentation including the original CoA

See Acceptance Criteria Below:

Approved for Use	☒	Not Approved for Use	☐
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New expiration date can be no greater than 1/2 the designated standards shelf life from the date of re-verification. Standards can only be re-verified one time.

New Expiration Date:	4/10/20
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1st Level Review LMW

Date: 1/10/19

2nd Level Review DB

Date: 1/22/19

QA Review (Re-verification only)	LMW	Date:	LMW
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Acceptance Criteria		
Department	Standard Analytes	Poor Performers* and Esterified Analytes
GC/HPLC	≤ 15 %D	≤ 35 %D or ≤ 50 %D for dinoseb
GCMS/LCMS	≤ 35 %D	≤ 55 %D
MSVOA	≤ 25 %D	≤ 55 %D
Metals	≤ 8 %D	NA
Wet Chemistry	≤ 5 %D	NA

*See analytical SOP for details on poor performing analytes.

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-CAL1

ICP ICPMS CAL Mix # 1

Lot #: 982731-1

Matrix: 5% HNO₃/tr. HF

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
As	100.0 ± 0.5 mg/L	Li	100.0 ± 0.5 mg/L ✓	Si	1000 ± 5 mg/L
Ba	100.0 ± 0.5 mg/L	Mn	100.0 ± 0.5 mg/L	Sn	100.0 ± 0.5 mg/L
Be	100.0 ± 0.5 mg/L ✓	Mo	100.0 ± 0.5 mg/L	Sr	100.0 ± 0.5 mg/L
Cd	100.0 ± 0.5 mg/L	Ni	100.0 ± 0.5 mg/L	Ti	100.0 ± 0.5 mg/L
Co	100.0 ± 0.5 mg/L	Pb	100.0 ± 0.5 mg/L	Tl	100.0 ± 0.5 mg/L
Cr	100.0 ± 0.5 mg/L	Sb	100.0 ± 0.5 mg/L	V	100.0 ± 0.5 mg/L
Cu	100.0 ± 0.5 mg/L	Se	100.0 ± 0.5 mg/L		

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO₃), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.


Chuck Goudreau, Certifying Officer

October 15, 2018
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
 - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	1077a	Hf	3122	—	S	3154	2770
Al	3101a	1075a	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	—	Sc	3148a	3148a
Au	3121	—	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	1066a
Ba	3104a	1051b	La	3127a	3127a	Sm	3147a	—
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	1057b
Bi	3106	3106	Lu	3130a	—	SO ₄ ²⁻	3181	—
Br	3184	—	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	—
Cd	3108	1053a	Mo	3134	3134	Tb	3157a	—
Ce	3110	3110	Na	3152a	3152a	Te	3156	—
Cl	3182	1818a	Nb	3137	—	Th	3159	—
Co	3113	3113	Nd	3135a	—	Ti	3162a	3162a
Cr	3112a	1078b	Ni	3136	1065b	Tl	3158	3158
Cs	3111a	—	NO ₃ ⁻	3185	—	Tm	3160a	—
Cu	3114	1080a	P	3139a	3139a	U	3164	—
Dy	3115a	—	Pb	3128	3128	V	3165	1052b
Er	3116a	—	Pd	3138	—	W	3163	3163
Eu	3117a	—	PO ₄ ³⁻	3186	—	Y	3167a	3167a
F ⁻	3183	—	Pr	3142a	—	Yb	3166a	—
Fe	3126a	1079b	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	—	Rb	3145a	—	Zr	3169	3169
Gd	3118a	—	Re	3143	—			
Ge	3120a	—	Rh	3144	3144			

Sample Report

Sample Table

Sample Name cal1
Data File Name 177SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\122618.b
Acq Date Time 2018-12-26T21:08:53-07:00
Analyst Denver Metals
Sample Type Sample
Dilution 1
Comment
ISTD Ref FileName 164CALB.d
Sample QC Pass/Fail Pass
ISTD Pass/Fail Pass

254

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	3656.659	ppb	3656.659	0.97	178199631	40000	
Be	9	1	6	4104.053	ppb	4104.053	2.27	2518534	2000	
B	11	1	6	1.443	ppb	1.443	4.96	2157	100	
Na	23	2	45	-25.683	ppb	-25.683	-3.93	11114	400000	
Mg	24	2	45	11.194	ppb	11.194	5.15	1677	400000	
Al	27	2	45	2.536	ppb	2.536	94.42	140	400000	
K	39	2	45	-9.489	ppb	-9.489	-46.57	10160	400000	
Ca	44	2	45	19667.739	ppb	19667.739	0.99	49593	400000	
V	51	2	72	3850.769	ppb	3850.769	1.06	3549417	2000	
Cr	52	2	72	3947.393	ppb	3947.393	2.04	5055126	5000	
Mn	55	2	72	3973.583	ppb	3973.583	5.01	1778426	10000	
Fe	57	2	72	1.993	ppb	1.993	108.99	557	400000	
Co	59	2	72	4006.204	ppb	4006.204	1.12	8550236	2000	
Ni	60	2	72	3991.592	ppb	3991.592	2.74	2407006	5000	
Cu	63	2	72	3956.112	ppb	3956.112	1.44	6450613	5000	
Zn	66	2	72	1.671	ppb	1.671	60.92	660	5000	
As	75	2	72	3781.400	ppb	3781.400	1.01	403912	2000	
Se	78	1	72	3858.347	ppb	3858.347	2.18	984849	2000	
Sr	88	2	45	3810.250	ppb	3810.250	0.68	1300429	2000	
Zr	90	2	72	102.619	ppb	102.619	11.55	1013	1000	
Zr	90	1	72	89.059	ppb	89.059	6.20	8217	1000	
Nb	93	2	72	6.334	ppb	6.334	5.73	14663	200	
Mo	95	2	115	4101.023	ppb	4101.023	4.33	2627054	2000	
Pd	105	2	115	0.170	ppb	0.170	29.69	180	100	
Ag	107	2	115	0.038	ppb	0.038	56.18	117	100	
Cd	111	2	115	3904.623	ppb	3904.623	2.56	1123583	2000	
Sn	120	2	115	4152.508	ppb	4152.508	3.13	2889403	2000	
Sb	121	2	115	3857.277	ppb	3857.277	3.57	2118745	1000	
Ba	137	2	115	3955.072	ppb	3955.072	1.60	660045	5000	
W	182	2	165	0.176	ppb	0.176	26.98	4411	100	
Pt	195	2	165	0.012	ppb	0.012	73.88	57	100	
Tl	205	2	165	3768.212	ppb	3768.212	2.99	18233940	2000	
Pb	208	2	165	3883.063	ppb	3883.063	1.80	25197106	5000	
Th	232	2	165	0.179	ppb	0.179	26.01	1390	2000	
U	238	2	165	0.034	ppb	0.034	21.98	417	2000	

103

CA
96
99
99

100
100
100
99

94
96
95

103

98
104
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99

94
97

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	2277422	1.61	2264630	100.56	60	125	
Sc (IS)	45	2	HMI He	757188	1.10	770564	98.26	60	125	
Sc IS)	45	3	No Gas	61785173	2.25	62537764	98.80	60	120	
Ge Internal Standard	72	1	HMI H2	9382082	2.59	9691882	96.80	60	125	
Ge Internal Standard	72	2	HMI He	728700	0.48	743556	98.00	60	125	
In Internal standard	115	2	HMI He	2024639	2.69	2135768	94.80	60	125	
Ho-165	165	2	HMI He	9887949	3.02	10135539	97.56	60	125	

Sample Report

Sample Table

Sample Name .5 cal1
 Data File Name 176SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\122618.b
 Acq Date Time 2018-12-26T21:05:34-07:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment
 ISTD Ref FileName 164CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

501

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	1927.607	ppb	1927.607	1.91	98157988	40000	
Be	9	1	6	2162.993	ppb	2162.993	0.78	1299482	2000	
B	11	1	6	2.351	ppb	2.351	4.25	2844	100	
Na	23	2	45	1.780	ppb	1.780	105.22	19130	400000	
Mg	24	2	45	10.108	ppb	10.108	9.80	1560	400000	
Al	27	2	45	10.303	ppb	10.303	43.10	340	400000	
K	39	2	45	1.654	ppb	1.654	265.64	10800	400000	
Ca	44	2	45	10262.338	ppb	10262.338	2.78	26183	400000	
V	51	2	72	1926.097	ppb	1926.097	1.87	1801873	2000	
Cr	52	2	72	1984.423	ppb	1984.423	1.99	2577377	5000	
Mn	55	2	72	1967.446	ppb	1967.446	0.14	893162	10000	
Fe	57	2	72	10.043	ppb	10.043	27.74	757	400000	
Co	59	2	72	1997.099	ppb	1997.099	1.47	4322680	2000	
Ni	60	2	72	1943.056	ppb	1943.056	1.84	1188332	5000	
Cu	63	2	72	2037.175	ppb	2037.175	2.28	3369610	5000	
Zn	66	2	72	1.060	ppb	1.060	61.25	547	5000	
As	75	2	72	1901.973	ppb	1901.973	0.16	206065	2000	
Se	78	1	72	1951.779	ppb	1951.779	3.65	512950	2000	
Sr	88	2	45	1913.794	ppb	1913.794	1.32	660590	2000	
Zr	90	2	72	70.916	ppb	70.916	17.67	723	1000	
Zr	90	1	72	62.326	ppb	62.326	9.16	6958	1000	
Nb	93	2	72	18.706	ppb	18.706	2.67	40649	200	
Mo	95	2	115	1995.992	ppb	1995.992	0.83	1282919	2000	
Pd	105	2	115	0.113	ppb	0.113	22.29	120	100	
Ag	107	2	115	0.050	ppb	0.050	21.12	143	100	
Cd	111	2	115	2008.362	ppb	2008.362	1.01	579689	2000	
Sn	120	2	115	2029.472	ppb	2029.472	1.84	1416369	2000	
Sb	121	2	115	1935.049	ppb	1935.049	0.21	1066124	1000	
Ba	137	2	115	2024.602	ppb	2024.602	2.05	338820	5000	
W	182	2	165	0.025	ppb	0.025	325.32	4011	100	
Pt	195	2	165	0.042	ppb	0.042	32.38	130	100	
Ti	205	2	165	1937.107	ppb	1937.107	3.49	9432943	2000	
Pb	208	2	165	1989.796	ppb	1989.796	4.29	12990802	5000	
Th	232	2	165	0.362	ppb	0.362	11.34	2594	2000	
U	238	2	165	0.156	ppb	0.156	6.94	1380	2000	

96.3

95.6

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	2229335	1.63	2264630	98.44	60	125	
Sc (IS)	45	2	HMI He	765674	0.83	770564	99.37	60	125	
Sc IS)	45	3	No Gas	60082696	0.95	62537764	96.07	60	120	
Ge Internal Standard	72	1	HMI H2	9660685	2.04	9691882	99.68	60	125	
Ge Internal Standard	72	2	HMI He	739034	0.62	743556	99.39	60	125	
In Internal standard	115	2	HMI He	2029970	0.90	2135768	95.05	60	125	
Ho-165	165	2	HMI He	9948227	1.43	10135539	98.15	60	125	

Reagent

MS CALSTD-1_00136

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Custom Grade Solution
Catalog Number: ICPMS-CALSTD-1
Lot Number: P2-MEB675675
Matrix: 5% (v/v) HNO₃
Value / Analyte(s): 20 µg/mL ea:
Silver, Arsenic, Barium,
Beryllium, Cadmium, Cobalt,
Chromium, Copper, Manganese,
Nickel, Lead, Selenium,
Thorium, Thallium, Uranium,
Vanadium, Zinc

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Arsenic, As	20.01 ± 0.16 µg/mL	Barium, Ba	20.01 ± 0.10 µg/mL
Beryllium, Be	20.00 ± 0.12 µg/mL	Cadmium, Cd	20.00 ± 0.12 µg/mL
Chromium, Cr	20.01 ± 0.11 µg/mL	Cobalt, Co	20.01 ± 0.11 µg/mL
Copper, Cu	20.01 ± 0.10 µg/mL	Lead, Pb	20.01 ± 0.11 µg/mL
Manganese, Mn	20.01 ± 0.10 µg/mL	Nickel, Ni	20.01 ± 0.11 µg/mL
Selenium, Se	20.00 ± 0.12 µg/mL	Silver, Ag	20.00 ± 0.14 µg/mL
Thallium, Tl	20.00 ± 0.14 µg/mL	Thorium, Th	20.00 ± 0.10 µg/mL
Uranium, U	19.99 ± 0.10 µg/mL	Vanadium, V	20.01 ± 0.11 µg/mL
Zinc, Zn	20.01 ± 0.11 µg/mL		

Density: 1.025 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	992212
Ag	Volhard	999c	999c
As	ICP Assay	3103a	100818
As	Calculated		See Sec. 4.2
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Co	ICP Assay	3113	000630 Co
Co	EDTA	928	928
Cr	ICP Assay	3112a	030730Cr3
Cr	Calculated		See Sec. 4.2
Cu	ICP Assay	3114	011017
Cu	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
Th	EDTA	928	928
Th	Calculated		See Sec. 4.2
Tl	ICP Assay	3158	993012
Tl	Calculated		See Sec. 4.2
U	ICP Assay	3164	080521
U	Calculated		See Sec. 4.2
V	EDTA	928	928
V	ICP Assay	3165	992706
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{\text{CRM/RM}}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{\text{CRM/RM}} = \sum (w_i) (X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{\text{char } i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{\text{char } i}^2) / (\sum (1/u_{\text{char } i}^2))$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k (u_{\text{char}}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char}} = [\sum (w_i)^2 (u_{\text{char } i})^2]^{1/2}$ where $u_{\text{char } i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{\text{CRM/RM}}$, where one method of characterization is used is the mean of individual results:

$$X_{\text{CRM/RM}} = (X_a) (u_{\text{char } a})$$

X_a = mean of Assay Method A with

$u_{\text{char } a}$ = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{\text{CRM/RM}} = k (u_{\text{char } a}^2 + u_{\text{bb}}^2 + u_{\text{Its}}^2 + u_{\text{ts}}^2)^{1/2}$$

k = coverage factor = 2

$u_{\text{char } a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{Its} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Certified Abundance:

IV's Certified Abundance

<u>Isotope</u>	<u>Atom %</u>
Uranium 238U	99.7 ± 0.1
Uranium 235U	0.28 ± 0.05

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

Low Silver Note: This solution contains "LOW" levels of Silver. Please store this entire bottle inside a sealed glass jar.

Uranium Note: If uranium is present in this standard, it is natural abundance unless specified in Section 3

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 21, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- January 21, 2023

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control



Certifying Officer:

Paul Gaines
CEO, Senior Technical Director



Reagent

MS CALSTD-4_00001

Standard Verification Form

Standard Information			
Vendor Standard Name	ICP-ICPMS CAL 4 Solution A		
Vendor	CPI		
Lot number	10088633-9		
Initial Verification	☒	Re-Verification	☐

TALS "Reagent" Information	
TALS Standard ID	MS CAL STD 4
COA Reviewed against what is in TALS	5364671 ☒

Verification Information and Data			
Verified by	LMT	Instrument ID	078
Verification Date	12/26/19, 1/13/20	Method Reference	6020
ID of Standard Used for Verification	5495405	Batch # / Chrom Work List #	442617, 443241

Attach to this form: formulary report, COA and data used for verification
 Attach to standard in TALS: this form and all supporting documentation including the original CoA

See Acceptance Criteria Below:

Approved for Use ☒ Not Approved for Use ☐

New expiration date can be no greater than 1/2 the designated standards shelf life from the date of re-verification. Standards can only be re-verified one time.

New Expiration Date: 11/10/19 4 7/21/20

1st Level Review 1/10/19 Date: LMT

2nd Level Review 1/22/19 Date: DG

QA Review (Re-verification only) *me* Date: *me*

Acceptance Criteria		
Department	Standard Analytes	Poor Performers* and Esterified Analytes
GC/HPLC	≤ 15 %D	≤ 35 %D or ≤ 50 %D for dinoseb
GCMS/LCMS	≤ 35 %D	≤ 55 %D
MSVOA	≤ 25 %D	≤ 55 %D
Metals	≤ 8 %D	NA
Wet Chemistry	≤ 5 %D	NA

*See analytical SOP for details on poor performing analytes.



5364671
ID: MS CALSTD-4_00001
Exp:07/21/20 Prod:LMT Opn:12/26/18
ICP-MS Cal Std 4 CPI new

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-CM-OCT18-DEN9-A

Custom ICP ICPMS Cal 4 Solution A

Lot #: 10088633-9

Matrix: 5% HNO₃

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Ag	100.0 ± 0.5 µg/mL	Nd	100.2 ± 0.5 µg/mL	Th	99.94 ± 0.50 µg/mL
Dy	100.0 ± 0.5 µg/mL	Pd	100.2 ± 0.5 µg/mL	Zn	100.1 ± 0.5 µg/mL
Gd	99.87 ± 0.50 µg/mL	Sm	100.1 ± 0.5 µg/mL		
Li	100.2 ± 0.5 µg/mL	Sr	100.1 ± 0.5 µg/mL		

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO₃) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau, Certifying Officer

November 21, 2018

Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

USA
5580 Skylane Boulevard P: 707.525.5788
Santa Rosa, CA 95403 P: 800.878.7654
F: 707.545.7901

www.cpiinternational.com
Page 1 of 2

Europe
Nieuwe Hemweg 7P P: +31 20 638 05 97
1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
 - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	1077a	Hf	3122	—	S	3154	2770
Al	3101a	1075a	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	—	Sc	3148a	3148a
Au	3121	—	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	1066a
Ba	3104a	1051b	La	3127a	3127a	Sm	3147a	—
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	1057b
Bi	3106	3106	Lu	3130a	—	SO ₄ ²⁻	3181	—
Br	3184	—	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	—
Cd	3108	1053a	Mo	3134	3134	Tb	3157a	—
Ce	3110	3110	Na	3152a	3152a	Te	3156	—
Cl	3182	1818a	Nb	3137	—	Th	3159	—
Co	3113	3113	Nd	3135a	—	Ti	3162a	3162a
Cr	3112a	1078b	Ni	3136	1065b	Tl	3158	3158
Cs	3111a	—	NO ₃	3185	—	Tm	3160a	—
Cu	3114	1080a	P	3139a	3139a	U	3164	—
Dy	3115a	—	Pb	3128	3128	V	3165	1052b
Er	3116a	—	Pd	3138	—	W	3163	3163
Eu	3117a	—	PO ₄ ³⁻	3186	—	Y	3167a	3167a
F	3183	—	Pr	3142a	—	Yb	3166a	—
Fe	3126a	1079b	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	—	Rb	3145a	—	Zr	3169	3169
Gd	3118a	—	Re	3143	—			
Ge	3120a	—	Rh	3144	3144			

Sample Report

Sample Table

Sample Name .5 cal4
 Data File Name 194SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\122618.b
 Acq Date Time 2018-12-26T22:06:31-07:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment
 ISTD Ref FileName 164CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

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QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	1892.448	ppb	1892.448	1.08	99105181	40000	
Be	9	1	6	0.064	ppb	0.064	39.93	45	2000	
B	11	1	6	-0.216	ppb	-0.216	-22.81	807	100	
Na	23	2	45	-25.159	ppb	-25.159	-5.85	11300	400000	
Mg	24	2	45	1.215	ppb	1.215	43.82	443	400000	
Al	27	2	45	1.742	ppb	1.742	124.68	120	400000	
K	39	2	45	3.179	ppb	3.179	424.46	10790	400000	
Ca	44	2	45	10256.373	ppb	10256.373	1.95	25966	400000	
V	51	2	72	-0.497	ppb	-0.497	-10.82	2134	2000	
Cr	52	2	72	-0.012	ppb	-0.012	-716.67	657	5000	
Mn	55	2	72	0.191	ppb	0.191	47.89	180	10000	
Fe	57	2	72	-2.339	ppb	-2.339	-345.44	470	400000	
Co	59	2	72	0.056	ppb	0.056	3.45	163	2000	
Ni	60	2	72	-0.030	ppb	-0.030	-86.16	113	5000	
Cu	63	2	72	0.205	ppb	0.205	92.76	2634	5000	
Zn	66	2	72	1849.661	ppb	1849.661	1.76	378813	5000	
As	75	2	72	79.107	ppb	79.107	1.52	8779	2000	
Se	78	1	72	32.233	ppb	32.233	2.24	8471	2000	
Sr	88	2	45	1900.126	ppb	1900.126	1.01	650743	2000	
Zr	90	2	72	-0.084	ppb	-0.084	-1802.57	43	1000	
Zr	90	1	72	-0.423	ppb	-0.423	-1579.52	3427	1000	
Nb	93	2	72	2.548	ppb	2.548	7.90	7128	200	
Mo	95	2	115	0.081	ppb	0.081	101.31	97	2000	
Pd	105	2	115	2108.446	ppb	2108.446	3.69	2308092	100	>LDR
Ag	107	2	115	1673.734	ppb	1673.734	4.46	3973117	100	>LDR
Cd	111	2	115	0.056	ppb	0.056	34.88	17	2000	
Sn	120	2	115	0.247	ppb	0.247	37.80	253	2000	
Sb	121	2	115	0.354	ppb	0.354	47.82	243	1000	
Ba	137	2	115	0.080	ppb	0.080	125.57	30	5000	
W	182	2	165	-0.103	ppb	-0.103	-34.61	3647	100	
Pt	195	2	165	0.059	ppb	0.059	24.64	173	100	
Tl	205	2	165	0.022	ppb	0.022	49.88	203	2000	
Pb	208	2	165	1.660	ppb	1.660	5.00	11393	5000	
Th	232	2	165	1901.230	ppb	1901.230	2.82	12397459	2000	
U	238	2	165	0.225	ppb	0.225	5.62	1927	2000	

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92 - AS - SC 95

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QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	2312935	2.26	2264630	102.13	60	125	
Sc (IS)	45	2	HMI He	759751	0.37	770564	98.60	60	125	
Sc IS)	45	3	No Gas	61617794	0.84	62537764	98.53	60	120	
Ge Internal Standard	72	1	HMI H2	9634264	0.77	9691882	99.41	60	125	
Ge Internal Standard	72	2	HMI He	754257	0.98	743556	101.44	60	125	
In Internal standard	115	2	HMI He	2096516	0.66	2135768	98.16	60	125	
Ho-165	165	2	HMI He	9946093	1.99	10135539	98.13	60	125	

Sample Report

Sample Table

Sample Name cal4
 Data File Name 196SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\122618.b
 Acq Date Time 2018-12-26T22:13:15-07:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment
 ISTD Ref FileName 164CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

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QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	3719.415	ppb	3719.415	1.25	177395399	40000	
Be	9	1	6	0.051	ppb	0.051	63.74	37	2000	
B	11	1	6	-0.157	ppb	-0.157	-72.49	853	100	
Na	23	2	45	-25.738	ppb	-25.738	-5.09	10920	400000	
Mg	24	2	45	0.519	ppb	0.519	81.46	350	400000	
Al	27	2	45	0.234	ppb	0.234	166.44	80	400000	
K	39	2	45	1.120	ppb	1.120	760.34	10485	400000	
Ca	44	2	45	20216.490	ppb	20216.490	1.40	50162	400000	← Ca
V	51	2	72	-0.489	ppb	-0.489	-16.92	2167	2000	
Cr	52	2	72	-0.033	ppb	-0.033	-165.84	637	5000	
Mn	55	2	72	0.151	ppb	0.151	39.09	163	10000	
Fe	57	2	72	-1.639	ppb	-1.639	-228.93	493	400000	
Co	59	2	72	0.053	ppb	0.053	42.75	160	2000	
Ni	60	2	72	-0.037	ppb	-0.037	-269.16	110	5000	
Cu	63	2	72	0.218	ppb	0.218	77.49	2690	5000	
Zn	66	2	72	3511.506	ppb	3511.506	1.19	727327	5000	← Zn
As	75	2	72	148.447	ppb	148.447	0.59	16639	2000	← As
Se	78	1	72	62.105	ppb	62.105	2.32	16280	2000	
Sr	88	2	45	3718.659	ppb	3718.659	1.70	1248766	2000	
Zr	90	2	72	2.559	ppb	2.559	204.66	70	1000	
Zr	90	1	72	0.873	ppb	0.873	548.06	3497	1000	
Nb	93	2	72	0.787	ppb	0.787	3.77	3424	200	
Mo	95	2	115	0.084	ppb	0.084	12.48	97	2000	
Pd	105	2	115	4207.383	ppb	4207.383	3.79	4539940	100	>LDR
Ag	107	2	115	2750.341	ppb	2750.341	39.33	6454403	100	>LDR
Cd	111	2	115	0.067	ppb	0.067	86.60	20	2000	
Sn	120	2	115	0.242	ppb	0.242	55.26	247	2000	
Sb	121	2	115	0.205	ppb	0.205	34.48	157	1000	
Ba	137	2	115	0.435	ppb	0.435	40.61	90	5000	
W	182	2	165	-0.191	ppb	-0.191	-36.22	3317	100	
Pt	195	2	165	0.050	ppb	0.050	52.03	147	100	
Tl	205	2	165	0.023	ppb	0.023	36.49	200	2000	
Pb	208	2	165	3.205	ppb	3.205	6.75	20969	5000	
Th	232	2	165	3884.781	ppb	3884.781	1.16	24763166	2000	
U	238	2	165	0.382	ppb	0.382	14.43	3097	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	2308058	1.34	2264630	101.92	60	125	
Sc (IS)	45	2	HMI He	745023	0.65	770564	96.69	60	125	
Sc (IS)	45	3	No Gas	60556976	2.18	62537764	96.83	60	120	
Ge Internal Standard	72	1	HMI H2	9623230	2.30	9691882	99.29	60	125	
Ge Internal Standard	72	2	HMI He	763121	1.11	743556	102.63	60	125	
In Internal standard	115	2	HMI He	2066816	1.49	2135768	96.77	60	125	
Ho-165	165	2	HMI He	9721044	2.10	10135539	95.91	60	125	

Sample Report

Sample Table

Sample Name cal 4
 Data File Name 0655SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\010319.b
 Acq Date Time 2019-01-03T15:23:54-07:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment
 ISTD Ref FileName 008CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	3853.739	ppb	3853.739	0.75	186572939	40000	
Be	9	1	6	-0.017	ppb	-0.017	-79.73	15	2000	
B	11	1	6	0.741	ppb	0.741	22.39	1107	100	
Na	23	2	45	-28.535	ppb	-28.535	-1.03	9333	400000	
Mg	24	2	45	-0.341	ppb	-0.341	-154.59	243	400000	
Al	27	2	45	5.234	ppb	5.234	37.93	223	400000	
K	39	2	45	-25.388	ppb	-25.388	-54.49	8619	400000	
Ca	44	2	45	21710.665	ppb	21710.665	2.19	47668	400000	
V	51	2	72	0.628	ppb	0.628	19.21	2960	2000	
Cr	52	2	72	0.103	ppb	0.103	155.05	1113	5000	
Mn	55	2	72	-0.109	ppb	-0.109	-42.49	70	10000	
Fe	57	2	72	1.660	ppb	1.660	351.34	780	400000	
Co	59	2	72	0.059	ppb	0.059	8.61	173	2000	
Ni	60	2	72	0.061	ppb	0.061	96.46	160	5000	
Cu	63	2	72	0.412	ppb	0.412	10.08	2180	5000	
Zn	66	2	72	3652.135	ppb	3652.135	0.75	679214	5000	
As	75	2	72	159.418	ppb	159.418	0.78	16200	2000	
Se	78	1	72	59.768	ppb	59.768	3.10	15191	2000	
Sr	88	2	45	4001.498	ppb	4001.498	0.76	1087166	2000	
Zr	90	2	72	6.961	ppb	6.961	154.88	57	1000	
Zr	90	1	72	16.694	ppb	16.694	17.67	3758	1000	
Nb	93	2	72	0.266	ppb	0.266	18.39	643	200	
Mo	95	2	115	-0.004	ppb	-0.004	-916.67	37	2000	
Pd	105	2	115	3803.259	ppb	3803.259	1.92	4057890	100	>LDR
Ag	107	2	115	982.634	ppb	982.634	119.18	2279325	100	>LDR
Cd	111	2	115	0.037	ppb	0.037	173.21	10	2000	
Sn	120	2	115	0.028	ppb	0.028	8.12	150	2000	
Sb	121	2	115	0.029	ppb	0.029	260.08	47	1000	
Ba	137	2	115	0.188	ppb	0.188	224.25	40	5000	
W	182	2	165	-0.044	ppb	-0.044	-119.19	1037	100	
Pt	195	2	165	0.008	ppb	0.008	30.36	27	100	
Tl	205	2	165	0.004	ppb	0.004	183.59	113	2000	
Pb	208	2	165	3.092	ppb	3.092	4.26	16925	5000	
Th	232	2	165	3969.656	ppb	3969.656	2.13	21090547	2000	
U	238	2	165	0.376	ppb	0.376	0.97	2644	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	2229288	2.69	2393764	93.13	60	125	
Sc (IS)	45	2	HMI He	759297	0.33	794153	95.61	60	125	
Sc (IS)	45	3	No Gas	60769814	0.88	68188743	89.12	60	120	
Ge Internal Standard	72	1	HMI H2	9950137	1.00	10812425	92.03	60	125	
Ge Internal Standard	72	2	HMI He	760102	0.59	764342	99.45	60	125	
In Internal standard	115	2	HMI He	1931618	0.97	2000530	96.56	60	125	
Ho-165	165	2	HMI He	9201344	2.63	10096939	91.13	60	125	

Reagent

MS ICSA STOCK_00033

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-ICPMS-ICSA

ICPMS ICSA Mix

Lot #: 992328-1

Matrix: 2% HNO₃

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Al	1000 ± 5 mg/L	Fe	1000 ± 5 mg/L	Na	999.9 ± 5.0 mg/L
C	1999 ± 10.0 mg/L	K	1000 ± 5 mg/L	P	1000 ± 5 mg/L
Ca	1000 ± 5 mg/L	Mg	1000 ± 5 mg/L	S	1000 ± 5 mg/L
Cl	9999 ± 50.0 mg/L	Mo	20.01 ± 0.10 mg/L	Ti	19.99 ± 0.10 mg/L

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to ISO 9001, ISO 17034, and ISO/IEC 17025. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to NIST SRMs (see reverse side). The solution was stabilized using high purity nitric acid (HNO₃) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against NIST SRMs (see reverse side). The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

January 3, 2019

Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
 - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	1077a	Hf	3122	—	S	3154	2770
Al	3101a	1075a	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	—	Sc	3148a	3148a
Au	3121	—	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	1066a
Ba	3104a	1051b	La	3127a	3127a	Sm	3147a	—
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	1057b
Bi	3106	3106	Lu	3130a	—	SO ₄ ²⁻	3181	—
Br	3184	—	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	—
Cd	3108	1053a	Mo	3134	3134	Tb	3157a	—
Ce	3110	3110	Na	3152a	3152a	Te	3156	—
Cl	3182	1818a	Nb	3137	—	Th	3159	—
Co	3113	3113	Nd	3135a	—	Ti	3162a	3162a
Cr	3112a	1078b	Ni	3136	1065b	Tl	3158	3158
Cs	3111a	—	NO ₃ ⁻	3185	—	Tm	3160a	—
Cu	3114	1080a	P	3139a	3139a	U	3164	—
Dy	3115a	—	Pb	3128	3128	V	3165	1052b
Er	3116a	—	Pd	3138	—	W	3163	3163
Eu	3117a	—	PO ₄ ³⁻	3186	—	Y	3167a	3167a
F	3183	—	Pr	3142a	—	Yb	3166a	—
Fe	3126a	1079b	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	—	Rb	3145a	—	Zr	3169	3169
Gd	3118a	—	Re	3143	—			
Ge	3120a	—	Rh	3144	3144			

Reagent

MS ICVMIX--4_00001

Standard Verification Form

Standard Information			
Vendor Standard Name	ICP ICPMS CAL 4 solution A		
Vendor	CPI		
Lot number	10088633-10		
Initial Verification	☒	Re-Verification	☐

TALS "Reagent" Information	
TALS Standard ID	MS ICPMS CAL 4 5499604
COA Reviewed against what is in TALS	☒

Verification Information and Data			
Verified by	LNT	Instrument ID	077
Verification Date	1/21/19, 1/31/19, 1/11/19	Method Reference	6020
ID of Standard Used for Verification	5500268, 5501313, 5509805	Batch # / Chrom Work List #	443117, 443253, 444142
Attach to this form: formulary report, COA and data used for verification			
Attach to standard in TALS: this form and all supporting documentation including the original CoA			

See Acceptance Criteria Below:

Approved for Use	☐	Not Approved for Use	☐
New expiration date can be no greater than 1/2 the designated standards shelf life from the date of re-verification. Standards can only be re-verified one time.			
New Expiration Date:	1/5/20		

1st Level Review

LM

Date:

1/15/19

2nd Level Review

DB

Date:

1/22/19

QA Review (Re-verification only)	<u>LM</u>	Date:	<u>LM</u>
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Acceptance Criteria		
Department	Standard Analytes	Poor Performers* and Esterified Analytes
GC/HPLC	≤ 15 %D	≤ 35 %D or ≤ 50 %D for dinoseb
GCMS/LCMS	≤ 35 %D	≤ 55 %D
MSVOA	≤ 25 %D	≤ 55 %D
Metals	≤ 8 %D	NA
Wet Chemistry	≤ 5 %D	NA

*See analytical SOP for details on poor performing analytes.

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-CM-OCT18-DEN9-A-SS

Custom ICP ICPMS Cal 4 Solution A

Lot #: 10088633-10

Matrix: 5% HNO₃

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Ag	100.0 ± 0.5 µg/mL	Nd	100.0 ± 0.5 µg/mL	Th	100.1 ± 0.5 µg/mL
Dy	100.0 ± 0.5 µg/mL	Pd	100.0 ± 0.5 µg/mL	Zn	100.0 ± 0.5 µg/mL
Gd	100.1 ± 0.5 µg/mL	Sm	100.0 ± 0.5 µg/mL		
Li	100.1 ± 0.5 µg/mL	Sr	100.0 ± 0.5 µg/mL		

Intended Use: This solution is intended for use as a second source certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to ISO 9001, ISO 17034, and ISO/IEC 17025. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to NIST SRMs (see reverse side). The solution was stabilized using high purity nitric acid (HNO₃) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against NIST SRMs (see reverse side). The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau

Chuck Goudreau, Certifying Officer

November 21, 2018
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
 - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	1077a	Hf	3122	—	S	3154	2770
Al	3101a	1075a	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	—	Sc	3148a	3148a
Au	3121	—	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	1066a
Ba	3104a	1051b	La	3127a	3127a	Sm	3147a	—
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	1057b
Bi	3106	3106	Lu	3130a	—	SO ₄ ²⁻	3181	—
Br	3184	—	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	—
Cd	3108	1053a	Mo	3134	3134	Tb	3157a	—
Ce	3110	3110	Na	3152a	3152a	Te	3156	—
Cl	3182	1818a	Nb	3137	—	Th	3159	—
Co	3113	3113	Nd	3135a	—	Ti	3162a	3162a
Cr	3112a	1078b	Ni	3136	1065b	Tl	3158	3158
Cs	3111a	—	NO ₃ ⁻	3185	—	Tm	3160a	—
Cu	3114	1080a	P	3139a	3139a	U	3164	—
Dy	3115a	—	Pb	3128	3128	V	3165	1052b
Er	3116a	—	Pd	3138	—	W	3163	3163
Eu	3117a	—	PO ₄ ³⁻	3186	—	Y	3167a	3167a
F	3183	—	Pr	3142a	—	Yb	3166a	—
Fe	3126a	1079b	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	—	Rb	3145a	—	Zr	3169	3169
Gd	3118a	—	Re	3143	—			
Ge	3120a	—	Rh	3144	3144			

Sample Report

Sample Table

Sample Name 0.5 cal 4
Data File Name 0795MPL.d
Data Path Name D:\MassHunter Data\010319.b
Acq Date Time 2019-01-03T15:53:12-07:00
Analyst Trudell, Lynn-Anne
Sample Type Sample
Dilution 1
Comment
ISTD Ref FileName 045CALB.d
Sample QC Pass/Fail Fail
ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	1	45	2235.052	ppb	2235.052	0.74	1206191	500000	
Li	7	2	45	1988.199	ppb	1988.199	4.16	43678	500000	
Li	7	3	45	1935.877	ppb	1935.877	1.40	66978526	50000	
Be	9	1	6	-0.013	ppb	-0.013	-194.39	7	2000	
B	11	1	6	-2.156	ppb	-2.156	-4.81	980	2000	
Na	23	1	45	-2.190	ppb	-2.190	-22.95	257447	2000	
Na	23	2	45	1.558	ppb	1.558	120.56	19000	400000	
Mg	24	2	45	5.800	ppb	5.800	29.64	863	400000	
Al	27	2	45	1.676	ppb	1.676	87.78	183	400000	
K	39	1	45	55.098	ppb	55.098	24.28	11113468	400000	
K	39	2	45	32.649	ppb	32.649	69.35	16140	400000	
Ca	40	1	45	14.395	ppb	14.395	1.30	157444	400000	
Ca	44	2	45	7512.628	ppb	7512.628	3.00	15736	400000	
Ti	47	2	45	0.347	ppb	0.347	86.64	7	4000	
V	51	2	72	0.484	ppb	0.484	13.35	4664	2000	
Cr	52	2	72	-0.047	ppb	-0.047	-85.59	613	5000	
Mn	55	2	72	0.065	ppb	0.065	180.71	130	10000	
Fe	57	2	72	1.669	ppb	1.669	145.13	153	400000	
Co	59	2	72	0.030	ppb	0.030	100.61	97	2000	
Ni	60	2	72	0.017	ppb	0.017	695.51	133	5000	
Cu	63	2	72	0.069	ppb	0.069	81.28	1650	5000	
Zn	66	2	72	1898.208	ppb	1898.208	1.88	368763	5000	
As	75	2	72	47.224	ppb	47.224	1.74	6328	2000	
Se	78	1	72	14.757	ppb	14.757	5.61	3308	2000	
Sr	88	2	72	1832.418	ppb	1832.418	1.46	624785	4000	
Zr	90	2	72	5.054	ppb	5.054	122.78	47	1000	
Nb	93	2	72	1.873	ppb	1.873	10.30	5081	200	
Mo	95	2	115	0.216	ppb	0.216	37.27	187	2000	
Pd	105	2	115	2124.068	ppb	2124.068	1.59	2033658	100	>LDR
Ag	107	2	115	320.338	ppb	320.338	42.18	676624	100	
Cd	111	2	115	0.041	ppb	0.041	101.30	10	2000	
Sn	120	2	115	0.164	ppb	0.164	18.56	197	2000	
Sb	121	2	115	0.183	ppb	0.183	36.72	207	1000	
Ba	137	2	115	0.170	ppb	0.170	54.21	50	5000	
W	182	2	165	0.227	ppb	0.227	13.74	1130	100	
Pt	195	2	165	0.025	ppb	0.025	42.47	87	100	
Tl	205	2	165	0.012	ppb	0.012	93.15	137	2000	
Pb	208	2	165	1.814	ppb	1.814	1.76	13455	5000	
Tn	232	2	165	1985.702	ppb	1985.702	0.35	16643854	2000	
U	238	2	165	0.439	ppb	0.439	4.57	4098	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1341204	2.03	1460232	91.85	60	120	
Sc (IS)	45	1	HMI H2	21968819	0.28	23361340	94.04	60	120	
Sc (IS)	45	2	HMI He	609709	2.60	650472	93.73	60	120	
Sc (IS)	45	3	No Gas	58744191	1.43	59100497	99.40	60	120	
Ge Internal Standard	72	1	HMI H2	8439859	1.26	8906732	94.76	60	120	
Ge Internal Standard	72	2	HMI He	699773	2.64	726696	96.30	60	120	
In Internal Standard	115	2	HMI He	1897438	2.19	2021111	93.88	60	120	
Ho-165	165	2	HMI He	9657634	0.71	9971317	96.85	60	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name mix icv4
Data File Name 036_ICV.d
Data Path Name D:\MassHunter Data\01011119.b
Acq Date Time 2019-01-11T12:14:08-07:00
Sample Type ICV
Dilution 1
Comment
ISTD Ref File Name 007CALB.d
Sample QC Pass/Fail Fail
ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	1	45	101.040	ppb	2.028	145094	400	25.3	90	110	>+ -10%
Li	7	2	45	64.631	ppb	22.030	4908	400	16.2	90	110	>+ -10%
Li	7	3	45	102.135	ppb	5.522	6714897	400	25.5	90	110	>+ -10%
Be	9	1	6	36.475	ppb	3.259	15455	40	91.2	90	110	
B	11	1	6	0.992	ppb	14.143	673	40	2.5	90	110	>+ -10%
Na	23	1	45	796.792	ppb	1.576	2902103	4000	19.9	90	110	>+ -10%
Na	23	2	45	758.122	ppb	0.050	181885	4000	19.0	90	110	>+ -10%
Mg	24	2	45	785.126	ppb	2.200	75308	4000	19.6	90	110	>+ -10%
Al	27	2	45	803.056	ppb	3.708	20191	4000	20.1	90	110	>+ -10%
K	39	1	45	827.187	ppb	6.648	13275137	4000	20.7	90	110	>+ -10%
K	39	2	45	755.697	ppb	1.944	57848	4000	18.9	90	110	>+ -10%
Ca	40	1	45	797.681	ppb	0.292	3954537	4000	19.9	90	110	>+ -10%
Ca	44	2	45	1019.954	ppb	5.646	2637	4000	25.5	90	110	>+ -10%
Ti	47	2	45	40.374	ppb	20.032	823	40	100.9	90	110	
V	51	2	72	39.383	ppb	2.732	40414	40	98.5	90	110	
Cr	52	2	72	39.033	ppb	4.284	47907	40	97.6	90	110	
Mn	55	2	72	39.281	ppb	3.607	17575	40	98.2	90	110	
Fe	57	2	72	766.275	ppb	3.291	16714	4000	19.2	90	110	>+ -10%
Co	59	2	72	38.441	ppb	1.997	80876	40	96.1	90	110	
Ni	60	2	72	37.733	ppb	1.235	22542	40	94.3	90	110	
Cu	63	2	72	37.908	ppb	2.984	63956	40	94.8	90	110	
Zn	66	2	72	37.521	ppb	3.126	8730	40	93.8	90	110	
As	75	2	72	38.921	ppb	0.703	6273	40	97.3	90	110	
Se	78	1	72	38.237	ppb	0.310	9837	40	95.6	90	110	
Sr	88	2	72	74.761	ppb	0.814	31633	40	186.9	90	110	>+ -10%
Zr	90	2	72	12.166	ppb	67.581	163	40	30.4	90	110	>+ -10%
Nb	93	2	72	34.320	ppb	0.845	88077	80	42.9	90	110	>+ -10%
Mo	95	2	115	38.298	ppb	1.977	27361	40	95.7	90	110	
Pd	105	2	115	39.283	ppb	1.690	43368	40	98.2	90	110	
Ag	107	2	115	37.416	ppb	1.898	92934	40	93.5	90	110	
Cd	111	2	115	35.945	ppb	1.794	10608	40	89.9	90	110	>+ -10%
Sn	120	2	115	38.819	ppb	2.135	29573	40	97.0	90	110	
Sb	121	2	115	39.097	ppb	1.525	27919	40	97.7	90	110	
Ba	137	2	115	35.674	ppb	5.519	8123	40	89.2	90	110	>+ -10%
W	182	2	165	39.423	ppb	1.412	129976	40	98.6	90	110	
Pt	195	2	165	38.027	ppb	0.974	110386	40	95.1	90	110	
Tl	205	2	165	38.875	ppb	1.262	224845	40	97.2	90	110	
Pb	208	2	165	39.281	ppb	0.650	297886	40	98.2	90	110	
Th	232	2	165	39.391	ppb	0.920	345501	40	98.5	90	110	
U	238	2	165	38.466	ppb	1.225	364061	40	96.2	90	110	

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QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	765246	0.50	749074	102.16	60	120	
Sc (IS)	45	1	HMI H2	27061203	1.68	28055669	96.46	60	120	
Sc (IS)	45	2	HMI He	826154	0.84	868713	95.10	60	120	
Sc (IS)	45	3	No Gas	62668627	1.51	63264234	99.06	60	120	
Ge Internal Standard	72	1	HMI H2	10511209	0.94	10773765	97.56	60	120	
Ge Internal Standard	72	2	HMI He	929574	1.02	971069	95.73	60	120	
In Internal Standard	115	2	HMI He	2471344	1.52	2542617	97.20	60	120	
Ho-165	165	2	HMI He	11548876	0.38	11767270	98.14	60	120	

Reagent

MS icvMIX-1_00001

Standard Verification Form

Standard Information			
Vendor Standard Name	TCP-ELPHS CAL MLX #1 (SS)		
Vendor	LPI		
Lot number	932733-1		
Initial Verification	☒	Re-Verification	☐

TALS "Reagent" Information	
TALS Standard ID	MSICV MLX 1 5499585
COA Reviewed against what is in TALS	☒

Verification Information and Data			
Verified by	LWR	Instrument ID	077
Verification Date	1/2/19 + 1/3/19	Method Reference	6020
ID of Standard Used for Verification	5500268, 5501313	Batch # / Chrom Work List #	443112, 443253

Attach to this form: formulary report, COA and data used for verification.
 Attach to standard in TALS: this form and all supporting documentation including the original CoA

See Acceptance Criteria Below:

Approved for Use	☒	Not Approved for Use	☐
New expiration date can be no greater than 1/2 the designated standards shelf life from the date of re-verification. Standards can only be re-verified one time.			
New Expiration Date:			

1st Level Review

1/10/19

Date: LWR

2nd Level Review

DB

Date: 1/22/19

QA Review (Re-verification only)	W	Date:	W
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Acceptance Criteria		
Department	Standard Analytes	Poor Performers* and Esterified Analytes
GC/HPLC	≤ 15 %D	≤ 35 %D or ≤ 50 %D for dinoseb
GCMS/LCMS	≤ 35 %D	≤ 55 %D
MSVOA	≤ 25 %D	≤ 55 %D
Metals	≤ 8 %D	NA
Wet Chemistry	≤ 5 %D	NA

*See analytical SOP for details on poor performing analytes.



5499585
ID: MS icvMIX-1_00001
Exp:04/15/20 Ppd:LMT Opn:12/31/18
ICP-MS ICV Std 1 CPI new

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-CAL1-SS

ICP ICPMS CAL Mix # 1

Lot #: 982733-1

Matrix: 5% HNO₃/tr. HF

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
As	100.0 ± 0.5 mg/L	Li	100.0 ± 0.5 mg/L	Si	1000 ± 5 mg/L
Ba	100.0 ± 0.5 mg/L	Mn	100.0 ± 0.5 mg/L	Sn	100.1 ± 0.5 mg/L
Be	100.0 ± 0.5 mg/L	Mo	100.0 ± 0.5 mg/L	Sr	100.0 ± 0.5 mg/L
Cd	100.1 ± 0.5 mg/L	Ni	100.0 ± 0.5 mg/L	Ti	100.1 ± 0.5 mg/L
Co	100.0 ± 0.5 mg/L	Pb	100.0 ± 0.5 mg/L	Tl	100.0 ± 0.5 mg/L
Cr	100.0 ± 0.5 mg/L	Sb	100.0 ± 0.5 mg/L	V	100.0 ± 0.5 mg/L
Cu	100.1 ± 0.5 mg/L	Se	100.0 ± 0.5 mg/L		

Intended Use: This solution is intended for use as a second source certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO₃), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau, Certifying Officer

October 15, 2018
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

USA
5580 Skylane Boulevard P: 707.525.5788
Santa Rosa, CA 95403 P: 800.878.7654
F: 707.545.7901

Europe
Nieuwe Hemweg 7P P: +31 20 638 05 97
1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
 - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO ₄ ²⁻	3181	—
Br	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO ₃ ⁻	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO ₄ ³⁻	3186	—		Y	3167a	3167a
F	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Sample Report

Sample Table

Sample Name 1/2 icv1
 Data File Name 128SMPL.d
 Data Path Name D:\MassHunter Data\1010219.b
 Acq Date Time 2019-01-02T20:13:16-07:00
 Analyst Trudell, Lynn-Anne
 Sample Type Sample
 Dilution 1
 Comment
 ISTD Ref FileName 123CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	1	45	2131.302	ppb	2131.302	0.52	893573	500000	
Li	7	2	45	2190.875	ppb	2190.875	0.73	36893	500000	
Li	7	3	45	2144.899	ppb	2144.899	0.61	55409866	50000	
Be	9	1	6	2181.610	ppb	2181.610	1.68	895435	2000	
B	11	1	6	0.537	ppb	0.537	25.76	467	2000	
Na	23	1	45	40.146	ppb	40.146	2.08	317607	2000	
Na	23	2	45	35.895	ppb	35.895	6.93	22244	400000	
Mg	24	2	45	24.298	ppb	24.298	4.69	2024	400000	
Al	27	2	45	3.653	ppb	3.653	78.66	153	400000	
K	39	1	45	143.486	ppb	143.486	16.77	12138795	400000	
K	39	2	45	39.408	ppb	39.408	35.25	20328	400000	
Ca	40	1	45	20.792	ppb	20.792	1.26	174568	400000	
Ca	44	2	45	7496.627	ppb	7496.627	3.91	13851	400000	
Ti	47	2	45	2081.178	ppb	2081.178	2.78	33844	4000	
V	51	2	72	2103.775	ppb	2103.775	0.61	1479396	2000	
Cr	52	2	72	2142.216	ppb	2142.216	0.75	1997199	5000	
Mn	55	2	72	2100.650	ppb	2100.650	0.53	683461	10000	
Fe	57	2	72	4.103	ppb	4.103	123.67	267	400000	
Co	59	2	72	2154.829	ppb	2154.829	0.33	3441202	2000	
Ni	60	2	72	2141.059	ppb	2141.059	0.45	985280	5000	
Cu	63	2	72	2177.279	ppb	2177.279	1.71	2761027	5000	
Zn	66	2	72	8.271	ppb	8.271	6.24	1794	5000	
As	75	2	72	2062.375	ppb	2062.375	0.26	270663	2000	
Se	78	1	72	2099.682	ppb	2099.682	1.29	442691	2000	
Sr	88	2	72	2010.297	ppb	2010.297	0.56	627849	4000	
Zr	90	2	72	194.763	ppb	194.763	28.66	1053	1000	
Nb	93	2	72	7.246	ppb	7.246	3.18	14875	200	
Mo	95	2	115	2092.001	ppb	2092.001	0.04	1107580	2000	
Pd	105	2	115	0.059	ppb	0.059	70.43	57	100	
Ag	107	2	115	0.012	ppb	0.012	157.41	57	100	
Cd	111	2	115	2031.378	ppb	2031.378	0.13	462568	2000	
Sn	120	2	115	2114.286	ppb	2114.286	0.12	1185309	2000	
Sb	121	2	115	1973.874	ppb	1973.874	0.84	1128911	1000	
Ba	137	2	115	2126.759	ppb	2126.759	1.43	350675	5000	
W	182	2	165	0.229	ppb	0.229	9.83	933	100	
Pt	195	2	165	0.008	ppb	0.008	228.63	57	100	
Tl	205	2	165	2072.703	ppb	2072.703	0.69	9287762	2000	
Pb	208	2	165	2157.692	ppb	2157.692	1.19	12763099	5000	
Th	232	2	165	0.389	ppb	0.389	0.47	2917	2000	
U	238	2	165	0.027	ppb	0.027	5.50	293	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	865332	1.45	940696	91.99	60	120	
Sc (IS)	45	1	HMI H2	18615746	0.90	19547458	95.23	60	120	
Sc (IS)	45	2	HMI He	541142	1.00	565551	95.68	60	120	
Sc (IS)	45	3	No Gas	57007854	0.56	58209461	97.94	60	120	
Ge Internal Standard	72	1	HMI H2	7252257	1.19	7625779	95.10	60	120	
Ge Internal Standard	72	2	HMI He	623330	1.66	643482	96.87	60	120	
In Internal Standard	115	2	HMI He	1653021	1.01	1772604	93.25	60	120	
Ho-165	165	2	HMI He	7947601	1.76	8323784	95.48	60	120	

Sample Report

Sample Table

Sample Name 0.5 cal 1
Data File Name 0835MPL.d
Data Path Name D:\MassHunter Data\j010319.b
Acq Date Time 2019-01-03T16:08:15-07:00
Analyst Trudell, Lynn-Anne
Sample Type Sample
Dilution 1
Comment
ISTD Ref FileName 045CALB.d
Sample QC Pass/Fail Pass
ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	1	45	2295.818	ppb	2295.818	1.75	1232071	500000	
Li	7	2	45	1971.812	ppb	1971.812	2.64	42755	500000	
Li	7	3	45	1919.101	ppb	1919.101	1.00	65608362	50000	
Be	9	1	6	2075.180	ppb	2075.180	2.30	967801	2000	
B	11	1	6	-2.135	ppb	-2.135	-9.81	1007	2000	
B	11	1	6	-23.273	ppb	-23.273	-2.60	188399	2000	
Na	23	1	45	-18.792	ppb	-18.792	-21.52	14751	400000	
Na	23	2	45	2.716	ppb	2.716	37.25	590	400000	
Mg	24	2	45	-2.073	ppb	-2.073	-137.36	100	400000	
Al	27	2	45	45.662	ppb	45.662	9.96	11063136	400000	
K	39	1	45	48.866	ppb	48.866	46.17	16537	400000	
K	39	2	45	2.723	ppb	2.723	1.90	105594	400000	
Ca	40	1	45	7367.778	ppb	7367.778	3.96	15222	400000	
Ca	44	2	45	1823.088	ppb	1823.088	0.83	34174	4000	
Ti	47	2	45	1974.576	ppb	1974.576	0.86	1539982	2000	
V	51	2	72	1945.853	ppb	1945.853	0.17	1987045	5000	
Cr	52	2	72	1955.541	ppb	1955.541	0.71	699224	10000	
Mn	55	2	72	2.457	ppb	2.457	63.22	163	400000	
Fe	57	2	72	2008.781	ppb	2008.781	0.90	3553515	2000	
Co	59	2	72	1967.405	ppb	1967.405	1.00	1003576	5000	
Ni	60	2	72	1951.783	ppb	1951.783	0.79	2798080	5000	
Cu	63	2	72	0.706	ppb	0.706	80.36	480	5000	
Zn	66	2	72	1874.522	ppb	1874.522	0.46	243707	2000	
As	75	2	72	1923.366	ppb	1923.366	0.71	424960	2000	
Se	78	1	72	1867.184	ppb	1867.184	0.30	620403	4000	
Sr	88	2	72	165.973	ppb	165.973	17.88	697	1000	
Zr	90	2	72	12.919	ppb	12.919	1.84	29585	200	
Nb	93	2	115	1978.096	ppb	1978.096	1.67	1148225	2000	
Mo	95	2	115	0.591	ppb	0.591	8.95	563	100	
Pd	105	2	115	1.394	ppb	1.394	6.71	2970	100	
Ag	107	2	115	1934.200	ppb	1934.200	0.88	473412	2000	
Cd	111	2	115	1946.106	ppb	1946.106	1.35	1211542	2000	
Sn	120	2	115	1817.314	ppb	1817.314	1.24	1102340	1000	
Sb	121	2	115	1923.614	ppb	1923.614	1.48	349776	5000	
Ba	137	2	165	0.170	ppb	0.170	11.10	933	100	
W	182	2	165	0.008	ppb	0.008	111.52	37	100	
Pt	195	2	165	1971.565	ppb	1971.565	1.17	10286219	2000	
Tl	205	2	165	2020.165	ppb	2020.165	0.47	13893654	5000	
Pb	208	2	165	6.843	ppb	6.843	3.31	60301	2000	
Th	232	2	165	0.008	ppb	0.008	39.68	163	2000	
U	238	2	165							

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1361493	1.40	1460232	93.24	60	120	
Sc (IS)	45	1	HMI H2	21922628	1.52	23361340	93.84	60	120	
Sc (IS)	45	2	HMI He	601201	1.64	650472	92.43	60	120	
Sc (IS)	45	3	No Gas	57965567	0.56	59100497	98.08	60	120	
Ge Internal Standard	72	1	HMI H2	8368218	1.63	8906732	93.95	60	120	
Ge Internal Standard	72	2	HMI He	681884	2.05	726696	93.83	60	120	
In Internal Standard	115	2	HMI He	1879428	2.71	2021111	92.99	60	120	
Ho-165	165	2	HMI He	9489083	1.49	9971317	95.16	60	120	

Sample Report

Sample Table

Sample Name cal 1
 Data File Name 085SMPL.d
 Data Path Name D:\MassHunter Data\1010319.b
 Acq Date Time 2019-01-03T16:15:46-07:00
 Analyst Trudell, Lynn-Anne
 Sample Type Sample
 Dilution 1
 Comment
 ISTD Ref FileName 045CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	1	45	4523.704	ppb	4523.704	2.53	2210410	500000	
Li	7	2	45	3872.972	ppb	3872.972	0.19	77041	500000	
Li	7	3	45	3910.811	ppb	3910.811	0.94	121990722	50000	
Be	9	1	6	4470.593	ppb	4470.593	2.72	1957205	2000	
B	11	1	6	-2.081	ppb	-2.081	-4.83	977	2000	
Na	23	1	45	-22.814	ppb	-22.814	-4.59	184110	2000	
Na	23	2	45	-20.412	ppb	-20.412	-15.53	14274	400000	
Mg	24	2	45	7.162	ppb	7.162	3.67	957	400000	
Al	27	2	45	-0.321	ppb	-0.321	-331.32	137	400000	
K	39	1	45	13.199	ppb	13.199	238.86	10636370	400000	
K	39	2	45	76.322	ppb	76.322	27.65	17401	400000	
Ca	40	1	45	-1.282	ppb	-1.282	-7.19	85233	400000	
Ca	44	2	45	14541.255	ppb	14541.255	1.11	29661	400000	
Ti	47	2	45	3564.588	ppb	3564.588	2.04	66054	4000	
V	51	2	72	3974.955	ppb	3974.955	0.43	3018385	2000	
Cr	52	2	72	3816.843	ppb	3816.843	1.69	3798923	5000	
Mn	55	2	72	4081.935	ppb	4081.935	1.42	1422985	10000	
Fe	57	2	72	0.608	ppb	0.608	262.57	127	400000	
Co	59	2	72	3896.835	ppb	3896.835	1.08	6717539	2000	
Ni	60	2	72	3943.981	ppb	3943.981	1.12	1961473	5000	
Cu	63	2	72	3789.718	ppb	3789.718	1.46	5294789	5000	
Zn	66	2	72	0.636	ppb	0.636	62.97	457	5000	
As	75	2	72	3783.675	ppb	3783.675	0.59	479546	2000	
Se	78	1	72	3857.391	ppb	3857.391	1.59	829435	2000	
Sr	88	2	72	3760.189	ppb	3760.189	1.10	1218067	4000	
Zr	90	2	72	140.259	ppb	140.259	25.33	580	1000	
Nb	93	2	72	5.164	ppb	5.164	4.28	11976	200	
Mo	95	2	115	4068.248	ppb	4068.248	1.80	2279603	2000	
Pd	105	2	115	0.284	ppb	0.284	7.85	263	100	
Ag	107	2	115	0.850	ppb	0.850	12.87	1770	100	
Cd	111	2	115	3929.482	ppb	3929.482	1.77	928310	2000	
Sn	120	2	115	4031.035	ppb	4031.035	1.10	2422317	2000	
Sb	121	2	115	3795.231	ppb	3795.231	1.75	2222125	1000	
Ba	137	2	115	3856.448	ppb	3856.448	2.34	676896	5000	
W	182	2	165	0.341	ppb	0.341	9.30	1454	100	
Pt	195	2	165	0.000	ppb	0.000	638.43	17	100	
Tl	205	2	165	3888.170	ppb	3888.170	1.49	20175915	2000	
Pb	208	2	165	3928.308	ppb	3928.308	1.51	26867073	5000	
Th	232	2	165	1.111	ppb	1.111	5.17	13047	2000	
U	238	2	165	0.013	ppb	0.013	108.46	210	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1278779	1.92	1460232	87.57	60	120	
Sc (IS)	45	1	HMI H2	21255401	0.75	23361340	90.99	60	120	
Sc (IS)	45	2	HMI He	594445	1.89	650472	91.39	60	120	
Sc (IS)	45	3	No Gas	57135856	0.80	59100497	96.68	60	120	
Ge Internal Standard	72	1	HMI H2	8144118	0.44	8906732	91.44	60	120	
Ge Internal Standard	72	2	HMI He	664819	1.87	726696	91.49	60	120	
In Internal Standard	115	2	HMI He	1813792	0.34	2021111	89.74	60	120	
Ho-165	165	2	HMI He	9438284	2.23	9971317	94.65	60	120	

Reagent

MS LLCCV_00001

Standard Verification Form

Standard Information			
Vendor Standard Name	TCP-M5 bw level CCV		
Vendor	CPI		
Lot number	100778 10077633-8 m 1/10/19		
Initial Verification	☒	Re-Verification	☐

TALS "Reagent" Information	
TALS Standard ID	MS LCCV 549633
COA Reviewed against what is in TALS	☒

Verification Information and Data			
Verified by	LMS	Instrument ID	077
Verification Date	1/2/19, 1/3/19	Method Reference	6020
ID of Standard Used for Verification	5500268, 550133	Batch # / Chrom Work List #	443112, 443253

Attach to this form: formulary report, COA and data used for verification
 Attach to standard in TALS: this form and all supporting documentation including the original CoA

See Acceptance Criteria Below:

Approved for Use	☒	Not Approved for Use	☐
------------------	-------------------------------------	----------------------	--------------------------

New expiration date can be no greater than 1/2 the designated standards shelf life from the date of re-verification. Standards can only be re-verified one time.

New Expiration Date:	5/5/20
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1st Level Review

LMS

Date:

1/14/19

2nd Level Review

DB

Date:

1/22/19

QA Review (Re-verification only)	M	Date:	M
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Acceptance Criteria		
Department	Standard Analytes	Poor Performers* and Esterified Analytes
GC/HPLC	≤ 15 %D	≤ 35 %D or ≤ 50 %D for dinoseb
GCMS/LCMS	≤ 35 %D	≤ 55 %D
MSVOA	≤ 25 %D	≤ 55 %D
Metals	≤ 8 %D	NA
Wet Chemistry	≤ 5 %D	NA

*See analytical SOP for details on poor performing analytes.

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous RM

Product #: TA-CM-OCT18-DEN8-250

ICP-MS low level CCV

Lot #: 10088633-8

Matrix: 2% HNO₃/tr. HF

Element	Certified Concentration	Element	Certified Concentration	Element	Certified Concentration
Ag	0.5 µg/mL	Fe	5.0 µg/mL	Sn	1.0 µg/mL
Al	5.0 µg/mL	K	10.0 µg/mL	Sr	0.1 µg/mL
As	0.5 µg/mL	Li	1.0 µg/mL	Th	0.2 µg/mL
B	0.1 µg/mL	Mg	5.0 µg/mL	Ti	0.1 µg/mL
Ba	0.1 µg/mL	Mn	0.1 µg/mL	Tl	0.1 µg/mL
Be	0.1 µg/mL	Mo	0.2 µg/mL	U	0.1 µg/mL
Ca	5.0 µg/mL	Na	5.0 µg/mL	V	0.5 µg/mL
Cd	0.1 µg/mL	Ni	0.15 µg/mL	W	0.5 µg/mL
Co	0.1 µg/mL	Pb	0.1 µg/mL	Zn	1.0 µg/mL
Cr	0.2 µg/mL	Sb	0.2 µg/mL		
Cu	0.2 µg/mL	Se	0.5 µg/mL		

Intended Use: This solution is intended for use as a reference material (RM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This RM was manufactured, processed, and/or certified under a quality management system that is registered/accredited to ISO 9001, ISO 17034, and ISO/IEC 17025. This RM was prepared to the certified concentrations shown above by gravimetric methods using single-element concentrates, and was stabilized using high purity nitric acid (HNO₃), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this RM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against NIST SRMs (see reverse side). The uncertainty associated with the certified concentration is ±0.5% relative, which is the sum of the estimated errors due to the purity of the raw materials, the gravimetric preparation of the solution, and transpiration through the container. This represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the RM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original RM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.



Chuck Goudreau, Certifying Officer

November 21, 2018

Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

USA
5580 Skylane Boulevard P: 707.525.5788
Santa Rosa, CA 95403 P: 800.878.7654
F: 707.545.7901

Europe
Nieuwe Hemweg 7P P: +31 20 638 05 97
1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

Rev. 1

www.cpiinternational.com
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This RM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	1077a	Hf	3122	—	S	3154	2770
Al	3101a	1075a	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	—	Sc	3148a	3148a
Au	3121	—	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	1066a
Ba	3104a	1051b	La	3127a	3127a	Sm	3147a	—
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	1057b
Bi	3106	3106	Lu	3130a	—	SO ₄ ²⁻	3181	—
Br	3184	—	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	—
Cd	3108	1053a	Mo	3134	3134	Tb	3157a	—
Ce	3110	3110	Na	3152a	3152a	Te	3156	—
Cl ⁻	3182	1818a	Nb	3137	—	Th	3159	—
Co	3113	3113	Nd	3135a	—	Ti	3162a	3162a
Cr	3112a	1078b	Ni	3136	1065b	Tl	3158	3158
Cs	3111a	—	NO ₃ ⁻	3185	—	Tm	3160a	—
Cu	3114	1080a	P	3139a	3139a	U	3164	—
Dy	3115a	—	Pb	3128	3128	V	3165	1052b
Er	3116a	—	Pd	3138	—	W	3163	3163
Eu	3117a	—	PO ₄ ³⁻	3186	—	Y	3167a	3167a
F ⁻	3183	—	Pr	3142a	—	Yb	3166a	—
Fe	3126a	1079b	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	—	Rb	3145a	—	Zr	3169	3169
Gd	3118a	—	Re	3143	—			
Ge	3120a	—	Rh	3144	3144			

Sample Report

Sample Table

Sample Name cpi cvl
Data File Name 079SMPL.d
Data Path Name D:\MassHunter Data\1010219.b
Acq Date Time 2019-01-02T17:07:26-07:00
Analyst Trudell, Lynn-Anne
Sample Type Sample
Dilution 1
Comment
ISTD Ref FileName 060CALB.d
Sample QC Pass/Fail Pass
ISTD Pass/Fail Pass

new Co. Ba₂Pb

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	1	45	96.147	ppb	96.147	4.14	167064	500000	
Li	7	2	45	105.670	ppb	105.670	12.67	6625	500000	
Li	7	3	45	109.757	ppb	109.757	5.87	9716842	50000	
Be	9	1	6	9.675	ppb	9.675	7.08	4661	2000	
B	11	1	6	7.494	ppb	7.494	7.33	4254	2000	
Na	23	1	45	552.697	ppb	552.697	2.49	1894750	2000	
Na	23	2	45	511.267	ppb	511.267	0.32	115761	400000	
Mg	24	2	45	519.361	ppb	519.361	2.74	42639	400000	
Al	27	2	45	504.216	ppb	504.216	2.19	10688	400000	
K	39	1	45	824.296	ppb	824.296	1.47	15270916	400000	
K	39	2	45	1031.729	ppb	1031.729	5.03	61935	400000	
Ca	40	1	45	540.243	ppb	540.243	2.00	2333215	400000	
Ca	44	2	45	525.756	ppb	525.756	2.97	1180	400000	
Ti	47	2	45	7.783	ppb	7.783	27.48	157	4000	
V	51	2	72	53.728	ppb	53.728	0.38	44566	2000	
Cr	52	2	72	21.503	ppb	21.503	6.01	21918	5000	
Mn	55	2	72	10.764	ppb	10.764	10.65	3774	10000	
Fe	57	2	72	517.900	ppb	517.900	0.92	9407	400000	
Co	59	2	72	10.983	ppb	10.983	3.62	18469	2000	
Ni	60	2	72	15.793	ppb	15.793	1.42	7946	5000	
Cu	63	2	72	21.536	ppb	21.536	3.14	31261	5000	
Zn	66	2	72	108.325	ppb	108.325	4.55	20415	5000	
As	75	2	72	51.507	ppb	51.507	2.47	7191	2000	
Se	78	1	72	51.720	ppb	51.720	1.50	11736	2000	
Sr	88	2	72	10.216	ppb	10.216	7.71	3341	4000	
Zr	90	2	72	10.958	ppb	10.958	35.92	73	1000	
Nb	93	2	72	1.159	ppb	1.159	12.38	2884	200	
Mo	95	2	115	21.377	ppb	21.377	1.76	12239	2000	
Pd	105	2	115	0.011	ppb	0.011	231.29	13	100	
Ag	107	2	115	52.289	ppb	52.289	2.36	103127	100	
Cd	111	2	115	9.857	ppb	9.857	5.13	2347	2000	
Sn	120	2	115	103.864	ppb	103.864	2.43	60392	2000	
Sb	121	2	115	19.639	ppb	19.639	7.14	11966	1000	
Ba	137	2	115	11.307	ppb	11.307	13.42	1987	5000	
W	182	2	165	51.018	ppb	51.018	0.48	136563	100	
Pt	195	2	165	0.005	ppb	0.005	43.83	37	100	
Tl	205	2	165	10.385	ppb	10.385	1.52	48289	2000	
Pb	208	2	165	10.866	ppb	10.866	1.75	67022	5000	
Th	232	2	165	21.061	ppb	21.061	1.21	151119	2000	
U	238	2	165	10.568	ppb	10.568	1.13	80585	2000	

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QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
LI-6 Internal Standard	6	1	HMI H2	929764	2.73	916378	101.46	60	120	
Sc (IS)	45	1	HMI H2	19911408	0.73	19585204	101.67	60	120	
Sc (IS)	45	2	HMI He	580698	1.77	580572	100.02	60	120	
Sc (IS)	45	3	No Gas	57455584	0.65	58883081	97.58	60	120	
Ge Internal Standard	72	1	HMI H2	7730261	1.28	7580333	101.98	60	120	
Ge Internal Standard	72	2	HMI He	642543	1.54	640198	100.37	60	120	
In Internal Standard	115	2	HMI He	1743624	1.50	1731804	100.68	60	120	
Hc-165	165	2	HMI He	8160846	0.49	8087692	100.90	60	120	

Sample Report

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Sample Table

Sample Name cpi ccv
Data File Name 072SMPL.d
Data Path Name D:\MassHunter Data\1010319.b
Acq Date Time 2019-01-03T15:26:53-07:00
Analyst Trudell, Lynn-Anne
Sample Type Sample
Dilution 1
Comment
ISTD Ref FileName 045CALB.d
Sample QC Pass/Fail Fail
ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	1	45	935.927	ppb	935.927	0.59	620168	500000	
Li	7	2	45	905.191	ppb	905.191	1.72	24327	500000	
Li	7	3	45	934.659	ppb	934.659	1.45	37542571	50000	
Be	9	1	6	98.892	ppb	98.892	1.42	47111	2000	
B	11	1	6	63.809	ppb	63.809	1.00	40700	2000	
Na	23	1	45	4854.995	ppb	4854.995	0.52	16780336	2000	
Na	23	2	45	4581.226	ppb	4581.226	1.50	968948	400000	
Mg	24	2	45	4866.558	ppb	4866.558	0.87	438396	400000	
Al	27	2	45	4946.249	ppb	4946.249	2.21	112736	400000	
K	39	1	45	8070.188	ppb	8070.188	0.74	35519157	400000	
K	39	2	45	9756.666	ppb	9756.666	1.37	414267	400000	
Ca	40	1	45	4857.729	ppb	4857.729	0.58	22535366	400000	
Ca	44	2	45	5133.159	ppb	5133.159	2.89	11228	400000	
Ti	47	2	45	102.298	ppb	102.298	14.72	2030	4000	
V	51	2	72	486.537	ppb	486.537	0.39	399219	2000	
Cr	52	2	72	194.899	ppb	194.899	0.65	208265	5000	
Mn	55	2	72	96.555	ppb	96.555	3.55	36133	10000	
Fe	57	2	72	4956.037	ppb	4956.037	1.60	95456	400000	
Co	59	2	72	100.113	ppb	100.113	1.37	184748	2000	
Ni	60	2	72	141.914	ppb	141.914	1.54	75665	5000	
Cu	63	2	72	199.770	ppb	199.770	1.37	300229	5000	
Zn	66	2	72	973.948	ppb	973.948	0.82	192596	5000	
As	75	2	72	478.667	ppb	478.667	1.10	64954	2000	
Se	78	1	72	491.255	ppb	491.255	0.71	113459	2000	
Sr	88	2	72	97.391	ppb	97.391	2.10	33785	4000	
Zr	90	2	72	24.419	ppb	24.419	100.11	130	1000	
Nb	93	2	72	0.649	ppb	0.649	14.17	2314	200	
Mo	95	2	115	203.276	ppb	203.276	0.93	122053	2000	
Pd	105	2	115	0.007	ppb	0.007	147.92	10	100	
Ag	107	2	115	493.404	ppb	493.404	0.59	1067058	100	
Cd	111	2	115	101.952	ppb	101.952	3.71	25791	2000	
Sn	120	2	115	967.040	ppb	967.040	1.26	622458	2000	
Sb	121	2	115	179.548	ppb	179.548	0.58	112680	1000	
Ba	137	2	115	95.653	ppb	95.653	1.28	17999	5000	
W	182	2	165	503.021	ppb	503.021	0.20	1602375	100	>LDR
Pt	195	2	165	0.017	ppb	0.017	102.68	67	100	
Tl	205	2	165	97.077	ppb	97.077	1.03	524983	2000	
Pb	208	2	165	101.550	ppb	101.550	1.30	724551	5000	
Th	232	2	165	213.310	ppb	213.310	0.88	1824306	2000	
U	238	2	165	97.137	ppb	97.137	0.08	901420	2000	

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QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1390711	1.34	1460232	95.24	60	120	
Sc (IS)	45	1	HMI H2	22939901	0.18	23361340	98.20	60	120	
Sc (IS)	45	2	HMI He	635529	2.43	650472	97.70	60	120	
Sc (IS)	45	3	No Gas	59029641	1.27	59100497	99.88	60	120	
Ge Internal Standard	72	1	HMI H2	8745705	0.12	8906732	98.19	60	120	
Ge Internal Standard	72	2	HMI He	711479	0.83	726696	97.91	60	120	
In Internal Standard	115	2	HMI He	1942532	0.58	2021111	96.11	60	120	
Ho-165	165	2	HMI He	9834166	0.87	9971317	98.62	60	120	

Reagent

MS-31010_00011



CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31010 Lot No.: A0116027
Description : SV Calibration Mix #4
SV Calibration Mix #4 2000 µg/mL, Methylene Chloride, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : March 31, 2019 Storage: 10°C or colder
Handling: Sonicate prior to use.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Hexachloroethane CAS # 67-72-1 (Lot 4H3SF) Purity 99%	2,002.0 µg/mL	+/- 11.8913 µg/mL Gravimetric +/- 60.6057 µg/mL Unstressed +/- 60.6057 µg/mL Stressed
2	Nitrobenzene CAS # 98-95-3 (Lot 65096APV) Purity 99%	2,014.0 µg/mL	+/- 11.9625 µg/mL Gravimetric +/- 60.9690 µg/mL Unstressed +/- 60.9690 µg/mL Stressed
3	Isophorone CAS # 78-59-1 (Lot MKBG2442V) Purity 99%	2,002.0 µg/mL	+/- 11.8913 µg/mL Gravimetric +/- 60.6057 µg/mL Unstressed +/- 60.6057 µg/mL Stressed
4	1,2,4-Trichlorobenzene CAS # 120-82-1 (Lot 26896BM) Purity 99%	2,014.0 µg/mL	+/- 11.9625 µg/mL Gravimetric +/- 60.9690 µg/mL Unstressed +/- 60.9690 µg/mL Stressed
5	Hexachlorobutadiene CAS # 87-68-3 (Lot J31X013) Purity 98%	2,007.0 µg/mL	+/- 11.9212 µg/mL Gravimetric +/- 60.7583 µg/mL Unstressed +/- 60.7583 µg/mL Stressed
6	2-Methylnaphthalene CAS # 91-57-6 (Lot 19399MJV) Purity 99%	2,000.0 µg/mL	+/- 11.8794 µg/mL Gravimetric +/- 60.5452 µg/mL Unstressed +/- 60.5452 µg/mL Stressed
7	Hexachlorocyclopentadiene CAS # 77-47-4 (Lot 150909) Purity 97%	2,007.9 µg/mL	+/- 11.9263 µg/mL Gravimetric +/- 60.7843 µg/mL Unstressed +/- 60.7843 µg/mL Stressed

8	2,6-Dinitrotoluene			2,010.0	µg/mL	+/-	11.9388	µg/mL	Gravimetric
	CAS #	606-20-2	(Lot 1437483V)			+/-	60.8479	µg/mL	Unstressed
	Purity	99%				+/-	60.8479	µg/mL	Stressed
9	Dibenzofuran			2,002.0	µg/mL	+/-	11.8913	µg/mL	Gravimetric
	CAS #	132-64-9	(Lot MKBH8392V)			+/-	60.6057	µg/mL	Unstressed
	Purity	99%				+/-	60.6057	µg/mL	Stressed
10	2,4-Dinitrotoluene			2,000.0	µg/mL	+/-	11.8794	µg/mL	Gravimetric
	CAS #	121-14-2	(Lot MKAA0690V)			+/-	60.5452	µg/mL	Unstressed
	Purity	99%				+/-	60.5452	µg/mL	Stressed
11	Diethylphthalate			2,016.0	µg/mL	+/-	11.9744	µg/mL	Gravimetric
	CAS #	84-66-2	(Lot MKBJ3578V)			+/-	61.0295	µg/mL	Unstressed
	Purity	99%				+/-	61.0295	µg/mL	Stressed
12	Hexachlorobenzene			2,018.0	µg/mL	+/-	11.9863	µg/mL	Gravimetric
	CAS #	118-74-1	(Lot LB98981V)			+/-	61.0901	µg/mL	Unstressed
	Purity	99%				+/-	61.0901	µg/mL	Stressed
13	Carbazole			1,999.2	µg/mL	+/-	11.8746	µg/mL	Gravimetric
	CAS #	86-74-8	(Lot 3715800)			+/-	60.5210	µg/mL	Unstressed
	Purity	98%				+/-	60.5210	µg/mL	Stressed
Solvent:	Methylene Chloride								
	CAS #	75-09-2							
	Purity	99%							

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

Inj. Temp:

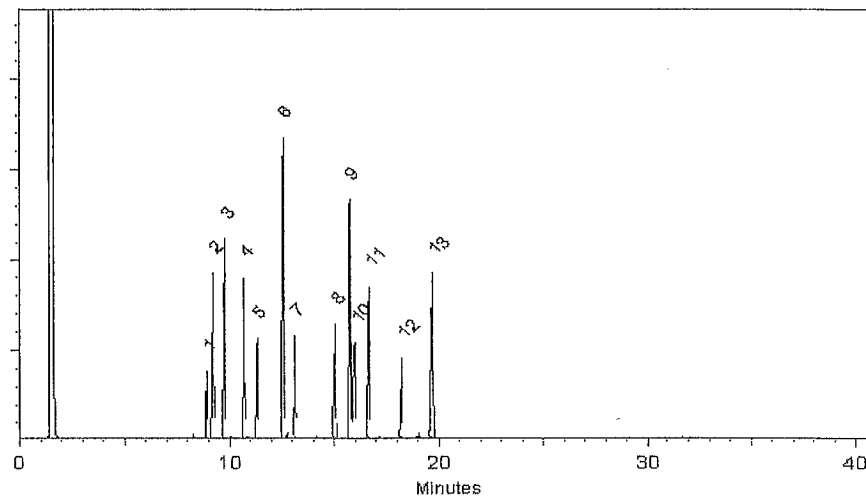
250°C

Det. Temp:

330°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Brandon Reish - Mix Technician

Date Mixed: 17-Dec-2015

Balance: B345965662

Jennifer L. Pollino - QC Analyst

Date Passed: 21-Dec-2015

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

MS-31010_00013



CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 31010 Lot No.: A0139726

Description: SV Calibration Mix #4
SV Calibration Mix #4 2000 µg/mL, Methylene Chloride, 1mL/ampul

Container Size: 2 mL Pkg Amt: > 1 mL

Expiration Date: October 31, 2021 Storage: 10°C or colder

Handling: Sonicate prior to use.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)				
1	Hexachloroethane	2,012.0 µg/mL	+/-	11.9507	µg/mL	Gravimetric	
	CAS # 67-72-1 (Lot 4H3SF)		+/-	60.9084	µg/mL	Unstressed	
	Purity 99%		+/-	60.9084	µg/mL	Stressed	
2	Nitrobenzene	2,004.0 µg/mL	+/-	11.9032	µg/mL	Gravimetric	
	CAS # 98-95-3 (Lot SHBG5577V)		+/-	60.6663	µg/mL	Unstressed	
	Purity 99%		+/-	60.6663	µg/mL	Stressed	
3	Isophorone	2,012.9 µg/mL	+/-	11.9561	µg/mL	Gravimetric	
	CAS # 78-59-1 (Lot MKBG2442V)		+/-	60.9363	µg/mL	Unstressed	
	Purity 98%		+/-	60.9363	µg/mL	Stressed	
4	1,2,4-Trichlorobenzene	2,004.0 µg/mL	+/-	11.9032	µg/mL	Gravimetric	
	CAS # 120-82-1 (Lot SHBJ0905)		+/-	60.6663	µg/mL	Unstressed	
	Purity 99%		+/-	60.6663	µg/mL	Stressed	
5	Hexachlorobutadiene	2,002.0 µg/mL	+/-	11.8913	µg/mL	Gravimetric	
	CAS # 87-68-3 (Lot J31X013)		+/-	60.6057	µg/mL	Unstressed	
	Purity 99%		+/-	60.6057	µg/mL	Stressed	
6	2-Methylnaphthalene	2,000.6 µg/mL	+/-	11.8832	µg/mL	Gravimetric	
	CAS # 91-57-6 (Lot STBF0201V)		+/-	60.5646	µg/mL	Unstressed	
	Purity 96%		+/-	60.5646	µg/mL	Stressed	
7	Hexachlorocyclopentadiene	2,010.0 µg/mL	+/-	11.9388	µg/mL	Gravimetric	
	CAS # 77-47-4 (Lot 0012015)		+/-	60.8479	µg/mL	Unstressed	
	Purity 99%		+/-	60.8479	µg/mL	Stressed	

Reagent

MS-31995_00005



CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31995 **Lot No.:** A0108907

Description : 8270 Calibration Mix #5, Revised

8270 Calibration Mix #5, Revised 2,000µg/ml, Methylene Chloride, 1ml/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : January 31, 2021 **Storage:** 10°C or colder

Handling: Sonication required. Mix is photosensitive.

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)			
1	Naphthalene	(Lot MKBH4351V)	2,000.5 µg/mL	+/- 11.7401	µg/mL	Gravimetric	
	CAS # 91-20-3			+/- 88.8976	µg/mL	Unstressed	
	Purity 99%			+/- 97.6678	µg/mL	Stressed	
2	2-Methylnaphthalene	(Lot 19399MJV)	2,000.6 µg/mL	+/- 11.7409	µg/mL	Gravimetric	
	CAS # 91-57-6			+/- 88.9038	µg/mL	Unstressed	
	Purity 96%			+/- 97.6746	µg/mL	Stressed	
3	1-Methylnaphthalene	(Lot 525000-10)	2,000.0 µg/mL	+/- 11.7371	µg/mL	Gravimetric	
	CAS # 90-12-0			+/- 88.8754	µg/mL	Unstressed	
	Purity 99%			+/- 97.6434	µg/mL	Stressed	
4	Acenaphthylene	(Lot ER030707-01)	2,000.0 µg/mL	+/- 11.7371	µg/mL	Gravimetric	
	CAS # 208-96-8			+/- 88.8754	µg/mL	Unstressed	
	Purity 99%			+/- 97.6434	µg/mL	Stressed	
5	Acenaphthene	(Lot MKBJ4871V)	2,000.5 µg/mL	+/- 11.7401	µg/mL	Gravimetric	
	CAS # 83-32-9			+/- 88.8976	µg/mL	Unstressed	
	Purity 99%			+/- 97.6678	µg/mL	Stressed	
6	Fluorene	(Lot 10174662)	2,000.2 µg/mL	+/- 11.7382	µg/mL	Gravimetric	
	CAS # 86-73-7			+/- 88.8834	µg/mL	Unstressed	
	Purity 98%			+/- 97.6521	µg/mL	Stressed	
7	Phenanthrene	(Lot MKBQ8219V)	2,000.7 µg/mL	+/- 11.7411	µg/mL	Gravimetric	
	CAS # 85-01-8			+/- 88.9051	µg/mL	Unstressed	
	Purity 98%			+/- 97.6761	µg/mL	Stressed	

8	Anthracene CAS # 120-12-7 Purity 99%	(Lot MKBR2268V)	2,000.0	µg/mL	+/- +/- +/-	11.7371 88.8754 97.6434	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
9	Fluoranthene CAS # 206-44-0 Purity 98%	(Lot MKBQ6360V)	2,000.7	µg/mL	+/- +/- +/-	11.7411 88.9051 97.6761	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
10	Pyrene CAS # 129-00-0 Purity 99%	(Lot BCBL6786V)	2,001.0	µg/mL	+/- +/- +/-	11.7430 88.9198 97.6922	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
11	Benz(a)anthracene CAS # 56-55-3 Purity 99%	(Lot ER031412-01)	2,000.5	µg/mL	+/- +/- +/-	11.7401 88.8976 97.6678	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
12	Chrysene CAS # 218-01-9 Purity 99%	(Lot ER120810-02)	2,000.5	µg/mL	+/- +/- +/-	11.7401 88.8976 97.6678	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
13	Benzo(b)fluoranthene CAS # 205-99-2 Purity 99%	(Lot ER03101401)	2,001.0	µg/mL	+/- +/- +/-	11.7430 88.9198 97.6922	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
14	Benzo(k)fluoranthene CAS # 207-08-9 Purity 99%	(Lot ER041513-01)	2,000.5	µg/mL	+/- +/- +/-	11.7401 88.8976 97.6678	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
15	Benzo(a)pyrene CAS # 50-32-8 Purity 99%	(Lot ER071309-02)	2,001.0	µg/mL	+/- +/- +/-	11.7430 88.9198 97.6922	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
16	Indeno(1,2,3-cd)pyrene CAS # 193-39-5 Purity 99%	(Lot ER082107-02)	2,000.0	µg/mL	+/- +/- +/-	11.7371 88.8754 97.6434	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
17	Dibenz(a,h)anthracene CAS # 53-70-3 Purity 99%	(Lot ER032211-01)	2,001.0	µg/mL	+/- +/- +/-	11.7430 88.9198 97.6922	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
18	Benzo(g,h,i)perylene CAS # 191-24-2 Purity 99%	(Lot ER020708-08)	2,000.0	µg/mL	+/- +/- +/-	11.7371 88.8754 97.6434	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
Solvent:	Methylene Chloride CAS # 75-09-2 Purity 99%							

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

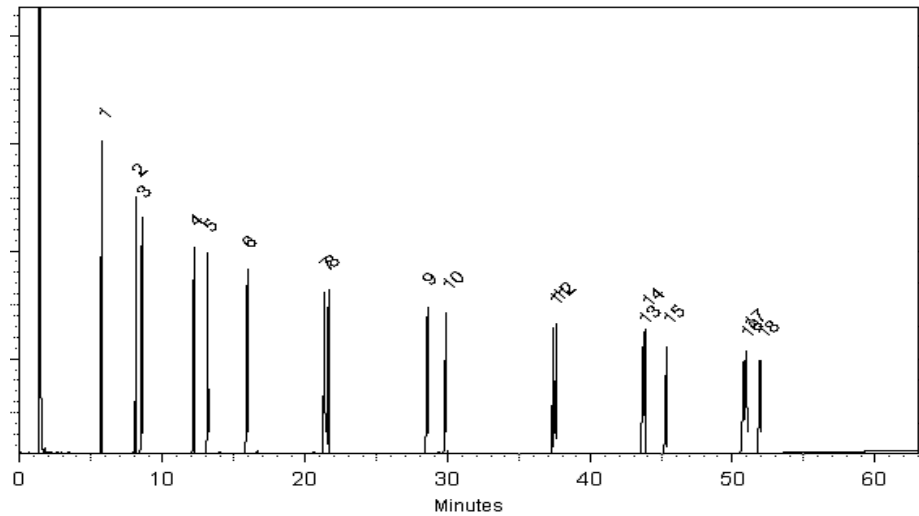
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
100°C (hold 1 min.) to 330°C
@ 4°C/min. (hold 5 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

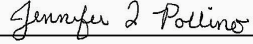
Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Connor Flannery - Mix Technician

Date Mixed: 05-Feb-2015 **Balance:** 1128360905


Jennifer L. Pollino - QC Analyst

Date Passed: 09-Feb-2015

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

MS-31995_00006

ms-31995-0006,7



110 Benner Circle
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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31995 Lot No.: A0140782

Description : 8270 Calibration Mix #5, Revised

8270 Calibration Mix #5, Revised 2,000µg/ml, Methylene Chloride, 1ml/ampul

Container Size : 2 mL Pkg Amt: > 1 mL

Expiration Date : July 31, 2024 Storage: 10°C or colder

Handling: Sonication required. Mix is photosensitive.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)				
1	Naphthalene	2,000.0 µg/mL	+/-	11.7371	µg/mL	Gravimetric	
	CAS # 91-20-3 (Lot MKBW2603V)		+/-	90.0953	µg/mL	Unstressed	
	Purity 99%		+/-	99.9689	µg/mL	Stressed	
2	2-Methylnaphthalene	2,001.6 µg/mL	+/-	11.7465	µg/mL	Gravimetric	
	CAS # 91-57-6 (Lot STBF0201V)		+/-	90.1674	µg/mL	Unstressed	
	Purity 96%		+/-	100.0489	µg/mL	Stressed	
3	1-Methylnaphthalene	2,000.0 µg/mL	+/-	11.7371	µg/mL	Gravimetric	
	CAS # 90-12-0 (Lot 525000-9)		+/-	90.0953	µg/mL	Unstressed	
	Purity 99%		+/-	99.9689	µg/mL	Stressed	
4	Acenaphthylene	2,001.1 µg/mL	+/-	11.7436	µg/mL	Gravimetric	
	CAS # 208-96-8 (Lot O03R)		+/-	90.1453	µg/mL	Unstressed	
	Purity 97%		+/-	100.0244	µg/mL	Stressed	
5	Acenaphthene	2,001.5 µg/mL	+/-	11.7459	µg/mL	Gravimetric	
	CAS # 83-32-9 (Lot MKCC8329)		+/-	90.1629	µg/mL	Unstressed	
	Purity 99%		+/-	100.0439	µg/mL	Stressed	
6	Fluorene	2,000.5 µg/mL	+/-	11.7401	µg/mL	Gravimetric	
	CAS # 86-73-7 (Lot 10207515)		+/-	90.1179	µg/mL	Unstressed	
	Purity 99%		+/-	99.9939	µg/mL	Stressed	
7	Phenanthrene	2,000.0 µg/mL	+/-	11.7371	µg/mL	Gravimetric	
	CAS # 85-01-8 (Lot MKCB1762V)		+/-	90.0953	µg/mL	Unstressed	
	Purity 99%		+/-	99.9689	µg/mL	Stressed	

Reagent

MS-47548-U_00015

Certificate of Analysis

Description: EPA 8270 GC/MS Tuning Solution II, 1x1ml, 1000µg/ml in methylene chloride

Part Number: 47548-U

Lot Number: XA19099V

Expiration Date: March 2019

Storage: Refrigerate

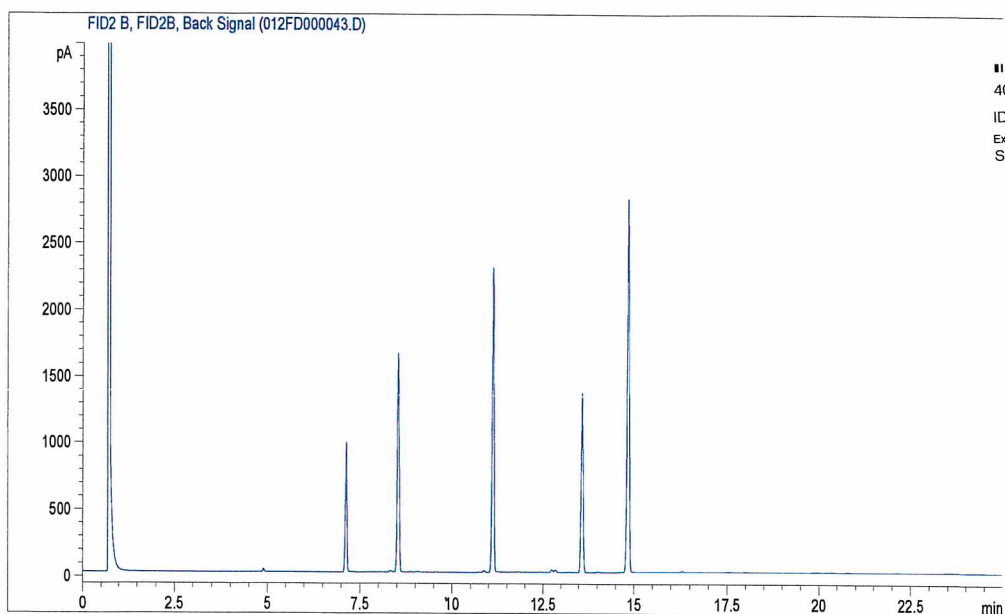
Analytical Method Parameters:

Column: Equity-5; 30 m x 0.53 mm, 1.5 µm df

150 °C to 280 °C (8.75 min) at 8 °C/min

Detector: FID; 310 °C

Injection Volume: 1µL



4089650
ID: MS-47548-U_00015
Exp:03/31/19 Prpd:DCK Opn:09/02/16
SUP Tuning Solution 1000

Elution	Analyte	Lot Number	CAS Number	Chromatographic Purity %	Certified Gravimetric Conc. µg/mL	Expanded Uncertainty µg/mL	Analytical Conc. µg/mL
1.	Pentachlorophenol	LC17897	87-86-5	97.5	1000.0	±38	945.6
2.	Decafluorotriphenylphosphine	LC14010	5074-71-5	98.6	986.0	±44	961.5
3.	Benzidine	LB83682	92-87-5	99.9	999.0	±38	1009.6
4.	4,4'-DDT	LA83013	50-29-3	98.0	980.8	±36	961.0
	Internal Standard	N/A	N/A	N/A	N/A	N/A	N/A

Reagent

MS-47548-U_00016

Certificate of Analysis

EPA 8270 GC/MS TUNING SOLUTION

*Certified
Reference
Material*

Product ID 47548-U

Lot LRAC0485

Expiration Date September 2021

MFG Date September 2018

Storage Conditions Refrigerate

Solvent/Matrix DICHLOROMETHANE



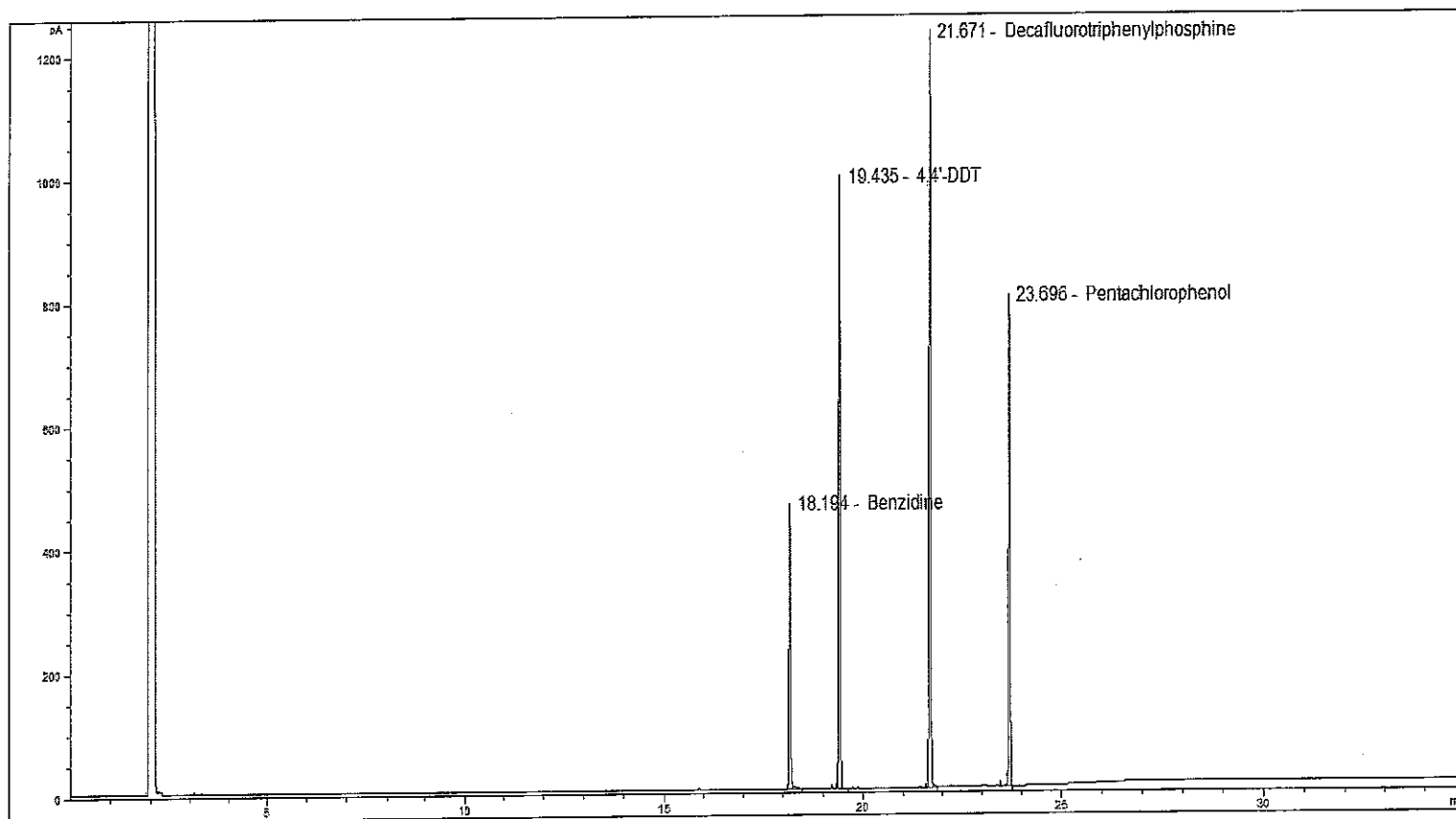
5590853

ID: MS-47548-U_00016

Exp: 09/30/21 Prpd: DCK

SUP Tuning Solution 1000

Analyte	Units	Certified Value ^{1,4}	Analytical Value	Raw Material Purity, %	Raw Material lot	Elution order	CAS
BENZIDINE	µg/ml	1000 ± 35	962	98.2	SLBF8865V	1	92-87-5
4,4'-DDT	µg/ml	1003 ± 35	978	99.9	LC18508	2	50-29-3
DFTPP	µg/ml	1002 ± 37	1001	98.6	LC14010	3	5074-71-5
PENTACHLOROPHENOL	µg/ml	1002 ± 42	998	97.9	MKCD2150	4	87-86-5



Additional Information:

Analytical Method Parameters:

Column: SPB-5, 30 m x 0.53 mm x 1.5 µm df

50°C (1 min) to 300°C (9 min) at 10°C/min

Detector: FID, 280°C

Injection Volume: 1 µL



SIGMA-ALDRICH®

2931 Soldier Springs Rd. Laramie, Wyoming 82070 USA
307-742-5452
rltechgroup@sial.com www.sigma-aldrich.com

Lot LRAC0485
Expiration Date September 2021
MFG Date September 2018
Storage Conditions Refrigerate
Solvent/Matrix DICHLOROMETHANE

1 Certified value - based on the gravimetric preparation and analytically verified by RTC with associated uncertainties from the preparation and analytical procedures.

4 Ucrm - Uncertainty values in this document are expressed as Expanded Uncertainty (Ucrm) corresponding to the 95% confidence interval. Ucrm is derived from the combined standard uncertainty multiplied by the coverage factor k, which is obtained from a t-distribution and degrees of freedom. The components of combined standard uncertainty include the uncertainties due to characterization, homogeneity, long term stability, and short term stability (transport). The components due to stability are generally considered to be negligible unless otherwise indicated by stability studies. The mathematical representation of the Ucrm calculation is as follows:

$$U_{CRM} = \sqrt{U_{char}^2 + U_{homogeneity}^2 + U_{stability}^2}$$

Traceability: The standard was manufactured under an ISO/IEC 17025:2005 certified quality system. The balance used to weigh raw materials is accurate to +/- 0.0001g and calibrated regularly using mass standards traceable to NIST. All dilutions were performed gravimetrically. Additionally, individual analytes are traceable to NIST SRMs where available and specified above.

Homogeneity: Homogeneity was assessed in accordance with ISO Guide 35. Completed units were sampled using a random stratified sampling protocol. The results of chemical analysis were then compared using a one-way analysis of variance approach as described by TNI EL-V3-2009 Appendix A.2. See Instructions for minimum sub-sample size.

Expiration is at end of month given on certificate and label.

THIS CERTIFICATE WAS PREPARED, REVIEWED AND APPROVED FOR SIGNATURE AND RELEASE BY THE ANALYST IN ACCORDANCE WITH THE ISO/IEC 17025:2005 AND THE Red 22-1166 and 122-1166 3/12/2009 AND THE Red 22-1166.

These reports for components comprising greater than 1.0% of the solution or 0.1% for components known to be carcinogens are available upon request.

Robert O'Brien - QC Supervisor

Mark Pooler - QA Supervisor

Certification Date October 01, 2018
Version -1012018

Reagent

MS-567684_00019



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 567684 Lot No.: A0112833
Description : 8270 Internal Standard
8270 Internal Standard 2,000µg/mL, Methylene Chloride, 5mL/ampul
Container Size : 5 mL Pkg Amt: > 5 mL
Expiration Date : July 31, 2020 Storage: 10°C or colder
Handling: Sonication required. Mix is photosensitive.



4101728

ID: MS-567684_00019
Exp: 07/31/20 Prep: DCK
RES 8270 Internal Std Mix

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1,4-Dichlorobenzene-d4 CAS # 3855-82-1 (Lot PR-18488) Purity 99%	2,014.8 µg/mL	+/- 11.7142 µg/mL Gravimetric +/- 89.5186 µg/mL Unstressed +/- 98.3528 µg/mL Stressed
2	Naphthalene-d8 CAS # 1146-65-2 (Lot M-1452) Purity 99%	2,015.8 µg/mL	+/- 11.7202 µg/mL Gravimetric +/- 89.5645 µg/mL Unstressed +/- 98.4032 µg/mL Stressed
3	Acenaphthene-d10 CAS # 15067-26-2 (Lot PR-21070) Purity 97%	2,002.0 µg/mL	+/- 11.6397 µg/mL Gravimetric +/- 88.9491 µg/mL Unstressed +/- 97.7271 µg/mL Stressed
4	Phenanthrene-d10 CAS # 1517-22-2 (Lot PR-23065) Purity 99%	2,007.1 µg/mL	+/- 11.6693 µg/mL Gravimetric +/- 89.1750 µg/mL Unstressed +/- 97.9753 µg/mL Stressed
5	Chrysene-d12 CAS # 1719-03-5 (Lot PR-25081) Purity 99%	2,013.2 µg/mL	+/- 11.7047 µg/mL Gravimetric +/- 89.4460 µg/mL Unstressed +/- 98.2730 µg/mL Stressed
6	Perylene-d12 CAS # 1520-96-3 (Lot PR-24113) Purity 99%	2,005.4 µg/mL	+/- 11.6598 µg/mL Gravimetric +/- 89.1024 µg/mL Unstressed +/- 97.8955 µg/mL Stressed

Reagent

MS-567684_00021



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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 567684 Lot No.: A0133281

Description : 8270 Internal Standard

8270 Internal Standard 2,000µg/mL, Methylene chloride, 5mL/ampul

Container Size : 5 mL Pkg Amt: > 5 mL

Expiration Date : December 31, 2022 Storage: 10°C or colder

Handling: Sonication required. Mix is photosensitive.



5035081
ID: MS-567684_00021
Exp: 12/31/22 Pripd: UCK
RES 8270 Internal Std Mix

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1,4-Dichlorobenzene-d4 CAS # 3855-82-1 (Lot PR-18488) Purity 99%	2,000.9 µg/mL	+/- 11.6334 µg/mL Gravimetric +/- 90.1217 µg/mL Unstressed +/- 100.0012 µg/mL Stressed
2	Naphthalene-d8 CAS # 1146-65-2 (Lot M-1452) Purity 99%	2,000.1 µg/mL	+/- 11.6285 µg/mL Gravimetric +/- 90.0835 µg/mL Unstressed +/- 99.9587 µg/mL Stressed
3	Acenaphthene-d10 CAS # 15067-26-2 (Lot PR-25444) Purity 99%	2,000.2 µg/mL	+/- 11.6290 µg/mL Gravimetric +/- 90.0880 µg/mL Unstressed +/- 99.9637 µg/mL Stressed
4	Phenanthrene-d10 CAS # 1517-22-2 (Lot PR-23065) Purity 99%	2,002.8 µg/mL	+/- 11.6442 µg/mL Gravimetric +/- 90.2051 µg/mL Unstressed +/- 100.0937 µg/mL Stressed
5	Chrysene-d12 CAS # 1719-03-5 (Lot PR-27952) Purity 99%	2,001.4 µg/mL	+/- 11.6360 µg/mL Gravimetric +/- 90.1420 µg/mL Unstressed +/- 100.0237 µg/mL Stressed
6	Perylene-d12 CAS # 1520-96-3 (Lot PR-24113) Purity 99%	2,002.3 µg/mL	+/- 11.6413 µg/mL Gravimetric +/- 90.1825 µg/mL Unstressed +/- 100.0687 µg/mL Stressed

Reagent

MS-567685_00005

Standard Verification Form

Standard Information			
Vendor Standard Name	567685 8270 Surrogate		
Vendor	Restek		
Lot number	A0130500		
Initial Verification	☐	Re-Verification	☒

TALS "Reagent" Information	
TALS Standard ID	MS-567685-00005
COA Reviewed against what is in TALS	☒

Verification Information and Data			
Verified by	APK	Instrument ID	D
Verification Date	012519	Method Reference	8270C
ID of Standard Used for Verification	MS-HSLA-STK-00050	Batch # / Chrom Work List #	445507 78399
Attach to this form: formulary report, COA and data used for verification Attach to standard in TALS: this form and all supporting documentation including the original CoA			
See Acceptance Criteria Below:			
Approved for Use	☒	Not Approved for Use	☐
New expiration date can be no greater than ½ the designated standards shelf life from the date of re-verification. Standards can only be re-verified one time.			
New Expiration Date:	033119		

1st Level Review APK Date: 012819

2nd Level Review AH Date: 012819

QA Review (Re-verification only)		Date:
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Acceptance Criteria		
Department	Standard Analytes	Poor Performers* and Esterified Analytes
GC/HPLC	≤ 15 %D	≤ 35 %D or ≤ 50 %D for dinoseb
GCMS/LCMS	≤ 35 %D	≤ 55 %D
MSVOA	≤ 25 %D	≤ 55 %D
Metals	≤ 8 %D	NA
Wet Chemistry	≤ 5 %D	NA

*See analytical SOP for details on poor performing analytes.

Preliminary Report

TestAmerica Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190125-78399.b\D31379.D
Lims ID: CCVC HSL
Client ID:
Sample Type: CCVC
Inject. Date: 26-Jan-2019 01:53:30 ALS Bottle#: 26 Worklist Smp#: 52
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: CCVC HSL
Operator ID: KIEKELD Instrument ID: SMS_D
Sublist: chrom-SMSD_8270C*sub39
Method: \\chromna\Denver\ChromData\SMS_D\20190125-78399.b\SMSD_8270C.m
Limit Group: MSSV - 8270C_625
Method Label: 8270C / 625
Last Update: 28-Jan-2019 11:26:04 Calib Date: 10-Jan-2019 10:48:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190110-77931.b\D31095.D
Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
Process Host: CTX0317

Compound	Amount Added	Amount Recovered	% Rec.
\$ 7 2-Fluorophenol	80.0	73.5	91.89
\$ 8 Phenol-d5	80.0	73.5	91.81
\$ 9 Nitrobenzene-d5	80.0	77.8	97.24
\$ 11 2-Fluorobiphenyl	80.0	72.8	91.03
\$ 12 2,4,6-Tribromophenol	80.0	71.8	89.71
\$ 13 Terphenyl-d14	80.0	76.1	95.12



Reagent ID: MS-567685_00005

Type: ASTD
 Description: 8270 Surrogates 5000ug/mL
 No. of Bottles: 1
 Storage Location: BNA Aliquoting
 Reagent Volume: 5.000 mL
 Creation Date: 01/29/2018
 Open Date:
 Container(s): 5521268
 Comment: re-verified standard of MS-567685_00004

Expiration Date: 07/30/2019
 Laboratory: TestAmerica Denver
 Prepared By: Kiekel, Daniel C
 Vendor: Restek
 Vendor Lot #: A0130500
 Vendor Cat #: 567685

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
2,4,6 - Tribromophenol					5000.00000	ug/mL
2,4,6-Tribromophenol					5000.00000	ug/mL
2-Fluorobiphenyl					5000.00000	ug/mL
2-Fluorophenol					5000.00000	ug/mL
Nitrobenzene-d5					5000.00000	ug/mL
Phenol-d5					5000.00000	ug/mL
Terphenyl-d14					5000.00000	ug/mL



CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
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Fax: (814)353-1309

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Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 567685 Lot No.: A0130500
Description : 8270 Surrogate Standard
8270 Surrogate Standard 5,000µg/mL, Methylene chloride, 5mL/ampul
Container Size : 5 mL Pkg Amt: > 5 mL
Expiration Date : September 30, 2022 Storage: 10°C or colder
Handling: Sonicate prior to use.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	2-Fluorophenol CAS # 367-12-4 (Lot STBD7945V) Purity 99%	5,009.8 µg/mL	+/- 29.1274 µg/mL +/- 146.2028 µg/mL +/- 177.4114 µg/mL	Gravimetric Unstressed Stressed
2	Phenol-d5 CAS # 4165-62-2 (Lot X-479) Purity 99%	5,013.6 µg/mL	+/- 29.1495 µg/mL +/- 146.3137 µg/mL +/- 177.5460 µg/mL	Gravimetric Unstressed Stressed
3	Nitrobenzene-d5 CAS # 4165-60-0 (Lot PR-25462) Purity 99%	5,000.0 µg/mL	+/- 29.0704 µg/mL +/- 145.9168 µg/mL +/- 177.0644 µg/mL	Gravimetric Unstressed Stressed
4	2-Fluorobiphenyl CAS # 321-60-8 (Lot B19Z016) Purity 99%	5,001.2 µg/mL	+/- 29.0774 µg/mL +/- 145.9518 µg/mL +/- 177.1069 µg/mL	Gravimetric Unstressed Stressed
5	2,4,6-Tribromophenol CAS # 118-79-6 (Lot 29699MJV) Purity 99%	5,002.6 µg/mL	+/- 29.0855 µg/mL +/- 145.9926 µg/mL +/- 177.1564 µg/mL	Gravimetric Unstressed Stressed
6	p-Terphenyl-d14 CAS # 1718-51-0 (Lot PR-27278) Purity 99%	5,004.0 µg/mL	+/- 29.0937 µg/mL +/- 146.0335 µg/mL +/- 177.2060 µg/mL	Gravimetric Unstressed Stressed

Reagent

MS-567685_00006



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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01



ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 567685 **Lot No.:** A0141581

Description : 8270 Surrogate Standard

8270 Surrogate Standard 5,000µg/mL, Methylene chloride, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : September 30, 2023 **Storage:** 10°C or colder

Handling: Sonicate prior to use.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	2-Fluorophenol CAS # 367-12-4 Purity 99% (Lot STBF3761V)	5,002.0 µg/mL	+/- 29.0821 µg/mL +/- 145.9751 µg/mL +/- 177.1352 µg/mL Gravimetric Unstressed Stressed
2	Phenol-d5 CAS # 4165-62-2 Purity 99% (Lot CD-105)	5,000.6 µg/mL	+/- 29.0739 µg/mL +/- 145.9343 µg/mL +/- 177.0856 µg/mL Gravimetric Unstressed Stressed
3	Nitrobenzene-d5 CAS # 4165-60-0 Purity 99% (Lot PR-29603)	5,006.0 µg/mL	+/- 29.1053 µg/mL +/- 146.0919 µg/mL +/- 177.2768 µg/mL Gravimetric Unstressed Stressed
4	2-Fluorobiphenyl CAS # 321-60-8 Purity 99% (Lot M09E045)	5,000.8 µg/mL	+/- 29.0751 µg/mL +/- 145.9401 µg/mL +/- 177.0927 µg/mL Gravimetric Unstressed Stressed
5	2,4,6-Tribromophenol CAS # 118-79-6 Purity 99% (Lot 29699MJV)	5,000.8 µg/mL	+/- 29.0751 µg/mL +/- 145.9401 µg/mL +/- 177.0927 µg/mL Gravimetric Unstressed Stressed
6	p-Terphenyl-d14 CAS # 1718-51-0 Purity 99% (Lot PR-21037)	5,001.0 µg/mL	+/- 29.0762 µg/mL +/- 145.9459 µg/mL +/- 177.0998 µg/mL Gravimetric Unstressed Stressed

Reagent

MS-568033_00029



CERTIFIED REFERENCE MATERIAL

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Gravimetric Certificate



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 568033 **Lot No.:** A0144277

Description : Denver 8270 Standard
Denver 8270 Standard 4,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

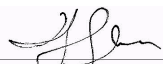
Expiration Date : June 30, 2020 **Storage:** 10°C or colder

Handling: Sonicate prior to use. This product is photosensitive.

CERTIFIED VALUES

Component #	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	2,3-Dichloroaniline CAS # 608-27-5 Purity 99% (Lot FBV01)	4,032.0 µg/mL	+/- 37.4954 µg/mL Gravimetric +/- 187.5074 µg/mL Unstressed +/- 192.1919 µg/mL Stressed
2	3,5-Dimethylphenol CAS # 108-68-9 Purity 99% (Lot 02801LZ)	4,020.0 µg/mL	+/- 37.3838 µg/mL Gravimetric +/- 186.9493 µg/mL Unstressed +/- 191.6199 µg/mL Stressed
3	Alachlor CAS # 15972-60-8 Purity 99% (Lot 7246900)	4,040.0 µg/mL	+/- 37.5698 µg/mL Gravimetric +/- 187.8794 µg/mL Unstressed +/- 192.5732 µg/mL Stressed
4	alpha-Methylstyrene CAS # 98-83-9 Purity 99% (Lot MKBS2502V)	4,016.0 µg/mL	+/- 37.3466 µg/mL Gravimetric +/- 186.7633 µg/mL Unstressed +/- 191.4292 µg/mL Stressed
5	Benzo(e)pyrene CAS # 192-97-2 Purity 99% (Lot NT061593)	4,012.0 µg/mL	+/- 37.3094 µg/mL Gravimetric +/- 186.5773 µg/mL Unstressed +/- 191.2385 µg/mL Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%



Tom Suckar - Mix Technician

Date Mixed: 18-Dec-2018

Balance: 1128360905

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

MS-569730 HSL_00008



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www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569730 Lot No.: A0137351
Description : 8270 List 1 / Std #9
8270 List 1 / Std #9 2,000µg/mL, Methylene chloride, 5mL/ampul
Container Size : 10 mL Pkg Amt: > 5 mL
Expiration Date : October 31, 2019 Storage: 10°C or colder
Handling: Contains carcinogen/reproductive toxin.



5306168
ID: MS-569730 AFC_00007
Exp: 10/31/19 Prep: DCK
HSLA Amine Mix (2015) 200



5306172
ID: MS-569730 HSL_00008
Exp: 10/31/19 Prep: DCK
HSLA Amine Mix (2015) 200

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Benzidine CAS # 92-87-5 (Lot 171228KJA) Purity 99%	2,000.3 µg/mL	+/- 11.6301 µg/mL Gravimetric +/- 23.9121 µg/mL Unstressed +/- 38.0558 µg/mL Stressed
2	3,3'-Dichlorobenzidine CAS # 91-94-1 (Lot 180328JNA) Purity 99%	2,005.7 µg/mL	+/- 11.6611 µg/mL Gravimetric +/- 23.9759 µg/mL Unstressed +/- 38.1572 µg/mL Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Reagent

MS-569731_00107



CERTIFIED REFERENCE MATERIAL

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Certificate of Analysis



ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01



ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569731 Lot No.: A0136865

Description : 8270 List 1 / Std #10

8270 List 1 / Std #10 2,000µg/mL, Methylene chloride, 5mL/ampul

Container Size : 5 mL Pkg Amt: > 5 mL

Expiration Date : October 31, 2019 Storage: 10°C or colder

Handling: This product is photosensitive.



5547917
ID: MS-569731_00107
Exp: 10/31/19 Pripd: OCK
HSLA Benzoic Acid (2015)

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Indene	2,004.3 µg/mL	+/- 11.6534 µg/mL Gravimetric
	CAS # 95-13-6 (Lot MKBV0236V)		+/- 112.3815 µg/mL Unstressed
	Purity 97%		+/- 115.0111 µg/mL Stressed
2	Benzoic acid	2,013.3 µg/mL	+/- 11.7053 µg/mL Gravimetric
	CAS # 65-85-0 (Lot MKCC9722)		+/- 112.8819 µg/mL Unstressed
	Purity 99%		+/- 115.5232 µg/mL Stressed
Solvent: Methylene chloride			
CAS # 75-09-2			
Purity 99%			

Reagent

MS-569732 HSL_00006



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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569732 Lot No.: A0137125
Description : 8270 List 1 / Std #11
8270 List 1 / Std #11 2,000µg/mL, Methylene chloride, 5mL/ampul
Container Size : 5 mL Pkg Amt: > 5 mL
Expiration Date : October 31, 2019 Storage: 10°C or colder
Handling: This product is photosensitive.



5335192
ID: MS-569732 HSL_00006
Exp: 10/31/19 Prip: DCK
8270 List 1/ Std 11 (2015)



5335191
ID: MS-569732 BZH_00008
Exp: 10/31/19 Prip: DCK
8270 List 1/ Std 11 (2015)

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Benzaldehyde CAS # 100-52-7 (Lot SHBG8690V) Purity 99%	2,001.1 µg/mL	+/- 11.6345 µg/mL Gravimetric +/- 64.1460 µg/mL Unstressed +/- 74.5673 µg/mL Stressed
2	epsilon-Caprolactam CAS # 105-60-2 (Lot I16X016) Purity 99%	2,002.0 µg/mL	+/- 11.6398 µg/mL Gravimetric +/- 64.1754 µg/mL Unstressed +/- 74.6014 µg/mL Stressed
3	Atrazine CAS # 1912-24-9 (Lot 77P7D) Purity 99%	2,002.6 µg/mL	+/- 11.6432 µg/mL Gravimetric +/- 64.1941 µg/mL Unstressed +/- 74.6232 µg/mL Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Reagent

MS-571995.SEC_00002



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 571995.SEC Lot No.: A0131190
Description: 8270 List 1 / Std #1 MegaMix (2017)
8270 List 1 / Std #1 MegaMix (2017) 500-2,000µg/mL, Methylene chloride, 5mL/ampul
Container Size: 10 mL Pkg Amt: > 5 mL
Expiration Date: March 31, 2019 Storage: 0°C or colder
Handling: Carcinogen/reproductive toxin. Photosensitive. Sonicate.



4994417

ID: MS-571995.SEC_00002

Exp:03/31/19 Prip:DCK Opn:03/09/19

RES HSLB Mega Mix (2017)

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1,4-Dioxane CAS # 123-91-1.SEC (Lot MUFZH) Purity 99%	1,000.0 µg/mL	+/- 5.8275 µg/mL Gravimetric +/- 11.9606 µg/mL Unstressed +/- 19.0288 µg/mL Stressed
2	N-Nitrosodimethylamine CAS # 62-75-9.SEC (Lot 61H72) Purity 99%	1,000.0 µg/mL	+/- 5.8275 µg/mL Gravimetric +/- 11.9606 µg/mL Unstressed +/- 19.0288 µg/mL Stressed
3	Pyridine CAS # 110-86-1.SEC (Lot QN8DK) Purity 99%	2,000.0 µg/mL	+/- 11.6282 µg/mL Gravimetric +/- 23.9081 µg/mL Unstressed +/- 38.0494 µg/mL Stressed
4	Phenol CAS # 108-95-2.SEC (Lot EDPYN) Purity 99%	1,000.6 µg/mL	+/- 5.8310 µg/mL Gravimetric +/- 11.9678 µg/mL Unstressed +/- 19.0402 µg/mL Stressed
5	Aniline CAS # 62-53-3.SEC (Lot ZCD3N) Purity 99%	1,000.4 µg/mL	+/- 5.8299 µg/mL Gravimetric +/- 11.9654 µg/mL Unstressed +/- 19.0364 µg/mL Stressed
6	Bis(2-chloroethyl)ether CAS # 111-44-4.SEC (Lot FA010143) Purity 99%	1,000.6 µg/mL	+/- 5.8310 µg/mL Gravimetric +/- 11.9678 µg/mL Unstressed +/- 19.0402 µg/mL Stressed
7	n-Decane (C10) CAS # 124-18-5.SEC (Lot UCVNN) Purity 99%	1,000.0 µg/mL	+/- 5.8275 µg/mL Gravimetric +/- 11.9606 µg/mL Unstressed +/- 19.0288 µg/mL Stressed

8	2-Chlorophenol CAS # 95-57-8.SEC Purity 99%	(Lot GJ01)	1,000.0	µg/mL	+/- +/- +/-	5.8275 11.9606 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
9	1,3-Dichlorobenzene CAS # 541-73-1.SEC Purity 99%	(Lot FMDFD)	1,000.0	µg/mL	+/- +/- +/-	5.8275 11.9606 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
10	1,4-Dichlorobenzene CAS # 106-46-7.SEC Purity 99%	(Lot 4Y5DC)	1,000.0	µg/mL	+/- +/- +/-	5.8275 11.9606 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
11	Benzyl alcohol CAS # 100-51-6.SEC Purity 99%	(Lot QZBUO)	1,000.6	µg/mL	+/- +/- +/-	5.8310 11.9678 19.0402	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
12	1,2-Dichlorobenzene CAS # 95-50-1.SEC Purity 99%	(Lot R6QDM)	1,000.4	µg/mL	+/- +/- +/-	5.8299 11.9654 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
13	2-Methylphenol (o-cresol) CAS # 95-48-7.SEC Purity 99%	(Lot NC7HL)	1,000.0	µg/mL	+/- +/- +/-	5.8275 11.9606 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
14	2,2'-oxybis(1-chloropropane) CAS # 108-60-1.SEC Purity 99%	(Lot 2-KMW-57-8)	1,000.0	µg/mL	+/- +/- +/-	5.8275 11.9606 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
15	Acetophenone CAS # 98-86-2.SEC Purity 99%	(Lot NSGTI)	1,000.6	µg/mL	+/- +/- +/-	5.8310 11.9678 19.0402	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
16	3-Methylphenol (m-cresol) CAS # 108-39-4.SEC Purity 99%	(Lot 6LHTM)	500.0	µg/mL	+/- +/- +/-	2.9138 5.9803 9.5144	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
17	4-Methylphenol (p-cresol) CAS # 106-44-5.SEC Purity 99%	(Lot 65S2E)	501.0	µg/mL	+/- +/- +/-	2.9196 5.9923 9.5334	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
18	N-Nitroso-di-n-propylamine CAS # 621-64-7.SEC Purity 99%	(Lot 4423200)	1,001.4	µg/mL	+/- +/- +/-	5.8357 11.9773 19.0555	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
19	Hexachloroethane CAS # 67-72-1.SEC Purity 99%	(Lot 10173016)	1,000.0	µg/mL	+/- +/- +/-	5.8275 11.9606 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
20	Nitrobenzene CAS # 98-95-3.SEC Purity 99%	(Lot FLYIG)	1,000.0	µg/mL	+/- +/- +/-	5.8275 11.9606 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
21	Isophorone CAS # 78-59-1.SEC Purity 99%	(Lot XHGJI)	1,000.0	µg/mL	+/- +/- +/-	5.8275 11.9606 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
22	2-Nitrophenol CAS # 88-75-5.SEC Purity 99%	(Lot GXJ7J)	1,000.0	µg/mL	+/- +/- +/-	5.8275 11.9606 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
23	2,4-Dimethylphenol CAS # 105-67-9.SEC Purity 99%	(Lot MKBL3650V)	1,000.0	µg/mL	+/- +/- +/-	5.8275 11.9606 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

24	Bis(2-chloroethoxy)methane CAS # 111-91-1 * Purity 99%	(Lot 5670100)	1,000.4 µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
25	2,4-Dichlorophenol CAS # 120-83-2.SEC Purity 99%	(Lot FHM01)	1,000.4 µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
26	1,2,4-Trichlorobenzene CAS # 120-82-1.SEC Purity 99%	(Lot OGO01)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
27	Naphthalene CAS # 91-20-3.SEC Purity 99%	(Lot SKZ5N)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
28	2,6-Dichlorophenol CAS # 87-65-0.SEC Purity 99%	(Lot SIDBB)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
29	4-Chloroaniline CAS # 106-47-8.SEC Purity 99%	(Lot 10171860)	1,000.2 µg/mL	+/- 5.8287 +/- 11.9630 +/- 19.0326	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
30	Hexachlorobutadiene CAS # 87-68-3.SEC Purity 97%	(Lot 1068200)	1,000.5 µg/mL	+/- 5.8302 +/- 11.9661 +/- 19.0375	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
31	4-Chloro-3-methylphenol CAS # 59-50-7.SEC Purity 99%	(Lot FDO02)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
32	2-Methylnaphthalene CAS # 91-57-6.SEC Purity 98%	(Lot 76023-1)	1,000.8 µg/mL	+/- 5.8320 +/- 11.9699 +/- 19.0436	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
33	1-Methylnaphthalene CAS # 90-12-0.SEC Purity 97%	(Lot UATSA)	1,000.1 µg/mL	+/- 5.8279 +/- 11.9614 +/- 19.0302	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
34	1,2,4,5-Tetrachlorobenzene CAS # 95-94-3.SEC Purity 99%	(Lot AF02)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
35	Hexachlorocyclopentadiene CAS # 77-47-4.SEC Purity 99%	(Lot 5608400)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
36	2,4,6-Trichlorophenol CAS # 88-06-2.SEC Purity 98%	(Lot UUMYM)	1,000.6 µg/mL	+/- 5.8309 +/- 11.9675 +/- 19.0399	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
37	2,4,5-Trichlorophenol CAS # 95-95-4.SEC Purity 97%	(Lot MKBQ9937V)	1,000.1 µg/mL	+/- 5.8279 +/- 11.9614 +/- 19.0302	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
38	2-Chloronaphthalene CAS # 91-58-7.SEC Purity 99%	(Lot LC07783V)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
39	Biphenyl CAS # 92-52-4.SEC Purity 99%	(Lot 330QE)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

40	2-Nitroaniline CAS # 88-74-4.SEC Purity 99%	(Lot T6E7B)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
41	Acenaphthylene CAS # 208-96-8.SEC Purity 96%	(Lot 0012014)	999.9 µg/mL	+/- 5.8271 +/- 11.9598 +/- 19.0276	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
42	1,3-Dinitrobenzene CAS # 99-65-0.SEC Purity 99%	(Lot 3XXLB)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
43	Dimethylphthalate CAS # 131-11-3.SEC Purity 99%	(Lot 483WC)	1,002.0 µg/mL	+/- 5.8392 +/- 11.9845 +/- 19.0669	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
44	2,6-Dinitrotoluene CAS # 606-20-2.SEC Purity 99%	(Lot GE01)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
45	3-Nitroaniline CAS # 99-09-2.SEC Purity 99%	(Lot FGN03)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
46	Acenaphthene CAS # 83-32-9.SEC Purity 99%	(Lot BWZIE)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
47	2,4-Dinitrophenol CAS # 51-28-5.SEC Purity 99%	(Lot YTR6B)	2,000.0 µg/mL	+/- 11.6282 +/- 23.9081 +/- 38.0494	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
48	Dibenzofuran CAS # 132-64-9.SEC Purity 99%	(Lot 27ZGC)	1,000.8 µg/mL	+/- 5.8322 +/- 11.9702 +/- 19.0440	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
49	4-Nitrophenol CAS # 100-02-7.SEC Purity 99%	(Lot 2J5LB)	2,000.0 µg/mL	+/- 11.6282 +/- 23.9081 +/- 38.0494	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
50	2,4-Dinitrotoluene CAS # 121-14-2.SEC Purity 99%	(Lot SHRSA)	1,000.4 µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
51	2,3,4,6-Tetrachlorophenol CAS # 58-90-2.SEC Purity 99%	(Lot LC19623V)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
52	Fluorene CAS # 86-73-7.SEC Purity 99%	(Lot 5027400)	1,000.6 µg/mL	+/- 5.8310 +/- 11.9678 +/- 19.0402	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
53	n-Hexadecane (C16) CAS # 544-76-3.SEC Purity 99%	(Lot A0328141)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
54	Diethylphthalate CAS # 84-66-2.SEC Purity 99%	(Lot UMBJC)	1,000.4 µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
55	4-Chlorophenyl phenyl ether CAS # 7005-72-3.SEC Purity 99%	(Lot P31G)	1,000.4 µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

56	4-Nitroaniline CAS # 100-01-6.SEC Purity 99%	(Lot 5ITRC)	1,000.4 µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
57	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol) CAS # 534-52-1.SEC Purity 99%	(Lot 6333400)	2,000.0 µg/mL	+/- 11.6282 +/- 23.9081 +/- 38.0494	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
58	Diphenylamine CAS # 122-39-4.SEC Purity 99%	(Lot 10164691)	850.0 µg/mL	+/- 4.9534 +/- 10.1665 +/- 16.1745	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
59	Azobenzene CAS # 103-33-3.SEC Purity 99%	(Lot JUWAG)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
60	4-Bromophenyl phenyl ether CAS # 101-55-3.SEC Purity 99%	(Lot 84C6D)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
61	Hexachlorobenzene CAS # 118-74-1.SEC Purity 99%	(Lot G120431)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
62	Pentachlorophenol CAS # 87-86-5.SEC Purity 99%	(Lot 5784900)	2,000.4 µg/mL	+/- 11.6305 +/- 23.9129 +/- 38.0570	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
63	n-Octadecane (C18) CAS # 593-45-3.SEC Purity 99%	(Lot G14U045)	1,001.0 µg/mL	+/- 5.8333 +/- 11.9726 +/- 19.0478	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
64	Phenanthrene CAS # 85-01-8.SEC Purity 98%	(Lot 4708400)	1,002.0 µg/mL	+/- 5.8389 +/- 11.9839 +/- 19.0660	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
65	Anthracene CAS # 120-12-7.SEC Purity 99%	(Lot WDFNJ)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
66	Carbazole CAS # 86-74-8.SEC Purity 99%	(Lot LMIZB)	1,000.4 µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
67	Di-n-butylphthalate CAS # 84-74-2.SEC Purity 99%	(Lot 42FSG)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
68	Fluoranthene CAS # 206-44-0.SEC Purity 99%	(Lot FREGF)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
69	Pyrene CAS # 129-00-0.SEC Purity 99%	(Lot ROVJC)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
70	Benzyl butyl phthalate CAS # 85-68-7.SEC Purity 98%	(Lot GX3GL)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9605 +/- 19.0287	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
71	Benz(a)anthracene CAS # 56-55-3.SEC Purity 99%	(Lot MTENF)	1,000.4 µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

72	chrysene CAS # 218-01-9.SEC Purity 99%	(Lot NICZC)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
73	Bis(2-ethylhexyl)phthalate CAS # 117-81-7.SEC Purity 99%	(Lot MT8AG)	1,000.4 µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
74	Di-n-octyl phthalate CAS # 117-84-0.SEC Purity 99%	(Lot O8DLD)	1,000.8 µg/mL	+/- 5.8322 +/- 11.9702 +/- 19.0440	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
75	Benzo(b)fluoranthene CAS # 205-99-2.SEC Purity 99%	(Lot 022011)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
76	Benzo(k)fluoranthene CAS # 207-08-9.SEC Purity 99%	(Lot ER041513-01)	1,000.6 µg/mL	+/- 5.8310 +/- 11.9678 +/- 19.0402	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
77	Benzo(a)pyrene CAS # 50-32-8.SEC Purity 97%	(Lot M8DFD)	1,000.5 µg/mL	+/- 5.8302 +/- 11.9661 +/- 19.0375	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
78	Indeno(1,2,3-cd)pyrene CAS # 193-39-5.SEC Purity 99%	(Lot 0012014)	1,000.4 µg/mL	+/- 5.8299 +/- 11.9654 +/- 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
79	Dibenz(a,h)anthracene CAS # 53-70-3.SEC Purity 99%	(Lot 0012011)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
80	Benzo(g,h,i)perylene CAS # 191-24-2.SEC Purity 97%	(Lot 0022012)	1,000.1 µg/mL	+/- 5.8279 +/- 11.9614 +/- 19.0302	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
Solvent: Methylene chloride CAS # 75-09-2 Purity 99%						

* Restek is unable to identify a reliable and/or acceptable second source for this material - the same batch of neat material may have been used to produce both the primary and secondary standard. The primary and secondary standards were prepared using different equipment and personnel.

Specific Reference Material Notes:

N-nitrosodiphenylamine 1000 ug/mL equivalent when used for GC analysis. Actual formulation is diphenylamine 855 ug/mL. N-Nitrosodiphenylamine is prone to breakdown in the injection port and will be converted to diphenylamine. N-Nitrosodiphenylamine is also a reactive species that can initiate premature decomposition of other compounds in the mix. For these reasons diphenylamine is used in the preparation of this mixture. When comparing the response of this compound to mixtures manufactured using N-nitrosodiphenylamine, a difference in response will be observed.

Reagent

MS-571995.SEC_00003



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 571995.SEC Lot No.: A0138890

Description : 8270 List 1 / Std #1 MegaMix (2017)

8270 List 1 / Std #1 MegaMix (2017) 500-2,000µg/mL, Methylene chloride, 5mL/ampul

Container Size : 10 mL Pkg Amt: > 5 mL

Expiration Date : December 31, 2019 Storage: 0°C or colder

Handling: Carcinogen/reproductive toxin. Photosensitive. Sonicate.



5335127
ID: MS-571995.SEC_00003
Exp: 12/31/19 Prod: DCK
RES HSLB Mega Mix (2017)

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1,4-Dioxane CAS # 123-91-1.SEC (Lot MUFZH) Purity 99%	1,006.2 µg/mL	+/- 5.8637 µg/mL Gravimetric +/- 12.0348 µg/mL Unstressed +/- 19.1468 µg/mL Stressed
2	N-Nitrosodimethylamine CAS # 62-75-9.SEC (Lot 61H72) Purity 99%	1,000.6 µg/mL	+/- 5.8310 µg/mL Gravimetric +/- 11.9678 µg/mL Unstressed +/- 19.0402 µg/mL Stressed
3	Pyridine CAS # 110-86-1.SEC (Lot QN8DK) Purity 99%	2,007.0 µg/mL	+/- 11.6689 µg/mL Gravimetric +/- 23.9918 µg/mL Unstressed +/- 38.1826 µg/mL Stressed
4	Phenol CAS # 108-95-2.SEC (Lot EDPYN) Purity 99%	1,010.0 µg/mL	+/- 5.8858 µg/mL Gravimetric +/- 12.0802 µg/mL Unstressed +/- 19.2191 µg/mL Stressed
5	Aniline CAS # 62-53-3.SEC (Lot ZCD3N) Purity 99%	1,002.2 µg/mL	+/- 5.8403 µg/mL Gravimetric +/- 11.9869 µg/mL Unstressed +/- 19.0707 µg/mL Stressed
6	Bis(2-chloroethyl)ether CAS # 111-44-4.SEC (Lot FA010143) Purity 99%	1,006.8 µg/mL	+/- 5.8671 µg/mL Gravimetric +/- 12.0419 µg/mL Unstressed +/- 19.1582 µg/mL Stressed
7	n-Decane (C10) CAS # 124-18-5.SEC (Lot UCVNN) Purity 99%	1,007.0 µg/mL	+/- 5.8683 µg/mL Gravimetric +/- 12.0443 µg/mL Unstressed +/- 19.1620 µg/mL Stressed

8	2-Chlorophenol CAS # 95-57-8.SEC Purity 99%	(Lot GJ01)	1,000.0 µg/mL	+/- +/- +/-	5.8275 11.9606 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
9	1,3-Dichlorobenzene CAS # 541-73-1.SEC Purity 99%	(Lot FMDFD-KA)	1,004.0 µg/mL	+/- +/- +/-	5.8508 12.0084 19.1049	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
10	1,4-Dichlorobenzene CAS # 106-46-7.SEC Purity 99%	(Lot 4Y5DC)	1,005.2 µg/mL	+/- +/- +/-	5.8578 12.0228 19.1278	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
11	Benzyl alcohol CAS # 100-51-6.SEC Purity 99%	(Lot QZBUO)	1,002.8 µg/mL	+/- +/- +/-	5.8438 11.9941 19.0821	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
12	1,2-Dichlorobenzene CAS # 95-50-1.SEC Purity 99%	(Lot R6QDM)	1,001.6 µg/mL	+/- +/- +/-	5.8368 11.9797 19.0593	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
13	2-Methylphenol (o-cresol) CAS # 95-48-7.SEC Purity 99%	(Lot NC7HL)	1,006.2 µg/mL	+/- +/- +/-	5.8637 12.0348 19.1468	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
14	2,2'-oxybis(1-chloropropane) CAS # 108-60-1.SEC Purity 99%	(Lot 2-KMW-57-8)	1,008.2 µg/mL	+/- +/- +/-	5.8753 12.0587 19.1849	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
15	Acetophenone CAS # 98-86-2.SEC Purity 99%	(Lot NSGTI)	1,000.6 µg/mL	+/- +/- +/-	5.8310 11.9678 19.0402	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
16	3-Methylphenol (m-cresol) CAS # 108-39-4.SEC Purity 99%	(Lot 6LHTM)	500.8 µg/mL	+/- +/- +/-	2.9184 5.9899 9.5296	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
17	4-Methylphenol (p-cresol) CAS # 106-44-5.SEC Purity 99%	(Lot 65S2E)	500.0 µg/mL	+/- +/- +/-	2.9138 5.9803 9.5144	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
18	N-Nitroso-di-n-propylamine CAS # 621-64-7.SEC Purity 99%	(Lot 4817800)	1,008.2 µg/mL	+/- +/- +/-	5.8753 12.0587 19.1849	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
19	Hexachloroethane CAS # 67-72-1.SEC Purity 99%	(Lot 10173016)	1,000.4 µg/mL	+/- +/- +/-	5.8299 11.9654 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
20	Nitrobenzene CAS # 98-95-3.SEC Purity 99%	(Lot FLYIG)	1,005.2 µg/mL	+/- +/- +/-	5.8578 12.0228 19.1278	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
21	Isophorone CAS # 78-59-1.SEC Purity 99%	(Lot XHGJI)	1,001.2 µg/mL	+/- +/- +/-	5.8345 11.9750 19.0517	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
22	2-Nitrophenol CAS # 88-75-5.SEC Purity 99%	(Lot GXJ7J)	1,007.2 µg/mL	+/- +/- +/-	5.8695 12.0467 19.1658	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
23	2,4-Dimethylphenol CAS # 105-67-9.SEC Purity 99%	(Lot MKBL3650V)	1,007.8 µg/mL	+/- +/- +/-	5.8730 12.0539 19.1772	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

24	Bis(2-chloroethoxy)methane CAS # 111-91-1 * Purity 99%	(Lot 4621000)	1,008.0 µg/mL	+/-	5.8741	µg/mL	Gravimetric
				+/-	12.0563	µg/mL	Unstressed
				+/-	19.1811	µg/mL	Stressed
25	2,4-Dichlorophenol CAS # 120-83-2.SEC Purity 99%	(Lot FHM01)	1,009.2 µg/mL	+/-	5.8811	µg/mL	Gravimetric
				+/-	12.0706	µg/mL	Unstressed
				+/-	19.2039	µg/mL	Stressed
26	1,2,4-Trichlorobenzene CAS # 120-82-1.SEC Purity 99%	(Lot 3LYYC)	1,007.0 µg/mL	+/-	5.8683	µg/mL	Gravimetric
				+/-	12.0443	µg/mL	Unstressed
				+/-	19.1620	µg/mL	Stressed
27	Naphthalene CAS # 91-20-3.SEC Purity 99%	(Lot SKZ5N)	1,003.2 µg/mL	+/-	5.8462	µg/mL	Gravimetric
				+/-	11.9989	µg/mL	Unstressed
				+/-	19.0897	µg/mL	Stressed
28	2,6-Dichlorophenol CAS # 87-65-0.SEC Purity 99%	(Lot SIDBB)	1,003.8 µg/mL	+/-	5.8497	µg/mL	Gravimetric
				+/-	12.0061	µg/mL	Unstressed
				+/-	19.1011	µg/mL	Stressed
29	4-Chloroaniline CAS # 106-47-8.SEC Purity 99%	(Lot 10171860)	1,002.2 µg/mL	+/-	5.8403	µg/mL	Gravimetric
				+/-	11.9869	µg/mL	Unstressed
				+/-	19.0707	µg/mL	Stressed
30	Hexachlorobutadiene CAS # 87-68-3.SEC Purity 97%	(Lot 6878400)	1,009.0 µg/mL	+/-	5.8799	µg/mL	Gravimetric
				+/-	12.0682	µg/mL	Unstressed
				+/-	19.2000	µg/mL	Stressed
31	4-Chloro-3-methylphenol CAS # 59-50-7.SEC Purity 99%	(Lot FDO02)	1,007.4 µg/mL	+/-	5.8706	µg/mL	Gravimetric
				+/-	12.0491	µg/mL	Unstressed
				+/-	19.1696	µg/mL	Stressed
32	2-Methylnaphthalene CAS # 91-57-6.SEC Purity 98%	(Lot 76023-1)	1,010.0 µg/mL	+/-	5.8857	µg/mL	Gravimetric
				+/-	12.0801	µg/mL	Unstressed
				+/-	19.2189	µg/mL	Stressed
33	1-Methylnaphthalene CAS # 90-12-0.SEC Purity 99%	(Lot OEE3F)	1,007.4 µg/mL	+/-	5.8706	µg/mL	Gravimetric
				+/-	12.0491	µg/mL	Unstressed
				+/-	19.1696	µg/mL	Stressed
34	1,2,4,5-Tetrachlorobenzene CAS # 95-94-3.SEC Purity 99%	(Lot AF02)	1,003.4 µg/mL	+/-	5.8473	µg/mL	Gravimetric
				+/-	12.0013	µg/mL	Unstressed
				+/-	19.0935	µg/mL	Stressed
35	Hexachlorocyclopentadiene CAS # 77-47-4.SEC Purity 99%	(Lot 6975000)	1,008.4 µg/mL	+/-	5.8765	µg/mL	Gravimetric
				+/-	12.0611	µg/mL	Unstressed
				+/-	19.1887	µg/mL	Stressed
36	2,4,6-Trichlorophenol CAS # 88-06-2.SEC Purity 98%	(Lot UUMYM)	1,009.6 µg/mL	+/-	5.8834	µg/mL	Gravimetric
				+/-	12.0754	µg/mL	Unstressed
				+/-	19.2114	µg/mL	Stressed
37	2,4,5-Trichlorophenol CAS # 95-95-4.SEC Purity 99%	(Lot MKBQ9937V)	1,004.8 µg/mL	+/-	5.8555	µg/mL	Gravimetric
				+/-	12.0180	µg/mL	Unstressed
				+/-	19.1202	µg/mL	Stressed
38	2-Chloronaphthalene CAS # 91-58-7.SEC Purity 99%	(Lot 6779200)	1,005.0 µg/mL	+/-	5.8567	µg/mL	Gravimetric
				+/-	12.0204	µg/mL	Unstressed
				+/-	19.1240	µg/mL	Stressed
39	Biphenyl CAS # 92-52-4.SEC Purity 99%	(Lot 330QE)	1,009.4 µg/mL	+/-	5.8823	µg/mL	Gravimetric
				+/-	12.0730	µg/mL	Unstressed
				+/-	19.2077	µg/mL	Stressed

40	2-Nitroaniline CAS # 88-74-4.SEC Purity 99%	(Lot T6E7B)	1,003.0 µg/mL	+/- +/- +/-	5.8450 11.9965 19.0859	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
41	Acenaphthylene CAS # 208-96-8.SEC Purity 96%	(Lot 0012014)	1,000.7 µg/mL	+/- +/- +/-	5.8316 11.9690 19.0422	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
42	1,3-Dinitrobenzene CAS # 99-65-0.SEC Purity 99%	(Lot TUOIE)	1,006.0 µg/mL	+/- +/- +/-	5.8625 12.0324 19.1430	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
43	Dimethylphthalate CAS # 131-11-3.SEC Purity 99%	(Lot 483WC)	1,000.8 µg/mL	+/- +/- +/-	5.8322 11.9702 19.0440	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
44	2,6-Dinitrotoluene CAS # 606-20-2.SEC Purity 99%	(Lot GE01)	1,008.4 µg/mL	+/- +/- +/-	5.8765 12.0611 19.1887	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
45	3-Nitroaniline CAS # 99-09-2.SEC Purity 99%	(Lot FGN03)	1,007.2 µg/mL	+/- +/- +/-	5.8695 12.0467 19.1658	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
46	Acenaphthene CAS # 83-32-9.SEC Purity 99%	(Lot BWZJE)	1,004.2 µg/mL	+/- +/- +/-	5.8520 12.0108 19.1087	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
47	2,4-Dinitrophenol CAS # 51-28-5.SEC Purity 99%	(Lot YTR6B)	2,017.0 µg/mL	+/- +/- +/-	11.7270 24.1113 38.3728	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
48	Dibenzofuran CAS # 132-64-9.SEC Purity 99%	(Lot 27ZGC)	1,001.2 µg/mL	+/- +/- +/-	5.8345 11.9750 19.0517	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
49	4-Nitrophenol CAS # 100-02-7.SEC Purity 99%	(Lot H75QG)	2,001.6 µg/mL	+/- +/- +/-	11.6375 23.9273 38.0799	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
50	2,4-Dinitrotoluene CAS # 121-14-2.SEC Purity 99%	(Lot SHRSA)	1,007.4 µg/mL	+/- +/- +/-	5.8706 12.0491 19.1696	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
51	2,3,4,6-Tetrachlorophenol CAS # 58-90-2.SEC Purity 99%	(Lot LRAB8148)	1,000.4 µg/mL	+/- +/- +/-	5.8299 11.9654 19.0364	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
52	Fluorene CAS # 86-73-7.SEC Purity 99%	(Lot 6818700)	1,004.2 µg/mL	+/- +/- +/-	5.8520 12.0108 19.1087	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
53	n-Hexadecane (C16) CAS # 544-76-3.SEC Purity 99%	(Lot A0328141)	1,005.6 µg/mL	+/- +/- +/-	5.8602 12.0276 19.1354	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
54	Diethylphthalate CAS # 84-66-2.SEC Purity 99%	(Lot UMBJC)	1,009.4 µg/mL	+/- +/- +/-	5.8823 12.0730 19.2077	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
55	4-Chlorophenyl phenyl ether CAS # 7005-72-3.SEC Purity 98%	(Lot P31G)	1,003.5 µg/mL	+/- +/- +/-	5.8480 12.0027 19.0958	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

56	4-Nitroaniline CAS # 100-01-6.SEC Purity 99%	(Lot 5ITRC)	1,002.0 µg/mL	+/- 5.8392 +/- 11.9845 +/- 19.0669	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
57	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol) CAS # 534-52-1.SEC Purity 99%	(Lot 3256700)	2,005.2 µg/mL	+/- 11.6584 +/- 23.9703 +/- 38.1483	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
58	Diphenylamine CAS # 122-39-4.SEC Purity 99%	(Lot 10164691)	853.0 µg/mL	+/- 4.9709 +/- 10.2024 +/- 16.2316	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
59	Azobenzene CAS # 103-33-3.SEC Purity 99%	(Lot JUWAG)	1,006.0 µg/mL	+/- 5.8625 +/- 12.0324 +/- 19.1430	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
60	4-Bromophenyl phenyl ether CAS # 101-55-3.SEC Purity 99%	(Lot 84C6D)	1,008.2 µg/mL	+/- 5.8753 +/- 12.0587 +/- 19.1849	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
61	Hexachlorobenzene CAS # 118-74-1.SEC Purity 99%	(Lot G137934)	1,001.6 µg/mL	+/- 5.8368 +/- 11.9797 +/- 19.0593	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
62	Pentachlorophenol CAS # 87-86-5.SEC Purity 99%	(Lot 6143700)	2,018.0 µg/mL	+/- 11.7328 +/- 24.1233 +/- 38.3919	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
63	n-Octadecane (C18) CAS # 593-45-3.SEC Purity 99%	(Lot G14U045)	1,008.0 µg/mL	+/- 5.8741 +/- 12.0563 +/- 19.1811	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
64	Phenanthrene CAS # 85-01-8.SEC Purity 98%	(Lot 7248800)	1,001.6 µg/mL	+/- 5.8366 +/- 11.9793 +/- 19.0585	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
65	Anthracene CAS # 120-12-7.SEC Purity 99%	(Lot WDFNJ)	1,002.6 µg/mL	+/- 5.8427 +/- 11.9917 +/- 19.0783	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
66	Carbazole CAS # 86-74-8.SEC Purity 99%	(Lot LMIZB)	1,005.6 µg/mL	+/- 5.8602 +/- 12.0276 +/- 19.1354	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
67	Di-n-butylphthalate CAS # 84-74-2.SEC Purity 99%	(Lot 42FSG)	1,000.0 µg/mL	+/- 5.8275 +/- 11.9606 +/- 19.0288	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
68	Fluoranthene CAS # 206-44-0.SEC Purity 99%	(Lot FREGF)	1,008.8 µg/mL	+/- 5.8788 +/- 12.0659 +/- 19.1963	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
69	Pyrene CAS # 129-00-0.SEC Purity 99%	(Lot ROVJC)	1,003.6 µg/mL	+/- 5.8485 +/- 12.0037 +/- 19.0973	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
70	Benzyl butyl phthalate CAS # 85-68-7.SEC Purity 98%	(Lot GX3GL)	1,002.0 µg/mL	+/- 5.8389 +/- 11.9839 +/- 19.0660	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
71	Benz(a)anthracene CAS # 56-55-3.SEC Purity 99%	(Lot MTENF)	1,000.6 µg/mL	+/- 5.8310 +/- 11.9678 +/- 19.0402	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

72	chrysene CAS # 218-01-9.SEC Purity 99%	(Lot NICZC)	1,003.6 µg/mL	+/- 5.8485 +/- 12.0037 +/- 19.0973	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
73	Bis(2-ethylhexyl)phthalate CAS # 117-81-7.SEC Purity 99%	(Lot MT8AG)	1,006.6 µg/mL	+/- 5.8660 +/- 12.0395 +/- 19.1544	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
74	Di-n-octyl phthalate CAS # 117-84-0.SEC Purity 99%	(Lot O8DLD)	1,009.4 µg/mL	+/- 5.8823 +/- 12.0730 +/- 19.2077	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
75	Benzo(b)fluoranthene CAS # 205-99-2.SEC Purity 99%	(Lot FLUSD)	1,009.6 µg/mL	+/- 5.8835 +/- 12.0754 +/- 19.2115	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
76	Benzo(k)fluoranthene CAS # 207-08-9.SEC Purity 98%	(Lot 6143600)	1,008.0 µg/mL	+/- 5.8743 +/- 12.0566 +/- 19.1816	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
77	Benzo(a)pyrene CAS # 50-32-8.SEC Purity 97%	(Lot NPEZF)	1,008.8 µg/mL	+/- 5.8788 +/- 12.0659 +/- 19.1963	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
78	Indeno(1,2,3-cd)pyrene CAS # 193-39-5.SEC Purity 99%	(Lot 022015)	1,000.8 µg/mL	+/- 5.8322 +/- 11.9702 +/- 19.0440	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
79	Dibenz(a,h)anthracene CAS # 53-70-3.SEC Purity 99%	(Lot 0012012)	1,002.6 µg/mL	+/- 5.8427 +/- 11.9917 +/- 19.0783	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
80	Benzo(g,h,i)perylene CAS # 191-24-2.SEC Purity 95%	(Lot 0062012)	1,001.3 µg/mL	+/- 5.8351 +/- 11.9762 +/- 19.0536	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
Solvent:	Methylene chloride CAS # 75-09-2 Purity 99%					

* Restek is unable to identify a reliable and/or acceptable second source for this material - the same batch of neat material may have been used to produce both the primary and secondary standard. The primary and secondary standards were prepared using different equipment and personnel.

Specific Reference Material Notes:

N-nitrosodiphenylamine 1000 ug/mL equivalent when used for GC analysis. Actual formulation is diphenylamine 855 ug/mL. N-Nitrosodiphenylamine is prone to breakdown in the injection port and will be converted to diphenylamine. N-Nitrosodiphenylamine is also a reactive species that can initiate premature decomposition of other compounds in the mix. For these reasons diphenylamine is used in the preparation of this mixture. When comparing the response of this compound to mixtures manufactured using N-nitrosodiphenylamine, a difference in response will be observed.

Reagent

MS-571995_00003



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 571995 Lot No.: A0140111

Description: 8270 List 1 / Std #1 MegaMix (2017)

8270 List 1 / Std #1 MegaMix (2017) 500-2,000µg/mL, Methylene chloride, 5mL/ampul

Container Size: 10 mL 2 Pkg Amt: > 5 mL

Expiration Date: January 31, 2020 Storage: 0°C or colder

Handling: Carcinogen/reproductive toxin. Photosensitive. Sonicate.



5335214
ID: MS-571995_00003
Exp: 01/31/20 Prep: DCK
RES HSLB Mega Mix (2017)

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)			
1	1,4-Dioxane CAS # 123-91-1 Purity 99% (Lot SHBJ5124)	1,006.6 µg/mL	+/- 5.8525	µg/mL	Gravimetric	
			+/- 12.0330	µg/mL	Unstressed	
			+/- 19.1503	µg/mL	Stressed	
2	N-Nitrosodimethylamine CAS # 62-75-9 Purity 99% (Lot 180322JLM)	1,005.1 µg/mL	+/- 5.8437	µg/mL	Gravimetric	
			+/- 12.0150	µg/mL	Unstressed	
			+/- 19.1217	µg/mL	Stressed	
3	Pyridine CAS # 110-86-1 Purity 99% (Lot SHBC7174V)	2,012.7 µg/mL	+/- 11.7020	µg/mL	Gravimetric	
			+/- 24.0599	µg/mL	Unstressed	
			+/- 38.2910	µg/mL	Stressed	
4	Phenol CAS # 108-95-2 Purity 99% (Lot SHBF9719V)	1,008.6 µg/mL	+/- 5.8641	µg/mL	Gravimetric	
			+/- 12.0569	µg/mL	Unstressed	
			+/- 19.1883	µg/mL	Stressed	
5	Aniline CAS # 62-53-3 Purity 99% (Lot K22Z462)	1,006.2 µg/mL	+/- 5.8501	µg/mL	Gravimetric	
			+/- 12.0282	µg/mL	Unstressed	
			+/- 19.1427	µg/mL	Stressed	
6	Bis(2-chloroethyl)ether CAS # 111-44-4 Purity 99% (Lot SHBD4430V)	1,009.5 µg/mL	+/- 5.8693	µg/mL	Gravimetric	
			+/- 12.0676	µg/mL	Unstressed	
			+/- 19.2054	µg/mL	Stressed	
7	n-Decane (C10) CAS # 124-18-5 Purity 99% (Lot SHBJ8526)	1,010.0 µg/mL	+/- 5.8722	µg/mL	Gravimetric	
			+/- 12.0736	µg/mL	Unstressed	
			+/- 19.2150	µg/mL	Stressed	

8	2-Chlorophenol CAS # 95-57-8 Purity 99%	(Lot STBF2690V)	1,005.6 µg/mL	+/- 5.8466 +/- 12.0210 +/- 19.1312	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
9	1,3-Dichlorobenzene CAS # 541-73-1 Purity 99%	(Lot BCBQ7100V)	1,009.7 µg/mL	+/- 5.8705 +/- 12.0700 +/- 19.2092	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
10	1,4-Dichlorobenzene CAS # 106-46-7 Purity 99%	(Lot MKBS4401V)	1,007.6 µg/mL	+/- 5.8583 +/- 12.0449 +/- 19.1693	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
11	Benzyl alcohol CAS # 100-51-6 Purity 99%	(Lot SHBJ0534)	1,009.6 µg/mL	+/- 5.8699 +/- 12.0688 +/- 19.2073	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
12	1,2-Dichlorobenzene CAS # 95-50-1 Purity 99%	(Lot SHBG3111V)	1,007.7 µg/mL	+/- 5.8589 +/- 12.0461 +/- 19.1712	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
13	2-Methylphenol (o-cresol) CAS # 95-48-7 Purity 99%	(Lot SHBH6379)	1,008.4 µg/mL	+/- 5.8629 +/- 12.0545 +/- 19.1845	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
14	2,2'-oxybis(1-chloropropane) CAS # 108-60-1 Purity 99%	(Lot 7577400)	1,007.6 µg/mL	+/- 5.8583 +/- 12.0449 +/- 19.1693	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
15	Acetophenone CAS # 98-86-2 Purity 99%	(Lot STBG8586)	1,009.4 µg/mL	+/- 5.8687 +/- 12.0664 +/- 19.2035	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
16	3-Methylphenol (m-cresol) CAS # 108-39-4 Purity 99%	(Lot SHBD0627V)	504.9 µg/mL	+/- 2.9423 +/- 6.0389 +/- 9.6077	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
17	4-Methylphenol (p-cresol) CAS # 106-44-5 Purity 99%	(Lot 49396APV)	501.8 µg/mL	+/- 2.9242 +/- 6.0018 +/- 9.5487	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
18	N-Nitroso-di-n-propylamine CAS # 621-64-7 Purity 99%	(Lot OPAGF)	1,006.6 µg/mL	+/- 5.8525 +/- 12.0330 +/- 19.1503	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
19	Hexachloroethane CAS # 67-72-1 Purity 99%	(Lot 4H3SF)	1,001.4 µg/mL	+/- 5.8222 +/- 11.9708 +/- 19.0513	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
20	Nitrobenzene CAS # 98-95-3 Purity 99%	(Lot SHBG5577V)	1,005.9 µg/mL	+/- 5.8484 +/- 12.0246 +/- 19.1370	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
21	Isophorone CAS # 78-59-1 Purity 98%	(Lot MKBG2442V)	1,009.1 µg/mL	+/- 5.8670 +/- 12.0629 +/- 19.1979	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
22	2-Nitrophenol CAS # 88-75-5 Purity 99%	(Lot BCBH7602V)	1,008.7 µg/mL	+/- 5.8647 +/- 12.0581 +/- 19.1902	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
23	2,4-Dimethylphenol CAS # 105-67-9 Purity 99%	(Lot 10165155)	1,008.6 µg/mL	+/- 5.8641 +/- 12.0569 +/- 19.1883	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

24	Bis(2-chloroethoxy)methane CAS # 111-91-1 Purity 99%	(Lot 5670100)	1,009.6 µg/mL	+/- 5.8699 +/- 12.0688 +/- 19.2073	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
25	2,4-Dichlorophenol CAS # 120-83-2 Purity 99%	(Lot BCBJ8113V)	1,009.0 µg/mL	+/- 5.8664 +/- 12.0616 +/- 19.1959	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
26	1,2,4-Trichlorobenzene CAS # 120-82-1 Purity 99%	(Lot SHBJ0905)	1,008.4 µg/mL	+/- 5.8629 +/- 12.0545 +/- 19.1845	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
27	Naphthalene CAS # 91-20-3 Purity 99%	(Lot MKBW2603V)	1,008.3 µg/mL	+/- 5.8623 +/- 12.0533 +/- 19.1826	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
28	2,6-Dichlorophenol CAS # 87-65-0 Purity 99%	(Lot MKBP8620V)	1,006.8 µg/mL	+/- 5.8536 +/- 12.0353 +/- 19.1541	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
29	4-Chloroaniline CAS # 106-47-8 Purity 99%	(Lot BCBJ1580V)	1,005.3 µg/mL	+/- 5.8449 +/- 12.0174 +/- 19.1255	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
30	Hexachlorobutadiene CAS # 87-68-3 Purity 99%	(Lot J31X013)	1,008.6 µg/mL	+/- 5.8641 +/- 12.0569 +/- 19.1883	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
31	4-Chloro-3-methylphenol CAS # 59-50-7 Purity 99%	(Lot STBC7309V)	1,006.2 µg/mL	+/- 5.8501 +/- 12.0282 +/- 19.1427	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
32	2-Methylnaphthalene CAS # 91-57-6 Purity 96%	(Lot STBF0201V)	1,005.5 µg/mL	+/- 5.8461 +/- 12.0199 +/- 19.1294	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
33	1-Methylnaphthalene CAS # 90-12-0 Purity 98%	(Lot 523400-9)	1,002.4 µg/mL	+/- 5.8283 +/- 11.9833 +/- 19.0712	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
34	1,2,4,5-Tetrachlorobenzene CAS # 95-94-3 Purity 99%	(Lot MKBW7717V)	1,007.2 µg/mL	+/- 5.8559 +/- 12.0401 +/- 19.1617	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
35	Hexachlorocyclopentadiene CAS # 77-47-4 Purity 99%	(Lot 0012015)	1,006.6 µg/mL	+/- 5.8525 +/- 12.0330 +/- 19.1503	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
36	2,4,6-Trichlorophenol CAS # 88-06-2 Purity 99%	(Lot STBF3742V)	1,009.3 µg/mL	+/- 5.8682 +/- 12.0652 +/- 19.2016	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
37	2,4,5-Trichlorophenol CAS # 95-95-4 Purity 99%	(Lot FHN01)	1,009.2 µg/mL	+/- 5.8676 +/- 12.0640 +/- 19.1997	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
38	2-Chloronaphthalene CAS # 91-58-7 Purity 99%	(Lot AJ2UI)	1,006.8 µg/mL	+/- 5.8536 +/- 12.0353 +/- 19.1541	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
39	Biphenyl CAS # 92-52-4 Purity 99%	(Lot MKBV9808V)	1,006.3 µg/mL	+/- 5.8507 +/- 12.0294 +/- 19.1446	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

40	2-Nitroaniline CAS # 88-74-4 Purity 99%	(Lot MKBK7597V)	1,007.5 µg/mL	+/-	5.8577	µg/mL	Gravimetric
				+/-	12.0437	µg/mL	Unstressed
				+/-	19.1674	µg/mL	Stressed
41	Acenaphthylene CAS # 208-96-8 Purity 97%	(Lot O03R)	1,007.2 µg/mL	+/-	5.8557	µg/mL	Gravimetric
				+/-	12.0395	µg/mL	Unstressed
				+/-	19.1608	µg/mL	Stressed
42	1,3-Dinitrobenzene CAS # 99-65-0 Purity 99%	(Lot BCBN4329V)	1,008.9 µg/mL	+/-	5.8658	µg/mL	Gravimetric
				+/-	12.0605	µg/mL	Unstressed
				+/-	19.1940	µg/mL	Stressed
43	Dimethylphthalate CAS # 131-11-3 Purity 99%	(Lot 10117699)	1,009.2 µg/mL	+/-	5.8676	µg/mL	Gravimetric
				+/-	12.0640	µg/mL	Unstressed
				+/-	19.1997	µg/mL	Stressed
44	2,6-Dinitrotoluene CAS # 606-20-2 Purity 99%	(Lot 1437483V)	1,009.1 µg/mL	+/-	5.8670	µg/mL	Gravimetric
				+/-	12.0628	µg/mL	Unstressed
				+/-	19.1978	µg/mL	Stressed
45	3-Nitroaniline CAS # 99-09-2 Purity 99%	(Lot MKBX1283V)	1,009.8 µg/mL	+/-	5.8711	µg/mL	Gravimetric
				+/-	12.0712	µg/mL	Unstressed
				+/-	19.2112	µg/mL	Stressed
46	Acenaphthene CAS # 83-32-9 Purity 99%	(Lot MKCC8329)	1,008.1 µg/mL	+/-	5.8612	µg/mL	Gravimetric
				+/-	12.0509	µg/mL	Unstressed
				+/-	19.1788	µg/mL	Stressed
47	2,4-Dinitrophenol CAS # 51-28-5 Purity 99%	(Lot STBG3580V)	2,013.2 µg/mL	+/-	11.7049	µg/mL	Gravimetric
				+/-	24.0659	µg/mL	Unstressed
				+/-	38.3005	µg/mL	Stressed
48	Dibenzofuran CAS # 132-64-9 Purity 99%	(Lot MKCD9952)	1,007.0 µg/mL	+/-	5.8548	µg/mL	Gravimetric
				+/-	12.0377	µg/mL	Unstressed
				+/-	19.1579	µg/mL	Stressed
49	4-Nitrophenol CAS # 100-02-7 Purity 99%	(Lot MKBK1842V)	2,015.4 µg/mL	+/-	11.7177	µg/mL	Gravimetric
				+/-	24.0922	µg/mL	Unstressed
				+/-	38.3424	µg/mL	Stressed
50	2,4-Dinitrotoluene CAS # 121-14-2 Purity 99%	(Lot MKAA0690V)	1,009.5 µg/mL	+/-	5.8693	µg/mL	Gravimetric
				+/-	12.0676	µg/mL	Unstressed
				+/-	19.2054	µg/mL	Stressed
51	2,3,4,6-Tetrachlorophenol CAS # 58-90-2 Purity 99%	(Lot PR-30126)	1,005.3 µg/mL	+/-	5.8449	µg/mL	Gravimetric
				+/-	12.0174	µg/mL	Unstressed
				+/-	19.1255	µg/mL	Stressed
52	Fluorene CAS # 86-73-7 Purity 98%	(Lot 10174662)	1,007.7 µg/mL	+/-	5.8591	µg/mL	Gravimetric
				+/-	12.0465	µg/mL	Unstressed
				+/-	19.1718	µg/mL	Stressed
53	n-Hexadecane (C16) CAS # 544-76-3 Purity 99%	(Lot SHBJ3997)	1,009.8 µg/mL	+/-	5.8711	µg/mL	Gravimetric
				+/-	12.0712	µg/mL	Unstressed
				+/-	19.2112	µg/mL	Stressed
54	Diethylphthalate CAS # 84-66-2 Purity 99%	(Lot MKCB0810V)	1,007.4 µg/mL	+/-	5.8571	µg/mL	Gravimetric
				+/-	12.0425	µg/mL	Unstressed
				+/-	19.1655	µg/mL	Stressed
55	4-Chlorophenyl phenyl ether CAS # 7005-72-3 Purity 99%	(Lot MKBX5225V)	1,006.7 µg/mL	+/-	5.8530	µg/mL	Gravimetric
				+/-	12.0342	µg/mL	Unstressed
				+/-	19.1522	µg/mL	Stressed

56	4-Nitroaniline CAS # 100-01-6 Purity 98%	(Lot BCBG4702V)	1,007.5 µg/mL	+/-	5.8579	µg/mL	Gravimetric
				+/-	12.0442	µg/mL	Unstressed
				+/-	19.1681	µg/mL	Stressed
57	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol) CAS # 534-52-1 Purity 99%	(Lot B180716L)	2,012.4 µg/mL	+/-	11.7003	µg/mL	Gravimetric
				+/-	24.0564	µg/mL	Unstressed
				+/-	38.2853	µg/mL	Stressed
58	Diphenylamine CAS # 122-39-4 Purity 99%	(Lot MKBN8295V)	856.1 µg/mL	+/-	4.9889	µg/mL	Gravimetric
				+/-	10.2395	µg/mL	Unstressed
				+/-	16.2906	µg/mL	Stressed
59	Azobenzene CAS # 103-33-3 Purity 97%	(Lot BCBS6535V)	1,009.8 µg/mL	+/-	5.8709	µg/mL	Gravimetric
				+/-	12.0709	µg/mL	Unstressed
				+/-	19.2106	µg/mL	Stressed
60	4-Bromophenyl phenyl ether CAS # 101-55-3 Purity 99%	(Lot STBB9729V)	1,007.6 µg/mL	+/-	5.8583	µg/mL	Gravimetric
				+/-	12.0449	µg/mL	Unstressed
				+/-	19.1693	µg/mL	Stressed
61	Hexachlorobenzene CAS # 118-74-1 Purity 99%	(Lot LRAB8468)	1,006.6 µg/mL	+/-	5.8525	µg/mL	Gravimetric
				+/-	12.0330	µg/mL	Unstressed
				+/-	19.1503	µg/mL	Stressed
62	Pentachlorophenol CAS # 87-86-5 Purity 99%	(Lot 170717KJA)	2,005.9 µg/mL	+/-	11.6625	µg/mL	Gravimetric
				+/-	23.9787	µg/mL	Unstressed
				+/-	38.1617	µg/mL	Stressed
63	n-Octadecane (C18) CAS # 593-45-3 Purity 99%	(Lot T7N4E)	1,004.8 µg/mL	+/-	5.8420	µg/mL	Gravimetric
				+/-	12.0114	µg/mL	Unstressed
				+/-	19.1160	µg/mL	Stressed
64	Phenanthrene CAS # 85-01-8 Purity 99%	(Lot MKCB1762V)	1,005.3 µg/mL	+/-	5.8449	µg/mL	Gravimetric
				+/-	12.0174	µg/mL	Unstressed
				+/-	19.1255	µg/mL	Stressed
65	Anthracene CAS # 120-12-7 Purity 99%	(Lot MKBR2268V)	1,006.2 µg/mL	+/-	5.8501	µg/mL	Gravimetric
				+/-	12.0282	µg/mL	Unstressed
				+/-	19.1427	µg/mL	Stressed
66	Carbazole CAS # 86-74-8 Purity 99%	(Lot 7528800)	1,002.7 µg/mL	+/-	5.8298	µg/mL	Gravimetric
				+/-	11.9863	µg/mL	Unstressed
				+/-	19.0761	µg/mL	Stressed
67	Di-n-butylphthalate CAS # 84-74-2 Purity 99%	(Lot MKBT0244V)	1,005.6 µg/mL	+/-	5.8466	µg/mL	Gravimetric
				+/-	12.0210	µg/mL	Unstressed
				+/-	19.1312	µg/mL	Stressed
68	Fluoranthene CAS # 206-44-0 Purity 98%	(Lot MKBQ6360V)	1,002.6 µg/mL	+/-	5.8294	µg/mL	Gravimetric
				+/-	11.9856	µg/mL	Unstressed
				+/-	19.0749	µg/mL	Stressed
69	Pyrene CAS # 129-00-0 Purity 99%	(Lot BCBT5695)	1,009.3 µg/mL	+/-	5.8682	µg/mL	Gravimetric
				+/-	12.0652	µg/mL	Unstressed
				+/-	19.2016	µg/mL	Stressed
70	Benzyl butyl phthalate CAS # 85-68-7 Purity 99%	(Lot MKCF0058)	1,006.6 µg/mL	+/-	5.8525	µg/mL	Gravimetric
				+/-	12.0330	µg/mL	Unstressed
				+/-	19.1503	µg/mL	Stressed
71	Benz(a)anthracene CAS # 56-55-3 Purity 96%	(Lot 0012018)	1,004.8 µg/mL	+/-	5.8422	µg/mL	Gravimetric
				+/-	12.0118	µg/mL	Unstressed
				+/-	19.1166	µg/mL	Stressed

72	Chrysene CAS # 218-01-9 Purity 99%	(Lot 012015)	1,009.4 µg/mL	+/- 5.8687 +/- 12.0664 +/- 19.2035	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
73	Bis(2-ethylhexyl)phthalate CAS # 117-81-7 Purity 99%	(Lot MKBZ3868V)	1,007.3 µg/mL	+/- 5.8565 +/- 12.0413 +/- 19.1636	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
74	Di-n-octyl phthalate CAS # 117-84-0 Purity 99%	(Lot 7170200)	1,007.0 µg/mL	+/- 5.8548 +/- 12.0377 +/- 19.1579	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
75	Benzo(b)fluoranthene CAS # 205-99-2 Purity 99%	(Lot 012012B)	1,003.7 µg/mL	+/- 5.8356 +/- 11.9983 +/- 19.0951	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
76	Benzo(k)fluoranthene CAS # 207-08-9 Purity 99%	(Lot 012012K)	1,005.7 µg/mL	+/- 5.8472 +/- 12.0222 +/- 19.1332	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
77	Benzo(a)pyrene CAS # 50-32-8 Purity 99%	(Lot ER071309-02)	1,008.8 µg/mL	+/- 5.8653 +/- 12.0593 +/- 19.1921	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
78	Indeno(1,2,3-cd)pyrene CAS # 193-39-5 Purity 99%	(Lot ER082107-02)	1,006.9 µg/mL	+/- 5.8542 +/- 12.0365 +/- 19.1560	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
79	Dibenz(a,h)anthracene CAS # 53-70-3 Purity 99%	(Lot ER032211-01)	1,008.7 µg/mL	+/- 5.8647 +/- 12.0581 +/- 19.1902	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
80	Benzo(g,h,i)perylene CAS # 191-24-2 Purity 99%	(Lot ER05121401)	1,000.2 µg/mL	+/- 5.8152 +/- 11.9565 +/- 19.0285	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
Solvent: Methylene chloride CAS # 75-09-2 Purity 99%						

Specific Reference Material Notes:

N-nitrosodiphenylamine 1000 ug/mL equivalent when used for GC analysis. Actual formulation is diphenylamine 855 ug/mL.

N-Nitrosodiphenylamine is prone to breakdown in the injection port and will be converted to diphenylamine.

N-Nitrosodiphenylamine is also a reactive species that can initiate premature decomposition of other compounds in the mix. For these reasons diphenylamine is used in the preparation of this mixture. When comparing the response of this compound to mixtures manufactured using N-nitrosodiphenylamine, a difference in response will be observed.

This lot was approved even though the %D for 4,6-DN-2-MP was greater than 10%.

Reagent

MV-569721.sec_00005



CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569721.sec **Lot No.:** A0123880

Description : 8260 List 1/ Std #2 Ketones (2015)

8260 List 1/ Std #2 Ketones (2015) 12,500 µg/ml, P&T Methanol/Water (90:10), 1 ml/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : January 31, 2020 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Acetone CAS # 67-64-1.SEC (Lot P14A572) Purity 99%	12,501.6 µg/mL	+/- 73.1996 µg/mL Gravimetric +/- 754.3267 µg/mL Unstressed +/- 756.1173 µg/mL Stressed
2	2-Butanone (MEK) CAS # 78-93-3.SEC (Lot RA58J) Purity 99%	12,503.6 µg/mL	+/- 73.2113 µg/mL Gravimetric +/- 754.4473 µg/mL Unstressed +/- 756.2383 µg/mL Stressed
3	4-Methyl-2-pentanone (MIBK) CAS # 108-10-1.SEC (Lot E29T040) Purity 99%	12,506.0 µg/mL	+/- 73.2254 µg/mL Gravimetric +/- 754.5921 µg/mL Unstressed +/- 756.3834 µg/mL Stressed
4	2-Hexanone CAS # 591-78-6.SEC (Lot V3NRA) Purity 99%	12,504.0 µg/mL	+/- 73.2137 µg/mL Gravimetric +/- 754.4715 µg/mL Unstressed +/- 756.2625 µg/mL Stressed
Solvent:	P&T Methanol/Water (90:10) CAS # 67-56-1/7732-18-5 Purity 99%		

Column:

105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:

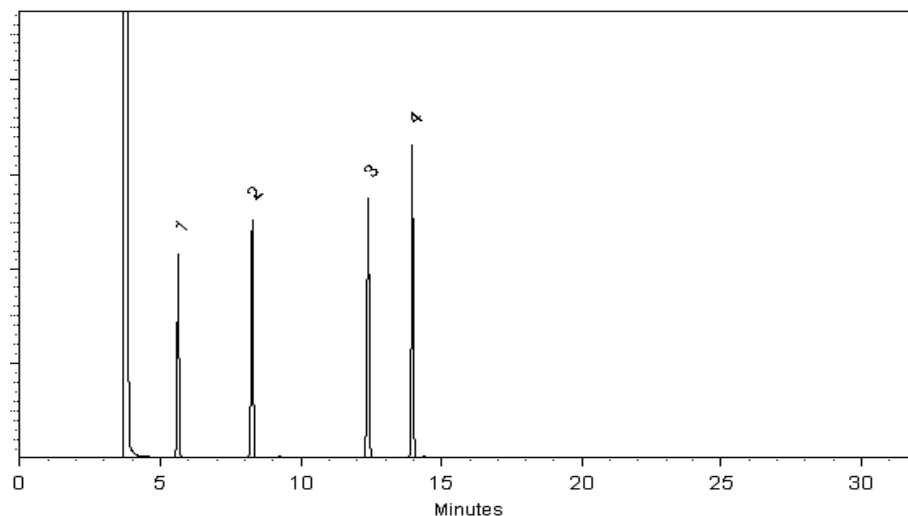
200°C

Det. Temp:

250°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Michael Maje

Date Mixed: 03-Jan-2017

Balance: 1127510105

Jennifer Pollino
Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 05-Jan-2017

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

MV-569721_00006

Reagent

MV-569723_00005

Reagent

MV-569727_00008

Reagent

MV-571992.sec_00002

Reagent

MV-571992_00002

Reagent

mv-8260 IS/SS_00001



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 570812 **Lot No.:** A0131478

Description : 8260 IS/Surrogate Mix (2016)

8260 IS/Surrogate Mix (2016) 250-5,000µg/mL, P&T Methanol, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : October 31, 2022 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	tert-Butyl-d9-alcohol CAS # 25725-11-5 Purity 98% (Lot CD-107)	5,017.3 µg/mL	+/- 29.1695	µg/mL	Gravimetric
			+/- 107.4207	µg/mL	Unstressed
			+/- 110.5436	µg/mL	Stressed
2	Dibromofluoromethane CAS # 1868-53-7 Purity 99.8% (Lot 0012017)	249.0 µg/mL	+/- 1.4511	µg/mL	Gravimetric
			+/- 5.3320	µg/mL	Unstressed
			+/- 5.4870	µg/mL	Stressed
3	1,2-Dichloroethane-d4 CAS # 17060-07-0 Purity 99% (Lot PR-26748)	249.6 µg/mL	+/- 1.4545	µg/mL	Gravimetric
			+/- 5.3449	µg/mL	Unstressed
			+/- 5.5002	µg/mL	Stressed
4	1,4-Dioxane-d8 CAS # 17647-74-4 Purity 99% (Lot I-19942)	4,979.2 µg/mL	+/- 28.9478	µg/mL	Gravimetric
			+/- 106.6041	µg/mL	Unstressed
			+/- 109.7033	µg/mL	Stressed
5	Fluorobenzene CAS # 462-06-6 Purity 99% (Lot BCBK8171V)	250.0 µg/mL	+/- 1.4567	µg/mL	Gravimetric
			+/- 5.3527	µg/mL	Unstressed
			+/- 5.5083	µg/mL	Stressed
6	Toluene-d8 CAS # 2037-26-5 Purity 99% (Lot PR-26623)	249.2 µg/mL	+/- 1.4522	µg/mL	Gravimetric
			+/- 5.3363	µg/mL	Unstressed
			+/- 5.4914	µg/mL	Stressed
7	Chlorobenzene-d5 CAS # 3114-55-4 Purity 99% (Lot PR-23926)	249.6 µg/mL	+/- 1.4545	µg/mL	Gravimetric
			+/- 5.3449	µg/mL	Unstressed
			+/- 5.5002	µg/mL	Stressed

8	1-Bromo-4-fluorobenzene (BFB)	248.5 µg/mL	+/- 1.4481	µg/mL	Gravimetric
	CAS # 460-00-4 (Lot 20401KOV)		+/- 5.3213	µg/mL	Unstressed
	Purity 99%		+/- 5.4760	µg/mL	Stressed
9	1,4-Dichlorobenzene-d4	249.5 µg/mL	+/- 1.4540	µg/mL	Gravimetric
	CAS # 3855-82-1 (Lot PR-18488)		+/- 5.3427	µg/mL	Unstressed
	Purity 99%		+/- 5.4980	µg/mL	Stressed
Solvent: P&T Methanol					
	CAS # 67-56-1				
	Purity 99%				

Column:

105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:

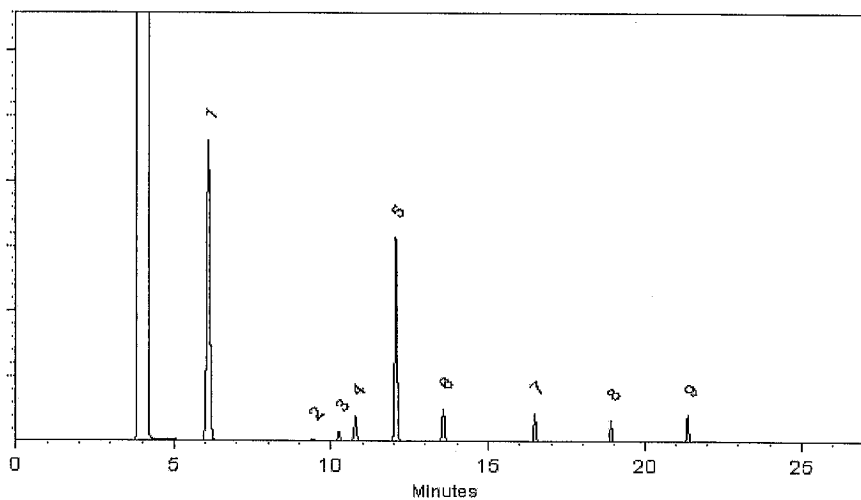
200°C

Det. Temp:

250°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cyndee L. Crust
Cyndee L. Crust - Mix Technologist

Date Mixed: 09-Oct-2017

Balance: B707717271

Jennifer L. Pollino
Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 24-Oct-2017

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

MV-MegaMainA_00014

Reagent

MV-ST5110N1_00066

4-Bromofluorobenzene Solution

Product Number: STS-110N

Page: 1 of 1

Lot Number: CH-3248Z

Lot Issue Date: 31-Aug-2016

Expiration Date: 31-Oct-2019

This ISO Guide 34 Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
4-bromofluorobenzene	000460-00-4	RM03365	2005 ± 10 µg/mL

Matrix: methanol (methyl alcohol)

Storage: Store Frozen (-25° to -10°C).

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

Reagent

OP-569731_00001



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569731 **Lot No.:** A0136865

Description : 8270 List 1 / Std #10
8270 List 1 / Std #10 2,000µg/mL, Methylene chloride, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : October 31, 2019 **Storage:** 10°C or colder

Handling: This product is photosensitive.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Indene	2,004.3 µg/mL	+/- 11.6534 µg/mL Gravimetric
	CAS # 95-13-6 (Lot MKBV0236V)		+/- 112.3815 µg/mL Unstressed
	Purity 97%		+/- 115.0111 µg/mL Stressed
2	Benzoic acid	2,013.3 µg/mL	+/- 11.7053 µg/mL Gravimetric
	CAS # 65-85-0 (Lot MKCC9722)		+/- 112.8819 µg/mL Unstressed
	Purity 99%		+/- 115.5232 µg/mL Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:

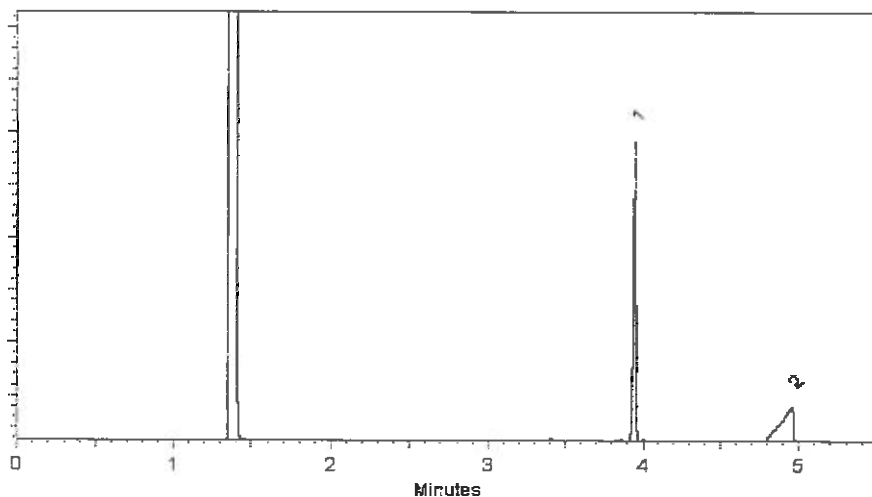
250°C

Det. Temp:

330°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Alice Brooks

Alice Brooks - Mix Technician

Date Mixed: 04-Apr-2018

Balance: B442140311

Jennifer Pollino

Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 06-Apr-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

Reagent

OP-569731_00002



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Tel: (800)356-1688
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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569731 **Lot No.:** A0136865

Description : 8270 List 1 / Std #10
8270 List 1 / Std #10 2,000µg/mL, Methylene chloride, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : October 31, 2019 **Storage:** 10°C or colder

Handling: This product is photosensitive.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)			
1	Indene	2,004.3 µg/mL	+/-	11.6534	µg/mL	Gravimetric
	CAS # 95-13-6 (Lot MKBV0236V)		+/-	112.3815	µg/mL	Unstressed
	Purity 97%		+/-	115.0111	µg/mL	Stressed
2	Benzoic acid	2,013.3 µg/mL	+/-	11.7053	µg/mL	Gravimetric
	CAS # 65-85-0 (Lot MKCC9722)		+/-	112.8819	µg/mL	Unstressed
	Purity 99%		+/-	115.5232	µg/mL	Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:

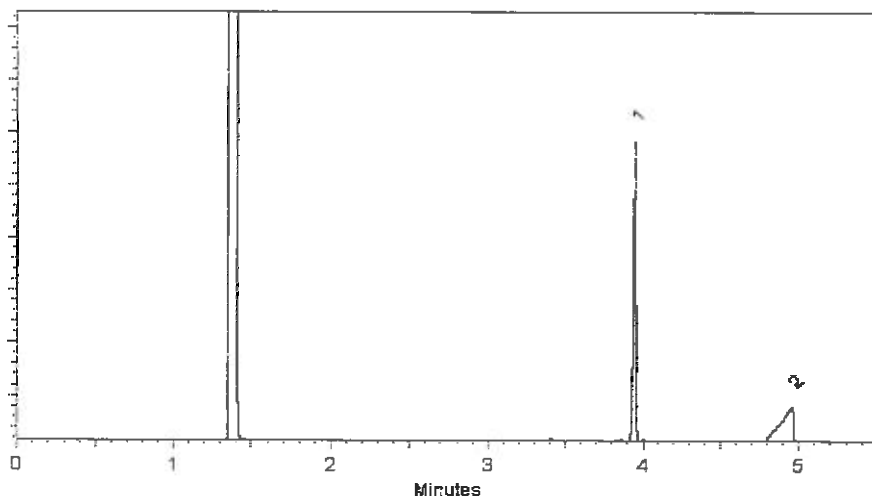
250°C

Det. Temp:

330°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Alice Brooks

Alice Brooks - Mix Technician

Date Mixed: 04-Apr-2018

Balance: B442140311

Jennifer Pollino

Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 06-Apr-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

Reagent

OP-569731_00003



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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569731 **Lot No.:** A0136865

Description : 8270 List 1 / Std #10
8270 List 1 / Std #10 2,000µg/mL, Methylene chloride, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : October 31, 2019 **Storage:** 10°C or colder

Handling: This product is photosensitive.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)			
1	Indene	2,004.3 µg/mL	+/-	11.6534	µg/mL	Gravimetric
	CAS # 95-13-6 (Lot MKBV0236V)		+/-	112.3815	µg/mL	Unstressed
	Purity 97%		+/-	115.0111	µg/mL	Stressed
2	Benzoic acid	2,013.3 µg/mL	+/-	11.7053	µg/mL	Gravimetric
	CAS # 65-85-0 (Lot MKCC9722)		+/-	112.8819	µg/mL	Unstressed
	Purity 99%		+/-	115.5232	µg/mL	Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:

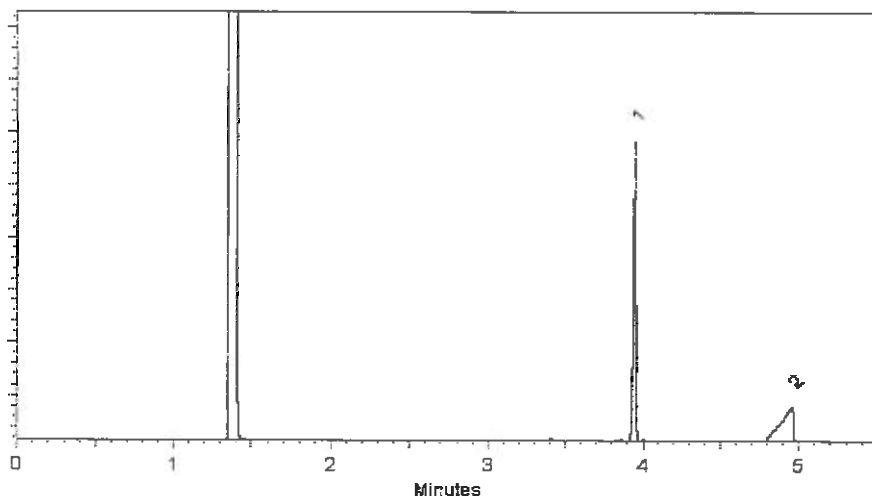
250°C

Det. Temp:

330°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Alice Brooks

Alice Brooks - Mix Technician

Date Mixed: 04-Apr-2018

Balance: B442140311

Jennifer Pollino

Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 06-Apr-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

Reagent

OP-569731_00005



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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569731 **Lot No.:** A0136865
Description : 8270 List 1 / Std #10
8270 List 1 / Std #10 2,000µg/mL, Methylene chloride, 5mL/ampul
Container Size : 5 mL **Pkg Amt:** > 5 mL
Expiration Date : October 31, 2019 **Storage:** 10°C or colder
Handling: This product is photosensitive.

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)				
1	Indene		2,004.3 µg/mL	+/-	11.6534	µg/mL	Gravimetric	
	CAS #	95-13-6			+/-	112.3815	µg/mL	Unstressed
	Purity	97%			+/-	115.0111	µg/mL	Stressed
	(Lot MKBV0236V)							
2	Benzoic acid		2,013.3 µg/mL	+/-	11.7053	µg/mL	Gravimetric	
	CAS #	65-85-0			+/-	112.8819	µg/mL	Unstressed
	Purity	99%			+/-	115.5232	µg/mL	Stressed
	(Lot MKCC9722)							

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:

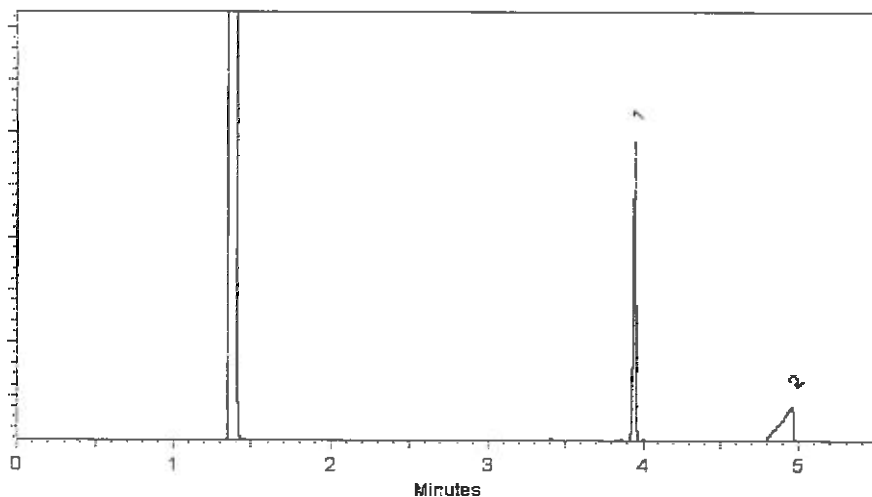
250°C

Det. Temp:

330°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Alice Brooks

Alice Brooks - Mix Technician

Date Mixed: 04-Apr-2018

Balance: B442140311

Jennifer Pollino

Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 06-Apr-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

Reagent

OP-569732_00021

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:

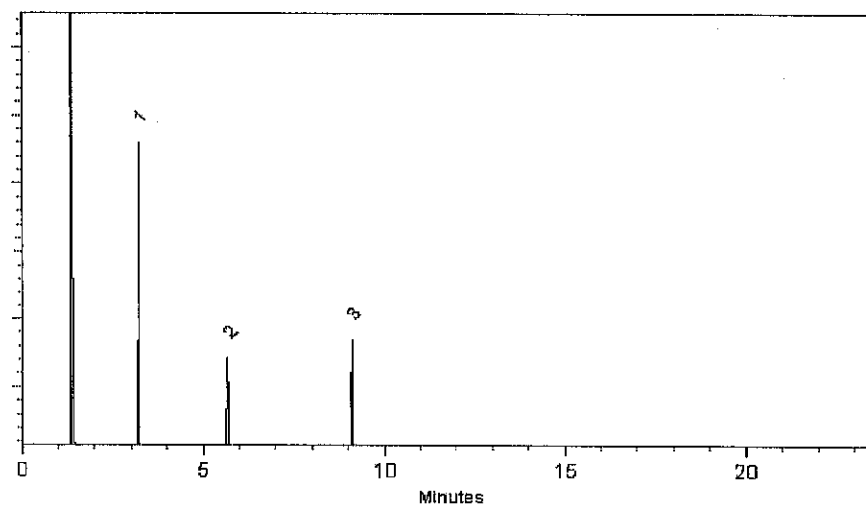
250°C

Det. Temp:

330°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

F. Joseph Tallon
F. Joseph Tallon - Mix Technician

Date Mixed: 12-Apr-2018

Balance: B442140311

Jennifer 2 Pollino
Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 16-Apr-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

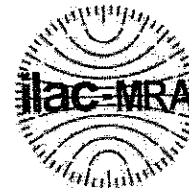


CERTIFIED REFERENCE MATERIAL

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Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

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Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 569732 Lot No.: A0137125
Description: 8270 List 1 / Std #11
8270 List 1 / Std #11 2,000µg/mL, Methylene chloride, 5mL/ampul
Container Size: 5 mL Pkg Amt: > 5 mL
Expiration Date: October 31, 2019 Storage: 10°C or colder
Handling: This product is photosensitive.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)			
1	Benzaldehyde CAS # 100-52-7 Purity 99% (Lot SHBG8690V)	2,001.1 µg/mL	+/-	11.6345	µg/mL	Gravimetric
			+/-	64.1460	µg/mL	Unstressed
			+/-	74.5673	µg/mL	Stressed
2	epsilon-Caprolactam CAS # 105-60-2 Purity 99% (Lot I16X016)	2,002.0 µg/mL	+/-	11.6398	µg/mL	Gravimetric
			+/-	64.1754	µg/mL	Unstressed
			+/-	74.6014	µg/mL	Stressed
3	Atrazine CAS # 1912-24-9 Purity 99% (Lot 77P7D)	2,002.6 µg/mL	+/-	11.6432	µg/mL	Gravimetric
			+/-	64.1941	µg/mL	Unstressed
			+/-	74.6232	µg/mL	Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Reagent

OP-572556_00021



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

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CERTIFIED REFERENCE MATERIAL

Gravimetric Certificate



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 572556 **Lot No.:** A0143533
Description : Custom Hexachlorocyclopentadiene Standard
Custom Hexachlorocyclopentadiene Standard 4,000µg/mL, Methylene Chloride, 5mL/ampul
Container Size : 5 mL **Pkg Amt:** > 5 mL
Expiration Date : November 30, 2022 **Storage:** 10°C or colder

CERTIFIED VALUES

Component #	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)												
1	Hexachlorocyclopentadiene CAS # 77-47-4 Purity 99% (Lot 0012015)	4,015.0 µg/mL	<table><tr><td>+/-</td><td>23.562270</td><td>µg/mL</td><td>Gravimetric</td></tr><tr><td>+/-</td><td>225.139850</td><td>µg/mL</td><td>Unstressed</td></tr><tr><td>+/-</td><td>230.406784</td><td>µg/mL</td><td>Stressed</td></tr></table>	+/-	23.562270	µg/mL	Gravimetric	+/-	225.139850	µg/mL	Unstressed	+/-	230.406784	µg/mL	Stressed
+/-	23.562270	µg/mL	Gravimetric												
+/-	225.139850	µg/mL	Unstressed												
+/-	230.406784	µg/mL	Stressed												

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Brandon Reish - Mix Technician

Date Mixed: 27-Nov-2018

Balance: B442140311

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

Reagent

OP-572556_00031



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

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CERTIFIED REFERENCE MATERIAL

Gravimetric Certificate



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 572556 **Lot No.:** A0143533
Description : Custom Hexachlorocyclopentadiene Standard
Custom Hexachlorocyclopentadiene Standard 4,000µg/mL, Methylene Chloride, 5mL/ampul
Container Size : 5 mL **Pkg Amt:** > 5 mL
Expiration Date : November 30, 2022 **Storage:** 10°C or colder

CERTIFIED VALUES

CERTIFIED VALUES						
Component #	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Hexachlorocyclopentadiene					
	CAS #	77-47-4	4,015.0 µg/mL	+/- 23.562270	µg/mL	Gravimetric
	Purity	99%		+/- 225.139850	µg/mL	Unstressed
		(Lot 0012015)		+/- 230.406784	µg/mL	Stressed
Solvent:		Methylene chloride				

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Brandon Reish - Mix Technician

Date Mixed: 27-Nov-2018

Balance: B442140311

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

Reagent

OP-CustBenz_00033



110 Benner Circle
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Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Gravimetric Certificate



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 572555 **Lot No.:** A0144729
Description : Custom Benzidines Standard
Custom Benzidines Standard 4,000µg/mL, Methylene Chloride, 5mL/ampul
Container Size : 5 mL **Pkg Amt:** > 5 mL
Expiration Date : January 31, 2023 **Storage:** 10°C or colder

CERTIFIED VALUES

Component #	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)			
1	3,3'-Dichlorobenzidine	4,000.7 µg/mL	+/-	23.4782	µg/mL	Gravimetric
	CAS # 91-94-1 (Lot 190104JACG)		+/-	121.0550	µg/mL	Unstressed
	Purity 99%		+/-	121.0550	µg/mL	Stressed
2	Benzidine	4,036.0 µg/mL	+/-	23.6855	µg/mL	Gravimetric
	CAS # 92-87-5 (Lot 190115JACG)		+/-	122.1242	µg/mL	Unstressed
	Purity 99%		+/-	122.1242	µg/mL	Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Brandon Reish - Mix Technician

Date Mixed: 08-Jan-2019

Balance: B516847571

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

PicricARestek_00082



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31499 Lot No.: A0143208
Description : Picric Acid Standard
Picric Acid Standard 1000µg/mL, Methanol, 1mL/1000µg/mL *PGI BOX
REQUIRED* SHIP FED EX GROUND ONLY
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : November 30, 2023 Storage: 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Picric Acid CAS # 88-89-1 Purity 97% (Lot 06130CU)	1,003.0 µg/mL	+/- 5.9574 µg/mL Gravimetric +/- 54.9463 µg/mL Unstressed +/- 64.0727 µg/mL Stressed

Solvent: Methanol
CAS # 67-56-1
Purity 99%

Specific Reference Material Notes:

This is a derivatized analysis.

Column:

250mm x 4.6mm
Ultra C18 (cat.# 9174575)

Flow Rate:

1.0 ml/min.

Mobile Phase A:

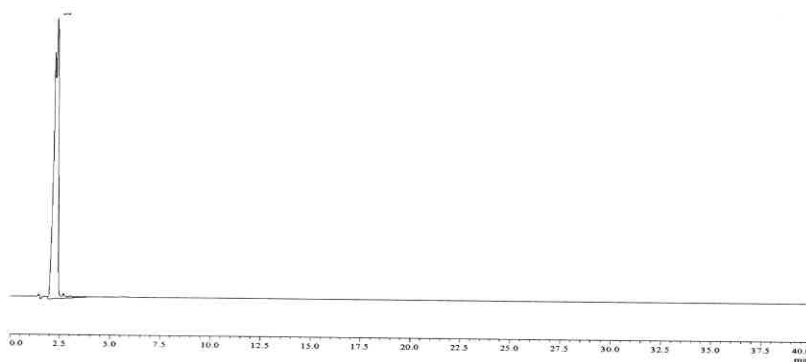
water:methanol (44:56 V/V)

Mobile Phase B:**Mobile Phase Composition:**

100%A

Det. Type:

Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Michael Mage

Date Mixed: 13-Nov-2018 Balance: 1127510105

John Lidgett
John Lidgett - AD Chemist

Date Passed: 16-Nov-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

Reagent

PREP SPK 1_00007



5643138
ID: PREP SPK 1_00007
Exp: 08/22/20 Prep: MRJ
Metals Prep Spike Mix 1 C

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-SPIKE1+

Spike Mix # 1

Lot #: 993218-1

Matrix: 5% HNO₃/tr. HF

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
As	200.0 ± 1.0 mg/L	Li	100.0 ± 0.5 mg/L	Sn	200.0 ± 1.0 mg/L
Ba	200.0 ± 1.0 mg/L	Mn	100.1 ± 0.5 mg/L	Sr	100.0 ± 0.5 mg/L
Be	100.0 ± 0.5 mg/L	Mo	100.0 ± 0.5 mg/L	Ti	100.0 ± 0.5 mg/L
Cd	100.0 ± 0.5 mg/L	Ni	100.0 ± 0.5 mg/L	Tl	200.0 ± 1.0 mg/L
Co	100.0 ± 0.5 mg/L	Pb	100.1 ± 0.5 mg/L	V	100.0 ± 0.5 mg/L
Cr	100.0 ± 0.5 mg/L	Se	200.0 ± 1.0 mg/L		
Cu	100.0 ± 0.5 mg/L	Si	200.0 ± 1.0 mg/L		

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO₃), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau, Certifying Officer

February 22, 2019
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

USA
5580 Skylane Boulevard P: 707.525.5788
Santa Rosa, CA 95403 P: 800.878.7654
F: 707.545.7901

www.cpiinternational.com
Page 1 of 2

Europe
Nieuwe Hemweg 7P P: +31 20 638 05 97
1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
 - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	1077a	Hf	3122	—	S	3154	2770
Al	3101a	1075a	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	—	Sc	3148a	3148a
Au	3121	—	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	1066a
Ba	3104a	1051b	La	3127a	3127a	Sm	3147a	—
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	1057b
Bi	3106	3106	Lu	3130a	—	SO ₄ ²⁻	3181	—
Br	3184	—	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	—
Cd	3108	1053a	Mo	3134	3134	Tb	3157a	—
Ce	3110	3110	Na	3152a	3152a	Te	3156	—
Cl	3182	1818a	Nb	3137	—	Th	3159	—
Co	3113	3113	Nd	3135a	—	Ti	3162a	3162a
Cr	3112a	1078b	Ni	3136	1065b	Tl	3158	3158
Cs	3111a	—	NO ₃ ⁻	3185	—	Tm	3160a	—
Cu	3114	1080a	P	3139a	3139a	U	3164	—
Dy	3115a	—	Pb	3128	3128	V	3165	1052b
Er	3116a	—	Pd	3138	—	W	3163	3163
Eu	3117a	—	PO ₄ ³⁻	3186	—	Y	3167a	3167a
F	3183	—	Pr	3142a	—	Yb	3166a	—
Fe	3126a	1079b	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	—	Rb	3145a	—	Zr	3169	3169
Gd	3118a	—	Re	3143	—			
Ge	3120a	—	Rh	3144	3144			

Reagent

PREP SPK 2_00003



5643180
ID: PREP SPK 2_00003
Exp: 08/22/20 Prep: MRJ
Metals Prep Spike 2 CPI

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-SPIKE2

Spike Mix # 2

Lot #: 982744-1

Matrix: 5% HNO₃

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
Al	1000 ± 5 mg/L	Fe	1000 ± 5 mg/L	Mg	5000 ± 25 mg/L
Ca	5000 ± 25 mg/L	K	5000 ± 25 mg/L	Na	5000 ± 25 mg/L

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to **NIST SRMs (see reverse side)**. The solution was stabilized using high purity nitric acid (HNO₃) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against **NIST SRMs (see reverse side)**. The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau, Certifying Officer

February 22, 2019
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

USA
5580 Skylane Boulevard P: 707.525.5788
Santa Rosa, CA 95403 P: 800.878.7654
F: 707.545.7901

www.cpi-intl.com
Page 1 of 2

Europe
Nieuwe Hemweg 7P P: +31 20 638 05 97
1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
 - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM	Analyte	Aq. SRM	MO SRM
Ag	3151	1077a	Hf	3122	—	S	3154	2770
Al	3101a	1075a	Hg	3133	3133	Sb	3102a	3102a
As	3103a	3103a	Ho	3123a	—	Sc	3148a	3148a
Au	3121	—	In	3124a	3124a	Se	3149	3149
B	3107	3107	K	3141a	3141a	Si	3150	1066a
Ba	3104a	1051b	La	3127a	3127a	Sm	3147a	—
Be	3105a	3105a	Li	3129a	3129a	Sn	3161a	1057b
Bi	3106	3106	Lu	3130a	—	SO ₄ ²⁻	3181	—
Br	3184	—	Mg	3131a	3131a	Sr	3153a	3153a
Ca	3109a	3109a	Mn	3132	3132	Ta	3155	—
Cd	3108	1053a	Mo	3134	3134	Tb	3157a	—
Ce	3110	3110	Na	3152a	3152a	Te	3156	—
Cl	3182	1818a	Nb	3137	—	Th	3159	—
Co	3113	3113	Nd	3135a	—	Ti	3162a	3162a
Cr	3112a	1078b	Ni	3136	1065b	Tl	3158	3158
Cs	3111a	—	NO ₃ ⁻	3185	—	Tm	3160a	—
Cu	3114	1080a	P	3139a	3139a	U	3164	—
Dy	3115a	—	Pb	3128	3128	V	3165	1052b
Er	3116a	—	Pd	3138	—	W	3163	3163
Eu	3117a	—	PO ₄ ³⁻	3186	—	Y	3167a	3167a
F	3183	—	Pr	3142a	—	Yb	3166a	—
Fe	3126a	1079b	Pt	3140	3140	Zn	3168a	3168a
Ga	3119a	—	Rb	3145a	—	Zr	3169	3169
Gd	3118a	—	Re	3143	—			
Ge	3120a	—	Rh	3144	3144			

Reagent

PREP SPK 3_00003



5643181

ID: PREP SPK 3_00003

Exp: 08/22/20 Prod: MRJ

Metals Prep Spike 3 CPI

CERTIFICATE OF ANALYSIS

Multi-Element Aqueous CRM

Product #: TA-SPIKE3

Spike Mix # 3

Lot #: 982745-1

Matrix: 5% HNO₃/tr. HF

Element	Certified Concentration & Uncertainty	Element	Certified Concentration & Uncertainty
P	2000 ± 10 mg/L	U	200.0 ± 1.0 mg/L
S	1000 ± 5 mg/L	W	100.0 ± 0.5 mg/L

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to ISO 9001, ISO 17034, and ISO/IEC 17025. This CRM was prepared to the certified concentrations shown above by gravimetric methods, using single-element concentrates that were certified using the "High Performance ICP-OES" protocol developed by NIST and are directly traceable to NIST SRMs (see reverse side). The solution was stabilized using high purity nitric acid (HNO₃), trace hydrofluoric acid (HF) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentrations were determined based upon gravimetric procedures. Secondary verification of the certified concentrations was performed using ICP-OES that was calibrated and/or referenced against NIST SRMs (see reverse side). The uncertainty associated with each certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for 18 months from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau, Certifying Officer

February 22, 2019

Certification Date

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USA

5580 Skylane Boulevard P: 707.525.5788
Santa Rosa, CA 95403 P: 800.878.7654
F: 707.545.7901

Europe

Nieuwe Hemweg 7P P: +31 20 638 05 97
1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
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- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
 - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

This CRM is traceable to the following NIST SRMs:

Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM		Analyte	Aq. SRM	MO SRM
Ag	3151	1077a		Hf	3122	—		S	3154	2770
Al	3101a	1075a		Hg	3133	3133		Sb	3102a	3102a
As	3103a	3103a		Ho	3123a	—		Sc	3148a	3148a
Au	3121	—		In	3124a	3124a		Se	3149	3149
B	3107	3107		K	3141a	3141a		Si	3150	1066a
Ba	3104a	1051b		La	3127a	3127a		Sm	3147a	—
Be	3105a	3105a		Li	3129a	3129a		Sn	3161a	1057b
Bi	3106	3106		Lu	3130a	—		SO ₄ ²⁻	3181	—
Br	3184	—		Mg	3131a	3131a		Sr	3153a	3153a
Ca	3109a	3109a		Mn	3132	3132		Ta	3155	—
Cd	3108	1053a		Mo	3134	3134		Tb	3157a	—
Ce	3110	3110		Na	3152a	3152a		Te	3156	—
Cl	3182	1818a		Nb	3137	—		Th	3159	—
Co	3113	3113		Nd	3135a	—		Ti	3162a	3162a
Cr	3112a	1078b		Ni	3136	1065b		Tl	3158	3158
Cs	3111a	—		NO ₃ ⁻	3185	—		Tm	3160a	—
Cu	3114	1080a		P	3139a	3139a		U	3164	—
Dy	3115a	—		Pb	3128	3128		V	3165	1052b
Er	3116a	—		Pd	3138	—		W	3163	3163
Eu	3117a	—		PO ₄ ³⁻	3186	—		Y	3167a	3167a
F	3183	—		Pr	3142a	—		Yb	3166a	—
Fe	3126a	1079b		Pt	3140	3140		Zn	3168a	3168a
Ga	3119a	—		Rb	3145a	—		Zr	3169	3169
Gd	3118a	—		Re	3143	—				
Ge	3120a	—		Rh	3144	3144				

Reagent

PREP SPK 4B_00001



5643188
ID: PREP SPK 4B_00001
Exp: 09/28/20 Ppd: MRJ
Metals Prep Spike 4B CPI

CERTIFICATE OF ANALYSIS

Single-Element Aqueous CRM

Product #: TA-CM-OCT18-DEN-B

Custom Spike Solution B

Lot #: 10094085-2

Matrix: 2% HNO₃

Element	Certified Concentration & Uncertainty
Ag	5.00 ± 0.03 µg/mL

Intended Use: This solution is intended for use as a certified reference material (CRM) or calibration standard for inductively coupled plasma optical emission spectroscopy (ICP-OES), inductively coupled plasma mass spectrometry (ICP-MS), flame or furnace atomic absorption spectroscopy (AA or GFAA), and other techniques for elemental analysis.

Certification & Traceability: This CRM was manufactured, processed, and certified under a quality management system that is registered/accredited to **ISO 9001**, **ISO 17034**, and **ISO/IEC 17025**. This CRM was prepared to a nominal concentration of 5.00 µg/mL by gravimetric methods using a single-element concentrate dissolved in high purity nitric acid (HNO₃) and diluted with filtered (0.22 µm), 18 M-ohm deionized water. The balances used in the preparation of this CRM are calibrated regularly with traceability to NIST, using a calibration provider that is accredited to ISO/IEC 17025 by a mutually recognized accreditation body. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration and uncertainty were determined using the "High Performance ICP-OES" protocol developed by NIST, and both the certified concentration and uncertainty values are traceable to **NIST SRM 3151**. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

Instructions for Use: We recommend that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy, the analyst should: (1) use only pre-cleaned containers and transferware, (2) not pipette directly from the CRM's original container, (3) never pour used product back into the original container, (4) make dilutions using calibrated balances or certified class A volumetric flasks and pipettes, (5) use a minimum sub-sample size of 500 µL, and (6) dilute with the same matrix as the original CRM or other chemically suitable matrix. The solution should be kept tightly capped and stored under normal laboratory conditions. Do not freeze, heat, or immerse the bottle or its contents, and avoid exposure to direct sunlight or moisture.

Period of Validity: CPI International ensures the accuracy of this solution for **18 months** from the certification date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

Chuck Goudreau, Certifying Officer

March 28, 2019
Certification Date

CPI International waives all responsibility for any damages resulting from the usage and/or implementation of the products/data described herein.

USA
5580 Skylane Boulevard P: 707.525.5788
Santa Rosa, CA 95403 P: 800.878.7654
F: 707.545.7901

Europe
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1013BG Amsterdam F: +31 20 420 28 36
The Netherlands

Health and Safety Information: Refer to the Safety Data Sheet (SDS).

Homogeneity: This solution was determined to be homogeneous by procedures consistent with the requirements of ISO Guide 34 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

Quality Manual Rev: No. 5, 03/01/2013

Further Information: Please contact CPI International for further information about this CRM.

Quality Certifications: This CRM was prepared under a quality management system that is registered/accredited to the following:

- ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. No. 44 100 16560231)
- ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- ISO Guide 34 – General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
 - ISO Guide 34 references additional requirements specified in ISO Guide 31 and ISO Guide 35.

Method 8260B

Volatile Organic Compounds (GC/MS)
by Method 8260B

FORM II
GC/MS VOA SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Matrix: Water Level: Low
 GC Column (1): RXI-624SilM ID: 0.25 (mm)

Client Sample ID	Lab Sample ID	DBFM #	DCA #	TOL #	BFB #
DET-003-190401-GW	280-123221-4	97	94	99	96
DET-003-190402-GW	280-123221-5	98	93	97	96
FWGTB-191001-TB	280-123221-6	98	95	99	95
DET-004-190401-GW	280-123221-7	98	93	99	95
	MB 280-457521/8	97	93	98	97
	LCS 280-457521/33	99	94	97	95
DET-003-190401-GWM S MS	280-123221-4 MS	99	95	100	96
DET-003-190401-GWM SD MSD	280-123221-4 MSD	99	94	98	96

	<u>QC LIMITS</u>
DBFM = Dibromofluoromethane (Surr)	80-119
DCA = 1,2-Dichloroethane-d4 (Surr)	81-118
TOL = Toluene-d8 (Surr)	89-112
BFB = 4-Bromofluorobenzene (Surr)	85-114

Column to be used to flag recovery values

FORM III
GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: ms9_1663.D
 Lab ID: LCS 280-457521/33 Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
1,1,1-Trichloroethane	25.0	23.5	94	74-131	
1,1,2,2-Tetrachloroethane	25.0	22.7	91	71-121	
1,1,2-Trichloroethane	25.0	23.6	94	80-119	
1,1-Dichloroethane	25.0	22.9	91	77-125	
1,1-Dichloroethene	25.0	24.3	97	71-131	
1,2-Dibromoethane	25.0	23.7	95	77-121	
1,2-Dichloroethane	25.0	21.1	85	73-128	
1,2-Dichloropropane	25.0	23.7	95	78-122	
2-Butanone (MEK)	100	90.7	91	56-143	
2-Hexanone	100	91.1	91	57-139	
4-Methyl-2-pentanone (MIBK)	100	91.7	92	67-130	
Acetone	100	95.2	95	39-160	
Benzene	25.0	23.4	94	79-120	
Bromobenzene	25.0	23.2	93	80-120	
Bromochloromethane	25.0	25.7	103	78-123	
Bromodichloromethane	25.0	23.5	94	79-125	
Bromoform	25.0	19.5	78	66-130	
Bromomethane	25.0	59.5	238	53-141	Q
Carbon disulfide	25.0	22.8	91	64-133	
Carbon tetrachloride	25.0	21.1	84	72-136	
Chlorobenzene	25.0	23.3	93	82-118	
Chloroethane	25.0	27.5	110	60-138	
Chloroform	25.0	23.1	92	79-124	
Chloromethane	25.0	19.9	80	50-139	
cis-1,3-Dichloropropene	25.0	23.2	93	75-124	
Dibromochloromethane	25.0	23.5	94	74-126	
Ethylbenzene	25.0	23.3	93	79-121	
Methylene Chloride	25.0	24.8	99	74-124	
Styrene	25.0	24.2	97	78-123	
Tetrachloroethene	25.0	24.0	96	74-129	
Toluene	25.0	23.5	94	80-121	
trans-1,3-Dichloropropene	25.0	23.4	94	73-127	
Trichloroethene	25.0	23.6	94	79-123	
Vinyl chloride	25.0	23.7	95	58-137	
Xylenes, Total	50.0	47.2	94	79-121	

Column to be used to flag recovery and RPD values

FORM III
GC/MS VOA MATRIX SPIKE RECOVERY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Matrix: Water Level: Low

Lab File ID: ms9_1664.D

Lab ID: 280-123221-4 MS

Client ID: DET-003-190401-GWMS MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
1,1,1-Trichloroethane	25.0	0.40 U	24.9	99	74-131	
1,1,2,2-Tetrachloroethane	25.0	0.80 U	25.7	103	71-121	
1,1,2-Trichloroethane	25.0	0.80 U	26.0	104	80-119	
1,1-Dichloroethane	25.0	0.80 U	24.6	98	77-125	
1,1-Dichloroethene	25.0	0.80 U	25.3	101	71-131	
1,2-Dibromoethane	25.0	0.40 U	26.4	106	77-121	
1,2-Dichloroethane	25.0	0.40 U	23.6	94	73-128	
1,2-Dichloropropane	25.0	0.40 U	25.8	103	78-122	
2-Butanone (MEK)	100	4.0 U	96.3	96	56-143	
2-Hexanone	100	4.0 U	99.5	100	57-139	
4-Methyl-2-pentanone (MIBK)	100	3.2 U	98.3	98	67-130	
Acetone	100	2.8 J	102	99	39-160	
Benzene	25.0	0.40 U	25.2	101	79-120	
Bromobenzene	25.0	0.40 U	25.3	101	80-120	
Bromochloromethane	25.0	0.20 U	27.6	111	78-123	
Bromodichloromethane	25.0	0.40 U	26.0	104	79-125	
Bromoform	25.0	1.0 U	22.3	89	66-130	
Bromomethane	25.0	0.80 U	63.4	254	53-141	J1
Carbon disulfide	25.0	0.80 U	24.6	99	64-133	
Carbon tetrachloride	25.0	0.40 U	22.0	88	72-136	
Chlorobenzene	25.0	0.40 U	25.5	102	82-118	
Chloroethane	25.0	1.6 U	28.8	115	60-138	
Chloroform	25.0	0.40 U	24.9	100	79-124	
Chloromethane	25.0	0.80 U	21.7	87	50-139	
cis-1,3-Dichloropropene	25.0	0.40 U	26.0	104	75-124	
Dibromochloromethane	25.0	0.40 U	26.7	107	74-126	
Ethylbenzene	25.0	0.40 U	25.4	101	79-121	
Methylene Chloride	25.0	2.0 U	26.7	107	74-124	
Styrene	25.0	0.80 U	26.6	106	78-123	
Tetrachloroethene	25.0	0.40 U	25.4	102	74-129	
Toluene	25.0	0.40 U	25.3	101	80-121	
trans-1,3-Dichloropropene	25.0	0.40 U	26.0	104	73-127	
Trichloroethene	25.0	0.40 U	25.1	100	79-123	
Vinyl chloride	25.0	0.20 U	25.0	100	58-137	
Xylenes, Total	50.0	0.80 U	51.5	103	79-121	

Column to be used to flag recovery and RPD values

FORM III
GC/MS VOA MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Matrix: Water Level: Low

Lab File ID: ms9_1665.D

Lab ID: 280-123221-4 MSD

Client ID: DET-003-190401-GWMSD MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
1,1,1-Trichloroethane	25.0	21.4	86	15	20	74-131	
1,1,2,2-Tetrachloroethane	25.0	21.8	87	16	20	71-121	
1,1,2-Trichloroethane	25.0	22.1	89	16	20	80-119	
1,1-Dichloroethane	25.0	21.2	85	15	20	77-125	
1,1-Dichloroethene	25.0	22.0	88	14	20	71-131	
1,2-Dibromoethane	25.0	22.2	89	17	20	77-121	
1,2-Dichloroethane	25.0	20.3	81	15	20	73-128	
1,2-Dichloropropane	25.0	22.1	88	15	20	78-122	
2-Butanone (MEK)	100	83.0	83	15	20	56-143	
2-Hexanone	100	84.0	84	17	20	57-139	
4-Methyl-2-pentanone (MIBK)	100	83.9	84	16	20	67-130	
Acetone	100	87.6	85	15	20	39-160	
Benzene	25.0	21.8	87	14	20	79-120	
Bromobenzene	25.0	21.9	88	14	20	80-120	
Bromochloromethane	25.0	24.0	96	14	20	78-123	
Bromodichloromethane	25.0	22.4	90	15	20	79-125	
Bromoform	25.0	18.9	76	16	20	66-130	
Bromomethane	25.0	52.4	210	19	20	53-141	J1
Carbon disulfide	25.0	21.7	87	13	20	64-133	
Carbon tetrachloride	25.0	19.3	77	13	20	72-136	
Chlorobenzene	25.0	21.9	88	15	20	82-118	
Chloroethane	25.0	27.1	108	6	20	60-138	
Chloroform	25.0	21.5	86	15	20	79-124	
Chloromethane	25.0	16.6	67	26	20	50-139	J1
cis-1,3-Dichloropropene	25.0	22.0	88	17	20	75-124	
Dibromochloromethane	25.0	22.5	90	17	20	74-126	
Ethylbenzene	25.0	21.8	87	15	20	79-121	
Methylene Chloride	25.0	23.2	93	14	20	74-124	
Styrene	25.0	22.9	91	15	20	78-123	
Tetrachloroethene	25.0	21.9	88	15	20	74-129	
Toluene	25.0	21.7	87	15	20	80-121	
trans-1,3-Dichloropropene	25.0	22.0	88	17	20	73-127	
Trichloroethene	25.0	21.5	86	15	20	79-123	
Vinyl chloride	25.0	19.1	76	27	20	58-137	J1
Xylenes, Total	50.0	44.2	88	15	20	79-121	

Column to be used to flag recovery and RPD values

FORM IV
GC/MS VOA METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab File ID: ms9_1661.D Lab Sample ID: MB 280-457521/8
Matrix: Water Heated Purge: (Y/N) Y
Instrument ID: VMS_MS9 Date Analyzed: 05/08/2019 22:31
GC Column: RXI-624SilMS ID: 0.25 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
DET-003-190401-GW	280-123221-4	ms9_1662.D	05/08/2019 22:53
	LCS 280-457521/33	ms9_1663.D	05/08/2019 23:15
DET-003-190401-GWMS MS	280-123221-4 MS	ms9_1664.D	05/08/2019 23:36
DET-003-190401-GWMSD MSD	280-123221-4 MSD	ms9_1665.D	05/08/2019 23:58
DET-003-190402-GW	280-123221-5	ms9_1666.D	05/09/2019 00:20
FWGTB-191001-TB	280-123221-6	ms9_1667.D	05/09/2019 00:42
DET-004-190401-GW	280-123221-7	ms9_1671.D	05/09/2019 02:08

FORM V
GC/MS VOA INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab File ID: ms9_1600.D BFB Injection Date: 05/07/2019
Instrument ID: VMS_MS9 BFB Injection Time: 10:56
Analysis Batch No.: 457270

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0 % of mass 95	21.6
75	30.0 - 60.0 % of mass 95	53.5
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0 % of mass 95	6.8
173	Less than 2.0 % of mass 174	0.2 (0.2) 1
174	50.0 - 120.00 % of mass 95	79.4
175	5.0 - 9.0 % of mass 174	5.7 (7.2) 1
176	95.0 - 101.0 % of mass 174	76.5 (96.3) 1
177	5.0 - 9.0 % of mass 176	5.2 (6.8) 2

1-Value is % mass 174

2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	STD100 280-457270/10	ms9_1602.D	05/07/2019	11:39
	STD75 280-457270/11	ms9_1603.D	05/07/2019	12:01
	STD50 280-457270/12	ms9_1604.D	05/07/2019	12:22
	STD20 280-457270/13	ms9_1605.D	05/07/2019	12:44
	STD10 280-457270/14	ms9_1606.D	05/07/2019	13:05
	STD05 280-457270/15	ms9_1607.D	05/07/2019	13:27
	STD02 280-457270/16	ms9_1608.D	05/07/2019	13:49
	STD01 280-457270/17	ms9_1609.D	05/07/2019	14:10
	STD005 280-457270/18	ms9_1610.D	05/07/2019	14:32
	ICV 280-457270/19	ms9_1611.D	05/07/2019	14:54
	STD200 280-457270/20	ms9_1612.D	05/07/2019	15:15
	STD100 280-457270/21	ms9_1613.D	05/07/2019	15:37
	ICIS 280-457270/22	ms9_1614.D	05/07/2019	15:58
	STD20 280-457270/23	ms9_1615.D	05/07/2019	16:20
	STD10 280-457270/24	ms9_1616.D	05/07/2019	16:41
	STD05 280-457270/25	ms9_1617.D	05/07/2019	17:03
	STD02 280-457270/26	ms9_1618.D	05/07/2019	17:25
	STD01 280-457270/27	ms9_1619.D	05/07/2019	17:46
	STD005 280-457270/28	ms9_1620.D	05/07/2019	18:08
	ICV 280-457270/29	ms9_1621.D	05/07/2019	18:30

FORM V
GC/MS VOA INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab File ID: ms9_1654.D BFB Injection Date: 05/08/2019
Instrument ID: VMS_MS9 BFB Injection Time: 19:52
Analysis Batch No.: 457521

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0 % of mass 95	18.9
75	30.0 - 60.0 % of mass 95	49.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0 % of mass 95	6.8
173	Less than 2.0 % of mass 174	0.5 (0.6) 1
174	50.0 - 120.00 % of mass 95	82.8
175	5.0 - 9.0 % of mass 174	6.0 (7.3) 1
176	95.0 - 101.0 % of mass 174	81.9 (98.9) 1
177	5.0 - 9.0 % of mass 176	5.5 (6.7) 2

1-Value is % mass 174

2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCV 280-457521/3	ms9_1656.D	05/08/2019	20:33
	MB 280-457521/8	ms9_1661.D	05/08/2019	22:31
DET-003-190401-GW	280-123221-4	ms9_1662.D	05/08/2019	22:53
	LCS 280-457521/33	ms9_1663.D	05/08/2019	23:15
DET-003-190401-GWMS MS	280-123221-4 MS	ms9_1664.D	05/08/2019	23:36
DET-003-190401-GWMSD MSD	280-123221-4 MSD	ms9_1665.D	05/08/2019	23:58
DET-003-190402-GW	280-123221-5	ms9_1666.D	05/09/2019	00:20
FWGTB-191001-TB	280-123221-6	ms9_1667.D	05/09/2019	00:42
DET-004-190401-GW	280-123221-7	ms9_1671.D	05/09/2019	02:08
	CCVC 280-457521/25	ms9_1679.D	05/09/2019	05:02

FORM VIII
GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Sample No.: ICIS 280-457270/22 Date Analyzed: 05/07/2019 15:58
 Instrument ID: VMS_MS9 GC Column: RXI-624SilMS ID: 0.25 (mm)
 Lab File ID (Standard): ms9_1614.D Heated Purge: (Y/N) Y
 Calibration ID: 36290

	TBAd9		FB		CBNZd5	
	AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT	2264779	3.29	1766233	5.09	430895	7.62
UPPER LIMIT	4529558	3.79	3532466	5.59	861790	8.12
LOWER LIMIT	1132390	2.79	883117	4.59	215448	7.12
LAB SAMPLE ID	CLIENT SAMPLE ID					
ICV 280-457270/29		2215380	3.29	1813656	5.09	448261 7.62
CCV 280-457521/3		2422553	3.29	1982685	5.09	486852 7.62
MB 280-457521/8		2457107	3.28	2064326	5.09	499358 7.62
280-123221-4	DET-003-190401-GW	2329096	3.28	1986010	5.09	481175 7.62
LCS 280-457521/33		2385781	3.29	2025008	5.09	498517 7.62
280-123221-4 MS	DET-003-190401-GWMS MS	2379062	3.29	2003526	5.09	484672 7.62
280-123221-4 MSD	DET-003-190401-GWMSD MSD	2397286	3.29	2006134	5.09	490910 7.62
280-123221-5	DET-003-190402-GW	2458333	3.28	2071785	5.09	507762 7.62
280-123221-6	FWGTB-191001-TB	2387335	3.29	1972477	5.09	478185 7.62
280-123221-7	DET-004-190401-GW	2418539	3.29	2079452	5.09	501060 7.62
CCVC 280-457521/25		2364017	3.29	1962633	5.09	484964 7.62

TBAd9 = TBA-d9 (IS)

FB = Fluorobenzene

CBNZd5 = Chlorobenzene-d5

Area Limit = 50%-200% of internal standard area

RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Sample No.: ICIS 280-457270/22 Date Analyzed: 05/07/2019 15:58
 Instrument ID: VMS_MS9 GC Column: RXI-624SilMS ID: 0.25 (mm)
 Lab File ID (Standard): ms9_1614.D Heated Purge: (Y/N) Y
 Calibration ID: 36290

		DCBd4					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		675047	9.84				
UPPER LIMIT		1350094	10.34				
LOWER LIMIT		337524	9.34				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 280-457270/29		704201	9.84				
CCV 280-457521/3		776424	9.84				
MB 280-457521/8		797341	9.84				
280-123221-4	DET-003-190401-GW	776398	9.84				
LCS 280-457521/33		805634	9.84				
280-123221-4 MS	DET-003-190401-GWMS MS	788677	9.84				
280-123221-4 MSD	DET-003-190401-GWMSD MSD	797267	9.84				
280-123221-5	DET-003-190402-GW	814649	9.84				
280-123221-6	FWGTB-191001-TB	778233	9.84				
280-123221-7	DET-004-190401-GW	809873	9.84				
CCVC 280-457521/25		794630	9.84				

DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: DET-003-190401-GW Lab Sample ID: 280-123221-4
 Matrix: Water Lab File ID: ms9_1662.D
 Analysis Method: 8260B Date Collected: 04/29/2019 10:53
 Sample wt/vol: 5 (mL) Date Analyzed: 05/08/2019 22:53
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RXI-624SilMS ID: 0.25 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 457521 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
71-55-6	1,1,1-Trichloroethane	0.40	U	1.0	0.40	0.16
79-34-5	1,1,2,2-Tetrachloroethane	0.80	U	1.0	0.80	0.21
79-00-5	1,1,2-Trichloroethane	0.80	U	1.0	0.80	0.27
75-34-3	1,1-Dichloroethane	0.80	U	1.0	0.80	0.22
75-35-4	1,1-Dichloroethene	0.80	U	1.0	0.80	0.23
106-93-4	1,2-Dibromoethane	0.40	U	1.0	0.40	0.18
107-06-2	1,2-Dichloroethane	0.40	U	1.0	0.40	0.13
540-59-0	1,2-Dichloroethene, Total	0.40	U	1.0	0.40	0.15
78-87-5	1,2-Dichloropropane	0.40	U	1.0	0.40	0.18
78-93-3	2-Butanone (MEK)	4.0	U	6.0	4.0	2.0
591-78-6	2-Hexanone	4.0	U	5.0	4.0	1.7
108-10-1	4-Methyl-2-pentanone (MIBK)	3.2	U	5.0	3.2	0.98
67-64-1	Acetone	2.8	J	10	6.4	1.9
71-43-2	Benzene	0.40	U	1.0	0.40	0.16
108-86-1	Bromobenzene	0.40	U	1.0	0.40	0.17
74-97-5	Bromochloromethane	0.20	U	1.0	0.20	0.10
75-27-4	Bromodichloromethane	0.40	U	1.0	0.40	0.17
75-25-2	Bromoform	1.0	U	1.0	1.0	0.46
74-83-9	Bromomethane	0.80	U Q J1	2.0	0.80	0.21
75-15-0	Carbon disulfide	0.80	U	2.0	0.80	0.17
56-23-5	Carbon tetrachloride	0.40	U	2.0	0.40	0.19
108-90-7	Chlorobenzene	0.40	U	1.0	0.40	0.17
75-00-3	Chloroethane	1.6	U	2.0	1.6	0.41
67-66-3	Chloroform	0.40	U	1.0	0.40	0.16
74-87-3	Chloromethane	0.80	U J1	2.0	0.80	0.30
10061-01-5	cis-1,3-Dichloropropene	0.40	U	1.0	0.40	0.16
124-48-1	Dibromochloromethane	0.40	U	1.0	0.40	0.17
100-41-4	Ethylbenzene	0.40	U	1.0	0.40	0.16
75-09-2	Methylene Chloride	2.0	U	5.0	2.0	0.94
100-42-5	Styrene	0.80	U	1.0	0.80	0.36
127-18-4	Tetrachloroethene	0.40	U	1.0	0.40	0.20
108-88-3	Toluene	0.40	U	1.0	0.40	0.17
10061-02-6	trans-1,3-Dichloropropene	0.40	U	1.0	0.40	0.19
79-01-6	Trichloroethene	0.40	U	1.0	0.40	0.16
75-01-4	Vinyl chloride	0.20	U J1	1.5	0.20	0.10

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: DET-003-190401-GW Lab Sample ID: 280-123221-4
 Matrix: Water Lab File ID: ms9_1662.D
 Analysis Method: 8260B Date Collected: 04/29/2019 10:53
 Sample wt/vol: 5 (mL) Date Analyzed: 05/08/2019 22:53
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RXI-624SilMS ID: 0.25 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 457521 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1330-20-7	Xylenes, Total	0.80	U	1.0	0.80	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	94		81-118
460-00-4	4-Bromofluorobenzene (Surr)	96		85-114
1868-53-7	Dibromofluoromethane (Surr)	97		80-119
2037-26-5	Toluene-d8 (Surr)	99		89-112

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1662.D
 Lims ID: 280-123221-M-4
 Client ID: DET-003-190401-GW
 Sample Type: Client
 Inject. Date: 08-May-2019 22:53:30 ALS Bottle#: 8 Worklist Smp#: 9
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: 280-123221-M-4
 Misc. Info.: 280-0081707-009
 Operator ID: ornelasg Instrument ID: VMS_MS9
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 09-May-2019 22:26:40 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: ornelasg

Date: 09-May-2019 22:26:40

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.282	3.286	-0.004	0	2329096	1000.0	
* 1 Fluorobenzene	96	5.093	5.089	0.004	99	1986010	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.616	0.003	86	481175	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	95	776398	50.0	
\$ 6 Dibromofluoromethane (Surr	111	4.587	4.587	0.001	94	458326	48.5	
\$ 7 1,2-Dichloroethane-d4 (Sur	65	4.849	4.853	-0.004	98	576244	47.1	
\$ 8 Toluene-d8 (Surr)	98	6.349	6.348	0.001	93	1904486	49.3	
\$ 9 4-Bromofluorobenzene (Surr	95	8.714	8.714	0.000	90	733418	48.1	
\$ 10 Trifluorotoluene (Surr)	1		0.000				ND	
\$ 11 BFB	95		3.564				ND	
13 Dichlorodifluoromethane	85		1.670				ND	
15 Chloromethane	50		1.854				ND	
16 Vinyl chloride	62		1.940				ND	
18 Ethylene oxide	43		2.188				ND	
19 Bromomethane	94		2.210				ND	
20 Chloroethane	64		2.300				ND	
21 Dichlorofluoromethane	67		2.491				ND	
22 Trichlorofluoromethane	101		2.521				ND	
23 Ethanol	45	2.649	2.652	-0.003	83	1304	4.05	
24 Ethyl ether	59		2.746				ND	
27 Propene oxide	58		2.784				ND	
28 Acrolein	56		2.858				ND	
29 1,1,2-Trichloro-1,2,2-trif	151		2.933				ND	
30 1,1-Dichloroethene	96		2.937				ND	
31 Acetone	43	2.956	2.952	0.004	100	18938	2.82	
32 Isopropyl alcohol	45	3.039	3.042	-0.003	99	64007	34.9	
33 Iodomethane	142		3.065				ND	
35 Carbon disulfide	76		3.125				ND	
37 Acetonitrile	41		3.162				ND	
34 Methyl acetate	43		3.188				ND	
36 3-Chloro-1-propene	41		3.207				ND	U

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
39 Methylene Chloride	84		3.301				ND	
38 2-Methyl-2-propanol	59	3.357	3.349	0.008	68	3529	1.37	
42 Acrylonitrile	53		3.466				ND	
40 Methyl tert-butyl ether	73		3.488				ND	
41 trans-1,2-Dichloroethene	96		3.503				ND	
43 Hexane	57		3.702				ND	
45 Vinyl acetate	43		3.799				ND	
44 Isopropyl ether	87		3.818				ND	
46 1,1-Dichloroethane	63		3.826				ND	
12 Chlorotrifluoroethene	116		3.859				ND	
47 2-Chloro-1,3-butadiene	53		3.871				ND	
14 1,2-Dichloro-1,1,2,2-tetra	85		4.045				ND	
48 Tert-butyl ethyl ether	59		4.081				ND	
50 2-Butanone (MEK)	43		4.208				ND	
49 Ethyl acetate	43		4.219				ND	
52 cis-1,2-Dichloroethene	96		4.234				ND	
53 2,2-Dichloropropane	77		4.245				ND	
54 Propionitrile	54		4.253				ND	
51 sec-Butyl Alcohol	45		4.317				ND	
55 Methacrylonitrile	41		4.369				ND	
59 Chlorobromomethane	128		4.410				ND	
57 Tetrahydrofuran	42		4.418				ND	
56 Chloroform	83		4.470				ND	
17 2-Chloro-1,1,1-Trifluoroet	118		4.471				ND	
60 1,1,1-Trichloroethane	97		4.616				ND	
61 Cyclohexane	56		4.676				ND	
62 1,1-Dichloropropene	75		4.725				ND	
63 Carbon tetrachloride	117		4.733				ND	
58 Isobutyl alcohol	43		4.736				ND	
66 Benzene	78		4.879				ND	
67 1,2-Dichloroethane	62		4.913				ND	
65 Tert-amyl methyl ether	73		4.943				ND	
25 1,2-Dichloro-1,1,2-trifluo	117		5.006				ND	
135 n-Heptane	43		5.066				ND	
26 1,1,1-Trifluoro-2,2-dichlo	83		5.097				ND	
64 n-Butanol	56		5.228				ND	
68 Trichloroethene	130		5.370				ND	
69 2-Pentanone	43		5.467				ND	
71 Methylcyclohexane	55		5.561				ND	
70 Methyl methacrylate	100		5.573				ND	
72 1,2-Dichloropropane	63		5.576				ND	
73 1,4-Dioxane	88		5.614				ND	
74 Dibromomethane	93		5.647				ND	
75 Dichlorobromomethane	83		5.771				ND	
77 2-Nitropropane	41		5.932				ND	
76 2-Chloroethyl vinyl ether	63		5.974				ND	
78 cis-1,3-Dichloropropene	75		6.120				ND	
79 4-Methyl-2-pentanone (MIBK)	43		6.217				ND	
80 Toluene	91		6.408				ND	
82 trans-1,3-Dichloropropene	75		6.577				ND	
81 Ethyl methacrylate	69		6.603				ND	
83 1,1,2-Trichloroethane	97		6.757				ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
85 Tetrachloroethene	164		6.847				ND	
86 1,3-Dichloropropane	76		6.903				ND	
84 2-Hexanone	43		6.922				ND	
88 Tetrahydrothiophene	60		7.091				ND	
87 Chlorodibromomethane	129		7.094				ND	
89 Ethylene Dibromide	107		7.222				ND	
90 1-Chlorohexane	91		7.608				ND	
91 Chlorobenzene	112		7.645				ND	
93 1,1,1,2-Tetrachloroethane	131		7.717				ND	
92 Ethylbenzene	106		7.724				ND	
94 m-Xylene & p-Xylene	91		7.840				ND	
95 o-Xylene	106		8.200				ND	
96 Styrene	104		8.215				ND	
97 Bromoform	173		8.399				ND	
98 Isopropylbenzene	105		8.541				ND	
99 cis-1,4-Dichloro-2-butene	53		8.590				ND	
100 Cyclohexanone	55		8.631				ND	
101 1,1,2,2-Tetrachloroethane	83		8.830				ND	
105 Bromobenzene	156		8.864				ND	
102 trans-1,4-Dichloro-2-buten	53		8.864				ND	
104 1,2,3-Trichloropropane	110		8.894				ND	
103 N-Propylbenzene	120		8.939				ND	
107 2-Chlorotoluene	126		9.036				ND	
106 1,3,5-Trimethylbenzene	105		9.115				ND	
108 4-Chlorotoluene	126		9.152				ND	
109 tert-Butylbenzene	119		9.415				ND	
110 1,2,4-Trimethylbenzene	105		9.478				ND	
111 sec-Butylbenzene	134		9.640				ND	
113 1,3-Dichlorobenzene	146		9.767				ND	
112 4-Isopropyltoluene	119		9.786				ND	
115 1,4-Dichlorobenzene	146		9.868				ND	
114 1,2,3-Trimethylbenzene	105		9.883				ND	
116 n-Butylbenzene	91		10.191				ND	
117 1,2-Dichlorobenzene	146		10.221				ND	
118 1,2-Dibromo-3-Chloropropan	157		11.000				ND	
119 1,3,5-Trichlorobenzene	180		11.188				ND	
120 1,2,4-Trichlorobenzene	180		11.818				ND	
121 Hexachlorobutadiene	225		11.960				ND	
122 Naphthalene	128		12.095				ND	
123 1,2,3-Trichlorobenzene	180		12.316				ND	
132 2-Methylhexane	1		0.000				ND	
128 Pentachloroethane	167		0.000				ND	
164 1-Chloro-1-fluoroethane TI	1		0.000				ND	
160 1-Chlorohexane TIC	1		0.000				ND	
163 n-Nonane TIC	1		0.000				ND	
131 3-Ethylpentane	1		0.000				ND	
124 2,3-Dimethylpentane	1		0.000				ND	
162 Cyclohexane TIC	1		0.000				ND	
127 3,3-Dimethylpentane	1		0.000				ND	
133 2,4-Dimethylpentane	1		0.000				ND	
126 2,2,3-Trimethylbutane	1		0.000				ND	
134 3-Methylhexane	1		0.000				ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
129 n-Nonyl Aldehyde	1		0.000				ND	
161 Methyl cyclohexane TIC	1		0.000				ND	
125 2,2-Dimethylpentane	1		0.000				ND	
130 Dimethyl disulfide	1		0.000				ND	
S 136 1,2-Dichloroethene, Total	96		2.000				ND	
S 142 Xylenes, Total	106		0.000				ND	
S 141 1,2-Dichloroethene, Total	1		0.000				ND	
S 139 Total BTEX	1		0.000				ND	
S 143 TAH	1				0		0	7
S 138 Xylenes, Total (URS)	1		0.000				ND	
S 137 Trihalomethanes, Total	1		0.000				ND	
S 140 1,3-Dichloropropene, Total	1		0.000				ND	
T 157 1,3-Butadiene TIC	1		1.985				ND	
T 158 2,3-dichloro-1-propene TIC	1		6.150				ND	
T 156 4-Ethyltoluene TIC	1		9.345				ND	
T 154 Dichloroacetonitrile TIC	1		0.000				ND	
T 152 Propene oxide TIC	1		0.000				ND	
T 153 Propene TIC	1		0.000				ND	
T 155 Dicyclopentadiene TIC	1		0.000				ND	
T 159 2-Butoxyethanol TIC	1		0.000				ND	

QC Flag Legend

Processing Flags

7 - Failed Limit of Detection

Review Flags

U - Marked Undetected

Reagents:

mv-Cent IS/SS_00002

Amount Added: 5.00

Units: uL

Run Reagent

Report Date: 09-May-2019 22:27:19

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1662.D

Injection Date: 08-May-2019 22:53:30

Instrument ID: VMS_MS9

Operator ID: ornelasg

Lims ID: 280-123221-M-4

Lab Sample ID: 280-123221-4

Worklist Smp#: 9

Client ID: DET-003-190401-GW

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

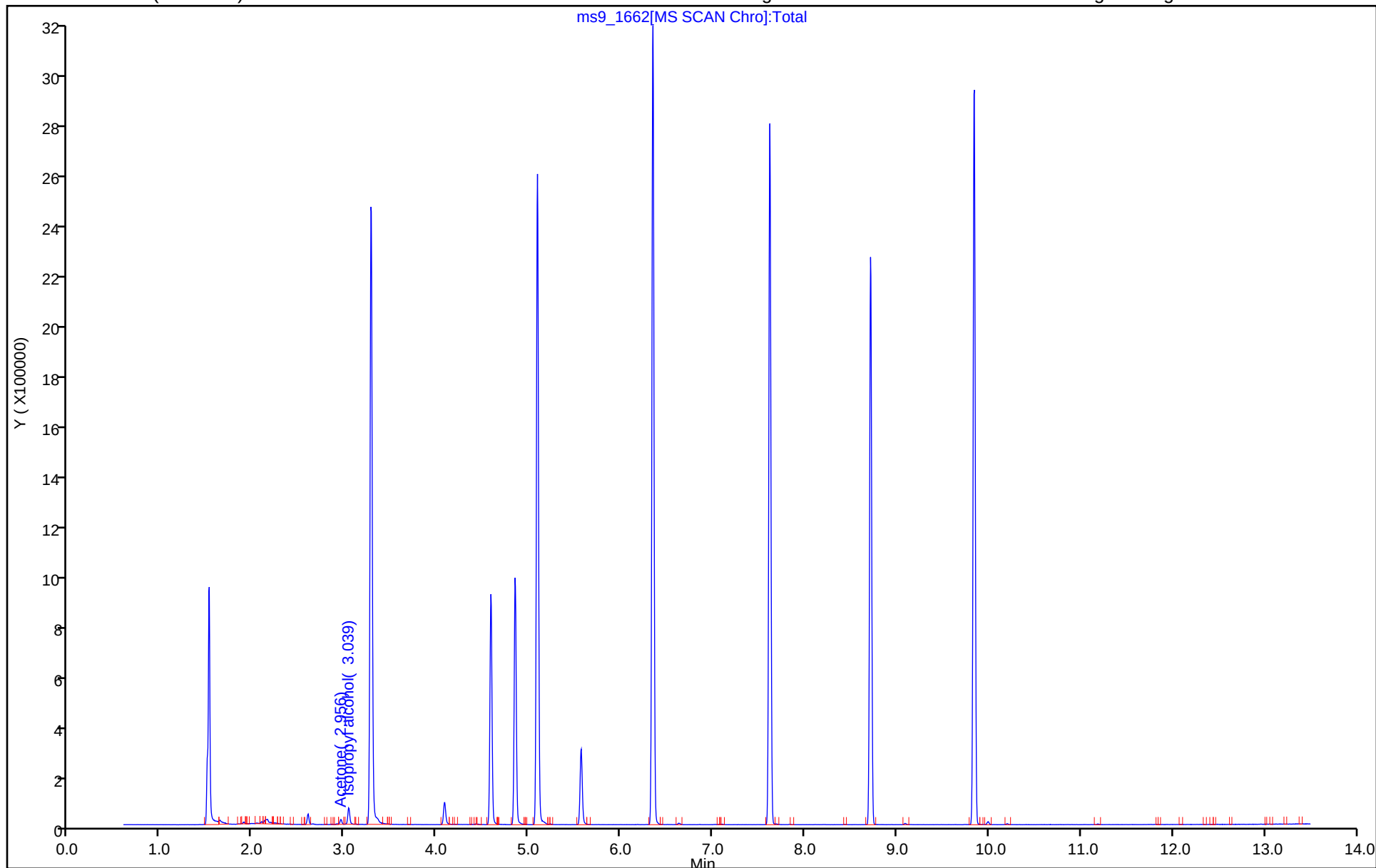
ALS Bottle#: 8

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1662.D
Lims ID: 280-123221-M-4
Client ID: DET-003-190401-GW
Sample Type: Client
Inject. Date: 08-May-2019 22:53:30 ALS Bottle#: 8 Worklist Smp#: 9
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 280-123221-M-4
Misc. Info.: 280-0081707-009
Operator ID: ornelasg Instrument ID: VMS_MS9
Method: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\AQ_VMSMS9_8260.m
Limit Group: MSV - 8260B Water and Solid
Last Update: 09-May-2019 22:26:40 Calib Date: 07-May-2019 18:08:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
Column 1 : DB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0321

First Level Reviewer: ornelasg

Date: 09-May-2019 22:26:40

Compound	Amount Added	Amount Recovered	% Rec.
\$ 6 Dibromofluoromethane (Surr)	50.0	48.5	96.99
\$ 7 1,2-Dichloroethane-d4 (Surr)	50.0	47.1	94.20
\$ 8 Toluene-d8 (Surr)	50.0	49.3	98.63
\$ 9 4-Bromofluorobenzene (Surr)	50.0	48.1	96.26

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1662.D

Injection Date: 08-May-2019 22:53:30

Instrument ID: VMS_MS9

Lims ID: 280-123221-M-4

Lab Sample ID: 280-123221-4

Client ID: DET-003-190401-GW

Operator ID: ornelasg

ALS Bottle#: 8

Worklist Smp#: 9

Purge Vol: 5.000 mL

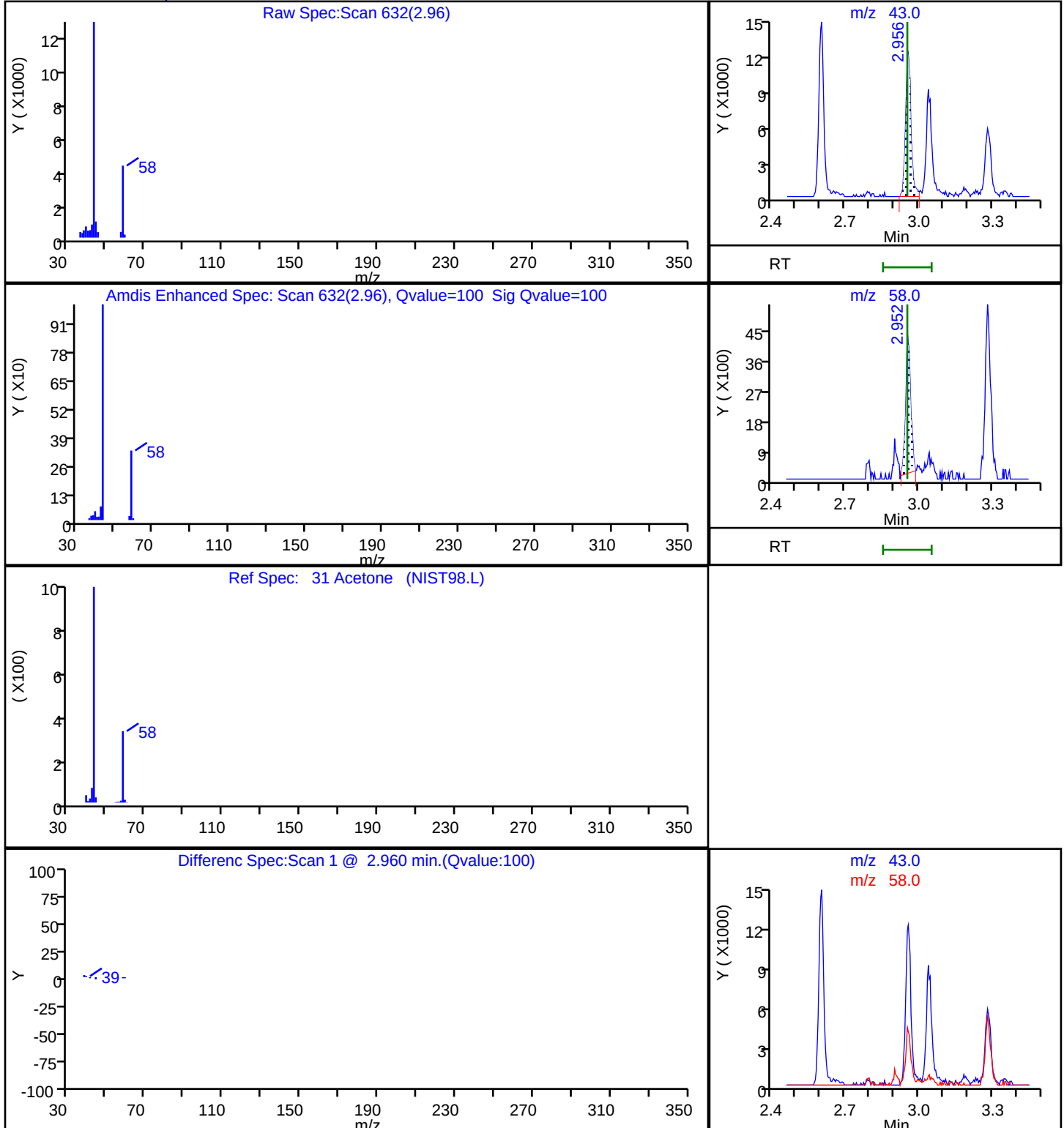
Dil. Factor: 1.0000

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Detector: MS SCAN

31 Acetone, CAS: 67-64-1

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>DET-003-190402-GW</u>	Lab Sample ID: <u>280-123221-5</u>
Matrix: <u>Water</u>	Lab File ID: <u>ms9_1666.D</u>
Analysis Method: <u>8260B</u>	Date Collected: <u>04/29/2019 10:53</u>
Sample wt/vol: <u>5(mL)</u>	Date Analyzed: <u>05/09/2019 00:20</u>
Soil Aliquot Vol: _____	Dilution Factor: <u>1</u>
Soil Extract Vol.: _____	GC Column: <u>RXI-624SilMS</u> ID: <u>0.25(mm)</u>
% Moisture: _____	Level: (low/med) <u>Low</u>
Analysis Batch No.: <u>457521</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
71-55-6	1,1,1-Trichloroethane	0.40	U	1.0	0.40	0.16
79-34-5	1,1,2,2-Tetrachloroethane	0.80	U	1.0	0.80	0.21
79-00-5	1,1,2-Trichloroethane	0.80	U	1.0	0.80	0.27
75-34-3	1,1-Dichloroethane	0.80	U	1.0	0.80	0.22
75-35-4	1,1-Dichloroethene	0.80	U	1.0	0.80	0.23
106-93-4	1,2-Dibromoethane	0.40	U	1.0	0.40	0.18
107-06-2	1,2-Dichloroethane	0.40	U	1.0	0.40	0.13
540-59-0	1,2-Dichloroethene, Total	0.40	U	1.0	0.40	0.15
78-87-5	1,2-Dichloropropane	0.40	U	1.0	0.40	0.18
78-93-3	2-Butanone (MEK)	4.0	U	6.0	4.0	2.0
591-78-6	2-Hexanone	4.0	U	5.0	4.0	1.7
108-10-1	4-Methyl-2-pentanone (MIBK)	3.2	U	5.0	3.2	0.98
67-64-1	Acetone	2.4	J	10	6.4	1.9
71-43-2	Benzene	0.40	U	1.0	0.40	0.16
108-86-1	Bromobenzene	0.40	U	1.0	0.40	0.17
74-97-5	Bromochloromethane	0.20	U	1.0	0.20	0.10
75-27-4	Bromodichloromethane	0.40	U	1.0	0.40	0.17
75-25-2	Bromoform	1.0	U	1.0	1.0	0.46
74-83-9	Bromomethane	0.80	U Q	2.0	0.80	0.21
75-15-0	Carbon disulfide	0.80	U	2.0	0.80	0.17
56-23-5	Carbon tetrachloride	0.40	U	2.0	0.40	0.19
108-90-7	Chlorobenzene	0.40	U	1.0	0.40	0.17
75-00-3	Chloroethane	1.6	U	2.0	1.6	0.41
67-66-3	Chloroform	0.40	U	1.0	0.40	0.16
74-87-3	Chloromethane	0.80	U	2.0	0.80	0.30
10061-01-5	cis-1,3-Dichloropropene	0.40	U	1.0	0.40	0.16
124-48-1	Dibromochloromethane	0.40	U	1.0	0.40	0.17
100-41-4	Ethylbenzene	0.40	U	1.0	0.40	0.16
75-09-2	Methylene Chloride	2.0	U	5.0	2.0	0.94
100-42-5	Styrene	0.80	U	1.0	0.80	0.36
127-18-4	Tetrachloroethene	0.40	U	1.0	0.40	0.20
108-88-3	Toluene	0.40	U	1.0	0.40	0.17
10061-02-6	trans-1,3-Dichloropropene	0.40	U	1.0	0.40	0.19
79-01-6	Trichloroethene	0.40	U	1.0	0.40	0.16
75-01-4	Vinyl chloride	0.20	U	1.5	0.20	0.10
1330-20-7	Xylenes, Total	0.80	U	1.0	0.80	0.19

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Client Sample ID: DET-003-190402-GW Lab Sample ID: 280-123221-5
Matrix: Water Lab File ID: ms9_1666.D
Analysis Method: 8260B Date Collected: 04/29/2019 10:53
Sample wt/vol: 5 (mL) Date Analyzed: 05/09/2019 00:20
Soil Aliquot Vol: _____ Dilution Factor: 1
Soil Extract Vol.: _____ GC Column: RXI-624SilMS ID: 0.25 (mm)
% Moisture: _____ Level: (low/med) Low
Analysis Batch No.: 457521 Units: ug/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	93		81-118
460-00-4	4-Bromofluorobenzene (Surr)	96		85-114
1868-53-7	Dibromofluoromethane (Surr)	98		80-119
2037-26-5	Toluene-d8 (Surr)	97		89-112

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1666.D
 Lims ID: 280-123221-H-5
 Client ID: DET-003-190402-GW
 Sample Type: Client
 Inject. Date: 09-May-2019 00:20:30 ALS Bottle#: 12 Worklist Smp#: 12
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: 280-123221-H-5
 Misc. Info.: 280-0081707-012
 Operator ID: ornelasg Instrument ID: VMS_MS9
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 09-May-2019 21:35:47 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: ornelasg

Date: 09-May-2019 18:07:02

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.282	3.286	-0.004	0	2458333	1000.0	
* 1 Fluorobenzene	96	5.093	5.089	0.004	99	2071785	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.616	0.003	86	507762	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	95	814649	50.0	
\$ 6 Dibromofluoromethane (Surr	111	4.587	4.587	0.001	93	484103	49.1	
\$ 7 1,2-Dichloroethane-d4 (Sur	65	4.849	4.853	-0.004	98	594726	46.6	
\$ 8 Toluene-d8 (Surr)	98	6.348	6.348	0.000	93	1982696	48.7	
\$ 9 4-Bromofluorobenzene (Surr	95	8.714	8.714	0.000	93	766137	47.9	
15 Chloromethane	50		1.854				ND	
16 Vinyl chloride	62		1.940				ND	
19 Bromomethane	94		2.210				ND	
20 Chloroethane	64		2.300				ND	
30 1,1-Dichloroethene	96		2.937				ND	
31 Acetone	43	2.952	2.952	0.000	100	17798	2.40	
35 Carbon disulfide	76	3.125	3.125	0.000	99	3150	0.1572	
39 Methylene Chloride	84		3.301				ND	
41 trans-1,2-Dichloroethene	96		3.503				ND	
46 1,1-Dichloroethane	63		3.826				ND	
50 2-Butanone (MEK)	43		4.208				ND	
52 cis-1,2-Dichloroethene	96		4.234				ND	
59 Chlorobromomethane	128		4.410				ND	
56 Chloroform	83		4.470				ND	
60 1,1,1-Trichloroethane	97		4.616				ND	
63 Carbon tetrachloride	117		4.733				ND	
66 Benzene	78		4.879				ND	
67 1,2-Dichloroethane	62		4.913				ND	
68 Trichloroethene	130		5.370				ND	
72 1,2-Dichloropropane	63		5.576				ND	
75 Dichlorobromomethane	83		5.771				ND	
78 cis-1,3-Dichloropropene	75		6.120				ND	
79 4-Methyl-2-pentanone (MIBK	43		6.217				ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
80 Toluene	91		6.408				ND	
82 trans-1,3-Dichloropropene	75		6.577				ND	
83 1,1,2-Trichloroethane	97		6.757				ND	
85 Tetrachloroethene	164		6.847				ND	
84 2-Hexanone	43		6.922				ND	
87 Chlorodibromomethane	129		7.094				ND	
89 Ethylene Dibromide	107		7.222				ND	
91 Chlorobenzene	112		7.645				ND	
92 Ethylbenzene	106		7.724				ND	
94 m-Xylene & p-Xylene	91		7.840				ND	
95 o-Xylene	106		8.200				ND	
96 Styrene	104		8.215				ND	
97 Bromoform	173		8.399				ND	
101 1,1,2,2-Tetrachloroethane	83		8.830				ND	
105 Bromobenzene	156		8.864				ND	
S 142 Xylenes, Total	106		0.000				ND	
S 141 1,2-Dichloroethene, Total	1		0.000				ND	

Reagents:

mv-Cent IS/SS_00002

Amount Added: 5.00

Units: uL

Run Reagent

Report Date: 09-May-2019 21:39:10

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1666.D

Injection Date: 09-May-2019 00:20:30

Instrument ID: VMS_MS9

Operator ID: ornelasg

Lims ID: 280-123221-H-5

Lab Sample ID: 280-123221-5

Worklist Smp#: 12

Client ID: DET-003-190402-GW

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

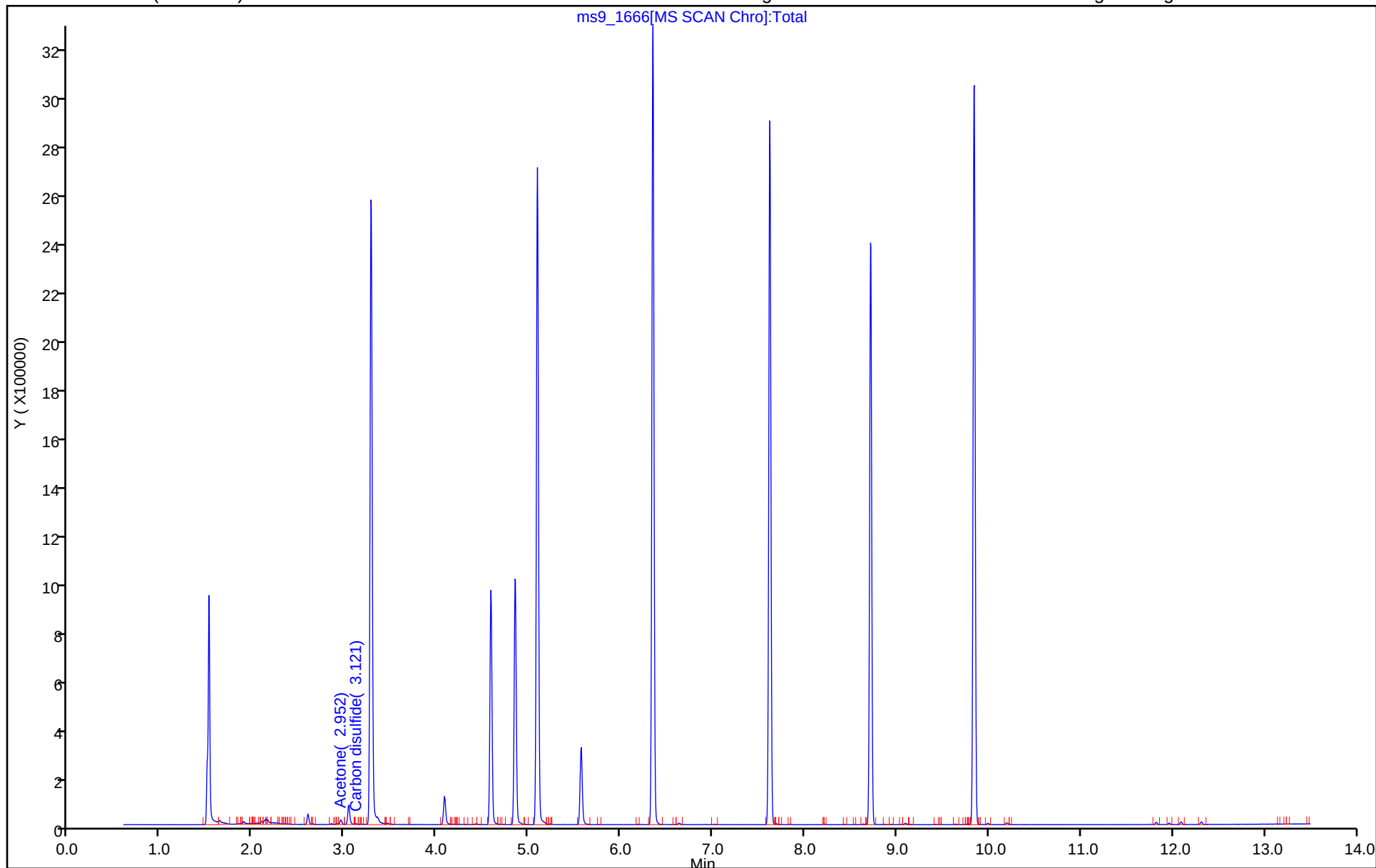
ALS Bottle#: 12

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1666.D
 Lims ID: 280-123221-H-5
 Client ID: DET-003-190402-GW
 Sample Type: Client
 Inject. Date: 09-May-2019 00:20:30 ALS Bottle#: 12 Worklist Smp#: 12
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: 280-123221-H-5
 Misc. Info.: 280-0081707-012
 Operator ID: ornelasg Instrument ID: VMS_MS9
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 09-May-2019 21:35:47 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: ornelasg

Date: 09-May-2019 18:07:02

Compound	Amount Added	Amount Recovered	% Rec.
\$ 6 Dibromofluoromethane (Surr)	50.0	49.1	98.21
\$ 7 1,2-Dichloroethane-d4 (Surr)	50.0	46.6	93.20
\$ 8 Toluene-d8 (Surr)	50.0	48.7	97.30
\$ 9 4-Bromofluorobenzene (Surr)	50.0	47.9	95.83

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>FWGTB-191001-TB</u>	Lab Sample ID: <u>280-123221-6</u>
Matrix: <u>Water</u>	Lab File ID: <u>ms9_1667.D</u>
Analysis Method: <u>8260B</u>	Date Collected: <u>04/29/2019 09:00</u>
Sample wt/vol: <u>5(mL)</u>	Date Analyzed: <u>05/09/2019 00:42</u>
Soil Aliquot Vol: _____	Dilution Factor: <u>1</u>
Soil Extract Vol.: _____	GC Column: <u>RXI-624SilMS</u> ID: <u>0.25(mm)</u>
% Moisture: _____	Level: (low/med) <u>Low</u>
Analysis Batch No.: <u>457521</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
71-55-6	1,1,1-Trichloroethane	0.40	U	1.0	0.40	0.16
79-34-5	1,1,2,2-Tetrachloroethane	0.80	U	1.0	0.80	0.21
79-00-5	1,1,2-Trichloroethane	0.80	U	1.0	0.80	0.27
75-34-3	1,1-Dichloroethane	0.80	U	1.0	0.80	0.22
75-35-4	1,1-Dichloroethene	0.80	U	1.0	0.80	0.23
106-93-4	1,2-Dibromoethane	0.40	U	1.0	0.40	0.18
107-06-2	1,2-Dichloroethane	0.40	U	1.0	0.40	0.13
540-59-0	1,2-Dichloroethene, Total	0.40	U	1.0	0.40	0.15
78-87-5	1,2-Dichloropropane	0.40	U	1.0	0.40	0.18
78-93-3	2-Butanone (MEK)	4.0	U	6.0	4.0	2.0
591-78-6	2-Hexanone	4.0	U	5.0	4.0	1.7
108-10-1	4-Methyl-2-pentanone (MIBK)	3.2	U	5.0	3.2	0.98
67-64-1	Acetone	6.4	U	10	6.4	1.9
71-43-2	Benzene	0.40	U	1.0	0.40	0.16
108-86-1	Bromobenzene	0.40	U	1.0	0.40	0.17
74-97-5	Bromochloromethane	0.20	U	1.0	0.20	0.10
75-27-4	Bromodichloromethane	0.40	U	1.0	0.40	0.17
75-25-2	Bromoform	1.0	U	1.0	1.0	0.46
74-83-9	Bromomethane	0.80	U Q	2.0	0.80	0.21
75-15-0	Carbon disulfide	0.80	U	2.0	0.80	0.17
56-23-5	Carbon tetrachloride	0.40	U	2.0	0.40	0.19
108-90-7	Chlorobenzene	0.40	U	1.0	0.40	0.17
75-00-3	Chloroethane	1.6	U	2.0	1.6	0.41
67-66-3	Chloroform	0.40	U	1.0	0.40	0.16
74-87-3	Chloromethane	0.80	U	2.0	0.80	0.30
10061-01-5	cis-1,3-Dichloropropene	0.40	U	1.0	0.40	0.16
124-48-1	Dibromochloromethane	0.40	U	1.0	0.40	0.17
100-41-4	Ethylbenzene	0.40	U	1.0	0.40	0.16
75-09-2	Methylene Chloride	2.0	U	5.0	2.0	0.94
100-42-5	Styrene	0.80	U	1.0	0.80	0.36
127-18-4	Tetrachloroethene	0.40	U	1.0	0.40	0.20
108-88-3	Toluene	0.40	U	1.0	0.40	0.17
10061-02-6	trans-1,3-Dichloropropene	0.40	U	1.0	0.40	0.19
79-01-6	Trichloroethene	0.40	U	1.0	0.40	0.16
75-01-4	Vinyl chloride	0.20	U	1.5	0.20	0.10
1330-20-7	Xylenes, Total	0.80	U	1.0	0.80	0.19

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Client Sample ID: FWGTB-191001-TB Lab Sample ID: 280-123221-6
Matrix: Water Lab File ID: ms9_1667.D
Analysis Method: 8260B Date Collected: 04/29/2019 09:00
Sample wt/vol: 5 (mL) Date Analyzed: 05/09/2019 00:42
Soil Aliquot Vol: _____ Dilution Factor: 1
Soil Extract Vol.: _____ GC Column: RXI-624SilMS ID: 0.25 (mm)
% Moisture: _____ Level: (low/med) Low
Analysis Batch No.: 457521 Units: ug/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	95		81-118
460-00-4	4-Bromofluorobenzene (Surr)	95		85-114
1868-53-7	Dibromofluoromethane (Surr)	98		80-119
2037-26-5	Toluene-d8 (Surr)	99		89-112

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1667.D
 Lims ID: 280-123221-B-6
 Client ID: FWGTB-191001-TB
 Sample Type: Client
 Inject. Date: 09-May-2019 00:42:30 ALS Bottle#: 13 Worklist Smp#: 13
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: 280-123221-B-6
 Misc. Info.: 280-0081707-013
 Operator ID: ornelasg Instrument ID: VMS_MS9
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 09-May-2019 21:35:47 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: ornelasg

Date: 09-May-2019 18:07:09

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.286	3.286	0.000	0	2387335	1000.0	
* 1 Fluorobenzene	96	5.093	5.089	0.004	99	1972477	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.616	0.003	86	478185	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	96	778233	50.0	
\$ 6 Dibromofluoromethane (Surr	111	4.587	4.587	0.001	93	462129	49.2	
\$ 7 1,2-Dichloroethane-d4 (Sur	65	4.849	4.853	-0.004	98	576964	47.5	
\$ 8 Toluene-d8 (Surr)	98	6.348	6.348	0.000	93	1899489	49.5	
\$ 9 4-Bromofluorobenzene (Surr	95	8.714	8.714	0.000	91	728600	47.7	
15 Chloromethane	50		1.854				ND	
16 Vinyl chloride	62		1.940				ND	
19 Bromomethane	94		2.210				ND	
20 Chloroethane	64		2.300				ND	
30 1,1-Dichloroethene	96		2.937				ND	
31 Acetone	43		2.952				ND	
35 Carbon disulfide	76		3.125				ND	
39 Methylene Chloride	84		3.301				ND	
41 trans-1,2-Dichloroethene	96		3.503				ND	
46 1,1-Dichloroethane	63		3.826				ND	
50 2-Butanone (MEK)	43		4.208				ND	
52 cis-1,2-Dichloroethene	96		4.234				ND	
59 Chlorobromomethane	128		4.410				ND	
56 Chloroform	83		4.470				ND	
60 1,1,1-Trichloroethane	97		4.616				ND	
63 Carbon tetrachloride	117		4.733				ND	
66 Benzene	78		4.879				ND	
67 1,2-Dichloroethane	62		4.913				ND	
68 Trichloroethene	130		5.370				ND	
72 1,2-Dichloropropane	63		5.576				ND	
75 Dichlorobromomethane	83		5.771				ND	
78 cis-1,3-Dichloropropene	75		6.120				ND	
79 4-Methyl-2-pentanone (MIBK	43		6.217				ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
80 Toluene	91		6.408				ND	
82 trans-1,3-Dichloropropene	75		6.577				ND	
83 1,1,2-Trichloroethane	97		6.757				ND	
85 Tetrachloroethene	164		6.847				ND	
84 2-Hexanone	43		6.922				ND	
87 Chlorodibromomethane	129		7.094				ND	
89 Ethylene Dibromide	107		7.222				ND	
91 Chlorobenzene	112		7.645				ND	
92 Ethylbenzene	106		7.724				ND	
94 m-Xylene & p-Xylene	91		7.840				ND	
95 o-Xylene	106		8.200				ND	
96 Styrene	104		8.215				ND	
97 Bromoform	173		8.399				ND	
101 1,1,2,2-Tetrachloroethane	83		8.830				ND	
105 Bromobenzene	156		8.864				ND	
S 142 Xylenes, Total	106		0.000				ND	
S 141 1,2-Dichloroethene, Total	1		0.000				ND	

Reagents:

mv-Cent IS/SS_00002

Amount Added: 5.00

Units: uL

Run Reagent

Report Date: 09-May-2019 21:39:15

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1667.D

Injection Date: 09-May-2019 00:42:30

Instrument ID: VMS_MS9

Operator ID: ornelasg

Lims ID: 280-123221-B-6

Lab Sample ID: 280-123221-6

Worklist Smp#: 13

Client ID: FWGTB-191001-TB

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

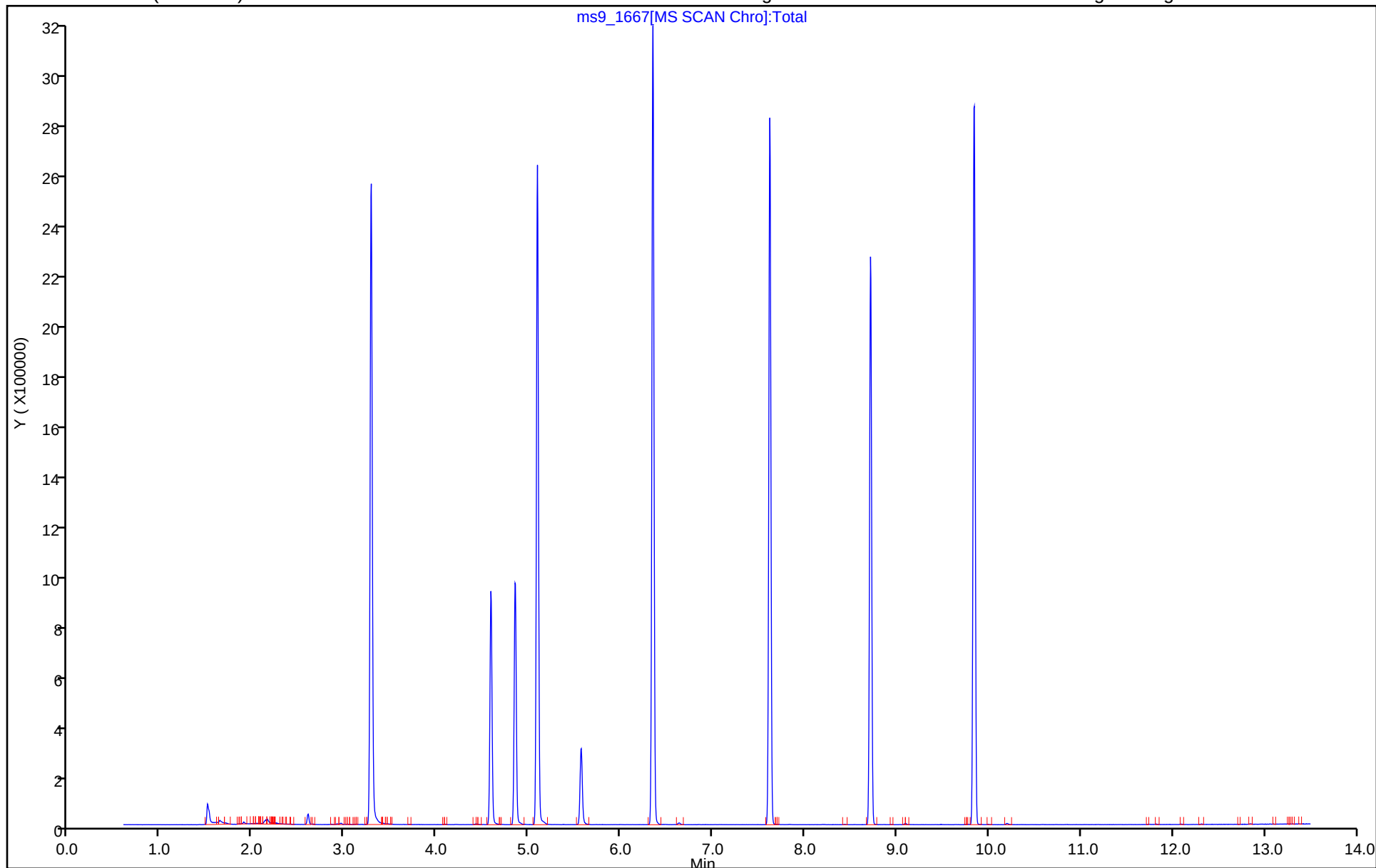
ALS Bottle#: 13

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1667.D
 Lims ID: 280-123221-B-6
 Client ID: FWGTB-191001-TB
 Sample Type: Client
 Inject. Date: 09-May-2019 00:42:30 ALS Bottle#: 13 Worklist Smp#: 13
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: 280-123221-B-6
 Misc. Info.: 280-0081707-013
 Operator ID: ornelasg Instrument ID: VMS_MS9
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 09-May-2019 21:35:47 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: ornelasg

Date: 09-May-2019 18:07:09

Compound	Amount Added	Amount Recovered	% Rec.
\$ 6 Dibromofluoromethane (Surr)	50.0	49.2	98.47
\$ 7 1,2-Dichloroethane-d4 (Surr)	50.0	47.5	94.96
\$ 8 Toluene-d8 (Surr)	50.0	49.5	98.98
\$ 9 4-Bromofluorobenzene (Surr)	50.0	47.7	95.40

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>DET-004-190401-GW</u>	Lab Sample ID: <u>280-123221-7</u>
Matrix: <u>Water</u>	Lab File ID: <u>ms9_1671.D</u>
Analysis Method: <u>8260B</u>	Date Collected: <u>04/29/2019 10:04</u>
Sample wt/vol: <u>5(mL)</u>	Date Analyzed: <u>05/09/2019 02:08</u>
Soil Aliquot Vol: _____	Dilution Factor: <u>1</u>
Soil Extract Vol.: _____	GC Column: <u>RXI-624SilMS</u> ID: <u>0.25(mm)</u>
% Moisture: _____	Level: (low/med) <u>Low</u>
Analysis Batch No.: <u>457521</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
71-55-6	1,1,1-Trichloroethane	0.40	U	1.0	0.40	0.16
79-34-5	1,1,2,2-Tetrachloroethane	0.80	U	1.0	0.80	0.21
79-00-5	1,1,2-Trichloroethane	0.80	U	1.0	0.80	0.27
75-34-3	1,1-Dichloroethane	0.80	U	1.0	0.80	0.22
75-35-4	1,1-Dichloroethene	0.80	U	1.0	0.80	0.23
106-93-4	1,2-Dibromoethane	0.40	U	1.0	0.40	0.18
107-06-2	1,2-Dichloroethane	0.40	U	1.0	0.40	0.13
540-59-0	1,2-Dichloroethene, Total	0.40	U	1.0	0.40	0.15
78-87-5	1,2-Dichloropropane	0.40	U	1.0	0.40	0.18
78-93-3	2-Butanone (MEK)	4.0	U	6.0	4.0	2.0
591-78-6	2-Hexanone	4.0	U	5.0	4.0	1.7
108-10-1	4-Methyl-2-pentanone (MIBK)	3.2	U	5.0	3.2	0.98
67-64-1	Acetone	5.1	J	10	6.4	1.9
71-43-2	Benzene	0.40	U	1.0	0.40	0.16
108-86-1	Bromobenzene	0.40	U	1.0	0.40	0.17
74-97-5	Bromochloromethane	0.20	U	1.0	0.20	0.10
75-27-4	Bromodichloromethane	0.40	U	1.0	0.40	0.17
75-25-2	Bromoform	1.0	U	1.0	1.0	0.46
74-83-9	Bromomethane	0.80	U Q	2.0	0.80	0.21
75-15-0	Carbon disulfide	0.80	U	2.0	0.80	0.17
56-23-5	Carbon tetrachloride	0.40	U	2.0	0.40	0.19
108-90-7	Chlorobenzene	0.40	U	1.0	0.40	0.17
75-00-3	Chloroethane	1.6	U	2.0	1.6	0.41
67-66-3	Chloroform	0.40	U	1.0	0.40	0.16
74-87-3	Chloromethane	0.80	U	2.0	0.80	0.30
10061-01-5	cis-1,3-Dichloropropene	0.40	U	1.0	0.40	0.16
124-48-1	Dibromochloromethane	0.40	U	1.0	0.40	0.17
100-41-4	Ethylbenzene	0.40	U	1.0	0.40	0.16
75-09-2	Methylene Chloride	2.0	U M	5.0	2.0	0.94
100-42-5	Styrene	0.80	U	1.0	0.80	0.36
127-18-4	Tetrachloroethene	0.40	U	1.0	0.40	0.20
108-88-3	Toluene	0.40	U	1.0	0.40	0.17
10061-02-6	trans-1,3-Dichloropropene	0.40	U	1.0	0.40	0.19
79-01-6	Trichloroethene	0.40	U	1.0	0.40	0.16
75-01-4	Vinyl chloride	0.20	U	1.5	0.20	0.10
1330-20-7	Xylenes, Total	0.80	U	1.0	0.80	0.19

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Client Sample ID: DET-004-190401-GW Lab Sample ID: 280-123221-7
Matrix: Water Lab File ID: ms9_1671.D
Analysis Method: 8260B Date Collected: 04/29/2019 10:04
Sample wt/vol: 5 (mL) Date Analyzed: 05/09/2019 02:08
Soil Aliquot Vol: _____ Dilution Factor: 1
Soil Extract Vol.: _____ GC Column: RXI-624SilMS ID: 0.25 (mm)
% Moisture: _____ Level: (low/med) Low
Analysis Batch No.: 457521 Units: ug/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	93		81-118
460-00-4	4-Bromofluorobenzene (Surr)	95		85-114
1868-53-7	Dibromofluoromethane (Surr)	98		80-119
2037-26-5	Toluene-d8 (Surr)	99		89-112

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1671.D
 Lims ID: 280-123221-L-7
 Client ID: DET-004-190401-GW
 Sample Type: Client
 Inject. Date: 09-May-2019 02:08:30 ALS Bottle#: 17 Worklist Smp#: 17
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: 280-123221-L-7
 Misc. Info.: 280-0081707-017
 Operator ID: ornelasg Instrument ID: VMS_MS9
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 09-May-2019 21:35:47 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: ornelasg

Date: 09-May-2019 18:08:05

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.286	3.286	0.000	0	2418539	1000.0	
* 1 Fluorobenzene	96	5.093	5.089	0.004	99	2079452	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.616	0.003	86	501060	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	95	809873	50.0	
\$ 6 Dibromofluoromethane (Surr	111	4.587	4.587	0.001	94	483373	48.8	
\$ 7 1,2-Dichloroethane-d4 (Sur	65	4.849	4.853	-0.004	98	598010	46.7	
\$ 8 Toluene-d8 (Surr)	98	6.348	6.348	0.000	93	1985609	49.4	
\$ 9 4-Bromofluorobenzene (Surr	95	8.714	8.714	0.000	91	757253	47.6	
15 Chloromethane	50		1.854				ND	
16 Vinyl chloride	62		1.940				ND	
19 Bromomethane	94		2.210				ND	
20 Chloroethane	64		2.300				ND	
30 1,1-Dichloroethene	96		2.937				ND	
31 Acetone	43	2.952	2.952	0.000	100	30372	5.11	
35 Carbon disulfide	76		3.125				ND	
39 Methylene Chloride	84		3.301				ND	U
41 trans-1,2-Dichloroethene	96		3.503				ND	
46 1,1-Dichloroethane	63		3.826				ND	
50 2-Butanone (MEK)	43		4.208				ND	
52 cis-1,2-Dichloroethene	96		4.234				ND	
59 Chlorobromomethane	128		4.410				ND	
56 Chloroform	83		4.470				ND	
60 1,1,1-Trichloroethane	97		4.616				ND	
63 Carbon tetrachloride	117		4.733				ND	
66 Benzene	78		4.879				ND	
67 1,2-Dichloroethane	62		4.913				ND	
68 Trichloroethene	130		5.370				ND	
72 1,2-Dichloropropane	63		5.576				ND	
75 Dichlorobromomethane	83		5.771				ND	
78 cis-1,3-Dichloropropene	75		6.120				ND	
79 4-Methyl-2-pentanone (MIBK	43		6.217				ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
80 Toluene	91		6.408				ND	
82 trans-1,3-Dichloropropene	75		6.577				ND	
83 1,1,2-Trichloroethane	97		6.757				ND	
85 Tetrachloroethene	164		6.847				ND	
84 2-Hexanone	43		6.922				ND	
87 Chlorodibromomethane	129		7.094				ND	
89 Ethylene Dibromide	107		7.222				ND	
91 Chlorobenzene	112		7.645				ND	
92 Ethylbenzene	106		7.724				ND	
94 m-Xylene & p-Xylene	91		7.840				ND	
95 o-Xylene	106		8.200				ND	
96 Styrene	104		8.215				ND	
97 Bromoform	173		8.399				ND	
101 1,1,2,2-Tetrachloroethane	83		8.830				ND	
105 Bromobenzene	156		8.864				ND	
S 142 Xylenes, Total	106		0.000				ND	
S 141 1,2-Dichloroethene, Total	1		0.000				ND	

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

mv-Cent IS/SS_00002

Amount Added: 5.00

Units: uL

Run Reagent

Report Date: 09-May-2019 21:38:58

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1671.D

Injection Date: 09-May-2019 02:08:30

Instrument ID: VMS_MS9

Operator ID: ornelasg

Lims ID: 280-123221-L-7

Lab Sample ID: 280-123221-7

Worklist Smp#: 17

Client ID: DET-004-190401-GW

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

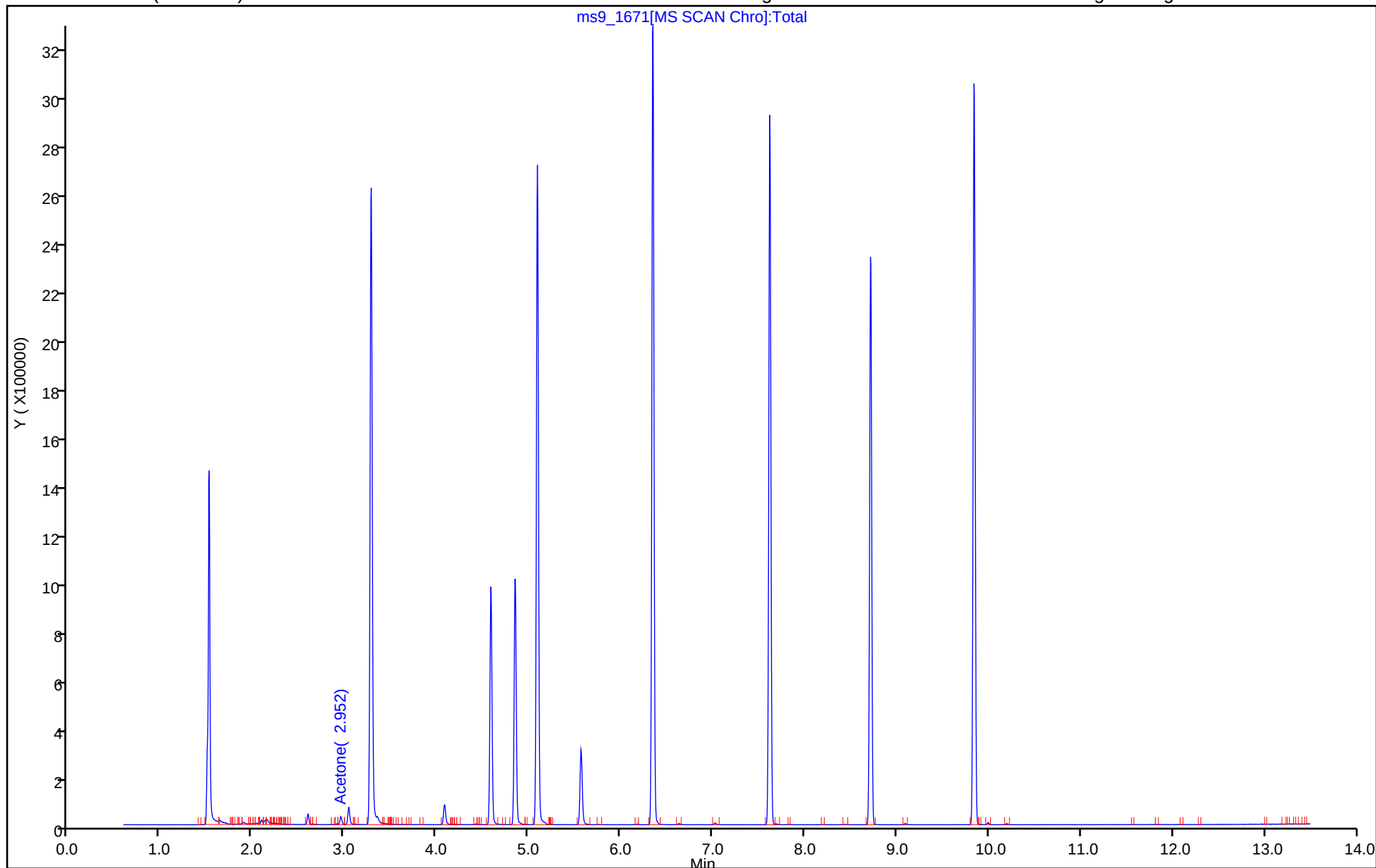
ALS Bottle#: 17

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1671.D
 Lims ID: 280-123221-L-7
 Client ID: DET-004-190401-GW
 Sample Type: Client
 Inject. Date: 09-May-2019 02:08:30 ALS Bottle#: 17 Worklist Smp#: 17
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: 280-123221-L-7
 Misc. Info.: 280-0081707-017
 Operator ID: ornelasg Instrument ID: VMS_MS9
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 09-May-2019 21:35:47 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: ornelasg

Date: 09-May-2019 18:08:05

Compound	Amount Added	Amount Recovered	% Rec.
\$ 6 Dibromofluoromethane (Surr)	50.0	48.8	97.70
\$ 7 1,2-Dichloroethane-d4 (Surr)	50.0	46.7	93.36
\$ 8 Toluene-d8 (Surr)	50.0	49.4	98.75
\$ 9 4-Bromofluorobenzene (Surr)	50.0	47.6	95.28

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1671.D

Injection Date: 09-May-2019 02:08:30

Instrument ID: VMS_MS9

Lims ID: 280-123221-L-7

Lab Sample ID: 280-123221-7

Client ID: DET-004-190401-GW

Operator ID: ornelasg

ALS Bottle#: 17

Worklist Smp#: 17

Purge Vol: 5.000 mL

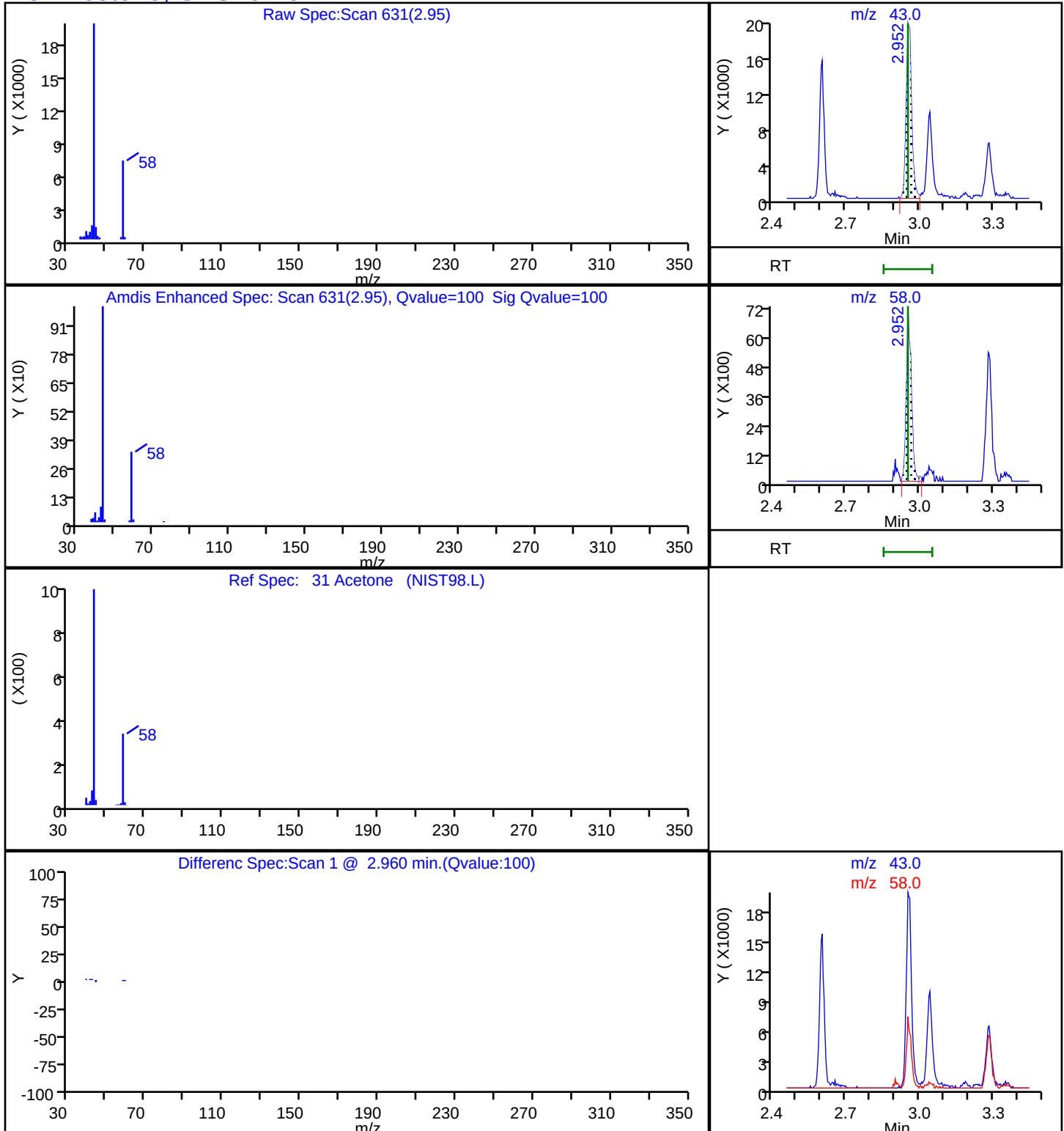
Dil. Factor: 1.0000

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Detector: MS SCAN

31 Acetone, CAS: 67-64-1

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1671.D

Injection Date: 09-May-2019 02:08:30

Instrument ID: VMS_MS9

Lims ID: 280-123221-L-7

Lab Sample ID: 280-123221-7

Client ID: DET-004-190401-GW

Operator ID: ornelasg

ALS Bottle#: 17 Worklist Smp#: 17

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

Method: AQ_VMSMS9_8260

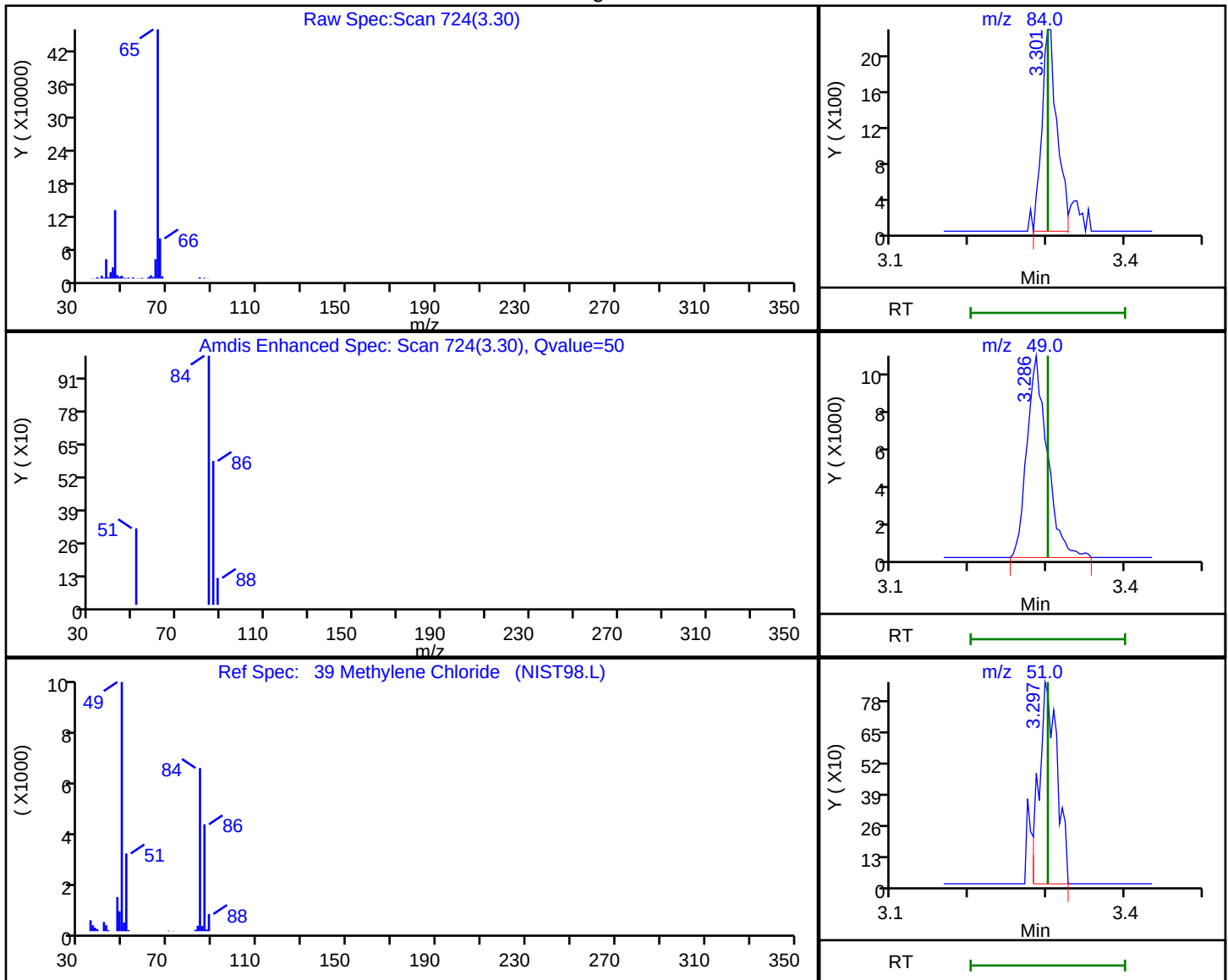
Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Detector: MS SCAN

39 Methylene Chloride, CAS: 75-09-2

Processing Results



RT	Mass	Response	Amount
3.30	84.00	3069	0.151667
3.29	49.00	19333	
3.30	51.00	1366	

Reviewer: ornelasg, 09-May-2019 18:07:59

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 457270

SDG No.: _____

Instrument ID: VMS_MS9 GC Column: RXI-624SilM ID: 0.25(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 05/07/2019 11:39 Calibration End Date: 05/07/2019 14:32 Calibration ID: 36288

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD005 280-457270/18	ms9_1610.D
Level 2	STD01 280-457270/17	ms9_1609.D
Level 3	STD02 280-457270/16	ms9_1608.D
Level 4	STD05 280-457270/15	ms9_1607.D
Level 5	STD10 280-457270/14	ms9_1606.D
Level 6	STD20 280-457270/13	ms9_1605.D
Level 7	STD50 280-457270/12	ms9_1604.D
Level 8	STD75 280-457270/11	ms9_1603.D
Level 9	STD100 280-457270/10	ms9_1602.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5		B	M1	M2								
Dichlorodifluoromethane	0.2667 0.2374	0.2578 0.2504	0.2604 0.2620	0.2414 0.2592	0.2396	Ave		0.2528				4.3		15.0			
Chloromethane	0.2256 0.1637	0.1838 0.1646	0.1802 0.1677	0.1727 0.1654	0.1654	Ave		0.1766			0.1000	11.2		15.0			
Vinyl chloride	0.1823 0.1442	0.1521 0.1482	0.1554 0.1529	0.1521 0.1514	0.1479	Ave		0.1541				7.2		30.0			
Bromomethane	++++ 0.0306	0.0487 0.0344	0.0362 0.0330	0.0385 0.0312	0.0336	Lin2	0.0154	0.0321							0.9930		0.9900
Chloroethane	0.1387 0.0908	0.1060 0.0921	0.1031 0.0923	0.0967 0.0935	0.0932	Lin2	0.0221	0.0911							0.9990		0.9900
Dichlorofluoromethane	0.3927 0.2921	0.3319 0.2994	0.3201 0.3014	0.3037 0.3009	0.2995	Ave		0.3157				9.9		15.0			
Trichlorofluoromethane	0.3151 0.2493	0.2614 0.2657	0.2503 0.2737	0.2569 0.2750	0.2542	Ave		0.2668				7.6		15.0			
2-Chloroethyl vinyl ether	0.1997 0.1673	0.1668 0.1681	0.1660 0.1728	0.1605 0.1722	0.1657	Ave		0.1710				6.6		15.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 457270

SDG No.: _____

Instrument ID: VMS_MS9 GC Column: RXI-624SilM ID: 0.25 (mm) Heated Purge: (Y/N) Y

Calibration Start Date: 05/07/2019 11:39 Calibration End Date: 05/07/2019 14:32 Calibration ID: 36288

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD005 280-457270/18	ms9_1610.D
Level 2	STD01 280-457270/17	ms9_1609.D
Level 3	STD02 280-457270/16	ms9_1608.D
Level 4	STD05 280-457270/15	ms9_1607.D
Level 5	STD10 280-457270/14	ms9_1606.D
Level 6	STD20 280-457270/13	ms9_1605.D
Level 7	STD50 280-457270/12	ms9_1604.D
Level 8	STD75 280-457270/11	ms9_1603.D
Level 9	STD100 280-457270/10	ms9_1602.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5
Dichlorodifluoromethane	FB	Ave	4314 155290	8311 410358	16520 627552	39072 831939	77837	0.500 20.0	1.00 50.0	2.00 75.0	5.00 100	10.0
Chloromethane	FB	Ave	3649 107076	5924 269730	11431 401719	27948 530806	53723	0.500 20.0	1.00 50.0	2.00 75.0	5.00 100	10.0
Vinyl chloride	FB	Ave	2949 94325	4904 242785	9856 366274	24615 485819	48036	0.500 20.0	1.00 50.0	2.00 75.0	5.00 100	10.0
Bromomethane	FB	Lin2	++++ 20025	1571 56445	2297 79005	6233 99993	10906	++++ 20.0	1.00 50.0	2.00 75.0	5.00 100	10.0
Chloroethane	FB	Lin2	2244 59401	3418 150945	6543 221165	15649 300015	30264	0.500 20.0	1.00 50.0	2.00 75.0	5.00 100	10.0
Dichlorofluoromethane	FB	Ave	6351 191078	10698 490638	20304 721751	49147 965765	97301	0.500 20.0	1.00 50.0	2.00 75.0	5.00 100	10.0
Trichlorofluoromethane	FB	Ave	5097 163042	8427 435378	15879 655387	41584 882564	82584	0.500 20.0	1.00 50.0	2.00 75.0	5.00 100	10.0
2-Chloroethyl vinyl ether	FB	Ave	3230 109398	5376 275487	10533 413914	25983 552654	53827	0.500 20.0	1.00 50.0	2.00 75.0	5.00 100	10.0

Curve Type Legend:

Ave = Average ISTD
Lin2 = Linear 1/conc^2 ISTD

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1602.D
 Lims ID: STD100
 Client ID:
 Sample Type: IC Calib Level: 9
 Inject. Date: 07-May-2019 11:39:30 ALS Bottle#: 12 Worklist Smp#: 10
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: STD100
 Operator ID: newcomer Instrument ID: VMS_MS9
 Sublist: chrom-AQ_VMSMS9_8260*sub51
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 08-May-2019 10:05:59 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0338

First Level Reviewer: newcomer

Date: 07-May-2019 12:28:48

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.290	3.290	0.000	0	1925766	1000.0	1000.0	
* 1 Fluorobenzene	96	5.093	5.093	0.000	98	1604854	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.619	0.000	87	381305	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.838	9.838	0.000	96	601724	50.0	50.0	
13 Dichlorodifluoromethane	85	1.670	1.670	0.000	100	831939	100.0	102.5	
15 Chloromethane	50	1.854	1.854	0.000	99	530806	100.0	93.7	
16 Vinyl chloride	62	1.944	1.944	0.000	98	485819	100.0	98.3	
19 Bromomethane	94	2.210	2.210	0.000	90	99993	100.0	96.4	
20 Chloroethane	64	2.300	2.300	0.000	99	300015	100.0	102.3	
21 Dichlorofluoromethane	67	2.487	2.487	0.000	97	965765	100.0	95.3	
22 Trichlorofluoromethane	101	2.517	2.517	0.000	98	882564	100.0	103.0	
76 2-Chloroethyl vinyl ether	63	5.970	5.970	0.000	92	552654	100.0	100.7	

Reagents:

mv-Cent IS_00002

Amount Added: 50.00

Units: uL

MV-Gas A_00023

Amount Added: 100.00

Units: uL

Report Date: 08-May-2019 10:05:59

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1602.D

Injection Date: 07-May-2019 11:39:30

Instrument ID: VMS_MS9

Operator ID: newcomer

Lims ID: STD100

Worklist Smp#: 10

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

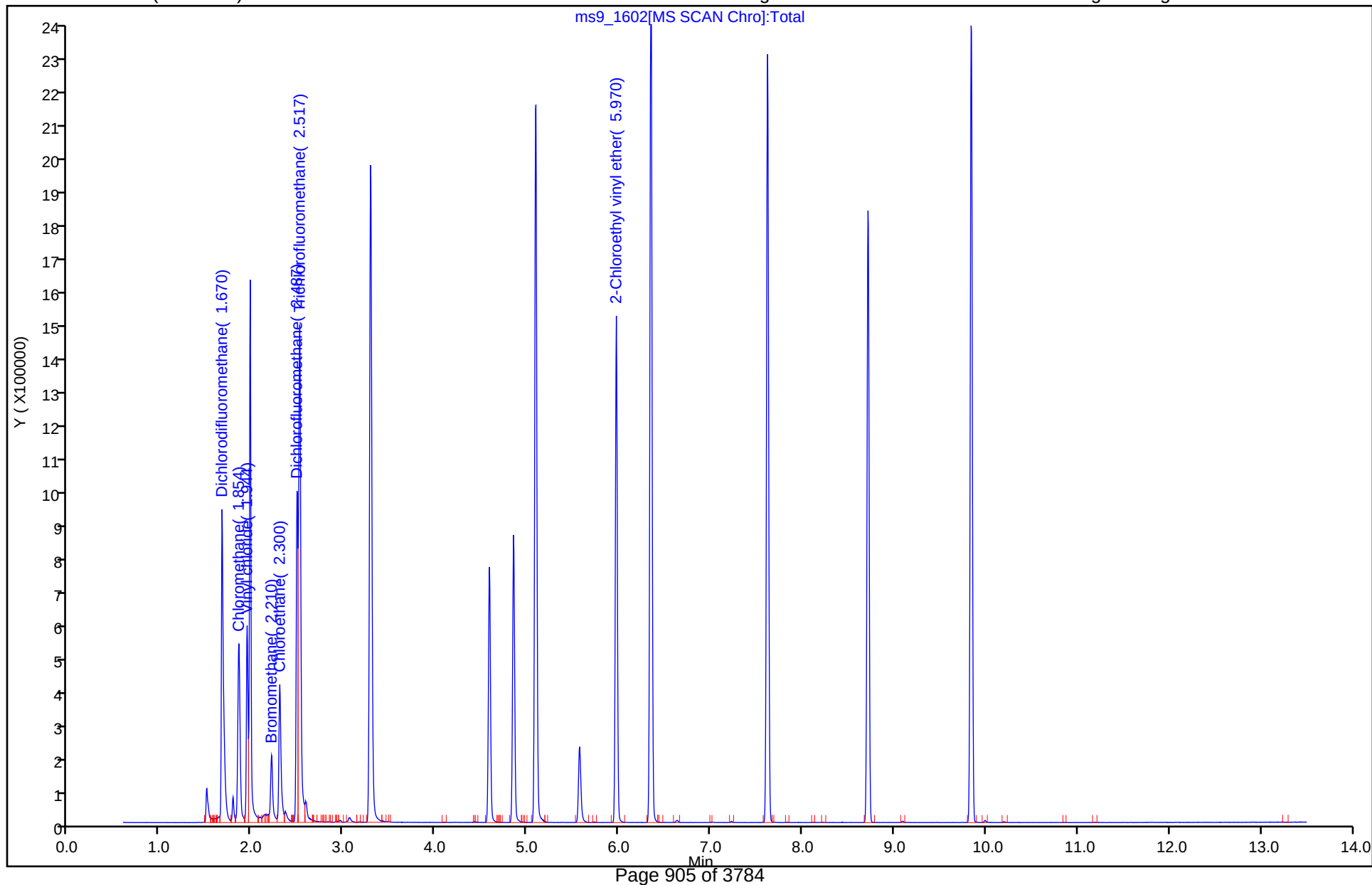
ALS Bottle#: 12

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1603.D
 Lims ID: STD75
 Client ID:
 Sample Type: IC Calib Level: 8
 Inject. Date: 07-May-2019 12:01:30 ALS Bottle#: 13 Worklist Smp#: 11
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: STD75
 Operator ID: newcomer Instrument ID: VMS_MS9
 Sublist: chrom-AQ_VMSMS9_8260*sub51
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 08-May-2019 10:06:01 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0338

First Level Reviewer: newcomer

Date: 07-May-2019 12:32:41

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.290	3.290	0.000	0	2041797	1000.0	1000.0	
* 1 Fluorobenzene	96	5.093	5.093	0.000	98	1596611	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.619	0.000	87	382761	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	96	621999	50.0	50.0	
13 Dichlorodifluoromethane	85	1.670	1.670	0.000	100	627552	75.0	77.7	
15 Chloromethane	50	1.854	1.854	0.000	99	401719	75.0	71.3	
16 Vinyl chloride	62	1.944	1.944	0.000	98	366274	75.0	74.5	
19 Bromomethane	94	2.214	2.214	0.000	90	79005	75.0	76.5	
20 Chloroethane	64	2.300	2.300	0.000	99	221165	75.0	75.7	
21 Dichlorofluoromethane	67	2.487	2.487	0.000	97	721751	75.0	71.6	
22 Trichlorofluoromethane	101	2.517	2.517	0.000	98	655387	75.0	76.9	
76 2-Chloroethyl vinyl ether	63	5.970	5.970	0.000	92	413914	75.0	75.8	

Reagents:

mv-Cent IS_00002 Amount Added: 50.00 Units: uL
 MV-Gas A_00023 Amount Added: 75.00 Units: uL

Report Date: 08-May-2019 10:06:02

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1603.D

Injection Date: 07-May-2019 12:01:30

Instrument ID: VMS_MS9

Operator ID: newcomer

Lims ID: STD75

Worklist Smp#: 11

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

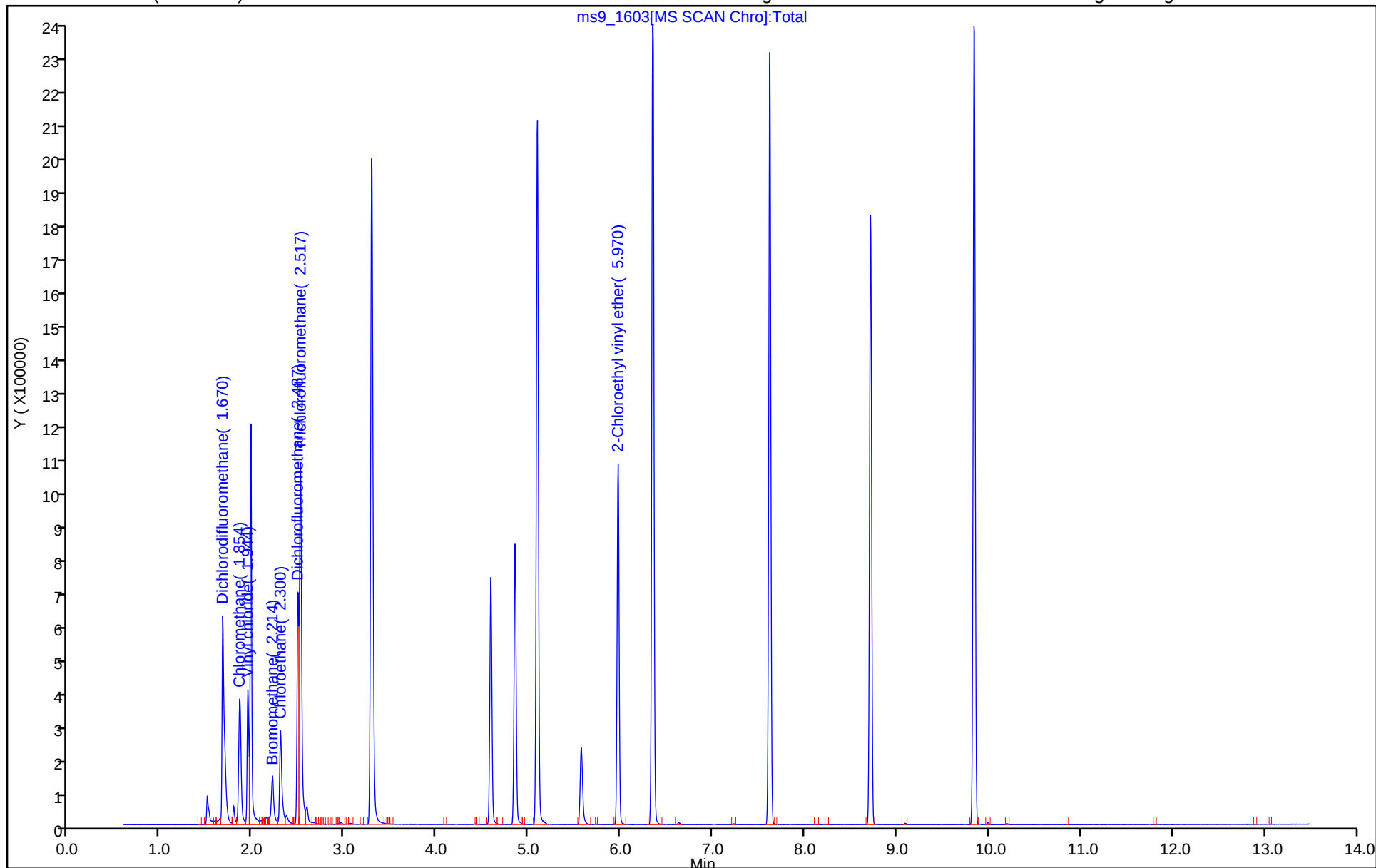
ALS Bottle#: 13

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1604.D
 Lims ID: STD50
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 07-May-2019 12:22:30 ALS Bottle#: 14 Worklist Smp#: 12
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: STD50
 Operator ID: newcomer Instrument ID: VMS_MS9
 Sublist: chrom-AQ_VMSMS9_8260*sub51
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 08-May-2019 10:06:04 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0338

First Level Reviewer: newcomer

Date: 07-May-2019 12:41:46

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.290	3.290	0.000	0	1921606	1000.0	1000.0	
* 1 Fluorobenzene	96	5.093	5.093	0.000	98	1638642	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.619	0.000	87	388032	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.839	9.839	0.000	96	623558	50.0	50.0	
13 Dichlorodifluoromethane	85	1.670	1.670	0.000	99	410358	50.0	49.5	
15 Chloromethane	50	1.854	1.854	0.000	99	269730	50.0	46.6	
16 Vinyl chloride	62	1.944	1.944	0.000	98	242785	50.0	48.1	
19 Bromomethane	94	2.214	2.214	0.000	90	56445	50.0	53.1	
20 Chloroethane	64	2.300	2.300	0.000	99	150945	50.0	50.3	
21 Dichlorofluoromethane	67	2.487	2.487	0.000	97	490638	50.0	47.4	
22 Trichlorofluoromethane	101	2.517	2.517	0.000	98	435378	50.0	49.8	
76 2-Chloroethyl vinyl ether	63	5.970	5.970	0.000	92	275487	50.0	49.2	

Reagents:

mv-Cent IS_00002

Amount Added: 50.00

Units: uL

MV-Gas A_00023

Amount Added: 50.00

Units: uL

Report Date: 08-May-2019 10:06:04

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1604.D

Injection Date: 07-May-2019 12:22:30

Instrument ID: VMS_MS9

Operator ID: newcomer

Lims ID: STD50

Worklist Smp#: 12

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

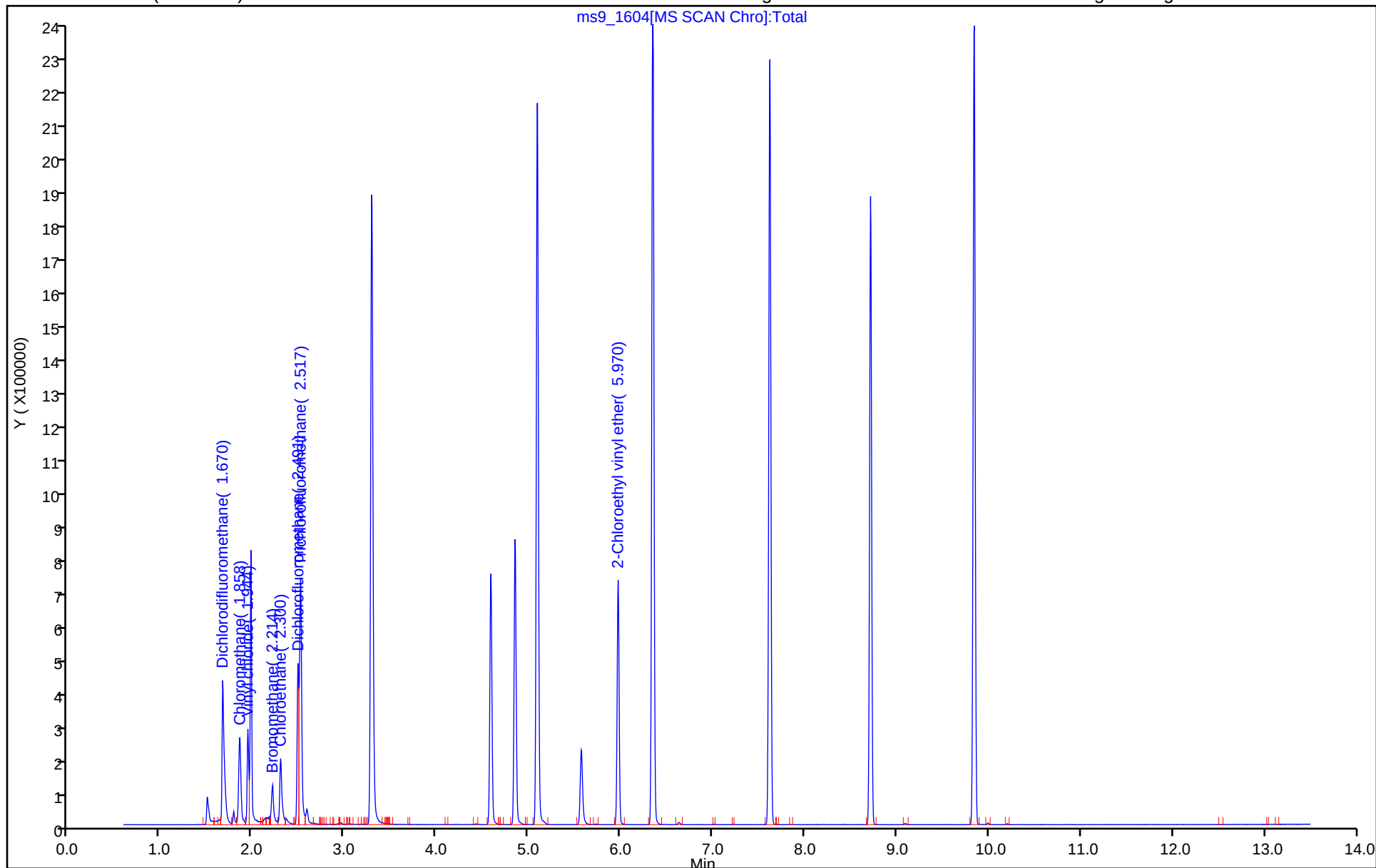
ALS Bottle#: 14

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1605.D
 Lims ID: STD20
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 07-May-2019 12:44:30 ALS Bottle#: 15 Worklist Smp#: 13
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: STD20
 Operator ID: newcomer Instrument ID: VMS_MS9
 Sublist: chrom-AQ_VMSMS9_8260*sub51
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 08-May-2019 10:06:06 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0338

First Level Reviewer: newcomer

Date: 07-May-2019 13:35:40

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.290	3.290	0.000	0	1997863	1000.0	1000.0	
* 1 Fluorobenzene	96	5.089	5.089	0.000	98	1635137	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.619	0.000	87	388731	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	96	622073	50.0	50.0	
13 Dichlorodifluoromethane	85	1.670	1.670	0.000	99	155290	20.0	18.8	
15 Chloromethane	50	1.854	1.854	0.000	99	107076	20.0	18.5	
16 Vinyl chloride	62	1.944	1.944	0.000	97	94325	20.0	18.7	
19 Bromomethane	94	2.210	2.210	0.000	91	20025	20.0	18.6	
20 Chloroethane	64	2.300	2.300	0.000	98	59401	20.0	19.7	
21 Dichlorofluoromethane	67	2.487	2.487	0.000	97	191078	20.0	18.5	
22 Trichlorofluoromethane	101	2.517	2.517	0.000	98	163042	20.0	18.7	
76 2-Chloroethyl vinyl ether	63	5.970	5.970	0.000	93	109398	20.0	19.6	

Reagents:

mv-Cent IS_00002 Amount Added: 50.00 Units: uL
 MV-Gas A_00023 Amount Added: 20.00 Units: uL

Report Date: 08-May-2019 10:06:07

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1605.D

Injection Date: 07-May-2019 12:44:30

Instrument ID: VMS_MS9

Operator ID: newcomer

Lims ID: STD20

Worklist Smp#: 13

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

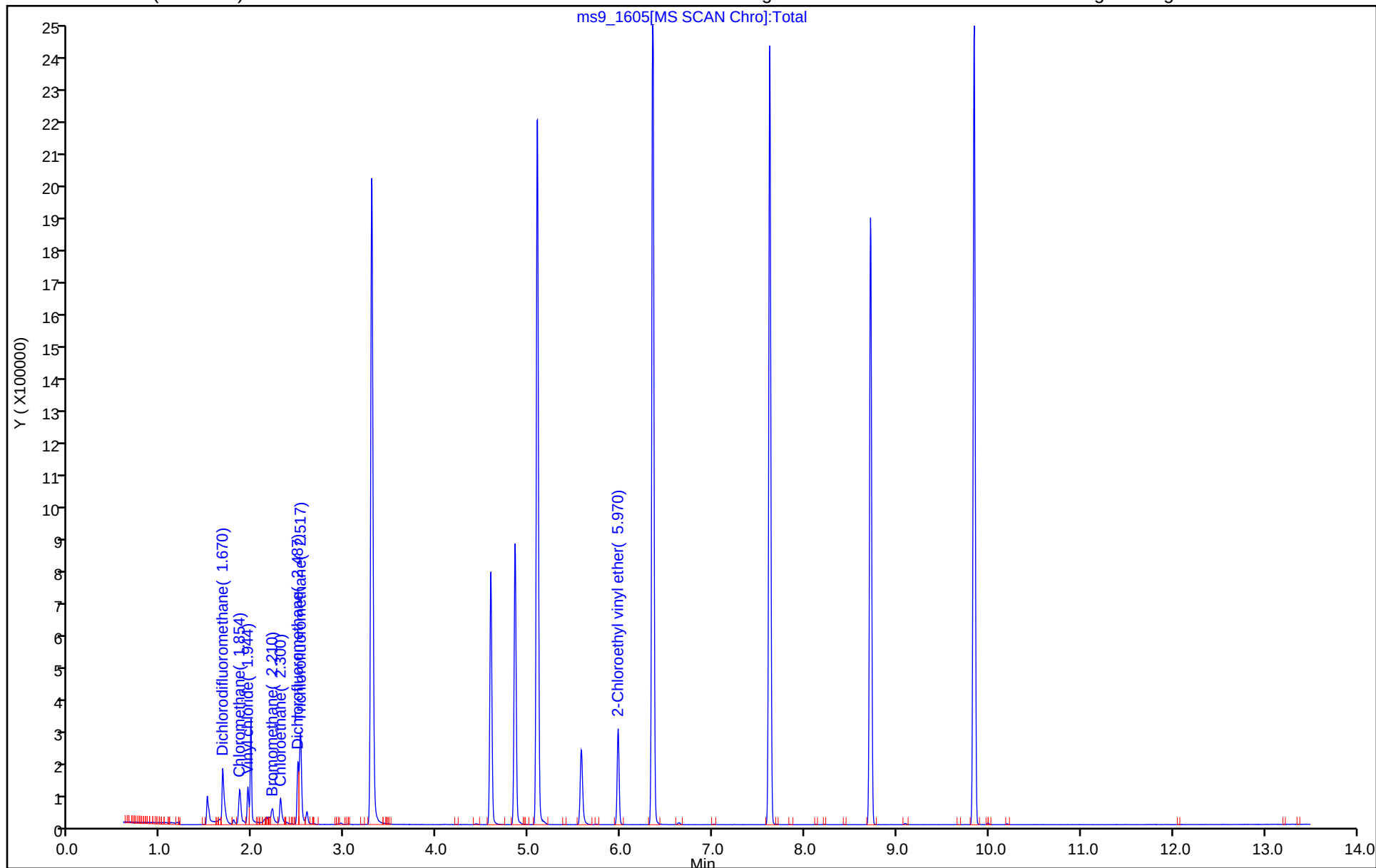
ALS Bottle#: 15

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1606.D
 Lims ID: STD10
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 07-May-2019 13:05:30 ALS Bottle#: 16 Worklist Smp#: 14
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: STD10
 Operator ID: newcomer Instrument ID: VMS_MS9
 Sublist: chrom-AQ_VMSMS9_8260*sub51
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 08-May-2019 10:06:09 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0338

First Level Reviewer: newcomer

Date: 07-May-2019 13:49:13

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.290	3.290	0.000	0	2038276	1000.0	1000.0	
* 1 Fluorobenzene	96	5.093	5.093	0.000	98	1624256	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.619	0.000	87	387990	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	96	625115	50.0	50.0	
13 Dichlorodifluoromethane	85	1.670	1.670	0.000	99	77837	10.0	9.48	
15 Chloromethane	50	1.858	1.858	0.000	98	53723	10.0	9.37	
16 Vinyl chloride	62	1.944	1.944	0.000	98	48036	10.0	9.60	
19 Bromomethane	94	2.214	2.214	0.000	89	10906	10.0	9.97	
20 Chloroethane	64	2.300	2.300	0.000	99	30264	10.0	9.98	
21 Dichlorofluoromethane	67	2.487	2.487	0.000	96	97301	10.0	9.49	
22 Trichlorofluoromethane	101	2.514	2.514	0.000	98	82584	10.0	9.53	
76 2-Chloroethyl vinyl ether	63	5.970	5.970	0.000	93	53827	10.0	9.69	

Reagents:

mv-Cent IS_00002

Amount Added: 50.00

Units: uL

MV-Gas A_00023

Amount Added: 10.00

Units: uL

Report Date: 08-May-2019 10:06:09

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1606.D

Injection Date: 07-May-2019 13:05:30

Instrument ID: VMS_MS9

Operator ID: newcomer

Lims ID: STD10

Worklist Smp#: 14

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

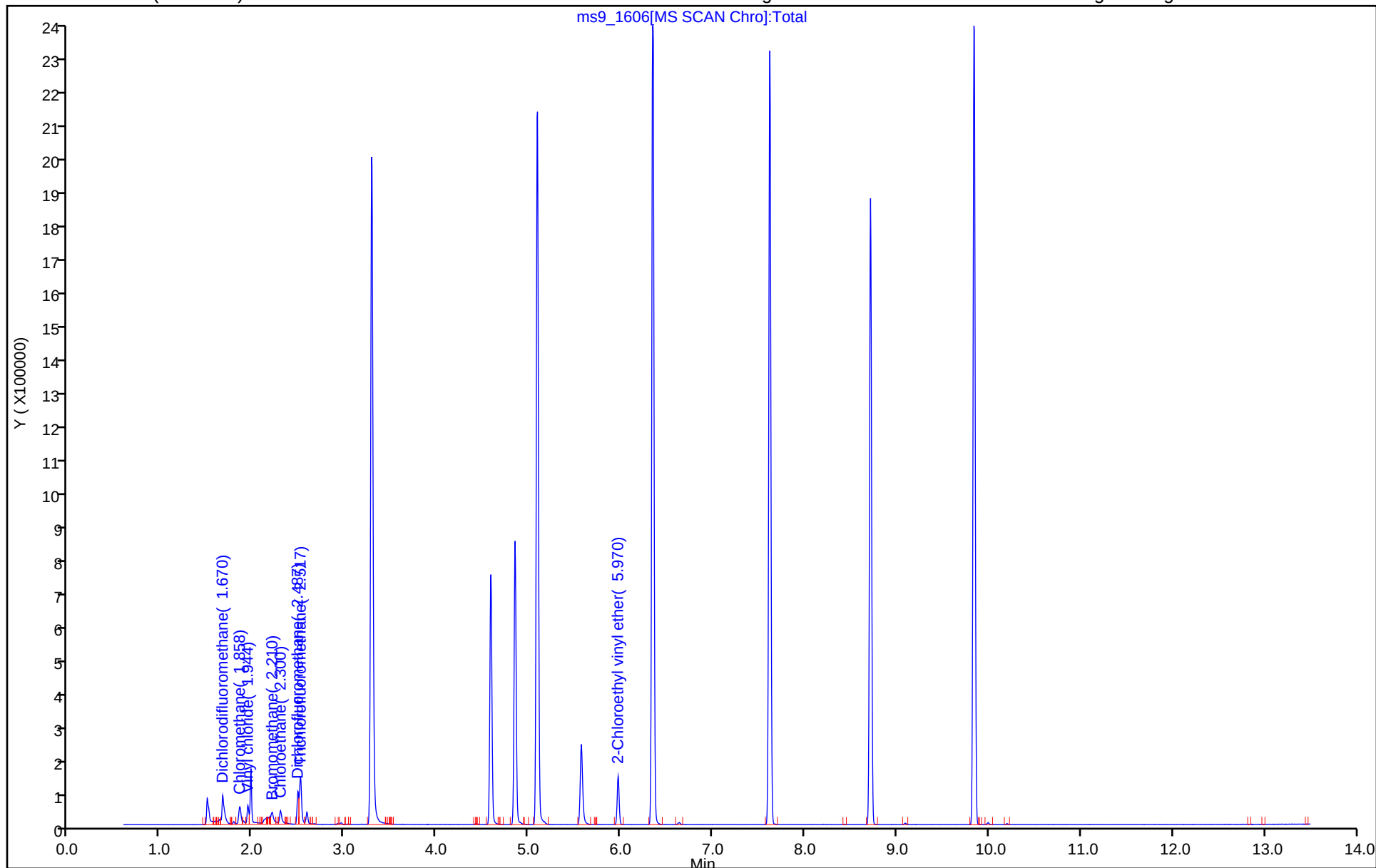
ALS Bottle#: 16

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1607.D
 Lims ID: STD05
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 07-May-2019 13:27:30 ALS Bottle#: 17 Worklist Smp#: 15
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: STD05
 Operator ID: newcomer Instrument ID: VMS_MS9
 Sublist: chrom-AQ_VMSMS9_8260*sub51
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 08-May-2019 10:06:11 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0338

First Level Reviewer: newcomer

Date: 07-May-2019 14:04:54

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.290	3.290	0.000	0	1984182	1000.0	1000.0	
* 1 Fluorobenzene	96	5.093	5.093	0.000	98	1618469	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.619	0.000	87	386895	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	96	637072	50.0	50.0	
13 Dichlorodifluoromethane	85	1.670	1.670	0.000	99	39072	5.00	4.78	
15 Chloromethane	50	1.858	1.858	0.000	99	27948	5.00	4.89	
16 Vinyl chloride	62	1.944	1.944	0.000	98	24615	5.00	4.94	
19 Bromomethane	94	2.214	2.214	0.000	92	6233	5.00	5.51	
20 Chloroethane	64	2.300	2.300	0.000	98	15649	5.00	5.06	
21 Dichlorofluoromethane	67	2.487	2.487	0.000	97	49147	5.00	4.81	
22 Trichlorofluoromethane	101	2.517	2.517	0.000	98	41584	5.00	4.81	
76 2-Chloroethyl vinyl ether	63	5.966	5.966	0.000	93	25983	5.00	4.69	

Reagents:

mv-Cent IS_00002 Amount Added: 50.00 Units: uL
 MV-Gas A_00023 Amount Added: 5.00 Units: uL

Report Date: 08-May-2019 10:06:12

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1607.D

Injection Date: 07-May-2019 13:27:30

Instrument ID: VMS_MS9

Operator ID: newcomer

Lims ID: STD05

Worklist Smp#: 15

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

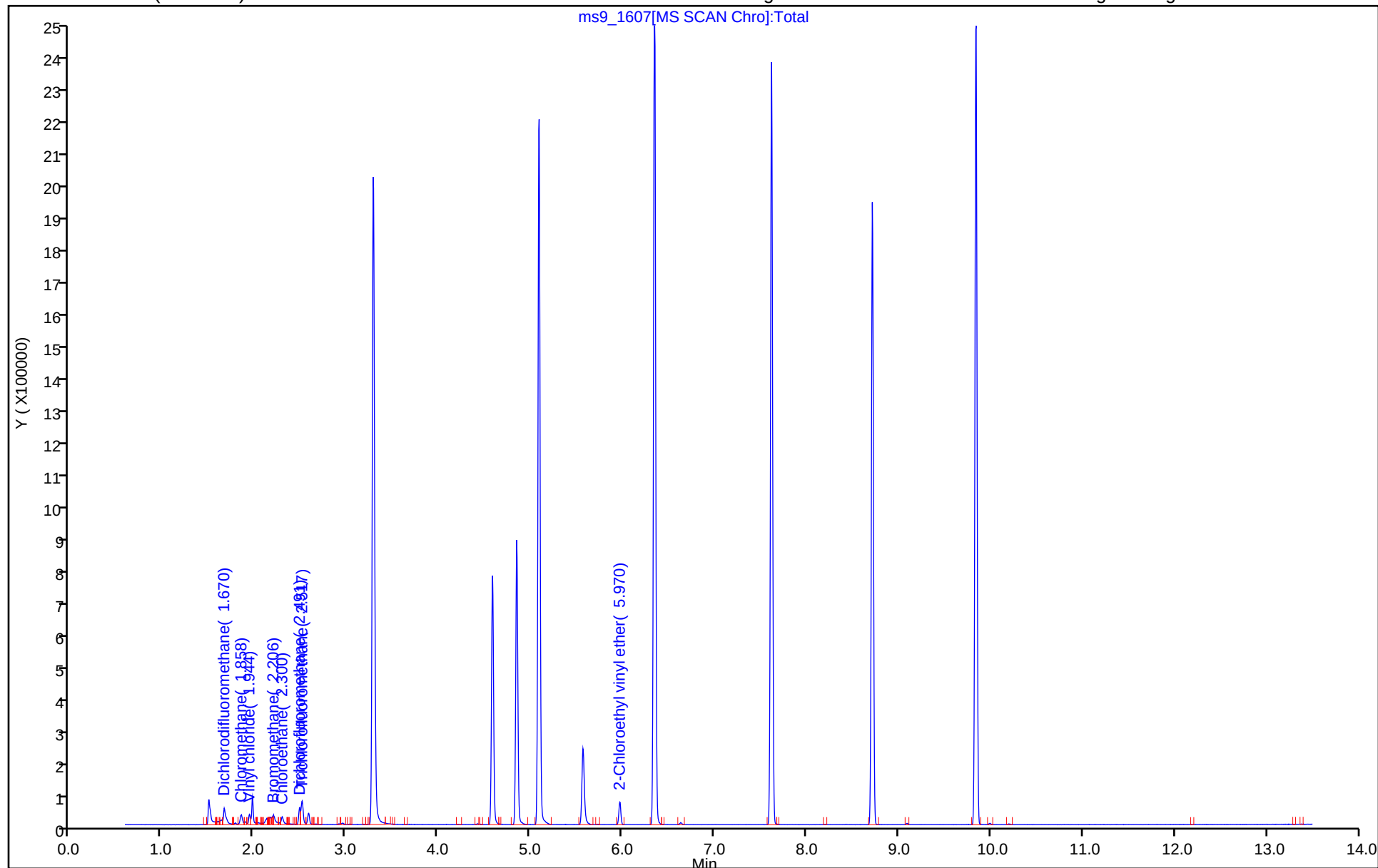
ALS Bottle#: 17

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1608.D
 Lims ID: STD02
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 07-May-2019 13:49:30 ALS Bottle#: 18 Worklist Smp#: 16
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: STD02
 Operator ID: newcomer Instrument ID: VMS_MS9
 Sublist: chrom-AQ_VMSMS9_8260*sub51
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 08-May-2019 10:06:14 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0338

First Level Reviewer: newcomer

Date: 07-May-2019 14:44:09

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.290	3.290	0.000	0	1884632	1000.0	1000.0	
* 1 Fluorobenzene	96	5.093	5.093	0.000	98	1585912	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.619	0.000	87	381978	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.839	9.839	0.000	96	623118	50.0	50.0	
13 Dichlorodifluoromethane	85	1.670	1.670	0.000	99	16520	2.00	2.06	
15 Chloromethane	50	1.850	1.850	0.000	98	11431	2.00	2.04	
16 Vinyl chloride	62	1.944	1.944	0.000	97	9856	2.00	2.02	
19 Bromomethane	94	2.210	2.210	0.000	93	2297	2.00	1.78	
20 Chloroethane	64	2.304	2.304	0.000	98	6543	2.00	2.02	
21 Dichlorofluoromethane	67	2.487	2.487	0.000	97	20304	2.00	2.03	
22 Trichlorofluoromethane	101	2.517	2.517	0.000	98	15879	2.00	1.88	
76 2-Chloroethyl vinyl ether	63	5.970	5.970	0.000	92	10533	2.00	1.94	

Reagents:

mv-Cent IS_00002

Amount Added: 50.00

Units: uL

MV-Gas A_00023

Amount Added: 2.00

Units: uL

Report Date: 08-May-2019 10:06:15

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1608.D

Injection Date: 07-May-2019 13:49:30

Instrument ID: VMS_MS9

Operator ID: newcomer

Lims ID: STD02

Worklist Smp#: 16

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

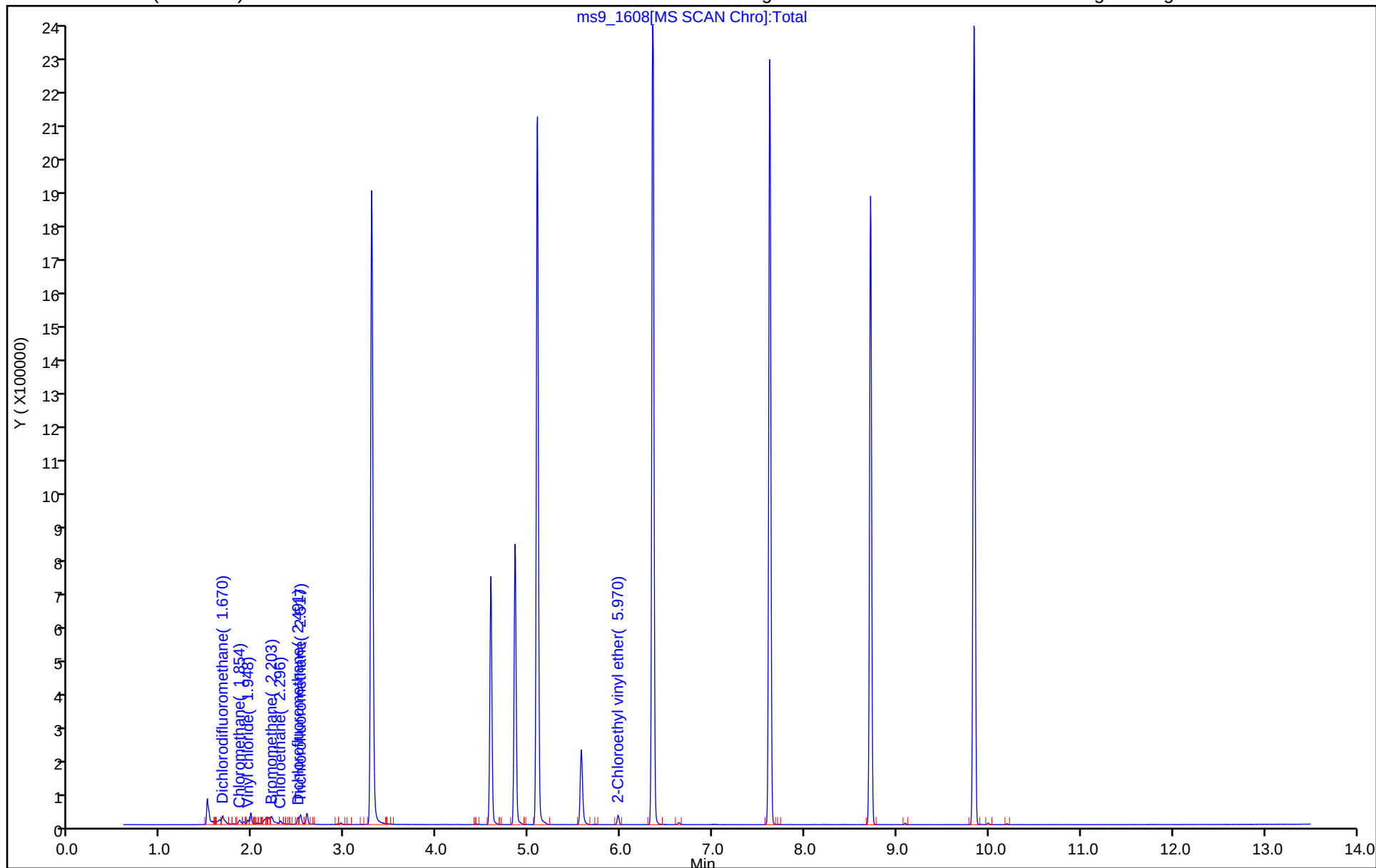
ALS Bottle#: 18

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1609.D
 Lims ID: STD01
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 07-May-2019 14:10:30 ALS Bottle#: 19 Worklist Smp#: 17
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: STD01
 Operator ID: newcomer Instrument ID: VMS_MS9
 Sublist: chrom-AQ_VMSMS9_8260*sub51
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 08-May-2019 10:06:17 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0338

First Level Reviewer: newcomer

Date: 07-May-2019 14:47:31

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.293	3.293	0.000	0	1993176	1000.0	1000.0	
* 1 Fluorobenzene	96	5.093	5.093	0.000	98	1611610	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.619	0.000	87	386104	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	96	620343	50.0	50.0	
13 Dichlorodifluoromethane	85	1.674	1.674	0.000	98	8311	1.00	1.02	
15 Chloromethane	50	1.854	1.854	0.000	98	5924	1.00	1.04	
16 Vinyl chloride	62	1.948	1.948	0.000	96	4904	1.00	0.9876	
19 Bromomethane	94	2.217	2.217	0.000	39	1571	1.00	1.04	M
20 Chloroethane	64	2.300	2.300	0.000	97	3418	1.00	0.9205	
21 Dichlorofluoromethane	67	2.491	2.491	0.000	97	10698	1.00	1.05	
22 Trichlorofluoromethane	101	2.517	2.517	0.000	98	8427	1.00	0.9798	
76 2-Chloroethyl vinyl ether	63	5.970	5.970	0.000	92	5376	1.00	0.9753	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

mv-Cent IS_00002 Amount Added: 50.00 Units: uL
 MV-Gas A_00023 Amount Added: 1.00 Units: uL

Report Date: 08-May-2019 10:06:18

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1609.D

Injection Date: 07-May-2019 14:10:30

Instrument ID: VMS_MS9

Operator ID: newcomer

Lims ID: STD01

Worklist Smp#: 17

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

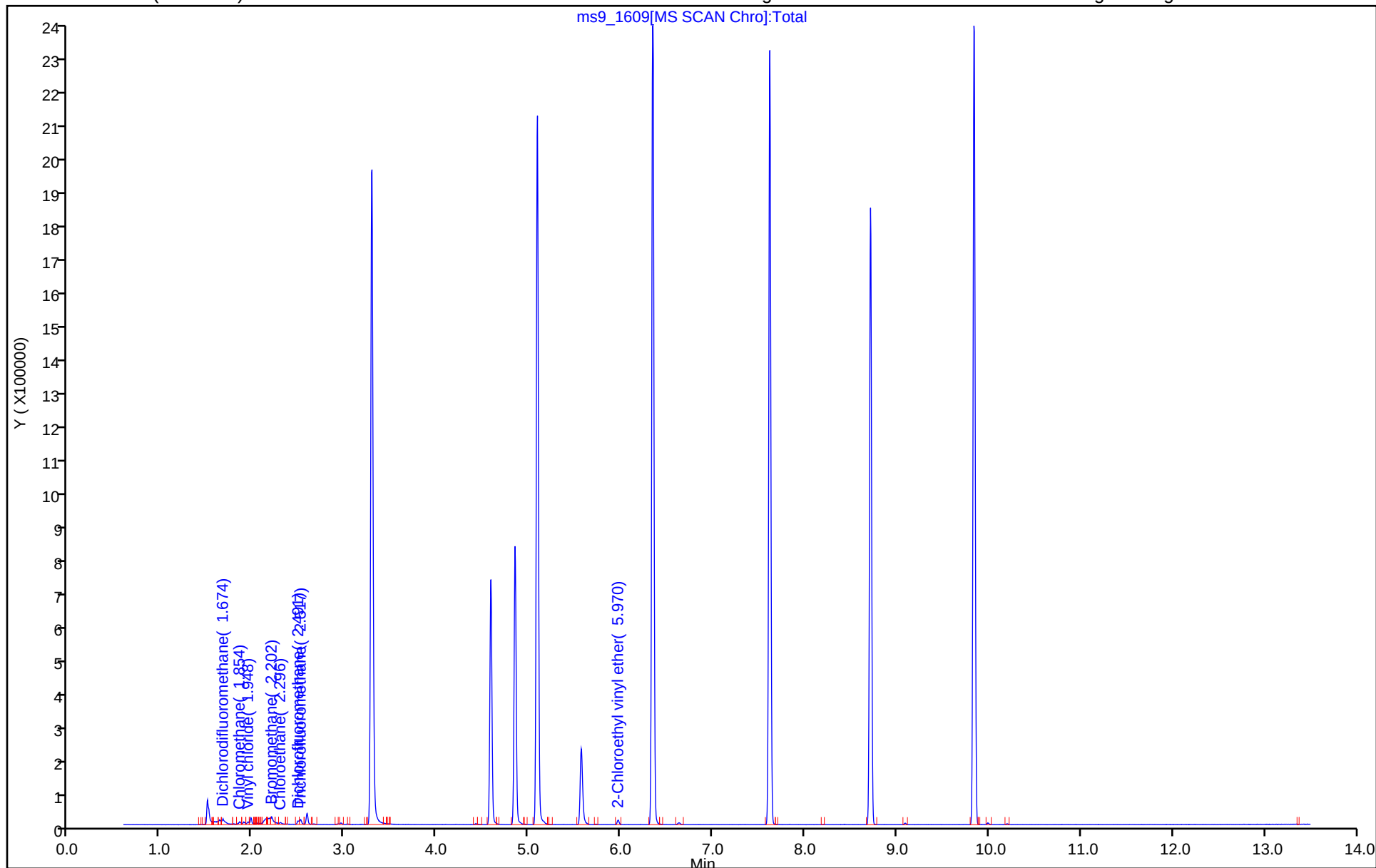
ALS Bottle#: 19

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver

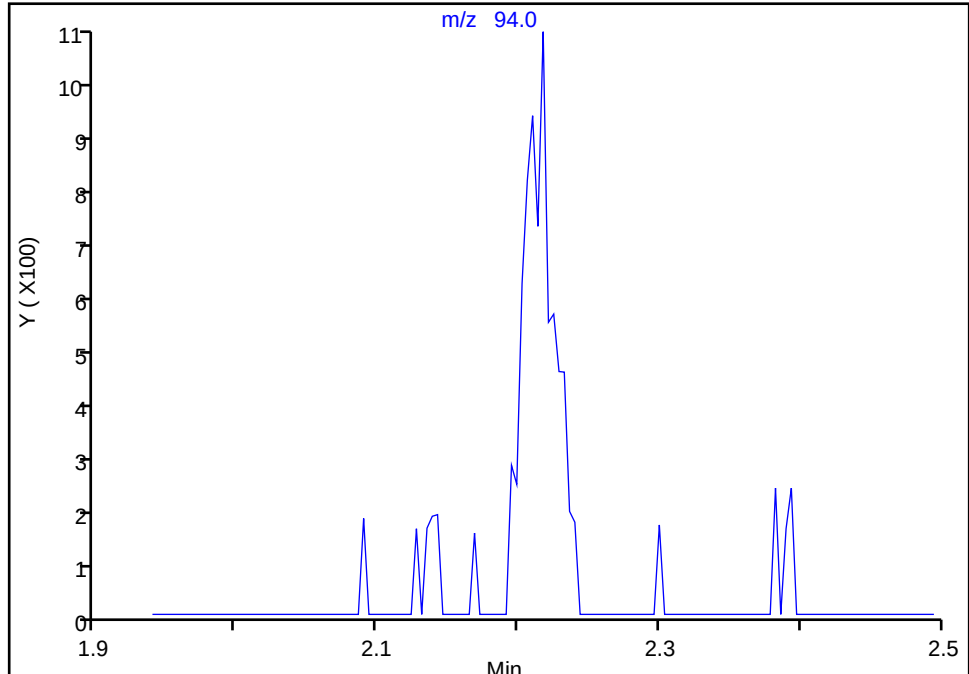
Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1609.D
Injection Date: 07-May-2019 14:10:30 Instrument ID: VMS_MS9
Lims ID: STD01
Client ID:
Operator ID: newcomer ALS Bottle#: 19 Worklist Smp#: 17
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: AQ_VMSMS9_8260 Limit Group: MSV - 8260B Water and Solid
Column: DB-624 (0.25 mm) Detector: MS SCAN

19 Bromomethane, CAS: 74-83-9

Signal: 1

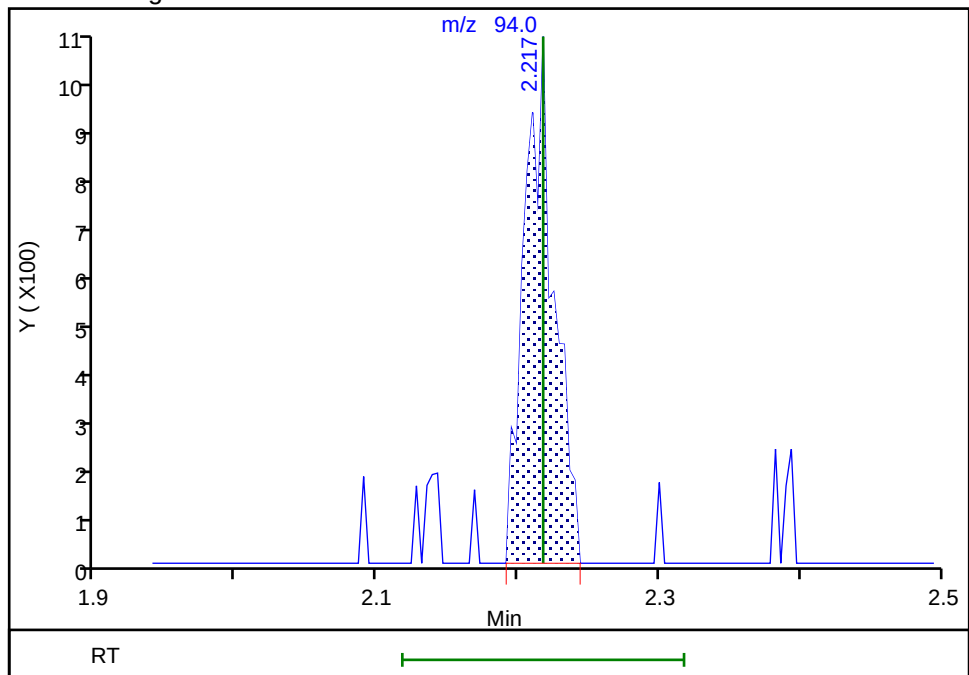
Not Detected
Expected RT: 2.22

Processing Integration Results



Manual Integration Results

RT: 2.22
Area: 1571
Amount: 1.038483
Amount Units: ug/l



Reviewer: newcomer, 07-May-2019 14:44:36
Audit Action: Manually Integrated

Audit Reason: Assign Peak

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1610.D
 Lims ID: STD005
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 07-May-2019 14:32:30 ALS Bottle#: 20 Worklist Smp#: 18
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: STD005
 Operator ID: newcomer Instrument ID: VMS_MS9
 Sublist: chrom-AQ_VMSMS9_8260*sub51
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 08-May-2019 10:06:21 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0338

First Level Reviewer: newcomer

Date: 07-May-2019 14:48:02

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.290	3.290	0.000	0	1959139	1000.0	1000.0	
* 1 Fluorobenzene	96	5.093	5.093	0.000	98	1617408	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.619	0.000	87	387261	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	96	620847	50.0	50.0	
13 Dichlorodifluoromethane	85	1.670	1.670	0.000	98	4314	0.5000	0.5276	
15 Chloromethane	50	1.854	1.854	0.000	97	3649	0.5000	0.6389	
16 Vinyl chloride	62	1.940	1.940	0.000	94	2949	0.5000	0.5918	
19 Bromomethane	94	2.210	2.210	0.000	30	1167	0.5000	0.6445	M
20 Chloroethane	64	2.300	2.300	0.000	95	2244	0.5000	0.5181	
21 Dichlorofluoromethane	67	2.491	2.491	0.000	96	6351	0.5000	0.6218	
22 Trichlorofluoromethane	101	2.521	2.521	0.000	95	5097	0.5000	0.5905	
76 2-Chloroethyl vinyl ether	63	5.974	5.974	0.000	90	3230	0.5000	0.5839	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

mv-Cent IS_00002 Amount Added: 50.00 Units: uL
 MV-Gas A_00023 Amount Added: 0.50 Units: uL

Report Date: 08-May-2019 10:06:21

Chrom Revision: 2.3 03-May-2019 15:52:00

Euofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1610.D

Injection Date: 07-May-2019 14:32:30

Instrument ID: VMS_MS9

Operator ID: newcomer

Lims ID: STD005

Worklist Smp#: 18

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

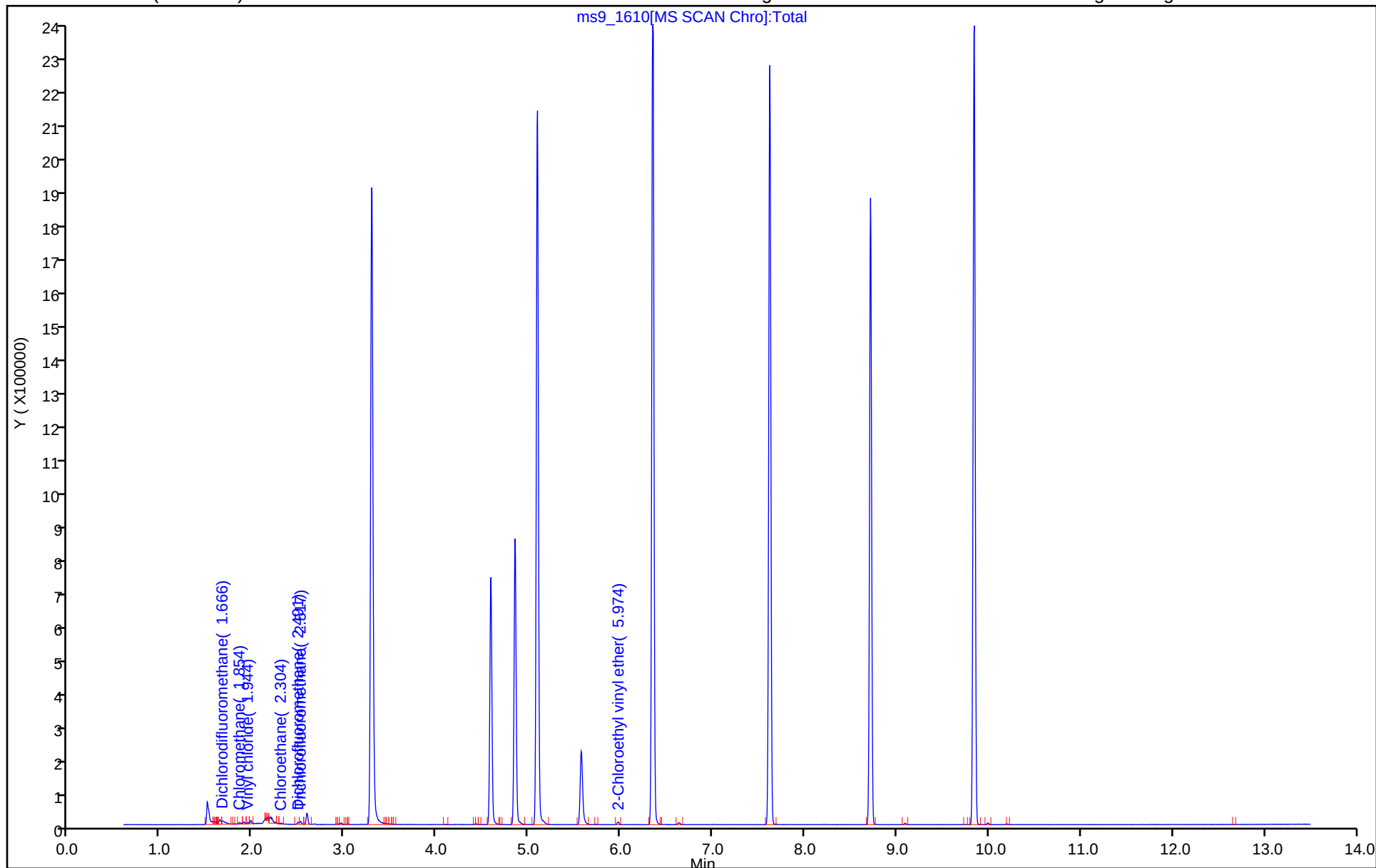
ALS Bottle#: 20

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver

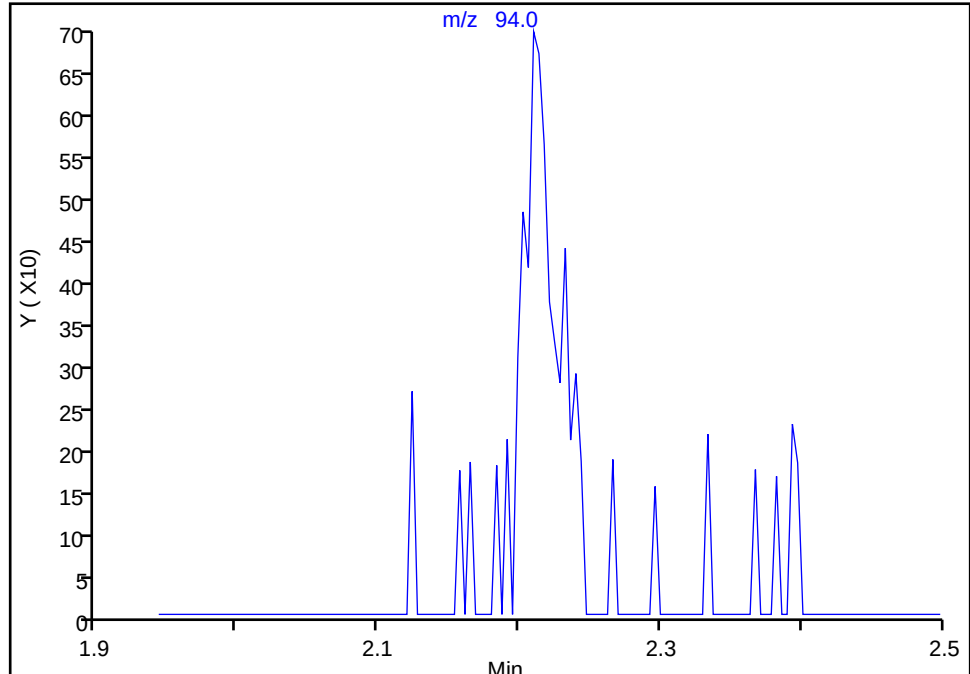
Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1610.D
Injection Date: 07-May-2019 14:32:30 Instrument ID: VMS_MS9
Lims ID: STD005
Client ID:
Operator ID: newcomer ALS Bottle#: 20 Worklist Smp#: 18
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: AQ_VMSMS9_8260 Limit Group: MSV - 8260B Water and Solid
Column: DB-624 (0.25 mm) Detector: MS SCAN

19 Bromomethane, CAS: 74-83-9

Signal: 1

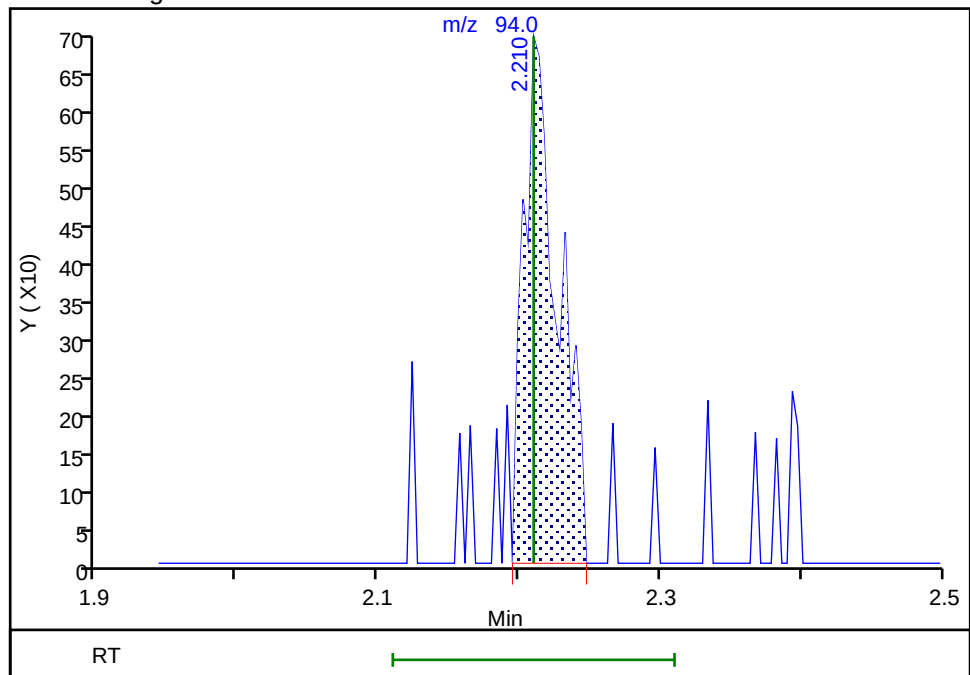
Not Detected
Expected RT: 2.21

Processing Integration Results



Manual Integration Results

RT: 2.21
Area: 1167
Amount: 0.644524
Amount Units: ug/l



Reviewer: newcomer, 07-May-2019 14:47:46
Audit Action: Manually Integrated

Audit Reason: Assign Peak

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 457270

SDG No.: _____

Instrument ID: VMS_MS9 GC Column: RXI-624SilM ID: 0.25(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 05/07/2019 15:15 Calibration End Date: 05/07/2019 18:08 Calibration ID: 36290

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD005 280-457270/28	ms9_1620.D
Level 2	STD01 280-457270/27	ms9_1619.D
Level 3	STD02 280-457270/26	ms9_1618.D
Level 4	STD05 280-457270/25	ms9_1617.D
Level 5	STD10 280-457270/24	ms9_1616.D
Level 6	STD20 280-457270/23	ms9_1615.D
Level 7	ICIS 280-457270/22	ms9_1614.D
Level 8	STD100 280-457270/21	ms9_1613.D
Level 9	STD200 280-457270/20	ms9_1612.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5		B	M1	M2								
Ethyl ether	0.2137 0.1719	0.1811 0.1731	0.1756 0.1707	0.1656 0.1708	0.1712	Ave		0.1771				8.1		15.0			
Acrolein	0.0674 0.0541	0.0578 0.0534	0.0569 0.0518	0.0546 0.0502	0.0554	Lin2	0.0695	0.0527							0.9990		0.9900
1,1,2-Trichloro-1,2,2-trifluoroethane	0.1506 0.1352	0.1473 0.1352	0.1294 0.1322	0.1338 0.1341	0.1316	Ave		0.1366				5.3		15.0			
1,1-Dichloroethene	0.1894 0.1672	0.1844 0.1668	0.1611 0.1622	0.1675 0.1603	0.1654	Ave		0.1694				6.1		30.0			
Acetone	0.1975 0.1121	0.1426 0.1119	0.1312 0.1126	0.1187 0.1138	0.1175	Lin2	0.1637	0.1110							0.9980		0.9900
Iodomethane	0.2662 0.1834	0.1975 0.1856	0.1940 0.1857	0.1822 0.1724	0.1813	Lin2	0.0393	0.1773							0.9970		0.9900
Carbon disulfide	0.5406 0.4833	0.4757 0.5022	0.4475 0.4998	0.4507 0.4932	0.4597	Ave		0.4836				6.1		15.0			
Methyl acetate	0.3081 0.2419	0.2710 0.2448	0.2591 0.2438	0.2409 0.2461	0.2464	Ave		0.2558				8.6		15.0			
3-Chloro-1-propene	0.3354 0.3010	0.2972 0.3132	0.2917 0.3032	0.2924 0.2880	0.3079	Ave		0.3033				4.8		15.0			
Methylene Chloride	0.2795 0.1933	0.2367 0.1915	0.2063 0.1875	0.1996 0.1895	0.1952	Lin2	0.0451	0.1893							1.0000		0.9900
t-Butyl alcohol	0.0734 0.0630	0.0667 0.0634	0.0647 0.0629	0.0650 0.0630	0.0634	Ave		0.0651				5.2		15.0			
Acrylonitrile	0.1473 0.1217	0.1310 0.1190	0.1283 0.1144	0.1262 0.1069	0.1255	Ave		0.1245				9.1		15.0			
Methyl tert-butyl ether	0.7850 0.6326	0.6871 0.6445	0.6334 0.6323	0.6285 0.6391	0.6402	Ave		0.6581				7.7		15.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 457270
SDG No.: _____
Instrument ID: VMS_MS9 GC Column: RXI-624SilM ID: 0.25 (mm) Heated Purge: (Y/N) Y
Calibration Start Date: 05/07/2019 15:15 Calibration End Date: 05/07/2019 18:08 Calibration ID: 36290

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5		B	M1	M2								
trans-1,2-Dichloroethene	0.2273 0.1863	0.2009 0.1868	0.1961 0.1818	0.1867 0.1784	0.1867	Ave		0.1923				7.7		15.0			
Hexane	1.3805 1.1974	1.2448 1.2322	1.2232 1.2183	1.1997 1.2020	1.2142	Ave		1.2347				4.6		15.0			
Vinyl acetate	0.5007 0.4936	0.4320 0.5175	0.4578 0.5161	0.4627 0.5195	0.4939	Ave		0.4882				6.3		15.0			
1,1-Dichloroethane	0.4163 0.3520	0.3772 0.3565	0.3606 0.3564	0.3551 0.3599	0.3616	Ave		0.3662			0.1000	5.5		15.0			
2-Butanone (MEK)	0.2269 0.1801	0.1911 0.1806	0.1891 0.1804	0.1853 0.1809	0.1844	Ave		0.1888				7.9		15.0			
cis-1,2-Dichloroethene	0.2735 0.2112	0.2269 0.2134	0.2205 0.2148	0.2184 0.2218	0.2167	Ave		0.2241				8.5		15.0			
2,2-Dichloropropane	0.3340 0.3118	0.2903 0.3268	0.3003 0.3344	0.3012 0.3521	0.3060	Ave		0.3174				6.4		15.0			
sec-Butyl Alcohol	0.8204 0.7659	0.7834 0.7121	0.7777 0.7595	0.7677 0.6970	0.7523	Ave		0.7596				4.9		15.0			
Bromochloromethane	++++ 0.0893	0.1061 0.0873	0.0907 0.0864	0.0909 0.0901	0.0910	Ave		0.0915				6.7		15.0			
Tetrahydrofuran	0.1807 0.1155	0.1385 0.1152	0.1317 0.1148	0.1202 0.1157	0.1201	Lin2	0.0630	0.1145							0.9990		0.9900
Chloroform	0.3973 0.3411	0.3593 0.3506	0.3557 0.3517	0.3505 0.3625	0.3455	Ave		0.3572				4.6		30.0			
1,1,1-Trichloroethane	++++ 0.3006	0.3073 0.3140	0.2992 0.3190	0.2943 0.3324	0.3009	Ave		0.3085				4.1		15.0			
Cyclohexane	0.4323 0.3532	0.3637 0.3633	0.3679 0.3558	0.3574 0.3639	0.3561	Ave		0.3682				6.7		15.0			
1,1-Dichloropropene	0.3176 0.2757	0.2927 0.2875	0.2831 0.2868	0.2747 0.2960	0.2814	Ave		0.2884				4.5		15.0			
Carbon tetrachloride	0.2396 0.2311	0.2318 0.2476	0.2121 0.2569	0.2151 0.2714	0.2207	Lin1	-0.058	0.2614							0.9970		0.9900
Isobutyl alcohol	0.4505 0.4070	0.4279 0.3764	0.4071 0.3955	0.4038 0.3596	0.4052	Ave		0.4037				6.5		15.0			
Benzene	0.9962 0.8130	0.9010 0.8179	0.8232 0.8116	0.8249 0.8101	0.8297	Ave		0.8475				7.4		15.0			
1,2-Dichloroethane	0.4342 0.2906	0.3329 0.3034	0.3077 0.3078	0.2968 0.3215	0.3011	Ave		0.3218				13.7		15.0			
Trichloroethene	0.2483 0.1994	0.2118 0.2012	0.2023 0.2038	0.1993 0.2150	0.1990	Ave		0.2089				7.6		15.0			
2-Pentanone	0.3283 0.2901	0.3032 0.2949	0.2968 0.2928	0.2908 0.2941	0.2981	Ave		0.2988				3.9		15.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 457270
SDG No.: _____
Instrument ID: VMS_MS9 GC Column: RXI-624SilM ID: 0.25 (mm) Heated Purge: (Y/N) Y
Calibration Start Date: 05/07/2019 15:15 Calibration End Date: 05/07/2019 18:08 Calibration ID: 36290

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5		B	M1	M2								
Methylcyclohexane	0.3587 0.2844	0.2962 0.2925	0.2926 0.2918	0.2868 0.2973	0.2853	Ave		0.2984				7.7		15.0			
1,2-Dichloropropane	++++ 0.2128	0.3799 0.2126	0.2946 0.2105	0.2413 0.2111	0.2261	Lin2	0.1717	0.2082							1.0000		0.9900
1,4-Dioxane	0.0072 0.0056	0.0062 0.0057	0.0060 0.0056	0.0058 0.0057	0.0057	Ave		0.0059				8.4		15.0			
Dibromomethane	0.1514 0.1256	0.1329 0.1284	0.1286 0.1304	0.1229 0.1345	0.1235	Ave		0.1309				6.6		15.0			
Bromodichloromethane	0.2312 0.2388	0.2146 0.2539	0.2137 0.2653	0.2220 0.2780	0.2307	Ave		0.2387				9.5		15.0			
cis-1,3-Dichloropropene	1.4845 1.3491	1.3061 1.4128	1.2682 1.4396	1.2937 1.4625	1.3460	Ave		1.3736				5.7		15.0			
4-Methyl-2-pentanone (MIBK)	0.3793 0.3315	0.3363 0.3349	0.3399 0.3279	0.3325 0.3154	0.3397	Ave		0.3375				5.1		15.0			
Toluene	1.0446 0.8561	0.9233 0.8681	0.8930 0.8731	0.8735 0.8909	0.8734	Ave		0.8996				6.4		30.0			
trans-1,3-Dichloropropene	0.3049 0.2962	0.2783 0.3129	0.2632 0.3222	0.2716 0.3395	0.2905	Ave		0.2977				8.3		15.0			
Ethyl methacrylate	1.5076 1.3987	1.3533 1.4171	1.3216 1.4156	1.3248 1.3937	1.3861	Ave		1.3910				4.1		15.0			
1,1,2-Trichloroethane	0.2184 0.1851	0.2008 0.1889	0.1916 0.1897	0.1811 0.1963	0.1881	Ave		0.1933				5.7		15.0			
Tetrachloroethene	0.8132 0.6739	0.7096 0.6845	0.7032 0.6868	0.6769 0.6970	0.6672	Ave		0.7014				6.3		15.0			
1,3-Dichloropropane	1.6370 1.3600	1.4747 1.3760	1.3999 1.3730	1.3348 1.3570	1.3740	Ave		1.4096				6.7		15.0			
2-Hexanone	1.2448 1.0903	1.1239 1.0952	1.1090 1.0680	1.1084 0.9998	1.1261	Ave		1.1073				5.8		15.0			
Dibromochloromethane	0.6222 0.6486	0.5817 0.7024	0.5476 0.7352	0.5589 0.7458	0.5988	Ave		0.6379				11.7		15.0			
1,2-Dibromoethane	0.9902 0.8161	0.8435 0.8467	0.8288 0.8466	0.8136 0.8442	0.8243	Ave		0.8505				6.4		15.0			
1-Chlorohexane	2.0925 1.2329	1.5508 1.2520	1.3794 1.2483	1.2393 1.2599	1.2635	Lin2	0.4140	1.2122							0.9980		0.9900
Chlorobenzene	2.8891 2.2419	2.3944 2.2522	2.3160 2.2430	2.2725 2.2473	2.2901	Ave		2.3496			0.3000	8.9		15.0			
1,1,1,2-Tetrachloroethane	0.7032 0.7155	0.7047 0.7514	0.6621 0.7730	0.6726 0.7922	0.7015	Ave		0.7196				6.1		15.0			
Ethylbenzene	1.5342 1.2445	1.3604 1.2601	1.3414 1.2593	1.2564 1.2435	1.2724	Ave		1.3080				7.2		30.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 457270
SDG No.: _____
Instrument ID: VMS_MS9 GC Column: RXI-624SilM ID: 0.25 (mm) Heated Purge: (Y/N) Y
Calibration Start Date: 05/07/2019 15:15 Calibration End Date: 05/07/2019 18:08 Calibration ID: 36290

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5		B	M1	M2								
m-Xylene & p-Xylene	3.8265 3.1184	3.2298 3.1325	3.1933 3.1100	3.1274 3.0857	3.1208	Ave		3.2160				7.3		15.0			
o-Xylene	1.7976 1.4898	1.5398 1.5120	1.5539 1.4938	1.5088 1.4957	1.5066	Ave		1.5442				6.3		15.0			
Styrene	2.8857 2.5797	2.5971 2.6221	2.5476 2.5738	2.5010 2.5537	2.5722	Ave		2.6037				4.3		15.0			
Bromoform	++++ 0.4169	0.3527 0.4723	0.3315 0.5088	0.3610 0.5336	0.3856	Lin1	-0.398	0.5140			0.1000				0.9950		0.9900
Isopropylbenzene	2.8056 2.4733	2.5179 2.5223	2.5078 2.6352	2.4562 2.7350	2.4798	Ave		2.5704				4.9		15.0			
Cyclohexanone	0.1122 0.1019	0.0997 0.0999	0.1054 0.0987	0.1027 0.0928	0.1046	Ave		0.1020				5.2		15.0			
1,1,2,2-Tetrachloroethane	0.8933 0.7708	0.8294 0.7984	0.7828 0.8427	0.7607 0.8772	0.7765	Ave		0.8146			0.3000	5.9		15.0			
Bromobenzene	0.7449 0.6088	0.6481 0.6211	0.5917 0.6552	0.6175 0.6793	0.6077	Ave		0.6416				7.4		15.0			
trans-1,4-Dichloro-2-butene	0.3185 0.2697	0.2721 0.2923	0.2590 0.3189	0.2460 0.3344	0.2649	Ave		0.2862				10.9		15.0			
1,2,3-Trichloropropane	0.2995 0.2377	0.2551 0.2486	0.2613 0.2581	0.2506 0.2638	0.2441	Ave		0.2576				6.9		15.0			
N-Propylbenzene	0.7628 0.6667	0.6410 0.6701	0.6546 0.6929	0.6577 0.7027	0.6634	Ave		0.6791				5.4		15.0			
2-Chlorotoluene	0.6614 0.5707	0.6016 0.5743	0.5792 0.6013	0.5737 0.6153	0.5750	Ave		0.5947				5.0		15.0			
1,3,5-Trimethylbenzene	2.2586 2.0244	2.0899 2.0844	2.0113 2.1433	1.9942 2.1510	2.0335	Ave		2.0878				4.1		15.0			
4-Chlorotoluene	0.6347 0.5965	0.6047 0.6070	0.6020 0.6202	0.5931 0.6255	0.5927	Ave		0.6085				2.5		15.0			
tert-Butylbenzene	1.9180 1.7317	1.7666 1.7722	1.6773 1.8292	1.7254 1.8645	1.7212	Ave		1.7785				4.4		15.0			
1,2,4-Trimethylbenzene	2.3702 2.0686	2.1346 2.1277	2.0816 2.1965	2.0438 2.2146	2.0800	Ave		2.1464				4.7		15.0			
sec-Butylbenzene	0.6357 0.5033	0.5362 0.5197	0.5101 0.5272	0.4949 0.5234	0.4951	Ave		0.5273				8.2		15.0			
1,3-Dichlorobenzene	1.3762 1.1254	1.1946 1.1529	1.1180 1.1871	1.0975 1.2110	1.1375	Ave		1.1778				7.1		15.0			
4-Isopropyltoluene	2.4028 2.2002	2.1668 2.2618	2.1052 2.3091	2.1704 2.3152	2.2023	Ave		2.2371				4.1		15.0			
1,4-Dichlorobenzene	1.5192 1.1421	1.2222 1.1630	1.1697 1.1788	1.1515 1.1705	1.1669	Ave		1.2094				9.8		15.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 457270

SDG No.: _____

Instrument ID: VMS_MS9 GC Column: RXI-624SilM ID: 0.25 (mm) Heated Purge: (Y/N) Y

Calibration Start Date: 05/07/2019 15:15 Calibration End Date: 05/07/2019 18:08 Calibration ID: 36290

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5		B	M1	M2								
n-Butylbenzene	2.0916 2.0530	2.0204 2.1453	1.9736 2.2107	1.9417 2.2199	2.0355	Ave		2.0769				4.7		15.0			
1,2-Dichlorobenzene	1.3371 1.0827	1.1609 1.1047	1.1152 1.1414	1.0801 1.1490	1.0883	Ave		1.1399				7.0		15.0			
1,2-Dibromo-3-Chloropropane	++++ 0.1848	0.1525 0.2041	0.1561 0.2250	0.1597 0.2492	0.1755	Lin1	-0.194	0.2341							0.9920		0.9900
1,2,4-Trichlorobenzene	0.8719 0.7852	0.7790 0.8263	0.7462 0.8835	0.7370 0.9187	0.7764	Ave		0.8138				7.9		15.0			
Hexachlorobutadiene	0.3999 0.3448	0.3424 0.3560	0.3211 0.3778	0.3330 0.3746	0.3326	Ave		0.3536				7.3		15.0			
Naphthalene	2.8700 2.5273	2.4762 2.6539	2.5014 2.8239	2.4261 2.9173	2.5273	Ave		2.6359				7.1		15.0			
1,2,3-Trichlorobenzene	0.8762 0.7547	0.7563 0.8003	0.7344 0.8445	0.7221 0.8445	0.7656	Ave		0.7887				7.0		15.0			
Dibromofluoromethane (Surr)	0.2339 0.2391	0.2337 0.2400	0.2345 0.2413	0.2351 0.2480	0.2358	Ave		0.2379				2.0		15.0			
1,2-Dichloroethane-d4 (Surr)	0.3021 0.3021	0.2959 0.3146	0.3027 0.3160	0.2996 0.3330	0.3061	Ave		0.3080				3.7		15.0			
Toluene-d8 (Surr)	4.0016 3.9997	4.0076 4.0097	4.0388 4.0370	4.0078 3.9956	4.0196	Ave		4.0130				0.4		15.0			
4-Bromofluorobenzene (Surr)	0.9643 0.9642	0.9693 0.9733	0.9748 1.0152	0.9644 1.0321	0.9746	Ave		0.9813				2.5		15.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 457270

SDG No.: _____

Instrument ID: VMS_MS9 GC Column: RXI-624SilM ID: 0.25 (mm) Heated Purge: (Y/N) Y

Calibration Start Date: 05/07/2019 15:15 Calibration End Date: 05/07/2019 18:08 Calibration ID: 36290

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD005 280-457270/28	ms9_1620.D
Level 2	STD01 280-457270/27	ms9_1619.D
Level 3	STD02 280-457270/26	ms9_1618.D
Level 4	STD05 280-457270/25	ms9_1617.D
Level 5	STD10 280-457270/24	ms9_1616.D
Level 6	STD20 280-457270/23	ms9_1615.D
Level 7	ICIS 280-457270/22	ms9_1614.D
Level 8	STD100 280-457270/21	ms9_1613.D
Level 9	STD200 280-457270/20	ms9_1612.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5
Ethyl ether	FB	Ave	3972 127060	7016 305664	12993 575983	30718 1051498	61372	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
Acrolein	FB	Lin2	12362 395080	22132 931329	41577 1724728	99997 3050006	195964	4.94 198	9.88 494	19.8 988	49.4 1975	98.8
1,1,2-Trichloro-1,2,2-trifluoroethane	FB	Ave	2799 99942	5708 238777	9573 445998	24808 825494	47169	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
1,1-Dichloroethene	FB	Ave	3520 123636	7147 294664	11916 547431	31070 986615	59275	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
Acetone	FB	Lin2	14679 331348	22100 790729	38812 1519725	88033 2802014	168483	2.00 80.0	4.00 200	8.00 400	20.0 800	40.0
Iodomethane	FB	Lin2	4947 135611	7653 327893	14354 626829	33790 1060881	64998	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
Carbon disulfide	FB	Ave	10046 357283	18433 886929	33108 1686866	83590 3035631	164755	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
Methyl acetate	FB	Ave	11453 357602	21003 864686	38339 1645690	89357 3029160	176624	1.00 40.0	2.00 100	4.00 200	10.0 400	20.0
3-Chloro-1-propene	FB	Ave	6233 222544	11518 553102	21584 1023318	54232 1772786	110359	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
Methylene Chloride	FB	Lin2	5194 142875	9172 338316	15265 632771	37018 1166283	69962	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
t-Butyl alcohol	FB	Ave	13634 465986	25853 1119193	47861 2123629	120572 3880344	227237	5.00 200	10.0 500	20.0 1000	50.0 2000	100
Acrylonitrile	FB	Ave	27380 899541	50778 2102492	94953 3860429	234154 6582289	449898	5.00 200	10.0 500	20.0 1000	50.0 2000	100
Methyl tert-butyl ether	FB	Ave	14589 467632	26627 1138419	46861 2133832	116563 3933974	229449	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
trans-1,2-Dichloroethene	FB	Ave	4224 137724	7786 329992	14505 613711	34632 1097908	66930	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0

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SDG No.: _____

Instrument ID: VMS_MS9 GC Column: RXI-624SilM ID: 0.25 (mm) Heated Purge: (Y/N) Y

Calibration Start Date: 05/07/2019 15:15 Calibration End Date: 05/07/2019 18:08 Calibration ID: 36290

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5
Hexane	CBNZ d5	Ave	6137 214442	11472 530966	21554 1010934	53574 1886711	104517	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
Vinyl acetate	FB	Ave	18610 729868	33481 1827904	67744 3483520	171646 6394882	354042	1.00 40.0	2.00 100	4.00 200	10.0 400	20.0
1,1-Dichloroethane	FB	Ave	7736 260222	14618 629595	26681 1202812	65861 2215350	129612	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
2-Butanone (MEK)	FB	Ave	16869 532627	29624 1276224	55968 2435870	137480 4455001	264394	2.00 80.0	4.00 200	8.00 400	20.0 800	40.0
cis-1,2-Dichloroethene	FB	Ave	5082 156128	8791 376950	16315 724974	40513 1365296	77669	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
2,2-Dichloropropane	FB	Ave	6207 230534	11251 577293	22219 1128586	55855 2167077	109663	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
sec-Butyl Alcohol	TBAd 9	Ave	27590 1019580	51734 2419020	104721 4631764	258991 8384521	493318	15.0 600	30.0 1500	60.0 3000	150 6000	300
Bromochloromethane	FB	Ave	++++ 65984	4113 154205	6707 291726	16852 554391	32610	++++ 20.0	1.00 50.0	2.00 100	5.00 200	10.0
Tetrahydrofuran	FB	Lin2	6717 170809	10734 406960	19485 774643	44594 1424752	86122	1.00 40.0	2.00 100	4.00 200	10.0 400	20.0
Chloroform	FB	Ave	7384 252164	13924 619196	26318 1187040	65009 2231481	123839	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
1,1,1-Trichloroethane	FB	Ave	++++ 222253	11907 554603	22137 1076675	54585 2045744	107852	++++ 20.0	1.00 50.0	2.00 100	5.00 200	10.0
Cyclohexane	FB	Ave	8033 261129	14094 641757	27220 1200937	66288 2239655	127626	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
1,1-Dichloropropene	FB	Ave	5903 203839	11343 507754	20945 968052	50944 1821830	100865	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
Carbon tetrachloride	FB	Lin1	4452 170837	8981 437257	15692 866926	39897 1670662	79105	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
Isobutyl alcohol	TBAd 9	Ave	12626 451466	23550 1065571	45678 2009862	113522 3604828	221443	12.5 500	25.0 1250	50.0 2500	125 5000	250
Benzene	FB	Ave	18513 601051	34916 1444633	60900 2738920	152999 4986342	297389	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
1,2-Dichloroethane	FB	Ave	8069 214831	12901 535876	22763 1038820	55051 1978947	107908	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
Trichloroethene	FB	Ave	4614 147415	8209 355346	14968 687946	36961 1323418	71309	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
2-Pentanone	FB	Ave	24406 857724	47004 2083657	87838 3952589	215753 7241174	427428	2.00 80.0	4.00 200	8.00 400	20.0 800	40.0
Methylcyclohexane	FB	Ave	6666 210251	11479 516701	21644 984913	53190 1830035	102267	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
1,2-Dichloropropane	FB	Lin2	++++ 157335	14720 375436	21795 710353	44758 1299434	81035	++++ 20.0	1.00 50.0	2.00 100	5.00 200	10.0

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SDG No.: _____

Instrument ID: VMS_MS9 GC Column: RXI-624SilM ID: 0.25 (mm) Heated Purge: (Y/N) Y

Calibration Start Date: 05/07/2019 15:15 Calibration End Date: 05/07/2019 18:08 Calibration ID: 36290

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5
1,4-Dioxane	FB	Ave	2663 83301	4807 202315	8916 377249	21442 699721	40683	10.0 400	20.0 1000	40.0 2000	100 4000	200
Dibromomethane	FB	Ave	2814 92828	5151 226711	9514 440094	22801 827942	44272	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
Bromodichloromethane	FB	Ave	4296 176541	8314 448449	15813 895466	41179 1710959	82685	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
cis-1,3-Dichloropropene	CBNZ d5	Ave	6599 241621	12037 608752	22348 1194612	57774 2295660	115866	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
4-Methyl-2-pentanone (MIBK)	FB	Ave	28195 980176	52127 2365952	100574 4426490	246676 7764251	487031	2.00 80.0	4.00 200	8.00 400	20.0 800	40.0
Toluene	FB	Ave	19413 632894	35779 1533317	66064 2946724	162006 5483928	313055	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
trans-1,3-Dichloropropene	FB	Ave	5667 218976	10786 552591	19472 1087356	50376 2089920	104117	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
Ethyl methacrylate	CBNZ d5	Ave	6702 250499	12472 610603	23289 1174701	59163 2187687	119313	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
1,1,2-Trichloroethane	FB	Ave	4058 136847	7780 333696	14177 640097	33593 1207972	67425	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
Tetrachloroethene	CBNZ d5	Ave	3615 120687	6540 294955	12392 569882	30228 1094088	57435	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
1,3-Dichloropropane	CBNZ d5	Ave	7277 243557	13591 592926	24669 1139333	59607 2130089	118271	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
2-Hexanone	CBNZ d5	Ave	22135 781063	41429 1887738	78170 3545082	197996 6277080	387755	2.00 80.0	4.00 200	8.00 400	20.0 800	40.0
Dibromochloromethane	CBNZ d5	Ave	2766 116162	5361 302680	9650 610062	24957 1170645	51548	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
1,2-Dibromoethane	CBNZ d5	Ave	4402 146164	7774 364853	14605 702561	36333 1325154	70956	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
1-Chlorohexane	CBNZ d5	Lin2	9302 220811	14292 539460	24307 1035890	55344 1977568	108766	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
Chlorobenzene	CBNZ d5	Ave	12843 401509	22066 970450	40811 1861333	101481 3527550	197130	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
1,1,1,2-Tetrachloroethane	CBNZ d5	Ave	3126 128143	6494 323779	11668 641447	30037 1243440	60387	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
Ethylbenzene	CBNZ d5	Ave	6820 222880	12537 542961	23638 1044962	56105 1951895	109527	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
m-Xylene & p-Xylene	CBNZ d5	Ave	17010 558474	29765 1349791	56270 2580753	139658 4843443	268638	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
o-Xylene	CBNZ d5	Ave	7991 266806	14191 651511	27382 1239564	67377 2347689	129693	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
Styrene	CBNZ d5	Ave	12828 462011	23934 1129856	44893 2135832	111688 4008485	221417	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0

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Job No.: 280-123221-1

Analy Batch No.: 457270

SDG No.: _____

Instrument ID: VMS_MS9

GC Column: RXI-624SilM ID: 0.25 (mm)

Heated Purge: (Y/N) Y

Calibration Start Date: 05/07/2019 15:15

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ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5
Bromoform	CBNZ d5	Lin1	+++++ 74671	3250 203493	5841 422214	16120 837617	33189	+++++ 20.0	1.00 50.0	2.00 100	5.00 200	10.0
Isopropylbenzene	DCBd 4	Ave	19906 703176	36474 1702673	70621 3211363	174512 6030932	338658	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
Cyclohexanone	CBNZ d5	Ave	19944 729636	36739 1722162	74326 3275983	183461 5825586	360094	20.0 800	40.0 2000	80.0 4000	200 8000	400
1,1,2,2-Tetrachloroethane	DCBd 4	Ave	6338 219147	12015 538938	22044 1026961	54048 1934284	106041	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
Bromobenzene	DCBd 4	Ave	5285 173074	9388 419271	16663 798422	43875 1497886	82996	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
trans-1,4-Dichloro-2-butene	DCBd 4	Ave	2260 76663	3941 197300	7294 388617	17478 737445	36180	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
1,2,3-Trichloropropane	DCBd 4	Ave	2125 67591	3695 167783	7357 314513	17804 581762	33337	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
N-Propylbenzene	DCBd 4	Ave	5412 189531	9286 452323	18433 844383	46730 1549451	90600	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
2-Chlorotoluene	DCBd 4	Ave	4693 162247	8715 387700	16312 732813	40759 1356760	78531	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
1,3,5-Trimethylbenzene	DCBd 4	Ave	16025 575535	30274 1407052	56639 2611949	141687 4743111	277703	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
4-Chlorotoluene	DCBd 4	Ave	4503 169579	8760 409779	16952 755819	42140 1379297	80949	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
tert-Butylbenzene	DCBd 4	Ave	13608 492341	25590 1196348	47235 2229108	122590 4111412	235063	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
1,2,4-Trimethylbenzene	DCBd 4	Ave	16817 588107	30921 1436274	58618 2676786	145210 4883336	284053	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
sec-Butylbenzene	DCBd 4	Ave	4510 143103	7767 350795	14364 642436	35159 1154149	67621	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
1,3-Dichlorobenzene	DCBd 4	Ave	9764 319966	17305 778240	31484 1446600	77976 2670456	155340	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
4-Isopropyltoluene	DCBd 4	Ave	17048 625535	31388 1526854	59283 2814022	154210 5105164	300756	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
1,4-Dichlorobenzene	DCBd 4	Ave	10779 324701	17705 785113	32940 1436565	81816 2581150	159363	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
n-Butylbenzene	DCBd 4	Ave	14840 583684	29267 1448189	55578 2694098	137959 4895055	277985	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
1,2-Dichlorobenzene	DCBd 4	Ave	9487 307827	16816 745756	31406 1390926	76744 2533567	148625	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
1,2-Dibromo-3-Chloropropane	DCBd 4	Lin1	+++++ 52551	2209 137770	4397 274222	11348 549591	23962	+++++ 20.0	1.00 50.0	2.00 100	5.00 200	10.0
1,2,4-Trichlorobenzene	DCBd 4	Ave	6186 223247	11284 557785	21013 1076664	52367 2025833	106026	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0

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Hexachlorobutadiene	DCBd 4	Ave	2837 98033	4960 240320	9042 460406	23659 825915	45421	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
Naphthalene	DCBd 4	Ave	20363 718505	35869 1791507	70442 3441358	172375 6432869	345145	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
1,2,3-Trichlorobenzene	DCBd 4	Ave	6217 214568	10955 540223	20682 1029106	51304 1862255	104553	0.500 20.0	1.00 50.0	2.00 100	5.00 200	10.0
Dibromofluoromethane (Surr)	FB	Ave	434599 441879	452820 423850	433797 407197	436105 381608	422535	50.0 50.0	50.0 50.0	50.0 50.0	50.0 50.0	50.0
1,2-Dichloroethane-d4 (Surr)	FB	Ave	561326 558334	573386 555703	559946 533289	555652 512430	548504	50.0 50.0	50.0 50.0	50.0 50.0	50.0 50.0	50.0
Toluene-d8 (Surr)	CBNZ d5	Ave	1778842 1790792	1846670 1727756	1779241 1675002	1789763 1567913	1730050	50.0 50.0	50.0 50.0	50.0 50.0	50.0 50.0	50.0
4-Bromofluorobenzene (Surr)	DCBd 4	Ave	684161 685299	702035 656995	686275 618571	685186 568954	665513	50.0 50.0	50.0 50.0	50.0 50.0	50.0 50.0	50.0

Curve Type Legend:

Ave = Average ISTD
Lin1 = Linear 1/conc ISTD
Lin2 = Linear 1/conc^2 ISTD

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1612.D
 Lims ID: STD200
 Client ID:
 Sample Type: IC Calib Level: 9
 Inject. Date: 07-May-2019 15:15:30 ALS Bottle#: 22 Worklist Smp#: 20
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: STD200
 Operator ID: newcomer Instrument ID: VMS_MS9
 Sublist: chrom-AQ_VMSMS9_8260*sub49
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 08-May-2019 10:06:25 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0338

First Level Reviewer: newcomer

Date: 08-May-2019 07:23:37

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.305	3.305	0.000	0	2004774	1000.0	1000.0	
* 1 Fluorobenzene	96	5.089	5.089	0.000	99	1538791	50.0	50.0	a
* 2 Chlorobenzene-d5	119	7.619	7.619	0.000	88	392413	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	97	551270	50.0	50.0	
\$ 6 Dibromofluoromethane (Surr	111	4.587	4.587	0.000	93	381608	50.0	52.1	
\$ 7 1,2-Dichloroethane-d4 (Sur	65	4.849	4.849	0.000	98	512430	50.0	54.1	
\$ 8 Toluene-d8 (Surr)	98	6.348	6.348	0.000	94	1567913	50.0	49.8	
\$ 9 4-Bromofluorobenzene (Surr	95	8.714	8.714	0.000	87	568954	50.0	52.6	
24 Ethyl ether	59	2.742	2.742	0.000	93	1051498	200.0	192.9	
28 Acrolein	56	2.855	2.855	0.000	99	3050006	1975.0	1879.7	
30 1,1-Dichloroethene	96	2.930	2.930	0.000	96	986615	200.0	189.3	
29 1,1,2-Trichloro-1,2,2-trif	151	2.926	2.926	0.000	95	825494	200.0	196.4	
31 Acetone	43	2.960	2.960	0.000	99	2802014	800.0	818.9	
33 Iodomethane	142	3.053	3.053	0.000	99	1060881	200.0	194.2	
35 Carbon disulfide	76	3.117	3.117	0.000	100	3035631	200.0	204.0	
34 Methyl acetate	43	3.185	3.185	0.000	98	3029160	400.0	384.8	
36 3-Chloro-1-propene	41	3.203	3.203	0.000	89	1772786	200.0	189.9	
39 Methylene Chloride	84	3.301	3.301	0.000	94	1166283	200.0	199.9	
38 2-Methyl-2-propanol	59	3.365	3.365	0.000	99	3880344	2000.0	1937.9	
42 Acrylonitrile	53	3.466	3.466	0.000	97	6582289	2000.0	1717.8	
40 Methyl tert-butyl ether	73	3.488	3.488	0.000	96	3933974	200.0	194.2	
41 trans-1,2-Dichloroethene	96	3.499	3.499	0.000	96	1097908	200.0	185.5	
43 Hexane	57	3.691	3.691	0.000	93	1886711	200.0	194.7	
45 Vinyl acetate	43	3.796	3.796	0.000	97	6394882	400.0	425.6	
46 1,1-Dichloroethane	63	3.818	3.818	0.000	96	2215350	200.0	196.6	
50 2-Butanone (MEK)	43	4.208	4.208	0.000	100	4455001	800.0	766.8	
52 cis-1,2-Dichloroethene	96	4.230	4.230	0.000	84	1365296	200.0	197.9	
53 2,2-Dichloropropane	77	4.242	4.242	0.000	86	2167077	200.0	221.8	
51 sec-Butyl Alcohol	45	4.332	4.332	0.000	98	8384521	6000.0	5506.2	
59 Chlorobromomethane	128	4.410	4.410	0.000	98	554391	200.0	196.9	
57 Tetrahydrofuran	42	4.422	4.422	0.000	85	1424752	400.0	403.9	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
56 Chloroform	83	4.467	4.467	0.000	94	2231481	200.0	203.0	
60 1,1,1-Trichloroethane	97	4.613	4.613	0.000	98	2045744	200.0	215.5	
61 Cyclohexane	56	4.669	4.669	0.000	91	2239655	200.0	197.7	
62 1,1-Dichloropropene	75	4.725	4.725	0.000	97	1821830	200.0	205.3	
63 Carbon tetrachloride	117	4.729	4.729	0.000	97	1670662	200.0	207.9	
58 Isobutyl alcohol	43	4.748	4.748	0.000	92	3604828	5000.0	4454.4	
66 Benzene	78	4.879	4.879	0.000	97	4986342	200.0	191.2	
67 1,2-Dichloroethane	62	4.909	4.909	0.000	98	1978947	200.0	199.8	
135 n-Heptane	43	5.063	5.063	0.000	92	1946482	200.0	214.4	
68 Trichloroethene	130	5.366	5.366	0.000	98	1323418	200.0	205.8	
69 2-Pentanone	43	5.471	5.471	0.000	99	7241174	800.0	787.4	
71 Methylcyclohexane	55	5.561	5.561	0.000	92	1830035	200.0	199.3	
72 1,2-Dichloropropane	63	5.576	5.576	0.000	92	1299434	200.0	202.0	
73 1,4-Dioxane	88	5.621	5.621	0.000	95	699721	4000.0	3825.9	
74 Dibromomethane	93	5.644	5.644	0.000	97	827942	200.0	205.5	
75 Dichlorobromomethane	83	5.767	5.767	0.000	99	1710959	200.0	232.9	
78 cis-1,3-Dichloropropene	75	6.116	6.116	0.000	95	2295660	200.0	212.9	
79 4-Methyl-2-pentanone (MIBK)	43	6.217	6.217	0.000	96	7764251	800.0	747.6	
80 Toluene	91	6.405	6.405	0.000	98	5483928	200.0	198.1	
82 trans-1,3-Dichloropropene	75	6.581	6.581	0.000	96	2089920	200.0	228.1	
81 Ethyl methacrylate	69	6.603	6.603	0.000	89	2187687	200.0	200.4	
83 1,1,2-Trichloroethane	97	6.757	6.757	0.000	92	1207972	200.0	203.0	
85 Tetrachloroethene	164	6.847	6.847	0.000	98	1094088	200.0	198.8	
86 1,3-Dichloropropane	76	6.903	6.903	0.000	96	2130089	200.0	192.5	
84 2-Hexanone	43	6.922	6.922	0.000	95	6277080	800.0	722.3	
87 Chlorodibromomethane	129	7.098	7.098	0.000	91	1170645	200.0	233.8	
89 Ethylene Dibromide	107	7.214	7.214	0.000	99	1325154	200.0	198.5	
90 1-Chlorohexane	91	7.604	7.604	0.000	97	1977568	200.0	207.5	
91 Chlorobenzene	112	7.645	7.645	0.000	93	3527550	200.0	191.3	
93 1,1,1,2-Tetrachloroethane	131	7.720	7.720	0.000	94	1243440	200.0	220.2	
92 Ethylbenzene	106	7.724	7.724	0.000	99	1951895	200.0	190.1	
94 m-Xylene & p-Xylene	91	7.840	7.840	0.000	97	4843443	200.0	191.9	
95 o-Xylene	106	8.200	8.200	0.000	96	2347689	200.0	193.7	
96 Styrene	104	8.215	8.215	0.000	94	4008485	200.0	196.2	
97 Bromoform	173	8.399	8.399	0.000	96	837617	200.0	208.4	
98 Isopropylbenzene	105	8.541	8.541	0.000	97	6030932	200.0	212.8	
100 Cyclohexanone	55	8.639	8.639	0.000	92	5825586	8000.0	7278.7	
101 1,1,2,2-Tetrachloroethane	83	8.826	8.826	0.000	95	1934284	200.0	215.4	
105 Bromobenzene	156	8.860	8.860	0.000	97	1497886	200.0	211.8	
102 trans-1,4-Dichloro-2-buten	53	8.868	8.868	0.000	84	737445	200.0	233.7	
104 1,2,3-Trichloropropane	110	8.894	8.894	0.000	85	581762	200.0	204.8	a
103 N-Propylbenzene	120	8.939	8.939	0.000	99	1549451	200.0	206.9	
107 2-Chlorotoluene	126	9.036	9.036	0.000	96	1356760	200.0	206.9	
106 1,3,5-Trimethylbenzene	105	9.111	9.111	0.000	95	4743111	200.0	206.0	
108 4-Chlorotoluene	126	9.152	9.152	0.000	99	1379297	200.0	205.6	
109 tert-Butylbenzene	119	9.422	9.422	0.000	93	4111412	200.0	209.7	
110 1,2,4-Trimethylbenzene	105	9.479	9.479	0.000	98	4883336	200.0	206.4	
111 sec-Butylbenzene	134	9.640	9.640	0.000	95	1154149	200.0	198.5	
113 1,3-Dichlorobenzene	146	9.767	9.767	0.000	98	2670456	200.0	205.6	
112 4-Isopropyltoluene	119	9.786	9.786	0.000	97	5105164	200.0	207.0	
115 1,4-Dichlorobenzene	146	9.868	9.868	0.000	92	2581150	200.0	193.6	
116 n-Butylbenzene	91	10.191	10.191	0.000	98	4895055	200.0	213.8	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
117 1,2-Dichlorobenzene	146	10.221	10.221	0.000	96	2533567	200.0	201.6	
118 1,2-Dibromo-3-Chloropropan	157	11.001	11.001	0.000	83	549591	200.0	213.8	
120 1,2,4-Trichlorobenzene	180	11.821	11.821	0.000	94	2025833	200.0	225.8	
121 Hexachlorobutadiene	225	11.960	11.960	0.000	97	825915	200.0	211.9	
122 Naphthalene	128	12.091	12.091	0.000	97	6432869	200.0	221.3	
123 1,2,3-Trichlorobenzene	180	12.313	12.313	0.000	95	1862255	200.0	214.1	
S 136 1,2-Dichloroethene, Total	96				0		400.0	383.4	
S 142 Xylenes, Total	106				0		400.0	385.6	
S 141 1,2-Dichloroethene, Total	1				0		400.0	383.4	
S 139 Total BTEX	1				0			965.0	
S 138 Xylenes, Total (URS)	1				0		400.0	385.6	
S 137 Trihalomethanes, Total	1				0		800.0	878.2	
S 140 1,3-Dichloropropene, Total	1				0		400.0	441.0	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MV-MegaMainA_00014

Amount Added: 200.00

Units: uL

mv-Cent IS/SS_00002

Amount Added: 5.00

Units: uL

Run Reagent

Report Date: 08-May-2019 10:06:27

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1612.D

Injection Date: 07-May-2019 15:15:30

Instrument ID: VMS_MS9

Operator ID: newcomer

Lims ID: STD200

Worklist Smp#: 20

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

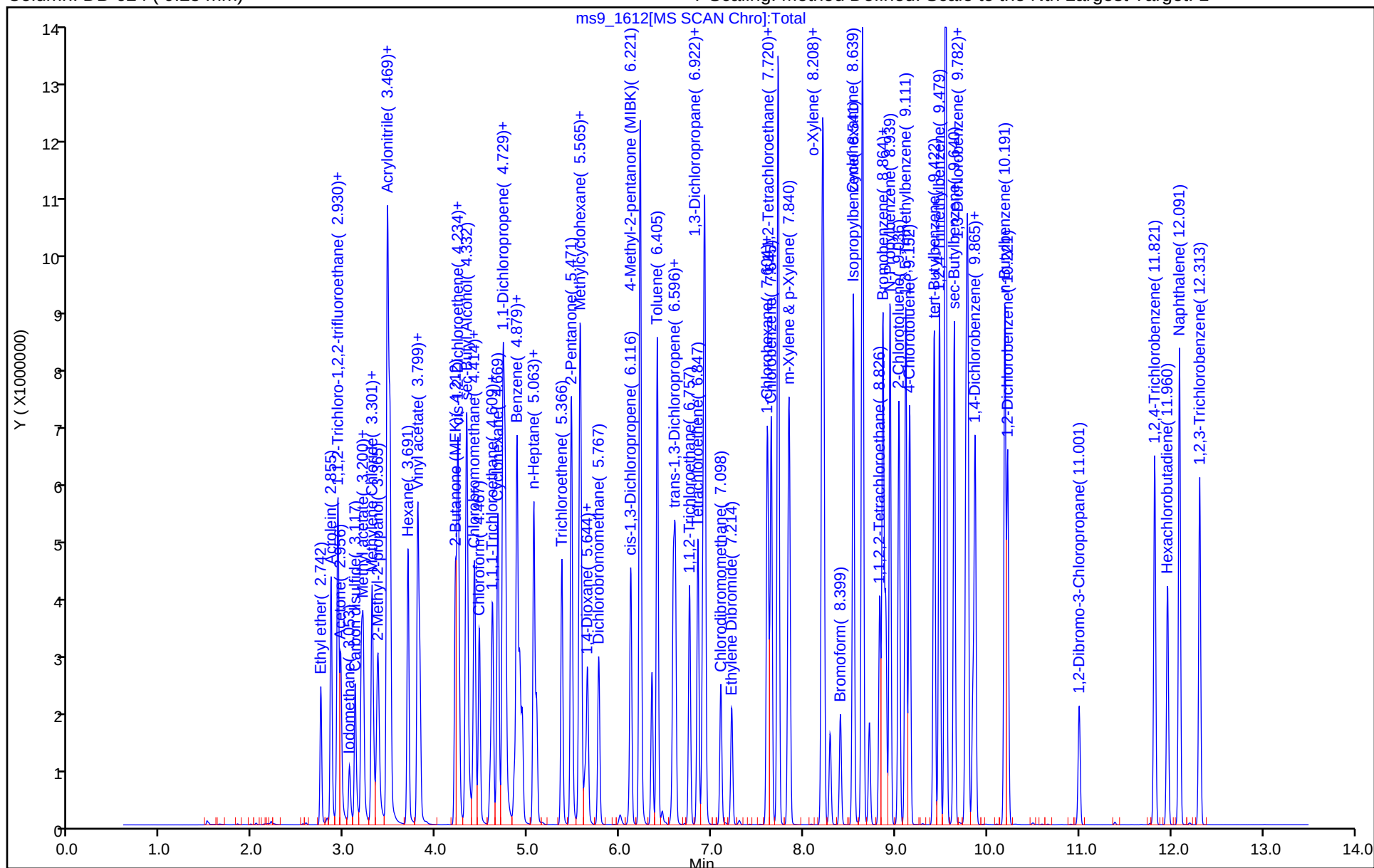
ALS Bottle#: 22

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver

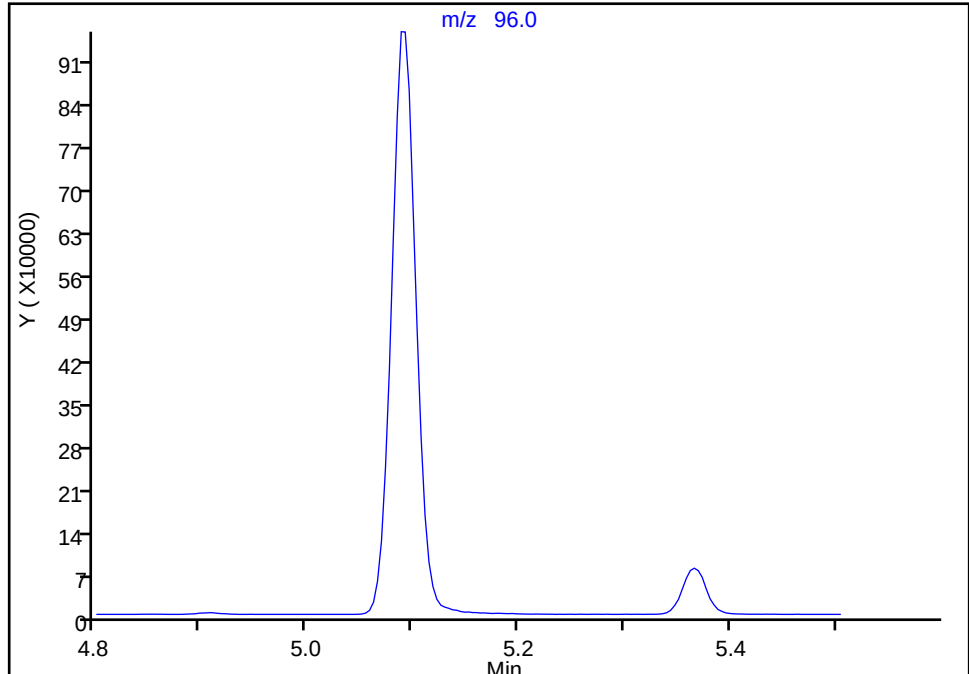
Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1612.D
Injection Date: 07-May-2019 15:15:30 Instrument ID: VMS_MS9
Lims ID: STD200
Client ID:
Operator ID: newcomer ALS Bottle#: 22 Worklist Smp#: 20
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: AQ_VMSMS9_8260 Limit Group: MSV - 8260B Water and Solid
Column: DB-624 (0.25 mm) Detector: MS SCAN

* 1 Fluorobenzene, CAS: 462-06-6

Signal: 1

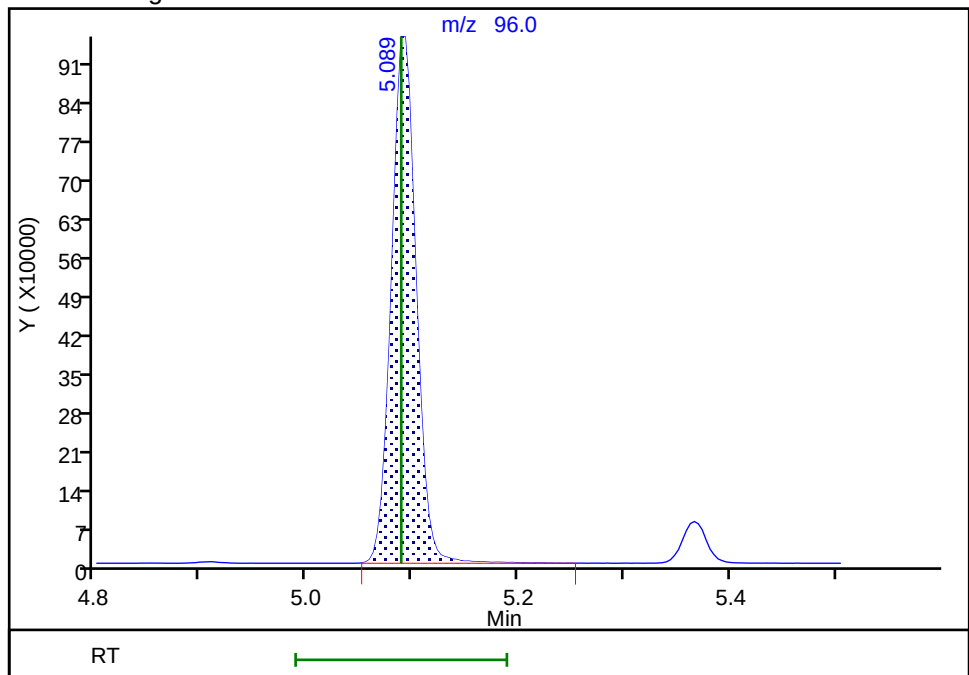
Not Detected
Expected RT: 5.09

Processing Integration Results



RT: 5.09
Area: 1538791
Amount: 50.000000
Amount Units: ug/l

Manual Integration Results



Reviewer: newcomer, 08-May-2019 07:22:19

Audit Action: Assigned Compound ID

Audit Reason: Assign Peak

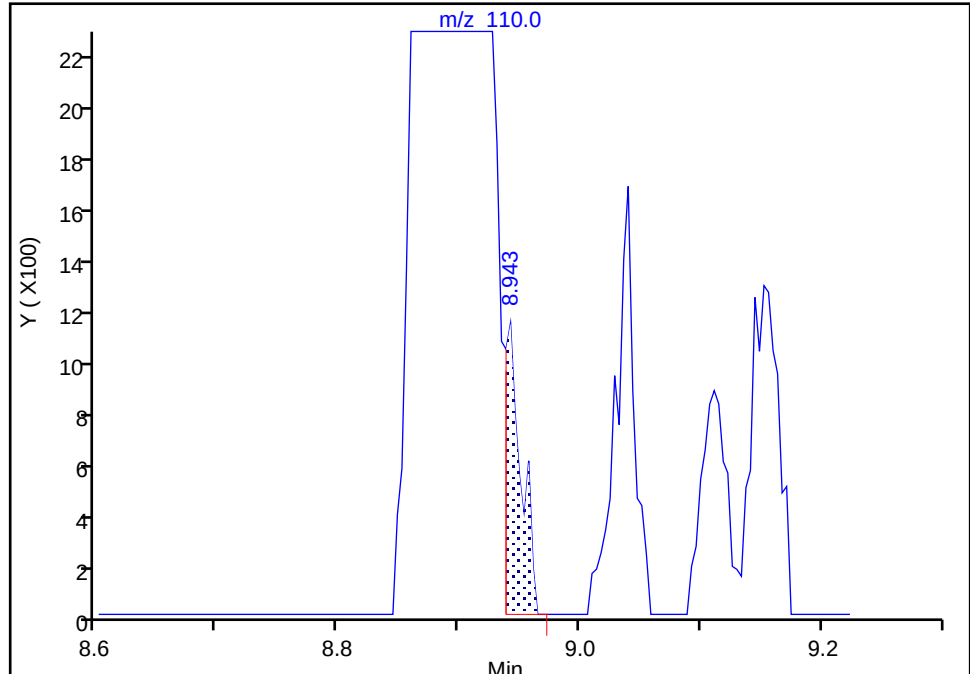
Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1612.D
Injection Date: 07-May-2019 15:15:30 Instrument ID: VMS_MS9
Lims ID: STD200
Client ID:
Operator ID: newcomer ALS Bottle#: 22 Worklist Smp#: 20
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: AQ_VMSMS9_8260 Limit Group: MSV - 8260B Water and Solid
Column: DB-624 (0.25 mm) Detector MS SCAN

104 1,2,3-Trichloropropane, CAS: 96-18-4
Signal: 1

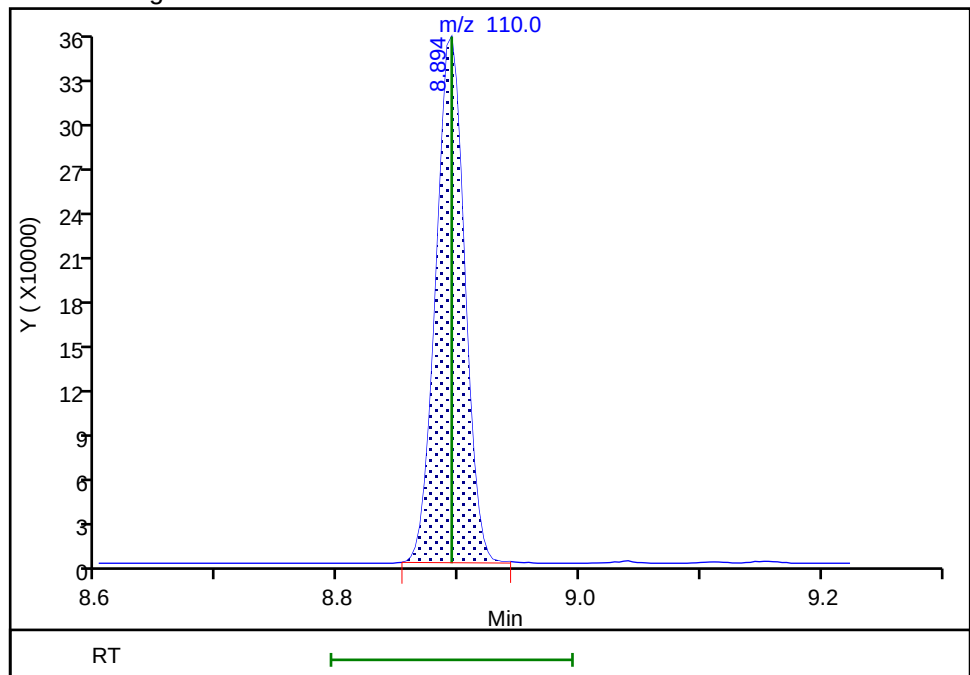
RT: 8.94
Area: 1054
Amount: 163.1430
Amount Units: ug/l

Processing Integration Results



RT: 8.89
Area: 581762
Amount: 204.8061
Amount Units: ug/l

Manual Integration Results



Reviewer: newcomer, 08-May-2019 07:22:59
Audit Action: Assigned Compound ID

Audit Reason: Assign Peak

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1613.D
 Lims ID: STD100
 Client ID:
 Sample Type: IC Calib Level: 8
 Inject. Date: 07-May-2019 15:37:30 ALS Bottle#: 23 Worklist Smp#: 21
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: STD100
 Misc. Info.: 280-0081636-021
 Operator ID: newcomer Instrument ID: VMS_MS9
 Sublist: chrom-AQ_VMSMS9_8260*sub49
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 08-May-2019 10:06:34 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0338

First Level Reviewer: newcomer

Date: 08-May-2019 07:24:42

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.293	3.293	0.000	0	2032771	1000.0	1000.0	
* 1 Fluorobenzene	96	5.093	5.093	0.000	98	1687425	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.619	0.000	86	414912	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	96	609324	50.0	50.0	
\$ 6 Dibromofluoromethane (Surr	111	4.587	4.587	0.000	93	407197	50.0	50.7	
\$ 7 1,2-Dichloroethane-d4 (Sur	65	4.849	4.849	0.000	98	533289	50.0	51.3	
\$ 8 Toluene-d8 (Surr)	98	6.349	6.349	0.000	94	1675002	50.0	50.3	
\$ 9 4-Bromofluorobenzene (Surr	95	8.714	8.714	0.000	90	618571	50.0	51.7	
24 Ethyl ether	59	2.742	2.742	0.000	94	575983	100.0	96.4	
28 Acrolein	56	2.855	2.855	0.000	99	1724728	987.5	968.7	
30 1,1-Dichloroethene	96	2.934	2.934	0.000	95	547431	100.0	95.8	
29 1,1,2-Trichloro-1,2,2-trif	151	2.930	2.930	0.000	95	445998	100.0	96.8	
31 Acetone	43	2.956	2.956	0.000	99	1519725	400.0	404.3	
33 Iodomethane	142	3.057	3.057	0.000	99	626829	100.0	104.5	
35 Carbon disulfide	76	3.117	3.117	0.000	99	1686866	100.0	103.4	
34 Methyl acetate	43	3.185	3.185	0.000	98	1645690	200.0	190.6	
36 3-Chloro-1-propene	41	3.203	3.203	0.000	90	1023318	100.0	100.0	
39 Methylene Chloride	84	3.301	3.301	0.000	94	632771	100.0	98.8	
38 2-Methyl-2-propanol	59	3.353	3.353	0.000	100	2123629	1000.0	967.2	
42 Acrylonitrile	53	3.466	3.466	0.000	98	3860429	1000.0	918.8	
40 Methyl tert-butyl ether	73	3.488	3.488	0.000	95	2133832	100.0	96.1	
41 trans-1,2-Dichloroethene	96	3.500	3.500	0.000	96	613711	100.0	94.5	
43 Hexane	57	3.695	3.695	0.000	93	1010934	100.0	98.7	
45 Vinyl acetate	43	3.796	3.796	0.000	97	3483520	200.0	211.4	
46 1,1-Dichloroethane	63	3.822	3.822	0.000	96	1202812	100.0	97.3	
50 2-Butanone (MEK)	43	4.204	4.204	0.000	100	2435870	400.0	382.3	
52 cis-1,2-Dichloroethene	96	4.231	4.231	0.000	84	724974	100.0	95.8	
53 2,2-Dichloropropane	77	4.242	4.242	0.000	86	1128586	100.0	105.3	
51 sec-Butyl Alcohol	45	4.321	4.321	0.000	99	4631764	3000.0	2999.8	
59 Chlorobromomethane	128	4.411	4.411	0.000	98	291726	100.0	94.5	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
57 Tetrahydrofuran	42	4.418	4.418	0.000	86	774643	200.0	200.0	
56 Chloroform	83	4.467	4.467	0.000	94	1187040	100.0	98.5	
60 1,1,1-Trichloroethane	97	4.613	4.613	0.000	98	1076675	100.0	103.4	
61 Cyclohexane	56	4.673	4.673	0.000	91	1200937	100.0	96.6	
62 1,1-Dichloropropene	75	4.725	4.725	0.000	95	968052	100.0	99.5	
63 Carbon tetrachloride	117	4.729	4.729	0.000	96	866926	100.0	98.5	
58 Isobutyl alcohol	43	4.740	4.740	0.000	93	2009862	2500.0	2449.3	
66 Benzene	78	4.879	4.879	0.000	96	2738920	100.0	95.8	
67 1,2-Dichloroethane	62	4.909	4.909	0.000	98	1038820	100.0	95.7	
135 n-Heptane	43	5.063	5.063	0.000	93	1035164	100.0	104.0	
68 Trichloroethene	130	5.366	5.366	0.000	98	687946	100.0	97.6	
69 2-Pentanone	43	5.468	5.468	0.000	99	3952589	400.0	392.0	
71 Methylcyclohexane	55	5.561	5.561	0.000	93	984913	100.0	97.8	
72 1,2-Dichloropropane	63	5.576	5.576	0.000	92	710353	100.0	100.3	
73 1,4-Dioxane	88	5.618	5.618	0.000	95	377249	2000.0	1881.0	
74 Dibromomethane	93	5.644	5.644	0.000	96	440094	100.0	99.6	
75 Dichlorobromomethane	83	5.768	5.768	0.000	99	895466	100.0	111.2	
78 cis-1,3-Dichloropropene	75	6.116	6.116	0.000	95	1194612	100.0	104.8	
79 4-Methyl-2-pentanone (MIBK)	43	6.217	6.217	0.000	96	4426490	400.0	388.7	
80 Toluene	91	6.405	6.405	0.000	98	2946724	100.0	97.1	
82 trans-1,3-Dichloropropene	75	6.581	6.581	0.000	96	1087356	100.0	108.2	
81 Ethyl methacrylate	69	6.600	6.600	0.000	89	1174701	100.0	101.8	
83 1,1,2-Trichloroethane	97	6.757	6.757	0.000	92	640097	100.0	98.1	
85 Tetrachloroethene	164	6.851	6.851	0.000	98	569882	100.0	97.9	
86 1,3-Dichloropropane	76	6.903	6.903	0.000	98	1139333	100.0	97.4	
84 2-Hexanone	43	6.918	6.918	0.000	96	3545082	400.0	385.8	
87 Chlorodibromomethane	129	7.098	7.098	0.000	90	610062	100.0	115.2	
89 Ethylene Dibromide	107	7.215	7.215	0.000	99	702561	100.0	99.5	
90 1-Chlorohexane	91	7.604	7.604	0.000	97	1035890	100.0	102.6	
91 Chlorobenzene	112	7.646	7.646	0.000	93	1861333	100.0	95.5	
93 1,1,1,2-Tetrachloroethane	131	7.717	7.717	0.000	94	641447	100.0	107.4	
92 Ethylbenzene	106	7.724	7.724	0.000	99	1044962	100.0	96.3	
94 m-Xylene & p-Xylene	91	7.841	7.841	0.000	97	2580753	100.0	96.7	
95 o-Xylene	106	8.200	8.200	0.000	98	1239564	100.0	96.7	
96 Styrene	104	8.215	8.215	0.000	94	2135832	100.0	98.9	
97 Bromoform	173	8.399	8.399	0.000	96	422214	100.0	99.8	
98 Isopropylbenzene	105	8.542	8.542	0.000	96	3211363	100.0	102.5	
100 Cyclohexanone	55	8.639	8.639	0.000	92	3275983	4000.0	3871.2	
101 1,1,2,2-Tetrachloroethane	83	8.826	8.826	0.000	95	1026961	100.0	103.4	
105 Bromobenzene	156	8.860	8.860	0.000	96	798422	100.0	102.1	
102 trans-1,4-Dichloro-2-buten	53	8.864	8.864	0.000	84	388617	100.0	111.4	
104 1,2,3-Trichloropropane	110	8.890	8.890	0.000	84	314513	100.0	100.2	a
103 N-Propylbenzene	120	8.939	8.939	0.000	99	844383	100.0	102.0	
107 2-Chlorotoluene	126	9.036	9.036	0.000	96	732813	100.0	101.1	
106 1,3,5-Trimethylbenzene	105	9.111	9.111	0.000	94	2611949	100.0	102.7	
108 4-Chlorotoluene	126	9.153	9.153	0.000	99	755819	100.0	101.9	
109 tert-Butylbenzene	119	9.419	9.419	0.000	93	2229108	100.0	102.9	
110 1,2,4-Trimethylbenzene	105	9.479	9.479	0.000	98	2676786	100.0	102.3	
111 sec-Butylbenzene	134	9.640	9.640	0.000	95	642436	100.0	100.0	
113 1,3-Dichlorobenzene	146	9.767	9.767	0.000	97	1446600	100.0	100.8	
112 4-Isopropyltoluene	119	9.786	9.786	0.000	97	2814022	100.0	103.2	
115 1,4-Dichlorobenzene	146	9.865	9.865	0.000	93	1436565	100.0	97.5	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
116 n-Butylbenzene	91	10.191	10.191	0.000	98	2694098	100.0	106.4	
117 1,2-Dichlorobenzene	146	10.221	10.221	0.000	97	1390926	100.0	100.1	
118 1,2-Dibromo-3-Chloropropan	157	11.001	11.001	0.000	83	274222	100.0	97.0	
120 1,2,4-Trichlorobenzene	180	11.822	11.822	0.000	94	1076664	100.0	108.6	
121 Hexachlorobutadiene	225	11.960	11.960	0.000	97	460406	100.0	106.9	
122 Naphthalene	128	12.092	12.092	0.000	97	3441358	100.0	107.1	
123 1,2,3-Trichlorobenzene	180	12.313	12.313	0.000	95	1029106	100.0	107.1	
S 136 1,2-Dichloroethene, Total	96				0		200.0	190.4	
S 142 Xylenes, Total	106				0		200.0	193.4	
S 141 1,2-Dichloroethene, Total	1				0		200.0	190.4	
S 139 Total BTEX	1				0			482.5	
S 138 Xylenes, Total (URS)	1				0		200.0	193.4	
S 137 Trihalomethanes, Total	1				0		400.0	424.7	
S 140 1,3-Dichloropropene, Total	1				0		200.0	213.0	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MV-MegaMainA_00014

Amount Added: 100.00

Units: uL

mv-Cent IS/SS_00002

Amount Added: 5.00

Units: uL

Run Reagent

Report Date: 08-May-2019 10:06:36

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1613.D

Injection Date: 07-May-2019 15:37:30

Instrument ID: VMS_MS9

Operator ID: newcomer

Lims ID: STD100

Worklist Smp#: 21

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

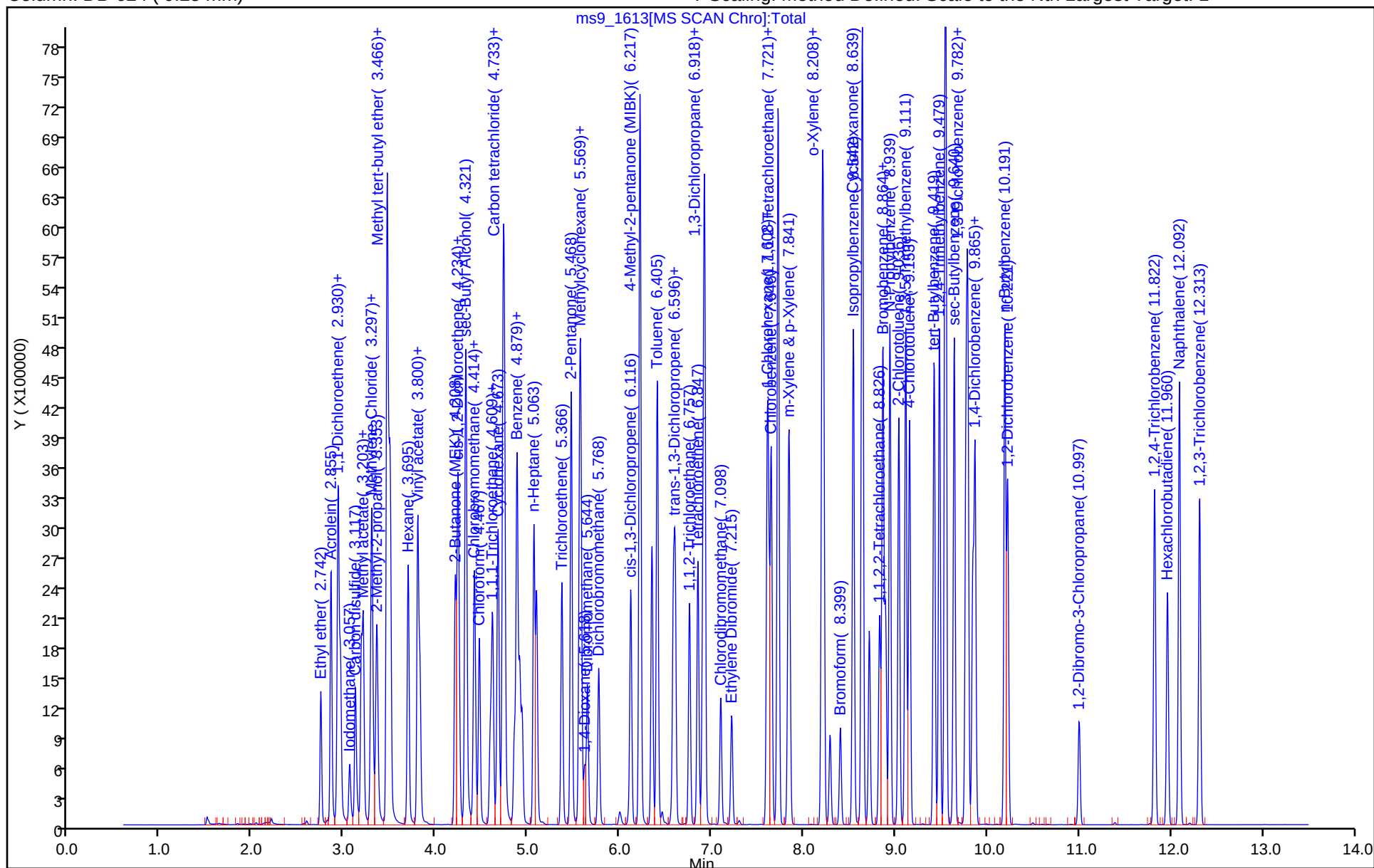
ALS Bottle#: 23

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



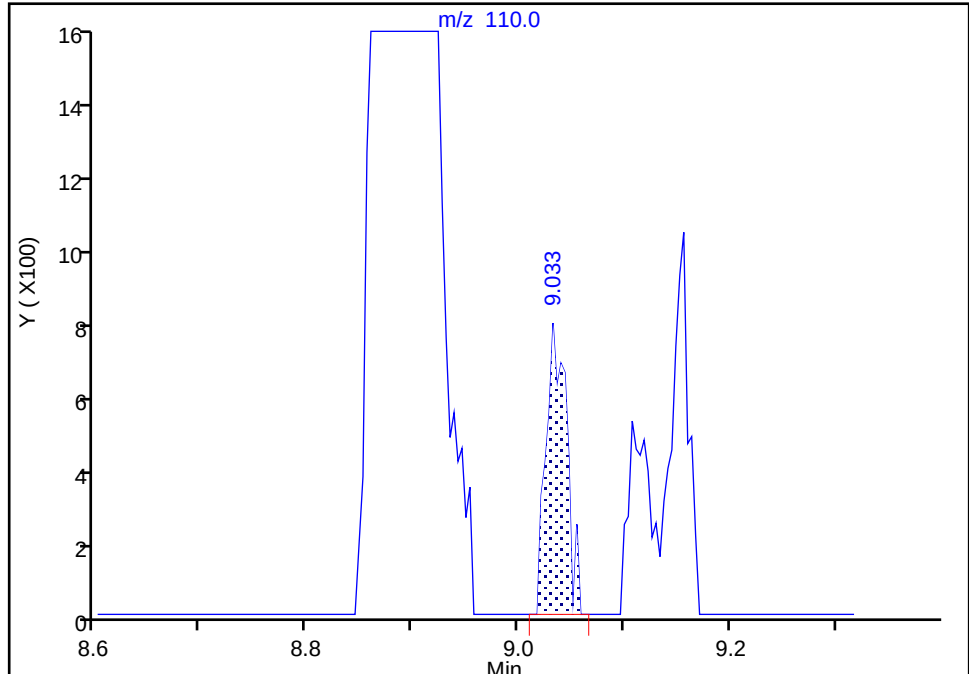
Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1613.D
Injection Date: 07-May-2019 15:37:30 Instrument ID: VMS_MS9
Lims ID: STD100
Client ID:
Operator ID: newcomer ALS Bottle#: 23 Worklist Smp#: 21
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: AQ_VMSMS9_8260 Limit Group: MSV - 8260B Water and Solid
Column: DB-624 (0.25 mm) Detector: MS SCAN

104 1,2,3-Trichloropropane, CAS: 96-18-4
Signal: 1

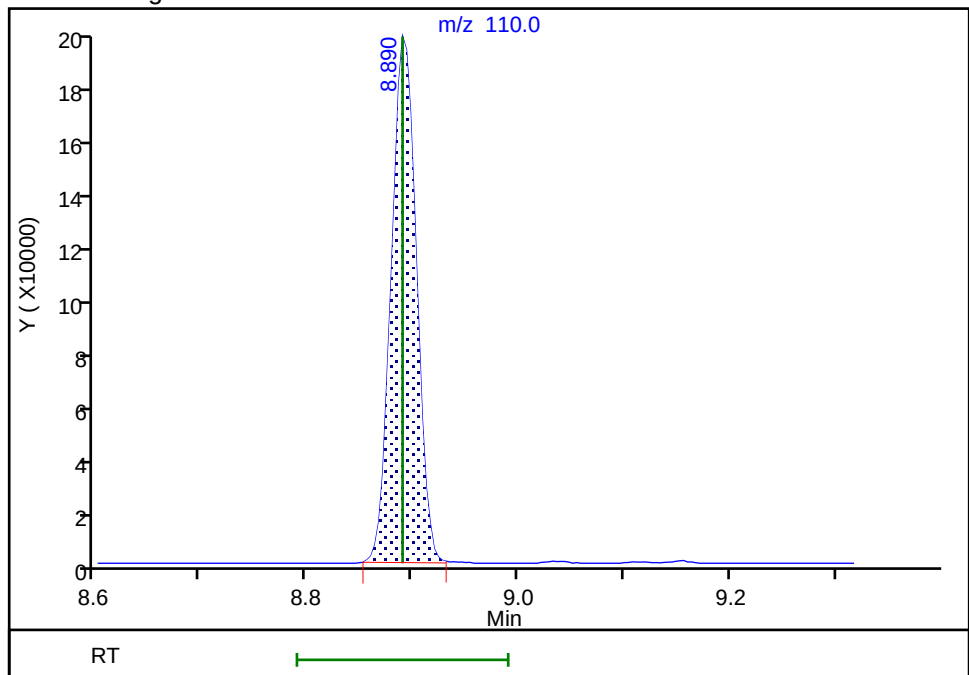
RT: 9.03
Area: 1025
Amount: 92.532369
Amount Units: ug/l

Processing Integration Results



RT: 8.89
Area: 314513
Amount: 100.1734
Amount Units: ug/l

Manual Integration Results



Reviewer: newcomer, 08-May-2019 07:24:21
Audit Action: Assigned Compound ID

Audit Reason: Assign Peak

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1614.D
 Lims ID: ICIS
 Client ID:
 Sample Type: ICIS Calib Level: 7
 Inject. Date: 07-May-2019 15:58:30 ALS Bottle#: 24 Worklist Smp#: 22
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: ICIS
 Misc. Info.: 280-0081636-022
 Operator ID: newcomer Instrument ID: VMS_MS9
 Sublist: chrom-AQ_VMSMS9_8260*sub49
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 08-May-2019 10:06:41 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0338

First Level Reviewer: newcomer

Date: 08-May-2019 07:25:45

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.290	3.290	0.000	0	2264779	1000.0	1000.0	
* 1 Fluorobenzene	96	5.093	5.093	0.000	99	1766233	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.619	0.000	87	430895	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	97	675047	50.0	50.0	
\$ 6 Dibromofluoromethane (Surr	111	4.587	4.587	0.000	94	423850	50.0	50.4	
\$ 7 1,2-Dichloroethane-d4 (Sur	65	4.849	4.849	0.000	98	555703	50.0	51.1	
\$ 8 Toluene-d8 (Surr)	98	6.348	6.348	0.000	93	1727756	50.0	50.0	
\$ 9 4-Bromofluorobenzene (Surr	95	8.714	8.714	0.000	90	656995	50.0	49.6	
24 Ethyl ether	59	2.742	2.742	0.000	94	305664	50.0	48.9	
28 Acrolein	56	2.855	2.855	0.000	100	931329	493.8	499.1	
29 1,1,2-Trichloro-1,2,2-trif	151	2.933	2.933	0.000	96	238777	50.0	49.5	
30 1,1-Dichloroethene	96	2.933	2.933	0.000	96	294664	50.0	49.2	
31 Acetone	43	2.956	2.956	0.000	99	790729	200.0	200.2	
33 Iodomethane	142	3.057	3.057	0.000	98	327893	50.0	52.1	
35 Carbon disulfide	76	3.121	3.121	0.000	99	886929	50.0	51.9	
34 Methyl acetate	43	3.185	3.185	0.000	98	864686	100.0	95.7	
36 3-Chloro-1-propene	41	3.203	3.203	0.000	90	553102	50.0	51.6	
39 Methylene Chloride	84	3.301	3.301	0.000	94	338316	50.0	50.3	
38 2-Methyl-2-propanol	59	3.350	3.350	0.000	100	1119193	500.0	487.0	
42 Acrylonitrile	53	3.462	3.462	0.000	98	2102492	500.0	478.0	
40 Methyl tert-butyl ether	73	3.488	3.488	0.000	95	1138419	50.0	49.0	
41 trans-1,2-Dichloroethene	96	3.503	3.503	0.000	97	329992	50.0	48.6	
43 Hexane	57	3.694	3.694	0.000	93	530966	50.0	49.9	
45 Vinyl acetate	43	3.796	3.796	0.000	97	1827904	100.0	106.0	
46 1,1-Dichloroethane	63	3.822	3.822	0.000	96	629595	50.0	48.7	
50 2-Butanone (MEK)	43	4.204	4.204	0.000	100	1276224	200.0	191.4	
52 cis-1,2-Dichloroethene	96	4.230	4.230	0.000	84	376950	50.0	47.6	
53 2,2-Dichloropropane	77	4.242	4.242	0.000	86	577293	50.0	51.5	
51 sec-Butyl Alcohol	45	4.317	4.317	0.000	99	2419020	1500.0	1406.2	
59 Chlorobromomethane	128	4.410	4.410	0.000	98	154205	50.0	47.7	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
57 Tetrahydrofuran	42	4.418	4.418	0.000	86	406960	100.0	100.1	
56 Chloroform	83	4.470	4.470	0.000	94	619196	50.0	49.1	
60 1,1,1-Trichloroethane	97	4.613	4.613	0.000	98	554603	50.0	50.9	
61 Cyclohexane	56	4.673	4.673	0.000	91	641757	50.0	49.3	
62 1,1-Dichloropropene	75	4.725	4.725	0.000	96	507754	50.0	49.8	
63 Carbon tetrachloride	117	4.733	4.733	0.000	96	437257	50.0	47.6	
58 Isobutyl alcohol	43	4.737	4.737	0.000	95	1065571	1250.0	1165.5	
66 Benzene	78	4.879	4.879	0.000	96	1444633	50.0	48.3	
67 1,2-Dichloroethane	62	4.909	4.909	0.000	98	535876	50.0	47.1	
135 n-Heptane	43	5.063	5.063	0.000	92	532988	50.0	51.1	
68 Trichloroethene	130	5.370	5.370	0.000	98	355346	50.0	48.2	
69 2-Pentanone	43	5.467	5.467	0.000	99	2083657	200.0	197.4	
71 Methylcyclohexane	55	5.561	5.561	0.000	93	516701	50.0	49.0	
72 1,2-Dichloropropane	63	5.576	5.576	0.000	91	375436	50.0	50.2	
73 1,4-Dioxane	88	5.614	5.614	0.000	95	202315	1000.0	963.8	
74 Dibromomethane	93	5.644	5.644	0.000	97	226711	50.0	49.0	
75 Dichlorobromomethane	83	5.767	5.767	0.000	100	448449	50.0	53.2	
78 cis-1,3-Dichloropropene	75	6.116	6.116	0.000	95	608752	50.0	51.4	
79 4-Methyl-2-pentanone (MIBK)	43	6.217	6.217	0.000	96	2365952	200.0	198.5	
80 Toluene	91	6.405	6.405	0.000	98	1533317	50.0	48.3	
82 trans-1,3-Dichloropropene	75	6.581	6.581	0.000	96	552591	50.0	52.5	
81 Ethyl methacrylate	69	6.600	6.600	0.000	88	610603	50.0	50.9	
83 1,1,2-Trichloroethane	97	6.757	6.757	0.000	92	333696	50.0	48.9	
85 Tetrachloroethene	164	6.847	6.847	0.000	97	294955	50.0	48.8	
86 1,3-Dichloropropane	76	6.903	6.903	0.000	98	592926	50.0	48.8	
84 2-Hexanone	43	6.918	6.918	0.000	96	1887738	200.0	197.8	
87 Chlorodibromomethane	129	7.094	7.094	0.000	90	302680	50.0	55.1	
89 Ethylene Dibromide	107	7.214	7.214	0.000	98	364853	50.0	49.8	
90 1-Chlorohexane	91	7.604	7.604	0.000	97	539460	50.0	51.3	
91 Chlorobenzene	112	7.645	7.645	0.000	93	970450	50.0	47.9	
93 1,1,1,2-Tetrachloroethane	131	7.717	7.717	0.000	94	323779	50.0	52.2	
92 Ethylbenzene	106	7.720	7.720	0.000	99	542961	50.0	48.2	
94 m-Xylene & p-Xylene	91	7.840	7.840	0.000	97	1349791	50.0	48.7	
95 o-Xylene	106	8.200	8.200	0.000	97	651511	50.0	49.0	
96 Styrene	104	8.215	8.215	0.000	95	1129856	50.0	50.4	
97 Bromoform	173	8.399	8.399	0.000	96	203493	50.0	46.7	
98 Isopropylbenzene	105	8.541	8.541	0.000	96	1702673	50.0	49.1	
100 Cyclohexanone	55	8.635	8.635	0.000	92	1722162	2000.0	1959.6	
101 1,1,2,2-Tetrachloroethane	83	8.826	8.826	0.000	94	538938	50.0	49.0	
105 Bromobenzene	156	8.860	8.860	0.000	96	419271	50.0	48.4	
102 trans-1,4-Dichloro-2-buten	53	8.864	8.864	0.000	82	197300	50.0	51.1	
104 1,2,3-Trichloropropane	110	8.890	8.890	0.000	84	167783	50.0	48.2	a
103 N-Propylbenzene	120	8.939	8.939	0.000	99	452323	50.0	49.3	
107 2-Chlorotoluene	126	9.036	9.036	0.000	96	387700	50.0	48.3	
106 1,3,5-Trimethylbenzene	105	9.111	9.111	0.000	94	1407052	50.0	49.9	
108 4-Chlorotoluene	126	9.152	9.152	0.000	98	409779	50.0	49.9	
109 tert-Butylbenzene	119	9.419	9.419	0.000	93	1196348	50.0	49.8	
110 1,2,4-Trimethylbenzene	105	9.479	9.479	0.000	98	1436274	50.0	49.6	
111 sec-Butylbenzene	134	9.640	9.640	0.000	95	350795	50.0	49.3	
113 1,3-Dichlorobenzene	146	9.767	9.767	0.000	98	778240	50.0	48.9	
112 4-Isopropyltoluene	119	9.786	9.786	0.000	97	1526854	50.0	50.6	
115 1,4-Dichlorobenzene	146	9.865	9.865	0.000	94	785113	50.0	48.1	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
116 n-Butylbenzene	91	10.191	10.191	0.000	98	1448189	50.0	51.6	
117 1,2-Dichlorobenzene	146	10.221	10.221	0.000	97	745756	50.0	48.5	
118 1,2-Dibromo-3-Chloropropan	157	11.000	11.000	0.000	82	137770	50.0	44.4	
120 1,2,4-Trichlorobenzene	180	11.821	11.821	0.000	94	557785	50.0	50.8	
121 Hexachlorobutadiene	225	11.960	11.960	0.000	97	240320	50.0	50.3	
122 Naphthalene	128	12.091	12.091	0.000	97	1791507	50.0	50.3	
123 1,2,3-Trichlorobenzene	180	12.312	12.312	0.000	95	540223	50.0	50.7	
S 136 1,2-Dichloroethene, Total	96				0		100.0	96.2	
S 142 Xylenes, Total	106				0		100.0	97.7	
S 141 1,2-Dichloroethene, Total	1				0		100.0	96.2	
S 138 Xylenes, Total (URS)	1				0		100.0	97.7	
S 137 Trihalomethanes, Total	1				0		200.0	204.0	
S 140 1,3-Dichloropropene, Total	1				0		100.0	104.0	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MV-MegaMainA_00014

Amount Added: 50.00

Units: uL

mv-Cent IS/SS_00002

Amount Added: 5.00

Units: uL

Run Reagent

Report Date: 08-May-2019 10:06:43

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1614.D

Injection Date: 07-May-2019 15:58:30

Instrument ID: VMS_MS9

Operator ID: newcomer

Lims ID: ICIS

Worklist Smp#: 22

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

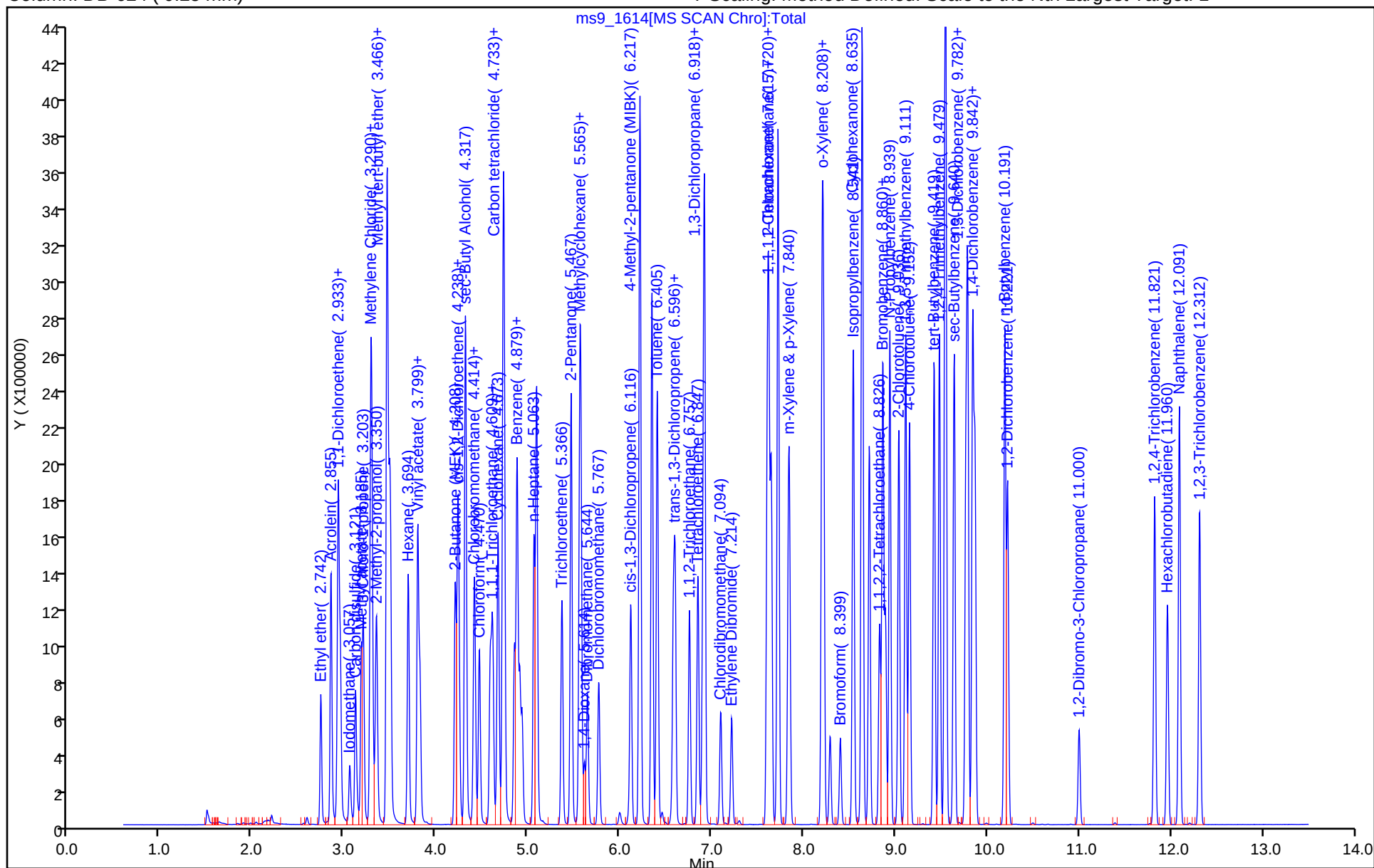
ALS Bottle#: 24

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver

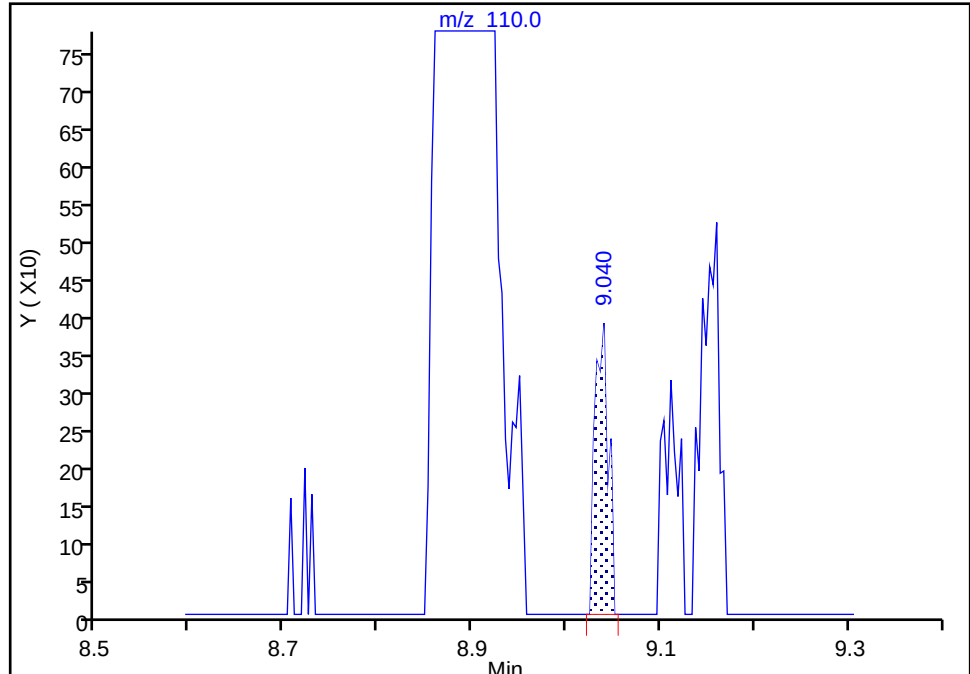
Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1614.D
Injection Date: 07-May-2019 15:58:30 Instrument ID: VMS_MS9
Lims ID: ICIS
Client ID:
Operator ID: newcomer ALS Bottle#: 24 Worklist Smp#: 22
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: AQ_VMSMS9_8260 Limit Group: MSV - 8260B Water and Solid
Column: DB-624 (0.25 mm) Detector MS SCAN

104 1,2,3-Trichloropropane, CAS: 96-18-4

Signal: 1

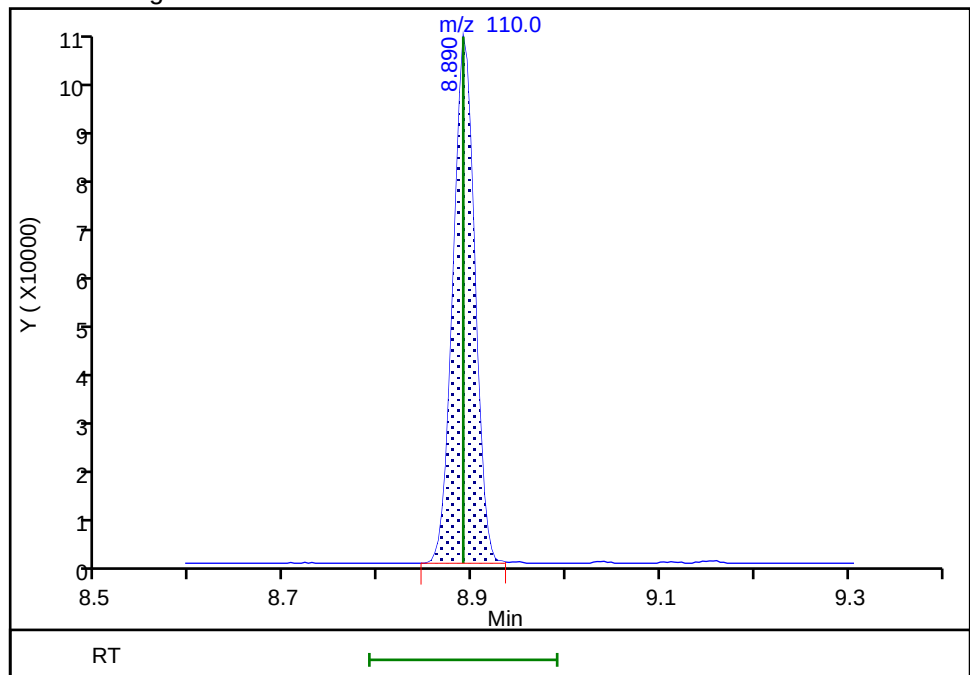
RT: 9.04
Area: 376
Amount: 0.213027
Amount Units: ug/l

Processing Integration Results



RT: 8.89
Area: 167783
Amount: 48.236512
Amount Units: ug/l

Manual Integration Results



Reviewer: newcomer, 08-May-2019 07:25:26
Audit Action: Assigned Compound ID

Audit Reason: Assign Peak

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1615.D
 Lims ID: STD20
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 07-May-2019 16:20:30 ALS Bottle#: 25 Worklist Smp#: 23
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: STD20
 Misc. Info.: 280-0081636-023
 Operator ID: newcomer Instrument ID: VMS_MS9
 Sublist: chrom-AQ_VMSMS9_8260*sub49
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 08-May-2019 10:06:48 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0338

First Level Reviewer: newcomer

Date: 08-May-2019 07:26:51

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.286	3.286	0.000	0	2218616	1000.0	1000.0	
* 1 Fluorobenzene	96	5.093	5.093	0.000	99	1848151	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.619	0.000	87	447730	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	96	710757	50.0	50.0	
\$ 6 Dibromofluoromethane (Surr	111	4.587	4.587	0.000	95	441879	50.0	50.2	
\$ 7 1,2-Dichloroethane-d4 (Sur	65	4.849	4.849	0.000	98	558334	50.0	49.0	
\$ 8 Toluene-d8 (Surr)	98	6.349	6.349	0.000	93	1790792	50.0	49.8	
\$ 9 4-Bromofluorobenzene (Surr	95	8.714	8.714	0.000	90	685299	50.0	49.1	
24 Ethyl ether	59	2.746	2.746	0.000	93	127060	20.0	19.4	
28 Acrolein	56	2.855	2.855	0.000	99	395080	197.5	201.6	
29 1,1,2-Trichloro-1,2,2-trif	151	2.934	2.934	0.000	94	99942	20.0	19.8	
30 1,1-Dichloroethene	96	2.934	2.934	0.000	95	123636	20.0	19.7	
31 Acetone	43	2.952	2.952	0.000	99	331348	80.0	79.3	
33 Iodomethane	142	3.057	3.057	0.000	98	135611	20.0	20.5	
35 Carbon disulfide	76	3.121	3.121	0.000	99	357283	20.0	20.0	
34 Methyl acetate	43	3.185	3.185	0.000	98	357602	40.0	37.8	
36 3-Chloro-1-propene	41	3.207	3.207	0.000	90	222544	20.0	19.8	
39 Methylene Chloride	84	3.301	3.301	0.000	94	142875	20.0	20.2	
38 2-Methyl-2-propanol	59	3.346	3.346	0.000	100	465986	200.0	193.8	
42 Acrylonitrile	53	3.462	3.462	0.000	99	899541	200.0	195.5	
40 Methyl tert-butyl ether	73	3.488	3.488	0.000	95	467632	20.0	19.2	
41 trans-1,2-Dichloroethene	96	3.503	3.503	0.000	97	137724	20.0	19.4	
43 Hexane	57	3.695	3.695	0.000	94	214442	20.0	19.4	
45 Vinyl acetate	43	3.799	3.799	0.000	97	729868	40.0	40.4	
46 1,1-Dichloroethane	63	3.822	3.822	0.000	96	260222	20.0	19.2	
50 2-Butanone (MEK)	43	4.204	4.204	0.000	100	532627	80.0	76.3	
52 cis-1,2-Dichloroethene	96	4.234	4.234	0.000	84	156128	20.0	18.8	
53 2,2-Dichloropropane	77	4.246	4.246	0.000	87	230534	20.0	19.6	
51 sec-Butyl Alcohol	45	4.313	4.313	0.000	99	1019580	600.0	605.0	
59 Chlorobromomethane	128	4.411	4.411	0.000	97	65984	20.0	19.5	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
57 Tetrahydrofuran	42	4.418	4.418	0.000	87	170809	40.0	39.8	
56 Chloroform	83	4.471	4.471	0.000	93	252164	20.0	19.1	
60 1,1,1-Trichloroethane	97	4.613	4.613	0.000	98	222253	20.0	19.5	
61 Cyclohexane	56	4.673	4.673	0.000	90	261129	20.0	19.2	
62 1,1-Dichloropropene	75	4.725	4.725	0.000	95	203839	20.0	19.1	
63 Carbon tetrachloride	117	4.733	4.733	0.000	93	170837	20.0	17.9	
58 Isobutyl alcohol	43	4.737	4.737	0.000	95	451466	500.0	504.1	
66 Benzene	78	4.879	4.879	0.000	96	601051	20.0	19.2	
67 1,2-Dichloroethane	62	4.909	4.909	0.000	98	214831	20.0	18.1	
135 n-Heptane	43	5.063	5.063	0.000	93	210990	20.0	19.3	
68 Trichloroethene	130	5.366	5.366	0.000	99	147415	20.0	19.1	
69 2-Pentanone	43	5.468	5.468	0.000	99	857724	80.0	77.7	
71 Methylcyclohexane	55	5.561	5.561	0.000	93	210251	20.0	19.1	
72 1,2-Dichloropropane	63	5.573	5.573	0.000	88	157335	20.0	19.6	
73 1,4-Dioxane	88	5.610	5.610	0.000	94	83301	400.0	379.2	
74 Dibromomethane	93	5.648	5.648	0.000	97	92828	20.0	19.2	
75 Dichlorobromomethane	83	5.768	5.768	0.000	99	176541	20.0	20.0	
78 cis-1,3-Dichloropropene	75	6.116	6.116	0.000	95	241621	20.0	19.6	
79 4-Methyl-2-pentanone (MIBK)	43	6.217	6.217	0.000	96	980176	80.0	78.6	
80 Toluene	91	6.405	6.405	0.000	98	632894	20.0	19.0	
82 trans-1,3-Dichloropropene	75	6.581	6.581	0.000	95	218976	20.0	19.9	
81 Ethyl methacrylate	69	6.600	6.600	0.000	89	250499	20.0	20.1	
83 1,1,2-Trichloroethane	97	6.757	6.757	0.000	92	136847	20.0	19.2	
85 Tetrachloroethene	164	6.847	6.847	0.000	98	120687	20.0	19.2	
86 1,3-Dichloropropane	76	6.903	6.903	0.000	91	243557	20.0	19.3	a
84 2-Hexanone	43	6.918	6.918	0.000	96	781063	80.0	78.8	
87 Chlorodibromomethane	129	7.098	7.098	0.000	88	116162	20.0	20.3	
89 Ethylene Dibromide	107	7.215	7.215	0.000	99	146164	20.0	19.2	
90 1-Chlorohexane	91	7.601	7.601	0.000	98	220811	20.0	20.0	
91 Chlorobenzene	112	7.646	7.646	0.000	94	401509	20.0	19.1	
93 1,1,1,2-Tetrachloroethane	131	7.721	7.721	0.000	93	128143	20.0	19.9	
92 Ethylbenzene	106	7.721	7.721	0.000	99	222880	20.0	19.0	
94 m-Xylene & p-Xylene	91	7.841	7.841	0.000	97	558474	20.0	19.4	
95 o-Xylene	106	8.200	8.200	0.000	97	266806	20.0	19.3	
96 Styrene	104	8.219	8.219	0.000	96	462011	20.0	19.8	
97 Bromoform	173	8.399	8.399	0.000	96	74671	20.0	17.0	
98 Isopropylbenzene	105	8.542	8.542	0.000	96	703176	20.0	19.2	
100 Cyclohexanone	55	8.635	8.635	0.000	92	729636	800.0	799.0	
101 1,1,2,2-Tetrachloroethane	83	8.826	8.826	0.000	94	219147	20.0	18.9	
105 Bromobenzene	156	8.860	8.860	0.000	96	173074	20.0	19.0	
102 trans-1,4-Dichloro-2-buten	53	8.864	8.864	0.000	71	76663	20.0	18.8	
104 1,2,3-Trichloropropane	110	8.890	8.890	0.000	84	67591	20.0	18.5	a
103 N-Propylbenzene	120	8.939	8.939	0.000	99	189531	20.0	19.6	
107 2-Chlorotoluene	126	9.036	9.036	0.000	96	162247	20.0	19.2	
106 1,3,5-Trimethylbenzene	105	9.111	9.111	0.000	94	575535	20.0	19.4	
108 4-Chlorotoluene	126	9.153	9.153	0.000	98	169579	20.0	19.6	
109 tert-Butylbenzene	119	9.419	9.419	0.000	93	492341	20.0	19.5	
110 1,2,4-Trimethylbenzene	105	9.479	9.479	0.000	98	588107	20.0	19.3	
111 sec-Butylbenzene	134	9.640	9.640	0.000	95	143103	20.0	19.1	
113 1,3-Dichlorobenzene	146	9.764	9.764	0.000	98	319966	20.0	19.1	
112 4-Isopropyltoluene	119	9.786	9.786	0.000	97	625535	20.0	19.7	
115 1,4-Dichlorobenzene	146	9.865	9.865	0.000	96	324701	20.0	18.9	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
116 n-Butylbenzene	91	10.191	10.191	0.000	98	583684	20.0	19.8	
117 1,2-Dichlorobenzene	146	10.221	10.221	0.000	97	307827	20.0	19.0	
118 1,2-Dibromo-3-Chloropropan	157	10.997	10.997	0.000	81	52551	20.0	16.6	
120 1,2,4-Trichlorobenzene	180	11.822	11.822	0.000	93	223247	20.0	19.3	
121 Hexachlorobutadiene	225	11.964	11.964	0.000	97	98033	20.0	19.5	
122 Naphthalene	128	12.091	12.091	0.000	97	718505	20.0	19.2	
123 1,2,3-Trichlorobenzene	180	12.309	12.309	0.000	95	214568	20.0	19.1	
S 136 1,2-Dichloroethene, Total	96				0		40.0	38.2	
S 142 Xylenes, Total	106				0		40.0	38.7	
S 141 1,2-Dichloroethene, Total	1				0		40.0	38.2	
S 139 Total BTEX	1				0			95.9	
S 138 Xylenes, Total (URS)	1				0		40.0	38.7	
S 137 Trihalomethanes, Total	1				0		80.0	76.4	
S 140 1,3-Dichloropropene, Total	1				0		40.0	39.5	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MV-MegaMainA_00014

Amount Added: 20.00

Units: uL

mv-Cent IS/SS_00002

Amount Added: 5.00

Units: uL

Run Reagent

Report Date: 08-May-2019 10:06:50

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1615.D

Injection Date: 07-May-2019 16:20:30

Instrument ID: VMS_MS9

Operator ID: newcomer

Lims ID: STD20

Worklist Smp#: 23

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

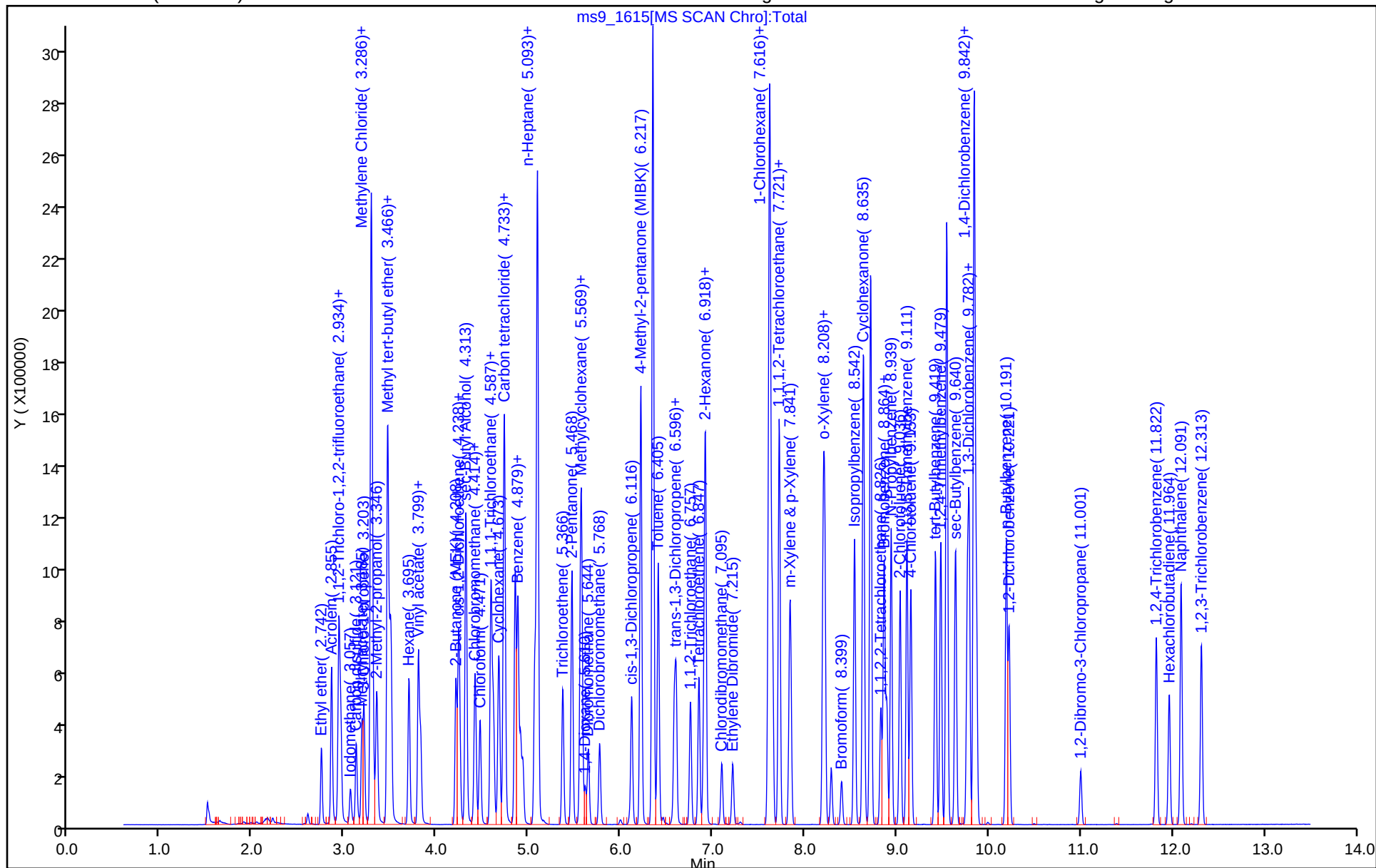
ALS Bottle#: 25

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver

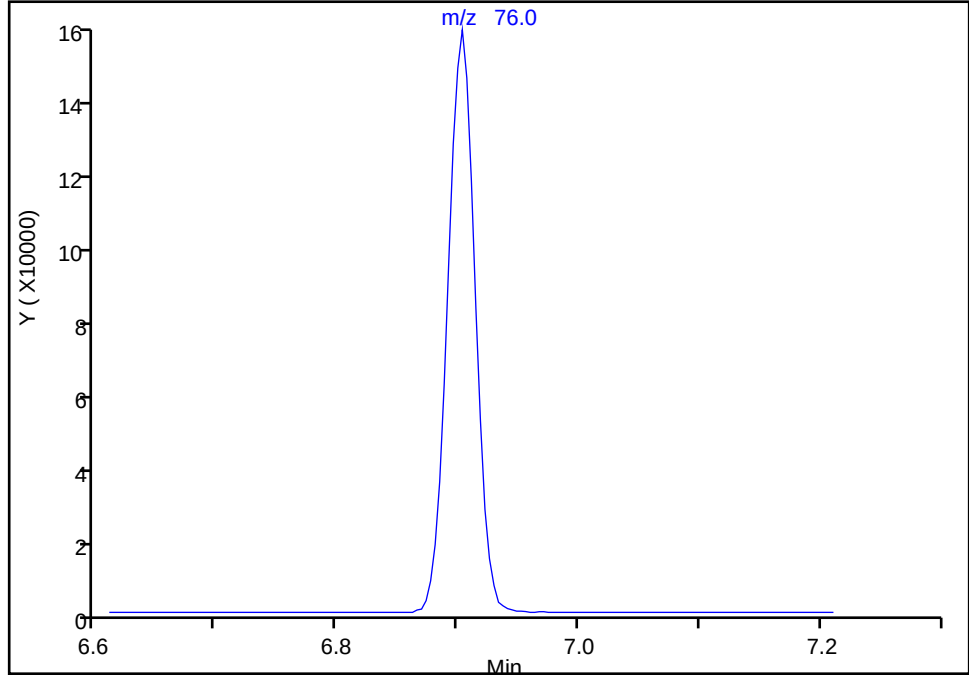
Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1615.D
Injection Date: 07-May-2019 16:20:30 Instrument ID: VMS_MS9
Lims ID: STD20
Client ID:
Operator ID: newcomer ALS Bottle#: 25 Worklist Smp#: 23
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: AQ_VMSMS9_8260 Limit Group: MSV - 8260B Water and Solid
Column: DB-624 (0.25 mm) Detector MS SCAN

86 1,3-Dichloropropane, CAS: 142-28-9

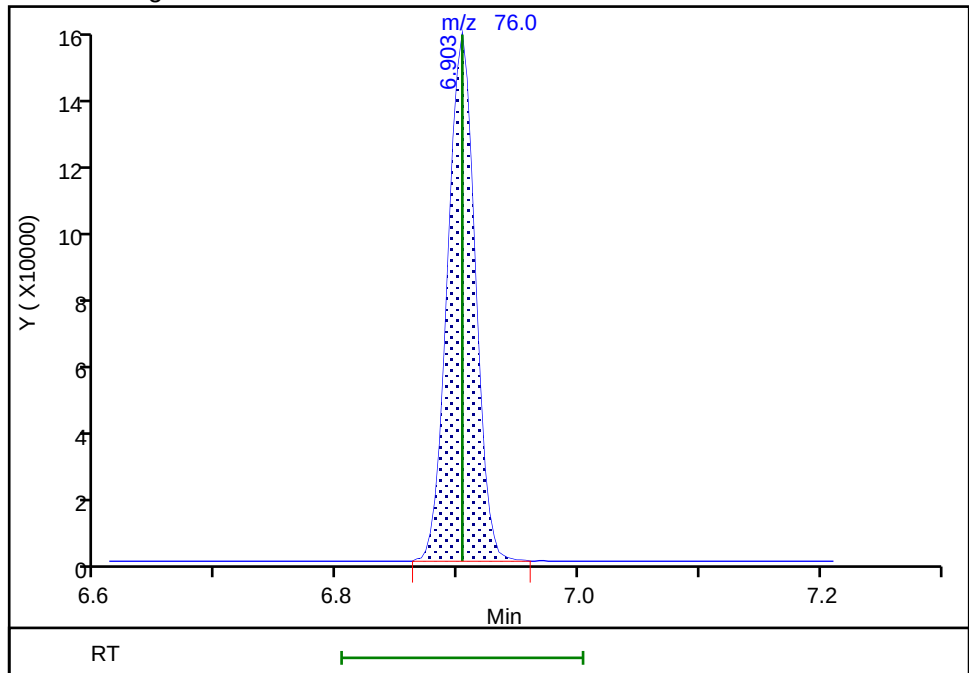
Signal: 1

Not Detected
Expected RT: 6.90

Processing Integration Results



Manual Integration Results



RT: 6.90
Area: 243557
Amount: 19.295567
Amount Units: ug/l

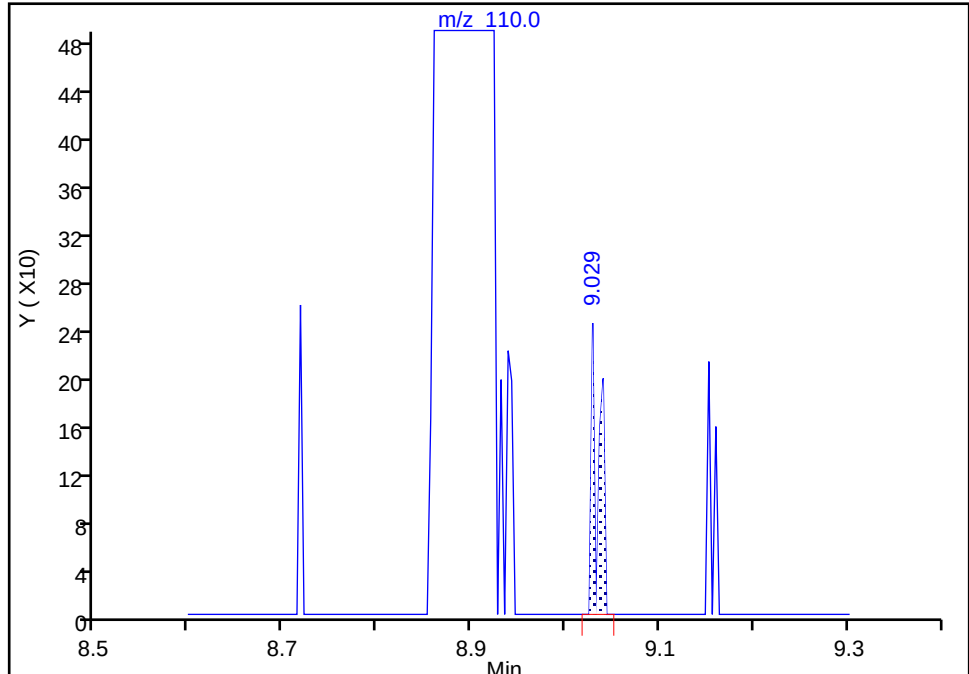
Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1615.D
Injection Date: 07-May-2019 16:20:30 Instrument ID: VMS_MS9
Lims ID: STD20
Client ID:
Operator ID: newcomer ALS Bottle#: 25 Worklist Smp#: 23
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: AQ_VMSMS9_8260 Limit Group: MSV - 8260B Water and Solid
Column: DB-624 (0.25 mm) Detector MS SCAN

104 1,2,3-Trichloropropane, CAS: 96-18-4
Signal: 1

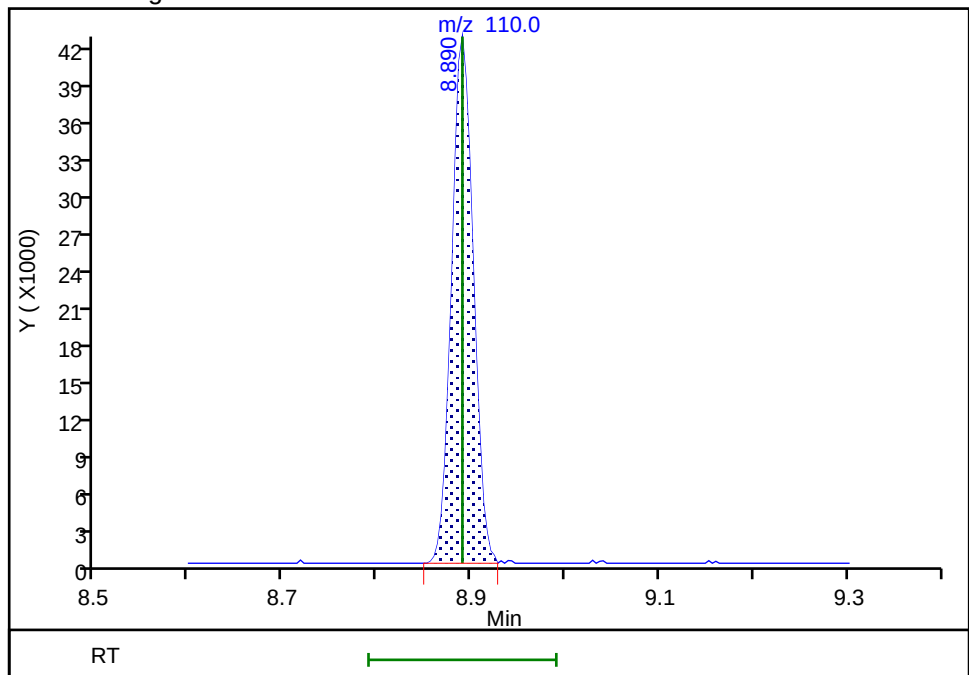
RT: 9.03
Area: 133
Amount: 12.917728
Amount Units: ug/l

Processing Integration Results



RT: 8.89
Area: 67591
Amount: 18.455664
Amount Units: ug/l

Manual Integration Results



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1616.D
 Lims ID: STD10
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 07-May-2019 16:41:30 ALS Bottle#: 26 Worklist Smp#: 24
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: STD10
 Misc. Info.: 280-0081636-024
 Operator ID: newcomer Instrument ID: VMS_MS9
 Sublist: chrom-AQ_VMSMS9_8260*sub49
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 08-May-2019 10:06:55 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0338

First Level Reviewer: newcomer

Date: 08-May-2019 07:27:53

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.286	3.286	0.000	0	2185800	1000.0	1000.0	
* 1 Fluorobenzene	96	5.093	5.093	0.000	99	1792103	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.619	0.000	87	430402	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	96	682834	50.0	50.0	
\$ 6 Dibromofluoromethane (Surr	111	4.586	4.586	0.000	94	422535	50.0	49.5	
\$ 7 1,2-Dichloroethane-d4 (Sur	65	4.853	4.853	0.000	98	548504	50.0	49.7	
\$ 8 Toluene-d8 (Surr)	98	6.348	6.348	0.000	94	1730050	50.0	50.1	
\$ 9 4-Bromofluorobenzene (Surr	95	8.714	8.714	0.000	89	665513	50.0	49.7	
24 Ethyl ether	59	2.746	2.746	0.000	95	61372	10.0	9.67	
28 Acrolein	56	2.855	2.855	0.000	99	195964	98.8	102.5	
29 1,1,2-Trichloro-1,2,2-trif	151	2.933	2.933	0.000	96	47169	10.0	9.63	
30 1,1-Dichloroethene	96	2.937	2.937	0.000	96	59275	10.0	9.76	
31 Acetone	43	2.956	2.956	0.000	100	168483	40.0	40.9	
33 Iodomethane	142	3.061	3.061	0.000	98	64998	10.0	10.0	
35 Carbon disulfide	76	3.125	3.125	0.000	99	164755	10.0	9.50	
34 Methyl acetate	43	3.184	3.184	0.000	98	176624	20.0	19.3	
36 3-Chloro-1-propene	41	3.207	3.207	0.000	90	110359	10.0	10.2	
39 Methylene Chloride	84	3.301	3.301	0.000	95	69962	10.0	10.1	
38 2-Methyl-2-propanol	59	3.346	3.346	0.000	100	227237	100.0	97.4	
42 Acrylonitrile	53	3.462	3.462	0.000	99	449898	100.0	100.8	
40 Methyl tert-butyl ether	73	3.488	3.488	0.000	94	229449	10.0	9.73	
41 trans-1,2-Dichloroethene	96	3.503	3.503	0.000	97	66930	10.0	9.71	
43 Hexane	57	3.698	3.698	0.000	93	104517	10.0	9.83	
45 Vinyl acetate	43	3.799	3.799	0.000	97	354042	20.0	20.2	
46 1,1-Dichloroethane	63	3.822	3.822	0.000	96	129612	10.0	9.88	
50 2-Butanone (MEK)	43	4.208	4.208	0.000	100	264394	40.0	39.1	
52 cis-1,2-Dichloroethene	96	4.234	4.234	0.000	84	77669	10.0	9.67	
53 2,2-Dichloropropane	77	4.242	4.242	0.000	87	109663	10.0	9.64	
51 sec-Butyl Alcohol	45	4.313	4.313	0.000	99	493318	300.0	297.1	
59 Chlorobromomethane	128	4.407	4.407	0.000	97	32610	10.0	9.95	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
57 Tetrahydrofuran	42	4.422	4.422	0.000	87	86122	20.0	20.4	
56 Chloroform	83	4.470	4.470	0.000	93	123839	10.0	9.67	
60 1,1,1-Trichloroethane	97	4.613	4.613	0.000	98	107852	10.0	9.75	
61 Cyclohexane	56	4.673	4.673	0.000	91	127626	10.0	9.67	
62 1,1-Dichloropropene	75	4.725	4.725	0.000	96	100865	10.0	9.76	
63 Carbon tetrachloride	117	4.733	4.733	0.000	72	79105	10.0	8.67	
58 Isobutyl alcohol	43	4.736	4.736	0.000	94	221443	250.0	251.0	
66 Benzene	78	4.883	4.883	0.000	96	297389	10.0	9.79	
67 1,2-Dichloroethane	62	4.909	4.909	0.000	97	107908	10.0	9.36	
135 n-Heptane	43	5.063	5.063	0.000	93	101688	10.0	9.62	
68 Trichloroethene	130	5.370	5.370	0.000	98	71309	10.0	9.52	
69 2-Pentanone	43	5.467	5.467	0.000	99	427428	40.0	39.9	
71 Methylcyclohexane	55	5.561	5.561	0.000	89	102267	10.0	9.56	
72 1,2-Dichloropropane	63	5.576	5.576	0.000	87	81035	10.0	10.0	
73 1,4-Dioxane	88	5.610	5.610	0.000	92	40683	200.0	191.0	
74 Dibromomethane	93	5.647	5.647	0.000	96	44272	10.0	9.44	
75 Dichlorobromomethane	83	5.771	5.771	0.000	99	82685	10.0	9.67	
78 cis-1,3-Dichloropropene	75	6.116	6.116	0.000	95	115866	10.0	9.80	
79 4-Methyl-2-pentanone (MIBK)	43	6.217	6.217	0.000	96	487031	40.0	40.3	
80 Toluene	91	6.405	6.405	0.000	98	313055	10.0	9.71	
82 trans-1,3-Dichloropropene	75	6.581	6.581	0.000	95	104117	10.0	9.76	
81 Ethyl methacrylate	69	6.600	6.600	0.000	89	119313	10.0	9.96	
83 1,1,2-Trichloroethane	97	6.757	6.757	0.000	91	67425	10.0	9.73	
85 Tetrachloroethene	164	6.847	6.847	0.000	98	57435	10.0	9.51	
86 1,3-Dichloropropane	76	6.903	6.903	0.000	96	118271	10.0	9.75	
84 2-Hexanone	43	6.918	6.918	0.000	97	387755	40.0	40.7	
87 Chlorodibromomethane	129	7.098	7.098	0.000	91	51548	10.0	9.39	
89 Ethylene Dibromide	107	7.214	7.214	0.000	98	70956	10.0	9.69	
90 1-Chlorohexane	91	7.604	7.604	0.000	97	108766	10.0	10.1	
91 Chlorobenzene	112	7.645	7.645	0.000	95	197130	10.0	9.75	
93 1,1,1,2-Tetrachloroethane	131	7.717	7.717	0.000	91	60387	10.0	9.75	
92 Ethylbenzene	106	7.720	7.720	0.000	99	109527	10.0	9.73	
94 m-Xylene & p-Xylene	91	7.840	7.840	0.000	98	268638	10.0	9.70	
95 o-Xylene	106	8.200	8.200	0.000	97	129693	10.0	9.76	
96 Styrene	104	8.215	8.215	0.000	95	221417	10.0	9.88	
97 Bromoform	173	8.399	8.399	0.000	95	33189	10.0	8.28	
98 Isopropylbenzene	105	8.538	8.538	0.000	96	338658	10.0	9.65	
100 Cyclohexanone	55	8.635	8.635	0.000	92	360094	400.0	410.2	
101 1,1,2,2-Tetrachloroethane	83	8.826	8.826	0.000	94	106041	10.0	9.53	
105 Bromobenzene	156	8.860	8.860	0.000	96	82996	10.0	9.47	
102 trans-1,4-Dichloro-2-buten	53	8.864	8.864	0.000	69	36180	10.0	9.26	
104 1,2,3-Trichloropropane	110	8.890	8.890	0.000	84	33337	10.0	9.47	a
103 N-Propylbenzene	120	8.939	8.939	0.000	99	90600	10.0	9.77	
107 2-Chlorotoluene	126	9.036	9.036	0.000	96	78531	10.0	9.67	
106 1,3,5-Trimethylbenzene	105	9.111	9.111	0.000	94	277703	10.0	9.74	
108 4-Chlorotoluene	126	9.152	9.152	0.000	98	80949	10.0	9.74	
109 tert-Butylbenzene	119	9.422	9.422	0.000	93	235063	10.0	9.68	
110 1,2,4-Trimethylbenzene	105	9.478	9.478	0.000	98	284053	10.0	9.69	
111 sec-Butylbenzene	134	9.640	9.640	0.000	95	67621	10.0	9.39	
113 1,3-Dichlorobenzene	146	9.767	9.767	0.000	98	155340	10.0	9.66	
112 4-Isopropyltoluene	119	9.786	9.786	0.000	97	300756	10.0	9.84	
115 1,4-Dichlorobenzene	146	9.865	9.865	0.000	96	159363	10.0	9.65	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
116 n-Butylbenzene	91	10.191	10.191	0.000	98	277985	10.0	9.80	
117 1,2-Dichlorobenzene	146	10.221	10.221	0.000	97	148625	10.0	9.55	
118 1,2-Dibromo-3-Chloropropan	157	11.004	11.004	0.000	81	23962	10.0	8.32	
120 1,2,4-Trichlorobenzene	180	11.821	11.821	0.000	94	106026	10.0	9.54	
121 Hexachlorobutadiene	225	11.960	11.960	0.000	97	45421	10.0	9.41	
122 Naphthalene	128	12.091	12.091	0.000	97	345145	10.0	9.59	
123 1,2,3-Trichlorobenzene	180	12.312	12.312	0.000	96	104553	10.0	9.71	
S 136 1,2-Dichloroethene, Total	96				0		20.0	19.4	
S 142 Xylenes, Total	106				0		20.0	19.5	
S 141 1,2-Dichloroethene, Total	1				0		20.0	19.4	
S 139 Total BTEX	1				0			48.7	
S 138 Xylenes, Total (URS)	1				0		20.0	19.5	
S 137 Trihalomethanes, Total	1				0		40.0	37.0	
S 140 1,3-Dichloropropene, Total	1				0		20.0	19.6	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MV-MegaMainA_00014

Amount Added: 10.00

Units: uL

mv-Cent IS/SS_00002

Amount Added: 5.00

Units: uL

Run Reagent

Report Date: 08-May-2019 10:06:57

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1616.D

Injection Date: 07-May-2019 16:41:30

Instrument ID: VMS_MS9

Operator ID: newcomer

Lims ID: STD10

Worklist Smp#: 24

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

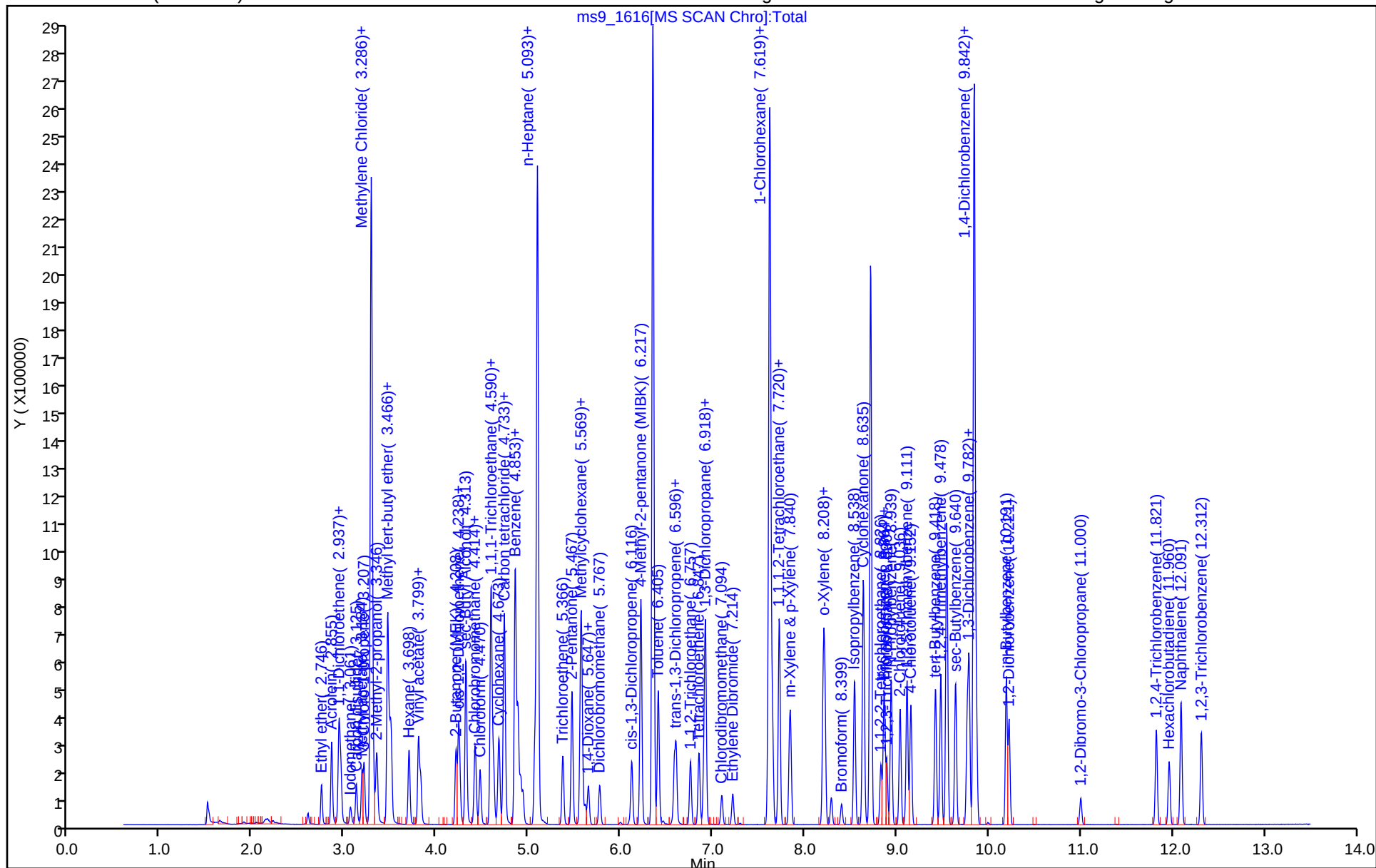
ALS Bottle#: 26

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



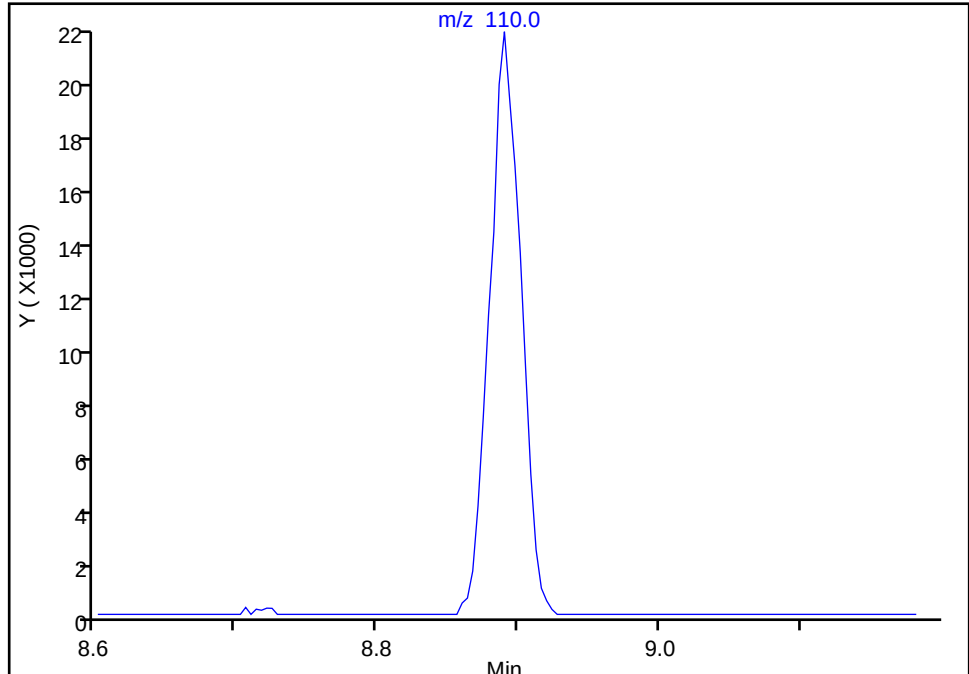
Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1616.D
Injection Date: 07-May-2019 16:41:30 Instrument ID: VMS_MS9
Lims ID: STD10
Client ID:
Operator ID: newcomer ALS Bottle#: 26 Worklist Smp#: 24
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: AQ_VMSMS9_8260 Limit Group: MSV - 8260B Water and Solid
Column: DB-624 (0.25 mm) Detector MS SCAN

104 1,2,3-Trichloropropane, CAS: 96-18-4
Signal: 1

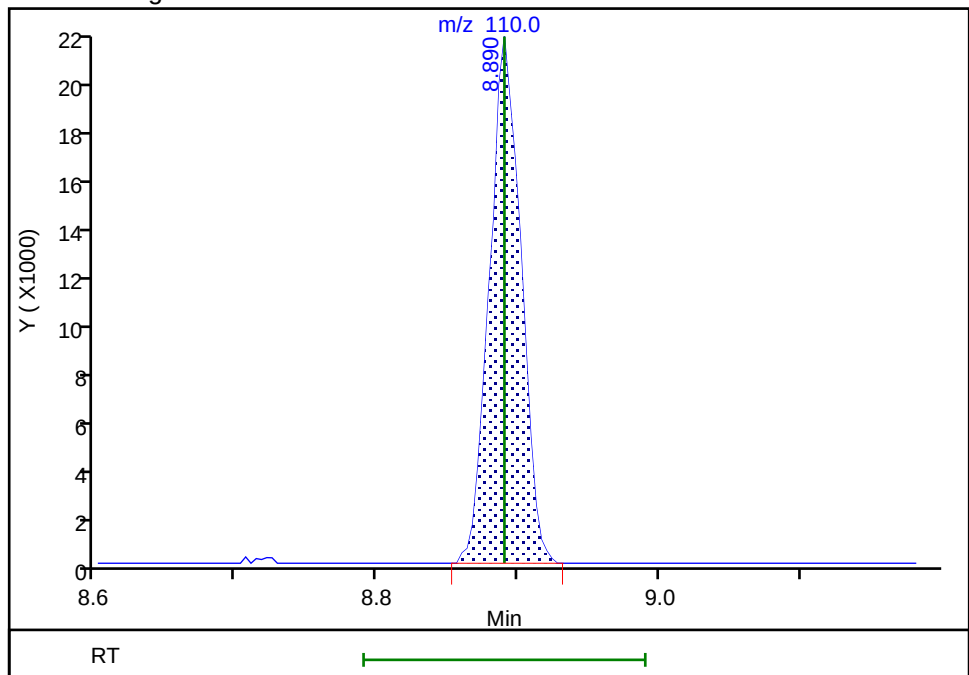
Not Detected
Expected RT: 8.89

Processing Integration Results



RT: 8.89
Area: 33337
Amount: 9.474872
Amount Units: ug/l

Manual Integration Results



Reviewer: newcomer, 08-May-2019 07:27:35
Audit Action: Assigned Compound ID

Audit Reason: Assign Peak

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1617.D
 Lims ID: STD05
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 07-May-2019 17:03:30 ALS Bottle#: 27 Worklist Smp#: 25
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: STD05
 Misc. Info.: 280-0081636-025
 Operator ID: newcomer Instrument ID: VMS_MS9
 Sublist: chrom-AQ_VMSMS9_8260*sub49
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 08-May-2019 10:07:03 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0338

First Level Reviewer: newcomer

Date: 08-May-2019 07:29:06

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.286	3.286	0.000	0	2249132	1000.0	1000.0	
* 1 Fluorobenzene	96	5.093	5.093	0.000	99	1854708	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.619	0.000	88	446568	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	96	710498	50.0	50.0	
\$ 6 Dibromofluoromethane (Surr	111	4.587	4.587	0.000	94	436105	50.0	49.4	
\$ 7 1,2-Dichloroethane-d4 (Sur	65	4.849	4.849	0.000	98	555652	50.0	48.6	
\$ 8 Toluene-d8 (Surr)	98	6.349	6.349	0.000	93	1789763	50.0	49.9	
\$ 9 4-Bromofluorobenzene (Surr	95	8.714	8.714	0.000	93	685186	50.0	49.1	
24 Ethyl ether	59	2.742	2.742	0.000	94	30718	5.00	4.68	
28 Acrolein	56	2.855	2.855	0.000	99	99997	49.4	49.8	
29 1,1,2-Trichloro-1,2,2-trif	151	2.934	2.934	0.000	69	24808	5.00	4.90	
30 1,1-Dichloroethene	96	2.937	2.937	0.000	96	31070	5.00	4.95	
31 Acetone	43	2.956	2.956	0.000	99	88033	20.0	19.9	
33 Iodomethane	142	3.061	3.061	0.000	98	33790	5.00	4.92	
35 Carbon disulfide	76	3.121	3.121	0.000	99	83590	5.00	4.66	
34 Methyl acetate	43	3.185	3.185	0.000	98	89357	10.0	9.42	
36 3-Chloro-1-propene	41	3.207	3.207	0.000	89	54232	5.00	4.82	
39 Methylene Chloride	84	3.301	3.301	0.000	93	37018	5.00	5.03	
38 2-Methyl-2-propanol	59	3.346	3.346	0.000	100	120572	50.0	50.0	
42 Acrylonitrile	53	3.462	3.462	0.000	99	234154	50.0	50.7	
40 Methyl tert-butyl ether	73	3.488	3.488	0.000	95	116563	5.00	4.78	
41 trans-1,2-Dichloroethene	96	3.503	3.503	0.000	97	34632	5.00	4.85	
43 Hexane	57	3.698	3.698	0.000	93	53574	5.00	4.86	
45 Vinyl acetate	43	3.800	3.800	0.000	97	171646	10.0	9.48	
46 1,1-Dichloroethane	63	3.822	3.822	0.000	96	65861	5.00	4.85	
50 2-Butanone (MEK)	43	4.208	4.208	0.000	100	137480	20.0	19.6	
52 cis-1,2-Dichloroethene	96	4.231	4.231	0.000	83	40513	5.00	4.87	
53 2,2-Dichloropropane	77	4.242	4.242	0.000	88	55855	5.00	4.74	
51 sec-Butyl Alcohol	45	4.313	4.313	0.000	99	258991	150.0	151.6	
59 Chlorobromomethane	128	4.411	4.411	0.000	98	16852	5.00	4.97	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
57 Tetrahydrofuran	42	4.418	4.418	0.000	87	44594	10.0	9.95	
56 Chloroform	83	4.467	4.467	0.000	93	65009	5.00	4.91	
60 1,1,1-Trichloroethane	97	4.613	4.613	0.000	98	54585	5.00	4.77	
61 Cyclohexane	56	4.669	4.669	0.000	90	66288	5.00	4.85	
62 1,1-Dichloropropene	75	4.725	4.725	0.000	96	50944	5.00	4.76	
63 Carbon tetrachloride	117	4.729	4.729	0.000	73	39897	5.00	4.34	
58 Isobutyl alcohol	43	4.737	4.737	0.000	95	113522	125.0	125.0	
66 Benzene	78	4.879	4.879	0.000	96	152999	5.00	4.87	
67 1,2-Dichloroethane	62	4.909	4.909	0.000	97	55051	5.00	4.61	
135 n-Heptane	43	5.063	5.063	0.000	91	52010	5.00	4.75	
68 Trichloroethene	130	5.366	5.366	0.000	98	36961	5.00	4.77	
69 2-Pentanone	43	5.468	5.468	0.000	99	215753	20.0	19.5	
71 Methylcyclohexane	55	5.561	5.561	0.000	82	53190	5.00	4.81	
72 1,2-Dichloropropane	63	5.573	5.573	0.000	91	44758	5.00	4.97	
73 1,4-Dioxane	88	5.614	5.614	0.000	94	21442	100.0	97.3	
74 Dibromomethane	93	5.644	5.644	0.000	97	22801	5.00	4.70	
75 Dichlorobromomethane	83	5.768	5.768	0.000	99	41179	5.00	4.65	
78 cis-1,3-Dichloropropene	75	6.120	6.120	0.000	95	57774	5.00	4.71	
79 4-Methyl-2-pentanone (MIBK)	43	6.217	6.217	0.000	96	246676	20.0	19.7	
80 Toluene	91	6.409	6.409	0.000	98	162006	5.00	4.85	
82 trans-1,3-Dichloropropene	75	6.581	6.581	0.000	93	50376	5.00	4.56	
81 Ethyl methacrylate	69	6.600	6.600	0.000	89	59163	5.00	4.76	
83 1,1,2-Trichloroethane	97	6.757	6.757	0.000	92	33593	5.00	4.68	
85 Tetrachloroethene	164	6.847	6.847	0.000	98	30228	5.00	4.83	
86 1,3-Dichloropropane	76	6.903	6.903	0.000	91	59607	5.00	4.73	a
84 2-Hexanone	43	6.918	6.918	0.000	96	197996	20.0	20.0	
87 Chlorodibromomethane	129	7.098	7.098	0.000	88	24957	5.00	4.38	
89 Ethylene Dibromide	107	7.215	7.215	0.000	99	36333	5.00	4.78	
90 1-Chlorohexane	91	7.604	7.604	0.000	98	55344	5.00	4.77	
91 Chlorobenzene	112	7.646	7.646	0.000	94	101481	5.00	4.84	
93 1,1,1,2-Tetrachloroethane	131	7.717	7.717	0.000	42	30037	5.00	4.67	
92 Ethylbenzene	106	7.721	7.721	0.000	98	56105	5.00	4.80	
94 m-Xylene & p-Xylene	91	7.844	7.844	0.000	96	139658	5.00	4.86	
95 o-Xylene	106	8.200	8.200	0.000	96	67377	5.00	4.89	
96 Styrene	104	8.215	8.215	0.000	94	111688	5.00	4.80	
97 Bromoform	173	8.395	8.395	0.000	96	16120	5.00	4.29	
98 Isopropylbenzene	105	8.542	8.542	0.000	96	174512	5.00	4.78	
100 Cyclohexanone	55	8.635	8.635	0.000	92	183461	200.0	201.4	
101 1,1,2,2-Tetrachloroethane	83	8.826	8.826	0.000	95	54048	5.00	4.67	
105 Bromobenzene	156	8.860	8.860	0.000	96	43875	5.00	4.81	
102 trans-1,4-Dichloro-2-buten	53	8.860	8.860	0.000	75	17478	5.00	4.30	
104 1,2,3-Trichloropropane	110	8.890	8.890	0.000	81	17804	5.00	4.86	a
103 N-Propylbenzene	120	8.935	8.935	0.000	99	46730	5.00	4.84	
107 2-Chlorotoluene	126	9.036	9.036	0.000	96	40759	5.00	4.82	
106 1,3,5-Trimethylbenzene	105	9.108	9.108	0.000	94	141687	5.00	4.78	
108 4-Chlorotoluene	126	9.153	9.153	0.000	98	42140	5.00	4.87	
109 tert-Butylbenzene	119	9.419	9.419	0.000	93	122590	5.00	4.85	
110 1,2,4-Trimethylbenzene	105	9.475	9.475	0.000	98	145210	5.00	4.76	
111 sec-Butylbenzene	134	9.640	9.640	0.000	95	35159	5.00	4.69	
113 1,3-Dichlorobenzene	146	9.767	9.767	0.000	98	77976	5.00	4.66	
112 4-Isopropyltoluene	119	9.786	9.786	0.000	97	154210	5.00	4.85	
115 1,4-Dichlorobenzene	146	9.865	9.865	0.000	95	81816	5.00	4.76	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
116 n-Butylbenzene	91	10.191	10.191	0.000	98	137959	5.00	4.67	
117 1,2-Dichlorobenzene	146	10.221	10.221	0.000	98	76744	5.00	4.74	
118 1,2-Dibromo-3-Chloropropan	157	10.997	10.997	0.000	82	11348	5.00	4.24	
120 1,2,4-Trichlorobenzene	180	11.818	11.818	0.000	94	52367	5.00	4.53	
121 Hexachlorobutadiene	225	11.960	11.960	0.000	96	23659	5.00	4.71	
122 Naphthalene	128	12.091	12.091	0.000	97	172375	5.00	4.60	
123 1,2,3-Trichlorobenzene	180	12.313	12.313	0.000	95	51304	5.00	4.58	
S 136 1,2-Dichloroethene, Total	96				0		10.0	9.73	
S 142 Xylenes, Total	106				0		10.0	9.75	
S 141 1,2-Dichloroethene, Total	1				0		10.0	9.73	
S 139 Total BTEX	1				0			24.3	
S 138 Xylenes, Total (URS)	1				0		10.0	9.75	
S 137 Trihalomethanes, Total	1				0		20.0	18.2	
S 140 1,3-Dichloropropene, Total	1				0		10.0	9.27	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MV-MegaMainA_00014

Amount Added: 5.00

Units: uL

mv-Cent IS/SS_00002

Amount Added: 5.00

Units: uL

Run Reagent

Report Date: 08-May-2019 10:07:05

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1617.D

Injection Date: 07-May-2019 17:03:30

Instrument ID: VMS_MS9

Operator ID: newcomer

Lims ID: STD05

Worklist Smp#: 25

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

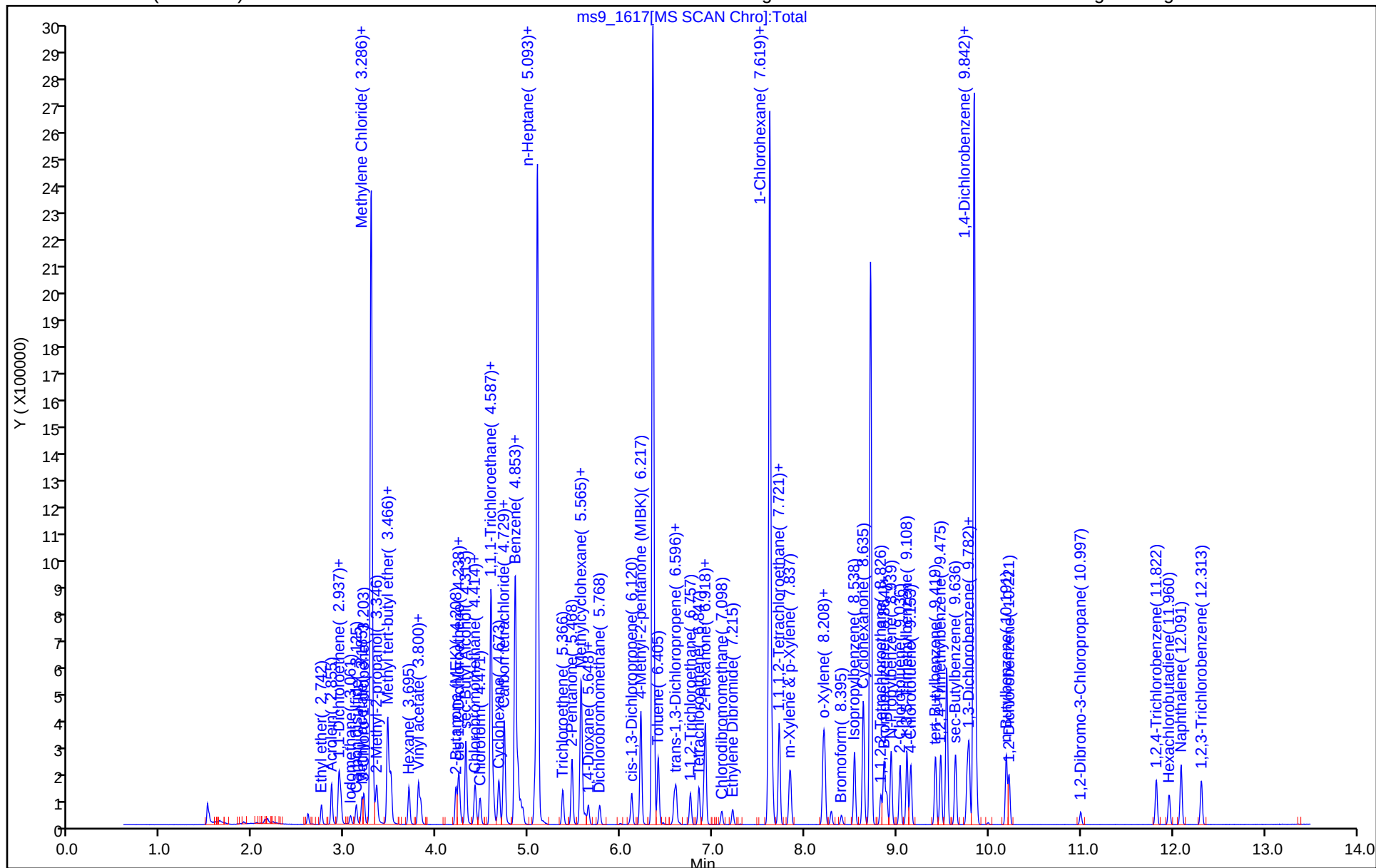
ALS Bottle#: 27

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver

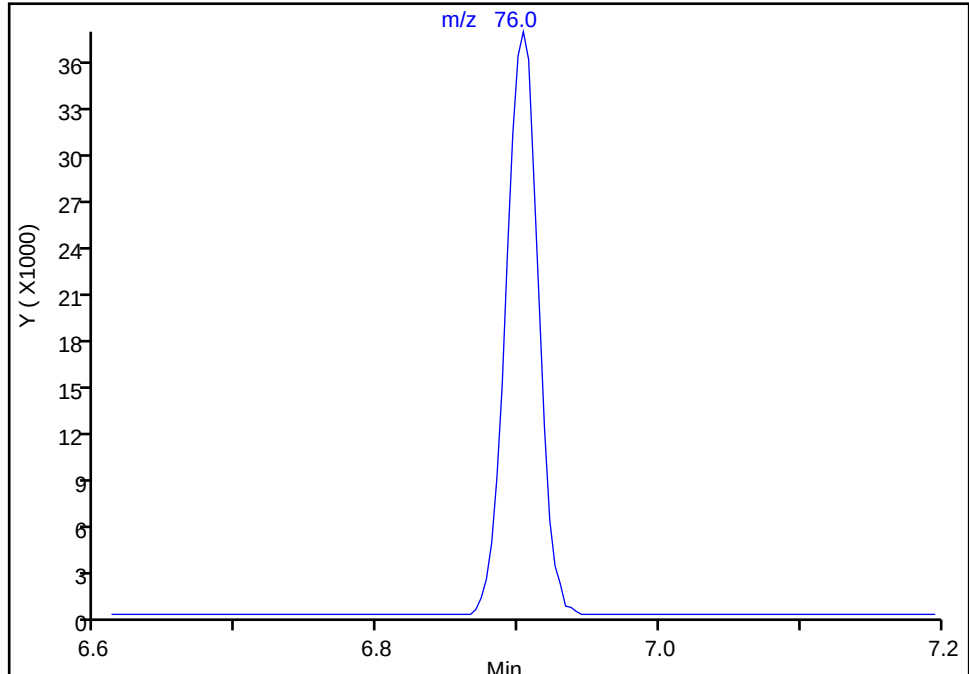
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Injection Date: 07-May-2019 17:03:30 Instrument ID: VMS_MS9
Lims ID: STD05
Client ID:
Operator ID: newcomer ALS Bottle#: 27 Worklist Smp#: 25
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: AQ_VMSMS9_8260 Limit Group: MSV - 8260B Water and Solid
Column: DB-624 (0.25 mm) Detector: MS SCAN

86 1,3-Dichloropropane, CAS: 142-28-9

Signal: 1

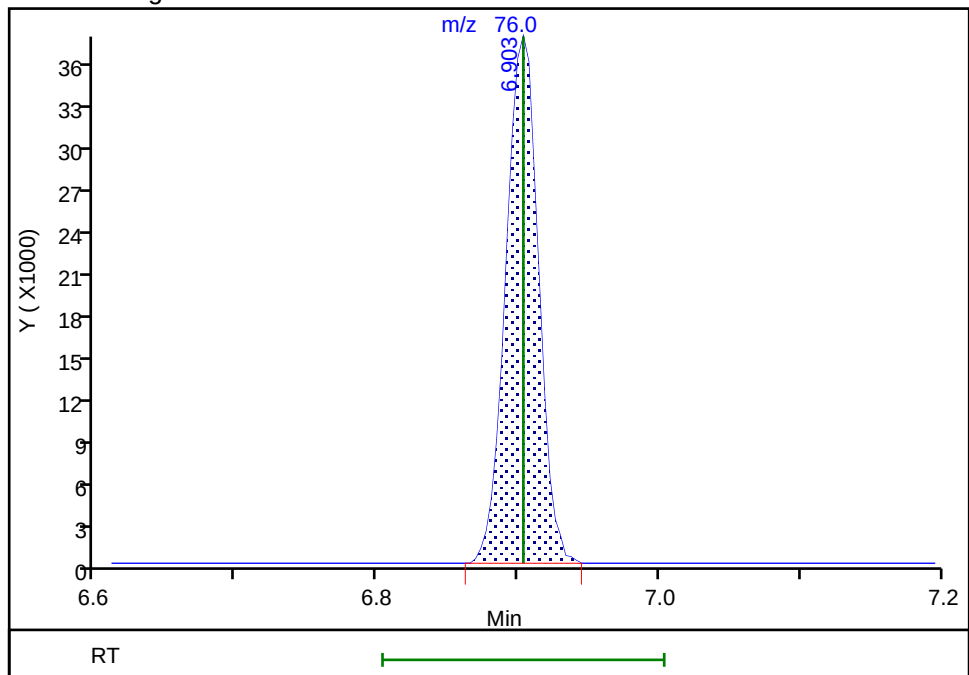
Not Detected
Expected RT: 6.90

Processing Integration Results



RT: 6.90
Area: 59607
Amount: 4.734595
Amount Units: ug/l

Manual Integration Results



Reviewer: newcomer, 08-May-2019 07:28:31
Audit Action: Assigned Compound ID

Audit Reason: Assign Peak

Eurofins TestAmerica, Denver

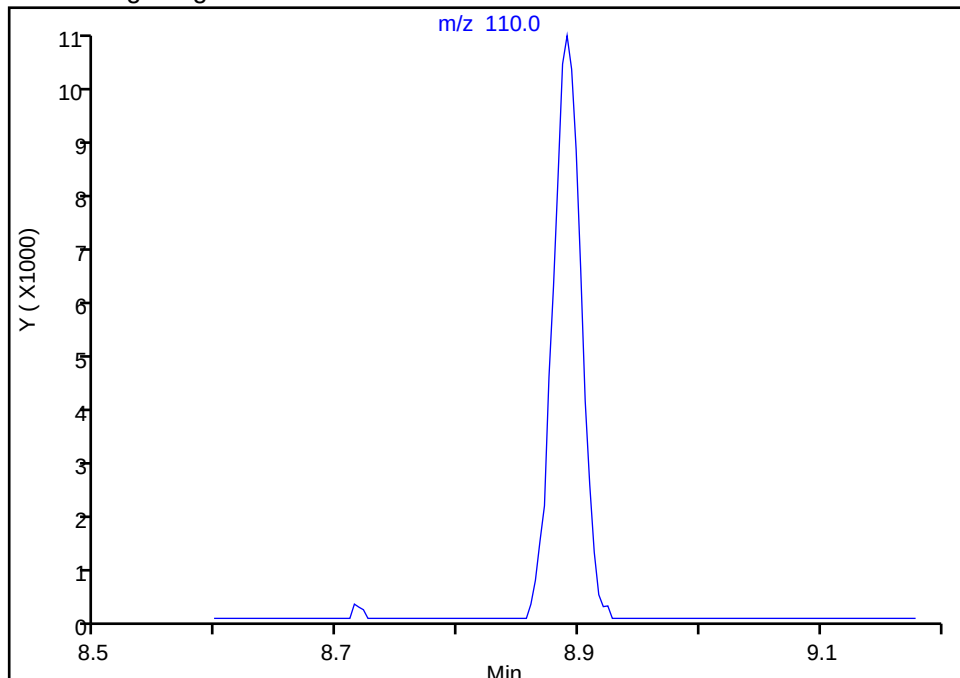
Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1617.D
Injection Date: 07-May-2019 17:03:30 Instrument ID: VMS_MS9
Lims ID: STD05
Client ID:
Operator ID: newcomer ALS Bottle#: 27 Worklist Smp#: 25
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: AQ_VMSMS9_8260 Limit Group: MSV - 8260B Water and Solid
Column: DB-624 (0.25 mm) Detector: MS SCAN

104 1,2,3-Trichloropropane, CAS: 96-18-4

Signal: 1

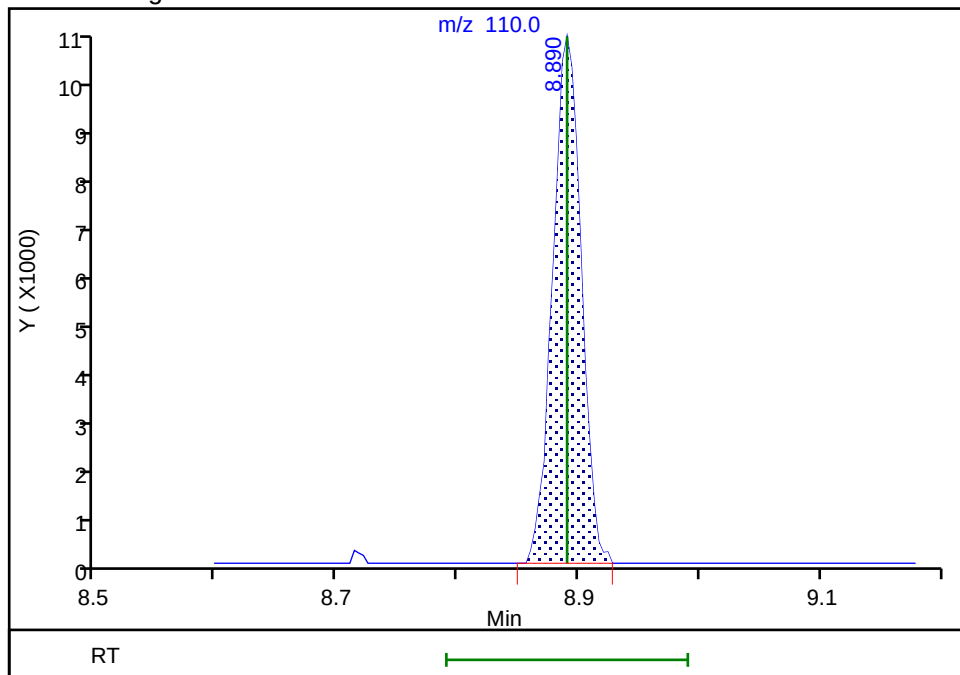
Not Detected
Expected RT: 8.89

Processing Integration Results



RT: 8.89
Area: 17804
Amount: 4.863139
Amount Units: ug/l

Manual Integration Results



Reviewer: newcomer, 08-May-2019 07:28:51

Audit Action: Assigned Compound ID

Audit Reason: Assign Peak

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1618.D
 Lims ID: STD02
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 07-May-2019 17:25:30 ALS Bottle#: 28 Worklist Smp#: 26
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: STD02
 Misc. Info.: 280-0081636-026
 Operator ID: newcomer Instrument ID: VMS_MS9
 Sublist: chrom-AQ_VMSMS9_8260*sub49
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 08-May-2019 10:07:10 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0338

First Level Reviewer: newcomer

Date: 08-May-2019 07:30:20

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.286	3.286	0.000	0	2244224	1000.0	1000.0	
* 1 Fluorobenzene	96	5.093	5.093	0.000	99	1849537	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.619	0.000	87	440537	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	96	704018	50.0	50.0	
\$ 6 Dibromofluoromethane (Surr	111	4.587	4.587	0.000	94	433797	50.0	49.3	
\$ 7 1,2-Dichloroethane-d4 (Sur	65	4.853	4.853	0.000	98	559946	50.0	49.1	
\$ 8 Toluene-d8 (Surr)	98	6.348	6.348	0.000	93	1779241	50.0	50.3	
\$ 9 4-Bromofluorobenzene (Surr	95	8.714	8.714	0.000	89	686275	50.0	49.7	
24 Ethyl ether	59	2.746	2.746	0.000	92	12993	2.00	1.98	
28 Acrolein	56	2.855	2.855	0.000	99	41577	19.8	20.0	
29 1,1,2-Trichloro-1,2,2-trif	151	2.933	2.933	0.000	69	9573	2.00	1.89	
30 1,1-Dichloroethene	96	2.933	2.933	0.000	94	11916	2.00	1.90	
31 Acetone	43	2.956	2.956	0.000	99	38812	8.00	7.98	
33 Iodomethane	142	3.057	3.057	0.000	97	14354	2.00	1.97	
35 Carbon disulfide	76	3.121	3.121	0.000	99	33108	2.00	1.85	
34 Methyl acetate	43	3.185	3.185	0.000	99	38339	4.00	4.05	
36 3-Chloro-1-propene	41	3.207	3.207	0.000	91	21584	2.00	1.92	
39 Methylene Chloride	84	3.304	3.304	0.000	93	15265	2.00	1.94	
38 2-Methyl-2-propanol	59	3.346	3.346	0.000	100	47861	20.0	19.9	
42 Acrylonitrile	53	3.466	3.466	0.000	99	94953	20.0	20.6	
40 Methyl tert-butyl ether	73	3.488	3.488	0.000	95	46861	2.00	1.93	
41 trans-1,2-Dichloroethene	96	3.503	3.503	0.000	97	14505	2.00	2.04	
43 Hexane	57	3.698	3.698	0.000	92	21554	2.00	1.98	
45 Vinyl acetate	43	3.799	3.799	0.000	97	67744	4.00	3.75	
46 1,1-Dichloroethane	63	3.826	3.826	0.000	96	26681	2.00	1.97	
50 2-Butanone (MEK)	43	4.208	4.208	0.000	100	55968	8.00	8.01	
52 cis-1,2-Dichloroethene	96	4.234	4.234	0.000	83	16315	2.00	1.97	
53 2,2-Dichloropropane	77	4.242	4.242	0.000	77	22219	2.00	1.89	
51 sec-Butyl Alcohol	45	4.317	4.317	0.000	99	104721	60.0	61.4	
59 Chlorobromomethane	128	4.407	4.407	0.000	87	6707	2.00	1.98	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
57 Tetrahydrofuran	42	4.418	4.418	0.000	85	19485	4.00	4.05	
56 Chloroform	83	4.470	4.470	0.000	93	26318	2.00	1.99	
60 1,1,1-Trichloroethane	97	4.613	4.613	0.000	98	22137	2.00	1.94	
61 Cyclohexane	56	4.676	4.676	0.000	91	27220	2.00	2.00	
62 1,1-Dichloropropene	75	4.725	4.725	0.000	85	20945	2.00	1.96	
63 Carbon tetrachloride	117	4.729	4.729	0.000	64	15692	2.00	1.85	
58 Isobutyl alcohol	43	4.733	4.733	0.000	92	45678	50.0	50.4	
66 Benzene	78	4.879	4.879	0.000	96	60900	2.00	1.94	
67 1,2-Dichloroethane	62	4.909	4.909	0.000	97	22763	2.00	1.91	
135 n-Heptane	43	5.066	5.066	0.000	92	21760	2.00	1.99	
68 Trichloroethene	130	5.374	5.374	0.000	97	14968	2.00	1.94	
69 2-Pentanone	43	5.467	5.467	0.000	99	87838	8.00	7.95	
71 Methylcyclohexane	55	5.561	5.561	0.000	86	21644	2.00	1.96	
72 1,2-Dichloropropane	63	5.576	5.576	0.000	87	21795	2.00	2.01	
73 1,4-Dioxane	88	5.614	5.614	0.000	92	8916	40.0	40.6	
74 Dibromomethane	93	5.644	5.644	0.000	98	9514	2.00	1.96	
75 Dichlorobromomethane	83	5.771	5.771	0.000	99	15813	2.00	1.79	
78 cis-1,3-Dichloropropene	75	6.116	6.116	0.000	95	22348	2.00	1.85	
79 4-Methyl-2-pentanone (MIBK)	43	6.213	6.213	0.000	96	100574	8.00	8.06	
80 Toluene	91	6.405	6.405	0.000	98	66064	2.00	1.99	
82 trans-1,3-Dichloropropene	75	6.581	6.581	0.000	95	19472	2.00	1.77	
81 Ethyl methacrylate	69	6.600	6.600	0.000	88	23289	2.00	1.90	
83 1,1,2-Trichloroethane	97	6.757	6.757	0.000	91	14177	2.00	1.98	
85 Tetrachloroethene	164	6.851	6.851	0.000	96	12392	2.00	2.01	
86 1,3-Dichloropropane	76	6.903	6.903	0.000	93	24669	2.00	1.99	
84 2-Hexanone	43	6.918	6.918	0.000	96	78170	8.00	8.01	
87 Chlorodibromomethane	129	7.098	7.098	0.000	92	9650	2.00	1.72	
89 Ethylene Dibromide	107	7.214	7.214	0.000	97	14605	2.00	1.95	
90 1-Chlorohexane	91	7.600	7.600	0.000	97	24307	2.00	1.93	a
91 Chlorobenzene	112	7.645	7.645	0.000	96	40811	2.00	1.97	
93 1,1,1,2-Tetrachloroethane	131	7.713	7.713	0.000	42	11668	2.00	1.84	
92 Ethylbenzene	106	7.724	7.724	0.000	98	23638	2.00	2.05	
94 m-Xylene & p-Xylene	91	7.840	7.840	0.000	98	56270	2.00	1.99	
95 o-Xylene	106	8.200	8.200	0.000	96	27382	2.00	2.01	
96 Styrene	104	8.219	8.219	0.000	95	44893	2.00	1.96	
97 Bromoform	173	8.399	8.399	0.000	96	5841	2.00	2.06	
98 Isopropylbenzene	105	8.541	8.541	0.000	96	70621	2.00	1.95	
100 Cyclohexanone	55	8.639	8.639	0.000	92	74326	80.0	82.7	
101 1,1,2,2-Tetrachloroethane	83	8.822	8.822	0.000	95	22044	2.00	1.92	
105 Bromobenzene	156	8.856	8.856	0.000	97	16663	2.00	1.84	
102 trans-1,4-Dichloro-2-buten	53	8.864	8.864	0.000	58	7294	2.00	1.81	
104 1,2,3-Trichloropropane	110	8.890	8.890	0.000	83	7357	2.00	2.03	a
103 N-Propylbenzene	120	8.939	8.939	0.000	99	18433	2.00	1.93	
107 2-Chlorotoluene	126	9.036	9.036	0.000	96	16312	2.00	1.95	
106 1,3,5-Trimethylbenzene	105	9.111	9.111	0.000	94	56639	2.00	1.93	
108 4-Chlorotoluene	126	9.152	9.152	0.000	98	16952	2.00	1.98	
109 tert-Butylbenzene	119	9.419	9.419	0.000	93	47235	2.00	1.89	
110 1,2,4-Trimethylbenzene	105	9.482	9.482	0.000	95	58618	2.00	1.94	
111 sec-Butylbenzene	134	9.640	9.640	0.000	95	14364	2.00	1.93	
113 1,3-Dichlorobenzene	146	9.763	9.763	0.000	98	31484	2.00	1.90	
112 4-Isopropyltoluene	119	9.786	9.786	0.000	96	59283	2.00	1.88	
115 1,4-Dichlorobenzene	146	9.865	9.865	0.000	94	32940	2.00	1.93	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
116 n-Butylbenzene	91	10.191	10.191	0.000	97	55578	2.00	1.90	
117 1,2-Dichlorobenzene	146	10.224	10.224	0.000	97	31406	2.00	1.96	
118 1,2-Dibromo-3-Chloropropan	157	10.997	10.997	0.000	78	4397	2.00	2.16	
120 1,2,4-Trichlorobenzene	180	11.825	11.825	0.000	94	21013	2.00	1.83	
121 Hexachlorobutadiene	225	11.960	11.960	0.000	95	9042	2.00	1.82	
122 Naphthalene	128	12.088	12.088	0.000	97	70442	2.00	1.90	
123 1,2,3-Trichlorobenzene	180	12.312	12.312	0.000	95	20682	2.00	1.86	
S 136 1,2-Dichloroethene, Total	96				0		4.00	4.01	
S 142 Xylenes, Total	106				0		4.00	4.00	
S 141 1,2-Dichloroethene, Total	1				0		4.00	4.01	
S 139 Total BTEX	1				0			9.98	
S 138 Xylenes, Total (URS)	1				0		4.00	4.00	
S 137 Trihalomethanes, Total	1				0		8.00	7.56	
S 140 1,3-Dichloropropene, Total	1				0		4.00	3.61	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MV-MegaMainA_00014

Amount Added: 2.00

Units: uL

mv-Cent IS/SS_00002

Amount Added: 5.00

Units: uL

Run Reagent

Report Date: 08-May-2019 10:07:13

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1618.D

Injection Date: 07-May-2019 17:25:30

Instrument ID: VMS_MS9

Operator ID: newcomer

Lims ID: STD02

Worklist Smp#: 26

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

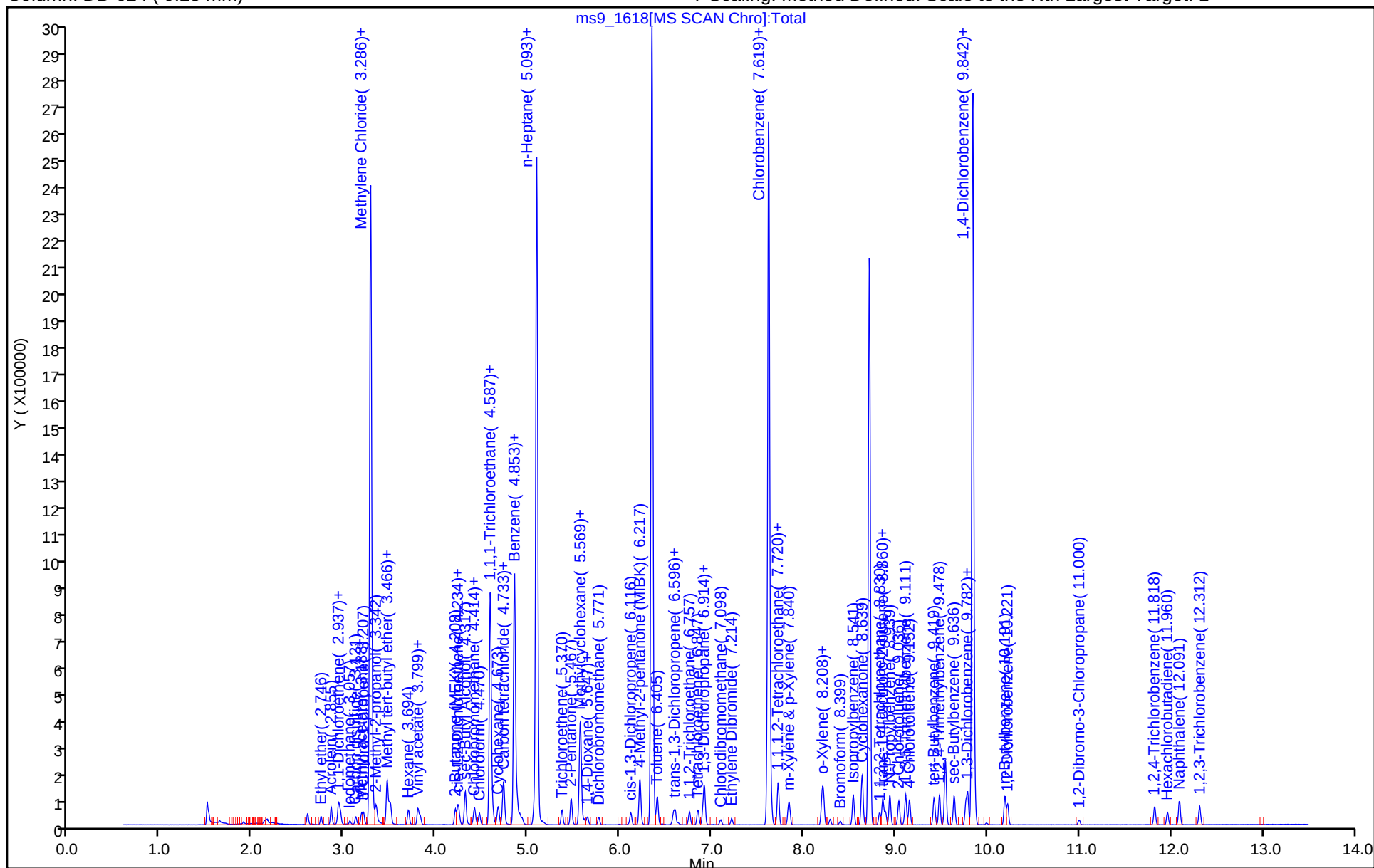
ALS Bottle#: 28

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver

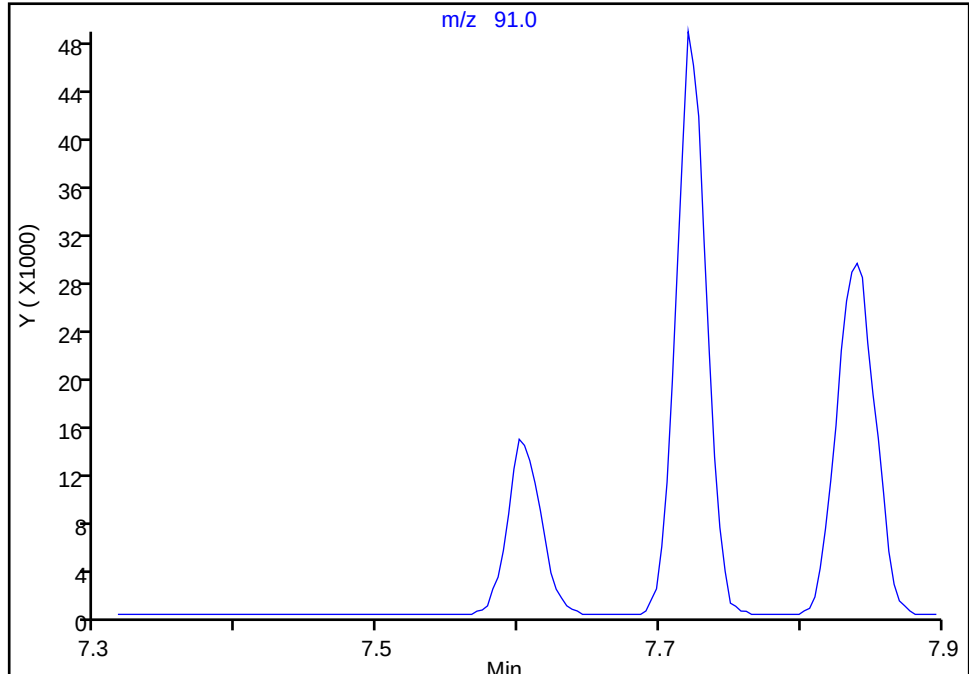
Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1618.D
Injection Date: 07-May-2019 17:25:30 Instrument ID: VMS_MS9
Lims ID: STD02
Client ID:
Operator ID: newcomer ALS Bottle#: 28 Worklist Smp#: 26
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: AQ_VMSMS9_8260 Limit Group: MSV - 8260B Water and Solid
Column: DB-624 (0.25 mm) Detector: MS SCAN

90 1-Chlorohexane, CAS: 544-10-5

Signal: 1

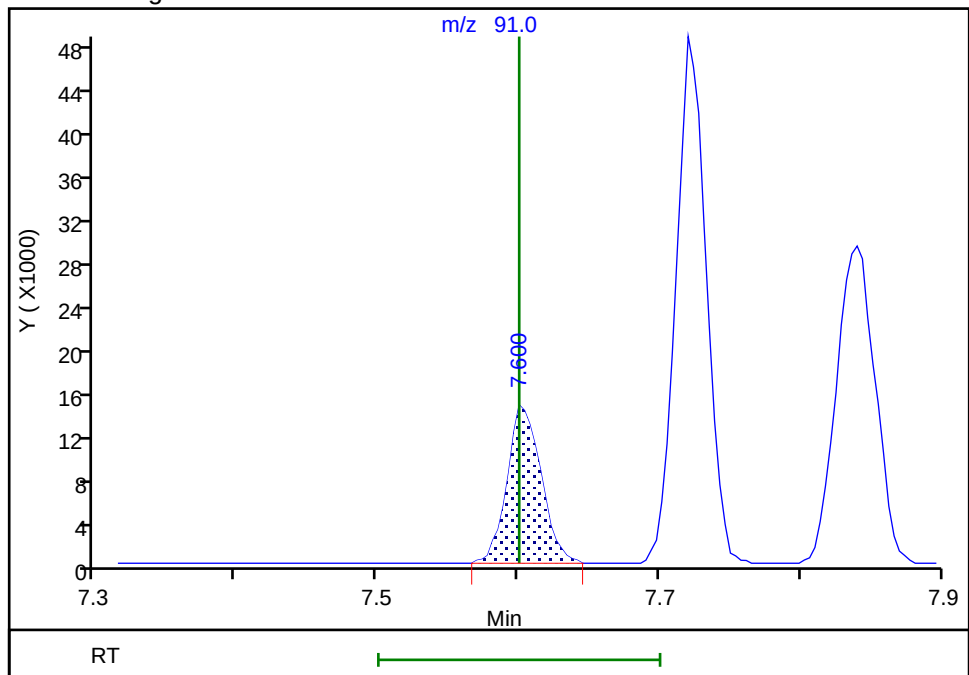
Not Detected
Expected RT: 7.60

Processing Integration Results



RT: 7.60
Area: 24307
Amount: 1.934233
Amount Units: ug/l

Manual Integration Results



Reviewer: newcomer, 08-May-2019 07:29:47
Audit Action: Assigned Compound ID

Audit Reason: Assign Peak

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1618.D

Injection Date: 07-May-2019 17:25:30

Instrument ID: VMS_MS9

Lims ID: STD02

Client ID:

Operator ID: newcomer

ALS Bottle#:

28

Worklist Smp#: 26

Purge Vol: 5.000 mL

Dil. Factor:

1.0000

Method: AQ_VMSMS9_8260

Limit Group:

MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Detector

MS SCAN

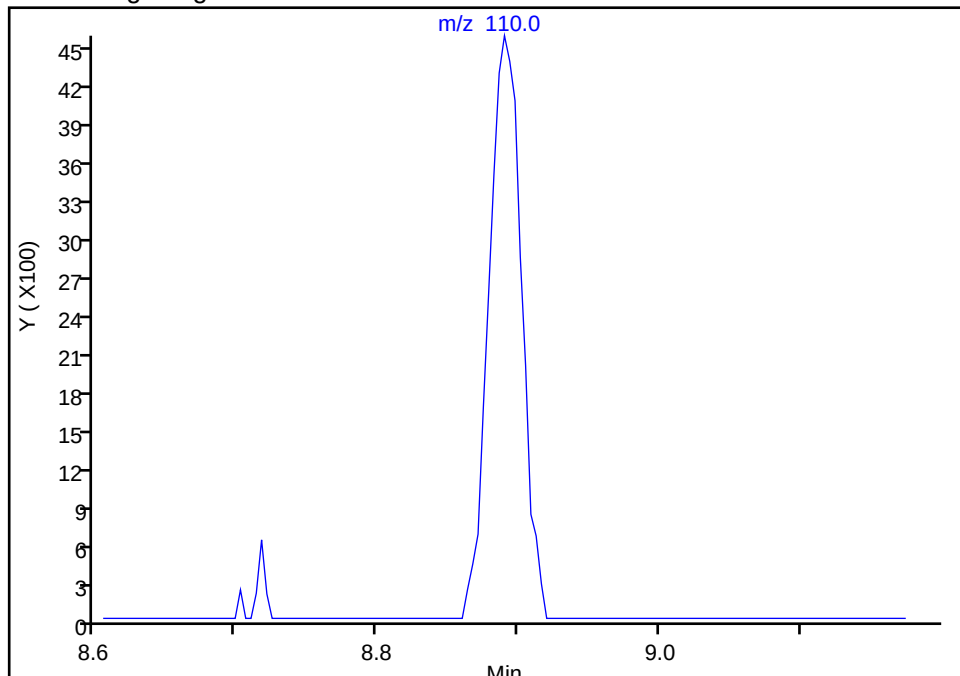
104 1,2,3-Trichloropropane, CAS: 96-18-4

Signal: 1

Not Detected

Expected RT: 8.89

Processing Integration Results



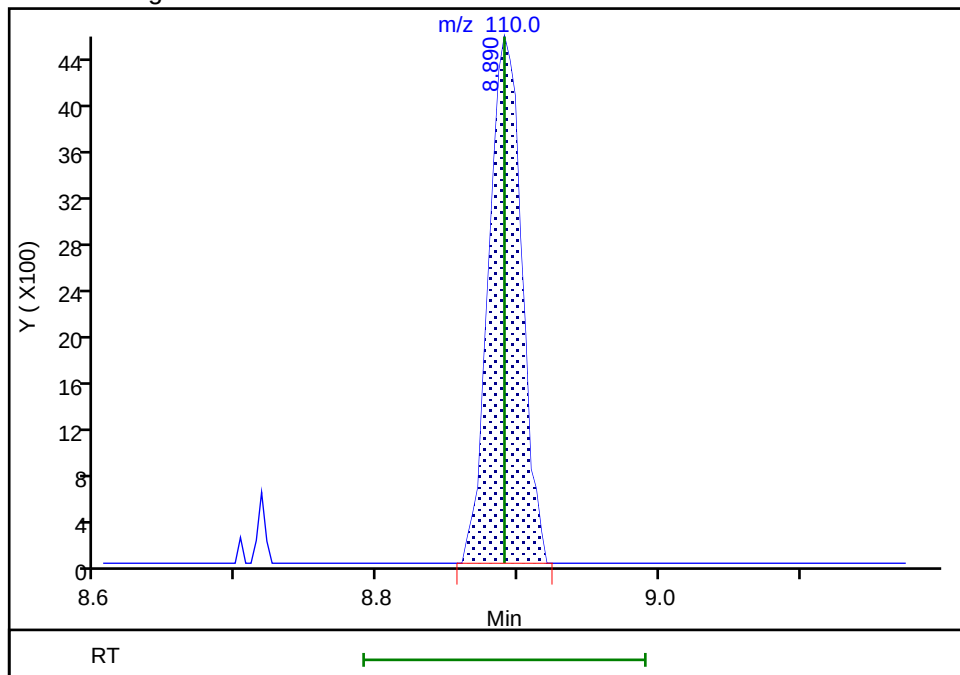
RT: 8.89

Area: 7357

Amount: 2.028051

Amount Units: ug/l

Manual Integration Results



Reviewer: newcomer, 08-May-2019 07:30:01

Audit Action: Assigned Compound ID

Audit Reason: Assign Peak

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1619.D
 Lims ID: STD01
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 07-May-2019 17:46:30 ALS Bottle#: 29 Worklist Smp#: 27
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: STD01
 Misc. Info.: 280-0081636-027
 Operator ID: newcomer Instrument ID: VMS_MS9
 Sublist: chrom-AQ_VMSMS9_8260*sub49
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 08-May-2019 10:07:19 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0338

First Level Reviewer: newcomer

Date: 08-May-2019 07:31:51

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.286	3.286	0.000	0	2201327	1000.0	1000.0	
* 1 Fluorobenzene	96	5.093	5.093	0.000	99	1937525	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.619	0.000	86	460792	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	96	724283	50.0	50.0	
\$ 6 Dibromofluoromethane (Surr	111	4.587	4.587	0.000	93	452820	50.0	49.1	
\$ 7 1,2-Dichloroethane-d4 (Sur	65	4.853	4.853	0.000	98	573386	50.0	48.0	
\$ 8 Toluene-d8 (Surr)	98	6.348	6.348	0.000	93	1846670	50.0	49.9	
\$ 9 4-Bromofluorobenzene (Surr	95	8.714	8.714	0.000	90	702035	50.0	49.4	
24 Ethyl ether	59	2.746	2.746	0.000	92	7016	1.00	1.02	
28 Acrolein	56	2.855	2.855	0.000	99	22132	9.88	9.52	
29 1,1,2-Trichloro-1,2,2-trif	151	2.937	2.937	0.000	69	5708	1.00	1.08	
30 1,1-Dichloroethene	96	2.937	2.937	0.000	95	7147	1.00	1.09	
31 Acetone	43	2.956	2.956	0.000	100	22100	4.00	3.66	
33 Iodomethane	142	3.061	3.061	0.000	99	7653	1.00	0.8924	
35 Carbon disulfide	76	3.125	3.125	0.000	99	18433	1.00	0.9836	
34 Methyl acetate	43	3.185	3.185	0.000	98	21003	2.00	2.12	
36 3-Chloro-1-propene	41	3.211	3.211	0.000	91	11518	1.00	0.9799	
39 Methylene Chloride	84	3.304	3.304	0.000	82	9172	1.00	1.01	
38 2-Methyl-2-propanol	59	3.342	3.342	0.000	99	25853	10.0	10.3	
42 Acrylonitrile	53	3.462	3.462	0.000	98	50778	10.0	10.5	
40 Methyl tert-butyl ether	73	3.488	3.488	0.000	94	26627	1.00	1.04	
41 trans-1,2-Dichloroethene	96	3.503	3.503	0.000	95	7786	1.00	1.04	
43 Hexane	57	3.698	3.698	0.000	94	11472	1.00	1.01	
45 Vinyl acetate	43	3.799	3.799	0.000	97	33481	2.00	1.77	
46 1,1-Dichloroethane	63	3.826	3.826	0.000	96	14618	1.00	1.03	
50 2-Butanone (MEK)	43	4.204	4.204	0.000	99	29624	4.00	4.05	
52 cis-1,2-Dichloroethene	96	4.234	4.234	0.000	83	8791	1.00	1.01	
53 2,2-Dichloropropane	77	4.245	4.245	0.000	88	11251	1.00	0.9146	
51 sec-Butyl Alcohol	45	4.313	4.313	0.000	98	51734	30.0	30.9	
59 Chlorobromomethane	128	4.407	4.407	0.000	95	4113	1.00	1.16	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
57 Tetrahydrofuran	42	4.414	4.414	0.000	87	10734	2.00	1.87	
56 Chloroform	83	4.470	4.470	0.000	93	13924	1.00	1.01	
60 1,1,1-Trichloroethane	97	4.613	4.613	0.000	98	11907	1.00	1.00	
61 Cyclohexane	56	4.676	4.676	0.000	89	14094	1.00	0.9878	
62 1,1-Dichloropropene	75	4.721	4.721	0.000	95	11343	1.00	1.01	
63 Carbon tetrachloride	117	4.733	4.733	0.000	61	8981	1.00	1.11	
58 Isobutyl alcohol	43	4.733	4.733	0.000	94	23550	25.0	26.5	
66 Benzene	78	4.883	4.883	0.000	96	34916	1.00	1.06	
67 1,2-Dichloroethane	62	4.905	4.905	0.000	97	12901	1.00	1.03	
135 n-Heptane	43	5.066	5.066	0.000	90	11318	1.00	0.9899	
68 Trichloroethene	130	5.366	5.366	0.000	97	8209	1.00	1.01	
69 2-Pentanone	43	5.467	5.467	0.000	99	47004	4.00	4.06	
71 Methylcyclohexane	55	5.561	5.561	0.000	38	11479	1.00	0.99	
72 1,2-Dichloropropane	63	5.576	5.576	0.000	43	14720	1.00	1.00	a
73 1,4-Dioxane	88	5.610	5.610	0.000	91	4807	20.0	20.9	
74 Dibromomethane	93	5.647	5.647	0.000	95	5151	1.00	1.02	
75 Dichlorobromomethane	83	5.767	5.767	0.000	99	8314	1.00	0.8989	
78 cis-1,3-Dichloropropene	75	6.120	6.120	0.000	94	12037	1.00	0.9509	
79 4-Methyl-2-pentanone (MIBK)	43	6.217	6.217	0.000	95	52127	4.00	3.99	
80 Toluene	91	6.408	6.408	0.000	97	35779	1.00	1.03	
82 trans-1,3-Dichloropropene	75	6.585	6.585	0.000	89	10786	1.00	0.9350	
81 Ethyl methacrylate	69	6.600	6.600	0.000	89	12472	1.00	0.9729	
83 1,1,2-Trichloroethane	97	6.757	6.757	0.000	87	7780	1.00	1.04	
85 Tetrachloroethene	164	6.847	6.847	0.000	90	6540	1.00	1.01	
86 1,3-Dichloropropane	76	6.907	6.907	0.000	92	13591	1.00	1.05	
84 2-Hexanone	43	6.918	6.918	0.000	96	41429	4.00	4.06	
87 Chlorodibromomethane	129	7.098	7.098	0.000	87	5361	1.00	0.9119	
89 Ethylene Dibromide	107	7.218	7.218	0.000	97	7774	1.00	0.99	
90 1-Chlorohexane	91	7.597	7.597	0.000	96	14292	1.00	0.9377	a
91 Chlorobenzene	112	7.649	7.649	0.000	94	22066	1.00	1.02	
93 1,1,1,2-Tetrachloroethane	131	7.717	7.717	0.000	49	6494	1.00	0.9793	
92 Ethylbenzene	106	7.724	7.724	0.000	99	12537	1.00	1.04	
94 m-Xylene & p-Xylene	91	7.840	7.840	0.000	98	29765	1.00	1.00	
95 o-Xylene	106	8.200	8.200	0.000	96	14191	1.00	1.00	
96 Styrene	104	8.215	8.215	0.000	94	23934	1.00	1.00	
97 Bromoform	173	8.399	8.399	0.000	94	3250	1.00	1.46	a
98 Isopropylbenzene	105	8.538	8.538	0.000	96	36474	1.00	0.9796	
100 Cyclohexanone	55	8.639	8.639	0.000	92	36739	40.0	39.1	
101 1,1,2,2-Tetrachloroethane	83	8.826	8.826	0.000	94	12015	1.00	1.02	
105 Bromobenzene	156	8.860	8.860	0.000	95	9388	1.00	1.01	
102 trans-1,4-Dichloro-2-buten	53	8.864	8.864	0.000	58	3941	1.00	0.9506	
104 1,2,3-Trichloropropane	110	8.886	8.886	0.000	83	3695	1.00	0.99	a
103 N-Propylbenzene	120	8.939	8.939	0.000	99	9286	1.00	0.9440	
107 2-Chlorotoluene	126	9.036	9.036	0.000	95	8715	1.00	1.01	
106 1,3,5-Trimethylbenzene	105	9.111	9.111	0.000	95	30274	1.00	1.00	
108 4-Chlorotoluene	126	9.149	9.149	0.000	98	8760	1.00	0.99	
109 tert-Butylbenzene	119	9.422	9.422	0.000	93	25590	1.00	0.99	
110 1,2,4-Trimethylbenzene	105	9.478	9.478	0.000	97	30921	1.00	0.99	
111 sec-Butylbenzene	134	9.636	9.636	0.000	95	7767	1.00	1.02	
113 1,3-Dichlorobenzene	146	9.767	9.767	0.000	98	17305	1.00	1.01	
112 4-Isopropyltoluene	119	9.786	9.786	0.000	96	31388	1.00	0.9686	
115 1,4-Dichlorobenzene	146	9.868	9.868	0.000	90	17705	1.00	1.01	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
116 n-Butylbenzene	91	10.191	10.191	0.000	98	29267	1.00	0.9728	
117 1,2-Dichlorobenzene	146	10.221	10.221	0.000	97	16816	1.00	1.02	
118 1,2-Dibromo-3-Chloropropan	157	10.997	10.997	0.000	80	2209	1.00	1.48	
120 1,2,4-Trichlorobenzene	180	11.818	11.818	0.000	94	11284	1.00	0.9572	
121 Hexachlorobutadiene	225	11.960	11.960	0.000	95	4960	1.00	0.9684	
122 Naphthalene	128	12.091	12.091	0.000	97	35869	1.00	0.9394	
123 1,2,3-Trichlorobenzene	180	12.309	12.309	0.000	94	10955	1.00	0.9588	
S 136 1,2-Dichloroethene, Total	96				0		2.00	2.06	
S 142 Xylenes, Total	106				0		2.00	2.00	
S 141 1,2-Dichloroethene, Total	1				0		2.00	2.06	
S 139 Total BTEX	1				0			5.13	
S 138 Xylenes, Total (URS)	1				0		2.00	2.00	
S 137 Trihalomethanes, Total	1				0		4.00	4.28	
S 140 1,3-Dichloropropene, Total	1				0		2.00	1.89	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MV-MegaMainA_00014

Amount Added: 1.00

Units: uL

mv-Cent IS/SS_00002

Amount Added: 5.00

Units: uL

Run Reagent

Report Date: 08-May-2019 10:07:20

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1619.D

Injection Date: 07-May-2019 17:46:30

Instrument ID: VMS_MS9

Operator ID: newcomer

Lims ID: STD01

Worklist Smp#: 27

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

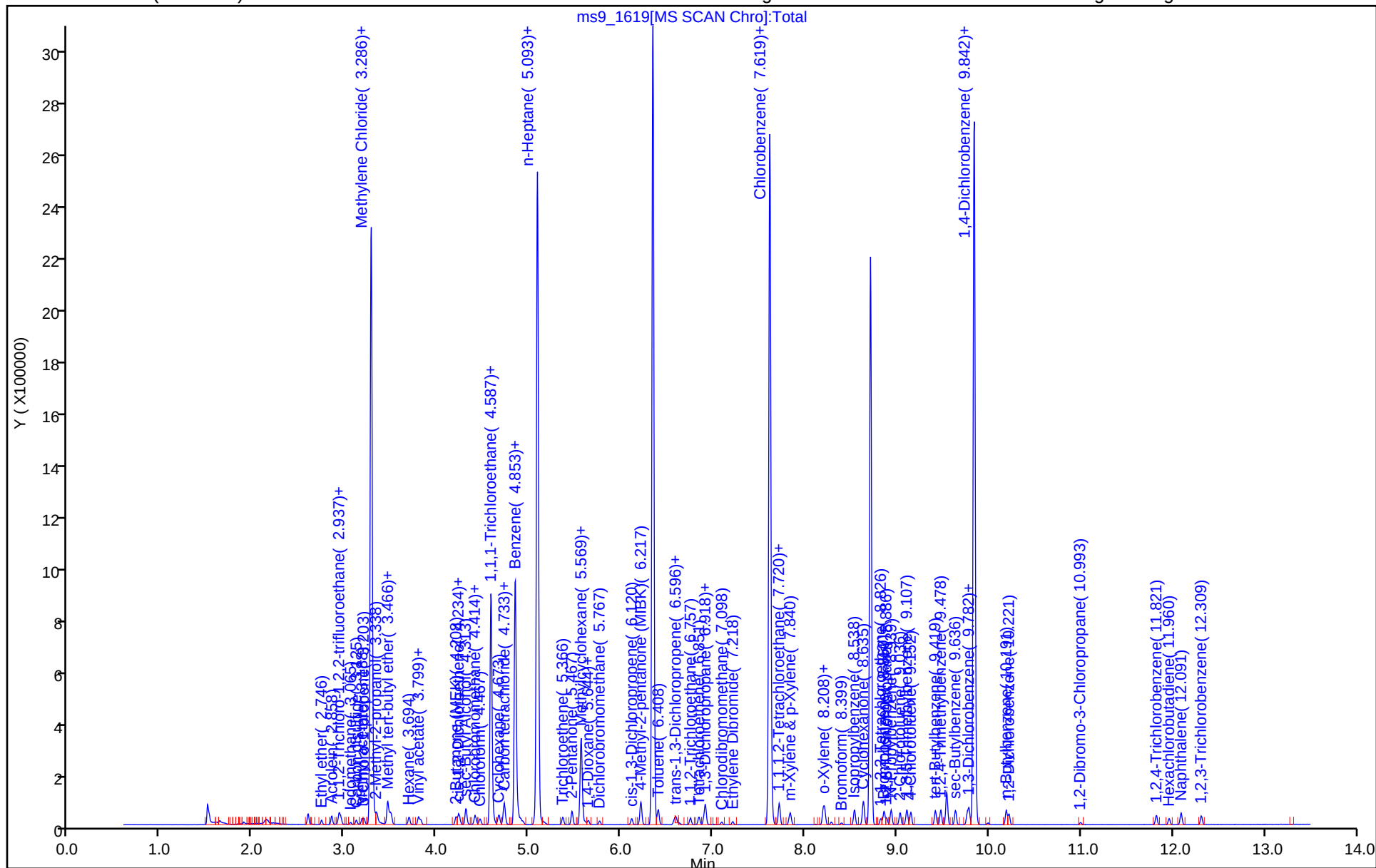
ALS Bottle#: 29

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver

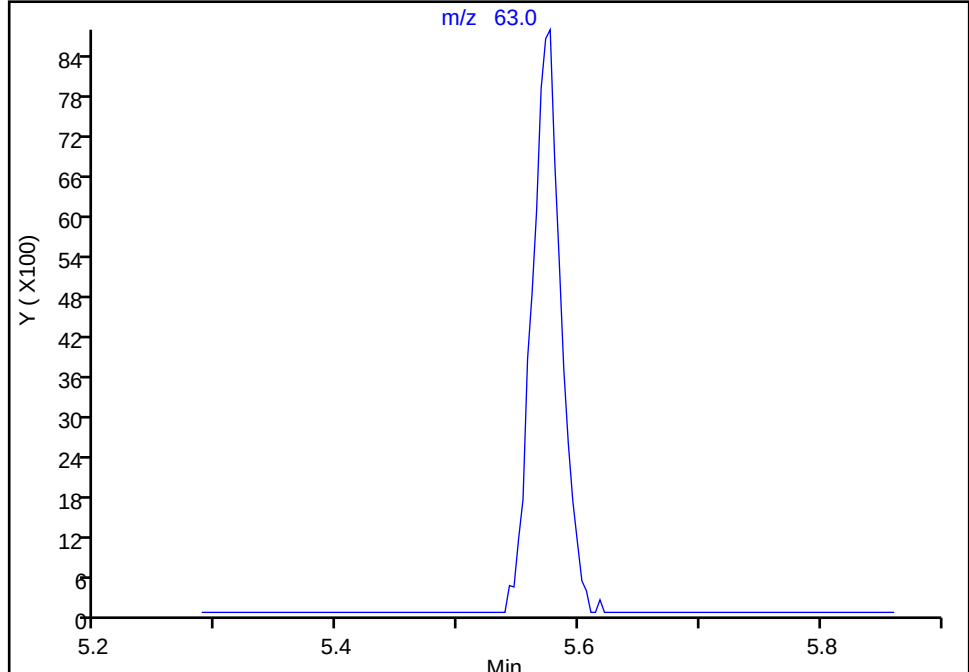
Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1619.D
Injection Date: 07-May-2019 17:46:30 Instrument ID: VMS_MS9
Lims ID: STD01
Client ID:
Operator ID: newcomer ALS Bottle#: 29 Worklist Smp#: 27
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: AQ_VMSMS9_8260 Limit Group: MSV - 8260B Water and Solid
Column: DB-624 (0.25 mm) Detector: MS SCAN

72 1,2-Dichloropropane, CAS: 78-87-5

Signal: 1

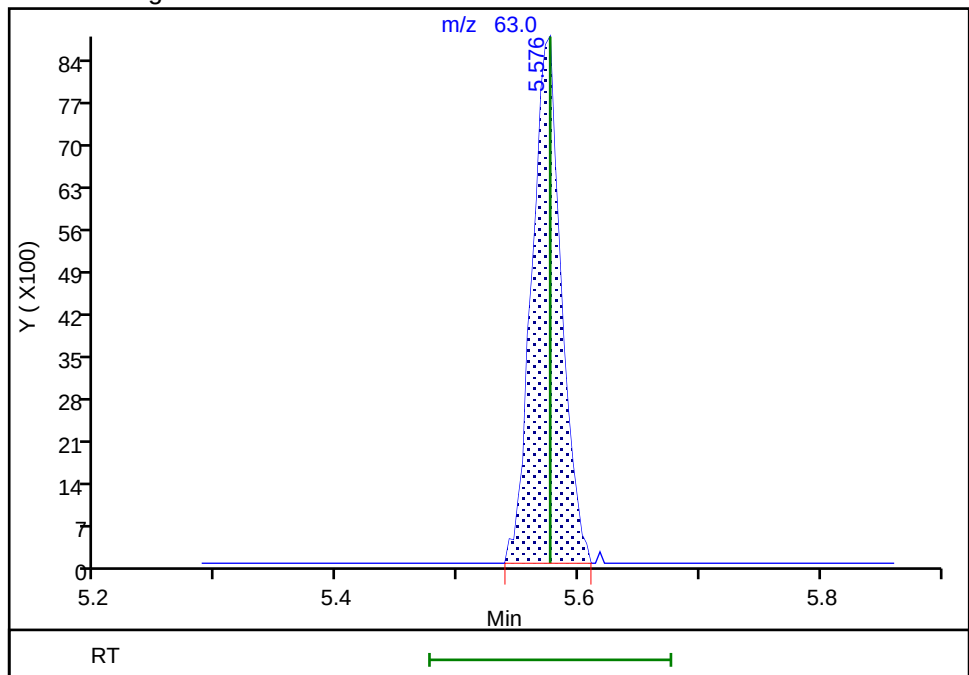
Not Detected
Expected RT: 5.58

Processing Integration Results



RT: 5.58
Area: 14720
Amount: 1.000079
Amount Units: ug/l

Manual Integration Results



Reviewer: newcomer, 08-May-2019 07:30:59
Audit Action: Assigned Compound ID

Audit Reason: Assign Peak

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1619.D

Injection Date: 07-May-2019 17:46:30

Instrument ID: VMS_MS9

Lims ID: STD01

Client ID:

Operator ID: newcomer

ALS Bottle#:

29

Worklist Smp#: 27

Purge Vol: 5.000 mL

Dil. Factor:

1.0000

Method: AQ_VMSMS9_8260

Limit Group:

MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Detector

MS SCAN

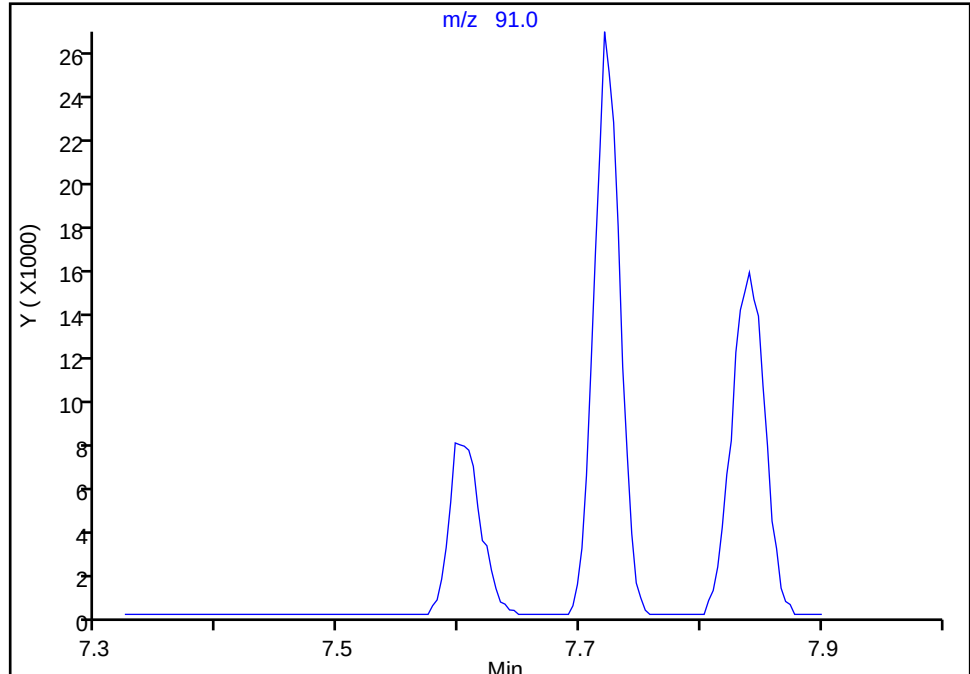
90 1-Chlorohexane, CAS: 544-10-5

Signal: 1

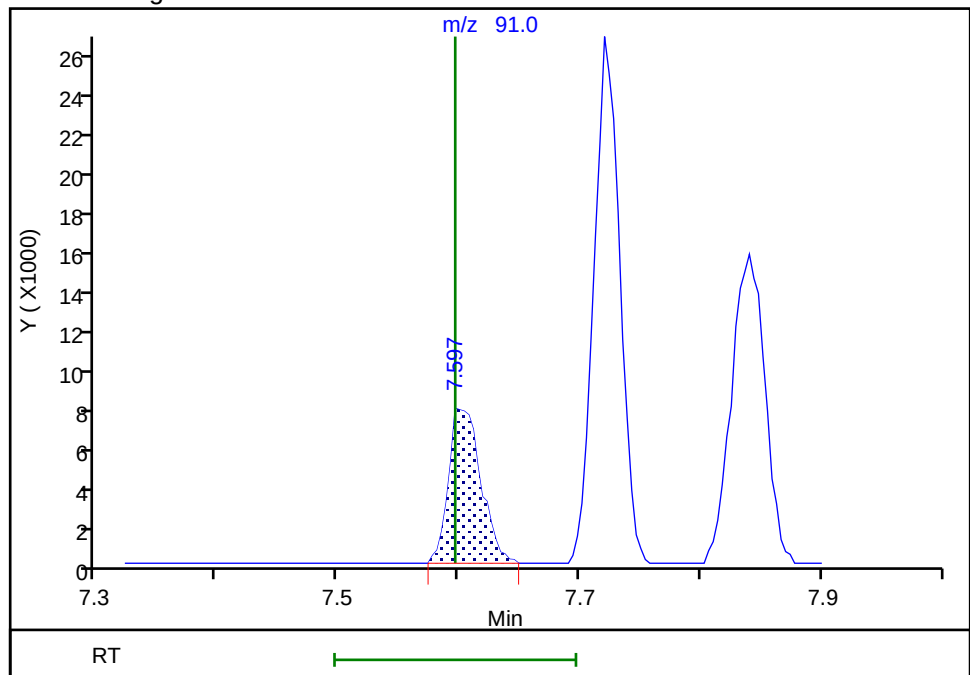
Not Detected

Expected RT: 7.60

Processing Integration Results



Manual Integration Results



Reviewer: newcomer, 08-May-2019 07:31:13

Audit Action: Assigned Compound ID

Audit Reason: Assign Peak

Eurofins TestAmerica, Denver

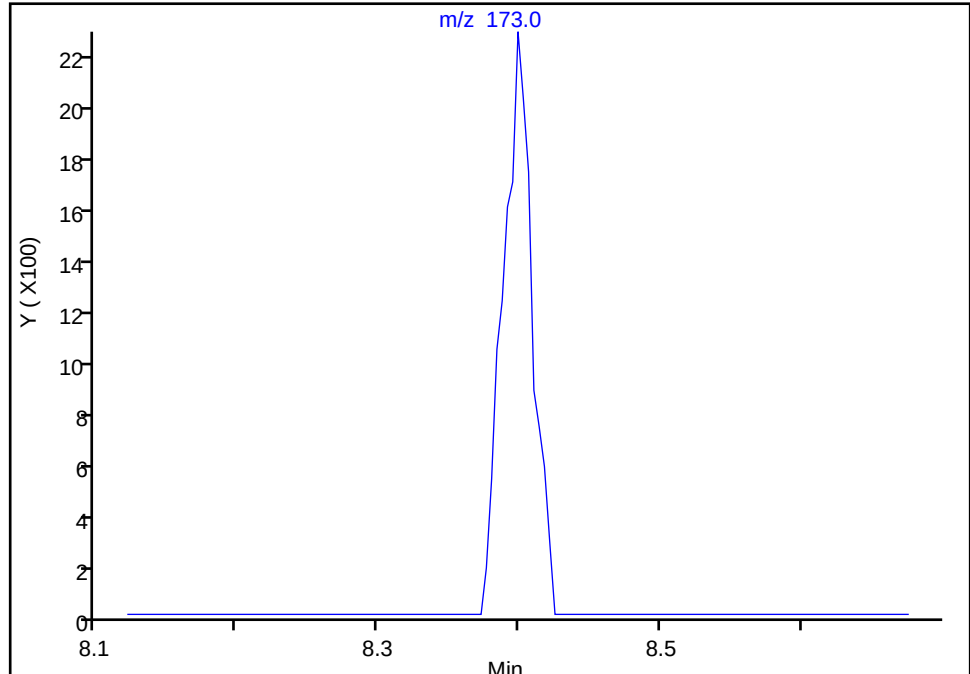
Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1619.D
Injection Date: 07-May-2019 17:46:30 Instrument ID: VMS_MS9
Lims ID: STD01
Client ID:
Operator ID: newcomer ALS Bottle#: 29 Worklist Smp#: 27
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: AQ_VMSMS9_8260 Limit Group: MSV - 8260B Water and Solid
Column: DB-624 (0.25 mm) Detector: MS SCAN

97 Bromoform, CAS: 75-25-2

Signal: 1

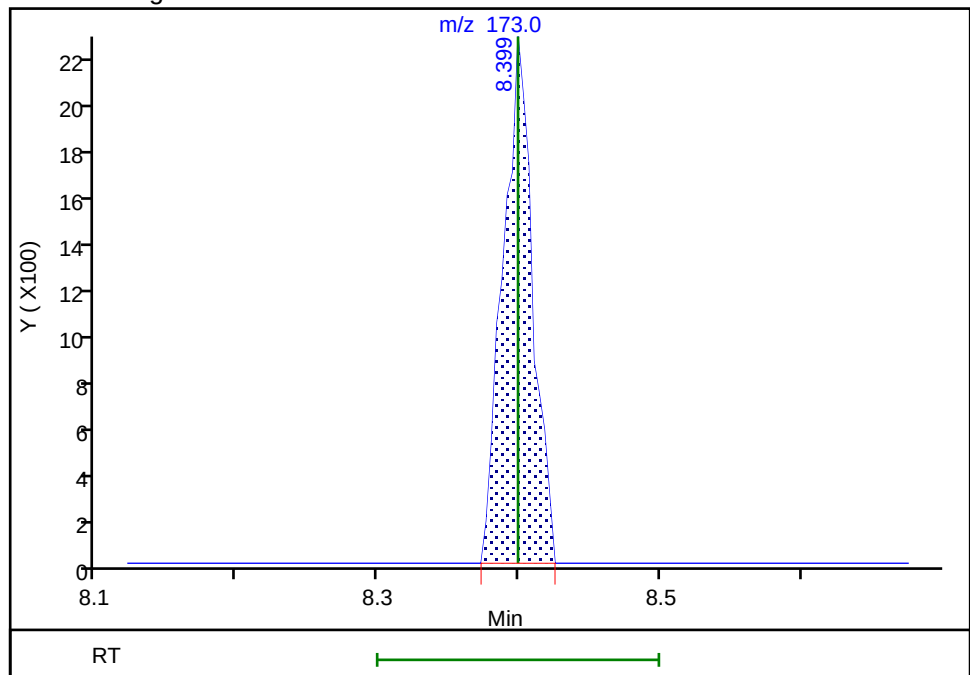
Not Detected
Expected RT: 8.40

Processing Integration Results



RT: 8.40
Area: 3250
Amount: 1.459635
Amount Units: ug/l

Manual Integration Results



Reviewer: newcomer, 08-May-2019 07:31:23
Audit Action: Assigned Compound ID

Audit Reason: Assign Peak

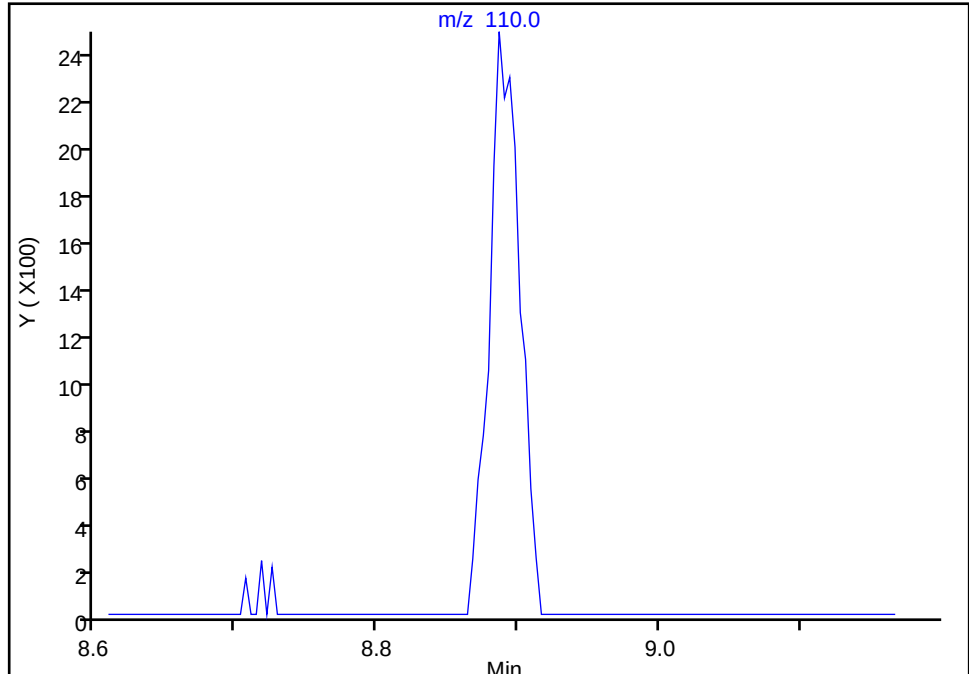
Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1619.D
Injection Date: 07-May-2019 17:46:30 Instrument ID: VMS_MS9
Lims ID: STD01
Client ID:
Operator ID: newcomer ALS Bottle#: 29 Worklist Smp#: 27
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: AQ_VMSMS9_8260 Limit Group: MSV - 8260B Water and Solid
Column: DB-624 (0.25 mm) Detector: MS SCAN

104 1,2,3-Trichloropropane, CAS: 96-18-4
Signal: 1

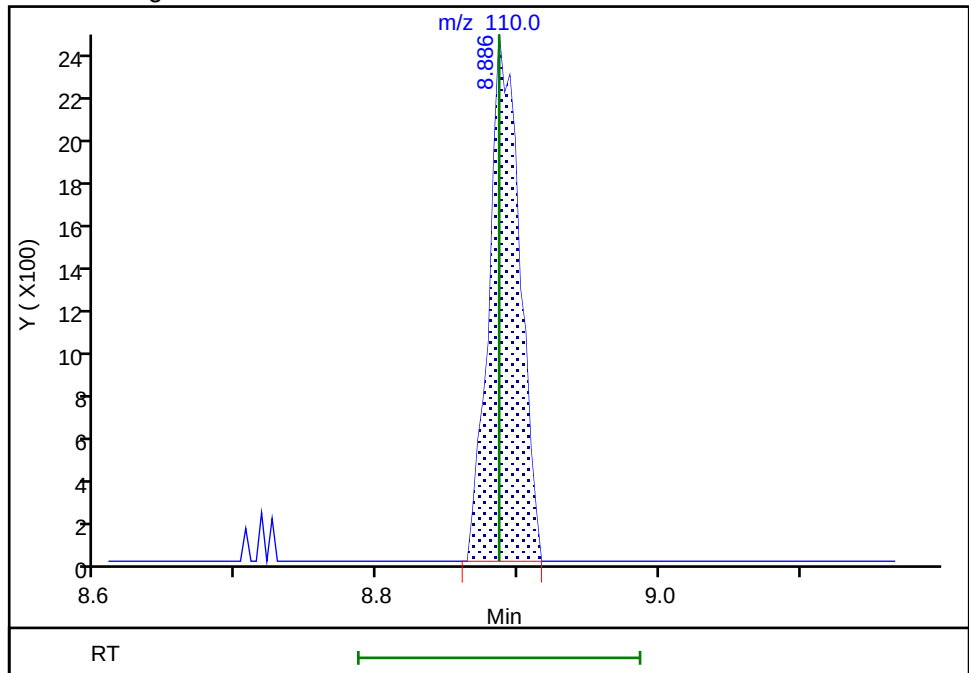
Not Detected
Expected RT: 8.89

Processing Integration Results



RT: 8.89
Area: 3695
Amount: 0.990075
Amount Units: ug/l

Manual Integration Results



Reviewer: newcomer, 08-May-2019 07:31:33
Audit Action: Assigned Compound ID

Audit Reason: Assign Peak

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Lims ID: STD005
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 07-May-2019 18:08:30 ALS Bottle#: 30 Worklist Smp#: 28
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: STD005
 Misc. Info.: 280-0081636-028
 Operator ID: newcomer Instrument ID: VMS_MS9
 Sublist: chrom-AQ_VMSMS9_8260*sub49
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 08-May-2019 10:07:26 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0338

First Level Reviewer: newcomer

Date: 08-May-2019 07:33:56

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.286	3.286	0.000	0	2241965	1000.0	1000.0	
* 1 Fluorobenzene	96	5.093	5.093	0.000	99	1858378	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.619	0.000	86	444535	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	96	709505	50.0	50.0	
\$ 6 Dibromofluoromethane (Surr	111	4.587	4.587	0.000	93	434599	50.0	49.1	
\$ 7 1,2-Dichloroethane-d4 (Sur	65	4.853	4.853	0.000	98	561326	50.0	49.0	
\$ 8 Toluene-d8 (Surr)	98	6.348	6.348	0.000	93	1778842	50.0	49.9	
\$ 9 4-Bromofluorobenzene (Surr	95	8.714	8.714	0.000	90	684161	50.0	49.1	
24 Ethyl ether	59	2.746	2.746	0.000	96	3972	0.5000	0.6035	
28 Acrolein	56	2.858	2.858	0.000	97	12362	4.94	4.99	
29 1,1,2-Trichloro-1,2,2-trif	151	2.933	2.933	0.000	69	2799	0.5000	0.5513	
30 1,1-Dichloroethene	96	2.937	2.937	0.000	96	3520	0.5000	0.5591	
31 Acetone	43	2.952	2.952	0.000	100	14679	2.00	2.08	
33 Iodomethane	142	3.065	3.065	0.000	99	4947	0.5000	0.5292	
35 Carbon disulfide	76	3.125	3.125	0.000	98	10046	0.5000	0.5589	
34 Methyl acetate	43	3.188	3.188	0.000	98	11453	1.00	1.20	
36 3-Chloro-1-propene	41	3.207	3.207	0.000	91	6233	0.5000	0.5528	
39 Methylene Chloride	84	3.301	3.301	0.000	59	5194	0.5000	0.5000	
38 2-Methyl-2-propanol	59	3.349	3.349	0.000	98	13634	5.00	5.64	
42 Acrylonitrile	53	3.466	3.466	0.000	99	27380	5.00	5.92	
40 Methyl tert-butyl ether	73	3.488	3.488	0.000	95	14589	0.5000	0.5965	
41 trans-1,2-Dichloroethene	96	3.503	3.503	0.000	95	4224	0.5000	0.5909	
43 Hexane	57	3.702	3.702	0.000	92	6137	0.5000	0.5591	
45 Vinyl acetate	43	3.799	3.799	0.000	97	18610	1.00	1.03	
46 1,1-Dichloroethane	63	3.826	3.826	0.000	95	7736	0.5000	0.5684	
50 2-Butanone (MEK)	43	4.208	4.208	0.000	100	16869	2.00	2.40	
52 cis-1,2-Dichloroethene	96	4.234	4.234	0.000	81	5082	0.5000	0.6100	
53 2,2-Dichloropropane	77	4.245	4.245	0.000	87	6207	0.5000	0.5261	
51 sec-Butyl Alcohol	45	4.317	4.317	0.000	98	27590	15.0	16.2	
59 Chlorobromomethane	128	4.410	4.410	0.000	91	2045	0.5000	0.6016	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
57 Tetrahydrofuran	42	4.418	4.418	0.000	88	6717	1.00	1.03	
56 Chloroform	83	4.470	4.470	0.000	92	7384	0.5000	0.5563	
60 1,1,1-Trichloroethane	97	4.616	4.616	0.000	98	6484	0.5000	0.5655	
61 Cyclohexane	56	4.676	4.676	0.000	90	8033	0.5000	0.5870	
62 1,1-Dichloropropene	75	4.725	4.725	0.000	89	5903	0.5000	0.5507	
63 Carbon tetrachloride	117	4.733	4.733	0.000	65	4452	0.5000	0.6812	
58 Isobutyl alcohol	43	4.736	4.736	0.000	88	12626	12.5	14.0	
66 Benzene	78	4.879	4.879	0.000	90	18513	0.5000	0.5877	
67 1,2-Dichloroethane	62	4.913	4.913	0.000	96	8069	0.5000	0.6747	
135 n-Heptane	43	5.066	5.066	0.000	73	6075	0.5000	0.5540	a
68 Trichloroethene	130	5.370	5.370	0.000	97	4614	0.5000	0.5942	
69 2-Pentanone	43	5.467	5.467	0.000	98	24406	2.00	2.20	
71 Methylcyclohexane	55	5.561	5.561	0.000	37	6666	0.5000	0.6010	
72 1,2-Dichloropropane	63	5.576	5.576	0.000	76	10675	0.5000	0.5550	
73 1,4-Dioxane	88	5.614	5.614	0.000	91	2663	10.0	12.1	
74 Dibromomethane	93	5.647	5.647	0.000	93	2814	0.5000	0.5783	
75 Dichlorobromomethane	83	5.771	5.771	0.000	98	4296	0.5000	0.4842	
78 cis-1,3-Dichloropropene	75	6.120	6.120	0.000	95	6599	0.5000	0.5403	
79 4-Methyl-2-pentanone (MIBK)	43	6.217	6.217	0.000	97	28195	2.00	2.25	
80 Toluene	91	6.408	6.408	0.000	99	19413	0.5000	0.5806	
82 trans-1,3-Dichloropropene	75	6.577	6.577	0.000	90	5667	0.5000	0.5121	
81 Ethyl methacrylate	69	6.603	6.603	0.000	87	6702	0.5000	0.5419	
83 1,1,2-Trichloroethane	97	6.757	6.757	0.000	92	4058	0.5000	0.5647	
85 Tetrachloroethene	164	6.847	6.847	0.000	96	3615	0.5000	0.5797	
86 1,3-Dichloropropane	76	6.903	6.903	0.000	93	7277	0.5000	0.5807	
84 2-Hexanone	43	6.922	6.922	0.000	98	22135	2.00	2.25	
87 Chlorodibromomethane	129	7.094	7.094	0.000	88	2766	0.5000	0.4877	
89 Ethylene Dibromide	107	7.222	7.222	0.000	98	4402	0.5000	0.5822	
90 1-Chlorohexane	91	7.608	7.608	0.000	93	9302	0.5000	0.5215	
91 Chlorobenzene	112	7.645	7.645	0.000	93	12843	0.5000	0.6148	
93 1,1,1,2-Tetrachloroethane	131	7.717	7.717	0.000	40	3126	0.5000	0.4886	
92 Ethylbenzene	106	7.724	7.724	0.000	98	6820	0.5000	0.5865	
94 m-Xylene & p-Xylene	91	7.840	7.840	0.000	97	17010	0.5000	0.5949	
95 o-Xylene	106	8.200	8.200	0.000	96	7991	0.5000	0.5820	
96 Styrene	104	8.215	8.215	0.000	95	12828	0.5000	0.5542	
97 Bromoform	173	8.399	8.399	0.000	40	1571	0.5000	1.12	M
98 Isopropylbenzene	105	8.541	8.541	0.000	96	19906	0.5000	0.5458	
100 Cyclohexanone	55	8.631	8.631	0.000	93	19944	20.0	22.0	
101 1,1,2,2-Tetrachloroethane	83	8.830	8.830	0.000	95	6338	0.5000	0.5483	
105 Bromobenzene	156	8.864	8.864	0.000	91	5285	0.5000	0.5805	
102 trans-1,4-Dichloro-2-buten	53	8.864	8.864	0.000	50	2260	0.5000	0.5565	
104 1,2,3-Trichloropropane	110	8.894	8.894	0.000	64	2125	0.5000	0.5813	M
103 N-Propylbenzene	120	8.939	8.939	0.000	99	5412	0.5000	0.5616	
107 2-Chlorotoluene	126	9.036	9.036	0.000	96	4693	0.5000	0.5561	
106 1,3,5-Trimethylbenzene	105	9.115	9.115	0.000	94	16025	0.5000	0.5409	
108 4-Chlorotoluene	126	9.152	9.152	0.000	99	4503	0.5000	0.5215	
109 tert-Butylbenzene	119	9.415	9.415	0.000	91	13608	0.5000	0.5392	a
110 1,2,4-Trimethylbenzene	105	9.478	9.478	0.000	98	16817	0.5000	0.5521	
111 sec-Butylbenzene	134	9.640	9.640	0.000	94	4510	0.5000	0.6028	
113 1,3-Dichlorobenzene	146	9.767	9.767	0.000	98	9764	0.5000	0.5842	
112 4-Isopropyltoluene	119	9.786	9.786	0.000	97	17048	0.5000	0.5370	
115 1,4-Dichlorobenzene	146	9.868	9.868	0.000	87	10779	0.5000	0.6281	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
116 n-Butylbenzene	91	10.191	10.191	0.000	98	14840	0.5000	0.5035	
117 1,2-Dichlorobenzene	146	10.221	10.221	0.000	98	9487	0.5000	0.5865	
118 1,2-Dibromo-3-Chloropropan	157	11.000	11.000	0.000	7	1194	0.5000	1.19	M
120 1,2,4-Trichlorobenzene	180	11.818	11.818	0.000	92	6186	0.5000	0.5357	
121 Hexachlorobutadiene	225	11.960	11.960	0.000	89	2837	0.5000	0.5655	
122 Naphthalene	128	12.095	12.095	0.000	97	20363	0.5000	0.5444	
123 1,2,3-Trichlorobenzene	180	12.316	12.316	0.000	94	6217	0.5000	0.5555	
S 136 1,2-Dichloroethene, Total	96				0		1.00	1.20	
S 142 Xylenes, Total	106				0		1.00	1.18	
S 141 1,2-Dichloroethene, Total	1				0		1.00	1.20	
S 139 Total BTEX	1				0			2.93	
S 138 Xylenes, Total (URS)	1				0		1.00	1.18	
S 137 Trihalomethanes, Total	1				0		2.00	2.65	
S 140 1,3-Dichloropropene, Total	1				0		1.00	1.05	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

MV-MegaMainA_00014

Amount Added: 0.50

Units: uL

mv-Cent IS/SS_00002

Amount Added: 5.00

Units: uL

Run Reagent

Report Date: 08-May-2019 10:07:28

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D

Injection Date: 07-May-2019 18:08:30

Instrument ID: VMS_MS9

Operator ID: newcomer

Lims ID: STD005

Worklist Smp#: 28

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

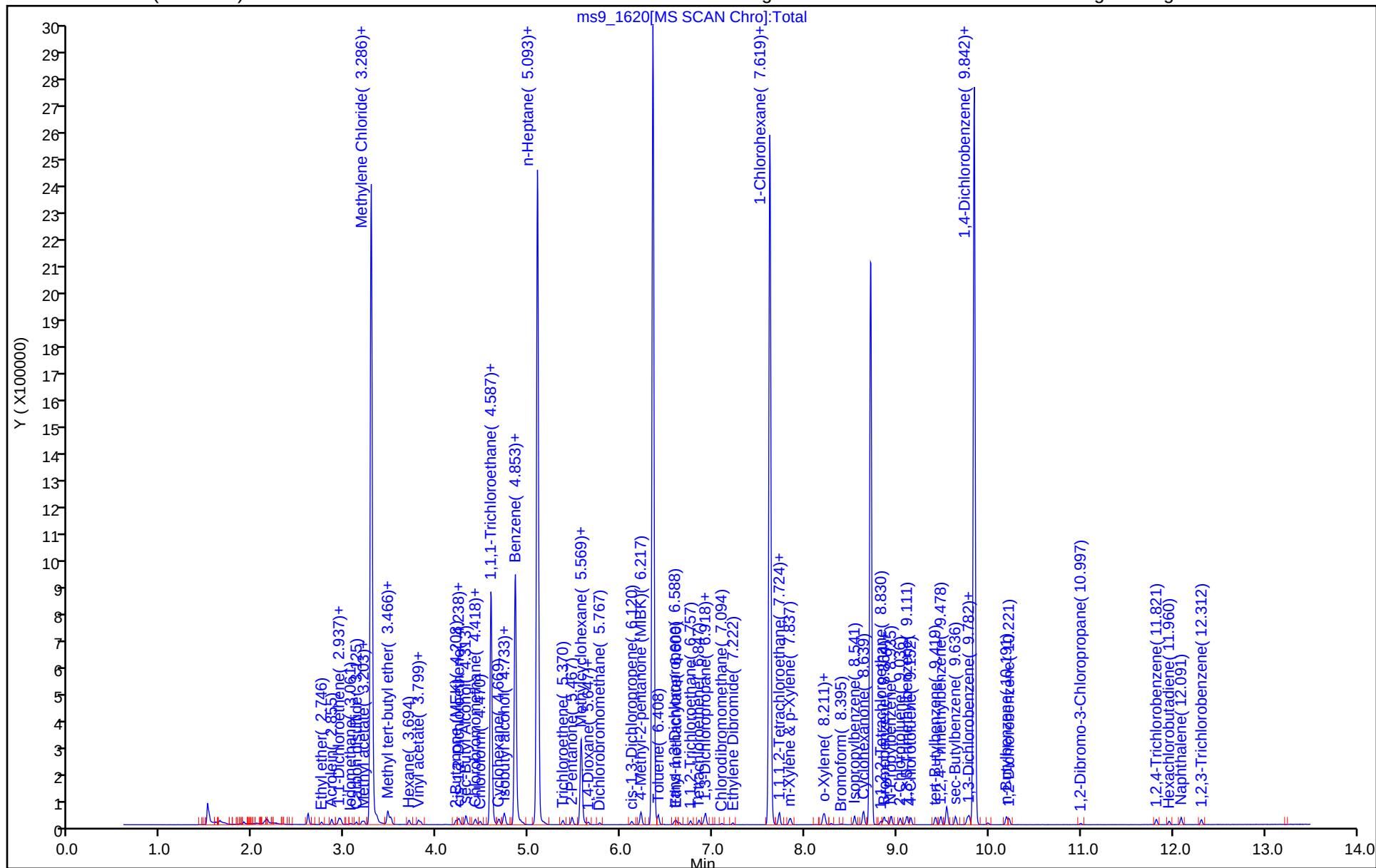
ALS Bottle#: 30

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D

Injection Date: 07-May-2019 18:08:30

Instrument ID: VMS_MS9

Lims ID: STD005

Client ID:

Operator ID: newcomer

ALS Bottle#:

30

Worklist Smp#: 28

Purge Vol: 5.000 mL

Dil. Factor:

1.0000

Method: AQ_VMSMS9_8260

Limit Group:

MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Detector

MS SCAN

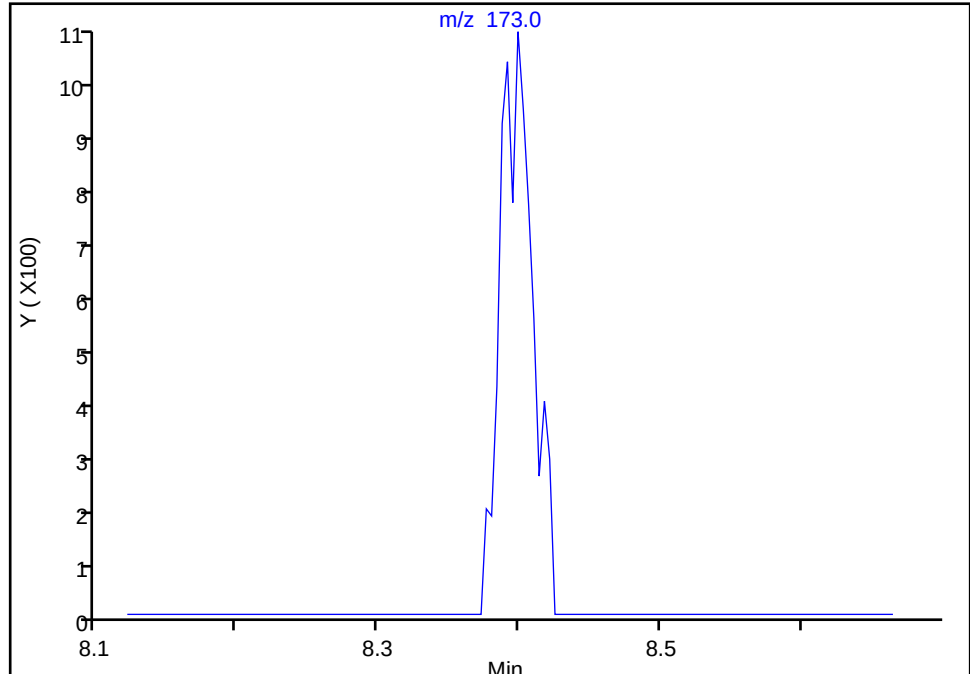
97 Bromoform, CAS: 75-25-2

Signal: 1

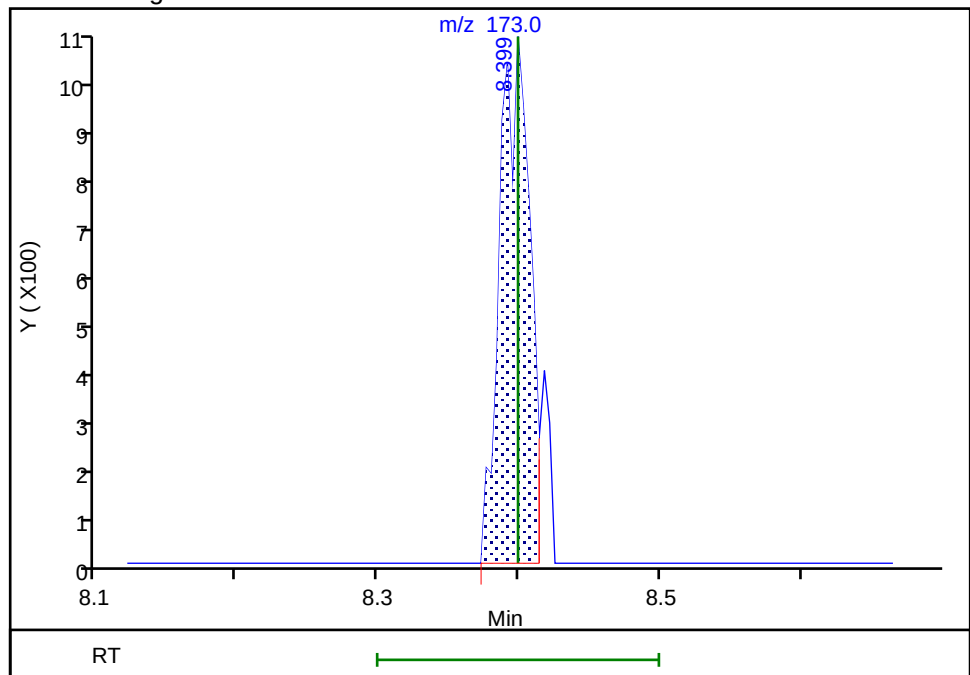
Not Detected

Expected RT: 8.40

Processing Integration Results



Manual Integration Results



RT: 8.40

Area: 1571

Amount: 1.117286

Amount Units: ug/l

Reviewer: newcomer, 08-May-2019 07:33:02

Audit Action: Manually Integrated

Audit Reason: Assign Peak

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D

Injection Date: 07-May-2019 18:08:30

Instrument ID: VMS_MS9

Lims ID: STD005

Client ID:

Operator ID: newcomer

ALS Bottle#:

30

Worklist Smp#: 28

Purge Vol: 5.000 mL

Dil. Factor:

1.0000

Method: AQ_VMSMS9_8260

Limit Group:

MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Detector

MS SCAN

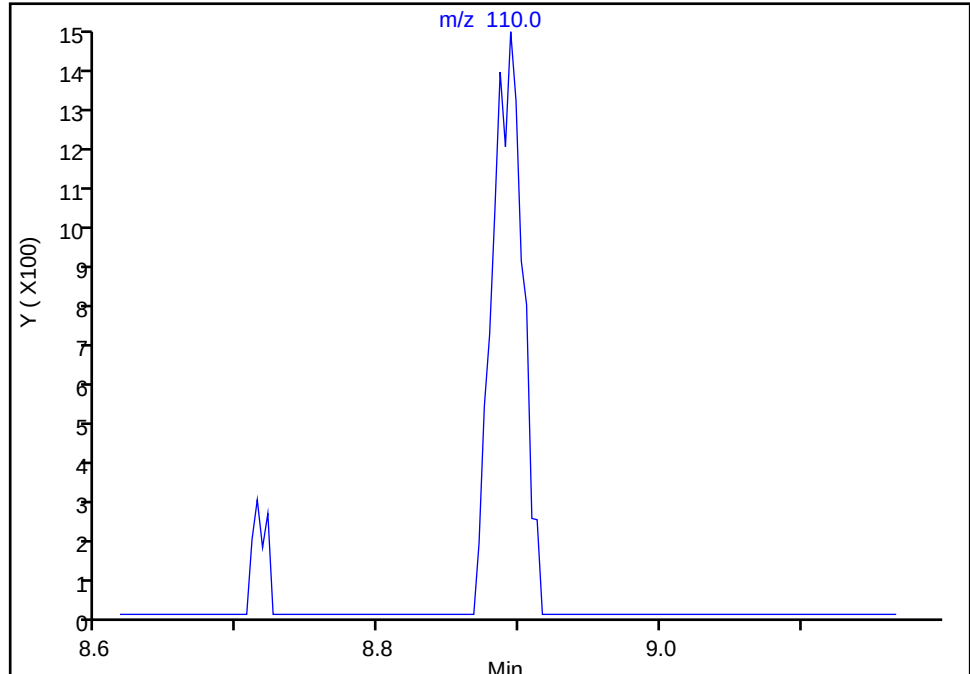
104 1,2,3-Trichloropropane, CAS: 96-18-4

Signal: 1

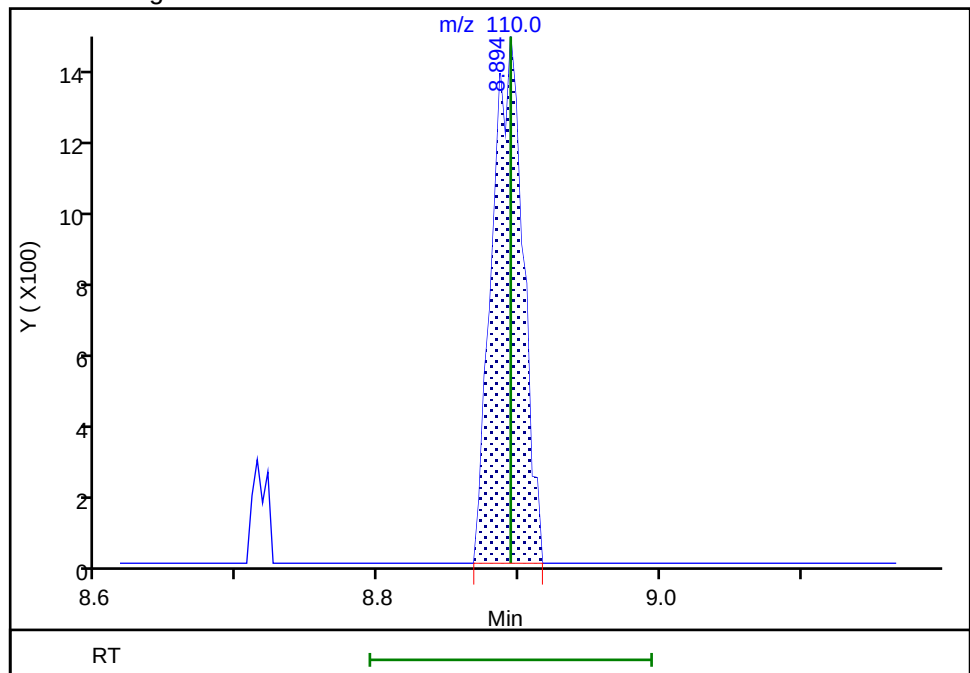
Not Detected

Expected RT: 8.89

Processing Integration Results



Manual Integration Results



Reviewer: newcomer, 08-May-2019 07:33:17

Audit Action: Manually Integrated

Audit Reason: Assign Peak

Eurofins TestAmerica, Denver

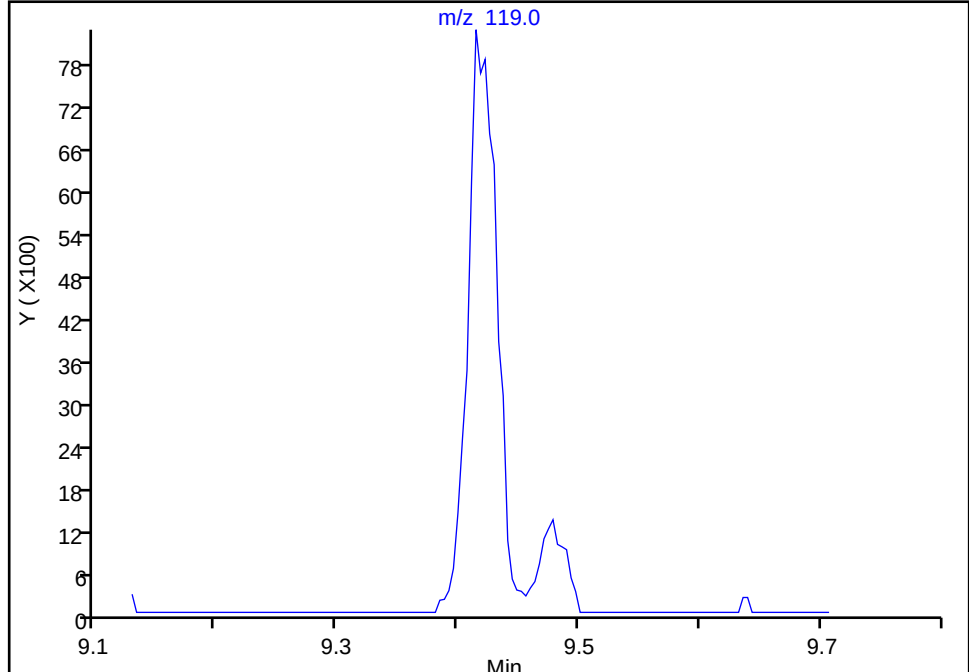
Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
Injection Date: 07-May-2019 18:08:30 Instrument ID: VMS_MS9
Lims ID: STD005
Client ID:
Operator ID: newcomer ALS Bottle#: 30 Worklist Smp#: 28
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: AQ_VMSMS9_8260 Limit Group: MSV - 8260B Water and Solid
Column: DB-624 (0.25 mm) Detector: MS SCAN

109 tert-Butylbenzene, CAS: 98-06-6

Signal: 1

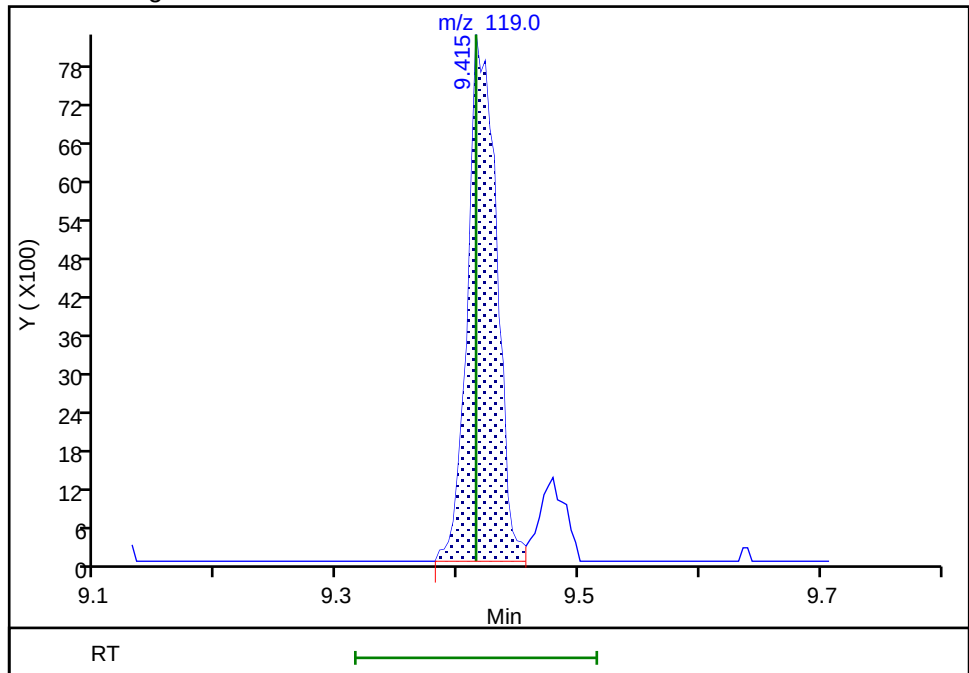
Not Detected
Expected RT: 9.41

Processing Integration Results



RT: 9.41
Area: 13608
Amount: 0.539217
Amount Units: ug/l

Manual Integration Results



Reviewer: newcomer, 08-May-2019 07:33:28
Audit Action: Assigned Compound ID

Audit Reason: Assign Peak

Eurofins TestAmerica, Denver

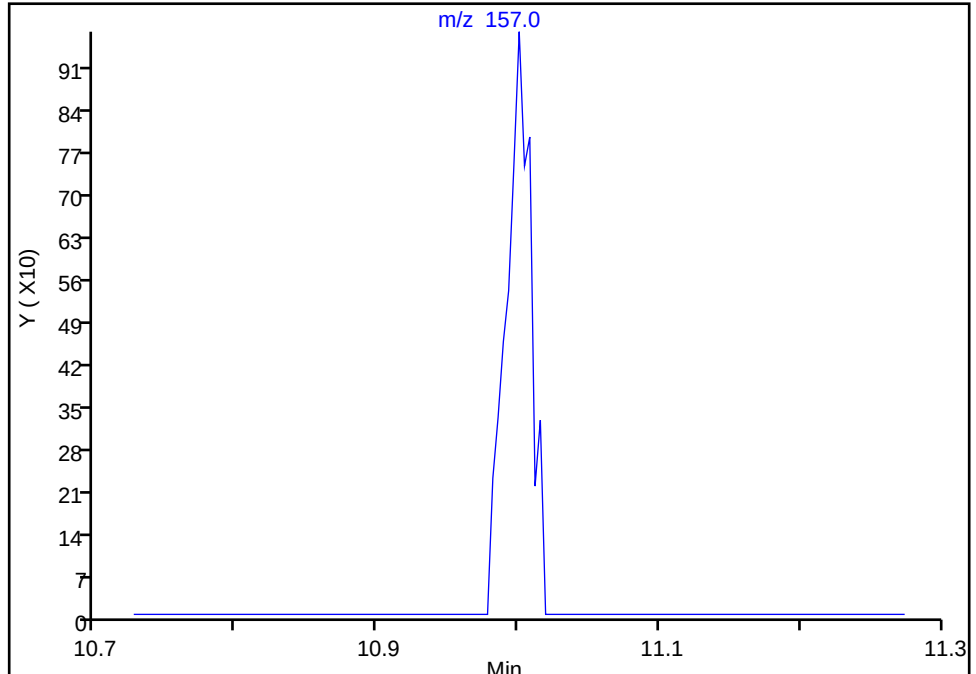
Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
Injection Date: 07-May-2019 18:08:30 Instrument ID: VMS_MS9
Lims ID: STD005
Client ID:
Operator ID: newcomer ALS Bottle#: 30 Worklist Smp#: 28
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: AQ_VMSMS9_8260 Limit Group: MSV - 8260B Water and Solid
Column: DB-624 (0.25 mm) Detector MS SCAN

118 1,2-Dibromo-3-Chloropropane, CAS: 96-12-8

Signal: 1

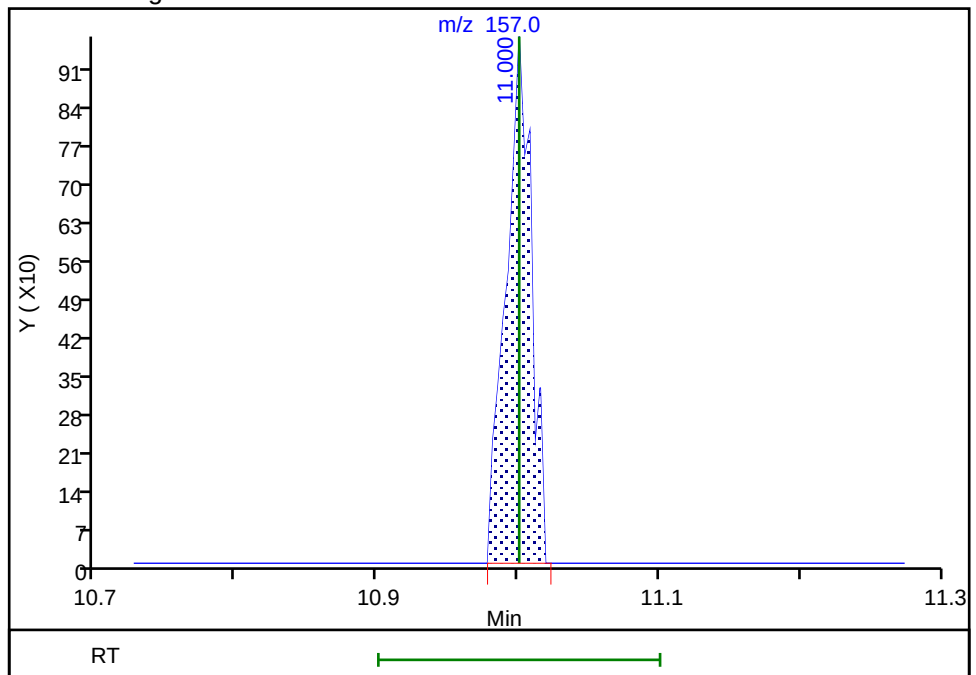
Not Detected
Expected RT: 11.00

Processing Integration Results



RT: 11.00
Area: 1194
Amount: 1.188036
Amount Units: ug/l

Manual Integration Results



Reviewer: newcomer, 08-May-2019 07:33:43
Audit Action: Manually Integrated

Audit Reason: Assign Peak

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-457270/19 Calibration Date: 05/07/2019 14:54
 Instrument ID: VMS_MS9 Calib Start Date: 05/07/2019 11:39
 GC Column: RXI-624SilMS ID: 0.25 (mm) Calib End Date: 05/07/2019 14:32
 Lab File ID: ms9_1611.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorodifluoromethane	Ave	0.2528	0.2133		42.2	50.0	-15.6	20.0
Chloromethane	Ave	0.1766	0.1678	0.1000	47.5	50.0	-5.0	20.0
Vinyl chloride	Ave	0.1541	0.1523		49.4	50.0	-1.1	20.0
Bromomethane	Lin2		0.0348		53.6	50.0	7.2	20.0
Chloroethane	Lin2		0.0961		52.5	50.0	4.9	20.0
Dichlorofluoromethane	Ave	0.3157	0.3049		48.3	50.0	-3.4	20.0
Trichlorofluoromethane	Ave	0.2668	0.2783		52.1	50.0	4.3	20.0
2-Chloroethyl vinyl ether	Ave	0.1710	0.1707		49.9	50.0	-0.2	20.0

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1611.D
 Lims ID: ICV
 Client ID:
 Sample Type: ICV
 Inject. Date: 07-May-2019 14:54:30 ALS Bottle#: 21 Worklist Smp#: 19
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: ICV
 Operator ID: newcomer Instrument ID: VMS_MS9
 Sublist:
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 08-May-2019 09:00:38 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0338

First Level Reviewer: newcomer

Date: 07-May-2019 15:19:26

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.290	3.293	-0.003	0	1934924	1000.0	1000.0	
* 1 Fluorobenzene	96	5.089	5.093	-0.004	98	1592564	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.619	0.000	87	380556	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	96	617278	50.0	50.0	
13 Dichlorodifluoromethane	85	1.670	1.674	-0.004	100	339665	50.0	42.2	
15 Chloromethane	50	1.854	1.854	0.000	99	267250	50.0	47.5	
16 Vinyl chloride	62	1.944	1.948	-0.004	98	242550	50.0	49.4	
19 Bromomethane	94	2.210	2.217	-0.007	90	55358	50.0	53.6	
20 Chloroethane	64	2.300	2.300	0.000	99	152975	50.0	52.5	
21 Dichlorofluoromethane	67	2.487	2.491	-0.004	97	485542	50.0	48.3	
22 Trichlorofluoromethane	101	2.517	2.517	0.000	98	443133	50.0	52.1	
76 2-Chloroethyl vinyl ether	63	5.970	5.970	0.000	92	271902	50.0	49.9	

Reagents:

mv-Cent IS_00002 Amount Added: 50.00 Units: uL
 MV-Gas B_00026 Amount Added: 50.00 Units: uL

Report Date: 08-May-2019 09:00:44

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1611.D

Injection Date: 07-May-2019 14:54:30

Instrument ID: VMS_MS9

Operator ID: newcomer

Lims ID: ICV

Worklist Smp#: 19

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

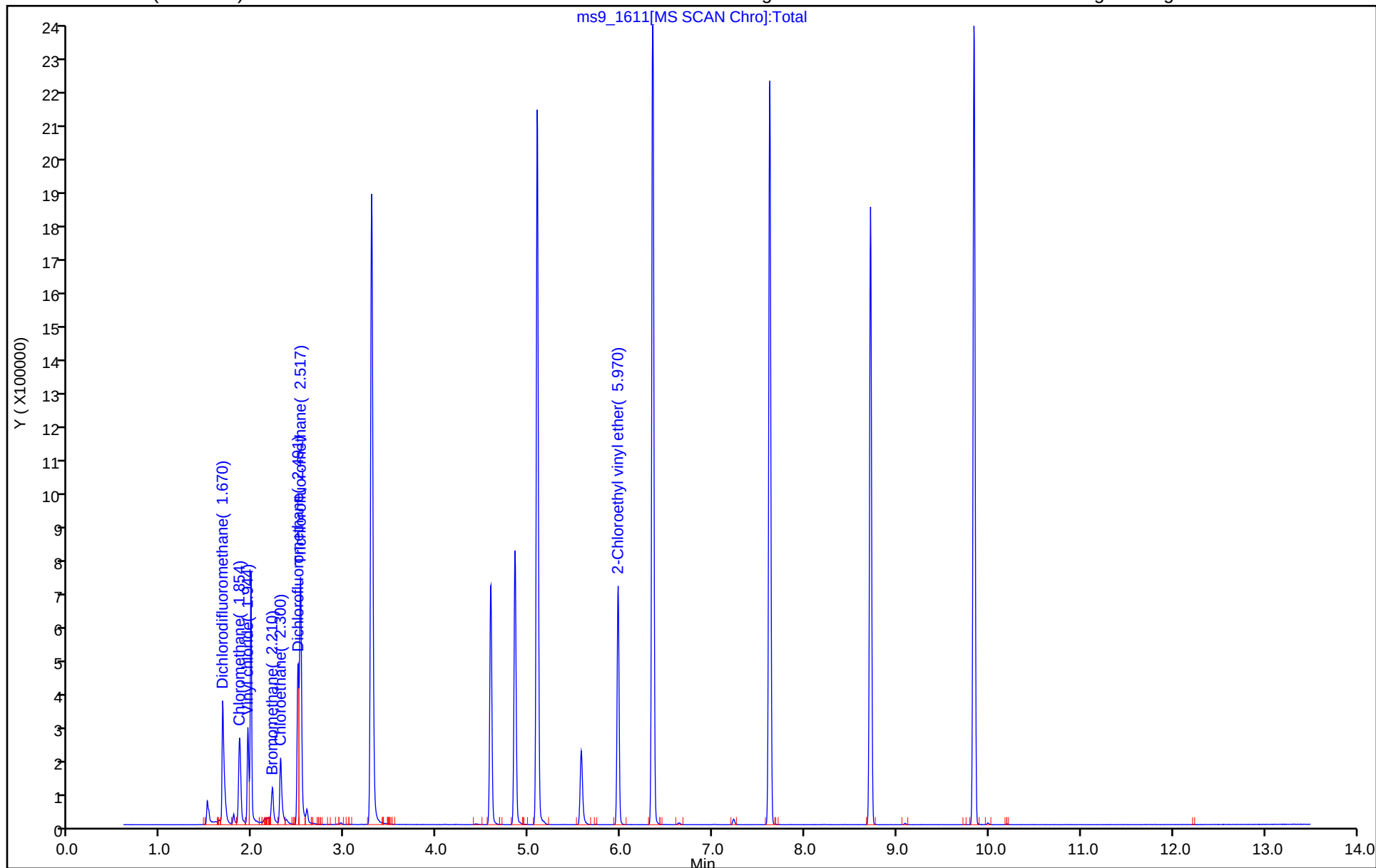
ALS Bottle#: 21

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Lab Sample ID: ICV 280-457270/29 Calibration Date: 05/07/2019 18:30

Instrument ID: VMS_MS9 Calib Start Date: 05/07/2019 15:15

GC Column: RXI-624SilMS ID: 0.25 (mm) Calib End Date: 05/07/2019 18:08

Lab File ID: ms9_1621.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Ethyl ether	Ave	0.1771	0.1754		49.5	50.0	-0.9	20.0
Acrolein	Lin2		0.0410		388	500	-22.4*	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	Ave	0.1366	0.1361		49.8	50.0	-0.4	20.0
1,1-Dichloroethene	Ave	0.1694	0.1672		49.4	50.0	-1.3	20.0
Acetone	Lin2		0.1118		200	200	-0.0	20.0
Iodomethane	Lin2		0.1776		49.8	50.0	-0.3	20.0
Carbon disulfide	Ave	0.4836	0.4890		50.6	50.0	1.1	20.0
Methyl acetate	Ave	0.2558	0.2486		97.2	100	-2.8	20.0
3-Chloro-1-propene	Ave	0.3033	0.2991		49.3	50.0	-1.4	20.0
Methylene Chloride	Lin2		0.1926		50.6	50.0	1.3	20.0
t-Butyl alcohol	Ave	0.0651	0.0644		495	500	-1.1	20.0
Acrylonitrile	Ave	0.1245	0.1210		486	500	-2.8	20.0
Methyl tert-butyl ether	Ave	0.6581	0.6443		49.0	50.0	-2.1	20.0
trans-1,2-Dichloroethene	Ave	0.1923	0.1865		48.5	50.0	-3.0	20.0
Hexane	Ave	1.235	1.152		46.7	50.0	-6.7	20.0
Vinyl acetate	Ave	0.4882	0.4891		100	100	0.2	20.0
1,1-Dichloroethane	Ave	0.3662	0.3530	0.1000	48.2	50.0	-3.6	20.0
2-Butanone (MEK)	Ave	0.1888	0.1770		187	200	-6.3	20.0
cis-1,2-Dichloroethene	Ave	0.2241	0.2142		47.8	50.0	-4.5	20.0
2,2-Dichloropropane	Ave	0.3174	0.2947		46.4	50.0	-7.2	20.0
sec-Butyl Alcohol	Ave	0.7596	0.7452		1470	1500	-1.9	20.0
Bromochloromethane	Ave	0.0915	0.0887		48.5	50.0	-3.0	20.0
Tetrahydrofuran	Lin2		0.1165		101	100	1.2	20.0
Chloroform	Ave	0.3572	0.3477		48.7	50.0	-2.7	20.0
1,1,1-Trichloroethane	Ave	0.3085	0.3073		49.8	50.0	-0.4	20.0
Cyclohexane	Ave	0.3682	0.3562		48.4	50.0	-3.3	20.0
1,1-Dichloropropene	Ave	0.2884	0.2834		49.1	50.0	-1.7	20.0
Carbon tetrachloride	Lin1		0.2384		45.8	50.0	-8.4	20.0
Isobutyl alcohol	Ave	0.4037	0.4019		1240	1250	-0.5	20.0
Benzene	Ave	0.8475	0.8249		48.7	50.0	-2.7	20.0
1,2-Dichloroethane	Ave	0.3218	0.2984		46.4	50.0	-7.3	20.0
Trichloroethene	Ave	0.2089	0.2037		48.7	50.0	-2.5	20.0
2-Pentanone	Ave	0.2988	0.2916		195	200	-2.4	20.0
Methylcyclohexane	Ave	0.2984	0.2863		48.0	50.0	-4.1	20.0
1,2-Dichloropropane	Lin2		0.2105		49.7	50.0	-0.5	20.0
1,4-Dioxane	Ave	0.0059	0.0058		976	1000	-2.4	20.0
Dibromomethane	Ave	0.1309	0.1288		49.2	50.0	-1.6	20.0
Bromodichloromethane	Ave	0.2387	0.2513		52.6	50.0	5.3	20.0
cis-1,3-Dichloropropene	Ave	1.374	1.371		49.9	50.0	-0.2	20.0
4-Methyl-2-pentanone (MIBK)	Ave	0.3375	0.3233		192	200	-4.2	20.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Lab Sample ID: ICV 280-457270/29 Calibration Date: 05/07/2019 18:30

Instrument ID: VMS_MS9 Calib Start Date: 05/07/2019 15:15

GC Column: RXI-624SilMS ID: 0.25 (mm) Calib End Date: 05/07/2019 18:08

Lab File ID: ms9_1621.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Toluene	Ave	0.8996	0.8773		48.8	50.0	-2.5	20.0
trans-1,3-Dichloropropene	Ave	0.2977	0.3050		51.2	50.0	2.4	20.0
Ethyl methacrylate	Ave	1.391	1.414		50.8	50.0	1.7	20.0
1,1,2-Trichloroethane	Ave	0.1933	0.1926		49.8	50.0	-0.4	20.0
Tetrachloroethene	Ave	0.7014	0.6767		48.2	50.0	-3.5	20.0
1,3-Dichloropropane	Ave	1.410	1.375		48.8	50.0	-2.4	20.0
2-Hexanone	Ave	1.107	1.058		191	200	-4.5	20.0
Dibromochloromethane	Ave	0.6379	0.6842		53.6	50.0	7.2	20.0
1,2-Dibromoethane	Ave	0.8505	0.8404		49.4	50.0	-1.2	20.0
1-Chlorohexane	Lin2		1.191		48.8	50.0	-2.4	20.0
Chlorobenzene	Ave	2.350	2.237	0.3000	47.6	50.0	-4.8	20.0
1,1,1,2-Tetrachloroethane	Ave	0.7196	0.7356		51.1	50.0	2.2	20.0
Ethylbenzene	Ave	1.308	1.246		47.6	50.0	-4.8	20.0
m-Xylene & p-Xylene	Ave	3.216	3.104		48.3	50.0	-3.5	20.0
o-Xylene	Ave	1.544	1.504		48.7	50.0	-2.6	20.0
Styrene	Ave	2.604	2.600		49.9	50.0	-0.1	20.0
Bromoform	Lin1		0.4633	0.1000	45.8	50.0	-8.3	20.0
Isopropylbenzene	Ave	2.570	2.478		48.2	50.0	-3.6	20.0
Cyclohexanone	Ave	0.1020	0.1055		2070	2000	3.5	20.0
1,1,2,2-Tetrachloroethane	Ave	0.8146	0.8005	0.3000	49.1	50.0	-1.7	20.0
Bromobenzene	Ave	0.6416	0.6221		48.5	50.0	-3.0	20.0
trans-1,4-Dichloro-2-butene	Ave	0.2862	0.2756		48.1	50.0	-3.7	20.0
1,2,3-Trichloropropane	Ave	0.2576	0.2470		47.9	50.0	-4.1	20.0
N-Propylbenzene	Ave	0.6791	0.6666		49.1	50.0	-1.8	20.0
2-Chlorotoluene	Ave	0.5947	0.5764		48.5	50.0	-3.1	20.0
1,3,5-Trimethylbenzene	Ave	2.088	2.057		49.2	50.0	-1.5	20.0
4-Chlorotoluene	Ave	0.6085	0.5960		49.0	50.0	-2.1	20.0
tert-Butylbenzene	Ave	1.778	1.752		49.2	50.0	-1.5	20.0
1,2,4-Trimethylbenzene	Ave	2.146	2.106		49.1	50.0	-1.9	20.0
sec-Butylbenzene	Ave	0.5273	0.5096		48.3	50.0	-3.3	20.0
1,3-Dichlorobenzene	Ave	1.178	1.146		48.6	50.0	-2.7	20.0
4-Isopropyltoluene	Ave	2.237	2.232		49.9	50.0	-0.2	20.0
1,4-Dichlorobenzene	Ave	1.209	1.159		47.9	50.0	-4.2	20.0
n-Butylbenzene	Ave	2.077	2.100		50.6	50.0	1.1	20.0
1,2-Dichlorobenzene	Ave	1.140	1.118		49.0	50.0	-1.9	20.0
1,2-Dibromo-3-Chloropropane	Lin1		0.2007		43.7	50.0	-12.6	20.0
1,2,4-Trichlorobenzene	Ave	0.8138	0.8220		50.5	50.0	1.0	20.0
Hexachlorobutadiene	Ave	0.3536	0.3540		50.1	50.0	0.1	20.0
Naphthalene	Ave	2.636	2.664		50.5	50.0	1.1	20.0
1,2,3-Trichlorobenzene	Ave	0.7887	0.7844		49.7	50.0	-0.5	20.0
Dibromofluoromethane (Surr)	Ave	0.2379	0.2397		50.4	50.0	0.7	20.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab Sample ID: ICV 280-457270/29 Calibration Date: 05/07/2019 18:30
Instrument ID: VMS_MS9 Calib Start Date: 05/07/2019 15:15
GC Column: RXI-624SilMS ID: 0.25 (mm) Calib End Date: 05/07/2019 18:08
Lab File ID: ms9_1621.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,2-Dichloroethane-d4 (Surr)	Ave	0.3080	0.3077		50.0	50.0	-0.0	20.0
Toluene-d8 (Surr)	Ave	4.013	3.948		49.2	50.0	-1.6	20.0
4-Bromofluorobenzene (Surr)	Ave	0.9813	0.9647		49.2	50.0	-1.7	20.0

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1621.D
 Lims ID: ICV
 Client ID:
 Sample Type: ICV
 Inject. Date: 07-May-2019 18:30:30 ALS Bottle#: 31 Worklist Smp#: 29
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: ICV
 Misc. Info.: 280-0081636-029
 Operator ID: newcomer Instrument ID: VMS_MS9
 Sublist:
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 08-May-2019 10:07:26 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0338

First Level Reviewer: newcomer

Date: 08-May-2019 10:29:54

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.290	3.286	0.004	0	2215380	1000.0	1000.0	
* 1 Fluorobenzene	96	5.093	5.093	0.000	99	1813656	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.619	0.000	86	448261	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	96	704201	50.0	50.0	
\$ 6 Dibromofluoromethane (Surr	111	4.587	4.587	0.001	95	434708	50.0	50.4	
\$ 7 1,2-Dichloroethane-d4 (Sur	65	4.849	4.853	-0.004	97	558119	50.0	50.0	
\$ 8 Toluene-d8 (Surr)	98	6.348	6.348	0.000	93	1769625	50.0	49.2	
\$ 9 4-Bromofluorobenzene (Surr	95	8.714	8.714	0.000	89	679372	50.0	49.2	
24 Ethyl ether	59	2.742	2.746	-0.004	94	318127	50.0	49.5	
28 Acrolein	56	2.855	2.855	0.000	99	744263	500.1	388.1	
29 1,1,2-Trichloro-1,2,2-trif	151	2.933	2.937	-0.004	95	246739	50.0	49.8	
30 1,1-Dichloroethene	96	2.933	2.937	-0.004	97	303283	50.0	49.4	
31 Acetone	43	2.956	2.956	0.000	99	810836	200.0	200.0	
33 Iodomethane	142	3.057	3.061	-0.004	98	322028	50.0	49.8	
35 Carbon disulfide	76	3.121	3.125	-0.004	99	886784	50.0	50.6	
34 Methyl acetate	43	3.185	3.185	0.000	98	901631	100.0	97.2	
36 3-Chloro-1-propene	41	3.207	3.211	-0.004	91	542540	50.0	49.3	
39 Methylene Chloride	84	3.301	3.304	-0.003	93	349331	50.0	50.6	
38 2-Methyl-2-propanol	59	3.350	3.342	0.008	100	1167282	500.0	494.6	
42 Acrylonitrile	53	3.466	3.462	0.004	98	2194755	500.0	486.0	
40 Methyl tert-butyl ether	73	3.488	3.488	0.000	95	1168588	50.0	49.0	
41 trans-1,2-Dichloroethene	96	3.503	3.503	0.000	97	338289	50.0	48.5	
43 Hexane	57	3.694	3.698	-0.004	93	516431	50.0	46.7	
45 Vinyl acetate	43	3.799	3.799	0.000	97	1773922	100.0	100.2	
46 1,1-Dichloroethane	63	3.822	3.826	-0.004	96	640167	50.0	48.2	
50 2-Butanone (MEK)	43	4.204	4.204	0.000	100	1283758	200.0	187.5	
52 cis-1,2-Dichloroethene	96	4.230	4.234	-0.004	83	388411	50.0	47.8	
53 2,2-Dichloropropane	77	4.245	4.245	0.000	86	534433	50.0	46.4	
51 sec-Butyl Alcohol	45	4.317	4.313	0.004	99	2476382	1500.0	1471.7	
59 Chlorobromomethane	128	4.410	4.407	0.003	97	160950	50.0	48.5	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
57 Tetrahydrofuran	42	4.418	4.414	0.004	86	422383	100.0	101.2	
56 Chloroform	83	4.470	4.470	0.000	93	630571	50.0	48.7	
60 1,1,1-Trichloroethane	97	4.613	4.613	0.000	98	557370	50.0	49.8	
61 Cyclohexane	56	4.673	4.676	-0.003	90	645937	50.0	48.4	
62 1,1-Dichloropropene	75	4.725	4.721	0.004	97	514067	50.0	49.1	
63 Carbon tetrachloride	117	4.729	4.733	-0.004	97	432337	50.0	45.8	
58 Isobutyl alcohol	43	4.737	4.733	0.003	95	1112812	1250.0	1244.4	
66 Benzene	78	4.879	4.883	-0.004	96	1496162	50.0	48.7	
67 1,2-Dichloroethane	62	4.909	4.905	0.004	98	541127	50.0	46.4	
135 n-Heptane	43	5.063	5.066	-0.003	92	510101	50.0	47.7	
68 Trichloroethene	130	5.366	5.366	0.000	99	369364	50.0	48.7	
69 2-Pentanone	43	5.467	5.467	0.000	99	2115704	200.0	195.2	
71 Methylcyclohexane	55	5.561	5.561	0.000	93	519198	50.0	48.0	
72 1,2-Dichloropropane	63	5.576	5.576	0.000	93	381855	50.0	49.7	
73 1,4-Dioxane	88	5.617	5.610	0.007	94	210405	1000.0	976.1	
74 Dibromomethane	93	5.644	5.647	-0.003	97	233562	50.0	49.2	
75 Dichlorobromomethane	83	5.767	5.767	0.000	99	455768	50.0	52.6	
78 cis-1,3-Dichloropropene	75	6.116	6.120	-0.004	95	614440	50.0	49.9	
79 4-Methyl-2-pentanone (MIBK)	43	6.217	6.217	0.000	96	2345592	200.0	191.6	
80 Toluene	91	6.405	6.408	-0.003	98	1591057	50.0	48.8	
82 trans-1,3-Dichloropropene	75	6.581	6.585	-0.004	94	553141	50.0	51.2	
81 Ethyl methacrylate	69	6.600	6.600	0.000	88	633807	50.0	50.8	
83 1,1,2-Trichloroethane	97	6.757	6.757	0.000	92	349265	50.0	49.8	
85 Tetrachloroethene	164	6.851	6.847	0.004	98	303330	50.0	48.2	
86 1,3-Dichloropropane	76	6.903	6.907	-0.004	98	616509	50.0	48.8	
84 2-Hexanone	43	6.918	6.918	0.000	96	1896819	200.0	191.1	
87 Chlorodibromomethane	129	7.098	7.098	0.000	90	306684	50.0	53.6	
89 Ethylene Dibromide	107	7.214	7.218	-0.004	98	376714	50.0	49.4	
90 1-Chlorohexane	91	7.604	7.597	0.007	97	533962	50.0	48.8	
91 Chlorobenzene	112	7.645	7.649	-0.004	93	1002634	50.0	47.6	
93 1,1,1,2-Tetrachloroethane	131	7.720	7.717	0.003	94	329729	50.0	51.1	
92 Ethylbenzene	106	7.724	7.724	0.000	99	558384	50.0	47.6	
94 m-Xylene & p-Xylene	91	7.840	7.840	0.000	97	1391614	50.0	48.3	
95 o-Xylene	106	8.200	8.200	0.000	97	674090	50.0	48.7	
96 Styrene	104	8.215	8.215	0.000	95	1165696	50.0	49.9	
97 Bromoform	173	8.399	8.399	0.000	97	207698	50.0	45.8	
98 Isopropylbenzene	105	8.541	8.538	0.003	96	1744829	50.0	48.2	
100 Cyclohexanone	55	8.635	8.639	-0.004	92	1891790	2000.0	2069.2	
101 1,1,2,2-Tetrachloroethane	83	8.826	8.826	0.000	94	563715	50.0	49.1	
105 Bromobenzene	156	8.860	8.860	0.000	96	438109	50.0	48.5	
102 trans-1,4-Dichloro-2-buten	53	8.864	8.864	0.000	69	194056	50.0	48.1	
104 1,2,3-Trichloropropane	110	8.894	8.886	0.008	84	173967	50.0	47.9	a
103 N-Propylbenzene	120	8.939	8.939	0.000	99	469449	50.0	49.1	
107 2-Chlorotoluene	126	9.036	9.036	0.000	96	405911	50.0	48.5	
106 1,3,5-Trimethylbenzene	105	9.111	9.111	0.000	95	1448188	50.0	49.2	
108 4-Chlorotoluene	126	9.152	9.149	0.003	98	419711	50.0	49.0	
109 tert-Butylbenzene	119	9.419	9.422	-0.003	93	1233407	50.0	49.2	
110 1,2,4-Trimethylbenzene	105	9.479	9.478	0.001	98	1483157	50.0	49.1	
111 sec-Butylbenzene	134	9.640	9.636	0.004	95	358885	50.0	48.3	
113 1,3-Dichlorobenzene	146	9.767	9.767	0.000	98	806972	50.0	48.6	
112 4-Isopropyltoluene	119	9.786	9.786	0.000	97	1571450	50.0	49.9	
115 1,4-Dichlorobenzene	146	9.865	9.868	-0.003	95	815877	50.0	47.9	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
116 n-Butylbenzene	91	10.191	10.191	0.000	98	1478731	50.0	50.6	
117 1,2-Dichlorobenzene	146	10.221	10.221	0.000	97	787212	50.0	49.0	
118 1,2-Dibromo-3-Chloropropan	157	11.000	10.997	0.003	82	141327	50.0	43.7	
120 1,2,4-Trichlorobenzene	180	11.821	11.818	0.003	93	578859	50.0	50.5	
121 Hexachlorobutadiene	225	11.960	11.960	0.000	97	249253	50.0	50.1	
122 Naphthalene	128	12.091	12.091	0.000	97	1875865	50.0	50.5	
123 1,2,3-Trichlorobenzene	180	12.313	12.309	0.003	95	552404	50.0	49.7	
S 136 1,2-Dichloroethene, Total	96				0		100.0	96.3	
S 142 Xylenes, Total	106				0		100.0	97.0	
S 141 1,2-Dichloroethene, Total	1				0		100.0	96.3	
S 138 Xylenes, Total (URS)	1				0		100.0	97.0	
S 137 Trihalomethanes, Total	1				0		200.0	200.8	
S 140 1,3-Dichloropropene, Total	1				0		100.0	101.1	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MV-MegaMain B_00012

Amount Added: 50.00

Units: uL

mv-Cent IS/SS_00002

Amount Added: 5.00

Units: uL

Run Reagent

Report Date: 08-May-2019 10:29:56

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1621.D

Injection Date: 07-May-2019 18:30:30

Instrument ID: VMS_MS9

Operator ID: newcomer

Lims ID: ICV

Worklist Smp#: 29

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

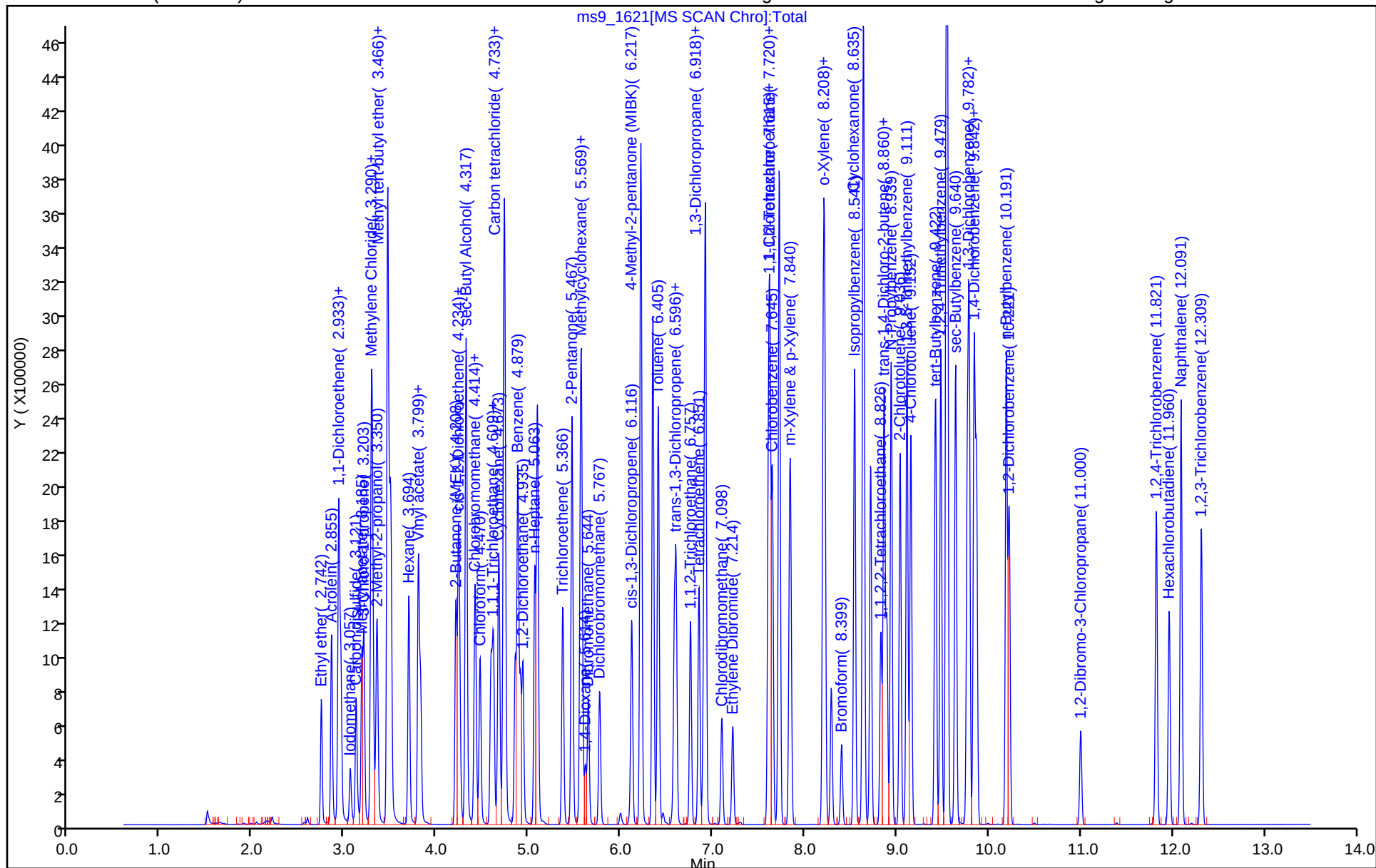
ALS Bottle#: 31

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



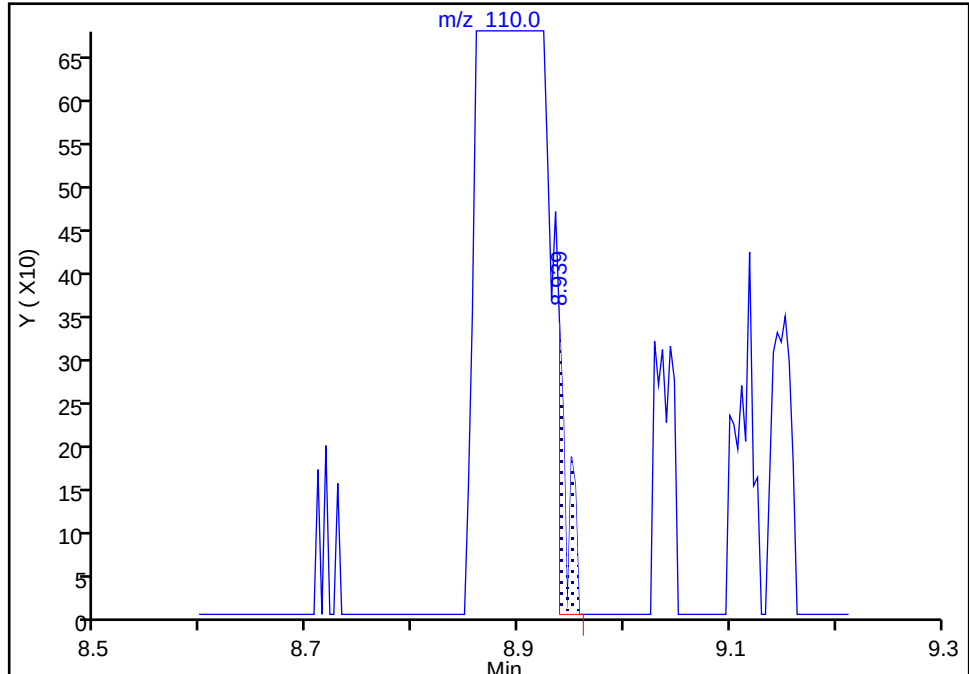
Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1621.D
Injection Date: 07-May-2019 18:30:30 Instrument ID: VMS_MS9
Lims ID: ICV
Client ID:
Operator ID: newcomer ALS Bottle#: 31 Worklist Smp#: 29
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: AQ_VMSMS9_8260 Limit Group: MSV - 8260B Water and Solid
Column: DB-624 (0.25 mm) Detector: MS SCAN

104 1,2,3-Trichloropropane, CAS: 96-18-4
Signal: 1

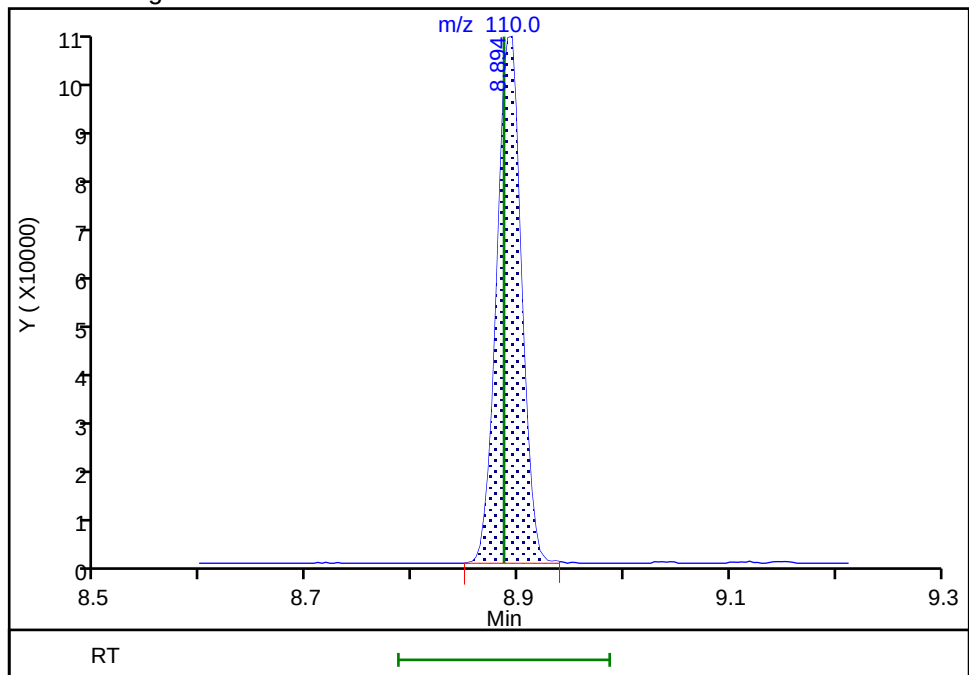
RT: 8.94
Area: 203
Amount: 0.055945
Amount Units: ug/l

Processing Integration Results



RT: 8.89
Area: 173967
Amount: 47.943771
Amount Units: ug/l

Manual Integration Results



FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-457521/3 Calibration Date: 05/08/2019 20:33
 Instrument ID: VMS_MS9 Calib Start Date: 05/07/2019 11:39
 GC Column: RXI-624SilMS ID: 0.25 (mm) Calib End Date: 05/07/2019 14:32
 Lab File ID: ms9_1656.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorodifluoromethane	Ave	0.2528	0.2067		40.9	50.0	-18.2	20.0
Chloromethane	Ave	0.1766	0.1530	0.1000	43.3	50.0	-13.3	20.0
Vinyl chloride	Ave	0.1541	0.1473		47.8	50.0	-4.4	20.0
Bromomethane	Lin2		0.0266		40.9	50.0	-18.1	20.0
Chloroethane	Lin2		0.0989		54.0	50.0	8.1	20.0
Dichlorofluoromethane	Ave	0.3157	0.3042		48.2	50.0	-3.7	20.0
Trichlorofluoromethane	Ave	0.2668	0.2771		51.9	50.0	3.8	20.0
2-Chloroethyl vinyl ether	Ave	0.1710	0.1714		50.1	50.0	0.2	20.0

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1656.D
 Lims ID: CCV
 Client ID:
 Sample Type: CCV
 Inject. Date: 08-May-2019 20:33:30 ALS Bottle#: 2 Worklist Smp#: 3
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: ccv m
 Misc. Info.: 280-0081707-002
 Operator ID: ornelasg Instrument ID: VMS_MS9
 Sublist: chrom-AQ_VMSMS9_8260*sub3
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 09-May-2019 21:39:57 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: ornelasg

Date: 09-May-2019 18:03:24

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.290	3.286	0.004	0	2422553	1000.0	1000.0	
* 1 Fluorobenzene	96	5.093	5.089	0.004	99	1982685	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.616	0.003	86	486852	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	95	776424	50.0	50.0	
\$ 6 Dibromofluoromethane (Surr	111	4.587	4.587	0.001	94	471802	50.0	50.0	
\$ 7 1,2-Dichloroethane-d4 (Sur	65	4.849	4.853	-0.004	98	587665	50.0	48.1	
\$ 8 Toluene-d8 (Surr)	98	6.349	6.348	0.001	93	1920775	50.0	49.2	
\$ 9 4-Bromofluorobenzene (Surr	95	8.714	8.714	0.000	91	731881	50.0	48.0	
13 Dichlorodifluoromethane	85	1.670	1.670	0.000	99	409763	50.0	40.9	
15 Chloromethane	50	1.854	1.854	0.000	99	303394	50.0	43.3	
16 Vinyl chloride	62	1.944	1.940	0.004	98	292094	50.0	47.8	
19 Bromomethane	94	2.210	2.210	0.000	91	52798	50.0	40.9	
20 Chloroethane	64	2.300	2.300	0.000	99	196160	50.0	54.0	
21 Dichlorofluoromethane	67	2.487	2.491	-0.004	97	603037	50.0	48.2	
22 Trichlorofluoromethane	101	2.517	2.521	-0.004	98	549293	50.0	51.9	
24 Ethyl ether	59	2.742	2.746	-0.004	93	333176	50.0	47.4	
28 Acrolein	56	2.851	2.858	-0.007	99	987192	493.8	471.2	
29 1,1,2-Trichloro-1,2,2-trif	151	2.930	2.933	-0.003	95	262417	50.0	48.4	
30 1,1-Dichloroethene	96	2.930	2.937	-0.007	96	320559	50.0	47.7	
31 Acetone	43	2.956	2.952	0.004	99	841866	200.0	189.8	
33 Iodomethane	142	3.057	3.065	-0.008	98	369179	50.0	52.3	
35 Carbon disulfide	76	3.117	3.125	-0.008	99	924619	50.0	48.2	
34 Methyl acetate	43	3.181	3.188	-0.007	98	924429	100.0	91.1	
36 3-Chloro-1-propene	41	3.203	3.207	-0.004	91	577513	50.0	48.0	
39 Methylene Chloride	84	3.301	3.301	0.000	92	371238	50.0	49.2	
38 2-Methyl-2-propanol	59	3.350	3.349	0.001	100	1190568	500.0	461.5	
42 Acrylonitrile	53	3.462	3.466	-0.004	99	2272806	500.0	460.4	
40 Methyl tert-butyl ether	73	3.485	3.488	-0.003	95	1226247	50.0	47.0	
41 trans-1,2-Dichloroethene	96	3.500	3.503	-0.003	98	361862	50.0	47.4	
43 Hexane	57	3.691	3.702	-0.011	92	564495	50.0	47.0	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
45 Vinyl acetate	43	3.796	3.799	-0.003	97	1960283	100.0	101.3	
46 1,1-Dichloroethane	63	3.818	3.826	-0.008	96	671312	50.0	46.2	
50 2-Butanone (MEK)	43	4.204	4.208	-0.004	100	1339929	200.0	179.0	
52 cis-1,2-Dichloroethene	96	4.231	4.234	-0.003	83	413249	50.0	46.5	
53 2,2-Dichloropropane	77	4.242	4.245	-0.003	86	617824	50.0	49.1	
51 sec-Butyl Alcohol	45	4.321	4.317	0.004	99	2578433	1500.0	1401.3	
59 Chlorobromomethane	128	4.407	4.410	-0.003	97	181500	50.0	50.0	
57 Tetrahydrofuran	42	4.418	4.418	0.000	86	427547	100.0	93.6	
56 Chloroform	83	4.467	4.470	-0.003	93	669326	50.0	47.3	
60 1,1,1-Trichloroethane	97	4.613	4.616	-0.003	98	592093	50.0	48.4	
61 Cyclohexane	56	4.669	4.676	-0.007	90	675746	50.0	46.3	
62 1,1-Dichloropropene	75	4.722	4.725	-0.003	96	541011	50.0	47.3	
63 Carbon tetrachloride	117	4.729	4.733	-0.004	96	455759	50.0	44.2	
58 Isobutyl alcohol	43	4.740	4.736	0.004	94	1124369	1250.0	1149.8	
66 Benzene	78	4.879	4.879	0.000	96	1586433	50.0	47.2	
67 1,2-Dichloroethane	62	4.905	4.913	-0.008	97	559762	50.0	43.9	
135 n-Heptane	43	5.063	5.066	-0.003	92	559875	50.0	47.9	
68 Trichloroethene	130	5.366	5.370	-0.004	99	396346	50.0	47.8	
69 2-Pentanone	43	5.468	5.467	0.001	99	2179186	200.0	183.9	
71 Methylcyclohexane	55	5.561	5.561	0.000	93	548367	50.0	46.3	
72 1,2-Dichloropropane	63	5.573	5.576	-0.003	92	403896	50.0	48.1	
73 1,4-Dioxane	88	5.614	5.614	0.000	93	221482	1000.0	939.9	
74 Dibromomethane	93	5.644	5.647	-0.003	97	247531	50.0	47.7	
75 Dichlorobromomethane	83	5.768	5.771	-0.003	100	475299	50.0	50.2	
76 2-Chloroethyl vinyl ether	63	5.970	5.974	-0.004	92	339763	50.0	50.1	
78 cis-1,3-Dichloropropene	75	6.116	6.120	-0.004	96	653478	50.0	48.9	
79 4-Methyl-2-pentanone (MIBK)	43	6.217	6.217	0.000	95	2460724	200.0	183.9	
80 Toluene	91	6.405	6.408	-0.003	98	1688401	50.0	47.3	
82 trans-1,3-Dichloropropene	75	6.581	6.577	0.004	96	586377	50.0	49.7	
81 Ethyl methacrylate	69	6.600	6.603	-0.003	90	659980	50.0	48.7	
83 1,1,2-Trichloroethane	97	6.757	6.757	0.000	91	365769	50.0	47.7	
85 Tetrachloroethene	164	6.847	6.847	0.000	98	331500	50.0	48.5	
86 1,3-Dichloropropane	76	6.903	6.903	0.000	96	639682	50.0	46.6	
84 2-Hexanone	43	6.918	6.922	-0.004	96	1965642	200.0	182.3	
87 Chlorodibromomethane	129	7.098	7.094	0.004	90	319905	50.0	51.5	
89 Ethylene Dibromide	107	7.214	7.222	-0.008	99	400136	50.0	48.3	
90 1-Chlorohexane	91	7.601	7.608	-0.007	96	593473	50.0	49.9	
91 Chlorobenzene	112	7.646	7.645	0.001	94	1077139	50.0	47.1	
93 1,1,1,2-Tetrachloroethane	131	7.717	7.717	0.000	94	354995	50.0	50.7	
92 Ethylbenzene	106	7.724	7.724	0.000	98	605307	50.0	47.5	
94 m-Xylene & p-Xylene	91	7.841	7.840	0.001	97	1479308	50.0	47.2	
95 o-Xylene	106	8.200	8.200	0.000	97	723417	50.0	48.1	
96 Styrene	104	8.215	8.215	0.000	94	1250536	50.0	49.3	
97 Bromoform	173	8.399	8.399	0.000	97	216333	50.0	44.0	
98 Isopropylbenzene	105	8.538	8.541	-0.003	96	1875294	50.0	47.0	
100 Cyclohexanone	55	8.635	8.631	0.004	91	1885102	2000.0	1898.4	
101 1,1,2,2-Tetrachloroethane	83	8.826	8.830	-0.004	94	590359	50.0	46.7	
105 Bromobenzene	156	8.860	8.864	-0.004	96	474034	50.0	47.6	
102 trans-1,4-Dichloro-2-buten	53	8.864	8.864	0.000	91	189170	50.0	42.6	
104 1,2,3-Trichloropropane	110	8.890	8.894	-0.004	84	182959	50.0	45.7	a
103 N-Propylbenzene	120	8.939	8.939	0.000	99	505412	50.0	47.9	
107 2-Chlorotoluene	126	9.036	9.036	0.000	96	436842	50.0	47.3	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
106 1,3,5-Trimethylbenzene	105	9.111	9.115	-0.004	94	1548602	50.0	47.8	
108 4-Chlorotoluene	126	9.153	9.152	0.001	98	455455	50.0	48.2	
109 tert-Butylbenzene	119	9.419	9.415	0.004	93	1326130	50.0	48.0	
110 1,2,4-Trimethylbenzene	105	9.479	9.478	0.001	98	1571518	50.0	47.2	
111 sec-Butylbenzene	134	9.640	9.640	0.000	94	391075	50.0	47.8	
113 1,3-Dichlorobenzene	146	9.764	9.767	-0.003	98	868043	50.0	47.5	
112 4-Isopropyltoluene	119	9.786	9.786	0.000	97	1698673	50.0	48.9	
115 1,4-Dichlorobenzene	146	9.865	9.868	-0.003	95	875852	50.0	46.6	
116 n-Butylbenzene	91	10.187	10.191	-0.004	98	1582806	50.0	49.1	
117 1,2-Dichlorobenzene	146	10.221	10.221	0.000	98	835359	50.0	47.2	
118 1,2-Dibromo-3-Chloropropan	157	11.001	11.000	0.001	84	149942	50.0	42.1	
120 1,2,4-Trichlorobenzene	180	11.822	11.818	0.004	94	621965	50.0	49.2	
121 Hexachlorobutadiene	225	11.960	11.960	0.000	96	273129	50.0	49.7	
122 Naphthalene	128	12.091	12.095	-0.004	97	1982691	50.0	48.4	
123 1,2,3-Trichlorobenzene	180	12.309	12.316	-0.007	94	593327	50.0	48.4	
S 136 1,2-Dichloroethene, Total	96				0		100.0	93.9	
S 142 Xylenes, Total	106				0		100.0	95.4	
S 141 1,2-Dichloroethene, Total	1				0		100.0	93.9	
S 139 Total BTEX	1				0			237.4	
S 138 Xylenes, Total (URS)	1				0		100.0	95.4	
S 137 Trihalomethanes, Total	1				0		200.0	193.0	
S 140 1,3-Dichloropropene, Total	1				0		100.0	98.5	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MV-MegaMainA_00014

Amount Added: 50.00

Units: uL

MV-Gas A_00023

Amount Added: 50.00

Units: uL

mv-Cent IS/SS_00002

Amount Added: 5.00

Units: uL

Run Reagent

Report Date: 09-May-2019 21:40:01

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1656.D

Injection Date: 08-May-2019 20:33:30

Instrument ID: VMS_MS9

Operator ID: ornelasg

Lims ID: CCV

Worklist Smp#: 3

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

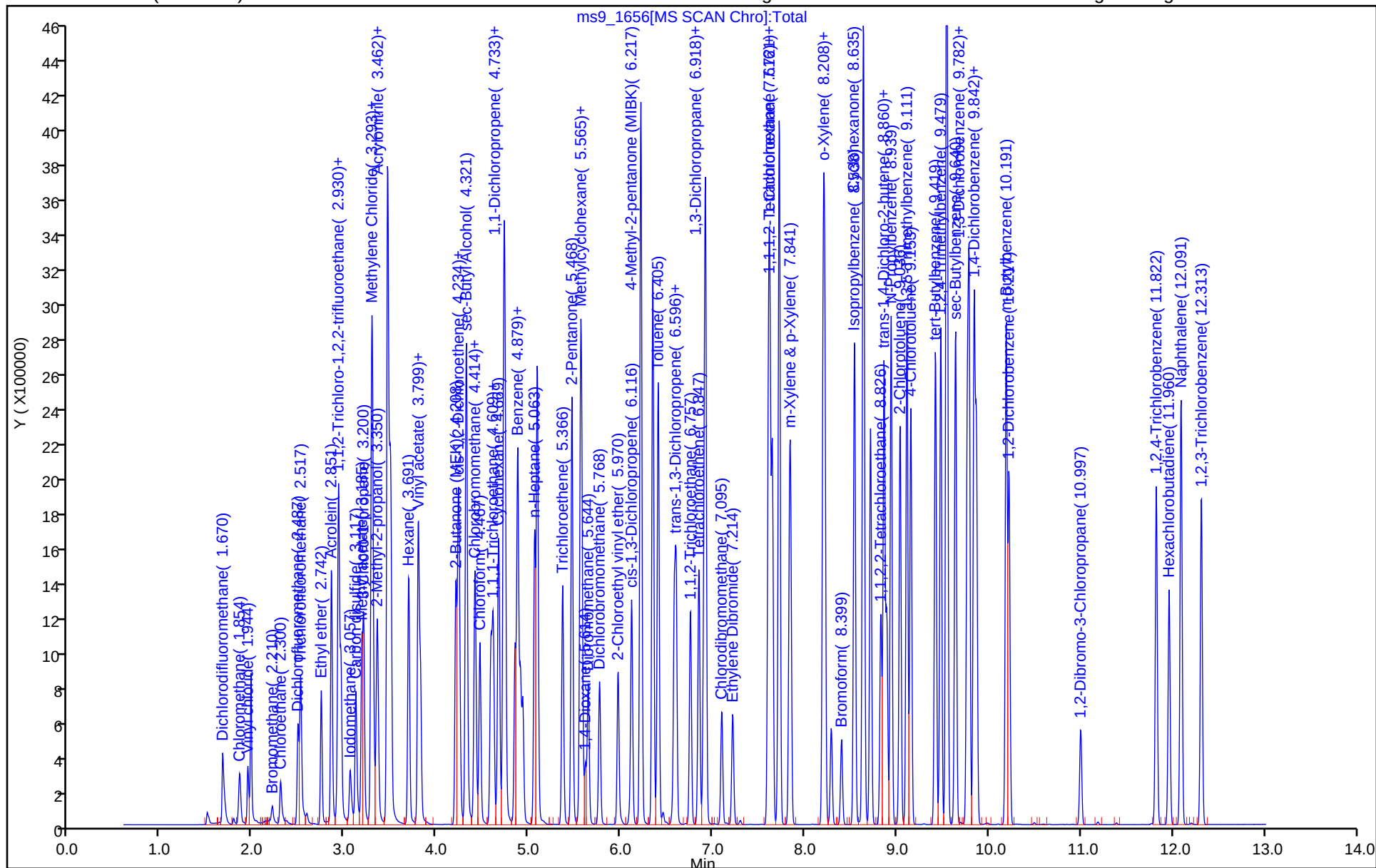
ALS Bottle#: 2

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-457521/3 Calibration Date: 05/08/2019 20:33
 Instrument ID: VMS_MS9 Calib Start Date: 05/07/2019 15:15
 GC Column: RXI-624SilMS ID: 0.25 (mm) Calib End Date: 05/07/2019 18:08
 Lab File ID: ms9_1656.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Ethyl ether	Ave	0.1771	0.1680		47.4	50.0	-5.1	20.0
Acrolein	Lin2		0.0504		471	494	-4.6	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	Ave	0.1366	0.1324		48.4	50.0	-3.1	20.0
1,1-Dichloroethene	Ave	0.1694	0.1617		47.7	50.0	-4.5	20.0
Acetone	Lin2		0.1062		190	200	-5.1	20.0
Iodomethane	Lin2		0.1862		52.3	50.0	4.6	20.0
Carbon disulfide	Ave	0.4836	0.4664		48.2	50.0	-3.6	20.0
Methyl acetate	Ave	0.2558	0.2331		91.1	100	-8.9	20.0
3-Chloro-1-propene	Ave	0.3033	0.2913		48.0	50.0	-4.0	20.0
Methylene Chloride	Lin2		0.1872		49.2	50.0	-1.6	20.0
t-Butyl alcohol	Ave	0.0651	0.0601		461	500	-7.7	20.0
Acrylonitrile	Ave	0.1245	0.1146		460	500	-7.9	20.0
Methyl tert-butyl ether	Ave	0.6581	0.6185		47.0	50.0	-6.0	20.0
trans-1,2-Dichloroethene	Ave	0.1923	0.1825		47.4	50.0	-5.1	20.0
Hexane	Ave	1.235	1.159		47.0	50.0	-6.1	20.0
Vinyl acetate	Ave	0.4882	0.4944		101	100	1.3	20.0
1,1-Dichloroethane	Ave	0.3662	0.3386	0.1000	46.2	50.0	-7.5	20.0
2-Butanone (MEK)	Ave	0.1888	0.1690		179	200	-10.5	20.0
cis-1,2-Dichloroethene	Ave	0.2241	0.2084		46.5	50.0	-7.0	20.0
2,2-Dichloropropane	Ave	0.3174	0.3116		49.1	50.0	-1.8	20.0
sec-Butyl Alcohol	Ave	0.7596	0.7096		1400	1500	-6.6	20.0
Bromochloromethane	Ave	0.0915	0.0915		50.0	50.0	0.0	20.0
Tetrahydrofuran	Lin2		0.1078		93.6	100	-6.4	20.0
Chloroform	Ave	0.3572	0.3376		47.3	50.0	-5.5	20.0
1,1,1-Trichloroethane	Ave	0.3085	0.2986		48.4	50.0	-3.2	20.0
Cyclohexane	Ave	0.3682	0.3408		46.3	50.0	-7.4	20.0
1,1-Dichloropropene	Ave	0.2884	0.2729		47.3	50.0	-5.4	20.0
Carbon tetrachloride	Lin1		0.2299		44.2	50.0	-11.6	20.0
Isobutyl alcohol	Ave	0.4037	0.3713		1150	1250	-8.0	20.0
Benzene	Ave	0.8475	0.8001		47.2	50.0	-5.6	20.0
1,2-Dichloroethane	Ave	0.3218	0.2823		43.9	50.0	-12.3	20.0
Trichloroethene	Ave	0.2089	0.1999		47.8	50.0	-4.3	20.0
2-Pentanone	Ave	0.2988	0.2748		184	200	-8.0	20.0
Methylcyclohexane	Ave	0.2984	0.2766		46.3	50.0	-7.3	20.0
1,2-Dichloropropane	Lin2		0.2037		48.1	50.0	-3.8	20.0
1,4-Dioxane	Ave	0.0059	0.0056		940	1000	-6.0	20.0
Dibromomethane	Ave	0.1309	0.1249		47.7	50.0	-4.6	20.0
Bromodichloromethane	Ave	0.2387	0.2397		50.2	50.0	0.4	20.0
cis-1,3-Dichloropropene	Ave	1.374	1.342		48.9	50.0	-2.3	20.0
4-Methyl-2-pentanone (MIBK)	Ave	0.3375	0.3103		184	200	-8.1	20.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Lab Sample ID: CCV 280-457521/3 Calibration Date: 05/08/2019 20:33

Instrument ID: VMS_MS9 Calib Start Date: 05/07/2019 15:15

GC Column: RXI-624SilMS ID: 0.25 (mm) Calib End Date: 05/07/2019 18:08

Lab File ID: ms9_1656.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Toluene	Ave	0.8996	0.8516		47.3	50.0	-5.3	20.0
trans-1,3-Dichloropropene	Ave	0.2977	0.2958		49.7	50.0	-0.7	20.0
Ethyl methacrylate	Ave	1.391	1.356		48.7	50.0	-2.5	20.0
1,1,2-Trichloroethane	Ave	0.1933	0.1845		47.7	50.0	-4.6	20.0
Tetrachloroethene	Ave	0.7014	0.6809		48.5	50.0	-2.9	20.0
1,3-Dichloropropane	Ave	1.410	1.314		46.6	50.0	-6.8	20.0
2-Hexanone	Ave	1.107	1.009		182	200	-8.8	20.0
Dibromochloromethane	Ave	0.6379	0.6571		51.5	50.0	3.0	20.0
1,2-Dibromoethane	Ave	0.8505	0.8219		48.3	50.0	-3.4	20.0
1-Chlorohexane	Lin2		1.219		49.9	50.0	-0.1	20.0
Chlorobenzene	Ave	2.350	2.212	0.3000	47.1	50.0	-5.8	20.0
1,1,1,2-Tetrachloroethane	Ave	0.7196	0.7292		50.7	50.0	1.3	20.0
Ethylbenzene	Ave	1.308	1.243		47.5	50.0	-4.9	20.0
m-Xylene & p-Xylene	Ave	3.216	3.039		47.2	50.0	-5.5	20.0
o-Xylene	Ave	1.544	1.486		48.1	50.0	-3.8	20.0
Styrene	Ave	2.604	2.569		49.3	50.0	-1.3	20.0
Bromoform	Lin1		0.4444	0.1000	44.0	50.0	-12.0	20.0
Isopropylbenzene	Ave	2.570	2.415		47.0	50.0	-6.0	20.0
Cyclohexanone	Ave	0.1020	0.0968		1900	2000	-5.1	20.0
1,1,2,2-Tetrachloroethane	Ave	0.8146	0.7604	0.3000	46.7	50.0	-6.7	20.0
Bromobenzene	Ave	0.6416	0.6105		47.6	50.0	-4.8	20.0
trans-1,4-Dichloro-2-butene	Ave	0.2862	0.2436		42.6	50.0	-14.9	20.0
1,2,3-Trichloropropane	Ave	0.2576	0.2356		45.7	50.0	-8.5	20.0
N-Propylbenzene	Ave	0.6791	0.6510		47.9	50.0	-4.1	20.0
2-Chlorotoluene	Ave	0.5947	0.5626		47.3	50.0	-5.4	20.0
1,3,5-Trimethylbenzene	Ave	2.088	1.995		47.8	50.0	-4.5	20.0
4-Chlorotoluene	Ave	0.6085	0.5866		48.2	50.0	-3.6	20.0
tert-Butylbenzene	Ave	1.778	1.708		48.0	50.0	-4.0	20.0
1,2,4-Trimethylbenzene	Ave	2.146	2.024		47.2	50.0	-5.7	20.0
sec-Butylbenzene	Ave	0.5273	0.5037		47.8	50.0	-4.5	20.0
1,3-Dichlorobenzene	Ave	1.178	1.118		47.5	50.0	-5.1	20.0
4-Isopropyltoluene	Ave	2.237	2.188		48.9	50.0	-2.2	20.0
1,4-Dichlorobenzene	Ave	1.209	1.128		46.6	50.0	-6.7	20.0
n-Butylbenzene	Ave	2.077	2.039		49.1	50.0	-1.8	20.0
1,2-Dichlorobenzene	Ave	1.140	1.076		47.2	50.0	-5.6	20.0
1,2-Dibromo-3-Chloropropane	Lin1		0.1931		42.1	50.0	-15.8	20.0
1,2,4-Trichlorobenzene	Ave	0.8138	0.8011		49.2	50.0	-1.6	20.0
Hexachlorobutadiene	Ave	0.3536	0.3518		49.7	50.0	-0.5	20.0
Naphthalene	Ave	2.636	2.554		48.4	50.0	-3.1	20.0
1,2,3-Trichlorobenzene	Ave	0.7887	0.7642		48.4	50.0	-3.1	20.0
Dibromofluoromethane (Surr)	Ave	0.2379	0.2380		50.0	50.0	0.0	20.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab Sample ID: CCV 280-457521/3 Calibration Date: 05/08/2019 20:33
Instrument ID: VMS_MS9 Calib Start Date: 05/07/2019 15:15
GC Column: RXI-624SilMS ID: 0.25 (mm) Calib End Date: 05/07/2019 18:08
Lab File ID: ms9_1656.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,2-Dichloroethane-d4 (Surr)	Ave	0.3080	0.2964		48.1	50.0	-3.8	20.0
Toluene-d8 (Surr)	Ave	4.013	3.945		49.2	50.0	-1.7	20.0
4-Bromofluorobenzene (Surr)	Ave	0.9813	0.9426		48.0	50.0	-3.9	20.0

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1656.D
 Lims ID: CCV
 Client ID:
 Sample Type: CCV
 Inject. Date: 08-May-2019 20:33:30 ALS Bottle#: 2 Worklist Smp#: 3
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: ccv m
 Misc. Info.: 280-0081707-002
 Operator ID: ornelasg Instrument ID: VMS_MS9
 Sublist: chrom-AQ_VMSMS9_8260*sub3
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 09-May-2019 21:39:57 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: ornelasg

Date: 09-May-2019 18:03:24

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.290	3.286	0.004	0	2422553	1000.0	1000.0	
* 1 Fluorobenzene	96	5.093	5.089	0.004	99	1982685	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.616	0.003	86	486852	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	95	776424	50.0	50.0	
\$ 6 Dibromofluoromethane (Surr	111	4.587	4.587	0.001	94	471802	50.0	50.0	
\$ 7 1,2-Dichloroethane-d4 (Sur	65	4.849	4.853	-0.004	98	587665	50.0	48.1	
\$ 8 Toluene-d8 (Surr)	98	6.349	6.348	0.001	93	1920775	50.0	49.2	
\$ 9 4-Bromofluorobenzene (Surr	95	8.714	8.714	0.000	91	731881	50.0	48.0	
13 Dichlorodifluoromethane	85	1.670	1.670	0.000	99	409763	50.0	40.9	
15 Chloromethane	50	1.854	1.854	0.000	99	303394	50.0	43.3	
16 Vinyl chloride	62	1.944	1.940	0.004	98	292094	50.0	47.8	
19 Bromomethane	94	2.210	2.210	0.000	91	52798	50.0	40.9	
20 Chloroethane	64	2.300	2.300	0.000	99	196160	50.0	54.0	
21 Dichlorofluoromethane	67	2.487	2.491	-0.004	97	603037	50.0	48.2	
22 Trichlorofluoromethane	101	2.517	2.521	-0.004	98	549293	50.0	51.9	
24 Ethyl ether	59	2.742	2.746	-0.004	93	333176	50.0	47.4	
28 Acrolein	56	2.851	2.858	-0.007	99	987192	493.8	471.2	
29 1,1,2-Trichloro-1,2,2-trif	151	2.930	2.933	-0.003	95	262417	50.0	48.4	
30 1,1-Dichloroethene	96	2.930	2.937	-0.007	96	320559	50.0	47.7	
31 Acetone	43	2.956	2.952	0.004	99	841866	200.0	189.8	
33 Iodomethane	142	3.057	3.065	-0.008	98	369179	50.0	52.3	
35 Carbon disulfide	76	3.117	3.125	-0.008	99	924619	50.0	48.2	
34 Methyl acetate	43	3.181	3.188	-0.007	98	924429	100.0	91.1	
36 3-Chloro-1-propene	41	3.203	3.207	-0.004	91	577513	50.0	48.0	
39 Methylene Chloride	84	3.301	3.301	0.000	92	371238	50.0	49.2	
38 2-Methyl-2-propanol	59	3.350	3.349	0.001	100	1190568	500.0	461.5	
42 Acrylonitrile	53	3.462	3.466	-0.004	99	2272806	500.0	460.4	
40 Methyl tert-butyl ether	73	3.485	3.488	-0.003	95	1226247	50.0	47.0	
41 trans-1,2-Dichloroethene	96	3.500	3.503	-0.003	98	361862	50.0	47.4	
43 Hexane	57	3.691	3.702	-0.011	92	564495	50.0	47.0	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
45 Vinyl acetate	43	3.796	3.799	-0.003	97	1960283	100.0	101.3	
46 1,1-Dichloroethane	63	3.818	3.826	-0.008	96	671312	50.0	46.2	
50 2-Butanone (MEK)	43	4.204	4.208	-0.004	100	1339929	200.0	179.0	
52 cis-1,2-Dichloroethene	96	4.231	4.234	-0.003	83	413249	50.0	46.5	
53 2,2-Dichloropropane	77	4.242	4.245	-0.003	86	617824	50.0	49.1	
51 sec-Butyl Alcohol	45	4.321	4.317	0.004	99	2578433	1500.0	1401.3	
59 Chlorobromomethane	128	4.407	4.410	-0.003	97	181500	50.0	50.0	
57 Tetrahydrofuran	42	4.418	4.418	0.000	86	427547	100.0	93.6	
56 Chloroform	83	4.467	4.470	-0.003	93	669326	50.0	47.3	
60 1,1,1-Trichloroethane	97	4.613	4.616	-0.003	98	592093	50.0	48.4	
61 Cyclohexane	56	4.669	4.676	-0.007	90	675746	50.0	46.3	
62 1,1-Dichloropropene	75	4.722	4.725	-0.003	96	541011	50.0	47.3	
63 Carbon tetrachloride	117	4.729	4.733	-0.004	96	455759	50.0	44.2	
58 Isobutyl alcohol	43	4.740	4.736	0.004	94	1124369	1250.0	1149.8	
66 Benzene	78	4.879	4.879	0.000	96	1586433	50.0	47.2	
67 1,2-Dichloroethane	62	4.905	4.913	-0.008	97	559762	50.0	43.9	
135 n-Heptane	43	5.063	5.066	-0.003	92	559875	50.0	47.9	
68 Trichloroethene	130	5.366	5.370	-0.004	99	396346	50.0	47.8	
69 2-Pentanone	43	5.468	5.467	0.001	99	2179186	200.0	183.9	
71 Methylcyclohexane	55	5.561	5.561	0.000	93	548367	50.0	46.3	
72 1,2-Dichloropropane	63	5.573	5.576	-0.003	92	403896	50.0	48.1	
73 1,4-Dioxane	88	5.614	5.614	0.000	93	221482	1000.0	939.9	
74 Dibromomethane	93	5.644	5.647	-0.003	97	247531	50.0	47.7	
75 Dichlorobromomethane	83	5.768	5.771	-0.003	100	475299	50.0	50.2	
76 2-Chloroethyl vinyl ether	63	5.970	5.974	-0.004	92	339763	50.0	50.1	
78 cis-1,3-Dichloropropene	75	6.116	6.120	-0.004	96	653478	50.0	48.9	
79 4-Methyl-2-pentanone (MIBK)	43	6.217	6.217	0.000	95	2460724	200.0	183.9	
80 Toluene	91	6.405	6.408	-0.003	98	1688401	50.0	47.3	
82 trans-1,3-Dichloropropene	75	6.581	6.577	0.004	96	586377	50.0	49.7	
81 Ethyl methacrylate	69	6.600	6.603	-0.003	90	659980	50.0	48.7	
83 1,1,2-Trichloroethane	97	6.757	6.757	0.000	91	365769	50.0	47.7	
85 Tetrachloroethene	164	6.847	6.847	0.000	98	331500	50.0	48.5	
86 1,3-Dichloropropane	76	6.903	6.903	0.000	96	639682	50.0	46.6	
84 2-Hexanone	43	6.918	6.922	-0.004	96	1965642	200.0	182.3	
87 Chlorodibromomethane	129	7.098	7.094	0.004	90	319905	50.0	51.5	
89 Ethylene Dibromide	107	7.214	7.222	-0.008	99	400136	50.0	48.3	
90 1-Chlorohexane	91	7.601	7.608	-0.007	96	593473	50.0	49.9	
91 Chlorobenzene	112	7.646	7.645	0.001	94	1077139	50.0	47.1	
93 1,1,1,2-Tetrachloroethane	131	7.717	7.717	0.000	94	354995	50.0	50.7	
92 Ethylbenzene	106	7.724	7.724	0.000	98	605307	50.0	47.5	
94 m-Xylene & p-Xylene	91	7.841	7.840	0.001	97	1479308	50.0	47.2	
95 o-Xylene	106	8.200	8.200	0.000	97	723417	50.0	48.1	
96 Styrene	104	8.215	8.215	0.000	94	1250536	50.0	49.3	
97 Bromoform	173	8.399	8.399	0.000	97	216333	50.0	44.0	
98 Isopropylbenzene	105	8.538	8.541	-0.003	96	1875294	50.0	47.0	
100 Cyclohexanone	55	8.635	8.631	0.004	91	1885102	2000.0	1898.4	
101 1,1,2,2-Tetrachloroethane	83	8.826	8.830	-0.004	94	590359	50.0	46.7	
105 Bromobenzene	156	8.860	8.864	-0.004	96	474034	50.0	47.6	
102 trans-1,4-Dichloro-2-buten	53	8.864	8.864	0.000	91	189170	50.0	42.6	
104 1,2,3-Trichloropropane	110	8.890	8.894	-0.004	84	182959	50.0	45.7	a
103 N-Propylbenzene	120	8.939	8.939	0.000	99	505412	50.0	47.9	
107 2-Chlorotoluene	126	9.036	9.036	0.000	96	436842	50.0	47.3	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
106 1,3,5-Trimethylbenzene	105	9.111	9.115	-0.004	94	1548602	50.0	47.8	
108 4-Chlorotoluene	126	9.153	9.152	0.001	98	455455	50.0	48.2	
109 tert-Butylbenzene	119	9.419	9.415	0.004	93	1326130	50.0	48.0	
110 1,2,4-Trimethylbenzene	105	9.479	9.478	0.001	98	1571518	50.0	47.2	
111 sec-Butylbenzene	134	9.640	9.640	0.000	94	391075	50.0	47.8	
113 1,3-Dichlorobenzene	146	9.764	9.767	-0.003	98	868043	50.0	47.5	
112 4-Isopropyltoluene	119	9.786	9.786	0.000	97	1698673	50.0	48.9	
115 1,4-Dichlorobenzene	146	9.865	9.868	-0.003	95	875852	50.0	46.6	
116 n-Butylbenzene	91	10.187	10.191	-0.004	98	1582806	50.0	49.1	
117 1,2-Dichlorobenzene	146	10.221	10.221	0.000	98	835359	50.0	47.2	
118 1,2-Dibromo-3-Chloropropan	157	11.001	11.000	0.001	84	149942	50.0	42.1	
120 1,2,4-Trichlorobenzene	180	11.822	11.818	0.004	94	621965	50.0	49.2	
121 Hexachlorobutadiene	225	11.960	11.960	0.000	96	273129	50.0	49.7	
122 Naphthalene	128	12.091	12.095	-0.004	97	1982691	50.0	48.4	
123 1,2,3-Trichlorobenzene	180	12.309	12.316	-0.007	94	593327	50.0	48.4	
S 136 1,2-Dichloroethene, Total	96				0		100.0	93.9	
S 142 Xylenes, Total	106				0		100.0	95.4	
S 141 1,2-Dichloroethene, Total	1				0		100.0	93.9	
S 139 Total BTEX	1				0			237.4	
S 138 Xylenes, Total (URS)	1				0		100.0	95.4	
S 137 Trihalomethanes, Total	1				0		200.0	193.0	
S 140 1,3-Dichloropropene, Total	1				0		100.0	98.5	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MV-MegaMainA_00014

Amount Added: 50.00

Units: uL

MV-Gas A_00023

Amount Added: 50.00

Units: uL

mv-Cent IS/SS_00002

Amount Added: 5.00

Units: uL

Run Reagent

Report Date: 09-May-2019 21:40:01

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1656.D

Injection Date: 08-May-2019 20:33:30

Instrument ID: VMS_MS9

Operator ID: ornelasg

Lims ID: CCV

Worklist Smp#: 3

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

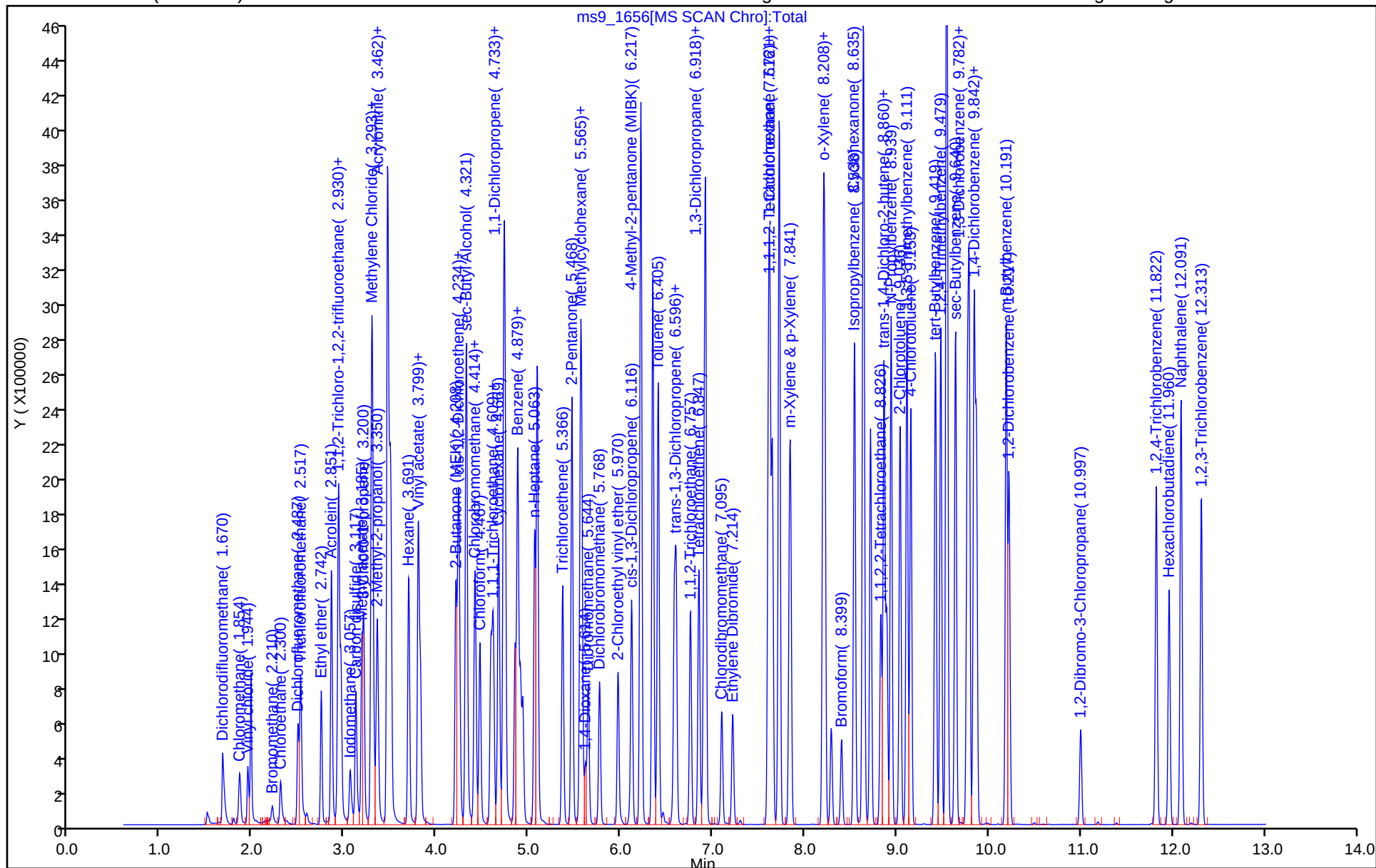
ALS Bottle#: 2

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



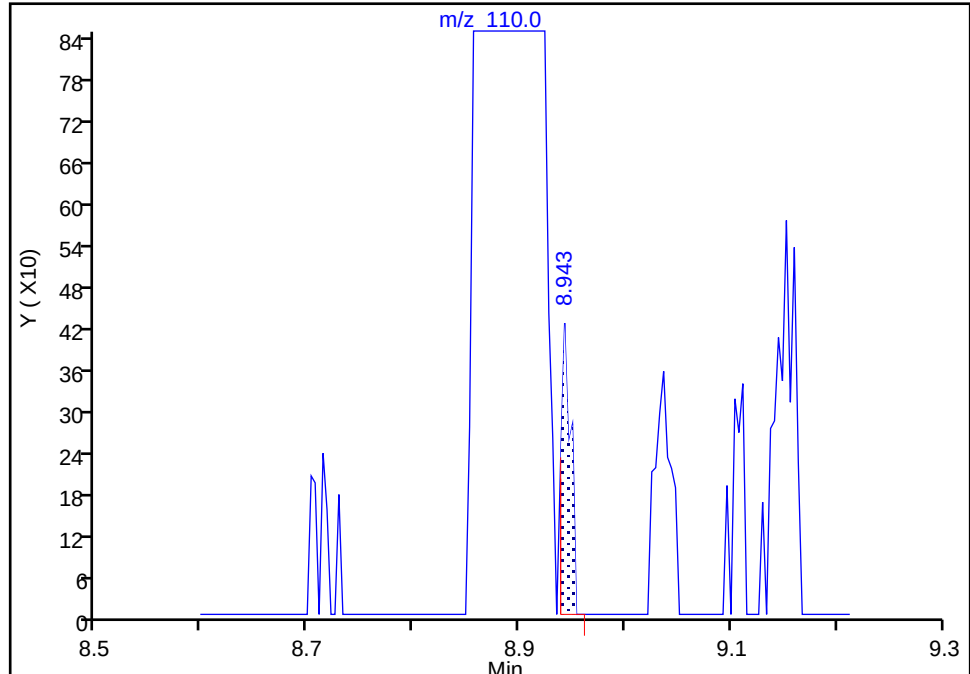
Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1656.D
Injection Date: 08-May-2019 20:33:30 Instrument ID: VMS_MS9
Lims ID: CCV
Client ID:
Operator ID: ornelasg ALS Bottle#: 2 Worklist Smp#: 3
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: AQ_VMSMS9_8260 Limit Group: MSV - 8260B Water and Solid
Column: DB-624 (0.25 mm) Detector: MS SCAN

104 1,2,3-Trichloropropane, CAS: 96-18-4
Signal: 1

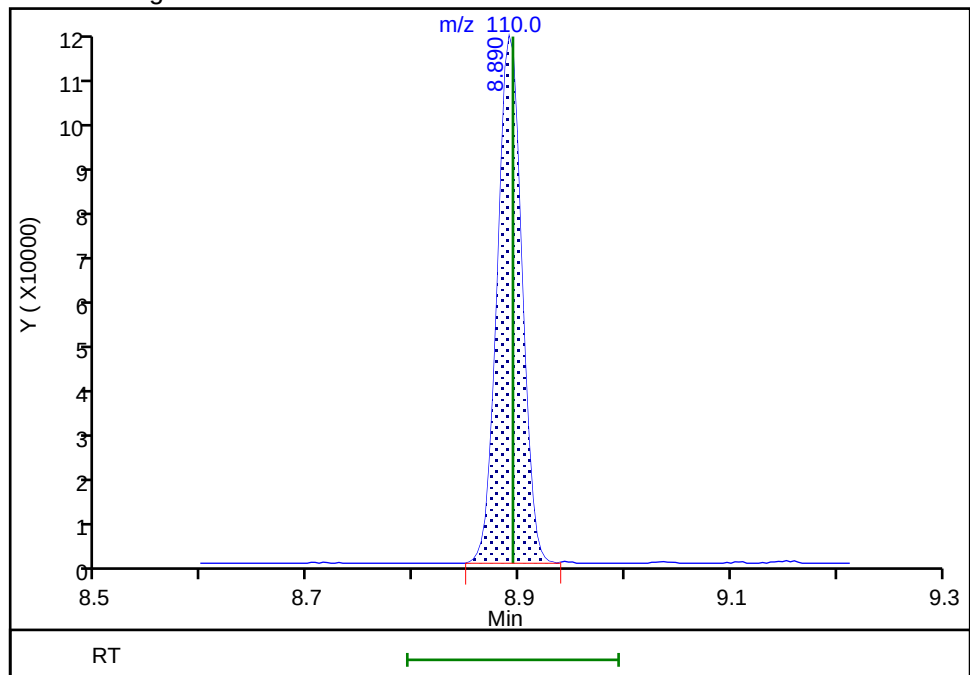
RT: 8.94
Area: 264
Amount: 0.065988
Amount Units: ug/l

Processing Integration Results



RT: 8.89
Area: 182959
Amount: 45.731640
Amount Units: ug/l

Manual Integration Results



Reviewer: ornelasg, 09-May-2019 18:03:15
Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCVC 280-457521/25 Calibration Date: 05/09/2019 05:02
 Instrument ID: VMS_MS9 Calib Start Date: 05/07/2019 11:39
 GC Column: RXI-624SilMS ID: 0.25 (mm) Calib End Date: 05/07/2019 14:32
 Lab File ID: ms9_1679.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorodifluoromethane	Ave	0.2528	0.1933		38.2	50.0	-23.5	50.0
Chloromethane	Ave	0.1766	0.1492	0.1000	42.3	50.0	-15.5	50.0
Vinyl chloride	Ave	0.1541	0.1432		46.5	50.0	-7.1	50.0
Bromomethane	Lin2		0.0223		34.3	50.0	-31.5	50.0
Chloroethane	Lin2		0.0977		53.4	50.0	6.8	50.0
Dichlorofluoromethane	Ave	0.3157	0.3045		48.2	50.0	-3.6	50.0
Trichlorofluoromethane	Ave	0.2668	0.2680		50.2	50.0	0.4	50.0
2-Chloroethyl vinyl ether	Ave	0.1710	0.1615		47.2	50.0	-5.6	50.0

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1679.D
 Lims ID: ccvc
 Client ID:
 Sample Type: CCVC
 Inject. Date: 09-May-2019 05:02:30 ALS Bottle#: 25 Worklist Smp#: 25
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: CCVC
 Misc. Info.: 280-0081707-025
 Operator ID: ornelasg Instrument ID: VMS_MS9
 Sublist: chrom-AQ_VMSMS9_8260*sub3
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 09-May-2019 21:41:44 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: ornelasg

Date: 09-May-2019 21:34:37

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.293	3.286	0.007	0	2364017	1000.0	1000.0	
* 1 Fluorobenzene	96	5.093	5.089	0.004	99	1962633	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.616	0.003	85	484964	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	96	794630	50.0	50.0	
\$ 6 Dibromofluoromethane (Surr	111	4.587	4.587	0.001	93	461007	50.0	49.4	
\$ 7 1,2-Dichloroethane-d4 (Sur	65	4.849	4.853	-0.004	98	569637	50.0	47.1	
\$ 8 Toluene-d8 (Surr)	98	6.349	6.348	0.000	93	1897704	50.0	48.8	
\$ 9 4-Bromofluorobenzene (Surr	95	8.714	8.714	0.000	91	732234	50.0	46.9	
13 Dichlorodifluoromethane	85	1.670	1.670	0.000	99	379372	50.0	38.2	
15 Chloromethane	50	1.858	1.854	0.004	99	292852	50.0	42.3	
16 Vinyl chloride	62	1.944	1.940	0.004	98	281004	50.0	46.5	
19 Bromomethane	94	2.214	2.210	0.004	90	43836	50.0	34.3	
20 Chloroethane	64	2.300	2.300	0.000	100	191833	50.0	53.4	
21 Dichlorofluoromethane	67	2.491	2.491	0.000	97	597566	50.0	48.2	
22 Trichlorofluoromethane	101	2.517	2.521	-0.004	98	525969	50.0	50.2	
24 Ethyl ether	59	2.742	2.746	-0.004	93	329067	50.0	47.3	
28 Acrolein	56	2.855	2.858	-0.003	99	801256	493.8	386.1	
29 1,1,2-Trichloro-1,2,2-trif	151	2.930	2.933	-0.003	95	257275	50.0	48.0	
30 1,1-Dichloroethene	96	2.934	2.937	-0.003	97	322706	50.0	48.5	
31 Acetone	43	2.956	2.952	0.004	100	850948	200.0	193.9	
33 Iodomethane	142	3.057	3.065	-0.008	98	294416	50.0	42.1	
35 Carbon disulfide	76	3.117	3.125	-0.008	99	901575	50.0	47.5	
34 Methyl acetate	43	3.185	3.188	-0.003	98	937672	100.0	93.4	
36 3-Chloro-1-propene	41	3.203	3.207	-0.004	92	499605	50.0	42.0	
39 Methylene Chloride	84	3.301	3.301	0.000	92	373124	50.0	50.0	
38 2-Methyl-2-propanol	59	3.350	3.349	0.001	100	1237276	500.0	484.5	
42 Acrylonitrile	53	3.466	3.466	0.000	98	2310406	500.0	472.8	
40 Methyl tert-butyl ether	73	3.488	3.488	0.000	94	1217428	50.0	47.1	
41 trans-1,2-Dichloroethene	96	3.500	3.503	-0.003	98	357818	50.0	47.4	
43 Hexane	57	3.694	3.702	-0.008	92	503092	50.0	42.0	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
45 Vinyl acetate	43	3.796	3.799	-0.003	97	1629746	100.0	85.0	
46 1,1-Dichloroethane	63	3.822	3.826	-0.004	96	666194	50.0	46.3	
50 2-Butanone (MEK)	43	4.204	4.208	-0.004	100	1334824	200.0	180.1	
52 cis-1,2-Dichloroethene	96	4.231	4.234	-0.003	82	415154	50.0	47.2	
53 2,2-Dichloropropane	77	4.242	4.245	-0.003	86	498881	50.0	40.0	
51 sec-Butyl Alcohol	45	4.320	4.317	0.003	99	2633084	1500.0	1466.4	
59 Chlorobromomethane	128	4.410	4.410	0.000	96	180250	50.0	50.2	
57 Tetrahydrofuran	42	4.418	4.418	0.000	85	433598	100.0	96.0	
56 Chloroform	83	4.467	4.470	-0.003	93	663368	50.0	47.3	
60 1,1,1-Trichloroethane	97	4.613	4.616	-0.003	98	584051	50.0	48.2	
61 Cyclohexane	56	4.673	4.676	-0.003	89	658559	50.0	45.6	
62 1,1-Dichloropropene	75	4.725	4.725	0.000	98	532803	50.0	47.1	
63 Carbon tetrachloride	117	4.729	4.733	-0.004	96	438942	50.0	43.0	
58 Isobutyl alcohol	43	4.740	4.736	0.004	94	1170166	1250.0	1226.2	
66 Benzene	78	4.879	4.879	0.000	96	1586462	50.0	47.7	
67 1,2-Dichloroethane	62	4.909	4.913	-0.004	97	554107	50.0	43.9	
135 n-Heptane	43	5.063	5.066	-0.003	92	484365	50.0	41.8	
68 Trichloroethene	130	5.366	5.370	-0.004	99	402441	50.0	49.1	
69 2-Pentanone	43	5.468	5.467	0.001	99	2167052	200.0	184.8	
71 Methylcyclohexane	55	5.561	5.561	0.000	92	520785	50.0	44.5	
72 1,2-Dichloropropane	63	5.573	5.576	-0.003	92	400014	50.0	48.1	
73 1,4-Dioxane	88	5.614	5.614	0.000	93	235170	1000.0	1008.2	
74 Dibromomethane	93	5.644	5.647	-0.003	96	245196	50.0	47.7	
75 Dichlorobromomethane	83	5.767	5.771	-0.004	100	462643	50.0	49.4	
76 2-Chloroethyl vinyl ether	63	5.970	5.974	-0.004	92	316872	50.0	47.2	
78 cis-1,3-Dichloropropene	75	6.116	6.120	-0.004	96	624645	50.0	46.9	
79 4-Methyl-2-pentanone (MIBK)	43	6.217	6.217	0.000	95	2395275	200.0	180.8	
80 Toluene	91	6.405	6.408	-0.003	98	1683775	50.0	47.7	
82 trans-1,3-Dichloropropene	75	6.581	6.577	0.004	95	557493	50.0	47.7	
81 Ethyl methacrylate	69	6.600	6.603	-0.003	87	659920	50.0	48.9	
83 1,1,2-Trichloroethane	97	6.757	6.757	0.000	91	370369	50.0	48.8	
85 Tetrachloroethene	164	6.847	6.847	0.000	98	328228	50.0	48.2	
86 1,3-Dichloropropane	76	6.903	6.903	0.000	99	646037	50.0	47.3	
84 2-Hexanone	43	6.918	6.922	-0.004	96	1938475	200.0	180.5	
87 Chlorodibromomethane	129	7.098	7.094	0.004	90	312353	50.0	50.5	
89 Ethylene Dibromide	107	7.214	7.222	-0.008	98	399499	50.0	48.4	
90 1-Chlorohexane	91	7.604	7.608	-0.004	96	558263	50.0	47.1	
91 Chlorobenzene	112	7.646	7.645	0.001	94	1075943	50.0	47.2	
93 1,1,1,2-Tetrachloroethane	131	7.721	7.717	0.003	94	349354	50.0	50.1	
92 Ethylbenzene	106	7.724	7.724	0.000	98	607734	50.0	47.9	
94 m-Xylene & p-Xylene	91	7.840	7.840	0.000	97	1478106	50.0	47.4	
95 o-Xylene	106	8.200	8.200	0.000	96	727460	50.0	48.6	
96 Styrene	104	8.215	8.215	0.000	95	1251670	50.0	49.6	
97 Bromoform	173	8.399	8.399	0.000	97	208391	50.0	42.6	
98 Isopropylbenzene	105	8.538	8.541	-0.003	96	1867007	50.0	45.7	
100 Cyclohexanone	55	8.639	8.631	0.008	91	1425460	2000.0	1441.1	
101 1,1,2,2-Tetrachloroethane	83	8.826	8.830	-0.004	94	586741	50.0	45.3	
105 Bromobenzene	156	8.860	8.864	-0.004	94	477650	50.0	46.8	
102 trans-1,4-Dichloro-2-buten	53	8.864	8.864	0.000	68	172130	50.0	37.8	
104 1,2,3-Trichloropropane	110	8.890	8.894	-0.004	84	187806	50.0	45.9	a
103 N-Propylbenzene	120	8.939	8.939	0.000	99	508584	50.0	47.1	
107 2-Chlorotoluene	126	9.036	9.036	0.000	96	443238	50.0	46.9	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
106 1,3,5-Trimethylbenzene	105	9.111	9.115	-0.004	94	1544103	50.0	46.5	
108 4-Chlorotoluene	126	9.152	9.152	0.000	98	457451	50.0	47.3	
109 tert-Butylbenzene	119	9.422	9.415	0.007	93	1332686	50.0	47.2	
110 1,2,4-Trimethylbenzene	105	9.479	9.478	0.001	97	1579754	50.0	46.3	
111 sec-Butylbenzene	134	9.640	9.640	0.000	94	392855	50.0	46.9	
113 1,3-Dichlorobenzene	146	9.767	9.767	0.000	98	889150	50.0	47.5	
112 4-Isopropyltoluene	119	9.786	9.786	0.000	97	1697981	50.0	47.8	
115 1,4-Dichlorobenzene	146	9.865	9.868	-0.003	95	900452	50.0	46.9	
116 n-Butylbenzene	91	10.187	10.191	-0.004	98	1557495	50.0	47.2	
117 1,2-Dichlorobenzene	146	10.221	10.221	0.000	98	867175	50.0	47.9	
118 1,2-Dibromo-3-Chloropropan	157	11.001	11.000	0.001	91	154432	50.0	42.3	
120 1,2,4-Trichlorobenzene	180	11.822	11.818	0.004	93	646994	50.0	50.0	
121 Hexachlorobutadiene	225	11.964	11.960	0.004	96	279580	50.0	49.8	
122 Naphthalene	128	12.091	12.095	-0.004	97	2097269	50.0	50.1	
123 1,2,3-Trichlorobenzene	180	12.313	12.316	-0.003	95	627543	50.0	50.1	
S 136 1,2-Dichloroethene, Total	96				0		100.0	94.6	
S 142 Xylenes, Total	106				0		100.0	96.0	
S 141 1,2-Dichloroethene, Total	1				0		100.0	94.6	
S 139 Total BTEX	1				0			239.2	
S 138 Xylenes, Total (URS)	1				0		100.0	96.0	
S 137 Trihalomethanes, Total	1				0		200.0	189.8	
S 140 1,3-Dichloropropene, Total	1				0		100.0	94.6	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MV-MegaMainA_00014

Amount Added: 50.00

Units: uL

MV-Gas A_00023

Amount Added: 50.00

Units: uL

mv-Cent IS/SS_00002

Amount Added: 5.00

Units: uL

Run Reagent

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1679.D

Injection Date: 09-May-2019 05:02:30

Instrument ID: VMS_MS9

Operator ID: ornelasg

Lims ID: ccvc

Worklist Smp#: 25

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

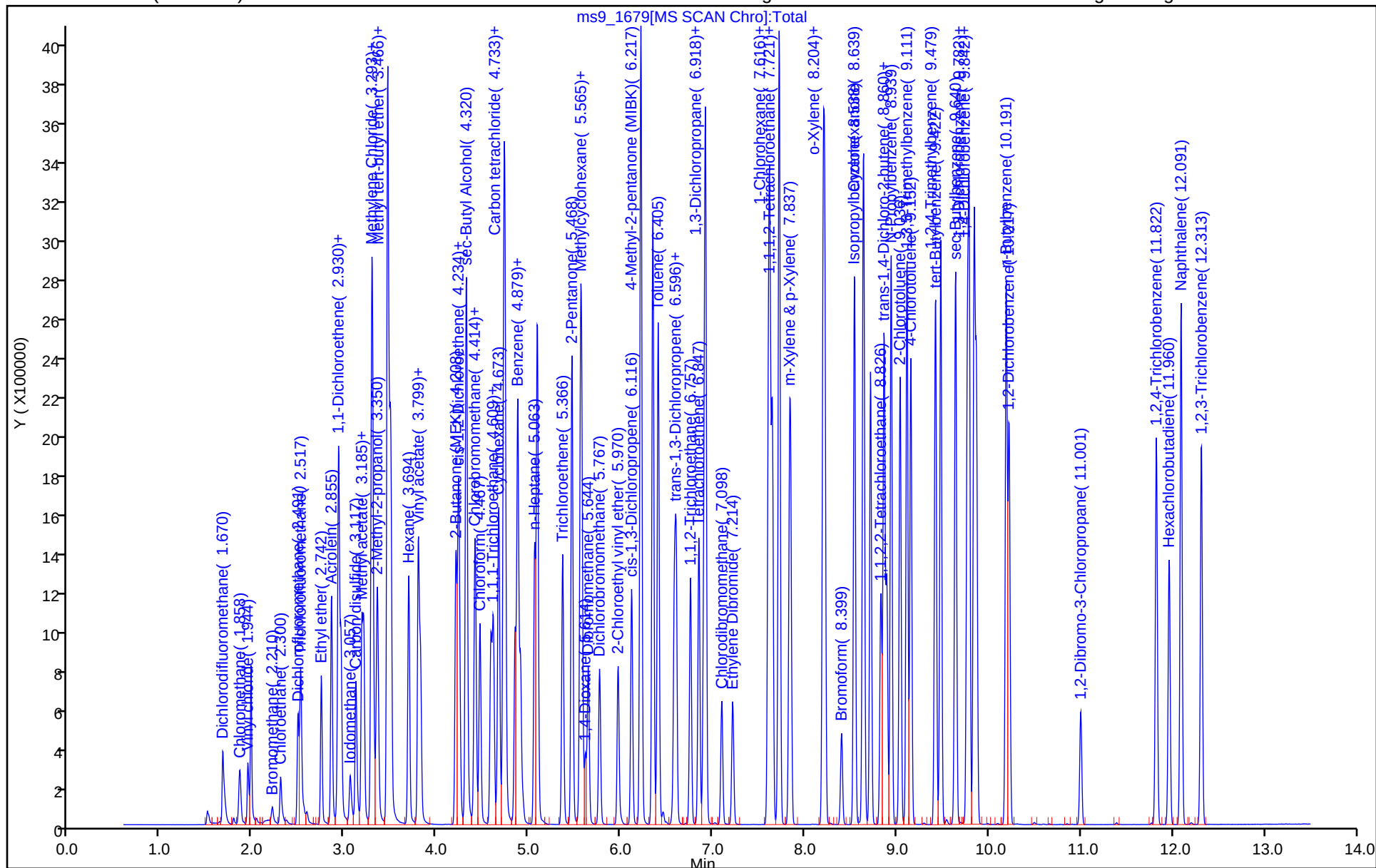
ALS Bottle#: 25

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCVC 280-457521/25 Calibration Date: 05/09/2019 05:02
 Instrument ID: VMS_MS9 Calib Start Date: 05/07/2019 15:15
 GC Column: RXI-624SilMS ID: 0.25 (mm) Calib End Date: 05/07/2019 18:08
 Lab File ID: ms9_1679.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Ethyl ether	Ave	0.1771	0.1677		47.3	50.0	-5.3	50.0
Acrolein	Lin2		0.0413		386	494	-21.8	50.0
1,1,2-Trichloro-1,2,2-trifluoroethane	Ave	0.1366	0.1311		48.0	50.0	-4.0	50.0
1,1-Dichloroethene	Ave	0.1694	0.1644		48.5	50.0	-2.9	50.0
Acetone	Lin2		0.1084		194	200	-3.1	50.0
Iodomethane	Lin2		0.1500		42.1	50.0	-15.8	50.0
Carbon disulfide	Ave	0.4836	0.4594		47.5	50.0	-5.0	50.0
Methyl acetate	Ave	0.2558	0.2389		93.4	100	-6.6	50.0
3-Chloro-1-propene	Ave	0.3033	0.2546		42.0	50.0	-16.1	50.0
Methylene Chloride	Lin2		0.1901		50.0	50.0	-0.0	50.0
t-Butyl alcohol	Ave	0.0651	0.0630		484	500	-3.1	50.0
Acrylonitrile	Ave	0.1245	0.1177		473	500	-5.4	50.0
Methyl tert-butyl ether	Ave	0.6581	0.6203		47.1	50.0	-5.7	50.0
trans-1,2-Dichloroethene	Ave	0.1923	0.1823		47.4	50.0	-5.2	50.0
Hexane	Ave	1.235	1.037		42.0	50.0	-16.0	50.0
Vinyl acetate	Ave	0.4882	0.4152		85.0	100	-15.0	50.0
1,1-Dichloroethane	Ave	0.3662	0.3394	0.1000	46.3	50.0	-7.3	50.0
2-Butanone (MEK)	Ave	0.1888	0.1700		180	200	-9.9	50.0
cis-1,2-Dichloroethene	Ave	0.2241	0.2115		47.2	50.0	-5.6	50.0
2,2-Dichloropropane	Ave	0.3174	0.2542		40.0	50.0	-19.9	50.0
sec-Butyl Alcohol	Ave	0.7596	0.7426		1470	1500	-2.2	50.0
Bromochloromethane	Ave	0.0915	0.0918		50.2	50.0	0.4	50.0
Tetrahydrofuran	Lin2		0.1105		96.0	100	-4.0	50.0
Chloroform	Ave	0.3572	0.3380		47.3	50.0	-5.4	50.0
1,1,1-Trichloroethane	Ave	0.3085	0.2976		48.2	50.0	-3.5	50.0
Cyclohexane	Ave	0.3682	0.3356		45.6	50.0	-8.9	50.0
1,1-Dichloropropene	Ave	0.2884	0.2715		47.1	50.0	-5.9	50.0
Carbon tetrachloride	Lin1		0.2237		43.0	50.0	-14.0	50.0
Isobutyl alcohol	Ave	0.4037	0.3960		1230	1250	-1.9	50.0
Benzene	Ave	0.8475	0.8083		47.7	50.0	-4.6	50.0
1,2-Dichloroethane	Ave	0.3218	0.2823		43.9	50.0	-12.3	50.0
Trichloroethene	Ave	0.2089	0.2051		49.1	50.0	-1.8	50.0
2-Pentanone	Ave	0.2988	0.2760		185	200	-7.6	50.0
Methylcyclohexane	Ave	0.2984	0.2654		44.5	50.0	-11.1	50.0
1,2-Dichloropropane	Lin2		0.2038		48.1	50.0	-3.7	50.0
1,4-Dioxane	Ave	0.0059	0.0060		1010	1000	0.8	50.0
Dibromomethane	Ave	0.1309	0.1249		47.7	50.0	-4.6	50.0
Bromodichloromethane	Ave	0.2387	0.2357		49.4	50.0	-1.2	50.0
cis-1,3-Dichloropropene	Ave	1.374	1.288		46.9	50.0	-6.2	50.0
4-Methyl-2-pentanone (MIBK)	Ave	0.3375	0.3051		181	200	-9.6	50.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCVC 280-457521/25 Calibration Date: 05/09/2019 05:02
 Instrument ID: VMS_MS9 Calib Start Date: 05/07/2019 15:15
 GC Column: RXI-624SilMS ID: 0.25 (mm) Calib End Date: 05/07/2019 18:08
 Lab File ID: ms9_1679.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Toluene	Ave	0.8996	0.8579		47.7	50.0	-4.6	50.0
trans-1,3-Dichloropropene	Ave	0.2977	0.2841		47.7	50.0	-4.6	50.0
Ethyl methacrylate	Ave	1.391	1.361		48.9	50.0	-2.2	50.0
1,1,2-Trichloroethane	Ave	0.1933	0.1887		48.8	50.0	-2.4	50.0
Tetrachloroethene	Ave	0.7014	0.6768		48.2	50.0	-3.5	50.0
1,3-Dichloropropane	Ave	1.410	1.332		47.3	50.0	-5.5	50.0
2-Hexanone	Ave	1.107	0.999		180	200	-9.8	50.0
Dibromochloromethane	Ave	0.6379	0.6441		50.5	50.0	1.0	50.0
1,2-Dibromoethane	Ave	0.8505	0.8238		48.4	50.0	-3.1	50.0
1-Chlorohexane	Lin2		1.151		47.1	50.0	-5.7	50.0
Chlorobenzene	Ave	2.350	2.219	0.3000	47.2	50.0	-5.6	50.0
1,1,1,2-Tetrachloroethane	Ave	0.7196	0.7204		50.1	50.0	0.1	50.0
Ethylbenzene	Ave	1.308	1.253		47.9	50.0	-4.2	50.0
m-Xylene & p-Xylene	Ave	3.216	3.048		47.4	50.0	-5.2	50.0
o-Xylene	Ave	1.544	1.500		48.6	50.0	-2.9	50.0
Styrene	Ave	2.604	2.581		49.6	50.0	-0.9	50.0
Bromoform	Lin1		0.4297	0.1000	42.6	50.0	-14.8	50.0
Isopropylbenzene	Ave	2.570	2.350		45.7	50.0	-8.6	50.0
Cyclohexanone	Ave	0.1020	0.0735		1440	2000	-27.9	50.0
1,1,2,2-Tetrachloroethane	Ave	0.8146	0.7384	0.3000	45.3	50.0	-9.4	50.0
Bromobenzene	Ave	0.6416	0.6011		46.8	50.0	-6.3	50.0
trans-1,4-Dichloro-2-butene	Ave	0.2862	0.2166		37.8	50.0	-24.3	50.0
1,2,3-Trichloropropane	Ave	0.2576	0.2363		45.9	50.0	-8.3	50.0
N-Propylbenzene	Ave	0.6791	0.6400		47.1	50.0	-5.8	50.0
2-Chlorotoluene	Ave	0.5947	0.5578		46.9	50.0	-6.2	50.0
1,3,5-Trimethylbenzene	Ave	2.088	1.943		46.5	50.0	-6.9	50.0
4-Chlorotoluene	Ave	0.6085	0.5757		47.3	50.0	-5.4	50.0
tert-Butylbenzene	Ave	1.778	1.677		47.2	50.0	-5.7	50.0
1,2,4-Trimethylbenzene	Ave	2.146	1.988		46.3	50.0	-7.4	50.0
sec-Butylbenzene	Ave	0.5273	0.4944		46.9	50.0	-6.2	50.0
1,3-Dichlorobenzene	Ave	1.178	1.119		47.5	50.0	-5.0	50.0
4-Isopropyltoluene	Ave	2.237	2.137		47.8	50.0	-4.5	50.0
1,4-Dichlorobenzene	Ave	1.209	1.133		46.9	50.0	-6.3	50.0
n-Butylbenzene	Ave	2.077	1.960		47.2	50.0	-5.6	50.0
1,2-Dichlorobenzene	Ave	1.140	1.091		47.9	50.0	-4.3	50.0
1,2-Dibromo-3-Chloropropane	Lin1		0.1943		42.3	50.0	-15.3	50.0
1,2,4-Trichlorobenzene	Ave	0.8138	0.8142		50.0	50.0	0.0	50.0
Hexachlorobutadiene	Ave	0.3536	0.3518		49.8	50.0	-0.5	50.0
Naphthalene	Ave	2.636	2.639		50.1	50.0	0.1	50.0
1,2,3-Trichlorobenzene	Ave	0.7887	0.7897		50.1	50.0	0.1	50.0
Dibromofluoromethane (Surr)	Ave	0.2379	0.2349		49.4	50.0	-1.3	50.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCVC 280-457521/25 Calibration Date: 05/09/2019 05:02
 Instrument ID: VMS_MS9 Calib Start Date: 05/07/2019 15:15
 GC Column: RXI-624SilMS ID: 0.25 (mm) Calib End Date: 05/07/2019 18:08
 Lab File ID: ms9_1679.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,2-Dichloroethane-d4 (Surr)	Ave	0.3080	0.2902		47.1	50.0	-5.8	50.0
Toluene-d8 (Surr)	Ave	4.013	3.913		48.8	50.0	-2.5	50.0
4-Bromofluorobenzene (Surr)	Ave	0.9813	0.9215		46.9	50.0	-6.1	50.0

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1679.D
 Lims ID: ccvc
 Client ID:
 Sample Type: CCVC
 Inject. Date: 09-May-2019 05:02:30 ALS Bottle#: 25 Worklist Smp#: 25
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: CCVC
 Misc. Info.: 280-0081707-025
 Operator ID: ornelasg Instrument ID: VMS_MS9
 Sublist: chrom-AQ_VMSMS9_8260*sub3
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 09-May-2019 21:41:44 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: ornelasg

Date: 09-May-2019 21:34:37

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.293	3.286	0.007	0	2364017	1000.0	1000.0	
* 1 Fluorobenzene	96	5.093	5.089	0.004	99	1962633	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.616	0.003	85	484964	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	96	794630	50.0	50.0	
\$ 6 Dibromofluoromethane (Surr	111	4.587	4.587	0.001	93	461007	50.0	49.4	
\$ 7 1,2-Dichloroethane-d4 (Sur	65	4.849	4.853	-0.004	98	569637	50.0	47.1	
\$ 8 Toluene-d8 (Surr)	98	6.349	6.348	0.000	93	1897704	50.0	48.8	
\$ 9 4-Bromofluorobenzene (Surr	95	8.714	8.714	0.000	91	732234	50.0	46.9	
13 Dichlorodifluoromethane	85	1.670	1.670	0.000	99	379372	50.0	38.2	
15 Chloromethane	50	1.858	1.854	0.004	99	292852	50.0	42.3	
16 Vinyl chloride	62	1.944	1.940	0.004	98	281004	50.0	46.5	
19 Bromomethane	94	2.214	2.210	0.004	90	43836	50.0	34.3	
20 Chloroethane	64	2.300	2.300	0.000	100	191833	50.0	53.4	
21 Dichlorofluoromethane	67	2.491	2.491	0.000	97	597566	50.0	48.2	
22 Trichlorofluoromethane	101	2.517	2.521	-0.004	98	525969	50.0	50.2	
24 Ethyl ether	59	2.742	2.746	-0.004	93	329067	50.0	47.3	
28 Acrolein	56	2.855	2.858	-0.003	99	801256	493.8	386.1	
29 1,1,2-Trichloro-1,2,2-trif	151	2.930	2.933	-0.003	95	257275	50.0	48.0	
30 1,1-Dichloroethene	96	2.934	2.937	-0.003	97	322706	50.0	48.5	
31 Acetone	43	2.956	2.952	0.004	100	850948	200.0	193.9	
33 Iodomethane	142	3.057	3.065	-0.008	98	294416	50.0	42.1	
35 Carbon disulfide	76	3.117	3.125	-0.008	99	901575	50.0	47.5	
34 Methyl acetate	43	3.185	3.188	-0.003	98	937672	100.0	93.4	
36 3-Chloro-1-propene	41	3.203	3.207	-0.004	92	499605	50.0	42.0	
39 Methylene Chloride	84	3.301	3.301	0.000	92	373124	50.0	50.0	
38 2-Methyl-2-propanol	59	3.350	3.349	0.001	100	1237276	500.0	484.5	
42 Acrylonitrile	53	3.466	3.466	0.000	98	2310406	500.0	472.8	
40 Methyl tert-butyl ether	73	3.488	3.488	0.000	94	1217428	50.0	47.1	
41 trans-1,2-Dichloroethene	96	3.500	3.503	-0.003	98	357818	50.0	47.4	
43 Hexane	57	3.694	3.702	-0.008	92	503092	50.0	42.0	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
45 Vinyl acetate	43	3.796	3.799	-0.003	97	1629746	100.0	85.0	
46 1,1-Dichloroethane	63	3.822	3.826	-0.004	96	666194	50.0	46.3	
50 2-Butanone (MEK)	43	4.204	4.208	-0.004	100	1334824	200.0	180.1	
52 cis-1,2-Dichloroethene	96	4.231	4.234	-0.003	82	415154	50.0	47.2	
53 2,2-Dichloropropane	77	4.242	4.245	-0.003	86	498881	50.0	40.0	
51 sec-Butyl Alcohol	45	4.320	4.317	0.003	99	2633084	1500.0	1466.4	
59 Chlorobromomethane	128	4.410	4.410	0.000	96	180250	50.0	50.2	
57 Tetrahydrofuran	42	4.418	4.418	0.000	85	433598	100.0	96.0	
56 Chloroform	83	4.467	4.470	-0.003	93	663368	50.0	47.3	
60 1,1,1-Trichloroethane	97	4.613	4.616	-0.003	98	584051	50.0	48.2	
61 Cyclohexane	56	4.673	4.676	-0.003	89	658559	50.0	45.6	
62 1,1-Dichloropropene	75	4.725	4.725	0.000	98	532803	50.0	47.1	
63 Carbon tetrachloride	117	4.729	4.733	-0.004	96	438942	50.0	43.0	
58 Isobutyl alcohol	43	4.740	4.736	0.004	94	1170166	1250.0	1226.2	
66 Benzene	78	4.879	4.879	0.000	96	1586462	50.0	47.7	
67 1,2-Dichloroethane	62	4.909	4.913	-0.004	97	554107	50.0	43.9	
135 n-Heptane	43	5.063	5.066	-0.003	92	484365	50.0	41.8	
68 Trichloroethene	130	5.366	5.370	-0.004	99	402441	50.0	49.1	
69 2-Pentanone	43	5.468	5.467	0.001	99	2167052	200.0	184.8	
71 Methylcyclohexane	55	5.561	5.561	0.000	92	520785	50.0	44.5	
72 1,2-Dichloropropane	63	5.573	5.576	-0.003	92	400014	50.0	48.1	
73 1,4-Dioxane	88	5.614	5.614	0.000	93	235170	1000.0	1008.2	
74 Dibromomethane	93	5.644	5.647	-0.003	96	245196	50.0	47.7	
75 Dichlorobromomethane	83	5.767	5.771	-0.004	100	462643	50.0	49.4	
76 2-Chloroethyl vinyl ether	63	5.970	5.974	-0.004	92	316872	50.0	47.2	
78 cis-1,3-Dichloropropene	75	6.116	6.120	-0.004	96	624645	50.0	46.9	
79 4-Methyl-2-pentanone (MIBK)	43	6.217	6.217	0.000	95	2395275	200.0	180.8	
80 Toluene	91	6.405	6.408	-0.003	98	1683775	50.0	47.7	
82 trans-1,3-Dichloropropene	75	6.581	6.577	0.004	95	557493	50.0	47.7	
81 Ethyl methacrylate	69	6.600	6.603	-0.003	87	659920	50.0	48.9	
83 1,1,2-Trichloroethane	97	6.757	6.757	0.000	91	370369	50.0	48.8	
85 Tetrachloroethene	164	6.847	6.847	0.000	98	328228	50.0	48.2	
86 1,3-Dichloropropane	76	6.903	6.903	0.000	99	646037	50.0	47.3	
84 2-Hexanone	43	6.918	6.922	-0.004	96	1938475	200.0	180.5	
87 Chlorodibromomethane	129	7.098	7.094	0.004	90	312353	50.0	50.5	
89 Ethylene Dibromide	107	7.214	7.222	-0.008	98	399499	50.0	48.4	
90 1-Chlorohexane	91	7.604	7.608	-0.004	96	558263	50.0	47.1	
91 Chlorobenzene	112	7.646	7.645	0.001	94	1075943	50.0	47.2	
93 1,1,1,2-Tetrachloroethane	131	7.721	7.717	0.003	94	349354	50.0	50.1	
92 Ethylbenzene	106	7.724	7.724	0.000	98	607734	50.0	47.9	
94 m-Xylene & p-Xylene	91	7.840	7.840	0.000	97	1478106	50.0	47.4	
95 o-Xylene	106	8.200	8.200	0.000	96	727460	50.0	48.6	
96 Styrene	104	8.215	8.215	0.000	95	1251670	50.0	49.6	
97 Bromoform	173	8.399	8.399	0.000	97	208391	50.0	42.6	
98 Isopropylbenzene	105	8.538	8.541	-0.003	96	1867007	50.0	45.7	
100 Cyclohexanone	55	8.639	8.631	0.008	91	1425460	2000.0	1441.1	
101 1,1,2,2-Tetrachloroethane	83	8.826	8.830	-0.004	94	586741	50.0	45.3	
105 Bromobenzene	156	8.860	8.864	-0.004	94	477650	50.0	46.8	
102 trans-1,4-Dichloro-2-buten	53	8.864	8.864	0.000	68	172130	50.0	37.8	
104 1,2,3-Trichloropropane	110	8.890	8.894	-0.004	84	187806	50.0	45.9	a
103 N-Propylbenzene	120	8.939	8.939	0.000	99	508584	50.0	47.1	
107 2-Chlorotoluene	126	9.036	9.036	0.000	96	443238	50.0	46.9	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
106 1,3,5-Trimethylbenzene	105	9.111	9.115	-0.004	94	1544103	50.0	46.5	
108 4-Chlorotoluene	126	9.152	9.152	0.000	98	457451	50.0	47.3	
109 tert-Butylbenzene	119	9.422	9.415	0.007	93	1332686	50.0	47.2	
110 1,2,4-Trimethylbenzene	105	9.479	9.478	0.001	97	1579754	50.0	46.3	
111 sec-Butylbenzene	134	9.640	9.640	0.000	94	392855	50.0	46.9	
113 1,3-Dichlorobenzene	146	9.767	9.767	0.000	98	889150	50.0	47.5	
112 4-Isopropyltoluene	119	9.786	9.786	0.000	97	1697981	50.0	47.8	
115 1,4-Dichlorobenzene	146	9.865	9.868	-0.003	95	900452	50.0	46.9	
116 n-Butylbenzene	91	10.187	10.191	-0.004	98	1557495	50.0	47.2	
117 1,2-Dichlorobenzene	146	10.221	10.221	0.000	98	867175	50.0	47.9	
118 1,2-Dibromo-3-Chloropropan	157	11.001	11.000	0.001	91	154432	50.0	42.3	
120 1,2,4-Trichlorobenzene	180	11.822	11.818	0.004	93	646994	50.0	50.0	
121 Hexachlorobutadiene	225	11.964	11.960	0.004	96	279580	50.0	49.8	
122 Naphthalene	128	12.091	12.095	-0.004	97	2097269	50.0	50.1	
123 1,2,3-Trichlorobenzene	180	12.313	12.316	-0.003	95	627543	50.0	50.1	
S 136 1,2-Dichloroethene, Total	96				0		100.0	94.6	
S 142 Xylenes, Total	106				0		100.0	96.0	
S 141 1,2-Dichloroethene, Total	1				0		100.0	94.6	
S 139 Total BTEX	1				0			239.2	
S 138 Xylenes, Total (URS)	1				0		100.0	96.0	
S 137 Trihalomethanes, Total	1				0		200.0	189.8	
S 140 1,3-Dichloropropene, Total	1				0		100.0	94.6	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MV-MegaMainA_00014

Amount Added: 50.00

Units: uL

MV-Gas A_00023

Amount Added: 50.00

Units: uL

mv-Cent IS/SS_00002

Amount Added: 5.00

Units: uL

Run Reagent

Report Date: 09-May-2019 21:41:47

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1679.D

Injection Date: 09-May-2019 05:02:30

Instrument ID: VMS_MS9

Operator ID: ornelasg

Lims ID: ccvc

Worklist Smp#: 25

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

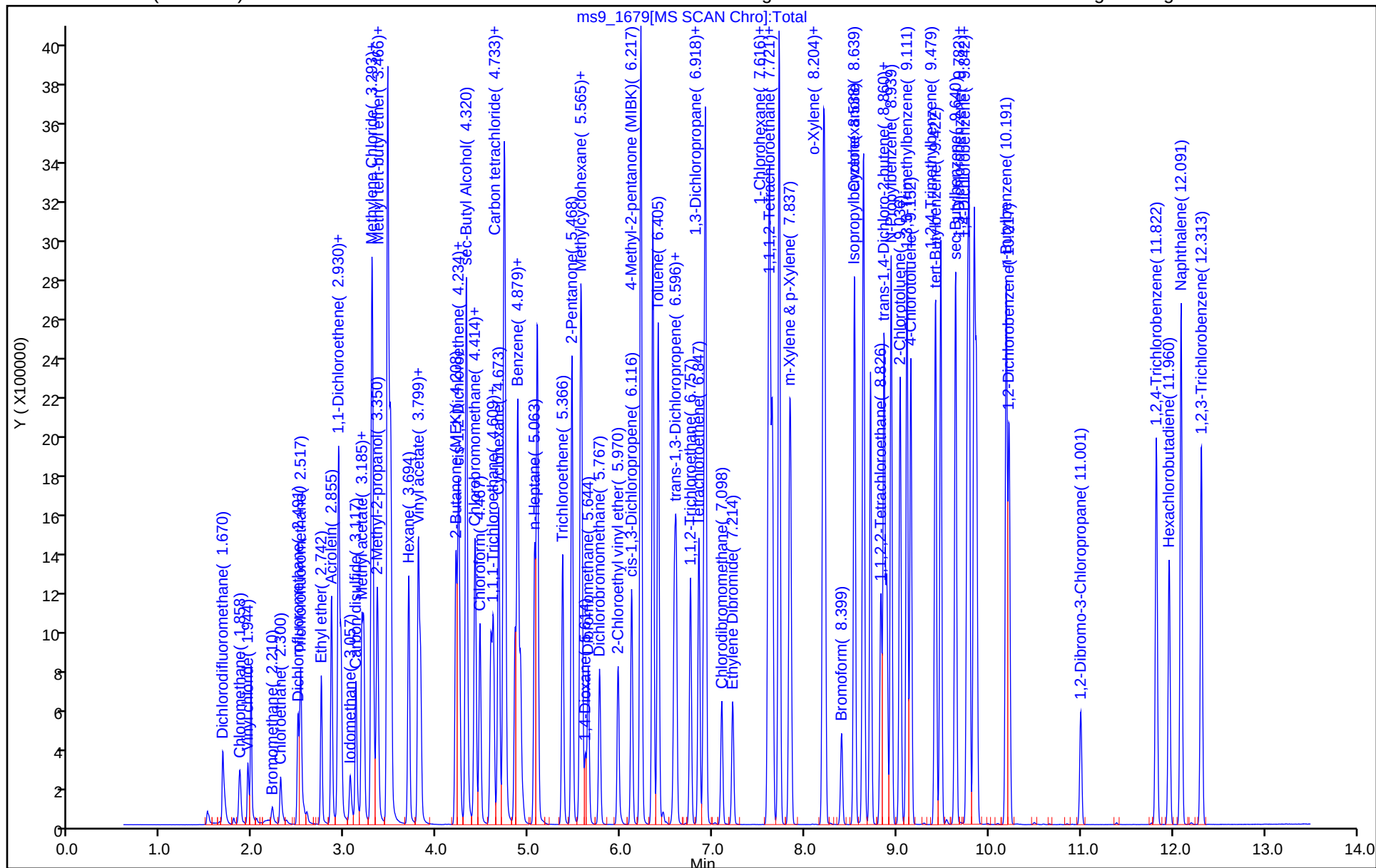
ALS Bottle#: 25

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



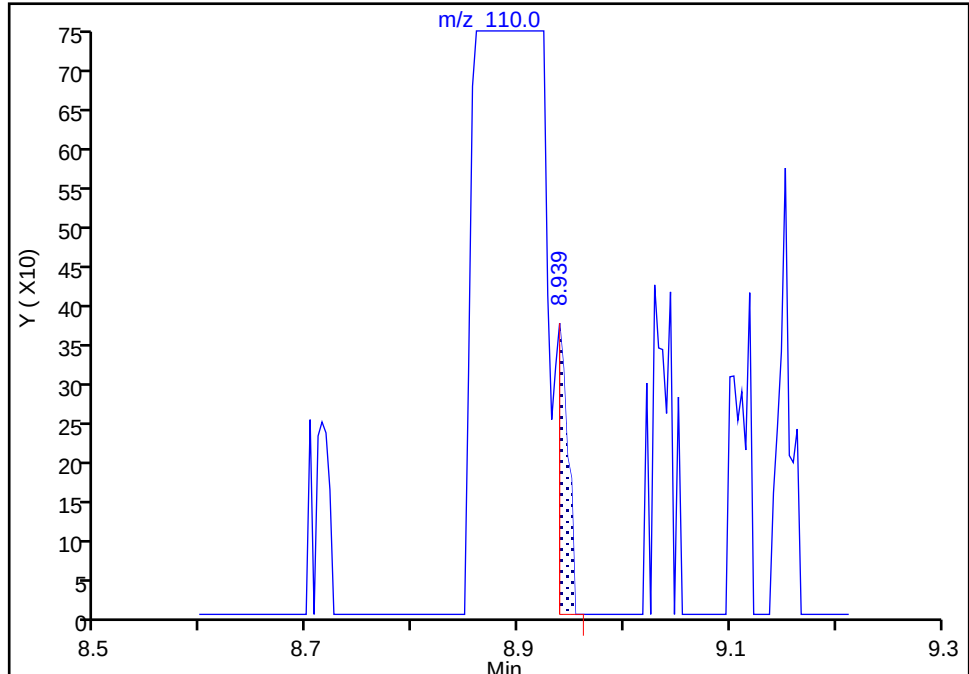
Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1679.D
Injection Date: 09-May-2019 05:02:30 Instrument ID: VMS_MS9
Lims ID: ccvc
Client ID:
Operator ID: ornelasg ALS Bottle#: 25 Worklist Smp#: 25
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: AQ_VMSMS9_8260 Limit Group: MSV - 8260B Water and Solid
Column: DB-624 (0.25 mm) Detector: MS SCAN

104 1,2,3-Trichloropropane, CAS: 96-18-4
Signal: 1

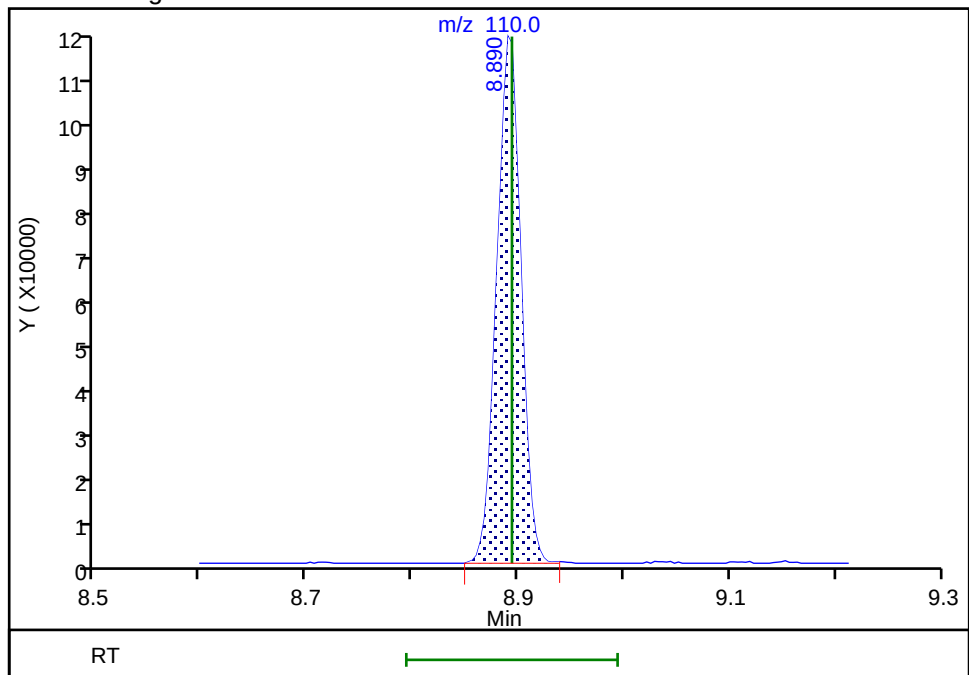
RT: 8.94
Area: 240
Amount: 0.058615
Amount Units: ug/l

Processing Integration Results



RT: 8.89
Area: 187806
Amount: 45.867647
Amount Units: ug/l

Manual Integration Results



Reviewer: ornelasg, 09-May-2019 21:34:33
Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1600.D
Lims ID: BFB
Client ID:
Sample Type: BFB
Inject. Date: 07-May-2019 10:56:30 ALS Bottle#: 100 Worklist Smp#: 1
Injection Vol: 2.0 uL Dil. Factor: 1.0000
Sample Info: BFB
Operator ID: newcomer Instrument ID: VMS_MS9
Method: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\AQ_VMSMS9_8260.m
Limit Group: MSV - 8260B Water and Solid
Last Update: 08-May-2019 09:02:21 Calib Date: 07-May-2019 18:08:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
Column 1 : DB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0338

First Level Reviewer: newcomer

Date: 07-May-2019 11:29:16

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
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\$ 11 BFB	95	3.564	3.564	0.000	86	174164	NR	NR	
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QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Reagents:

MV-BFB_00028

Amount Added: 2.00

Units: uL

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1600.D

Injection Date: 07-May-2019 10:56:30

Instrument ID: VMS_MS9

Lims ID: BFB

Client ID:

Operator ID: newcomer

ALS Bottle#: 100

Worklist Smp#: 1

Injection Vol: 2.0 uL

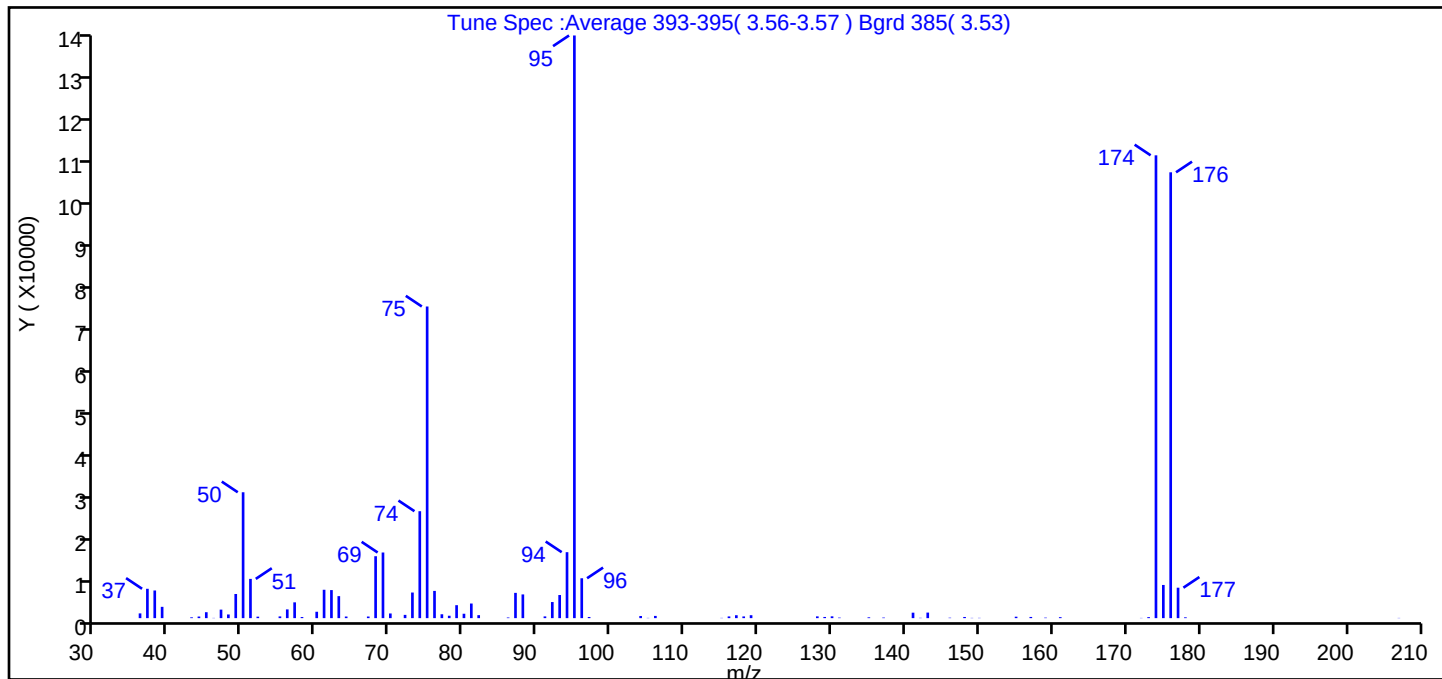
Dil. Factor: 1.0000

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Tune Method: BFB Method 8260

\$ 11 BFB



m/z	Ion Abundance Criteria	% Relative Abundance
95	Base peak, 100% relative abundance	100.0
50	15 to 40% of m/z 95	21.6
75	30 to 60% of m/z 95	53.5
96	5 to 9% of m/z 95	6.8
173	Less than 2% of m/z 174	0.2 (0.2)
174	50 to 120% of m/z 95	79.4
175	5 to 9% of m/z 174	5.7 (7.2)
176	Greater than 95% but less than 101% of m/z 174	76.5 (96.3)
177	5 to 9% of m/z 176	5.2 (6.8)

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1600.D\AQ_VMSMS9_8260.rslt\spectr
Injection Date: 07-May-2019 10:56:30
Spectrum: Tune Spec :Average 393-395(3.56-3.57) Bgrd 385(3.53)
Base Peak: 95.00
Minimum % Base Peak: 0
Number of Points: 81

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1082	63.00	5020	92.00	3671	142.00	72
37.00	6695	64.00	368	93.00	5271	143.00	1267
38.00	6308	67.00	370	94.00	15040	146.00	98
39.00	2577	68.00	14121	95.00	132864	148.00	264
43.00	187	69.00	14967	96.00	9095	149.00	58
44.00	366	70.00	1066	97.00	263	150.00	63
45.00	1353	72.00	745	104.00	491	155.00	329
46.00	52	73.00	5842	105.00	56	157.00	272
47.00	1944	74.00	24384	106.00	508	159.00	113
48.00	839	75.00	71064	115.00	58	161.00	221
49.00	5507	76.00	6211	116.00	390	172.00	50
50.00	28704	77.00	886	117.00	665	173.00	228
51.00	8952	78.00	547	118.00	390	174.00	105536
52.00	335	79.00	2956	119.00	669	175.00	7567
55.00	395	80.00	1004	128.00	403	176.00	101664
56.00	1996	81.00	3334	129.00	268	177.00	6942
57.00	3603	82.00	678	130.00	411	178.00	183
58.00	253	86.00	147	131.00	119	207.00	51
60.00	1457	87.00	5764	135.00	185		
61.00	6472	88.00	5410	137.00	128		
62.00	6399	91.00	395	141.00	1247		

Report Date: 08-May-2019 09:02:21

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1600.D

Injection Date: 07-May-2019 10:56:30

Instrument ID: VMS_MS9

Operator ID: newcomer

Lims ID: BFB

Worklist Smp#: 1

Client ID:

Injection Vol: 2.0 uL

Dil. Factor: 1.0000

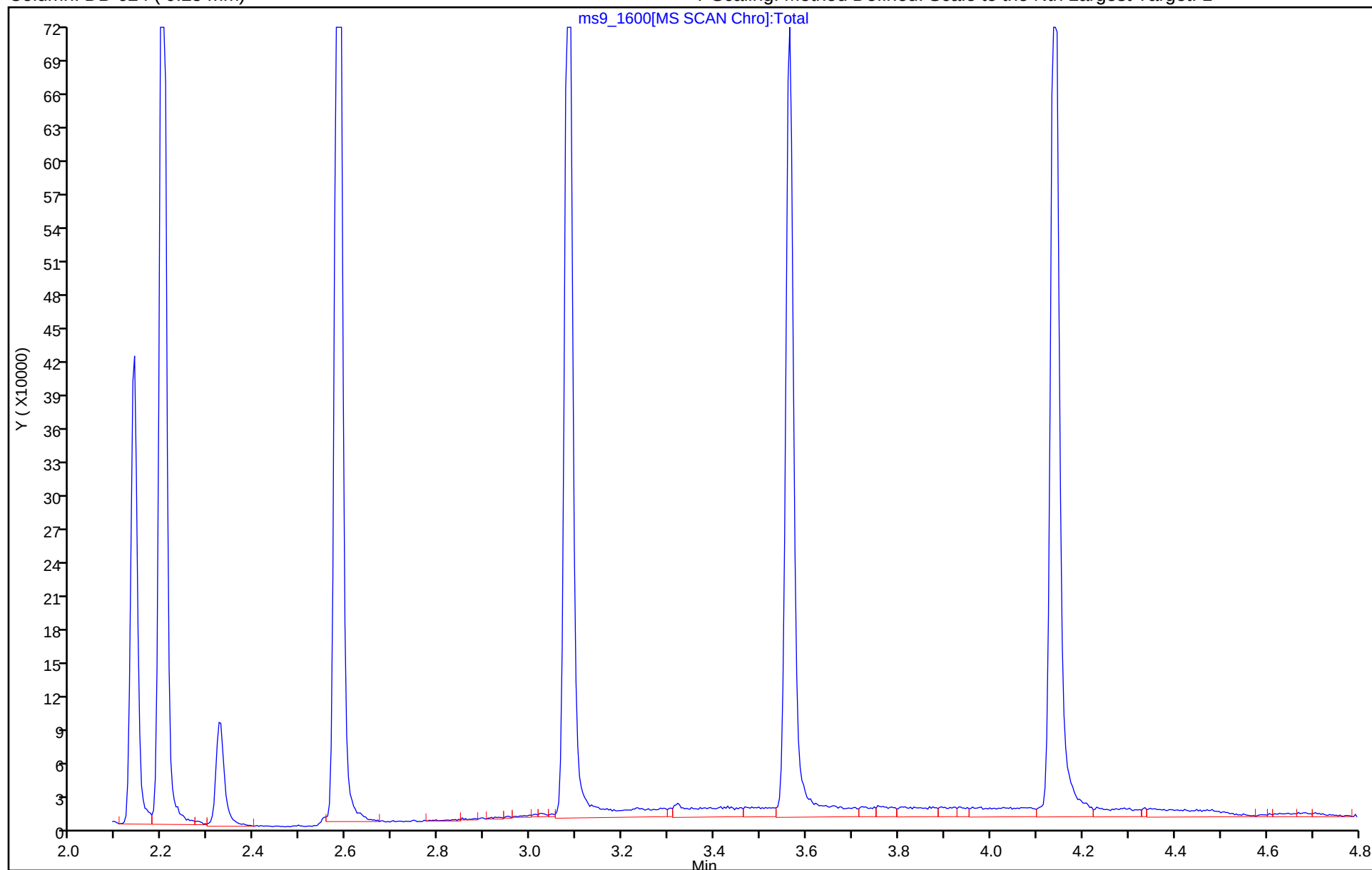
ALS Bottle#: 100

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1654.D
Lims ID: BFB
Client ID:
Sample Type: BFB
Inject. Date: 08-May-2019 19:52:30 ALS Bottle#: 100 Worklist Smp#: 1
Injection Vol: 2.0 uL Dil. Factor: 1.0000
Sample Info: bfb
Operator ID: ornelasg Instrument ID: VMS_MS9
Method: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\AQ_VMSMS9_8260.m
Limit Group: MSV - 8260B Water and Solid
Last Update: 09-May-2019 21:39:32 Calib Date: 07-May-2019 18:08:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
Column 1 : DB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0321

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
\$ 11 BFB	95	3.564	3.564	0.000	90	218456	NR	NR	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Reagents:

MV-BFB_00028

Amount Added: 2.00

Units: uL

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1654.D

Injection Date: 08-May-2019 19:52:30

Instrument ID: VMS_MS9

Lims ID: BFB

Client ID:

Operator ID: ornelasg

ALS Bottle#: 100

Worklist Smp#: 1

Injection Vol: 2.0 uL

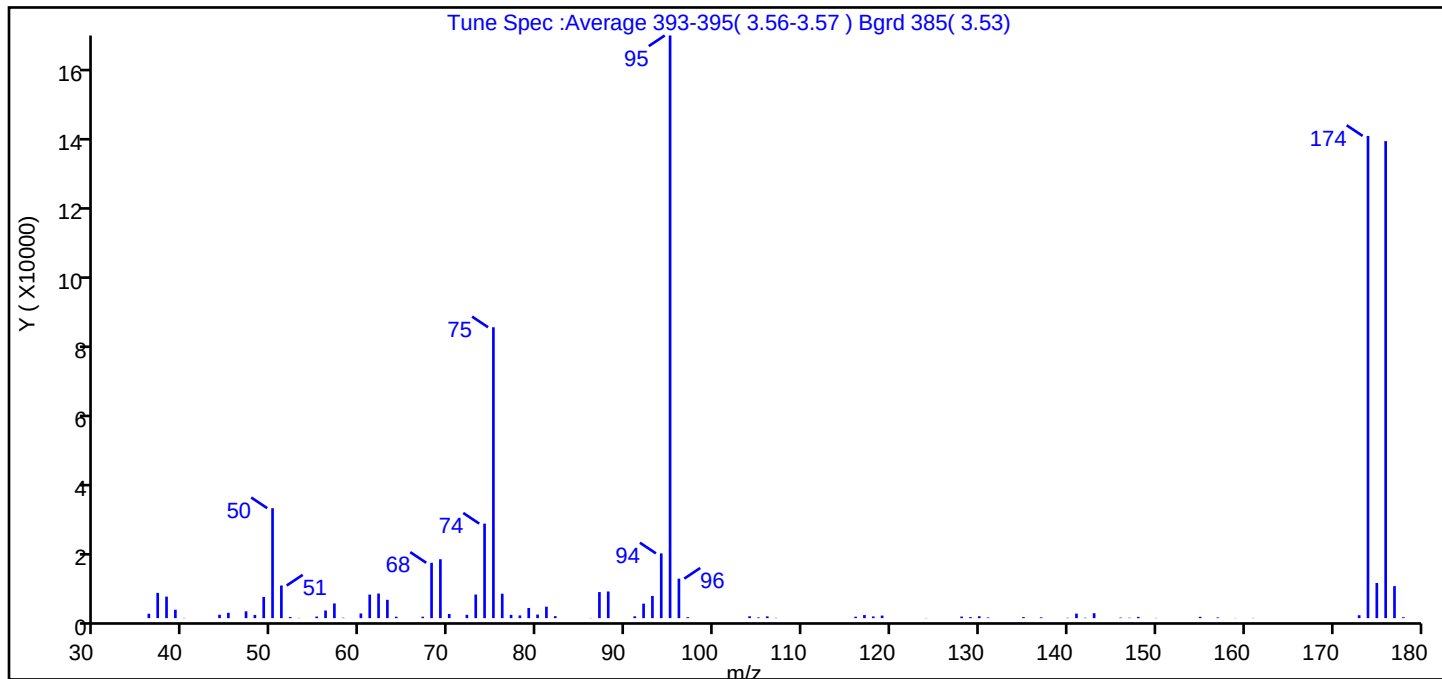
Dil. Factor: 1.0000

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Tune Method: BFB Method 8260

\$ 11 BFB



m/z	Ion Abundance Criteria	% Relative Abundance
95	Base peak, 100% relative abundance	100.0
50	15 to 40% of m/z 95	18.9
75	30 to 60% of m/z 95	49.9
96	5 to 9% of m/z 95	6.8
173	Less than 2% of m/z 174	0.5 (0.6)
174	50 to 120% of m/z 95	82.8
175	5 to 9% of m/z 174	6.0 (7.3)
176	Greater than 95% but less than 101% of m/z 174	81.9 (98.9)
177	5 to 9% of m/z 176	5.5 (6.7)

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1654.D\AQ_VMSMS9_8260.rslt\spectr
Injection Date: 08-May-2019 19:52:30
Spectrum: Tune Spec :Average 393-395(3.56-3.57) Bgrd 385(3.53)
Base Peak: 95.00
Minimum % Base Peak: 0
Number of Points: 81

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1257	63.00	5206	92.00	4122	140.00	106
37.00	7178	64.00	403	93.00	6299	141.00	1287
38.00	6117	67.00	406	94.00	18400	142.00	114
39.00	2392	68.00	15730	95.00	165568	143.00	1401
40.00	72	69.00	16744	96.00	11226	146.00	150
44.00	960	70.00	1186	97.00	277	147.00	107
45.00	1510	72.00	945	104.00	527	148.00	348
47.00	1943	73.00	6708	105.00	199	150.00	63
48.00	905	74.00	26856	106.00	505	155.00	377
49.00	6030	75.00	82656	107.00	81	157.00	198
50.00	31248	76.00	6942	116.00	403	159.00	51
51.00	9273	77.00	940	117.00	879	161.00	64
52.00	343	78.00	780	118.00	477	173.00	833
53.00	63	79.00	2890	119.00	732	174.00	137024
55.00	458	80.00	1020	124.00	55	175.00	9983
56.00	2168	81.00	3255	128.00	444	176.00	135552
57.00	4182	82.00	567	129.00	298	177.00	9102
58.00	113	86.00	55	130.00	541	178.00	248
60.00	1341	87.00	7406	131.00	189		
61.00	6692	88.00	7581	135.00	298		
62.00	6989	91.00	523	137.00	224		

Report Date: 09-May-2019 21:39:33

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1654.D

Injection Date: 08-May-2019 19:52:30

Instrument ID: VMS_MS9

Operator ID: ornelasg

Lims ID: BFB

Worklist Smp#: 1

Client ID:

Injection Vol: 2.0 uL

Dil. Factor: 1.0000

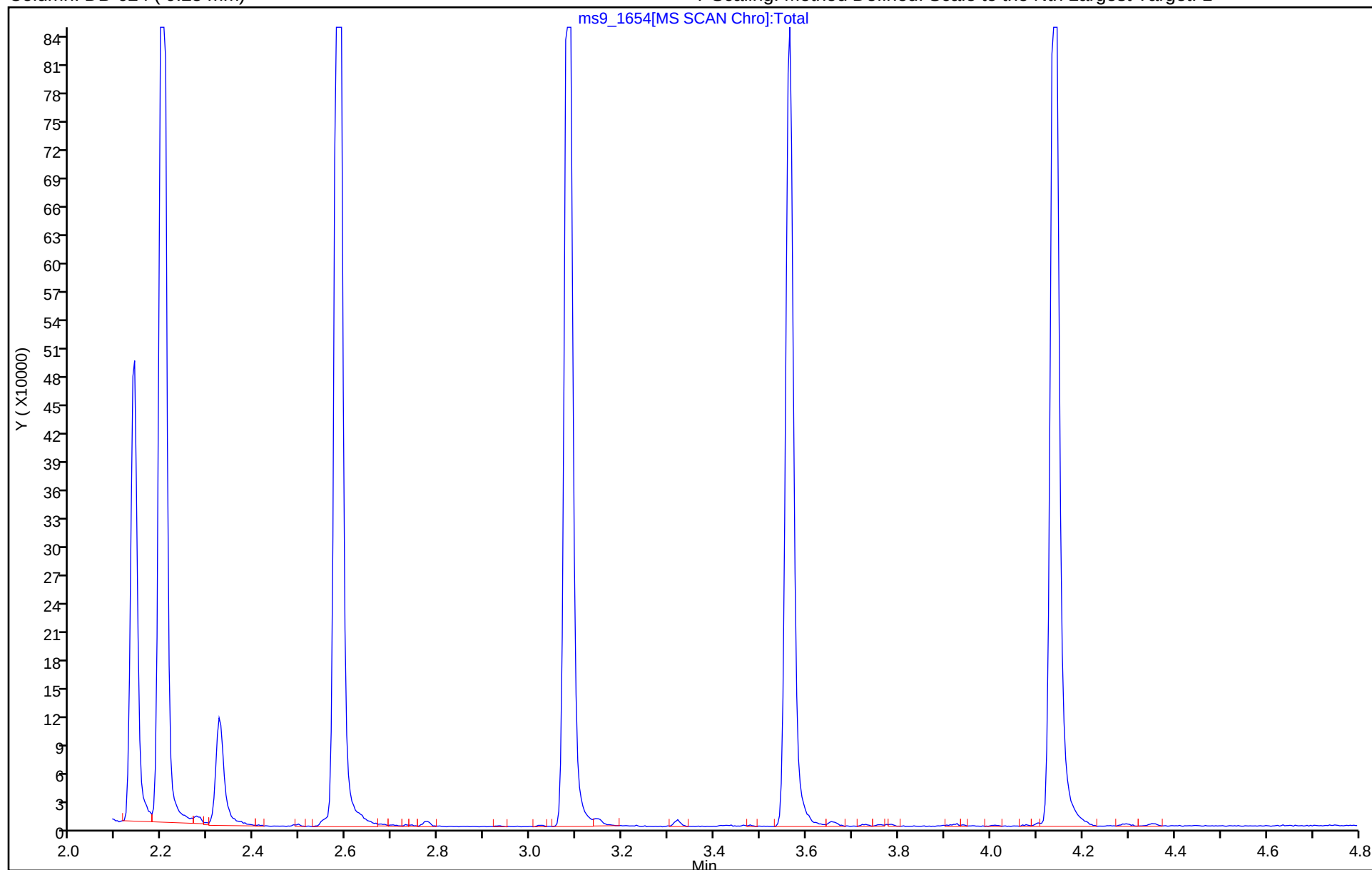
ALS Bottle#: 100

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: MB 280-457521/8

Matrix: Water Lab File ID: ms9_1661.D

Analysis Method: 8260B Date Collected: _____

Sample wt/vol: 5(mL) Date Analyzed: 05/08/2019 22:31

Soil Aliquot Vol: _____ Dilution Factor: 1

Soil Extract Vol.: _____ GC Column: RXI-624SilMS ID: 0.25(mm)

% Moisture: _____ Level: (low/med) Low

Analysis Batch No.: 457521 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
71-55-6	1,1,1-Trichloroethane	0.40	U	1.0	0.40	0.16
79-34-5	1,1,2,2-Tetrachloroethane	0.80	U	1.0	0.80	0.21
79-00-5	1,1,2-Trichloroethane	0.80	U	1.0	0.80	0.27
75-34-3	1,1-Dichloroethane	0.80	U	1.0	0.80	0.22
75-35-4	1,1-Dichloroethene	0.80	U	1.0	0.80	0.23
106-93-4	1,2-Dibromoethane	0.40	U	1.0	0.40	0.18
107-06-2	1,2-Dichloroethane	0.40	U	1.0	0.40	0.13
540-59-0	1,2-Dichloroethene, Total	0.40	U	1.0	0.40	0.15
78-87-5	1,2-Dichloropropane	0.40	U	1.0	0.40	0.18
78-93-3	2-Butanone (MEK)	4.0	U	6.0	4.0	2.0
591-78-6	2-Hexanone	4.0	U	5.0	4.0	1.7
108-10-1	4-Methyl-2-pentanone (MIBK)	3.2	U	5.0	3.2	0.98
67-64-1	Acetone	6.4	U	10	6.4	1.9
71-43-2	Benzene	0.40	U	1.0	0.40	0.16
108-86-1	Bromobenzene	0.40	U	1.0	0.40	0.17
74-97-5	Bromochloromethane	0.20	U	1.0	0.20	0.10
75-27-4	Bromodichloromethane	0.40	U	1.0	0.40	0.17
75-25-2	Bromoform	1.0	U	1.0	1.0	0.46
74-83-9	Bromomethane	0.80	U	2.0	0.80	0.21
75-15-0	Carbon disulfide	0.80	U	2.0	0.80	0.17
56-23-5	Carbon tetrachloride	0.40	U	2.0	0.40	0.19
108-90-7	Chlorobenzene	0.40	U	1.0	0.40	0.17
75-00-3	Chloroethane	1.6	U	2.0	1.6	0.41
67-66-3	Chloroform	0.40	U	1.0	0.40	0.16
74-87-3	Chloromethane	0.80	U	2.0	0.80	0.30
10061-01-5	cis-1,3-Dichloropropene	0.40	U	1.0	0.40	0.16
124-48-1	Dibromochloromethane	0.40	U	1.0	0.40	0.17
100-41-4	Ethylbenzene	0.40	U	1.0	0.40	0.16
75-09-2	Methylene Chloride	2.0	U	5.0	2.0	0.94
100-42-5	Styrene	0.80	U	1.0	0.80	0.36
127-18-4	Tetrachloroethene	0.40	U	1.0	0.40	0.20
108-88-3	Toluene	0.40	U	1.0	0.40	0.17
10061-02-6	trans-1,3-Dichloropropene	0.40	U	1.0	0.40	0.19
79-01-6	Trichloroethene	0.40	U	1.0	0.40	0.16
75-01-4	Vinyl chloride	0.20	U	1.5	0.20	0.10
1330-20-7	Xylenes, Total	0.80	U	1.0	0.80	0.19

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: MB 280-457521/8
Matrix: Water Lab File ID: ms9_1661.D
Analysis Method: 8260B Date Collected: _____
Sample wt/vol: 5 (mL) Date Analyzed: 05/08/2019 22:31
Soil Aliquot Vol: _____ Dilution Factor: 1
Soil Extract Vol.: _____ GC Column: RXI-624SilMS ID: 0.25 (mm)
% Moisture: _____ Level: (low/med) Low
Analysis Batch No.: 457521 Units: ug/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	93		81-118
460-00-4	4-Bromofluorobenzene (Surr)	97		85-114
1868-53-7	Dibromofluoromethane (Surr)	97		80-119
2037-26-5	Toluene-d8 (Surr)	98		89-112

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1661.D
 Lims ID: mb
 Client ID:
 Sample Type: MB
 Inject. Date: 08-May-2019 22:31:30 ALS Bottle#: 7 Worklist Smp#: 8
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: mb
 Misc. Info.: 280-0081707-008
 Operator ID: ornelasg Instrument ID: VMS_MS9
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 09-May-2019 21:39:57 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: ornelasg

Date: 08-May-2019 23:22:27

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.282	3.286	-0.004	0	2457107	1000.0	1000.0	
* 1 Fluorobenzene	96	5.093	5.089	0.004	99	2064326	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.616	0.003	86	499358	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	95	797341	50.0	50.0	
\$ 6 Dibromofluoromethane (Surr	111	4.587	4.587	0.001	94	474491	50.0	48.3	
\$ 7 1,2-Dichloroethane-d4 (Sur	65	4.849	4.853	-0.004	98	592218	50.0	46.6	
\$ 8 Toluene-d8 (Surr)	98	6.349	6.348	0.000	93	1967833	50.0	49.1	
\$ 9 4-Bromofluorobenzene (Surr	95	8.714	8.714	0.000	93	757793	50.0	48.4	
\$ 10 Trifluorotoluene (Surr)	1		0.000					ND	
\$ 11 BFB	95		3.564					ND	
13 Dichlorodifluoromethane	85		1.670					ND	
15 Chloromethane	50		1.854					ND	
16 Vinyl chloride	62		1.940					ND	
18 Ethylene oxide	43		2.188					ND	
19 Bromomethane	94		2.210					ND	
20 Chloroethane	64		2.300					ND	
21 Dichlorofluoromethane	67		2.491					ND	
22 Trichlorofluoromethane	101		2.521					ND	
23 Ethanol	45	2.652	2.652	0.000	80	1544		4.54	
24 Ethyl ether	59		2.746					ND	
27 Propene oxide	58		2.784					ND	
28 Acrolein	56		2.858					ND	
29 1,1,2-Trichloro-1,2,2-trif	151		2.933					ND	
30 1,1-Dichloroethene	96		2.937					ND	
31 Acetone	43	2.956	2.952	0.004	100	8627		0.4081	
32 Isopropyl alcohol	45		3.042					ND	
33 Iodomethane	142		3.065					ND	
35 Carbon disulfide	76		3.125					ND	
37 Acetonitrile	41		3.162					ND	
34 Methyl acetate	43		3.188					ND	
36 3-Chloro-1-propene	41		3.207					ND	U

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
39 Methylene Chloride	84		3.301					ND	
38 2-Methyl-2-propanol	59		3.349					ND	
42 Acrylonitrile	53		3.466					ND	
40 Methyl tert-butyl ether	73		3.488					ND	
41 trans-1,2-Dichloroethene	96		3.503					ND	
43 Hexane	57		3.702					ND	
45 Vinyl acetate	43		3.799					ND	
44 Isopropyl ether	87		3.818					ND	
46 1,1-Dichloroethane	63		3.826					ND	
12 Chlorotrifluoroethene	116		3.859					ND	
47 2-Chloro-1,3-butadiene	53		3.871					ND	
14 1,2-Dichloro-1,1,2,2-tetra	85		4.045					ND	
48 Tert-butyl ethyl ether	59		4.081					ND	
50 2-Butanone (MEK)	43		4.208					ND	
49 Ethyl acetate	43		4.219					ND	
52 cis-1,2-Dichloroethene	96		4.234					ND	
53 2,2-Dichloropropane	77		4.245					ND	
54 Propionitrile	54		4.253					ND	
51 sec-Butyl Alcohol	45		4.317					ND	
55 Methacrylonitrile	41	4.373	4.369	0.004	89	2390		0.3047	
59 Chlorobromomethane	128		4.410					ND	
57 Tetrahydrofuran	42		4.418					ND	
56 Chloroform	83		4.470					ND	
17 2-Chloro-1,1,1-Trifluoroet	118		4.471					ND	
60 1,1,1-Trichloroethane	97		4.616					ND	
61 Cyclohexane	56		4.676					ND	
62 1,1-Dichloropropene	75		4.725					ND	
63 Carbon tetrachloride	117		4.733					ND	
58 Isobutyl alcohol	43		4.736					ND	
66 Benzene	78		4.879					ND	
67 1,2-Dichloroethane	62		4.913					ND	
65 Tert-amyl methyl ether	73		4.943					ND	
25 1,2-Dichloro-1,1,2-trifluo	117		5.006					ND	
135 n-Heptane	43		5.066					ND	
26 1,1,1-Trifluoro-2,2-dichlo	83		5.097					ND	
64 n-Butanol	56		5.228					ND	
68 Trichloroethene	130		5.370					ND	
69 2-Pentanone	43		5.467					ND	
71 Methylcyclohexane	55		5.561					ND	
70 Methyl methacrylate	100		5.573					ND	
72 1,2-Dichloropropane	63		5.576					ND	
73 1,4-Dioxane	88		5.614					ND	
74 Dibromomethane	93		5.647					ND	
75 Dichlorobromomethane	83		5.771					ND	
77 2-Nitropropane	41		5.932					ND	
76 2-Chloroethyl vinyl ether	63		5.974					ND	
78 cis-1,3-Dichloropropene	75		6.120					ND	
79 4-Methyl-2-pentanone (MIBK)	43		6.217					ND	
80 Toluene	91		6.408					ND	
82 trans-1,3-Dichloropropene	75		6.577					ND	
81 Ethyl methacrylate	69		6.603					ND	
83 1,1,2-Trichloroethane	97		6.757					ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
85 Tetrachloroethene	164		6.847					ND	
86 1,3-Dichloropropane	76		6.903					ND	
84 2-Hexanone	43		6.922					ND	
88 Tetrahydrothiophene	60		7.091					ND	
87 Chlorodibromomethane	129		7.094					ND	
89 Ethylene Dibromide	107		7.222					ND	
90 1-Chlorohexane	91		7.608					ND	
91 Chlorobenzene	112		7.645					ND	
93 1,1,1,2-Tetrachloroethane	131		7.717					ND	
92 Ethylbenzene	106		7.724					ND	
94 m-Xylene & p-Xylene	91		7.840					ND	
95 o-Xylene	106		8.200					ND	
96 Styrene	104		8.215					ND	
97 Bromoform	173		8.399					ND	
98 Isopropylbenzene	105		8.541					ND	
99 cis-1,4-Dichloro-2-butene	53		8.590					ND	
100 Cyclohexanone	55		8.631					ND	
101 1,1,2,2-Tetrachloroethane	83		8.830					ND	
105 Bromobenzene	156		8.864					ND	
102 trans-1,4-Dichloro-2-buten	53		8.864					ND	
104 1,2,3-Trichloropropane	110		8.894					ND	
103 N-Propylbenzene	120		8.939					ND	
107 2-Chlorotoluene	126		9.036					ND	
106 1,3,5-Trimethylbenzene	105		9.115					ND	
108 4-Chlorotoluene	126		9.152					ND	
109 tert-Butylbenzene	119		9.415					ND	
110 1,2,4-Trimethylbenzene	105		9.478					ND	
111 sec-Butylbenzene	134		9.640					ND	
113 1,3-Dichlorobenzene	146		9.767					ND	
112 4-Isopropyltoluene	119		9.786					ND	
115 1,4-Dichlorobenzene	146		9.868					ND	
114 1,2,3-Trimethylbenzene	105		9.883					ND	
116 n-Butylbenzene	91		10.191					ND	
117 1,2-Dichlorobenzene	146		10.221					ND	
118 1,2-Dibromo-3-Chloropropan	157		11.000					ND	
119 1,3,5-Trichlorobenzene	180	11.188	11.188	0.000	93	4328		0.2861	
120 1,2,4-Trichlorobenzene	180		11.818					ND	
121 Hexachlorobutadiene	225		11.960					ND	
122 Naphthalene	128		12.095					ND	
123 1,2,3-Trichlorobenzene	180		12.316					ND	
132 2-Methylhexane	1		0.000					ND	
128 Pentachloroethane	167		0.000					ND	
164 1-Chloro-1-fluoroethane TI	1		0.000					ND	
160 1-Chlorohexane TIC	1		0.000					ND	
163 n-Nonane TIC	1		0.000					ND	
131 3-Ethylpentane	1		0.000					ND	
124 2,3-Dimethylpentane	1		0.000					ND	
162 Cyclohexane TIC	1		0.000					ND	
127 3,3-Dimethylpentane	1		0.000					ND	
133 2,4-Dimethylpentane	1		0.000					ND	
126 2,2,3-Trimethylbutane	1		0.000					ND	
134 3-Methylhexane	1		0.000					ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
129 n-Nonyl Aldehyde	1		0.000					ND	
161 Methyl cyclohexane TIC	1		0.000					ND	
125 2,2-Dimethylpentane	1		0.000					ND	
130 Dimethyl disulfide	1		0.000					ND	
S 136 1,2-Dichloroethene, Total	96		2.000					ND	
S 142 Xylenes, Total	106		0.000					ND	
S 141 1,2-Dichloroethene, Total	1		0.000					ND	
S 139 Total BTEX	1		0.000					ND	
S 143 TAH	1				0			0	7
S 138 Xylenes, Total (URS)	1		0.000					ND	
S 137 Trihalomethanes, Total	1		0.000					ND	
S 140 1,3-Dichloropropene, Total	1		0.000					ND	

QC Flag Legend

Processing Flags

7 - Failed Limit of Detection

Review Flags

U - Marked Undetected

Reagents:

mv-Cent IS/SS_00002

Amount Added: 5.00

Units: uL

Run Reagent

Report Date: 09-May-2019 21:40:27

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1661.D

Injection Date: 08-May-2019 22:31:30

Instrument ID: VMS_MS9

Operator ID: ornelasg

Lims ID: mb

Worklist Smp#: 8

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

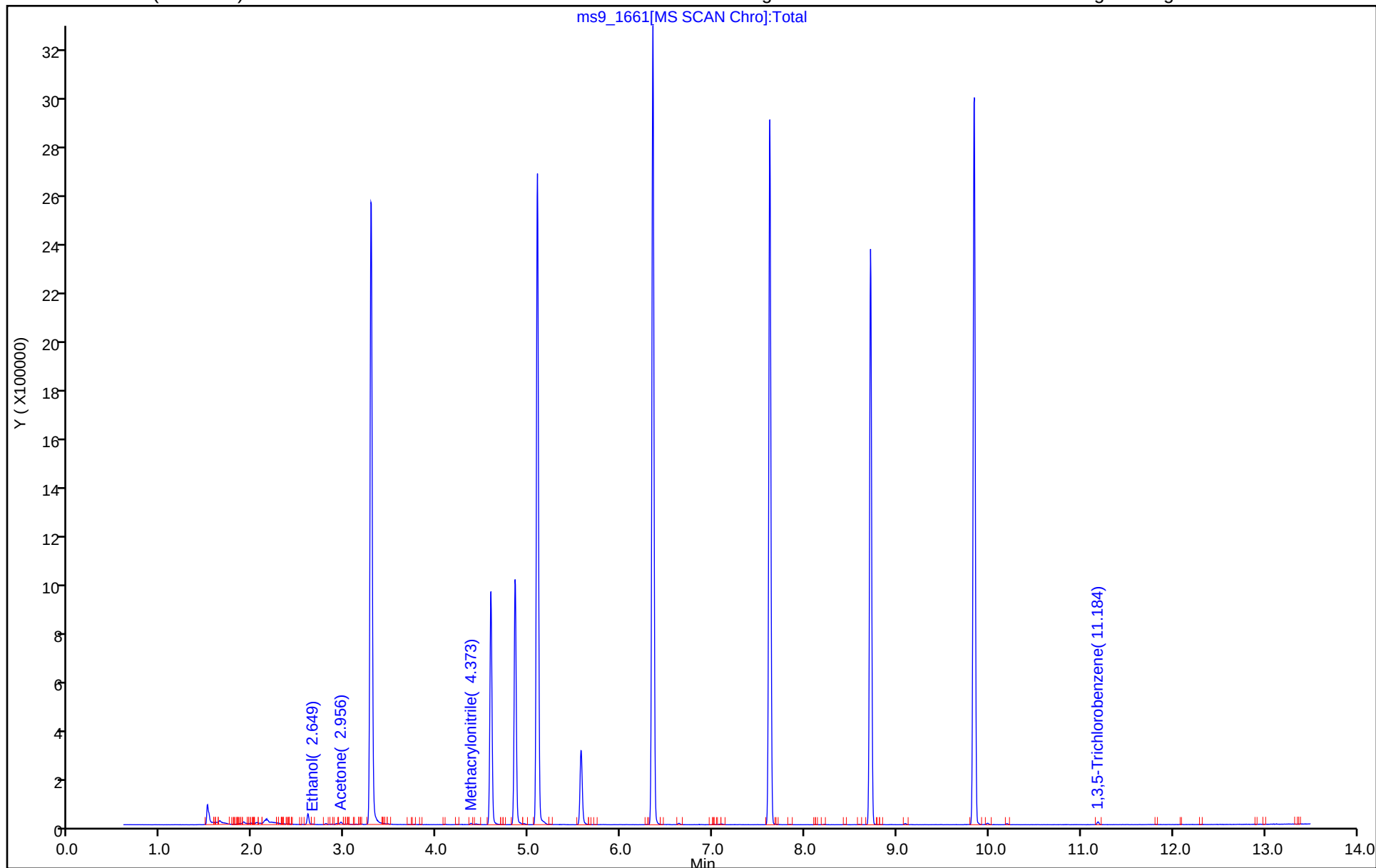
ALS Bottle#: 7

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1661.D
 Lims ID: mb
 Client ID:
 Sample Type: MB
 Inject. Date: 08-May-2019 22:31:30 ALS Bottle#: 7 Worklist Smp#: 8
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: mb
 Misc. Info.: 280-0081707-008
 Operator ID: ornelasg Instrument ID: VMS_MS9
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 09-May-2019 21:39:57 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: ornelasg

Date: 08-May-2019 23:22:27

Compound	Amount Added	Amount Recovered	% Rec.
\$ 6 Dibromofluoromethane (Surr)	50.0	48.3	96.60
\$ 7 1,2-Dichloroethane-d4 (Surr)	50.0	46.6	93.14
\$ 8 Toluene-d8 (Surr)	50.0	49.1	98.20
\$ 9 4-Bromofluorobenzene (Surr)	50.0	48.4	96.85

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCS 280-457521/33
 Matrix: Water Lab File ID: ms9_1663.D
 Analysis Method: 8260B Date Collected: _____
 Sample wt/vol: 5(mL) Date Analyzed: 05/08/2019 23:15
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RXI-624SilMS ID: 0.25 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 457521 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
71-55-6	1,1,1-Trichloroethane	23.5		1.0	0.40	0.16
79-34-5	1,1,2,2-Tetrachloroethane	22.7		1.0	0.80	0.21
79-00-5	1,1,2-Trichloroethane	23.6		1.0	0.80	0.27
75-34-3	1,1-Dichloroethane	22.9		1.0	0.80	0.22
75-35-4	1,1-Dichloroethene	24.3		1.0	0.80	0.23
106-93-4	1,2-Dibromoethane	23.7		1.0	0.40	0.18
107-06-2	1,2-Dichloroethane	21.1		1.0	0.40	0.13
540-59-0	1,2-Dichloroethene, Total	46.6		1.0	0.40	0.15
78-87-5	1,2-Dichloropropane	23.7		1.0	0.40	0.18
78-93-3	2-Butanone (MEK)	90.7		6.0	4.0	2.0
591-78-6	2-Hexanone	91.1		5.0	4.0	1.7
108-10-1	4-Methyl-2-pentanone (MIBK)	91.7		5.0	3.2	0.98
67-64-1	Acetone	95.2		10	6.4	1.9
71-43-2	Benzene	23.4		1.0	0.40	0.16
108-86-1	Bromobenzene	23.2		1.0	0.40	0.17
74-97-5	Bromochloromethane	25.7		1.0	0.20	0.10
75-27-4	Bromodichloromethane	23.5		1.0	0.40	0.17
75-25-2	Bromoform	19.5		1.0	1.0	0.46
74-83-9	Bromomethane	59.5	Q	2.0	0.80	0.21
75-15-0	Carbon disulfide	22.8		2.0	0.80	0.17
56-23-5	Carbon tetrachloride	21.1		2.0	0.40	0.19
108-90-7	Chlorobenzene	23.3		1.0	0.40	0.17
75-00-3	Chloroethane	27.5		2.0	1.6	0.41
67-66-3	Chloroform	23.1		1.0	0.40	0.16
74-87-3	Chloromethane	19.9		2.0	0.80	0.30
10061-01-5	cis-1,3-Dichloropropene	23.2		1.0	0.40	0.16
124-48-1	Dibromochloromethane	23.5		1.0	0.40	0.17
100-41-4	Ethylbenzene	23.3		1.0	0.40	0.16
75-09-2	Methylene Chloride	24.8		5.0	2.0	0.94
100-42-5	Styrene	24.2		1.0	0.80	0.36
127-18-4	Tetrachloroethene	24.0		1.0	0.40	0.20
108-88-3	Toluene	23.5		1.0	0.40	0.17
10061-02-6	trans-1,3-Dichloropropene	23.4		1.0	0.40	0.19
79-01-6	Trichloroethene	23.6		1.0	0.40	0.16
75-01-4	Vinyl chloride	23.7		1.5	0.20	0.10
1330-20-7	Xylenes, Total	47.2		1.0	0.80	0.19

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: LCS 280-457521/33
Matrix: Water Lab File ID: ms9_1663.D
Analysis Method: 8260B Date Collected: _____
Sample wt/vol: 5 (mL) Date Analyzed: 05/08/2019 23:15
Soil Aliquot Vol: _____ Dilution Factor: 1
Soil Extract Vol.: _____ GC Column: RXI-624SilMS ID: 0.25 (mm)
% Moisture: _____ Level: (low/med) Low
Analysis Batch No.: 457521 Units: ug/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	94		81-118
460-00-4	4-Bromofluorobenzene (Surr)	95		85-114
1868-53-7	Dibromofluoromethane (Surr)	99		80-119
2037-26-5	Toluene-d8 (Surr)	97		89-112

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1663.D
 Lims ID: LCS
 Client ID:
 Sample Type: LCS
 Inject. Date: 08-May-2019 23:15:30 ALS Bottle#: 9 Worklist Smp#: 33
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: LCS
 Misc. Info.: 280-0081707-033
 Operator ID: ornelasg Instrument ID: VMS_MS9
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 09-May-2019 21:39:57 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: ornelasg

Date: 09-May-2019 18:03:59

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.286	3.286	0.000	0	2385781	1000.0	1000.0	
* 1 Fluorobenzene	96	5.093	5.089	0.004	99	2025008	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.616	0.003	85	498517	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	95	805634	50.0	50.0	
\$ 6 Dibromofluoromethane (Surr	111	4.587	4.587	0.001	94	475628	50.0	49.4	
\$ 7 1,2-Dichloroethane-d4 (Sur	65	4.849	4.853	-0.004	98	583531	50.0	46.8	
\$ 8 Toluene-d8 (Surr)	98	6.348	6.348	0.000	93	1949979	50.0	48.7	
\$ 9 4-Bromofluorobenzene (Surr	95	8.714	8.714	0.000	91	752466	50.0	47.6	
13 Dichlorodifluoromethane	85	1.670	1.670	0.000	99	256097	25.0	25.0	
15 Chloromethane	50	1.854	1.854	0.000	99	142544	25.0	19.9	
16 Vinyl chloride	62	1.944	1.940	0.004	98	147928	25.0	23.7	
19 Bromomethane	94	2.210	2.210	0.000	89	78037	25.0	59.5	
20 Chloroethane	64	2.307	2.300	0.007	100	102469	25.0	27.5	
21 Dichlorofluoromethane	67	2.491	2.491	0.000	97	324401	25.0	25.4	
22 Trichlorofluoromethane	101	2.525	2.521	0.004	98	286085	25.0	26.5	
24 Ethyl ether	59	2.742	2.746	-0.004	93	168150	25.0	23.4	
28 Acrolein	56	2.855	2.858	-0.003	100	551054	250.0	256.9	
29 1,1,2-Trichloro-1,2,2-trif	151	2.930	2.933	-0.003	95	136981	25.0	24.8	
30 1,1-Dichloroethene	96	2.933	2.937	-0.004	97	166423	25.0	24.3	
31 Acetone	43	2.956	2.952	0.004	100	434393	100.0	95.2	
33 Iodomethane	142	3.057	3.065	-0.008	97	172800	25.0	23.8	
35 Carbon disulfide	76	3.121	3.125	-0.004	99	446720	25.0	22.8	
34 Methyl acetate	43	3.181	3.188	-0.007	98	467310	50.0	45.1	
36 3-Chloro-1-propene	41	3.203	3.207	-0.004	92	291589	25.0	23.7	
39 Methylene Chloride	84	3.301	3.301	0.000	92	191885	25.0	24.8	
38 2-Methyl-2-propanol	59	3.346	3.349	-0.003	100	617149	250.0	234.2	
42 Acrylonitrile	53	3.462	3.466	-0.004	98	1193035	250.0	236.6	
40 Methyl tert-butyl ether	73	3.484	3.488	-0.004	94	615598	25.0	23.1	
41 trans-1,2-Dichloroethene	96	3.499	3.503	-0.004	98	182667	25.0	23.4	
43 Hexane	57	3.694	3.702	-0.008	92	282031	25.0	22.9	
45 Vinyl acetate	43	3.799	3.799	0.000	97	993684	50.0	50.3	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
46 1,1-Dichloroethane	63	3.822	3.826	-0.004	96	339178	25.0	22.9	
50 2-Butanone (MEK)	43	4.204	4.208	-0.004	100	693740	100.0	90.7	
52 cis-1,2-Dichloroethene	96	4.230	4.234	-0.004	83	210786	25.0	23.2	
53 2,2-Dichloropropane	77	4.242	4.245	-0.003	86	310631	25.0	24.2	
51 sec-Butyl Alcohol	45	4.317	4.317	0.000	99	1314790	750.0	725.5	
59 Chlorobromomethane	128	4.410	4.410	0.000	97	95330	25.0	25.7	
57 Tetrahydrofuran	42	4.418	4.418	0.000	86	222044	50.0	47.3	
56 Chloroform	83	4.470	4.470	0.000	93	334106	25.0	23.1	
60 1,1,1-Trichloroethane	97	4.613	4.616	-0.003	98	293379	25.0	23.5	
61 Cyclohexane	56	4.673	4.676	-0.003	89	339018	25.0	22.7	
62 1,1-Dichloropropene	75	4.725	4.725	0.000	97	271201	25.0	23.2	
63 Carbon tetrachloride	117	4.729	4.733	-0.004	95	220862	25.0	21.1	
58 Isobutyl alcohol	43	4.737	4.736	0.001	95	579904	625.0	602.1	
66 Benzene	78	4.879	4.879	0.000	96	802659	25.0	23.4	
67 1,2-Dichloroethane	62	4.909	4.913	-0.004	97	275483	25.0	21.1	
135 n-Heptane	43	5.063	5.066	-0.003	91	277814	25.0	23.2	
68 Trichloroethene	130	5.370	5.370	0.000	98	199688	25.0	23.6	
69 2-Pentanone	43	5.468	5.467	0.001	99	1110229	100.0	91.7	
71 Methylcyclohexane	55	5.561	5.561	0.000	92	275315	25.0	22.8	
72 1,2-Dichloropropane	63	5.576	5.576	0.000	92	206896	25.0	23.7	
73 1,4-Dioxane	88	5.614	5.614	0.000	94	116200	500.0	482.8	
74 Dibromomethane	93	5.647	5.647	0.000	95	123670	25.0	23.3	
75 Dichlorobromomethane	83	5.767	5.771	-0.004	100	227151	25.0	23.5	
76 2-Chloroethyl vinyl ether	63	5.970	5.974	-0.004	92	162653	25.0	23.5	
78 cis-1,3-Dichloropropene	75	6.116	6.120	-0.004	96	318006	25.0	23.2	
79 4-Methyl-2-pentanone (MIBK)	43	6.217	6.217	0.000	96	1252741	100.0	91.7	
80 Toluene	91	6.405	6.408	-0.003	98	854676	25.0	23.5	
82 trans-1,3-Dichloropropene	75	6.581	6.577	0.004	92	282217	25.0	23.4	
81 Ethyl methacrylate	69	6.600	6.603	-0.003	89	328429	25.0	23.7	
83 1,1,2-Trichloroethane	97	6.757	6.757	0.000	91	184828	25.0	23.6	
85 Tetrachloroethene	164	6.847	6.847	0.000	99	167675	25.0	24.0	
86 1,3-Dichloropropane	76	6.903	6.903	0.000	98	322238	25.0	22.9	
84 2-Hexanone	43	6.918	6.922	-0.004	95	1005458	100.0	91.1	
87 Chlorodibromomethane	129	7.098	7.094	0.004	91	149741	25.0	23.5	
89 Ethylene Dibromide	107	7.214	7.222	-0.008	98	200868	25.0	23.7	
90 1-Chlorohexane	91	7.600	7.608	-0.008	96	297657	25.0	24.3	
91 Chlorobenzene	112	7.645	7.645	0.000	94	546321	25.0	23.3	
93 1,1,1,2-Tetrachloroethane	131	7.720	7.717	0.003	94	172825	25.0	24.1	
92 Ethylbenzene	106	7.724	7.724	0.000	98	303897	25.0	23.3	
94 m-Xylene & p-Xylene	91	7.840	7.840	0.000	97	754753	25.0	23.5	
95 o-Xylene	106	8.200	8.200	0.000	97	365323	25.0	23.7	
96 Styrene	104	8.215	8.215	0.000	94	628629	25.0	24.2	
97 Bromoform	173	8.399	8.399	0.000	97	95966	25.0	19.5	
98 Isopropylbenzene	105	8.541	8.541	0.000	96	946727	25.0	22.9	
100 Cyclohexanone	55	8.635	8.631	0.004	91	749277	1000.0	736.9	
101 1,1,2,2-Tetrachloroethane	83	8.826	8.830	-0.004	94	297394	25.0	22.7	
105 Bromobenzene	156	8.860	8.864	-0.004	95	239403	25.0	23.2	
102 trans-1,4-Dichloro-2-buten	53	8.864	8.864	0.000	68	88021	25.0	19.1	
104 1,2,3-Trichloropropane	110	8.894	8.894	0.000	84	94252	25.0	22.7	a
103 N-Propylbenzene	120	8.939	8.939	0.000	99	256264	25.0	23.4	
107 2-Chlorotoluene	126	9.036	9.036	0.000	96	223300	25.0	23.3	
106 1,3,5-Trimethylbenzene	105	9.111	9.115	-0.004	94	784571	25.0	23.3	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
108 4-Chlorotoluene	126	9.152	9.152	0.000	98	229645	25.0	23.4	
109 tert-Butylbenzene	119	9.422	9.415	0.007	93	670825	25.0	23.4	
110 1,2,4-Trimethylbenzene	105	9.479	9.478	0.001	98	797872	25.0	23.1	
111 sec-Butylbenzene	134	9.640	9.640	0.000	94	198228	25.0	23.3	
113 1,3-Dichlorobenzene	146	9.767	9.767	0.000	98	440199	25.0	23.2	
112 4-Isopropyltoluene	119	9.786	9.786	0.000	97	856734	25.0	23.8	
115 1,4-Dichlorobenzene	146	9.868	9.868	0.000	96	451365	25.0	23.2	
116 n-Butylbenzene	91	10.191	10.191	0.000	98	794982	25.0	23.8	
117 1,2-Dichlorobenzene	146	10.221	10.221	0.000	98	428272	25.0	23.3	
118 1,2-Dibromo-3-Chloropropan	157	11.000	11.000	0.000	84	70692	25.0	19.6	
120 1,2,4-Trichlorobenzene	180	11.821	11.818	0.003	94	305105	25.0	23.3	
121 Hexachlorobutadiene	225	11.960	11.960	0.000	96	133492	25.0	23.4	
122 Naphthalene	128	12.091	12.095	-0.004	97	984314	25.0	23.2	
123 1,2,3-Trichlorobenzene	180	12.313	12.316	-0.003	95	292118	25.0	23.0	
S 136 1,2-Dichloroethene, Total	96				0		50.0	46.7	
S 142 Xylenes, Total	106				0		50.0	47.3	
S 141 1,2-Dichloroethene, Total	1				0		50.0	46.7	
S 138 Xylenes, Total (URS)	1				0		50.0	47.3	
S 137 Trihalomethanes, Total	1				0		100.0	89.6	
S 140 1,3-Dichloropropene, Total	1				0		50.0	46.6	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MV-MegaMain B_00012

Amount Added: 25.00

Units: uL

MV-Gas B_00026

Amount Added: 25.00

Units: uL

mv-Cent IS/SS_00002

Amount Added: 5.00

Units: uL

Run Reagent

Report Date: 09-May-2019 21:40:57

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1663.D

Injection Date: 08-May-2019 23:15:30

Instrument ID: VMS_MS9

Operator ID: ornelasg

Lims ID: LCS

Worklist Smp#: 33

Client ID:

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

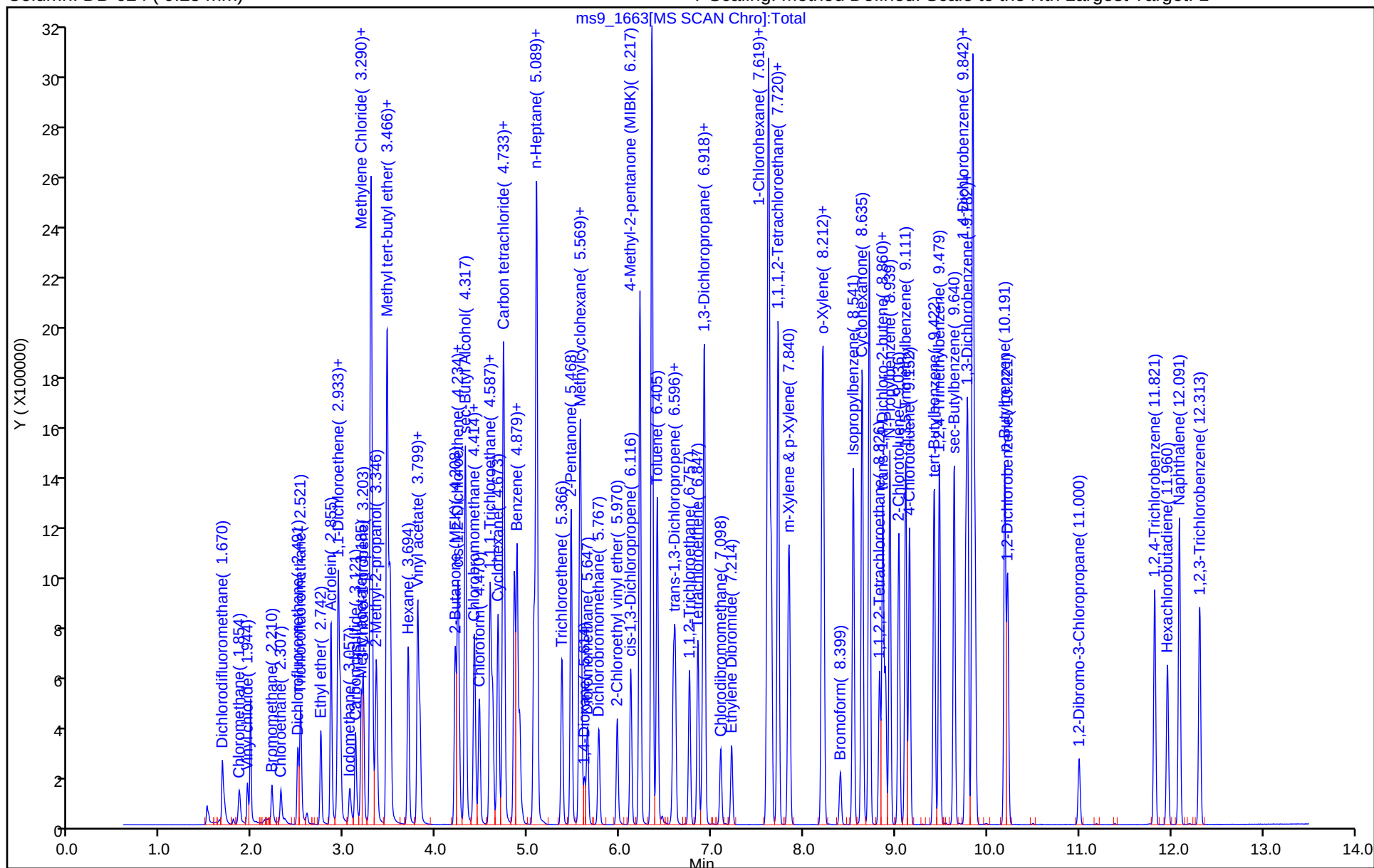
ALS Bottle#: 9

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1663.D
 Lims ID: LCS
 Client ID:
 Sample Type: LCS
 Inject. Date: 08-May-2019 23:15:30 ALS Bottle#: 9 Worklist Smp#: 33
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: LCS
 Misc. Info.: 280-0081707-033
 Operator ID: ornelasg Instrument ID: VMS_MS9
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 09-May-2019 21:39:57 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: ornelasg

Date: 09-May-2019 18:03:59

Compound	Amount Added	Amount Recovered	% Rec.
\$ 6 Dibromofluoromethane (Surr)	50.0	49.4	98.72
\$ 7 1,2-Dichloroethane-d4 (Surr)	50.0	46.8	93.55
\$ 8 Toluene-d8 (Surr)	50.0	48.7	97.47
\$ 9 4-Bromofluorobenzene (Surr)	50.0	47.6	95.18

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>DET-003-190401-GWMS MS</u>	Lab Sample ID: <u>280-123221-4 MS</u>
Matrix: <u>Water</u>	Lab File ID: <u>ms9_1664.D</u>
Analysis Method: <u>8260B</u>	Date Collected: <u>04/29/2019 10:53</u>
Sample wt/vol: <u>5(mL)</u>	Date Analyzed: <u>05/08/2019 23:36</u>
Soil Aliquot Vol: _____	Dilution Factor: <u>1</u>
Soil Extract Vol.: _____	GC Column: <u>RXI-624SilMS</u> ID: <u>0.25(mm)</u>
% Moisture: _____	Level: (low/med) <u>Low</u>
Analysis Batch No.: <u>457521</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
71-55-6	1,1,1-Trichloroethane	24.9		1.0	0.40	0.16
79-34-5	1,1,2,2-Tetrachloroethane	25.7		1.0	0.80	0.21
79-00-5	1,1,2-Trichloroethane	26.0		1.0	0.80	0.27
75-34-3	1,1-Dichloroethane	24.6		1.0	0.80	0.22
75-35-4	1,1-Dichloroethene	25.3		1.0	0.80	0.23
106-93-4	1,2-Dibromoethane	26.4		1.0	0.40	0.18
107-06-2	1,2-Dichloroethane	23.6		1.0	0.40	0.13
540-59-0	1,2-Dichloroethene, Total	50.8		1.0	0.40	0.15
78-87-5	1,2-Dichloropropane	25.8		1.0	0.40	0.18
78-93-3	2-Butanone (MEK)	96.3		6.0	4.0	2.0
591-78-6	2-Hexanone	99.5		5.0	4.0	1.7
108-10-1	4-Methyl-2-pentanone (MIBK)	98.3		5.0	3.2	0.98
67-64-1	Acetone	102		10	6.4	1.9
71-43-2	Benzene	25.2		1.0	0.40	0.16
108-86-1	Bromobenzene	25.3		1.0	0.40	0.17
74-97-5	Bromochloromethane	27.6		1.0	0.20	0.10
75-27-4	Bromodichloromethane	26.0		1.0	0.40	0.17
75-25-2	Bromoform	22.3		1.0	1.0	0.46
74-83-9	Bromomethane	63.4	J1	2.0	0.80	0.21
75-15-0	Carbon disulfide	24.6		2.0	0.80	0.17
56-23-5	Carbon tetrachloride	22.0		2.0	0.40	0.19
108-90-7	Chlorobenzene	25.5		1.0	0.40	0.17
75-00-3	Chloroethane	28.8		2.0	1.6	0.41
67-66-3	Chloroform	24.9		1.0	0.40	0.16
74-87-3	Chloromethane	21.7		2.0	0.80	0.30
10061-01-5	cis-1,3-Dichloropropene	26.0		1.0	0.40	0.16
124-48-1	Dibromochloromethane	26.7		1.0	0.40	0.17
100-41-4	Ethylbenzene	25.4		1.0	0.40	0.16
75-09-2	Methylene Chloride	26.7		5.0	2.0	0.94
100-42-5	Styrene	26.6		1.0	0.80	0.36
127-18-4	Tetrachloroethene	25.4		1.0	0.40	0.20
108-88-3	Toluene	25.3		1.0	0.40	0.17
10061-02-6	trans-1,3-Dichloropropene	26.0		1.0	0.40	0.19
79-01-6	Trichloroethene	25.1		1.0	0.40	0.16
75-01-4	Vinyl chloride	25.0		1.5	0.20	0.10
1330-20-7	Xylenes, Total	51.5		1.0	0.80	0.19

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Client Sample ID: DET-003-190401-GWMS MS Lab Sample ID: 280-123221-4 MS
Matrix: Water Lab File ID: ms9_1664.D
Analysis Method: 8260B Date Collected: 04/29/2019 10:53
Sample wt/vol: 5 (mL) Date Analyzed: 05/08/2019 23:36
Soil Aliquot Vol: _____ Dilution Factor: 1
Soil Extract Vol.: _____ GC Column: RXI-624SilMS ID: 0.25 (mm)
% Moisture: _____ Level: (low/med) Low
Analysis Batch No.: 457521 Units: ug/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	95		81-118
460-00-4	4-Bromofluorobenzene (Surr)	96		85-114
1868-53-7	Dibromofluoromethane (Surr)	99		80-119
2037-26-5	Toluene-d8 (Surr)	100		89-112

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1664.D
 Lims ID: 280-123221-I-4 MS
 Client ID: DET-003-190401-GWMS
 Sample Type: MS
 Inject. Date: 08-May-2019 23:36:30 ALS Bottle#: 10 Worklist Smp#: 10
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: 280-123221-I-4 MS
 Misc. Info.: 280-0081707-010
 Operator ID: ornelasg Instrument ID: VMS_MS9
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 09-May-2019 21:39:57 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: ornelasg

Date: 09-May-2019 18:05:14

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.286	3.286	0.000	0	2379062	1000.0	1000.0	
* 1 Fluorobenzene	96	5.093	5.089	0.004	99	2003526	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.616	0.003	86	484672	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	95	788677	50.0	50.0	
\$ 6 Dibromofluoromethane (Surr	111	4.587	4.587	0.001	94	473409	50.0	49.7	
\$ 7 1,2-Dichloroethane-d4 (Sur	65	4.849	4.853	-0.004	98	587274	50.0	47.6	
\$ 8 Toluene-d8 (Surr)	98	6.348	6.348	0.000	93	1937505	50.0	49.8	
\$ 9 4-Bromofluorobenzene (Surr	95	8.714	8.714	0.000	91	740828	50.0	47.9	
\$ 10 Trifluorotoluene (Surr)	1		0.000					ND	
\$ 11 BFB	95	3.503	3.564	-0.061	0	8890		NR	
13 Dichlorodifluoromethane	85	1.670	1.670	0.000	99	200404	25.0	19.8	
15 Chloromethane	50	1.854	1.854	0.000	99	153353	25.0	21.7	
16 Vinyl chloride	62	1.944	1.940	0.004	98	154605	25.0	25.0	
18 Ethylene oxide	43		2.188					ND	
19 Bromomethane	94	2.210	2.210	0.000	90	82304	25.0	63.4	
20 Chloroethane	64	2.307	2.300	0.007	99	106232	25.0	28.8	
21 Dichlorofluoromethane	67	2.491	2.491	0.000	97	338609	25.0	26.8	
22 Trichlorofluoromethane	101	2.521	2.521	0.000	98	282299	25.0	26.4	
23 Ethanol	45		2.652					ND	
24 Ethyl ether	59	2.742	2.746	-0.004	93	182525	25.0	25.7	
27 Propene oxide	58		2.784					ND	
28 Acrolein	56	2.855	2.858	-0.003	100	489146	250.0	230.4	
29 1,1,2-Trichloro-1,2,2-trif	151	2.933	2.933	0.000	93	136695	25.0	25.0	
30 1,1-Dichloroethene	96	2.933	2.937	-0.004	97	172023	25.0	25.3	
31 Acetone	43	2.956	2.952	0.004	100	461105	100.0	102.2	
32 Isopropyl alcohol	45	3.046	3.042	0.004	98	80284		42.8	
33 Iodomethane	142	3.061	3.065	-0.004	98	199197	25.0	27.8	
35 Carbon disulfide	76	3.121	3.125	-0.004	99	477452	25.0	24.6	
37 Acetonitrile	41		3.162					ND	
34 Methyl acetate	43	3.185	3.188	-0.003	98	507714	50.0	49.5	
36 3-Chloro-1-propene	41	3.203	3.207	-0.004	91	313469	25.0	25.8	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
39 Methylene Chloride	84	3.301	3.301	0.000	92	204717	25.0	26.7	
38 2-Methyl-2-propanol	59	3.350	3.349	0.001	100	679025	250.0	260.5	
42 Acrylonitrile	53	3.462	3.466	-0.004	98	1274217	250.0	255.4	
40 Methyl tert-butyl ether	73	3.488	3.488	0.000	94	673871	25.0	25.6	
41 trans-1,2-Dichloroethene	96	3.503	3.503	0.000	98	196697	25.0	25.5	
43 Hexane	57	3.694	3.702	-0.008	92	288693	25.0	24.1	
45 Vinyl acetate	43	3.796	3.799	-0.003	97	1071874	50.0	54.8	
44 Isopropyl ether	87		3.818					ND	U
46 1,1-Dichloroethane	63	3.822	3.826	-0.004	96	361241	25.0	24.6	
12 Chlorotrifluoroethene	116		3.859					ND	
47 2-Chloro-1,3-butadiene	53		3.871					ND	
14 1,2-Dichloro-1,1,2,2-tetra	85		4.045					ND	
48 Tert-butyl ethyl ether	59		4.081					ND	
50 2-Butanone (MEK)	43	4.204	4.208	-0.004	100	728819	100.0	96.3	
49 Ethyl acetate	43		4.219					ND	
52 cis-1,2-Dichloroethene	96	4.234	4.234	0.000	83	227386	25.0	25.3	
53 2,2-Dichloropropane	77	4.242	4.245	-0.003	86	318988	25.0	25.1	
54 Propionitrile	54		4.253					ND	U
51 sec-Butyl Alcohol	45	4.317	4.317	0.000	99	1434039	750.0	793.6	
55 Methacrylonitrile	41		4.369					ND	
59 Chlorobromomethane	128	4.410	4.410	0.000	97	101267	25.0	27.6	
57 Tetrahydrofuran	42	4.418	4.418	0.000	86	238142	50.0	51.4	
56 Chloroform	83	4.470	4.470	0.000	93	356864	25.0	24.9	
17 2-Chloro-1,1,1-Trifluoroet	118	4.470	4.471	-0.001	25	5741		NC	
60 1,1,1-Trichloroethane	97	4.613	4.616	-0.003	98	307399	25.0	24.9	
61 Cyclohexane	56	4.673	4.676	-0.003	90	346957	25.0	23.5	
62 1,1-Dichloropropene	75	4.725	4.725	0.000	96	282424	25.0	24.4	
63 Carbon tetrachloride	117	4.729	4.733	-0.004	95	228388	25.0	22.0	
58 Isobutyl alcohol	43	4.737	4.736	0.001	94	630596	625.0	656.6	
66 Benzene	78	4.879	4.879	0.000	96	855434	25.0	25.2	
67 1,2-Dichloroethane	62	4.909	4.913	-0.004	97	304138	25.0	23.6	
65 Tert-amyl methyl ether	73		4.943					ND	
25 1,2-Dichloro-1,1,2-trifluo	117		5.006					ND	
135 n-Heptane	43	5.063	5.066	-0.003	93	276162	25.0	23.4	
26 1,1,1-Trifluoro-2,2-dichlo	83		5.097					ND	
64 n-Butanol	56		5.228					ND	
68 Trichloroethene	130	5.366	5.370	-0.004	98	210153	25.0	25.1	
69 2-Pentanone	43	5.468	5.467	0.001	99	1191303	100.0	99.5	
71 Methylcyclohexane	55	5.561	5.561	0.000	93	278532	25.0	23.3	
70 Methyl methacrylate	100		5.573					ND	U
72 1,2-Dichloropropane	63	5.576	5.576	0.000	91	221736	25.0	25.8	
73 1,4-Dioxane	88	5.614	5.614	0.000	92	122103	500.0	512.8	
74 Dibromomethane	93	5.644	5.647	-0.003	97	134689	25.0	25.7	
75 Dichlorobromomethane	83	5.767	5.771	-0.004	100	248892	25.0	26.0	
77 2-Nitropropane	41		5.932					ND	
76 2-Chloroethyl vinyl ether	63		5.974				ND	ND	
78 cis-1,3-Dichloropropene	75	6.116	6.120	-0.004	96	346583	25.0	26.0	
79 4-Methyl-2-pentanone (MIBK	43	6.217	6.217	0.000	96	1329891	100.0	98.3	
80 Toluene	91	6.405	6.408	-0.003	99	911404	25.0	25.3	
82 trans-1,3-Dichloropropene	75	6.581	6.577	0.004	95	309990	25.0	26.0	
81 Ethyl methacrylate	69	6.600	6.603	-0.003	88	364138	25.0	27.0	
83 1,1,2-Trichloroethane	97	6.753	6.757	-0.004	91	201733	25.0	26.0	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
85 Tetrachloroethene	164	6.847	6.847	0.000	98	172906	25.0	25.4	
86 1,3-Dichloropropane	76	6.903	6.903	0.000	98	351064	25.0	25.7	
84 2-Hexanone	43	6.918	6.922	-0.004	96	1068212	100.0	99.5	
88 Tetrahydrothiophene	60		7.091					ND	
87 Chlorodibromomethane	129	7.094	7.094	0.000	90	164834	25.0	26.7	
89 Ethylene Dibromide	107	7.214	7.222	-0.008	98	217852	25.0	26.4	
90 1-Chlorohexane	91	7.604	7.608	-0.004	96	300808	25.0	25.3	
91 Chlorobenzene	112	7.645	7.645	0.000	94	581166	25.0	25.5	
93 1,1,1,2-Tetrachloroethane	131	7.720	7.717	0.003	93	185748	25.0	26.6	
92 Ethylbenzene	106	7.724	7.724	0.000	98	321624	25.0	25.4	
94 m-Xylene & p-Xylene	91	7.837	7.840	-0.003	97	798518	25.0	25.6	
95 o-Xylene	106	8.200	8.200	0.000	96	388384	25.0	25.9	
96 Styrene	104	8.215	8.215	0.000	95	671054	25.0	26.6	
97 Bromoform	173	8.399	8.399	0.000	97	107223	25.0	22.3	
98 Isopropylbenzene	105	8.541	8.541	0.000	96	1000105	25.0	24.7	
99 cis-1,4-Dichloro-2-butene	53		8.590					ND	
100 Cyclohexanone	55	8.635	8.631	0.004	91	738875	1000.0	747.5	
101 1,1,2,2-Tetrachloroethane	83	8.826	8.830	-0.004	94	330619	25.0	25.7	
105 Bromobenzene	156	8.860	8.864	-0.004	94	256037	25.0	25.3	
102 trans-1,4-Dichloro-2-buten	53	8.864	8.864	0.000	68	95009	25.0	21.0	
104 1,2,3-Trichloropropane	110	8.890	8.894	-0.004	84	101401	25.0	25.0	a
103 N-Propylbenzene	120	8.939	8.939	0.000	99	269565	25.0	25.2	
107 2-Chlorotoluene	126	9.036	9.036	0.000	96	238190	25.0	25.4	
106 1,3,5-Trimethylbenzene	105	9.111	9.115	-0.004	94	833271	25.0	25.3	
108 4-Chlorotoluene	126	9.152	9.152	0.000	98	247806	25.0	25.8	
109 tert-Butylbenzene	119	9.419	9.415	0.004	93	702223	25.0	25.0	
110 1,2,4-Trimethylbenzene	105	9.479	9.478	0.001	97	844921	25.0	25.0	
111 sec-Butylbenzene	134	9.640	9.640	0.000	94	204409	25.0	24.6	
113 1,3-Dichlorobenzene	146	9.767	9.767	0.000	98	475473	25.0	25.6	
112 4-Isopropyltoluene	119	9.786	9.786	0.000	97	893608	25.0	25.3	
115 1,4-Dichlorobenzene	146	9.865	9.868	-0.003	95	486634	25.0	25.5	
114 1,2,3-Trimethylbenzene	105		9.883					ND	U
116 n-Butylbenzene	91	10.191	10.191	0.000	98	830572	25.0	25.4	
117 1,2-Dichlorobenzene	146	10.221	10.221	0.000	98	461350	25.0	25.7	
118 1,2-Dibromo-3-Chloropropan	157	11.001	11.000	0.001	86	77598	25.0	21.8	
119 1,3,5-Trichlorobenzene	180		11.188					ND	
120 1,2,4-Trichlorobenzene	180	11.821	11.818	0.003	94	333263	25.0	26.0	
121 Hexachlorobutadiene	225	11.964	11.960	0.004	96	136851	25.0	24.5	
122 Naphthalene	128	12.091	12.095	-0.004	97	1090225	25.0	26.2	
123 1,2,3-Trichlorobenzene	180	12.313	12.316	-0.003	95	319024	25.0	25.6	
132 2-Methylhexane	1		0.000					ND	
128 Pentachloroethane	167		0.000					ND	
164 1-Chloro-1-fluoroethane TI	1		0.000					ND	
160 1-Chlorohexane TIC	1		0.000					ND	
163 n-Nonane TIC	1		0.000					ND	
131 3-Ethylpentane	1		0.000					ND	
124 2,3-Dimethylpentane	1		0.000					ND	
162 Cyclohexane TIC	1		0.000					ND	
127 3,3-Dimethylpentane	1		0.000					ND	
133 2,4-Dimethylpentane	1		0.000					ND	
126 2,2,3-Trimethylbutane	1		0.000					ND	
134 3-Methylhexane	1		0.000					ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
129 n-Nonyl Aldehyde	1		0.000					ND	
161 Methyl cyclohexane TIC	1		0.000					ND	
125 2,2-Dimethylpentane	1		0.000					ND	
130 Dimethyl disulfide	1		0.000					ND	
S 136 1,2-Dichloroethene, Total	96				0		50.0	50.8	
S 142 Xylenes, Total	106				0		50.0	51.6	
S 141 1,2-Dichloroethene, Total	1				0		50.0	50.8	
S 139 Total BTEX	1				0			127.4	
S 143 TAH	1				0			0	7
S 138 Xylenes, Total (URS)	1				0		50.0	51.6	
S 137 Trihalomethanes, Total	1				0		100.0	99.9	
S 140 1,3-Dichloropropene, Total	1				0		50.0	52.0	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

NC - Not Calibrated

ND - Not Detected or Marked ND

7 - Failed Limit of Detection

Review Flags

U - Marked Undetected

a - User Assigned ID

Reagents:

MV-MegaMain B_00012

Amount Added: 50.00

Units: uL

MV-Gas B_00026

Amount Added: 50.00

Units: uL

mv-Cent IS/SS_00002

Amount Added: 5.00

Units: uL

Run Reagent

Report Date: 09-May-2019 21:41:21

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1664.D

Injection Date: 08-May-2019 23:36:30

Instrument ID: VMS_MS9

Operator ID: ornelasg

Lims ID: 280-123221-I-4 MS

Worklist Smp#: 10

Client ID: DET-003-190401-GWMS

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

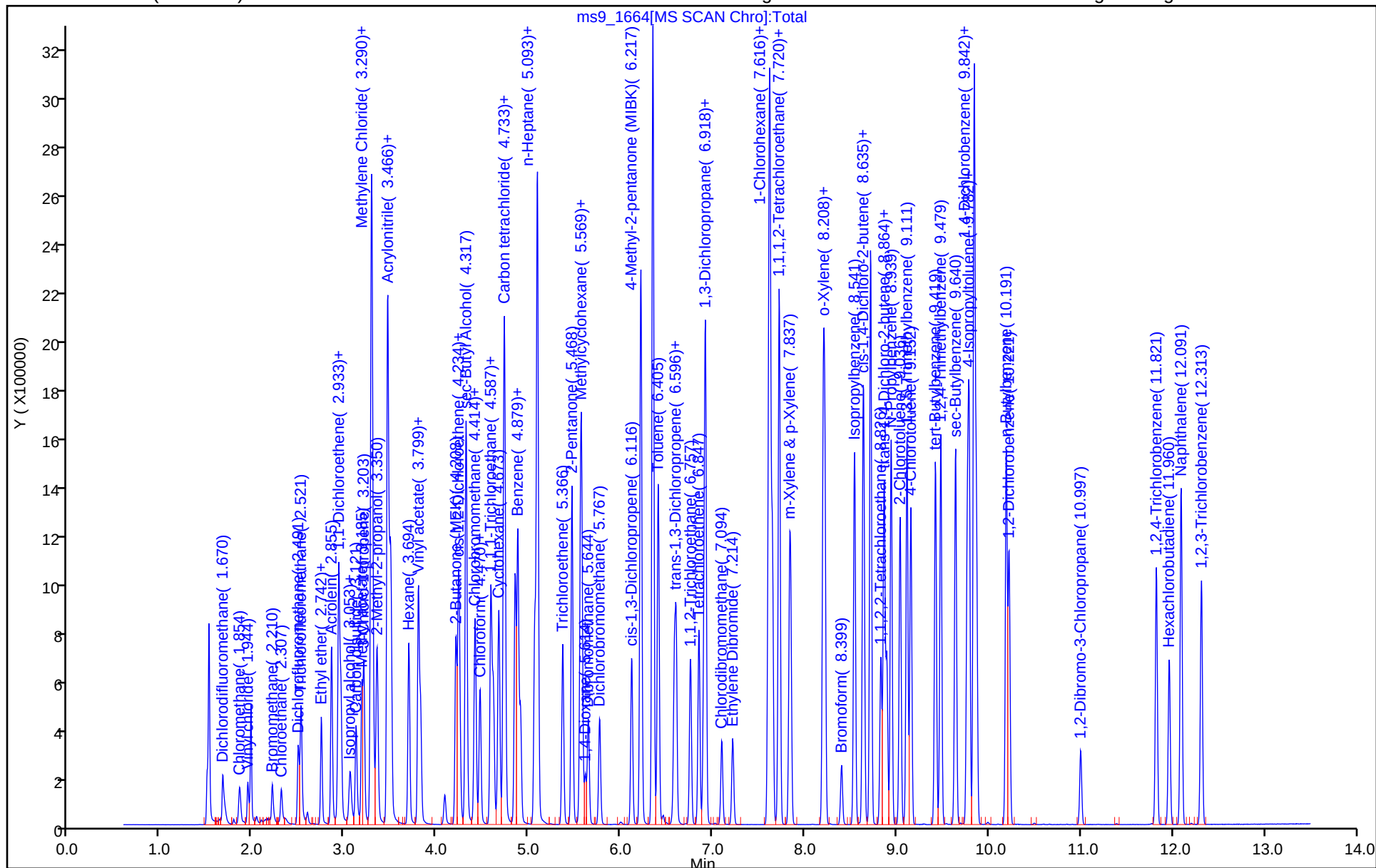
ALS Bottle#: 10

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1664.D
 Lims ID: 280-123221-I-4 MS
 Client ID: DET-003-190401-GWMS
 Sample Type: MS
 Inject. Date: 08-May-2019 23:36:30 ALS Bottle#: 10 Worklist Smp#: 10
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: 280-123221-I-4 MS
 Misc. Info.: 280-0081707-010
 Operator ID: ornelasg Instrument ID: VMS_MS9
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 09-May-2019 21:39:57 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: ornelasg

Date: 09-May-2019 18:05:14

Compound	Amount Added	Amount Recovered	% Rec.
\$ 6 Dibromofluoromethane (Surr)	50.0	49.7	99.31
\$ 7 1,2-Dichloroethane-d4 (Surr)	50.0	47.6	95.16
\$ 8 Toluene-d8 (Surr)	50.0	49.8	99.61
\$ 9 4-Bromofluorobenzene (Surr)	50.0	47.9	95.72
\$ 11 BFB	0	0	0.00

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Client Sample ID: DET-003-190401-GWMSD MSD Lab Sample ID: 280-123221-4 MSD

Matrix: Water Lab File ID: ms9_1665.D

Analysis Method: 8260B Date Collected: 04/29/2019 10:53

Sample wt/vol: 5(mL) Date Analyzed: 05/08/2019 23:58

Soil Aliquot Vol: _____ Dilution Factor: 1

Soil Extract Vol.: _____ GC Column: RXI-624SilMS ID: 0.25(mm)

% Moisture: _____ Level: (low/med) Low

Analysis Batch No.: 457521 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
71-55-6	1,1,1-Trichloroethane	21.4		1.0	0.40	0.16
79-34-5	1,1,2,2-Tetrachloroethane	21.8		1.0	0.80	0.21
79-00-5	1,1,2-Trichloroethane	22.1		1.0	0.80	0.27
75-34-3	1,1-Dichloroethane	21.2		1.0	0.80	0.22
75-35-4	1,1-Dichloroethene	22.0		1.0	0.80	0.23
106-93-4	1,2-Dibromoethane	22.2		1.0	0.40	0.18
107-06-2	1,2-Dichloroethane	20.3		1.0	0.40	0.13
540-59-0	1,2-Dichloroethene, Total	43.4		1.0	0.40	0.15
78-87-5	1,2-Dichloropropane	22.1		1.0	0.40	0.18
78-93-3	2-Butanone (MEK)	83.0		6.0	4.0	2.0
591-78-6	2-Hexanone	84.0		5.0	4.0	1.7
108-10-1	4-Methyl-2-pentanone (MIBK)	83.9		5.0	3.2	0.98
67-64-1	Acetone	87.6		10	6.4	1.9
71-43-2	Benzene	21.8		1.0	0.40	0.16
108-86-1	Bromobenzene	21.9		1.0	0.40	0.17
74-97-5	Bromochloromethane	24.0		1.0	0.20	0.10
75-27-4	Bromodichloromethane	22.4		1.0	0.40	0.17
75-25-2	Bromoform	18.9		1.0	1.0	0.46
74-83-9	Bromomethane	52.4	J1	2.0	0.80	0.21
75-15-0	Carbon disulfide	21.7		2.0	0.80	0.17
56-23-5	Carbon tetrachloride	19.3		2.0	0.40	0.19
108-90-7	Chlorobenzene	21.9		1.0	0.40	0.17
75-00-3	Chloroethane	27.1		2.0	1.6	0.41
67-66-3	Chloroform	21.5		1.0	0.40	0.16
74-87-3	Chloromethane	16.6	J1	2.0	0.80	0.30
10061-01-5	cis-1,3-Dichloropropene	22.0		1.0	0.40	0.16
124-48-1	Dibromochloromethane	22.5		1.0	0.40	0.17
100-41-4	Ethylbenzene	21.8		1.0	0.40	0.16
75-09-2	Methylene Chloride	23.2		5.0	2.0	0.94
100-42-5	Styrene	22.9		1.0	0.80	0.36
127-18-4	Tetrachloroethene	21.9		1.0	0.40	0.20
108-88-3	Toluene	21.7		1.0	0.40	0.17
10061-02-6	trans-1,3-Dichloropropene	22.0		1.0	0.40	0.19
79-01-6	Trichloroethene	21.5		1.0	0.40	0.16
75-01-4	Vinyl chloride	19.1	J1	1.5	0.20	0.10
1330-20-7	Xylenes, Total	44.2		1.0	0.80	0.19

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Client Sample ID: DET-003-190401-GWMSD MSD Lab Sample ID: 280-123221-4 MSD
Matrix: Water Lab File ID: ms9_1665.D
Analysis Method: 8260B Date Collected: 04/29/2019 10:53
Sample wt/vol: 5 (mL) Date Analyzed: 05/08/2019 23:58
Soil Aliquot Vol: _____ Dilution Factor: 1
Soil Extract Vol.: _____ GC Column: RXI-624SilMS ID: 0.25 (mm)
% Moisture: _____ Level: (low/med) Low
Analysis Batch No.: 457521 Units: ug/L

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	94		81-118
460-00-4	4-Bromofluorobenzene (Surr)	96		85-114
1868-53-7	Dibromofluoromethane (Surr)	99		80-119
2037-26-5	Toluene-d8 (Surr)	98		89-112

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1665.D
 Lims ID: 280-123221-H-4 MSD
 Client ID: DET-003-190401-GWMSD
 Sample Type: MSD
 Inject. Date: 08-May-2019 23:58:30 ALS Bottle#: 11 Worklist Smp#: 11
 Purge Vol: 5.000 mL Dil. Factor: 1.0000
 Sample Info: 280-123221-H-4 MSD
 Misc. Info.: 280-0081707-011
 Operator ID: ornelasg Instrument ID: VMS_MS9
 Method: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\AQ_VMSMS9_8260.m
 Limit Group: MSV - 8260B Water and Solid
 Last Update: 09-May-2019 21:39:57 Calib Date: 07-May-2019 18:08:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
 Column 1 : DB-624 (0.25 mm) Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: ornelasg

Date: 09-May-2019 18:06:23

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
* 5 TBA-d9 (IS)	65	3.286	3.286	0.000	0	2397286	1000.0	1000.0	
* 1 Fluorobenzene	96	5.093	5.089	0.004	99	2006134	50.0	50.0	
* 2 Chlorobenzene-d5	119	7.619	7.616	0.003	86	490910	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	9.842	9.842	0.000	95	797267	50.0	50.0	
\$ 6 Dibromofluoromethane (Surr	111	4.587	4.587	0.001	93	473218	50.0	49.6	
\$ 7 1,2-Dichloroethane-d4 (Sur	65	4.849	4.853	-0.004	98	580335	50.0	47.0	
\$ 8 Toluene-d8 (Surr)	98	6.348	6.348	0.000	93	1935549	50.0	49.1	
\$ 9 4-Bromofluorobenzene (Surr	95	8.714	8.714	0.000	92	748954	50.0	47.9	
\$ 10 Trifluorotoluene (Surr)	1		0.000					ND	
\$ 11 BFB	95	3.503	3.564	-0.061	0	7618		NR	
13 Dichlorodifluoromethane	85	1.670	1.670	0.000	99	155332	25.0	15.3	
15 Chloromethane	50	1.854	1.854	0.000	99	117855	25.0	16.6	
16 Vinyl chloride	62	1.940	1.940	0.000	97	118037	25.0	19.1	
18 Ethylene oxide	43		2.188					ND	
19 Bromomethane	94	2.210	2.210	0.000	89	68167	25.0	52.4	
20 Chloroethane	64	2.307	2.300	0.007	100	99848	25.0	27.1	
21 Dichlorofluoromethane	67	2.495	2.491	0.004	97	262790	25.0	20.7	
22 Trichlorofluoromethane	101	2.525	2.521	0.004	98	221735	25.0	20.7	
23 Ethanol	45		2.652					ND	U
24 Ethyl ether	59	2.742	2.746	-0.004	93	158015	25.0	22.2	
27 Propene oxide	58		2.784					ND	
28 Acrolein	56	2.855	2.858	-0.003	100	417172	250.0	196.0	
29 1,1,2-Trichloro-1,2,2-trif	151	2.933	2.933	0.000	95	119035	25.0	21.7	
30 1,1-Dichloroethene	96	2.933	2.937	-0.004	97	149268	25.0	22.0	
31 Acetone	43	2.956	2.952	0.004	100	396454	100.0	87.6	
32 Isopropyl alcohol	45		3.042					ND	U
33 Iodomethane	142	3.057	3.065	-0.008	98	174207	25.0	24.3	
35 Carbon disulfide	76	3.121	3.125	-0.004	99	421247	25.0	21.7	
37 Acetonitrile	41		3.162					ND	
34 Methyl acetate	43	3.185	3.188	-0.003	98	429937	50.0	41.9	
36 3-Chloro-1-propene	41	3.207	3.207	0.000	92	266524	25.0	21.9	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
39 Methylene Chloride	84	3.301	3.301	0.000	92	177849	25.0	23.2	
38 2-Methyl-2-propanol	59	3.349	3.349	0.000	100	588666	250.0	225.5	
42 Acrylonitrile	53	3.462	3.466	-0.004	98	1109121	250.0	222.0	
40 Methyl tert-butyl ether	73	3.488	3.488	0.000	94	579641	25.0	22.0	
41 trans-1,2-Dichloroethene	96	3.499	3.503	-0.004	98	167771	25.0	21.7	
43 Hexane	57	3.694	3.702	-0.008	92	243028	25.0	20.0	
45 Vinyl acetate	43	3.796	3.799	-0.003	97	903772	50.0	46.1	
44 Isopropyl ether	87		3.818					ND	
46 1,1-Dichloroethane	63	3.822	3.826	-0.004	96	311550	25.0	21.2	
12 Chlorotrifluoroethene	116		3.859					ND	
47 2-Chloro-1,3-butadiene	53		3.871					ND	
14 1,2-Dichloro-1,1,2,2-tetra	85		4.045					ND	
48 Tert-butyl ethyl ether	59		4.081					ND	
50 2-Butanone (MEK)	43	4.204	4.208	-0.004	100	628903	100.0	83.0	
49 Ethyl acetate	43		4.219					ND	
52 cis-1,2-Dichloroethene	96	4.230	4.234	-0.004	83	194951	25.0	21.7	
53 2,2-Dichloropropane	77	4.242	4.245	-0.003	86	277299	25.0	21.8	
54 Propionitrile	54		4.253					ND	U
51 sec-Butyl Alcohol	45	4.317	4.317	0.000	99	1236983	750.0	679.3	
55 Methacrylonitrile	41		4.369					ND	
59 Chlorobromomethane	128	4.410	4.410	0.000	97	87964	25.0	24.0	
57 Tetrahydrofuran	42	4.418	4.418	0.000	87	205159	50.0	44.1	
56 Chloroform	83	4.467	4.470	-0.003	93	307977	25.0	21.5	
17 2-Chloro-1,1,1-Trifluoroet	118	4.470	4.471	-0.001	25	4934		NC	
60 1,1,1-Trichloroethane	97	4.613	4.616	-0.003	98	265394	25.0	21.4	
61 Cyclohexane	56	4.673	4.676	-0.003	90	301649	25.0	20.4	
62 1,1-Dichloropropene	75	4.725	4.725	0.000	97	243869	25.0	21.1	
63 Carbon tetrachloride	117	4.733	4.733	0.000	95	199679	25.0	19.3	
58 Isobutyl alcohol	43	4.736	4.736	0.000	97	551141	625.0	569.5	
66 Benzene	78	4.879	4.879	0.000	96	741814	25.0	21.8	
67 1,2-Dichloroethane	62	4.909	4.913	-0.004	97	262002	25.0	20.3	
65 Tert-amyl methyl ether	73		4.943					ND	
25 1,2-Dichloro-1,1,2-trifluo	117		5.006					ND	
135 n-Heptane	43	5.063	5.066	-0.003	92	234905	25.0	19.8	
26 1,1,1-Trifluoro-2,2-dichlo	83		5.097					ND	
64 n-Butanol	56		5.228					ND	
68 Trichloroethene	130	5.366	5.370	-0.004	99	180614	25.0	21.5	
69 2-Pentanone	43	5.467	5.467	0.000	99	1021579	100.0	85.2	
71 Methylcyclohexane	55	5.561	5.561	0.000	93	240257	25.0	20.1	
70 Methyl methacrylate	100		5.573					ND	
72 1,2-Dichloropropane	63	5.572	5.576	-0.004	94	191307	25.0	22.1	
73 1,4-Dioxane	88	5.614	5.614	0.000	94	106622	500.0	447.2	
74 Dibromomethane	93	5.644	5.647	-0.003	96	115172	25.0	21.9	
75 Dichlorobromomethane	83	5.767	5.771	-0.004	100	214411	25.0	22.4	
77 2-Nitropropane	41		5.932					ND	
76 2-Chloroethyl vinyl ether	63		5.974				ND	ND	
78 cis-1,3-Dichloropropene	75	6.116	6.120	-0.004	95	296485	25.0	22.0	
79 4-Methyl-2-pentanone (MIBK	43	6.217	6.217	0.000	96	1135764	100.0	83.9	
80 Toluene	91	6.405	6.408	-0.003	99	784069	25.0	21.7	
82 trans-1,3-Dichloropropene	75	6.581	6.577	0.004	94	262238	25.0	22.0	
81 Ethyl methacrylate	69	6.600	6.603	-0.003	88	307122	25.0	22.5	
83 1,1,2-Trichloroethane	97	6.753	6.757	-0.004	91	171697	25.0	22.1	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
85 Tetrachloroethene	164	6.847	6.847	0.000	98	150861	25.0	21.9	
86 1,3-Dichloropropane	76	6.903	6.903	0.000	95	303014	25.0	21.9	
84 2-Hexanone	43	6.918	6.922	-0.004	96	913255	100.0	84.0	
88 Tetrahydrothiophene	60		7.091					ND	
87 Chlorodibromomethane	129	7.098	7.094	0.004	90	141125	25.0	22.5	
89 Ethylene Dibromide	107	7.218	7.222	-0.004	99	185546	25.0	22.2	
90 1-Chlorohexane	91	7.604	7.608	-0.004	97	258256	25.0	21.4	
91 Chlorobenzene	112	7.645	7.645	0.000	94	505923	25.0	21.9	
93 1,1,1,2-Tetrachloroethane	131	7.717	7.717	0.000	94	159773	25.0	22.6	
92 Ethylbenzene	106	7.724	7.724	0.000	98	280272	25.0	21.8	
94 m-Xylene & p-Xylene	91	7.840	7.840	0.000	97	686093	25.0	21.7	
95 o-Xylene	106	8.200	8.200	0.000	96	341291	25.0	22.5	
96 Styrene	104	8.215	8.215	0.000	95	584469	25.0	22.9	
97 Bromoform	173	8.399	8.399	0.000	97	91651	25.0	18.9	
98 Isopropylbenzene	105	8.541	8.541	0.000	96	864226	25.0	21.1	
99 cis-1,4-Dichloro-2-butene	53		8.590					ND	
100 Cyclohexanone	55	8.635	8.631	0.004	92	642395	1000.0	641.6	
101 1,1,2,2-Tetrachloroethane	83	8.826	8.830	-0.004	94	283571	25.0	21.8	
105 Bromobenzene	156	8.860	8.864	-0.004	94	224110	25.0	21.9	
102 trans-1,4-Dichloro-2-buten	53	8.864	8.864	0.000	67	82315	25.0	18.0	
104 1,2,3-Trichloropropane	110	8.890	8.894	-0.004	84	87269	25.0	21.2	a
103 N-Propylbenzene	120	8.939	8.939	0.000	99	237952	25.0	22.0	
107 2-Chlorotoluene	126	9.036	9.036	0.000	96	206077	25.0	21.7	
106 1,3,5-Trimethylbenzene	105	9.111	9.115	-0.004	94	724977	25.0	21.8	
108 4-Chlorotoluene	126	9.152	9.152	0.000	98	212908	25.0	21.9	
109 tert-Butylbenzene	119	9.419	9.415	0.003	93	616587	25.0	21.7	
110 1,2,4-Trimethylbenzene	105	9.478	9.478	0.000	98	740678	25.0	21.6	
111 sec-Butylbenzene	134	9.640	9.640	0.000	94	179784	25.0	21.4	
113 1,3-Dichlorobenzene	146	9.767	9.767	0.000	98	413376	25.0	22.0	
112 4-Isopropyltoluene	119	9.786	9.786	0.000	97	781183	25.0	21.9	
115 1,4-Dichlorobenzene	146	9.865	9.868	-0.003	96	419273	25.0	21.7	
114 1,2,3-Trimethylbenzene	105		9.883					ND	
116 n-Butylbenzene	91	10.191	10.191	0.000	98	718329	25.0	21.7	
117 1,2-Dichlorobenzene	146	10.221	10.221	0.000	98	403508	25.0	22.2	
118 1,2-Dibromo-3-Chloropropan	157	11.000	11.000	0.000	84	66854	25.0	18.7	
119 1,3,5-Trichlorobenzene	180		11.188					ND	
120 1,2,4-Trichlorobenzene	180	11.821	11.818	0.003	94	289958	25.0	22.3	
121 Hexachlorobutadiene	225	11.964	11.960	0.004	96	122431	25.0	21.7	
122 Naphthalene	128	12.091	12.095	-0.004	97	937960	25.0	22.3	
123 1,2,3-Trichlorobenzene	180	12.312	12.316	-0.004	95	277777	25.0	22.1	
132 2-Methylhexane	1		0.000					ND	
128 Pentachloroethane	167		0.000					ND	
164 1-Chloro-1-fluoroethane TI	1		0.000					ND	
160 1-Chlorohexane TIC	1		0.000					ND	
163 n-Nonane TIC	1		0.000					ND	
131 3-Ethylpentane	1		0.000					ND	
124 2,3-Dimethylpentane	1		0.000					ND	
162 Cyclohexane TIC	1		0.000					ND	
127 3,3-Dimethylpentane	1		0.000					ND	
133 2,4-Dimethylpentane	1		0.000					ND	
126 2,2,3-Trimethylbutane	1		0.000					ND	
134 3-Methylhexane	1		0.000					ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
129 n-Nonyl Aldehyde	1		0.000					ND	
161 Methyl cyclohexane TIC	1		0.000					ND	
125 2,2-Dimethylpentane	1		0.000					ND	
130 Dimethyl disulfide	1		0.000					ND	
S 136 1,2-Dichloroethene, Total	96				0		50.0	43.4	
S 142 Xylenes, Total	106				0		50.0	44.2	
S 141 1,2-Dichloroethene, Total	1				0		50.0	43.4	
S 139 Total BTEX	1				0			109.6	
S 143 TAH	1				0			0	7
S 138 Xylenes, Total (URS)	1				0		50.0	44.2	
S 137 Trihalomethanes, Total	1				0		100.0	85.3	
S 140 1,3-Dichloropropene, Total	1				0		50.0	43.9	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

NC - Not Calibrated

ND - Not Detected or Marked ND

7 - Failed Limit of Detection

Review Flags

U - Marked Undetected

a - User Assigned ID

Reagents:

MV-MegaMain B_00012

Amount Added: 50.00

Units: uL

MV-Gas B_00026

Amount Added: 50.00

Units: uL

mv-Cent IS/SS_00002

Amount Added: 5.00

Units: uL

Run Reagent

Report Date: 09-May-2019 21:41:36

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1665.D

Injection Date: 08-May-2019 23:58:30

Instrument ID: VMS_MS9

Operator ID: ornelasg

Lims ID: 280-123221-H-4 MSD

Worklist Smp#: 11

Client ID: DET-003-190401-GWMSD

Purge Vol: 5.000 mL

Dil. Factor: 1.0000

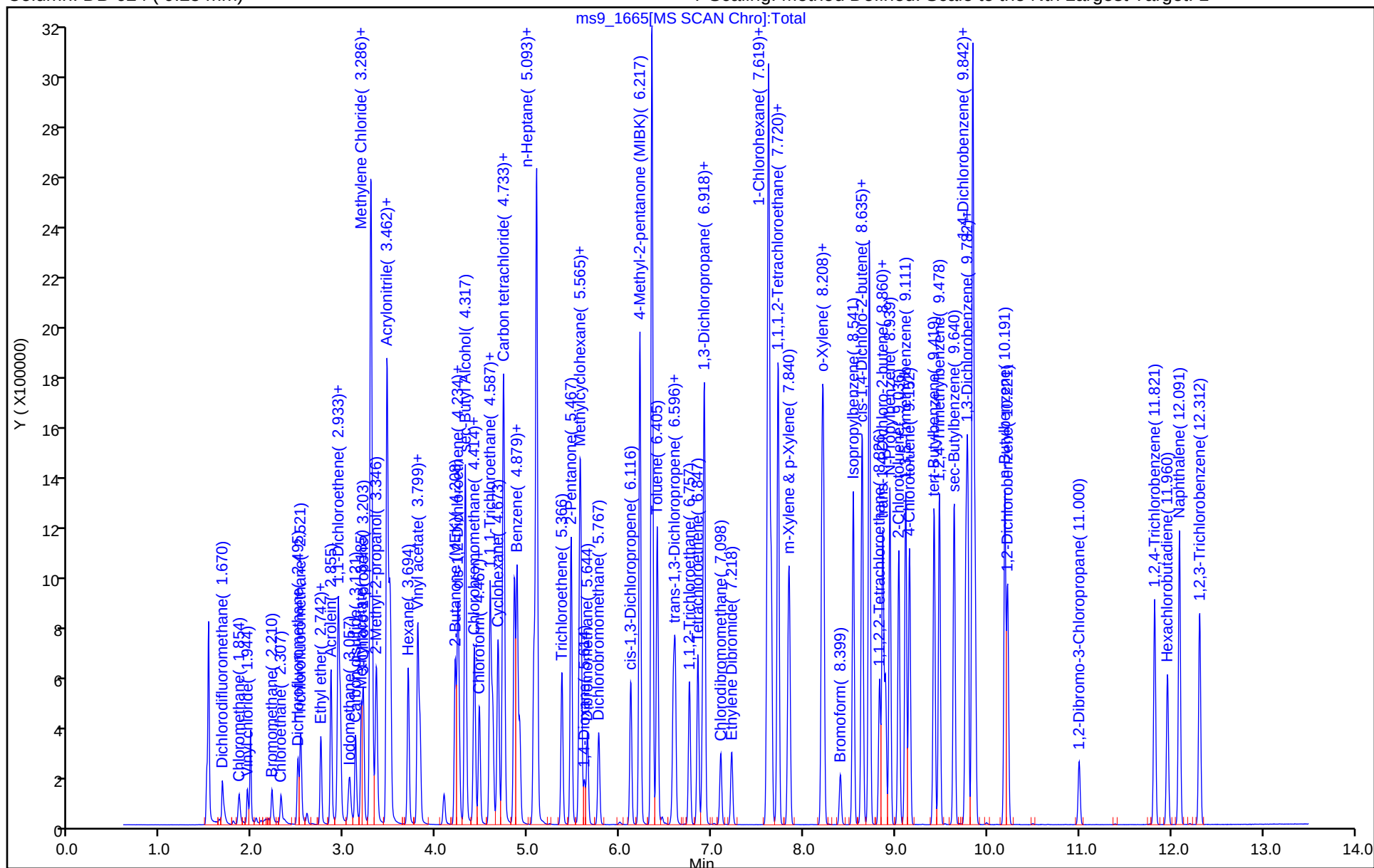
ALS Bottle#: 11

Method: AQ_VMSMS9_8260

Limit Group: MSV - 8260B Water and Solid

Column: DB-624 (0.25 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\ms9_1665.D
Lims ID: 280-123221-H-4 MSD
Client ID: DET-003-190401-GWMSD
Sample Type: MSD
Inject. Date: 08-May-2019 23:58:30 ALS Bottle#: 11 Worklist Smp#: 11
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 280-123221-H-4 MSD
Misc. Info.: 280-0081707-011
Operator ID: ornelasg Instrument ID: VMS_MS9
Method: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b\AQ_VMSMS9_8260.m
Limit Group: MSV - 8260B Water and Solid
Last Update: 09-May-2019 21:39:57 Calib Date: 07-May-2019 18:08:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b\ms9_1620.D
Column 1 : DB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0321

First Level Reviewer: ornelasg

Date: 09-May-2019 18:06:23

Compound	Amount Added	Amount Recovered	% Rec.
\$ 6 Dibromofluoromethane (Surr)	50.0	49.6	99.14
\$ 7 1,2-Dichloroethane-d4 (Surr)	50.0	47.0	93.92
\$ 8 Toluene-d8 (Surr)	50.0	49.1	98.25
\$ 9 4-Bromofluorobenzene (Surr)	50.0	47.9	95.73
\$ 11 BFB	0	0	0.00

GC/MS VOA ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.:

Instrument ID: VMS_MS9

Start Date: 05/07/2019 10:56

Analysis Batch Number: 457270

End Date: 05/07/2019 18:30

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
BFB 280-457270/1		05/07/2019 10:56	1	ms9_1600.D	RXI-624SilMS 0.25 (mm)
STD100 280-457270/10 IC		05/07/2019 11:39	1	ms9_1602.D	RXI-624SilMS 0.25 (mm)
STD75 280-457270/11 IC		05/07/2019 12:01	1	ms9_1603.D	RXI-624SilMS 0.25 (mm)
STD50 280-457270/12 IC		05/07/2019 12:22	1	ms9_1604.D	RXI-624SilMS 0.25 (mm)
STD20 280-457270/13 IC		05/07/2019 12:44	1	ms9_1605.D	RXI-624SilMS 0.25 (mm)
STD10 280-457270/14 IC		05/07/2019 13:05	1	ms9_1606.D	RXI-624SilMS 0.25 (mm)
STD05 280-457270/15 IC		05/07/2019 13:27	1	ms9_1607.D	RXI-624SilMS 0.25 (mm)
STD02 280-457270/16 IC		05/07/2019 13:49	1	ms9_1608.D	RXI-624SilMS 0.25 (mm)
STD01 280-457270/17 IC		05/07/2019 14:10	1	ms9_1609.D	RXI-624SilMS 0.25 (mm)
STD005 280-457270/18 IC		05/07/2019 14:32	1	ms9_1610.D	RXI-624SilMS 0.25 (mm)
ICV 280-457270/19		05/07/2019 14:54	1	ms9_1611.D	RXI-624SilMS 0.25 (mm)
STD200 280-457270/20 IC		05/07/2019 15:15	1	ms9_1612.D	RXI-624SilMS 0.25 (mm)
STD100 280-457270/21 IC		05/07/2019 15:37	1	ms9_1613.D	RXI-624SilMS 0.25 (mm)
ICIS 280-457270/22		05/07/2019 15:58	1	ms9_1614.D	RXI-624SilMS 0.25 (mm)
STD20 280-457270/23 IC		05/07/2019 16:20	1	ms9_1615.D	RXI-624SilMS 0.25 (mm)
STD10 280-457270/24 IC		05/07/2019 16:41	1	ms9_1616.D	RXI-624SilMS 0.25 (mm)
STD05 280-457270/25 IC		05/07/2019 17:03	1	ms9_1617.D	RXI-624SilMS 0.25 (mm)
STD02 280-457270/26 IC		05/07/2019 17:25	1	ms9_1618.D	RXI-624SilMS 0.25 (mm)
STD01 280-457270/27 IC		05/07/2019 17:46	1	ms9_1619.D	RXI-624SilMS 0.25 (mm)
STD005 280-457270/28 IC		05/07/2019 18:08	1	ms9_1620.D	RXI-624SilMS 0.25 (mm)
ICV 280-457270/29		05/07/2019 18:30	1	ms9_1621.D	RXI-624SilMS 0.25 (mm)

GC/MS VOA ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, DenverJob No.: 280-123221-1

SDG No.: _____

Instrument ID: VMS_MS9Start Date: 05/08/2019 19:52Analysis Batch Number: 457521End Date: 05/09/2019 06:07

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
BFB 280-457521/1		05/08/2019 19:52	1	ms9_1654.D	RXI-624SilMS 0.25 (mm)
CCV 280-457521/3		05/08/2019 20:33	1	ms9_1656.D	RXI-624SilMS 0.25 (mm)
MB 280-457521/8		05/08/2019 22:31	1	ms9_1661.D	RXI-624SilMS 0.25 (mm)
280-123221-4		05/08/2019 22:53	1	ms9_1662.D	RXI-624SilMS 0.25 (mm)
LCS 280-457521/33		05/08/2019 23:15	1	ms9_1663.D	RXI-624SilMS 0.25 (mm)
280-123221-4 MS		05/08/2019 23:36	1	ms9_1664.D	RXI-624SilMS 0.25 (mm)
280-123221-4 MSD		05/08/2019 23:58	1	ms9_1665.D	RXI-624SilMS 0.25 (mm)
280-123221-5		05/09/2019 00:20	1	ms9_1666.D	RXI-624SilMS 0.25 (mm)
280-123221-6		05/09/2019 00:42	1	ms9_1667.D	RXI-624SilMS 0.25 (mm)
ZZZZZ		05/09/2019 01:03	1		RXI-624SilMS 0.25 (mm)
280-123221-7		05/09/2019 02:08	1	ms9_1671.D	RXI-624SilMS 0.25 (mm)
ZZZZZ		05/09/2019 02:30	1		RXI-624SilMS 0.25 (mm)
ZZZZZ		05/09/2019 02:52	1		RXI-624SilMS 0.25 (mm)
ZZZZZ		05/09/2019 03:14	1		RXI-624SilMS 0.25 (mm)
CCVC 280-457521/25		05/09/2019 05:02	1	ms9_1679.D	RXI-624SilMS 0.25 (mm)
ZZZZZ		05/09/2019 05:45	1		RXI-624SilMS 0.25 (mm)
ZZZZZ		05/09/2019 06:07	1		RXI-624SilMS 0.25 (mm)

TestAmerica Laboratories
Worklist Report

Worklist Name: 050819pm

Worklist Number: 81707

Instrument Name: VMS_MS9

Chrom Method: AQ_VMSMS9_8260

Purge Volume: 5.000

Units: mL

Analysis Type: VOA

Batch Directory: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b

Upload Directory: \\CORPTALSAPP16\280-DN-RawData\Organics\MS\VMS_MS9

Run Reagent: mv-Cent IS/SS_00002

Amount Added: 5.000, Units: uL

Smp #	Lims ID	Smp Type	Dil Fact	Fract	Initial Vol/Wt	Vol/Wt Units	Sample Reagents	pH	Comment
1	# 1 BFB	BFB	1.000	voaWater	2.000	uL	MV-BFB_00028		
2	# 2 CCV	CCV	1.000	voaWater	5.000	mL	MV-Supp A_00034 mv-Cent IS_00002		
3	# 3 CCV	CCV	1.000	voaWater	5.000	mL	MV-MegaMainA_00014 MV-Gas A_00023		
4	# 4 LCS	LCS	1.000	voaWater	5.000	mL	MV-MegaMain B_00012 MV-Gas B_00026		
5	# 5 LCSD	LCSD	1.000	voaWater	5.000	mL	MV-MegaMain B_00012 MV-Gas B_00026		
6	# 6 lcs	LCS	1.000	voaWater	5.000	mL	MV-Supp B_00024		
7	# 7 lcsd	LCSD	1.000	voaWater	5.000	mL	MV-Supp B_00024		
8	# 8 mb	MB	1.000	voaWater	5.000	mL			
34	#34 280-121232-A-1	Client	1.000	voaWater	5.000	mL			
35	#35 280-121232-A-2	Client	1.000	voaWater	5.000	mL			
36	#36 280-121232-A-3	Client	1.000	voaWater	5.000	mL			
9	# 9 280-123221-M-4	Client	1.000	voaWater	5.000	mL		<2	
33	#33 LCS	LCS	1.000	voaWater	5.000	mL	MV-MegaMain B_00012 MV-Gas B_00026	~	
10	#10 280-123221-I-4 MS	MS	1.000	voaWater	5.000	mL	MV-MegaMain B_00012 MV-Gas B_00026	<2	
11	#11 280-123221-H-4 MSD	MSD	1.000	voaWater	5.000	mL	MV-MegaMain B_00012 MV-Gas B_00026	<2	
12	#12 280-123221-H-5	Client	1.000	voaWater	5.000	mL		<2	
13	#13 280-123221-B-6	Client	1.000	voaWater	5.000	mL		<2	
14	#14 280-123156-W-1	Client	1.000	voaWater	5.000	mL		<2	
15	#15 280-123114-B-2	Client	1.000	voaWater	5.000	mL		<2	
16	#16 280-123053-B-9	Client	1.000	voaWater	5.000	mL		<2	not reported
17	#17 280-123221-L-7	Client	1.000	voaWater	5.000	mL		<2	
18	#18 280-123231-E-4	Client	1.000	voaWater	5.000	mL		<2	
19	#19 280-123231-E-5	Client	1.000	voaWater	5.000	mL		<2	
20	#20 280-123231-E-7	Client	1.000	voaWater	5.000	mL		<2	
21	#21 280-123047-G-4	Client	1.000	voaWater	5.000	mL		<2	
22	#22 280-123053-E-7	Client	1.000	voaWater	5.000	mL		<2	Not Reported
23	#23 280-123112-E-1	Client	1.000	voaWater	5.000	mL		<2	
24	#24 280-123114-D-1	Client	1.000	voaWater	5.000	mL		<2	
25	#25 ccvc	CCVC	1.000	voaWater	5.000	mL	MV-MegaMainA_00014 MV-Gas A_00023	-	
32	#32 blank	Client	1.000	voaWater	5.000	mL		-	
27	#27 280-123052-A-2	Client	1.000	voaWater	5.000	mL		<2	
28	#28 280-123052-D-1	Client	1.000	voaWater	5.000	mL		<2	
29	#29 280-123156-Z-1	Client	1.000	voaWater	5.000	mL		<2	Already Reported
30	#30 280-123156-X-1	Client	1.000	voaWater	5.000	mL		<2	
31	#31 280-123152-J-1	Client	4.000	voaWater	5.000	mL		7	HCl preserved !!

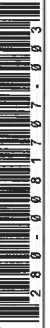
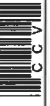
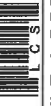
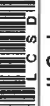
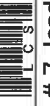
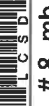
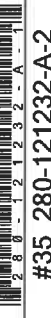
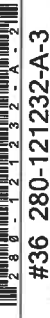
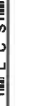
Sample 5/2/19
dark color.

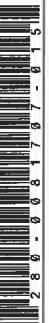
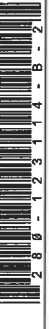
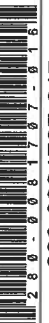
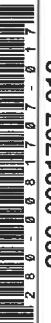
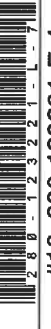
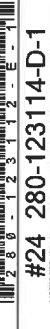
TestAmerica Denver
Instrument: MS9
UV-MS-0010 (280-123152) (Circle)
Purge Volume: (20mL/min) (5g)
(Circle)
Time: 1952/0713
Lims: 457521 → 8260
457527 → 624

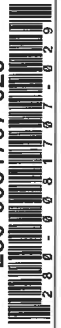
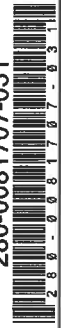
TestAmerica Laboratories
Worklist Report

Worklist Name: 050819pm
Instrument Name: VMS_MS9
Purge Volume: 5.000
Analysis Type: VOA
Batch Directory: \\chromna\Denver\ChromData\VMS_MS9\20190508-81707.b
Upload Directory: \\CORPTALSAPP16\280-DN-RawData\Organics\MS\VMS_MS9
Run Reagent: mv-Cent IS/SS_00002
Amount Added: 5.000, Units: uL

Worklist Number: 81707
Chrom Method: AQ_VMSMS9_8260
Units: mL

Worklist ID	Lims ID	Sample Reagents	Smp Type	Fract	Initial Vol/Wt	Vol/Wt Units	Dil Fact
280-0081707-001 	# 1 BFB 	MV-BFB_00028	BFB	voaWater	2.000	uL	1.000
280-0081707-002 	# 2 CCV 	MV-Supp A_00034 mv-Cent IS_00002	CCV	voaWater	5.000	mL	1.000
280-0081707-003 	# 3 CCV 	MV-MegaMainA_00014 MV-Gas A_00023	CCV	voaWater	5.000	mL	1.000
280-0081707-004 	# 4 LCS 	MV-MegaMain B_00012 MV-Gas B_00026	LCS	voaWater	5.000	mL	1.000
280-0081707-005 	# 5 LCSD 	MV-MegaMain B_00012 MV-Gas B_00026	LCSD	voaWater	5.000	mL	1.000
280-0081707-006 	# 6 lcs 	MV-Supp B_00024	LCS	voaWater	5.000	mL	1.000
280-0081707-007 	# 7 lcscd 	MV-Supp B_00024	LCSD	voaWater	5.000	mL	1.000
280-0081707-008 	# 8 mb 		MB	voaWater	5.000	mL	1.000
280-0081707-034 	#34 280-121232-A-1 			voaWater	5.000	mL	1.000
280-0081707-035 	#35 280-121232-A-2 		Client	voaWater	5.000	mL	1.000
280-0081707-036 	#36 280-121232-A-3 		Client	voaWater	5.000	mL	1.000
280-0081707-009 	# 9 280-123221-M-4 		Client	voaWater	5.000	mL	1.000
280-0081707-033 	#33 LCS 	MV-MegaMain B_00012 MV-Gas B_00026	LCS	voaWater	5.000	mL	1.000

Worklist ID	Lims ID	Sample Reagents	Smp Type	Fract	Initial Vol/Wt	Vol/Wt Units	Dil Fact
280-0081707-010 	#10 280-123221-I-4 MS 	MV-MegaMain B_00012 MV-Gas B_00026	MS	voaWater	5.000	mL	1.000
280-0081707-011 	#11 280-123221-H-4 MSD 	MV-MegaMain B_00012 MV-Gas B_00026	MSD	voaWater	5.000	mL	1.000
280-0081707-012 	#12 280-123221-H-5 		Client	voaWater	5.000	mL	1.000
280-0081707-013 	#13 280-123221-B-6 		Client	voaWater	5.000	mL	1.000
280-0081707-014 	#14 280-123156-W-1 		Client	voaWater	5.000	mL	1.000
280-0081707-015 	#15 280-123114-B-2 		Client	voaWater	5.000	mL	1.000
280-0081707-016 	#16 280-123053-B-9 		Client	voaWater	5.000	mL	1.000
280-0081707-017 	#17 280-123221-L-7 		Client	voaWater	5.000	mL	1.000
280-0081707-018 	#18 280-123231-E-4 		Client	voaWater	5.000	mL	1.000
280-0081707-019 	#19 280-123231-E-5 		Client	voaWater	5.000	mL	1.000
280-0081707-020 	#20 280-123231-E-7 		Client	voaWater	5.000	mL	1.000
280-0081707-021 	#21 280-123047-G-4 		Client	voaWater	5.000	mL	1.000
280-0081707-022 	#22 280-123053-E-7 		Client	voaWater	5.000	mL	1.000
280-0081707-023 	#23 280-123112-E-1 		Client	voaWater	5.000	mL	1.000
280-0081707-024 	#24 280-123114-D-1 		Client	voaWater	5.000	mL	1.000
280-0081707-025 	#25 CCVC 	MV-MegaMainA_00014 MV-Gas A_00023	CCVC	voaWater	5.000	mL	1.000
280-0081707-032 	#32 blank 		Client	voaWater	5.000	mL	1.000
280-0081707-027 	#27 280-123052-A-2 		Client	voaWater	5.000	mL	1.000

Worklist ID	Lims ID	Sample Reagents	Smp Type	Fract	Initial Vol/Wt	Vol/Wt Units	Dil Fact
280-0081707-028 	#28 280-123052-D-1 		Client	voaWater	5.000	mL	1.000
280-0081707-029 	#29 280-123156-Z-1 		Client	voaWater	5.000	mL	1.000
280-0081707-030 	#30 280-123156-X-1 		Client	voaWater	5.000	mL	1.000
280-0081707-031 	#31 280-123152-J-1 		Client	voaWater	5.000	mL	4.000

5/9/2019
12:40AM

Sample Request Form: 55750

Page 1 of 2

den_msvoa_totalbacklog 5/9/2019 12:40:12 AM Assigned to:Ornelas, Gabriel

Sample	Client Sample ID	Container	Method	Analytical Method	Hold Time	Due	PM	State Code	Storage	Hazard Level
280-123062-1 ✓	MMW36-WDR		8260B	8260B	05/09 23:59	05/14/19	BAS	CO	MS-Strge & MS-Strge & 247	Unconfirmed
280-123062-2 ✓	TRIP BLANK		8260B	8260B	05/09 23:59	05/14/19	BAS	CO	MS-Strge	Unconfirmed
280-123112-1 ✓	NY116-042619-OF-1		624_5ml_D OD5	624_5ml_DOD5	05/10 23:59	05/14/19	DRB	NY	MS-Strge & 252	Unconfirmed
280-123114-1 ✓	NY128-042619-OP1		624_5ml_D OD5	624_5ml_DOD5	05/10 23:59	05/14/19	DRB	NY	MS-Strge & 252	Unconfirmed
280-123114-2 ✓	TB		624_5ml_D OD5	624_5ml_DOD5	05/10 23:59	05/14/19	DRB	NY	MS-Strge	Unconfirmed
280-123152-1 ✓	L203-L204 Composite	Col + THP	624_5ml	624_5ml	05/13 23:59	05/16/19	BAS	IL	MS-Strge & WC Dpt & MS-Strge & 256	Unconfirmed
M 2-CLEVE										
280-123156-1 ✓	R62S		8260B	8260B	05/13 23:59	05/16/19	BAS	IL	256 & OP Dpt & MS-Strge & MS-Strge	Unconfirmed
280-123221-4 ✓	DET-003-190401-GW		8260B_DO D5	8260B_DOD5	05/13 23:59	05/17/19	DRR	OH	OP Dpt & MS-Strge & MS-Strge & 264	Unconfirmed
M Q5.0_DIL1										
280-123221-4MS ✓	DET-003-190401-GWMS		8260B_DO D5	8260B_DOD5	05/13 23:59	05/17/19	DRR	OH	MS-Strge & 264 & OP Dpt	Unconfirmed
M Q5.0_DIL1										
280-123221-4MSD ✓	DET-003-190401-GWMSD		8260B_DO D5	8260B_DOD5	05/13 23:59	05/17/19	DRR	OH	OP Dpt & 264 & MS-Strge	Unconfirmed
M Q5.0_DIL1										
280-123221-5 ✓	DET-003-190402-GW		8260B_DO D5	8260B_DOD5	05/13 23:59	05/17/19	DRR	OH	264 & MS-Strge & OP Dpt & MS-Strge	Unconfirmed
M Q5.0_DIL1										
280-123221-6 ✓	FWGTB-191001-TB		8260B_DO D5	8260B_DOD5	05/13 23:59	05/17/19	DRR	OH	MS-Strge	Unconfirmed
M Q5.0_DIL1										

5/9/2019
12:40AM

Sample Request Form: 55750

Page 2 of 2

den_msvoa_totalbacklog 5/9/2019 12:40:12 AM Assigned to:Ornelas, Gabriel

Sample	Client Sample ID	Container	Method	Analytical Method	Hold Time	Due	PM	State Code	Storage	Hazard Level
280-123221-7	DET-004-190401-G W		8260B_DO D5	8260B_DOD5	05/13 23:59	05/17/19	DRR	OH	MIs-Strge & MS-Strge & 264 & OP Dpt	Unconfirmed
M	Q5.0_DIL1									
280-123231-4		B525DP02	8260B_DO D5	8260B_DOD5	05/13 23:59	05/17/19	DRR	CO	MS-Strge & 258	Unconfirmed
M	Q5.1/DIL3/Freon 113 included on compound list_Req SuppSpk for TBME									
280-123231-5		B525DP01	8260B_DO D5	8260B_DOD5	05/13 23:59	05/17/19	DRR	CO	258 & MS-Strge	Unconfirmed
M	Q5.1/DIL3/Freon 113 included on compound list_Req SuppSpk for TBME									
280-123231-7		B525DP01FD	8260B_DO D5	8260B_DOD5	05/13 23:59	05/17/19	DRR	CO	258 & MS-Strge	Unconfirmed
M	Q5.1/DIL3/Freon 113 included on compound list_Req SuppSpk for TBME									
280-123256-1	ST-3RC		624_5ml	624_5ml	05/14 23:59	05/17/19	DMH	KS	260 & MS-Strge & MIs-Strge	Unconfirmed
M	DIL3, 2-CLEVE									
280-123256-2	TRIP BLANK		624_5ml	624_5ml	05/14 23:59	05/17/19	DMH	KS	MS-Strge	Unconfirmed
M	DIL3, 2-CLEVE									

did not run.

TestAmerica Laboratories
Initial Calibration Event Report

Worklist Name: 050719 Worklist Num: 81636
Instrument: VMS_MS9 Method: AQ_VMSMS9_8260
Batch Directory: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b
Analysis Type: VOA
Inj Volume: 5.00 Inj Vol Units: mL

Sublist: chrom-AQ_VMSMS9_8260*sub51

Gas

Lab ID	MSV - 8260B Water and Solid	MSV - 624
#10 STD100	Cal Level: 9	Cal Level: 9
#11 STD75	Cal Level: 8	Cal Level: 8
#12 STD50	Cal Level: 7	Cal Level: 7
#13 STD20	Cal Level: 6	Cal Level: 6
#14 STD10	Cal Level: 5	Cal Level: 5
#15 STD05	Cal Level: 4	Cal Level: 4
#16 STD02	Cal Level: 3	Cal Level: 3
#17 STD01	Cal Level: 2	Cal Level: 2
#18 STD005	Cal Level: 1	Cal Level: 1

Cal ID 36288/36289

457270/457306

* Acrolein - 22.4% D

Gas ICV 19

Main ICV 22

ICV 29

Sublist: chrom-AQ_VMSMS9_8260*sub49

Main

Lab ID	MSV - 8260B Water and Solid	MSV - 624
#20 STD200	Cal Level: 9	Cal Level: 9
#21 STD100	Cal Level: 8	Cal Level: 8
#22 ICIS	Cal Level: 7	Cal Level: 7
#23 STD20	Cal Level: 6	Cal Level: 6
#24 STD10	Cal Level: 5	Cal Level: 5
#25 STD05	Cal Level: 4	Cal Level: 4
#26 STD02	Cal Level: 3	Cal Level: 3
#27 STD01	Cal Level: 2	Cal Level: 2
#28 STD005	Cal Level: 1	Cal Level: 1

Cal ID 36290/36291

TestAmerica Denver

Instrument: MS9

DV-MS-0010 (8260B/624) (Circle)

Purge Volume: (20mL/5mL/5g)

(Circle)

Tune Time: 1056 - 1830

Lims Batch: _____

RSN
5/8/19

JK 5/8/19

TestAmerica Laboratories
Worklist Report

Worklist Name: 050719 Worklist Number: 81636
 Instrument Name: VMS_MS9 Chrom Method: AQ_VMSMS9_8260
 Purge Volume: 5.000 Units: mL
 Analysis Type: VOA
 Batch Directory: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b
 Upload Directory: \\CORPTALSAPP16\280-DN-RawData\Organics\MS\VMS_MS9
 Run Reagent: mv-Cent IS/SS_00002 Amount Added: 5.000, Units: uL

Smp #	Lims ID	Smp Type	Ical Lvl	Dil Fact	Fract	Initial Vol/Wt	Vol/Wt Units	Sample Reagents	pH	Comment
1	# 1 BFB	BFB		1.000	voaWater	2.000	uL	MV-BFB_00028		
2	# 2 CCV	CCV		1.000	voaWater	5.000	mL	MV-MegaMainA_00014 MV-Gas A_00023		
3	# 3 CCV	CCV		1.000	voaWater	5.000	mL	MV-Supp A_00034 mv-Cent IS_00002		
4	# 4 LCS	LCS		1.000	voaWater	5.000	mL	MV-MegaMain B_00012 MV-Gas B_00026		
5	# 5 LCSD	LCSD		1.000	voaWater	5.000	mL	MV-MegaMain B_00012 MV-Gas B_00026		
6	# 6 MB	MB		1.000	voaWater	5.000	mL			
7	# 7 280-121232-A-1	Client		1.000	voaWater	5.000	mL			
8	# 8 280-121232-A-2	Client		1.000	voaWater	5.000	mL			
9	# 9 280-121232-A-3	Client		1.000	voaWater	5.000	mL			
10	#10 STD100	IC	9	1.000	voaWater	5.000	mL	mv-Cent IS_00002 MV-Gas A_00023		
11	#11 STD75	IC	8	1.000	voaWater	5.000	mL	mv-Cent IS_00002 MV-Gas A_00023		
12	#12 STD50	IC	7	1.000	voaWater	5.000	mL	mv-Cent IS_00002 MV-Gas A_00023		
13	#13 STD20	IC	6	1.000	voaWater	5.000	mL	mv-Cent IS_00002 MV-Gas A_00023		
14	#14 STD10	IC	5	1.000	voaWater	5.000	mL	mv-Cent IS_00002 MV-Gas A_00023		
15	#15 STD05	IC	4	1.000	voaWater	5.000	mL	mv-Cent IS_00002 MV-Gas A_00023		
16	#16 STD02	IC	3	1.000	voaWater	5.000	mL	mv-Cent IS_00002 MV-Gas A_00023		
17	#17 STD01	IC	2	1.000	voaWater	5.000	mL	mv-Cent IS_00002 MV-Gas A_00023		
18	#18 STD005	IC	1	1.000	voaWater	5.000	mL	mv-Cent IS_00002 MV-Gas A_00023		
19	#19 ICV	ICV		1.000	voaWater	5.000	mL	mv-Cent IS_00002 MV-Gas B_00026		
20	#20 STD200	IC	9	1.000	voaWater	5.000	mL	MV-MegaMainA_00014		
21	#21 STD100	IC	8	1.000	voaWater	5.000	mL	MV-MegaMainA_00014		
22	#22 ICIS	ICIS	7	1.000	voaWater	5.000	mL	MV-MegaMainA_00014		
23	#23 STD20	IC	6	1.000	voaWater	5.000	mL	MV-MegaMainA_00014		
24	#24 STD10	IC	5	1.000	voaWater	5.000	mL	MV-MegaMainA_00014		
25	#25 STD05	IC	4	1.000	voaWater	5.000	mL	MV-MegaMainA_00014		
26	#26 STD02	IC	3	1.000	voaWater	5.000	mL	MV-MegaMainA_00014		
27	#27 STD01	IC	2	1.000	voaWater	5.000	mL	MV-MegaMainA_00014		
28	#28 STD005	IC	1	1.000	voaWater	5.000	mL	MV-MegaMainA_00014		
29	#29 ICV	ICV		1.000	voaWater	5.000	mL	MV-MegaMain B_00012		
30	#30 Samp 30	Client		1.000	voaWater	5.000	mL			

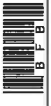
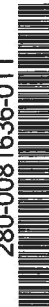
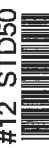
TestAmerica Laboratories
Worklist Report

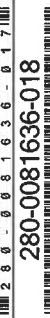
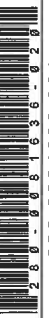
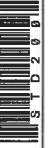
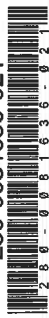
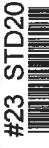
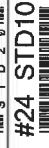
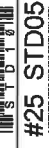
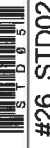
Worklist Name: 050719
Instrument Name: VMS_MS9
Purge Volume: 5.000
Analysis Type: VOA
Batch Directory: \\chromna\Denver\ChromData\VMS_MS9\20190507-81636.b
Upload Directory: \\CORPTALSAPP16\280-DN-RawData\Organics\VMS\VMS_MS9
Run Reagent: mv-Cent IS\SS_00002
Amount Added: 5.000, Units: uL

Worklist Number: 81636

Chrom Method: AQ_VMSMS9_8260

Units: mL

Worklist ID	Lims ID	Sample Reagents	Smp Type	Cal Lvl	Fract	Initial Vol/Wt	Vol/Wt Units	Dil Fact
280-0081636-001 	# 1 BFB 	MV-BFB_00028	BFB		voaWater	2.000	uL	1.000
280-0081636-002 	# 2 CCV 	MV-MegaMainA_00014 MV-Gas A_00023	CCV		voaWater	5.000	mL	1.000
280-0081636-003 	# 3 CCV 	MV-Supp A_00034 mv-Cent IS_00002	CCV		voaWater	5.000	mL	1.000
280-0081636-004 	# 4 LCS 	MV-MegaMain B_00012 MV-Gas B_00026	LCS		voaWater	5.000	mL	1.000
280-0081636-005 	# 5 LCSD 	MV-MegaMain B_00012 MV-Gas B_00026	LCSD		voaWater	5.000	mL	1.000
280-0081636-006 	# 6 MB 		MB		voaWater	5.000	mL	1.000
280-0081636-007 	# 7 280-121232-A-1 		Client		voaWater	5.000	mL	1.000
280-0081636-008 	# 8 280-121232-A-2 		Client		voaWater	5.000	mL	1.000
280-0081636-009 	# 9 280-121232-A-3 		Client		voaWater	5.000	mL	1.000
280-0081636-010 	# 10 STD100 	mv-Cent IS_00002 MV-Gas A_00023	IC		voaWater	5.000	mL	1.000
280-0081636-011 	# 11 STD75 	mv-Cent IS_00002 MV-Gas A_00023	IC		voaWater	5.000	mL	1.000
280-0081636-012 	# 12 STD50 	mv-Cent IS_00002 MV-Gas A_00023	IC		voaWater	5.000	mL	1.000
280-0081636-013 	# 13 STD20 	mv-Cent IS_00002 MV-Gas A_00023	IC		voaWater	5.000	mL	1.000

Worklist ID	Lims ID	Sample Reagents	Smp Type	Cal Lvl	Fract	Initial Vol/Wt	Vol/Wt Units	Dil Fact
280-0081636-014 	#14 STD10 	mv-Cent IS_ 00002 MV-Gas A_ 00023	IC	5	voaWater	5.000	mL	1.000
280-0081636-015 	#15 STD05 	mv-Cent IS_ 00002 MV-Gas A_ 00023	IC	4	voaWater	5.000	mL	1.000
280-0081636-016 	#16 STD02 	mv-Cent IS_ 00002 MV-Gas A_ 00023	IC	3	voaWater	5.000	mL	1.000
280-0081636-017 	#17 STD01 	mv-Cent IS_ 00002 MV-Gas A_ 00023	IC	2	voaWater	5.000	mL	1.000
280-0081636-018 	#18 STD005 	mv-Cent IS_ 00002 MV-Gas A_ 00023	IC	1	voaWater	5.000	mL	1.000
280-0081636-019 	#19 ICV 	mv-Cent IS_ 00002 MV-Gas B_ 00026	ICV		voaWater	5.000	mL	1.000
280-0081636-020 	#20 STD200 	MV-MegaMainA_ 00014	IC	9	voaWater	5.000	mL	1.000
280-0081636-021 	#21 STD100 	MV-MegaMainA_ 00014	IC	8	voaWater	5.000	mL	1.000
280-0081636-022 	#22 ICIS 	MV-MegaMainA_ 00014	ICIS	7	voaWater	5.000	mL	1.000
280-0081636-023 	#23 STD20 	MV-MegaMainA_ 00014	IC	6	voaWater	5.000	mL	1.000
280-0081636-024 	#24 STD10 	MV-MegaMainA_ 00014	IC	5	voaWater	5.000	mL	1.000
280-0081636-025 	#25 STD05 	MV-MegaMainA_ 00014	IC	4	voaWater	5.000	mL	1.000
280-0081636-026 	#26 STD02 	MV-MegaMainA_ 00014	IC	3	voaWater	5.000	mL	1.000
280-0081636-027 	#27 STD01 	MV-MegaMainA_ 00014	IC	2	voaWater	5.000	mL	1.000
280-0081636-028 	#28 STD005 	MV-MegaMainA_ 00014	IC	1	voaWater	5.000	mL	1.000
280-0081636-029 	#29 ICV 	MV-MegaMain B_ 00012	ICV		voaWater	5.000	mL	1.000
280-0081636-030 	#30 Samp 30 		Client		voaWater	5.000	mL	1.000

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457270 Batch Start Date: 05/07/19 10:56 Batch Analyst: Newcome, Robin SBatch Method: 8260B Batch End Date: _____

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	MV-BFB 00028	mv-Cent IS 00002	mv-Cent IS/SS 00002	MV-Gas A 00023
BFB 280-457270/1		8260B		2 uL	2 uL	2 uL			
STD100 280-457270/10 IC		8260B		5 mL	5 mL		50 uL		100 uL
STD75 280-457270/11 IC		8260B		5 mL	5 mL		50 uL		75 uL
STD50 280-457270/12 IC		8260B		5 mL	5 mL		50 uL		50 uL
STD20 280-457270/13 IC		8260B		5 mL	5 mL		50 uL		20 uL
STD10 280-457270/14 IC		8260B		5 mL	5 mL		50 uL		10 uL
STD05 280-457270/15 IC		8260B		5 mL	5 mL		50 uL		5 uL
STD02 280-457270/16 IC		8260B		5 mL	5 mL		50 uL		2 uL
STD01 280-457270/17 IC		8260B		5 mL	5 mL		50 uL		1 uL
STD005 280-457270/18 IC		8260B		5 mL	5 mL		50 uL		0.5 uL
ICV 280-457270/19		8260B		5 mL	5 mL		50 uL		
STD200 280-457270/20 IC		8260B		5 mL	5 mL			5 uL	
STD100 280-457270/21 IC		8260B		5 mL	5 mL			5 uL	
ICIS 280-457270/22		8260B		5 mL	5 mL			5 uL	
STD20 280-457270/23 IC		8260B		5 mL	5 mL			5 uL	

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

8260B

Page 1 of 4

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457270 Batch Start Date: 05/07/19 10:56 Batch Analyst: Newcome, Robin SBatch Method: 8260B Batch End Date: _____

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	MV-BFB 00028	mv-Cent IS 00002	mv-Cent IS/SS 00002	MV-Gas A 00023
STD10 280-457270/24 IC		8260B		5 mL	5 mL			5 uL	
STD05 280-457270/25 IC		8260B		5 mL	5 mL			5 uL	
STD02 280-457270/26 IC		8260B		5 mL	5 mL			5 uL	
STD01 280-457270/27 IC		8260B		5 mL	5 mL			5 uL	
STD005 280-457270/28 IC		8260B		5 mL	5 mL			5 uL	
ICV 280-457270/29		8260B		5 mL	5 mL			5 uL	

Lab Sample ID	Client Sample ID	Method Chain	Basis	MV-Gas B 00026	MV-MegaMain B 00012	MV-MegaMainA 00014			
BFB 280-457270/1		8260B							
STD100 280-457270/10 IC		8260B							
STD75 280-457270/11 IC		8260B							
STD50 280-457270/12 IC		8260B							
STD20 280-457270/13 IC		8260B							
STD10 280-457270/14 IC		8260B							
STD05 280-457270/15 IC		8260B							

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

8260B

Page 2 of 4

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457270 Batch Start Date: 05/07/19 10:56 Batch Analyst: Newcome, Robin SBatch Method: 8260B Batch End Date: _____

Lab Sample ID	Client Sample ID	Method Chain	Basis	MV-Gas B 00026	MV-MegaMain B 00012	MV-MegaMainA 00014			
STD02 280-457270/16 IC		8260B							
STD01 280-457270/17 IC		8260B							
STD005 280-457270/18 IC		8260B							
ICV 280-457270/19		8260B		50 uL					
STD200 280-457270/20 IC		8260B				200 uL			
STD100 280-457270/21 IC		8260B				100 uL			
ICIS 280-457270/22		8260B				50 uL			
STD20 280-457270/23 IC		8260B				20 uL			
STD10 280-457270/24 IC		8260B				10 uL			
STD05 280-457270/25 IC		8260B				5 uL			
STD02 280-457270/26 IC		8260B				2 uL			
STD01 280-457270/27 IC		8260B				1 uL			
STD005 280-457270/28 IC		8260B				0.5 uL			
ICV 280-457270/29		8260B			50 uL				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457270 Batch Start Date: 05/07/19 10:56 Batch Analyst: Newcome, Robin SBatch Method: 8260B Batch End Date: _____

Batch Notes	

Basis	Basis Description

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

8260B

Page 4 of 4

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457521 Batch Start Date: 05/08/19 19:52 Batch Analyst: Ornelas, GabrielBatch Method: 8260B Batch End Date: _____

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	MV-BFB 00028	mv-Cent IS/SS 00002	MV-Gas A 00023	MV-Gas B 00026
BFB 280-457521/1		8260B		2 uL	2 uL	2 uL			
CCV 280-457521/3		8260B		5 mL	5 mL		5 uL	50 uL	
MB 280-457521/8		8260B		5 mL	5 mL		5 uL		
280-123221-M-4	DET-003-190401-G W	8260B	T	5 mL	5 mL		5 uL		
280-123221-I-4 MS	DET-003-190401-G WMS	8260B	T	5 mL	5 mL		5 uL		50 uL
280-123221-H-4 MSD	DET-003-190401-G WMSD	8260B	T	5 mL	5 mL		5 uL		50 uL
280-123221-H-5	DET-003-190402-G W	8260B	T	5 mL	5 mL		5 uL		
280-123221-B-6	FWGTB-191001-TB	8260B	T	5 mL	5 mL		5 uL		
280-123221-L-7	DET-004-190401-G W	8260B	T	5 mL	5 mL		5 uL		
CCVC 280-457521/25		8260B		5 mL	5 mL		5 uL	50 uL	
LCS 280-457521/33		8260B		5 mL	5 mL		5 uL		25 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	MV-MegaMain B 00012	MV-MegaMainA 00014				
BFB 280-457521/1		8260B							
CCV 280-457521/3		8260B			50 uL				
MB 280-457521/8		8260B							
280-123221-M-4	DET-003-190401-G W	8260B	T						
280-123221-I-4 MS	DET-003-190401-G WMS	8260B	T	50 uL					
280-123221-H-4 MSD	DET-003-190401-G WMSD	8260B	T	50 uL					
280-123221-H-5	DET-003-190402-G W	8260B	T						
280-123221-B-6	FWGTB-191001-TB	8260B	T						
280-123221-L-7	DET-004-190401-G W	8260B	T						

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

8260B

Page 1 of 2

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457521 Batch Start Date: 05/08/19 19:52 Batch Analyst: Ornelas, GabrielBatch Method: 8260B Batch End Date: _____

Lab Sample ID	Client Sample ID	Method Chain	Basis	MV-MegaMain B 00012	MV-MegaMainA 00014				
CCVC 280-457521/25		8260B			50 uL				
LCS 280-457521/33		8260B		25 uL					

Batch Notes	

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

8270D_DOD5

Semivolatile Organic Compounds
(GC/MS)

FORM II
GC/MS SEMI VOA SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Matrix: Water Level: Low

GC Column (1): Rxi-5Sil MS ID: 0.25 (mm)

Client Sample ID	Lab Sample ID	2FP #	PHL #	NBZ #	FBP #	TBP #	TPHL #
NTAmw-120-190401-GW	280-123221-1	74	71	75	72	72	75
DET-003-190401-GW	280-123221-4	83	82	83	80	79	92
DET-004-190401-GW	280-123221-7	70	71	69	77	79	88
	MB 280-456902/1-A	83	81	86	82	82	87
	MB 280-457323/1-A	82	81	84	86	80	91
	LCS 280-456902/2-A	77	77	80	77	81	86
	LCS 280-457323/2-A	74	74	76	79	77	81
	LCSD 280-456902/3-A	74	76	79	82	82	87
	LCSD 280-457323/3-A	79	79	81	83	80	85

	<u>QC LIMITS</u>
2FP = 2-Fluorophenol (Surr)	19-119
PHL = Phenol-d5 (Surr)	10-115
NBZ = Nitrobenzene-d5 (Surr)	44-120
FBP = 2-Fluorobiphenyl	44-119
TBP = 2,4,6-Tribromophenol (Surr)	43-140
TPHL = Terphenyl-d14 (Surr)	50-134

Column to be used to flag recovery values

FORM III
GC/MS SEMI VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: D33120.D
 Lab ID: LCS 280-456902/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
2,4,5-Trichlorophenol	80.0	67.6	85	53-123	
2,4,6-Trichlorophenol	80.0	70.1	88	50-125	
2,4-Dichlorophenol	80.0	67.3	84	47-121	
2,4-Dimethylphenol	80.0	59.8	75	31-124	
2,4-Dinitrophenol	160	148	92	23-143	
2,4-Dinitrotoluene	80.0	70.6	88	57-128	
2,6-Dinitrotoluene	80.0	68.7	86	57-124	
2-Chlorophenol	80.0	63.3	79	38-117	
2-Methylphenol	80.0	64.8	81	30-117	
2-Nitrophenol	80.0	67.6	85	47-123	
3 & 4 Methylphenol	80.0	64.6	81	29-110	
4,6-Dinitro-2-methylphenol	160	146	91	44-137	
4-Chloro-3-methylphenol	80.0	67.2	84	52-119	
4-Nitrophenol	160	143	89	59-129	
Bis(2-ethylhexyl) phthalate	80.0	69.9	87	55-135	
Butyl benzyl phthalate	80.0	71.1	89	53-134	
Diethyl phthalate	80.0	69.7	87	56-125	
Dimethyl phthalate	80.0	68.5	86	45-127	
Di-n-butyl phthalate	80.0	70.7	88	59-127	
Di-n-octyl phthalate	80.0	70.3	88	51-140	
Nitrobenzene	80.0	61.3	77	45-121	
Pentachlorophenol	160	132	82	35-138	
Phenol	80.0	62.2	78	61-120	

Column to be used to flag recovery and RPD values

FORM III
GC/MS SEMI VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Matrix: Water Level: Low Lab File ID: D33117.D
Lab ID: LCS 280-457323/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
Hexachlorocyclopentadiene	160	90.9	57	10-106	

Column to be used to flag recovery and RPD values

FORM III
GC/MS SEMI VOA LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Matrix: Water Level: Low

Lab File ID: D33121.D

Lab ID: LCSD 280-456902/3-A

Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
2,4,5-Trichlorophenol	80.0	69.0	86	2	20	53-123	
2,4,6-Trichlorophenol	80.0	70.2	88	0	20	50-125	
2,4-Dichlorophenol	80.0	68.4	85	2	20	47-121	
2,4-Dimethylphenol	80.0	58.7	73	2	20	31-124	
2,4-Dinitrophenol	160	148	93	1	20	23-143	
2,4-Dinitrotoluene	80.0	69.4	87	2	20	57-128	
2,6-Dinitrotoluene	80.0	69.2	87	1	20	57-124	
2-Chlorophenol	80.0	60.8	76	4	20	38-117	
2-Methylphenol	80.0	61.2	77	6	20	30-117	
2-Nitrophenol	80.0	69.4	87	3	20	47-123	
3 & 4 Methylphenol	80.0	62.6	78	3	20	29-110	
4,6-Dinitro-2-methylphenol	160	143	89	2	20	44-137	
4-Chloro-3-methylphenol	80.0	67.6	84	1	20	52-119	
4-Nitrophenol	160	141	88	1	20	59-129	
Bis(2-ethylhexyl) phthalate	80.0	69.4	87	1	20	55-135	
Butyl benzyl phthalate	80.0	71.9	90	1	20	53-134	
Diethyl phthalate	80.0	69.8	87	0	20	56-125	
Dimethyl phthalate	80.0	66.6	83	3	20	45-127	
Di-n-butyl phthalate	80.0	70.3	88	1	20	59-127	
Di-n-octyl phthalate	80.0	70.5	88	0	20	51-140	
Nitrobenzene	80.0	62.4	78	2	20	45-121	
Pentachlorophenol	160	131	82	0	20	35-138	
Phenol	80.0	61.8	77	1	20	61-120	

Column to be used to flag recovery and RPD values

FORM III
GC/MS SEMI VOA LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Matrix: Water Level: Low Lab File ID: D33118.D
Lab ID: LCSD 280-457323/3-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Hexachlorocyclopentadiene	160	93.0	58	2	20	10-106	

Column to be used to flag recovery and RPD values

FORM IV
GC/MS SEMI VOA METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab File ID: D33119.D Lab Sample ID: MB 280-456902/1-A
Matrix: Water Date Extracted: 05/03/2019 12:42
Instrument ID: SMS_D Date Analyzed: 05/15/2019 19:18
Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 280-456902/2-A	D33120.D	05/15/2019 19:48
	LCSD 280-456902/3-A	D33121.D	05/15/2019 20:17
DET-003-190401-GW	280-123221-4	D33127.D	05/15/2019 23:14
DET-004-190401-GW	280-123221-7	D33128.D	05/15/2019 23:44

FORM IV
GC/MS SEMI VOA METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab File ID: D33116.D Lab Sample ID: MB 280-457323/1-A
Matrix: Water Date Extracted: 05/07/2019 16:07
Instrument ID: SMS_D Date Analyzed: 05/15/2019 17:49
Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 280-457323/2-A	D33117.D	05/15/2019 18:19
	LCSD 280-457323/3-A	D33118.D	05/15/2019 18:49
NTAmw-120-190401-GW	280-123221-1	D33124.D	05/15/2019 21:46

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab File ID: D32379.D DFTPP Injection Date: 04/03/2019
Instrument ID: SMS_D DFTPP Injection Time: 07:34
Analysis Batch No.: 452848

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0 % of mass 198	41.7
68	Less than 2.0 % of mass 69	0.0 (0.0) 1
69	Mass 69 relative abundance	50.1
70	Less than 2.0 % of mass 69	0.1 (0.3) 1
127	40.0 - 60.0 % of mass 198	53.9
197	Less than 1.0 % of mass 198	0.0
198	Base Peak, 100 % relative abundance	100.0
199	5.0- 9.0 % of mass 198	7.6
275	10.0 - 30.0 % of mass 198	21.0
365	Greater than 1.0 % of mass 198	2.4
441	Present but less than mass 443	10.6 (80.4) 3
442	Greater than 40.0 % of mass 198	66.7
443	17.0 - 23.0 % of mass 442	13.2 (19.8) 2

1-Value is % mass 69 2-Value is % mass 442 3-Value is % mass 443

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	ICIS 280-452848/3	D32380.D	04/03/2019	07:48
	STD004 280-452848/4	D32381.D	04/03/2019	08:17
	STD010 280-452848/5	D32382.D	04/03/2019	08:47
	STD020 280-452848/6	D32383.D	04/03/2019	09:16
	STD050 280-452848/7	D32384.D	04/03/2019	09:45
	STD120 280-452848/8	D32385.D	04/03/2019	10:15
	STD160 280-452848/9	D32386.D	04/03/2019	10:44
	STD200 280-452848/10	D32387.D	04/03/2019	11:14
	ICV 280-452848/11	D32388.D	04/03/2019	11:43
	ICV 280-452848/12	D32389.D	04/03/2019	12:13

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab File ID: D33113.D DFTPP Injection Date: 05/15/2019
Instrument ID: SMS_D DFTPP Injection Time: 16:26
Analysis Batch No.: 458321

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0 % of mass 198	43.8
68	Less than 2.0 % of mass 69	0.0 (0.0) 1
69	Mass 69 relative abundance	54.9
70	Less than 2.0 % of mass 69	0.1 (0.1) 1
127	40.0 - 60.0 % of mass 198	56.9
197	Less than 1.0 % of mass 198	0.0
198	Base Peak, 100 % relative abundance	100.0
199	5.0- 9.0 % of mass 198	6.6
275	10.0 - 30.0 % of mass 198	21.3
365	Greater than 1.0 % of mass 198	2.7
441	Present but less than mass 443	8.7 (78.4) 3
442	Greater than 40.0 % of mass 198	55.9
443	17.0 - 23.0 % of mass 442	11.1 (19.9) 2

1-Value is % mass 69 2-Value is % mass 442 3-Value is % mass 443

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCV 280-458321/3	D33114.D	05/15/2019	16:55
	CCV 280-458321/4	D33115.D	05/15/2019	17:25
	MB 280-457323/1-A	D33116.D	05/15/2019	17:49
	LCS 280-457323/2-A	D33117.D	05/15/2019	18:19
	LCSD 280-457323/3-A	D33118.D	05/15/2019	18:49
	MB 280-456902/1-A	D33119.D	05/15/2019	19:18
	LCS 280-456902/2-A	D33120.D	05/15/2019	19:48
	LCSD 280-456902/3-A	D33121.D	05/15/2019	20:17
NTAmw-120-190401-GW	280-123221-1	D33124.D	05/15/2019	21:46
DET-003-190401-GW	280-123221-4	D33127.D	05/15/2019	23:14
DET-004-190401-GW	280-123221-7	D33128.D	05/15/2019	23:44
	CCVC 280-458321/23	D33134.D	05/16/2019	02:41
	CCVC 280-458321/24	D33135.D	05/16/2019	03:06

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Sample No.: ICIS 280-452848/3 Date Analyzed: 04/03/2019 07:48
 Instrument ID: SMS_D GC Column: Rxi-5Sil MS ID: 0.25 (mm)
 Lab File ID (Standard): D32380.D Heated Purge: (Y/N) N
 Calibration ID: 35876

		DCBd4		NPT		ANT	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		128073	4.70	519422	5.92	336563	7.67
UPPER LIMIT		256146	5.20	1038844	6.42	673126	8.17
LOWER LIMIT		64037	4.20	259711	5.42	168282	7.17
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 280-452848/11		125861	4.70	520327	5.92	345869	7.67
ICV 280-452848/12		122709	4.70	500757	5.92	324923	7.67
CCV 280-458321/3		126894	4.55	495980	5.79	307109	7.54
CCV 280-458321/4		125980	4.55	498705	5.79	316661	7.53
MB 280-457323/1-A		128143	4.55	493919	5.79	312806	7.54
LCS 280-457323/2-A		138608	4.56	543545	5.79	343153	7.54
LCSD 280-457323/3-A		138940	4.55	548081	5.79	349348	7.54
MB 280-456902/1-A		142781	4.55	550329	5.79	354290	7.54
LCS 280-456902/2-A		139351	4.55	549341	5.79	347476	7.54
LCSD 280-456902/3-A		147068	4.55	571778	5.79	364935	7.54
280-123221-1	NTAmw-120-190401-GW	148017	4.55	590309	5.79	388877	7.53
280-123221-4	DET-003-190401-GW	133122	4.55	515861	5.79	331794	7.53
280-123221-7	DET-004-190401-GW	137645	4.55	542225	5.79	336403	7.53
CCVC 280-458321/23		130592	4.55	531499	5.79	331240	7.53
CCVC 280-458321/24		141717	4.55	569070	5.79	356716	7.53

DCBd4 = 1,4-Dichlorobenzene-d4

NPT = Naphthalene-d8

ANT = Acenaphthene-d10

Area Limit = 50%-200% of internal standard area

RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Sample No.: ICIS 280-452848/3 Date Analyzed: 04/03/2019 07:48
 Instrument ID: SMS_D GC Column: Rxi-5Sil MS ID: 0.25 (mm)
 Lab File ID (Standard): D32380.D Heated Purge: (Y/N) N
 Calibration ID: 35876

	PHN		CRY		PRY		
	AREA #	RT #	AREA #	RT #	AREA #	RT #	
INITIAL CALIBRATION MID-POINT	621182	9.17	614664	13.36	566449	17.36	
UPPER LIMIT	1242364	9.67	1229328	13.86	1132898	17.86	
LOWER LIMIT	310591	8.67	307332	12.86	283225	16.86	
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 280-452848/11		646003	9.16	641022	13.35	596743	17.35
ICV 280-452848/12		601212	9.16	612246	13.33	585922	17.33
CCV 280-458321/3		537586	9.03	525852	13.04	443725	16.93
CCV 280-458321/4		580741	9.02	540600	13.02	497055	16.91
MB 280-457323/1-A		566870	9.02	552552	13.03	502346	16.92
LCS 280-457323/2-A		612418	9.02	574377	13.03	508128	16.92
LCSD 280-457323/3-A		611752	9.02	582515	13.04	512521	16.92
MB 280-456902/1-A		664104	9.02	649159	13.02	594445	16.91
LCS 280-456902/2-A		614588	9.02	594073	13.03	542016	16.91
LCSD 280-456902/3-A		648055	9.02	623622	13.04	560086	16.92
280-123221-1	NTAmw-120-190401-GW	697126	9.02	685651	13.01	633695	16.90
280-123221-4	DET-003-190401-GW	592649	9.01	561289	13.01	525093	16.89
280-123221-7	DET-004-190401-GW	597839	9.01	553722	13.01	515703	16.89
CCVC 280-458321/23		602470	9.01	576005	13.01	539737	16.89
CCVC 280-458321/24		620172	9.01	584878	13.02	516624	16.90

PHN = Phenanthrene-d10
 CRY = Chrysene-d12
 PRY = Perylene-d12

Area Limit = 50%-200% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: NTAmw-120-190401-GW Lab Sample ID: 280-123221-1
 Matrix: Water Lab File ID: D33124.D
 Analysis Method: 8270D Date Collected: 04/30/2019 10:48
 Extract. Method: 3520C Date Extracted: 05/07/2019 16:07
 Sample wt/vol: 1017.3 (mL) Date Analyzed: 05/15/2019 21:46
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 458321 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
77-47-4	Hexachlorocyclopentadiene	9.8	U	49	9.8	3.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
118-79-6	2,4,6-Tribromophenol (Surr)	72		43-140
321-60-8	2-Fluorobiphenyl	72		44-119
367-12-4	2-Fluorophenol (Surr)	74		19-119
4165-60-0	Nitrobenzene-d5 (Surr)	75		44-120
4165-62-2	Phenol-d5 (Surr)	71		10-115
1718-51-0	Terphenyl-d14 (Surr)	75		50-134

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33124.D
 Lims ID: 280-123221-B-1-A
 Client ID: NTAmw-120-190401-GW
 Sample Type: Client
 Inject. Date: 15-May-2019 21:46:30 ALS Bottle#: 12 Worklist Smp#: 13
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-b-1-a
 Operator ID: WICKHAMM Instrument ID: SMS_D
 Method: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 17-May-2019 22:14:20 Calib Date: 29-Apr-2019 12:43:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190429-81391.b\D32840.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 17-May-2019 22:05:20

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	4.551	4.554	-0.003	98	148017	40.0	
* 2 Naphthalene-d8	136	5.785	5.794	-0.009	100	590309	40.0	
* 3 Acenaphthene-d10	164	7.532	7.541	-0.009	97	388877	40.0	
* 4 Phenanthrene-d10	188	9.017	9.026	-0.009	99	697126	40.0	
* 5 Chrysene-d12	240	13.013	13.043	-0.030	82	685651	40.0	
* 6 Perylene-d12	264	16.902	16.932	-0.030	99	633695	40.0	
\$ 7 2-Fluorophenol	112	3.359	3.363	-0.004	98	395771	74.4	
\$ 8 Phenol-d5	99	4.198	4.207	-0.009	98	507738	71.0	
\$ 9 Nitrobenzene-d5	82	5.074	5.078	-0.004	95	486676	74.8	
\$ 11 2-Fluorobiphenyl	172	6.848	6.857	-0.009	98	884671	71.8	
\$ 12 2,4,6-Tribromophenol	330	8.322	8.331	-0.009	94	112600	72.0	
\$ 13 Terphenyl-d14	244	10.934	10.949	-0.015	100	1046821	75.3	
90 Hexachlorocyclopentadiene	237		6.664				ND	

Reagents:

MS-IS_00015

Amount Added: 20.00

Units: uL

Run Reagent

Report Date: 17-May-2019 22:14:41

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33124.D

Injection Date: 15-May-2019 21:46:30

Instrument ID: SMS_D

Operator ID: WICKHAMM

Lims ID: 280-123221-B-1-A

Lab Sample ID: 280-123221-1

Worklist Smp#: 13

Client ID: NTAmw-120-190401-GW

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

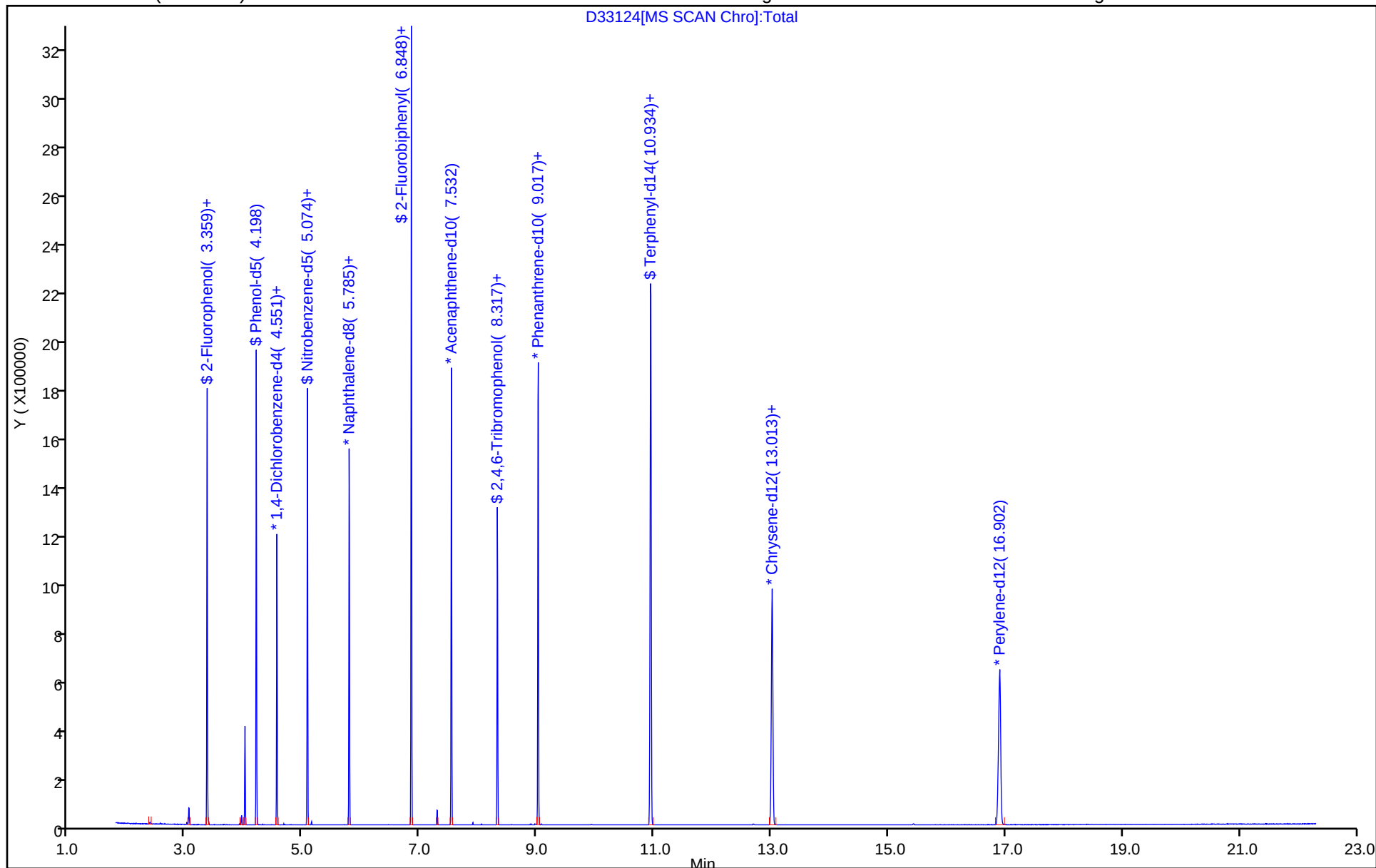
ALS Bottle#: 12

Method: SMSD_8270C

Limit Group: MSSV - 8270C_625

Column: VF-5ms (0.50 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33124.D
 Lims ID: 280-123221-B-1-A
 Client ID: NTAmw-120-190401-GW
 Sample Type: Client
 Inject. Date: 15-May-2019 21:46:30 ALS Bottle#: 12 Worklist Smp#: 13
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-b-1-a
 Operator ID: WICKHAMM Instrument ID: SMS_D
 Method: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 17-May-2019 22:14:20 Calib Date: 29-Apr-2019 12:43:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190429-81391.b\D32840.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 17-May-2019 22:05:20

Compound	Amount Added	Amount Recovered	% Rec.
\$ 7 2-Fluorophenol	100.0	74.4	74.38
\$ 8 Phenol-d5	100.0	71.0	71.05
\$ 9 Nitrobenzene-d5	100.0	74.8	74.83
\$ 11 2-Fluorobiphenyl	100.0	71.8	71.77
\$ 12 2,4,6-Tribromophenol	100.0	72.0	72.03
\$ 13 Terphenyl-d14	100.0	75.3	75.27

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>DET-003-190401-GW</u>	Lab Sample ID: <u>280-123221-4</u>
Matrix: <u>Water</u>	Lab File ID: <u>D33127.D</u>
Analysis Method: <u>8270D</u>	Date Collected: <u>04/29/2019 10:53</u>
Extract. Method: <u>3520C</u>	Date Extracted: <u>05/03/2019 12:42</u>
Sample wt/vol: <u>989.5 (mL)</u>	Date Analyzed: <u>05/15/2019 23:14</u>
Con. Extract Vol.: <u>1 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>1 (uL)</u>	Level: (low/med) <u>Low</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>458321</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
95-95-4	2,4,5-Trichlorophenol	4.4	U	20	4.4	2.1
88-06-2	2,4,6-Trichlorophenol	1.0	U	20	1.0	0.29
120-83-2	2,4-Dichlorophenol	2.0	U	10	2.0	0.65
105-67-9	2,4-Dimethylphenol	2.0	U	10	2.0	0.59
51-28-5	2,4-Dinitrophenol	30	U	81	30	10
121-14-2	2,4-Dinitrotoluene	4.4	U	20	4.4	1.7
606-20-2	2,6-Dinitrotoluene	4.4	U	20	4.4	1.9
95-57-8	2-Chlorophenol	4.4	U	10	4.4	2.0
95-48-7	2-Methylphenol	2.0	U	10	2.0	0.99
88-75-5	2-Nitrophenol	1.0	U	20	1.0	0.39
15831-10-4	3 & 4 Methylphenol	0.51	U	20	0.51	0.25
534-52-1	4,6-Dinitro-2-methylphenol	8.9	U	81	8.9	4.0
59-50-7	4-Chloro-3-methylphenol	5.1	U	20	5.1	2.4
100-02-7	4-Nitrophenol	4.0	U Q	51	4.0	1.2
117-81-7	Bis(2-ethylhexyl) phthalate	2.0	U	10	2.0	0.57
85-68-7	Butyl benzyl phthalate	2.0	U	20	2.0	1.0
84-66-2	Diethyl phthalate	1.0	U	20	1.0	0.38
131-11-3	Dimethyl phthalate	0.51	U	20	0.51	0.21
84-74-2	Di-n-butyl phthalate	4.4	U	20	4.4	1.2
117-84-0	Di-n-octyl phthalate	1.0	U	20	1.0	0.35
98-95-3	Nitrobenzene	2.0	U	20	2.0	0.82
87-86-5	Pentachlorophenol	61	U	81	61	20
108-95-2	Phenol	4.4	U	10	4.4	2.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
118-79-6	2,4,6-Tribromophenol (Surr)	79		43-140
321-60-8	2-Fluorobiphenyl	80		44-119
367-12-4	2-Fluorophenol (Surr)	83		19-119
4165-60-0	Nitrobenzene-d5 (Surr)	83		44-120
4165-62-2	Phenol-d5 (Surr)	82		10-115
1718-51-0	Terphenyl-d14 (Surr)	92		50-134

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33127.D
 Lims ID: 280-123221-B-4-A
 Client ID: DET-003-190401-GW
 Sample Type: Client
 Inject. Date: 15-May-2019 23:14:30 ALS Bottle#: 15 Worklist Smp#: 16
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-b-4-a
 Operator ID: WICKHAMM Instrument ID: SMS_D
 Method: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 17-May-2019 22:14:20 Calib Date: 29-Apr-2019 12:43:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190429-81391.b\D32840.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 17-May-2019 22:06:33

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	4.553	4.554	-0.001	99	133122	40.0	
* 2 Naphthalene-d8	136	5.787	5.794	-0.007	100	515861	40.0	
* 3 Acenaphthene-d10	164	7.534	7.541	-0.007	98	331794	40.0	
* 4 Phenanthrene-d10	188	9.014	9.026	-0.012	99	592649	40.0	
* 5 Chrysene-d12	240	13.010	13.043	-0.033	82	561289	40.0	
* 6 Perylene-d12	264	16.893	16.932	-0.039	99	525093	40.0	
\$ 7 2-Fluorophenol	112	3.357	3.363	-0.006	98	399500	83.5	
\$ 8 Phenol-d5	99	4.201	4.207	-0.006	98	524434	81.6	
\$ 9 Nitrobenzene-d5	82	5.071	5.078	-0.007	95	473891	83.4	
\$ 11 2-Fluorobiphenyl	172	6.845	6.857	-0.012	98	844197	80.3	
\$ 12 2,4,6-Tribromophenol	330	8.319	8.331	-0.012	90	105353	79.0	
\$ 13 Terphenyl-d14	244	10.937	10.949	-0.012	100	1050807	92.3	
28 Phenol	94		4.218				ND	
36 2-Chlorophenol	128		4.367				ND	
41 2-Methylphenol	108		4.789				ND	
46 3 & 4 Methylphenol	108		4.934				ND	
54 Nitrobenzene	77		5.099				ND	
59 2-Nitrophenol	139		5.409				ND	
60 2,4-Dimethylphenol	107		5.446				ND	
68 2,4-Dichlorophenol	162		5.655				ND	
83 4-Chloro-3-methylphenol	107		6.344				ND	
94 2,4,6-Trichlorophenol	196		6.782				ND	
96 2,4,5-Trichlorophenol	196		6.825				ND	
111 Dimethyl phthalate	163		7.247				ND	
113 2,6-Dinitrotoluene	165		7.306				ND	
120 2,4-Dinitrophenol	184		7.589				ND	
121 4-Nitrophenol	109		7.674				ND	
124 2,4-Dinitrotoluene	165		7.717				ND	
132 Diethyl phthalate	149		7.952				ND	
139 4,6-Dinitro-2-methylphenol	198		8.134				ND	
157 Pentachlorophenol	266		8.844				ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/ml	Flags
169 Di-n-butyl phthalate	149		9.587				ND	
187 Butyl benzyl phthalate	149		11.825				ND	
193 Bis(2-ethylhexyl) phthalat	149		13.177				ND	
197 Di-n-octyl phthalate	149		14.955				ND	

Reagents:

MS-IS_00015

Amount Added: 20.00

Units: uL

Run Reagent

Report Date: 17-May-2019 22:14:44

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33127.D

Injection Date: 15-May-2019 23:14:30

Instrument ID: SMS_D

Operator ID: WICKHAMM

Lims ID: 280-123221-B-4-A

Lab Sample ID: 280-123221-4

Worklist Smp#: 16

Client ID: DET-003-190401-GW

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

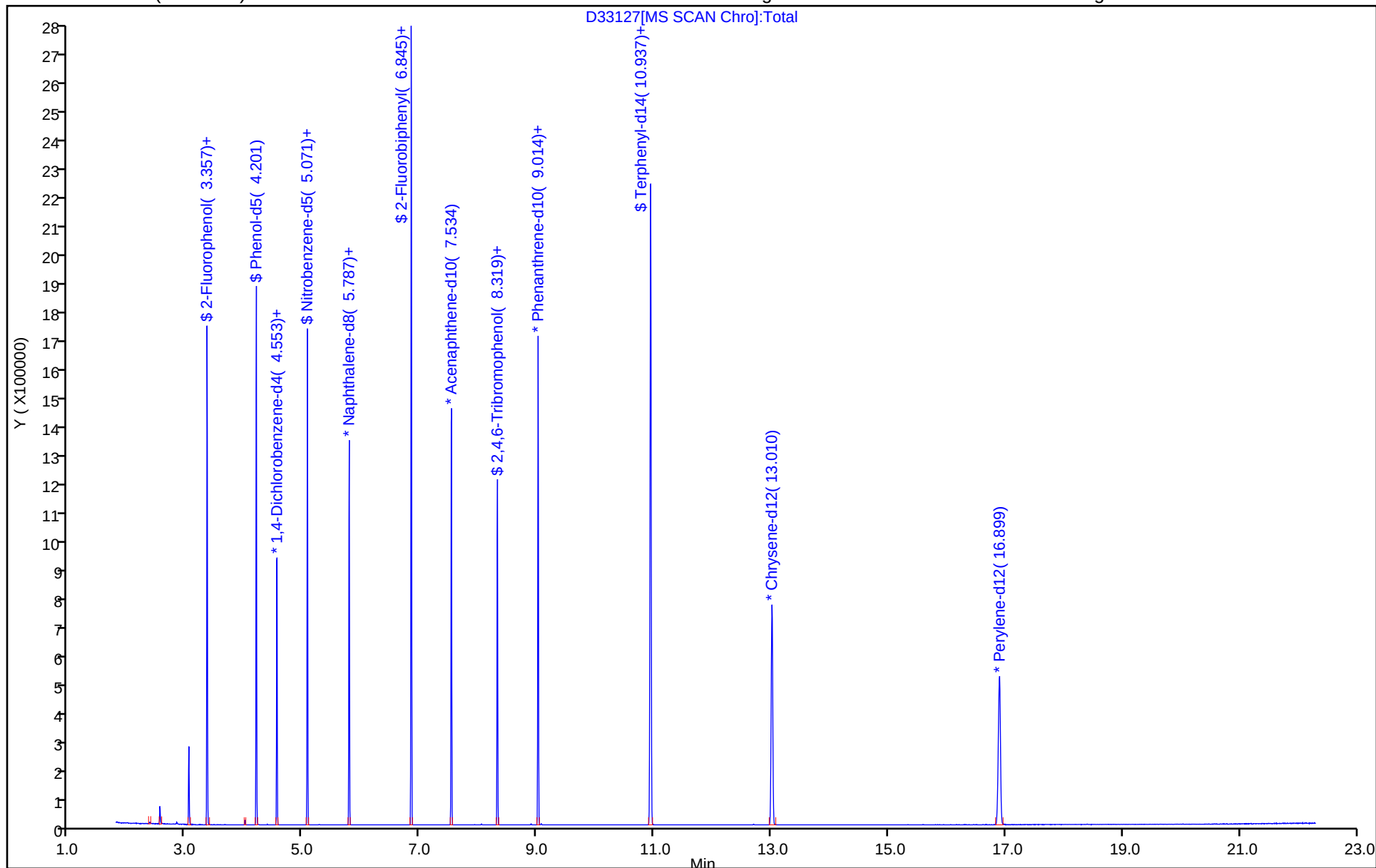
ALS Bottle#: 15

Method: SMSD_8270C

Limit Group: MSSV - 8270C_625

Column: VF-5ms (0.50 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33127.D
 Lims ID: 280-123221-B-4-A
 Client ID: DET-003-190401-GW
 Sample Type: Client
 Inject. Date: 15-May-2019 23:14:30 ALS Bottle#: 15 Worklist Smp#: 16
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-b-4-a
 Operator ID: WICKHAMM Instrument ID: SMS_D
 Method: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 17-May-2019 22:14:20 Calib Date: 29-Apr-2019 12:43:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190429-81391.b\D32840.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 17-May-2019 22:06:33

Compound	Amount Added	Amount Recovered	% Rec.
\$ 7 2-Fluorophenol	100.0	83.5	83.48
\$ 8 Phenol-d5	100.0	81.6	81.59
\$ 9 Nitrobenzene-d5	100.0	83.4	83.39
\$ 11 2-Fluorobiphenyl	100.0	80.3	80.27
\$ 12 2,4,6-Tribromophenol	100.0	79.0	78.99
\$ 13 Terphenyl-d14	100.0	92.3	92.29

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>DET-004-190401-GW</u>	Lab Sample ID: <u>280-123221-7</u>
Matrix: <u>Water</u>	Lab File ID: <u>D33128.D</u>
Analysis Method: <u>8270D</u>	Date Collected: <u>04/29/2019 10:04</u>
Extract. Method: <u>3520C</u>	Date Extracted: <u>05/03/2019 12:42</u>
Sample wt/vol: <u>1010.9(mL)</u>	Date Analyzed: <u>05/15/2019 23:44</u>
Con. Extract Vol.: <u>1(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>1(uL)</u>	Level: (low/med) <u>Low</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>458321</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
95-95-4	2,4,5-Trichlorophenol	4.4	U	20	4.4	2.0
88-06-2	2,4,6-Trichlorophenol	0.99	U	20	0.99	0.29
120-83-2	2,4-Dichlorophenol	2.0	U	9.9	2.0	0.63
105-67-9	2,4-Dimethylphenol	2.0	U	9.9	2.0	0.57
51-28-5	2,4-Dinitrophenol	30	U	79	30	9.9
121-14-2	2,4-Dinitrotoluene	4.4	U	20	4.4	1.6
606-20-2	2,6-Dinitrotoluene	4.4	U	20	4.4	1.9
95-57-8	2-Chlorophenol	4.4	U	9.9	4.4	2.0
95-48-7	2-Methylphenol	2.0	U	9.9	2.0	0.97
88-75-5	2-Nitrophenol	0.99	U	20	0.99	0.39
15831-10-4	3 & 4 Methylphenol	0.49	U	20	0.49	0.25
534-52-1	4,6-Dinitro-2-methylphenol	8.7	U	79	8.7	4.0
59-50-7	4-Chloro-3-methylphenol	4.9	U	20	4.9	2.4
100-02-7	4-Nitrophenol	4.0	U Q	49	4.0	1.2
117-81-7	Bis(2-ethylhexyl) phthalate	2.0	U	9.9	2.0	0.55
85-68-7	Butyl benzyl phthalate	2.0	U	20	2.0	0.99
84-66-2	Diethyl phthalate	0.99	U	20	0.99	0.38
131-11-3	Dimethyl phthalate	0.49	U	20	0.49	0.21
84-74-2	Di-n-butyl phthalate	4.4	U	20	4.4	1.1
117-84-0	Di-n-octyl phthalate	0.99	U	20	0.99	0.35
98-95-3	Nitrobenzene	2.0	U M	20	2.0	0.80
87-86-5	Pentachlorophenol	59	U	79	59	20
108-95-2	Phenol	4.4	U	9.9	4.4	2.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
118-79-6	2,4,6-Tribromophenol (Surr)	79		43-140
321-60-8	2-Fluorobiphenyl	77		44-119
367-12-4	2-Fluorophenol (Surr)	70		19-119
4165-60-0	Nitrobenzene-d5 (Surr)	69		44-120
4165-62-2	Phenol-d5 (Surr)	71		10-115
1718-51-0	Terphenyl-d14 (Surr)	88		50-134

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33128.D
 Lims ID: 280-123221-B-7-A
 Client ID: DET-004-190401-GW
 Sample Type: Client
 Inject. Date: 15-May-2019 23:44:30 ALS Bottle#: 16 Worklist Smp#: 17
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-b-7-a
 Operator ID: WICKHAMM Instrument ID: SMS_D
 Method: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 17-May-2019 22:14:20 Calib Date: 29-Apr-2019 12:43:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190429-81391.b\D32840.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 17-May-2019 22:06:47

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	4.553	4.554	-0.001	99	137645	40.0	
* 2 Naphthalene-d8	136	5.787	5.794	-0.007	100	542225	40.0	
* 3 Acenaphthene-d10	164	7.534	7.541	-0.007	98	336403	40.0	
* 4 Phenanthrene-d10	188	9.013	9.026	-0.013	99	597839	40.0	
* 5 Chrysene-d12	240	13.009	13.043	-0.034	82	553722	40.0	
* 6 Perylene-d12	264	16.893	16.932	-0.039	99	515703	40.0	
\$ 7 2-Fluorophenol	112	3.362	3.363	-0.001	99	344894	69.7	
\$ 8 Phenol-d5	99	4.200	4.207	-0.007	98	473945	71.3	
\$ 9 Nitrobenzene-d5	82	5.071	5.078	-0.007	95	412944	69.1	
\$ 11 2-Fluorobiphenyl	172	6.850	6.857	-0.007	98	820593	77.0	
\$ 12 2,4,6-Tribromophenol	330	8.319	8.331	-0.012	90	107255	79.3	
\$ 13 Terphenyl-d14	244	10.937	10.949	-0.012	100	985079	87.7	
28 Phenol	94		4.218				ND	
36 2-Chlorophenol	128		4.367				ND	
41 2-Methylphenol	108		4.789				ND	
46 3 & 4 Methylphenol	108		4.934				ND	
54 Nitrobenzene	77		5.099				ND	U
59 2-Nitrophenol	139		5.409				ND	
60 2,4-Dimethylphenol	107		5.446				ND	
68 2,4-Dichlorophenol	162		5.655				ND	
83 4-Chloro-3-methylphenol	107		6.344				ND	
94 2,4,6-Trichlorophenol	196		6.782				ND	
96 2,4,5-Trichlorophenol	196		6.825				ND	
111 Dimethyl phthalate	163		7.247				ND	
113 2,6-Dinitrotoluene	165		7.306				ND	
120 2,4-Dinitrophenol	184		7.589				ND	
121 4-Nitrophenol	109		7.674				ND	
124 2,4-Dinitrotoluene	165		7.717				ND	
132 Diethyl phthalate	149		7.952				ND	
139 4,6-Dinitro-2-methylphenol	198		8.134				ND	
157 Pentachlorophenol	266		8.844				ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/ml	Flags
169 Di-n-butyl phthalate	149		9.587				ND	
187 Butyl benzyl phthalate	149		11.825				ND	
193 Bis(2-ethylhexyl) phthalat	149		13.177				ND	
197 Di-n-octyl phthalate	149		14.955				ND	

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MS-IS_00015

Amount Added: 20.00

Units: uL

Run Reagent

Report Date: 17-May-2019 22:14:45

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33128.D

Injection Date: 15-May-2019 23:44:30

Instrument ID: SMS_D

Operator ID: WICKHAMM

Lims ID: 280-123221-B-7-A

Lab Sample ID: 280-123221-7

Worklist Smp#: 17

Client ID: DET-004-190401-GW

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

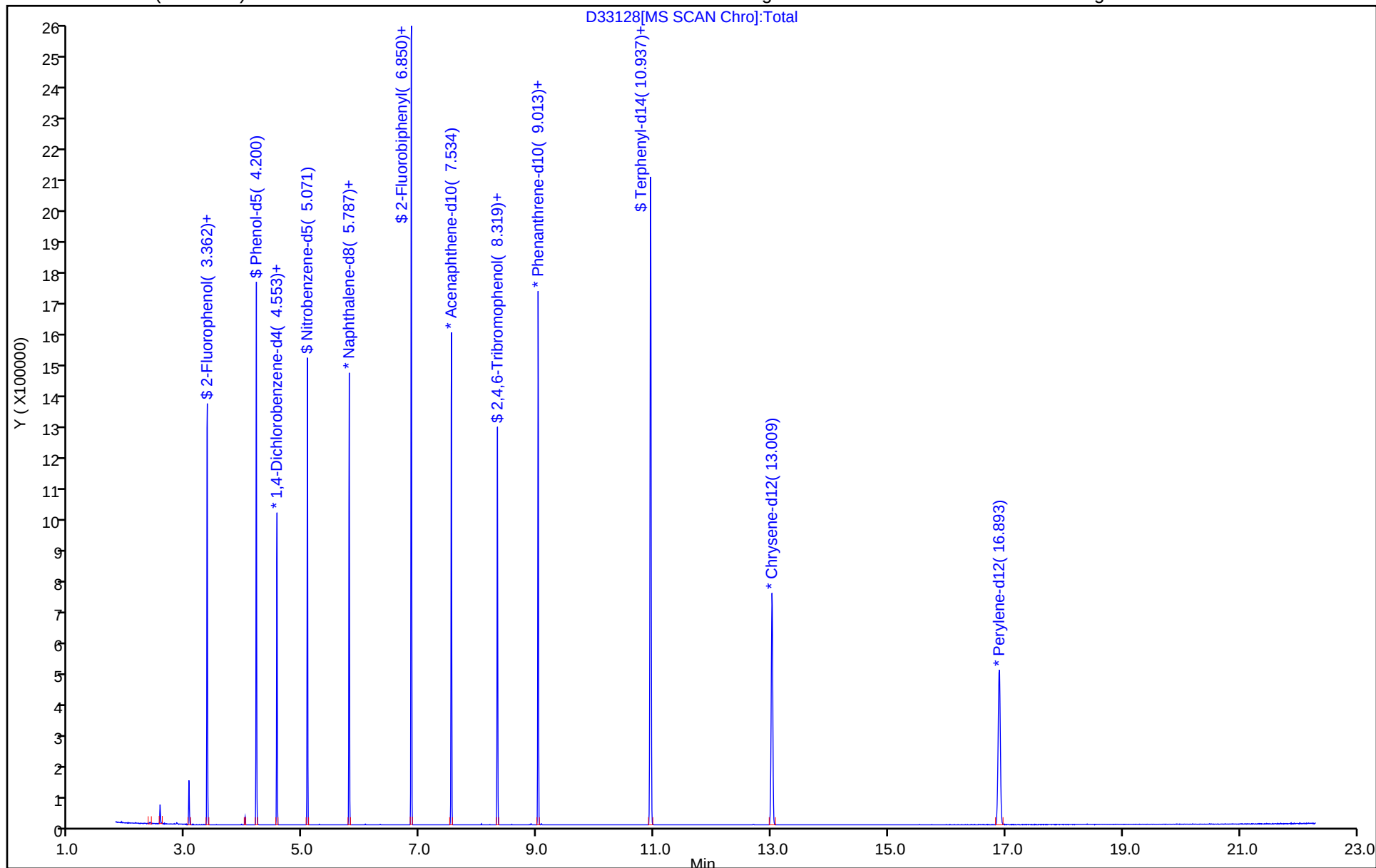
ALS Bottle#: 16

Method: SMSD_8270C

Limit Group: MSSV - 8270C_625

Column: VF-5ms (0.50 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33128.D
 Lims ID: 280-123221-B-7-A
 Client ID: DET-004-190401-GW
 Sample Type: Client
 Inject. Date: 15-May-2019 23:44:30 ALS Bottle#: 16 Worklist Smp#: 17
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-b-7-a
 Operator ID: WICKHAMM Instrument ID: SMS_D
 Method: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 17-May-2019 22:14:20 Calib Date: 29-Apr-2019 12:43:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190429-81391.b\D32840.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 17-May-2019 22:06:47

Compound	Amount Added	Amount Recovered	% Rec.
\$ 7 2-Fluorophenol	100.0	69.7	69.70
\$ 8 Phenol-d5	100.0	71.3	71.32
\$ 9 Nitrobenzene-d5	100.0	69.1	69.13
\$ 11 2-Fluorobiphenyl	100.0	77.0	76.96
\$ 12 2,4,6-Tribromophenol	100.0	79.3	79.31
\$ 13 Terphenyl-d14	100.0	87.7	87.70

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33128.D

Injection Date: 15-May-2019 23:44:30

Instrument ID: SMS_D

Lims ID: 280-123221-B-7-A

Lab Sample ID: 280-123221-7

Client ID: DET-004-190401-GW

Operator ID: WICKHAMM

ALS Bottle#: 16

Worklist Smp#: 17

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: SMSD_8270C

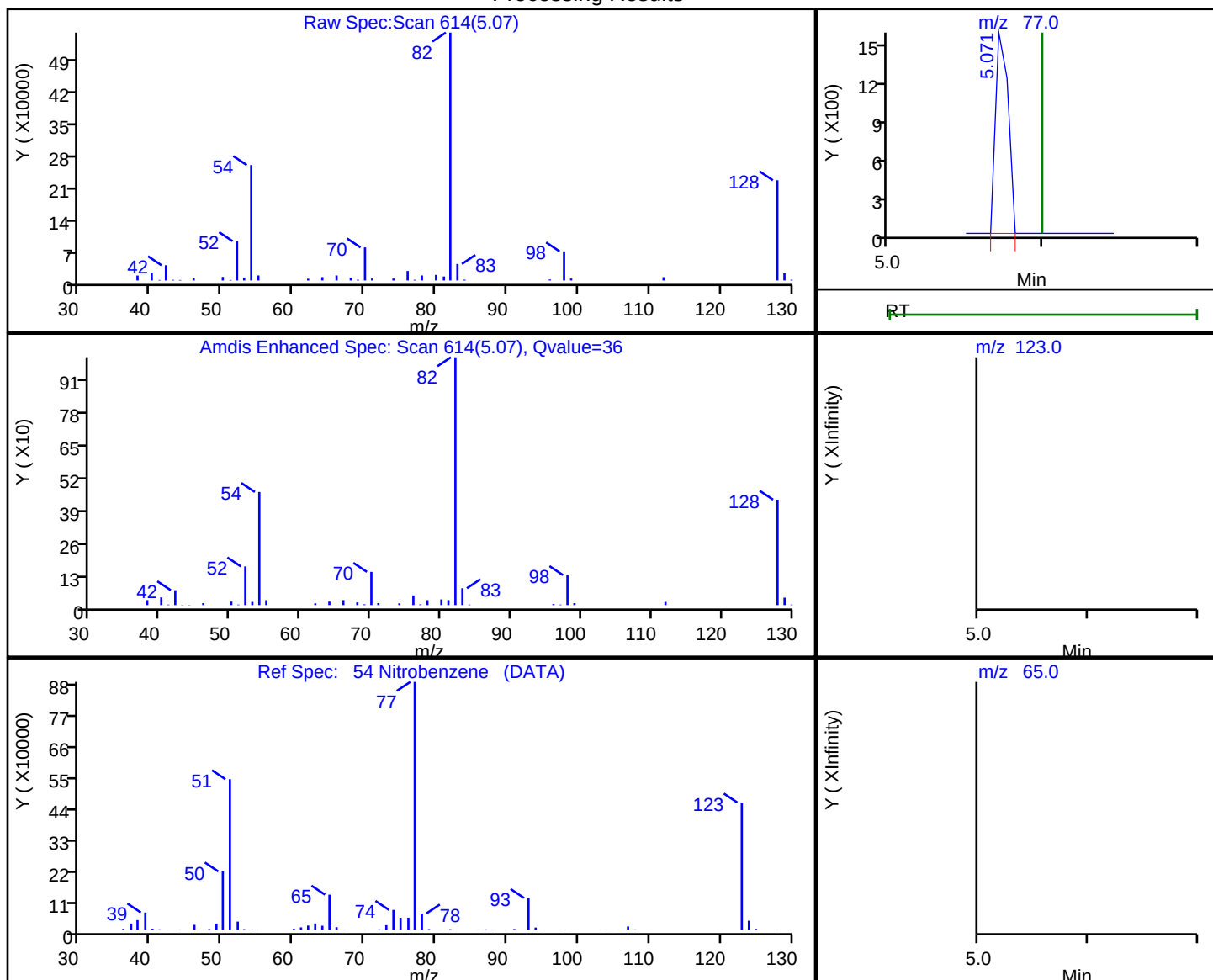
Limit Group: MSSV - 8270C_625

Column: VF-5ms (0.50 mm)

Detector: MS SCAN

54 Nitrobenzene, CAS: 98-95-3

Processing Results



RT	Mass	Response	Amount
5.07	77.00	853	0.139922
5.10	123.00	0	
5.10	65.00	0	

Reviewer: wickhamm, 17-May-2019 22:06:43

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 452848

SDG No.: _____

Instrument ID: SMS_D GC Column: Rxi-5Sil MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/03/2019 07:48 Calibration End Date: 04/03/2019 11:14 Calibration ID: 35876

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD004 280-452848/4	D32381.D
Level 2	STD010 280-452848/5	D32382.D
Level 3	STD020 280-452848/6	D32383.D
Level 4	STD050 280-452848/7	D32384.D
Level 5	ICIS 280-452848/3	D32380.D
Level 6	STD120 280-452848/8	D32385.D
Level 7	STD160 280-452848/9	D32386.D
Level 8	STD200 280-452848/10	D32387.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7	LVL 8														
1,4-Dioxane	0.8768 0.6639	0.6645 0.6612	0.7492 0.6604	0.6918	0.6962	Ave		0.7080				10.5		15.0			
N-Nitrosodimethylamine	1.0642 1.0702	1.0928 1.0712	1.1004 1.0585	1.1073	1.1079	Ave		1.0841				1.9		15.0			
Pyridine	1.7356 1.6889	1.6958 1.6511	1.7385 1.6156	1.7389	1.7708	Ave		1.7044				3.0		15.0			
Phenol	2.1526 2.0334	2.1208 2.0062	2.1577 1.9772	2.1201	2.1130	Ave		2.0851				3.3		15.0			
Aniline	2.7897 2.5629	2.6364 2.5639	2.7044 2.5073	2.6703	2.6829	Ave		2.6397				3.5		15.0			
Bis(2-chloroethyl)ether	1.6880 1.4987	1.5734 1.4904	1.6207 1.4609	1.5794	1.5863	Ave		1.5622				4.8		15.0			
2-Chlorophenol	1.5824 1.4579	1.4976 1.4321	1.5264 1.4231	1.4940	1.5203	Ave		1.4917				3.6		15.0			
1,3-Dichlorobenzene	1.6551 1.5053	1.6047 1.4729	1.6114 1.4377	1.5845	1.5779	Ave		1.5562				4.9		15.0			
1,4-Dichlorobenzene	1.7187 1.5295	1.6289 1.4959	1.6380 1.4578	1.5976	1.5962	Ave		1.5828				5.3		15.0			
Benzyl alcohol	1.1219 1.1106	1.0838 1.1168	1.1356 1.0986	1.1391	1.1577	Ave		1.1205				2.1		15.0			
1,2-Dichlorobenzene	1.6361 1.4511	1.5552 1.4368	1.5868 1.4006	1.5331	1.5118	Ave		1.5139				5.3		15.0			
2-Methylphenol	1.5741 1.5359	1.4950 1.5034	1.6018 1.4823	1.5710	1.5718	Ave		1.5419				2.9		15.0			
2,2'-oxybis[1-chloropropane]	2.0965 1.9506	2.0421 1.9392	2.0637 1.8914	2.0417	2.0404	Ave		2.0082				3.6		15.0			
3 & 4 Methylphenol	1.6658 1.5904	1.6383 1.5609	1.6821 1.5247	1.6525	1.6645	Ave		1.6224				3.5		15.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 452848
SDG No.: _____
Instrument ID: SMS_D GC Column: Rxi-5Sil MS ID: 0.25 (mm) Heated Purge: (Y/N) N
Calibration Start Date: 04/03/2019 07:48 Calibration End Date: 04/03/2019 11:14 Calibration ID: 35876

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
N-Nitrosodi-n-propylamine	1.3186 1.2026	1.2642 1.1658	1.2979 1.1317	1.2872	1.2710	Ave		1.2424			0.0500	5.4		15.0			
Acetophenone	2.3938 2.1798	2.3567 2.0988	2.3619 2.0308	2.3348	2.2765	Ave		2.2541				6.0		15.0			
Hexachloroethane	0.6146 0.5916	0.5937 0.5883	0.6188 0.5777	0.6166	0.6139	Ave		0.6019				2.6		15.0			
Nitrobenzene	0.4430 0.4424	0.4610 0.4360	0.4691 0.4273	0.4608	0.4583	Ave		0.4497				3.2		15.0			
Isophorone	0.8902 0.8462	0.8698 0.8237	0.8915 0.8167	0.8626	0.8828	Ave		0.8604				3.4		15.0			
2-Nitrophenol	0.1585 0.2002	0.1758 0.1950	0.1842 0.1937	0.1938	0.1959	Ave		0.1871				7.4		15.0			
2,4-Dimethylphenol	0.4148 0.3948	0.4118 0.3818	0.4174 0.3783	0.4102	0.4126	Ave		0.4027				3.9		15.0			
Bis(2-chloroethoxy)methane	0.5101 0.4724	0.4919 0.4628	0.4957 0.4569	0.4887	0.4919	Ave		0.4838				3.7		15.0			
Benzoic acid	++++ 0.3488	0.2507 0.3513	0.2937 0.3538	0.3205	0.3424	Lin2	-2.166	0.3543							0.9990		0.9900
2,4-Dichlorophenol	0.3066 0.3112	0.3163 0.3002	0.3180 0.3002	0.3186	0.3201	Ave		0.3114				2.6		15.0			
1,2,4-Trichlorobenzene	0.3552 0.3321	0.3423 0.3188	0.3551 0.3130	0.3402	0.3446	Ave		0.3377				4.6		15.0			
Naphthalene	1.1589 1.0391	1.1212 1.0009	1.1246 0.9832	1.1038	1.1113	Ave		1.0804				5.9		15.0			
4-Chloroaniline	0.5033 0.4750	0.4906 0.4559	0.5087 0.4535	0.4967	0.4927	Ave		0.4845				4.3		15.0			
2,6-Dichlorophenol	0.3147 0.3046	0.3145 0.2965	0.3114 0.2907	0.3177	0.3142	Ave		0.3080				3.2		15.0			
Hexachlorobutadiene	0.1898 0.1772	0.1854 0.1712	0.1883 0.1693	0.1800	0.1813	Ave		0.1803				4.2		15.0			
Caprolactam	0.2117 0.1947	0.2033 0.2081	0.2059 0.2060	0.2071	0.2024	Ave		0.2049				2.5		15.0			
4-Chloro-3-methylphenol	0.3616 0.3547	0.3594 0.3465	0.3694 0.3436	0.3726	0.3702	Ave		0.3597				3.0		15.0			
2-Methylnaphthalene	0.8019 0.7273	0.7764 0.6934	0.7994 0.6750	0.7674	0.7574	Ave		0.7498				6.3		15.0			
1-Methylnaphthalene	0.7535 0.6901	0.7318 0.6551	0.7501 0.6456	0.7159	0.7219	Ave		0.7080				5.8		15.0			
Hexachlorocyclopentadiene	0.3005 0.3330	0.2963 0.3282	0.3162 0.3113	0.3365	0.3453	Ave		0.3209			0.0500	5.5		15.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 452848
SDG No.: _____
Instrument ID: SMS_D GC Column: Rxi-5Sil MS ID: 0.25 (mm) Heated Purge: (Y/N) N
Calibration Start Date: 04/03/2019 07:48 Calibration End Date: 04/03/2019 11:14 Calibration ID: 35876

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
1,2,4,5-Tetrachlorobenzene	0.3614 0.3223	0.3540 0.3087	0.3567 0.2993	0.3460	0.3403	Ave		0.3361				6.9		15.0			
2,4,6-Trichlorophenol	0.3595 0.3534	0.3536 0.3417	0.3704 0.3217	0.3718	0.3722	Ave		0.3555				4.9		15.0			
2,4,5-Trichlorophenol	0.3674 0.4027	0.3766 0.3888	0.4004 0.3819	0.4152	0.4118	Ave		0.3931				4.4		15.0			
1,1'-Biphenyl	1.4780 1.3065	1.4344 1.2638	1.4282 1.2032	1.3890	1.3946	Ave		1.3622				7.0		15.0			
2-Chloronaphthalene	1.1361 1.0435	1.0999 1.0249	1.1072 0.9733	1.0834	1.0958	Ave		1.0705				4.9		15.0			
2-Nitroaniline	0.3295 0.4047	0.3605 0.3940	0.3866 0.3815	0.4105	0.4056	Ave		0.3841				7.1		15.0			
Dimethyl phthalate	1.3706 1.2317	1.3093 1.1984	1.2973 1.1609	1.2857	1.2852	Ave		1.2674				5.3		15.0			
1,3-Dinitrobenzene	0.1336 0.2291	0.1738 0.2282	0.2035 0.2206	0.2206	0.2247	Lin2	-0.393	0.2265							0.9990		0.9900
2,6-Dinitrotoluene	0.2711 0.3154	0.3025 0.3080	0.3112 0.2953	0.3209	0.3180	Ave		0.3053				5.3		15.0			
Acenaphthylene	1.8756 1.7148	1.8417 1.6587	1.8557 1.5908	1.8289	1.8105	Ave		1.7721				5.9		15.0			
3-Nitroaniline	0.2953 0.3522	0.3240 0.3459	0.3463 0.3392	0.3575	0.3585	Ave		0.3398				6.2		15.0			
Acenaphthene	1.2157 1.0243	1.1234 0.9851	1.1202 0.9398	1.1065	1.0797	Ave		1.0743				8.2		15.0			
2,4-Dinitrophenol	++++ 0.2024	0.1192 0.2020	0.1540 0.1994	0.1872	0.1873	Lin2	-1.761	0.2042			0.0500				0.9990		0.9900
4-Nitrophenol	0.1739 0.2062	0.1953 0.2001	0.2040 0.1919	0.2121	0.2108	Ave		0.1993			0.0500	6.2		15.0			
2,4-Dinitrotoluene	0.3722 0.4393	0.3894 0.4235	0.4272 0.4108	0.4431	0.4365	Ave		0.4178				6.1		15.0			
Dibenzofuran	1.7741 1.6029	1.6940 1.5261	1.7255 1.4555	1.6854	1.6467	Ave		1.6388				6.5		15.0			
2,3,4,6-Tetrachlorophenol	0.2805 0.3340	0.2995 0.3266	0.3252 0.3221	0.3462	0.3377	Ave		0.3215				6.7		15.0			
Diethyl phthalate	1.3955 1.2458	1.3506 1.1799	1.3613 1.1186	1.3384	1.3110	Ave		1.2876				7.5		15.0			
4-Chlorophenyl phenyl ether	0.6840 0.6164	0.6687 0.6057	0.6582 0.5755	0.6505	0.6415	Ave		0.6376				5.6		15.0			
Fluorene	1.5016 1.2902	1.4201 1.2385	1.4138 1.1695	1.3908	1.3539	Ave		1.3473				8.0		15.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 452848
SDG No.: _____
Instrument ID: SMS_D GC Column: Rxi-5Sil MS ID: 0.25(mm) Heated Purge: (Y/N) N
Calibration Start Date: 04/03/2019 07:48 Calibration End Date: 04/03/2019 11:14 Calibration ID: 35876

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
4-Nitroaniline	0.3380 0.3847	0.3869 0.3804	0.3936 0.3691	0.4032	0.3977	Ave		0.3817				5.4		15.0			
4,6-Dinitro-2-methylphenol	++++ 0.1488	0.1013 0.1437	0.1251 0.1445	0.1385	0.1416	Lin2	-0.938	0.1483							1.0000		0.9900
Diphenylamine	1.2984 1.1353	1.2004 1.0899	1.2142 1.0575	1.2018	1.1676	Ave		1.1706				6.5		15.0			
N-Nitrosodiphenylamine	0.5918 0.5222	0.5446 0.4975	0.5613 0.4947	0.5303	0.5377	Ave		0.5350				6.0		15.0			
1,2-Diphenylhydrazine	1.7049 1.5415	1.6118 1.4806	1.6263 1.4189	1.6049	1.5850	Ave		1.5717				5.7		15.0			
Azobenzene	1.7236 1.5584	1.6295 1.4968	1.6441 1.4344	1.6226	1.6024	Ave		1.5890				5.7		15.0			
4-Bromophenyl phenyl ether	0.2174 0.1980	0.1995 0.1908	0.2112 0.1919	0.1980	0.2036	Ave		0.2013				4.5		15.0			
Hexachlorobenzene	0.2091 0.1943	0.1966 0.1842	0.2034 0.1818	0.1939	0.1974	Ave		0.1951				4.6		15.0			
Atrazine	0.2128 0.2035	0.2133 0.1879	0.2211 0.1833	0.2078	0.2111	Ave		0.2051				6.4		15.0			
Pentachlorophenol	++++ 0.1327	0.1096 0.1281	0.1294 0.1258	0.1288	0.1333	Lin2	-0.385	0.1324							0.9980		0.9900
Phenanthrene	1.1678 1.0281	1.1253 0.9759	1.1390 0.9465	1.0737	1.0781	Ave		1.0668				7.4		15.0			
Anthracene	1.1932 1.0737	1.1472 1.0128	1.1784 0.9864	1.1225	1.1330	Ave		1.1059				6.8		15.0			
Carbazole	1.1749 1.0481	1.1110 0.9812	1.1305 0.9614	1.0846	1.0846	Ave		1.0720				6.8		15.0			
Alachlor	0.1423 0.1467	0.1436 0.1405	0.1531 0.1387	0.1487	0.1513	Ave		0.1456				3.5		15.0			
Di-n-butyl phthalate	1.2890 1.2225	1.2668 1.1408	1.2996 1.1237	1.2329	1.2591	Ave		1.2293				5.3		15.0			
Fluoranthene	1.3095 1.2244	1.2610 1.1515	1.2847 1.1264	1.2473	1.2365	Ave		1.2302				5.1		15.0			
Pyrene	1.3398 1.2963	1.3010 1.2590	1.3357 1.2661	1.3209	1.3173	Ave		1.3045				2.3		15.0			
Butyl benzyl phthalate	0.5753 0.5987	0.5624 0.5845	0.5965 0.5828	0.5880	0.6014	Ave		0.5862				2.2		15.0			
3,3'-Dichlorobenzidine	0.4174 0.4292	0.4108 0.4271	0.4356 0.4188	0.4348	0.4347	Ave		0.4261				2.2		15.0			
Benzo[a]anthracene	1.2500 1.1970	1.2119 1.1826	1.2233 1.1611	1.2224	1.2140	Ave		1.2078				2.3		15.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 452848
SDG No.: _____
Instrument ID: SMS_D GC Column: Rxi-5Sil MS ID: 0.25 (mm) Heated Purge: (Y/N) N
Calibration Start Date: 04/03/2019 07:48 Calibration End Date: 04/03/2019 11:14 Calibration ID: 35876

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
Chrysene	1.2600 1.1982	1.1995 1.1715	1.2199 1.1607	1.2193	1.2277	Ave		1.2071				2.6		15.0			
Bis(2-ethylhexyl) phthalate	0.7876 0.8331	0.7788 0.8159	0.8111 0.8129	0.8110	0.8317	Ave		0.8103				2.3		15.0			
Di-n-octyl phthalate	1.3499 1.4815	1.3784 1.4606	1.4347 1.4495	1.4470	1.4877	Ave		1.4362				3.4		15.0			
Benzo[b]fluoranthene	1.2505 1.2543	1.1984 1.2599	1.2447 1.2826	1.2477	1.2990	Ave		1.2546				2.4		15.0			
Benzo[k]fluoranthene	1.2735 1.2842	1.2345 1.2333	1.2792 1.2023	1.2831	1.3100	Ave		1.2625				2.8		15.0			
Benzo[a]pyrene	1.2085 1.2578	1.2104 1.2320	1.2475 1.2376	1.2548	1.2878	Ave		1.2421				2.1		15.0			
Indeno[1,2,3-cd]pyrene	1.0844 1.1014	1.0636 1.0962	1.0522 1.1189	1.0913	1.0980	Ave		1.0882				2.0		15.0			
Dibenz(a,h)anthracene	1.0415 1.1083	1.0277 1.0962	1.0499 1.0947	1.0714	1.0705	Ave		1.0700				2.7		15.0			
Benzo[g,h,i]perylene	1.1105 1.1247	1.0873 1.1135	1.1038 1.1173	1.1198	1.1211	Ave		1.1122				1.1		15.0			
2-Fluorophenol (Surr)	1.4685 1.4059	1.4342 1.4080	1.4541 1.3729	1.4731	1.4863	Ave		1.4379				2.7		15.0			
Phenol-d5 (Surr)	1.9881 1.9090	1.9261 1.8675	1.9827 1.8558	1.9506	1.9703	Ave		1.9313				2.6		15.0			
Nitrobenzene-d5 (Surr)	0.4275 0.4399	0.4386 0.4308	0.4602 0.4307	0.4482	0.4495	Ave		0.4407				2.6		15.0			
2-Fluorobiphenyl	1.3582 1.2318	1.3263 1.1795	1.3306 1.1239	1.2981	1.2945	Ave		1.2679				6.5		15.0			
2,4,6-Tribromophenol (Surr)	0.1400 0.1691	0.1512 0.1674	0.1613 0.1623	0.1691	0.1660	Ave		0.1608				6.4		15.0			
Terphenyl-d14 (Surr)	0.8205 0.8134	0.8072 0.7906	0.8339 0.7895	0.8220	0.8142	Ave		0.8114				1.9		15.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 452848

SDG No.: _____

Instrument ID: SMS_D GC Column: Rxi-5Sil MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/03/2019 07:48 Calibration End Date: 04/03/2019 11:14 Calibration ID: 35876

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD004 280-452848/4	D32381.D
Level 2	STD010 280-452848/5	D32382.D
Level 3	STD020 280-452848/6	D32383.D
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Level 6	STD120 280-452848/8	D32385.D
Level 7	STD160 280-452848/9	D32386.D
Level 8	STD200 280-452848/10	D32387.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
1,4-Dioxane	DCBd 4	Ave	10469 261553	20633 351954	47782 441293	106426	178324	4.00 120	10.0 160	20.0 200	50.0	80.0
N-Nitrosodimethylamine	DCBd 4	Ave	12707 421641	33931 570234	70183 707331	170351	283772	4.00 120	10.0 160	20.0 200	50.0	80.0
Pyridine	DCBd 4	Ave	41447 1330773	105307 1757795	221749 2159253	535060	907159	8.00 240	20.0 320	40.0 400	100	160
Phenol	DCBd 4	Ave	25703 801102	65850 1067928	137614 1321212	326174	541237	4.00 120	10.0 160	20.0 200	50.0	80.0
Aniline	DCBd 4	Ave	33310 1009744	81859 1364817	172483 1675510	410814	687211	4.00 120	10.0 160	20.0 200	50.0	80.0
Bis(2-chloroethyl)ether	DCBd 4	Ave	20155 590442	48854 793373	103364 976248	242978	406323	4.00 120	10.0 160	20.0 200	50.0	80.0
2-Chlorophenol	DCBd 4	Ave	18895 574390	46498 762334	97352 950961	229844	389418	4.00 120	10.0 160	20.0 200	50.0	80.0
1,3-Dichlorobenzene	DCBd 4	Ave	19763 593079	49823 784052	102774 960732	243768	404169	4.00 120	10.0 160	20.0 200	50.0	80.0
1,4-Dichlorobenzene	DCBd 4	Ave	20522 602601	50575 796322	104469 974188	245783	408861	4.00 120	10.0 160	20.0 200	50.0	80.0
Benzyl alcohol	DCBd 4	Ave	13396 437547	33651 594472	72423 734134	175243	296548	4.00 120	10.0 160	20.0 200	50.0	80.0
1,2-Dichlorobenzene	DCBd 4	Ave	19536 571687	48286 764862	101200 935906	235867	387232	4.00 120	10.0 160	20.0 200	50.0	80.0
2-Methylphenol	DCBd 4	Ave	18795 605124	46419 800312	102157 990513	241695	402607	4.00 120	10.0 160	20.0 200	50.0	80.0
2,2'-oxybis[1-chloropropane]	DCBd 4	Ave	25033 768495	63406 1032294	131619 1263922	314104	522639	4.00 120	10.0 160	20.0 200	50.0	80.0
3 & 4 Methylphenol	DCBd 4	Ave	19890 626585	50869 830916	107279 1018888	254234	426355	4.00 120	10.0 160	20.0 200	50.0	80.0
N-Nitrosodi-n-propylamine	DCBd 4	Ave	15745 473784	39252 620605	82776 756216	198026	325573	4.00 120	10.0 160	20.0 200	50.0	80.0

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 452848

SDG No.: _____

Instrument ID: SMS_D GC Column: Rxi-5Sil MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/03/2019 07:48 Calibration End Date: 04/03/2019 11:14 Calibration ID: 35876

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Acetophenone	DCBd 4	Ave	28583 858800	73174 1117230	150639 1357078	359201	583118	4.00 120	10.0 160	20.0 200	50.0	80.0
Hexachloroethane	DCBd 4	Ave	7339 233077	18434 313143	39464 386041	94866	157254	4.00 120	10.0 160	20.0 200	50.0	80.0
Nitrobenzene	NPT	Ave	21402 711282	57928 954504	121833 1172127	291565	476151	4.00 120	10.0 160	20.0 200	50.0	80.0
Isophorone	NPT	Ave	43008 1360693	109305 1803411	231530 2240184	545808	917070	4.00 120	10.0 160	20.0 200	50.0	80.0
2-Nitrophenol	NPT	Ave	7656 321843	22092 426848	47842 531443	122644	203543	4.00 120	10.0 160	20.0 200	50.0	80.0
2,4-Dimethylphenol	NPT	Ave	20042 634795	51749 835925	108401 1037808	259539	428673	4.00 120	10.0 160	20.0 200	50.0	80.0
Bis(2-chloroethoxy)methane	NPT	Ave	24645 759576	61818 1013380	128742 1253397	309213	510960	4.00 120	10.0 160	20.0 200	50.0	80.0
Benzoic acid	NPT	Lin2	++++ 1121668	62998 1538265	152558 1941207	405576	711341	++++ 240	20.0 320	40.0 400	100	160
2,4-Dichlorophenol	NPT	Ave	14812 500372	39747 657370	82590 823509	201627	332560	4.00 120	10.0 160	20.0 200	50.0	80.0
1,2,4-Trichlorobenzene	NPT	Ave	17159 534027	43021 697926	92229 858661	215295	357962	4.00 120	10.0 160	20.0 200	50.0	80.0
Naphthalene	NPT	Ave	55992 1670778	140897 2191375	292064 2697150	698484	1154464	4.00 120	10.0 160	20.0 200	50.0	80.0
4-Chloroaniline	NPT	Ave	24315 763738	61647 998075	132098 1243966	314281	511803	4.00 120	10.0 160	20.0 200	50.0	80.0
2,6-Dichlorophenol	NPT	Ave	15203 489828	39520 649104	80858 797376	201011	326413	4.00 120	10.0 160	20.0 200	50.0	80.0
Hexachlorobutadiene	NPT	Ave	9172 284972	23294 374776	48889 464424	113880	188291	4.00 120	10.0 160	20.0 200	50.0	80.0
Caprolactam	NPT	Ave	10227 313037	25546 455644	53471 565124	131047	210220	4.00 120	10.0 160	20.0 200	50.0	80.0
4-Chloro-3-methylphenol	NPT	Ave	17470 570268	45161 758560	95929 942530	235799	384624	4.00 120	10.0 160	20.0 200	50.0	80.0
2-Methylnaphthalene	NPT	Ave	38743 1169432	97564 1518192	207615 1851714	485590	786869	4.00 120	10.0 160	20.0 200	50.0	80.0
1-Methylnaphthalene	NPT	Ave	36404 1109687	91968 1434248	194804 1770852	453010	749969	4.00 120	10.0 160	20.0 200	50.0	80.0
Hexachlorocyclopentadiene	ANT	Ave	9320 347633	24249 459628	54445 563299	138086	232429	4.00 120	10.0 160	20.0 200	50.0	80.0
1,2,4,5-Tetrachlorobenzene	NPT	Ave	17459 518247	44491 675837	92636 821127	218952	353492	4.00 120	10.0 160	20.0 200	50.0	80.0
2,4,6-Trichlorophenol	ANT	Ave	11148 368875	28933 478507	63778 582079	152574	250539	4.00 120	10.0 160	20.0 200	50.0	80.0

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 452848

SDG No.: _____

Instrument ID: SMS_D GC Column: Rxi-5Sil MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/03/2019 07:48 Calibration End Date: 04/03/2019 11:14 Calibration ID: 35876

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
2,4,5-Trichlorophenol	ANT	Ave	11394 420351	30812 544358	68941 690954	170406	277196	4.00 120	10.0 160	20.0 200	50.0	80.0
1,1'-Biphenyl	ANT	Ave	45837 1363797	117370 1769680	245914 2177174	570019	938748	4.00 120	10.0 160	20.0 200	50.0	80.0
2-Chloronaphthalene	ANT	Ave	35234 1089264	89998 1435127	190638 1761077	444596	737633	4.00 120	10.0 160	20.0 200	50.0	80.0
2-Nitroaniline	ANT	Ave	10219 422451	29499 551638	66558 690283	168456	272987	4.00 120	10.0 160	20.0 200	50.0	80.0
Dimethyl phthalate	ANT	Ave	42505 1285756	107135 1678004	223368 2100541	527640	865126	4.00 120	10.0 160	20.0 200	50.0	80.0
1,3-Dinitrobenzene	ANT	Lin2	4144 239182	14221 319595	35044 399087	90522	151280	4.00 120	10.0 160	20.0 200	50.0	80.0
2,6-Dinitrotoluene	ANT	Ave	8408 329278	24756 431232	53576 534397	131679	214077	4.00 120	10.0 160	20.0 200	50.0	80.0
Acenaphthylene	ANT	Ave	58168 1790005	150695 2322535	319521 2878429	750542	1218685	4.00 120	10.0 160	20.0 200	50.0	80.0
3-Nitroaniline	ANT	Ave	9157 367591	26515 484291	59629 613695	146713	241313	4.00 120	10.0 160	20.0 200	50.0	80.0
Acenaphthene	ANT	Ave	37701 1069209	91921 1379335	192875 1700521	454070	726782	4.00 120	10.0 160	20.0 200	50.0	80.0
2,4-Dinitrophenol	ANT	Lin2	++++ 422544	19502 565632	53049 721508	153671	252098	++++ 240	20.0 320	40.0 400	100	160
4-Nitrophenol	ANT	Ave	10786 430514	31955 560260	70266 694447	174044	283794	8.00 240	20.0 320	40.0 400	100	160
2,4-Dinitrotoluene	ANT	Ave	11543 458572	31859 593030	73558 743380	181852	293831	4.00 120	10.0 160	20.0 200	50.0	80.0
Dibenzofuran	ANT	Ave	55019 1673224	138616 2136871	297105 2633754	691652	1108411	4.00 120	10.0 160	20.0 200	50.0	80.0
2,3,4,6-Tetrachlorophenol	ANT	Ave	8699 348680	24509 457352	55992 582789	142065	227319	4.00 120	10.0 160	20.0 200	50.0	80.0
Diethyl phthalate	ANT	Ave	43277 1300420	110510 1652176	234391 2024153	549264	882454	4.00 120	10.0 160	20.0 200	50.0	80.0
4-Chlorophenyl phenyl ether	ANT	Ave	21212 643399	54717 848129	113327 1041316	266952	431818	4.00 120	10.0 160	20.0 200	50.0	80.0
Fluorene	ANT	Ave	46568 1346756	116201 1734167	243424 2116237	570752	911373	4.00 120	10.0 160	20.0 200	50.0	80.0
4-Nitroaniline	ANT	Ave	10483 401523	31655 532629	67764 667827	165473	267727	4.00 120	10.0 160	20.0 200	50.0	80.0
4,6-Dinitro-2-methylphenol	PHN	Lin2	++++ 574080	31067 749197	79180 950183	218977	351771	++++ 240	20.0 320	40.0 400	100	160
Diphenylamine	ANT	Ave	34226 1007350	83493 1297206	177697 1626476	419226	668051	3.40 102	8.50 136	17.0 170	42.5	68.0

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 452848

SDG No.: _____

Instrument ID: SMS_D GC Column: Rxi-5Sil MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/03/2019 07:48 Calibration End Date: 04/03/2019 11:14 Calibration ID: 35876

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
N-Nitrosodiphenylamine	PHN	Ave	34226 1007350	83493 1297206	177697 1626476	419226	668051	4.00 120	10.0 160	20.0 200	50.0	80.0
1,2-Diphenylhydrazine	ANT	Ave	53453 1626762	133332 2095972	283090 2595565	665861	1078632	4.04 121	10.1 162	20.2 202	50.5	80.9
Azobenzene	ANT	Ave	53453 1626762	133332 2095972	283090 2595565	665861	1078632	4.00 120	10.0 160	20.0 200	50.0	80.0
4-Bromophenyl phenyl ether	PHN	Ave	12573 381980	30581 497576	66842 630822	156531	252908	4.00 120	10.0 160	20.0 200	50.0	80.0
Hexachlorobenzene	PHN	Ave	12091 374765	30146 480214	64374 597795	153282	245286	4.00 120	10.0 160	20.0 200	50.0	80.0
Atrazine	PHN	Ave	12306 392679	32695 489796	70006 602754	164249	262319	4.00 120	10.0 160	20.0 200	50.0	80.0
Pentachlorophenol	PHN	Lin2	+++++ 511873	33607 667864	81907 827028	203635	331103	+++++ 240	20.0 320	40.0 400	100	160
Phenanthrene	PHN	Ave	67536 1983432	172514 2544423	360548 3111922	848744	1339334	4.00 120	10.0 160	20.0 200	50.0	80.0
Anthracene	PHN	Ave	69003 2071364	175880 2640703	373031 3243089	887324	1407624	4.00 120	10.0 160	20.0 200	50.0	80.0
Carbazole	PHN	Ave	67949 2021961	170319 2558278	357852 3161002	857349	1347520	4.00 120	10.0 160	20.0 200	50.0	80.0
Alachlor	PHN	Ave	8229 282975	22010 366391	48464 456163	117527	187932	4.00 120	10.0 160	20.0 200	50.0	80.0
Di-n-butyl phthalate	PHN	Ave	74544 2358370	194219 2974318	411381 3694541	974643	1564212	4.00 120	10.0 160	20.0 200	50.0	80.0
Fluoranthene	PHN	Ave	75731 2362164	193327 3002084	406688 3703415	986018	1536224	4.00 120	10.0 160	20.0 200	50.0	80.0
Pyrene	CRY	Ave	80509 2459666	202767 3146724	427872 3941084	1036473	1619383	4.00 120	10.0 160	20.0 200	50.0	80.0
Butyl benzyl phthalate	CRY	Ave	34570 1135967	87652 1460978	191085 1814115	461371	739375	4.00 120	10.0 160	20.0 200	50.0	80.0
3,3'-Dichlorobenzidine	CRY	Ave	25081 814406	64020 1067495	139555 1303580	341208	534345	4.00 120	10.0 160	20.0 200	50.0	80.0
Benzo[a]anthracene	CRY	Ave	75109 2271319	188878 2955841	391862 3614445	959212	1492422	4.00 120	10.0 160	20.0 200	50.0	80.0
Chrysene	CRY	Ave	75711 2273571	186955 2927951	390792 3612977	956782	1509187	4.00 120	10.0 160	20.0 200	50.0	80.0
Bis(2-ethylhexyl) phthalate	CRY	Ave	47327 1580702	121383 2039144	259825 2530412	636349	1022412	4.00 120	10.0 160	20.0 200	50.0	80.0
Di-n-octyl phthalate	CRY	Ave	81116 2811027	214832 3650723	459603 4511889	1135441	1828884	4.00 120	10.0 160	20.0 200	50.0	80.0
Benzo[b]fluoranthene	PRY	Ave	72975 2208076	179187 2969137	375157 3735924	910990	1471681	4.00 120	10.0 160	20.0 200	50.0	80.0

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 452848

SDG No.: _____

Instrument ID: SMS_D GC Column: Rxi-5Sil MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/03/2019 07:48 Calibration End Date: 04/03/2019 11:14 Calibration ID: 35876

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Benzo[k]fluoranthene	PRY	Ave	74314 2260838	184588 2906426	385585 3502107	936860	1484053	4.00 120	10.0 160	20.0 200	50.0	80.0
Benzo[a]pyrene	PRY	Ave	70524 2214353	180985 2903273	376017 3604929	916215	1458936	4.00 120	10.0 160	20.0 200	50.0	80.0
Indeno[1,2,3-cd]pyrene	PRY	Ave	63278 1938999	159035 2583278	317144 3259133	796822	1243892	4.00 120	10.0 160	20.0 200	50.0	80.0
Dibenz(a,h)anthracene	PRY	Ave	60777 1951163	153665 2583326	316451 3188701	782310	1212770	4.00 120	10.0 160	20.0 200	50.0	80.0
Benzo[g,h,i]perylene	PRY	Ave	64802 1979978	162581 2624117	332697 3254342	817629	1270063	4.00 120	10.0 160	20.0 200	50.0	80.0
2-Fluorophenol (Surr)	DCBd 4	Ave	17535 553905	44532 749514	92741 917407	226627	380713	4.00 120	10.0 160	20.0 200	50.0	80.0
Phenol-d5 (Surr)	DCBd 4	Ave	23739 752117	59805 994110	126454 1240139	300088	504696	4.00 120	10.0 160	20.0 200	50.0	80.0
Nitrobenzene-d5 (Surr)	NPT	Ave	20656 707395	55120 943131	119510 1181478	283604	466934	4.00 120	10.0 160	20.0 200	50.0	80.0
2-Fluorobiphenyl	ANT	Ave	42120 1285823	108528 1651635	229109 2033744	532694	871338	4.00 120	10.0 160	20.0 200	50.0	80.0
2,4,6-Tribromophenol (Surr)	ANT	Ave	4342 176490	12372 234336	27777 293702	69399	111727	4.00 120	10.0 160	20.0 200	50.0	80.0
Terphenyl-d14 (Surr)	CRY	Ave	49300 1543324	125809 1975909	267133 2457661	644975	1000922	4.00 120	10.0 160	20.0 200	50.0	80.0

Curve Type Legend:

Ave = Average ISTD
Lin2 = Linear 1/conc^2 ISTD

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32380.D
 Lims ID: ICIS HSL
 Client ID:
 Sample Type: ICIS Calib Level: 5
 Inject. Date: 03-Apr-2019 07:48:30 ALS Bottle#: 2 Worklist Smp#: 3
 Injection Vol: 0.5 ul Dil. Factor: 1.0000
 Sample Info: ICIS HSL
 Operator ID: KIEKELD Instrument ID: SMS_D
 Sublist: chrom-SMSD_8270C*sub39
 Method: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 03-Apr-2019 12:50:46 Calib Date: 03-Apr-2019 11:14:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32387.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0309

First Level Reviewer: kiekeld

Date: 03-Apr-2019 08:20:05

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	4.698	4.698	0.000	98	128073	40.0	40.0	
* 2 Naphthalene-d8	136	5.922	5.922	0.000	99	519422	40.0	40.0	
* 3 Acenaphthene-d10	164	7.669	7.669	0.000	97	336563	40.0	40.0	
* 4 Phenanthrene-d10	188	9.170	9.170	0.000	99	621182	40.0	40.0	
* 5 Chrysene-d12	240	13.358	13.358	0.000	97	614664	40.0	40.0	
* 6 Perylene-d12	264	17.359	17.359	0.000	99	566449	40.0	40.0	
\$ 7 2-Fluorophenol	112	3.539	3.539	0.000	98	380713	80.0	82.7	
\$ 8 Phenol-d5	99	4.324	4.324	0.000	99	504696	80.0	81.6	
\$ 9 Nitrobenzene-d5	82	5.211	5.211	0.000	95	466934	80.0	81.6	
\$ 11 2-Fluorobiphenyl	172	6.979	6.979	0.000	98	871338	80.0	81.7	
\$ 12 2,4,6-Tribromophenol	330	8.465	8.465	0.000	92	111727	80.0	82.6	
\$ 13 Terphenyl-d14	244	11.178	11.178	0.000	100	1000922	80.0	80.3	
16 1,4-Dioxane	88	2.252	2.252	0.000	96	178324	80.0	78.7	
17 N-Nitrosodimethylamine	74	2.460	2.460	0.000	90	283772	80.0	81.8	
18 Pyridine	79	2.508	2.508	0.000	93	907159	160.0	166.2	
28 Phenol	94	4.340	4.340	0.000	91	541237	80.0	81.1	
30 Aniline	93	4.388	4.388	0.000	100	687211	80.0	81.3	
31 Alpha Methyl Styrene	118	4.442	4.442	0.000	71	393113	80.0	80.9	
32 Bis(2-chloroethyl)ether	93	4.426	4.426	0.000	95	406323	80.0	81.2	
35 n-Decane	43	4.538	4.538	0.000	97	362220	80.0	79.7	
36 2-Chlorophenol	128	4.506	4.506	0.000	98	389418	80.0	81.5	
37 1,3-Dichlorobenzene	146	4.656	4.656	0.000	98	404169	80.0	81.1	
38 1,4-Dichlorobenzene	146	4.714	4.714	0.000	97	408861	80.0	80.7	
39 Benzyl alcohol	108	4.805	4.805	0.000	97	296548	80.0	82.7	
40 1,2-Dichlorobenzene	146	4.864	4.864	0.000	98	387232	80.0	79.9	
41 2-Methylphenol	108	4.901	4.901	0.000	76	402607	80.0	81.6	
43 2,2'-oxybis[1-chloropropan	45	4.928	4.928	0.000	96	522639	80.0	81.3	
44 Indene	116	4.944	4.944	0.000	99	1260958	160.0	161.6	
45 3-Methylphenol	108	5.046	5.046	0.000	94	426355	80.0	82.1	
46 3 & 4 Methylphenol	108	5.046	5.046	0.000	94	426355	80.0	82.1	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
47 4-Methylphenol	108	5.046	5.046	0.000	94	426355	80.0	82.1	
48 N-Nitrosodi-n-propylamine	70	5.056	5.056	0.000	93	325573	80.0	81.8	
50 Acetophenone	105	5.062	5.062	0.000	75	583118	80.0	80.8	
53 Hexachloroethane	117	5.190	5.190	0.000	98	157254	80.0	81.6	
54 Nitrobenzene	77	5.227	5.227	0.000	94	476151	80.0	81.5	
57 Isophorone	82	5.457	5.457	0.000	97	917070	80.0	82.1	
59 2-Nitrophenol	139	5.537	5.537	0.000	96	203543	80.0	83.8	
60 2,4-Dimethylphenol	107	5.558	5.558	0.000	98	428673	80.0	82.0	
63 Bis(2-chloroethoxy)methane	93	5.644	5.644	0.000	99	510960	80.0	81.3	
64 Benzoic acid	105	5.676	5.676	0.000	88	711341	160.0	160.7	
65 3,5-Dimethylphenol	107	5.687	5.687	0.000	99	440715	80.0	81.5	
68 2,4-Dichlorophenol	162	5.772	5.772	0.000	97	332560	80.0	82.2	
70 1,2,4-Trichlorobenzene	180	5.863	5.863	0.000	97	357962	80.0	81.6	
72 Naphthalene	128	5.943	5.943	0.000	100	1154464	80.0	82.3	
73 4-Chloroaniline	127	5.975	5.975	0.000	99	511803	80.0	81.3	
74 2,6-Dichlorophenol	162	5.991	5.991	0.000	96	326413	80.0	81.6	
76 Hexachlorobutadiene	225	6.066	6.066	0.000	99	188291	80.0	80.4	
80 Caprolactam	55	6.312	6.312	0.000	96	210220	80.0	79.0	
83 4-Chloro-3-methylphenol	107	6.445	6.445	0.000	97	384624	80.0	82.3	
87 2-Methylnaphthalene	142	6.621	6.621	0.000	100	786869	80.0	80.8	
89 1-Methylnaphthalene	142	6.723	6.723	0.000	99	749969	80.0	81.6	
90 Hexachlorocyclopentadiene	237	6.792	6.792	0.000	98	232429	80.0	86.1	
91 1,2,4,5-Tetrachlorobenzene	216	6.798	6.798	0.000	98	353492	80.0	81.0	
94 2,4,6-Trichlorophenol	196	6.899	6.899	0.000	87	250539	80.0	83.8	
95 2,3-Dichlorobenzenamine	161	6.899	6.899	0.000	89	404438	80.0	81.7	a
96 2,4,5-Trichlorophenol	196	6.937	6.937	0.000	98	277196	80.0	83.8	
100 1,1'-Biphenyl	154	7.086	7.086	0.000	95	938748	80.0	81.9	
102 2-Chloronaphthalene	162	7.113	7.113	0.000	99	737633	80.0	81.9	
105 2-Nitroaniline	65	7.198	7.198	0.000	94	272987	80.0	84.5	
111 Dimethyl phthalate	163	7.375	7.375	0.000	98	865126	80.0	81.1	
112 1,3-Dinitrobenzene	168	7.407	7.407	0.000	87	151280	80.0	81.1	
113 2,6-Dinitrotoluene	165	7.433	7.433	0.000	94	214077	80.0	83.3	
115 Acenaphthylene	152	7.530	7.530	0.000	100	1218685	80.0	81.7	
117 3-Nitroaniline	138	7.610	7.610	0.000	96	241313	80.0	84.4	
119 Acenaphthene	153	7.706	7.706	0.000	97	726782	80.0	80.4	
120 2,4-Dinitrophenol	184	7.717	7.717	0.000	94	252098	160.0	155.4	
121 4-Nitrophenol	109	7.770	7.770	0.000	96	283794	160.0	169.3	
124 2,4-Dinitrotoluene	165	7.845	7.845	0.000	96	293831	80.0	83.6	
125 Dibenzofuran	168	7.877	7.877	0.000	100	1108411	80.0	80.4	
129 2,3,4,6-Tetrachlorophenol	232	8.000	8.000	0.000	73	227319	80.0	84.0	
131 Hexadecane	57	8.096	8.096	0.000	95	532866	80.0	81.4	
132 Diethyl phthalate	149	8.080	8.080	0.000	100	882454	80.0	81.5	
134 4-Chlorophenyl phenyl ethe	204	8.208	8.208	0.000	98	431818	80.0	80.5	
135 Fluorene	166	8.224	8.224	0.000	99	911373	80.0	80.4	
138 4-Nitroaniline	138	8.229	8.229	0.000	96	267727	80.0	83.4	
139 4,6-Dinitro-2-methylphenol	198	8.262	8.262	0.000	93	351771	160.0	159.1	
140 Diphenylamine	169	8.326	8.326	0.000	96	668051	68.0	67.8	
141 N-Nitrosodiphenylamine	169	8.326	8.326	0.000	99	668051	80.0	80.4	
142 1,2-Diphenylhydrazine	77	8.368	8.368	0.000	95	1078632	80.9	81.6	
143 Azobenzene	77	8.368	8.368	0.000	95	1078632	80.0	80.7	
145 2,4,6 - Tribromophenol	330	8.465	8.465	0.000	92	111727	80.0	82.6	
152 4-Bromophenyl phenyl ether	248	8.700	8.700	0.000	97	252908	80.0	80.9	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
153 Hexachlorobenzene	284	8.796	8.796	0.000	98	245286	80.0	81.0	
155 Atrazine	200	8.849	8.849	0.000	95	262319	80.0	82.4	
156 n-Octadecane	85	9.020	9.020	0.000	96	268361	80.0	81.8	
157 Pentachlorophenol	266	8.983	8.983	0.000	97	331103	160.0	164.0	
163 Phenanthrene	178	9.196	9.196	0.000	99	1339334	80.0	80.8	
164 Anthracene	178	9.244	9.244	0.000	100	1407624	80.0	82.0	
165 Carbazole	167	9.394	9.394	0.000	100	1347520	80.0	80.9	
166 Alachlor	188	9.538	9.538	0.000	96	187932	80.0	83.1	
169 Di-n-butyl phthalate	149	9.747	9.747	0.000	100	1564212	80.0	81.9	
176 Fluoranthene	202	10.601	10.601	0.000	100	1536224	80.0	80.4	
180 Pyrene	202	10.949	10.949	0.000	99	1619383	80.0	80.8	
187 Butyl benzyl phthalate	149	12.092	12.092	0.000	95	739375	80.0	82.1	
190 3,3'-Dichlorobenzidine	252	13.283	13.283	0.000	98	534345	80.0	81.6	
192 Benzo[a]anthracene	228	13.331	13.331	0.000	100	1492422	80.0	80.4	
193 Bis(2-ethylhexyl) phthalat	149	13.502	13.502	0.000	99	1022412	80.0	82.1	
194 Chrysene	228	13.422	13.422	0.000	99	1509187	80.0	81.4	
197 Di-n-octyl phthalate	149	15.340	15.340	0.000	100	1828884	80.0	82.9	
198 Benzo[b]fluoranthene	252	16.259	16.259	0.000	99	1471681	80.0	82.8	
200 Benzo[k]fluoranthene	252	16.339	16.339	0.000	100	1484053	80.0	83.0	
201 Benzo[e]pyrene	252	17.055	17.055	0.000	97	1384175	80.0	82.9	
202 Benzo[a]pyrene	252	17.204	17.204	0.000	100	1458936	80.0	82.9	
208 Indeno[1,2,3-cd]pyrene	276	20.522	20.522	0.000	74	1243892	80.0	80.7	
209 Dibenz(a,h)anthracene	278	20.618	20.618	0.000	87	1212770	80.0	80.0	
210 Benzo[g,h,i]perylene	276	21.270	21.270	0.000	99	1270063	80.0	80.6	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MS-HSLA080_00042

Amount Added: 200.00

Units: uL

TestAmerica Denver

Data File: \\chromna\denver\ChromData\SMS_D\20190402-80465.b\D32380.D

Injection Date: 03-Apr-2019 07:48:30

Instrument ID: SMS_D

Operator ID: KIEKELD

Lims ID: ICIS HSL

Worklist Smp#: 3

Client ID:

Injection Vol: 0.5 ul

Dil. Factor: 1.0000

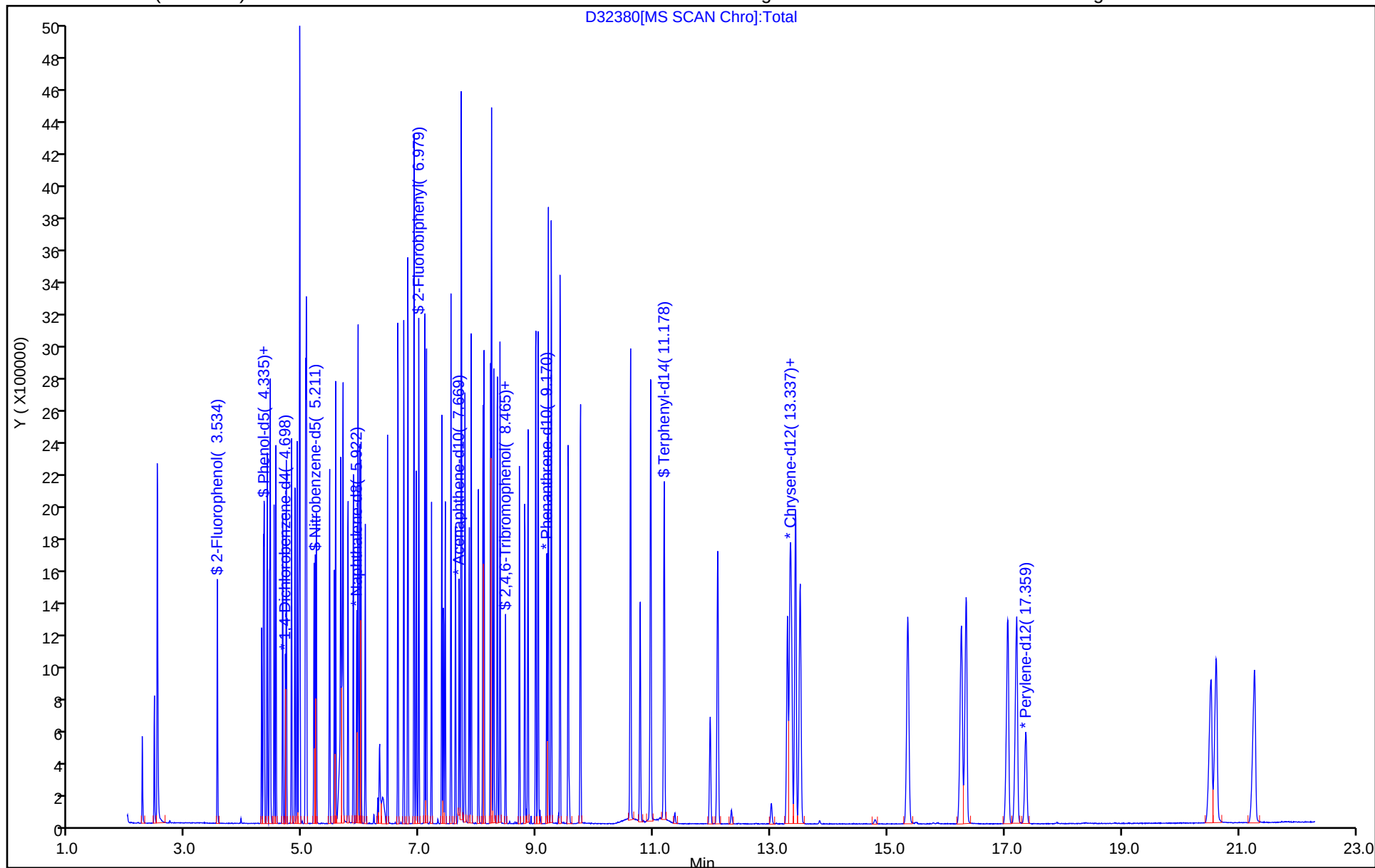
ALS Bottle#: 2

Method: SMSD_8270C

Limit Group: MSSV - 8270C_625

Column: VF-5ms (0.50 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32381.D
 Lims ID: STD004 HSL
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 03-Apr-2019 08:17:30 ALS Bottle#: 3 Worklist Smp#: 4
 Injection Vol: 0.5 ul Dil. Factor: 1.0000
 Sample Info: STD004 HSL
 Operator ID: KIEKELD Instrument ID: SMS_D
 Sublist: chrom-SMSD_8270C*sub39
 Method: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 03-Apr-2019 12:50:50 Calib Date: 03-Apr-2019 11:14:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32387.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0309

First Level Reviewer: kiekeld

Date: 03-Apr-2019 09:22:23

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	4.696	4.698	-0.002	99	119405	40.0	40.0	
* 2 Naphthalene-d8	136	5.920	5.922	-0.002	100	483141	40.0	40.0	
* 3 Acenaphthene-d10	164	7.672	7.669	0.003	97	310123	40.0	40.0	
* 4 Phenanthrene-d10	188	9.168	9.170	-0.002	99	578325	40.0	40.0	
* 5 Chrysene-d12	240	13.345	13.358	-0.013	82	600889	40.0	40.0	
* 6 Perylene-d12	264	17.352	17.359	-0.007	99	583551	40.0	40.0	
\$ 7 2-Fluorophenol	112	3.537	3.539	-0.002	95	17535	4.00	4.09	
\$ 8 Phenol-d5	99	4.317	4.324	-0.007	97	23739	4.00	4.12	
\$ 9 Nitrobenzene-d5	82	5.204	5.211	-0.007	95	20656	4.00	3.88	
\$ 11 2-Fluorobiphenyl	172	6.977	6.979	-0.002	98	42120	4.00	4.28	
\$ 12 2,4,6-Tribromophenol	330	8.462	8.465	-0.003	86	4342	4.00	3.48	
\$ 13 Terphenyl-d14	244	11.171	11.178	-0.007	99	49300	4.00	4.04	
16 1,4-Dioxane	88	2.255	2.252	0.003	96	10469	4.00	4.95	
17 N-Nitrosodimethylamine	74	2.452	2.460	-0.008	93	12707	4.00	3.93	
18 Pyridine	79	2.506	2.508	-0.002	94	41447	8.00	8.15	
28 Phenol	94	4.333	4.340	-0.007	89	25703	4.00	4.13	
30 Aniline	93	4.386	4.388	-0.002	99	33310	4.00	4.23	
31 Alpha Methyl Styrene	118	4.440	4.442	-0.002	71	19621	4.00	4.33	
32 Bis(2-chloroethyl)ether	93	4.424	4.426	-0.002	91	20155	4.00	4.32	
35 n-Decane	43	4.536	4.538	-0.002	98	18791	4.00	4.43	
36 2-Chlorophenol	128	4.504	4.506	-0.002	98	18895	4.00	4.24	
37 1,3-Dichlorobenzene	146	4.653	4.656	-0.003	96	19763	4.00	4.25	
38 1,4-Dichlorobenzene	146	4.712	4.714	-0.002	97	20522	4.00	4.34	
39 Benzyl alcohol	108	4.798	4.805	-0.007	97	13396	4.00	4.00	
40 1,2-Dichlorobenzene	146	4.862	4.864	-0.002	96	19536	4.00	4.32	
41 2-Methylphenol	108	4.894	4.901	-0.007	76	18795	4.00	4.08	
43 2,2'-oxybis[1-chloropropan	45	4.931	4.928	0.003	96	25033	4.00	4.18	
44 Indene	116	4.942	4.944	-0.002	98	64225	8.00	8.83	
45 3-Methylphenol	108	5.038	5.046	-0.008	83	19890	4.00	4.11	
46 3 & 4 Methylphenol	108	5.038	5.046	-0.008	83	19890	4.00	4.11	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
47 4-Methylphenol	108	5.038	5.046	-0.008	83	19890	4.00	4.11	
48 N-Nitrosodi-n-propylamine	70	5.049	5.056	-0.007	87	15745	4.00	4.25	
50 Acetophenone	105	5.054	5.062	-0.008	74	28583	4.00	4.25	
53 Hexachloroethane	117	5.188	5.190	-0.002	95	7339	4.00	4.08	
54 Nitrobenzene	77	5.225	5.227	-0.002	95	21402	4.00	3.94	
57 Isophorone	82	5.449	5.457	-0.008	97	43008	4.00	4.14	
59 2-Nitrophenol	139	5.535	5.537	-0.002	91	7656	4.00	3.39	
60 2,4-Dimethylphenol	107	5.556	5.558	-0.002	95	20042	4.00	4.12	
63 Bis(2-chloroethoxy)methane	93	5.642	5.644	-0.002	90	24645	4.00	4.22	
64 Benzoic acid	105	5.588	5.676	-0.088	94	18412	8.00	10.4	a
65 3,5-Dimethylphenol	107	5.679	5.687	-0.008	96	21130	4.00	4.20	
68 2,4-Dichlorophenol	162	5.765	5.772	-0.007	96	14812	4.00	3.94	
70 1,2,4-Trichlorobenzene	180	5.861	5.863	-0.002	94	17159	4.00	4.21	
72 Naphthalene	128	5.941	5.943	-0.002	99	55992	4.00	4.29	
73 4-Chloroaniline	127	5.973	5.975	-0.002	97	24315	4.00	4.15	
74 2,6-Dichlorophenol	162	5.989	5.991	-0.002	95	15203	4.00	4.09	
76 Hexachlorobutadiene	225	6.064	6.066	-0.002	96	9172	4.00	4.21	
80 Caprolactam	55	6.277	6.312	-0.035	93	10227	4.00	4.13	
83 4-Chloro-3-methylphenol	107	6.438	6.445	-0.007	96	17470	4.00	4.02	
87 2-Methylnaphthalene	142	6.619	6.621	-0.002	100	38743	4.00	4.28	
89 1-Methylnaphthalene	142	6.721	6.723	-0.002	99	36404	4.00	4.26	
90 Hexachlorocyclopentadiene	237	6.790	6.792	-0.002	91	9320	4.00	3.75	
91 1,2,4,5-Tetrachlorobenzene	216	6.796	6.798	-0.002	97	17459	4.00	4.30	
94 2,4,6-Trichlorophenol	196	6.897	6.899	-0.002	82	11148	4.00	4.04	
95 2,3-Dichlorobenzenamine	161	6.897	6.899	-0.002	93	20648	4.00	4.52	a
96 2,4,5-Trichlorophenol	196	6.935	6.937	-0.002	94	11394	4.00	3.74	
100 1,1'-Biphenyl	154	7.079	7.086	-0.007	96	45837	4.00	4.34	
102 2-Chloronaphthalene	162	7.111	7.113	-0.002	98	35234	4.00	4.25	
105 2-Nitroaniline	65	7.191	7.198	-0.007	90	10219	4.00	3.43	
111 Dimethyl phthalate	163	7.367	7.375	-0.008	98	42505	4.00	4.33	
112 1,3-Dinitrobenzene	168	7.399	7.407	-0.008	83	4144	4.00	4.10	
113 2,6-Dinitrotoluene	165	7.426	7.433	-0.007	88	8408	4.00	3.55	
115 Acenaphthylene	152	7.527	7.530	-0.003	99	58168	4.00	4.23	
117 3-Nitroaniline	138	7.602	7.610	-0.008	93	9157	4.00	3.48	
119 Acenaphthene	153	7.704	7.706	-0.002	98	37701	4.00	4.53	
120 2,4-Dinitrophenol	184	7.704	7.717	-0.013	84	5194	8.00	11.9	
121 4-Nitrophenol	109	7.752	7.770	-0.018	94	10786	8.00	6.98	
124 2,4-Dinitrotoluene	165	7.837	7.845	-0.008	90	11543	4.00	3.56	
125 Dibenzofuran	168	7.875	7.877	-0.002	99	55019	4.00	4.33	
129 2,3,4,6-Tetrachlorophenol	232	7.998	8.000	-0.002	70	8699	4.00	3.49	
131 Hexadecane	57	8.094	8.096	-0.002	96	26459	4.00	4.39	
132 Diethyl phthalate	149	8.072	8.080	-0.008	99	43277	4.00	4.34	
134 4-Chlorophenyl phenyl ethe	204	8.206	8.208	-0.002	96	21212	4.00	4.29	
135 Fluorene	166	8.217	8.224	-0.007	99	46568	4.00	4.46	
138 4-Nitroaniline	138	8.211	8.229	-0.018	93	10483	4.00	3.54	
139 4,6-Dinitro-2-methylphenol	198	8.249	8.262	-0.013	87	8607	8.00	10.3	
140 Diphenylamine	169	8.318	8.326	-0.008	96	34226	3.40	3.77	
141 N-Nitrosodiphenylamine	169	8.318	8.326	-0.008	98	34226	4.00	4.42	
142 1,2-Diphenylhydrazine	77	8.366	8.368	-0.002	94	53453	4.04	4.39	
143 Azobenzene	77	8.366	8.368	-0.002	94	53453	4.00	4.34	
145 2,4,6 - Tribromophenol	330	8.462	8.465	-0.003	86	4342	4.00	3.48	
152 4-Bromophenyl phenyl ether	248	8.697	8.700	-0.003	96	12573	4.00	4.32	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
153 Hexachlorobenzene	284	8.788	8.796	-0.008	95	12091	4.00	4.29	
155 Atrazine	200	8.836	8.849	-0.013	93	12306	4.00	4.15	
156 n-Octadecane	85	9.018	9.020	-0.002	96	12975	4.00	4.25	
157 Pentachlorophenol	266	8.975	8.983	-0.008	93	11398	8.00	8.87	
163 Phenanthrene	178	9.189	9.196	-0.007	99	67536	4.00	4.38	
164 Anthracene	178	9.242	9.244	-0.002	100	69003	4.00	4.32	
165 Carbazole	167	9.392	9.394	-0.002	100	67949	4.00	4.38	
166 Alachlor	188	9.531	9.538	-0.007	93	8229	4.00	3.91	
169 Di-n-butyl phthalate	149	9.739	9.747	-0.008	100	74544	4.00	4.19	
176 Fluoranthene	202	10.594	10.601	-0.007	100	75731	4.00	4.26	
180 Pyrene	202	10.936	10.949	-0.013	99	80509	4.00	4.11	
187 Butyl benzyl phthalate	149	12.084	12.092	-0.008	94	34570	4.00	3.93	
190 3,3'-Dichlorobenzidine	252	13.265	13.283	-0.018	96	25081	4.00	3.92	
192 Benzo[a]anthracene	228	13.318	13.331	-0.013	96	75109	4.00	4.14	
193 Bis(2-ethylhexyl) phthalat	149	13.495	13.502	-0.007	96	47327	4.00	3.89	
194 Chrysene	228	13.404	13.422	-0.018	99	75711	4.00	4.18	
197 Di-n-octyl phthalate	149	15.332	15.340	-0.008	99	81116	4.00	3.76	
198 Benzo[b]fluoranthene	252	16.230	16.259	-0.029	98	72975	4.00	3.99	
200 Benzo[k]fluoranthene	252	16.305	16.339	-0.034	99	74314	4.00	4.03	
201 Benzo[e]pyrene	252	17.026	17.055	-0.029	97	68146	4.00	3.96	
202 Benzo[a]pyrene	252	17.165	17.204	-0.039	99	70524	4.00	3.89	
208 Indeno[1,2,3-cd]pyrene	276	20.482	20.522	-0.040	74	63278	4.00	3.99	
209 Dibenz(a,h)anthracene	278	20.568	20.618	-0.050	71	60777	4.00	3.89	
210 Benzo[g,h,i]perylene	276	21.219	21.270	-0.051	98	64802	4.00	3.99	
S 219 Total Cresols	108				0			8.19	
S 220 Methyl Phenols, Total	108				0			8.19	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MS-HSLA004_00044

Amount Added: 200.00

Units: uL

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32381.D

Injection Date: 03-Apr-2019 08:17:30

Instrument ID: SMS_D

Operator ID: KIEKELD

Lims ID: STD004 HSL

Worklist Smp#: 4

Client ID:

Injection Vol: 0.5 ul

Dil. Factor: 1.0000

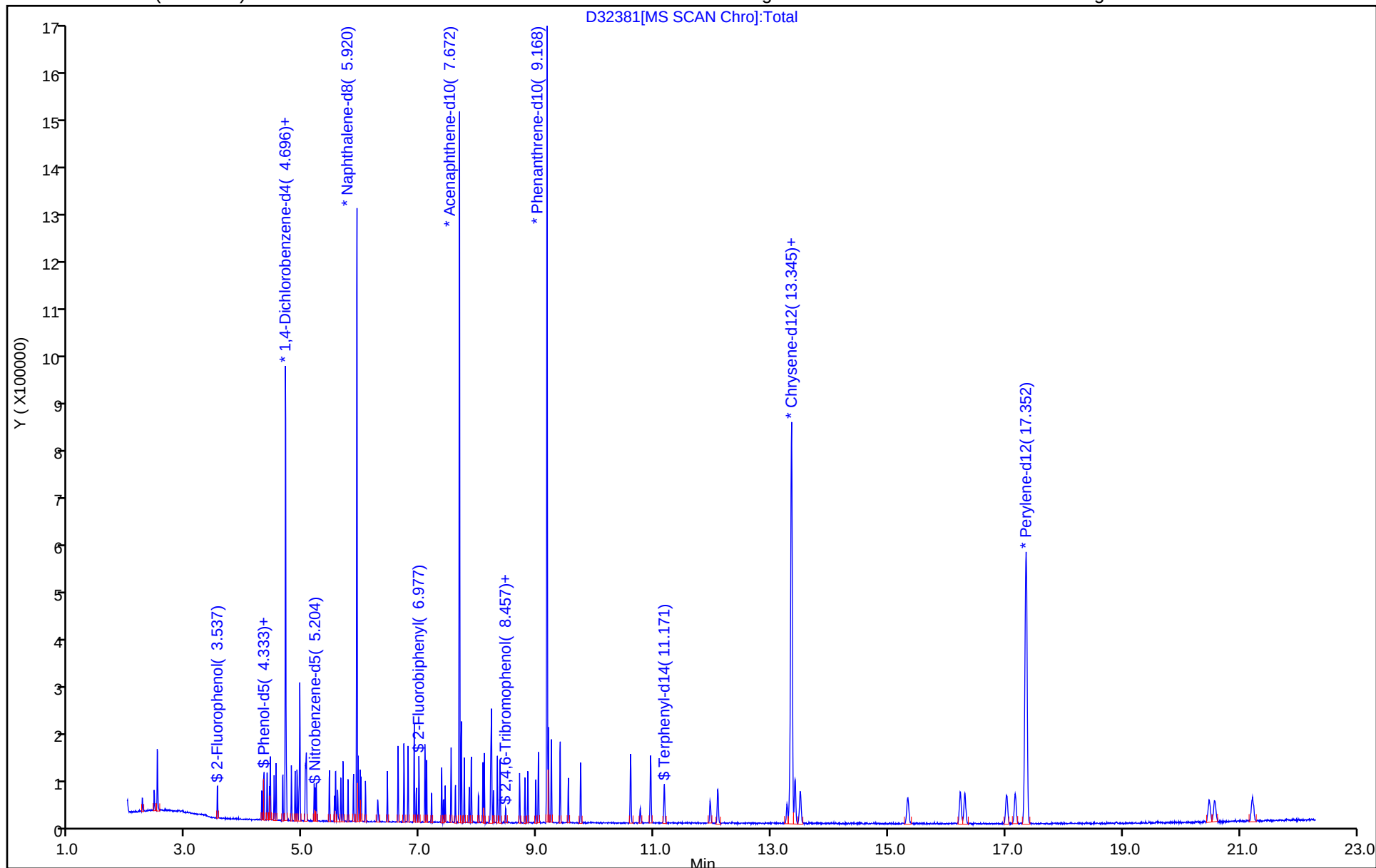
ALS Bottle#: 3

Method: SMSD_8270C

Limit Group: MSSV - 8270C_625

Column: VF-5ms (0.50 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



TestAmerica Denver

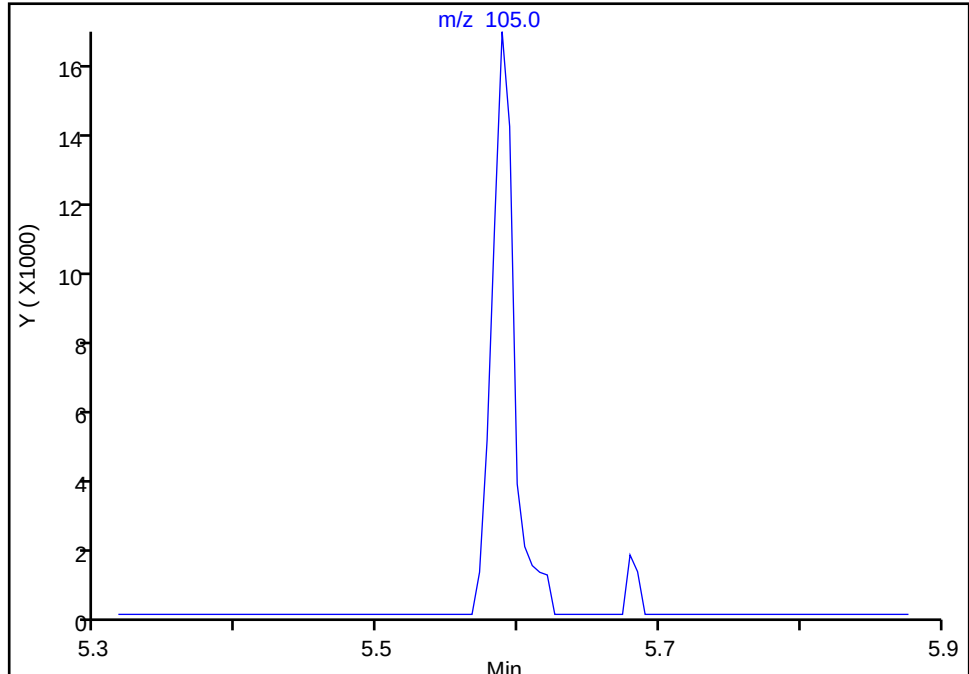
Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32381.D
Injection Date: 03-Apr-2019 08:17:30 Instrument ID: SMS_D
Lims ID: STD004 HSL
Client ID:
Operator ID: KIEKELD ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 0.5 ul Dil. Factor: 1.0000
Method: SMSD_8270C Limit Group: MSSV - 8270C_625
Column: VF-5ms (0.50 mm) Detector: MS SCAN

64 Benzoic acid, CAS: 65-85-0

Signal: 1

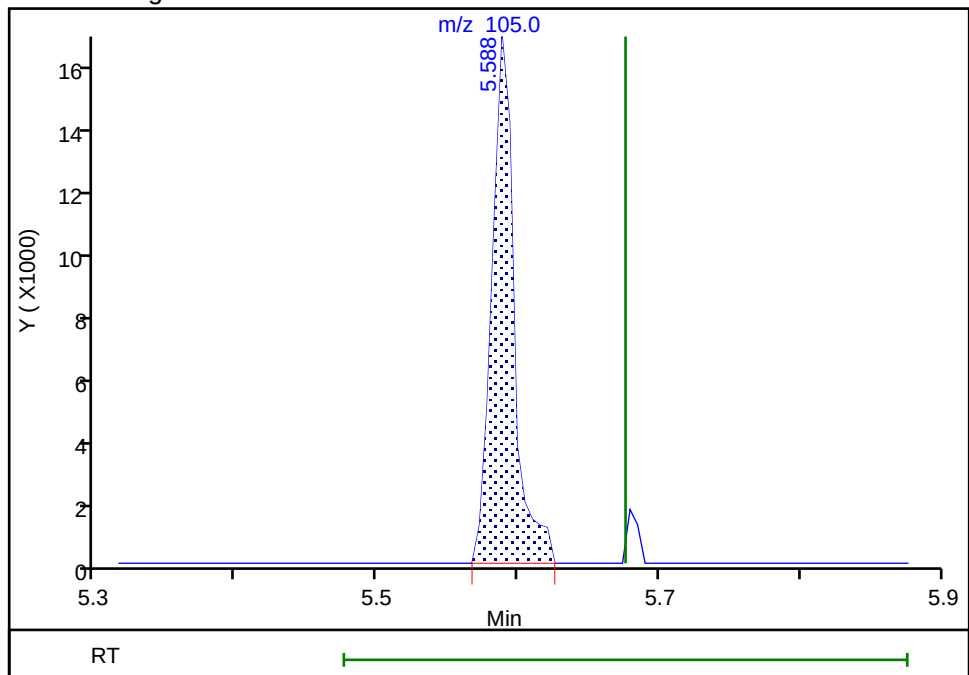
Not Detected
Expected RT: 5.68

Processing Integration Results



RT: 5.59
Area: 18412
Amount: 10.415505
Amount Units: ug/ml

Manual Integration Results



Reviewer: kiekeld, 03-Apr-2019 08:54:25
Audit Action: Assigned Compound ID

Audit Reason: Assign Peak
Page 1128 of 3784

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32382.D
 Lims ID: STD010 HSL
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 03-Apr-2019 08:47:30 ALS Bottle#: 4 Worklist Smp#: 5
 Injection Vol: 0.5 ul Dil. Factor: 1.0000
 Sample Info: STD010 HSL
 Operator ID: KIEKELD Instrument ID: SMS_D
 Sublist: chrom-SMSD_8270C*sub39
 Method: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 03-Apr-2019 12:50:53 Calib Date: 03-Apr-2019 11:14:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32387.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0309

First Level Reviewer: kiekeld

Date: 03-Apr-2019 10:04:20

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	4.697	4.698	-0.001	99	124196	40.0	40.0	
* 2 Naphthalene-d8	136	5.921	5.922	-0.001	100	502673	40.0	40.0	
* 3 Acenaphthene-d10	164	7.668	7.669	-0.001	97	327303	40.0	40.0	
* 4 Phenanthrene-d10	188	9.169	9.170	-0.001	99	613236	40.0	40.0	
* 5 Chrysene-d12	240	13.346	13.358	-0.012	83	623420	40.0	40.0	
* 6 Perylene-d12	264	17.353	17.359	-0.006	99	598083	40.0	40.0	
\$ 7 2-Fluorophenol	112	3.533	3.539	-0.006	99	44532	10.0	9.97	
\$ 8 Phenol-d5	99	4.318	4.324	-0.006	97	59805	10.0	9.97	
\$ 9 Nitrobenzene-d5	82	5.205	5.211	-0.006	95	55120	10.0	9.95	
\$ 11 2-Fluorobiphenyl	172	6.978	6.979	-0.001	98	108528	10.0	10.5	
\$ 12 2,4,6-Tribromophenol	330	8.464	8.465	-0.001	89	12372	10.0	9.40	
\$ 13 Terphenyl-d14	244	11.172	11.178	-0.006	100	125809	10.0	9.95	
16 1,4-Dioxane	88	2.251	2.252	-0.001	98	20633	10.0	9.39	M
17 N-Nitrosodimethylamine	74	2.454	2.460	-0.006	91	33931	10.0	10.1	
18 Pyridine	79	2.507	2.508	-0.001	94	105307	20.0	19.9	
28 Phenol	94	4.334	4.340	-0.006	89	65850	10.0	10.2	
30 Aniline	93	4.382	4.388	-0.006	100	81859	10.0	9.99	
31 Alpha Methyl Styrene	118	4.441	4.442	-0.001	71	49063	10.0	10.4	
32 Bis(2-chloroethyl)ether	93	4.425	4.426	-0.001	93	48854	10.0	10.1	
35 n-Decane	43	4.537	4.538	-0.001	98	46347	10.0	10.5	
36 2-Chlorophenol	128	4.505	4.506	-0.001	97	46498	10.0	10.0	
37 1,3-Dichlorobenzene	146	4.655	4.656	-0.001	97	49823	10.0	10.3	
38 1,4-Dichlorobenzene	146	4.713	4.714	-0.001	96	50575	10.0	10.3	
39 Benzyl alcohol	108	4.799	4.805	-0.006	96	33651	10.0	9.67	
40 1,2-Dichlorobenzene	146	4.863	4.864	-0.001	98	48286	10.0	10.3	
41 2-Methylphenol	108	4.895	4.901	-0.006	76	46419	10.0	9.70	
43 2,2'-oxybis[1-chloropropan	45	4.932	4.928	0.004	95	63406	10.0	10.2	
44 Indene	116	4.943	4.944	-0.001	99	162098	20.0	21.4	
45 3-Methylphenol	108	5.039	5.046	-0.007	92	50869	10.0	10.1	
46 3 & 4 Methylphenol	108	5.039	5.046	-0.007	92	50869	10.0	10.1	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
47 4-Methylphenol	108	5.039	5.046	-0.007	92	50869	10.0	10.1	
48 N-Nitrosodi-n-propylamine	70	5.050	5.056	-0.006	91	39252	10.0	10.2	
50 Acetophenone	105	5.055	5.062	-0.007	75	73174	10.0	10.5	
53 Hexachloroethane	117	5.189	5.190	-0.001	95	18434	10.0	9.86	
54 Nitrobenzene	77	5.226	5.227	-0.001	93	57928	10.0	10.2	
57 Isophorone	82	5.451	5.457	-0.006	97	109305	10.0	10.1	
59 2-Nitrophenol	139	5.536	5.537	-0.001	96	22092	10.0	9.39	
60 2,4-Dimethylphenol	107	5.557	5.558	-0.001	96	51749	10.0	10.2	
63 Bis(2-chloroethoxy)methane	93	5.643	5.644	-0.001	90	61818	10.0	10.2	
64 Benzoic acid	105	5.605	5.676	-0.071	95	62998	20.0	20.3	a
65 3,5-Dimethylphenol	107	5.680	5.687	-0.007	96	53303	10.0	10.2	
68 2,4-Dichlorophenol	162	5.766	5.772	-0.006	97	39747	10.0	10.2	
70 1,2,4-Trichlorobenzene	180	5.862	5.863	-0.001	97	43021	10.0	10.1	
72 Naphthalene	128	5.937	5.943	-0.006	100	140897	10.0	10.4	
73 4-Chloroaniline	127	5.974	5.975	-0.001	99	61647	10.0	10.1	
74 2,6-Dichlorophenol	162	5.990	5.991	-0.001	96	39520	10.0	10.2	
76 Hexachlorobutadiene	225	6.065	6.066	-0.001	98	23294	10.0	10.3	
80 Caprolactam	55	6.279	6.312	-0.033	95	25546	10.0	9.92	
83 4-Chloro-3-methylphenol	107	6.439	6.445	-0.006	96	45161	10.0	9.99	
87 2-Methylnaphthalene	142	6.620	6.621	-0.001	100	97564	10.0	10.4	
89 1-Methylnaphthalene	142	6.722	6.723	-0.001	99	91968	10.0	10.3	
90 Hexachlorocyclopentadiene	237	6.791	6.792	-0.001	97	24249	10.0	9.23	
91 1,2,4,5-Tetrachlorobenzene	216	6.797	6.798	-0.001	97	44491	10.0	10.5	
94 2,4,6-Trichlorophenol	196	6.898	6.899	-0.001	84	28933	10.0	9.95	
95 2,3-Dichlorobenzenamine	161	6.898	6.899	-0.001	91	50521	10.0	10.5	a
96 2,4,5-Trichlorophenol	196	6.936	6.937	-0.001	97	30812	10.0	9.58	
100 1,1'-Biphenyl	154	7.080	7.086	-0.006	95	117370	10.0	10.5	
102 2-Chloronaphthalene	162	7.107	7.113	-0.006	98	89998	10.0	10.3	
105 2-Nitroaniline	65	7.192	7.198	-0.006	93	29499	10.0	9.39	
111 Dimethyl phthalate	163	7.368	7.375	-0.007	98	107135	10.0	10.3	
112 1,3-Dinitrobenzene	168	7.395	7.407	-0.012	83	14221	10.0	9.41	
113 2,6-Dinitrotoluene	165	7.427	7.433	-0.006	94	24756	10.0	9.91	
115 Acenaphthylene	152	7.529	7.530	-0.001	100	150695	10.0	10.4	
117 3-Nitroaniline	138	7.603	7.610	-0.007	95	26515	10.0	9.53	
119 Acenaphthene	153	7.700	7.706	-0.006	98	91921	10.0	10.5	
120 2,4-Dinitrophenol	184	7.705	7.717	-0.012	86	19502	20.0	20.3	
121 4-Nitrophenol	109	7.753	7.770	-0.017	95	31955	20.0	19.6	
124 2,4-Dinitrotoluene	165	7.838	7.845	-0.007	93	31859	10.0	9.32	
125 Dibenzofuran	168	7.876	7.877	-0.001	100	138616	10.0	10.3	
129 2,3,4,6-Tetrachlorophenol	232	7.993	8.000	-0.007	73	24509	10.0	9.32	
131 Hexadecane	57	8.095	8.096	-0.001	96	65826	10.0	10.3	
132 Diethyl phthalate	149	8.074	8.080	-0.006	100	110510	10.0	10.5	
134 4-Chlorophenyl phenyl ethe	204	8.207	8.208	-0.001	97	54717	10.0	10.5	
135 Fluorene	166	8.218	8.224	-0.006	99	116201	10.0	10.5	
138 4-Nitroaniline	138	8.212	8.229	-0.017	94	31655	10.0	10.1	
139 4,6-Dinitro-2-methylphenol	198	8.250	8.262	-0.012	91	31067	20.0	20.0	
140 Diphenylamine	169	8.319	8.326	-0.007	96	83493	8.50	8.72	
141 N-Nitrosodiphenylamine	169	8.319	8.326	-0.007	99	83493	10.0	10.2	
142 1,2-Diphenylhydrazine	77	8.362	8.368	-0.006	95	133332	10.1	10.4	
143 Azobenzene	77	8.362	8.368	-0.006	95	133332	10.0	10.3	
145 2,4,6 - Tribromophenol	330	8.464	8.465	-0.001	89	12372	10.0	9.40	
152 4-Bromophenyl phenyl ether	248	8.699	8.700	-0.001	96	30581	10.0	9.91	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
153 Hexachlorobenzene	284	8.789	8.796	-0.007	96	30146	10.0	10.1	
155 Atrazine	200	8.837	8.849	-0.012	94	32695	10.0	10.4	
156 n-Octadecane	85	9.019	9.020	-0.001	96	33833	10.0	10.5	
157 Pentachlorophenol	266	8.976	8.983	-0.007	94	33607	20.0	19.5	
163 Phenanthrene	178	9.190	9.196	-0.006	100	172514	10.0	10.5	
164 Anthracene	178	9.243	9.244	-0.001	100	175880	10.0	10.4	
165 Carbazole	167	9.388	9.394	-0.006	100	170319	10.0	10.4	
166 Alachlor	188	9.532	9.538	-0.006	94	22010	10.0	9.86	
169 Di-n-butyl phthalate	149	9.740	9.747	-0.007	100	194219	10.0	10.3	
176 Fluoranthene	202	10.595	10.601	-0.006	100	193327	10.0	10.3	
180 Pyrene	202	10.937	10.949	-0.012	99	202767	10.0	9.97	
187 Butyl benzyl phthalate	149	12.085	12.092	-0.007	95	87652	10.0	9.59	
190 3,3'-Dichlorobenzidine	252	13.266	13.283	-0.017	98	64020	10.0	9.64	
192 Benzo[a]anthracene	228	13.320	13.331	-0.011	100	188878	10.0	10.0	
193 Bis(2-ethylhexyl) phthalat	149	13.496	13.502	-0.006	99	121383	10.0	9.61	
194 Chrysene	228	13.405	13.422	-0.017	99	186955	10.0	9.94	
197 Di-n-octyl phthalate	149	15.333	15.340	-0.007	100	214832	10.0	9.60	
198 Benzo[b]fluoranthene	252	16.231	16.259	-0.028	99	179187	10.0	9.55	
200 Benzo[k]fluoranthene	252	16.311	16.339	-0.028	100	184588	10.0	9.78	
201 Benzo[e]pyrene	252	17.016	17.055	-0.039	98	172309	10.0	9.78	
202 Benzo[a]pyrene	252	17.171	17.204	-0.033	100	180985	10.0	9.75	
208 Indeno[1,2,3-cd]pyrene	276	20.489	20.522	-0.033	74	159035	10.0	9.77	
209 Dibenz(a,h)anthracene	278	20.579	20.618	-0.039	74	153665	10.0	9.60	
210 Benzo[g,h,i]perylene	276	21.226	21.270	-0.044	99	162581	10.0	9.78	
S 219 Total Cresols	108				0			19.8	
S 220 Methyl Phenols, Total	108				0			19.8	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

MS-HSLA010_00042

Amount Added: 200.00

Units: uL

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32382.D

Injection Date: 03-Apr-2019 08:47:30

Instrument ID: SMS_D

Operator ID: KIEKELD

Lims ID: STD010 HSL

Worklist Smp#: 5

Client ID:

Injection Vol: 0.5 ul

Dil. Factor: 1.0000

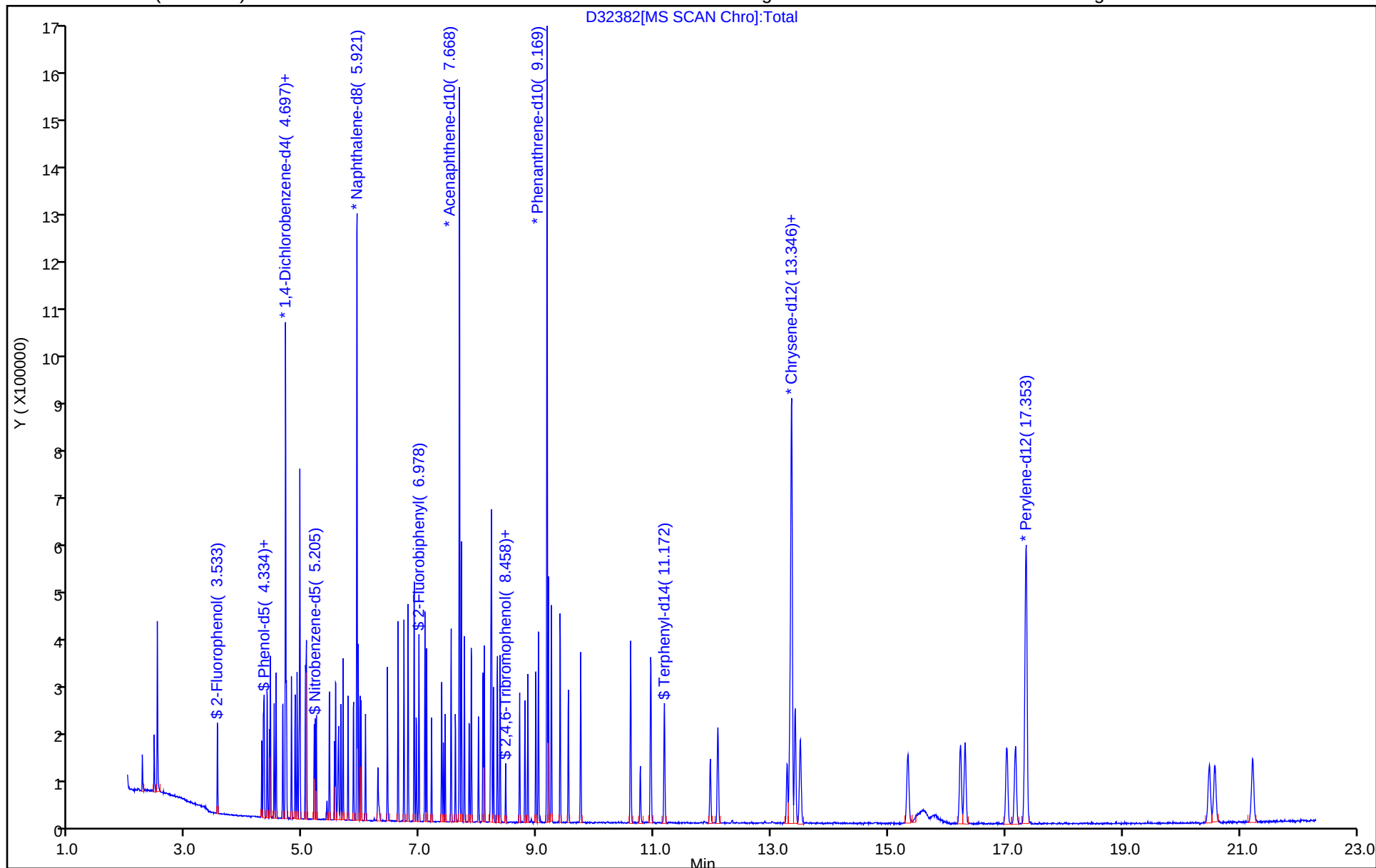
ALS Bottle#: 4

Method: SMSD_8270C

Limit Group: MSSV - 8270C_625

Column: VF-5ms (0.50 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



TestAmerica Denver

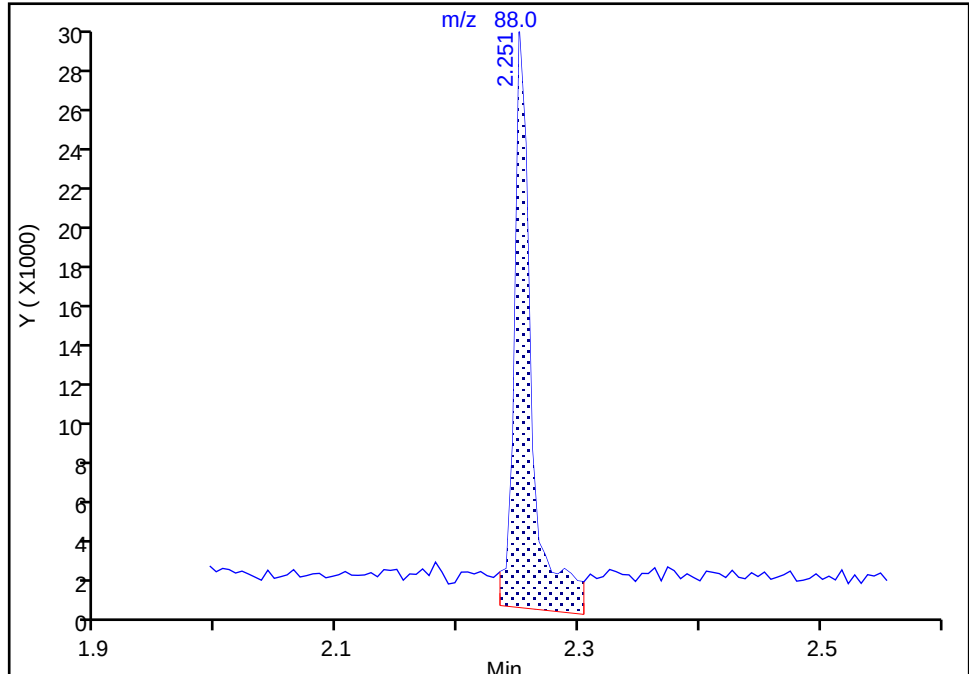
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Injection Date: 03-Apr-2019 08:47:30 Instrument ID: SMS_D
Lims ID: STD010 HSL
Client ID:
Operator ID: KIEKELD ALS Bottle#: 4 Worklist Smp#: 5
Injection Vol: 0.5 ul Dil. Factor: 1.0000
Method: SMSD_8270C Limit Group: MSSV - 8270C_625
Column: VF-5ms (0.50 mm) Detector: MS SCAN

16 1,4-Dioxane, CAS: 123-91-1

Signal: 1

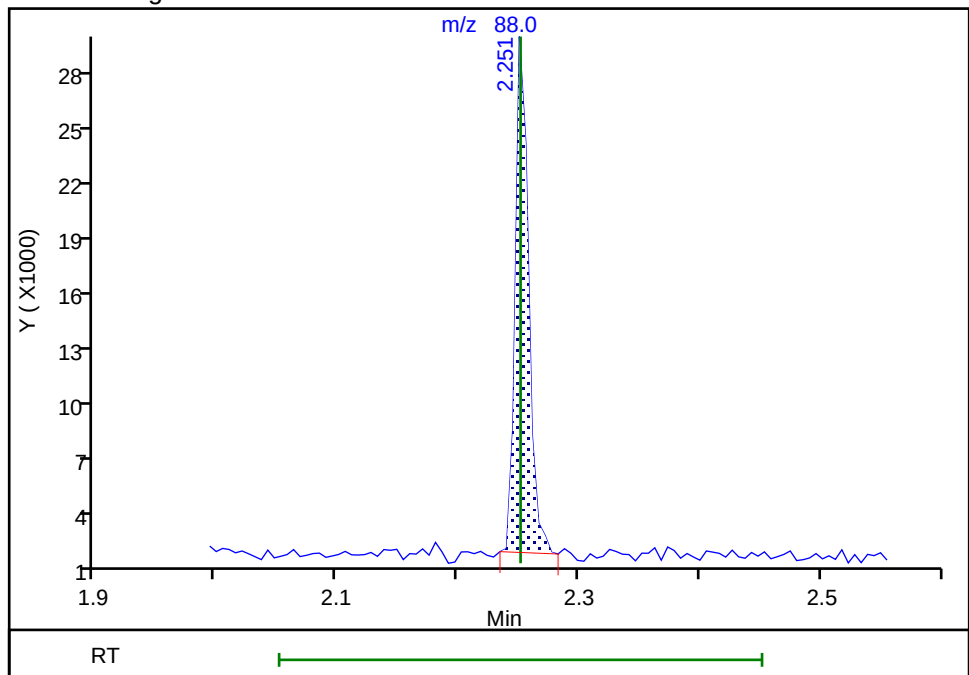
RT: 2.25
Area: 28725
Amount: 11.110270
Amount Units: ug/ml

Processing Integration Results



RT: 2.25
Area: 20633
Amount: 9.386244
Amount Units: ug/ml

Manual Integration Results



Reviewer: kiekeld, 03-Apr-2019 09:22:55

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Denver

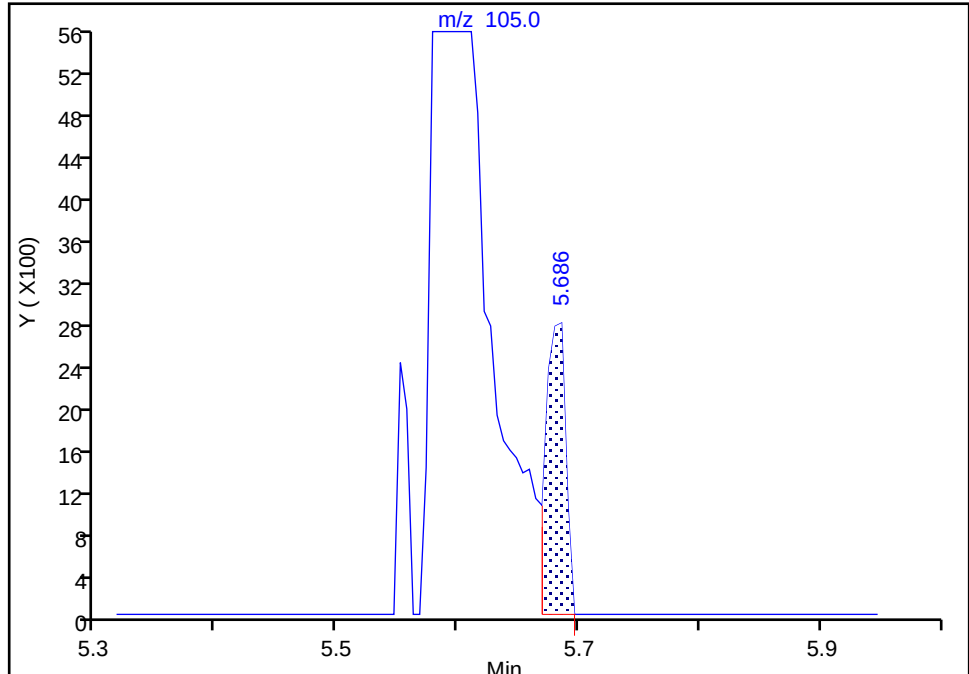
Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32382.D
Injection Date: 03-Apr-2019 08:47:30 Instrument ID: SMS_D
Lims ID: STD010 HSL
Client ID:
Operator ID: KIEKELD ALS Bottle#: 4 Worklist Smp#: 5
Injection Vol: 0.5 ul Dil. Factor: 1.0000
Method: SMSD_8270C Limit Group: MSSV - 8270C_625
Column: VF-5ms (0.50 mm) Detector MS SCAN

64 Benzoic acid, CAS: 65-85-0

Signal: 1

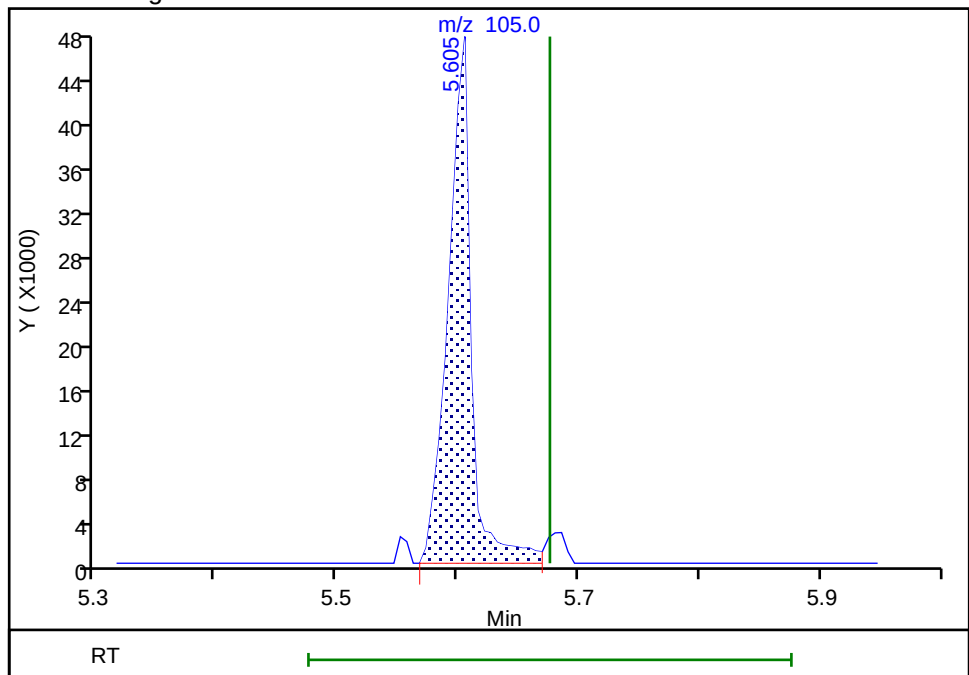
RT: 5.69
Area: 3193
Amount: 11.950289
Amount Units: ug/ml

Processing Integration Results



RT: 5.61
Area: 62998
Amount: 20.262841
Amount Units: ug/ml

Manual Integration Results



Reviewer: kiekeld, 03-Apr-2019 09:23:11

Audit Action: Assigned Compound ID

Audit Reason: Wrong peak

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32383.D
 Lims ID: STD020 HSL
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 03-Apr-2019 09:16:30 ALS Bottle#: 5 Worklist Smp#: 6
 Injection Vol: 0.5 ul Dil. Factor: 1.0000
 Sample Info: STD020 HSL
 Operator ID: KIEKELD Instrument ID: SMS_D
 Sublist: chrom-SMSD_8270C*sub39
 Method: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 03-Apr-2019 12:50:56 Calib Date: 03-Apr-2019 11:14:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32387.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0309

First Level Reviewer: kiekeld

Date: 03-Apr-2019 10:51:42

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	4.700	4.698	0.002	99	127555	40.0	40.0	
* 2 Naphthalene-d8	136	5.918	5.922	-0.004	100	519401	40.0	40.0	
* 3 Acenaphthene-d10	164	7.670	7.669	0.001	98	344363	40.0	40.0	
* 4 Phenanthrene-d10	188	9.166	9.170	-0.004	99	633113	40.0	40.0	
* 5 Chrysene-d12	240	13.349	13.358	-0.009	87	640682	40.0	40.0	
* 6 Perylene-d12	264	17.350	17.359	-0.009	99	602830	40.0	40.0	
\$ 7 2-Fluorophenol	112	3.535	3.539	-0.004	98	92741	20.0	20.2	
\$ 8 Phenol-d5	99	4.320	4.324	-0.004	97	126454	20.0	20.5	
\$ 9 Nitrobenzene-d5	82	5.207	5.211	-0.004	95	119510	20.0	20.9	
\$ 11 2-Fluorobiphenyl	172	6.981	6.979	0.002	98	229109	20.0	21.0	
\$ 12 2,4,6-Tribromophenol	330	8.461	8.465	-0.004	88	27777	20.0	20.1	
\$ 13 Terphenyl-d14	244	11.169	11.178	-0.009	100	267133	20.0	20.6	
16 1,4-Dioxane	88	2.253	2.252	0.001	98	47782	20.0	21.2	
17 N-Nitrosodimethylamine	74	2.456	2.460	-0.004	92	70183	20.0	20.3	
18 Pyridine	79	2.509	2.508	0.001	93	221749	40.0	40.8	
28 Phenol	94	4.331	4.340	-0.009	91	137614	20.0	20.7	
30 Aniline	93	4.385	4.388	-0.003	100	172483	20.0	20.5	
31 Alpha Methyl Styrene	118	4.438	4.442	-0.004	71	100184	20.0	20.7	
32 Bis(2-chloroethyl)ether	93	4.427	4.426	0.001	94	103364	20.0	20.7	
35 n-Decane	43	4.539	4.538	0.001	98	93206	20.0	20.6	
36 2-Chlorophenol	128	4.507	4.506	0.001	97	97352	20.0	20.5	
37 1,3-Dichlorobenzene	146	4.652	4.656	-0.004	96	102774	20.0	20.7	
38 1,4-Dichlorobenzene	146	4.716	4.714	0.002	97	104469	20.0	20.7	
39 Benzyl alcohol	108	4.801	4.805	-0.004	97	72423	20.0	20.3	
40 1,2-Dichlorobenzene	146	4.865	4.864	0.001	98	101200	20.0	21.0	
41 2-Methylphenol	108	4.897	4.901	-0.004	76	102157	20.0	20.8	
43 2,2'-oxybis[1-chloropropan	45	4.929	4.928	0.001	96	131619	20.0	20.6	
44 Indene	116	4.945	4.944	0.001	99	335804	40.0	43.2	
45 3-Methylphenol	108	5.042	5.046	-0.004	93	107279	20.0	20.7	
46 3 & 4 Methylphenol	108	5.042	5.046	-0.004	93	107279	20.0	20.7	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
47 4-Methylphenol	108	5.042	5.046	-0.004	93	107279	20.0	20.7	
48 N-Nitrosodi-n-propylamine	70	5.047	5.056	-0.009	92	82776	20.0	20.9	
50 Acetophenone	105	5.058	5.062	-0.004	76	150639	20.0	21.0	
53 Hexachloroethane	117	5.191	5.190	0.001	97	39464	20.0	20.6	
54 Nitrobenzene	77	5.223	5.227	-0.004	94	121833	20.0	20.9	
57 Isophorone	82	5.448	5.457	-0.009	98	231530	20.0	20.7	
59 2-Nitrophenol	139	5.538	5.537	0.001	95	47842	20.0	19.7	
60 2,4-Dimethylphenol	107	5.554	5.558	-0.004	96	108401	20.0	20.7	
63 Bis(2-chloroethoxy)methane	93	5.645	5.644	0.001	90	128742	20.0	20.5	
64 Benzoic acid	105	5.624	5.676	-0.052	95	152558	40.0	39.3	a
65 3,5-Dimethylphenol	107	5.683	5.687	-0.004	97	114496	20.0	21.2	
68 2,4-Dichlorophenol	162	5.768	5.772	-0.004	97	82590	20.0	20.4	
70 1,2,4-Trichlorobenzene	180	5.859	5.863	-0.004	97	92229	20.0	21.0	
72 Naphthalene	128	5.939	5.943	-0.004	100	292064	20.0	20.8	
73 4-Chloroaniline	127	5.971	5.975	-0.004	99	132098	20.0	21.0	
74 2,6-Dichlorophenol	162	5.993	5.991	0.002	96	80858	20.0	20.2	
76 Hexachlorobutadiene	225	6.067	6.066	0.001	98	48889	20.0	20.9	
80 Caprolactam	55	6.281	6.312	-0.031	97	53471	20.0	20.1	
83 4-Chloro-3-methylphenol	107	6.441	6.445	-0.004	97	95929	20.0	20.5	
87 2-Methylnaphthalene	142	6.623	6.621	0.002	99	207615	20.0	21.3	
89 1-Methylnaphthalene	142	6.724	6.723	0.001	99	194804	20.0	21.2	
90 Hexachlorocyclopentadiene	237	6.789	6.792	-0.004	98	54445	20.0	19.7	
91 1,2,4,5-Tetrachlorobenzene	216	6.794	6.798	-0.004	97	92636	20.0	21.2	
94 2,4,6-Trichlorophenol	196	6.895	6.899	-0.004	84	63778	20.0	20.8	
95 2,3-Dichlorobenzenamine	161	6.895	6.899	-0.004	91	107221	20.0	21.2	a
96 2,4,5-Trichlorophenol	196	6.933	6.937	-0.004	98	68941	20.0	20.4	
100 1,1'-Biphenyl	154	7.082	7.086	-0.004	95	245914	20.0	21.0	
102 2-Chloronaphthalene	162	7.109	7.113	-0.004	99	190638	20.0	20.7	
105 2-Nitroaniline	65	7.195	7.198	-0.004	94	66558	20.0	20.1	
111 Dimethyl phthalate	163	7.365	7.375	-0.010	98	223368	20.0	20.5	
112 1,3-Dinitrobenzene	168	7.398	7.407	-0.009	86	35044	20.0	19.7	
113 2,6-Dinitrotoluene	165	7.430	7.433	-0.003	94	53576	20.0	20.4	
115 Acenaphthylene	152	7.531	7.530	0.001	100	319521	20.0	20.9	
117 3-Nitroaniline	138	7.601	7.610	-0.010	96	59629	20.0	20.4	
119 Acenaphthene	153	7.702	7.706	-0.004	95	192875	20.0	20.9	
120 2,4-Dinitrophenol	184	7.707	7.717	-0.010	92	53049	40.0	38.8	
121 4-Nitrophenol	109	7.755	7.770	-0.015	95	70266	40.0	41.0	
124 2,4-Dinitrotoluene	165	7.836	7.845	-0.009	95	73558	20.0	20.5	
125 Dibenzofuran	168	7.873	7.877	-0.004	99	297105	20.0	21.1	
129 2,3,4,6-Tetrachlorophenol	232	7.996	8.000	-0.004	73	55992	20.0	20.2	
131 Hexadecane	57	8.092	8.096	-0.004	96	140004	20.0	20.9	
132 Diethyl phthalate	149	8.071	8.080	-0.009	99	234391	20.0	21.1	
134 4-Chlorophenyl phenyl ethe	204	8.204	8.208	-0.004	97	113327	20.0	20.6	
135 Fluorene	166	8.220	8.224	-0.004	98	243424	20.0	21.0	
138 4-Nitroaniline	138	8.215	8.229	-0.014	95	67764	20.0	20.6	
139 4,6-Dinitro-2-methylphenol	198	8.252	8.262	-0.010	92	79180	40.0	40.1	
140 Diphenylamine	169	8.322	8.326	-0.004	95	177697	17.0	17.6	
141 N-Nitrosodiphenylamine	169	8.322	8.326	-0.004	98	177697	20.0	21.0	
142 1,2-Diphenylhydrazine	77	8.364	8.368	-0.004	95	283090	20.2	20.9	
143 Azobenzene	77	8.364	8.368	-0.004	95	283090	20.0	20.7	
145 2,4,6 - Tribromophenol	330	8.461	8.465	-0.004	88	27777	20.0	20.1	
152 4-Bromophenyl phenyl ether	248	8.701	8.700	0.001	97	66842	20.0	21.0	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
153 Hexachlorobenzene	284	8.792	8.796	-0.004	96	64374	20.0	20.8	
155 Atrazine	200	8.840	8.849	-0.009	94	70006	20.0	21.6	
156 n-Octadecane	85	9.022	9.020	0.002	96	69822	20.0	20.9	
157 Pentachlorophenol	266	8.973	8.983	-0.010	95	81907	40.0	42.0	
163 Phenanthrene	178	9.192	9.196	-0.004	99	360548	20.0	21.4	
164 Anthracene	178	9.241	9.244	-0.003	100	373031	20.0	21.3	
165 Carbazole	167	9.390	9.394	-0.004	100	357852	20.0	21.1	
166 Alachlor	188	9.534	9.538	-0.004	95	48464	20.0	21.0	
169 Di-n-butyl phthalate	149	9.743	9.747	-0.004	100	411381	20.0	21.1	
176 Fluoranthene	202	10.597	10.601	-0.004	100	406688	20.0	20.9	
180 Pyrene	202	10.939	10.949	-0.010	99	427872	20.0	20.5	
187 Butyl benzyl phthalate	149	12.088	12.092	-0.004	95	191085	20.0	20.4	
190 3,3'-Dichlorobenzidine	252	13.269	13.283	-0.014	98	139555	20.0	20.5	
192 Benzo[a]anthracene	228	13.317	13.331	-0.014	100	391862	20.0	20.3	
193 Bis(2-ethylhexyl) phthalat	149	13.493	13.502	-0.009	99	259825	20.0	20.0	
194 Chrysene	228	13.407	13.422	-0.015	99	390792	20.0	20.2	
197 Di-n-octyl phthalate	149	15.331	15.340	-0.009	100	459603	20.0	20.0	
198 Benzo[b]fluoranthene	252	16.239	16.259	-0.020	99	375157	20.0	19.8	
200 Benzo[k]fluoranthene	252	16.314	16.339	-0.025	99	385585	20.0	20.3	
201 Benzo[e]pyrene	252	17.029	17.055	-0.026	93	355556	20.0	20.0	
202 Benzo[a]pyrene	252	17.174	17.204	-0.030	100	376017	20.0	20.1	
208 Indeno[1,2,3-cd]pyrene	276	20.486	20.522	-0.036	74	317144	20.0	19.3	
209 Dibenz(a,h)anthracene	278	20.582	20.618	-0.036	73	316451	20.0	19.6	
210 Benzo[g,h,i]perylene	276	21.234	21.270	-0.036	100	332697	20.0	19.8	
S 219 Total Cresols	108				0			41.5	
S 220 Methyl Phenols, Total	108				0			41.5	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MS-HSLA020_00042

Amount Added: 200.00

Units: uL

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32383.D

Injection Date: 03-Apr-2019 09:16:30

Instrument ID: SMS_D

Operator ID: KIEKELD

Lims ID: STD020 HSL

Worklist Smp#: 6

Client ID:

Injection Vol: 0.5 ul

Dil. Factor: 1.0000

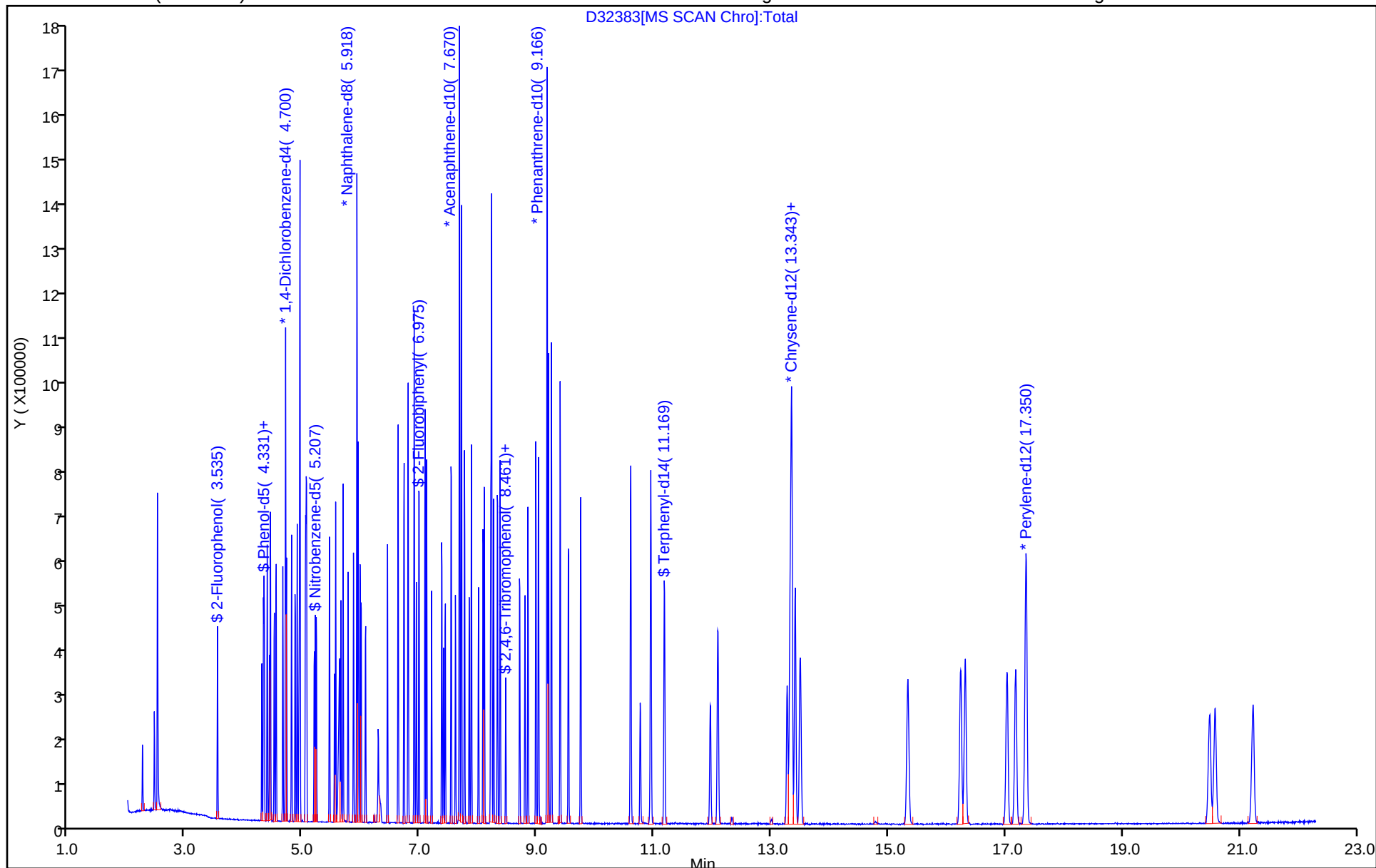
ALS Bottle#: 5

Method: SMSD_8270C

Limit Group: MSSV - 8270C_625

Column: VF-5ms (0.50 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



TestAmerica Denver

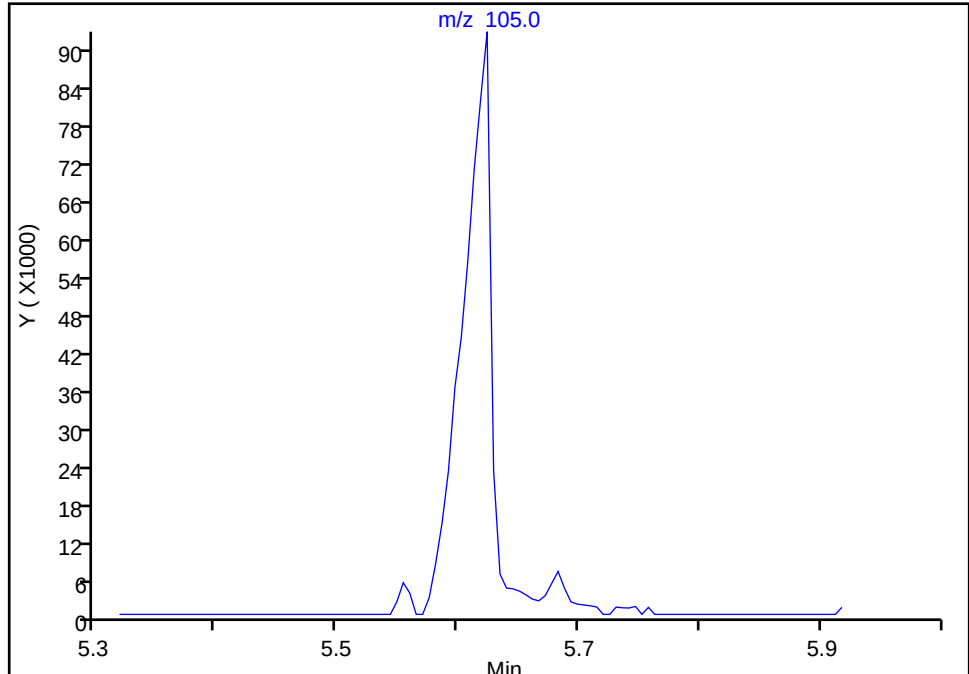
Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32383.D
Injection Date: 03-Apr-2019 09:16:30 Instrument ID: SMS_D
Lims ID: STD020 HSL
Client ID:
Operator ID: KIEKELD ALS Bottle#: 5 Worklist Smp#: 6
Injection Vol: 0.5 ul Dil. Factor: 1.0000
Method: SMSD_8270C Limit Group: MSSV - 8270C_625
Column: VF-5ms (0.50 mm) Detector: MS SCAN

64 Benzoic acid, CAS: 65-85-0

Signal: 1

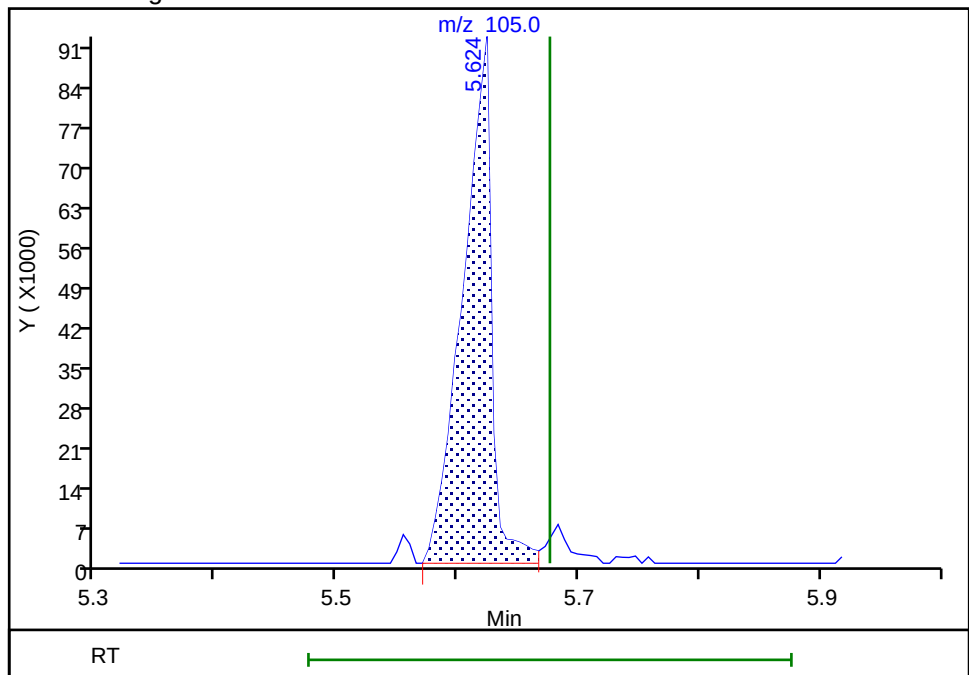
Not Detected
Expected RT: 5.68

Processing Integration Results



RT: 5.62
Area: 152558
Amount: 39.275448
Amount Units: ug/ml

Manual Integration Results



Reviewer: kiekeld, 03-Apr-2019 10:04:51

Audit Action: Assigned Compound ID

Audit Reason: Assign Peak

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32384.D
 Lims ID: STD050 HSL
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 03-Apr-2019 09:45:30 ALS Bottle#: 6 Worklist Smp#: 7
 Injection Vol: 0.5 ul Dil. Factor: 1.0000
 Sample Info: STD050 HSL
 Operator ID: KIEKELD Instrument ID: SMS_D
 Sublist: chrom-SMSD_8270C*sub39
 Method: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 03-Apr-2019 12:50:59 Calib Date: 03-Apr-2019 11:14:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32387.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0309

First Level Reviewer: kiekeld

Date: 03-Apr-2019 10:53:02

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	4.698	4.698	0.000	97	123077	40.0	40.0	
* 2 Naphthalene-d8	136	5.921	5.922	-0.001	99	506227	40.0	40.0	
* 3 Acenaphthene-d10	164	7.673	7.669	0.004	97	328302	40.0	40.0	
* 4 Phenanthrene-d10	188	9.169	9.170	-0.001	99	632405	40.0	40.0	
* 5 Chrysene-d12	240	13.347	13.358	-0.012	86	627733	40.0	40.0	
* 6 Perylene-d12	264	17.353	17.359	-0.006	99	584131	40.0	40.0	
\$ 7 2-Fluorophenol	112	3.538	3.539	-0.001	98	226627	50.0	51.2	
\$ 8 Phenol-d5	99	4.324	4.324	0.000	98	300088	50.0	50.5	
\$ 9 Nitrobenzene-d5	82	5.210	5.211	-0.001	95	283604	50.0	50.9	
\$ 11 2-Fluorobiphenyl	172	6.979	6.979	0.000	98	532694	50.0	51.2	
\$ 12 2,4,6-Tribromophenol	330	8.464	8.465	-0.001	92	69399	50.0	52.6	
\$ 13 Terphenyl-d14	244	11.172	11.178	-0.006	100	644975	50.0	50.7	
16 1,4-Dioxane	88	2.251	2.252	-0.001	97	106426	50.0	48.9	
17 N-Nitrosodimethylamine	74	2.459	2.460	-0.001	90	170351	50.0	51.1	
18 Pyridine	79	2.507	2.508	-0.001	93	535060	100.0	102.0	
28 Phenol	94	4.334	4.340	-0.006	90	326174	50.0	50.8	
30 Aniline	93	4.388	4.388	0.000	100	410814	50.0	50.6	
31 Alpha Methyl Styrene	118	4.441	4.442	-0.001	71	235064	50.0	50.3	
32 Bis(2-chloroethyl)ether	93	4.425	4.426	-0.001	96	242978	50.0	50.5	
35 n-Decane	43	4.537	4.538	-0.001	98	217626	50.0	49.8	
36 2-Chlorophenol	128	4.505	4.506	-0.001	98	229844	50.0	50.1	
37 1,3-Dichlorobenzene	146	4.655	4.656	-0.001	97	243768	50.0	50.9	
38 1,4-Dichlorobenzene	146	4.714	4.714	0.000	97	245783	50.0	50.5	
39 Benzyl alcohol	108	4.804	4.805	-0.001	97	175243	50.0	50.8	
40 1,2-Dichlorobenzene	146	4.863	4.864	-0.001	98	235867	50.0	50.6	
41 2-Methylphenol	108	4.901	4.901	0.000	76	241695	50.0	50.9	
43 2,2'-oxybis[1-chloropropan	45	4.933	4.928	0.005	96	314104	50.0	50.8	
44 Indene	116	4.943	4.944	-0.001	99	772036	100.0	103.0	
45 3-Methylphenol	108	5.039	5.046	-0.007	93	254234	50.0	50.9	
46 3 & 4 Methylphenol	108	5.039	5.046	-0.007	93	254234	50.0	50.9	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
47 4-Methylphenol	108	5.039	5.046	-0.007	93	254234	50.0	50.9	
48 N-Nitrosodi-n-propylamine	70	5.050	5.056	-0.006	93	198026	50.0	51.8	
50 Acetophenone	105	5.061	5.062	-0.001	74	359201	50.0	51.8	
53 Hexachloroethane	117	5.189	5.190	-0.001	96	94866	50.0	51.2	
54 Nitrobenzene	77	5.226	5.227	-0.001	93	291565	50.0	51.2	
57 Isophorone	82	5.451	5.457	-0.006	97	545808	50.0	50.1	
59 2-Nitrophenol	139	5.536	5.537	-0.001	96	122644	50.0	51.8	
60 2,4-Dimethylphenol	107	5.558	5.558	0.000	98	259539	50.0	50.9	
63 Bis(2-chloroethoxy)methane	93	5.643	5.644	-0.001	97	309213	50.0	50.5	
64 Benzoic acid	105	5.654	5.676	-0.022	96	405576	100.0	96.6	a
65 3,5-Dimethylphenol	107	5.686	5.687	-0.001	98	269618	50.0	51.1	
68 2,4-Dichlorophenol	162	5.771	5.772	-0.001	98	201627	50.0	51.2	
70 1,2,4-Trichlorobenzene	180	5.862	5.863	-0.001	98	215295	50.0	50.4	
72 Naphthalene	128	5.942	5.943	-0.001	100	698484	50.0	51.1	
73 4-Chloroaniline	127	5.974	5.975	-0.001	99	314281	50.0	51.3	
74 2,6-Dichlorophenol	162	5.990	5.991	-0.001	97	201011	50.0	51.6	
76 Hexachlorobutadiene	225	6.065	6.066	-0.001	99	113880	50.0	49.9	
80 Caprolactam	55	6.295	6.312	-0.017	97	131047	50.0	50.5	M
83 4-Chloro-3-methylphenol	107	6.444	6.445	-0.001	97	235799	50.0	51.8	
87 2-Methylnaphthalene	142	6.621	6.621	0.000	100	485590	50.0	51.2	
89 1-Methylnaphthalene	142	6.722	6.723	-0.001	99	453010	50.0	50.6	
90 Hexachlorocyclopentadiene	237	6.792	6.792	0.000	98	138086	50.0	52.4	
91 1,2,4,5-Tetrachlorobenzene	216	6.797	6.798	-0.001	98	218952	50.0	51.5	
94 2,4,6-Trichlorophenol	196	6.899	6.899	0.000	86	152574	50.0	52.3	
95 2,3-Dichlorobenzenamine	161	6.899	6.899	0.000	89	245061	50.0	50.7	a
96 2,4,5-Trichlorophenol	196	6.936	6.937	-0.001	98	170406	50.0	52.8	
100 1,1'-Biphenyl	154	7.080	7.086	-0.006	95	570019	50.0	51.0	
102 2-Chloronaphthalene	162	7.112	7.113	-0.001	99	444596	50.0	50.6	
105 2-Nitroaniline	65	7.198	7.198	0.000	95	168456	50.0	53.4	
111 Dimethyl phthalate	163	7.369	7.375	-0.006	98	527640	50.0	50.7	
112 1,3-Dinitrobenzene	168	7.401	7.407	-0.006	87	90522	50.0	50.4	
113 2,6-Dinitrotoluene	165	7.427	7.433	-0.006	95	131679	50.0	52.5	
115 Acenaphthylene	152	7.529	7.530	-0.001	100	750542	50.0	51.6	
117 3-Nitroaniline	138	7.604	7.610	-0.006	96	146713	50.0	52.6	
119 Acenaphthene	153	7.705	7.706	-0.001	98	454070	50.0	51.5	
120 2,4-Dinitrophenol	184	7.711	7.717	-0.006	92	153671	100.0	100.3	
121 4-Nitrophenol	109	7.764	7.770	-0.006	96	174044	100.0	106.4	
124 2,4-Dinitrotoluene	165	7.839	7.845	-0.006	96	181852	50.0	53.0	
125 Dibenzofuran	168	7.876	7.877	-0.001	100	691652	50.0	51.4	
129 2,3,4,6-Tetrachlorophenol	232	7.999	8.000	-0.001	72	142065	50.0	53.8	
131 Hexadecane	57	8.095	8.096	-0.001	95	323467	50.0	50.6	
132 Diethyl phthalate	149	8.074	8.080	-0.006	100	549264	50.0	52.0	
134 4-Chlorophenyl phenyl ethe	204	8.207	8.208	-0.001	98	266952	50.0	51.0	
135 Fluorene	166	8.223	8.224	-0.001	98	570752	50.0	51.6	
138 4-Nitroaniline	138	8.223	8.229	-0.006	93	165473	50.0	52.8	
139 4,6-Dinitro-2-methylphenol	198	8.261	8.262	-0.001	93	218977	100.0	99.7	
140 Diphenylamine	169	8.320	8.326	-0.006	96	419226	42.5	43.6	
141 N-Nitrosodiphenylamine	169	8.320	8.326	-0.006	98	419226	50.0	49.6	
142 1,2-Diphenylhydrazine	77	8.368	8.368	0.000	95	665861	50.5	51.6	
143 Azobenzene	77	8.368	8.368	0.000	95	665861	50.0	51.1	
145 2,4,6 - Tribromophenol	330	8.464	8.465	-0.001	92	69399	50.0	52.6	
152 4-Bromophenyl phenyl ether	248	8.699	8.700	-0.001	97	156531	50.0	49.2	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
153 Hexachlorobenzene	284	8.790	8.796	-0.006	96	153282	50.0	49.7	
155 Atrazine	200	8.843	8.849	-0.006	95	164249	50.0	50.7	
156 n-Octadecane	85	9.019	9.020	-0.001	96	163931	50.0	49.1	
157 Pentachlorophenol	266	8.977	8.983	-0.006	95	203635	100.0	100.2	
163 Phenanthrene	178	9.190	9.196	-0.006	99	848744	50.0	50.3	
164 Anthracene	178	9.244	9.244	0.000	100	887324	50.0	50.7	
165 Carbazole	167	9.393	9.394	-0.001	100	857349	50.0	50.6	
166 Alachlor	188	9.532	9.538	-0.006	95	117527	50.0	51.1	
169 Di-n-butyl phthalate	149	9.741	9.747	-0.006	100	974643	50.0	50.1	
176 Fluoranthene	202	10.595	10.601	-0.006	100	986018	50.0	50.7	
180 Pyrene	202	10.943	10.949	-0.006	99	1036473	50.0	50.6	
187 Butyl benzyl phthalate	149	12.086	12.092	-0.006	95	461371	50.0	50.2	
190 3,3'-Dichlorobenzidine	252	13.272	13.283	-0.011	98	341208	50.0	51.0	
192 Benzo[a]anthracene	228	13.320	13.331	-0.011	100	959212	50.0	50.6	
193 Bis(2-ethylhexyl) phthalat	149	13.496	13.502	-0.006	99	636349	50.0	50.0	
194 Chrysene	228	13.416	13.422	-0.006	99	956782	50.0	50.5	
197 Di-n-octyl phthalate	149	15.334	15.340	-0.006	100	1135441	50.0	50.4	
198 Benzo[b]fluoranthene	252	16.242	16.259	-0.017	99	910990	50.0	49.7	
200 Benzo[k]fluoranthene	252	16.322	16.339	-0.017	99	936860	50.0	50.8	
201 Benzo[e]pyrene	252	17.033	17.055	-0.022	98	868824	50.0	50.5	
202 Benzo[a]pyrene	252	17.187	17.204	-0.017	100	916215	50.0	50.5	
208 Indeno[1,2,3-cd]pyrene	276	20.500	20.522	-0.022	74	796822	50.0	50.1	
209 Dibenz(a,h)anthracene	278	20.596	20.618	-0.022	72	782310	50.0	50.1	
210 Benzo[g,h,i]perylene	276	21.248	21.270	-0.022	99	817629	50.0	50.3	
S 219 Total Cresols	108				0			101.9	
S 220 Methyl Phenols, Total	108				0			101.9	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

MS-HSLA050_00043

Amount Added: 200.00

Units: uL

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32384.D

Injection Date: 03-Apr-2019 09:45:30

Instrument ID: SMS_D

Operator ID: KIEKELD

Lims ID: STD050 HSL

Worklist Smp#: 7

Client ID:

Injection Vol: 0.5 ul

Dil. Factor: 1.0000

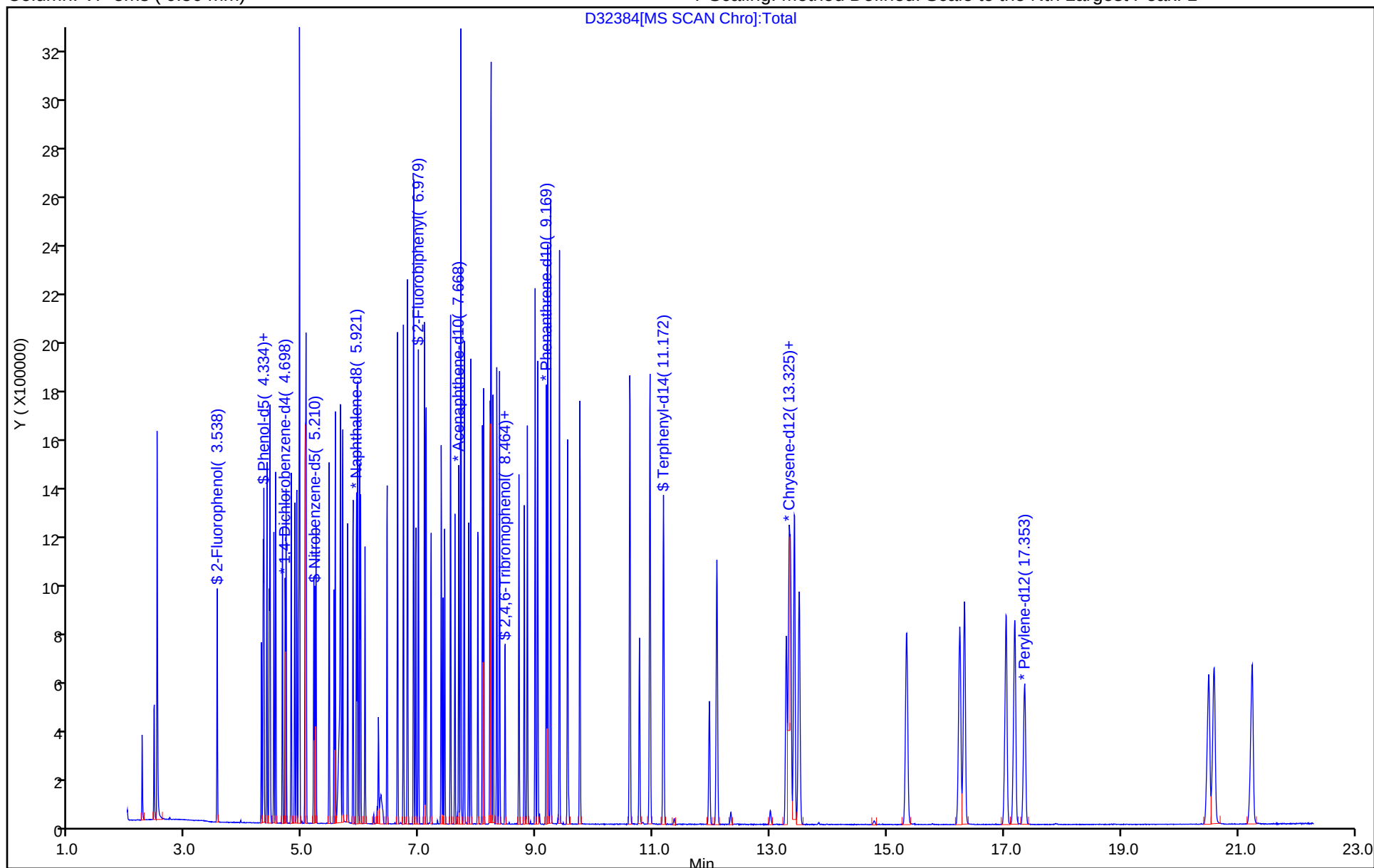
ALS Bottle#: 6

Method: SMSD_8270C

Limit Group: MSSV - 8270C_625

Column: VF-5ms (0.50 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



TestAmerica Denver

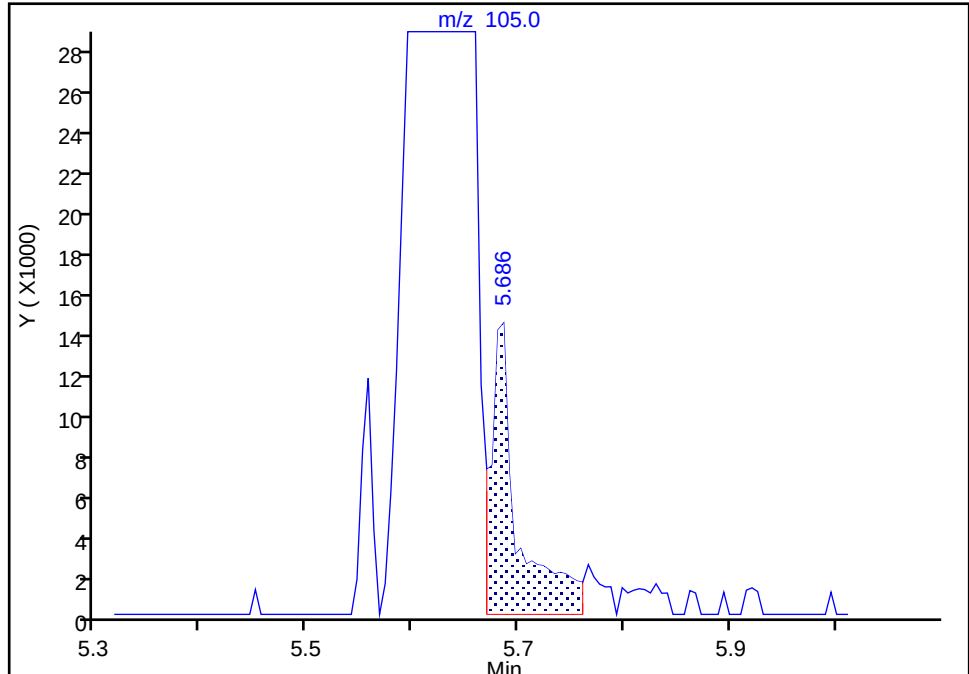
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Injection Date: 03-Apr-2019 09:45:30 Instrument ID: SMS_D
Lims ID: STD050 HSL
Client ID:
Operator ID: KIEKELD ALS Bottle#: 6 Worklist Smp#: 7
Injection Vol: 0.5 ul Dil. Factor: 1.0000
Method: SMSD_8270C Limit Group: MSSV - 8270C_625
Column: VF-5ms (0.50 mm) Detector: MS SCAN

64 Benzoic acid, CAS: 65-85-0

Signal: 1

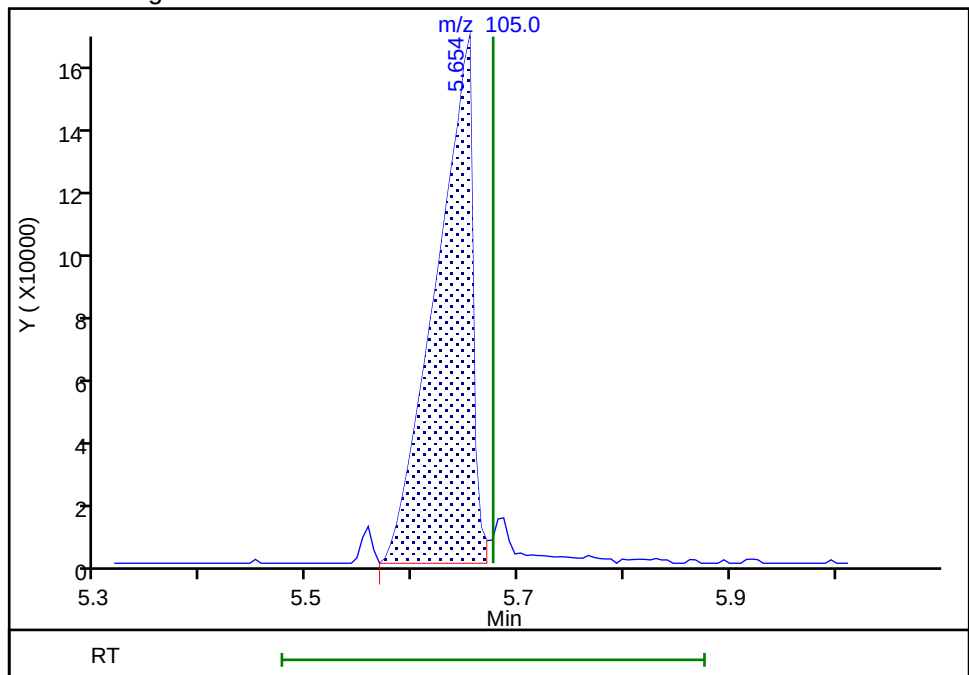
RT: 5.69
Area: 25561
Amount: 8.379033
Amount Units: ug/ml

Processing Integration Results



RT: 5.65
Area: 405576
Amount: 96.570216
Amount Units: ug/ml

Manual Integration Results



Reviewer: kiekeld, 03-Apr-2019 10:52:20

Audit Action: Assigned Compound ID

Audit Reason: Wrong peak

TestAmerica Denver

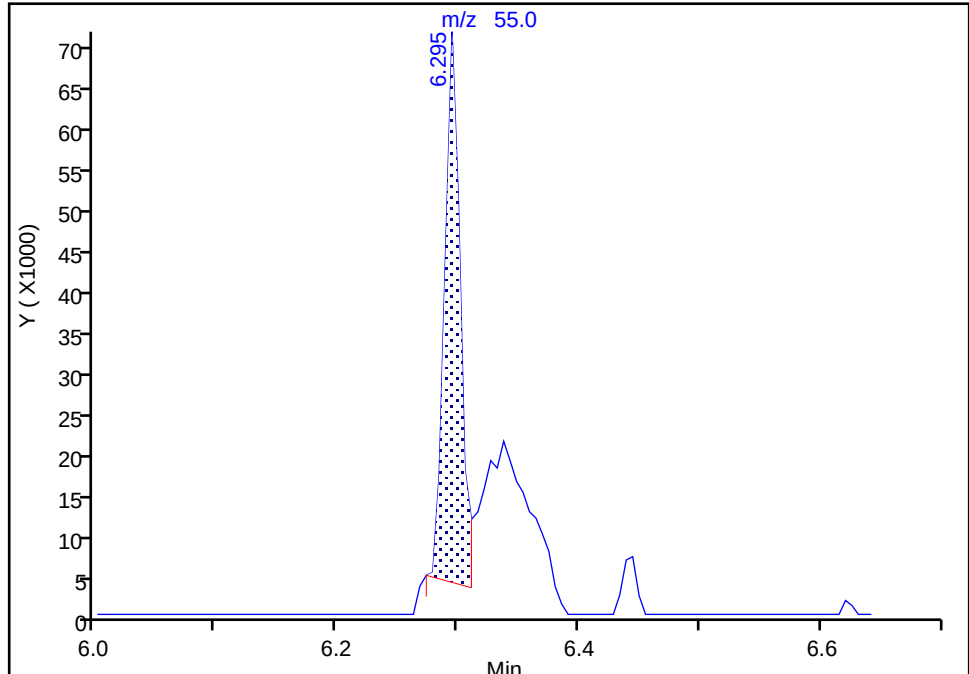
Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32384.D
Injection Date: 03-Apr-2019 09:45:30 Instrument ID: SMS_D
Lims ID: STD050 HSL
Client ID:
Operator ID: KIEKELD ALS Bottle#: 6 Worklist Smp#: 7
Injection Vol: 0.5 ul Dil. Factor: 1.0000
Method: SMSD_8270C Limit Group: MSSV - 8270C_625
Column: VF-5ms (0.50 mm) Detector MS SCAN

80 Caprolactam, CAS: 105-60-2

Signal: 1

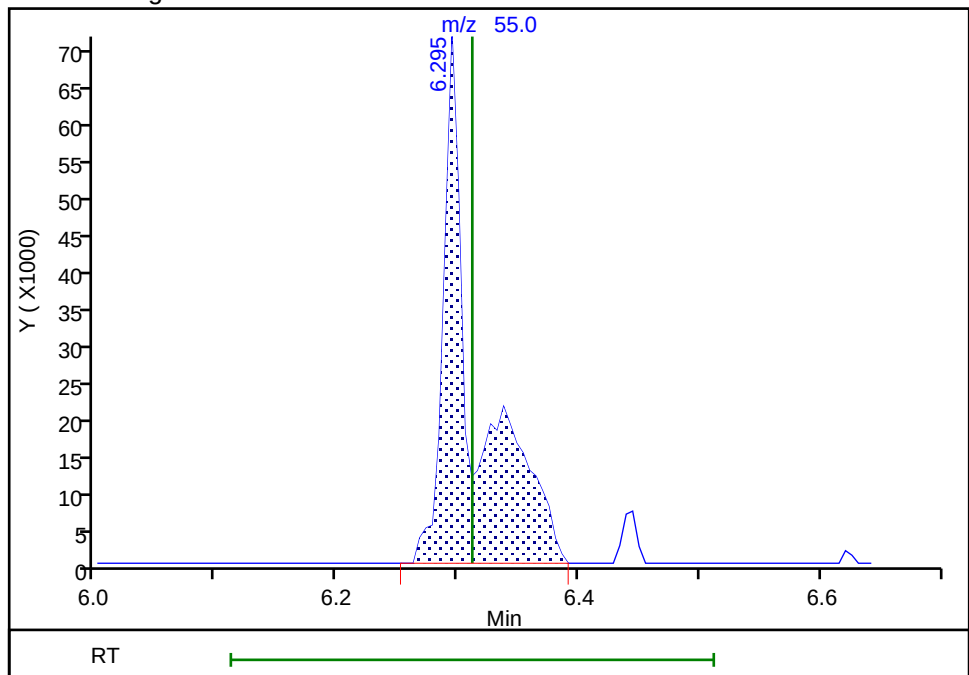
RT: 6.29
Area: 61137
Amount: 27.969310
Amount Units: ug/ml

Processing Integration Results



RT: 6.29
Area: 131047
Amount: 50.538584
Amount Units: ug/ml

Manual Integration Results



Reviewer: kiekeld, 03-Apr-2019 10:52:35
Audit Action: Manually Integrated

Audit Reason: Split Peak
Page 1145 of 3784

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32385.D
 Lims ID: STD120 HSL
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 03-Apr-2019 10:15:30 ALS Bottle#: 7 Worklist Smp#: 8
 Injection Vol: 0.5 ul Dil. Factor: 1.0000
 Sample Info: STD120 HSL
 Operator ID: KIEKELD Instrument ID: SMS_D
 Sublist: chrom-SMSD_8270C*sub39
 Method: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 03-Apr-2019 12:51:03 Calib Date: 03-Apr-2019 11:14:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32387.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0309

First Level Reviewer: kiekeld

Date: 03-Apr-2019 11:13:31

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	4.698	4.698	0.000	96	131327	40.0	40.0	
* 2 Naphthalene-d8	136	5.921	5.922	-0.001	100	535985	40.0	40.0	
* 3 Acenaphthene-d10	164	7.673	7.669	0.004	98	347949	40.0	40.0	
* 4 Phenanthrene-d10	188	9.169	9.170	-0.001	99	643069	40.0	40.0	
* 5 Chrysene-d12	240	13.357	13.358	-0.001	93	632483	40.0	40.0	
* 6 Perylene-d12	264	17.358	17.359	-0.001	99	586825	40.0	40.0	
\$ 7 2-Fluorophenol	112	3.538	3.539	-0.001	98	553905	120.0	117.3	
\$ 8 Phenol-d5	99	4.329	4.324	0.005	99	752117	120.0	118.6	
\$ 9 Nitrobenzene-d5	82	5.210	5.211	-0.001	95	707395	120.0	119.8	
\$ 11 2-Fluorobiphenyl	172	6.979	6.979	0.000	98	1285823	120.0	116.6	
\$ 12 2,4,6-Tribromophenol	330	8.464	8.465	-0.001	93	176490	120.0	126.2	
\$ 13 Terphenyl-d14	244	11.178	11.178	0.000	100	1543324	120.0	120.3	
16 1,4-Dioxane	88	2.251	2.252	-0.001	98	261553	120.0	112.5	
17 N-Nitrosodimethylamine	74	2.459	2.460	-0.001	91	421641	120.0	118.5	
18 Pyridine	79	2.513	2.508	0.005	93	1330773	240.0	237.8	
28 Phenol	94	4.340	4.340	0.000	92	801102	120.0	117.0	
30 Aniline	93	4.393	4.388	0.005	100	1009744	120.0	116.5	
31 Alpha Methyl Styrene	118	4.441	4.442	-0.001	71	575082	120.0	115.3	
32 Bis(2-chloroethyl)ether	93	4.431	4.426	0.004	96	590442	120.0	115.1	
35 n-Decane	43	4.537	4.538	-0.001	97	531599	120.0	114.1	
36 2-Chlorophenol	128	4.511	4.506	0.005	97	574390	120.0	117.3	
37 1,3-Dichlorobenzene	146	4.655	4.656	-0.001	97	593079	120.0	116.1	
38 1,4-Dichlorobenzene	146	4.714	4.714	0.000	97	602601	120.0	116.0	
39 Benzyl alcohol	108	4.810	4.805	0.005	97	437547	120.0	118.9	
40 1,2-Dichlorobenzene	146	4.863	4.864	-0.001	97	571687	120.0	115.0	
41 2-Methylphenol	108	4.901	4.901	0.000	75	605124	120.0	119.5	
43 2,2'-oxybis[1-chloropropan	45	4.933	4.928	0.005	97	768495	120.0	116.6	
44 Indene	116	4.949	4.944	0.005	99	1805166	240.0	225.6	
45 3-Methylphenol	108	5.050	5.046	0.004	95	626585	120.0	117.6	
46 3 & 4 Methylphenol	108	5.050	5.046	0.004	95	626585	120.0	117.6	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
47 4-Methylphenol	108	5.050	5.046	0.004	95	626585	120.0	117.6	
48 N-Nitrosodi-n-propylamine	70	5.061	5.056	0.005	93	473784	120.0	116.2	
50 Acetophenone	105	5.061	5.062	-0.001	75	858800	120.0	116.0	
53 Hexachloroethane	117	5.189	5.190	-0.001	96	233077	120.0	117.9	
54 Nitrobenzene	77	5.232	5.227	0.005	94	711282	120.0	118.0	
57 Isophorone	82	5.462	5.457	0.005	97	1360693	120.0	118.0	
59 2-Nitrophenol	139	5.536	5.537	-0.001	96	321843	120.0	128.4	
60 2,4-Dimethylphenol	107	5.558	5.558	0.000	97	634795	120.0	117.6	
63 Bis(2-chloroethoxy)methane	93	5.649	5.644	0.004	96	759576	120.0	117.2	
64 Benzoic acid	105	5.697	5.676	0.021	90	1121668	240.0	242.4	
65 3,5-Dimethylphenol	107	5.686	5.687	-0.001	97	645141	120.0	115.6	
68 2,4-Dichlorophenol	162	5.771	5.772	-0.001	97	500372	120.0	119.9	
70 1,2,4-Trichlorobenzene	180	5.862	5.863	-0.001	97	534027	120.0	118.0	
72 Naphthalene	128	5.942	5.943	-0.001	100	1670778	120.0	115.4	
73 4-Chloroaniline	127	5.980	5.975	0.005	100	763738	120.0	117.6	
74 2,6-Dichlorophenol	162	5.996	5.991	0.005	97	489828	120.0	118.7	
76 Hexachlorobutadiene	225	6.065	6.066	-0.001	99	284972	120.0	118.0	
80 Caprolactam	55	6.322	6.312	0.010	96	313037	120.0	114.0	M
83 4-Chloro-3-methylphenol	107	6.450	6.445	0.005	97	570268	120.0	118.3	
87 2-Methylnaphthalene	142	6.626	6.621	0.005	100	1169432	120.0	116.4	
89 1-Methylnaphthalene	142	6.722	6.723	-0.001	99	1109687	120.0	117.0	
90 Hexachlorocyclopentadiene	237	6.792	6.792	0.000	99	347633	120.0	124.5	
91 1,2,4,5-Tetrachlorobenzene	216	6.797	6.798	-0.001	97	518247	120.0	115.1	
94 2,4,6-Trichlorophenol	196	6.899	6.899	0.000	87	368875	120.0	119.3	
95 2,3-Dichlorobenzenamine	161	6.899	6.899	0.000	89	585003	120.0	114.2	a
96 2,4,5-Trichlorophenol	196	6.936	6.937	-0.001	98	420351	120.0	122.9	
100 1,1'-Biphenyl	154	7.086	7.086	0.000	95	1363797	120.0	115.1	
102 2-Chloronaphthalene	162	7.112	7.113	-0.001	99	1089264	120.0	117.0	
105 2-Nitroaniline	65	7.198	7.198	0.000	95	422451	120.0	126.4	
111 Dimethyl phthalate	163	7.379	7.375	0.004	99	1285756	120.0	116.6	
112 1,3-Dinitrobenzene	168	7.406	7.407	-0.001	87	239182	120.0	123.1	
113 2,6-Dinitrotoluene	165	7.438	7.433	0.005	97	329278	120.0	124.0	
115 Acenaphthylene	152	7.534	7.530	0.004	100	1790005	120.0	116.1	
117 3-Nitroaniline	138	7.614	7.610	0.004	96	367591	120.0	124.3	
119 Acenaphthene	153	7.705	7.706	-0.001	98	1069209	120.0	114.4	
120 2,4-Dinitrophenol	184	7.716	7.717	-0.001	91	422544	240.0	246.5	
121 4-Nitrophenol	109	7.780	7.770	0.010	96	430514	240.0	248.4	
124 2,4-Dinitrotoluene	165	7.849	7.845	0.004	96	458572	120.0	126.2	
125 Dibenzofuran	168	7.876	7.877	-0.001	99	1673224	120.0	117.4	
129 2,3,4,6-Tetrachlorophenol	232	7.999	8.000	-0.001	72	348680	120.0	124.7	
131 Hexadecane	57	8.095	8.096	-0.001	95	795688	120.0	117.5	
132 Diethyl phthalate	149	8.079	8.080	-0.001	100	1300420	120.0	116.1	
134 4-Chlorophenyl phenyl ethe	204	8.207	8.208	-0.001	98	643399	120.0	116.0	
135 Fluorene	166	8.223	8.224	-0.001	99	1346756	120.0	114.9	
138 4-Nitroaniline	138	8.239	8.229	0.010	96	401523	120.0	120.9	
139 4,6-Dinitro-2-methylphenol	198	8.266	8.262	0.004	93	574080	240.0	247.1	
140 Diphenylamine	169	8.325	8.326	-0.001	96	1007350	102.0	98.9	
141 N-Nitrosodiphenylamine	169	8.325	8.326	-0.001	98	1007350	120.0	117.1	
142 1,2-Diphenylhydrazine	77	8.368	8.368	0.000	95	1626762	121.3	119.0	
143 Azobenzene	77	8.368	8.368	0.000	95	1626762	120.0	117.7	
145 2,4,6 - Tribromophenol	330	8.464	8.465	-0.001	93	176490	120.0	126.2	
152 4-Bromophenyl phenyl ether	248	8.704	8.700	0.004	97	381980	120.0	118.0	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
153 Hexachlorobenzene	284	8.795	8.796	-0.001	98	374765	120.0	119.5	
155 Atrazine	200	8.854	8.849	0.005	98	392679	120.0	119.1	
156 n-Octadecane	85	9.019	9.020	-0.001	96	401745	120.0	118.3	
157 Pentachlorophenol	266	8.982	8.983	-0.001	97	511873	240.0	243.5	
163 Phenanthrene	178	9.196	9.196	0.000	99	1983432	120.0	115.6	
164 Anthracene	178	9.249	9.244	0.005	100	2071364	120.0	116.5	
165 Carbazole	167	9.399	9.394	0.005	100	2021961	120.0	117.3	
166 Alachlor	188	9.538	9.538	0.000	96	282975	120.0	120.9	
169 Di-n-butyl phthalate	149	9.746	9.747	-0.001	100	2358370	120.0	119.3	
176 Fluoranthene	202	10.601	10.601	0.000	99	2362164	120.0	119.4	
180 Pyrene	202	10.948	10.949	-0.001	99	2459666	120.0	119.2	
187 Butyl benzyl phthalate	149	12.091	12.092	-0.001	95	1135967	120.0	122.6	
190 3,3'-Dichlorobenzidine	252	13.282	13.283	-0.001	98	814406	120.0	120.9	
192 Benzo[a]anthracene	228	13.331	13.331	-0.001	100	2271319	120.0	118.9	
193 Bis(2-ethylhexyl) phthalat	149	13.496	13.502	-0.006	99	1580702	120.0	123.4	
194 Chrysene	228	13.427	13.422	0.005	99	2273571	120.0	119.1	
197 Di-n-octyl phthalate	149	15.339	15.340	-0.001	100	2811027	120.0	123.8	
198 Benzo[b]fluoranthene	252	16.263	16.259	0.004	99	2208076	120.0	120.0	
200 Benzo[k]fluoranthene	252	16.343	16.339	0.004	99	2260838	120.0	122.1	
201 Benzo[e]pyrene	252	17.059	17.055	0.004	97	2093747	120.0	121.1	
202 Benzo[a]pyrene	252	17.209	17.204	0.005	100	2214353	120.0	121.5	
208 Indeno[1,2,3-cd]pyrene	276	20.532	20.522	0.010	74	1938999	120.0	121.5	
209 Dibenz(a,h)anthracene	278	20.623	20.618	0.004	87	1951163	120.0	124.3	
210 Benzo[g,h,i]perylene	276	21.280	21.270	0.010	99	1979978	120.0	121.3	
S 219 Total Cresols	108				0			237.2	
S 220 Methyl Phenols, Total	108				0			237.2	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

MS-HSLA120_00042

Amount Added: 200.00

Units: uL

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32385.D

Injection Date: 03-Apr-2019 10:15:30

Instrument ID: SMS_D

Operator ID: KIEKELD

Lims ID: STD120 HSL

Worklist Smp#: 8

Client ID:

Injection Vol: 0.5 ul

Dil. Factor: 1.0000

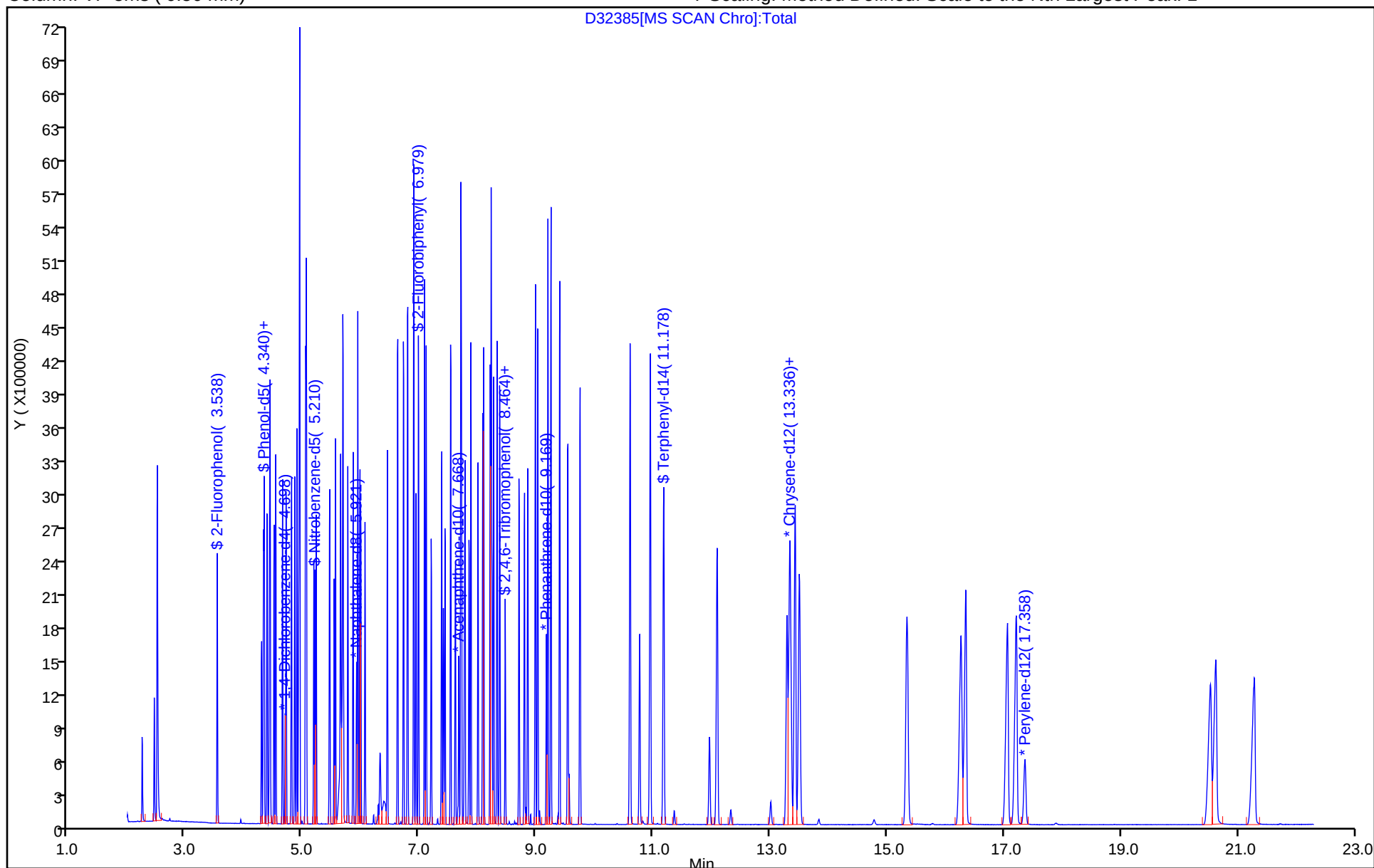
ALS Bottle#: 7

Method: SMSD_8270C

Limit Group: MSSV - 8270C_625

Column: VF-5ms (0.50 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



TestAmerica Denver

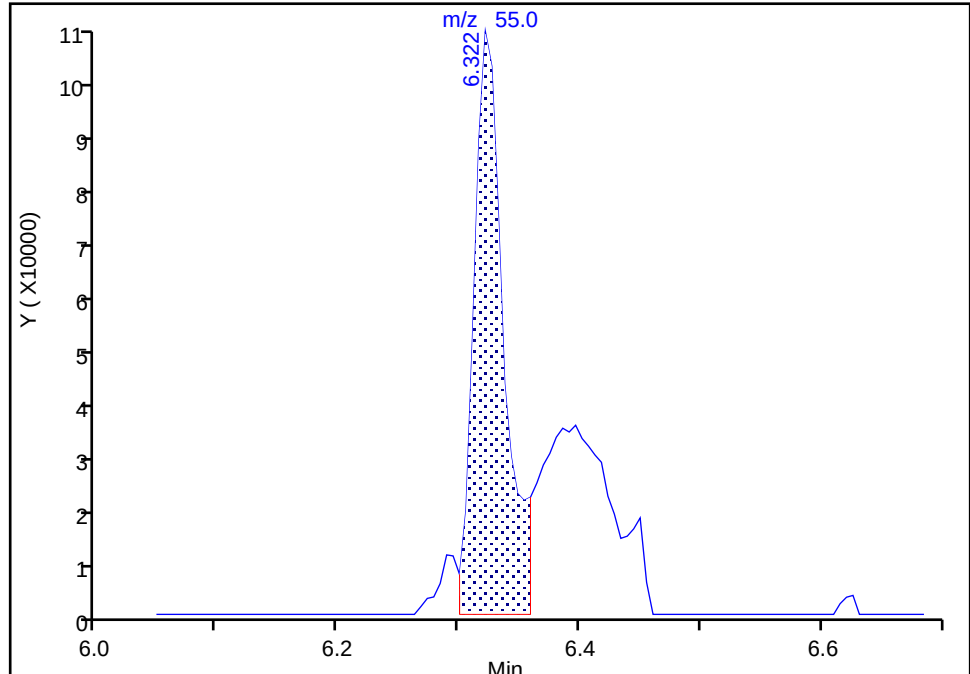
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Injection Date: 03-Apr-2019 10:15:30 Instrument ID: SMS_D
Lims ID: STD120 HSL
Client ID:
Operator ID: KIEKELD ALS Bottle#: 7 Worklist Smp#: 8
Injection Vol: 0.5 ul Dil. Factor: 1.0000
Method: SMSD_8270C Limit Group: MSSV - 8270C_625
Column: VF-5ms (0.50 mm) Detector: MS SCAN

80 Caprolactam, CAS: 105-60-2

Signal: 1

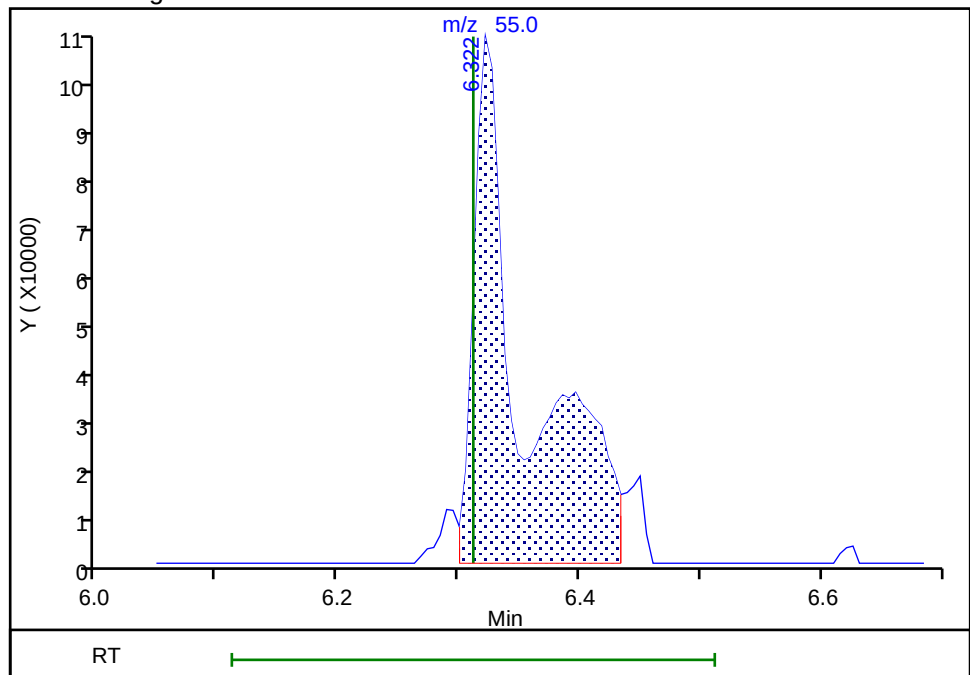
RT: 6.32
Area: 187291
Amount: 73.129538
Amount Units: ug/ml

Processing Integration Results



RT: 6.32
Area: 313037
Amount: 114.0209
Amount Units: ug/ml

Manual Integration Results



Reviewer: kiekeld, 03-Apr-2019 10:53:56
Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32386.D
 Lims ID: STD160 HSL
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 03-Apr-2019 10:44:30 ALS Bottle#: 8 Worklist Smp#: 9
 Injection Vol: 0.5 ul Dil. Factor: 1.0000
 Sample Info: STD160 HSL
 Operator ID: KIEKELD Instrument ID: SMS_D
 Sublist: chrom-SMSD_8270C*sub39
 Method: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 03-Apr-2019 12:51:07 Calib Date: 03-Apr-2019 11:14:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32387.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0309

First Level Reviewer: kiekeld

Date: 03-Apr-2019 11:16:22

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	4.699	4.698	0.001	98	133080	40.0	40.0	
* 2 Naphthalene-d8	136	5.922	5.922	0.000	99	547362	40.0	40.0	
* 3 Acenaphthene-d10	164	7.669	7.669	0.000	97	350064	40.0	40.0	
* 4 Phenanthrene-d10	188	9.170	9.170	0.000	99	651801	40.0	40.0	
* 5 Chrysene-d12	240	13.358	13.358	0.000	93	624851	40.0	40.0	
* 6 Perylene-d12	264	17.360	17.359	0.001	99	589161	40.0	40.0	
\$ 7 2-Fluorophenol	112	3.539	3.539	0.000	98	749514	160.0	156.7	
\$ 8 Phenol-d5	99	4.330	4.324	0.006	99	994110	160.0	154.7	
\$ 9 Nitrobenzene-d5	82	5.212	5.211	0.001	95	943131	160.0	156.4	
\$ 11 2-Fluorobiphenyl	172	6.980	6.979	0.001	98	1651635	160.0	148.9	
\$ 12 2,4,6-Tribromophenol	330	8.465	8.465	0.000	94	234336	160.0	166.5	
\$ 13 Terphenyl-d14	244	11.179	11.178	0.001	100	1975909	160.0	155.9	
16 1,4-Dioxane	88	2.252	2.252	0.000	98	351954	160.0	149.4	
17 N-Nitrosodimethylamine	74	2.466	2.460	0.006	91	570234	160.0	158.1	
18 Pyridine	79	2.514	2.508	0.006	93	1757795	320.0	310.0	
28 Phenol	94	4.346	4.340	0.006	91	1067928	160.0	153.9	
30 Aniline	93	4.394	4.388	0.006	100	1364817	160.0	155.4	
31 Alpha Methyl Styrene	118	4.442	4.442	0.000	73	768577	160.0	152.1	
32 Bis(2-chloroethyl)ether	93	4.432	4.426	0.006	95	793373	160.0	152.6	
35 n-Decane	43	4.538	4.538	0.000	98	716576	160.0	151.7	
36 2-Chlorophenol	128	4.512	4.506	0.006	97	762334	160.0	153.6	
37 1,3-Dichlorobenzene	146	4.656	4.656	0.000	97	784052	160.0	151.4	
38 1,4-Dichlorobenzene	146	4.715	4.714	0.001	97	796322	160.0	151.2	
39 Benzyl alcohol	108	4.811	4.805	0.006	97	594472	160.0	159.5	
40 1,2-Dichlorobenzene	146	4.864	4.864	0.000	97	764862	160.0	151.9	
41 2-Methylphenol	108	4.902	4.901	0.001	76	800312	160.0	156.0	
43 2,2'-oxybis[1-chloropropan	45	4.934	4.928	0.006	97	1032294	160.0	154.5	
44 Indene	116	4.950	4.944	0.006	99	2340693	320.0	288.7	
45 3-Methylphenol	108	5.051	5.046	0.005	94	830916	160.0	153.9	
46 3 & 4 Methylphenol	108	5.051	5.046	0.005	94	830916	160.0	153.9	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
47 4-Methylphenol	108	5.051	5.046	0.005	94	830916	160.0	153.9	
48 N-Nitrosodi-n-propylamine	70	5.062	5.056	0.006	92	620605	160.0	150.1	
50 Acetophenone	105	5.067	5.062	0.005	75	1117230	160.0	149.0	
53 Hexachloroethane	117	5.190	5.190	0.000	97	313143	160.0	156.4	
54 Nitrobenzene	77	5.233	5.227	0.006	93	954504	160.0	155.1	
57 Isophorone	82	5.463	5.457	0.006	97	1803411	160.0	153.2	
59 2-Nitrophenol	139	5.537	5.537	0.000	96	426848	160.0	166.7	
60 2,4-Dimethylphenol	107	5.564	5.558	0.006	98	835925	160.0	151.7	
63 Bis(2-chloroethoxy)methane	93	5.650	5.644	0.006	95	1013380	160.0	153.1	
64 Benzoic acid	105	5.714	5.676	0.038	96	1538265	320.0	323.4	
65 3,5-Dimethylphenol	107	5.692	5.687	0.005	97	858807	160.0	150.7	
68 2,4-Dichlorophenol	162	5.772	5.772	0.000	97	657370	160.0	154.3	
70 1,2,4-Trichlorobenzene	180	5.863	5.863	0.000	97	697926	160.0	151.0	
72 Naphthalene	128	5.943	5.943	0.000	100	2191375	160.0	148.2	
73 4-Chloroaniline	127	5.981	5.975	0.006	100	998075	160.0	150.5	
74 2,6-Dichlorophenol	162	5.997	5.991	0.006	97	649104	160.0	154.0	
76 Hexachlorobutadiene	225	6.066	6.066	0.000	99	374776	160.0	151.9	
80 Caprolactam	55	6.333	6.312	0.021	96	455644	160.0	162.5	M
83 4-Chloro-3-methylphenol	107	6.451	6.445	0.006	97	758560	160.0	154.1	
87 2-Methylnaphthalene	142	6.627	6.621	0.006	100	1518192	160.0	148.0	
89 1-Methylnaphthalene	142	6.723	6.723	0.000	99	1434248	160.0	148.0	
90 Hexachlorocyclopentadiene	237	6.793	6.792	0.001	99	459628	160.0	163.6	
91 1,2,4,5-Tetrachlorobenzene	216	6.798	6.798	0.000	98	675837	160.0	147.0	
94 2,4,6-Trichlorophenol	196	6.900	6.899	0.001	88	478507	160.0	153.8	
95 2,3-Dichlorobenzenamine	161	6.900	6.899	0.001	88	753608	160.0	146.3	a
96 2,4,5-Trichlorophenol	196	6.942	6.937	0.005	99	544358	160.0	158.2	
100 1,1'-Biphenyl	154	7.087	7.086	0.001	95	1769680	160.0	148.4	
102 2-Chloronaphthalene	162	7.113	7.113	0.000	99	1435127	160.0	153.2	
105 2-Nitroaniline	65	7.204	7.198	0.006	96	551638	160.0	164.1	
111 Dimethyl phthalate	163	7.380	7.375	0.005	98	1678004	160.0	151.3	
112 1,3-Dinitrobenzene	168	7.412	7.407	0.005	87	319595	160.0	163.0	
113 2,6-Dinitrotoluene	165	7.439	7.433	0.006	96	431232	160.0	161.4	
115 Acenaphthylene	152	7.530	7.530	0.000	99	2322535	160.0	149.8	
117 3-Nitroaniline	138	7.615	7.610	0.005	96	484291	160.0	162.8	
119 Acenaphthene	153	7.706	7.706	0.000	98	1379335	160.0	146.7	
120 2,4-Dinitrophenol	184	7.722	7.717	0.005	97	565632	320.0	325.1	
121 4-Nitrophenol	109	7.786	7.770	0.016	96	560260	320.0	321.2	
124 2,4-Dinitrotoluene	165	7.851	7.845	0.006	96	593030	160.0	162.2	
125 Dibenzofuran	168	7.877	7.877	0.000	99	2136871	160.0	149.0	
129 2,3,4,6-Tetrachlorophenol	232	8.000	8.000	0.000	73	457352	160.0	162.6	
131 Hexadecane	57	8.096	8.096	0.000	95	1019372	160.0	149.7	
132 Diethyl phthalate	149	8.080	8.080	0.000	100	1652176	160.0	146.6	
134 4-Chlorophenyl phenyl ethe	204	8.208	8.208	0.000	98	848129	160.0	152.0	
135 Fluorene	166	8.225	8.224	0.000	99	1734167	160.0	147.1	
138 4-Nitroaniline	138	8.246	8.229	0.017	97	532629	160.0	159.5	
139 4,6-Dinitro-2-methylphenol	198	8.273	8.262	0.011	95	749197	320.0	316.3	
140 Diphenylamine	169	8.326	8.326	0.000	96	1297206	136.0	126.6	
141 N-Nitrosodiphenylamine	169	8.326	8.326	0.000	98	1297206	160.0	148.8	
142 1,2-Diphenylhydrazine	77	8.374	8.368	0.006	95	2095972	161.8	152.4	
143 Azobenzene	77	8.374	8.368	0.006	95	2095972	160.0	150.7	
145 2,4,6 - Tribromophenol	330	8.465	8.465	0.000	94	234336	160.0	166.5	
152 4-Bromophenyl phenyl ether	248	8.700	8.700	0.000	97	497576	160.0	151.7	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
153 Hexachlorobenzene	284	8.796	8.796	0.000	98	480214	160.0	151.1	
155 Atrazine	200	8.855	8.849	0.006	96	489796	160.0	146.5	
156 n-Octadecane	85	9.020	9.020	0.000	96	518612	160.0	150.7	
157 Pentachlorophenol	266	8.983	8.983	0.000	96	667864	320.0	312.6	
163 Phenanthrene	178	9.197	9.196	0.001	99	2544423	160.0	146.4	
164 Anthracene	178	9.250	9.244	0.006	99	2640703	160.0	146.5	
165 Carbazole	167	9.400	9.394	0.006	100	2558278	160.0	146.4	
166 Alachlor	188	9.539	9.538	0.001	97	366391	160.0	154.4	
169 Di-n-butyl phthalate	149	9.747	9.747	0.000	100	2974318	160.0	148.5	
176 Fluoranthene	202	10.607	10.601	0.006	100	3002084	160.0	149.8	
180 Pyrene	202	10.949	10.949	0.000	99	3146724	160.0	154.4	
187 Butyl benzyl phthalate	149	12.092	12.092	0.000	95	1460978	160.0	159.5	
190 3,3'-Dichlorobenzidine	252	13.294	13.283	0.011	99	1067495	160.0	160.4	
192 Benzo[a]anthracene	228	13.337	13.331	0.006	100	2955841	160.0	156.7	
193 Bis(2-ethylhexyl) phthalat	149	13.497	13.502	-0.005	98	2039144	160.0	161.1	
194 Chrysene	228	13.433	13.422	0.011	99	2927951	160.0	155.3	
197 Di-n-octyl phthalate	149	15.346	15.340	0.006	100	3650723	160.0	162.7	
198 Benzo[b]fluoranthene	252	16.270	16.259	0.011	99	2969137	160.0	160.7	
200 Benzo[k]fluoranthene	252	16.355	16.339	0.016	99	2906426	160.0	156.3	
201 Benzo[e]pyrene	252	17.066	17.055	0.011	98	2744228	160.0	158.1	
202 Benzo[a]pyrene	252	17.221	17.204	0.017	100	2903273	160.0	158.7	
208 Indeno[1,2,3-cd]pyrene	276	20.543	20.522	0.021	75	2583278	160.0	161.2	M
209 Dibenz(a,h)anthracene	278	20.640	20.618	0.022	76	2583326	160.0	163.9	
210 Benzo[g,h,i]perylene	276	21.297	21.270	0.027	99	2624117	160.0	160.2	
S 219 Total Cresols	108				0			309.9	
S 220 Methyl Phenols, Total	108				0			309.9	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

MS-HSLA160_00042

Amount Added: 200.00

Units: uL

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32386.D

Injection Date: 03-Apr-2019 10:44:30

Instrument ID: SMS_D

Operator ID: KIEKELD

Lims ID: STD160 HSL

Worklist Smp#: 9

Client ID:

Injection Vol: 0.5 ul

Dil. Factor: 1.0000

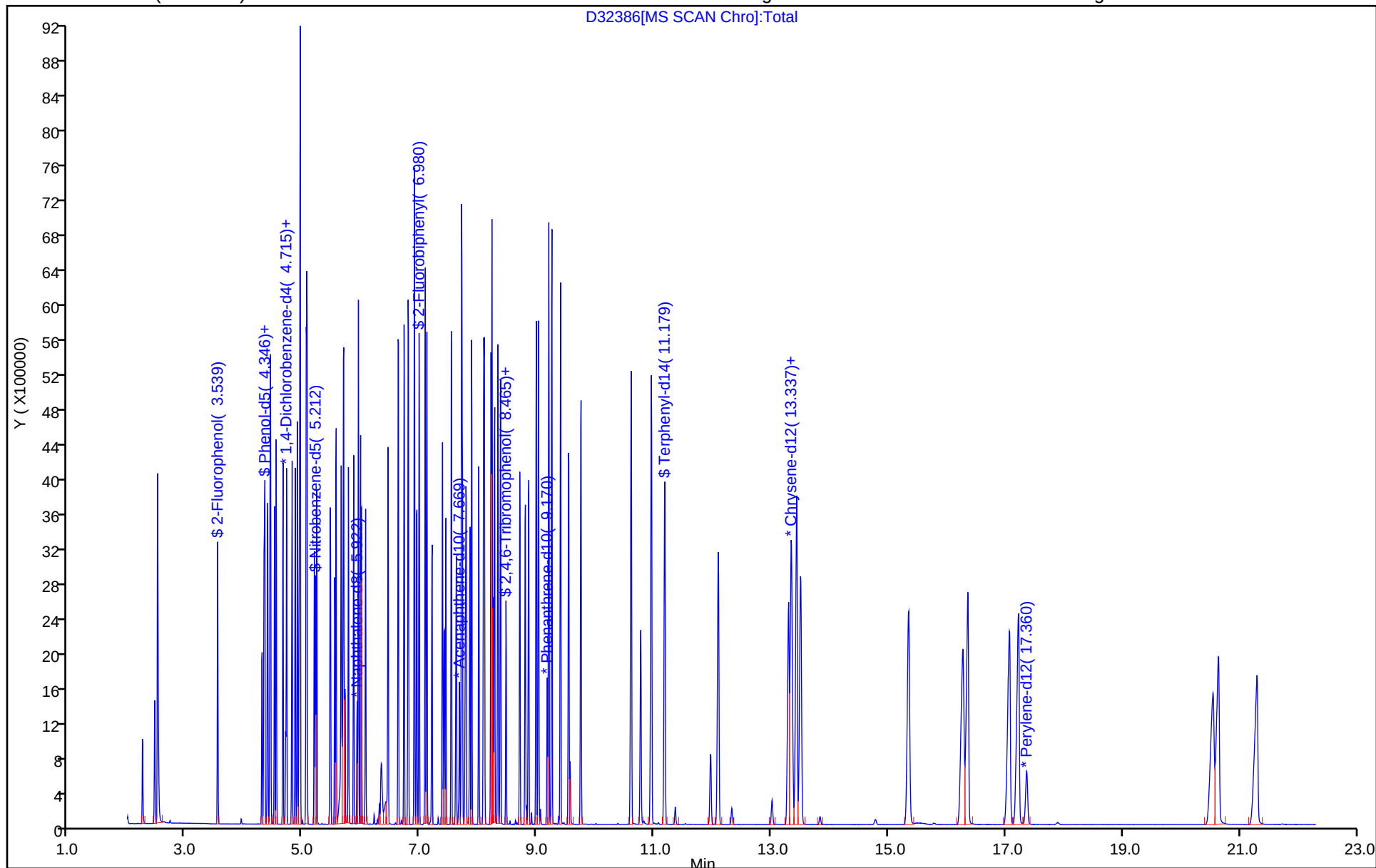
ALS Bottle#: 8

Method: SMSD_8270C

Limit Group: MSSV - 8270C_625

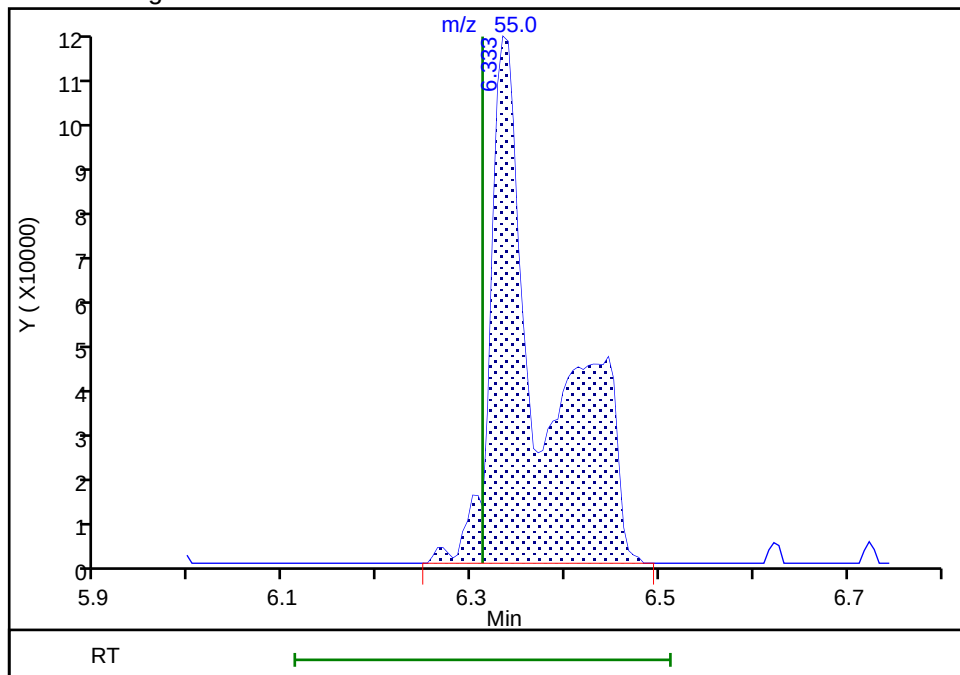
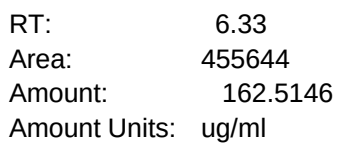
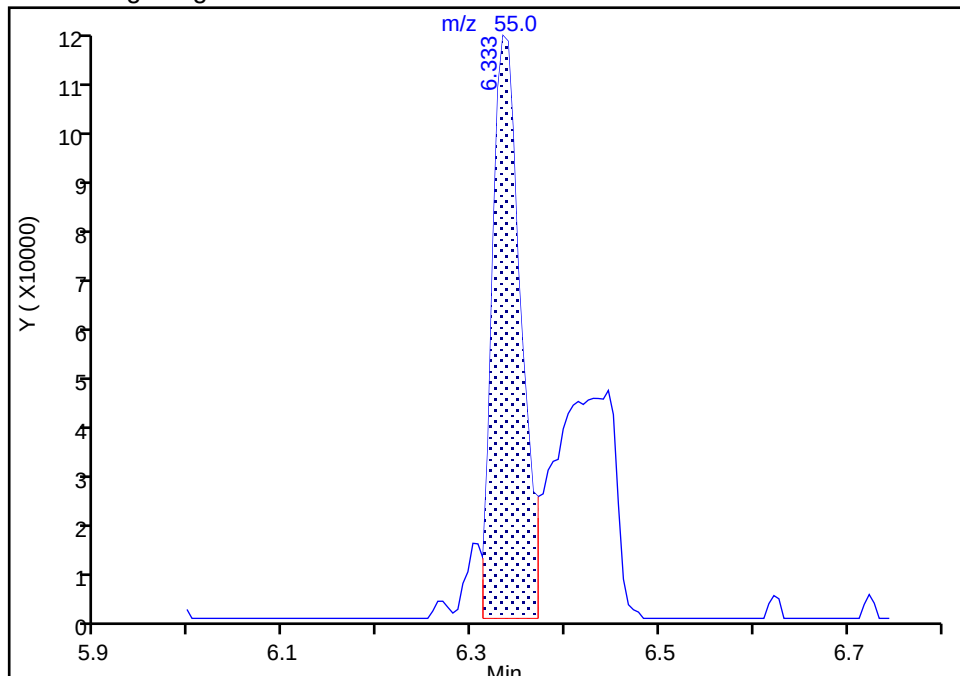
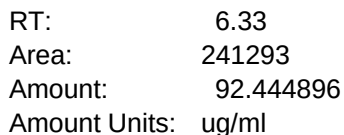
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Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Data File:	\\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32386.D				
Injection Date:	03-Apr-2019 10:44:30	Instrument ID:	SMS_D		
Lims ID:	STD160 HSL				
Client ID:					
Operator ID:	KIEKELD	ALS Bottle#:	8	Worklist Smp#:	9
Injection Vol:	0.5 ul	Dil. Factor:	1.0000		
Method:	SMSD_8270C	Limit Group:	MSSV - 8270C_625		
Column:	VF-5ms (0.50 mm)	Detector	MS SCAN		

Signal: 1



TestAmerica Denver

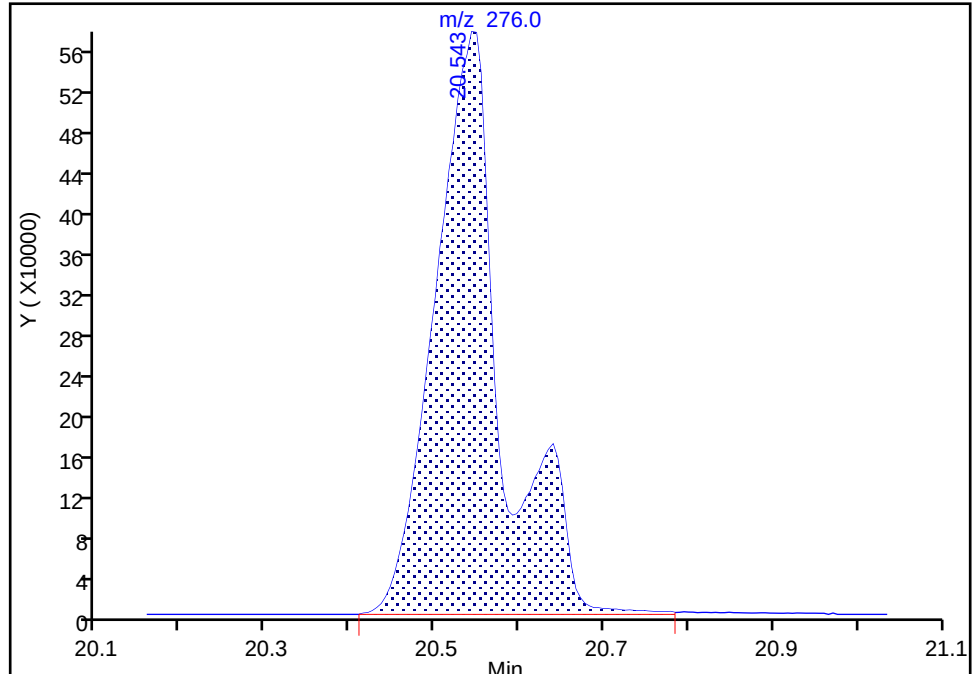
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Injection Date: 03-Apr-2019 10:44:30 Instrument ID: SMS_D
Lims ID: STD160 HSL
Client ID:
Operator ID: KIEKELD ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 0.5 ul Dil. Factor: 1.0000
Method: SMSD_8270C Limit Group: MSSV - 8270C_625
Column: VF-5ms (0.50 mm) Detector: MS SCAN

208 Indeno[1,2,3-cd]pyrene, CAS: 193-39-5

Signal: 1

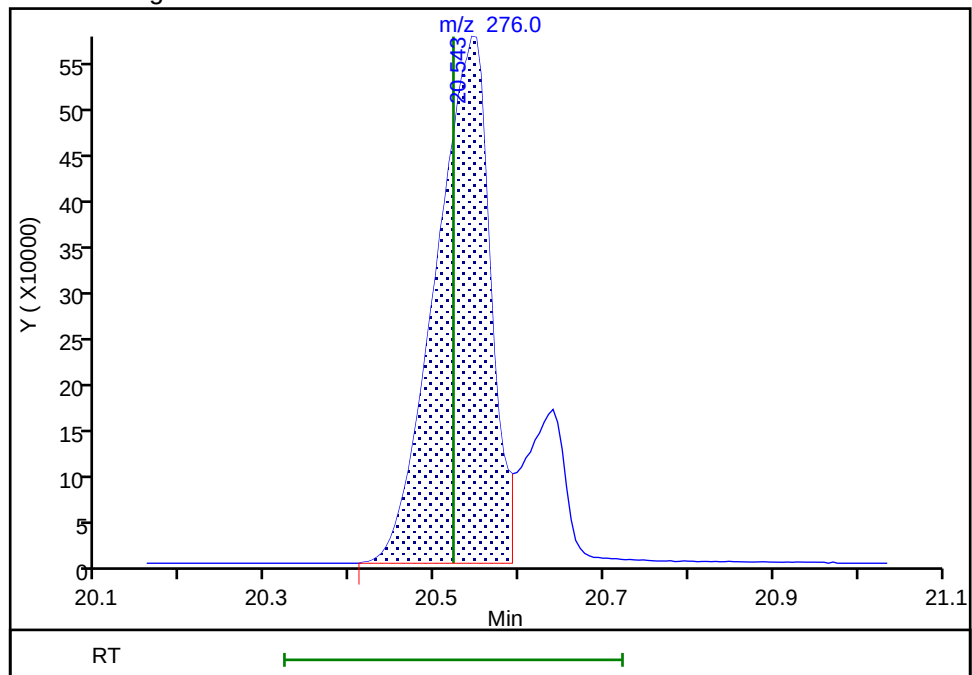
RT: 20.54
Area: 3139916
Amount: 190.7466
Amount Units: ug/ml

Processing Integration Results



RT: 20.54
Area: 2583278
Amount: 161.1656
Amount Units: ug/ml

Manual Integration Results



Reviewer: kiekeld, 03-Apr-2019 11:15:02

Audit Action: Split an Integrated Peak

Audit Reason: Shouldering

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32387.D
 Lims ID: STD200 HSL
 Client ID:
 Sample Type: IC Calib Level: 8
 Inject. Date: 03-Apr-2019 11:14:30 ALS Bottle#: 9 Worklist Smp#: 10
 Injection Vol: 0.5 ul Dil. Factor: 1.0000
 Sample Info: STD200 HSL
 Operator ID: KIEKELD Instrument ID: SMS_D
 Sublist: chrom-SMSD_8270C*sub39
 Method: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 03-Apr-2019 12:51:10 Calib Date: 03-Apr-2019 11:14:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32387.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0309

First Level Reviewer: kiekeld

Date: 03-Apr-2019 11:44:43

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	4.703	4.698	0.005	98	133648	40.0	40.0	
* 2 Naphthalene-d8	136	5.921	5.922	-0.001	99	548627	40.0	40.0	
* 3 Acenaphthene-d10	164	7.673	7.669	0.004	97	361894	40.0	40.0	
* 4 Phenanthrene-d10	188	9.169	9.170	-0.001	99	657573	40.0	40.0	
* 5 Chrysene-d12	240	13.362	13.358	0.004	88	622565	40.0	40.0	
* 6 Perylene-d12	264	17.363	17.359	0.004	99	582558	40.0	40.0	
\$ 7 2-Fluorophenol	112	3.538	3.539	-0.001	98	917407	200.0	191.0	
\$ 8 Phenol-d5	99	4.334	4.324	0.010	98	1240139	200.0	192.2	
\$ 9 Nitrobenzene-d5	82	5.215	5.211	0.004	95	1181478	200.0	195.5	
\$ 11 2-Fluorobiphenyl	172	6.984	6.979	0.005	98	2033744	200.0	177.3	
\$ 12 2,4,6-Tribromophenol	330	8.469	8.465	0.004	95	293702	200.0	201.9	
\$ 13 Terphenyl-d14	244	11.177	11.178	-0.001	100	2457661	200.0	194.6	
16 1,4-Dioxane	88	2.256	2.252	0.004	97	441293	200.0	186.6	
17 N-Nitrosodimethylamine	74	2.464	2.460	0.004	91	707331	200.0	195.3	
18 Pyridine	79	2.512	2.508	0.004	93	2159253	400.0	379.2	
28 Phenol	94	4.345	4.340	0.005	93	1321212	200.0	189.6	
30 Aniline	93	4.393	4.388	0.005	100	1675510	200.0	190.0	
31 Alpha Methyl Styrene	118	4.446	4.442	0.004	73	927588	200.0	182.8	
32 Bis(2-chloroethyl)ether	93	4.436	4.426	0.010	96	976248	200.0	187.0	
35 n-Decane	43	4.542	4.538	0.004	97	872280	200.0	183.9	
36 2-Chlorophenol	128	4.510	4.506	0.004	98	950961	200.0	190.8	
37 1,3-Dichlorobenzene	146	4.655	4.656	-0.001	97	960732	200.0	184.8	
38 1,4-Dichlorobenzene	146	4.719	4.714	0.005	97	974188	200.0	184.2	
39 Benzyl alcohol	108	4.815	4.805	0.010	97	734134	200.0	196.1	
40 1,2-Dichlorobenzene	146	4.868	4.864	0.004	98	935906	200.0	185.0	
41 2-Methylphenol	108	4.906	4.901	0.005	75	990513	200.0	192.3	
43 2,2'-oxybis[1-chloropropan	45	4.932	4.928	0.004	97	1263922	200.0	188.4	
44 Indene	116	4.948	4.944	0.004	100	2811238	400.0	345.3	
45 3-Methylphenol	108	5.055	5.046	0.009	96	1018888	200.0	188.0	
46 3 & 4 Methylphenol	108	5.055	5.046	0.009	96	1018888	200.0	188.0	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
47 4-Methylphenol	108	5.055	5.046	0.009	96	1018888	200.0	188.0	
48 N-Nitrosodi-n-propylamine	70	5.066	5.056	0.010	61	756216	200.0	182.2	
50 Acetophenone	105	5.066	5.062	0.004	78	1357078	200.0	180.2	
53 Hexachloroethane	117	5.189	5.190	-0.001	96	386041	200.0	192.0	
54 Nitrobenzene	77	5.237	5.227	0.010	94	1172127	200.0	190.0	
57 Isophorone	82	5.472	5.457	0.015	97	2240184	200.0	189.8	
59 2-Nitrophenol	139	5.541	5.537	0.004	96	531443	200.0	207.1	
60 2,4-Dimethylphenol	107	5.563	5.558	0.005	98	1037808	200.0	187.9	
63 Bis(2-chloroethoxy)methane	93	5.654	5.644	0.010	94	1253397	200.0	188.9	
64 Benzoic acid	105	5.734	5.676	0.058	95	1941207	400.0	405.6	
65 3,5-Dimethylphenol	107	5.691	5.687	0.004	98	1060271	200.0	185.6	
68 2,4-Dichlorophenol	162	5.776	5.772	0.004	97	823509	200.0	192.8	
70 1,2,4-Trichlorobenzene	180	5.862	5.863	-0.001	98	858661	200.0	185.4	
72 Naphthalene	128	5.947	5.943	0.004	100	2697150	200.0	182.0	
73 4-Chloroaniline	127	5.985	5.975	0.010	99	1243966	200.0	187.2	
74 2,6-Dichlorophenol	162	5.995	5.991	0.004	97	797376	200.0	188.7	
76 Hexachlorobutadiene	225	6.065	6.066	-0.001	99	464424	200.0	187.8	
80 Caprolactam	55	6.348	6.312	0.036	95	565124	200.0	201.1	M
83 4-Chloro-3-methylphenol	107	6.455	6.445	0.010	97	942530	200.0	191.0	
87 2-Methylnaphthalene	142	6.626	6.621	0.005	100	1851714	200.0	180.1	
89 1-Methylnaphthalene	142	6.727	6.723	0.004	99	1770852	200.0	182.4	
90 Hexachlorocyclopentadiene	237	6.791	6.792	-0.001	99	563299	200.0	194.0	
91 1,2,4,5-Tetrachlorobenzene	216	6.802	6.798	0.004	98	821127	200.0	178.1	
94 2,4,6-Trichlorophenol	196	6.904	6.899	0.005	92	582079	200.0	181.0	
95 2,3-Dichlorobenzenamine	161	6.898	6.899	-0.001	91	917038	200.0	172.2	
96 2,4,5-Trichlorophenol	196	6.941	6.937	0.004	98	690954	200.0	194.3	
100 1,1'-Biphenyl	154	7.085	7.086	-0.001	96	2177174	200.0	176.7	
102 2-Chloronaphthalene	162	7.117	7.113	0.004	99	1761077	200.0	181.8	
105 2-Nitroaniline	65	7.203	7.198	0.005	95	690283	200.0	198.6	
111 Dimethyl phthalate	163	7.384	7.375	0.009	99	2100541	200.0	183.2	
112 1,3-Dinitrobenzene	168	7.416	7.407	0.009	87	399087	200.0	196.5	
113 2,6-Dinitrotoluene	165	7.443	7.433	0.010	97	534397	200.0	193.5	
115 Acenaphthylene	152	7.534	7.530	0.004	99	2878429	200.0	179.5	
117 3-Nitroaniline	138	7.619	7.610	0.009	96	613695	200.0	199.6	
119 Acenaphthene	153	7.710	7.706	0.004	98	1700521	200.0	175.0	
120 2,4-Dinitrophenol	184	7.726	7.717	0.009	96	721508	400.0	399.2	
121 4-Nitrophenol	109	7.790	7.770	0.020	96	694447	400.0	385.2	
124 2,4-Dinitrotoluene	165	7.854	7.845	0.009	97	743380	200.0	196.7	
125 Dibenzofuran	168	7.881	7.877	0.004	99	2633754	200.0	177.6	
129 2,3,4,6-Tetrachlorophenol	232	8.004	8.000	0.004	72	582789	200.0	200.4	
131 Hexadecane	57	8.095	8.096	-0.001	95	1239132	200.0	176.0	
132 Diethyl phthalate	149	8.084	8.080	0.004	100	2024153	200.0	173.8	
134 4-Chlorophenyl phenyl ethe	204	8.207	8.208	-0.001	98	1041316	200.0	180.5	
135 Fluorene	166	8.228	8.224	0.004	99	2116237	200.0	173.6	
138 4-Nitroaniline	138	8.250	8.229	0.021	95	667827	200.0	193.4	
139 4,6-Dinitro-2-methylphenol	198	8.277	8.262	0.014	95	950183	400.0	396.0	
140 Diphenylamine	169	8.330	8.326	0.004	96	1626476	170.0	153.6	
141 N-Nitrosodiphenylamine	169	8.330	8.326	0.004	98	1626476	200.0	184.9	
142 1,2-Diphenylhydrazine	77	8.373	8.368	0.005	95	2595565	202.2	182.5	
143 Azobenzene	77	8.373	8.368	0.005	95	2595565	200.0	180.5	
145 2,4,6 - Tribromophenol	330	8.469	8.465	0.004	95	293702	200.0	201.9	
152 4-Bromophenyl phenyl ether	248	8.704	8.700	0.004	97	630822	200.0	190.6	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
153 Hexachlorobenzene	284	8.795	8.796	-0.001	97	597795	200.0	186.4	
155 Atrazine	200	8.859	8.849	0.010	97	602754	200.0	178.8	
156 n-Octadecane	85	9.019	9.020	-0.001	96	635484	200.0	183.1	
157 Pentachlorophenol	266	8.987	8.983	0.004	99	827028	400.0	383.0	
163 Phenanthrene	178	9.201	9.196	0.005	99	3111922	200.0	177.4	
164 Anthracene	178	9.254	9.244	0.010	100	3243089	200.0	178.4	
165 Carbazole	167	9.404	9.394	0.010	100	3161002	200.0	179.4	
166 Alachlor	188	9.537	9.538	-0.001	95	456163	200.0	190.6	
169 Di-n-butyl phthalate	149	9.746	9.747	-0.001	100	3694541	200.0	182.8	
176 Fluoranthene	202	10.606	10.601	0.005	99	3703415	200.0	183.1	
180 Pyrene	202	10.953	10.949	0.004	99	3941084	200.0	194.1	
187 Butyl benzyl phthalate	149	12.096	12.092	0.004	95	1814115	200.0	198.8	
190 3,3'-Dichlorobenzidine	252	13.298	13.283	0.015	99	1303580	200.0	196.6	
192 Benzo[a]anthracene	228	13.341	13.331	0.010	100	3614445	200.0	192.3	
193 Bis(2-ethylhexyl) phthalat	149	13.501	13.502	-0.001	99	2530412	200.0	200.7	
194 Chrysene	228	13.437	13.422	0.015	99	3612977	200.0	192.3	
197 Di-n-octyl phthalate	149	15.344	15.340	0.004	100	4511889	200.0	201.8	
198 Benzo[b]fluoranthene	252	16.284	16.259	0.025	99	3735924	200.0	204.5	
200 Benzo[k]fluoranthene	252	16.365	16.339	0.025	98	3502107	200.0	190.5	
201 Benzo[e]pyrene	252	17.075	17.055	0.020	98	3384050	200.0	197.2	
202 Benzo[a]pyrene	252	17.230	17.204	0.026	99	3604929	200.0	199.3	
208 Indeno[1,2,3-cd]pyrene	276	20.558	20.522	0.036	74	3259133	200.0	205.6	M
209 Dibenz(a,h)anthracene	278	20.649	20.618	0.031	84	3188701	200.0	204.6	
210 Benzo[g,h,i]perylene	276	21.311	21.270	0.041	99	3254342	200.0	200.9	
S 219 Total Cresols	108				0			380.2	
S 220 Methyl Phenols, Total	108				0			380.2	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MS-HSLA200_00042

Amount Added: 200.00

Units: uL

Report Date: 03-Apr-2019 12:51:11

Chrom Revision: 2.3 24-Mar-2019 20:11:04

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32387.D

Injection Date: 03-Apr-2019 11:14:30

Instrument ID: SMS_D

Operator ID: KIEKELD

Lims ID: STD200 HSL

Worklist Smp#: 10

Client ID:

Injection Vol: 0.5 ul

Dil. Factor: 1.0000

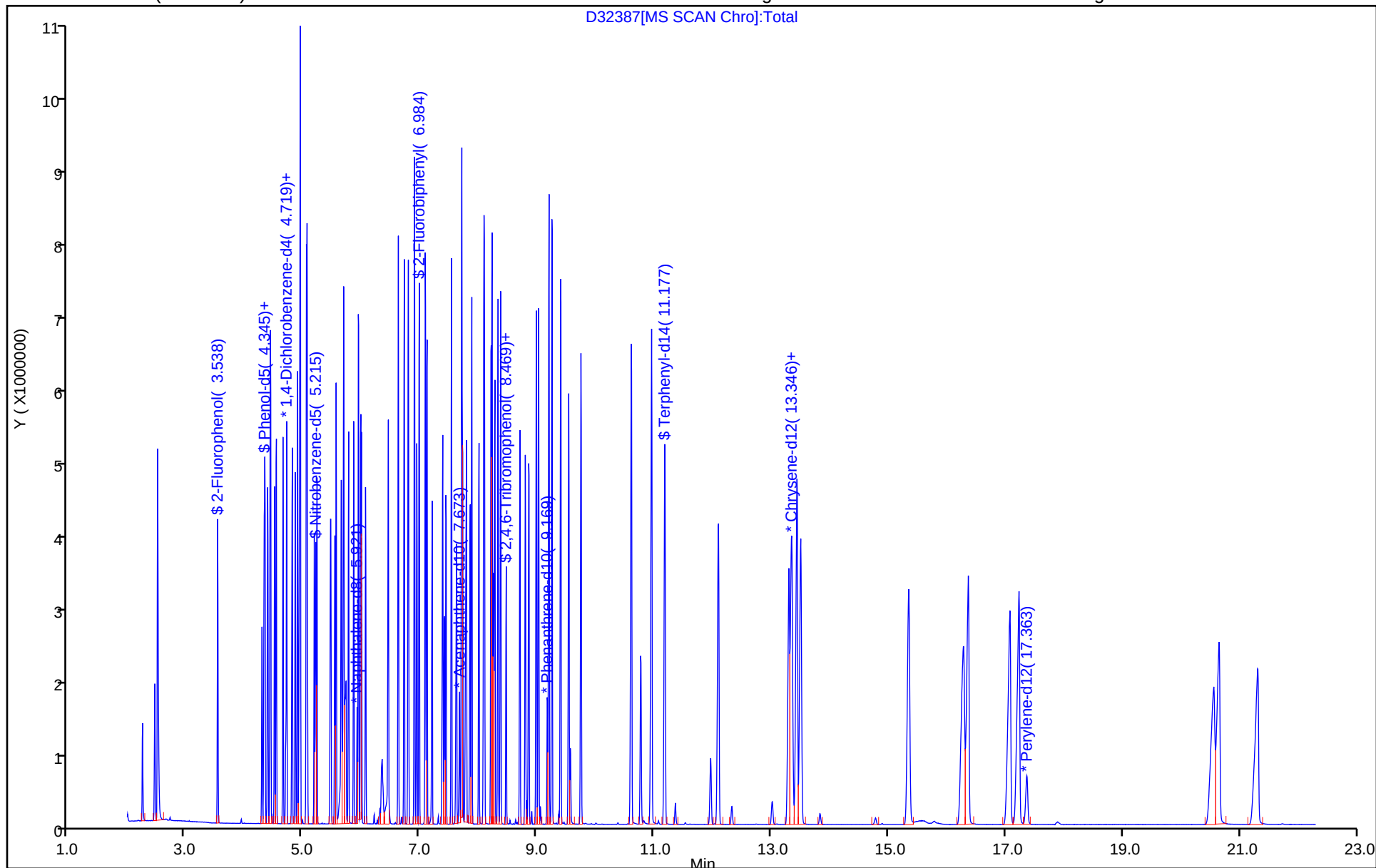
ALS Bottle#: 9

Method: SMSD_8270C

Limit Group: MSSV - 8270C_625

Column: VF-5ms (0.50 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



TestAmerica Denver

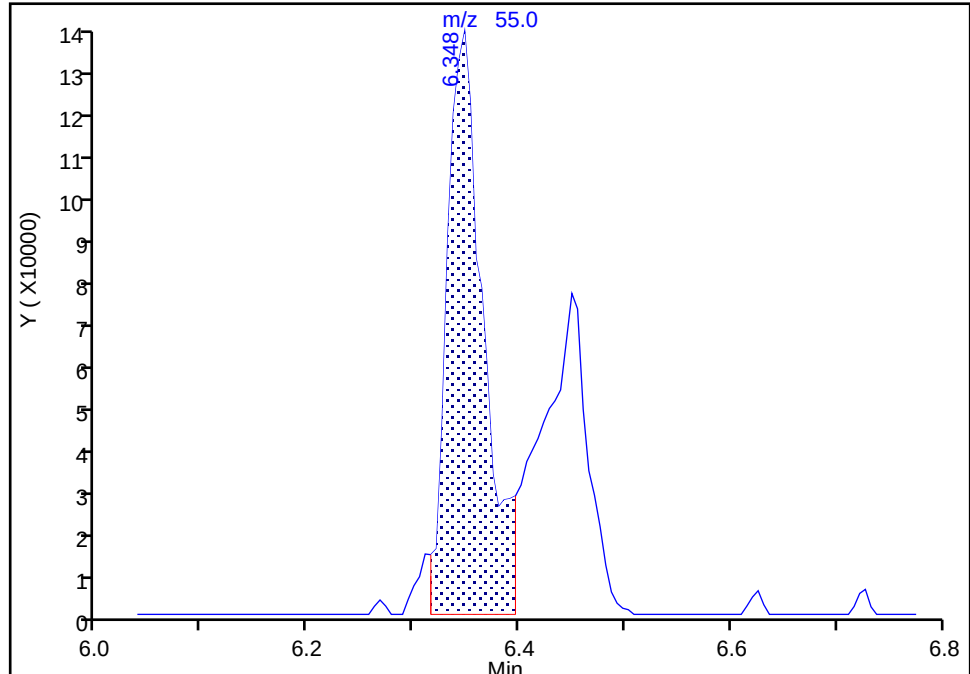
Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32387.D
Injection Date: 03-Apr-2019 11:14:30 Instrument ID: SMS_D
Lims ID: STD200 HSL
Client ID:
Operator ID: KIEKELD ALS Bottle#: 9 Worklist Smp#: 10
Injection Vol: 0.5 ul Dil. Factor: 1.0000
Method: SMSD_8270C Limit Group: MSSV - 8270C_625
Column: VF-5ms (0.50 mm) Detector: MS SCAN

80 Caprolactam, CAS: 105-60-2

Signal: 1

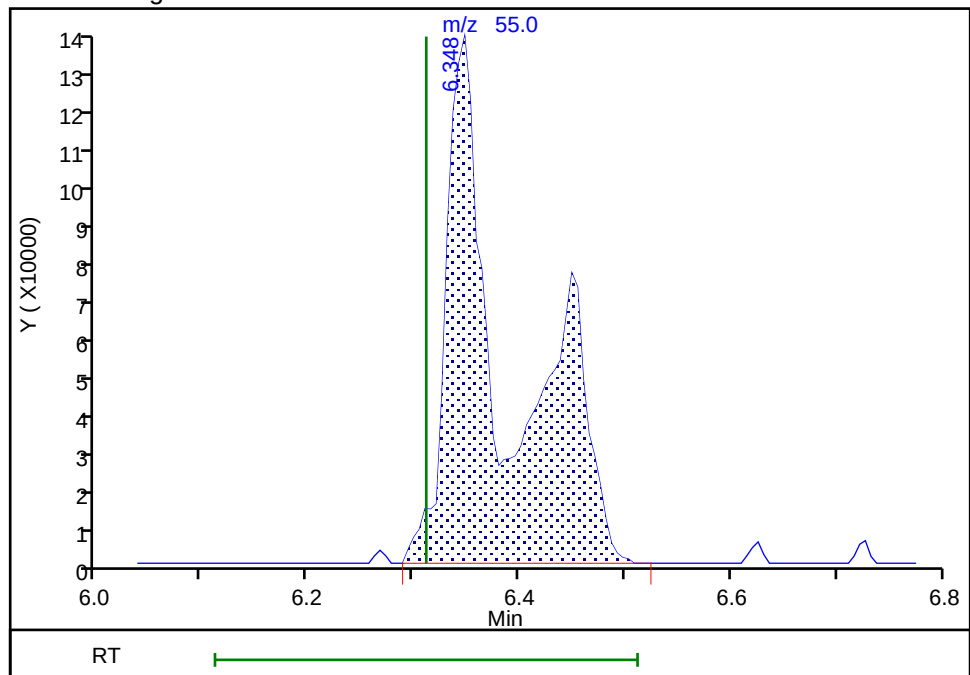
RT: 6.35
Area: 328289
Amount: 123.3163
Amount Units: ug/ml

Processing Integration Results



RT: 6.35
Area: 565124
Amount: 201.0981
Amount Units: ug/ml

Manual Integration Results



Reviewer: kiekeld, 03-Apr-2019 11:42:08

Audit Action: Manually Integrated

Audit Reason: Split Peak

TestAmerica Denver

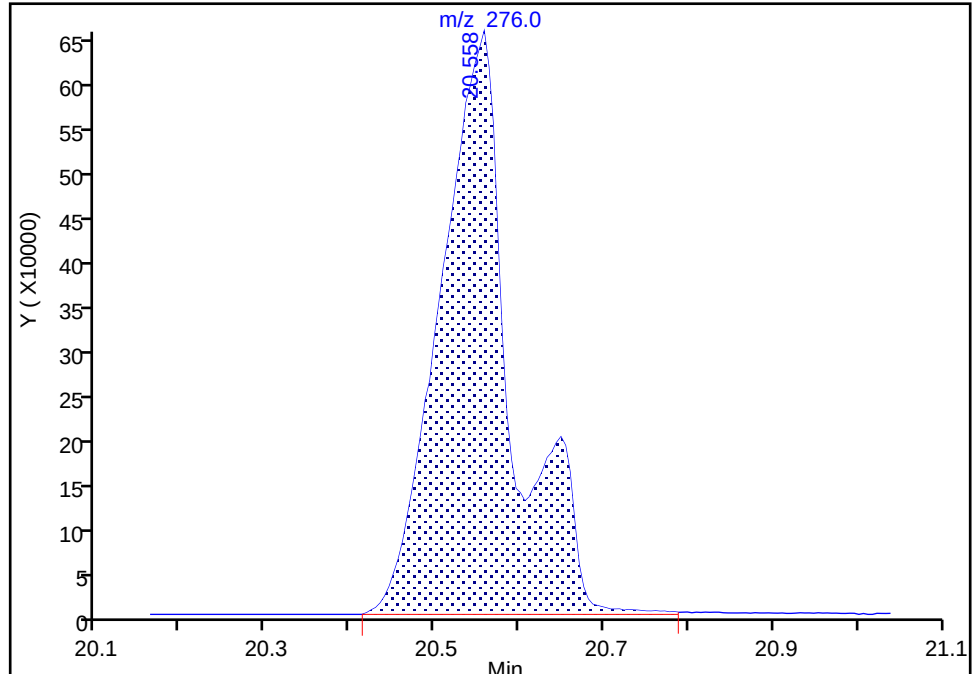
Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32387.D
Injection Date: 03-Apr-2019 11:14:30 Instrument ID: SMS_D
Lims ID: STD200 HSL
Client ID:
Operator ID: KIEKELD ALS Bottle#: 9 Worklist Smp#: 10
Injection Vol: 0.5 ul Dil. Factor: 1.0000
Method: SMSD_8270C Limit Group: MSSV - 8270C_625
Column: VF-5ms (0.50 mm) Detector MS SCAN

208 Indeno[1,2,3-cd]pyrene, CAS: 193-39-5

Signal: 1

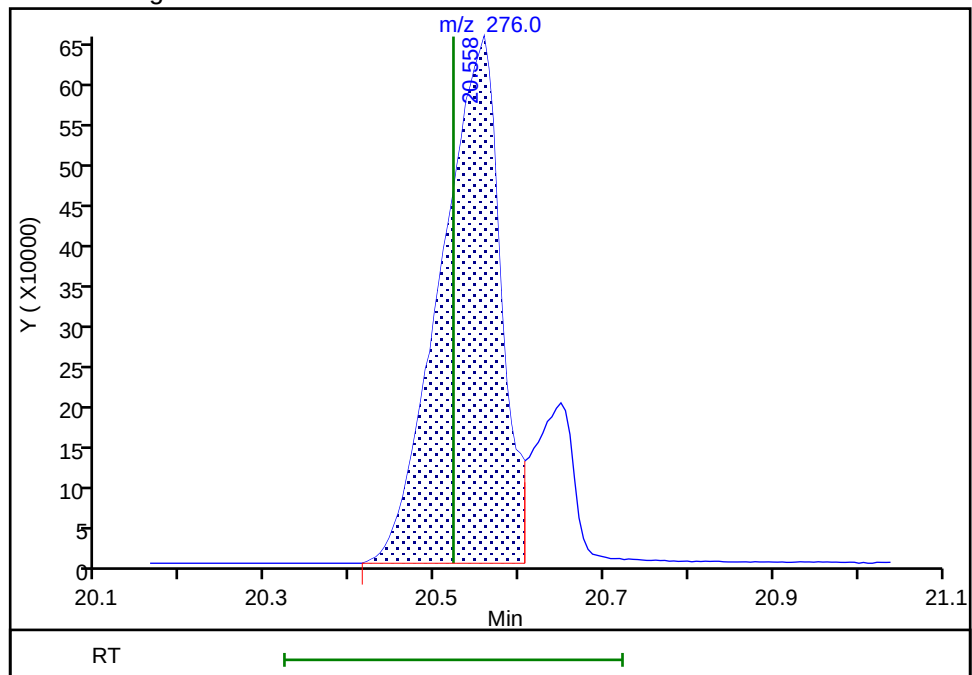
RT: 20.56
Area: 3902954
Amount: 240.1602
Amount Units: ug/ml

Processing Integration Results



RT: 20.56
Area: 3259133
Amount: 205.6355
Amount Units: ug/ml

Manual Integration Results



Reviewer: kiekeld, 03-Apr-2019 11:42:34

Audit Action: Split an Integrated Peak

Audit Reason: Split Peak

FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Lab Sample ID: ICV 280-452848/11 Calibration Date: 04/03/2019 11:43

Instrument ID: SMS_D Calib Start Date: 04/03/2019 07:48

GC Column: Rxi-5Sil MS ID: 0.25 (mm) Calib End Date: 04/03/2019 11:14

Lab File ID: D32388.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	Ave	0.7080	0.6623		93600	100000	-6.4	20.0
N-Nitrosodimethylamine	Ave	1.084	1.063		98100	100000	-1.9	20.0
Pyridine	Ave	1.704	1.638		192000	200000	-3.9	20.0
Phenol	Ave	2.085	2.029	0.8000	97300	100000	-2.7	20.0
Aniline	Ave	2.640	2.495		94500	100000	-5.5	20.0
Bis(2-chloroethyl)ether	Ave	1.562	1.497	0.7000	95800	100000	-4.2	20.0
2-Chlorophenol	Ave	1.492	1.433	0.8000	96100	100000	-3.9	20.0
1,3-Dichlorobenzene	Ave	1.556	1.472		94600	100000	-5.4	20.0
1,4-Dichlorobenzene	Ave	1.583	1.513		95600	100000	-4.4	20.0
Benzyl alcohol	Ave	1.121	1.121		100000	100000	0.0	20.0
1,2-Dichlorobenzene	Ave	1.514	1.462		96600	100000	-3.4	20.0
2-Methylphenol	Ave	1.542	1.522	0.7000	98700	100000	-1.3	20.0
2,2'-oxybis[1-chloropropane]	Ave	2.008	1.869	0.0100	93000	100000	-7.0	20.0
3 & 4 Methylphenol	Ave	1.622	1.601		98700	100000	-1.3	20.0
N-Nitrosodi-n-propylamine	Ave	1.242	1.230	0.5000	99000	100000	-1.0	20.0
Acetophenone	Ave	2.254	2.150	0.0100	95400	100000	-4.6	20.0
Hexachloroethane	Ave	0.6019	0.5803	0.3000	96400	100000	-3.6	20.0
Nitrobenzene	Ave	0.4497	0.4422		98300	100000	-1.7	20.0
Isophorone	Ave	0.8604	0.8225	0.4000	95600	100000	-4.4	20.0
2-Nitrophenol	Ave	0.1871	0.1931	0.1000	103000	100000	3.2	20.0
2,4-Dimethylphenol	Ave	0.4027	0.3788	0.2000	94100	100000	-5.9	20.0
Bis(2-chloroethoxy)methane	Ave	0.4838	0.4639	0.3000	95900	100000	-4.1	20.0
Benzoic acid	Lin2		0.3448		201000	200000	0.4	20.0
2,4-Dichlorophenol	Ave	0.3114	0.3036	0.2000	97500	100000	-2.5	20.0
1,2,4-Trichlorobenzene	Ave	0.3377	0.3254		96400	100000	-3.6	20.0
Naphthalene	Ave	1.080	1.025	0.7000	94900	100000	-5.1	20.0
4-Chloroaniline	Ave	0.4845	0.4688	0.0100	96800	100000	-3.2	20.0
2,6-Dichlorophenol	Ave	0.3080	0.3021		98100	100000	-1.9	20.0
Hexachlorobutadiene	Ave	0.1803	0.1764	0.0100	97800	100000	-2.2	20.0
4-Chloro-3-methylphenol	Ave	0.3597	0.3547	0.2000	98600	100000	-1.4	20.0
2-Methylnaphthalene	Ave	0.7498	0.7038	0.4000	93900	100000	-6.1	20.0
1-Methylnaphthalene	Ave	0.7080	0.6559		92600	100000	-7.4	20.0
Hexachlorocyclopentadiene	Ave	0.3209	0.3075	0.0500	95800	100000	-4.2	20.0
1,2,4,5-Tetrachlorobenzene	Ave	0.3361	0.3245	0.0100	96600	100000	-3.4	20.0
2,4,6-Trichlorophenol	Ave	0.3555	0.3464	0.2000	97400	100000	-2.6	20.0
2,4,5-Trichlorophenol	Ave	0.3931	0.3813	0.2000	97000	100000	-3.0	20.0
1,1'-Biphenyl	Ave	1.362	1.292		94800	100000	-5.2	20.0
2-Chloronaphthalene	Ave	1.071	1.030	0.8000	96200	100000	-3.8	20.0
2-Nitroaniline	Ave	0.3841	0.3928	0.0100	102000	100000	2.3	20.0
Dimethyl phthalate	Ave	1.267	1.195	0.0100	94300	100000	-5.7	20.0
1,3-Dinitrobenzene	Lin2		0.2242		101000	100000	0.7	20.0

FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-452848/11 Calibration Date: 04/03/2019 11:43
 Instrument ID: SMS_D Calib Start Date: 04/03/2019 07:48
 GC Column: Rxi-5Sil MS ID: 0.25 (mm) Calib End Date: 04/03/2019 11:14
 Lab File ID: D32388.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,6-Dinitrotoluene	Ave	0.3053	0.3093	0.2000	101000	100000	1.3	20.0
Acenaphthylene	Ave	1.772	1.684	0.9000	95000	100000	-5.0	20.0
3-Nitroaniline	Ave	0.3398	0.3565	0.0100	105000	100000	4.9	20.0
Acenaphthene	Ave	1.074	0.997	0.9000	92800	100000	-7.2	20.0
2,4-Dinitrophenol	Lin2		0.2096	0.0100	214000	200000	7.0	20.0
4-Nitrophenol	Ave	0.1993	0.2035	0.0100	204000	200000	2.1	20.0
2,4-Dinitrotoluene	Ave	0.4178	0.4307	0.2000	103000	100000	3.1	20.0
Dibenzofuran	Ave	1.639	1.538	0.8000	93800	100000	-6.2	20.0
2,3,4,6-Tetrachlorophenol	Ave	0.3215	0.3239	0.0100	101000	100000	0.7	20.0
Diethyl phthalate	Ave	1.288	1.244	0.0100	96600	100000	-3.4	20.0
4-Chlorophenyl phenyl ether	Ave	0.6376	0.6131	0.4000	96200	100000	-3.8	20.0
Fluorene	Ave	1.347	1.256	0.9000	93300	100000	-6.7	20.0
4-Nitroaniline	Ave	0.3817	0.3545	0.0100	92900	100000	-7.1	20.0
4,6-Dinitro-2-methylphenol	Lin2		0.1495	0.0100	208000	200000	4.0	20.0
Diphenylamine	Ave	1.171	1.117		81100	85000	-4.6	20.0
N-Nitrosodiphenylamine	Ave	0.5350	0.5081	0.0100	95000	100000	-5.0	20.0
1,2-Diphenylhydrazine	Ave	1.572	1.485		95500	101000	-5.5	20.0
Azobenzene	Ave	1.589	1.501		94500	100000	-5.5	20.0
4-Bromophenyl phenyl ether	Ave	0.2013	0.1903	0.1000	94500	100000	-5.5	20.0
Hexachlorobenzene	Ave	0.1951	0.1876	0.1000	96100	100000	-3.9	20.0
Pentachlorophenol	Lin2		0.1405	0.0500	215000	200000	7.6	20.0
Phenanthrene	Ave	1.067	1.026	0.7000	96200	100000	-3.8	20.0
Anthracene	Ave	1.106	1.062	0.7000	96100	100000	-3.9	20.0
Carbazole	Ave	1.072	1.030	0.0100	96100	100000	-3.9	20.0
Alachlor	Ave	0.1456	0.1457		100000	100000	0.0	20.0
Di-n-butyl phthalate	Ave	1.229	1.179	0.0100	95900	100000	-4.1	20.0
Fluoranthene	Ave	1.230	1.200	0.6000	97600	100000	-2.4	20.0
Pyrene	Ave	1.305	1.255	0.6000	96200	100000	-3.8	20.0
Butyl benzyl phthalate	Ave	0.5862	0.5860	0.0100	100000	100000	-0.0	20.0
Benzo[a]anthracene	Ave	1.208	1.214	0.8000	101000	100000	0.5	20.0
Chrysene	Ave	1.207	1.176	0.7000	97400	100000	-2.6	20.0
Bis(2-ethylhexyl) phthalate	Ave	0.8103	0.7973	0.0100	98400	100000	-1.6	20.0
Di-n-octyl phthalate	Ave	1.436	1.429	0.0100	99500	100000	-0.5	20.0
Benzo[b]fluoranthene	Ave	1.255	1.208	0.7000	96300	100000	-3.7	20.0
Benzo[k]fluoranthene	Ave	1.263	1.243	0.7000	98400	100000	-1.6	20.0
Benzo[a]pyrene	Ave	1.242	1.206	0.7000	97100	100000	-2.9	20.0
Indeno[1,2,3-cd]pyrene	Ave	1.088	1.038	0.5000	95400	100000	-4.6	20.0
Dibenz(a,h)anthracene	Ave	1.070	1.049	0.4000	98000	100000	-2.0	20.0
Benzo[g,h,i]perylene	Ave	1.112	1.060	0.5000	95300	100000	-4.7	20.0

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32388.D
 Lims ID: ICV HSL 1
 Client ID:
 Sample Type: ICV
 Inject. Date: 03-Apr-2019 11:43:30 ALS Bottle#: 10 Worklist Smp#: 11
 Injection Vol: 0.5 ul Dil. Factor: 1.0000
 Sample Info: ICV HSL 1
 Operator ID: KIEKELD Instrument ID: SMS_D
 Sublist:
 Method: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\SMDS_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 03-Apr-2019 12:51:10 Calib Date: 03-Apr-2019 11:14:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32387.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0309

First Level Reviewer: kiekeld

Date: 03-Apr-2019 12:49:57

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	4.697	4.698	-0.001	98	125861	40.0	40.0	
* 2 Naphthalene-d8	136	5.915	5.922	-0.007	99	520327	40.0	40.0	
* 3 Acenaphthene-d10	164	7.667	7.669	-0.002	97	345869	40.0	40.0	
* 4 Phenanthrene-d10	188	9.163	9.170	-0.007	99	646003	40.0	40.0	
* 5 Chrysene-d12	240	13.346	13.358	-0.012	96	641022	40.0	40.0	
* 6 Perylene-d12	264	17.352	17.359	-0.007	99	596743	40.0	40.0	
16 1,4-Dioxane	88	2.250	2.252	-0.002	97	208407	100.0	93.6	
17 N-Nitrosodimethylamine	74	2.459	2.460	-0.001	90	334467	100.0	98.1	
18 Pyridine	79	2.512	2.508	0.004	93	1030810	200.0	192.2	
28 Phenol	94	4.339	4.340	-0.001	90	638468	100.0	97.3	
30 Aniline	93	4.387	4.388	-0.001	100	785167	100.0	94.5	
31 Alpha Methyl Styrene	118	4.441	4.442	-0.001	71	464299	100.0	97.2	
32 Bis(2-chloroethyl)ether	93	4.425	4.426	-0.001	95	471115	100.0	95.8	
35 n-Decane	43	4.537	4.538	-0.001	97	420340	100.0	94.1	
36 2-Chlorophenol	128	4.505	4.506	-0.001	97	450950	100.0	96.1	
37 1,3-Dichlorobenzene	146	4.654	4.656	-0.002	98	463265	100.0	94.6	
38 1,4-Dichlorobenzene	146	4.713	4.714	-0.001	97	475984	100.0	95.6	
39 Benzyl alcohol	108	4.804	4.805	-0.001	97	352588	100.0	100.0	
40 1,2-Dichlorobenzene	146	4.863	4.864	-0.001	98	460167	100.0	96.6	
41 2-Methylphenol	108	4.900	4.901	-0.001	75	478752	100.0	98.7	
43 2,2'-oxybis[1-chloropropan	45	4.932	4.928	0.004	97	587943	100.0	93.0	
44 Indene	116	4.943	4.944	-0.001	99	1457524	200.0	190.1	
45 3-Methylphenol	108	5.044	5.046	-0.002	94	503692	100.0	98.7	
46 3 & 4 Methylphenol	108	5.044	5.046	-0.002	94	503692	100.0	98.7	
47 4-Methylphenol	108	5.044	5.046	-0.002	94	503692	100.0	98.7	
48 N-Nitrosodi-n-propylamine	70	5.055	5.056	-0.001	93	387116	100.0	99.0	
50 Acetophenone	105	5.060	5.062	-0.002	75	676551	100.0	95.4	
53 Hexachloroethane	117	5.188	5.190	-0.002	98	182583	100.0	96.4	
54 Nitrobenzene	77	5.226	5.227	-0.001	94	575173	100.0	98.3	
57 Isophorone	82	5.456	5.457	-0.001	97	1069873	100.0	95.6	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
59 2-Nitrophenol	139	5.536	5.537	-0.001	95	251158	100.0	103.2	
60 2,4-Dimethylphenol	107	5.557	5.558	-0.001	98	492763	100.0	94.1	
63 Bis(2-chloroethoxy)methane	93	5.643	5.644	-0.001	98	603495	100.0	95.9	
64 Benzoic acid	105	5.685	5.676	0.009	68	896949	200.0	200.7	
65 3,5-Dimethylphenol	107	5.685	5.687	-0.002	93	517563	100.0	95.5	
68 2,4-Dichlorophenol	162	5.771	5.772	-0.001	98	394970	100.0	97.5	
70 1,2,4-Trichlorobenzene	180	5.862	5.863	-0.001	97	423291	100.0	96.4	
72 Naphthalene	128	5.942	5.943	-0.001	100	1333690	100.0	94.9	
73 4-Chloroaniline	127	5.974	5.975	-0.001	99	609859	100.0	96.8	
74 2,6-Dichlorophenol	162	5.990	5.991	-0.001	97	393028	100.0	98.1	
76 Hexachlorobutadiene	225	6.065	6.066	-0.001	99	229459	100.0	97.8	
83 4-Chloro-3-methylphenol	107	6.439	6.445	-0.007	97	461388	100.0	98.6	
87 2-Methylnaphthalene	142	6.620	6.621	-0.001	100	915460	100.0	93.9	
89 1-Methylnaphthalene	142	6.722	6.723	-0.001	99	853147	100.0	92.6	
90 Hexachlorocyclopentadiene	237	6.791	6.792	-0.001	98	265866	100.0	95.8	
91 1,2,4,5-Tetrachlorobenzene	216	6.796	6.798	-0.002	97	422158	100.0	96.6	
94 2,4,6-Trichlorophenol	196	6.898	6.899	-0.001	88	299490	100.0	97.4	
95 2,3-Dichlorobenzenamine	161	6.898	6.899	-0.001	88	474850	100.0	93.3	
96 2,4,5-Trichlorophenol	196	6.930	6.937	-0.007	98	329732	100.0	97.0	
100 1,1'-Biphenyl	154	7.080	7.086	-0.006	95	1116973	100.0	94.8	
102 2-Chloronaphthalene	162	7.106	7.113	-0.007	99	890783	100.0	96.2	
105 2-Nitroaniline	65	7.197	7.198	-0.001	95	339627	100.0	102.3	
111 Dimethyl phthalate	163	7.373	7.375	-0.002	99	1032953	100.0	94.3	
112 1,3-Dinitrobenzene	168	7.400	7.407	-0.007	87	193852	100.0	100.7	
113 2,6-Dinitrotoluene	165	7.432	7.433	-0.001	96	267471	100.0	101.3	
115 Acenaphthylene	152	7.528	7.530	-0.002	99	1455961	100.0	95.0	
117 3-Nitroaniline	138	7.608	7.610	-0.002	96	308213	100.0	104.9	
119 Acenaphthene	153	7.705	7.706	-0.001	97	862189	100.0	92.8	
120 2,4-Dinitrophenol	184	7.710	7.717	-0.007	93	362493	200.0	213.9	
121 4-Nitrophenol	109	7.769	7.770	-0.001	96	351830	200.0	204.2	
124 2,4-Dinitrotoluene	165	7.843	7.845	-0.002	96	372367	100.0	103.1	
125 Dibenzofuran	168	7.876	7.877	-0.001	99	1329471	100.0	93.8	
129 2,3,4,6-Tetrachlorophenol	232	7.993	8.000	-0.007	72	280051	100.0	100.7	
131 Hexadecane	57	8.095	8.096	-0.001	95	636195	100.0	94.5	
132 Diethyl phthalate	149	8.079	8.080	-0.001	100	1075339	100.0	96.6	
134 4-Chlorophenyl phenyl ethe	204	8.201	8.208	-0.007	98	530144	100.0	96.2	
135 Fluorene	166	8.217	8.224	-0.007	99	1086357	100.0	93.3	
138 4-Nitroaniline	138	8.228	8.229	-0.001	95	306518	100.0	92.9	
139 4,6-Dinitro-2-methylphenol	198	8.260	8.262	-0.002	93	482925	200.0	207.9	
140 Diphenylamine	169	8.319	8.326	-0.007	95	820628	85.0	81.1	
141 N-Nitrosodiphenylamine	169	8.319	8.326	-0.007	98	820628	100.0	95.0	
142 1,2-Diphenylhydrazine	77	8.367	8.368	-0.001	95	1298042	101.1	95.5	
143 Azobenzene	77	8.367	8.368	-0.001	95	1298042	100.0	94.5	
152 4-Bromophenyl phenyl ether	248	8.698	8.700	-0.002	97	307351	100.0	94.5	
153 Hexachlorobenzene	284	8.789	8.796	-0.007	96	302910	100.0	96.1	
156 n-Octadecane	85	9.019	9.020	-0.001	96	322336	100.0	94.5	
157 Pentachlorophenol	266	8.976	8.983	-0.007	96	453903	200.0	215.3	
163 Phenanthrene	178	9.190	9.196	-0.006	99	1656734	100.0	96.2	
164 Anthracene	178	9.243	9.244	-0.001	99	1715772	100.0	96.1	
165 Carbazole	167	9.393	9.394	-0.001	100	1663988	100.0	96.1	
166 Alachlor	188	9.532	9.538	-0.006	95	235371	100.0	100.1	
169 Di-n-butyl phthalate	149	9.740	9.747	-0.007	100	1904282	100.0	95.9	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
176 Fluoranthene	202	10.600	10.601	-0.001	100	1938445	100.0	97.6	
180 Pyrene	202	10.942	10.949	-0.007	99	2010999	100.0	96.2	
187 Butyl benzyl phthalate	149	12.085	12.092	-0.007	95	939089	100.0	100.0	
192 Benzo[a]anthracene	228	13.325	13.331	-0.006	100	1945874	100.0	100.5	
193 Bis(2-ethylhexyl) phthalat	149	13.490	13.502	-0.012	99	1277635	100.0	98.4	
194 Chrysene	228	13.415	13.422	-0.007	99	1884276	100.0	97.4	
197 Di-n-octyl phthalate	149	15.328	15.340	-0.012	100	2289567	100.0	99.5	
198 Benzo[b]fluoranthene	252	16.247	16.259	-0.012	99	1802787	100.0	96.3	
200 Benzo[k]fluoranthene	252	16.332	16.339	-0.007	99	1853664	100.0	98.4	
201 Benzo[e]pyrene	252	17.043	17.055	-0.012	98	1692791	100.0	96.3	
202 Benzo[a]pyrene	252	17.192	17.204	-0.012	100	1799709	100.0	97.1	
208 Indeno[1,2,3-cd]pyrene	276	20.515	20.522	-0.007	74	1548895	100.0	95.4	
209 Dibenz(a,h)anthracene	278	20.606	20.618	-0.012	74	1565006	100.0	98.0	
210 Benzo[g,h,i]perylene	276	21.263	21.270	-0.007	99	1581858	100.0	95.3	

Reagents:

MS-HSLB1B3SSV_00055

Amount Added: 200.00

Units: uL

Report Date: 03-Apr-2019 12:51:14

Chrom Revision: 2.3 24-Mar-2019 20:11:04

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32388.D

Injection Date: 03-Apr-2019 11:43:30

Instrument ID: SMS_D

Operator ID: KIEKELD

Lims ID: ICV HSL 1

Worklist Smp#: 11

Client ID:

Injection Vol: 0.5 ul

Dil. Factor: 1.0000

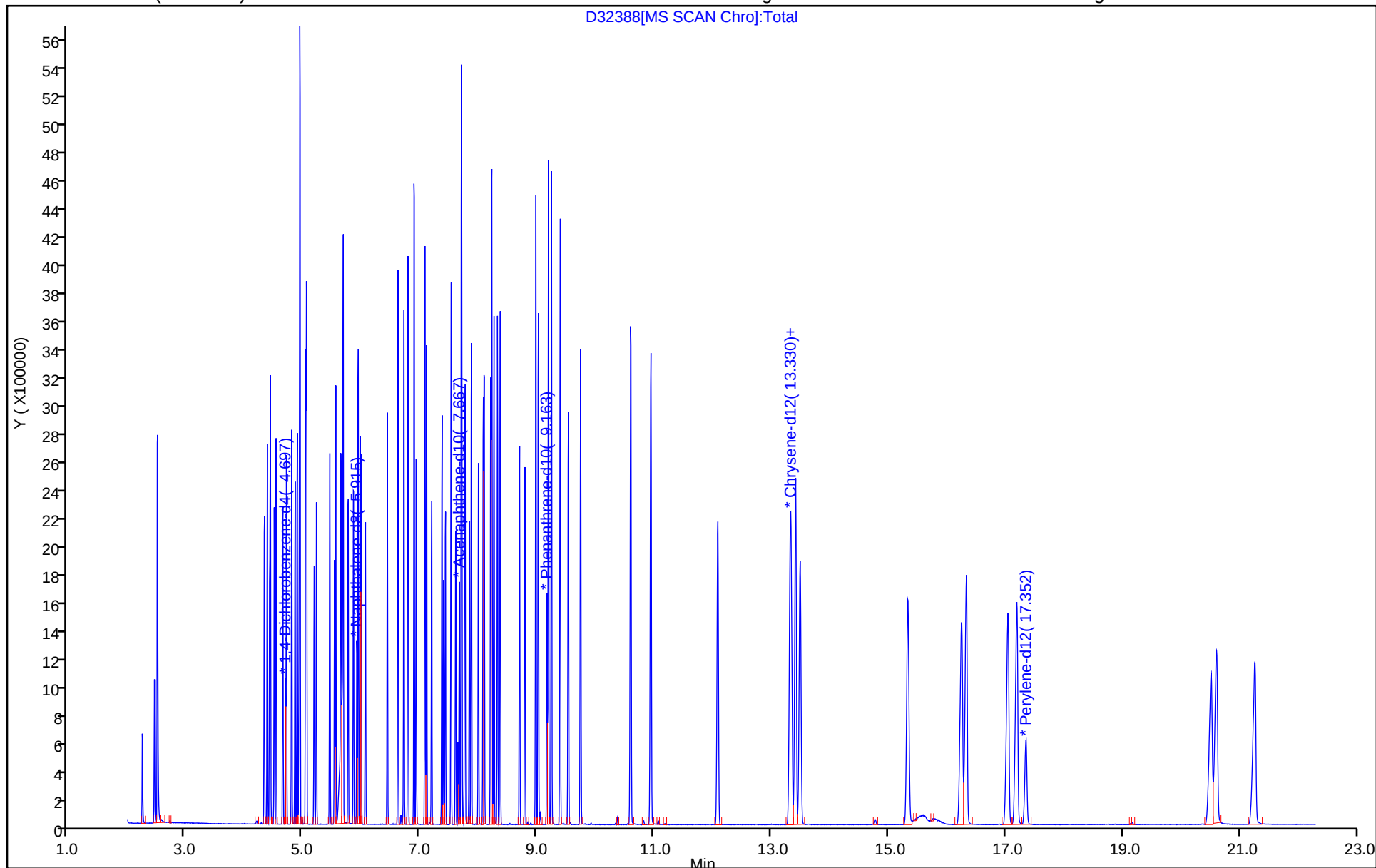
ALS Bottle#: 10

Method: SMSD_8270C

Limit Group: MSSV - 8270C_625

Column: VF-5ms (0.50 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Lab Sample ID: CCV 280-458321/3 Calibration Date: 05/15/2019 16:55

Instrument ID: SMS_D Calib Start Date: 04/03/2019 07:48

GC Column: Rxi-5Sil MS ID: 0.25 (mm) Calib End Date: 04/03/2019 11:14

Lab File ID: D33114.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	Ave	0.7080	0.6775		76600	80000	-4.3	20.0
N-Nitrosodimethylamine	Ave	1.084	1.029		76000	80000	-5.0	20.0
Pyridine	Ave	1.704	1.637		154000	160000	-4.0	20.0
Phenol	Ave	2.085	2.027	0.8000	77800	80000	-2.8	20.0
Aniline	Ave	2.640	2.505		75900	80000	-5.1	20.0
Bis(2-chloroethyl)ether	Ave	1.562	1.493	0.7000	76500	80000	-4.4	20.0
2-Chlorophenol	Ave	1.492	1.482	0.8000	79500	80000	-0.7	20.0
1,3-Dichlorobenzene	Ave	1.556	1.564		80400	80000	0.5	20.0
1,4-Dichlorobenzene	Ave	1.583	1.615		81600	80000	2.0	20.0
Benzyl alcohol	Ave	1.121	1.027		73300	80000	-8.3	20.0
1,2-Dichlorobenzene	Ave	1.514	1.507		79600	80000	-0.5	20.0
2-Methylphenol	Ave	1.542	1.512	0.7000	78500	80000	-1.9	20.0
2,2'-oxybis[1-chloropropane]	Ave	2.008	1.842	0.0100	73400	80000	-8.3	20.0
N-Nitrosodi-n-propylamine	Ave	1.242	1.212	0.5000	78000	80000	-2.4	20.0
3 & 4 Methylphenol	Ave	1.622	1.557		76800	80000	-4.0	20.0
Acetophenone	Ave	2.254	2.223	0.0100	78900	80000	-1.4	20.0
Hexachloroethane	Ave	0.6019	0.6232	0.3000	82800	80000	3.5	20.0
Nitrobenzene	Ave	0.4497	0.4611		82000	80000	2.5	20.0
Isophorone	Ave	0.8604	0.8344	0.4000	77600	80000	-3.0	20.0
2-Nitrophenol	Ave	0.1871	0.2018	0.1000	86300	80000	7.9	20.0
2,4-Dimethylphenol	Ave	0.4027	0.4198	0.2000	83400	80000	4.2	20.0
Bis(2-chloroethoxy)methane	Ave	0.4838	0.4649	0.3000	76900	80000	-3.9	20.0
Benzoic acid	Lin2		0.3237		152000	160000	-4.8	20.0
2,4-Dichlorophenol	Ave	0.3114	0.3194	0.2000	82100	80000	2.6	20.0
1,2,4-Trichlorobenzene	Ave	0.3377	0.3309		78400	80000	-2.0	20.0
Naphthalene	Ave	1.080	1.123	0.7000	83100	80000	3.9	20.0
4-Chloroaniline	Ave	0.4845	0.4790	0.0100	79100	80000	-1.1	20.0
2,6-Dichlorophenol	Ave	0.3080	0.3180		82600	80000	3.2	20.0
Hexachlorobutadiene	Ave	0.1803	0.1806	0.0100	80100	80000	0.2	20.0
Caprolactam	Ave	0.2049	0.1802		70300	80000	-12.1	20.0
4-Chloro-3-methylphenol	Ave	0.3597	0.3713	0.2000	82600	80000	3.2	20.0
2-Methylnaphthalene	Ave	0.7498	0.7786	0.4000	83100	80000	3.8	20.0
1-Methylnaphthalene	Ave	0.7080	0.7407		83700	80000	4.6	20.0
Hexachlorocyclopentadiene	Ave	0.3209	0.3501	0.0500	87300	80000	9.1	20.0
1,2,4,5-Tetrachlorobenzene	Ave	0.3361	0.3396	0.0100	80800	80000	1.0	20.0
2,4,6-Trichlorophenol	Ave	0.3555	0.3878	0.2000	87300	80000	9.1	20.0
2,4,5-Trichlorophenol	Ave	0.3931	0.4170	0.2000	84900	80000	6.1	20.0
1,1'-Biphenyl	Ave	1.362	1.475		86600	80000	8.3	20.0
2-Chloronaphthalene	Ave	1.071	1.129	0.8000	84400	80000	5.5	20.0
2-Nitroaniline	Ave	0.3841	0.4208	0.0100	87600	80000	9.5	20.0
Dimethyl phthalate	Ave	1.267	1.296	0.0100	81800	80000	2.3	20.0

FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Lab Sample ID: CCV 280-458321/3

Calibration Date: 05/15/2019 16:55

Instrument ID: SMS_D

Calib Start Date: 04/03/2019 07:48

GC Column: Rxi-5Sil MS ID: 0.25 (mm)

Calib End Date: 04/03/2019 11:14

Lab File ID: D33114.D

Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,3-Dinitrobenzene	Lin2		0.2286		82500	80000	3.1	20.0
2,6-Dinitrotoluene	Ave	0.3053	0.3222	0.2000	84400	80000	5.5	20.0
Acenaphthylene	Ave	1.772	1.881	0.9000	84900	80000	6.1	20.0
3-Nitroaniline	Ave	0.3398	0.3489	0.0100	82100	80000	2.7	20.0
Acenaphthene	Ave	1.074	1.162	0.9000	86500	80000	8.2	20.0
2,4-Dinitrophenol	Lin2		0.2028	0.0100	168000	160000	4.7	20.0
4-Nitrophenol	Ave	0.1993	0.2407	0.0100	193000	160000	20.8*	20.0
2,4-Dinitrotoluene	Ave	0.4178	0.4330	0.2000	82900	80000	3.6	20.0
Dibenzofuran	Ave	1.639	1.710	0.8000	83500	80000	4.3	20.0
2,3,4,6-Tetrachlorophenol	Ave	0.3215	0.3352	0.0100	83400	80000	4.3	20.0
Diethyl phthalate	Ave	1.288	1.355	0.0100	84200	80000	5.2	20.0
4-Chlorophenyl phenyl ether	Ave	0.6376	0.6348	0.4000	79700	80000	-0.4	20.0
Fluorene	Ave	1.347	1.420	0.9000	84300	80000	5.4	20.0
4-Nitroaniline	Ave	0.3817	0.4006	0.0100	84000	80000	5.0	20.0
4,6-Dinitro-2-methylphenol	Lin2		0.1550	0.0100	174000	160000	8.5	20.0
Diphenylamine	Ave	1.171	1.203		69900	68000	2.8	20.0
N-Nitrosodiphenylamine	Ave	0.5350	0.5841	0.0100	87300	80000	9.2	20.0
1,2-Diphenylhydrazine	Ave	1.572	1.623		83500	80900	3.2	20.0
Azobenzene	Ave	1.589	1.641		82600	80000	3.2	20.0
4-Bromophenyl phenyl ether	Ave	0.2013	0.2103	0.1000	83600	80000	4.5	20.0
Hexachlorobenzene	Ave	0.1951	0.2039	0.1000	83600	80000	4.5	20.0
Atrazine	Ave	0.2051	0.2159		84200	80000	5.3	20.0
Pentachlorophenol	Lin2		0.1327	0.0500	163000	160000	2.1	20.0
Phenanthrene	Ave	1.067	1.168	0.7000	87600	80000	9.5	20.0
Anthracene	Ave	1.106	1.190	0.7000	86100	80000	7.6	20.0
Carbazole	Ave	1.072	1.137	0.0100	84800	80000	6.0	20.0
Alachlor	Ave	0.1456	0.1605		88200	80000	10.3	20.0
Di-n-butyl phthalate	Ave	1.229	1.325	0.0100	86300	80000	7.8	20.0
Fluoranthene	Ave	1.230	1.298	0.6000	84400	80000	5.5	20.0
Pyrene	Ave	1.305	1.374	0.6000	84300	80000	5.4	20.0
Butyl benzyl phthalate	Ave	0.5862	0.6312	0.0100	86100	80000	7.7	20.0
3,3'-Dichlorobenzidine	Ave	0.4261	0.3977	0.0100	74700	80000	-6.6	20.0
Benzo[a]anthracene	Ave	1.208	1.246	0.8000	82500	80000	3.1	20.0
Chrysene	Ave	1.207	1.239	0.7000	82100	80000	2.6	20.0
Bis(2-ethylhexyl) phthalate	Ave	0.8103	0.8417	0.0100	83100	80000	3.9	20.0
Di-n-octyl phthalate	Ave	1.436	1.506	0.0100	83900	80000	4.9	20.0
Benzo[b]fluoranthene	Ave	1.255	1.354	0.7000	86300	80000	7.9	20.0
Benzo[k]fluoranthene	Ave	1.263	1.404	0.7000	88900	80000	11.2	20.0
Benzo[a]pyrene	Ave	1.242	1.332	0.7000	85800	80000	7.2	20.0
Indeno[1,2,3-cd]pyrene	Ave	1.088	1.151	0.5000	84600	80000	5.8	20.0
Dibenz(a,h)anthracene	Ave	1.070	1.147	0.4000	85800	80000	7.2	20.0

FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458321/3 Calibration Date: 05/15/2019 16:55
 Instrument ID: SMS_D Calib Start Date: 04/03/2019 07:48
 GC Column: Rxi-5Sil MS ID: 0.25 (mm) Calib End Date: 04/03/2019 11:14
 Lab File ID: D33114.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Benzo[g,h,i]perylene	Ave	1.112	1.151	0.5000	82800	80000	3.4	20.0
2-Fluorophenol (Surr)	Ave	1.438	1.423		79200	80000	-1.0	20.0
Phenol-d5 (Surr)	Ave	1.931	1.871		77500	80000	-3.1	20.0
Nitrobenzene-d5 (Surr)	Ave	0.4407	0.4544		82500	80000	3.1	20.0
2-Fluorobiphenyl	Ave	1.268	1.355		85500	80000	6.9	20.0
2,4,6-Tribromophenol (Surr)	Ave	0.1608	0.1582		78700	80000	-1.6	20.0
Terphenyl-d14 (Surr)	Ave	0.8114	0.8443		83200	80000	4.1	20.0

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33114.D
 Lims ID: CCV HSL
 Client ID:
 Sample Type: CCV
 Inject. Date: 15-May-2019 16:55:30 ALS Bottle#: 2 Worklist Smp#: 3
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: CCV HSL
 Operator ID: WICKHAMM Instrument ID: SMS_D
 Sublist: chrom-SMSD_8270C*sub39
 Method: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 17-May-2019 22:14:17 Calib Date: 29-Apr-2019 12:43:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190429-81391.b\D32840.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 17-May-2019 21:58:16

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	4.554	4.554	0.000	96	126894	40.0	40.0	
* 2 Naphthalene-d8	136	5.794	5.794	0.000	99	495980	40.0	40.0	
* 3 Acenaphthene-d10	164	7.541	7.541	0.000	97	307109	40.0	40.0	
* 4 Phenanthrene-d10	188	9.026	9.026	0.000	99	537586	40.0	40.0	
* 5 Chrysene-d12	240	13.043	13.043	0.000	85	525852	40.0	40.0	
* 6 Perylene-d12	264	16.932	16.932	0.000	99	443725	40.0	40.0	
\$ 7 2-Fluorophenol	112	3.363	3.363	0.000	98	361241	80.0	79.2	
\$ 8 Phenol-d5	99	4.207	4.207	0.000	98	474802	80.0	77.5	
\$ 9 Nitrobenzene-d5	82	5.078	5.078	0.000	95	450707	80.0	82.5	
\$ 11 2-Fluorobiphenyl	172	6.857	6.857	0.000	98	832225	80.0	85.5	
\$ 12 2,4,6-Tribromophenol	330	8.331	8.331	0.000	91	97141	80.0	78.7	
\$ 13 Terphenyl-d14	244	10.949	10.949	0.000	100	887987	80.0	83.2	
16 1,4-Dioxane	88	1.910	1.910	0.000	98	171943	80.0	76.6	
17 N-Nitrosodimethylamine	74	2.150	2.150	0.000	93	261254	80.0	76.0	
18 Pyridine	79	2.204	2.204	0.000	94	830693	160.0	153.6	
28 Phenol	94	4.218	4.218	0.000	92	514394	80.0	77.8	
30 Aniline	93	4.239	4.239	0.000	99	635838	80.0	75.9	
31 Alpha Methyl Styrene	118	4.293	4.293	0.000	97	389487	80.0	80.8	
32 Bis(2-chloroethyl)ether	93	4.287	4.287	0.000	95	378984	80.0	76.5	
35 n-Decane	43	4.394	4.394	0.000	98	338631	80.0	75.2	
36 2-Chlorophenol	128	4.367	4.367	0.000	98	376075	80.0	79.5	
37 1,3-Dichlorobenzene	146	4.506	4.506	0.000	97	396838	80.0	80.4	
38 1,4-Dichlorobenzene	146	4.576	4.576	0.000	97	409923	80.0	81.6	
39 Benzyl alcohol	108	4.677	4.677	0.000	96	260710	80.0	73.3	
40 1,2-Dichlorobenzene	146	4.725	4.725	0.000	97	382346	80.0	79.6	
41 2-Methylphenol	108	4.789	4.789	0.000	83	383748	80.0	78.5	
43 2,2'-oxybis[1-chloropropan	45	4.800	4.800	0.000	99	467564	80.0	73.4	
44 Indene	116	4.805	4.805	0.000	99	1257913	160.0	162.7	
45 3-Methylphenol	108	4.934	4.934	0.000	90	395233	80.0	76.8	
46 3 & 4 Methylphenol	108	4.934	4.934	0.000	90	395233	80.0	76.8	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
47 4-Methylphenol	108	4.934	4.934	0.000	90	395233	80.0	76.8	
48 N-Nitrosodi-n-propylamine	70	4.923	4.923	0.000	94	307582	80.0	78.0	
50 Acetophenone	105	4.934	4.934	0.000	96	564114	80.0	78.9	
53 Hexachloroethane	117	5.051	5.051	0.000	97	158158	80.0	82.8	
54 Nitrobenzene	77	5.099	5.099	0.000	94	457342	80.0	82.0	
57 Isophorone	82	5.329	5.329	0.000	98	827646	80.0	77.6	
59 2-Nitrophenol	139	5.409	5.409	0.000	93	200219	80.0	86.3	
60 2,4-Dimethylphenol	107	5.446	5.446	0.000	97	416425	80.0	83.4	
63 Bis(2-chloroethoxy)methane	93	5.527	5.527	0.000	95	461174	80.0	76.9	
64 Benzoic acid	105	5.580	5.580	0.000	88	642187	160.0	152.3	
65 3,5-Dimethylphenol	107	5.580	5.580	0.000	98	430103	80.0	83.3	
68 2,4-Dichlorophenol	162	5.655	5.655	0.000	97	316857	80.0	82.1	
70 1,2,4-Trichlorobenzene	180	5.735	5.735	0.000	97	328217	80.0	78.4	
72 Naphthalene	128	5.815	5.815	0.000	100	1113737	80.0	83.1	
73 4-Chloroaniline	127	5.858	5.858	0.000	99	475116	80.0	79.1	
74 2,6-Dichlorophenol	162	5.874	5.874	0.000	96	315448	80.0	82.6	
76 Hexachlorobutadiene	225	5.943	5.943	0.000	98	179139	80.0	80.1	
80 Caprolactam	55	6.200	6.200	0.000	96	178711	80.0	70.3	
83 4-Chloro-3-methylphenol	107	6.344	6.344	0.000	96	368261	80.0	82.6	
87 2-Methylnaphthalene	142	6.499	6.499	0.000	99	772303	80.0	83.1	
89 1-Methylnaphthalene	142	6.600	6.600	0.000	99	734716	80.0	83.7	
90 Hexachlorocyclopentadiene	237	6.664	6.664	0.000	97	215028	80.0	87.3	
91 1,2,4,5-Tetrachlorobenzene	216	6.670	6.670	0.000	98	336828	80.0	80.8	
94 2,4,6-Trichlorophenol	196	6.782	6.782	0.000	94	238207	80.0	87.3	
95 2,3-Dichlorobenzenamine	161	6.777	6.777	0.000	92	391415	80.0	86.6	
96 2,4,5-Trichlorophenol	196	6.825	6.825	0.000	97	256100	80.0	84.9	
100 1,1'-Biphenyl	154	6.958	6.958	0.000	95	905969	80.0	86.6	
102 2-Chloronaphthalene	162	6.985	6.985	0.000	98	693568	80.0	84.4	
105 2-Nitroaniline	65	7.076	7.076	0.000	94	258436	80.0	87.6	
111 Dimethyl phthalate	163	7.247	7.247	0.000	98	796134	80.0	81.8	
112 1,3-Dinitrobenzene	168	7.279	7.279	0.000	87	140400	80.0	82.5	
113 2,6-Dinitrotoluene	165	7.306	7.306	0.000	93	197901	80.0	84.4	
115 Acenaphthylene	152	7.402	7.402	0.000	100	1155108	80.0	84.9	
117 3-Nitroaniline	138	7.482	7.482	0.000	96	214323	80.0	82.1	
119 Acenaphthene	153	7.573	7.573	0.000	99	713800	80.0	86.5	
120 2,4-Dinitrophenol	184	7.589	7.589	0.000	94	249105	160.0	167.5	
121 4-Nitrophenol	109	7.674	7.674	0.000	94	295653	160.0	193.2	
124 2,4-Dinitrotoluene	165	7.717	7.717	0.000	94	265928	80.0	82.9	
125 Dibenzofuran	168	7.744	7.744	0.000	100	1050296	80.0	83.5	
129 2,3,4,6-Tetrachlorophenol	232	7.872	7.872	0.000	74	205858	80.0	83.4	
131 Hexadecane	57	7.968	7.968	0.000	95	507353	80.0	84.9	
132 Diethyl phthalate	149	7.952	7.952	0.000	99	832147	80.0	84.2	
134 4-Chlorophenyl phenyl ethe	204	8.075	8.075	0.000	97	389898	80.0	79.7	
135 Fluorene	166	8.086	8.086	0.000	99	872394	80.0	84.3	
138 4-Nitroaniline	138	8.096	8.096	0.000	96	246081	80.0	84.0	
139 4,6-Dinitro-2-methylphenol	198	8.134	8.134	0.000	91	333339	160.0	173.6	
140 Diphenylamine	169	8.192	8.192	0.000	96	627996	68.0	69.9	
141 N-Nitrosodiphenylamine	169	8.192	8.192	0.000	99	627996	80.0	87.3	
142 1,2-Diphenylhydrazine	77	8.235	8.235	0.000	95	1007681	80.9	83.5	
143 Azobenzene	77	8.235	8.235	0.000	95	1007681	80.0	82.6	
145 2,4,6 - Tribromophenol	330	8.331	8.331	0.000	91	97141	80.0	78.7	
152 4-Bromophenyl phenyl ether	248	8.561	8.561	0.000	95	226094	80.0	83.6	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
153 Hexachlorobenzene	284	8.652	8.652	0.000	96	219208	80.0	83.6	
155 Atrazine	200	8.716	8.716	0.000	97	232155	80.0	84.2	
156 n-Octadecane	85	8.881	8.881	0.000	96	251223	80.0	88.5	
157 Pentachlorophenol	266	8.844	8.844	0.000	93	285379	160.0	163.3	
163 Phenanthrene	178	9.052	9.052	0.000	100	1255938	80.0	87.6	
164 Anthracene	178	9.101	9.101	0.000	100	1279783	80.0	86.1	
165 Carbazole	167	9.255	9.255	0.000	100	1222123	80.0	84.8	
166 Alachlor	188	9.384	9.384	0.000	97	172604	80.0	88.2	
169 Di-n-butyl phthalate	149	9.587	9.587	0.000	100	1425083	80.0	86.3	
176 Fluoranthene	202	10.399	10.399	0.000	100	1395575	80.0	84.4	
180 Pyrene	202	10.730	10.730	0.000	99	1445561	80.0	84.3	
187 Butyl benzyl phthalate	149	11.825	11.825	0.000	96	663848	80.0	86.1	
190 3,3'-Dichlorobenzidine	252	12.974	12.974	0.000	98	418296	80.0	74.7	
192 Benzo[a]anthracene	228	13.016	13.016	0.000	100	1310018	80.0	82.5	
193 Bis(2-ethylhexyl) phthalat	149	13.177	13.177	0.000	99	885265	80.0	83.1	
194 Chrysene	228	13.102	13.102	0.000	99	1302971	80.0	82.1	
197 Di-n-octyl phthalate	149	14.955	14.955	0.000	100	1583952	80.0	83.9	
198 Benzo[b]fluoranthene	252	15.853	15.853	0.000	100	1201586	80.0	86.3	
200 Benzo[k]fluoranthene	252	15.928	15.928	0.000	99	1245664	80.0	88.9	
201 Benzo[e]pyrene	252	16.628	16.628	0.000	98	1131259	80.0	86.5	
202 Benzo[a]pyrene	252	16.772	16.772	0.000	100	1181924	80.0	85.8	
208 Indeno[1,2,3-cd]pyrene	276	20.031	20.031	0.000	74	1021882	80.0	84.6	
209 Dibenz(a,h)anthracene	278	20.116	20.116	0.000	73	1018294	80.0	85.8	
210 Benzo[g,h,i]perylene	276	20.762	20.762	0.000	99	1021104	80.0	82.8	

Reagents:

MS-HSLACCV080_00186

Amount Added: 200.00

Units: uL

Report Date: 17-May-2019 22:14:18

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33114.D

Injection Date: 15-May-2019 16:55:30

Instrument ID: SMS_D

Operator ID: WICKHAMM

Lims ID: CCV HSL

Worklist Smp#: 3

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

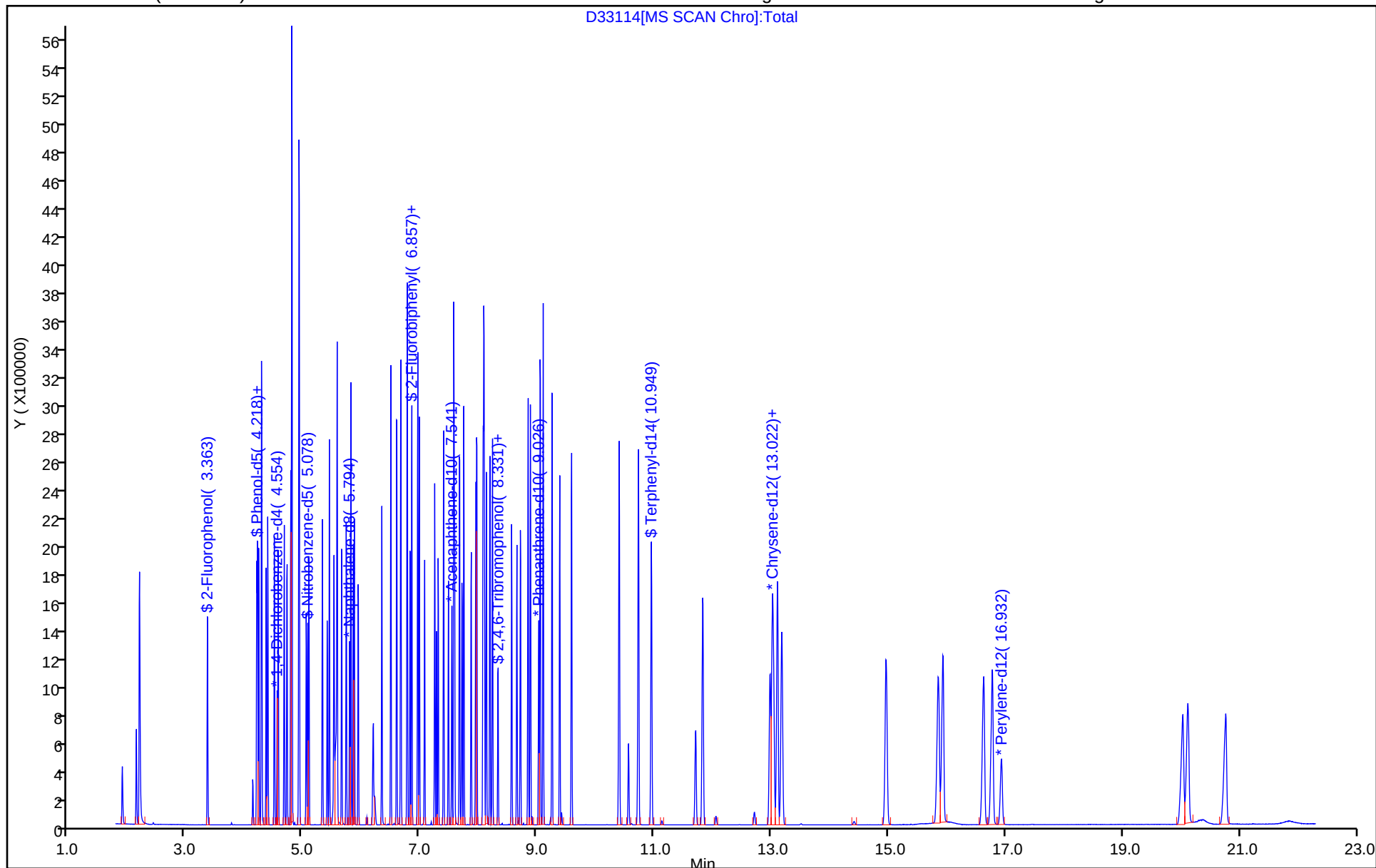
ALS Bottle#: 2

Method: SMSD_8270C

Limit Group: MSSV - 8270C_625

Column: VF-5ms (0.50 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Lab Sample ID: CCVC 280-458321/24 Calibration Date: 05/16/2019 03:06

Instrument ID: SMS_D Calib Start Date: 04/03/2019 07:48

GC Column: Rxi-5Sil MS ID: 0.25 (mm) Calib End Date: 04/03/2019 11:14

Lab File ID: D33135.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	Ave	0.7080	0.6474		73100	80000	-8.6	50.0
N-Nitrosodimethylamine	Ave	1.084	0.9904		73100	80000	-8.6	50.0
Pyridine	Ave	1.704	1.561		147000	160000	-8.4	50.0
Phenol	Ave	2.085	1.871	0.8000	71800	80000	-10.3	50.0
Aniline	Ave	2.640	2.336		70800	80000	-11.5	50.0
Bis(2-chloroethyl)ether	Ave	1.562	1.412	0.7000	72300	80000	-9.6	50.0
2-Chlorophenol	Ave	1.492	1.359	0.8000	72900	80000	-8.9	50.0
1,3-Dichlorobenzene	Ave	1.556	1.457		74900	80000	-6.4	50.0
1,4-Dichlorobenzene	Ave	1.583	1.465		74000	80000	-7.5	50.0
Benzyl alcohol	Ave	1.121	1.000		71400	80000	-10.7	50.0
1,2-Dichlorobenzene	Ave	1.514	1.411		74500	80000	-6.8	50.0
2-Methylphenol	Ave	1.542	1.399	0.7000	72600	80000	-9.3	50.0
2,2'-oxybis[1-chloropropane]	Ave	2.008	1.798	0.0100	71600	80000	-10.5	50.0
N-Nitrosodi-n-propylamine	Ave	1.242	1.122	0.5000	72300	80000	-9.7	50.0
3 & 4 Methylphenol	Ave	1.622	1.458		71900	80000	-10.1	50.0
Acetophenone	Ave	2.254	2.027	0.0100	71900	80000	-10.1	50.0
Hexachloroethane	Ave	0.6019	0.5595	0.3000	74400	80000	-7.1	50.0
Nitrobenzene	Ave	0.4497	0.4167		74100	80000	-7.3	50.0
Isophorone	Ave	0.8604	0.7691	0.4000	71500	80000	-10.6	50.0
2-Nitrophenol	Ave	0.1871	0.1900	0.1000	81200	80000	1.5	50.0
2,4-Dimethylphenol	Ave	0.4027	0.3682	0.2000	73100	80000	-8.6	50.0
Bis(2-chloroethoxy)methane	Ave	0.4838	0.4333	0.3000	71600	80000	-10.4	50.0
Benzoic acid	Lin2		0.2844		135000	160000	-15.9	50.0
2,4-Dichlorophenol	Ave	0.3114	0.2907	0.2000	74700	80000	-6.7	50.0
1,2,4-Trichlorobenzene	Ave	0.3377	0.3072		72800	80000	-9.0	50.0
Naphthalene	Ave	1.080	1.012	0.7000	74900	80000	-6.3	50.0
4-Chloroaniline	Ave	0.4845	0.4447	0.0100	73400	80000	-8.2	50.0
2,6-Dichlorophenol	Ave	0.3080	0.2897		75200	80000	-6.0	50.0
Hexachlorobutadiene	Ave	0.1803	0.1614	0.0100	71600	80000	-10.5	50.0
Caprolactam	Ave	0.2049	0.1724		67300	80000	-15.9	50.0
4-Chloro-3-methylphenol	Ave	0.3597	0.3303	0.2000	73500	80000	-8.2	50.0
2-Methylnaphthalene	Ave	0.7498	0.7097	0.4000	75700	80000	-5.3	50.0
1-Methylnaphthalene	Ave	0.7080	0.6645		75100	80000	-6.1	50.0
Hexachlorocyclopentadiene	Ave	0.3209	0.2822	0.0500	70300	80000	-12.1	50.0
1,2,4,5-Tetrachlorobenzene	Ave	0.3361	0.3023	0.0100	72000	80000	-10.0	50.0
2,4,6-Trichlorophenol	Ave	0.3555	0.3422	0.2000	77000	80000	-3.7	50.0
2,4,5-Trichlorophenol	Ave	0.3931	0.3596	0.2000	73200	80000	-8.5	50.0
1,1'-Biphenyl	Ave	1.362	1.309		76900	80000	-3.9	50.0
2-Chloronaphthalene	Ave	1.071	0.998	0.8000	74600	80000	-6.7	50.0
2-Nitroaniline	Ave	0.3841	0.3670	0.0100	76400	80000	-4.4	50.0
Dimethyl phthalate	Ave	1.267	1.145	0.0100	72300	80000	-9.7	50.0

FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Lab Sample ID: CCVC 280-458321/24 Calibration Date: 05/16/2019 03:06

Instrument ID: SMS_D Calib Start Date: 04/03/2019 07:48

GC Column: Rxi-5Sil MS ID: 0.25 (mm) Calib End Date: 04/03/2019 11:14

Lab File ID: D33135.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,3-Dinitrobenzene	Lin2		0.2103		76000	80000	-5.0	50.0
2,6-Dinitrotoluene	Ave	0.3053	0.2849	0.2000	74600	80000	-6.7	50.0
Acenaphthylene	Ave	1.772	1.659	0.9000	74900	80000	-6.4	50.0
3-Nitroaniline	Ave	0.3398	0.3213	0.0100	75600	80000	-5.5	50.0
Acenaphthene	Ave	1.074	1.018	0.9000	75800	80000	-5.3	50.0
2,4-Dinitrophenol	Lin2		0.1761	0.0100	147000	160000	-8.4	50.0
4-Nitrophenol	Ave	0.1993	0.1803	0.0100	145000	160000	-9.5	50.0
2,4-Dinitrotoluene	Ave	0.4178	0.3844	0.2000	73600	80000	-8.0	50.0
Dibenzofuran	Ave	1.639	1.516	0.8000	74000	80000	-7.5	50.0
2,3,4,6-Tetrachlorophenol	Ave	0.3215	0.2861	0.0100	71200	80000	-11.0	50.0
Diethyl phthalate	Ave	1.288	1.190	0.0100	73900	80000	-7.6	50.0
4-Chlorophenyl phenyl ether	Ave	0.6376	0.5564	0.4000	69800	80000	-12.7	50.0
Fluorene	Ave	1.347	1.255	0.9000	74500	80000	-6.8	50.0
4-Nitroaniline	Ave	0.3817	0.3625	0.0100	76000	80000	-5.0	50.0
4,6-Dinitro-2-methylphenol	Lin2		0.1357	0.0100	153000	160000	-4.6	50.0
Diphenylamine	Ave	1.171	1.063		61800	68000	-9.2	50.0
N-Nitrosodiphenylamine	Ave	0.5350	0.5198	0.0100	77700	80000	-2.8	50.0
1,2-Diphenylhydrazine	Ave	1.572	1.396		71800	80900	-11.2	50.0
Azobenzene	Ave	1.589	1.412		71100	80000	-11.2	50.0
4-Bromophenyl phenyl ether	Ave	0.2013	0.1824	0.1000	72500	80000	-9.4	50.0
Hexachlorobenzene	Ave	0.1951	0.1729	0.1000	70900	80000	-11.4	50.0
Atrazine	Ave	0.2051	0.1899		74100	80000	-7.4	50.0
Pentachlorophenol	Lin2		0.1124	0.0500	139000	160000	-13.3	50.0
Phenanthrene	Ave	1.067	1.006	0.7000	75400	80000	-5.7	50.0
Anthracene	Ave	1.106	1.038	0.7000	75100	80000	-6.1	50.0
Carbazole	Ave	1.072	0.998	0.0100	74500	80000	-6.9	50.0
Alachlor	Ave	0.1456	0.1386		76200	80000	-4.8	50.0
Di-n-butyl phthalate	Ave	1.229	1.167	0.0100	76000	80000	-5.0	50.0
Fluoranthene	Ave	1.230	1.114	0.6000	72500	80000	-9.4	50.0
Pyrene	Ave	1.305	1.242	0.6000	76200	80000	-4.8	50.0
Butyl benzyl phthalate	Ave	0.5862	0.5756	0.0100	78500	80000	-1.8	50.0
3,3'-Dichlorobenzidine	Ave	0.4261	0.3896	0.0100	73200	80000	-8.6	50.0
Benzo[a]anthracene	Ave	1.208	1.105	0.8000	73200	80000	-8.5	50.0
Chrysene	Ave	1.207	1.102	0.7000	73000	80000	-8.7	50.0
Bis(2-ethylhexyl) phthalate	Ave	0.8103	0.7749	0.0100	76500	80000	-4.4	50.0
Di-n-octyl phthalate	Ave	1.436	1.374	0.0100	76600	80000	-4.3	50.0
Benzo[b]fluoranthene	Ave	1.255	1.173	0.7000	74800	80000	-6.5	50.0
Benzo[k]fluoranthene	Ave	1.263	1.219	0.7000	77200	80000	-3.5	50.0
Benzo[a]pyrene	Ave	1.242	1.166	0.7000	75100	80000	-6.1	50.0
Indeno[1,2,3-cd]pyrene	Ave	1.088	0.9898	0.5000	72800	80000	-9.0	50.0
Dibenz(a,h)anthracene	Ave	1.070	0.9882	0.4000	73900	80000	-7.6	50.0

FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCVC 280-458321/24 Calibration Date: 05/16/2019 03:06
 Instrument ID: SMS_D Calib Start Date: 04/03/2019 07:48
 GC Column: Rxi-5Sil MS ID: 0.25 (mm) Calib End Date: 04/03/2019 11:14
 Lab File ID: D33135.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Benzo[g,h,i]perylene	Ave	1.112	1.025	0.5000	73700	80000	-7.8	50.0
2-Fluorophenol (Surr)	Ave	1.438	1.320		73400	80000	-8.2	50.0
Phenol-d5 (Surr)	Ave	1.931	1.744		72200	80000	-9.7	50.0
Nitrobenzene-d5 (Surr)	Ave	0.4407	0.4002		72700	80000	-9.2	50.0
2-Fluorobiphenyl	Ave	1.268	1.193		75300	80000	-5.9	50.0
2,4,6-Tribromophenol (Surr)	Ave	0.1608	0.1380		68600	80000	-14.2	50.0
Terphenyl-d14 (Surr)	Ave	0.8114	0.7583		74800	80000	-6.5	50.0

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33135.D
 Lims ID: CCVC HSL
 Client ID:
 Sample Type: CCVC
 Inject. Date: 16-May-2019 03:06:30 ALS Bottle#: 23 Worklist Smp#: 24
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: CCVC HSL
 Operator ID: WICKHAMM Instrument ID: SMS_D
 Sublist: chrom-SMSD_8270C*sub39
 Method: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 17-May-2019 22:14:57 Calib Date: 29-Apr-2019 12:43:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190429-81391.b\D32840.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 17-May-2019 22:14:07

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	4.552	4.554	-0.002	98	141717	40.0	40.0	
* 2 Naphthalene-d8	136	5.786	5.794	-0.008	100	569070	40.0	40.0	
* 3 Acenaphthene-d10	164	7.533	7.541	-0.008	98	356716	40.0	40.0	
* 4 Phenanthrene-d10	188	9.012	9.026	-0.014	99	620172	40.0	40.0	
* 5 Chrysene-d12	240	13.019	13.043	-0.024	86	584878	40.0	40.0	
* 6 Perylene-d12	264	16.897	16.932	-0.035	99	516624	40.0	40.0	
\$ 7 2-Fluorophenol	112	3.360	3.363	-0.003	98	374162	80.0	73.4	
\$ 8 Phenol-d5	99	4.199	4.207	-0.008	98	494313	80.0	72.2	
\$ 9 Nitrobenzene-d5	82	5.075	5.078	-0.003	95	455474	80.0	72.7	
\$ 11 2-Fluorobiphenyl	172	6.849	6.857	-0.008	98	851320	80.0	75.3	
\$ 12 2,4,6-Tribromophenol	330	8.323	8.331	-0.008	94	98417	80.0	68.6	
\$ 13 Terphenyl-d14	244	10.936	10.949	-0.013	100	886976	80.0	74.8	
16 1,4-Dioxane	88	1.907	1.910	-0.003	97	183480	80.0	73.1	
17 N-Nitrosodimethylamine	74	2.148	2.150	-0.002	90	280719	80.0	73.1	
18 Pyridine	79	2.196	2.204	-0.008	93	884742	160.0	146.5	
28 Phenol	94	4.215	4.218	-0.003	91	530307	80.0	71.8	
30 Aniline	93	4.237	4.239	-0.002	99	662076	80.0	70.8	
31 Alpha Methyl Styrene	118	4.290	4.293	-0.003	96	403735	80.0	75.0	
32 Bis(2-chloroethyl)ether	93	4.279	4.287	-0.008	96	400140	80.0	72.3	
35 n-Decane	43	4.392	4.394	-0.002	97	364405	80.0	72.4	
36 2-Chlorophenol	128	4.365	4.367	-0.002	98	385202	80.0	72.9	
37 1,3-Dichlorobenzene	146	4.504	4.506	-0.002	98	412980	80.0	74.9	
38 1,4-Dichlorobenzene	146	4.568	4.576	-0.008	96	415166	80.0	74.0	
39 Benzyl alcohol	108	4.669	4.677	-0.008	97	283475	80.0	71.4	
40 1,2-Dichlorobenzene	146	4.717	4.725	-0.008	98	399804	80.0	74.5	
41 2-Methylphenol	108	4.781	4.789	-0.008	77	396544	80.0	72.6	
43 2,2'-oxybis[1-chloropropan	45	4.798	4.800	-0.002	97	509677	80.0	71.6	
44 Indene	116	4.803	4.805	-0.002	99	1293258	160.0	149.8	
45 3-Methylphenol	108	4.926	4.934	-0.008	87	413353	80.0	71.9	
46 3 & 4 Methylphenol	108	4.926	4.934	-0.008	87	413353	80.0	71.9	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
47 4-Methylphenol	108	4.926	4.934	-0.008	87	413353	80.0	71.9	
48 N-Nitrosodi-n-propylamine	70	4.920	4.923	-0.003	93	318116	80.0	72.3	
50 Acetophenone	105	4.926	4.934	-0.008	96	574517	80.0	71.9	
53 Hexachloroethane	117	5.049	5.051	-0.002	96	158566	80.0	74.4	
54 Nitrobenzene	77	5.091	5.099	-0.008	94	474242	80.0	74.1	
57 Isophorone	82	5.321	5.329	-0.008	97	875390	80.0	71.5	
59 2-Nitrophenol	139	5.407	5.409	-0.003	96	216260	80.0	81.2	
60 2,4-Dimethylphenol	107	5.444	5.446	-0.002	98	419013	80.0	73.1	
63 Bis(2-chloroethoxy)methane	93	5.519	5.527	-0.008	95	493094	80.0	71.6	
64 Benzoic acid	105	5.572	5.580	-0.008	69	647450	160.0	134.6	
65 3,5-Dimethylphenol	107	5.572	5.580	-0.008	95	431250	80.0	72.8	
68 2,4-Dichlorophenol	162	5.652	5.655	-0.003	98	330835	80.0	74.7	
70 1,2,4-Trichlorobenzene	180	5.732	5.735	-0.003	98	349664	80.0	72.8	
72 Naphthalene	128	5.807	5.815	-0.008	100	1151636	80.0	74.9	
73 4-Chloroaniline	127	5.850	5.858	-0.008	99	506141	80.0	73.4	
74 2,6-Dichlorophenol	162	5.866	5.874	-0.008	97	329686	80.0	75.2	
76 Hexachlorobutadiene	225	5.935	5.943	-0.008	98	183705	80.0	71.6	
80 Caprolactam	55	6.186	6.200	-0.014	96	196187	80.0	67.3	
83 4-Chloro-3-methylphenol	107	6.336	6.344	-0.008	97	375957	80.0	73.5	
87 2-Methylnaphthalene	142	6.491	6.499	-0.008	100	807739	80.0	75.7	
89 1-Methylnaphthalene	142	6.592	6.600	-0.008	99	756261	80.0	75.1	
90 Hexachlorocyclopentadiene	237	6.657	6.664	-0.007	98	201298	80.0	70.3	
91 1,2,4,5-Tetrachlorobenzene	216	6.662	6.670	-0.008	97	344080	80.0	72.0	
94 2,4,6-Trichlorophenol	196	6.774	6.782	-0.008	95	244138	80.0	77.0	
95 2,3-Dichlorobenzenamine	161	6.769	6.777	-0.008	95	400684	80.0	76.3	
96 2,4,5-Trichlorophenol	196	6.817	6.825	-0.008	98	256521	80.0	73.2	
100 1,1'-Biphenyl	154	6.950	6.958	-0.008	95	933897	80.0	76.9	
102 2-Chloronaphthalene	162	6.977	6.985	-0.008	99	712305	80.0	74.6	
105 2-Nitroaniline	65	7.068	7.076	-0.008	96	261845	80.0	76.4	
111 Dimethyl phthalate	163	7.239	7.247	-0.008	98	816806	80.0	72.3	
112 1,3-Dinitrobenzene	168	7.271	7.279	-0.008	87	150010	80.0	76.0	
113 2,6-Dinitrotoluene	165	7.303	7.306	-0.003	97	203239	80.0	74.6	
115 Acenaphthylene	152	7.394	7.402	-0.008	100	1183475	80.0	74.9	
117 3-Nitroaniline	138	7.474	7.482	-0.008	96	229192	80.0	75.6	
119 Acenaphthene	153	7.565	7.573	-0.008	99	725989	80.0	75.8	
120 2,4-Dinitrophenol	184	7.581	7.589	-0.008	96	251312	160.0	146.6	
121 4-Nitrophenol	109	7.661	7.674	-0.013	96	257320	160.0	144.8	a
124 2,4-Dinitrotoluene	165	7.704	7.717	-0.013	95	274238	80.0	73.6	
125 Dibenzofuran	168	7.736	7.744	-0.008	100	1081780	80.0	74.0	
129 2,3,4,6-Tetrachlorophenol	232	7.864	7.872	-0.008	74	204088	80.0	71.2	
131 Hexadecane	57	7.955	7.968	-0.013	95	536001	80.0	77.2	
132 Diethyl phthalate	149	7.939	7.952	-0.013	100	849009	80.0	73.9	
134 4-Chlorophenyl phenyl ethe	204	8.067	8.075	-0.008	98	396934	80.0	69.8	
135 Fluorene	166	8.078	8.086	-0.008	98	895595	80.0	74.5	
138 4-Nitroaniline	138	8.088	8.096	-0.008	96	258640	80.0	76.0	
139 4,6-Dinitro-2-methylphenol	198	8.120	8.134	-0.014	92	336636	160.0	152.7	
140 Diphenylamine	169	8.179	8.192	-0.013	96	644725	68.0	61.8	
141 N-Nitrosodiphenylamine	169	8.179	8.192	-0.013	99	644725	80.0	77.7	
142 1,2-Diphenylhydrazine	77	8.227	8.235	-0.008	95	1007031	80.9	71.8	
143 Azobenzene	77	8.227	8.235	-0.008	95	1007031	80.0	71.1	
145 2,4,6 - Tribromophenol	330	8.323	8.331	-0.008	94	98417	80.0	68.6	
152 4-Bromophenyl phenyl ether	248	8.553	8.561	-0.008	95	226246	80.0	72.5	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
153 Hexachlorobenzene	284	8.644	8.652	-0.008	97	214390	80.0	70.9	
155 Atrazine	200	8.703	8.716	-0.013	95	235494	80.0	74.1	
156 n-Octadecane	85	8.874	8.881	-0.007	95	264127	80.0	80.7	
157 Pentachlorophenol	266	8.831	8.844	-0.013	94	278823	160.0	138.8	
163 Phenanthrene	178	9.039	9.052	-0.013	100	1247679	80.0	75.4	
164 Anthracene	178	9.093	9.101	-0.008	100	1287622	80.0	75.1	
165 Carbazole	167	9.242	9.255	-0.013	100	1237711	80.0	74.5	
166 Alachlor	188	9.376	9.384	-0.008	97	171965	80.0	76.2	
169 Di-n-butyl phthalate	149	9.573	9.587	-0.014	100	1448065	80.0	76.0	
176 Fluoranthene	202	10.385	10.399	-0.014	100	1382104	80.0	72.5	
180 Pyrene	202	10.711	10.730	-0.019	99	1452716	80.0	76.2	
187 Butyl benzyl phthalate	149	11.806	11.825	-0.019	95	673253	80.0	78.5	
190 3,3'-Dichlorobenzidine	252	12.950	12.974	-0.024	99	455762	80.0	73.2	
192 Benzo[a]anthracene	228	12.992	13.016	-0.024	100	1292450	80.0	73.2	
193 Bis(2-ethylhexyl) phthalat	149	13.153	13.177	-0.024	99	906467	80.0	76.5	
194 Chrysene	228	13.078	13.102	-0.024	99	1288750	80.0	73.0	
197 Di-n-octyl phthalate	149	14.932	14.955	-0.023	100	1607783	80.0	76.6	
198 Benzo[b]fluoranthene	252	15.824	15.853	-0.029	99	1211762	80.0	74.8	
200 Benzo[k]fluoranthene	252	15.898	15.928	-0.030	99	1259413	80.0	77.2	
201 Benzo[e]pyrene	252	16.593	16.628	-0.035	97	1160252	80.0	76.2	
202 Benzo[a]pyrene	252	16.743	16.772	-0.030	99	1204846	80.0	75.1	
208 Indeno[1,2,3-cd]pyrene	276	19.991	20.031	-0.040	74	1022753	80.0	72.8	
209 Dibenz(a,h)anthracene	278	20.081	20.116	-0.035	72	1021100	80.0	73.9	
210 Benzo[g,h,i]perylene	276	20.728	20.762	-0.034	99	1059382	80.0	73.7	
S 219 Total Cresols	108				0			144.5	
S 220 Methyl Phenols, Total	108				0			144.5	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MS-HSLACCV080_00186

Amount Added: 200.00

Units: uL

Report Date: 17-May-2019 22:14:58

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33135.D

Injection Date: 16-May-2019 03:06:30

Instrument ID: SMS_D

Operator ID: WICKHAMM

Lims ID: CCVC HSL

Worklist Smp#: 24

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

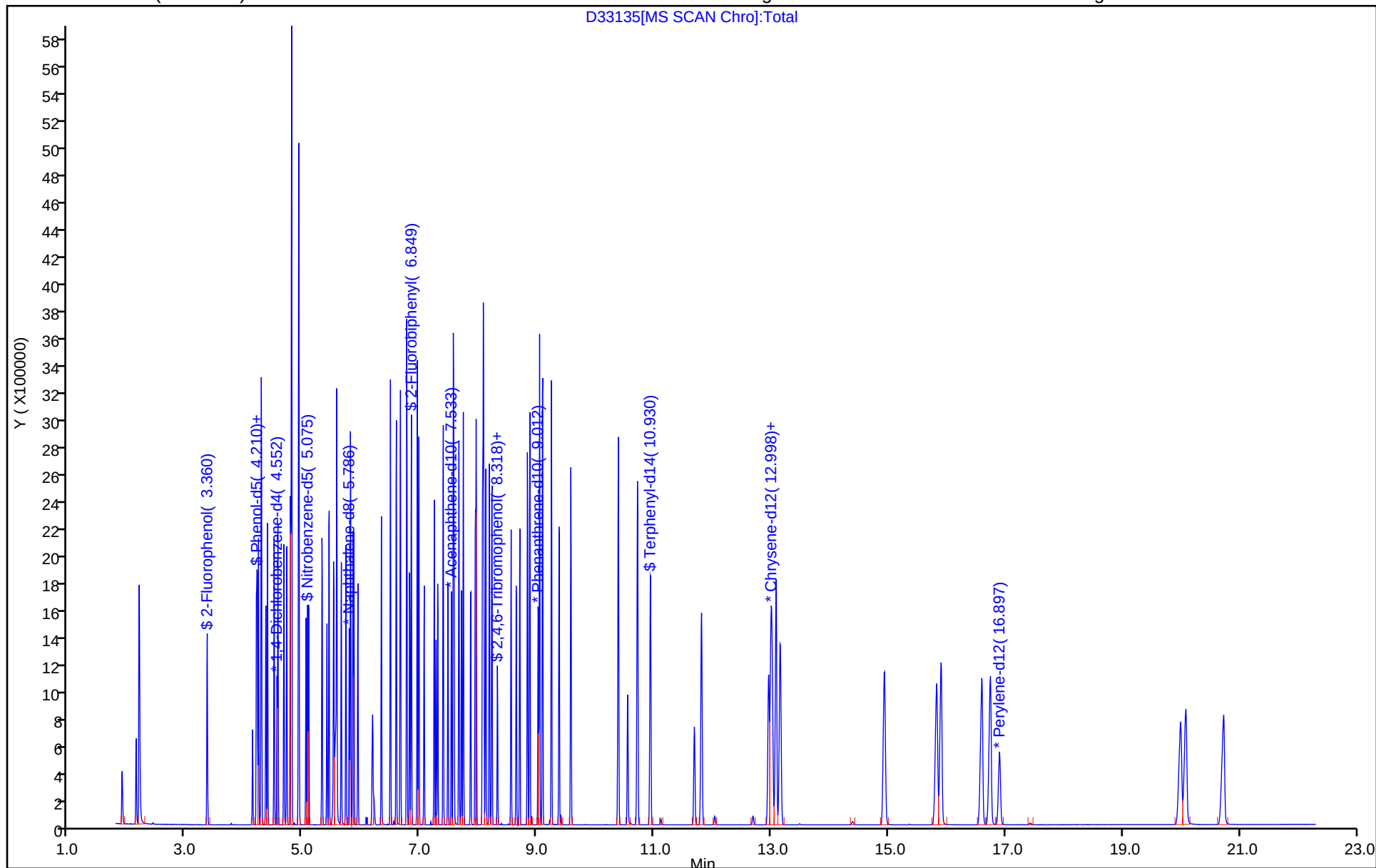
ALS Bottle#: 23

Method: SMSD_8270C

Limit Group: MSSV - 8270C_625

Column: VF-5ms (0.50 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Eurofins TestAmerica, Denver

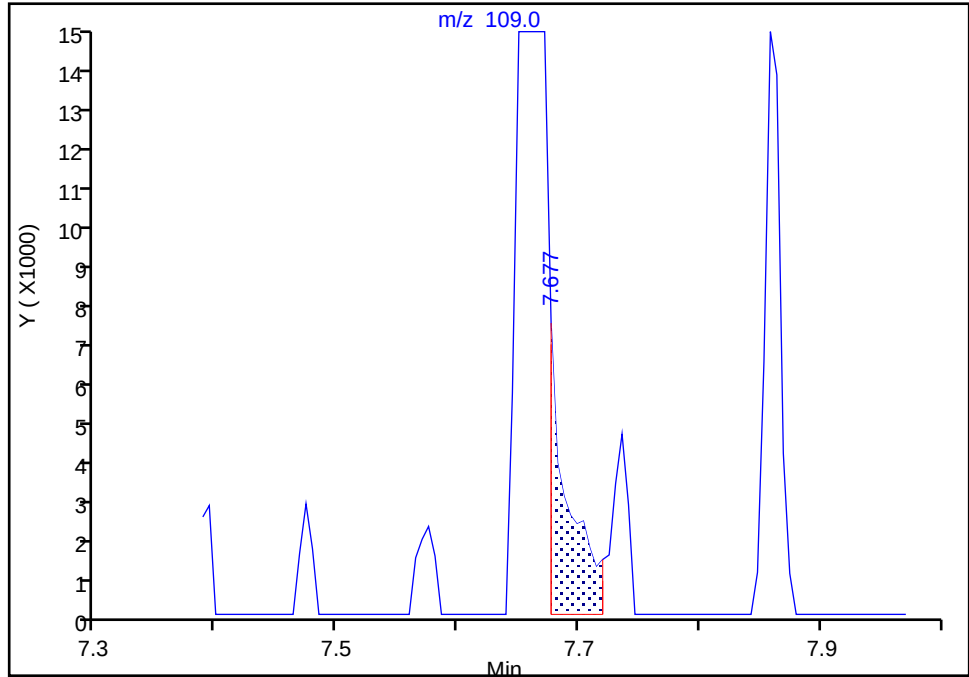
Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33135.D
Injection Date: 16-May-2019 03:06:30 Instrument ID: SMS_D
Lims ID: CCVC HSL
Client ID:
Operator ID: WICKHAMM ALS Bottle#: 23 Worklist Smp#: 24
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: SMSD_8270C Limit Group: MSSV - 8270C_625
Column: VF-5ms (0.50 mm) Detector: MS SCAN

121 4-Nitrophenol, CAS: 100-02-7

Signal: 1

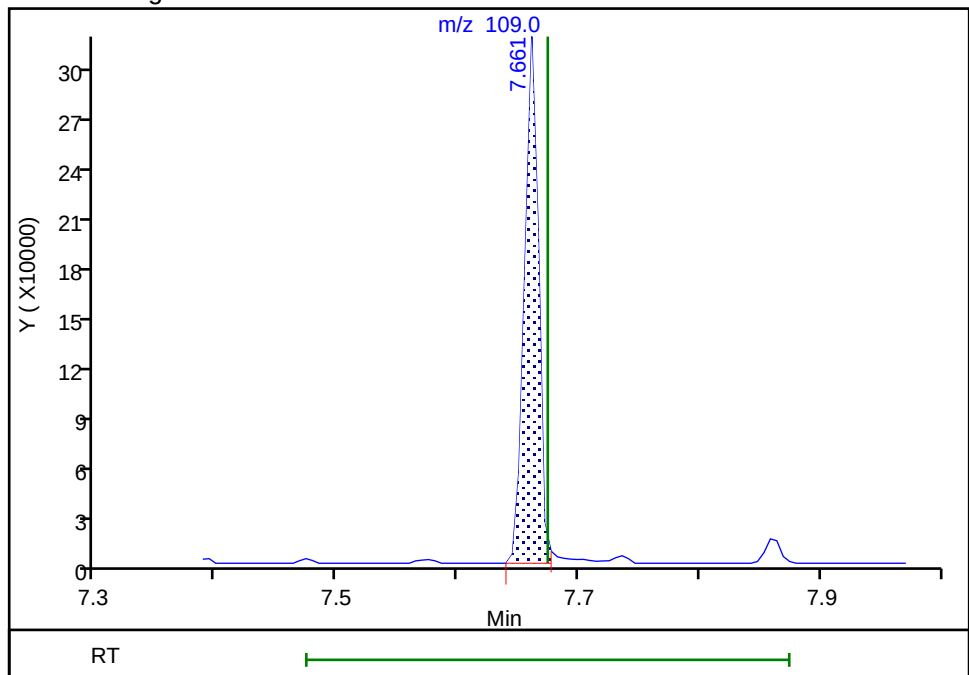
RT: 7.68
Area: 8198
Amount: 4.613015
Amount Units: ug/ml

Processing Integration Results



RT: 7.66
Area: 257320
Amount: 144.7940
Amount Units: ug/ml

Manual Integration Results



Reviewer: wickhamm, 17-May-2019 22:13:46

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32379.D
 Lims ID: DFTPP
 Client ID:
 Sample Type: DFTPP
 Inject. Date: 03-Apr-2019 07:34:30 ALS Bottle#: 1 Worklist Smp#: 2
 Injection Vol: 0.5 ul Dil. Factor: 1.0000
 Sample Info: DFTPP
 Operator ID: KIEKELD Instrument ID: SMS_D
 Method: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 03-Apr-2019 12:50:44 Calib Date: 03-Apr-2019 11:14:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32387.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0309

First Level Reviewer: kiekeld

Date: 03-Apr-2019 07:46:32

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
25 Pentachlorophenol_T	266	3.818	3.818	0.000	89	49061	NR	NR	
42 Benzidine_T	184	4.898	4.898	0.000	100	455363	NR	NR	
215 DFTPP									
216 4,4'-DDE	246	5.031	5.031	0.000	1	27	NR	NR	a
217 4,4'-DDD	235	5.337	5.337	0.000	1	343	NR	NR	a
218 4,4'-DDT	235	5.557	5.557	0.000	98	153421	NR	NR	a

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Review Flags

a - User Assigned ID

Reagents:

MS-DFTPP_00049

Amount Added: 200.00

Units: uL

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32379.D

Injection Date: 03-Apr-2019 07:34:30

Instrument ID: SMS_D

Lims ID: DFTPP

Client ID:

Operator ID: KIEKELD

ALS Bottle#: 1 Worklist Smp#: 2

Injection Vol: 0.5 ul

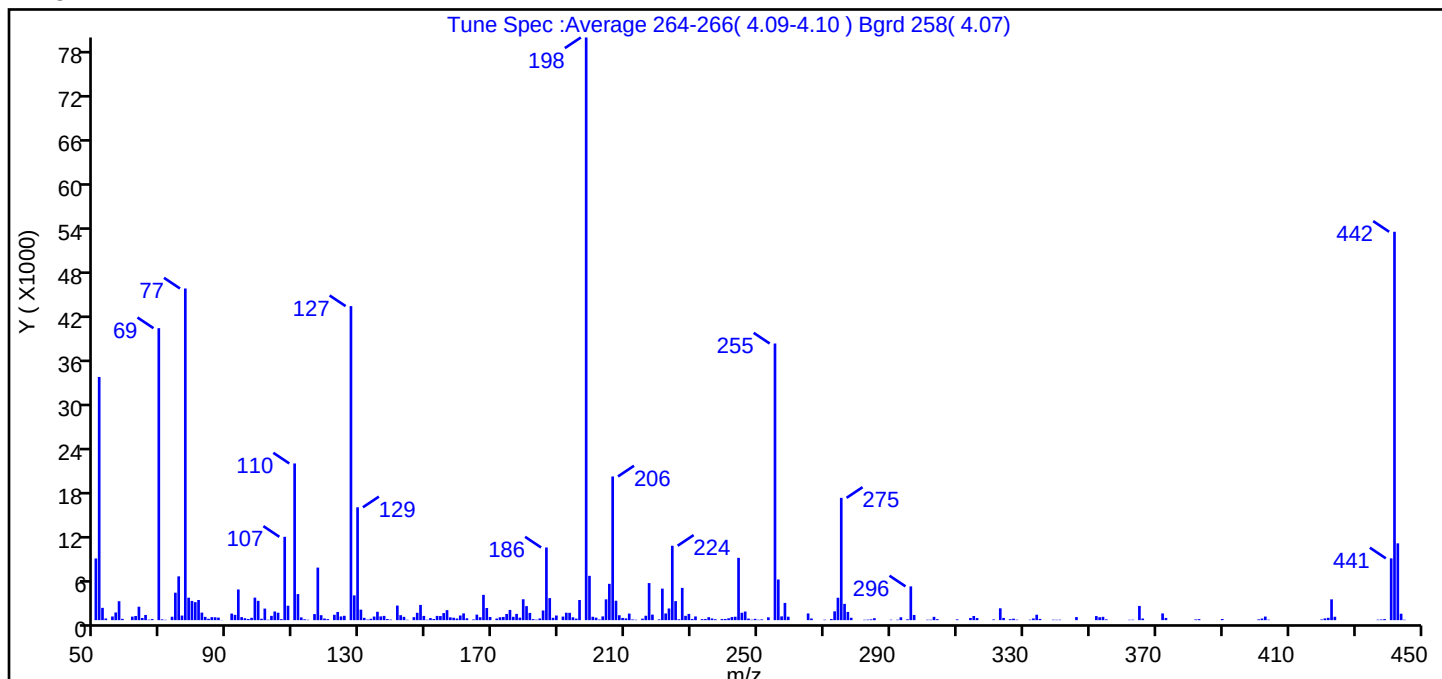
Dil. Factor: 1.0000

Method: SMSD_8270C

Limit Group: MSSV - 8270C_625

Tune Method: DFTPP Method 8270

215 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	Base peak, 100% relative abundance	100.0
51	30-60% of mass 198	41.7
68	<2% of mass 69	0.0 (0.0)
69	Present	50.1
70	<2% of mass 69	0.1 (0.3)
127	40-60% of mass 198	53.9
197	<1% of mass 198	0.0
199	5-9% of mass 198	7.6
275	10-30% of mass 198	21.0
365	>1% of mass 198	2.4
441	Present but less than mass 443	10.6 (80.4)
442	>40% of mass 198	66.7
443	17-23% of mass 442	13.2 (19.8)

Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\32379.D\SMSD_8270C.rslt\spectra.d
Injection Date: 03-Apr-2019 07:34:30
Spectrum: Tune Spec :Average 264-266(4.09-4.10) Bgrd 258(4.07)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 259

m/z	Y	m/z	Y	m/z	Y	m/z	Y
50.00	8396	125.00	592	196.00	2742	277.00	1120
51.00	33104	127.00	42744	198.00	79312	278.00	322
52.00	1673	128.00	3371	199.00	6031	282.00	54
53.00	225	129.00	15362	200.00	458	283.00	70
55.00	500	130.00	1428	201.00	334	284.00	108
56.00	1046	131.00	312	202.00	88	285.00	262
57.00	2576	132.00	77	203.00	509	290.00	58
58.00	176	133.00	185	204.00	2831	292.00	58
61.00	479	134.00	487	205.00	4943	293.00	394
62.00	568	135.00	1138	206.00	19560	295.00	111
63.00	1827	136.00	507	207.00	2641	296.00	4598
64.00	294	137.00	579	208.00	669	297.00	708
65.00	706	138.00	147	209.00	300	301.00	60
66.00	66	139.00	74	210.00	243	302.00	63
67.00	145	141.00	1983	211.00	892	303.00	449
69.00	39744	142.00	675	212.00	94	304.00	128
70.00	106	143.00	451	213.00	54	310.00	107
71.00	44	144.00	54	215.00	201	314.00	295
73.00	463	146.00	407	216.00	598	315.00	563
74.00	3737	147.00	1002	217.00	5046	316.00	284
75.00	5960	148.00	2070	218.00	749	321.00	97
76.00	624	149.00	575	220.00	97	323.00	1611
77.00	45144	150.00	57	221.00	4289	324.00	302
78.00	3054	151.00	278	222.00	908	326.00	131
79.00	2617	152.00	155	223.00	1588	327.00	200
80.00	2449	153.00	578	224.00	10124	328.00	62
81.00	2742	154.00	557	225.00	2589	332.00	62
82.00	1023	155.00	962	226.00	119	333.00	227
83.00	447	156.00	1360	227.00	4394	334.00	738
84.00	189	157.00	382	228.00	584	335.00	165
85.00	407	158.00	329	229.00	845	339.00	62
86.00	392	159.00	224	230.00	163	340.00	51
87.00	344	160.00	631	231.00	504	341.00	60

Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\32379.D\SMSD_8270C.rslt\spectra.d

Injection Date: 03-Apr-2019 07:34:30

Spectrum: Tune Spec :Average 264-266(4.09-4.10) Bgrd 258(4.07)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 259

m/z	Y	m/z	Y	m/z	Y	m/z	Y
88.00	22	161.00	921	233.00	138	346.00	420
91.00	893	162.00	251	234.00	147	352.00	556
92.00	720	164.00	96	235.00	400	353.00	395
93.00	4174	165.00	752	236.00	225	354.00	451
94.00	412	166.00	398	237.00	122	355.00	108
95.00	263	167.00	3441	239.00	150	362.00	51
96.00	157	168.00	1649	240.00	162	363.00	60
97.00	317	169.00	429	241.00	254	365.00	1936
98.00	3063	171.00	220	242.00	417	366.00	222
99.00	2629	172.00	390	243.00	463	372.00	917
100.00	189	173.00	433	244.00	8481	373.00	303
101.00	1570	174.00	840	245.00	1002	382.00	95
102.00	59	175.00	1390	246.00	1174	383.00	141
103.00	582	176.00	453	247.00	213	390.00	154
104.00	1178	177.00	851	248.00	64	401.00	102
105.00	1009	178.00	340	249.00	177	402.00	215
106.00	134	179.00	2845	250.00	55	403.00	487
107.00	11342	180.00	1906	251.00	105	404.00	58
108.00	1966	181.00	985	253.00	381	420.00	91
110.00	21328	182.00	140	255.00	37656	421.00	234
111.00	3548	183.00	65	256.00	5533	422.00	318
112.00	371	184.00	228	257.00	513	423.00	2832
113.00	118	185.00	1314	258.00	2346	424.00	459
114.00	56	186.00	9891	259.00	468	437.00	68
116.00	825	187.00	2998	265.00	909	438.00	86
117.00	7154	188.00	321	266.00	223	439.00	144
118.00	674	189.00	633	270.00	63	441.00	8411
119.00	219	191.00	486	272.00	160	442.00	52864
120.00	138	192.00	1012	273.00	1199	443.00	10456
122.00	732	193.00	997	274.00	3048	444.00	876
123.00	1113	194.00	393	275.00	16648	445.00	57
124.00	503	195.00	212	276.00	2216		

Report Date: 03-Apr-2019 12:50:44

Chrom Revision: 2.3 24-Mar-2019 20:11:04

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32379.D

Injection Date: 03-Apr-2019 07:34:30

Instrument ID: SMS_D

Operator ID: KIEKELD

Lims ID: DFTPP

Worklist Smp#: 2

Client ID:

Injection Vol: 0.5 ul

Dil. Factor: 1.0000

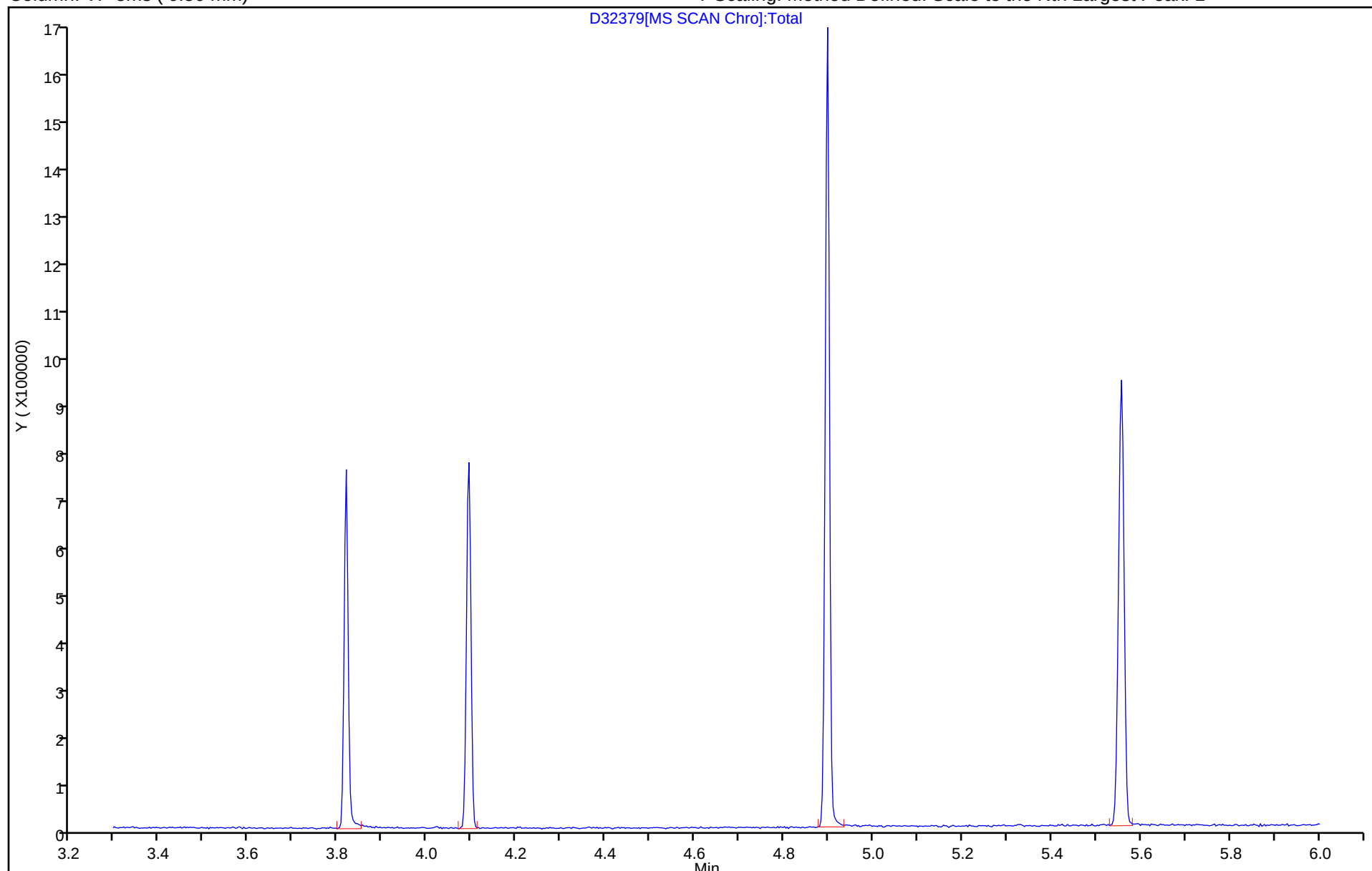
ALS Bottle#: 1

Method: SMSD_8270C

Limit Group: MSSV - 8270C_625

Column: VF-5ms (0.50 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32379.D
Injection Date: 03-Apr-2019 07:34:30 Instrument ID: SMS_D
Lims ID: DFTPP
Client ID:
Operator ID: KIEKELD ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 0.5 ul Dil. Factor: 1.0000
Method: SMSD_8270C Limit Group: MSSV - 8270C_625

218 4,4'-DDT, Detector: MS SCAN

SW-846 Method

%Breakdown =
(Area Breakdown Cpnds/
Total Area Breakdown Cpnds) * 100

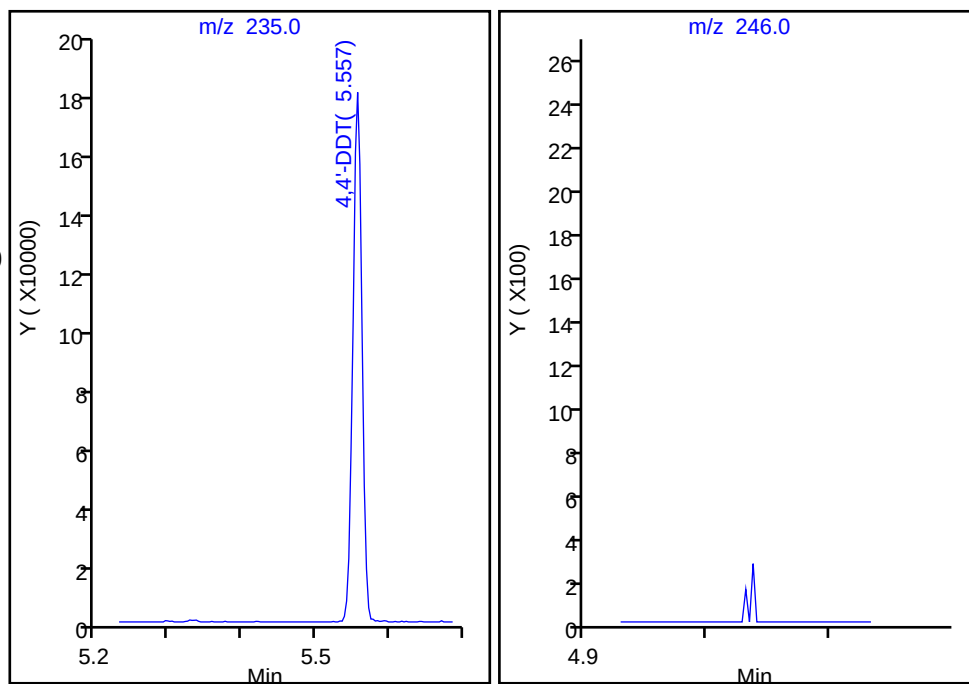
218 4,4'-DDT, Area = 153421

217 4,4'-DDD, Area = 343

216 4,4'-DDE, Area = 27

%Breakdown: 0.24%, <= 20.00%

Passed



TestAmerica Denver

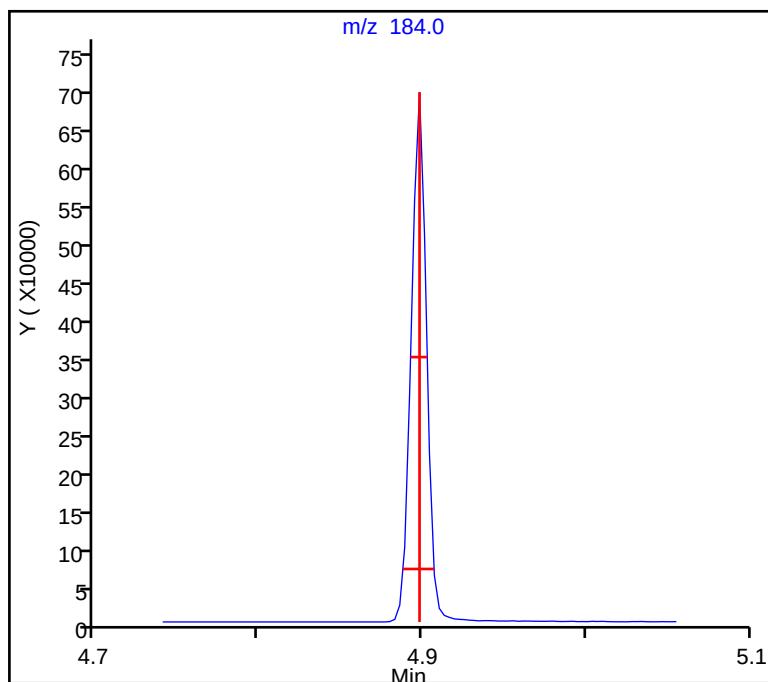
Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32379.D
Injection Date: 03-Apr-2019 07:34:30 Instrument ID: SMS_D
Lims ID: DFTPP
Client ID:
Operator ID: KIEKELD ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 0.5 ul Dil. Factor: 1.0000
Method: SMSD_8270C Limit Group: MSSV - 8270C_625

42 Benzidine_T, Detector: MS SCAN

Peak Tailing Factor =
BackWidth/FrontWidth @ 10% Peak Height

Back Width = 0.009 (min.)
Front Width = 0.010 (min.)

Tailing Factor = 0.9, Max. Tailing < 3.00
Passed



TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190402-80465.b\D32379.D
Injection Date: 03-Apr-2019 07:34:30 Instrument ID: SMS_D
Lims ID: DFTPP
Client ID:
Operator ID: KIEKELD ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 0.5 ul Dil. Factor: 1.0000
Method: SMSD_8270C Limit Group: MSSV - 8270C_625

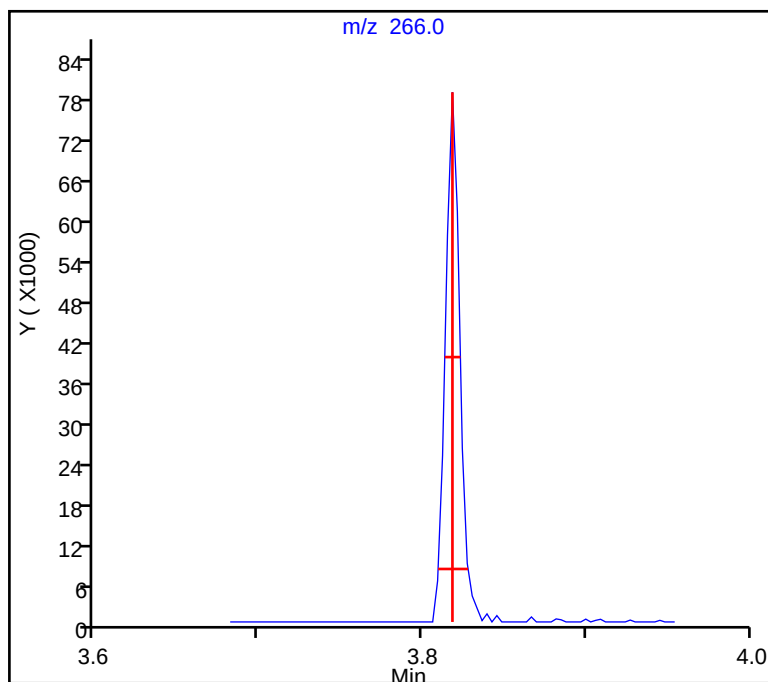
25 Pentachlorophenol_T, Detector: MS SCAN

Peak Tailing Factor =
BackWidth/FrontWidth @ 10% Peak Height

Back Width = 0.010 (min.)

Front Width = 0.009 (min.)

Tailing Factor = 1.1, Max. Tailing < 5.00
Passed



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33113.D
 Lims ID: DFTPP
 Client ID:
 Sample Type: DFTPP
 Inject. Date: 15-May-2019 16:26:30 ALS Bottle#: 1 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: DFTPP
 Operator ID: WICKHAMM Instrument ID: SMS_D
 Method: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 17-May-2019 22:14:16 Calib Date: 29-Apr-2019 12:43:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190429-81391.b\D32840.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 15-May-2019 16:53:44

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
25 Pentachlorophenol_T	266	3.687	3.687	0.000	85	36040	NR	NR	
42 Benzdine_T	184	4.761	4.761	0.000	99	382484	NR	NR	
215 DFTPP									
216 4,4'-DDE	246		4.891				ND	ND	
217 4,4'-DDD	235		5.182				ND	ND	
218 4,4'-DDT	235	5.387	5.387	0.000	96	136416	NR	NR	a

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

ND - Not Detected or Marked ND

Review Flags

a - User Assigned ID

Reagents:

MS-DFTPP_00049

Amount Added: 200.00

Units: uL

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33113.D

Injection Date: 15-May-2019 16:26:30

Instrument ID: SMS_D

Lims ID: DFTPP

Client ID:

Operator ID: WICKHAMM

ALS Bottle#: 1 Worklist Smp#: 2

Injection Vol: 1.0 ul

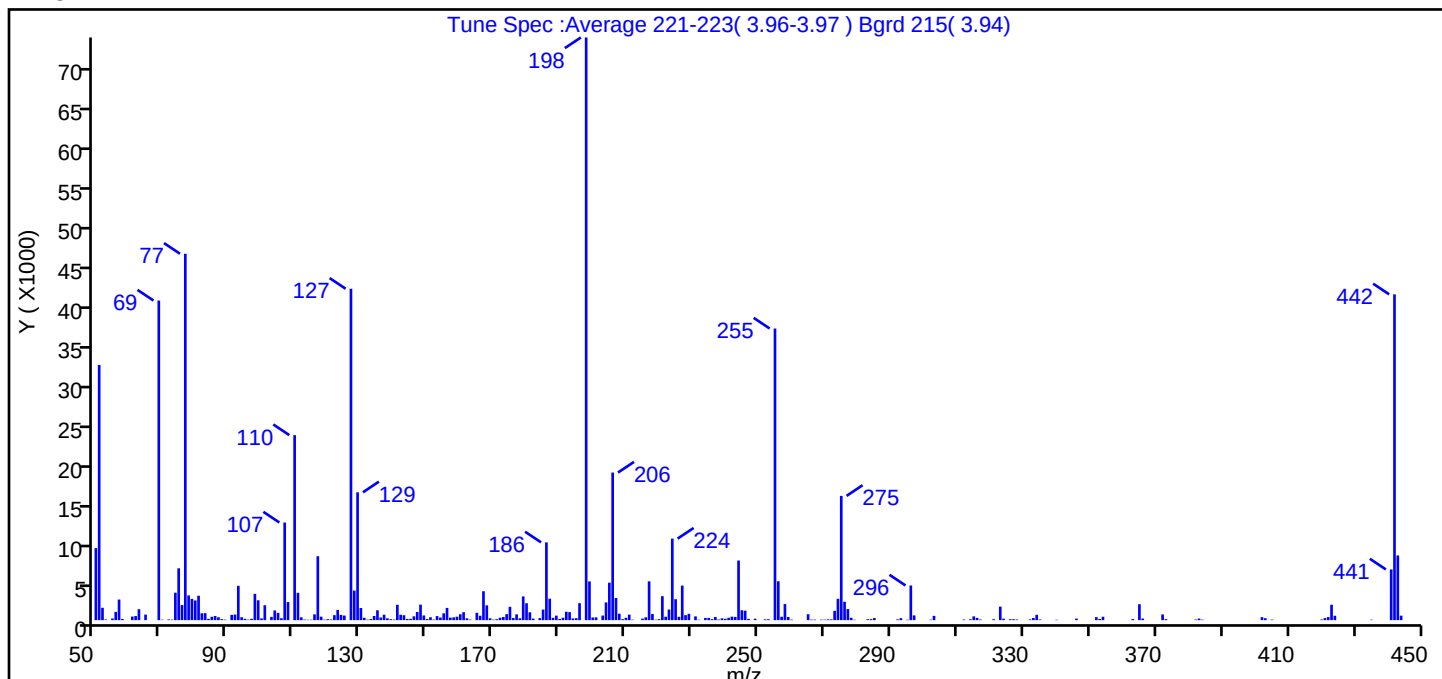
Dil. Factor: 1.0000

Method: SMSD_8270C

Limit Group: MSSV - 8270C_625

Tune Method: DFTPP Method 8270

215 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	Base peak, 100% relative abundance	100.0
51	30-60% of mass 198	43.8
68	<2% of mass 69	0.0 (0.0)
69	Present	54.9
70	<2% of mass 69	0.1 (0.1)
127	40-60% of mass 198	56.9
197	<1% of mass 198	0.0
199	5-9% of mass 198	6.6
275	10-30% of mass 198	21.3
365	>1% of mass 198	2.7
441	Present but less than mass 443	8.7 (78.4)
442	>40% of mass 198	55.9
443	17-23% of mass 442	11.1 (19.9)

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33113.D\SMSD_8270C.rslt\spectra.d
Injection Date: 15-May-2019 16:26:30
Spectrum: Tune Spec :Average 221-223(3.96-3.97) Bgrd 215(3.94)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 252

m/z	Y	m/z	Y	m/z	Y	m/z	Y
50.00	9038	124.00	655	190.00	143	267.00	66
51.00	32016	125.00	574	191.00	302	269.00	60
52.00	1551	127.00	41584	192.00	1055	270.00	59
53.00	85	128.00	3708	193.00	1007	271.00	101
55.00	208	129.00	16040	194.00	210	272.00	95
56.00	1035	130.00	1523	195.00	246	273.00	1169
57.00	2586	131.00	299	196.00	2134	274.00	2675
58.00	142	132.00	67	198.00	73112	275.00	15593
61.00	448	133.00	134	199.00	4859	276.00	2306
62.00	514	134.00	519	200.00	334	277.00	1394
63.00	1372	135.00	1238	201.00	349	278.00	299
65.00	694	136.00	331	203.00	577	279.00	53
69.00	40104	137.00	682	204.00	2225	283.00	115
70.00	54	138.00	228	205.00	4701	284.00	124
72.00	87	139.00	116	206.00	18520	285.00	262
73.00	61	140.00	73	207.00	2781	292.00	94
74.00	3441	141.00	1924	208.00	804	293.00	248
75.00	6504	142.00	672	209.00	124	295.00	56
76.00	1895	143.00	616	210.00	298	296.00	4351
77.00	45976	144.00	154	211.00	692	297.00	594
78.00	3101	145.00	163	212.00	56	302.00	64
79.00	2667	146.00	479	215.00	187	303.00	534
80.00	2467	147.00	1023	216.00	358	312.00	80
81.00	3059	148.00	1947	217.00	4868	314.00	110
82.00	864	149.00	586	218.00	769	315.00	474
83.00	876	150.00	142	219.00	53	316.00	282
84.00	157	151.00	371	220.00	125	317.00	82
85.00	420	152.00	68	221.00	3009	321.00	117
86.00	523	153.00	510	222.00	429	323.00	1696
87.00	362	154.00	329	223.00	1329	324.00	184
88.00	124	155.00	859	224.00	10230	326.00	116
89.00	61	156.00	1534	225.00	2629	327.00	115
91.00	661	157.00	316	226.00	417	328.00	76

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\33113.D\SMSD_8270C.rslt\spectra.d

Injection Date: 15-May-2019 16:26:30

Spectrum: Tune Spec :Average 221-223(3.96-3.97) Bgrd 215(3.94)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 252

m/z	Y	m/z	Y	m/z	Y	m/z	Y
92.00	701	158.00	351	227.00	4334	332.00	90
93.00	4306	159.00	429	228.00	628	333.00	268
94.00	367	160.00	741	229.00	796	334.00	666
95.00	167	161.00	1001	231.00	473	335.00	79
96.00	62	162.00	223	232.00	50	340.00	50
97.00	169	163.00	69	234.00	277	346.00	195
98.00	3300	165.00	925	235.00	289	352.00	379
99.00	2492	166.00	552	236.00	124	353.00	149
100.00	219	167.00	3627	237.00	398	354.00	425
101.00	1869	168.00	1856	238.00	81	363.00	135
103.00	407	169.00	231	239.00	230	365.00	2000
104.00	1217	170.00	61	240.00	167	366.00	197
105.00	912	171.00	118	241.00	298	372.00	717
106.00	239	172.00	306	242.00	436	373.00	128
107.00	12252	173.00	394	243.00	403	382.00	77
108.00	2275	174.00	752	244.00	7478	383.00	197
110.00	23216	175.00	1673	245.00	1243	384.00	61
111.00	3429	176.00	265	246.00	1186	402.00	376
112.00	355	177.00	726	247.00	158	403.00	242
113.00	68	178.00	230	249.00	179	405.00	69
114.00	50	179.00	2976	252.00	98	420.00	83
115.00	53	180.00	2123	253.00	118	421.00	253
116.00	724	181.00	986	255.00	36592	422.00	388
117.00	8023	182.00	198	256.00	4881	423.00	1934
118.00	435	184.00	252	257.00	425	424.00	549
119.00	59	185.00	1328	258.00	2016	435.00	54
120.00	123	186.00	9760	259.00	397	441.00	6363
121.00	83	187.00	2690	260.00	66	442.00	40880
122.00	626	188.00	290	265.00	739	443.00	8115
123.00	1277	189.00	567	266.00	67	444.00	560

Report Date: 17-May-2019 22:14:16

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33113.D

Injection Date: 15-May-2019 16:26:30

Instrument ID: SMS_D

Operator ID: WICKHAMM

Lims ID: DFTPP

Worklist Smp#: 2

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

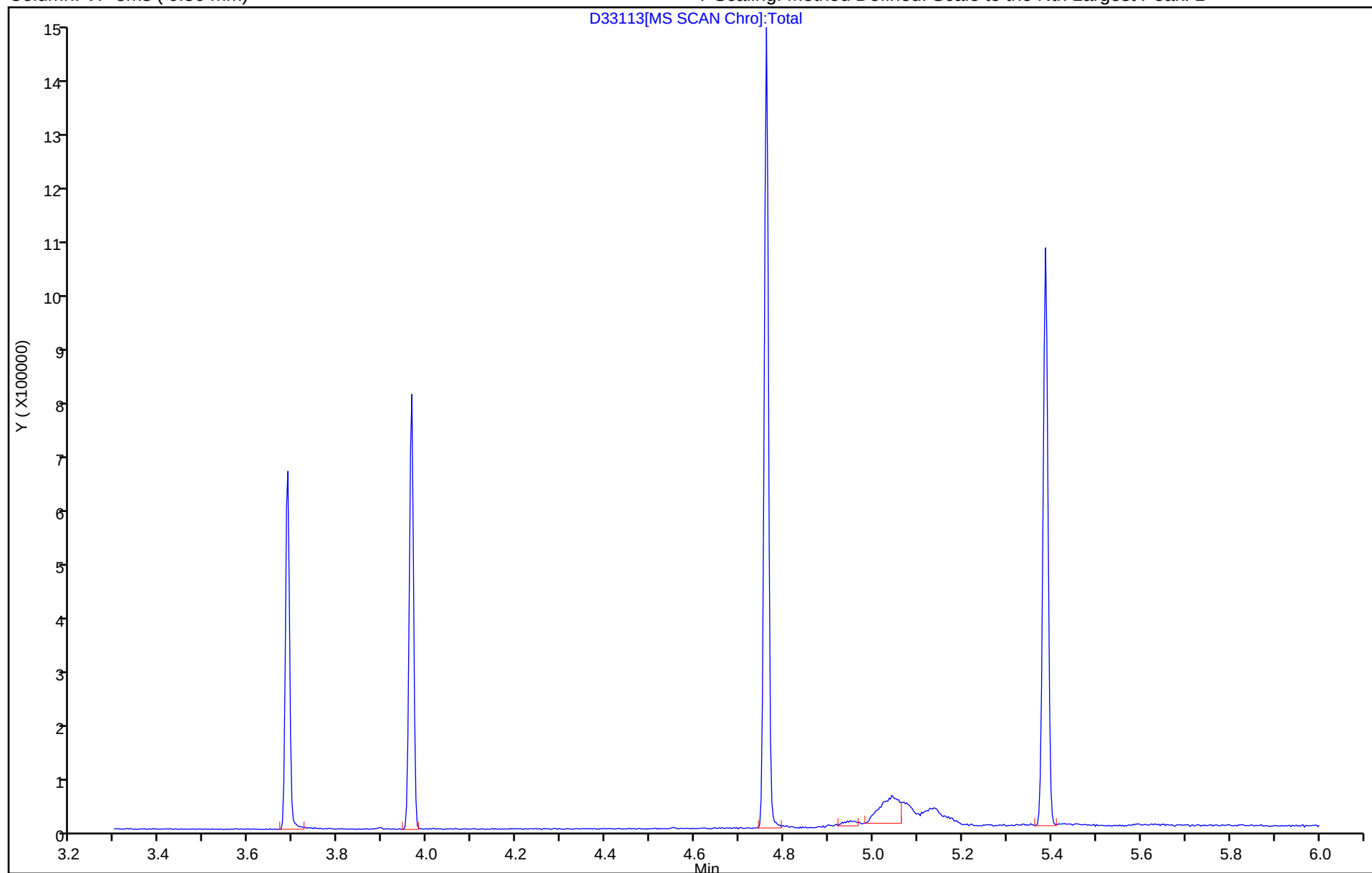
ALS Bottle#: 1

Method: SMSD_8270C

Limit Group: MSSV - 8270C_625

Column: VF-5ms (0.50 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33113.D
Injection Date: 15-May-2019 16:26:30 Instrument ID: SMS_D
Lims ID: DFTPP
Client ID:
Operator ID: WICKHAMM ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: SMSD_8270C Limit Group: MSSV - 8270C_625

218 4,4'-DDT, Detector: MS SCAN

SW-846 Method

%Breakdown =
(Area Breakdown Cpnds/
Total Area Breakdown Cpnds) * 100

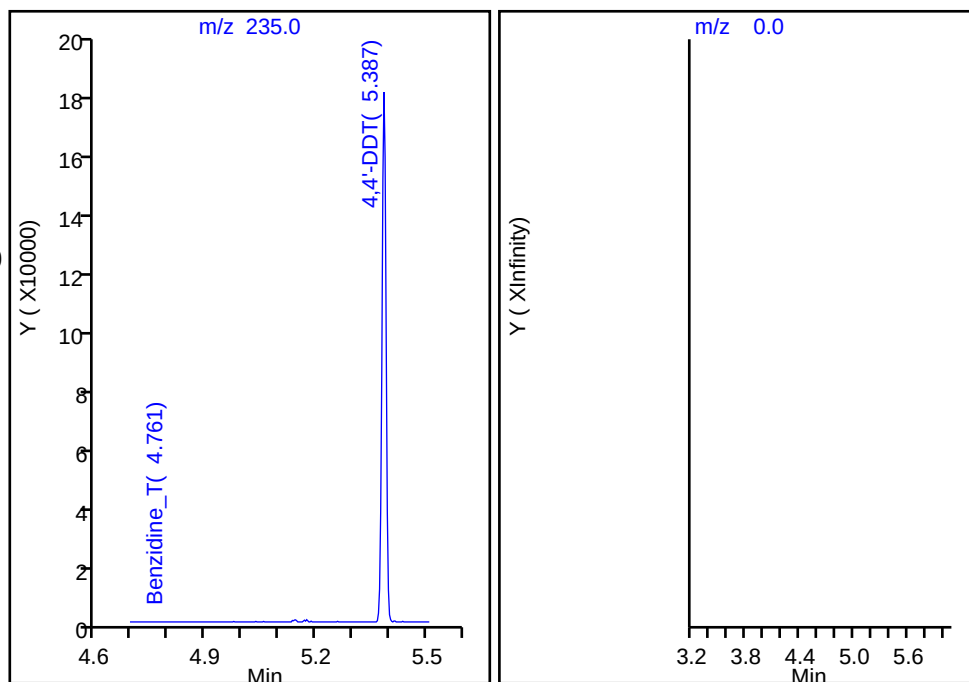
218 4,4'-DDT, Area = 136416

217 4,4'-DDD, Area = 0

216 4,4'-DDE, Area = 0

%Breakdown: 0.00%, <= 20.00%

Passed



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33113.D
Injection Date: 15-May-2019 16:26:30 Instrument ID: SMS_D
Lims ID: DFTPP
Client ID:
Operator ID: WICKHAMM
Injection Vol: 1.0 ul
Method: SMSD_8270C

ALS Bottle#: 1 Worklist Smp#: 2
Dil. Factor: 1.0000
Limit Group: MSSV - 8270C_625

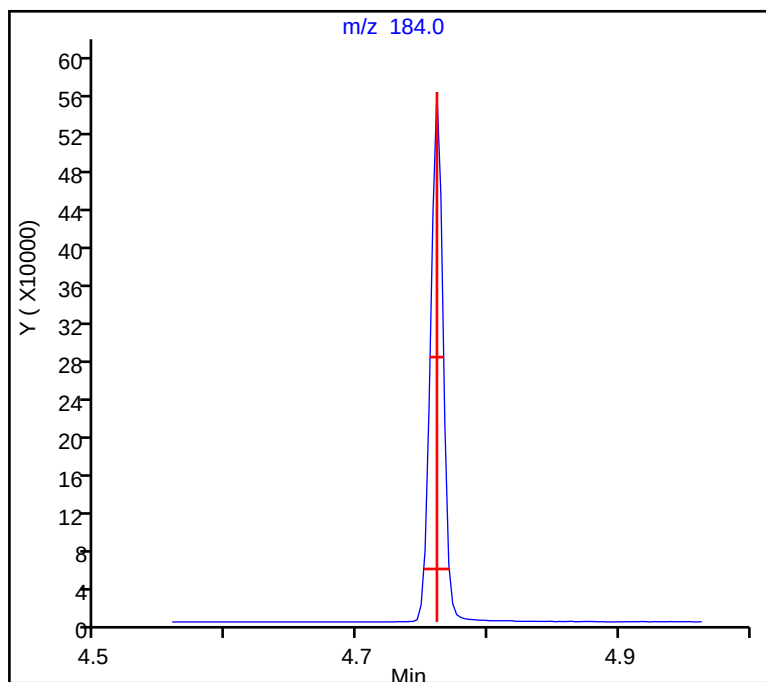
42 Benzidine_T, Detector: MS SCAN

Peak Tailing Factor =
BackWidth/FrontWidth @ 10% Peak Height

Back Width = 0.009 (min.)

Front Width = 0.010 (min.)

Tailing Factor = 0.9, Max. Tailing < 3.00
Passed



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33113.D
Injection Date: 15-May-2019 16:26:30 Instrument ID: SMS_D
Lims ID: DFTPP
Client ID:
Operator ID: WICKHAMM
Injection Vol: 1.0 ul
Method: SMSD_8270C

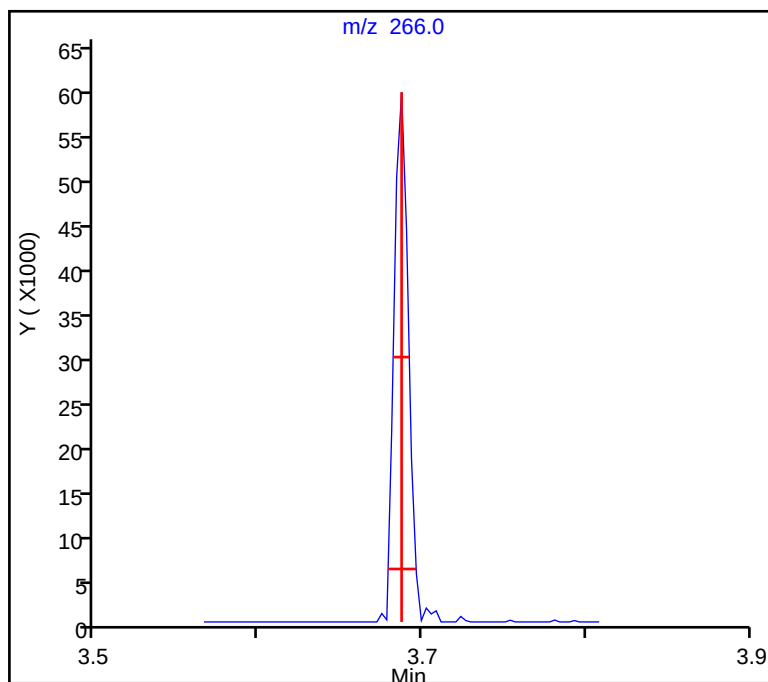
ALS Bottle#: 1 Worklist Smp#: 2
Dil. Factor: 1.0000
Limit Group: MSSV - 8270C_625

25 Pentachlorophenol_T, Detector: MS SCAN

Peak Tailing Factor =
BackWidth/FrontWidth @ 10% Peak Height

Back Width = 0.009 (min.)
Front Width = 0.008 (min.)

Tailing Factor = 1.1, Max. Tailing < 5.00
Passed



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: MB 280-456902/1-A

Matrix: Water Lab File ID: D33119.D

Analysis Method: 8270D Date Collected: _____

Extract. Method: 3520C Date Extracted: 05/03/2019 12:42

Sample wt/vol: 1000(mL) Date Analyzed: 05/15/2019 19:18

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: _____ GPC Cleanup: (Y/N) N

Analysis Batch No.: 458321 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
95-95-4	2,4,5-Trichlorophenol	4.4	U	20	4.4	2.1
88-06-2	2,4,6-Trichlorophenol	1.0	U	20	1.0	0.29
120-83-2	2,4-Dichlorophenol	2.0	U	10	2.0	0.64
105-67-9	2,4-Dimethylphenol	2.0	U	10	2.0	0.58
51-28-5	2,4-Dinitrophenol	30	U	80	30	10
121-14-2	2,4-Dinitrotoluene	4.4	U	20	4.4	1.7
606-20-2	2,6-Dinitrotoluene	4.4	U	20	4.4	1.9
95-57-8	2-Chlorophenol	4.4	U	10	4.4	2.0
95-48-7	2-Methylphenol	2.0	U	10	2.0	0.98
88-75-5	2-Nitrophenol	1.0	U	20	1.0	0.39
15831-10-4	3 & 4 Methylphenol	0.50	U	20	0.50	0.25
534-52-1	4,6-Dinitro-2-methylphenol	8.8	U	80	8.8	4.0
59-50-7	4-Chloro-3-methylphenol	5.0	U	20	5.0	2.4
100-02-7	4-Nitrophenol	4.0	U	50	4.0	1.2
117-81-7	Bis(2-ethylhexyl) phthalate	2.0	U	10	2.0	0.56
85-68-7	Butyl benzyl phthalate	2.0	U	20	2.0	1.0
84-66-2	Diethyl phthalate	1.0	U	20	1.0	0.38
131-11-3	Dimethyl phthalate	0.50	U	20	0.50	0.21
84-74-2	Di-n-butyl phthalate	4.4	U	20	4.4	1.2
117-84-0	Di-n-octyl phthalate	1.0	U	20	1.0	0.35
98-95-3	Nitrobenzene	2.0	U	20	2.0	0.81
87-86-5	Pentachlorophenol	60	U	80	60	20
108-95-2	Phenol	4.4	U	10	4.4	2.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
118-79-6	2,4,6-Tribromophenol (Surr)	82		43-140
321-60-8	2-Fluorobiphenyl	82		44-119
367-12-4	2-Fluorophenol (Surr)	83		19-119
4165-60-0	Nitrobenzene-d5 (Surr)	86		44-120
4165-62-2	Phenol-d5 (Surr)	81		10-115
1718-51-0	Terphenyl-d14 (Surr)	87		50-134

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33119.D
 Lims ID: MB 280-456902/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 15-May-2019 19:18:30 ALS Bottle#: 7 Worklist Smp#: 8
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: mb280-456902_1-a
 Operator ID: WICKHAMM Instrument ID: SMS_D
 Method: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 17-May-2019 22:14:20 Calib Date: 29-Apr-2019 12:43:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190429-81391.b\D32840.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 17-May-2019 22:02:24

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	4.550	4.554	-0.004	98	142781	40.0	40.0	
* 2 Naphthalene-d8	136	5.789	5.794	-0.005	100	550329	40.0	40.0	
* 3 Acenaphthene-d10	164	7.536	7.541	-0.005	98	354290	40.0	40.0	
* 4 Phenanthrene-d10	188	9.021	9.026	-0.005	99	664104	40.0	40.0	
* 5 Chrysene-d12	240	13.022	13.043	-0.021	82	649159	40.0	40.0	
* 6 Perylene-d12	264	16.911	16.932	-0.021	99	594445	40.0	40.0	
\$ 7 2-Fluorophenol	112	3.358	3.363	-0.005	98	427517	100.0	83.3	
\$ 8 Phenol-d5	99	4.202	4.207	-0.005	98	557538	100.0	80.9	
\$ 9 Nitrobenzene-d5	82	5.073	5.078	-0.005	95	520681	100.0	85.9	
\$ 10 2,4,6-Trichlorophenol-d2	198		6.858					ND	
\$ 11 2-Fluorobiphenyl	172	6.852	6.857	-0.005	98	922577	100.0	82.2	
\$ 12 2,4,6-Tribromophenol	330	8.321	8.331	-0.010	90	116869	100.0	82.1	
\$ 13 Terphenyl-d14	244	10.944	10.949	-0.005	100	1146315	100.0	87.1	
14 Triethyl amine	86		6.858					ND	U
15 2-Ethoxyethanol	59		2.039					ND	
16 1,4-Dioxane	88		1.910					ND	
17 N-Nitrosodimethylamine	74		2.150					ND	
18 Pyridine	79		2.204					ND	
19 Dimethylformamide	73		2.600					ND	
20 2-Picoline	93		2.913					ND	
21 N-Nitrosomethylethylamine	88		2.983					ND	
22 Acrylamide	71		3.245					ND	
23 Methyl methanesulfonate	80		3.250					ND	U
24 N-Nitrosodiethylamine	102		3.619					ND	
25 Pentachlorophenol_T	266		3.687					ND	
26 Ethyl methanesulfonate	79		3.875					ND	
27 Benzaldehyde	106		4.127					ND	
28 Phenol	94		4.218					ND	
29 Phenylmercaptan	110		4.336					ND	
30 Aniline	93		4.239					ND	
31 Alpha Methyl Styrene	118		4.293					ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
32 Bis(2-chloroethyl)ether	93		4.287					ND	
33 Pentachloroethane	117		4.361					ND	
34 Methyl styrene	118	4.550	4.445	0.105	42	1722		NC	
35 n-Decane	43		4.394					ND	
36 2-Chlorophenol	128		4.367					ND	
37 1,3-Dichlorobenzene	146		4.506					ND	
38 1,4-Dichlorobenzene	146		4.576					ND	
39 Benzyl alcohol	108		4.677					ND	
40 1,2-Dichlorobenzene	146		4.725					ND	
41 2-Methylphenol	108		4.789					ND	
42 Benzidine_T	184		4.761					ND	
43 2,2'-oxybis[1-chloropropan	45		4.800					ND	
44 Indene	116		4.805					ND	
45 3-Methylphenol	108		4.934					ND	
46 3 & 4 Methylphenol	108		4.934					ND	
47 4-Methylphenol	108		4.934					ND	
48 N-Nitrosodi-n-propylamine	70		4.923					ND	
49 N-Nitrosopyrrolidine	100		4.965					ND	
50 Acetophenone	105		4.934					ND	
51 N-Nitrosomorpholine	116		5.002					ND	
52 2-Toluidine	106		5.034					ND	
53 Hexachloroethane	117		5.051					ND	
54 Nitrobenzene	77		5.099					ND	
55 Triethyl phosphate	99		5.282					ND	
56 N-Nitrosopiperidine	114		5.307					ND	
57 Isophorone	82		5.329					ND	
58 4-Methylacetophenone	119		5.330					ND	
59 2-Nitrophenol	139		5.409					ND	
60 2,4-Dimethylphenol	107		5.446					ND	
61 Benzyl dichloride	125		5.539					ND	
62 o,o',o''-Triethylphosphoro	198		5.563					ND	
63 Bis(2-chloroethoxy)methane	93		5.527					ND	
64 Benzoic acid	105		5.580					ND	
65 3,5-Dimethylphenol	107		5.580					ND	
66 alpha,alpha-Dimethyl phene	58		5.718					ND	
67 2,4-Xylidine	121		5.733					ND	
68 2,4-Dichlorophenol	162		5.655					ND	
69 o-Anisidine	80		5.771					ND	
70 1,2,4-Trichlorobenzene	180		5.735					ND	
71 Alpha-Terpineol	59		5.923					ND	
72 Naphthalene	128		5.815					ND	
73 4-Chloroaniline	127		5.858					ND	
74 2,6-Dichlorophenol	162		5.874					ND	
75 Hexachloropropene	213		5.975					ND	
76 Hexachlorobutadiene	225		5.943					ND	
77 4-chlorobenzenethiol	144		5.976					ND	
78 Quinoline	129		6.204					ND	
79 N-Nitrosodi-n-butylamine	84		6.247					ND	
80 Caprolactam	55		6.200					ND	
81 p-Phenylene diamine	108		6.263					ND	
82 5-Methyl-o-Anisidine	122		6.385					ND	
83 4-Chloro-3-methylphenol	107		6.344					ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
84 Safrole, Total	162		6.466					ND	
85 Carbofuran phenol	164		6.505					ND	
86 1,3-phenylenediamine	108		6.508					ND	
87 2-Methylnaphthalene	142		6.499					ND	
88 Phthalic anhydride	76		6.644					ND	
89 1-Methylnaphthalene	142		6.600					ND	
90 Hexachlorocyclopentadiene	237		6.664					ND	
91 1,2,4,5-Tetrachlorobenzene	216		6.670					ND	
92 Isosafrole Peak 1	162		6.754					ND	
93 Methyl 4-chlorophenyl sulf	158		6.685					ND	
94 2,4,6-Trichlorophenol	196		6.782					ND	
95 2,3-Dichlorobenzenamine	161		6.777					ND	
96 2,4,5-Trichlorophenol	196		6.825					ND	
97 1,3-Dimethyl-2,4-Dinitrobe	77		7.542					ND	
98 Isosafrole Peak 2	104		6.979					ND	
99 Toluene diamine (2,4- + 2,	122		7.034					ND	
100 1,1'-Biphenyl	154		6.958					ND	
101 1,3-Dimethyl-2,5-Dinitrobe	179		7.655					ND	
102 2-Chloronaphthalene	162		6.985					ND	
103 1-Chloronaphthalene	162		7.080					ND	
104 1,4-Dimethyl-2,3-Dinitrobe	77		7.778					ND	
105 2-Nitroaniline	65		7.076					ND	
106 1,4-Dimethyl-2,6-Dinitrobe	179		7.842					ND	
107 1,4-Dimethyl-2,5-Dinitrobe	149		7.874					ND	
108 1,4-Naphthoquinone	158		7.214					ND	
109 1,4-Dinitrobenzene	168		7.267					ND	
110 1,2-Dimethyl-3,6-Dinitrobe	179		7.943					ND	
111 Dimethyl phthalate	163		7.247					ND	
112 1,3-Dinitrobenzene	168		7.279					ND	
113 2,6-Dinitrotoluene	165		7.306					ND	
114 1,5-Dimethyl-2,4-Dinitrobe	179		8.103					ND	
115 Acenaphthylene	152		7.402					ND	
116 1,5-Dimethyl-2,3-Dinitrobe	179		8.200					ND	
117 3-Nitroaniline	138		7.482					ND	
118 1,2-Dimethyl-3,5-Dinitrobe	179		8.312					ND	
119 Acenaphthene	153		7.573					ND	
120 2,4-Dinitrophenol	184		7.589					ND	
121 4-Nitrophenol	109		7.674					ND	
122 1,2-Dimethyl-3,4-Dinitrobe	179		8.456					ND	
123 Pentachlorobenzene	250		7.786					ND	
124 2,4-Dinitrotoluene	165		7.717					ND	
125 Dibenzofuran	168		7.744					ND	
126 n-hydroxymethylphthalimide	147		7.439					ND	
127 1-Naphthylamine	143		7.887					ND	
128 1,2-Dimethyl-4,5-Dinitrobe	91		8.691					ND	
129 2,3,4,6-Tetrachlorophenol	232		7.872					ND	
130 2-Naphthylamine	143		7.967					ND	
131 Hexadecane	57		7.968					ND	
132 Diethyl phthalate	149		7.952					ND	
133 Thionazin	97		8.095					ND	
134 4-Chlorophenyl phenyl ethe	204		8.075					ND	
135 Fluorene	166		8.086					ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
136 Tributyl phosphate	99		8.231					ND	
137 N-Nitro-o-toluidine	152		8.159					ND	
138 4-Nitroaniline	138		8.096					ND	
139 4,6-Dinitro-2-methylphenol	198		8.134					ND	
140 Diphenylamine	169		8.192					ND	
141 N-Nitrosodiphenylamine	169		8.192					ND	
142 1,2-Diphenylhydrazine	77		8.235					ND	
143 Azobenzene	77		8.235					ND	
144 Sulfotepp	97		8.400					ND	
145 2,4,6 - Tribromophenol	330		8.331				ND	ND	U
146 Phenyl sulfide	186		8.390					ND	
147 Diallate Peak 1	86		8.544					ND	
148 1,3,5-Trinitrobenzene	213		8.512					ND	
149 Phorate	121		8.555					ND	
150 Phenacetin	108		8.565					ND	
151 Diallate Peak 2	86		8.635					ND	
152 4-Bromophenyl phenyl ether	248		8.561					ND	
153 Hexachlorobenzene	284		8.652					ND	
154 Dimethoate	87		8.726					ND	
155 Atrazine	200		8.716					ND	
156 n-Octadecane	85		8.881					ND	
157 Pentachlorophenol	266		8.844					ND	
158 4-Aminobiphenyl	169		8.897					ND	
159 Pentachloronitrobenzene	237		8.929					ND	
160 Pronamide	173		8.950					ND	
161 Disulfoton	88		9.073					ND	
162 Dinoseb	211		9.084					ND	
163 Phenanthrene	178		9.052					ND	
164 Anthracene	178		9.101					ND	
165 Carbazole	167		9.255					ND	
166 Alachlor	188		9.384					ND	
167 Methyl parathion	109		9.452					ND	
168 Phenyl disulfide	109		9.661					ND	
169 Di-n-butyl phthalate	149		9.587					ND	
170 Diphenylsulfone	125		9.667					ND	
171 Ethyl Parathion	109		9.885					ND	
172 4-Nitroquinoline-1-oxide	190		9.938					ND	
173 Methapyrilene	97		10.024					ND	
174 Octachlorostyrene	308		10.118					ND	
175 Isodrin	193		10.302					ND	
176 Fluoranthene	202		10.399					ND	
177 4,4-Dichlorobenzil	139		10.439					ND	
178 Benzidine	184		10.556					ND	
180 Pyrene	202		10.730					ND	
181 p-chlorophenyl sulfone	159	10.944	10.893	0.051	43	14764		NC	
182 Aramite Peak 1	185		11.012					ND	
183 Aramite Peak 2	185		11.140					ND	
184 p-Dimethylamino azobenzene	120		11.301					ND	
185 Chlorobenzilate	251		11.386					ND	
186 Famphur	218		11.893					ND	
187 Butyl benzyl phthalate	149		11.825					ND	
188 3,3'-Dimethylbenzidine	212		11.931					ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
189 2-Acetylaminofluorene	181		12.471					ND	
190 3,3'-Dichlorobenzidine	252		12.974					ND	
191 4,4'-Methylene bis(2-chlor	231		13.138					ND	
192 Benzo[a]anthracene	228		13.016					ND	
193 Bis(2-ethylhexyl) phthalat	149		13.177					ND	
194 Chrysene	228		13.102					ND	
195 6-Methylchrysene	242		14.436					ND	
196 Hexachlorophene	196		16.791					ND	
197 Di-n-octyl phthalate	149		14.955					ND	
198 Benzo[b]fluoranthene	252		15.853					ND	
199 7,12-Dimethylbenz(a)anthra	256		16.055					ND	
200 Benzo[k]fluoranthene	252		15.928					ND	
201 Benzo[e]pyrene	252		16.628					ND	
202 Benzo[a]pyrene	252		16.772					ND	
203 Perylene	252		17.281					ND	
204 3-Methylcholanthrene	268		18.074					ND	
205 Tris(2,3-dibromopropyl)pho	119		18.868					ND	
206 Dibenz[a,h]acridine	279		19.650					ND	
207 Dibenz[a,i]acridine	279		19.811					ND	
208 Indeno[1,2,3-cd]pyrene	276		20.031					ND	
209 Dibenz(a,h)anthracene	278		20.116					ND	
210 Benzo[g,h,i]perylene	276		20.762					ND	
211 Dibenzo[a,e]pyrene	302		25.409					ND	
S 219 Total Cresols	108		15.341					ND	
S 220 Methyl Phenols, Total	108		15.341					ND	
S 221 Isosafrole	162		15.341					ND	
S 222 Diallate	86		15.341					ND	
S 223 Aramite, Total	185		15.341					ND	
S 224 Phthalic acid	148		19.492					ND	
212 1,2,3,4-Tetrahydronaphthal	1		0.000					ND	
213 2-Butoxyethanol	1		0.000					ND	
214 2-Phenoxyethanol	1		0.000					ND	
216 4,4'-DDE	246		4.891					ND	
217 4,4'-DDD	235		5.182					ND	
218 4,4'-DDT	235		5.387					ND	
S 225 TPAH	1		0.000					ND	

QC Flag Legend

Processing Flags

NC - Not Calibrated

ND - Not Detected or Marked ND

Review Flags

U - Marked Undetected

Reagents:

MS-IS_00015

Amount Added: 20.00

Units: uL

Run Reagent

Report Date: 17-May-2019 22:14:30

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33119.D

Injection Date: 15-May-2019 19:18:30

Instrument ID: SMS_D

Operator ID: WICKHAMM

Lims ID: MB 280-456902/1-A

Worklist Smp#: 8

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

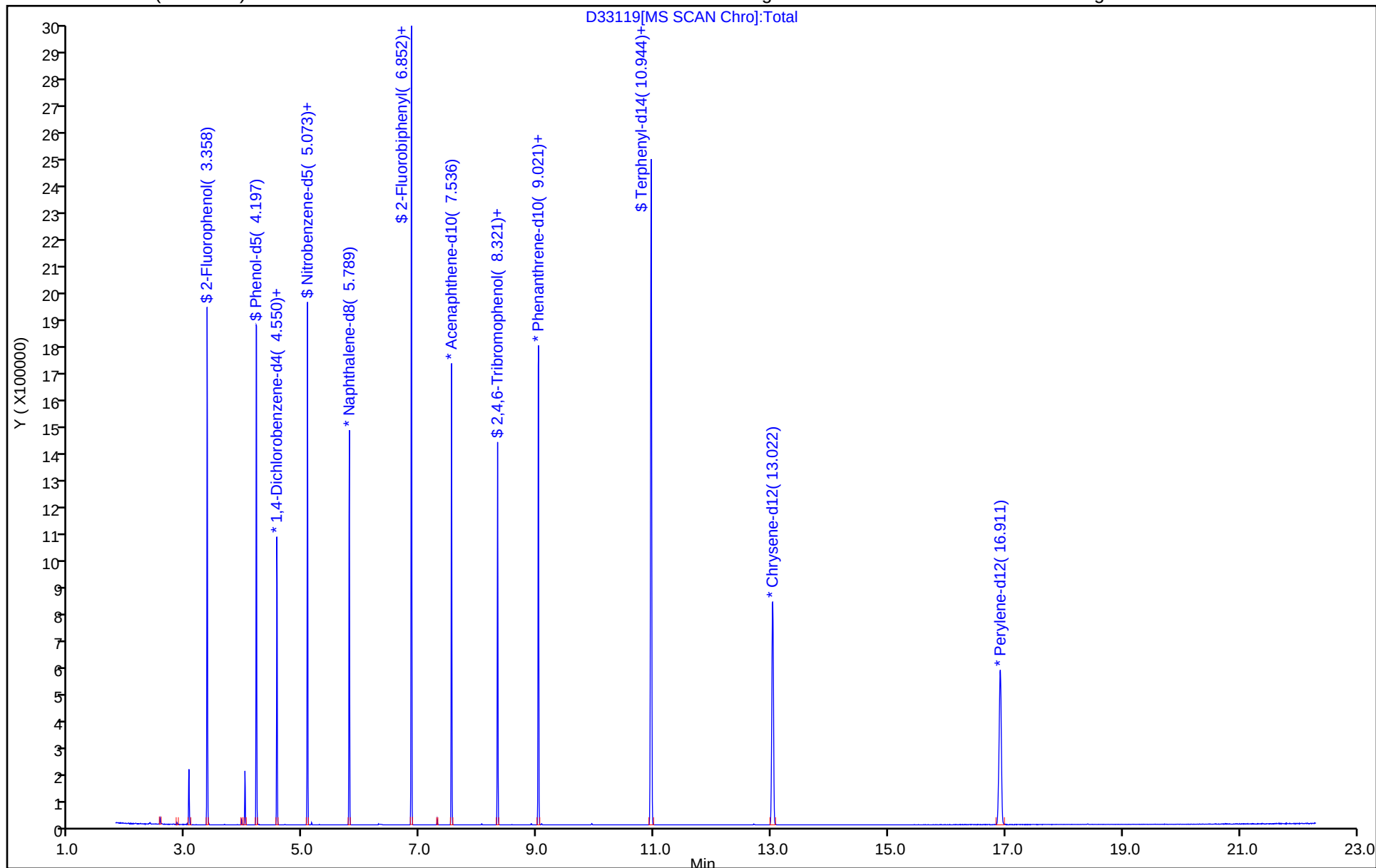
ALS Bottle#: 7

Method: SMSD_8270C

Limit Group: MSSV - 8270C_625

Column: VF-5ms (0.50 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33119.D
 Lims ID: MB 280-456902/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 15-May-2019 19:18:30 ALS Bottle#: 7 Worklist Smp#: 8
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: mb280-456902_1-a
 Operator ID: WICKHAMM Instrument ID: SMS_D
 Method: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 17-May-2019 22:14:20 Calib Date: 29-Apr-2019 12:43:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190429-81391.b\D32840.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 17-May-2019 22:02:24

Compound	Amount Added	Amount Recovered	% Rec.
\$ 7 2-Fluorophenol	100.0	83.3	83.29
\$ 8 Phenol-d5	100.0	80.9	80.88
\$ 9 Nitrobenzene-d5	100.0	85.9	85.88
\$ 11 2-Fluorobiphenyl	100.0	82.2	82.15
\$ 12 2,4,6-Tribromophenol	100.0	82.1	82.06
\$ 13 Terphenyl-d14	100.0	87.1	87.05

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 280-457323/1-A
 Matrix: Water Lab File ID: D33116.D
 Analysis Method: 8270D Date Collected: _____
 Extract. Method: 3520C Date Extracted: 05/07/2019 16:07
 Sample wt/vol: 1000 (mL) Date Analyzed: 05/15/2019 17:49
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 458321 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
77-47-4	Hexachlorocyclopentadiene	10	U	50	10	3.1

CAS NO.	SURROGATE	%REC	Q	LIMITS
118-79-6	2,4,6-Tribromophenol (Surr)	80		43-140
321-60-8	2-Fluorobiphenyl	86		44-119
367-12-4	2-Fluorophenol (Surr)	82		19-119
4165-60-0	Nitrobenzene-d5 (Surr)	84		44-120
4165-62-2	Phenol-d5 (Surr)	81		10-115
1718-51-0	Terphenyl-d14 (Surr)	91		50-134

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33116.D
 Lims ID: MB 280-457323/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 15-May-2019 17:49:30 ALS Bottle#: 4 Worklist Smp#: 5
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: mb280-457323_1-a
 Operator ID: WICKHAMM Instrument ID: SMS_D
 Method: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 17-May-2019 22:14:20 Calib Date: 29-Apr-2019 12:43:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190429-81391.b\D32840.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 17-May-2019 21:59:25

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	4.554	4.554	0.000	98	128143	40.0	40.0	
* 2 Naphthalene-d8	136	5.788	5.794	-0.006	100	493919	40.0	40.0	
* 3 Acenaphthene-d10	164	7.535	7.541	-0.006	97	312806	40.0	40.0	
* 4 Phenanthrene-d10	188	9.020	9.026	-0.006	99	566870	40.0	40.0	
* 5 Chrysene-d12	240	13.026	13.043	-0.017	82	552552	40.0	40.0	
* 6 Perylene-d12	264	16.915	16.932	-0.017	99	502346	40.0	40.0	
\$ 7 2-Fluorophenol	112	3.362	3.363	-0.001	98	377496	100.0	82.0	
\$ 8 Phenol-d5	99	4.201	4.207	-0.006	98	503707	100.0	81.4	
\$ 9 Nitrobenzene-d5	82	5.072	5.078	-0.006	95	458556	100.0	84.3	
\$ 10 2,4,6-Trichlorophenol-d2	198		6.858					ND	
\$ 11 2-Fluorobiphenyl	172	6.851	6.857	-0.006	98	856770	100.0	86.4	
\$ 12 2,4,6-Tribromophenol	330	8.325	8.331	-0.006	92	101215	100.0	80.5	
\$ 13 Terphenyl-d14	244	10.948	10.949	-0.001	100	1016700	100.0	90.7	
14 Triethyl amine	86		6.858					ND	
15 2-Ethoxyethanol	59		2.039					ND	
16 1,4-Dioxane	88		1.910					ND	
17 N-Nitrosodimethylamine	74		2.150					ND	
18 Pyridine	79		2.204					ND	
19 Dimethylformamide	73		2.600					ND	
20 2-Picoline	93		2.913					ND	
21 N-Nitrosomethylethylamine	88		2.983					ND	
22 Acrylamide	71		3.245					ND	
23 Methyl methanesulfonate	80		3.250					ND	U
24 N-Nitrosodiethylamine	102		3.619					ND	
25 Pentachlorophenol_T	266		3.687					ND	
26 Ethyl methanesulfonate	79		3.875					ND	
27 Benzaldehyde	106		4.127					ND	
28 Phenol	94		4.218					ND	
29 Phenylmercaptan	110		4.336					ND	
30 Aniline	93		4.239					ND	
31 Alpha Methyl Styrene	118		4.293					ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
32 Bis(2-chloroethyl)ether	93		4.287					ND	
33 Pentachloroethane	117		4.361					ND	U
34 Methyl styrene	118		4.445					ND	
35 n-Decane	43		4.394					ND	
36 2-Chlorophenol	128		4.367					ND	
37 1,3-Dichlorobenzene	146		4.506					ND	
38 1,4-Dichlorobenzene	146		4.576					ND	
39 Benzyl alcohol	108		4.677					ND	
40 1,2-Dichlorobenzene	146		4.725					ND	
41 2-Methylphenol	108		4.789					ND	
42 Benzidine_T	184		4.761					ND	
43 2,2'-oxybis[1-chloropropan	45		4.800					ND	
44 Indene	116		4.805					ND	
45 3-Methylphenol	108		4.934					ND	
46 3 & 4 Methylphenol	108		4.934					ND	
47 4-Methylphenol	108		4.934					ND	
48 N-Nitrosodi-n-propylamine	70		4.923					ND	
49 N-Nitrosopyrrolidine	100		4.965					ND	
50 Acetophenone	105		4.934					ND	
51 N-Nitrosomorpholine	116		5.002					ND	
52 2-Toluidine	106		5.034					ND	
53 Hexachloroethane	117		5.051					ND	
54 Nitrobenzene	77		5.099					ND	
55 Triethyl phosphate	99		5.282					ND	
56 N-Nitrosopiperidine	114		5.307					ND	
57 Isophorone	82		5.329					ND	
58 4-Methylacetophenone	119		5.330					ND	
59 2-Nitrophenol	139		5.409					ND	
60 2,4-Dimethylphenol	107		5.446					ND	
61 Benzyl dichloride	125		5.539					ND	
62 o,o',o''-Triethylphosphoro	198		5.563					ND	
63 Bis(2-chloroethoxy)methane	93		5.527					ND	
64 Benzoic acid	105		5.580					ND	
65 3,5-Dimethylphenol	107		5.580					ND	
66 alpha,alpha-Dimethyl phene	58		5.718					ND	
67 2,4-Xylidine	121		5.733					ND	
68 2,4-Dichlorophenol	162		5.655					ND	
69 o-Anisidine	80		5.771					ND	
70 1,2,4-Trichlorobenzene	180		5.735					ND	
71 Alpha-Terpineol	59		5.923					ND	
72 Naphthalene	128		5.815					ND	
73 4-Chloroaniline	127		5.858					ND	
74 2,6-Dichlorophenol	162		5.874					ND	
75 Hexachloropropene	213		5.975					ND	
76 Hexachlorobutadiene	225		5.943					ND	
77 4-chlorobenzenethiol	144		5.976					ND	
78 Quinoline	129		6.204					ND	
79 N-Nitrosodi-n-butylamine	84		6.247					ND	
80 Caprolactam	55		6.200					ND	
81 p-Phenylene diamine	108		6.263					ND	
82 5-Methyl-o-Anisidine	122		6.385					ND	
83 4-Chloro-3-methylphenol	107		6.344					ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
84 Safrole, Total	162		6.466					ND	
85 Carbofuran phenol	164		6.505					ND	
86 1,3-phenylenediamine	108		6.508					ND	
87 2-Methylnaphthalene	142		6.499					ND	
88 Phthalic anhydride	76		6.644					ND	
89 1-Methylnaphthalene	142		6.600					ND	
90 Hexachlorocyclopentadiene	237		6.664					ND	
91 1,2,4,5-Tetrachlorobenzene	216		6.670					ND	
92 Isosafrole Peak 1	162		6.754					ND	
93 Methyl 4-chlorophenyl sulf	158		6.685					ND	
94 2,4,6-Trichlorophenol	196		6.782					ND	
95 2,3-Dichlorobenzenamine	161		6.777					ND	
96 2,4,5-Trichlorophenol	196		6.825					ND	
97 1,3-Dimethyl-2,4-Dinitrobe	77		7.542					ND	
98 Isosafrole Peak 2	104		6.979					ND	
99 Toluene diamine (2,4- + 2,	122		7.034					ND	
100 1,1'-Biphenyl	154		6.958					ND	
101 1,3-Dimethyl-2,5-Dinitrobe	179		7.655					ND	
102 2-Chloronaphthalene	162		6.985					ND	
103 1-Chloronaphthalene	162		7.080					ND	
104 1,4-Dimethyl-2,3-Dinitrobe	77		7.778					ND	
105 2-Nitroaniline	65		7.076					ND	
106 1,4-Dimethyl-2,6-Dinitrobe	179		7.842					ND	
107 1,4-Dimethyl-2,5-Dinitrobe	149		7.874					ND	
108 1,4-Naphthoquinone	158		7.214					ND	
109 1,4-Dinitrobenzene	168		7.267					ND	
110 1,2-Dimethyl-3,6-Dinitrobe	179		7.943					ND	
111 Dimethyl phthalate	163		7.247					ND	
112 1,3-Dinitrobenzene	168		7.279					ND	
113 2,6-Dinitrotoluene	165		7.306					ND	
114 1,5-Dimethyl-2,4-Dinitrobe	179		8.103					ND	
115 Acenaphthylene	152		7.402					ND	
116 1,5-Dimethyl-2,3-Dinitrobe	179		8.200					ND	
117 3-Nitroaniline	138		7.482					ND	
118 1,2-Dimethyl-3,5-Dinitrobe	179		8.312					ND	
119 Acenaphthene	153		7.573					ND	
120 2,4-Dinitrophenol	184		7.589					ND	
121 4-Nitrophenol	109		7.674					ND	
122 1,2-Dimethyl-3,4-Dinitrobe	179		8.456					ND	
123 Pentachlorobenzene	250		7.786					ND	
124 2,4-Dinitrotoluene	165		7.717					ND	
125 Dibenzofuran	168		7.744					ND	
126 n-hydroxymethylphthalimide	147		7.439					ND	
127 1-Naphthylamine	143		7.887					ND	
128 1,2-Dimethyl-4,5-Dinitrobe	91		8.691					ND	
129 2,3,4,6-Tetrachlorophenol	232		7.872					ND	
130 2-Naphthylamine	143		7.967					ND	
131 Hexadecane	57		7.968					ND	
132 Diethyl phthalate	149		7.952					ND	
133 Thionazin	97		8.095					ND	
134 4-Chlorophenyl phenyl ethe	204		8.075					ND	
135 Fluorene	166		8.086					ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
136 Tributyl phosphate	99		8.231					ND	
137 N-Nitro-o-toluidine	152		8.159					ND	
138 4-Nitroaniline	138		8.096					ND	
139 4,6-Dinitro-2-methylphenol	198		8.134					ND	
140 Diphenylamine	169		8.192					ND	
141 N-Nitrosodiphenylamine	169		8.192					ND	
142 1,2-Diphenylhydrazine	77		8.235					ND	
143 Azobenzene	77		8.235					ND	
144 Sulfotepp	97		8.400					ND	
145 2,4,6 - Tribromophenol	330		8.331				ND	ND	U
146 Phenyl sulfide	186		8.390					ND	
147 Diallate Peak 1	86		8.544					ND	
148 1,3,5-Trinitrobenzene	213		8.512					ND	
149 Phorate	121		8.555					ND	
150 Phenacetin	108		8.565					ND	
151 Diallate Peak 2	86		8.635					ND	
152 4-Bromophenyl phenyl ether	248		8.561					ND	
153 Hexachlorobenzene	284		8.652					ND	
154 Dimethoate	87		8.726					ND	
155 Atrazine	200		8.716					ND	
156 n-Octadecane	85		8.881					ND	
157 Pentachlorophenol	266		8.844					ND	
158 4-Aminobiphenyl	169		8.897					ND	
159 Pentachloronitrobenzene	237		8.929					ND	
160 Pronamide	173		8.950					ND	
161 Disulfoton	88		9.073					ND	
162 Dinoseb	211		9.084					ND	
163 Phenanthrene	178		9.052					ND	
164 Anthracene	178		9.101					ND	
165 Carbazole	167		9.255					ND	
166 Alachlor	188		9.384					ND	
167 Methyl parathion	109		9.452					ND	
168 Phenyl disulfide	109		9.661					ND	
169 Di-n-butyl phthalate	149		9.587					ND	
170 Diphenylsulfone	125		9.667					ND	
171 Ethyl Parathion	109		9.885					ND	
172 4-Nitroquinoline-1-oxide	190		9.938					ND	
173 Methapyrilene	97		10.024					ND	
174 Octachlorostyrene	308		10.118					ND	
175 Isodrin	193		10.302					ND	
176 Fluoranthene	202		10.399					ND	
177 4,4-Dichlorobenzil	139		10.439					ND	
178 Benzidine	184		10.556					ND	
180 Pyrene	202		10.730					ND	
181 p-chlorophenyl sulfone	159	10.948	10.893	0.055	43	13235		NC	
182 Aramite Peak 1	185		11.012					ND	
183 Aramite Peak 2	185		11.140					ND	
184 p-Dimethylamino azobenzene	120		11.301					ND	
185 Chlorobenzilate	251		11.386					ND	
186 Famphur	218		11.893					ND	
187 Butyl benzyl phthalate	149		11.825					ND	
188 3,3'-Dimethylbenzidine	212		11.931					ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
189 2-Acetylaminofluorene	181		12.471					ND	
190 3,3'-Dichlorobenzidine	252		12.974					ND	
191 4,4'-Methylene bis(2-chlor	231		13.138					ND	
192 Benzo[a]anthracene	228		13.016					ND	
193 Bis(2-ethylhexyl) phthalat	149		13.177					ND	
194 Chrysene	228		13.102					ND	
195 6-Methylchrysene	242		14.436					ND	
196 Hexachlorophene	196		16.791					ND	
197 Di-n-octyl phthalate	149		14.955					ND	
198 Benzo[b]fluoranthene	252		15.853					ND	
199 7,12-Dimethylbenz(a)anthra	256		16.055					ND	
200 Benzo[k]fluoranthene	252		15.928					ND	
201 Benzo[e]pyrene	252		16.628					ND	
202 Benzo[a]pyrene	252		16.772					ND	
203 Perylene	252		17.281					ND	
204 3-Methylcholanthrene	268		18.074					ND	
205 Tris(2,3-dibromopropyl)pho	119		18.868					ND	
206 Dibenz[a,h]acridine	279		19.650					ND	
207 Dibenz[a,i]acridine	279		19.811					ND	
208 Indeno[1,2,3-cd]pyrene	276		20.031					ND	
209 Dibenz(a,h)anthracene	278		20.116					ND	
210 Benzo[g,h,i]perylene	276		20.762					ND	
211 Dibenzo[a,e]pyrene	302		25.409					ND	
S 219 Total Cresols	108		15.341					ND	
S 220 Methyl Phenols, Total	108		15.341					ND	
S 221 Isosafrole	162		15.341					ND	
S 222 Diallate	86		15.341					ND	
S 223 Aramite, Total	185		15.341					ND	
S 224 Phthalic acid	148		19.492					ND	
212 1,2,3,4-Tetrahydronaphthal	1		0.000					ND	
213 2-Butoxyethanol	1		0.000					ND	
214 2-Phenoxyethanol	1		0.000					ND	
216 4,4'-DDE	246		4.891					ND	
217 4,4'-DDD	235		5.182					ND	
218 4,4'-DDT	235		5.387					ND	
S 225 TPAH	1		0.000					ND	

QC Flag Legend

Processing Flags

NC - Not Calibrated

ND - Not Detected or Marked ND

Review Flags

U - Marked Undetected

Reagents:

MS-IS_00015

Amount Added: 20.00

Units: uL

Run Reagent

Report Date: 17-May-2019 22:14:23

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33116.D

Injection Date: 15-May-2019 17:49:30

Instrument ID: SMS_D

Operator ID: WICKHAMM

Lims ID: MB 280-457323/1-A

Worklist Smp#: 5

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

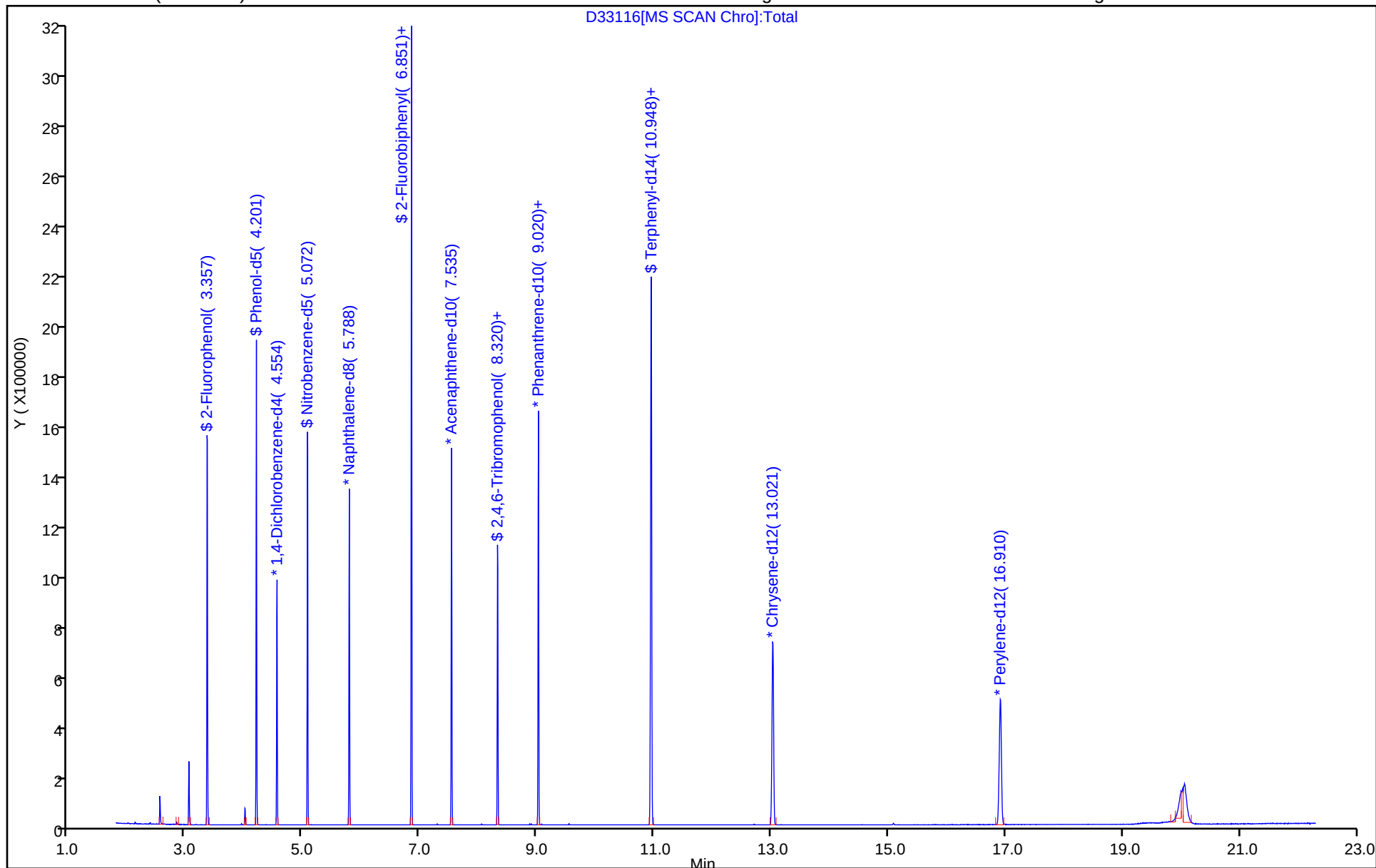
ALS Bottle#: 4

Method: SMSD_8270C

Limit Group: MSSV - 8270C_625

Column: VF-5ms (0.50 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33116.D
Lims ID: MB 280-457323/1-A
Client ID:
Sample Type: MB
Inject. Date: 15-May-2019 17:49:30 ALS Bottle#: 4 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: mb280-457323_1-a
Operator ID: WICKHAMM Instrument ID: SMS_D
Method: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\SMSD_8270C.m
Limit Group: MSSV - 8270C_625
Method Label: 8270C / 625
Last Update: 17-May-2019 22:14:20 Calib Date: 29-Apr-2019 12:43:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190429-81391.b\D32840.D
Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 17-May-2019 21:59:25

Compound	Amount Added	Amount Recovered	% Rec.
\$ 7 2-Fluorophenol	100.0	82.0	81.95
\$ 8 Phenol-d5	100.0	81.4	81.41
\$ 9 Nitrobenzene-d5	100.0	84.3	84.27
\$ 11 2-Fluorobiphenyl	100.0	86.4	86.41
\$ 12 2,4,6-Tribromophenol	100.0	80.5	80.49
\$ 13 Terphenyl-d14	100.0	90.7	90.71

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: LCS 280-456902/2-A

Matrix: Water Lab File ID: D33120.D

Analysis Method: 8270D Date Collected: _____

Extract. Method: 3520C Date Extracted: 05/03/2019 12:42

Sample wt/vol: 1000(mL) Date Analyzed: 05/15/2019 19:48

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: _____ GPC Cleanup: (Y/N) N

Analysis Batch No.: 458321 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
95-95-4	2,4,5-Trichlorophenol	67.6		20	4.4	2.1
88-06-2	2,4,6-Trichlorophenol	70.1		20	1.0	0.29
120-83-2	2,4-Dichlorophenol	67.3		10	2.0	0.64
105-67-9	2,4-Dimethylphenol	59.8		10	2.0	0.58
51-28-5	2,4-Dinitrophenol	148		80	30	10
121-14-2	2,4-Dinitrotoluene	70.6		20	4.4	1.7
606-20-2	2,6-Dinitrotoluene	68.7		20	4.4	1.9
95-57-8	2-Chlorophenol	63.3		10	4.4	2.0
95-48-7	2-Methylphenol	64.8		10	2.0	0.98
88-75-5	2-Nitrophenol	67.6		20	1.0	0.39
15831-10-4	3 & 4 Methylphenol	64.6		20	0.50	0.25
534-52-1	4,6-Dinitro-2-methylphenol	146		80	8.8	4.0
59-50-7	4-Chloro-3-methylphenol	67.2		20	5.0	2.4
100-02-7	4-Nitrophenol	143		50	4.0	1.2
117-81-7	Bis(2-ethylhexyl) phthalate	69.9		10	2.0	0.56
85-68-7	Butyl benzyl phthalate	71.1		20	2.0	1.0
84-66-2	Diethyl phthalate	69.7		20	1.0	0.38
131-11-3	Dimethyl phthalate	68.5		20	0.50	0.21
84-74-2	Di-n-butyl phthalate	70.7		20	4.4	1.2
117-84-0	Di-n-octyl phthalate	70.3		20	1.0	0.35
98-95-3	Nitrobenzene	61.3		20	2.0	0.81
87-86-5	Pentachlorophenol	132		80	60	20
108-95-2	Phenol	62.2		10	4.4	2.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
118-79-6	2,4,6-Tribromophenol (Surr)	81		43-140
321-60-8	2-Fluorobiphenyl	77		44-119
367-12-4	2-Fluorophenol (Surr)	77		19-119
4165-60-0	Nitrobenzene-d5 (Surr)	80		44-120
4165-62-2	Phenol-d5 (Surr)	77		10-115
1718-51-0	Terphenyl-d14 (Surr)	86		50-134

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33120.D
 Lims ID: LCS 280-456902/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 15-May-2019 19:48:30 ALS Bottle#: 8 Worklist Smp#: 9
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: lcs280-456902_2-a
 Operator ID: WICKHAMM Instrument ID: SMS_D
 Method: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 17-May-2019 22:14:20 Calib Date: 29-Apr-2019 12:43:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190429-81391.b\D32840.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 17-May-2019 22:03:11

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	4.552	4.554	-0.002	98	139351	40.0	40.0	
* 2 Naphthalene-d8	136	5.786	5.794	-0.008	100	549341	40.0	40.0	
* 3 Acenaphthene-d10	164	7.539	7.541	-0.002	97	347476	40.0	40.0	
* 4 Phenanthrene-d10	188	9.018	9.026	-0.008	99	614588	40.0	40.0	
* 5 Chrysene-d12	240	13.030	13.043	-0.013	91	594073	40.0	40.0	
* 6 Perylene-d12	264	16.914	16.932	-0.018	99	542016	40.0	40.0	
\$ 7 2-Fluorophenol	112	3.356	3.363	-0.007	98	384524	100.0	76.8	
\$ 8 Phenol-d5	99	4.200	4.207	-0.007	98	520760	100.0	77.4	
\$ 9 Nitrobenzene-d5	82	5.076	5.078	-0.002	95	485500	100.0	80.2	
\$ 11 2-Fluorobiphenyl	172	6.850	6.857	-0.007	98	844210	100.0	76.7	
\$ 12 2,4,6-Tribromophenol	330	8.324	8.331	-0.007	89	113621	100.0	81.3	
\$ 13 Terphenyl-d14	244	10.942	10.949	-0.007	100	1033307	100.0	85.7	
16 1,4-Dioxane	88	1.897	1.910	-0.013	97	122977	80.0	49.9	
17 N-Nitrosodimethylamine	74	2.138	2.150	-0.012	92	221829	80.0	58.7	
18 Pyridine	79	2.191	2.204	-0.013	94	471068	160.0	79.3	
27 Benzaldehyde	106	4.136	4.127	0.009	97	135548	80.0	30.8	
28 Phenol	94	4.216	4.218	-0.002	91	451730	80.0	62.2	
30 Aniline	93	4.237	4.239	-0.002	99	428356	80.0	46.6	
32 Bis(2-chloroethyl)ether	93	4.280	4.287	-0.007	96	322833	80.0	59.3	
35 n-Decane	43	4.387	4.394	-0.007	97	180903	80.0	36.6	
36 2-Chlorophenol	128	4.360	4.367	-0.007	98	329120	80.0	63.3	
37 1,3-Dichlorobenzene	146	4.504	4.506	-0.002	98	233921	80.0	43.1	
38 1,4-Dichlorobenzene	146	4.568	4.576	-0.008	97	237947	80.0	43.2	
39 Benzyl alcohol	108	4.670	4.677	-0.007	96	243376	80.0	62.3	
40 1,2-Dichlorobenzene	146	4.718	4.725	-0.007	98	226421	80.0	42.9	
41 2-Methylphenol	108	4.782	4.789	-0.007	77	348080	80.0	64.8	
43 2,2'-oxybis[1-chloropropan	45	4.793	4.800	-0.007	98	360395	80.0	51.5	
44 Indene	116	4.804	4.805	-0.001	98	394531	80.0	46.5	
45 3-Methylphenol	108	4.932	4.934	-0.002	90	365390	80.0	64.6	
46 3 & 4 Methylphenol	108	4.932	4.934	-0.002	90	365390	80.0	64.6	
47 4-Methylphenol	108	4.932	4.934	-0.002	90	365390	80.0	64.6	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
48 N-Nitrosodi-n-propylamine	70	4.921	4.923	-0.002	93	274982	80.0	63.5	
50 Acetophenone	105	4.926	4.934	-0.008	96	481855	80.0	61.4	
53 Hexachloroethane	117	5.049	5.051	-0.002	96	88500	80.0	42.2	
54 Nitrobenzene	77	5.092	5.099	-0.007	94	378769	80.0	61.3	
57 Isophorone	82	5.322	5.329	-0.007	98	750276	80.0	63.5	
59 2-Nitrophenol	139	5.407	5.409	-0.002	94	173818	80.0	67.6	
60 2,4-Dimethylphenol	107	5.445	5.446	-0.001	98	330983	80.0	59.8	
63 Bis(2-chloroethoxy)methane	93	5.519	5.527	-0.008	95	419325	80.0	63.1	
64 Benzoic acid	105	5.541	5.580	-0.039	96	250195	80.0	57.5	
68 2,4-Dichlorophenol	162	5.653	5.655	-0.002	97	287943	80.0	67.3	
70 1,2,4-Trichlorobenzene	180	5.733	5.735	-0.002	97	198179	80.0	42.7	
72 Naphthalene	128	5.808	5.815	-0.007	100	703789	80.0	47.4	
73 4-Chloroaniline	127	5.851	5.858	-0.007	99	367305	80.0	55.2	
74 2,6-Dichlorophenol	162	5.867	5.874	-0.007	97	288719	80.0	68.3	
76 Hexachlorobutadiene	225	5.936	5.943	-0.007	96	98822	80.0	39.9	
80 Caprolactam	55	6.176	6.200	-0.024	96	160163	80.0	56.9	
83 4-Chloro-3-methylphenol	107	6.342	6.344	-0.002	97	331982	80.0	67.2	
87 2-Methylnaphthalene	142	6.492	6.499	-0.007	99	504597	80.0	49.0	
89 1-Methylnaphthalene	142	6.593	6.600	-0.007	99	479161	80.0	49.3	
90 Hexachlorocyclopentadiene	237	6.663	6.664	-0.001	97	118245	160.0	42.4	
91 1,2,4,5-Tetrachlorobenzene	216	6.668	6.670	-0.002	98	215091	80.0	46.6	
94 2,4,6-Trichlorophenol	196	6.775	6.782	-0.007	82	216398	80.0	70.1	
96 2,4,5-Trichlorophenol	196	6.823	6.825	-0.002	98	230969	80.0	67.6	
100 1,1'-Biphenyl	154	6.951	6.958	-0.007	95	640295	80.0	54.1	
102 2-Chloronaphthalene	162	6.978	6.985	-0.007	99	473089	80.0	50.9	
105 2-Nitroaniline	65	7.069	7.076	-0.007	95	238396	80.0	71.4	
111 Dimethyl phthalate	163	7.245	7.247	-0.002	99	753870	80.0	68.5	
112 1,3-Dinitrobenzene	168	7.272	7.279	-0.007	86	138227	80.0	72.0	
113 2,6-Dinitrotoluene	165	7.304	7.306	-0.002	93	182103	80.0	68.7	
115 Acenaphthylene	152	7.394	7.402	-0.008	100	849542	80.0	55.2	
117 3-Nitroaniline	138	7.480	7.482	-0.002	96	175736	80.0	59.5	
119 Acenaphthene	153	7.571	7.573	-0.002	99	532079	80.0	57.0	
120 2,4-Dinitrophenol	184	7.581	7.589	-0.008	92	246659	160.0	147.7	
121 4-Nitrophenol	109	7.667	7.674	-0.007	95	247381	160.0	142.9	
124 2,4-Dinitrotoluene	165	7.710	7.717	-0.007	95	256201	80.0	70.6	
125 Dibenzofuran	168	7.742	7.744	-0.002	100	834829	80.0	58.6	
129 2,3,4,6-Tetrachlorophenol	232	7.865	7.872	-0.007	74	184855	80.0	66.2	
131 Hexadecane	57	7.961	7.968	-0.007	95	388333	80.0	57.4	
132 Diethyl phthalate	149	7.945	7.952	-0.007	99	779224	80.0	69.7	
134 4-Chlorophenyl phenyl ethe	204	8.068	8.075	-0.007	96	320386	80.0	57.8	
135 Fluorene	166	8.084	8.086	-0.002	99	731364	80.0	62.5	
138 4-Nitroaniline	138	8.094	8.096	-0.002	97	229865	80.0	69.3	
139 4,6-Dinitro-2-methylphenol	198	8.126	8.134	-0.008	91	317465	160.0	145.6	
140 Diphenylamine	169	8.185	8.192	-0.007	96	556014	68.0	54.7	
141 N-Nitrosodiphenylamine	169	8.185	8.192	-0.007	98	556014	80.0	67.6	
142 1,2-Diphenylhydrazine	77	8.228	8.235	-0.007	95	861043	80.9	63.1	
143 Azobenzene	77	8.228	8.235	-0.007	95	861043	80.0	62.4	
145 2,4,6 - Tribromophenol	330	8.324	8.331	-0.007	89	113621	100.0	81.3	
152 4-Bromophenyl phenyl ether	248	8.559	8.561	-0.002	95	195633	80.0	63.3	
153 Hexachlorobenzene	284	8.645	8.652	-0.007	95	193057	80.0	64.4	
155 Atrazine	200	8.709	8.716	-0.007	95	214744	80.0	68.1	
156 n-Octadecane	85	8.880	8.881	-0.001	96	222641	80.0	68.6	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
157 Pentachlorophenol	266	8.837	8.844	-0.007	94	261831	160.0	131.7	
163 Phenanthrene	178	9.045	9.052	-0.007	100	1114126	80.0	68.0	
164 Anthracene	178	9.093	9.101	-0.008	100	1167218	80.0	68.7	
165 Carbazole	167	9.248	9.255	-0.007	100	1151278	80.0	69.9	
169 Di-n-butyl phthalate	149	9.579	9.587	-0.008	100	1335539	80.0	70.7	
176 Fluoranthene	202	10.391	10.399	-0.008	100	1293331	80.0	68.4	
178 Benzidine	184	10.557	10.556	0.001	83	671556	160.0	49.6	
180 Pyrene	202	10.723	10.730	-0.007	99	1351462	80.0	69.8	
187 Butyl benzyl phthalate	149	11.818	11.825	-0.007	95	618787	80.0	71.1	
190 3,3'-Dichlorobenzidine	252	12.972	12.974	-0.002	99	839619	160.0	132.7	
192 Benzo[a]anthracene	228	13.009	13.016	-0.007	100	1235979	80.0	68.9	
193 Bis(2-ethylhexyl) phthalat	149	13.169	13.177	-0.008	99	841282	80.0	69.9	
194 Chrysene	228	13.095	13.102	-0.007	99	1201196	80.0	67.0	
197 Di-n-octyl phthalate	149	14.943	14.955	-0.012	100	1499660	80.0	70.3	
198 Benzo[b]fluoranthene	252	15.840	15.853	-0.013	99	1151794	80.0	67.7	
200 Benzo[k]fluoranthene	252	15.915	15.928	-0.013	99	1190240	80.0	69.6	
202 Benzo[a]pyrene	252	16.754	16.772	-0.018	100	1110504	80.0	66.0	
208 Indeno[1,2,3-cd]pyrene	276	20.018	20.031	-0.013	74	968876	80.0	65.7	
209 Dibenz(a,h)anthracene	278	20.103	20.116	-0.013	73	965835	80.0	66.6	
210 Benzo[g,h,i]perylene	276	20.750	20.762	-0.012	99	1001241	80.0	66.4	

Reagents:

MS-IS_00015

Amount Added: 20.00

Units: uL

Run Reagent

Report Date: 17-May-2019 22:14:32

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33120.D

Injection Date: 15-May-2019 19:48:30

Instrument ID: SMS_D

Operator ID: WICKHAMM

Lims ID: LCS 280-456902/2-A

Worklist Smp#: 9

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

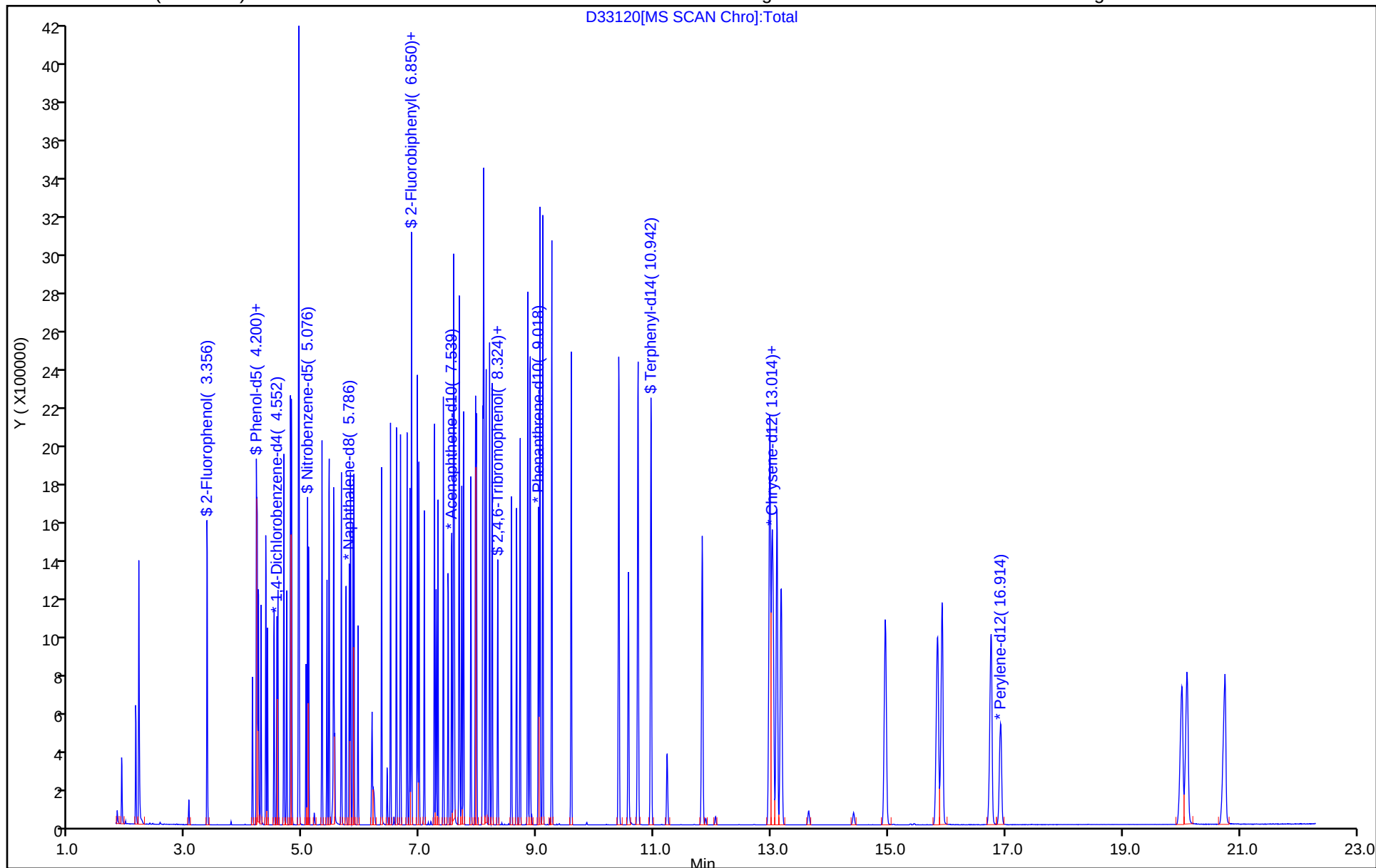
ALS Bottle#: 8

Method: SMSD_8270C

Limit Group: MSSV - 8270C_625

Column: VF-5ms (0.50 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33120.D
Lims ID: LCS 280-456902/2-A
Client ID:
Sample Type: LCS
Inject. Date: 15-May-2019 19:48:30 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: lcs280-456902_2-a
Operator ID: WICKHAMM Instrument ID: SMS_D
Method: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\SMSD_8270C.m
Limit Group: MSSV - 8270C_625
Method Label: 8270C / 625
Last Update: 17-May-2019 22:14:20 Calib Date: 29-Apr-2019 12:43:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190429-81391.b\D32840.D
Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 17-May-2019 22:03:11

Compound	Amount Added	Amount Recovered	% Rec.
\$ 7 2-Fluorophenol	100.0	76.8	76.76
\$ 8 Phenol-d5	100.0	77.4	77.40
\$ 9 Nitrobenzene-d5	100.0	80.2	80.22
\$ 11 2-Fluorobiphenyl	100.0	76.7	76.65
\$ 12 2,4,6-Tribromophenol	100.0	81.3	81.34
\$ 13 Terphenyl-d14	100.0	85.7	85.75

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCS 280-457323/2-A
 Matrix: Water Lab File ID: D33117.D
 Analysis Method: 8270D Date Collected: _____
 Extract. Method: 3520C Date Extracted: 05/07/2019 16:07
 Sample wt/vol: 1000 (mL) Date Analyzed: 05/15/2019 18:19
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 458321 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
77-47-4	Hexachlorocyclopentadiene	90.9		50	10	3.1

CAS NO.	SURROGATE	%REC	Q	LIMITS
118-79-6	2,4,6-Tribromophenol (Surr)	77		43-140
321-60-8	2-Fluorobiphenyl	79		44-119
367-12-4	2-Fluorophenol (Surr)	74		19-119
4165-60-0	Nitrobenzene-d5 (Surr)	76		44-120
4165-62-2	Phenol-d5 (Surr)	74		10-115
1718-51-0	Terphenyl-d14 (Surr)	81		50-134

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33117.D
 Lims ID: LCS 280-457323/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 15-May-2019 18:19:30 ALS Bottle#: 5 Worklist Smp#: 6
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: lcs280-457323_2-a
 Operator ID: WICKHAMM Instrument ID: SMS_D
 Method: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 17-May-2019 22:14:20 Calib Date: 29-Apr-2019 12:43:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190429-81391.b\D32840.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 17-May-2019 22:00:48

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	4.555	4.554	0.001	97	138608	40.0	40.0	
* 2 Naphthalene-d8	136	5.789	5.794	-0.005	100	543545	40.0	40.0	
* 3 Acenaphthene-d10	164	7.536	7.541	-0.005	98	343153	40.0	40.0	
* 4 Phenanthrene-d10	188	9.021	9.026	-0.005	99	612418	40.0	40.0	
* 5 Chrysene-d12	240	13.033	13.043	-0.010	88	574377	40.0	40.0	
* 6 Perylene-d12	264	16.916	16.932	-0.016	99	508128	40.0	40.0	
\$ 7 2-Fluorophenol	112	3.358	3.363	-0.005	98	370229	100.0	74.3	
\$ 8 Phenol-d5	99	4.202	4.207	-0.005	98	494954	100.0	74.0	
\$ 9 Nitrobenzene-d5	82	5.078	5.078	0.000	95	456054	100.0	76.2	
\$ 11 2-Fluorobiphenyl	172	6.852	6.857	-0.005	98	856076	100.0	78.7	
\$ 12 2,4,6-Tribromophenol	330	8.326	8.331	-0.005	89	106652	100.0	77.3	
\$ 13 Terphenyl-d14	244	10.944	10.949	-0.005	100	941270	100.0	80.8	
16 1,4-Dioxane	88	1.900	1.910	-0.010	99	125065	80.0	51.0	
17 N-Nitrosodimethylamine	74	2.140	2.150	-0.010	93	215833	80.0	57.5	
18 Pyridine	79	2.194	2.204	-0.010	93	542730	160.0	91.9	
27 Benzaldehyde	106	4.133	4.127	0.006	97	128395	80.0	29.3	
28 Phenol	94	4.213	4.218	-0.005	93	436478	80.0	60.4	
30 Aniline	93	4.234	4.239	-0.005	99	445575	80.0	48.7	
32 Bis(2-chloroethyl)ether	93	4.282	4.287	-0.005	96	313365	80.0	57.9	
35 n-Decane	43	4.389	4.394	-0.005	98	219858	80.0	44.7	
36 2-Chlorophenol	128	4.362	4.367	-0.005	97	317583	80.0	61.4	
37 1,3-Dichlorobenzene	146	4.501	4.506	-0.005	97	298092	80.0	55.3	
38 1,4-Dichlorobenzene	146	4.571	4.576	-0.005	98	304638	80.0	55.5	
39 Benzyl alcohol	108	4.672	4.677	-0.005	97	226480	80.0	58.3	
40 1,2-Dichlorobenzene	146	4.720	4.725	-0.005	98	296983	80.0	56.6	
41 2-Methylphenol	108	4.784	4.789	-0.005	81	324295	80.0	60.7	
43 2,2'-oxybis[1-chloropropan	45	4.795	4.800	-0.005	98	397526	80.0	57.1	
44 Indene	116	4.800	4.805	-0.005	99	502012	80.0	59.4	
45 3-Methylphenol	108	4.929	4.934	-0.005	89	343739	80.0	61.1	
46 3 & 4 Methylphenol	108	4.929	4.934	-0.005	89	343739	80.0	61.1	
47 4-Methylphenol	108	4.929	4.934	-0.005	89	343739	80.0	61.1	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
48 N-Nitrosodi-n-propylamine	70	4.918	4.923	-0.005	94	260166	80.0	60.4	
50 Acetophenone	105	4.923	4.934	-0.011	96	474556	80.0	60.8	
53 Hexachloroethane	117	5.046	5.051	-0.005	96	110390	80.0	52.9	
54 Nitrobenzene	77	5.094	5.099	-0.005	94	380397	80.0	62.2	
57 Isophorone	82	5.324	5.329	-0.005	98	714753	80.0	61.1	
59 2-Nitrophenol	139	5.404	5.409	-0.005	95	173706	80.0	68.3	
60 2,4-Dimethylphenol	107	5.442	5.446	-0.004	97	324075	80.0	59.2	
63 Bis(2-chloroethoxy)methane	93	5.522	5.527	-0.005	95	398293	80.0	60.6	
64 Benzoic acid	105	5.543	5.580	-0.037	96	246517	80.0	57.3	
68 2,4-Dichlorophenol	162	5.655	5.655	0.000	98	272702	80.0	64.4	
70 1,2,4-Trichlorobenzene	180	5.730	5.735	-0.005	97	265050	80.0	57.8	
72 Naphthalene	128	5.810	5.815	-0.005	100	912985	80.0	62.2	
73 4-Chloroaniline	127	5.853	5.858	-0.005	99	319780	80.0	48.6	
74 2,6-Dichlorophenol	162	5.869	5.874	-0.005	96	270143	80.0	64.5	
76 Hexachlorobutadiene	225	5.938	5.943	-0.005	98	134485	80.0	54.9	
80 Caprolactam	55	6.179	6.200	-0.021	96	151173	80.0	54.3	
83 4-Chloro-3-methylphenol	107	6.339	6.344	-0.005	96	319904	80.0	65.4	
87 2-Methylnaphthalene	142	6.494	6.499	-0.005	100	645357	80.0	63.3	
89 1-Methylnaphthalene	142	6.595	6.600	-0.005	99	611502	80.0	63.6	
90 Hexachlorocyclopentadiene	237	6.660	6.664	-0.004	98	250367	160.0	90.9	
91 1,2,4,5-Tetrachlorobenzene	216	6.665	6.670	-0.005	97	278513	80.0	61.0	
94 2,4,6-Trichlorophenol	196	6.777	6.782	-0.005	82	211190	80.0	69.2	
96 2,4,5-Trichlorophenol	196	6.825	6.825	0.000	98	223645	80.0	66.3	
100 1,1'-Biphenyl	154	6.953	6.958	-0.005	94	772324	80.0	66.1	
102 2-Chloronaphthalene	162	6.980	6.985	-0.005	98	586593	80.0	63.9	
105 2-Nitroaniline	65	7.071	7.076	-0.005	95	226266	80.0	68.7	
111 Dimethyl phthalate	163	7.242	7.247	-0.005	98	706977	80.0	65.0	
112 1,3-Dinitrobenzene	168	7.274	7.279	-0.005	87	128190	80.0	67.7	
113 2,6-Dinitrotoluene	165	7.306	7.306	0.000	95	173869	80.0	66.4	
115 Acenaphthylene	152	7.397	7.402	-0.005	100	967027	80.0	63.6	
117 3-Nitroaniline	138	7.477	7.482	-0.005	96	141404	80.0	48.5	
119 Acenaphthene	153	7.568	7.573	-0.005	99	612096	80.0	66.4	
120 2,4-Dinitrophenol	184	7.584	7.589	-0.005	93	222963	160.0	135.9	
121 4-Nitrophenol	109	7.669	7.674	-0.005	95	243699	160.0	142.5	
124 2,4-Dinitrotoluene	165	7.712	7.717	-0.005	95	237011	80.0	66.1	
125 Dibenzofuran	168	7.739	7.744	-0.005	100	910214	80.0	64.7	
129 2,3,4,6-Tetrachlorophenol	232	7.867	7.872	-0.005	74	177898	80.0	64.5	
131 Hexadecane	57	7.963	7.968	-0.005	95	450509	80.0	67.5	
132 Diethyl phthalate	149	7.947	7.952	-0.005	99	739202	80.0	66.9	
134 4-Chlorophenyl phenyl ethe	204	8.070	8.075	-0.005	97	342769	80.0	62.7	
135 Fluorene	166	8.086	8.086	0.000	99	757529	80.0	65.5	
138 4-Nitroaniline	138	8.091	8.096	-0.005	96	208296	80.0	63.6	
139 4,6-Dinitro-2-methylphenol	198	8.129	8.134	-0.005	94	289316	160.0	133.7	
140 Diphenylamine	169	8.187	8.192	-0.005	96	552023	68.0	55.0	
141 N-Nitrosodiphenylamine	169	8.187	8.192	-0.005	99	552023	80.0	67.4	
142 1,2-Diphenylhydrazine	77	8.230	8.235	-0.005	95	861787	80.9	63.9	
143 Azobenzene	77	8.230	8.235	-0.005	95	861787	80.0	63.2	
145 2,4,6 - Tribromophenol	330	8.326	8.331	-0.005	89	106652	100.0	77.3	
152 4-Bromophenyl phenyl ether	248	8.561	8.561	0.000	96	195062	80.0	63.3	
153 Hexachlorobenzene	284	8.647	8.652	-0.005	95	186914	80.0	62.6	
155 Atrazine	200	8.706	8.716	-0.010	95	201419	80.0	64.1	
156 n-Octadecane	85	8.877	8.881	-0.004	96	225609	80.0	69.8	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
157 Pentachlorophenol	266	8.839	8.844	-0.005	93	241086	160.0	121.9	
163 Phenanthrene	178	9.047	9.052	-0.005	100	1085843	80.0	66.5	
164 Anthracene	178	9.096	9.101	-0.005	100	1110033	80.0	65.6	
165 Carbazole	167	9.250	9.255	-0.005	100	1073591	80.0	65.4	
169 Di-n-butyl phthalate	149	9.582	9.587	-0.005	100	1265508	80.0	67.2	
176 Fluoranthene	202	10.394	10.399	-0.005	100	1203804	80.0	63.9	
178 Benzidine	184	10.559	10.556	0.003	83	581844	160.0	44.5	
180 Pyrene	202	10.725	10.730	-0.005	99	1235126	80.0	65.9	
187 Butyl benzyl phthalate	149	11.820	11.825	-0.005	95	575309	80.0	68.3	
190 3,3'-Dichlorobenzidine	252	12.974	12.974	0.000	98	726785	160.0	118.8	
192 Benzo[a]anthracene	228	13.011	13.016	-0.005	100	1113833	80.0	64.2	
193 Bis(2-ethylhexyl) phthalat	149	13.172	13.177	-0.005	99	786779	80.0	67.6	
194 Chrysene	228	13.097	13.102	-0.005	99	1103074	80.0	63.6	
197 Di-n-octyl phthalate	149	14.951	14.955	-0.004	100	1376407	80.0	66.7	
198 Benzo[b]fluoranthene	252	15.837	15.853	-0.016	99	1042068	80.0	65.4	
200 Benzo[k]fluoranthene	252	15.917	15.928	-0.011	99	1063835	80.0	66.3	
202 Benzo[a]pyrene	252	16.756	16.772	-0.016	100	998979	80.0	63.3	
208 Indeno[1,2,3-cd]pyrene	276	20.010	20.031	-0.021	74	857270	80.0	62.0	
209 Dibenz(a,h)anthracene	278	20.106	20.116	-0.010	77	843306	80.0	62.0	
210 Benzo[g,h,i]perylene	276	20.741	20.762	-0.021	99	882470	80.0	62.5	

Reagents:

MS-IS_00015

Amount Added: 20.00

Units: uL

Run Reagent

Report Date: 17-May-2019 22:14:25

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33117.D

Injection Date: 15-May-2019 18:19:30

Instrument ID: SMS_D

Operator ID: WICKHAMM

Lims ID: LCS 280-457323/2-A

Worklist Smp#: 6

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

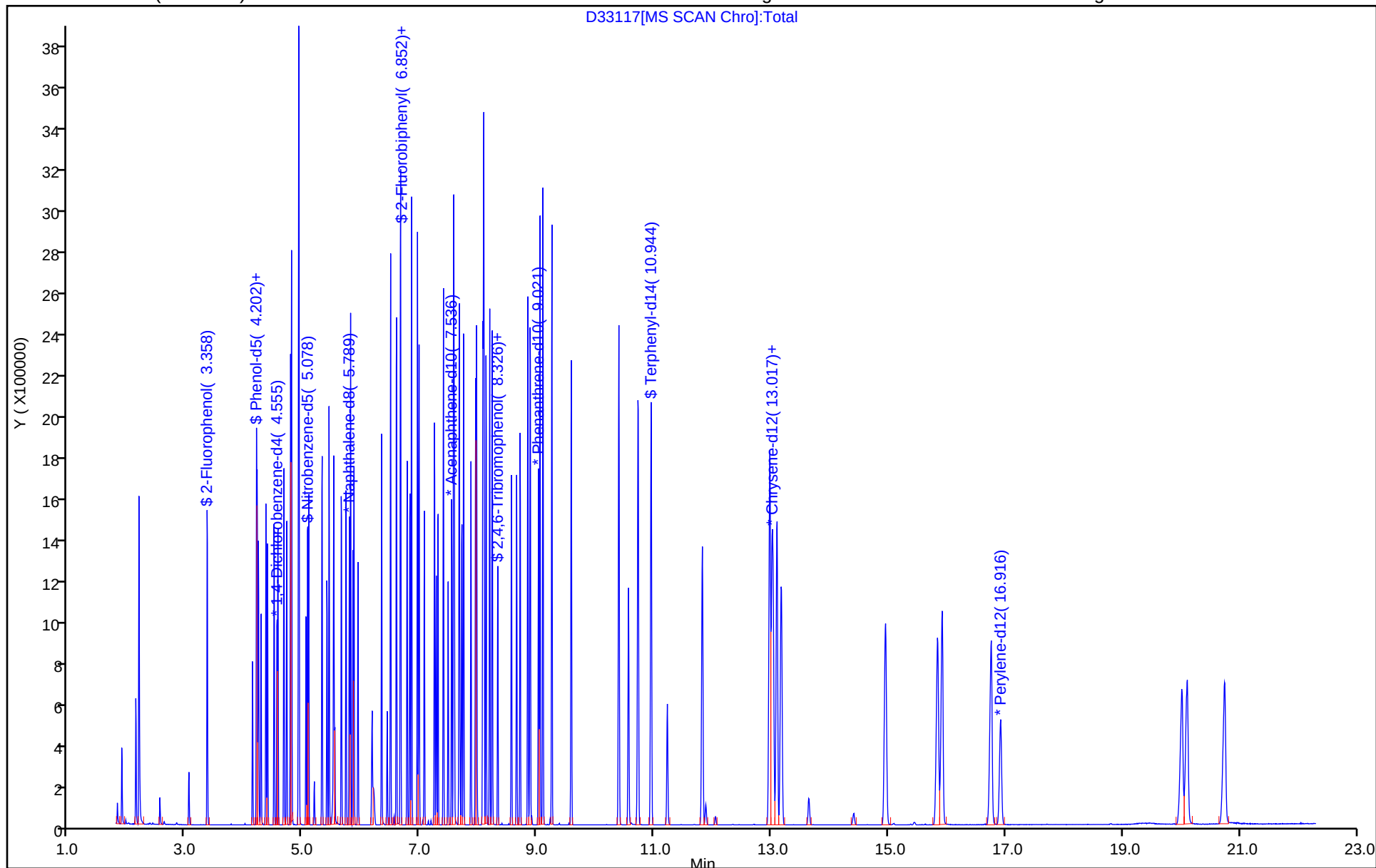
ALS Bottle#: 5

Method: SMSD_8270C

Limit Group: MSSV - 8270C_625

Column: VF-5ms (0.50 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33117.D
 Lims ID: LCS 280-457323/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 15-May-2019 18:19:30 ALS Bottle#: 5 Worklist Smp#: 6
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: lcs280-457323_2-a
 Operator ID: WICKHAMM Instrument ID: SMS_D
 Method: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 17-May-2019 22:14:20 Calib Date: 29-Apr-2019 12:43:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190429-81391.b\D32840.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 17-May-2019 22:00:48

Compound	Amount Added	Amount Recovered	% Rec.
\$ 7 2-Fluorophenol	100.0	74.3	74.30
\$ 8 Phenol-d5	100.0	74.0	73.96
\$ 9 Nitrobenzene-d5	100.0	76.2	76.16
\$ 11 2-Fluorobiphenyl	100.0	78.7	78.71
\$ 12 2,4,6-Tribromophenol	100.0	77.3	77.32
\$ 13 Terphenyl-d14	100.0	80.8	80.79

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCSD 280-456902/3-A
 Matrix: Water Lab File ID: D33121.D
 Analysis Method: 8270D Date Collected: _____
 Extract. Method: 3520C Date Extracted: 05/03/2019 12:42
 Sample wt/vol: 1000(mL) Date Analyzed: 05/15/2019 20:17
 Con. Extract Vol.: 1(mL) Dilution Factor: 1
 Injection Volume: 1(uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 458321 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
95-95-4	2,4,5-Trichlorophenol	69.0		20	4.4	2.1
88-06-2	2,4,6-Trichlorophenol	70.2		20	1.0	0.29
120-83-2	2,4-Dichlorophenol	68.4		10	2.0	0.64
105-67-9	2,4-Dimethylphenol	58.7		10	2.0	0.58
51-28-5	2,4-Dinitrophenol	148		80	30	10
121-14-2	2,4-Dinitrotoluene	69.4		20	4.4	1.7
606-20-2	2,6-Dinitrotoluene	69.2		20	4.4	1.9
95-57-8	2-Chlorophenol	60.8		10	4.4	2.0
95-48-7	2-Methylphenol	61.2		10	2.0	0.98
88-75-5	2-Nitrophenol	69.4		20	1.0	0.39
15831-10-4	3 & 4 Methylphenol	62.6		20	0.50	0.25
534-52-1	4,6-Dinitro-2-methylphenol	143		80	8.8	4.0
59-50-7	4-Chloro-3-methylphenol	67.6		20	5.0	2.4
100-02-7	4-Nitrophenol	141		50	4.0	1.2
117-81-7	Bis(2-ethylhexyl) phthalate	69.4		10	2.0	0.56
85-68-7	Butyl benzyl phthalate	71.9		20	2.0	1.0
84-66-2	Diethyl phthalate	69.8		20	1.0	0.38
131-11-3	Dimethyl phthalate	66.6		20	0.50	0.21
84-74-2	Di-n-butyl phthalate	70.3		20	4.4	1.2
117-84-0	Di-n-octyl phthalate	70.5		20	1.0	0.35
98-95-3	Nitrobenzene	62.4		20	2.0	0.81
87-86-5	Pentachlorophenol	131		80	60	20
108-95-2	Phenol	61.8		10	4.4	2.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
118-79-6	2,4,6-Tribromophenol (Surr)	82		43-140
321-60-8	2-Fluorobiphenyl	82		44-119
367-12-4	2-Fluorophenol (Surr)	74		19-119
4165-60-0	Nitrobenzene-d5 (Surr)	79		44-120
4165-62-2	Phenol-d5 (Surr)	76		10-115
1718-51-0	Terphenyl-d14 (Surr)	87		50-134

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33121.D
 Lims ID: LCSD 280-456902/3-A
 Client ID:
 Sample Type: LCSD
 Inject. Date: 15-May-2019 20:17:30 ALS Bottle#: 9 Worklist Smp#: 10
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: lcsd280-456902_3-a
 Operator ID: WICKHAMM Instrument ID: SMS_D
 Method: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 17-May-2019 22:14:20 Calib Date: 29-Apr-2019 12:43:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190429-81391.b\D32840.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 17-May-2019 22:03:52

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	4.553	4.554	-0.001	97	147068	40.0	40.0	
* 2 Naphthalene-d8	136	5.792	5.794	-0.002	100	571778	40.0	40.0	
* 3 Acenaphthene-d10	164	7.539	7.541	-0.002	98	364935	40.0	40.0	
* 4 Phenanthrene-d10	188	9.024	9.026	-0.002	99	648055	40.0	40.0	
* 5 Chrysene-d12	240	13.036	13.043	-0.007	84	623622	40.0	40.0	
* 6 Perylene-d12	264	16.920	16.932	-0.012	99	560086	40.0	40.0	
\$ 7 2-Fluorophenol	112	3.361	3.363	-0.002	98	391009	100.0	74.0	
\$ 8 Phenol-d5	99	4.205	4.207	-0.002	98	541429	100.0	76.2	
\$ 9 Nitrobenzene-d5	82	5.076	5.078	-0.002	95	495410	100.0	78.6	
\$ 11 2-Fluorobiphenyl	172	6.850	6.857	-0.007	98	948282	100.0	82.0	
\$ 12 2,4,6-Tribromophenol	330	8.324	8.331	-0.007	90	120897	100.0	82.4	
\$ 13 Terphenyl-d14	244	10.947	10.949	-0.002	100	1098450	100.0	86.8	
16 1,4-Dioxane	88	1.903	1.910	-0.007	97	128609	80.0	49.4	
17 N-Nitrosodimethylamine	74	2.143	2.150	-0.007	92	227696	80.0	57.1	
18 Pyridine	79	2.197	2.204	-0.007	93	508698	160.0	81.2	
27 Benzaldehyde	106	4.136	4.127	0.009	97	123415	80.0	26.5	
28 Phenol	94	4.216	4.218	-0.002	90	473628	80.0	61.8	
30 Aniline	93	4.238	4.239	-0.001	99	418961	80.0	43.2	
32 Bis(2-chloroethyl)ether	93	4.280	4.287	-0.007	96	326278	80.0	56.8	
35 n-Decane	43	4.392	4.394	-0.002	97	192623	80.0	36.9	
36 2-Chlorophenol	128	4.366	4.367	-0.001	98	333598	80.0	60.8	
37 1,3-Dichlorobenzene	146	4.505	4.506	-0.001	97	251655	80.0	44.0	
38 1,4-Dichlorobenzene	146	4.569	4.576	-0.007	98	258716	80.0	44.5	
39 Benzyl alcohol	108	4.670	4.677	-0.007	96	247642	80.0	60.1	
40 1,2-Dichlorobenzene	146	4.718	4.725	-0.007	98	252490	80.0	45.4	
41 2-Methylphenol	108	4.782	4.789	-0.007	77	347168	80.0	61.2	
43 2,2'-oxybis[1-chloropropan	45	4.798	4.800	-0.002	98	405225	80.0	54.9	
44 Indene	116	4.804	4.805	-0.001	99	446845	80.0	49.9	
45 3-Methylphenol	108	4.932	4.934	-0.002	95	373675	80.0	62.6	
46 3 & 4 Methylphenol	108	4.932	4.934	-0.002	95	373675	80.0	62.6	
47 4-Methylphenol	108	4.932	4.934	-0.002	95	373675	80.0	62.6	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
48 N-Nitrosodi-n-propylamine	70	4.921	4.923	-0.002	93	281519	80.0	61.6	
50 Acetophenone	105	4.927	4.934	-0.007	96	499579	80.0	60.3	
53 Hexachloroethane	117	5.050	5.051	-0.001	95	93462	80.0	42.2	
54 Nitrobenzene	77	5.092	5.099	-0.007	94	401183	80.0	62.4	
57 Isophorone	82	5.322	5.329	-0.007	98	774249	80.0	63.0	
59 2-Nitrophenol	139	5.407	5.409	-0.002	95	185539	80.0	69.4	
60 2,4-Dimethylphenol	107	5.445	5.446	-0.001	98	337702	80.0	58.7	
63 Bis(2-chloroethoxy)methane	93	5.520	5.527	-0.007	96	433482	80.0	62.7	
64 Benzoic acid	105	5.546	5.580	-0.034	96	280255	80.0	61.5	
68 2,4-Dichlorophenol	162	5.653	5.655	-0.002	97	304260	80.0	68.4	
70 1,2,4-Trichlorobenzene	180	5.733	5.735	-0.002	97	231518	80.0	48.0	
72 Naphthalene	128	5.808	5.815	-0.007	100	866720	80.0	56.1	
73 4-Chloroaniline	127	5.851	5.858	-0.007	99	379839	80.0	54.8	
74 2,6-Dichlorophenol	162	5.867	5.874	-0.007	96	294101	80.0	66.8	
76 Hexachlorobutadiene	225	5.936	5.943	-0.007	97	106748	80.0	41.4	
80 Caprolactam	55	6.177	6.200	-0.023	96	174141	80.0	59.5	
83 4-Chloro-3-methylphenol	107	6.342	6.344	-0.002	97	347542	80.0	67.6	
87 2-Methylnaphthalene	142	6.492	6.499	-0.007	100	627674	80.0	58.6	
89 1-Methylnaphthalene	142	6.593	6.600	-0.007	99	603414	80.0	59.6	
90 Hexachlorocyclopentadiene	237	6.663	6.664	-0.001	96	155472	160.0	53.1	
91 1,2,4,5-Tetrachlorobenzene	216	6.668	6.670	-0.002	98	274707	80.0	57.2	
94 2,4,6-Trichlorophenol	196	6.775	6.782	-0.007	82	227856	80.0	70.2	
96 2,4,5-Trichlorophenol	196	6.823	6.825	-0.002	97	247443	80.0	69.0	
100 1,1'-Biphenyl	154	6.951	6.958	-0.007	95	785973	80.0	63.2	
102 2-Chloronaphthalene	162	6.978	6.985	-0.007	99	596607	80.0	61.1	
105 2-Nitroaniline	65	7.069	7.076	-0.007	95	247499	80.0	70.6	
111 Dimethyl phthalate	163	7.245	7.247	-0.002	99	770038	80.0	66.6	
112 1,3-Dinitrobenzene	168	7.277	7.279	-0.002	87	139586	80.0	69.3	
113 2,6-Dinitrotoluene	165	7.304	7.306	-0.002	93	192840	80.0	69.2	
115 Acenaphthylene	152	7.395	7.402	-0.007	100	1012026	80.0	62.6	
117 3-Nitroaniline	138	7.480	7.482	-0.002	97	177722	80.0	57.3	
119 Acenaphthene	153	7.571	7.573	-0.002	99	642914	80.0	65.6	
120 2,4-Dinitrophenol	184	7.582	7.589	-0.007	92	260498	160.0	148.5	
121 4-Nitrophenol	109	7.667	7.674	-0.007	95	256609	160.0	141.1	
124 2,4-Dinitrotoluene	165	7.710	7.717	-0.007	95	264324	80.0	69.4	
125 Dibenzofuran	168	7.742	7.744	-0.002	100	964933	80.0	64.5	
129 2,3,4,6-Tetrachlorophenol	232	7.865	7.872	-0.007	74	198954	80.0	67.8	
131 Hexadecane	57	7.961	7.968	-0.007	95	467465	80.0	65.8	
132 Diethyl phthalate	149	7.945	7.952	-0.007	100	819996	80.0	69.8	
134 4-Chlorophenyl phenyl ethe	204	8.068	8.075	-0.007	96	360821	80.0	62.0	
135 Fluorene	166	8.084	8.086	-0.002	99	819244	80.0	66.6	
138 4-Nitroaniline	138	8.095	8.096	-0.001	97	238930	80.0	68.6	
139 4,6-Dinitro-2-methylphenol	198	8.127	8.134	-0.007	92	328697	160.0	143.1	
140 Diphenylamine	169	8.185	8.192	-0.007	96	594190	68.0	55.6	
141 N-Nitrosodiphenylamine	169	8.185	8.192	-0.007	99	594190	80.0	68.5	
142 1,2-Diphenylhydrazine	77	8.228	8.235	-0.007	95	939259	80.9	65.5	
143 Azobenzene	77	8.228	8.235	-0.007	95	939259	80.0	64.8	
145 2,4,6 - Tribromophenol	330	8.324	8.331	-0.007	90	120897	100.0	82.4	
152 4-Bromophenyl phenyl ether	248	8.559	8.561	-0.002	95	209865	80.0	64.4	
153 Hexachlorobenzene	284	8.650	8.652	-0.002	96	205430	80.0	65.0	
155 Atrazine	200	8.709	8.716	-0.007	95	217507	80.0	65.5	
156 n-Octadecane	85	8.880	8.881	-0.001	96	243004	80.0	71.0	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
157 Pentachlorophenol	266	8.837	8.844	-0.007	94	275028	160.0	131.2	
163 Phenanthrene	178	9.045	9.052	-0.007	100	1195034	80.0	69.1	
164 Anthracene	178	9.099	9.101	-0.002	100	1222952	80.0	68.3	
165 Carbazole	167	9.248	9.255	-0.007	100	1199333	80.0	69.1	
169 Di-n-butyl phthalate	149	9.580	9.587	-0.007	100	1400296	80.0	70.3	
176 Fluoranthene	202	10.392	10.399	-0.007	100	1349451	80.0	67.7	
178 Benzidine	184	10.557	10.556	0.001	83	604653	160.0	42.6	
180 Pyrene	202	10.723	10.730	-0.007	99	1400040	80.0	68.8	
187 Butyl benzyl phthalate	149	11.818	11.825	-0.007	95	657162	80.0	71.9	
190 3,3'-Dichlorobenzidine	252	12.972	12.974	-0.002	98	825646	160.0	124.3	
192 Benzo[a]anthracene	228	13.009	13.016	-0.007	100	1261844	80.0	67.0	
193 Bis(2-ethylhexyl) phthalat	149	13.164	13.177	-0.013	99	876751	80.0	69.4	
194 Chrysene	228	13.095	13.102	-0.007	99	1249497	80.0	66.4	
197 Di-n-octyl phthalate	149	14.948	14.955	-0.007	100	1577818	80.0	70.5	
198 Benzo[b]fluoranthene	252	15.835	15.853	-0.018	99	1171253	80.0	66.7	
200 Benzo[k]fluoranthene	252	15.915	15.928	-0.013	99	1212682	80.0	68.6	
202 Benzo[a]pyrene	252	16.754	16.772	-0.018	100	1120438	80.0	64.4	
208 Indeno[1,2,3-cd]pyrene	276	20.013	20.031	-0.018	74	970761	80.0	63.7	
209 Dibenz(a,h)anthracene	278	20.104	20.116	-0.012	72	969800	80.0	64.7	
210 Benzo[g,h,i]perylene	276	20.750	20.762	-0.012	99	1002956	80.0	64.4	

Reagents:

MS-IS_00015

Amount Added: 20.00

Units: uL

Run Reagent

Report Date: 17-May-2019 22:14:35

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33121.D

Injection Date: 15-May-2019 20:17:30

Instrument ID: SMS_D

Operator ID: WICKHAMM

Lims ID: LCSD 280-456902/3-A

Worklist Smp#: 10

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

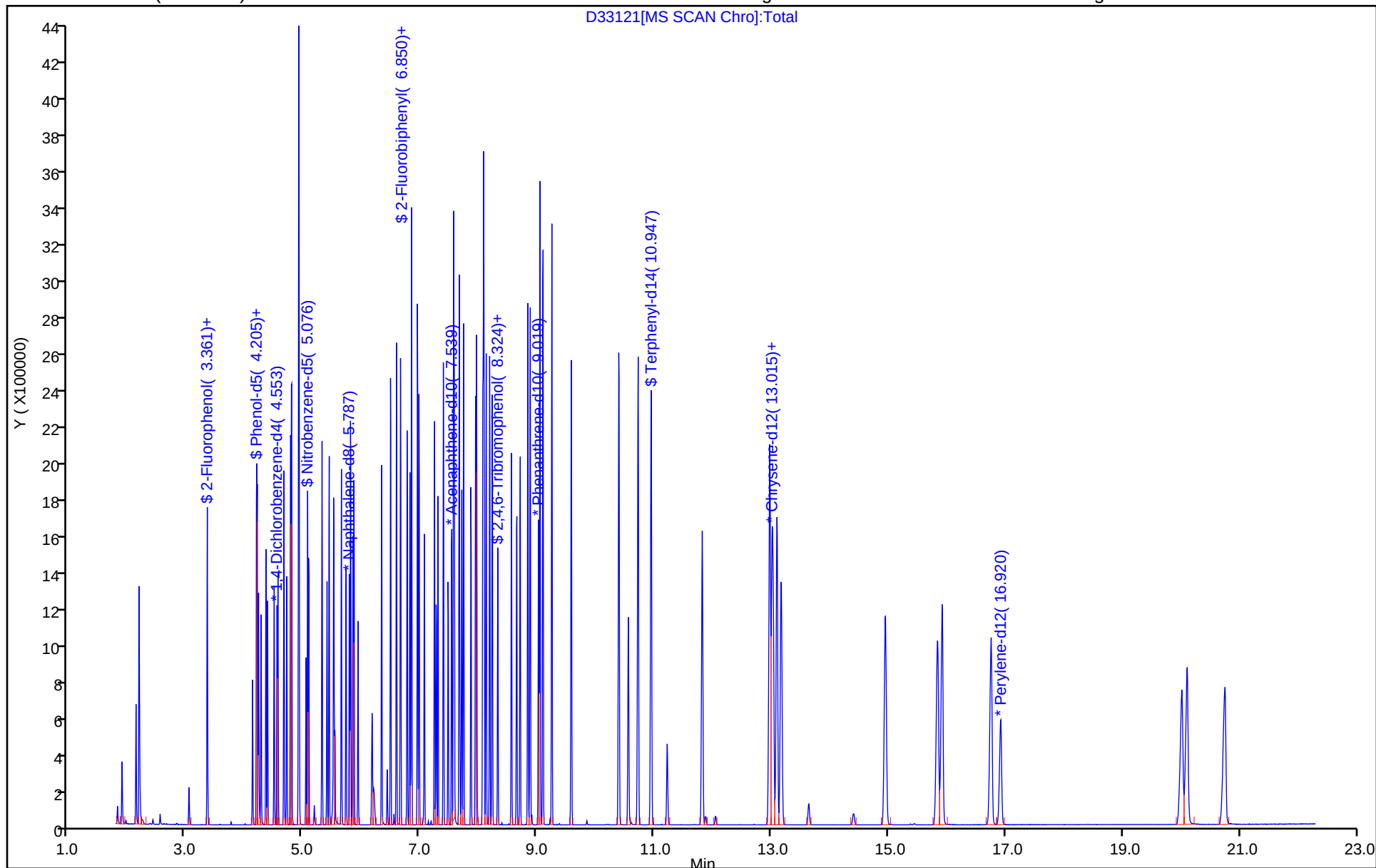
ALS Bottle#: 9

Method: SMSD_8270C

Limit Group: MSSV - 8270C_625

Column: VF-5ms (0.50 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33121.D
Lims ID: LCSD 280-456902/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 15-May-2019 20:17:30 ALS Bottle#: 9 Worklist Smp#: 10
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: lcsd280-456902_3-a
Operator ID: WICKHAMM Instrument ID: SMS_D
Method: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\SMSD_8270C.m
Limit Group: MSSV - 8270C_625
Method Label: 8270C / 625
Last Update: 17-May-2019 22:14:20 Calib Date: 29-Apr-2019 12:43:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190429-81391.b\D32840.D
Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 17-May-2019 22:03:52

Compound	Amount Added	Amount Recovered	% Rec.
\$ 7 2-Fluorophenol	100.0	74.0	73.96
\$ 8 Phenol-d5	100.0	76.2	76.25
\$ 9 Nitrobenzene-d5	100.0	78.6	78.65
\$ 11 2-Fluorobiphenyl	100.0	82.0	81.98
\$ 12 2,4,6-Tribromophenol	100.0	82.4	82.41
\$ 13 Terphenyl-d14	100.0	86.8	86.83

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCSD 280-457323/3-A
 Matrix: Water Lab File ID: D33118.D
 Analysis Method: 8270D Date Collected: _____
 Extract. Method: 3520C Date Extracted: 05/07/2019 16:07
 Sample wt/vol: 1000 (mL) Date Analyzed: 05/15/2019 18:49
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 458321 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
77-47-4	Hexachlorocyclopentadiene	93.0		50	10	3.1

CAS NO.	SURROGATE	%REC	Q	LIMITS
118-79-6	2,4,6-Tribromophenol (Surr)	80		43-140
321-60-8	2-Fluorobiphenyl	83		44-119
367-12-4	2-Fluorophenol (Surr)	79		19-119
4165-60-0	Nitrobenzene-d5 (Surr)	81		44-120
4165-62-2	Phenol-d5 (Surr)	79		10-115
1718-51-0	Terphenyl-d14 (Surr)	85		50-134

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33118.D
 Lims ID: LCSD 280-457323/3-A
 Client ID:
 Sample Type: LCSD
 Inject. Date: 15-May-2019 18:49:30 ALS Bottle#: 6 Worklist Smp#: 7
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: lcsd280-457323_3-a
 Operator ID: WICKHAMM Instrument ID: SMS_D
 Method: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\SMSD_8270C.m
 Limit Group: MSSV - 8270C_625
 Method Label: 8270C / 625
 Last Update: 17-May-2019 22:14:20 Calib Date: 29-Apr-2019 12:43:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190429-81391.b\D32840.D
 Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
 Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 17-May-2019 22:01:50

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 1 1,4-Dichlorobenzene-d4	152	4.552	4.554	-0.002	98	138940	40.0	40.0	
* 2 Naphthalene-d8	136	5.786	5.794	-0.008	99	548081	40.0	40.0	
* 3 Acenaphthene-d10	164	7.539	7.541	-0.002	98	349348	40.0	40.0	
* 4 Phenanthrene-d10	188	9.018	9.026	-0.008	99	611752	40.0	40.0	
* 5 Chrysene-d12	240	13.036	13.043	-0.007	93	582515	40.0	40.0	
* 6 Perylene-d12	264	16.919	16.932	-0.013	99	512521	40.0	40.0	
\$ 7 2-Fluorophenol	112	3.361	3.363	-0.002	98	396778	100.0	79.4	
\$ 8 Phenol-d5	99	4.200	4.207	-0.007	98	532322	100.0	79.4	
\$ 9 Nitrobenzene-d5	82	5.076	5.078	-0.002	95	491822	100.0	81.5	
\$ 11 2-Fluorobiphenyl	172	6.850	6.857	-0.007	98	919738	100.0	83.1	
\$ 12 2,4,6-Tribromophenol	330	8.324	8.331	-0.007	90	112672	100.0	80.2	
\$ 13 Terphenyl-d14	244	10.947	10.949	-0.002	100	1001400	100.0	84.7	
16 1,4-Dioxane	88	1.897	1.910	-0.013	98	129748	80.0	52.8	
17 N-Nitrosodimethylamine	74	2.138	2.150	-0.012	93	220775	80.0	58.6	
18 Pyridine	79	2.191	2.204	-0.013	94	574725	160.0	97.1	
27 Benzaldehyde	106	4.136	4.127	0.009	97	144811	80.0	32.9	
28 Phenol	94	4.216	4.218	-0.002	90	451081	80.0	62.3	
30 Aniline	93	4.237	4.239	-0.002	99	473752	80.0	51.7	
32 Bis(2-chloroethyl)ether	93	4.280	4.287	-0.007	96	329593	80.0	60.7	
35 n-Decane	43	4.392	4.394	-0.002	97	168405	80.0	34.2	
36 2-Chlorophenol	128	4.365	4.367	-0.002	98	329869	80.0	63.7	
37 1,3-Dichlorobenzene	146	4.504	4.506	-0.002	98	257696	80.0	47.7	
38 1,4-Dichlorobenzene	146	4.568	4.576	-0.008	97	266751	80.0	48.5	
39 Benzyl alcohol	108	4.670	4.677	-0.007	96	241066	80.0	61.9	
40 1,2-Dichlorobenzene	146	4.718	4.725	-0.007	98	261009	80.0	49.6	
41 2-Methylphenol	108	4.782	4.789	-0.007	78	339417	80.0	63.4	
43 2,2'-oxybis[1-chloropropan	45	4.793	4.800	-0.007	98	407259	80.0	58.4	
44 Indene	116	4.804	4.805	-0.001	98	482063	80.0	56.9	
45 3-Methylphenol	108	4.926	4.934	-0.008	89	359581	80.0	63.8	
46 3 & 4 Methylphenol	108	4.926	4.934	-0.008	89	359581	80.0	63.8	
47 4-Methylphenol	108	4.926	4.934	-0.008	89	359581	80.0	63.8	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
48 N-Nitrosodi-n-propylamine	70	4.921	4.923	-0.002	92	277490	80.0	64.3	
50 Acetophenone	105	4.926	4.934	-0.008	96	494947	80.0	63.2	
53 Hexachloroethane	117	5.049	5.051	-0.002	96	94185	80.0	45.0	
54 Nitrobenzene	77	5.092	5.099	-0.007	93	405169	80.0	65.8	
57 Isophorone	82	5.322	5.329	-0.007	97	744784	80.0	63.2	
59 2-Nitrophenol	139	5.407	5.409	-0.002	95	180571	80.0	70.4	
60 2,4-Dimethylphenol	107	5.445	5.446	-0.001	98	323884	80.0	58.7	
63 Bis(2-chloroethoxy)methane	93	5.519	5.527	-0.008	96	419380	80.0	63.3	
64 Benzoic acid	105	5.541	5.580	-0.039	95	261870	80.0	60.1	
68 2,4-Dichlorophenol	162	5.653	5.655	-0.002	97	285479	80.0	66.9	
70 1,2,4-Trichlorobenzene	180	5.733	5.735	-0.002	97	252132	80.0	54.5	
72 Naphthalene	128	5.808	5.815	-0.007	100	894586	80.0	60.4	
73 4-Chloroaniline	127	5.851	5.858	-0.007	99	321935	80.0	48.5	
74 2,6-Dichlorophenol	162	5.867	5.874	-0.007	97	280294	80.0	66.4	
76 Hexachlorobutadiene	225	5.936	5.943	-0.007	97	120251	80.0	48.7	
80 Caprolactam	55	6.176	6.200	-0.024	96	157839	80.0	56.2	
83 4-Chloro-3-methylphenol	107	6.342	6.344	-0.002	97	333874	80.0	67.7	
87 2-Methylnaphthalene	142	6.492	6.499	-0.007	99	652133	80.0	63.5	
89 1-Methylnaphthalene	142	6.593	6.600	-0.007	99	620406	80.0	64.0	
90 Hexachlorocyclopentadiene	237	6.663	6.664	-0.001	98	260671	160.0	93.0	
91 1,2,4,5-Tetrachlorobenzene	216	6.668	6.670	-0.002	98	285192	80.0	61.9	
94 2,4,6-Trichlorophenol	196	6.775	6.782	-0.007	82	216134	80.0	69.6	
96 2,4,5-Trichlorophenol	196	6.823	6.825	-0.002	97	229268	80.0	66.8	
100 1,1'-Biphenyl	154	6.951	6.958	-0.007	95	785060	80.0	66.0	
102 2-Chloronaphthalene	162	6.978	6.985	-0.007	99	604333	80.0	64.6	
105 2-Nitroaniline	65	7.069	7.076	-0.007	95	232272	80.0	69.2	
111 Dimethyl phthalate	163	7.245	7.247	-0.002	99	725794	80.0	65.6	
112 1,3-Dinitrobenzene	168	7.272	7.279	-0.007	87	131494	80.0	68.2	
113 2,6-Dinitrotoluene	165	7.304	7.306	-0.002	93	178776	80.0	67.0	
115 Acenaphthylene	152	7.394	7.402	-0.008	100	1011112	80.0	65.3	
117 3-Nitroaniline	138	7.475	7.482	-0.007	96	146889	80.0	49.5	
119 Acenaphthene	153	7.571	7.573	-0.002	99	629703	80.0	67.1	
120 2,4-Dinitrophenol	184	7.581	7.589	-0.008	91	234428	160.0	140.1	
121 4-Nitrophenol	109	7.667	7.674	-0.007	95	246928	160.0	141.9	
124 2,4-Dinitrotoluene	165	7.710	7.717	-0.007	95	245873	80.0	67.4	
125 Dibenzofuran	168	7.742	7.744	-0.002	100	937714	80.0	65.5	
129 2,3,4,6-Tetrachlorophenol	232	7.865	7.872	-0.007	74	183342	80.0	65.3	
131 Hexadecane	57	7.961	7.968	-0.007	95	461635	80.0	67.9	
132 Diethyl phthalate	149	7.945	7.952	-0.007	100	759970	80.0	67.6	
134 4-Chlorophenyl phenyl ethe	204	8.068	8.075	-0.007	96	351463	80.0	63.1	
135 Fluorene	166	8.084	8.086	-0.002	99	780368	80.0	66.3	
138 4-Nitroaniline	138	8.094	8.096	-0.002	97	213043	80.0	63.9	
139 4,6-Dinitro-2-methylphenol	198	8.126	8.134	-0.008	92	305535	160.0	141.0	
140 Diphenylamine	169	8.185	8.192	-0.007	96	565602	68.0	55.3	
141 N-Nitrosodiphenylamine	169	8.185	8.192	-0.007	99	565602	80.0	69.1	
142 1,2-Diphenylhydrazine	77	8.228	8.235	-0.007	95	890146	80.9	64.8	
143 Azobenzene	77	8.228	8.235	-0.007	95	890146	80.0	64.1	
145 2,4,6 - Tribromophenol	330	8.324	8.331	-0.007	90	112672	100.0	80.2	
152 4-Bromophenyl phenyl ether	248	8.559	8.561	-0.002	95	201726	80.0	65.5	
153 Hexachlorobenzene	284	8.645	8.652	-0.008	95	190200	80.0	63.7	
155 Atrazine	200	8.709	8.716	-0.007	96	209901	80.0	66.9	
156 n-Octadecane	85	8.880	8.881	-0.001	96	228641	80.0	70.8	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
157 Pentachlorophenol	266	8.837	8.844	-0.007	93	247671	160.0	125.3	
163 Phenanthrene	178	9.045	9.052	-0.007	100	1108244	80.0	67.9	
164 Anthracene	178	9.093	9.101	-0.008	100	1144297	80.0	67.7	
165 Carbazole	167	9.248	9.255	-0.007	100	1104751	80.0	67.4	
169 Di-n-butyl phthalate	149	9.579	9.587	-0.008	100	1292957	80.0	68.8	
176 Fluoranthene	202	10.391	10.399	-0.008	100	1230632	80.0	65.4	
178 Benzidine	184	10.557	10.556	0.001	83	685624	160.0	51.7	
180 Pyrene	202	10.723	10.730	-0.007	99	1292127	80.0	68.0	
187 Butyl benzyl phthalate	149	11.818	11.825	-0.007	95	591204	80.0	69.3	
190 3,3'-Dichlorobenzidine	252	12.972	12.974	-0.002	98	752142	160.0	121.2	
192 Benzo[a]anthracene	228	13.009	13.016	-0.007	100	1158177	80.0	65.8	
193 Bis(2-ethylhexyl) phthalat	149	13.169	13.177	-0.008	99	836713	80.0	70.9	
194 Chrysene	228	13.095	13.102	-0.008	99	1132176	80.0	64.4	
197 Di-n-octyl phthalate	149	14.948	14.955	-0.007	100	1420791	80.0	67.9	
198 Benzo[b]fluoranthene	252	15.835	15.853	-0.018	99	1063202	80.0	66.1	
200 Benzo[k]fluoranthene	252	15.915	15.928	-0.013	99	1089053	80.0	67.3	
202 Benzo[a]pyrene	252	16.754	16.772	-0.018	100	1039383	80.0	65.3	
208 Indeno[1,2,3-cd]pyrene	276	20.013	20.031	-0.018	74	893035	80.0	64.0	
209 Dibenz(a,h)anthracene	278	20.103	20.116	-0.013	72	871164	80.0	63.5	
210 Benzo[g,h,i]perylene	276	20.744	20.762	-0.018	99	918591	80.0	64.5	

Reagents:

MS-IS_00015

Amount Added: 20.00

Units: uL

Run Reagent

Report Date: 17-May-2019 22:14:27

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33118.D

Injection Date: 15-May-2019 18:49:30

Instrument ID: SMS_D

Operator ID: WICKHAMM

Lims ID: LCSD 280-457323/3-A

Worklist Smp#: 7

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

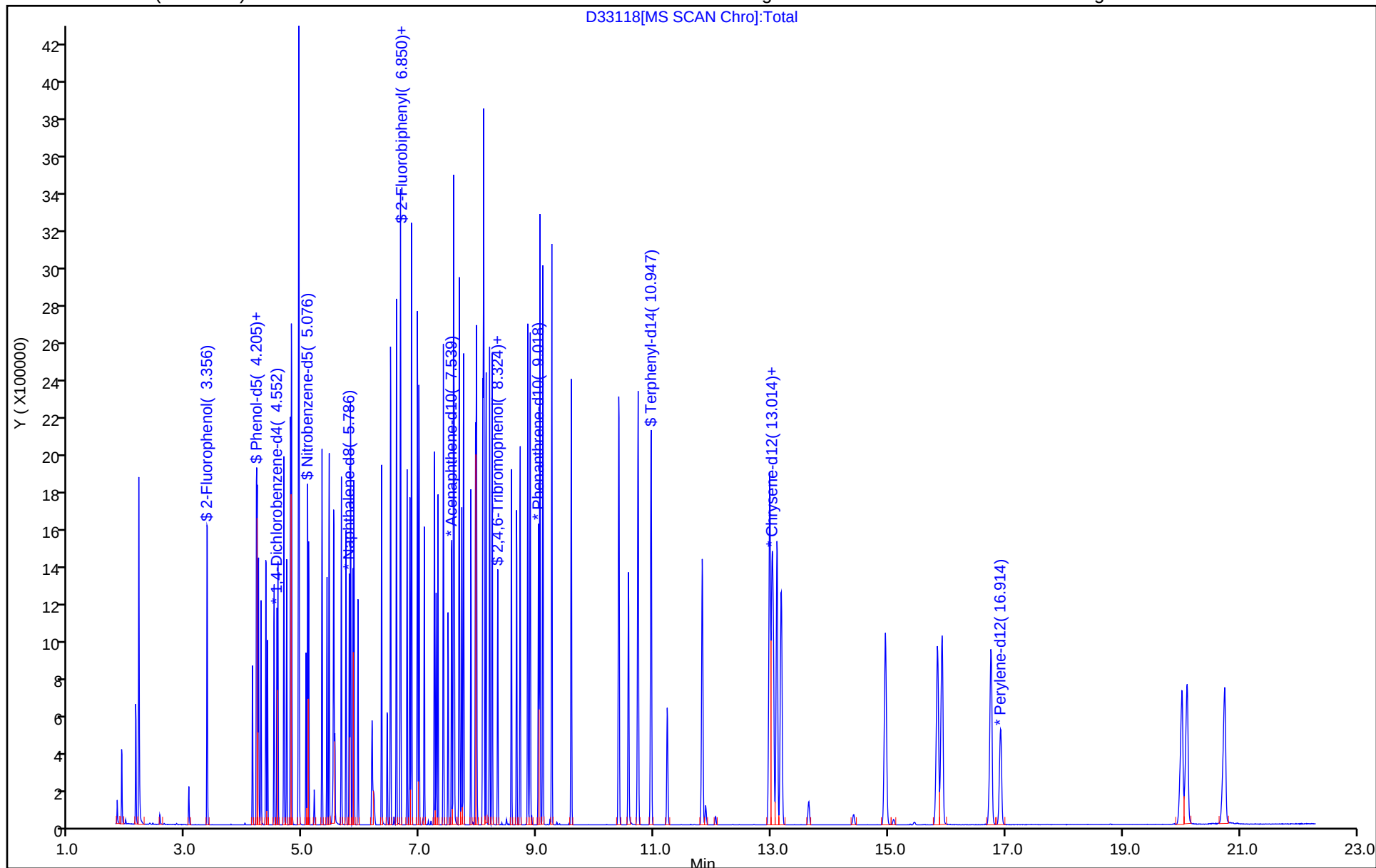
ALS Bottle#: 6

Method: SMSD_8270C

Limit Group: MSSV - 8270C_625

Column: VF-5ms (0.50 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\D33118.D
Lims ID: LCSD 280-457323/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 15-May-2019 18:49:30 ALS Bottle#: 6 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: lcsd280-457323_3-a
Operator ID: WICKHAMM Instrument ID: SMS_D
Method: \\chromna\Denver\ChromData\SMS_D\20190515-81926.b\SMSD_8270C.m
Limit Group: MSSV - 8270C_625
Method Label: 8270C / 625
Last Update: 17-May-2019 22:14:20 Calib Date: 29-Apr-2019 12:43:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\SMS_D\20190429-81391.b\D32840.D
Column 1 : VF-5ms (0.50 mm) Det: MS SCAN
Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 17-May-2019 22:01:50

Compound	Amount Added	Amount Recovered	% Rec.
\$ 7 2-Fluorophenol	100.0	79.4	79.44
\$ 8 Phenol-d5	100.0	79.4	79.35
\$ 9 Nitrobenzene-d5	100.0	81.5	81.45
\$ 11 2-Fluorobiphenyl	100.0	83.1	83.06
\$ 12 2,4,6-Tribromophenol	100.0	80.2	80.23
\$ 13 Terphenyl-d14	100.0	84.7	84.75

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, DenverJob No.: 280-123221-1

SDG No.: _____

Instrument ID: SMS_DStart Date: 04/03/2019 07:34Analysis Batch Number: 452848End Date: 04/03/2019 12:13

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 280-452848/2		04/03/2019 07:34	1	D32379.D	Rxi-5Sil MS 0.25 (mm)
ICIS 280-452848/3		04/03/2019 07:48	1	D32380.D	Rxi-5Sil MS 0.25 (mm)
STD004 280-452848/4 IC		04/03/2019 08:17	1	D32381.D	Rxi-5Sil MS 0.25 (mm)
STD010 280-452848/5 IC		04/03/2019 08:47	1	D32382.D	Rxi-5Sil MS 0.25 (mm)
STD020 280-452848/6 IC		04/03/2019 09:16	1	D32383.D	Rxi-5Sil MS 0.25 (mm)
STD050 280-452848/7 IC		04/03/2019 09:45	1	D32384.D	Rxi-5Sil MS 0.25 (mm)
STD120 280-452848/8 IC		04/03/2019 10:15	1	D32385.D	Rxi-5Sil MS 0.25 (mm)
STD160 280-452848/9 IC		04/03/2019 10:44	1	D32386.D	Rxi-5Sil MS 0.25 (mm)
STD200 280-452848/10 IC		04/03/2019 11:14	1	D32387.D	Rxi-5Sil MS 0.25 (mm)
ICV 280-452848/11		04/03/2019 11:43	1	D32388.D	Rxi-5Sil MS 0.25 (mm)
ICV 280-452848/12		04/03/2019 12:13	1	D32389.D	Rxi-5Sil MS 0.25 (mm)

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, DenverJob No.: 280-123221-1

SDG No.: _____

Instrument ID: SMS_DStart Date: 05/15/2019 16:26Analysis Batch Number: 458321End Date: 05/16/2019 03:06

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 280-458321/2		05/15/2019 16:26	1	D33113.D	Rxi-5Sil MS 0.25 (mm)
CCV 280-458321/3		05/15/2019 16:55	1	D33114.D	Rxi-5Sil MS 0.25 (mm)
CCV 280-458321/4		05/15/2019 17:25	1	D33115.D	Rxi-5Sil MS 0.25 (mm)
MB 280-457323/1-A		05/15/2019 17:49	1	D33116.D	Rxi-5Sil MS 0.25 (mm)
LCS 280-457323/2-A		05/15/2019 18:19	1	D33117.D	Rxi-5Sil MS 0.25 (mm)
LCSD 280-457323/3-A		05/15/2019 18:49	1	D33118.D	Rxi-5Sil MS 0.25 (mm)
MB 280-456902/1-A		05/15/2019 19:18	1	D33119.D	Rxi-5Sil MS 0.25 (mm)
LCS 280-456902/2-A		05/15/2019 19:48	1	D33120.D	Rxi-5Sil MS 0.25 (mm)
LCSD 280-456902/3-A		05/15/2019 20:17	1	D33121.D	Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/15/2019 20:47	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/15/2019 21:16	1		Rxi-5Sil MS 0.25 (mm)
280-123221-1		05/15/2019 21:46	1	D33124.D	Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/15/2019 22:15	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/15/2019 22:45	1		Rxi-5Sil MS 0.25 (mm)
280-123221-4		05/15/2019 23:14	1	D33127.D	Rxi-5Sil MS 0.25 (mm)
280-123221-7		05/15/2019 23:44	1	D33128.D	Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/16/2019 00:14	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/16/2019 00:43	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/16/2019 01:13	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/16/2019 01:42	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/16/2019 02:12	1		Rxi-5Sil MS 0.25 (mm)
CCVC 280-458321/23		05/16/2019 02:41	1	D33134.D	Rxi-5Sil MS 0.25 (mm)
CCVC 280-458321/24		05/16/2019 03:06	1	D33135.D	Rxi-5Sil MS 0.25 (mm)

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 456902 Batch Start Date: 05/03/19 12:42 Batch Analyst: Stewart, Klaudia JBatch Method: 3520C Batch End Date: 05/06/19 17:10

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	FirstAdjustpH
MB 280-456902/1		3520C, 8270D				1000 mL	1 mL	7 SU	1-2 SU
LCS 280-456902/2		3520C, 8270D				1000 mL	1 mL	7 SU	1-2 SU
LCSD 280-456902/3		3520C, 8270D				1000 mL	1 mL	7 SU	1-2 SU
280-123221-B-4	DET-003-190401-G W	3520C, 8270D	T	1500.3 g	510.8 g	989.5 mL	1 mL	7 SU	1-2 SU
280-123221-B-7	DET-004-190401-G W	3520C, 8270D	T	1521.6 g	510.7 g	1010.9 mL	1 mL	7 SU	1-2 SU

Lab Sample ID	Client Sample ID	Method Chain	Basis	SecondAdjustpH	8270 LCS Main 00061	8270 LCS Supp 00341	8270Surrogate 00133	AnalysisComment	
MB 280-456902/1		3520C, 8270D		11-12 SU			1 mL	8270, shared QC w/456895	
LCS 280-456902/2		3520C, 8270D		11-12 SU	1 mL	1 mL	1 mL	8270, shared QC w/456895	
LCSD 280-456902/3		3520C, 8270D		11-12 SU	1 mL	1 mL	1 mL	8270, shared QC w/456895	
280-123221-B-4	DET-003-190401-G W	3520C, 8270D	T	11-12 SU			1 mL		
280-123221-B-7	DET-004-190401-G W	3520C, 8270D	T	11-12 SU			1 mL		

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 456902 Batch Start Date: 05/03/19 12:42 Batch Analyst: Stewart, Klaudia JBatch Method: 3520C Batch End Date: 05/06/19 17:10

Batch Notes	
Acid Used for pH Adjustment ID	1:1 H2SO4_00081
Balance ID	B318295195
Base Used to Adjust pH ID	10N NaOH_00139
Batch Comment	DV-OP-0007/0008
Analyst ID - Concentration	CR/MM
Concentration 1 Corrected Temperature	84 Degrees C
Equipment ID - Concentration 1	A
Analyst ID - Extraction	KS
Extraction 1 End Time	05/04/2019 09:38
Extraction 1 Start Time	05/03/2019 12:42
Method/Fraction	3520C/8270C_D0D5
Na2SO4 ID	0000218678_00005
NaCl ID	188397
Pipette/Syringe/Dispenser ID	Woo!
Prep Solvent ID	MeCl2_Cycl_00435/436
Extraction 2 End Time	05/05/2019 09:10
Extraction 2 Start Time	05/04/2019 12:33
Analyst ID - Spike Analyst	KS
Analyst ID - Spike Witness Analyst	Reviewer:
Sufficient Volume for Batch QC	NO
Concentration 1 Uncorrected Temperature	84 Degrees C
Reagent Water ID	N. Elga

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457323 Batch Start Date: 05/07/19 16:07 Batch Analyst: Villanueva, Vanessa NBatch Method: 3520C Batch End Date: 05/10/19 18:08

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	FirstAdjustpH
MB 280-457323/1		3520C, 8270D				1000 mL	1 mL	7 SU	1-2 SU
LCS 280-457323/2		3520C, 8270D				1000 mL	1 mL	7 SU	1-2 SU
LCSD 280-457323/3		3520C, 8270D				1000 mL	1 mL	7 SU	1-2 SU
280-123221-B-1	NTAmw-120-190401 -GW	3520C, 8270D	T	1530.5 g	513.2 g	1017.3 mL	1 mL	7 SU	1-2 SU

Lab Sample ID	Client Sample ID	Method Chain	Basis	SecondAdjustpH	8270_LCS_Main 00061	8270_LCS_Supp 00341	8270Surrogate 00133	AnalysisComment	
MB 280-457323/1		3520C, 8270D		11-12 SU			1 mL	Shares QC with 457325 and 457326	
LCS 280-457323/2		3520C, 8270D		11-12 SU	1 mL	1 mL	1 mL	Shares QC with 457325 and 457326	
LCSD 280-457323/3		3520C, 8270D		11-12 SU	1 mL	1 mL	1 mL	Shares QC with 457325 and 457326	
280-123221-B-1	NTAmw-120-190401 -GW	3520C, 8270D	T	11-12 SU			1 mL		

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457323 Batch Start Date: 05/07/19 16:07 Batch Analyst: Villanueva, Vanessa NBatch Method: 3520C Batch End Date: 05/10/19 18:08

Batch Notes	
Acid Used for pH Adjustment ID	1:1 H2SO4_00082
Balance ID	B318295195
Base Used to Adjust pH ID	10N NaOH_00141
Batch Comment	DV-OP-0007/0008
Analyst ID - Concentration	VV/MM
Concentration 1 Corrected Temperature	84 Degrees C
Equipment ID - Concentration 1	A
Analyst ID - Extraction	VV
Extraction 1 End Time	05/08/2019 12:24
Extraction 1 Start Time	05/07/2019 16:11
Method/Fraction	3520C_8270D_D0D5
Na2SO4 ID	0000218678_00004
NaCl ID	188397
Pipette/Syringe/Dispenser ID	Woo!
Prep Solvent ID	MeCl2_Cycl_00436/437
Extraction 2 End Time	05/09/2019 10:21
Extraction 2 Start Time	05/08/2019 16:21
Analyst ID - Spike Analyst	VV
Analyst ID - Spike Witness Analyst	Reviewer: CR
Sufficient Volume for Batch QC	No
Concentration 1 Uncorrected Temperature	84 Degrees C
Reagent Water ID	N. Elga

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

8270D_SIM_DOD5

Semivolatile Organic Compounds
(GC/MS SIM)

FORM II
GC/MS SEMI VOA SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Matrix: Water Level: Low
GC Column (1): Rxi-5Sil MS ID: 0.25 (mm)

Client Sample ID	Lab Sample ID	NBZ #	FBP #	TPHL #
NTAmw-119-190401-GW	280-123221-2	78	79	88
DET-003-190401-GW	280-123221-4	88	91	99
DET-004-190401-GW	280-123221-7	81	83	108
	MB 280-457182/1-A	80	90	87
	MB 280-457236/1-A	81	81	87
	LCS 280-457182/2-A	80	87	93
	LCS 280-457236/2-A	76	77	84
	LCSD 280-457182/3-A	78	81	88

NBZ = Nitrobenzene-d5
FBP = 2-Fluorobiphenyl
TPHL = Terphenyl-d14

QC LIMITS
55-111
53-106
58-132

Column to be used to flag recovery values

FORM II 8270D SIM

FORM III
GC/MS SEMI VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: X4_8412.D
 Lab ID: LCS 280-457182/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
1-Methylnaphthalene	0.900	0.827	92	41-115	
2-Methylnaphthalene	0.900	0.805	89	39-114	
Acenaphthene	0.900	0.874	97	48-114	
Acenaphthylene	0.900	0.739	82	35-121	
Anthracene	0.900	0.869	97	53-119	
Benzo[a]anthracene	0.900	0.673	75	59-120	
Benzo[a]pyrene	0.900	0.622	69	53-120	
Benzo[b]fluoranthene	0.900	0.674	75	53-126	
Benzo[g,h,i]perylene	0.900	0.708	79	44-128	
Benzo[k]fluoranthene	0.900	0.786	87	54-125	
Chrysene	0.900	1.01	112	57-120	
Dibenz(a,h)anthracene	0.900	0.635	71	44-131	
Fluoranthene	0.900	0.845	94	58-120	
Fluorene	0.900	0.878	98	50-118	
Indeno[1,2,3-cd]pyrene	0.900	0.575	64	48-130	
Naphthalene	0.900	0.827	92	43-114	
Phenanthrene	0.900	0.840	93	53-115	
Pyrene	0.900	0.819	91	53-121	

Column to be used to flag recovery and RPD values

FORM III
GC/MS SEMI VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: X4_8461.D
 Lab ID: LCS 280-457236/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
1-Methylnaphthalene	0.900	0.777	86	41-115	
2-Methylnaphthalene	0.900	0.746	83	39-114	
Acenaphthene	0.900	0.787	87	48-114	
Acenaphthylene	0.900	0.703	78	35-121	
Anthracene	0.900	0.810	90	53-119	
Benzo[a]anthracene	0.900	0.707	79	59-120	
Benzo[a]pyrene	0.900	0.772	86	53-120	
Benzo[b]fluoranthene	0.900	0.782	87	53-126	
Benzo[g,h,i]perylene	0.900	0.814	90	44-128	
Benzo[k]fluoranthene	0.900	0.748	83	54-125	
Chrysene	0.900	0.849	94	57-120	
Dibenz(a,h)anthracene	0.900	0.726	81	44-131	
Fluoranthene	0.900	0.822	91	58-120	
Fluorene	0.900	0.771	86	50-118	
Indeno[1,2,3-cd]pyrene	0.900	0.795	88	48-130	
Naphthalene	0.900	0.764	85	43-114	
Phenanthrene	0.900	0.780	87	53-115	
Pyrene	0.900	0.820	91	53-121	

Column to be used to flag recovery and RPD values

FORM III
GC/MS SEMI VOA LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: X4_8413.D
 Lab ID: LCSD 280-457182/3-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
1-Methylnaphthalene	0.900	0.815	91	1	20	41-115	
2-Methylnaphthalene	0.900	0.748	83	7	20	39-114	
Acenaphthene	0.900	0.794	88	10	20	48-114	
Acenaphthylene	0.900	0.678	75	9	20	35-121	
Anthracene	0.900	0.821	91	6	20	53-119	
Benzo[a]anthracene	0.900	0.659	73	2	20	59-120	
Benzo[a]pyrene	0.900	0.588	65	6	20	53-120	
Benzo[b]fluoranthene	0.900	0.646	72	4	20	53-126	
Benzo[g,h,i]perylene	0.900	0.700	78	1	20	44-128	
Benzo[k]fluoranthene	0.900	0.747	83	5	20	54-125	
Chrysene	0.900	0.965	107	4	20	57-120	
Dibenz(a,h)anthracene	0.900	0.581	65	9	20	44-131	
Fluoranthene	0.900	0.818	91	3	20	58-120	
Fluorene	0.900	0.813	90	8	20	50-118	
Indeno[1,2,3-cd]pyrene	0.900	0.559	62	3	20	48-130	
Naphthalene	0.900	0.773	86	7	20	43-114	
Phenanthrene	0.900	0.798	89	5	20	53-115	
Pyrene	0.900	0.812	90	1	20	53-121	

Column to be used to flag recovery and RPD values

FORM IV
GC/MS SEMI VOA METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab File ID: X4_8411.D Lab Sample ID: MB 280-457182/1-A
Matrix: Water Date Extracted: 05/06/2019 12:22
Instrument ID: SMS_X4 Date Analyzed: 05/10/2019 20:33
Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 280-457182/2-A	X4_8412.D	05/10/2019 21:03
	LCSD 280-457182/3-A	X4_8413.D	05/10/2019 21:33
DET-003-190401-GW	280-123221-4	X4_8703.D	05/16/2019 16:41
DET-004-190401-GW	280-123221-7	X4_8704.D	05/16/2019 17:11

FORM IV
GC/MS SEMI VOA METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab File ID: X4_8460.D Lab Sample ID: MB 280-457236/1-A
Matrix: Water Date Extracted: 05/07/2019 06:23
Instrument ID: SMS_X4 Date Analyzed: 05/13/2019 21:50
Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 280-457236/2-A	X4_8461.D	05/13/2019 22:20
NTAmw-119-190401-GW	280-123221-2	X4_8468.D	05/14/2019 01:50

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab File ID: X4_7420.D DFTPP Injection Date: 03/21/2019
Instrument ID: SMS_X4 DFTPP Injection Time: 20:02
Analysis Batch No.: 451426

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0 % of mass 198	41.2
68	Less than 2.0 % of mass 69	0.3 (1.1) 1
69	Mass 69 relative abundance	30.3
70	Less than 2.0 % of mass 69	0.1 (0.5) 1
127	40.0 - 60.0 % of mass 198	45.8
197	Less than 1.0 % of mass 198	0.5
198	Base Peak, 100 % relative abundance	100.0
199	5.0- 9.0 % of mass 198	6.7
275	10.0 - 30.0 % of mass 198	22.5
365	Greater than 1.0 % of mass 198	2.5
441	Present but less than mass 443	12.8 (75.4) 3
442	Greater than 40.0 % of mass 198	86.6
443	17.0 - 23.0 % of mass 442	17.0 (19.6) 2

1-Value is % mass 69 2-Value is % mass 442 3-Value is % mass 443

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	STD0001 280-451426/3	X4_7421.D	03/21/2019	20:15
	STD0002 280-451426/4	X4_7422.D	03/21/2019	20:45
	STD0050 280-451426/5	X4_7423.D	03/21/2019	21:15
	STD0100 280-451426/6	X4_7424.D	03/21/2019	21:45
	STD0300 280-451426/7	X4_7425.D	03/21/2019	22:15
	ICIS 280-451426/8	X4_7426.D	03/21/2019	22:45
	STD1200 280-451426/9	X4_7427.D	03/21/2019	23:15
	STD2500 280-451426/10	X4_7428.D	03/21/2019	23:45
	STD5000 280-451426/11	X4_7429.D	03/22/2019	00:16
	ICV 280-451426/12	X4_7430.D	03/22/2019	06:59

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab File ID: X4_8401.D DFTPP Injection Date: 05/10/2019
Instrument ID: SMS_X4 DFTPP Injection Time: 15:22
Analysis Batch No.: 457763

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0 % of mass 198	38.7
68	Less than 2.0 % of mass 69	0.4 (1.3) 1
69	Mass 69 relative abundance	29.2
70	Less than 2.0 % of mass 69	0.1 (0.4) 1
127	40.0 - 60.0 % of mass 198	44.2
197	Less than 1.0 % of mass 198	0.4
198	Base Peak, 100 % relative abundance	100.0
199	5.0- 9.0 % of mass 198	6.5
275	10.0 - 30.0 % of mass 198	23.7
365	Greater than 1.0 % of mass 198	2.7
441	Present but less than mass 443	13.9 (78.4) 3
442	Greater than 40.0 % of mass 198	93.8
443	17.0 - 23.0 % of mass 442	17.7 (18.9) 2

1-Value is % mass 69 2-Value is % mass 442 3-Value is % mass 443

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCV 280-457763/3	X4_8402.D	05/10/2019	15:34
	MB 280-457182/1-A	X4_8411.D	05/10/2019	20:33
	LCS 280-457182/2-A	X4_8412.D	05/10/2019	21:03
	LCSD 280-457182/3-A	X4_8413.D	05/10/2019	21:33
	CCVC 280-457763/24	X4_8423.D	05/11/2019	02:34

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab File ID: X4_8453.D DFTPP Injection Date: 05/13/2019
Instrument ID: SMS_X4 DFTPP Injection Time: 18:15
Analysis Batch No.: 458021

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0 % of mass 198	39.7
68	Less than 2.0 % of mass 69	0.3 (1.1) 1
69	Mass 69 relative abundance	29.8
70	Less than 2.0 % of mass 69	0.1 (0.5) 1
127	40.0 - 60.0 % of mass 198	44.9
197	Less than 1.0 % of mass 198	0.7
198	Base Peak, 100 % relative abundance	100.0
199	5.0- 9.0 % of mass 198	6.7
275	10.0 - 30.0 % of mass 198	23.4
365	Greater than 1.0 % of mass 198	2.6
441	Present but less than mass 443	13.9 (78.9) 3
442	Greater than 40.0 % of mass 198	91.8
443	17.0 - 23.0 % of mass 442	17.6 (19.2) 2

1-Value is % mass 69 2-Value is % mass 442 3-Value is % mass 443

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCV 280-458021/3	X4_8454.D	05/13/2019	18:28
	MB 280-457236/1-A	X4_8460.D	05/13/2019	21:50
	LCS 280-457236/2-A	X4_8461.D	05/13/2019	22:20
NTAmw-119-190401-GW	280-123221-2	X4_8468.D	05/14/2019	01:50
	CCVC 280-458021/23	X4_8474.D	05/14/2019	04:50

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab File ID: X4_8701.D DFTPP Injection Date: 05/16/2019
Instrument ID: SMS_X4 DFTPP Injection Time: 15:58
Analysis Batch No.: 458474

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0 % of mass 198	42.8
68	Less than 2.0 % of mass 69	0.4 (1.4) 1
69	Mass 69 relative abundance	31.1
70	Less than 2.0 % of mass 69	0.1 (0.4) 1
127	40.0 - 60.0 % of mass 198	45.2
197	Less than 1.0 % of mass 198	0.6
198	Base Peak, 100 % relative abundance	100.0
199	5.0- 9.0 % of mass 198	6.6
275	10.0 - 30.0 % of mass 198	22.8
365	Greater than 1.0 % of mass 198	2.4
441	Present but less than mass 443	12.7 (77.4) 3
442	Greater than 40.0 % of mass 198	86.6
443	17.0 - 23.0 % of mass 442	16.3 (18.9) 2

1-Value is % mass 69 2-Value is % mass 442 3-Value is % mass 443

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCV 280-458474/3	X4_8702.D	05/16/2019	16:11
DET-003-190401-GW	280-123221-4	X4_8703.D	05/16/2019	16:41
DET-004-190401-GW	280-123221-7	X4_8704.D	05/16/2019	17:11
	CCVC 280-458474/13	X4_8712.D	05/16/2019	21:13

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Sample No.: ICIS 280-451426/8 Date Analyzed: 03/21/2019 22:45
 Instrument ID: SMS_X4 GC Column: Rxi-5Sil MS ID: 0.25 (mm)
 Lab File ID (Standard): X4_7426.D Heated Purge: (Y/N) N
 Calibration ID: 35715

	ANT		PHN		CRY		
	AREA #	RT #	AREA #	RT #	AREA #	RT #	
INITIAL CALIBRATION MID-POINT	65365	7.41	137456	8.89	125671	12.77	
UPPER LIMIT	130730	7.91	274912	9.39	251342	13.27	
LOWER LIMIT	32683	6.91	68728	8.39	62836	12.27	
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 280-451426/12		58926	7.41	119511	8.89	107403	12.77
CCV 280-457763/3		45374	7.42	93576	8.90	82325	12.80
MB 280-457182/1-A		42901	7.42	95294	8.90	71441	12.80
LCS 280-457182/2-A		43744	7.42	100858	8.90	81152	12.80
LCSD 280-457182/3-A		44890	7.42	101224	8.90	80820	12.80
CCVC 280-457763/24		44395	7.41	91949	8.90	77348	12.80
CCV 280-458021/3		55052	7.41	115835	8.90	109510	12.79
MB 280-457236/1-A		49115	7.41	104653	8.89	100418	12.79
LCS 280-457236/2-A		49256	7.41	109483	8.89	102373	12.79
280-123221-2	NTAmw-119-190401-GW	46368	7.41	102972	8.89	94910	12.79
CCVC 280-458021/23		47393	7.41	100314	8.89	95125	12.79
CCV 280-458474/3		65301	7.41	144442	8.90	130314	12.80
280-123221-4	DET-003-190401-GW	52403	7.41	118297	8.90	109656	12.79
280-123221-7	DET-004-190401-GW	49161	7.41	108072	8.90	102710	12.79
CCVC 280-458474/13		70435	7.41	148748	8.90	143328	12.79

ANT = Acenaphthene-d10
 PHN = Phenanthrene-d10
 CRY = Chrysene-d12

Area Limit = 50%-200% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Sample No.: ICIS 280-451426/8 Date Analyzed: 03/21/2019 22:45
 Instrument ID: SMS_X4 GC Column: Rxi-5Sil MS ID: 0.25 (mm)
 Lab File ID (Standard): X4_7426.D Heated Purge: (Y/N) N
 Calibration ID: 35715

		PRY					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		103291	16.58				
UPPER LIMIT		206582	17.08				
LOWER LIMIT		51646	16.08				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 280-451426/12		82450	16.59				
CCV 280-457763/3		63371	16.63				
MB 280-457182/1-A		51420Q	16.63				
LCS 280-457182/2-A		58734	16.63				
LCSD 280-457182/3-A		56904	16.62				
CCVC 280-457763/24		57176	16.63				
CCV 280-458021/3		103362	16.62				
MB 280-457236/1-A		97351	16.62				
LCS 280-457236/2-A		92065	16.62				
280-123221-2	NTAmw-119-190401-GW	86295	16.61				
CCVC 280-458021/23		78699	16.61				
CCV 280-458474/3		111441	16.62				
280-123221-4	DET-003-190401-GW	97408	16.62				
280-123221-7	DET-004-190401-GW	94286	16.62				
CCVC 280-458474/13		123192	16.62				

PRY = Perylene-d12

Area Limit = 50%-200% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>NTAmw-119-190401-GW</u>	Lab Sample ID: <u>280-123221-2</u>
Matrix: <u>Water</u>	Lab File ID: <u>X4_8468.D</u>
Analysis Method: <u>8270D SIM</u>	Date Collected: <u>04/30/2019 10:45</u>
Extract. Method: <u>3510C</u>	Date Extracted: <u>05/07/2019 06:23</u>
Sample wt/vol: <u>228.8(mL)</u>	Date Analyzed: <u>05/14/2019 01:50</u>
Con. Extract Vol.: <u>1(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>1(uL)</u>	Level: (low/med) <u>Low</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>458021</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
90-12-0	1-Methylnaphthalene	0.044	U	0.11	0.044	0.020
91-57-6	2-Methylnaphthalene	0.055	U	0.11	0.055	0.023
83-32-9	Acenaphthene	0.044	U	0.11	0.044	0.0046
208-96-8	Acenaphthylene	0.044	U	0.11	0.044	0.0056
120-12-7	Anthracene	0.11	U	0.11	0.11	0.034
56-55-3	Benzo[a]anthracene	0.11	U	0.11	0.11	0.031
50-32-8	Benzo[a]pyrene	0.055	U	0.11	0.055	0.027
205-99-2	Benzo[b]fluoranthene	0.11	U	0.11	0.11	0.043
191-24-2	Benzo[g,h,i]perylene	0.11	U	0.11	0.11	0.041
207-08-9	Benzo[k]fluoranthene	0.055	U	0.11	0.055	0.025
218-01-9	Chrysene	0.11	U	0.11	0.11	0.036
53-70-3	Dibenz(a,h)anthracene	0.11	U	0.11	0.11	0.030
206-44-0	Fluoranthene	0.11	U	0.11	0.11	0.053
86-73-7	Fluorene	0.044	U	0.11	0.044	0.021
193-39-5	Indeno[1,2,3-cd]pyrene	0.11	U	0.11	0.11	0.043
91-20-3	Naphthalene	0.055	U	0.11	0.055	0.025
85-01-8	Phenanthrene	0.11	U	0.11	0.11	0.054
129-00-0	Pyrene	0.11	U	0.11	0.11	0.049

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	79		53-106
4165-60-0	Nitrobenzene-d5	78		55-111
1718-51-0	Terphenyl-d14	88		58-132

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\X4_8468.D
 Lims ID: 280-123221-D-2-A
 Client ID: NTAmw-119-190401-GW
 Sample Type: Client
 Inject. Date: 14-May-2019 01:50:30 ALS Bottle#: 16 Worklist Smp#: 17
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-d-2-a
 Operator ID: WICKHAMM Instrument ID: SMS_X4
 Method: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 14-May-2019 23:07:26 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D

Column 1 : Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: wickhamm

Date: 14-May-2019 23:05:53

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164	7.408	7.408	0.000	89	46368	600.0	
* 2 Phenanthrene-d10	188	8.888	8.899	-0.011	100	102972	600.0	
* 3 Chrysene-d12	240	12.786	12.786	0.000	1	94910	600.0	
* 49 Perylene-d12	264	16.612	16.624	-0.012	0	86295	600.0	
\$ 4 Nitrobenzene-d5	82	4.964	4.964	0.000	95	19790	390.9	
\$ 7 2-methylnaphthalene-d10	152	6.339	6.339	0.000	95	27781	336.2	
\$ 5 2-Fluorobiphenyl	172	6.729	6.729	0.000	99	50590	394.7	
\$ 8 Fluoranthene-d10	212	10.205	10.216	-0.012	96	74156	405.1	
\$ 6 Terphenyl-d14	244	10.771	10.771	0.000	98	54177	438.1	
9 1,4-Dioxane	88		1.976				ND	
10 N-Nitrosodimethylamine	74		2.187				ND	U
11 Naphthalene	128		5.690				ND	
12 2-Methylnaphthalene	142		6.371				ND	
13 1-Methylnaphthalene	142		6.467				ND	
14 Dimethyl phthalate	163		7.114				ND	
15 Acenaphthylene	152		7.261				ND	
16 Acenaphthene	153		7.439				ND	
17 Dibenzofuran	168		7.618				ND	
18 Diethyl phthalate	149		7.935				ND	
20 Fluorene	166		7.951				ND	
19 N-Nitrosodiphenylamine	169		8.063				ND	
21 Phenanthrene	178		8.922				ND	
22 Anthracene	178		8.967				ND	
23 Di-n-butyl phthalate	149		9.455				ND	
24 Fluoranthene	202		10.239				ND	
25 Pyrene	202		10.557				ND	
26 Butyl benzyl phthalate	149		11.619				ND	
28 Benzo[a]anthracene	228		12.772				ND	
29 Chrysene	228		12.856				ND	
27 Bis(2-ethylhexyl) phthalat	149		12.939				ND	
30 Di-n-octyl phthalate	149		14.687				ND	U
31 Benzo[b]fluoranthene	252		15.552				ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ml	Flags
32 Benzo[k]fluoranthene	252		15.627				ND	
33 Benzo[a]pyrene	252		16.455				ND	
34 Indeno[1,2,3-cd]pyrene	276		19.691				ND	
35 Dibenzo[a,h]anthracene	278		19.789				ND	
36 Benzo[g,h,i]perylene	276		20.418				ND	
39 Pentachlorophenol_T	266		3.598				ND	
38 N-Nitrosodiethylamine	102		3.603				ND	
40 DFTPP								
41 Benzidine_T	184		4.668				ND	
42 4,4'-DDE	246		4.807				ND	
37 N-Nitrosodi-n-propylamine	70		4.919				ND	
43 4,4'-DDD	235		5.080				ND	
44 4,4'-DDT	235		5.288				ND	
S 45 TPAH	1		0.000				ND	

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MS-SIM IS_00034

Amount Added: 20.00

Units: uL

Run Reagent

Report Date: 14-May-2019 23:07:42

Chrom Revision: 2.3 03-May-2019 15:52:00

Euofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\X4_8468.D

Injection Date: 14-May-2019 01:50:30

Instrument ID: SMS_X4

Operator ID: WICKHAMM

Lims ID: 280-123221-D-2-A

Lab Sample ID: 280-123221-2

Worklist Smp#: 17

Client ID: NTAmw-119-190401-GW

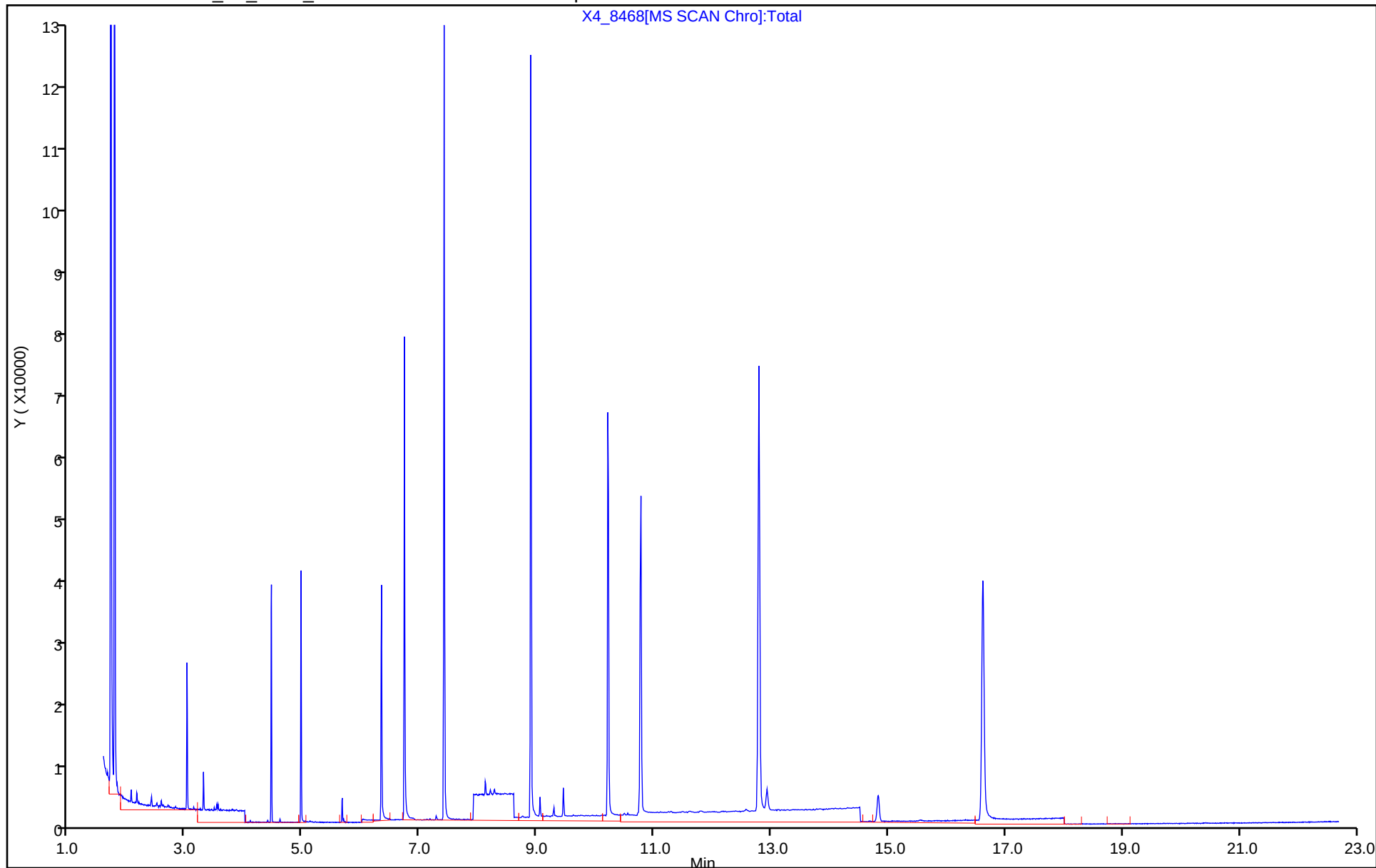
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 16

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\X4_8468.D
 Lims ID: 280-123221-D-2-A
 Client ID: NTAmw-119-190401-GW
 Sample Type: Client
 Inject. Date: 14-May-2019 01:50:30 ALS Bottle#: 16 Worklist Smp#: 17
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-d-2-a
 Operator ID: WICKHAMM Instrument ID: SMS_X4
 Method: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 14-May-2019 23:07:26 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: wickhamm

Date: 14-May-2019 23:05:53

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Nitrobenzene-d5	500.0	390.9	78.18
\$ 7 2-methylnaphthalene-d10	500.0	336.2	67.24
\$ 5 2-Fluorobiphenyl	500.0	394.7	78.93
\$ 8 Fluoranthene-d10	500.0	405.1	81.01
\$ 6 Terphenyl-d14	500.0	438.1	87.62

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>DET-003-190401-GW</u>	Lab Sample ID: <u>280-123221-4</u>
Matrix: <u>Water</u>	Lab File ID: <u>X4_8703.D</u>
Analysis Method: <u>8270D SIM</u>	Date Collected: <u>04/29/2019 10:53</u>
Extract. Method: <u>3510C</u>	Date Extracted: <u>05/06/2019 12:22</u>
Sample wt/vol: <u>228.3(mL)</u>	Date Analyzed: <u>05/16/2019 16:41</u>
Con. Extract Vol.: <u>1(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>1(uL)</u>	Level: (low/med) <u>Low</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>458474</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
90-12-0	1-Methylnaphthalene	0.044	U	0.11	0.044	0.020
91-57-6	2-Methylnaphthalene	0.055	U	0.11	0.055	0.023
83-32-9	Acenaphthene	0.044	U	0.11	0.044	0.0046
208-96-8	Acenaphthylene	0.044	U	0.11	0.044	0.0056
120-12-7	Anthracene	0.11	U	0.11	0.11	0.034
56-55-3	Benzo[a]anthracene	0.11	U	0.11	0.11	0.031
50-32-8	Benzo[a]pyrene	0.055	U	0.11	0.055	0.027
205-99-2	Benzo[b]fluoranthene	0.11	U	0.11	0.11	0.043
191-24-2	Benzo[g,h,i]perylene	0.11	U	0.11	0.11	0.041
207-08-9	Benzo[k]fluoranthene	0.055	U	0.11	0.055	0.025
218-01-9	Chrysene	0.11	U	0.11	0.11	0.036
53-70-3	Dibenz(a,h)anthracene	0.11	U	0.11	0.11	0.030
206-44-0	Fluoranthene	0.11	U	0.11	0.11	0.053
86-73-7	Fluorene	0.044	U	0.11	0.044	0.021
193-39-5	Indeno[1,2,3-cd]pyrene	0.11	U	0.11	0.11	0.043
91-20-3	Naphthalene	0.055	U	0.11	0.055	0.025
85-01-8	Phenanthrene	0.11	U	0.11	0.11	0.054
129-00-0	Pyrene	0.11	U	0.11	0.11	0.049

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	91		53-106
4165-60-0	Nitrobenzene-d5	88		55-111
1718-51-0	Terphenyl-d14	99		58-132

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\X4_8703.D
 Lims ID: 280-123221-G-4-A
 Client ID: DET-003-190401-GW
 Sample Type: Client
 Inject. Date: 16-May-2019 16:41:30 ALS Bottle#: 3 Worklist Smp#: 4
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-g-4-a
 Operator ID: WICKHAMM Instrument ID: SMS_X4
 Method: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 17-May-2019 19:19:50 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 17-May-2019 19:12:59

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164	7.408	7.408	0.000	97	52403	600.0	
* 2 Phenanthrene-d10	188	8.899	8.899	0.000	100	118297	600.0	
* 3 Chrysene-d12	240	12.786	12.800	-0.014	1	109656	600.0	
* 49 Perylene-d12	264	16.624	16.618	0.006	0	97408	600.0	
\$ 4 Nitrobenzene-d5	82	4.964	4.964	0.000	100	25263	441.6	
\$ 7 2-methylnaphthalene-d10	152	6.339	6.339	0.000	99	35680	382.1	
\$ 5 2-Fluorobiphenyl	172	6.729	6.729	0.000	100	65789	454.1	
\$ 8 Fluoranthene-d10	212	10.216	10.216	0.000	96	90377	429.7	
\$ 6 Terphenyl-d14	244	10.771	10.771	0.000	99	70606	497.0	
9 1,4-Dioxane	88		1.976				ND	
10 N-Nitrosodimethylamine	74		2.187				ND	U
11 Naphthalene	128		5.690				ND	
12 2-Methylnaphthalene	142		6.371				ND	
13 1-Methylnaphthalene	142		6.475				ND	
14 Dimethyl phthalate	163		7.114				ND	
15 Acenaphthylene	152		7.271				ND	
16 Acenaphthene	153		7.439				ND	
17 Dibenzofuran	168		7.618				ND	
18 Diethyl phthalate	149		7.935				ND	
20 Fluorene	166		7.959				ND	
19 N-Nitrosodiphenylamine	169		8.063				ND	
21 Phenanthrene	178		8.922				ND	
22 Anthracene	178		8.967				ND	
23 Di-n-butyl phthalate	149		9.455				ND	
24 Fluoranthene	202		10.239				ND	
25 Pyrene	202		10.557				ND	
26 Butyl benzyl phthalate	149		11.619				ND	
28 Benzo[a]anthracene	228		12.772				ND	
29 Chrysene	228		12.856				ND	
27 Bis(2-ethylhexyl) phthalat	149		12.939				ND	
30 Di-n-octyl phthalate	149		14.687				ND	U
31 Benzo[b]fluoranthene	252		15.552				ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ml	Flags
32 Benzo[k]fluoranthene	252		15.621				ND	
33 Benzo[a]pyrene	252		16.449				ND	
34 Indeno[1,2,3-cd]pyrene	276		19.686				ND	
35 Dibenzo[a,h]anthracene	278		19.783				ND	
36 Benzo[g,h,i]perylene	276		20.413				ND	
39 Pentachlorophenol_T	266		3.598				ND	
38 N-Nitrosodiethylamine	102		3.603				ND	
40 DFTPP								
41 Benzidine_T	184		4.668				ND	
42 4,4'-DDE	246		4.807				ND	
37 N-Nitrosodi-n-propylamine	70		4.919				ND	
43 4,4'-DDD	235		5.053				ND	
44 4,4'-DDT	235		5.288				ND	
S 45 TPAH	1		0.000				ND	

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MS-SIM IS_00034

Amount Added: 20.00

Units: uL

Run Reagent

Report Date: 17-May-2019 19:19:56

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\X4_8703.D

Injection Date: 16-May-2019 16:41:30

Instrument ID: SMS_X4

Operator ID: WICKHAMM

Lims ID: 280-123221-G-4-A

Lab Sample ID: 280-123221-4

Worklist Smp#: 4

Client ID: DET-003-190401-GW

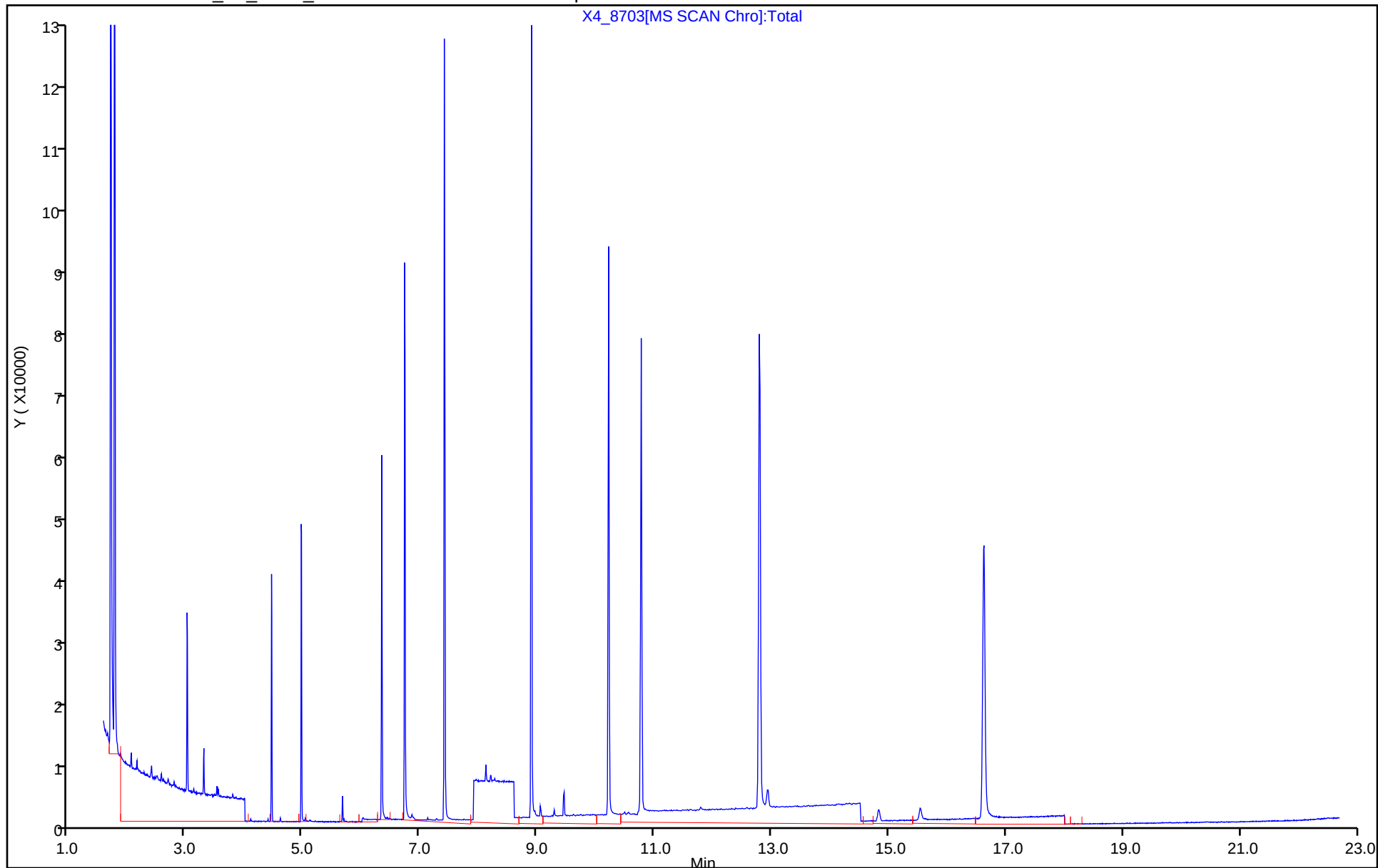
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 3

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\X4_8703.D
 Lims ID: 280-123221-G-4-A
 Client ID: DET-003-190401-GW
 Sample Type: Client
 Inject. Date: 16-May-2019 16:41:30 ALS Bottle#: 3 Worklist Smp#: 4
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-g-4-a
 Operator ID: WICKHAMM Instrument ID: SMS_X4
 Method: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 17-May-2019 19:19:50 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D

Column 1 : Det: MS SCAN
 Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 17-May-2019 19:12:59

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Nitrobenzene-d5	500.0	441.6	88.31
\$ 7 2-methylnaphthalene-d10	500.0	382.1	76.41
\$ 5 2-Fluorobiphenyl	500.0	454.1	90.82
\$ 8 Fluoranthene-d10	500.0	429.7	85.95
\$ 6 Terphenyl-d14	500.0	497.0	99.40

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>DET-004-190401-GW</u>	Lab Sample ID: <u>280-123221-7</u>
Matrix: <u>Water</u>	Lab File ID: <u>X4_8704.D</u>
Analysis Method: <u>8270D SIM</u>	Date Collected: <u>04/29/2019 10:04</u>
Extract. Method: <u>3510C</u>	Date Extracted: <u>05/06/2019 12:22</u>
Sample wt/vol: <u>235.2 (mL)</u>	Date Analyzed: <u>05/16/2019 17:11</u>
Con. Extract Vol.: <u>1 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>1 (uL)</u>	Level: (low/med) <u>Low</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>458474</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
90-12-0	1-Methylnaphthalene	0.043	U	0.11	0.043	0.019
91-57-6	2-Methylnaphthalene	0.053	U	0.11	0.053	0.023
83-32-9	Acenaphthene	0.043	U	0.11	0.043	0.0045
208-96-8	Acenaphthylene	0.043	U	0.11	0.043	0.0054
120-12-7	Anthracene	0.11	U	0.11	0.11	0.033
56-55-3	Benzo[a]anthracene	0.11	U	0.11	0.11	0.030
50-32-8	Benzo[a]pyrene	0.053	U	0.11	0.053	0.026
205-99-2	Benzo[b]fluoranthene	0.11	U	0.11	0.11	0.042
191-24-2	Benzo[g,h,i]perylene	0.11	U	0.11	0.11	0.040
207-08-9	Benzo[k]fluoranthene	0.053	U	0.11	0.053	0.024
218-01-9	Chrysene	0.11	U	0.11	0.11	0.035
53-70-3	Dibenz(a,h)anthracene	0.11	U	0.11	0.11	0.029
206-44-0	Fluoranthene	0.11	U	0.11	0.11	0.052
86-73-7	Fluorene	0.043	U	0.11	0.043	0.020
193-39-5	Indeno[1,2,3-cd]pyrene	0.11	U	0.11	0.11	0.042
91-20-3	Naphthalene	0.053	U	0.11	0.053	0.024
85-01-8	Phenanthrene	0.11	U	0.11	0.11	0.053
129-00-0	Pyrene	0.11	U	0.11	0.11	0.048

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	83		53-106
4165-60-0	Nitrobenzene-d5	81		55-111
1718-51-0	Terphenyl-d14	108		58-132

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\X4_8704.D
 Lims ID: 280-123221-H-7-A
 Client ID: DET-004-190401-GW
 Sample Type: Client
 Inject. Date: 16-May-2019 17:11:30 ALS Bottle#: 4 Worklist Smp#: 5
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-h-7-a
 Operator ID: WICKHAMM Instrument ID: SMS_X4
 Method: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 17-May-2019 19:19:50 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 17-May-2019 19:14:52

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164	7.408	7.408	0.000	98	49161	600.0	
* 2 Phenanthrene-d10	188	8.899	8.899	0.000	100	108072	600.0	
* 3 Chrysene-d12	240	12.786	12.800	-0.014	1	102710	600.0	
* 49 Perylene-d12	264	16.618	16.618	0.000	0	94286	600.0	
\$ 4 Nitrobenzene-d5	82	4.964	4.964	0.000	100	21671	403.8	
\$ 7 2-methylnaphthalene-d10	152	6.339	6.339	0.000	100	30046	343.0	
\$ 5 2-Fluorobiphenyl	172	6.729	6.729	0.000	100	56725	417.4	
\$ 8 Fluoranthene-d10	212	10.216	10.216	0.000	96	88659	461.4	
\$ 6 Terphenyl-d14	244	10.771	10.771	0.000	99	70013	539.4	
9 1,4-Dioxane	88		1.976				ND	
10 N-Nitrosodimethylamine	74		2.187				ND	U
11 Naphthalene	128		5.690				ND	
12 2-Methylnaphthalene	142		6.371				ND	
13 1-Methylnaphthalene	142		6.475				ND	
14 Dimethyl phthalate	163		7.114				ND	
15 Acenaphthylene	152		7.271				ND	
16 Acenaphthene	153		7.439				ND	
17 Dibenzofuran	168		7.618				ND	
18 Diethyl phthalate	149		7.935				ND	
20 Fluorene	166		7.959				ND	
19 N-Nitrosodiphenylamine	169		8.063				ND	
21 Phenanthrene	178		8.922				ND	
22 Anthracene	178		8.967				ND	
23 Di-n-butyl phthalate	149		9.455				ND	
24 Fluoranthene	202		10.239				ND	
25 Pyrene	202		10.557				ND	
26 Butyl benzyl phthalate	149		11.619				ND	
28 Benzo[a]anthracene	228		12.772				ND	
29 Chrysene	228		12.856				ND	
27 Bis(2-ethylhexyl) phthalat	149		12.939				ND	
30 Di-n-octyl phthalate	149	14.824	14.687	0.137	0	4111	96.6	
31 Benzo[b]fluoranthene	252		15.552				ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ml	Flags
32 Benzo[k]fluoranthene	252		15.621				ND	
33 Benzo[a]pyrene	252		16.449				ND	
34 Indeno[1,2,3-cd]pyrene	276		19.686				ND	
35 Dibenzo[a,h]anthracene	278		19.783				ND	
36 Benzo[g,h,i]perylene	276		20.413				ND	
39 Pentachlorophenol_T	266		3.598				ND	
38 N-Nitrosodiethylamine	102		3.603				ND	
40 DFTPP								
41 Benzidine_T	184		4.668				ND	
42 4,4'-DDE	246		4.807				ND	
37 N-Nitrosodi-n-propylamine	70		4.919				ND	
43 4,4'-DDD	235		5.053				ND	
44 4,4'-DDT	235		5.288				ND	
S 45 TPAH	1		0.000				ND	

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MS-SIM IS_00034

Amount Added: 20.00

Units: uL

Run Reagent

Report Date: 17-May-2019 19:19:59

Chrom Revision: 2.3 03-May-2019 15:52:00

Euofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\X4_8704.D

Injection Date: 16-May-2019 17:11:30

Instrument ID: SMS_X4

Operator ID: WICKHAMM

Lims ID: 280-123221-H-7-A

Lab Sample ID: 280-123221-7

Worklist Smp#: 5

Client ID: DET-004-190401-GW

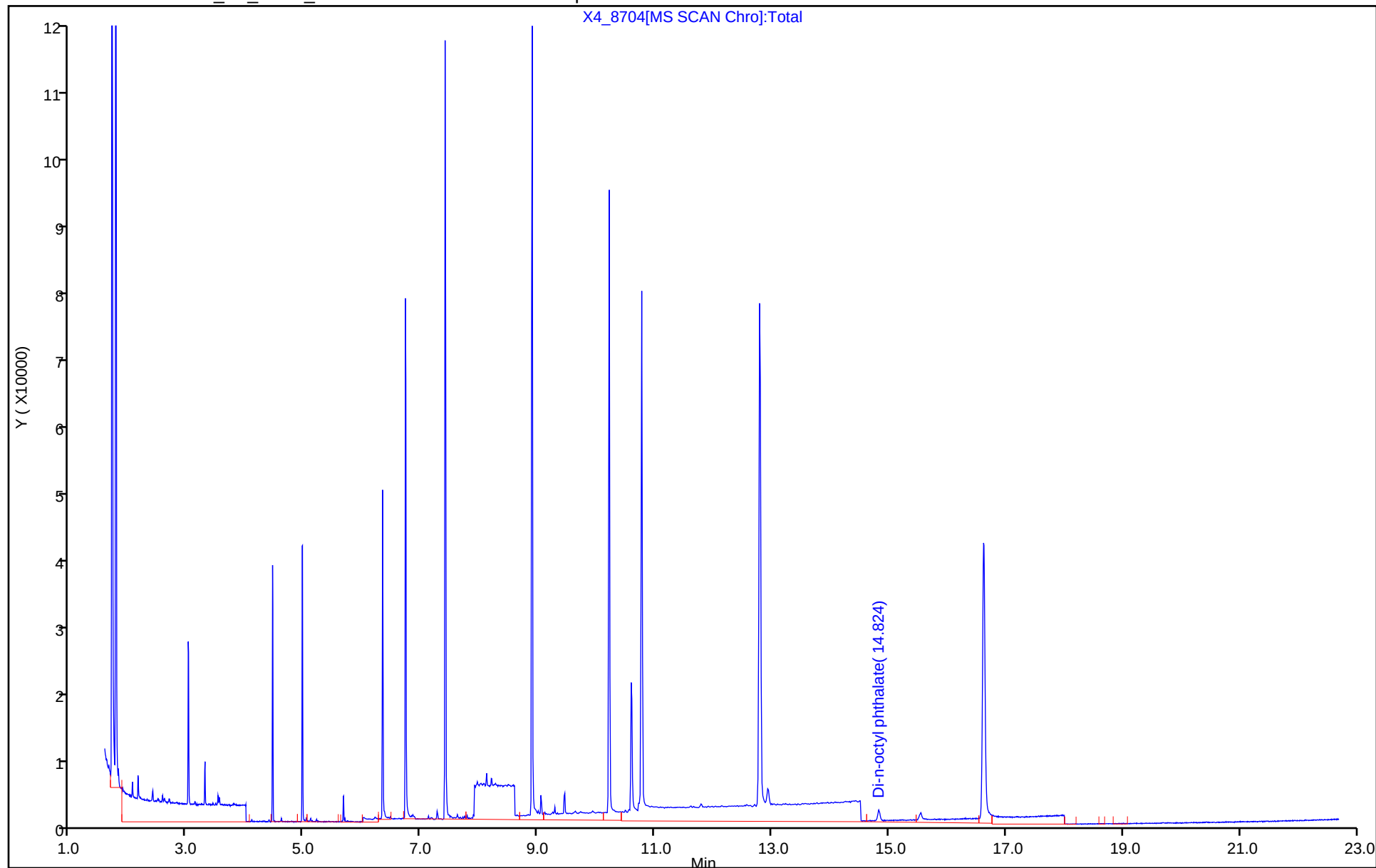
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 4

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\X4_8704.D
 Lims ID: 280-123221-H-7-A
 Client ID: DET-004-190401-GW
 Sample Type: Client
 Inject. Date: 16-May-2019 17:11:30 ALS Bottle#: 4 Worklist Smp#: 5
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-h-7-a
 Operator ID: WICKHAMM Instrument ID: SMS_X4
 Method: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 17-May-2019 19:19:50 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D

Column 1 : Det: MS SCAN
 Process Host: CTX0304

First Level Reviewer: wickhamm Date: 17-May-2019 19:14:52

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Nitrobenzene-d5	500.0	403.8	80.75
\$ 7 2-methylnaphthalene-d10	500.0	343.0	68.59
\$ 5 2-Fluorobiphenyl	500.0	417.4	83.47
\$ 8 Fluoranthene-d10	500.0	461.4	92.29
\$ 6 Terphenyl-d14	500.0	539.4	107.89

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 451426

SDG No.: _____

Instrument ID: SMS_X4 GC Column: Rxi-5Sil MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/21/2019 20:15 Calibration End Date: 03/22/2019 00:16 Calibration ID: 35715

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD0001 280-451426/3	X4_7421.D
Level 2	STD0002 280-451426/4	X4_7422.D
Level 3	STD0050 280-451426/5	X4_7423.D
Level 4	STD0100 280-451426/6	X4_7424.D
Level 5	STD0300 280-451426/7	X4_7425.D
Level 6	ICIS 280-451426/8	X4_7426.D
Level 7	STD1200 280-451426/9	X4_7427.D
Level 8	STD2500 280-451426/10	X4_7428.D
Level 9	STD5000 280-451426/11	X4_7429.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5		B	M1	M2								
Naphthalene	2.2004 1.9462	2.3118 2.2306	2.2114 2.2084	2.1132 2.1918	2.1326	Ave		2.1718			0.7000	4.7		15.0			
2-Methylnaphthalene	1.4174 1.2978	1.5095 1.4841	1.4269 1.4705	1.3809 1.4739	1.4085	Ave		1.4299			0.4000	4.5		15.0			
1-Methylnaphthalene	1.3389 1.1736	1.3301 1.3239	1.3122 1.3270	1.2426 1.3346	1.2421	Ave		1.2917			0.0500	4.5		15.0			
Acenaphthylene	2.2572 1.9808	2.2657 2.2341	2.1581 2.3220	2.0838 2.3539	2.1106	Ave		2.1962			0.9000	5.5		15.0			
Acenaphthene	1.4514 1.2637	1.4518 1.4255	1.4097 1.4238	1.3159 1.4437	1.3203	Ave		1.3895			0.9000	5.1		15.0			
Fluorene	1.6784 1.4846	1.7235 1.6765	1.5686 1.6802	1.5028 1.7150	1.5368	Ave		1.6185			0.9000	5.8		15.0			
Phenanthrene	1.4041 1.1454	1.3357 1.3001	1.2817 1.2997	1.2502 1.2493	1.2262	Ave		1.2769			0.7000	5.7		15.0			
Anthracene	1.2251 1.0252	1.1781 1.1971	1.0983 1.2138	1.0755 1.2197	1.0704	Ave		1.1448			0.7000	6.7		15.0			
Fluoranthene	1.4805 1.2412	1.4517 1.4439	1.3074 1.4361	1.3032 1.4282	1.2774	Ave		1.3744			0.6000	6.6		15.0			
Pyrene	1.5544 1.2292	1.4549 1.4554	1.3672 1.4433	1.3175 1.4497	1.3020	Ave		1.3970			0.6000	7.2		15.0			
Benzo[a]anthracene	1.7433 1.1714	1.4971 1.3158	1.3207 1.3294	1.2363 1.3508	1.1962	Ave		1.3512			0.8000	13.0		15.0			
Chrysene	1.4247 1.2629	1.4987 1.4610	1.3671 1.4241	1.3656 1.4143	1.3242	Ave		1.3936			0.7000	5.2		15.0			
Benzo[b]fluoranthene	1.5786 1.1205	1.3747 1.3353	1.3094 1.2931	1.2229 1.3066	1.1616	Ave		1.3003			0.7000	10.2		15.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 451426

SDG No.: _____

Instrument ID: SMS_X4 GC Column: Rxi-5Sil MS ID: 0.25 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/21/2019 20:15 Calibration End Date: 03/22/2019 00:16 Calibration ID: 35715

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7	LVL 8	LVL 9													
Benzo[k]fluoranthene	1.4686 1.1853	1.3966 1.3993	1.2223 1.4265	1.2714 1.4587	1.2173	Ave		1.3384			0.7000	8.5		15.0			
Benzo[a]pyrene	1.3637 1.0104	1.1892 1.1686	1.1097 1.1939	1.0887 1.2441	1.0388	Ave		1.1563			0.7000	9.4		15.0			
Indeno[1,2,3-cd]pyrene	1.2452 0.9129	1.1430 1.0298	1.0612 1.0348	0.9799 1.0524	0.9766	Ave		1.0484			0.5000	9.3		15.0			
Dibenz(a,h)anthracene	1.0583 0.9101	1.0154 1.0570	0.9966 1.0866	0.9538 1.1149	0.9595	Ave		1.0169			0.4000	6.7		15.0			
Benzo[g,h,i]perylene	1.3649 1.1219	1.3323 1.2933	1.2831 1.2708	1.2610 1.2829	1.2052	Ave		1.2684			0.5000	5.6		15.0			
Nitrobenzene-d5	0.6862 0.5793	0.7161 0.6671	0.6454 0.6773	0.6181 0.6878	0.6183	Ave		0.6551				6.6		15.0			
2-methylnaphthalene-d10	1.1585 0.9616	1.1456 1.0855	1.0580 1.0800	1.0254 1.0790	1.0296	Ave		1.0693				5.7		15.0			
2-Fluorobiphenyl	1.6582 1.5031	1.7320 1.7184	1.6482 1.7175	1.6070 1.7100	1.6345	Ave		1.6588				4.4		15.0			
Fluoranthene-d10	1.1774 0.9653	1.0968 1.1144	1.0539 1.0894	1.0205 1.0896	0.9931	Ave		1.0667				6.2		15.0			
Terphenyl-d14	0.8226 0.6498	0.7458 0.7492	0.6958 0.7428	0.6801 0.7357	0.6636	Ave		0.7206				7.5		15.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 451426

SDG No.: _____

Instrument ID: SMS_X4 GC Column: Rxi-5Sil MS ID: 0.25 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/21/2019 20:15 Calibration End Date: 03/22/2019 00:16 Calibration ID: 35715

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD0001 280-451426/3	X4_7421.D
Level 2	STD0002 280-451426/4	X4_7422.D
Level 3	STD0050 280-451426/5	X4_7423.D
Level 4	STD0100 280-451426/6	X4_7424.D
Level 5	STD0300 280-451426/7	X4_7425.D
Level 6	ICIS 280-451426/8	X4_7426.D
Level 7	STD1200 280-451426/9	X4_7427.D
Level 8	STD2500 280-451426/10	X4_7428.D
Level 9	STD5000 280-451426/11	X4_7429.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5
Naphthalene	ANT	Ave	2171 127211	4613 243221	10865 504066	20637 976925	61320	10.0 600	20.0 1200	50.0 2500	100 5000	300
2-Methylnaphthalene	ANT	Ave	2797 169659	6024 323649	14021 671277	26970 1313933	80998	20.0 1200	40.0 2400	100 5000	200 10000	600
1-Methylnaphthalene	ANT	Ave	1321 76711	2654 144362	6447 302878	12135 594866	35715	10.0 600	20.0 1200	50.0 2500	100 5000	300
Acenaphthylene	ANT	Ave	2227 129473	4521 243602	10603 529992	20350 1049184	60689	10.0 600	20.0 1200	50.0 2500	100 5000	300
Acenaphthene	ANT	Ave	1432 82601	2897 155439	6926 324988	12851 643502	37963	10.0 600	20.0 1200	50.0 2500	100 5000	300
Fluorene	ANT	Ave	1656 97038	3439 182808	7707 383506	14676 764425	44189	10.0 600	20.0 1200	50.0 2500	100 5000	300
Phenanthrene	PHN	Ave	2738 157444	5400 287089	12741 606808	24446 1201089	73412	10.0 600	20.0 1200	50.0 2500	100 5000	300
Anthracene	PHN	Ave	2389 140922	4763 264334	10918 566735	21029 1172613	64087	10.0 600	20.0 1200	50.0 2500	100 5000	300
Fluoranthene	PHN	Ave	2887 170610	5869 318840	12997 670516	25482 1373048	76482	10.0 600	20.0 1200	50.0 2500	100 5000	300
Pyrene	PHN	Ave	3031 168962	5882 321372	13591 673864	25762 1393725	77951	10.0 600	20.0 1200	50.0 2500	100 5000	300
Benzo[a]anthracene	CRY	Ave	3059 147214	5408 269665	11405 590988	21783 1239173	64942	10.0 600	20.0 1200	50.0 2500	100 5000	300
Chrysene	CRY	Ave	2500 158707	5414 299408	11806 633124	24062 1297481	71891	10.0 600	20.0 1200	50.0 2500	100 5000	300
Benzo[b]fluoranthene	CRY	Ave	2770 140818	4966 273650	11307 574865	21548 1198684	63061	10.0 600	20.0 1200	50.0 2500	100 5000	300
Benzo[k]fluoranthene	CRY	Ave	2577 148955	5045 286765	10555 634184	22402 1338185	66085	10.0 600	20.0 1200	50.0 2500	100 5000	300

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 451426

SDG No.: _____

Instrument ID: SMS_X4 GC Column: Rxi-5Sil MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/21/2019 20:15 Calibration End Date: 03/22/2019 00:16 Calibration ID: 35715

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5
Benzo[a]pyrene	CRY	Ave	2393 126979	4296 239484	9583 530749	19183 1141342	56395	10.0 600	20.0 1200	50.0 2500	100 5000	300
Indeno[1,2,3-cd]pyrene	CRY	Ave	2185 114725	4129 211050	9164 460029	17266 965474	53021	10.0 600	20.0 1200	50.0 2500	100 5000	300
Dibenz(a,h)anthracene	CRY	Ave	1857 114373	3668 216621	8606 483051	16806 1022741	52092	10.0 600	20.0 1200	50.0 2500	100 5000	300
Benzo[g,h,i]perylene	CRY	Ave	2395 140992	4813 265040	11080 564961	22218 1176941	65433	10.0 600	20.0 1200	50.0 2500	100 5000	300
Nitrobenzene-d5	ANT	Ave	677 37865	1429 72746	3171 154584	6036 306580	17779	10.0 600	20.0 1200	50.0 2500	100 5000	300
2-methylnaphthalene-d10	ANT	Ave	1143 62858	2286 118368	5198 246500	10014 480952	29605	10.0 600	20.0 1200	50.0 2500	100 5000	300
2-Fluorobiphenyl	ANT	Ave	1636 98249	3456 187369	8098 392019	15693 762190	46999	10.0 600	20.0 1200	50.0 2500	100 5000	300
Fluoranthene-d10	PHN	Ave	2296 132689	4434 246073	10477 508650	19954 1047534	59457	10.0 600	20.0 1200	50.0 2500	100 5000	300
Terphenyl-d14	PHN	Ave	1604 89317	3015 165428	6917 346818	13298 707291	39730	10.0 600	20.0 1200	50.0 2500	100 5000	300

Curve Type Legend:

Ave = Average ISTD

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7421.D
 Lims ID: std0001
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 21-Mar-2019 20:15:30 ALS Bottle#: 2 Worklist Smp#: 3
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD0001
 Operator ID: HOEFLERA Instrument ID: SMS_X4
 Sublist: chrom-SMS_X4_SIMX_5.1*sub1
 Method: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 22-Mar-2019 07:39:09 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0305

First Level Reviewer: wickhamm

Date: 21-Mar-2019 20:47:31

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164	7.408	7.408	0.000	85	59198	600.0	600.0	
* 2 Phenanthrene-d10	188	8.888	8.888	0.000	100	117000	600.0	600.0	
* 3 Chrysene-d12	240	12.772	12.772	0.000	1	105285	600.0	600.0	
* 49 Perylene-d12	264	16.581	16.581	0.000	0	98381	600.0	600.0	
\$ 4 Nitrobenzene-d5	82	4.964	4.964	0.000	97	677	10.0	10.5	a
\$ 7 2-methylnaphthalene-d10	152	6.339	6.339	0.000	97	1143	10.0	10.8	
\$ 5 2-Fluorobiphenyl	172	6.729	6.729	0.000	99	1636	10.0	10.0	
\$ 8 Fluoranthene-d10	212	10.205	10.205	0.000	76	2296	10.0	11.0	
\$ 6 Terphenyl-d14	244	10.771	10.771	0.000	61	1604	10.0	11.4	
9 1,4-Dioxane	88		1.993				ND	ND	
10 N-Nitrosodimethylamine	74	2.198	2.198	0.000	26	452	10.0	10.4	
11 Naphthalene	128	5.690	5.690	0.000	97	2171	10.0	10.1	a
12 2-Methylnaphthalene	142	6.371	6.371	0.000	96	2797	20.0	19.8	
13 1-Methylnaphthalene	142	6.467	6.467	0.000	96	1321	10.0	10.4	a
14 Dimethyl phthalate	163	7.114	7.114	0.000	100	3210	20.0	20.0	a
15 Acenaphthylene	152	7.261	7.261	0.000	97	2227	10.0	10.3	a
16 Acenaphthene	153	7.439	7.439	0.000	98	1432	10.0	10.4	
17 Dibenzofuran	168	7.618	7.618	0.000	62	2073	10.0	10.2	
18 Diethyl phthalate	149		7.935				ND	ND	
20 Fluorene	166	7.951	7.951	0.000	28	1656	10.0	10.4	a
19 N-Nitrosodiphenylamine	169	8.063	8.063	0.000	28	1172	10.0	10.6	
21 Phenanthrene	178	8.910	8.910	0.000	96	2738	10.0	11.0	a
22 Anthracene	178	8.967	8.967	0.000	96	2389	10.0	10.7	a
23 Di-n-butyl phthalate	149	9.455	9.455	0.000	100	5361	20.0	22.3	
24 Fluoranthene	202	10.227	10.227	0.000	75	2887	10.0	10.8	a
25 Pyrene	202	10.545	10.545	0.000	71	3031	10.0	11.1	a
26 Butyl benzyl phthalate	149	11.619	11.619	0.000	77	2140	20.0	25.6	
28 Benzo[a]anthracene	228	12.745	12.745	0.000	28	3059	10.0	12.9	
29 Chrysene	228	12.828	12.828	0.000	80	2500	10.0	10.2	
27 Bis(2-ethylhexyl) phthalat	149	12.939	12.939	0.000	91	3511	20.0	150.1	a
30 Di-n-octyl phthalate	149	14.693	14.693	0.000	0	3254	20.0	89.8	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
31 Benzo[b]fluoranthene	252	15.508	15.508	0.000	90	2770	10.0	12.1	a
32 Benzo[k]fluoranthene	252	15.590	15.590	0.000	88	2577	10.0	11.0	
33 Benzo[a]pyrene	252	16.411	16.411	0.000	86	2393	10.0	11.8	
34 Indeno[1,2,3-cd]pyrene	276	19.626	19.626	0.000	89	2185	10.0	11.9	
35 Dibenzo(a,h)anthracene	278	19.735	19.735	0.000	81	1857	10.0	10.4	
36 Benzo[g,h,i]perylene	276	20.358	20.358	0.000	90	2395	10.0	10.8	M
38 N-Nitrosodiethylamine	102		3.603				ND	ND	
37 N-Nitrosodi-n-propylamine	70		4.919				ND	ND	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

MS-SIMSL 0.01_00008

Amount Added: 200.00

Units: uL

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7421.D

Injection Date: 21-Mar-2019 20:15:30

Instrument ID: SMS_X4

Operator ID: HOEFLERA

Lims ID: std0001

Worklist Smp#: 3

Client ID:

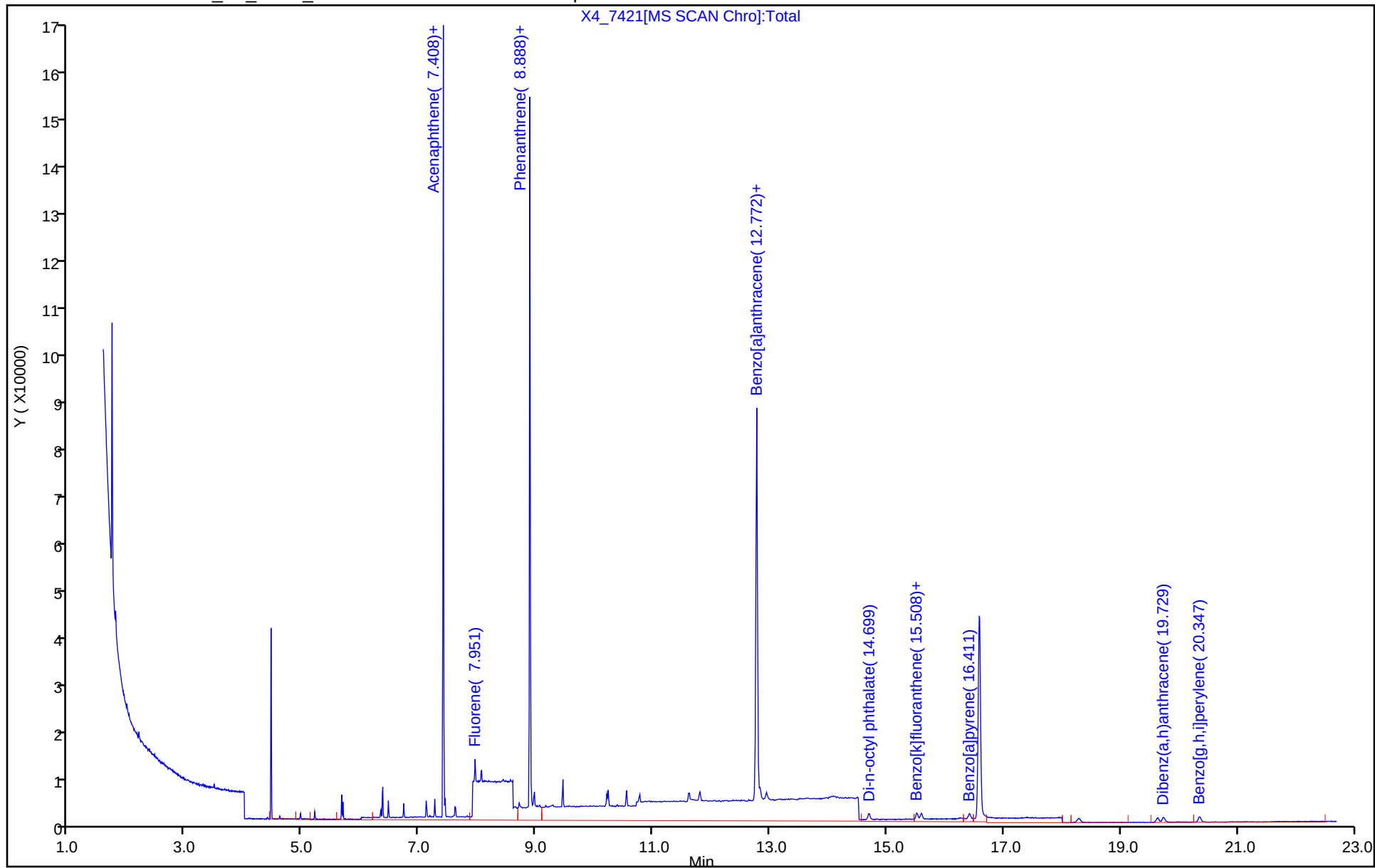
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 2

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM



TestAmerica Denver

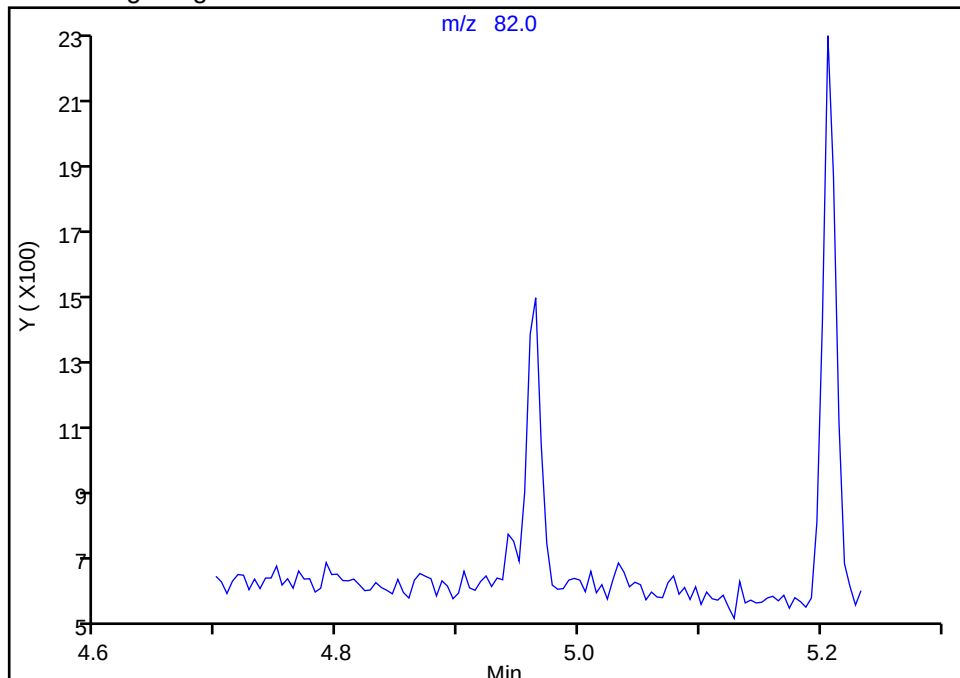
Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7421.D
Injection Date: 21-Mar-2019 20:15:30 Instrument ID: SMS_X4
Lims ID: std0001
Client ID:
Operator ID: HOEFLERA ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: SMS_X4_SIMX_5.1 Limit Group: MSSV - 8270C-SIM
Column: Detector MS SCAN

\$ 4 Nitrobenzene-d5, CAS: 4165-60-0

Signal: 1

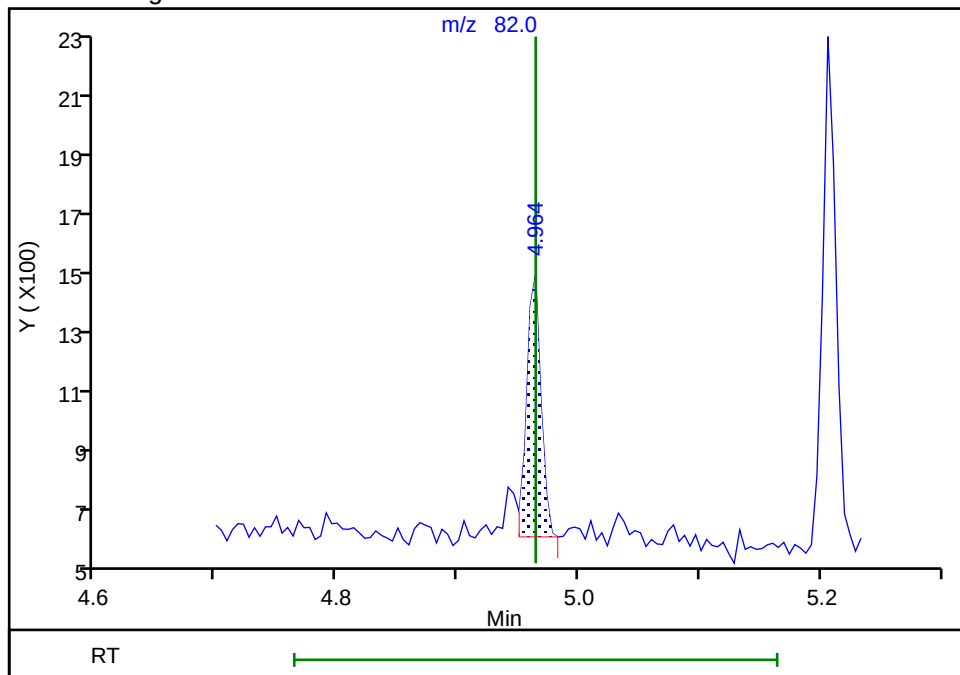
Not Detected
Expected RT: 4.96

Processing Integration Results



RT: 4.96
Area: 677
Amount: 10.474767
Amount Units: ng/ml

Manual Integration Results



Reviewer: wickham, 21-Mar-2019 20:45:31
Audit Action: Assigned Compound ID

Audit Reason: Incomplete Integration

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7421.D

Injection Date: 21-Mar-2019 20:15:30

Instrument ID: SMS_X4

Lims ID: std0001

Client ID:

Operator ID: HOEFLERA

ALS Bottle#:

2

Worklist Smp#: 3

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM

Column:

Detector MS SCAN

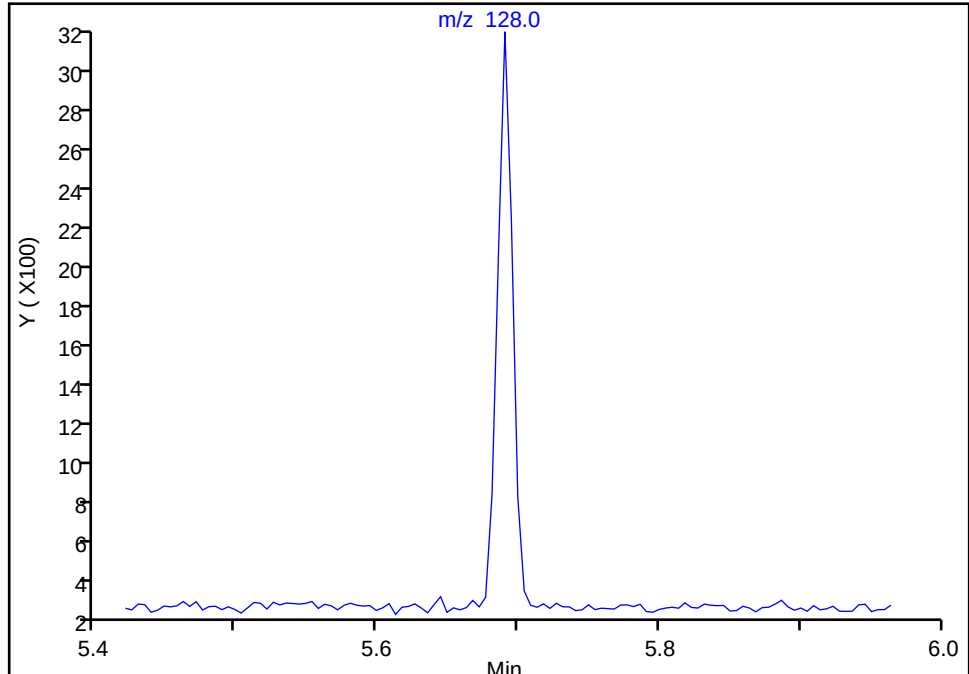
11 Naphthalene, CAS: 91-20-3

Signal: 1

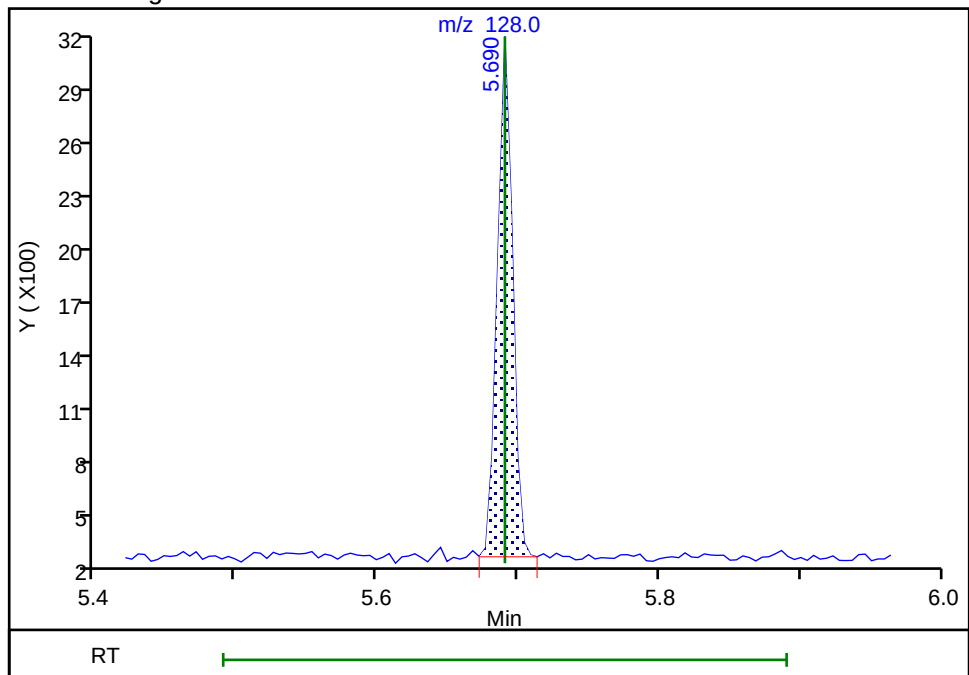
Not Detected

Expected RT: 5.69

Processing Integration Results



Manual Integration Results



Reviewer: wickhamm, 21-Mar-2019 20:45:37

Audit Action: Assigned Compound ID

Audit Reason: Incomplete Integration

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7421.D

Injection Date: 21-Mar-2019 20:15:30

Instrument ID: SMS_X4

Lims ID: std0001

Client ID:

Operator ID: HOEFLERA

ALS Bottle#:

2

Worklist Smp#: 3

Injection Vol: 1.0 ul

Dil. Factor:

1.0000

Method: SMS_X4_SIMX_5.1

Limit Group:

MSSV - 8270C-SIM

Column:

Detector

MS SCAN

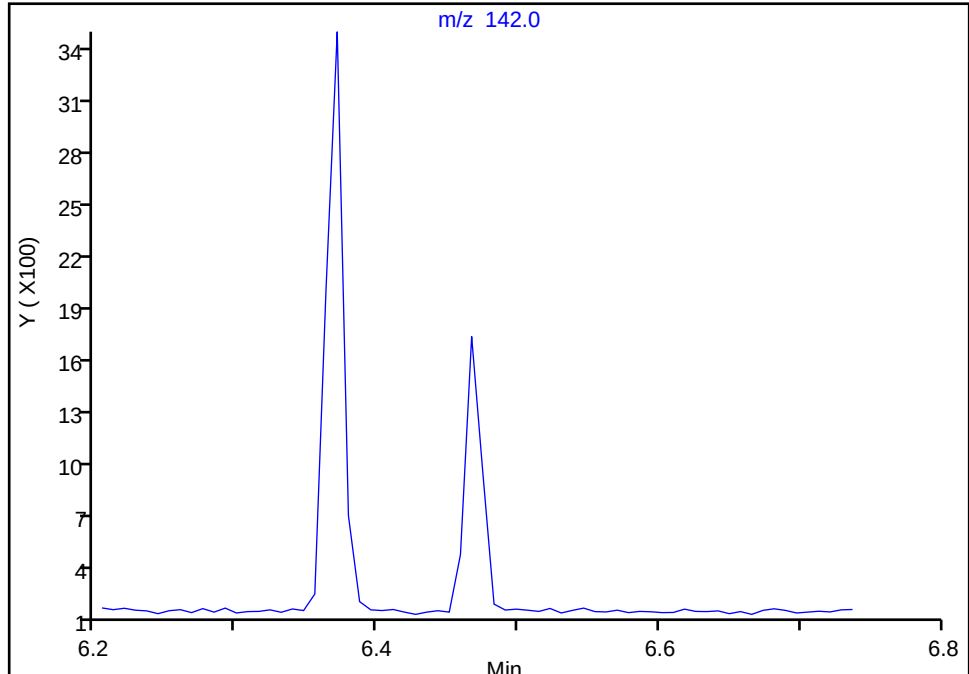
13 1-Methylnaphthalene, CAS: 90-12-0

Signal: 1

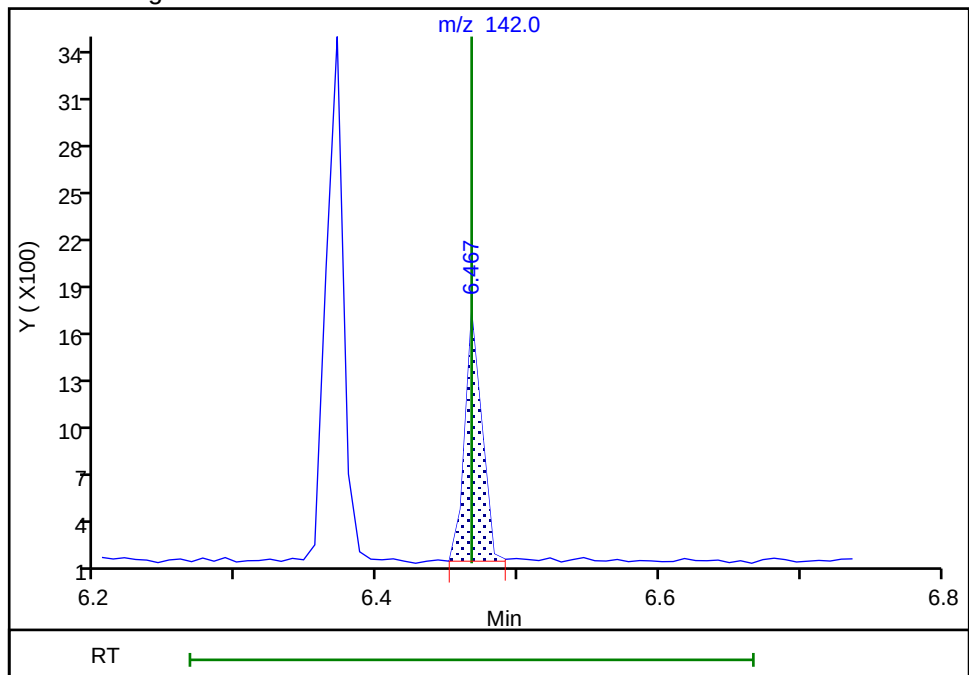
Not Detected

Expected RT: 6.47

Processing Integration Results



Manual Integration Results



Reviewer: wickham, 21-Mar-2019 20:44:45

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7421.D

Injection Date: 21-Mar-2019 20:15:30

Instrument ID: SMS_X4

Lims ID: std0001

Client ID:

Operator ID: HOEFLERA

ALS Bottle#:

2

Worklist Smp#: 3

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM

Column:

Detector MS SCAN

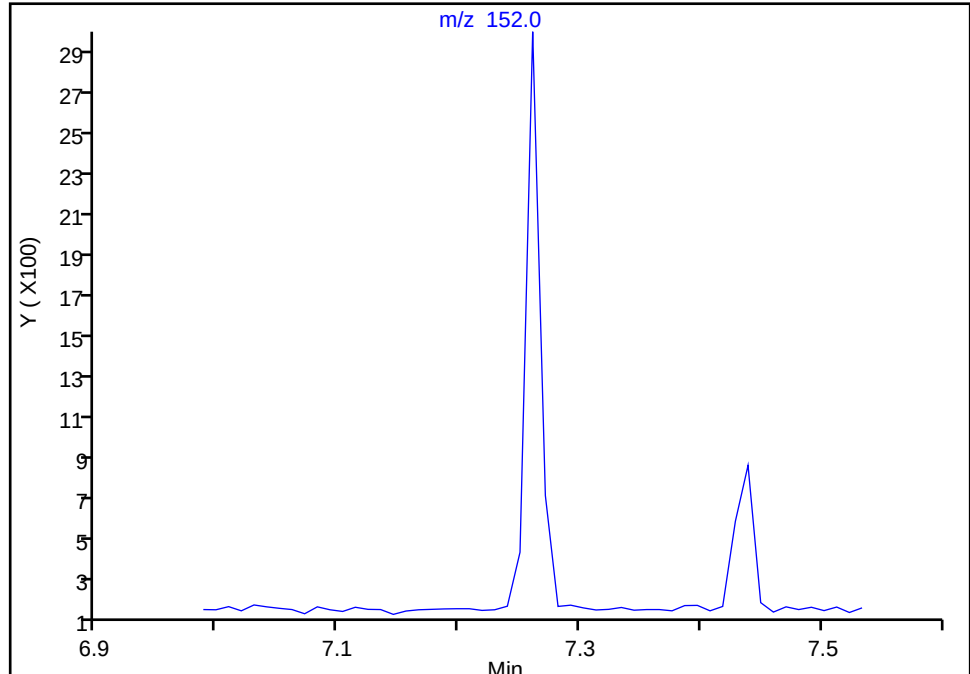
15 Acenaphthylene, CAS: 208-96-8

Signal: 1

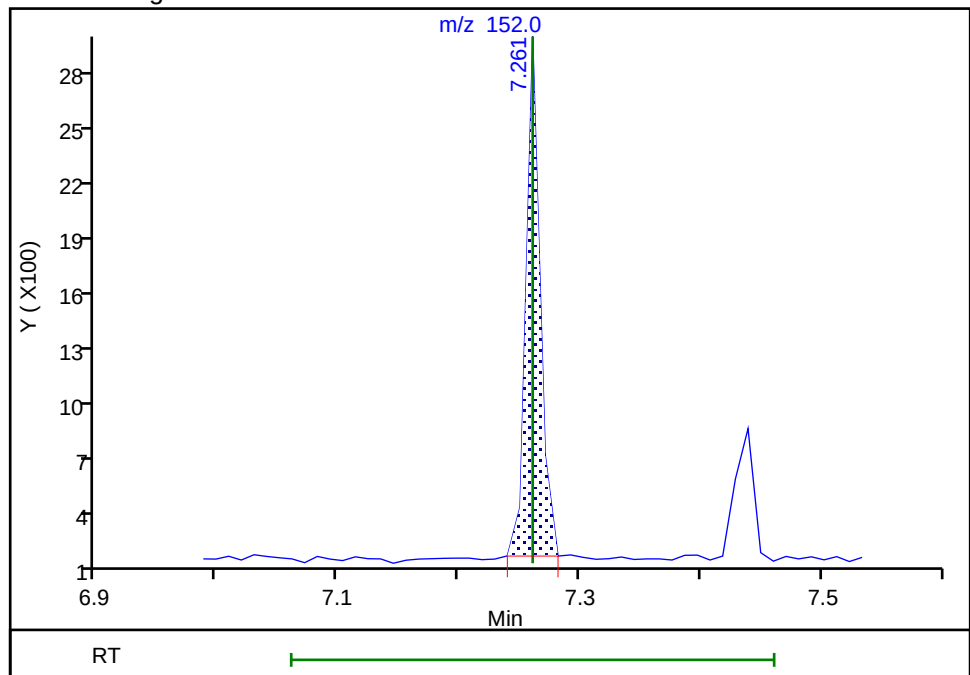
Not Detected

Expected RT: 7.26

Processing Integration Results



Manual Integration Results



RT: 7.26

Area: 2227

Amount: 10.277457

Amount Units: ng/ml

Reviewer: wickhamm, 21-Mar-2019 20:45:44

Audit Action: Assigned Compound ID

Audit Reason: Incomplete Integration

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7421.D

Injection Date: 21-Mar-2019 20:15:30

Instrument ID: SMS_X4

Lims ID: std0001

Client ID:

Operator ID: HOEFLERA

ALS Bottle#:

2

Worklist Smp#: 3

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM

Column:

Detector MS SCAN

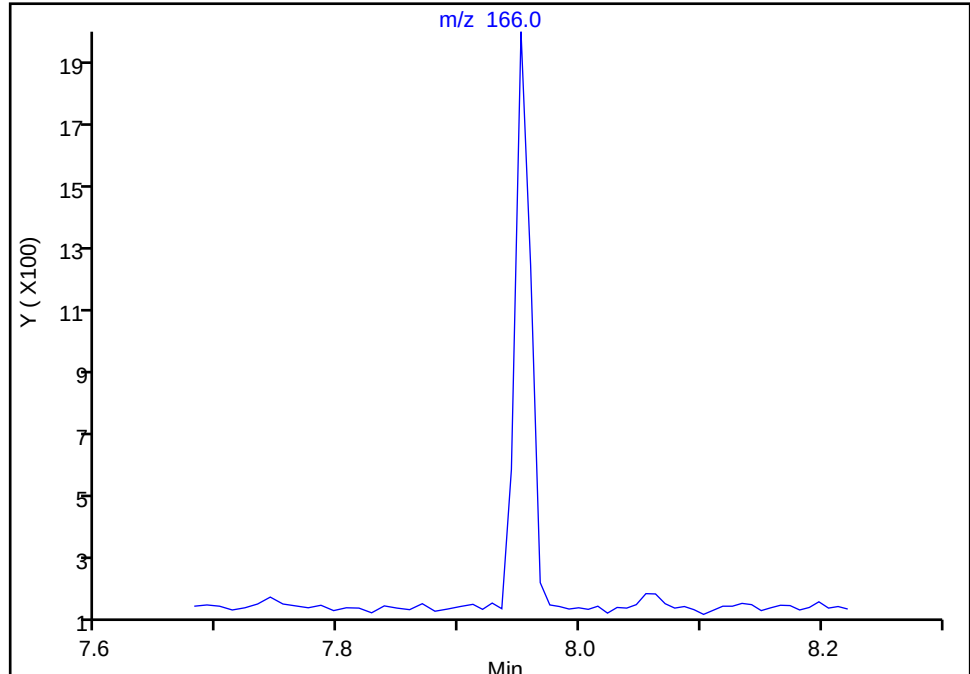
20 Fluorene, CAS: 86-73-7

Signal: 1

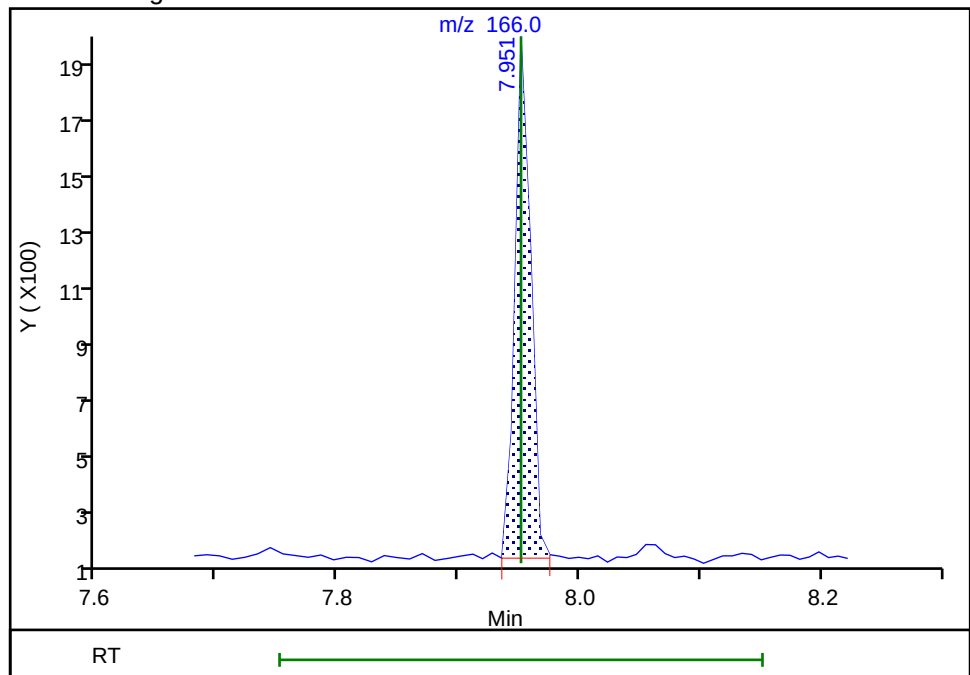
Not Detected

Expected RT: 7.95

Processing Integration Results



Manual Integration Results



Reviewer: wickhamm, 21-Mar-2019 20:45:51

Audit Action: Assigned Compound ID

Audit Reason: Incomplete Integration

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7421.D

Injection Date: 21-Mar-2019 20:15:30

Instrument ID: SMS_X4

Lims ID: std0001

Client ID:

Operator ID: HOEFLERA

ALS Bottle#:

2

Worklist Smp#: 3

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM

Column:

Detector MS SCAN

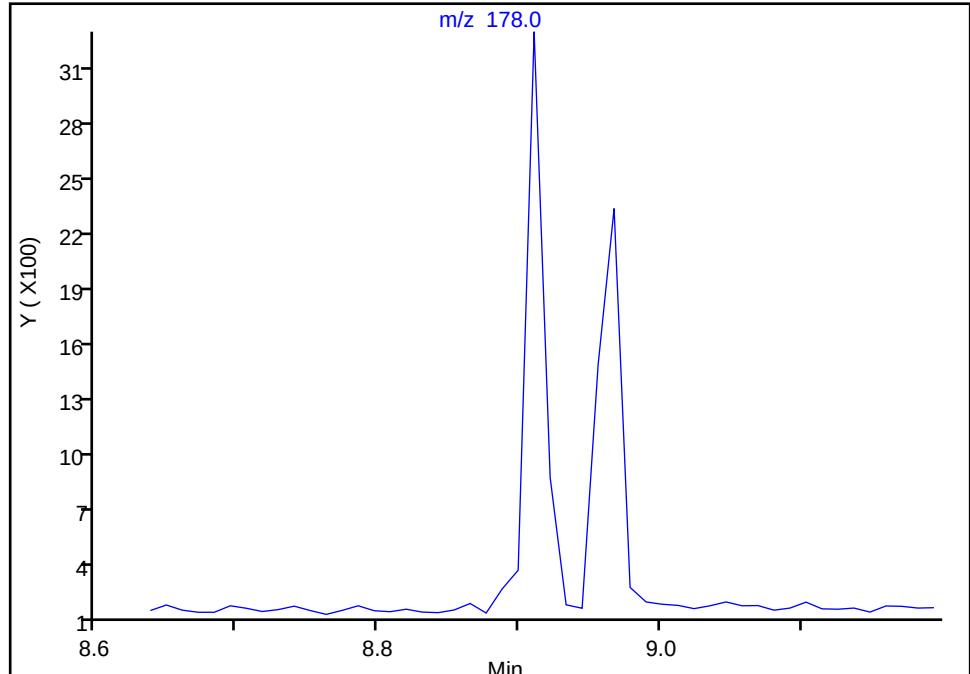
21 Phenanthrene, CAS: 85-01-8

Signal: 1

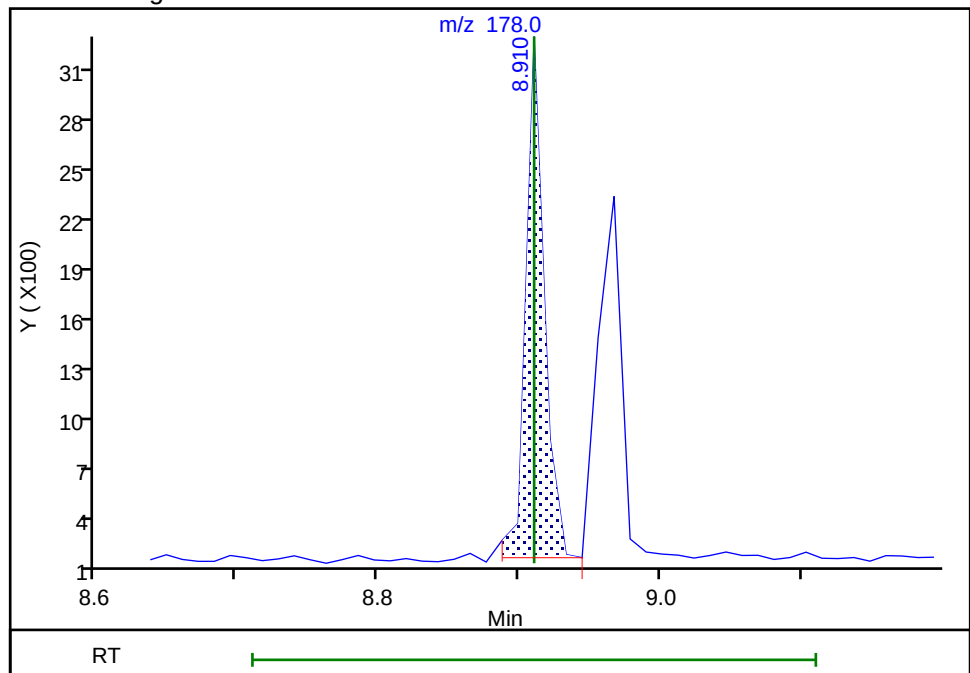
Not Detected

Expected RT: 8.91

Processing Integration Results



Manual Integration Results



RT: 8.91

Area: 2738

Amount: 10.995985

Amount Units: ng/ml

Reviewer: wickhamm, 21-Mar-2019 20:44:57

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7421.D

Injection Date: 21-Mar-2019 20:15:30

Instrument ID: SMS_X4

Lims ID: std0001

Client ID:

Operator ID: HOEFLERA

ALS Bottle#:

2

Worklist Smp#: 3

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM

Column:

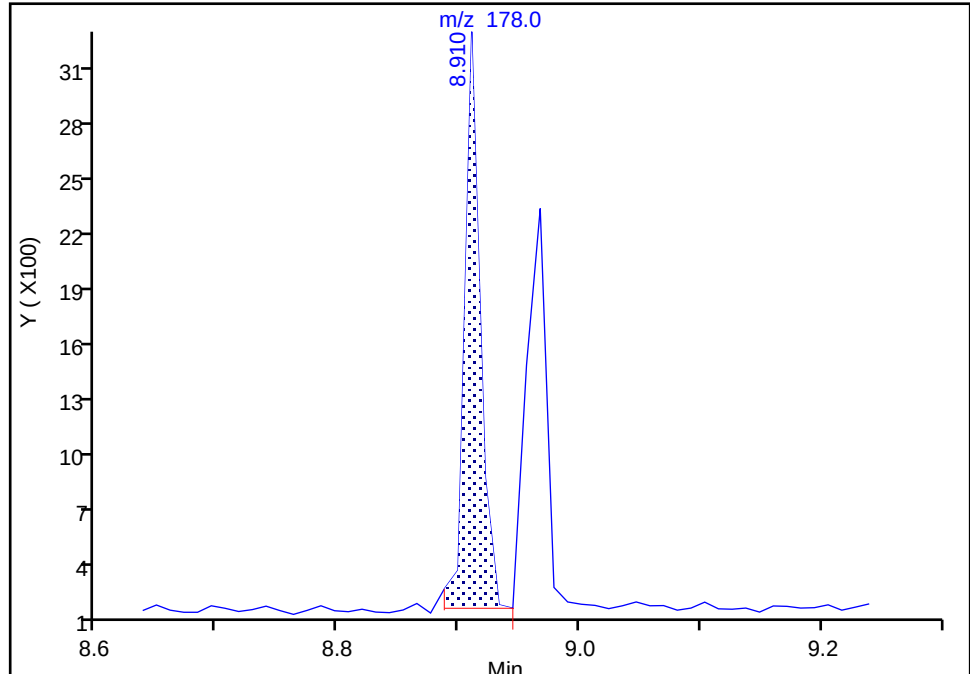
Detector: MS SCAN

22 Anthracene, CAS: 120-12-7

Signal: 1

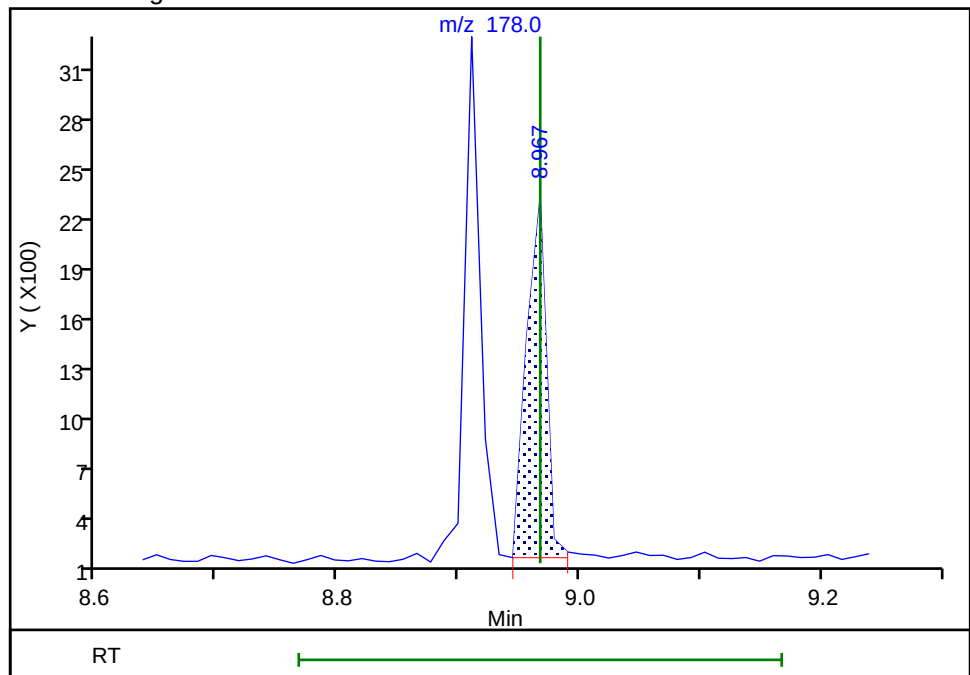
RT: 8.91
Area: 2738
Amount: 10.000000
Amount Units: ng/ml

Processing Integration Results



RT: 8.97
Area: 2389
Amount: 10.701686
Amount Units: ng/ml

Manual Integration Results



Reviewer: wickham, 21-Mar-2019 20:44:53

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7421.D

Injection Date: 21-Mar-2019 20:15:30

Instrument ID: SMS_X4

Lims ID: std0001

Client ID:

Operator ID: HOEFLERA

ALS Bottle#:

2

Worklist Smp#: 3

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM

Column:

Detector: MS SCAN

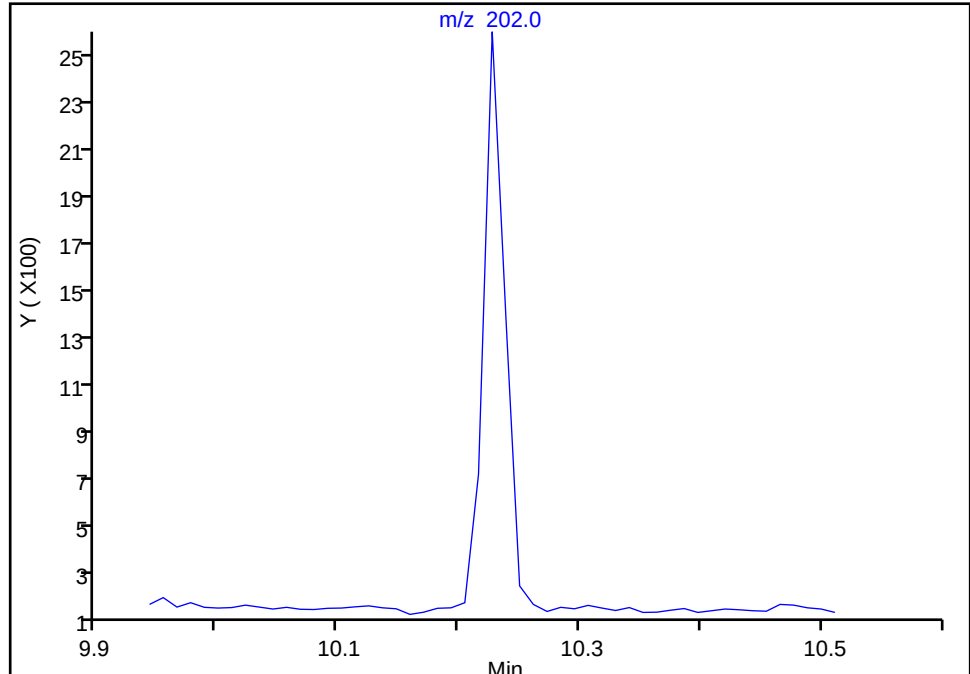
24 Fluoranthene, CAS: 206-44-0

Signal: 1

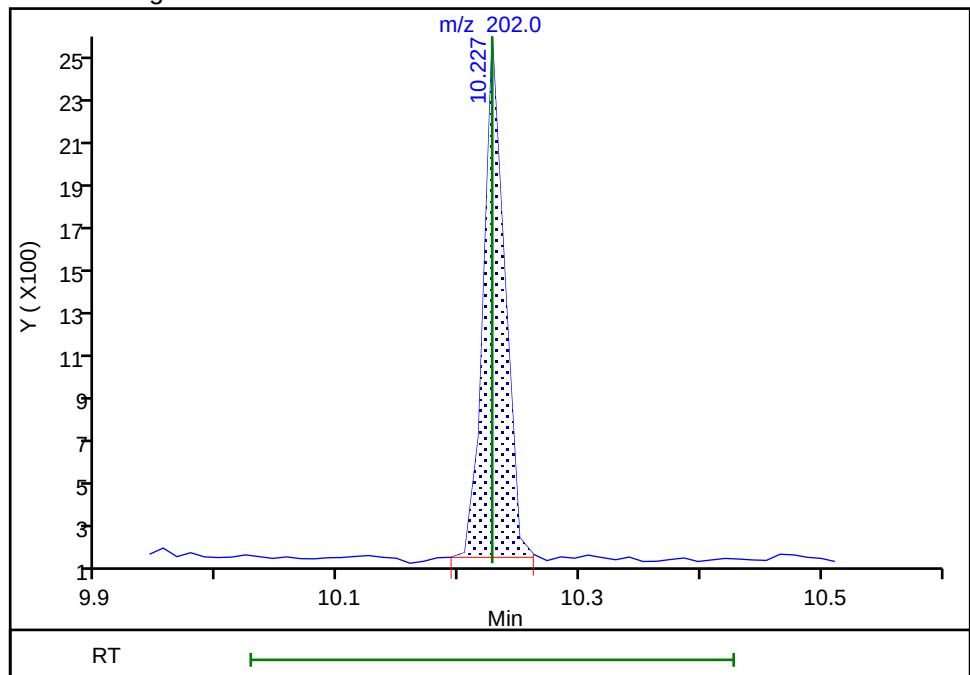
Not Detected

Expected RT: 10.23

Processing Integration Results



Manual Integration Results



Reviewer: wickham, 21-Mar-2019 20:45:56

Audit Action: Assigned Compound ID

Audit Reason: Incomplete Integration

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7421.D

Injection Date: 21-Mar-2019 20:15:30

Instrument ID: SMS_X4

Lims ID: std0001

Client ID:

Operator ID: HOEFLERA

ALS Bottle#:

2

Worklist Smp#: 3

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM

Column:

Detector MS SCAN

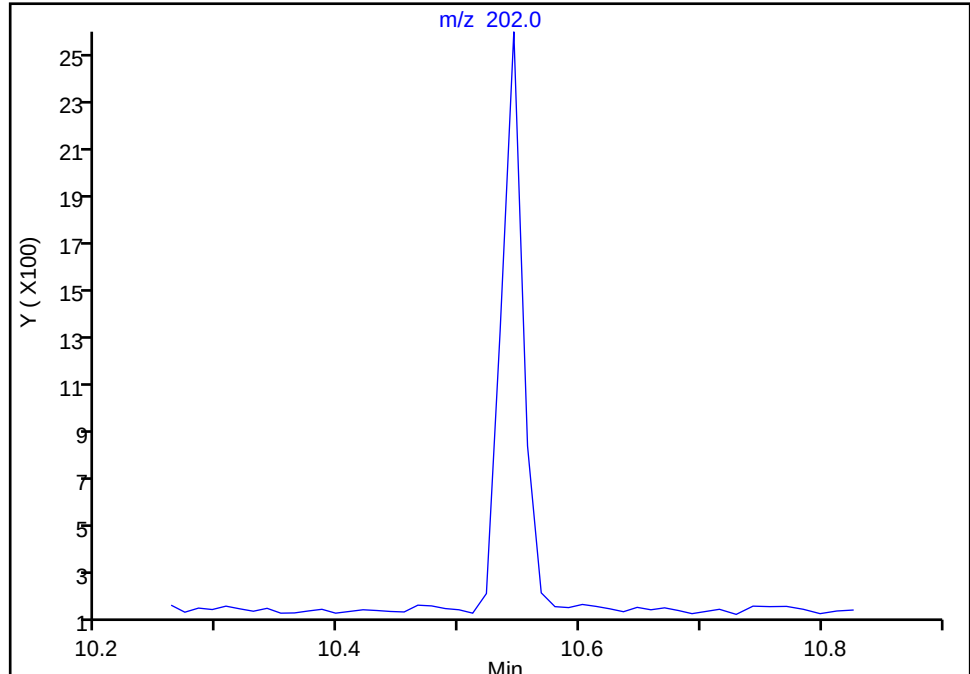
25 Pyrene, CAS: 129-00-0

Signal: 1

Not Detected

Expected RT: 10.55

Processing Integration Results



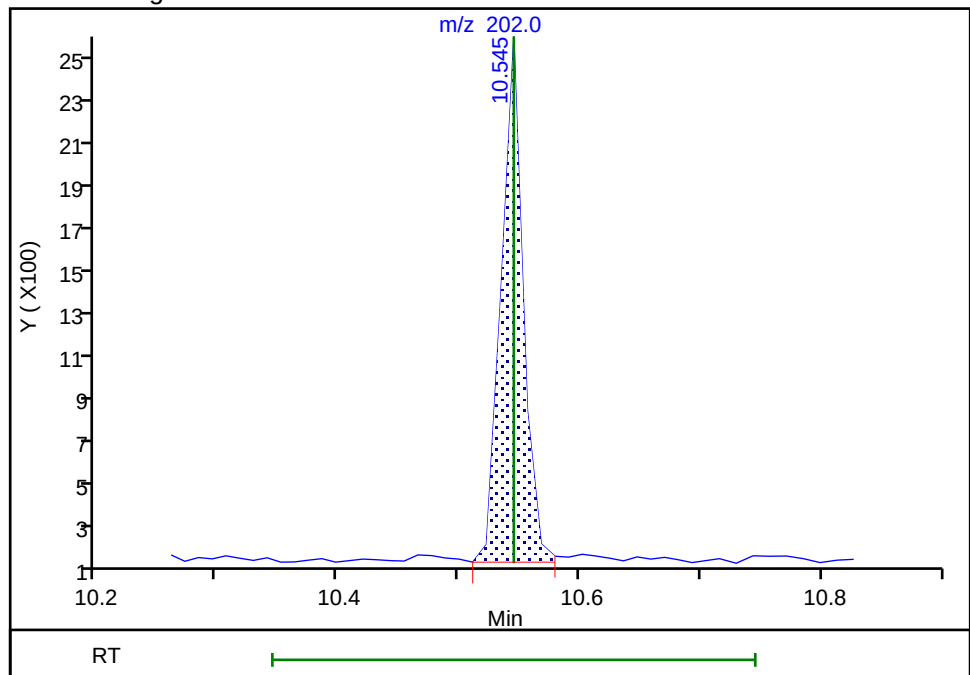
RT: 10.55

Area: 3031

Amount: 11.126015

Amount Units: ng/ml

Manual Integration Results



Reviewer: wickham, 21-Mar-2019 20:46:13

Audit Action: Assigned Compound ID

Audit Reason: Incomplete Integration

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7421.D

Injection Date: 21-Mar-2019 20:15:30

Instrument ID: SMS_X4

Lims ID: std0001

Client ID:

Operator ID: HOEFLERA

ALS Bottle#:

2

Worklist Smp#: 3

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM

Column:

Detector MS SCAN

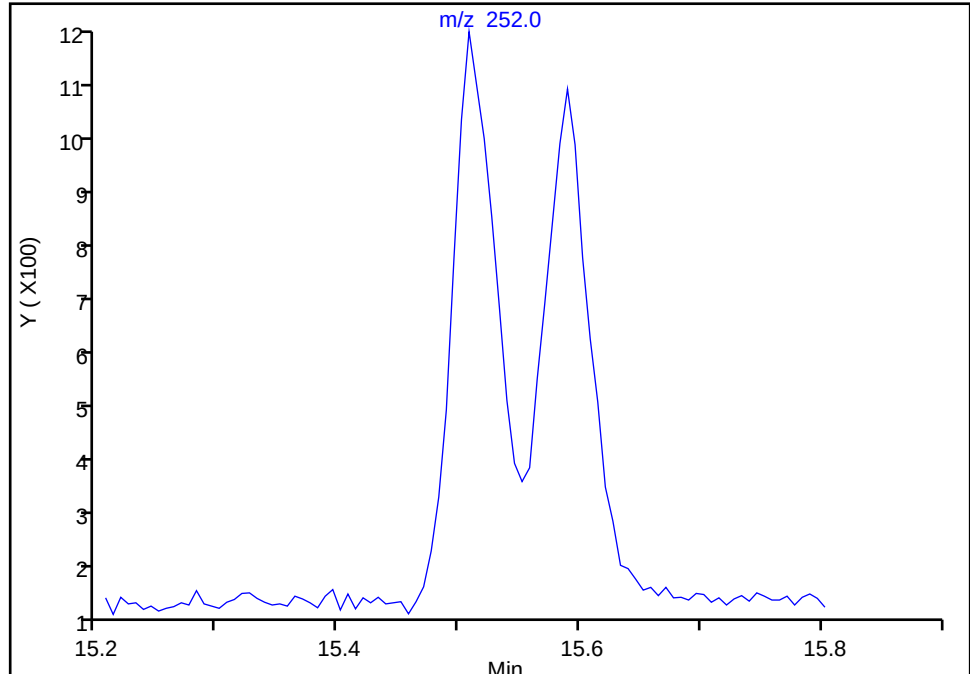
31 Benzo[b]fluoranthene, CAS: 205-99-2

Signal: 1

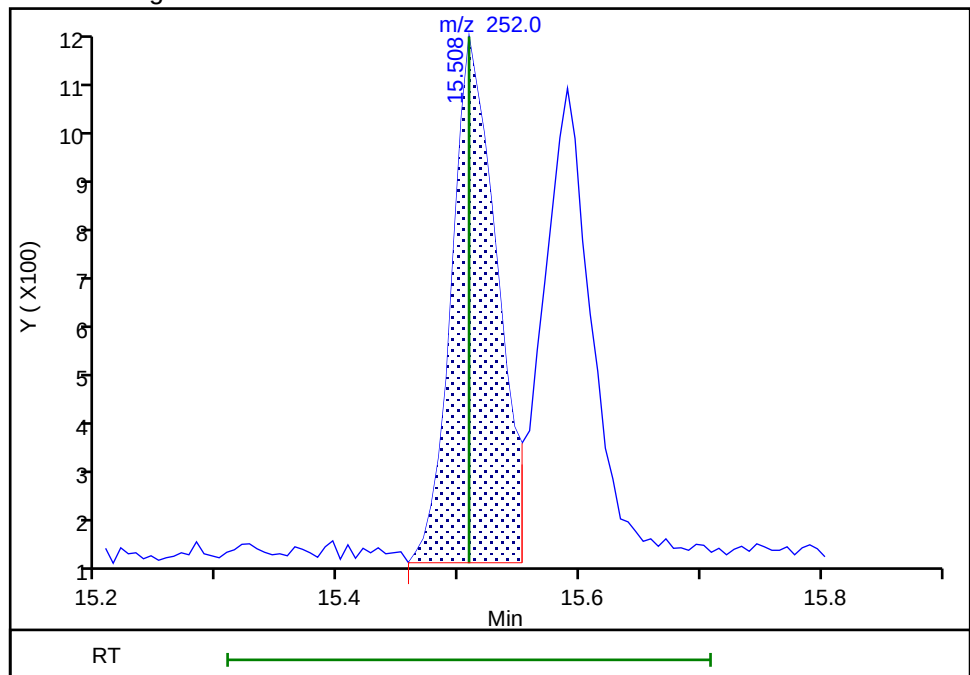
Not Detected

Expected RT: 15.51

Processing Integration Results



Manual Integration Results



Reviewer: wickhamm, 21-Mar-2019 20:46:19

Audit Action: Assigned Compound ID

Audit Reason: Incomplete Integration

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7421.D

Injection Date: 21-Mar-2019 20:15:30

Instrument ID: SMS_X4

Lims ID: std0001

Client ID:

Operator ID: HOEFLERA

ALS Bottle#:

2

Worklist Smp#: 3

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM

Column:

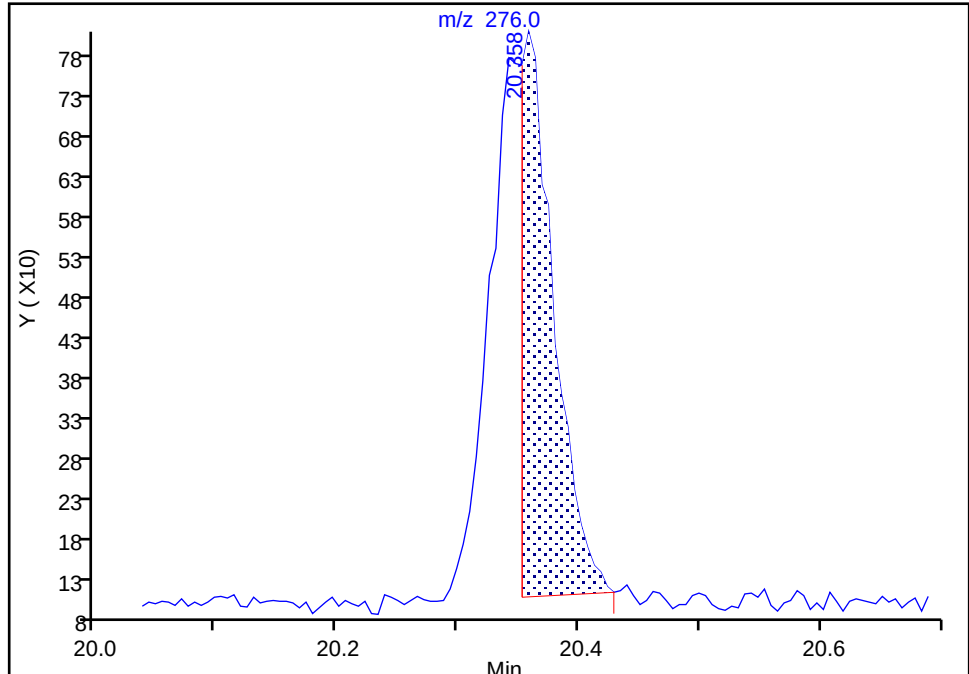
Detector MS SCAN

36 Benzo[g,h,i]perylene, CAS: 191-24-2

Signal: 1

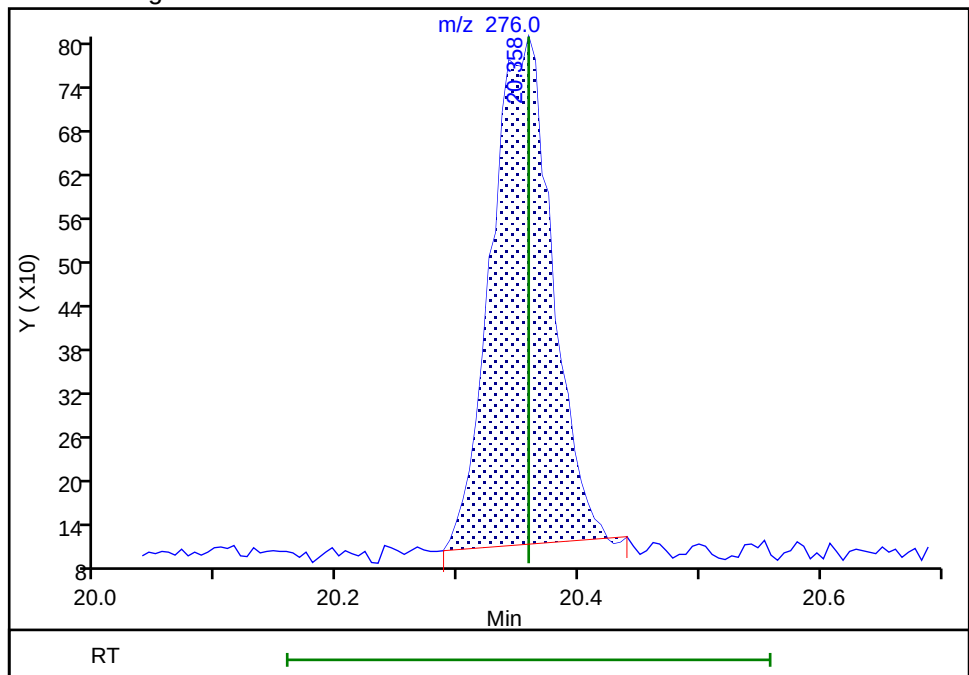
RT: 20.36
Area: 1327
Amount: 10.000000
Amount Units: ng/ml

Processing Integration Results



RT: 20.36
Area: 2395
Amount: 10.760701
Amount Units: ng/ml

Manual Integration Results



Reviewer: wickhamm, 21-Mar-2019 20:45:26

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7422.D
 Lims ID: std0002
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 21-Mar-2019 20:45:30 ALS Bottle#: 3 Worklist Smp#: 4
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD0002
 Operator ID: HOEFLERA Instrument ID: SMS_X4
 Sublist: chrom-SMS_X4_SIMX_5.1*sub1
 Method: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 22-Mar-2019 07:39:12 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0305

First Level Reviewer: wickhamm

Date: 22-Mar-2019 07:21:43

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164	7.408	7.408	0.000	85	59862	600.0	600.0	
* 2 Phenanthrene-d10	188	8.888	8.888	0.000	100	121284	600.0	600.0	
* 3 Chrysene-d12	240	12.772	12.772	0.000	1	108373	600.0	600.0	
* 49 Perylene-d12	264	16.580	16.581	-0.001	0	97397	600.0	600.0	
\$ 4 Nitrobenzene-d5	82	4.964	4.964	0.000	95	1429	20.0	21.9	
\$ 7 2-methylnaphthalene-d10	152	6.339	6.339	0.000	95	2286	20.0	21.4	
\$ 5 2-Fluorobiphenyl	172	6.729	6.729	0.000	99	3456	20.0	20.9	
\$ 8 Fluoranthene-d10	212	10.205	10.205	0.000	88	4434	20.0	20.6	
\$ 6 Terphenyl-d14	244	10.771	10.771	0.000	90	3015	20.0	20.7	
9 1,4-Dioxane	88	1.993	1.993	0.000	85	818	20.2	28.7	
10 N-Nitrosodimethylamine	74	2.198	2.198	0.000	66	984	20.0	22.4	
11 Naphthalene	128	5.690	5.690	0.000	99	4613	20.0	21.3	
12 2-Methylnaphthalene	142	6.371	6.371	0.000	96	6024	40.0	42.2	
13 1-Methylnaphthalene	142	6.467	6.467	0.000	99	2654	20.0	20.6	
14 Dimethyl phthalate	163	7.114	7.114	0.000	100	6672	40.0	41.1	
15 Acenaphthylene	152	7.261	7.261	0.000	98	4521	20.0	20.6	
16 Acenaphthene	153	7.439	7.439	0.000	95	2897	20.0	20.9	
17 Dibenzofuran	168	7.617	7.618	-0.001	61	4227	20.0	20.6	
18 Diethyl phthalate	149		7.935				ND	ND	
20 Fluorene	166	7.951	7.951	0.000	46	3439	20.0	21.3	a
19 N-Nitrosodiphenylamine	169	8.063	8.063	-0.001	35	2442	20.0	21.4	
21 Phenanthrene	178	8.910	8.910	0.000	98	5400	20.0	20.9	
22 Anthracene	178	8.967	8.967	0.000	98	4763	20.0	20.6	
23 Di-n-butyl phthalate	149	9.455	9.455	0.000	100	10296	40.0	41.3	
24 Fluoranthene	202	10.227	10.227	0.000	76	5869	20.0	21.1	
25 Pyrene	202	10.545	10.545	0.000	73	5882	20.0	20.8	
26 Butyl benzyl phthalate	149	11.619	11.619	0.000	87	3292	40.0	38.0	
28 Benzo[a]anthracene	228	12.745	12.745	-0.001	42	5408	20.0	22.2	
29 Chrysene	228	12.828	12.828	0.000	95	5414	20.0	21.5	
27 Bis(2-ethylhexyl) phthalat	149	12.939	12.939	0.000	94	5111	40.0	162.8	a
30 Di-n-octyl phthalate	149	14.686	14.693	-0.007	0	5490	40.0	104.6	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
31 Benzo[b]fluoranthene	252	15.508	15.508	0.000	96	4966	20.0	21.1	
32 Benzo[k]fluoranthene	252	15.590	15.590	0.000	94	5045	20.0	20.9	
33 Benzo[a]pyrene	252	16.411	16.411	0.000	95	4296	20.0	20.6	
34 Indeno[1,2,3-cd]pyrene	276	19.626	19.626	0.000	97	4129	20.0	21.8	
35 Dibenz(a,h)anthracene	278	19.729	19.735	-0.006	94	3668	20.0	20.0	
36 Benzo[g,h,i]perylene	276	20.353	20.358	-0.005	96	4813	20.0	21.0	
38 N-Nitrosodiethylamine	102		3.603				ND	ND	
37 N-Nitrosodi-n-propylamine	70		4.919				ND	ND	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Review Flags

a - User Assigned ID

Reagents:

MS-SIMSL 0.02_00081

Amount Added: 200.00

Units: uL

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7422.D

Injection Date: 21-Mar-2019 20:45:30

Instrument ID: SMS_X4

Operator ID: HOEFLERA

Lims ID: std0002

Worklist Smp#: 4

Client ID:

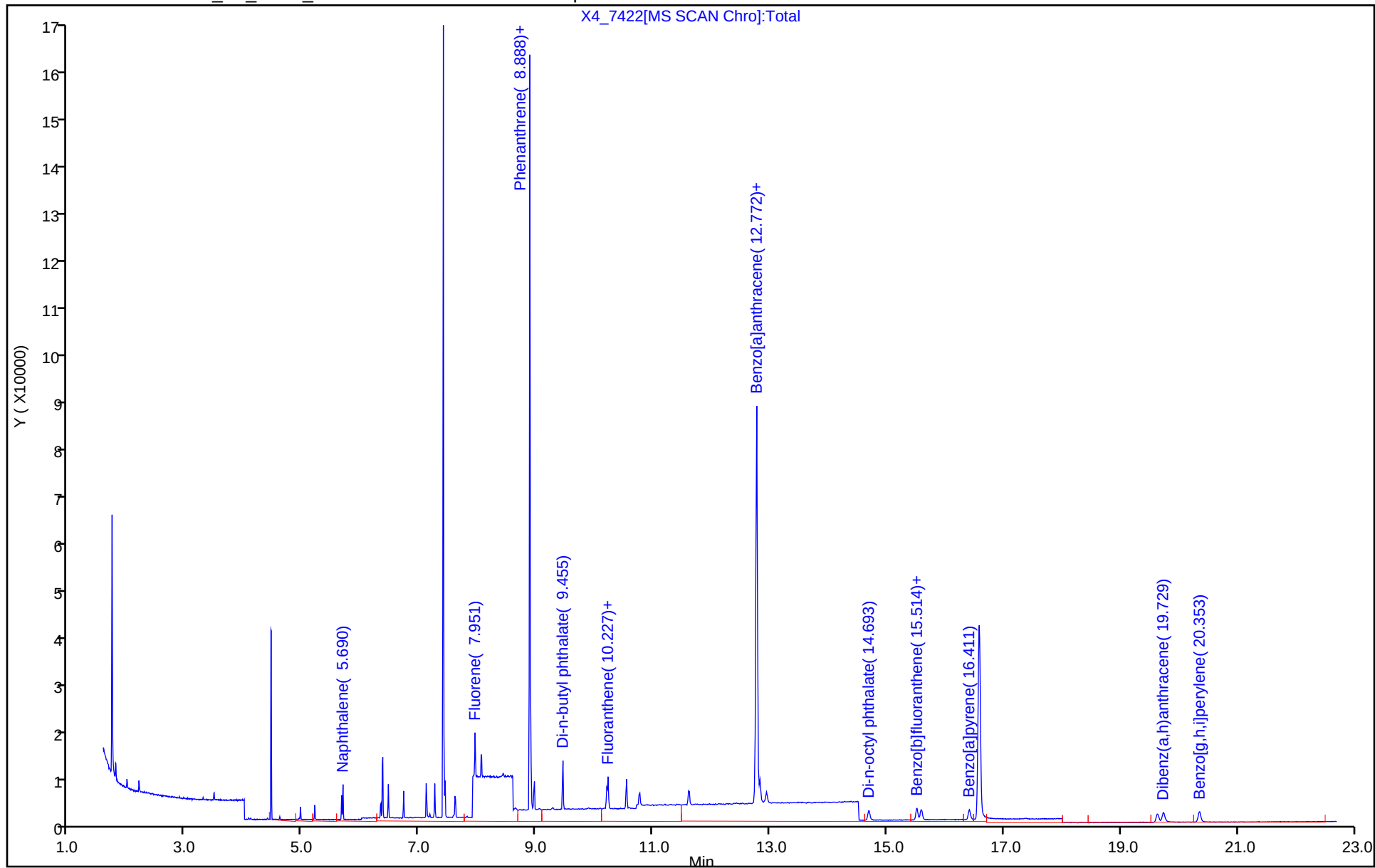
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 3

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM



TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7422.D

Injection Date: 21-Mar-2019 20:45:30

Instrument ID: SMS_X4

Lims ID: std0002

Client ID:

Operator ID: HOEFLERA

ALS Bottle#:

3

Worklist Smp#: 4

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM

Column:

Detector MS SCAN

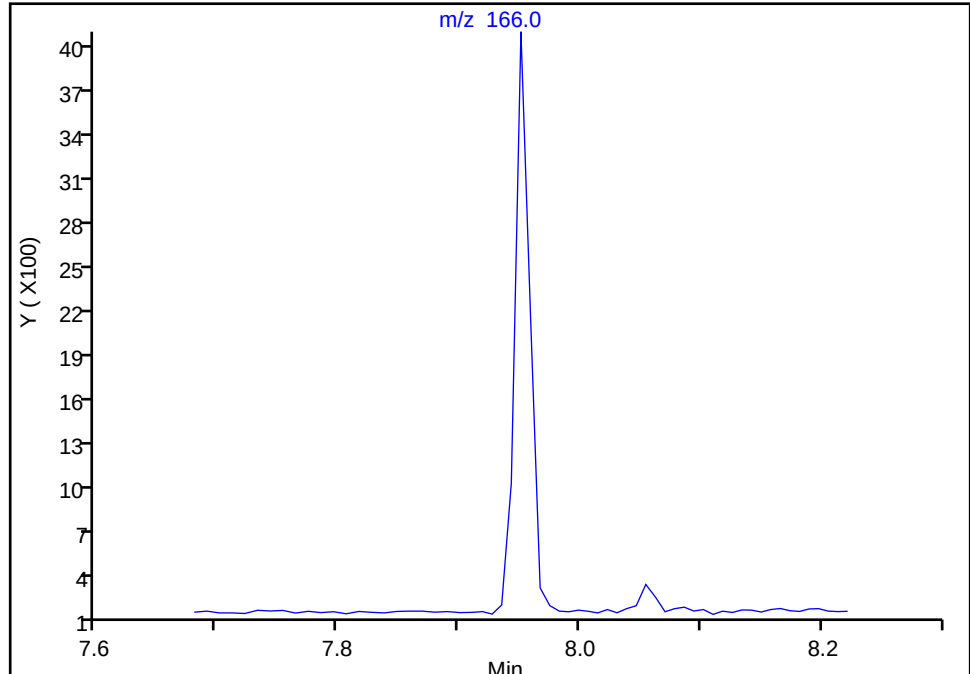
20 Fluorene, CAS: 86-73-7

Signal: 1

Not Detected

Expected RT: 7.95

Processing Integration Results



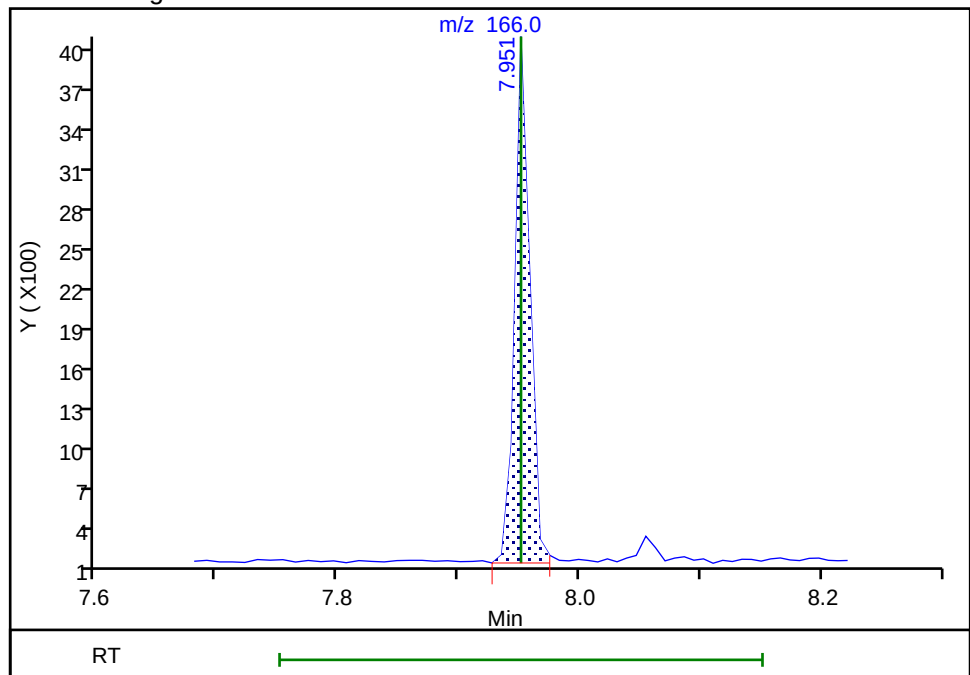
RT: 7.95

Area: 3439

Amount: 21.297130

Amount Units: ng/ml

Manual Integration Results



Reviewer: wickhamm, 22-Mar-2019 07:21:21

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7423.D
 Lims ID: std0050
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 21-Mar-2019 21:15:30 ALS Bottle#: 4 Worklist Smp#: 5
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD0500
 Operator ID: HOEFLERA Instrument ID: SMS_X4
 Sublist: chrom-SMS_X4_SIMX_5.1*sub1
 Method: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 22-Mar-2019 07:39:14 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0305

First Level Reviewer: wickhamm

Date: 22-Mar-2019 07:22:23

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164	7.408	7.408	0.000	82	58958	600.0	600.0	
* 2 Phenanthrene-d10	188	8.888	8.888	0.000	100	119293	600.0	600.0	
* 3 Chrysene-d12	240	12.772	12.772	0.000	1	103626	600.0	600.0	
* 49 Perylene-d12	264	16.580	16.581	-0.001	0	92722	600.0	600.0	
\$ 4 Nitrobenzene-d5	82	4.964	4.964	0.000	95	3171	50.0	49.3	
\$ 7 2-methylnaphthalene-d10	152	6.339	6.339	0.000	93	5198	50.0	49.5	
\$ 5 2-Fluorobiphenyl	172	6.729	6.729	0.000	100	8098	50.0	49.7	
\$ 8 Fluoranthene-d10	212	10.205	10.205	-0.001	94	10477	50.0	49.4	
\$ 6 Terphenyl-d14	244	10.771	10.771	0.000	96	6917	50.0	48.3	
9 1,4-Dioxane	88	1.993	1.993	0.000	87	3302	50.4	117.6	
10 N-Nitrosodimethylamine	74	2.198	2.198	0.000	37	2209	50.0	51.0	
11 Naphthalene	128	5.690	5.690	0.000	100	10865	50.0	50.9	
12 2-Methylnaphthalene	142	6.371	6.371	0.000	98	14021	100.0	99.8	
13 1-Methylnaphthalene	142	6.467	6.467	0.000	95	6447	50.0	50.8	
14 Dimethyl phthalate	163	7.114	7.114	0.000	100	15588	100.0	97.4	
15 Acenaphthylene	152	7.261	7.261	0.000	99	10603	50.0	49.1	
16 Acenaphthene	153	7.439	7.439	0.000	94	6926	50.0	50.7	
17 Dibenzofuran	168	7.607	7.618	-0.011	56	9979	50.1	49.3	
18 Diethyl phthalate	149		7.935				ND	ND	
20 Fluorene	166	7.951	7.951	0.000	84	7707	50.0	48.5	
19 N-Nitrosodiphenylamine	169	8.055	8.063	-0.008	63	5628	50.0	50.0	
21 Phenanthrene	178	8.910	8.910	0.000	99	12741	50.0	50.2	
22 Anthracene	178	8.967	8.967	0.000	98	10918	50.0	48.0	
23 Di-n-butyl phthalate	149	9.455	9.455	0.000	100	22270	100.0	90.9	
24 Fluoranthene	202	10.227	10.227	0.000	76	12997	50.0	47.6	
25 Pyrene	202	10.545	10.545	0.000	73	13591	50.0	48.9	
26 Butyl benzyl phthalate	149	11.605	11.619	-0.014	91	7102	100.0	83.4	
28 Benzo[a]anthracene	228	12.744	12.745	-0.001	65	11405	50.0	48.9	
29 Chrysene	228	12.828	12.828	0.000	99	11806	50.0	49.0	
27 Bis(2-ethylhexyl) phthalat	149	12.939	12.939	0.000	97	8887	100.0	196.5	a
30 Di-n-octyl phthalate	149	14.693	14.693	0.000	0	11436	100.0	149.3	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
31 Benzo[b]fluoranthene	252	15.514	15.508	0.006	99	11307	50.0	50.3	
32 Benzo[k]fluoranthene	252	15.590	15.590	0.000	98	10555	50.0	45.7	
33 Benzo[a]pyrene	252	16.411	16.411	0.000	99	9583	50.0	48.0	
34 Indeno[1,2,3-cd]pyrene	276	19.631	19.626	0.005	98	9164	50.0	50.6	
35 Dibenzo(a,h)anthracene	278	19.729	19.735	-0.006	98	8606	50.0	49.0	
36 Benzo[g,h,i]perylene	276	20.347	20.358	-0.011	99	11080	50.0	50.6	
38 N-Nitrosodiethylamine	102		3.603				ND	ND	
37 N-Nitrosodi-n-propylamine	70		4.919				ND	ND	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Review Flags

a - User Assigned ID

Reagents:

MS-SIMSL 0.05_00009

Amount Added: 200.00

Units: uL

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7423.D

Injection Date: 21-Mar-2019 21:15:30

Instrument ID: SMS_X4

Operator ID: HOEFLERA

Lims ID: std0050

Worklist Smp#: 5

Client ID:

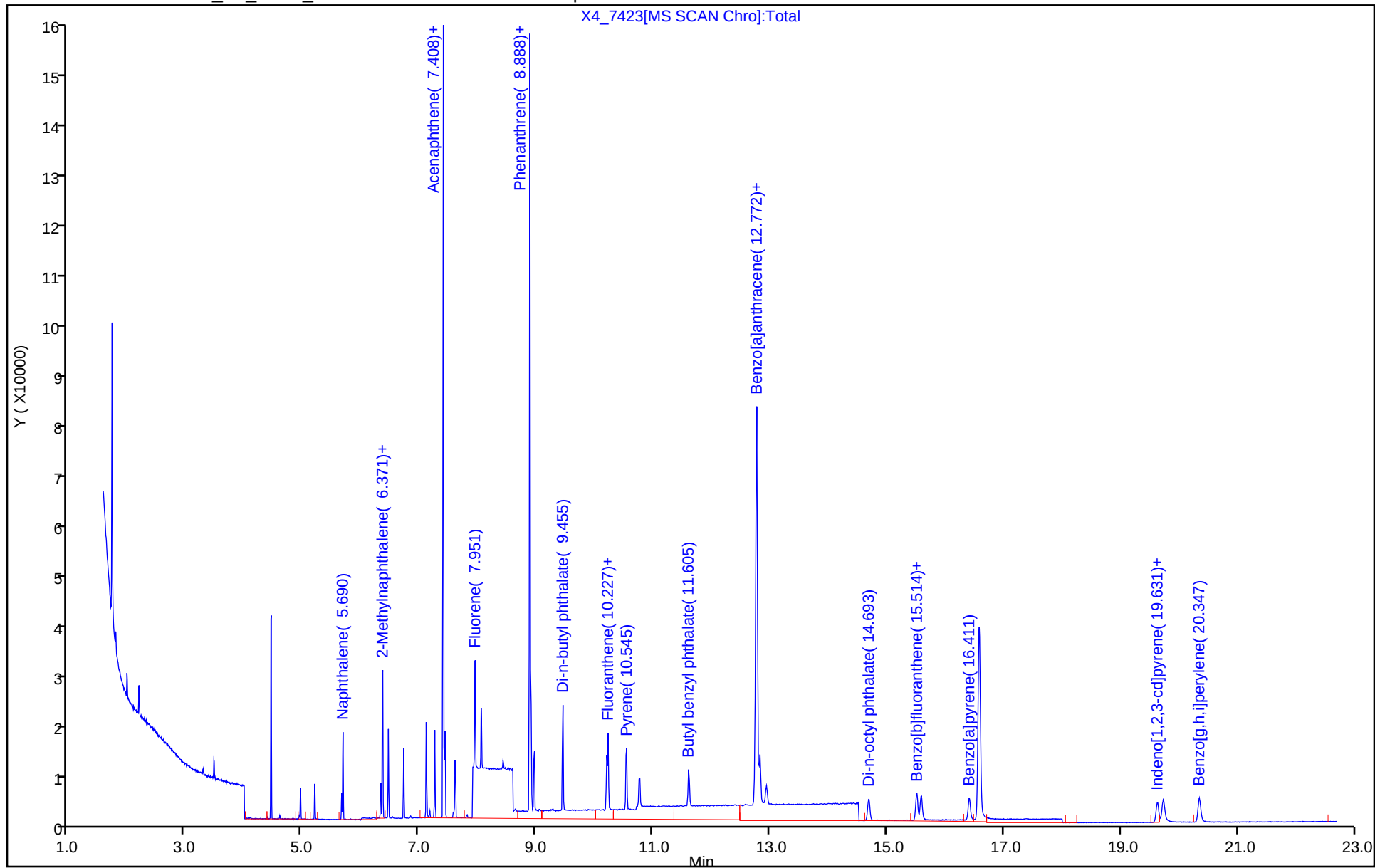
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 4

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7424.D
 Lims ID: std0100
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 21-Mar-2019 21:45:30 ALS Bottle#: 5 Worklist Smp#: 6
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD0100
 Operator ID: HOEFLERA Instrument ID: SMS_X4
 Sublist: chrom-SMS_X4_SIMX_5.1*sub1
 Method: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 22-Mar-2019 07:39:16 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0305

First Level Reviewer: wickhamm

Date: 22-Mar-2019 07:22:50

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164	7.408	7.408	0.000	83	58594	600.0	600.0	
* 2 Phenanthrene-d10	188	8.888	8.888	0.000	100	117322	600.0	600.0	
* 3 Chrysene-d12	240	12.773	12.773	0.000	1	105720	600.0	600.0	
* 49 Perylene-d12	264	16.581	16.581	0.000	0	93985	600.0	600.0	
\$ 4 Nitrobenzene-d5	82	4.960	4.960	0.000	99	6036	100.0	94.4	
\$ 7 2-methylnaphthalene-d10	152	6.340	6.340	0.000	93	10014	100.0	95.9	
\$ 5 2-Fluorobiphenyl	172	6.729	6.729	0.000	100	15693	100.0	96.9	
\$ 8 Fluoranthene-d10	212	10.205	10.205	0.000	95	19954	100.0	95.7	
\$ 6 Terphenyl-d14	244	10.771	10.771	0.000	97	13298	100.0	94.4	
9 1,4-Dioxane	88	1.998	1.998	0.000	95	3020	100.8	108.2	
10 N-Nitrosodimethylamine	74	2.198	2.198	0.000	98	4192	100.0	97.3	
11 Naphthalene	128	5.690	5.690	0.000	100	20637	100.0	97.3	
12 2-Methylnaphthalene	142	6.371	6.371	0.000	99	26970	200.0	193.1	
13 1-Methylnaphthalene	142	6.467	6.467	0.000	94	12135	100.0	96.2	
14 Dimethyl phthalate	163	7.114	7.114	0.000	100	29818	200.0	187.6	
15 Acenaphthylene	152	7.261	7.261	0.000	99	20350	100.0	94.9	
16 Acenaphthene	153	7.439	7.439	0.000	93	12851	100.0	94.7	
17 Dibenzofuran	168	7.618	7.618	0.000	60	19310	100.1	96.0	
18 Diethyl phthalate	149		7.935				ND	ND	
20 Fluorene	166	7.951	7.951	0.000	96	14676	100.0	92.9	
19 N-Nitrosodiphenylamine	169	8.055	8.055	0.000	99	10685	100.0	96.6	
21 Phenanthrene	178	8.910	8.910	0.000	98	24446	100.0	97.9	
22 Anthracene	178	8.967	8.967	0.000	98	21029	100.0	93.9	
23 Di-n-butyl phthalate	149	9.455	9.455	0.000	100	42758	200.0	177.4	
24 Fluoranthene	202	10.227	10.227	0.000	75	25482	100.0	94.8	
25 Pyrene	202	10.545	10.545	0.000	73	25762	100.0	94.3	
26 Butyl benzyl phthalate	149	11.605	11.605	0.000	97	13243	200.0	158.1	
28 Benzo[a]anthracene	228	12.745	12.745	0.000	86	21783	100.0	91.5	
29 Chrysene	228	12.828	12.828	0.000	99	24062	100.0	98.0	
27 Bis(2-ethylhexyl) phthalat	149	12.939	12.939	0.000	99	16370	200.0	264.1	a
30 Di-n-octyl phthalate	149	14.693	14.693	0.000	0	20641	200.0	212.4	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
31 Benzo[b]fluoranthene	252	15.508	15.508	0.000	100	21548	100.0	94.0	
32 Benzo[k]fluoranthene	252	15.584	15.584	0.000	100	22402	100.0	95.0	
33 Benzo[a]pyrene	252	16.411	16.411	0.000	100	19183	100.0	94.2	
34 Indeno[1,2,3-cd]pyrene	276	19.632	19.632	0.000	99	17266	100.0	93.5	
35 Dibenzo(a,h)anthracene	278	19.735	19.735	0.000	96	16806	100.0	93.8	
36 Benzo[g,h,i]perylene	276	20.348	20.348	0.000	98	22218	100.0	99.4	
38 N-Nitrosodiethylamine	102		3.603				ND	ND	
37 N-Nitrosodi-n-propylamine	70		4.919				ND	ND	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Review Flags

a - User Assigned ID

Reagents:

MS-SIMSL 0.1_00077

Amount Added: 200.00

Units: uL

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7424.D

Injection Date: 21-Mar-2019 21:45:30

Instrument ID: SMS_X4

Operator ID: HOEFLERA

Lims ID: std0100

Worklist Smp#: 6

Client ID:

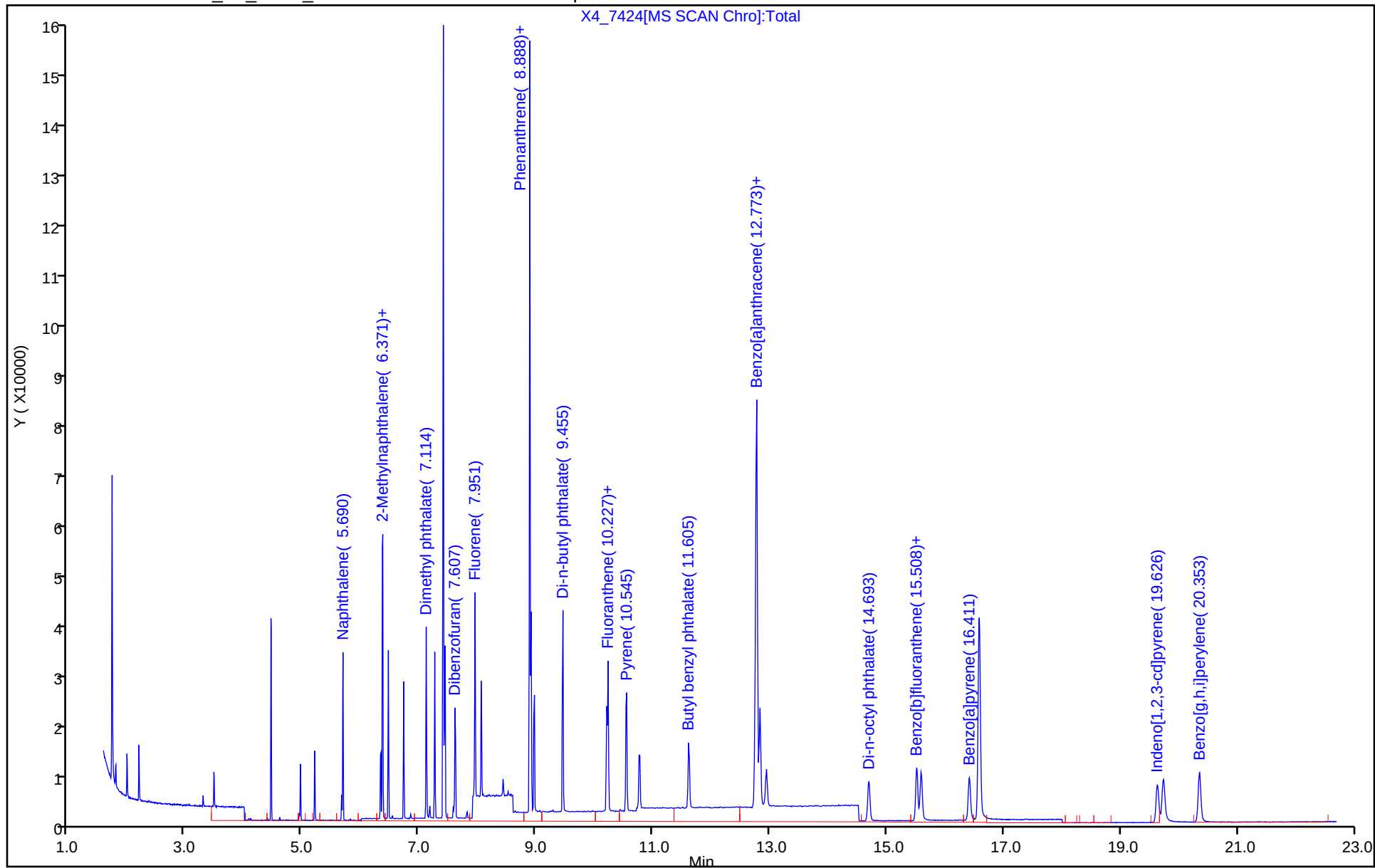
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 5

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7425.D
 Lims ID: std0300
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 21-Mar-2019 22:15:30 ALS Bottle#: 6 Worklist Smp#: 7
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD0300
 Operator ID: HOEFLERA Instrument ID: SMS_X4
 Sublist: chrom-SMS_X4_SIMX_5.1*sub1
 Method: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 22-Mar-2019 07:39:18 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0305

First Level Reviewer: wickhamm

Date: 22-Mar-2019 07:23:16

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164	7.408	7.408	0.000	81	57508	600.0	600.0	
* 2 Phenanthrene-d10	188	8.888	8.888	0.000	100	119743	600.0	600.0	
* 3 Chrysene-d12	240	12.772	12.773	0.000	1	108580	600.0	600.0	
* 49 Perylene-d12	264	16.581	16.581	0.000	0	93145	600.0	600.0	
\$ 4 Nitrobenzene-d5	82	4.960	4.960	0.000	100	17779	300.0	283.2	
\$ 7 2-methylnaphthalene-d10	152	6.339	6.340	-0.001	92	29605	300.0	288.9	
\$ 5 2-Fluorobiphenyl	172	6.729	6.729	0.000	98	46999	300.0	295.6	
\$ 8 Fluoranthene-d10	212	10.205	10.205	0.000	96	59457	300.0	279.3	
\$ 6 Terphenyl-d14	244	10.771	10.771	0.000	98	39730	300.0	276.3	
9 1,4-Dioxane	88	1.993	1.998	-0.005	78	8372	302.4	305.6	
10 N-Nitrosodimethylamine	74	2.198	2.198	0.000	87	12168	300.0	287.9	
11 Naphthalene	128	5.690	5.690	0.000	100	61320	300.0	294.6	
12 2-Methylnaphthalene	142	6.371	6.371	0.000	100	80998	600.0	591.0	
13 1-Methylnaphthalene	142	6.467	6.467	0.000	93	35715	300.0	288.5	
14 Dimethyl phthalate	163	7.114	7.114	0.000	100	90395	600.0	579.4	
15 Acenaphthylene	152	7.261	7.261	0.000	99	60689	300.0	288.3	
16 Acenaphthene	153	7.439	7.439	0.000	92	37963	300.0	285.0	
17 Dibenzofuran	168	7.607	7.618	-0.011	59	58101	300.3	294.3	
18 Diethyl phthalate	149		7.935				ND	ND	
20 Fluorene	166	7.951	7.951	0.000	96	44189	300.0	284.9	
19 N-Nitrosodiphenylamine	169	8.055	8.055	0.000	100	32162	300.0	284.9	
21 Phenanthrene	178	8.910	8.910	0.000	98	73412	300.0	288.1	
22 Anthracene	178	8.967	8.967	0.000	98	64087	300.0	280.5	
23 Di-n-butyl phthalate	149	9.455	9.455	0.000	100	132395	600.0	538.3	
24 Fluoranthene	202	10.227	10.227	0.000	75	76482	300.0	278.8	
25 Pyrene	202	10.545	10.545	0.000	73	77951	300.0	279.6	
26 Butyl benzyl phthalate	149	11.619	11.605	0.014	87	40700	600.0	476.1	
28 Benzo[a]anthracene	228	12.745	12.745	0.000	97	64942	300.0	265.6	
29 Chrysene	228	12.828	12.828	0.000	100	71891	300.0	285.1	
27 Bis(2-ethylhexyl) phthalat	149	12.939	12.939	0.000	100	48445	600.0	536.3	a
30 Di-n-octyl phthalate	149	14.693	14.693	0.000	0	66423	600.0	515.6	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
31 Benzo[b]fluoranthene	252	15.514	15.508	0.006	100	63061	300.0	268.0	
32 Benzo[k]fluoranthene	252	15.583	15.584	-0.001	100	66085	300.0	272.8	
33 Benzo[a]pyrene	252	16.411	16.411	0.000	99	56395	300.0	269.5	
34 Indeno[1,2,3-cd]pyrene	276	19.632	19.632	0.000	98	53021	300.0	279.5	
35 Dibenz(a,h)anthracene	278	19.735	19.735	0.000	95	52092	300.0	283.1	
36 Benzo[g,h,i]perylene	276	20.348	20.348	0.000	98	65433	300.0	285.1	
38 N-Nitrosodiethylamine	102		3.603				ND	ND	
37 N-Nitrosodi-n-propylamine	70		4.919				ND	ND	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Review Flags

a - User Assigned ID

Reagents:

MS-SIMSL 0.3_00076

Amount Added: 200.00

Units: uL

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7425.D

Injection Date: 21-Mar-2019 22:15:30

Instrument ID: SMS_X4

Operator ID: HOEFLERA

Lims ID: std0300

Worklist Smp#: 7

Client ID:

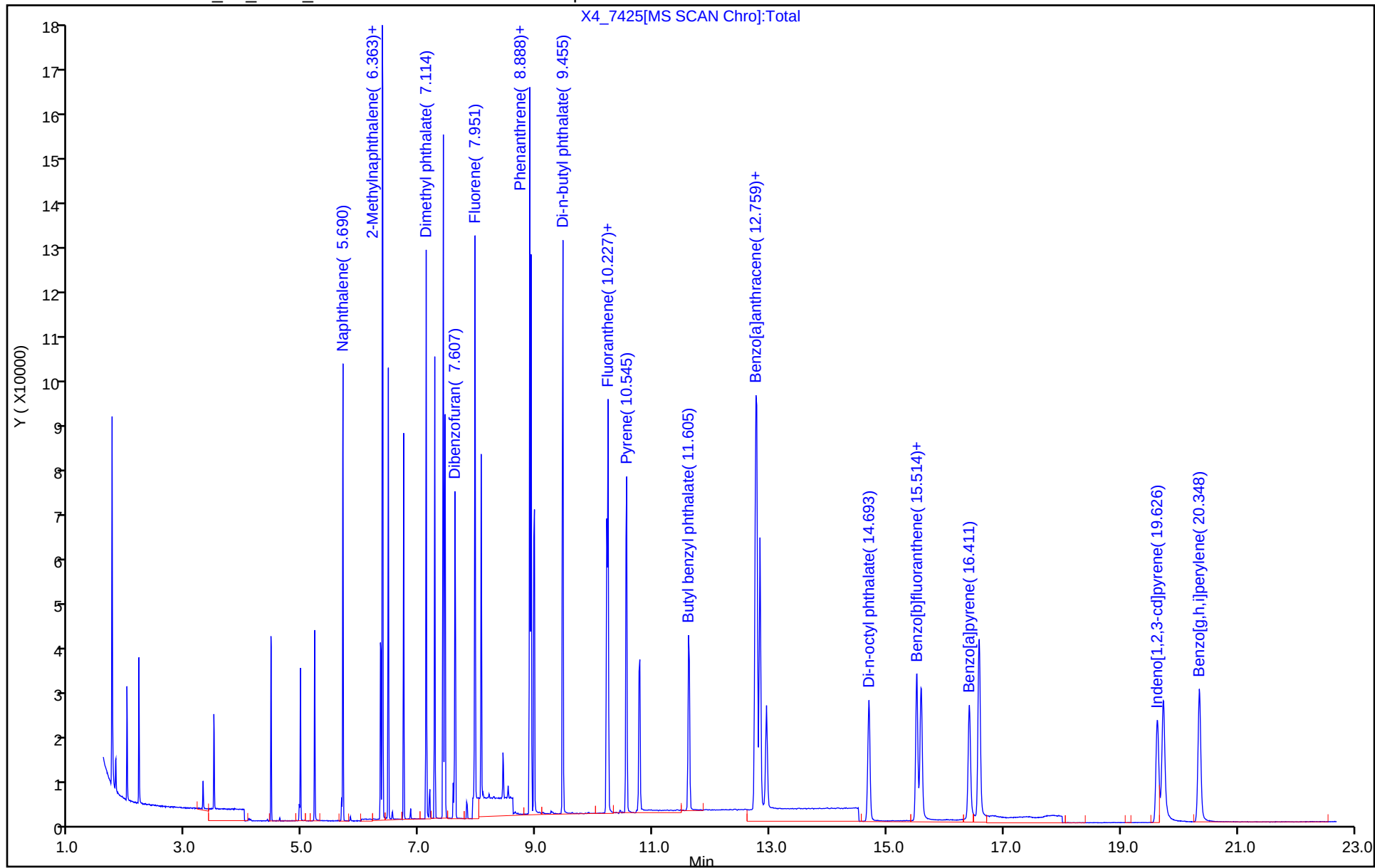
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 6

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7426.D
 Lims ID: icis
 Client ID:
 Sample Type: ICIS Calib Level: 6
 Inject. Date: 21-Mar-2019 22:45:30 ALS Bottle#: 7 Worklist Smp#: 8
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: ICIS
 Operator ID: HOEFLERA Instrument ID: SMS_X4
 Sublist: chrom-SMS_X4_SIMX_5.1*sub1
 Method: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 22-Mar-2019 07:39:20 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0305

First Level Reviewer: wickhamm

Date: 22-Mar-2019 07:24:29

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164	7.408	7.408	0.000	81	65365	600.0	600.0	
* 2 Phenanthrene-d10	188	8.888	8.888	0.000	100	137456	600.0	600.0	
* 3 Chrysene-d12	240	12.772	12.772	0.000	1	125671	600.0	600.0	
* 49 Perylene-d12	264	16.581	16.581	0.000	0	103291	600.0	600.0	
\$ 4 Nitrobenzene-d5	82	4.964	4.964	0.000	95	37865	600.0	530.6	
\$ 7 2-methylnaphthalene-d10	152	6.339	6.339	0.000	92	62858	600.0	539.6	
\$ 5 2-Fluorobiphenyl	172	6.729	6.729	0.000	99	98249	600.0	543.7	
\$ 8 Fluoranthene-d10	212	10.205	10.205	0.000	97	132689	600.0	543.0	
\$ 6 Terphenyl-d14	244	10.771	10.771	0.000	98	89317	600.0	541.1	
9 1,4-Dioxane	88	1.998	1.998	0.000	94	16847	604.8	541.1	
10 N-Nitrosodimethylamine	74	2.198	2.198	0.000	85	25386	600.0	528.4	
11 Naphthalene	128	5.690	5.690	0.000	100	127211	600.0	537.7	
12 2-Methylnaphthalene	142	6.371	6.371	0.000	100	169659	1200.0	1089.1	
13 1-Methylnaphthalene	142	6.467	6.467	0.000	92	76711	600.0	545.1	
14 Dimethyl phthalate	163	7.114	7.114	0.000	100	197490	1200.0	1113.6	
15 Acenaphthylene	152	7.261	7.261	0.000	99	129473	600.0	541.1	
16 Acenaphthene	153	7.439	7.439	0.000	92	82601	600.0	545.7	
17 Dibenzofuran	168	7.607	7.607	0.000	60	121882	600.6	543.2	
18 Diethyl phthalate	149		7.935				ND	ND	
20 Fluorene	166	7.951	7.951	0.000	96	97038	600.0	550.3	
19 N-Nitrosodiphenylamine	169	8.055	8.055	0.000	100	70490	600.0	543.9	
21 Phenanthrene	178	8.910	8.910	0.000	98	157444	600.0	538.2	
22 Anthracene	178	8.967	8.967	0.000	98	140922	600.0	537.3	
23 Di-n-butyl phthalate	149	9.455	9.455	0.000	100	310587	1200.0	1100.0	
24 Fluoranthene	202	10.227	10.227	0.000	75	170610	600.0	541.8	
25 Pyrene	202	10.545	10.545	0.000	73	168962	600.0	527.9	
26 Butyl benzyl phthalate	149	11.619	11.619	0.000	86	106244	1200.0	1082.6	
28 Benzo[a]anthracene	228	12.745	12.745	0.000	94	147214	600.0	520.2	
29 Chrysene	228	12.828	12.828	0.000	100	158707	600.0	543.7	
27 Bis(2-ethylhexyl) phthalat	149	12.939	12.939	0.000	100	127718	1200.0	1060.3	a
30 Di-n-octyl phthalate	149	14.693	14.693	0.000	0	186062	1200.0	1117.3	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
31 Benzo[b]fluoranthene	252	15.508	15.508	0.000	100	140818	600.0	517.0	
32 Benzo[k]fluoranthene	252	15.583	15.583	0.000	100	148955	600.0	531.3	
33 Benzo[a]pyrene	252	16.411	16.411	0.000	99	126979	600.0	524.3	
34 Indeno[1,2,3-cd]pyrene	276	19.626	19.626	0.000	98	114725	600.0	522.4	
35 Dibenzo(a,h)anthracene	278	19.729	19.729	0.000	95	114373	600.0	537.0	
36 Benzo[g,h,i]perylene	276	20.348	20.348	0.000	98	140992	600.0	530.7	
38 N-Nitrosodiethylamine	102		3.603				ND	ND	
37 N-Nitrosodi-n-propylamine	70		4.919				ND	ND	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Review Flags

a - User Assigned ID

Reagents:

MS-SIMSL 0.6_00146

Amount Added: 200.00

Units: uL

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7426.D

Injection Date: 21-Mar-2019 22:45:30

Instrument ID: SMS_X4

Lims ID: icis

Operator ID: HOEFLERA

Client ID:

Worklist Smp#: 8

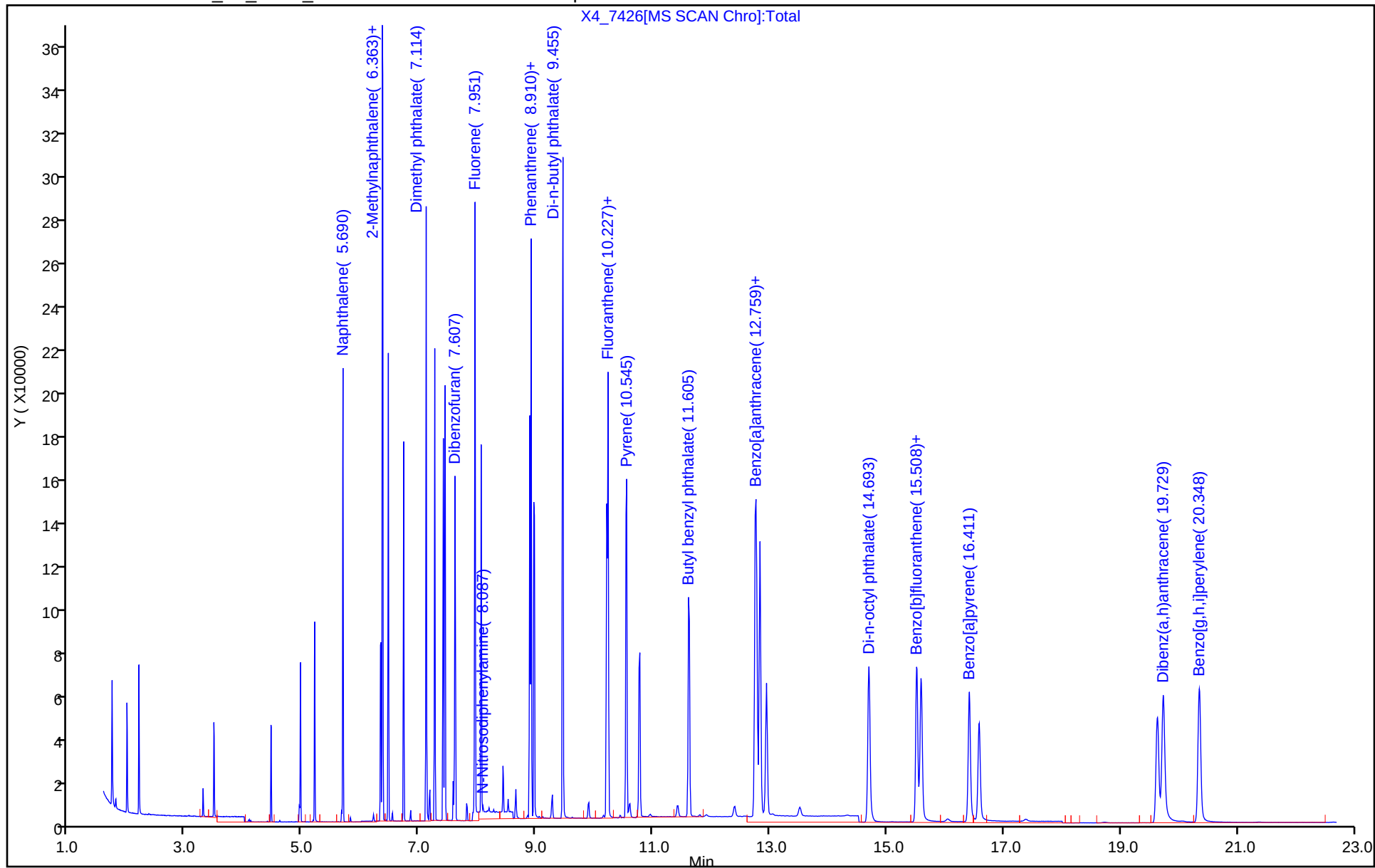
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 7

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7427.D
 Lims ID: std1200
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 21-Mar-2019 23:15:30 ALS Bottle#: 8 Worklist Smp#: 9
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD1200
 Operator ID: HOEFLERA Instrument ID: SMS_X4
 Sublist: chrom-SMS_X4_SIMX_5.1*sub1
 Method: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 22-Mar-2019 07:39:22 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0305

First Level Reviewer: wickhamm

Date: 22-Mar-2019 07:25:09

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164	7.408	7.408	0.000	80	54520	600.0	600.0	
* 2 Phenanthrene-d10	188	8.887	8.888	-0.001	100	110408	600.0	600.0	
* 3 Chrysene-d12	240	12.772	12.772	0.000	1	102469	600.0	600.0	
* 49 Perylene-d12	264	16.574	16.581	-0.007	0	79150	600.0	600.0	
\$ 4 Nitrobenzene-d5	82	4.959	4.964	-0.005	100	72746	1200.0	1222.1	
\$ 7 2-methylnaphthalene-d10	152	6.339	6.339	0.000	91	118368	1200.0	1218.3	
\$ 5 2-Fluorobiphenyl	172	6.729	6.729	0.000	99	187369	1200.0	1243.1	
\$ 8 Fluoranthene-d10	212	10.204	10.205	-0.001	97	246073	1200.0	1253.6	
\$ 6 Terphenyl-d14	244	10.771	10.771	0.000	97	165428	1200.0	1247.6	
9 1,4-Dioxane	88	1.998	1.998	0.000	93	32491	1209.6	1251.2	
10 N-Nitrosodimethylamine	74	2.198	2.198	0.000	82	48749	1200.0	1216.5	
11 Naphthalene	128	5.690	5.690	0.000	100	243221	1200.0	1232.5	
12 2-Methylnaphthalene	142	6.371	6.371	0.000	100	323649	2400.0	2490.9	
13 1-Methylnaphthalene	142	6.467	6.467	0.000	93	144362	1200.0	1230.0	
14 Dimethyl phthalate	163	7.114	7.114	0.000	100	379067	2400.0	2562.7	
15 Acenaphthylene	152	7.261	7.261	0.000	99	243602	1200.0	1220.7	
16 Acenaphthene	153	7.439	7.439	0.000	91	155439	1200.0	1231.1	
17 Dibenzofuran	168	7.607	7.607	0.000	59	233168	1201.2	1245.9	
18 Diethyl phthalate	149		7.935				ND	ND	
20 Fluorene	166	7.951	7.951	0.000	95	182808	1200.0	1243.0	
19 N-Nitrosodiphenylamine	169	8.054	8.055	-0.001	100	130311	1200.0	1251.8	
21 Phenanthrene	178	8.910	8.910	0.000	98	287089	1200.0	1221.8	
22 Anthracene	178	8.967	8.967	0.000	98	264334	1200.0	1254.8	
23 Di-n-butyl phthalate	149	9.455	9.455	0.000	100	558722	2400.0	2463.6	
24 Fluoranthene	202	10.227	10.227	0.000	75	318840	1200.0	1260.7	
25 Pyrene	202	10.545	10.545	0.000	73	321372	1200.0	1250.1	
26 Butyl benzyl phthalate	149	11.605	11.619	-0.014	99	193254	2400.0	2451.6	
28 Benzo[a]anthracene	228	12.744	12.745	-0.001	91	269665	1200.0	1168.6	
29 Chrysene	228	12.828	12.828	0.000	100	299408	1200.0	1258.0	
27 Bis(2-ethylhexyl) phthalat	149		12.939				ND	ND	
30 Di-n-octyl phthalate	149	14.693	14.693	0.000	0	341173	2400.0	2286.3	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
31 Benzo[b]fluoranthene	252	15.508	15.508	0.000	100	273650	1200.0	1232.3	
32 Benzo[k]fluoranthene	252	15.583	15.583	0.000	100	286765	1200.0	1254.6	
33 Benzo[a]pyrene	252	16.411	16.411	0.000	99	239484	1200.0	1212.7	
34 Indeno[1,2,3-cd]pyrene	276	19.626	19.626	0.000	98	211050	1200.0	1178.7	
35 Dibenzo(a,h)anthracene	278	19.729	19.729	0.000	95	216621	1200.0	1247.3	
36 Benzo[g,h,i]perylene	276	20.347	20.348	-0.001	97	265040	1200.0	1223.5	
38 N-Nitrosodiethylamine	102		3.603				ND	ND	
37 N-Nitrosodi-n-propylamine	70		4.919				ND	ND	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Reagents:

MS-SIMSL 1.2_00079

Amount Added: 200.00

Units: uL

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7427.D

Injection Date: 21-Mar-2019 23:15:30

Instrument ID: SMS_X4

Lims ID: std1200

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

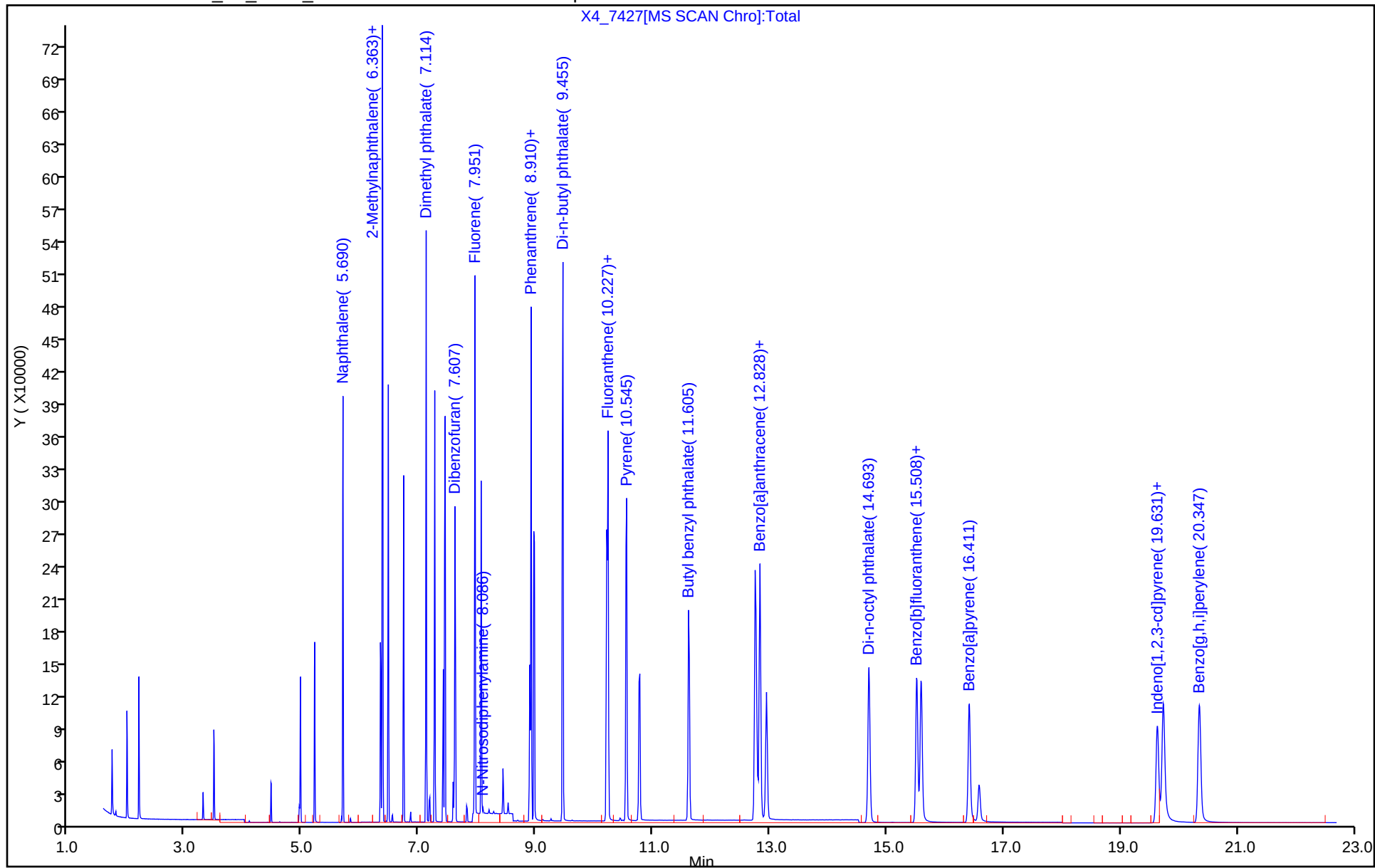
Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM

Operator ID: HOEFLERA

Worklist Smp#: 9

ALS Bottle#: 8



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7428.D
 Lims ID: std2500
 Client ID:
 Sample Type: IC Calib Level: 8
 Inject. Date: 21-Mar-2019 23:45:30 ALS Bottle#: 9 Worklist Smp#: 10
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD2500
 Operator ID: HOEFLERA Instrument ID: SMS_X4
 Sublist: chrom-SMS_X4_SIMX_5.1*sub1
 Method: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 22-Mar-2019 07:39:24 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0305

First Level Reviewer: wickhamm

Date: 22-Mar-2019 07:25:35

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164	7.408	7.408	0.000	79	54780	600.0	600.0	
* 2 Phenanthrene-d10	188	8.888	8.888	0.000	100	112056	600.0	600.0	
* 3 Chrysene-d12	240	12.772	12.772	0.000	1	106696	600.0	600.0	
* 49 Perylene-d12	264	16.580	16.580	0.000	0	81575	600.0	600.0	
\$ 4 Nitrobenzene-d5	82	4.959	4.959	0.000	100	154584	2500.0	2584.7	
\$ 7 2-methylnaphthalene-d10	152	6.339	6.339	0.000	91	246500	2500.0	2525.0	
\$ 5 2-Fluorobiphenyl	172	6.729	6.729	0.000	98	392019	2500.0	2588.5	
\$ 8 Fluoranthene-d10	212	10.205	10.205	0.000	97	508650	2500.0	2553.2	
\$ 6 Terphenyl-d14	244	10.771	10.771	0.000	97	346818	2500.0	2577.1	
9 1,4-Dioxane	88	1.993	1.993	0.000	72	66328	2520.0	2542.1	
10 N-Nitrosodimethylamine	74	2.198	2.198	0.000	81	101146	2500.0	2512.1	
11 Naphthalene	128	5.690	5.690	0.000	100	504066	2500.0	2542.1	
12 2-Methylnaphthalene	142	6.371	6.371	0.000	100	671277	5000.0	5141.8	
13 1-Methylnaphthalene	142	6.467	6.467	0.000	93	302878	2500.0	2568.3	
14 Dimethyl phthalate	163	7.114	7.114	0.000	100	766347	5000.0	5156.2	
15 Acenaphthylene	152	7.261	7.261	0.000	99	529992	2500.0	2643.1	
16 Acenaphthene	153	7.439	7.439	0.000	90	324988	2500.0	2561.7	
17 Dibenzofuran	168	7.607	7.607	0.000	61	483103	2502.5	2569.2	
18 Diethyl phthalate	149		7.935				ND	ND	
20 Fluorene	166	7.951	7.951	0.000	95	383506	2500.0	2595.3	
19 N-Nitrosodiphenylamine	169	8.055	8.055	0.000	100	271261	2500.0	2567.5	
21 Phenanthrene	178	8.910	8.910	0.000	98	606808	2500.0	2544.5	
22 Anthracene	178	8.956	8.956	0.000	100	566735	2500.0	2650.7	
23 Di-n-butyl phthalate	149	9.455	9.455	0.000	100	1236472	5000.0	5371.8	
24 Fluoranthene	202	10.227	10.227	0.000	75	670516	2500.0	2612.2	
25 Pyrene	202	10.545	10.545	0.000	73	673864	2500.0	2582.7	
26 Butyl benzyl phthalate	149	11.605	11.605	0.000	97	458588	5000.0	5732.0	
28 Benzo[a]anthracene	228	12.745	12.745	0.000	90	590988	2500.0	2459.6	
29 Chrysene	228	12.828	12.828	0.000	100	633124	2500.0	2554.7	
27 Bis(2-ethylhexyl) phthalat	149	12.939	12.939	0.000	100	621613	5000.0	5051.1	a
30 Di-n-octyl phthalate	149	14.693	14.693	0.000	0	923328	5000.0	5101.0	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
31 Benzo[b]fluoranthene	252	15.508	15.508	0.000	100	574865	2500.0	2486.1	
32 Benzo[k]fluoranthene	252	15.583	15.583	0.000	100	634184	2500.0	2664.5	
33 Benzo[a]pyrene	252	16.411	16.411	0.000	99	530749	2500.0	2581.1	
34 Indeno[1,2,3-cd]pyrene	276	19.626	19.626	0.000	97	460029	2500.0	2467.5	
35 Dibenz(a,h)anthracene	278	19.729	19.729	0.000	95	483051	2500.0	2671.3	
36 Benzo[g,h,i]perylene	276	20.347	20.347	0.000	98	564961	2500.0	2504.8	
38 N-Nitrosodiethylamine	102		3.603				ND	ND	
37 N-Nitrosodi-n-propylamine	70		4.919				ND	ND	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Review Flags

a - User Assigned ID

Reagents:

MS-SIMSL 2.5_00077

Amount Added: 200.00

Units: uL

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7428.D

Injection Date: 21-Mar-2019 23:45:30

Instrument ID: SMS_X4

Lims ID: std2500

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

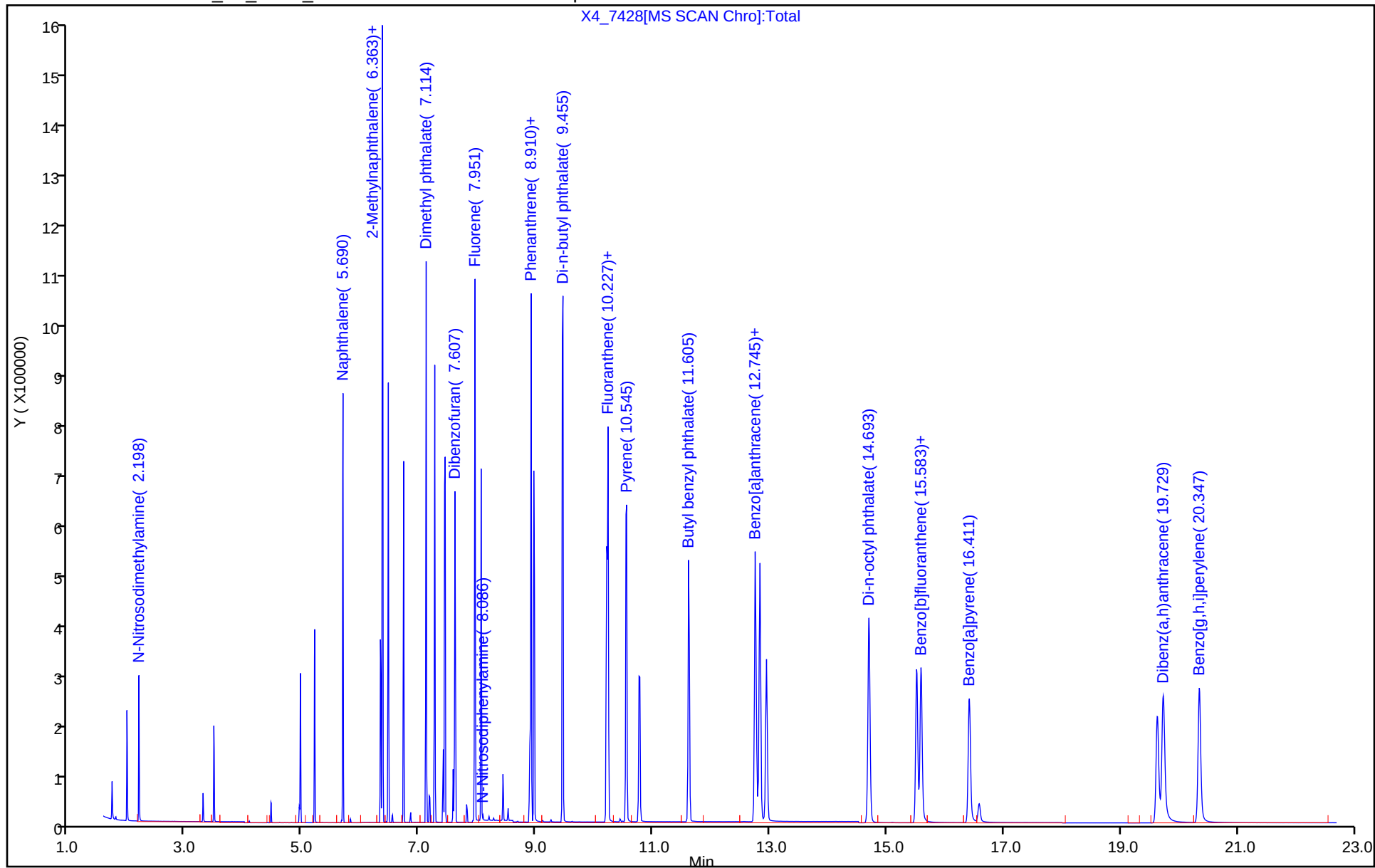
Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM

Operator ID: HOEFLERA

Worklist Smp#: 10

ALS Bottle#: 9



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Lims ID: std5000
 Client ID:
 Sample Type: IC Calib Level: 9
 Inject. Date: 22-Mar-2019 00:16:30 ALS Bottle#: 10 Worklist Smp#: 11
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD5000
 Operator ID: HOEFLERA Instrument ID: SMS_X4
 Sublist: chrom-SMS_X4_SIMX_5.1*sub1
 Method: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 22-Mar-2019 07:39:26 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0305

First Level Reviewer: wickhamm

Date: 22-Mar-2019 07:28:09

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164	7.408	7.408	0.000	80	53487	600.0	600.0	
* 2 Phenanthrene-d10	188	8.888	8.888	0.000	100	115370	600.0	600.0	
* 3 Chrysene-d12	240	12.772	12.772	0.000	11	110085	600.0	600.0	
* 49 Perylene-d12	264	16.580	16.580	0.000	0	82171	600.0	600.0	
\$ 4 Nitrobenzene-d5	82	4.960	4.959	0.001	100	306580	5000.0	5250.0	
\$ 7 2-methylnaphthalene-d10	152	6.331	6.339	-0.008	96	480952	5000.0	5045.7	
\$ 5 2-Fluorobiphenyl	172	6.729	6.729	0.000	98	762190	5000.0	5154.5	
\$ 8 Fluoranthene-d10	212	10.205	10.205	0.001	97	1047534	5000.0	5107.2	
\$ 6 Terphenyl-d14	244	10.771	10.771	0.000	97	707291	5000.0	5104.7	
9 1,4-Dioxane	88	1.993	1.993	0.000	77	125548	5040.0	4928.2	
10 N-Nitrosodimethylamine	74	2.198	2.198	0.000	76	194813	5000.0	4955.5	
11 Naphthalene	128	5.690	5.690	0.000	100	976925	5000.0	5045.9	
12 2-Methylnaphthalene	142	6.363	6.371	-0.008	87	1313933	10000	10308	
13 1-Methylnaphthalene	142	6.467	6.467	0.000	90	594866	5000.0	5166.2	
14 Dimethyl phthalate	163	7.114	7.114	0.000	100	1550939	10000	10688	
15 Acenaphthylene	152	7.261	7.261	0.000	99	1049184	5000.0	5358.9	
16 Acenaphthene	153	7.439	7.439	0.000	90	643502	5000.0	5194.9	
17 Dibenzofuran	168	7.607	7.607	0.000	62	974590	5005.0	5308.2	
18 Diethyl phthalate	149		7.935				ND	ND	
20 Fluorene	166	7.951	7.951	0.000	94	764425	5000.0	5298.2	
19 N-Nitrosodiphenylamine	169	8.055	8.055	0.000	100	531255	5000.0	4884.0	
21 Phenanthrene	178	8.910	8.910	0.000	98	1201089	5000.0	4891.8	
22 Anthracene	178	8.956	8.956	0.000	100	1172613	5000.0	5327.0	
23 Di-n-butyl phthalate	149	9.455	9.455	0.000	100	2703878	10000	11409	
24 Fluoranthene	202	10.227	10.227	0.000	75	1373048	5000.0	5195.5	
25 Pyrene	202	10.545	10.545	0.000	73	1393725	5000.0	5188.3	
26 Butyl benzyl phthalate	149	11.605	11.605	0.000	96	1055053	10000	12809	
28 Benzo[a]anthracene	228	12.745	12.745	0.001	90	1239173	5000.0	4998.4	
29 Chrysene	228	12.828	12.828	0.000	100	1297481	5000.0	5074.3	
27 Bis(2-ethylhexyl) phthalat	149	12.939	12.939	0.000	100	1475346	10000	9991.3	a
30 Di-n-octyl phthalate	149	14.693	14.693	0.000	0	2292040	10000	9986.1	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
31 Benzo[b]fluoranthene	252	15.508	15.508	0.000	100	1198684	5000.0	5024.4	
32 Benzo[k]fluoranthene	252	15.583	15.583	0.000	100	1338185	5000.0	5449.3	
33 Benzo[a]pyrene	252	16.411	16.411	0.000	99	1141342	5000.0	5379.6	
34 Indeno[1,2,3-cd]pyrene	276	19.626	19.626	0.000	98	965474	5000.0	5019.1	
35 Dibenz(a,h)anthracene	278	19.729	19.729	0.000	95	1022741	5000.0	5481.7	
36 Benzo[g,h,i]perylene	276	20.347	20.347	0.000	98	1176941	5000.0	5057.4	
38 N-Nitrosodiethylamine	102		3.603				ND	ND	
37 N-Nitrosodi-n-propylamine	70		4.919				ND	ND	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Review Flags

a - User Assigned ID

Reagents:

MS-SIMSL 5_00079

Amount Added: 200.00

Units: uL

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D

Injection Date: 22-Mar-2019 00:16:30

Instrument ID: SMS_X4

Lims ID: std5000

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

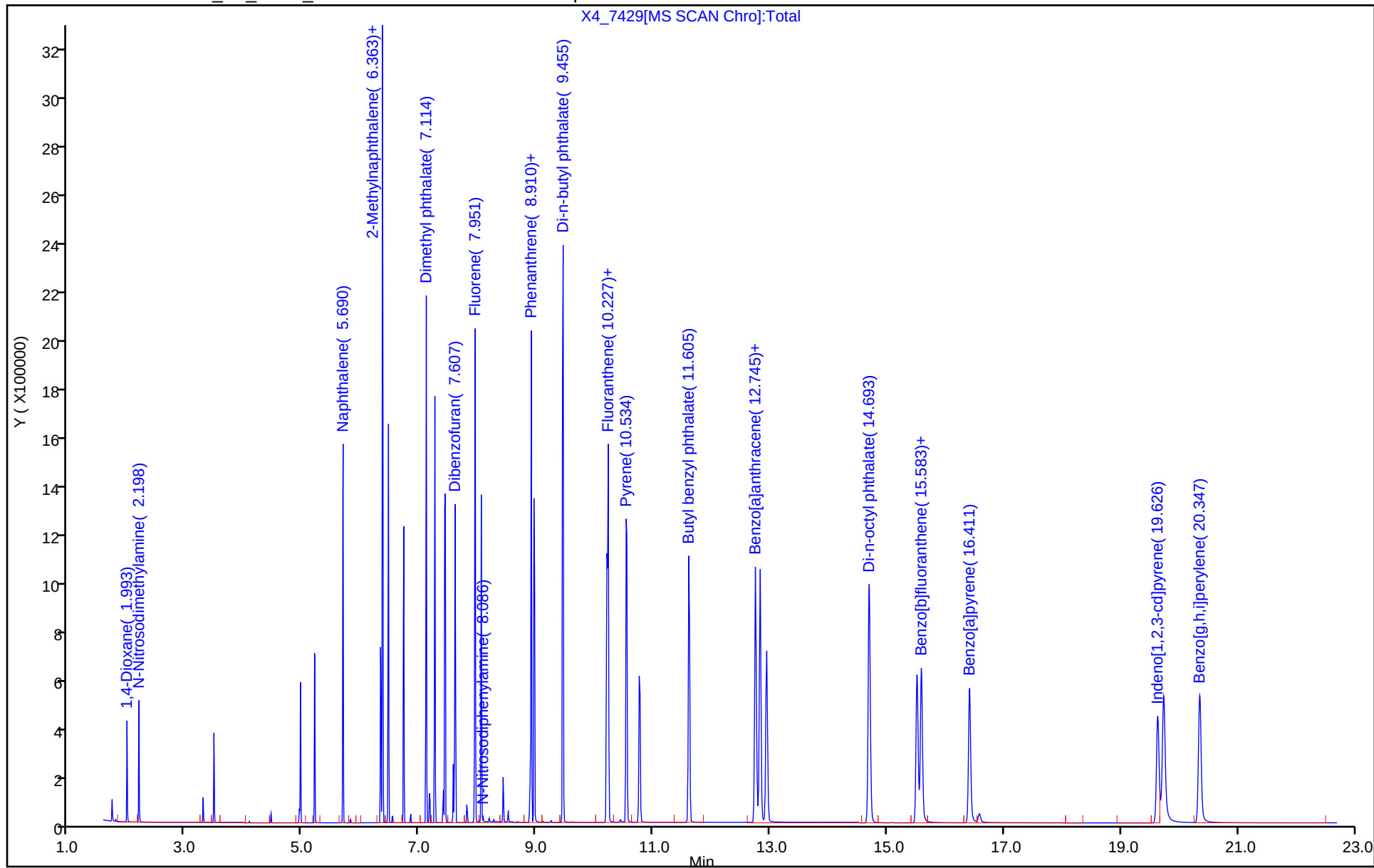
Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM

Operator ID: HOEFLERA

Worklist Smp#: 11

ALS Bottle#: 10



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-451426/12 Calibration Date: 03/22/2019 06:59
 Instrument ID: SMS_X4 Calib Start Date: 03/21/2019 20:15
 GC Column: Rxi-5Sil MS ID: 0.25 (mm) Calib End Date: 03/22/2019 00:16
 Lab File ID: X4_7430.D Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Naphthalene	Ave	2.172	2.341	0.7000	647000	600000	7.8	20.0
2-Methylnaphthalene	Ave	1.430	1.529	0.4000	642000	600000	7.0	20.0
1-Methylnaphthalene	Ave	1.292	1.458	0.0500	677000	600000	12.9	20.0
Acenaphthylene	Ave	2.196	2.293	0.9000	627000	600000	4.4	20.0
Acenaphthene	Ave	1.390	1.505	0.9000	650000	600000	8.3	20.0
Fluorene	Ave	1.618	1.767	0.9000	655000	600000	9.1	20.0
Phenanthrene	Ave	1.277	1.403	0.7000	659000	600000	9.9	20.0
Anthracene	Ave	1.145	1.303	0.7000	683000	600000	13.8	20.0
Fluoranthene	Ave	1.374	1.408	0.6000	615000	600000	2.5	20.0
Pyrene	Ave	1.397	1.518	0.6000	652000	600000	8.7	20.0
Benzo[a]anthracene	Ave	1.351	1.404	0.8000	623000	600000	3.9	20.0
Chrysene	Ave	1.394	1.638	0.7000	705000	600000	17.5	20.0
Benzo[b]fluoranthene	Ave	1.300	1.267	0.7000	585000	600000	-2.6	20.0
Benzo[k]fluoranthene	Ave	1.338	1.433	0.7000	643000	600000	7.1	20.0
Benzo[a]pyrene	Ave	1.156	1.115	0.7000	578000	600000	-3.6	20.0
Indeno[1,2,3-cd]pyrene	Ave	1.048	0.9205	0.5000	527000	600000	-12.2	20.0
Dibenz(a,h)anthracene	Ave	1.017	1.009	0.4000	595000	600000	-0.8	20.0
Benzo[g,h,i]perylene	Ave	1.268	1.227	0.5000	581000	600000	-3.2	20.0

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7430.D

Lims ID: icv

Client ID:

Sample Type: ICV

Inject. Date: 22-Mar-2019 06:59:30

ALS Bottle#: 11

Worklist Smp#: 12

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Sample Info: ICV

Operator ID: HOEFLERA

Instrument ID: SMS_X4

Sublist:

Method: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\SMS_X4_SIMX_5.1.m

Limit Group: MSSV - 8270C-SIM

Last Update: 22-Mar-2019 07:45:10

Calib Date: 22-Mar-2019 00:16:30

Integrator: RTE

ID Type: RT Order ID

Quant Method: Internal Standard

Quant By: Initial Calibration

Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D

Column 1 :

Det: MS SCAN

Process Host: CTX0305

First Level Reviewer: wickhamm

Date: 22-Mar-2019 07:45:10

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164	7.408	7.408	0.000	83	58926	600.0	600.0	
* 2 Phenanthrene-d10	188	8.888	8.888	0.000	100	119511	600.0	600.0	
* 3 Chrysene-d12	240	12.772	12.772	0.000	1	107403	600.0	600.0	
* 49 Perylene-d12	264	16.587	16.580	0.007	0	82450	600.0	600.0	
9 1,4-Dioxane	88	1.993	1.993	0.000	93	17830	600.0	635.3	
10 N-Nitrosodimethylamine	74	2.193	2.198	-0.005	92	28539	600.0	658.9	
11 Naphthalene	128	5.686	5.690	-0.004	100	137960	600.0	646.8	
12 2-Methylnaphthalene	142	6.363	6.371	-0.008	86	90126	600.0	641.8	
13 1-Methylnaphthalene	142	6.467	6.467	0.000	91	85907	600.0	677.2	
14 Dimethyl phthalate	163	7.114	7.114	0.000	100	101626	600.0	635.7	
15 Acenaphthylene	152	7.261	7.261	0.000	99	135139	600.0	626.5	
16 Acenaphthene	153	7.439	7.439	0.000	92	88667	600.0	649.7	
17 Dibenzofuran	168	7.607	7.607	0.000	57	131138	600.0	648.3	
18 Diethyl phthalate	149		7.935				ND	ND	
20 Fluorene	166	7.951	7.951	0.000	97	104096	600.0	654.9	
19 N-Nitrosodiphenylamine	169	8.055	8.055	0.000	99	77489	600.0	687.7	
21 Phenanthrene	178	8.910	8.910	0.000	99	167670	600.0	659.2	
22 Anthracene	178	8.967	8.956	0.011	99	155705	600.0	682.8	
23 Di-n-butyl phthalate	149	9.455	9.455	0.000	100	155404	600.0	633.0	
24 Fluoranthene	202	10.227	10.227	0.000	76	168290	600.0	614.7	
25 Pyrene	202	10.545	10.545	0.000	73	181421	600.0	652.0	
26 Butyl benzyl phthalate	149	11.619	11.605	0.014	90	44088	600.0	516.7	
28 Benzo[a]anthracene	228	12.758	12.745	0.014	99	150781	600.0	623.4	
29 Chrysene	228	12.828	12.828	0.000	99	175924	600.0	705.2	
27 Bis(2-ethylhexyl) phthalat	149	12.939	12.939	0.000	100	48214	600.0	535.2	a
30 Di-n-octyl phthalate	149	14.699	14.693	0.006	0	57711	600.0	462.2	
31 Benzo[b]fluoranthene	252	15.521	15.508	0.013	99	136071	600.0	584.6	
32 Benzo[k]fluoranthene	252	15.590	15.583	0.007	100	153939	600.0	642.5	
33 Benzo[a]pyrene	252	16.417	16.411	0.006	99	119731	600.0	578.4	
34 Indeno[1,2,3-cd]pyrene	276	19.631	19.626	0.005	98	98869	600.0	526.8	
35 Dibenz(a,h)anthracene	278	19.740	19.729	0.011	95	108370	600.0	595.3	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
36 Benzo[g,h,i]perylene	276	20.353	20.347	0.006	97	131807	600.0	580.5	
37 N-Nitrosodi-n-propylamine	70		4.919				ND	ND	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Review Flags

a - User Assigned ID

Reagents:

MS-SIM SSV2_00010

Amount Added: 200.00

Units: uL

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7430.D

Injection Date: 22-Mar-2019 06:59:30

Instrument ID: SMS_X4

Operator ID: HOEFLERA

Lims ID: icv

Worklist Smp#: 12

Client ID:

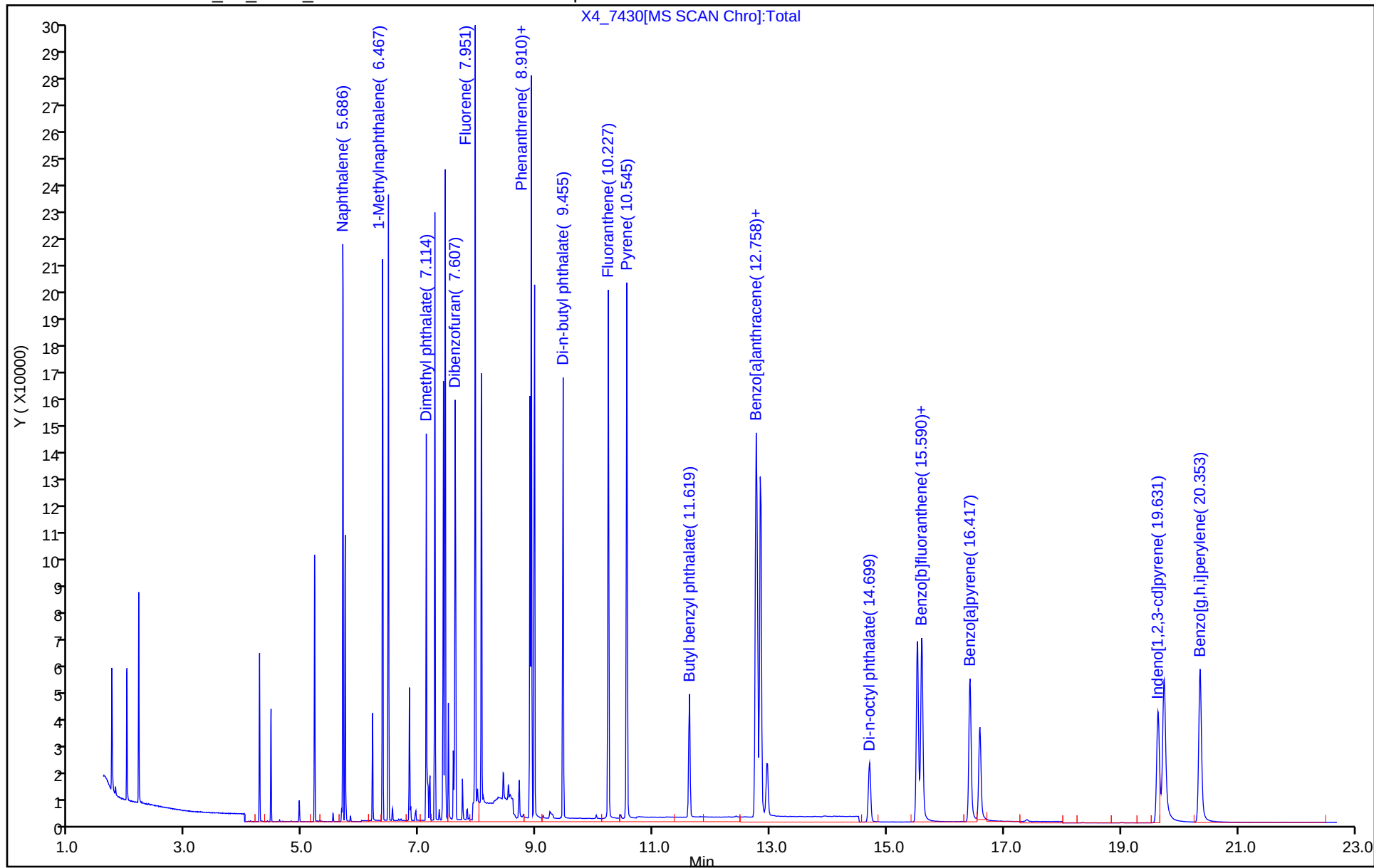
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 11

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-457763/3 Calibration Date: 05/10/2019 15:34
 Instrument ID: SMS_X4 Calib Start Date: 03/21/2019 20:15
 GC Column: Rxi-5Sil MS ID: 0.25 (mm) Calib End Date: 03/22/2019 00:16
 Lab File ID: X4_8402.D Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Naphthalene	Ave	2.172	2.172	0.7000	600000	600000	0.0	20.0
2-Methylnaphthalene	Ave	1.430	1.393	0.4000	1170000	1200000	-2.6	20.0
1-Methylnaphthalene	Ave	1.292	1.412	0.0500	656000	600000	9.3	20.0
Acenaphthylene	Ave	2.196	1.940	0.9000	530000	600000	-11.6	20.0
Acenaphthene	Ave	1.390	1.357	0.9000	586000	600000	-2.4	20.0
Fluorene	Ave	1.618	1.551	0.9000	575000	600000	-4.2	20.0
Phenanthrene	Ave	1.277	1.207	0.7000	567000	600000	-5.5	20.0
Anthracene	Ave	1.145	1.094	0.7000	573000	600000	-4.5	20.0
Fluoranthene	Ave	1.374	1.318	0.6000	576000	600000	-4.1	20.0
Pyrene	Ave	1.397	1.348	0.6000	579000	600000	-3.5	20.0
Benzo[a]anthracene	Ave	1.351	1.100	0.8000	489000	600000	-18.6	20.0
Chrysene	Ave	1.394	1.462	0.7000	629000	600000	4.9	20.0
Benzo[b]fluoranthene	Ave	1.300	1.093	0.7000	504000	600000	-15.9	20.0
Benzo[k]fluoranthene	Ave	1.338	1.293	0.7000	580000	600000	-3.4	20.0
Benzo[a]pyrene	Ave	1.156	0.9672	0.7000	502000	600000	-16.4	20.0
Indeno[1,2,3-cd]pyrene	Ave	1.048	0.8892	0.5000	509000	600000	-15.2	20.0
Dibenz (a,h) anthracene	Ave	1.017	0.9625	0.4000	568000	600000	-5.3	20.0
Benzo[g,h,i]perylene	Ave	1.268	1.189	0.5000	562000	600000	-6.3	20.0
Nitrobenzene-d5	Ave	0.6551	0.6052		554000	600000	-7.6	20.0
2-methylnaphthalene-d10	Ave	1.069	0.9643		541000	600000	-9.8	35.0
2-Fluorobiphenyl	Ave	1.659	1.751		633000	600000	5.5	20.0
Fluoranthene-d10	Ave	1.067	0.9529		536000	600000	-10.7	35.0
Terphenyl-d14	Ave	0.7206	0.7010		584000	600000	-2.7	20.0

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\X4_8402.D
 Lims ID: CCV
 Client ID:
 Sample Type: CCV
 Inject. Date: 10-May-2019 15:34:30 ALS Bottle#: 2 Worklist Smp#: 3
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: ccv
 Operator ID: WICKHAMM Instrument ID: SMS_X4
 Sublist: chrom-SMS_X4_SIMX_5.1*sub1
 Method: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 11-May-2019 08:37:00 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0312

First Level Reviewer: wickhamm

Date: 10-May-2019 18:32:52

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164	7.418	7.418	0.000	77	45374	600.0	600.0	
* 2 Phenanthrene-d10	188	8.899	8.899	0.000	100	93576	600.0	600.0	
* 3 Chrysene-d12	240	12.800	12.800	0.000	1	82325	600.0	600.0	
* 49 Perylene-d12	264	16.630	16.630	0.000	0	63371	600.0	600.0	
\$ 4 Nitrobenzene-d5	82	4.964	4.964	0.000	99	27462	600.0	554.4	
\$ 7 2-methylnaphthalene-d10	152	6.339	6.339	0.000	96	43756	600.0	541.1	
\$ 5 2-Fluorobiphenyl	172	6.737	6.737	0.000	98	79429	600.0	633.2	
\$ 8 Fluoranthene-d10	212	10.216	10.216	0.000	97	89168	600.0	536.0	
\$ 6 Terphenyl-d14	244	10.771	10.771	0.000	100	65593	600.0	583.7	
9 1,4-Dioxane	88	1.992	1.992	0.000	81	12173	604.8	563.3	
10 N-Nitrosodimethylamine	74	2.203	2.203	0.000	83	19311	600.0	579.0	
11 Naphthalene	128	5.690	5.690	0.000	100	98556	600.0	600.1	
12 2-Methylnaphthalene	142	6.371	6.371	0.000	94	126446	1200.0	1169.3	
13 1-Methylnaphthalene	142	6.474	6.474	0.000	86	64051	600.0	655.7	
14 Dimethyl phthalate	163	7.124	7.124	0.000	100	146527	1200.0	1190.3	
15 Acenaphthylene	152	7.271	7.271	0.000	99	88048	600.0	530.1	
16 Acenaphthene	153	7.439	7.439	0.000	96	61555	600.0	585.8	
17 Dibenzofuran	168	7.617	7.617	0.000	61	95814	600.6	615.2	
18 Diethyl phthalate	149		7.935				ND	ND	
20 Fluorene	166	7.959	7.959	0.000	97	70379	600.0	575.0	
19 N-Nitrosodiphenylamine	169	8.062	8.062	0.000	99	49283	600.0	558.6	
21 Phenanthrene	178	8.921	8.921	0.000	98	112926	600.0	567.0	
22 Anthracene	178	8.967	8.967	0.000	100	102342	600.0	573.2	
23 Di-n-butyl phthalate	149	9.455	9.455	0.000	100	201177	1200.0	1046.6	
24 Fluoranthene	202	10.238	10.238	0.000	76	123376	600.0	575.6	
25 Pyrene	202	10.556	10.556	0.000	73	126130	600.0	578.9	
26 Butyl benzyl phthalate	149	11.619	11.619	0.000	88	60193	1200.0	901.0	
28 Benzo[a]anthracene	228	12.772	12.772	0.000	98	90598	600.0	488.7	
29 Chrysene	228	12.856	12.856	0.000	100	120371	600.0	629.5	
27 Bis(2-ethylhexyl) phthalat	149		12.939				ND	ND	
30 Di-n-octyl phthalate	149	14.686	14.686	0.000	0	96002	1200.0	904.0	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
31 Benzo[b]fluoranthene	252	15.552	15.552	0.000	99	89978	600.0	504.3	
32 Benzo[k]fluoranthene	252	15.627	15.627	0.000	100	106456	600.0	579.7	
33 Benzo[a]pyrene	252	16.461	16.461	0.000	99	79623	600.0	501.8	
34 Indeno[1,2,3-cd]pyrene	276	19.696	19.696	0.000	97	73200	600.0	508.9	
35 Dibenzo[a,h]anthracene	278	19.794	19.794	0.000	96	79241	600.0	567.9	
36 Benzo[g,h,i]perylene	276	20.423	20.423	0.000	97	97847	600.0	562.2	
38 N-Nitrosodiethylamine	102		3.603				ND	ND	
37 N-Nitrosodi-n-propylamine	70		4.919				ND	ND	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Reagents:

MS-SIM CCV_00084

Amount Added: 200.00

Units: uL

Report Date: 11-May-2019 08:37:01

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\X4_8402.D

Injection Date: 10-May-2019 15:34:30

Instrument ID: SMS_X4

Operator ID: WICKHAMM

Lims ID: CCV

Worklist Smp#: 3

Client ID:

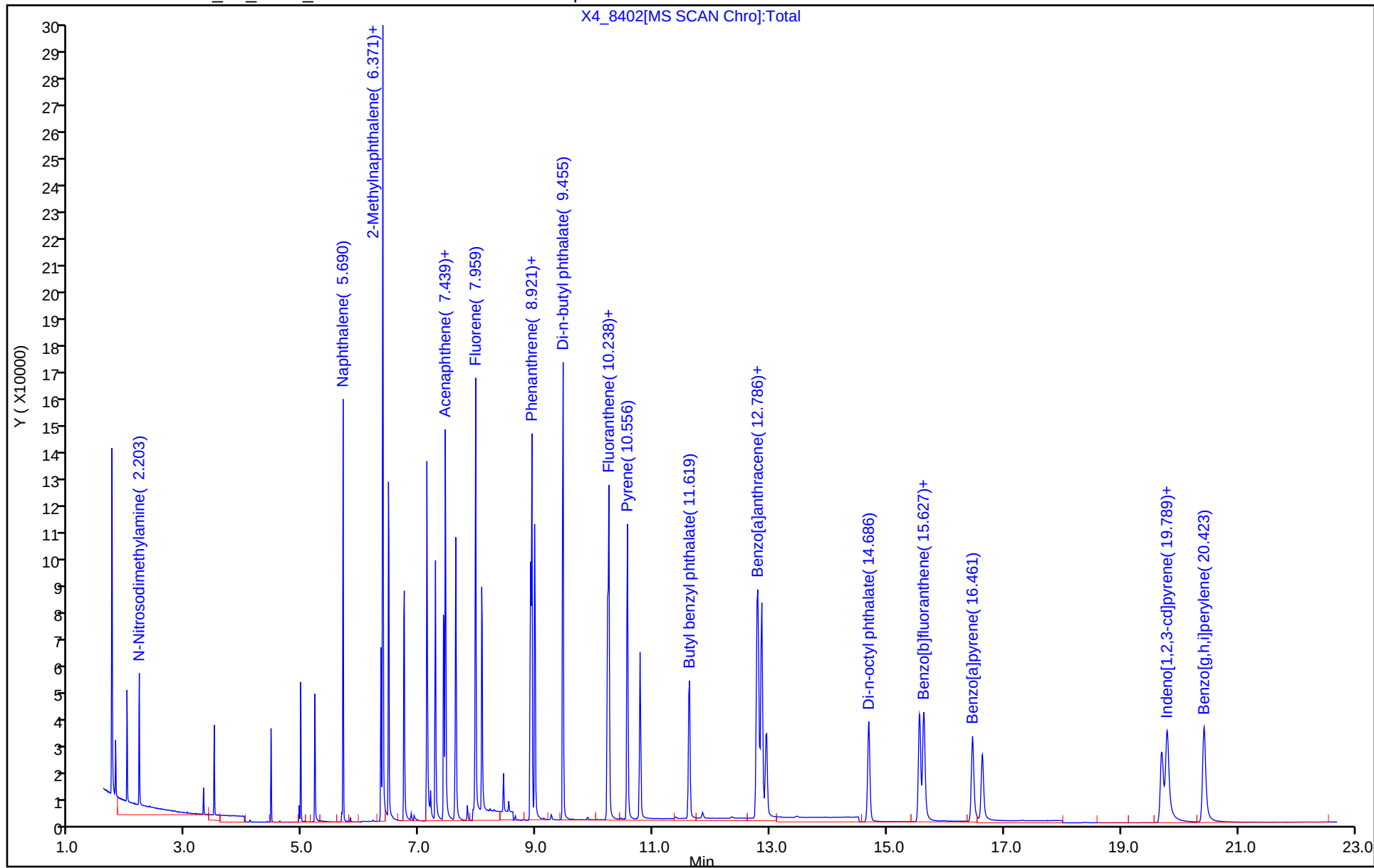
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 2

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCVC 280-457763/24 Calibration Date: 05/11/2019 02:34
 Instrument ID: SMS_X4 Calib Start Date: 03/21/2019 20:15
 GC Column: Rxi-5Sil MS ID: 0.25 (mm) Calib End Date: 03/22/2019 00:16
 Lab File ID: X4_8423.D Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Naphthalene	Ave	2.172	2.140	0.7000	591000	600000	-1.5	50.0
2-Methylnaphthalene	Ave	1.430	1.422	0.4000	1190000	1200000	-0.6	50.0
1-Methylnaphthalene	Ave	1.292	1.408	0.0500	654000	600000	9.0	50.0
Acenaphthylene	Ave	2.196	1.960	0.9000	535000	600000	-10.8	50.0
Acenaphthene	Ave	1.390	1.365	0.9000	590000	600000	-1.7	50.0
Fluorene	Ave	1.618	1.551	0.9000	575000	600000	-4.2	50.0
Phenanthrene	Ave	1.277	1.217	0.7000	572000	600000	-4.7	50.0
Anthracene	Ave	1.145	1.169	0.7000	612000	600000	2.1	50.0
Fluoranthene	Ave	1.374	1.310	0.6000	572000	600000	-4.7	50.0
Pyrene	Ave	1.397	1.296	0.6000	556000	600000	-7.3	50.0
Benzo[a]anthracene	Ave	1.351	1.081	0.8000	480000	600000	-20.0	50.0
Chrysene	Ave	1.394	1.513	0.7000	651000	600000	8.6	50.0
Benzo[b]fluoranthene	Ave	1.300	1.035	0.7000	477000	600000	-20.4	50.0
Benzo[k]fluoranthene	Ave	1.338	1.285	0.7000	576000	600000	-4.0	50.0
Benzo[a]pyrene	Ave	1.156	0.9042	0.7000	469000	600000	-21.8	50.0
Indeno[1,2,3-cd]pyrene	Ave	1.048	0.7919	0.5000	453000	600000	-24.5	50.0
Dibenz (a,h) anthracene	Ave	1.017	0.8991	0.4000	530000	600000	-11.6	50.0
Benzo[g,h,i]perylene	Ave	1.268	1.152	0.5000	545000	600000	-9.2	50.0
Nitrobenzene-d5	Ave	0.6551	0.5808		532000	600000	-11.3	50.0
2-methylnaphthalene-d10	Ave	1.069	0.9922		557000	600000	-7.2	50.0
2-Fluorobiphenyl	Ave	1.659	1.682		608000	600000	1.4	50.0
Fluoranthene-d10	Ave	1.067	0.9624		541000	600000	-9.8	50.0
Terphenyl-d14	Ave	0.7206	0.6974		581000	600000	-3.2	50.0

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\X4_8423.D
 Lims ID: ccvc
 Client ID:
 Sample Type: CCVC
 Inject. Date: 11-May-2019 02:34:30 ALS Bottle#: 23 Worklist Smp#: 24
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: CCVC
 Operator ID: WICKHAMM Instrument ID: SMS_X4
 Sublist: chrom-SMS_X4_SIMX_5.1*sub1
 Method: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 11-May-2019 08:37:46 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0312

First Level Reviewer: wickhamm

Date: 11-May-2019 07:18:11

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164	7.408	7.418	-0.010	98	44395	600.0	600.0	
* 2 Phenanthrene-d10	188	8.899	8.899	0.000	100	91949	600.0	600.0	
* 3 Chrysene-d12	240	12.800	12.800	0.000	1	77348	600.0	600.0	
* 49 Perylene-d12	264	16.631	16.630	0.001	0	57176	600.0	600.0	
\$ 4 Nitrobenzene-d5	82	4.964	4.964	0.000	99	25785	600.0	532.0	
\$ 7 2-methylnaphthalene-d10	152	6.339	6.339	0.000	96	44048	600.0	556.8	
\$ 5 2-Fluorobiphenyl	172	6.737	6.737	0.000	98	74656	600.0	608.3	
\$ 8 Fluoranthene-d10	212	10.216	10.216	0.000	97	88489	600.0	541.3	
\$ 6 Terphenyl-d14	244	10.771	10.771	0.000	99	64129	600.0	580.7	
9 1,4-Dioxane	88	1.993	1.992	0.001	74	12868	604.8	608.6	
10 N-Nitrosodimethylamine	74	2.204	2.203	0.001	79	18445	600.0	565.3	
11 Naphthalene	128	5.690	5.690	0.000	100	94984	600.0	591.1	
12 2-Methylnaphthalene	142	6.371	6.371	0.000	94	126233	1200.0	1193.1	
13 1-Methylnaphthalene	142	6.467	6.474	-0.007	99	62504	600.0	654.0	
14 Dimethyl phthalate	163	7.124	7.124	0.000	100	139005	1200.0	1154.1	
15 Acenaphthylene	152	7.271	7.271	0.000	99	86998	600.0	535.4	
16 Acenaphthene	153	7.439	7.439	0.000	98	60610	600.0	589.5	
17 Dibenzofuran	168	7.618	7.617	0.001	61	92827	600.6	609.1	
18 Diethyl phthalate	149		7.935				ND	ND	
20 Fluorene	166	7.959	7.959	0.000	96	68838	600.0	574.8	
19 N-Nitrosodiphenylamine	169	8.063	8.062	0.001	100	49695	600.0	573.2	
21 Phenanthrene	178	8.922	8.921	0.001	98	111933	600.0	572.0	
22 Anthracene	178	8.967	8.967	0.000	100	107454	600.0	612.5	
23 Di-n-butyl phthalate	149	9.455	9.455	0.000	100	187964	1200.0	995.2	
24 Fluoranthene	202	10.239	10.238	0.001	76	120421	600.0	571.7	
25 Pyrene	202	10.557	10.556	0.001	73	119125	600.0	556.4	
26 Butyl benzyl phthalate	149	11.619	11.619	0.000	89	50301	1200.0	766.2	
28 Benzo[a]anthracene	228	12.772	12.772	0.000	98	83629	600.0	480.1	
29 Chrysene	228	12.856	12.856	0.000	100	117013	600.0	651.3	
27 Bis(2-ethylhexyl) phthalat	149		12.939				ND	ND	
30 Di-n-octyl phthalate	149	14.687	14.686	0.001	0	73847	1200.0	757.9	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
31 Benzo[b]fluoranthene	252	15.552	15.552	0.000	99	80019	600.0	477.4	
32 Benzo[k]fluoranthene	252	15.627	15.627	0.000	100	99387	600.0	576.0	
33 Benzo[a]pyrene	252	16.461	16.461	0.000	99	69937	600.0	469.2	
34 Indeno[1,2,3-cd]pyrene	276	19.702	19.696	0.006	97	61252	600.0	453.2	
35 Dibenz(a,h)anthracene	278	19.794	19.794	0.000	95	69542	600.0	530.5	
36 Benzo[g,h,i]perylene	276	20.429	20.423	0.006	97	89124	600.0	545.1	
38 N-Nitrosodiethylamine	102		3.603				ND	ND	
37 N-Nitrosodi-n-propylamine	70		4.919				ND	ND	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Reagents:

MS-SIM CCV_00084

Amount Added: 200.00

Units: uL

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\X4_8423.D

Injection Date: 11-May-2019 02:34:30

Instrument ID: SMS_X4

Operator ID: WICKHAMM

Lims ID: ccvc

Worklist Smp#: 24

Client ID:

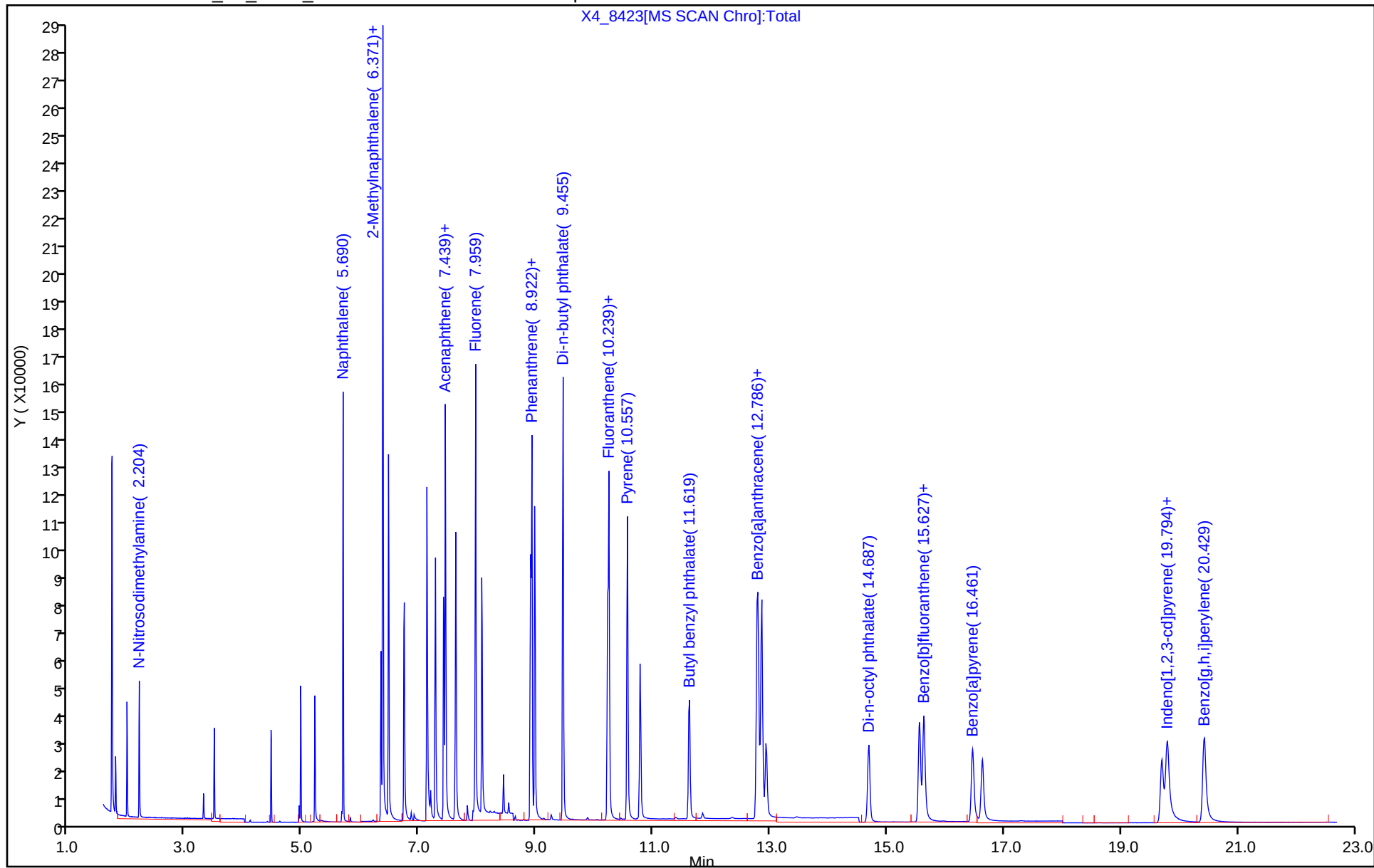
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 23

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458021/3 Calibration Date: 05/13/2019 18:28
 Instrument ID: SMS_X4 Calib Start Date: 03/21/2019 20:15
 GC Column: Rxi-5Sil MS ID: 0.25 (mm) Calib End Date: 03/22/2019 00:16
 Lab File ID: X4_8454.D Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Naphthalene	Ave	2.172	2.099	0.7000	580000	600000	-3.4	20.0
2-Methylnaphthalene	Ave	1.430	1.389	0.4000	1170000	1200000	-2.9	20.0
1-Methylnaphthalene	Ave	1.292	1.291	0.0500	600000	600000	-0.0	20.0
Acenaphthylene	Ave	2.196	2.039	0.9000	557000	600000	-7.1	20.0
Acenaphthene	Ave	1.390	1.346	0.9000	581000	600000	-3.1	20.0
Fluorene	Ave	1.618	1.575	0.9000	584000	600000	-2.7	20.0
Phenanthrene	Ave	1.277	1.192	0.7000	560000	600000	-6.6	20.0
Anthracene	Ave	1.145	1.159	0.7000	607000	600000	1.2	20.0
Fluoranthene	Ave	1.374	1.342	0.6000	586000	600000	-2.4	20.0
Pyrene	Ave	1.397	1.403	0.6000	603000	600000	0.4	20.0
Benzo[a]anthracene	Ave	1.351	1.295	0.8000	575000	600000	-4.2	20.0
Chrysene	Ave	1.394	1.396	0.7000	601000	600000	0.2	20.0
Benzo[b]fluoranthene	Ave	1.300	1.323	0.7000	611000	600000	1.8	20.0
Benzo[k]fluoranthene	Ave	1.338	1.365	0.7000	612000	600000	2.0	20.0
Benzo[a]pyrene	Ave	1.156	1.276	0.7000	662000	600000	10.4	20.0
Indeno[1,2,3-cd]pyrene	Ave	1.048	1.196	0.5000	685000	600000	14.1	20.0
Dibenz (a,h) anthracene	Ave	1.017	1.182	0.4000	698000	600000	16.3	20.0
Benzo[g,h,i]perylene	Ave	1.268	1.368	0.5000	647000	600000	7.8	20.0
Nitrobenzene-d5	Ave	0.6551	0.6147		563000	600000	-6.2	20.0
2-methylnaphthalene-d10	Ave	1.069	0.9603		539000	600000	-10.2	35.0
2-Fluorobiphenyl	Ave	1.659	1.632		590000	600000	-1.6	20.0
Fluoranthene-d10	Ave	1.067	1.029		579000	600000	-3.6	35.0
Terphenyl-d14	Ave	0.7206	0.7515		626000	600000	4.3	20.0

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\X4_8454.D
 Lims ID: CCV
 Client ID:
 Sample Type: CCV
 Inject. Date: 13-May-2019 18:28:30 ALS Bottle#: 2 Worklist Smp#: 3
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: ccv
 Operator ID: WICKHAMM Instrument ID: SMS_X4
 Sublist: chrom-SMS_X4_SIMX_5.1*sub1
 Method: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 14-May-2019 23:07:26 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: wickhamm

Date: 13-May-2019 18:54:57

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164	7.408	7.408	0.000	87	55052	600.0	600.0	
* 2 Phenanthrene-d10	188	8.899	8.899	0.000	100	115835	600.0	600.0	
* 3 Chrysene-d12	240	12.786	12.786	0.000	1	109510	600.0	600.0	
* 49 Perylene-d12	264	16.624	16.624	0.000	0	103362	600.0	600.0	
\$ 4 Nitrobenzene-d5	82	4.964	4.964	0.000	95	33841	600.0	563.0	
\$ 7 2-methylnaphthalene-d10	152	6.339	6.339	0.000	93	52867	600.0	538.9	
\$ 5 2-Fluorobiphenyl	172	6.729	6.729	0.000	99	89867	600.0	590.5	
\$ 8 Fluoranthene-d10	212	10.216	10.216	0.000	97	119151	600.0	578.6	
\$ 6 Terphenyl-d14	244	10.771	10.771	0.000	100	87046	600.0	625.7	
9 1,4-Dioxane	88	1.976	1.976	0.000	89	14628	604.8	557.9	
10 N-Nitrosodimethylamine	74	2.187	2.187	0.000	76	22903	600.0	566.0	
11 Naphthalene	128	5.690	5.690	0.000	100	115555	600.0	579.9	
12 2-Methylnaphthalene	142	6.371	6.371	0.000	99	152911	1200.0	1165.5	
13 1-Methylnaphthalene	142	6.467	6.467	0.000	96	71050	600.0	599.5	
14 Dimethyl phthalate	163	7.114	7.114	0.000	100	179938	1200.0	1204.7	
15 Acenaphthylene	152	7.261	7.261	0.000	98	112264	600.0	557.1	
16 Acenaphthene	153	7.439	7.439	0.000	97	74094	600.0	581.2	
17 Dibenzofuran	168	7.618	7.618	0.000	60	110062	600.6	582.4	
18 Diethyl phthalate	149		7.935				ND	ND	
20 Fluorene	166	7.951	7.951	0.000	100	86699	600.0	583.8	
19 N-Nitrosodiphenylamine	169	8.063	8.063	0.000	97	66595	600.0	609.8	
21 Phenanthrene	178	8.922	8.922	0.000	97	138132	600.0	560.3	
22 Anthracene	178	8.967	8.967	0.000	100	134215	600.0	607.3	
23 Di-n-butyl phthalate	149	9.455	9.455	0.000	100	292539	1200.0	1229.5	
24 Fluoranthene	202	10.239	10.239	0.000	75	155425	600.0	585.8	
25 Pyrene	202	10.557	10.557	0.000	73	162521	600.0	602.6	
26 Butyl benzyl phthalate	149	11.619	11.619	0.000	86	109978	1200.0	1329.8	
28 Benzo[a]anthracene	228	12.772	12.772	0.000	97	141776	600.0	574.9	
29 Chrysene	228	12.856	12.856	0.000	100	152883	600.0	601.0	
27 Bis(2-ethylhexyl) phthalat	149		12.939				ND	ND	
30 Di-n-octyl phthalate	149	14.687	14.687	0.000	0	242398	1200.0	1597.0	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
31 Benzo[b]fluoranthene	252	15.552	15.552	0.000	100	144912	600.0	610.6	
32 Benzo[k]fluoranthene	252	15.627	15.627	0.000	100	149469	600.0	611.9	
33 Benzo[a]pyrene	252	16.455	16.455	0.000	99	139753	600.0	662.2	
34 Indeno[1,2,3-cd]pyrene	276	19.691	19.691	0.000	97	131008	600.0	684.6	
35 Dibenzo(a,h)anthracene	278	19.789	19.789	0.000	94	129475	600.0	697.6	
36 Benzo[g,h,i]perylene	276	20.418	20.418	0.000	97	149757	600.0	646.9	
38 N-Nitrosodiethylamine	102		3.603				ND	ND	
37 N-Nitrosodi-n-propylamine	70		4.919				ND	ND	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Reagents:

MS-SIM CCV_00084

Amount Added: 200.00

Units: uL

Report Date: 14-May-2019 23:07:26

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\X4_8454.D

Injection Date: 13-May-2019 18:28:30

Instrument ID: SMS_X4

Operator ID: WICKHAMM

Lims ID: CCV

Worklist Smp#: 3

Client ID:

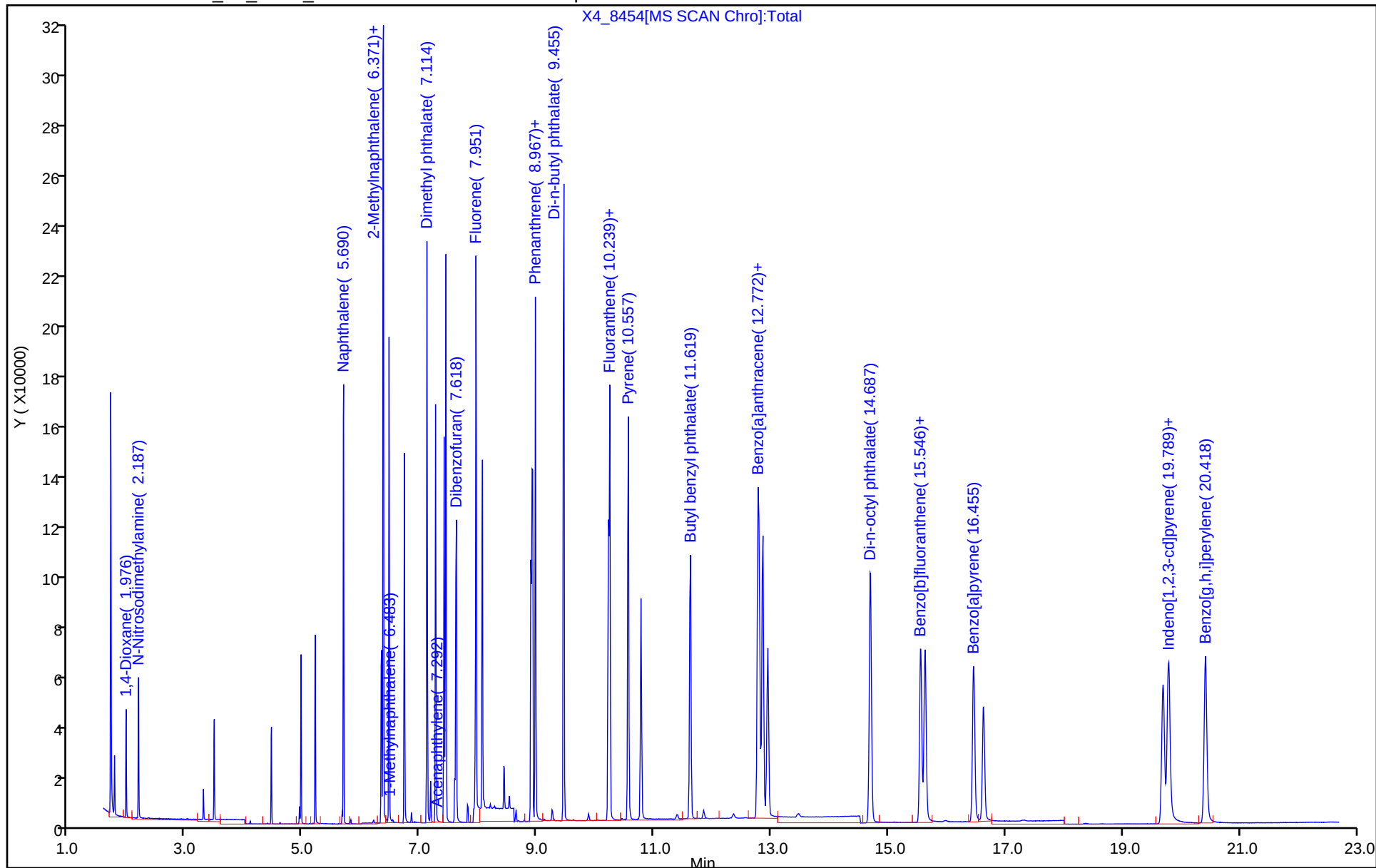
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 2

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCVC 280-458021/23 Calibration Date: 05/14/2019 04:50
 Instrument ID: SMS_X4 Calib Start Date: 03/21/2019 20:15
 GC Column: Rxi-5Sil MS ID: 0.25 (mm) Calib End Date: 03/22/2019 00:16
 Lab File ID: X4_8474.D Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Naphthalene	Ave	2.172	2.180	0.7000	602000	600000	0.4	50.0
2-Methylnaphthalene	Ave	1.430	1.413	0.4000	1190000	1200000	-1.2	50.0
1-Methylnaphthalene	Ave	1.292	1.336	0.0500	621000	600000	3.5	50.0
Acenaphthylene	Ave	2.196	2.083	0.9000	569000	600000	-5.1	50.0
Acenaphthene	Ave	1.390	1.361	0.9000	588000	600000	-2.0	50.0
Fluorene	Ave	1.618	1.568	0.9000	581000	600000	-3.1	50.0
Phenanthrene	Ave	1.277	1.208	0.7000	568000	600000	-5.4	50.0
Anthracene	Ave	1.145	1.080	0.7000	566000	600000	-5.6	50.0
Fluoranthene	Ave	1.374	1.318	0.6000	576000	600000	-4.1	50.0
Pyrene	Ave	1.397	1.342	0.6000	576000	600000	-3.9	50.0
Benzo[a]anthracene	Ave	1.351	1.138	0.8000	505000	600000	-15.8	50.0
Chrysene	Ave	1.394	1.429	0.7000	615000	600000	2.5	50.0
Benzo[b]fluoranthene	Ave	1.300	1.192	0.7000	550000	600000	-8.3	50.0
Benzo[k]fluoranthene	Ave	1.338	1.305	0.7000	585000	600000	-2.5	50.0
Benzo[a]pyrene	Ave	1.156	1.067	0.7000	554000	600000	-7.7	50.0
Indeno[1,2,3-cd]pyrene	Ave	1.048	0.997	0.5000	571000	600000	-4.9	50.0
Dibenz (a,h) anthracene	Ave	1.017	1.026	0.4000	606000	600000	0.9	50.0
Benzo[g,h,i]perylene	Ave	1.268	1.289	0.5000	610000	600000	1.6	50.0
Nitrobenzene-d5	Ave	0.6551	0.6185		567000	600000	-5.6	50.0
2-methylnaphthalene-d10	Ave	1.069	0.9917		556000	600000	-7.3	50.0
2-Fluorobiphenyl	Ave	1.659	1.668		603000	600000	0.5	50.0
Fluoranthene-d10	Ave	1.067	0.9763		549000	600000	-8.5	50.0
Terphenyl-d14	Ave	0.7206	0.7213		601000	600000	0.1	50.0

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\X4_8474.D
 Lims ID: ccvc
 Client ID:
 Sample Type: CCVC
 Inject. Date: 14-May-2019 04:50:30 ALS Bottle#: 22 Worklist Smp#: 23
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: CCVC
 Operator ID: WICKHAMM Instrument ID: SMS_X4
 Sublist: chrom-SMS_X4_SIMX_5.1*sub1
 Method: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 14-May-2019 23:07:47 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: wickhamm

Date: 14-May-2019 16:01:25

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164	7.408	7.408	0.000	83	47393	600.0	600.0	
* 2 Phenanthrene-d10	188	8.888	8.899	-0.011	100	100314	600.0	600.0	
* 3 Chrysene-d12	240	12.786	12.786	0.000	1	95125	600.0	600.0	
* 49 Perylene-d12	264	16.612	16.624	-0.012	0	78699	600.0	600.0	
\$ 4 Nitrobenzene-d5	82	4.960	4.964	-0.004	100	29314	600.0	566.5	
\$ 7 2-methylnaphthalene-d10	152	6.339	6.339	0.000	92	46999	600.0	556.5	
\$ 5 2-Fluorobiphenyl	172	6.729	6.729	0.000	98	79036	600.0	603.2	
\$ 8 Fluoranthene-d10	212	10.205	10.216	-0.011	96	97932	600.0	549.1	
\$ 6 Terphenyl-d14	244	10.771	10.771	0.000	98	72359	600.0	600.6	
9 1,4-Dioxane	88	1.976	1.976	0.000	89	13973	604.8	619.0	
10 N-Nitrosodimethylamine	74	2.187	2.187	0.000	77	20222	600.0	580.5	
11 Naphthalene	128	5.686	5.690	-0.004	100	103322	600.0	602.3	
12 2-Methylnaphthalene	142	6.371	6.371	0.000	100	133895	1200.0	1185.5	
13 1-Methylnaphthalene	142	6.467	6.467	0.000	94	63336	600.0	620.8	
14 Dimethyl phthalate	163	7.114	7.114	0.000	100	150220	1200.0	1168.3	
15 Acenaphthylene	152	7.261	7.261	0.000	99	98739	600.0	569.2	
16 Acenaphthene	153	7.439	7.439	0.000	93	64506	600.0	587.7	
17 Dibenzofuran	168	7.618	7.618	0.000	60	95818	600.6	589.0	
18 Diethyl phthalate	149		7.935				ND	ND	
20 Fluorene	166	7.951	7.951	0.000	97	74330	600.0	581.4	
19 N-Nitrosodiphenylamine	169	8.055	8.063	-0.008	100	53660	600.0	567.3	
21 Phenanthrene	178	8.910	8.922	-0.012	99	121185	600.0	567.6	
22 Anthracene	178	8.967	8.967	0.000	99	108385	600.0	566.3	
23 Di-n-butyl phthalate	149	9.444	9.455	-0.011	100	228846	1200.0	1110.6	
24 Fluoranthene	202	10.227	10.239	-0.012	77	132255	600.0	575.6	
25 Pyrene	202	10.545	10.557	-0.012	72	134641	600.0	576.4	
26 Butyl benzyl phthalate	149	11.605	11.619	-0.014	94	75639	1200.0	1056.1	
28 Benzo[a]anthracene	228	12.758	12.772	-0.014	93	108243	600.0	505.3	
29 Chrysene	228	12.842	12.856	-0.014	100	135945	600.0	615.3	
27 Bis(2-ethylhexyl) phthalat	149		12.939				ND	ND	
30 Di-n-octyl phthalate	149	14.680	14.687	-0.007	0	133058	1200.0	1062.3	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
31 Benzo[b]fluoranthene	252	15.539	15.552	-0.013	100	113373	600.0	550.0	
32 Benzo[k]fluoranthene	252	15.615	15.627	-0.012	99	124168	600.0	585.2	
33 Benzo[a]pyrene	252	16.443	16.455	-0.012	99	101481	600.0	553.5	
34 Indeno[1,2,3-cd]pyrene	276	19.680	19.691	-0.011	97	94833	600.0	570.5	
35 Dibenzo(a,h)anthracene	278	19.772	19.789	-0.017	96	97630	600.0	605.6	
36 Benzo[g,h,i]perylene	276	20.402	20.418	-0.016	97	122592	600.0	609.6	
38 N-Nitrosodiethylamine	102		3.603				ND	ND	
37 N-Nitrosodi-n-propylamine	70		4.919				ND	ND	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Reagents:

MS-SIM CCV_00084

Amount Added: 200.00

Units: uL

Report Date: 14-May-2019 23:07:47

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\X4_8474.D

Injection Date: 14-May-2019 04:50:30

Instrument ID: SMS_X4

Operator ID: WICKHAMM

Lims ID: ccvc

Worklist Smp#: 23

Client ID:

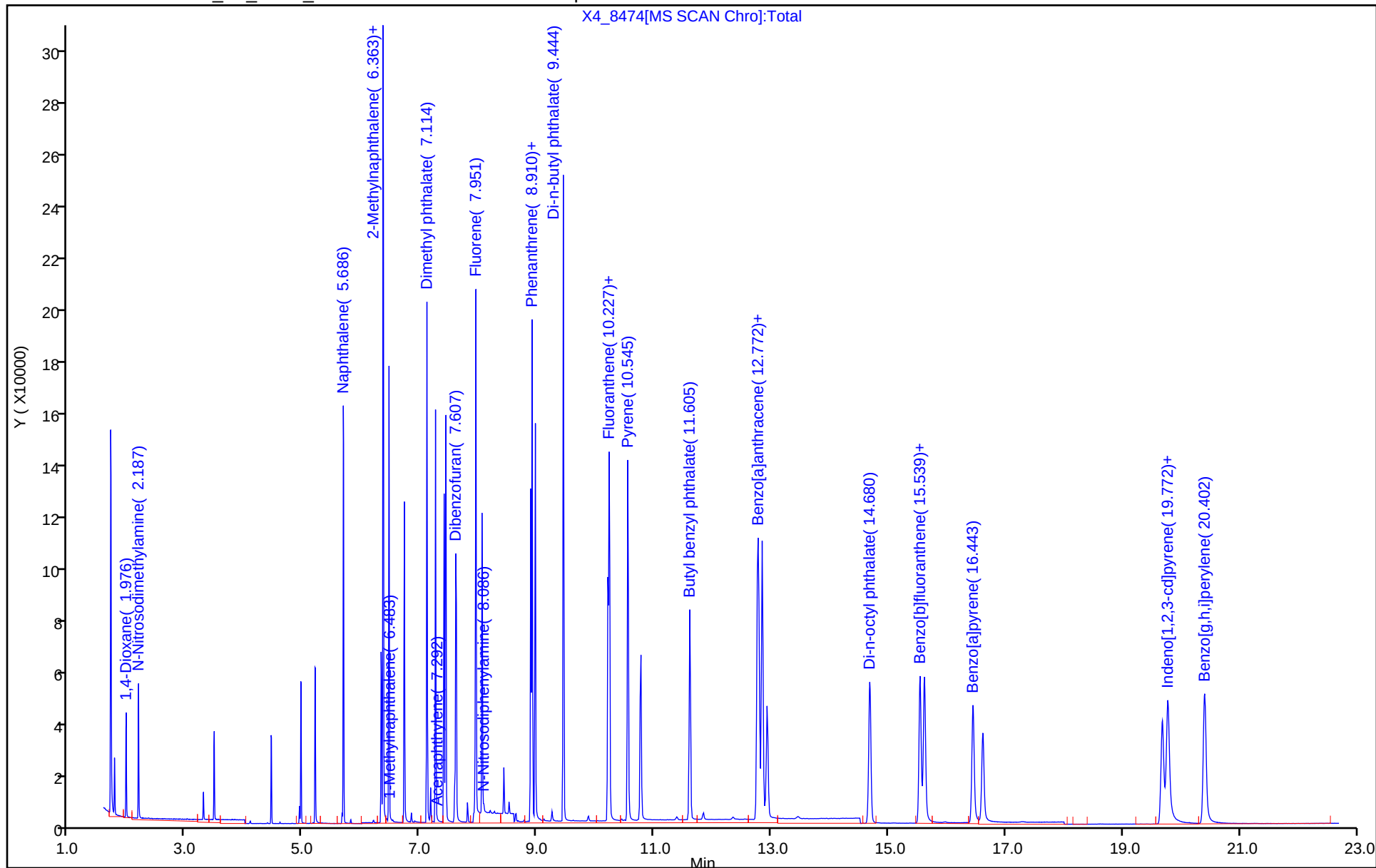
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 22

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458474/3 Calibration Date: 05/16/2019 16:11
 Instrument ID: SMS_X4 Calib Start Date: 03/21/2019 20:15
 GC Column: Rxi-5Sil MS ID: 0.25 (mm) Calib End Date: 03/22/2019 00:16
 Lab File ID: X4_8702.D Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Naphthalene	Ave	2.172	2.044	0.7000	565000	600000	-5.9	20.0
2-Methylnaphthalene	Ave	1.430	1.376	0.4000	1150000	1200000	-3.8	20.0
1-Methylnaphthalene	Ave	1.292	1.303	0.0500	605000	600000	0.9	20.0
Acenaphthylene	Ave	2.196	2.006	0.9000	548000	600000	-8.7	20.0
Acenaphthene	Ave	1.390	1.377	0.9000	595000	600000	-0.9	20.0
Fluorene	Ave	1.618	1.614	0.9000	598000	600000	-0.3	20.0
Phenanthrene	Ave	1.277	1.172	0.7000	551000	600000	-8.2	20.0
Anthracene	Ave	1.145	1.135	0.7000	595000	600000	-0.8	20.0
Fluoranthene	Ave	1.374	1.354	0.6000	591000	600000	-1.5	20.0
Pyrene	Ave	1.397	1.367	0.6000	587000	600000	-2.1	20.0
Benzo[a]anthracene	Ave	1.351	1.278	0.8000	567000	600000	-5.4	20.0
Chrysene	Ave	1.394	1.408	0.7000	606000	600000	1.0	20.0
Benzo[b]fluoranthene	Ave	1.300	1.272	0.7000	587000	600000	-2.2	20.0
Benzo[k]fluoranthene	Ave	1.338	1.370	0.7000	614000	600000	2.4	20.0
Benzo[a]pyrene	Ave	1.156	1.147	0.7000	595000	600000	-0.8	20.0
Indeno[1,2,3-cd]pyrene	Ave	1.048	1.005	0.5000	575000	600000	-4.1	20.0
Dibenz (a,h) anthracene	Ave	1.017	1.034	0.4000	610000	600000	1.7	20.0
Benzo[g,h,i]perylene	Ave	1.268	1.188	0.5000	562000	600000	-6.3	20.0
Nitrobenzene-d5	Ave	0.6551	0.6155		564000	600000	-6.0	20.0
2-methylnaphthalene-d10	Ave	1.069	0.9654		542000	600000	-9.7	35.0
2-Fluorobiphenyl	Ave	1.659	1.641		593000	600000	-1.1	20.0
Fluoranthene-d10	Ave	1.067	1.024		576000	600000	-4.0	35.0
Terphenyl-d14	Ave	0.7206	0.7560		629000	600000	4.9	20.0

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\X4_8702.D
 Lims ID: CCV
 Client ID:
 Sample Type: CCV
 Inject. Date: 16-May-2019 16:11:30 ALS Bottle#: 2 Worklist Smp#: 3
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: CCV
 Operator ID: WICKHAMM Instrument ID: SMS_X4
 Sublist: chrom-SMS_X4_SIMX_5.1*sub1
 Method: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 17-May-2019 19:19:50 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 16-May-2019 16:49:27

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164	7.408	7.408	0.000	96	65301	600.0	600.0	
* 2 Phenanthrene-d10	188	8.899	8.899	0.000	100	144442	600.0	600.0	
* 3 Chrysene-d12	240	12.800	12.800	0.000	1	130314	600.0	600.0	
* 49 Perylene-d12	264	16.618	16.618	0.000	0	111441	600.0	600.0	
\$ 4 Nitrobenzene-d5	82	4.964	4.964	0.000	98	40190	600.0	563.7	
\$ 7 2-methylnaphthalene-d10	152	6.339	6.339	0.000	96	63038	600.0	541.7	
\$ 5 2-Fluorobiphenyl	172	6.729	6.729	0.000	100	107126	600.0	593.4	
\$ 8 Fluoranthene-d10	212	10.216	10.216	0.000	97	147871	600.0	575.8	
\$ 6 Terphenyl-d14	244	10.771	10.771	0.000	100	109192	600.0	629.5	
9 1,4-Dioxane	88	1.976	1.976	0.000	90	16678	604.8	536.2	
10 N-Nitrosodimethylamine	74	2.187	2.187	0.000	78	26441	600.0	550.9	
11 Naphthalene	128	5.690	5.690	0.000	100	133455	600.0	564.6	
12 2-Methylnaphthalene	142	6.371	6.371	0.000	94	179689	1200.0	1154.6	
13 1-Methylnaphthalene	142	6.475	6.475	0.000	85	85101	600.0	605.4	
14 Dimethyl phthalate	163	7.114	7.114	0.000	100	219086	1200.0	1236.6	
15 Acenaphthylene	152	7.271	7.271	0.000	100	131006	600.0	548.1	
16 Acenaphthene	153	7.439	7.439	0.000	100	89921	600.0	594.6	
17 Dibenzofuran	168	7.618	7.618	0.000	61	135035	600.6	602.4	
18 Diethyl phthalate	149		7.935				ND	ND	
20 Fluorene	166	7.959	7.959	0.000	93	105399	600.0	598.4	
19 N-Nitrosodiphenylamine	169	8.063	8.063	0.000	99	81403	600.0	597.7	
21 Phenanthrene	178	8.922	8.922	0.000	97	169252	600.0	550.6	
22 Anthracene	178	8.967	8.967	0.000	100	163979	600.0	595.0	
23 Di-n-butyl phthalate	149	9.455	9.455	0.000	100	374949	1200.0	1263.7	
24 Fluoranthene	202	10.239	10.239	0.000	75	195562	600.0	591.1	
25 Pyrene	202	10.557	10.557	0.000	73	197467	600.0	587.1	
26 Butyl benzyl phthalate	149	11.619	11.619	0.000	86	140666	1200.0	1364.0	
28 Benzo[a]anthracene	228	12.772	12.772	0.000	97	166502	600.0	567.4	
29 Chrysene	228	12.856	12.856	0.000	100	183487	600.0	606.2	
27 Bis(2-ethylhexyl) phthalat	149		12.939				ND	ND	
30 Di-n-octyl phthalate	149	14.687	14.687	0.000	0	279575	1200.0	1553.4	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
31 Benzo[b]fluoranthene	252	15.552	15.552	0.000	100	165764	600.0	587.0	
32 Benzo[k]fluoranthene	252	15.621	15.621	0.000	100	178518	600.0	614.1	
33 Benzo[a]pyrene	252	16.449	16.449	0.000	99	149525	600.0	595.4	
34 Indeno[1,2,3-cd]pyrene	276	19.686	19.686	0.000	97	131010	600.0	575.3	
35 Dibenz(a,h)anthracene	278	19.783	19.783	0.000	94	134741	600.0	610.1	
36 Benzo[g,h,i]perylene	276	20.413	20.413	0.000	97	154849	600.0	562.1	
38 N-Nitrosodiethylamine	102		3.603				ND	ND	
37 N-Nitrosodi-n-propylamine	70		4.919				ND	ND	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Reagents:

MS-SIM CCV_00084

Amount Added: 200.00

Units: uL

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\X4_8702.D

Injection Date: 16-May-2019 16:11:30

Instrument ID: SMS_X4

Operator ID: WICKHAMM

Lims ID: CCV

Worklist Smp#: 3

Client ID:

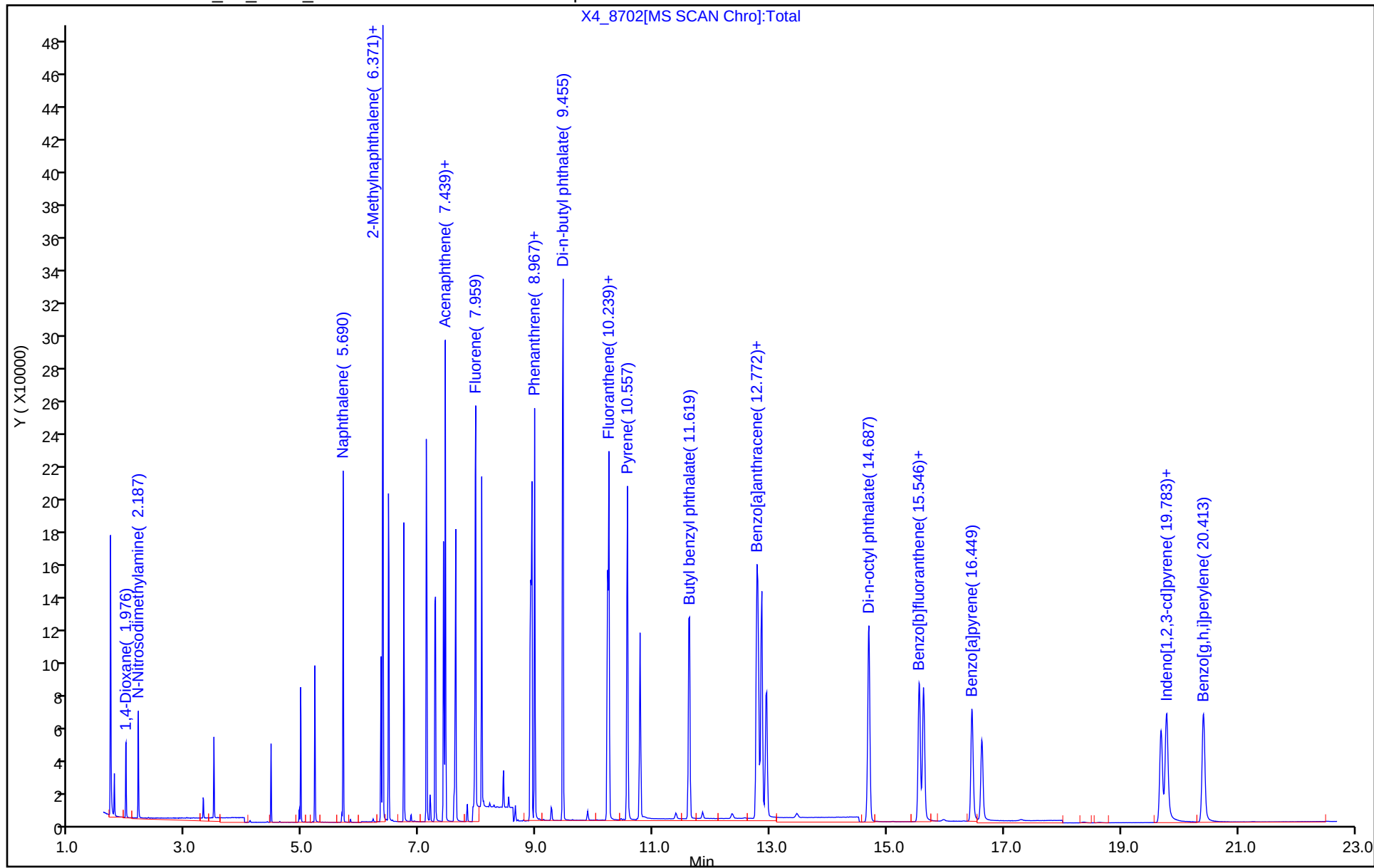
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 2

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCVC 280-458474/13 Calibration Date: 05/16/2019 21:13
 Instrument ID: SMS_X4 Calib Start Date: 03/21/2019 20:15
 GC Column: Rxi-5Sil MS ID: 0.25 (mm) Calib End Date: 03/22/2019 00:16
 Lab File ID: X4_8712.D Conc. Units: ng/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Naphthalene	Ave	2.172	2.099	0.7000	580000	600000	-3.3	50.0
2-Methylnaphthalene	Ave	1.430	1.419	0.4000	1190000	1200000	-0.7	50.0
1-Methylnaphthalene	Ave	1.292	1.322	0.0500	614000	600000	2.3	50.0
Acenaphthylene	Ave	2.196	1.994	0.9000	545000	600000	-9.2	50.0
Acenaphthene	Ave	1.390	1.404	0.9000	606000	600000	1.1	50.0
Fluorene	Ave	1.618	1.600	0.9000	593000	600000	-1.2	50.0
Phenanthrene	Ave	1.277	1.214	0.7000	571000	600000	-4.9	50.0
Anthracene	Ave	1.145	1.162	0.7000	609000	600000	1.5	50.0
Fluoranthene	Ave	1.374	1.361	0.6000	594000	600000	-1.0	50.0
Pyrene	Ave	1.397	1.382	0.6000	594000	600000	-1.1	50.0
Benzo[a]anthracene	Ave	1.351	1.267	0.8000	563000	600000	-6.2	50.0
Chrysene	Ave	1.394	1.431	0.7000	616000	600000	2.6	50.0
Benzo[b]fluoranthene	Ave	1.300	1.232	0.7000	568000	600000	-5.3	50.0
Benzo[k]fluoranthene	Ave	1.338	1.332	0.7000	597000	600000	-0.5	50.0
Benzo[a]pyrene	Ave	1.156	1.114	0.7000	578000	600000	-3.7	50.0
Indeno[1,2,3-cd]pyrene	Ave	1.048	0.9898	0.5000	566000	600000	-5.6	50.0
Dibenz (a,h) anthracene	Ave	1.017	1.040	0.4000	613000	600000	2.2	50.0
Benzo[g,h,i]perylene	Ave	1.268	1.244	0.5000	588000	600000	-2.0	50.0
Nitrobenzene-d5	Ave	0.6551	0.6156		564000	600000	-6.0	50.0
2-methylnaphthalene-d10	Ave	1.069	0.9714		545000	600000	-9.2	50.0
2-Fluorobiphenyl	Ave	1.659	1.665		602000	600000	0.4	50.0
Fluoranthene-d10	Ave	1.067	1.024		576000	600000	-4.0	50.0
Terphenyl-d14	Ave	0.7206	0.7565		630000	600000	5.0	50.0

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\X4_8712.D
 Lims ID: ccvc
 Client ID:
 Sample Type: CCVC
 Inject. Date: 16-May-2019 21:13:30 ALS Bottle#: 12 Worklist Smp#: 13
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: CCVC
 Operator ID: WICKHAMM Instrument ID: SMS_X4
 Sublist: chrom-SMS_X4_SIMX_5.1*sub1
 Method: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 17-May-2019 19:20:32 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 17-May-2019 19:19:30

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164	7.408	7.408	0.000	93	70435	600.0	600.0	
* 2 Phenanthrene-d10	188	8.899	8.899	0.000	100	148748	600.0	600.0	
* 3 Chrysene-d12	240	12.786	12.800	-0.014	1	143328	600.0	600.0	
* 49 Perylene-d12	264	16.618	16.618	0.000	0	123192	600.0	600.0	
\$ 4 Nitrobenzene-d5	82	4.964	4.964	0.000	99	43360	600.0	563.8	
\$ 7 2-methylnaphthalene-d10	152	6.339	6.339	0.000	96	68419	600.0	545.1	
\$ 5 2-Fluorobiphenyl	172	6.729	6.729	0.000	100	117302	600.0	602.4	
\$ 8 Fluoranthene-d10	212	10.216	10.216	0.000	97	152246	600.0	575.7	
\$ 6 Terphenyl-d14	244	10.771	10.771	0.000	99	112526	600.0	629.9	
9 1,4-Dioxane	88	1.976	1.976	0.000	88	18951	604.8	564.9	
10 N-Nitrosodimethylamine	74	2.187	2.187	0.000	79	29168	600.0	563.4	
11 Naphthalene	128	5.690	5.690	0.000	100	147866	600.0	580.0	
12 2-Methylnaphthalene	142	6.371	6.371	0.000	95	199924	1200.0	1191.0	
13 1-Methylnaphthalene	142	6.475	6.475	0.000	86	93092	600.0	613.9	
14 Dimethyl phthalate	163	7.114	7.114	0.000	100	229202	1200.0	1199.4	
15 Acenaphthylene	152	7.261	7.271	-0.010	98	140457	600.0	544.8	
16 Acenaphthene	153	7.439	7.439	0.000	100	98920	600.0	606.4	
17 Dibenzofuran	168	7.618	7.618	0.000	61	147718	600.6	611.0	
18 Diethyl phthalate	149		7.935				ND	ND	
20 Fluorene	166	7.959	7.959	0.000	92	112671	600.0	593.0	
19 N-Nitrosodiphenylamine	169	8.063	8.063	0.000	98	84358	600.0	601.5	
21 Phenanthrene	178	8.922	8.922	0.000	97	180630	600.0	570.6	
22 Anthracene	178	8.967	8.967	0.000	100	172852	600.0	609.0	
23 Di-n-butyl phthalate	149	9.444	9.455	-0.011	100	367864	1200.0	1203.9	
24 Fluoranthene	202	10.239	10.239	0.000	74	202459	600.0	594.2	
25 Pyrene	202	10.557	10.557	0.000	73	205579	600.0	593.6	
26 Butyl benzyl phthalate	149	11.605	11.619	-0.014	97	134777	1200.0	1269.1	
28 Benzo[a]anthracene	228	12.772	12.772	0.000	97	181652	600.0	562.8	
29 Chrysene	228	12.842	12.856	-0.014	99	205034	600.0	615.9	
27 Bis(2-ethylhexyl) phthalat	149		12.939				ND	ND	
30 Di-n-octyl phthalate	149	14.680	14.687	-0.007	0	265586	1200.0	1364.0	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
31 Benzo[b]fluoranthene	252	15.546	15.552	-0.006	100	176576	600.0	568.5	
32 Benzo[k]fluoranthene	252	15.621	15.621	0.000	100	190956	600.0	597.3	
33 Benzo[a]pyrene	252	16.449	16.449	0.000	99	159632	600.0	577.9	
34 Indeno[1,2,3-cd]pyrene	276	19.686	19.686	0.000	97	141871	600.0	566.5	
35 Dibenz(a,h)anthracene	278	19.778	19.783	-0.005	95	149029	600.0	613.5	
36 Benzo[g,h,i]perylene	276	20.407	20.413	-0.006	97	178239	600.0	588.3	
38 N-Nitrosodiethylamine	102		3.603				ND	ND	
37 N-Nitrosodi-n-propylamine	70		4.919				ND	ND	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Reagents:

MS-SIM CCV_00084

Amount Added: 200.00

Units: uL

Report Date: 17-May-2019 19:20:32

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\X4_8712.D

Injection Date: 16-May-2019 21:13:30

Instrument ID: SMS_X4

Operator ID: WICKHAMM

Lims ID: ccvc

Worklist Smp#: 13

Client ID:

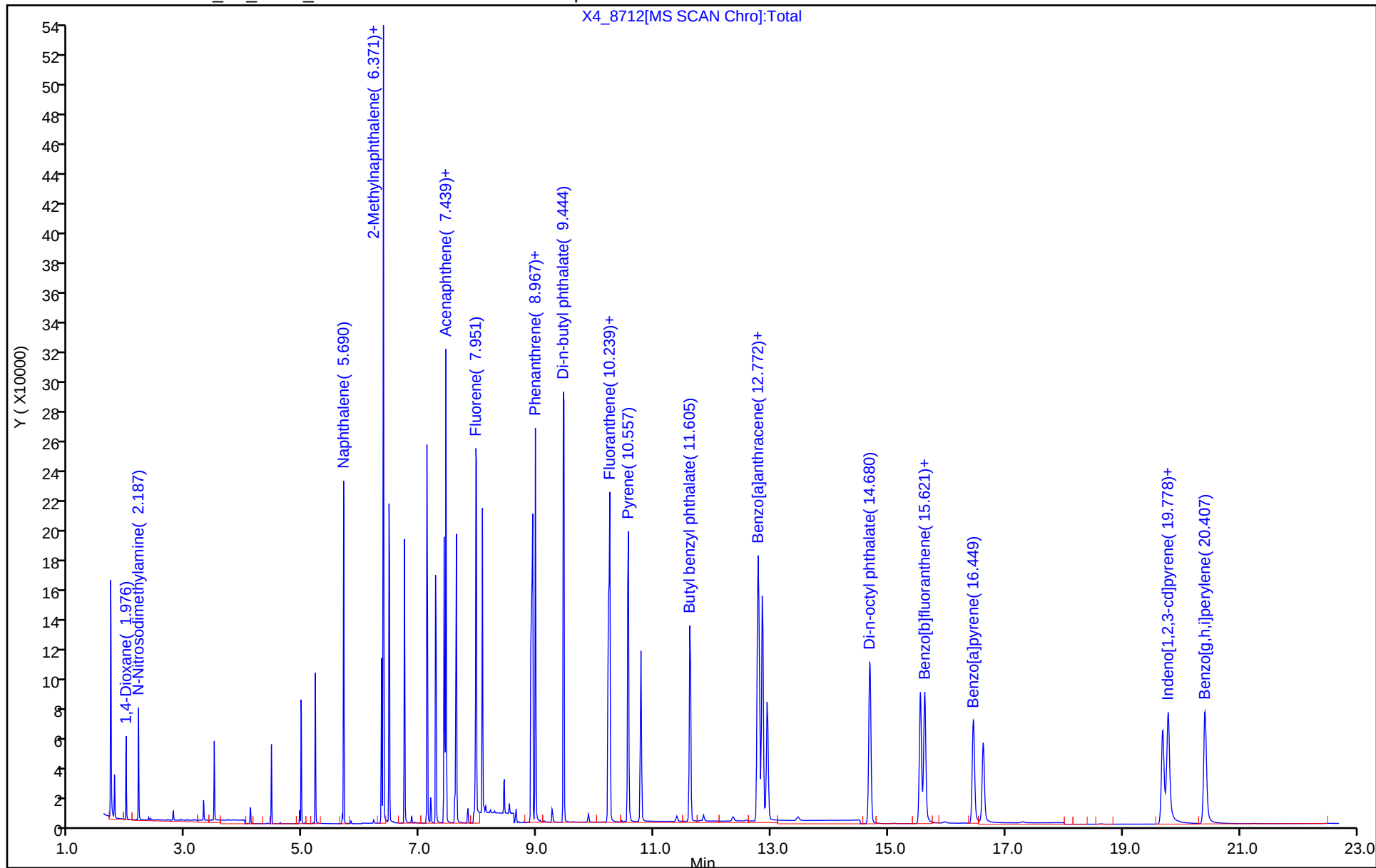
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 12

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7420.D
 Lims ID: DFTPP
 Client ID:
 Sample Type: DFTPP
 Inject. Date: 21-Mar-2019 20:02:30 ALS Bottle#: 1 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: dftpp
 Operator ID: HOEFLERA Instrument ID: SMS_X4
 Method: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 22-Mar-2019 09:21:21 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0305

First Level Reviewer: wickhamm

Date: 21-Mar-2019 20:44:29

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164		7.408				600.0	ND	
* 2 Phenanthrene-d10	188		8.888				600.0	ND	
* 3 Chrysene-d12	240		12.772				600.0	ND	
* 49 Perylene-d12	264		16.580				600.0	ND	
39 Pentachlorophenol_T	266	3.598	3.598	0.000	0	2191372	NR	NR	
40 DFTPP									
41 Benizidine_T	184	4.668	4.668	0.000	0	8871383	NR	NR	e
42 4,4'-DDE	246	4.812	4.812	0.000	0	8576	NR	NR	
43 4,4'-DDD	235	5.085	5.085	0.000	0	79827	NR	NR	
44 4,4'-DDT	235	5.293	5.293	0.000	0	5737670	NR	NR	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

e - Potential Peak Saturated

Reagents:

MS-DFTPP_00048 Amount Added: 0.50 Units: uL
 MS-SIM IS_00033 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7420.D

Injection Date: 21-Mar-2019 20:02:30

Instrument ID: SMS_X4

Lims ID: DFTPP

Client ID:

Operator ID: HOEFLERA

ALS Bottle#: 1 Worklist Smp#: 2

Injection Vol: 1.0 ul

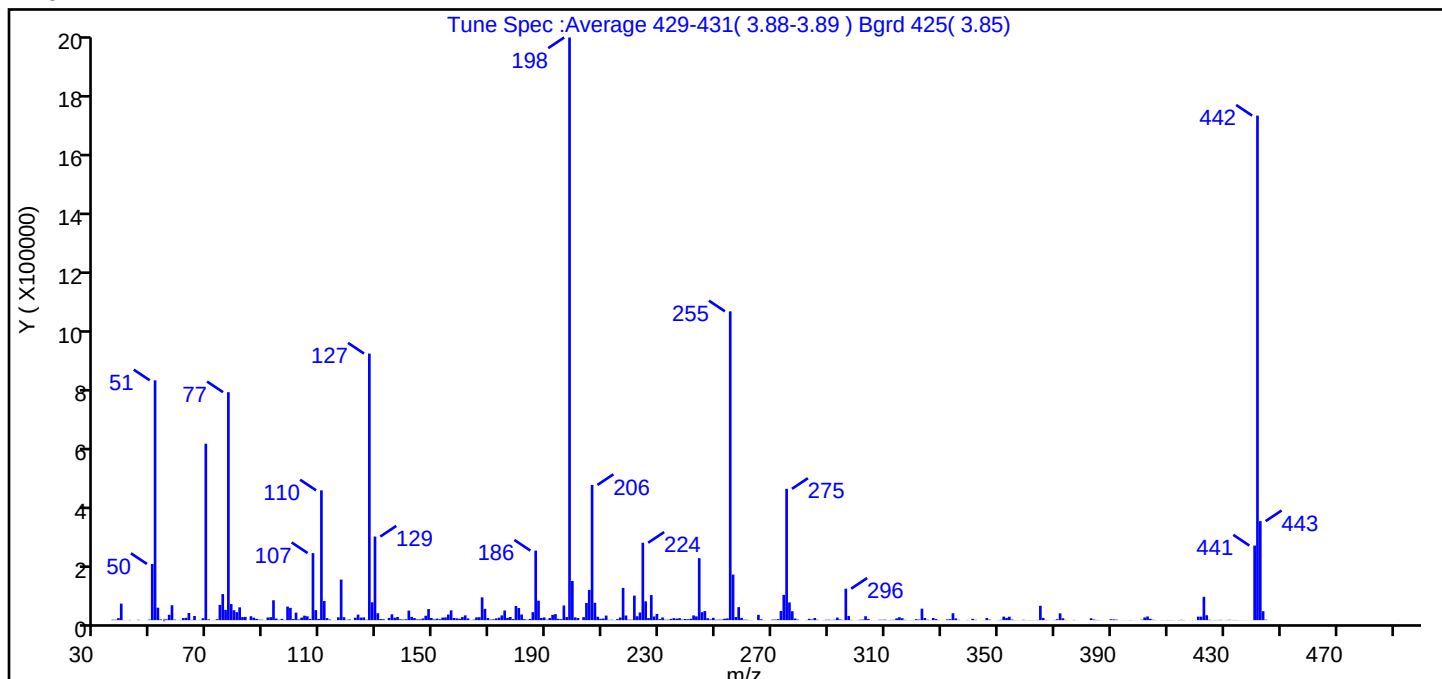
Dil. Factor: 1.0000

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM

Tune Method: DFTPP Method 8270

40 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	Base peak, 100% relative abundance	100.0
51	30-60% of mass 198	41.2
68	<2% of mass 69	0.3 (1.1)
69	Present	30.3
70	<2% of mass 69	0.1 (0.5)
127	40-60% of mass 198	45.8
197	<1% of mass 198	0.5
199	5-9% of mass 198	6.7
275	10-30% of mass 198	22.5
365	>1% of mass 198	2.5
441	Present but less than mass 443	12.8 (75.4)
442	>40% of mass 198	86.6
443	17-23% of mass 442	17.0 (19.6)

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7420.D\SMS_X4_SIMX_5.1.rslt\spectra.d
Injection Date: 21-Mar-2019 20:02:30
Spectrum: Tune Spec :Average 429-431(3.88-3.89) Bgrd 425(3.85)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 390

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1660	140.00	2913	239.00	3903	341.00	4487
37.00	1449	141.00	32752	240.00	3188	342.00	1153
38.00	7010	142.00	11249	241.00	4662	343.00	106
39.00	56592	143.00	7129	242.00	16230	344.00	309
40.00	271	144.00	2585	243.00	12825	345.00	254
41.00	232	145.00	2706	244.00	212352	346.00	7260
42.00	729	146.00	5732	245.00	27304	347.00	1757
45.00	1255	147.00	14994	246.00	31224	350.00	548
46.00	242	148.00	37952	247.00	6588	351.00	1174
48.00	328	149.00	7428	248.00	2604	352.00	12074
49.00	1943	150.00	2509	249.00	7886	353.00	7841
50.00	192576	151.00	5229	250.00	1502	354.00	11749
51.00	821888	152.00	3127	251.00	1814	355.00	2122
52.00	42640	153.00	8761	252.00	1945	356.00	449
53.00	2348	154.00	9349	253.00	4836	357.00	266
54.00	4	155.00	19136	254.00	5961	358.00	256
55.00	2762	156.00	33520	255.00	1058304	359.00	1183
56.00	18416	157.00	7633	256.00	156096	360.00	359
57.00	51016	158.00	6085	257.00	10720	361.00	528
58.00	1873	159.00	4694	258.00	44520	362.00	368
59.00	341	160.00	10573	259.00	7731	363.00	293
60.00	972	161.00	16349	260.00	1579	364.00	795
61.00	7069	162.00	5993	261.00	1517	365.00	49192
62.00	7982	163.00	466	262.00	451	366.00	7747
63.00	24608	164.00	1624	263.00	338	367.00	716
64.00	909	165.00	9603	264.00	53	368.00	283
65.00	14192	166.00	9991	265.00	18080	369.00	112
66.00	100	167.00	78200	266.00	2993	370.00	854
67.00	876	168.00	38800	267.00	533	371.00	3176
68.00	6590	169.00	7073	269.00	82	372.00	23320
69.00	604544	170.00	2056	270.00	1783	373.00	6399
70.00	2846	171.00	2625	271.00	2021	374.00	789
72.00	601	172.00	5965	272.00	3353	375.00	258

Report Date: 22-Mar-2019 09:21:22

Chrom Revision: 2.3 21-Mar-2019 13:38:44

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7420.D\SMS_X4_SIMX_5.1.rslt\spectra.d

Injection Date: 21-Mar-2019 20:02:30

Spectrum: Tune Spec :Average 429-431(3.88-3.89) Bgrd 425(3.85)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 390

m/z	Y	m/z	Y	m/z	Y	m/z	Y
73.00	3216	173.00	8472	273.00	31192	377.00	926
74.00	52248	174.00	16292	274.00	86632	378.00	201
75.00	89352	175.00	33128	275.00	449984	383.00	6312
76.00	35256	176.00	8032	276.00	60768	384.00	2106
77.00	781184	177.00	10755	277.00	30624	385.00	744
78.00	55104	178.00	3646	278.00	5475	386.00	481
79.00	34008	179.00	48368	279.00	1693	387.00	115
80.00	27296	180.00	41456	280.00	106	389.00	110
81.00	43920	181.00	19400	282.00	470	390.00	3032
82.00	10490	182.00	3269	283.00	4404	391.00	2677
83.00	11047	183.00	1380	284.00	2291	392.00	1764
85.00	13421	184.00	4208	285.00	7359	393.00	119
86.00	8421	185.00	27320	286.00	1218	394.00	171
87.00	4576	186.00	238272	288.00	371	395.00	300
88.00	1701	187.00	66696	289.00	1288	396.00	133
89.00	1349	188.00	7471	290.00	1329	397.00	525
90.00	423	189.00	9420	291.00	722	398.00	130
91.00	9037	190.00	1481	292.00	1574	399.00	147
92.00	10102	191.00	7069	293.00	8640	401.00	1471
93.00	68128	192.00	18048	294.00	2291	402.00	9044
94.00	5284	193.00	20648	295.00	832	403.00	12663
95.00	967	194.00	4632	296.00	107824	404.00	4372
96.00	4269	195.00	3215	297.00	14342	405.00	1244
97.00	864	196.00	50120	298.00	958	406.00	356
98.00	46456	197.00	10509	299.00	257	408.00	417
99.00	42088	198.00	1996800	300.00	391	409.00	241
100.00	3619	199.00	134080	301.00	1475	410.00	603
101.00	25696	200.00	9409	302.00	2048	411.00	463
102.00	2469	201.00	7144	303.00	13412	412.00	456
103.00	8680	203.00	10262	304.00	3651	413.00	146
104.00	15352	204.00	58832	305.00	319	414.00	499
105.00	13172	205.00	103520	306.00	117	415.00	1153
106.00	4201	206.00	463296	307.00	265	416.00	505
107.00	229824	207.00	59440	308.00	1327	418.00	111

Report Date: 22-Mar-2019 09:21:22

Chrom Revision: 2.3 21-Mar-2019 13:38:44

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7420.D\SMS_X4_SIMX_5.1.rslt\spectra.d

Injection Date: 21-Mar-2019 20:02:30

Spectrum: Tune Spec :Average 429-431(3.88-3.89) Bgrd 425(3.85)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 390

m/z	Y	m/z	Y	m/z	Y	m/z	Y
108.00	34200	208.00	11564	309.00	1344	419.00	197
109.00	4081	209.00	4532	310.00	1544	420.00	263
110.00	444736	210.00	5374	311.00	389	421.00	12034
111.00	65472	211.00	15645	312.00	923	422.00	11899
112.00	6952	212.00	1011	313.00	1083	423.00	80000
113.00	2173	213.00	1276	314.00	6110	424.00	16832
114.00	204	214.00	577	315.00	10019	425.00	1277
115.00	501	215.00	3616	316.00	6450	426.00	436
116.00	9793	216.00	9063	317.00	1014	427.00	636
117.00	138944	217.00	110384	318.00	254	428.00	659
118.00	10014	218.00	15946	319.00	319	429.00	1100
119.00	1062	219.00	1827	320.00	846	430.00	295
120.00	2455	220.00	1494	321.00	3201	431.00	740
121.00	137	221.00	84008	322.00	1925	432.00	1261
122.00	8378	222.00	13219	323.00	39272	433.00	648
123.00	18808	223.00	26232	324.00	7261	434.00	668
124.00	8669	224.00	265216	325.00	1432	435.00	451
125.00	9383	225.00	64344	326.00	566	436.00	286
126.00	1524	226.00	6959	327.00	7382	437.00	153
127.00	913600	227.00	85952	328.00	3742	438.00	224
128.00	61176	228.00	12697	329.00	673	439.00	279
129.00	286464	229.00	21376	330.00	234	440.00	372
130.00	23688	230.00	3463	331.00	125	441.00	255680
131.00	3752	231.00	9080	332.00	2573	442.00	1729024
132.00	3127	232.00	1582	333.00	3225	443.00	339264
134.00	7698	233.00	1467	334.00	23768	444.00	30688
135.00	20032	234.00	4330	335.00	5906	445.00	1467
136.00	8317	235.00	6741	336.00	954	447.00	100
137.00	10929	236.00	5095	337.00	108	492.00	111
138.00	2872	237.00	6703	339.00	738		
139.00	2002	238.00	1963	340.00	146		

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7420.D

Injection Date: 21-Mar-2019 20:02:30

Instrument ID: SMS_X4

Operator ID: HOEFLERA

Lims ID: DFTPP

Worklist Smp#: 2

Client ID:

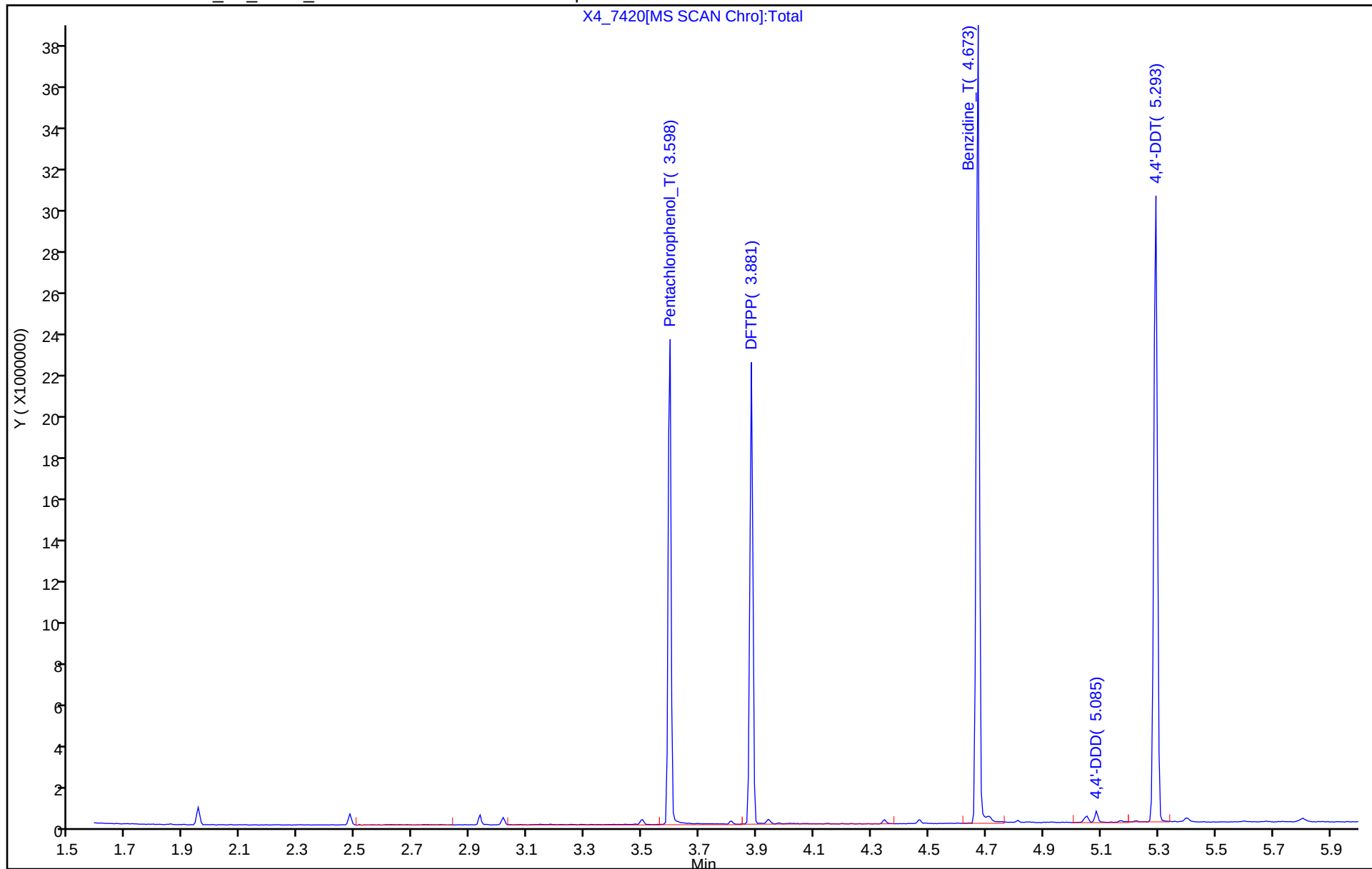
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 1

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM



TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7420.D
Injection Date: 21-Mar-2019 20:02:30 Instrument ID: SMS_X4
Lims ID: DFTPP
Client ID:
Operator ID: HOEFLERA ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: SMS_X4_SIMX_5.1 Limit Group: MSSV - 8270C-SIM

44 4,4'-DDT, Detector: MS SCAN

SW-846 Method

%Breakdown =
(Area Breakdown Cpnds/
Total Area Breakdown Cpnds) * 100

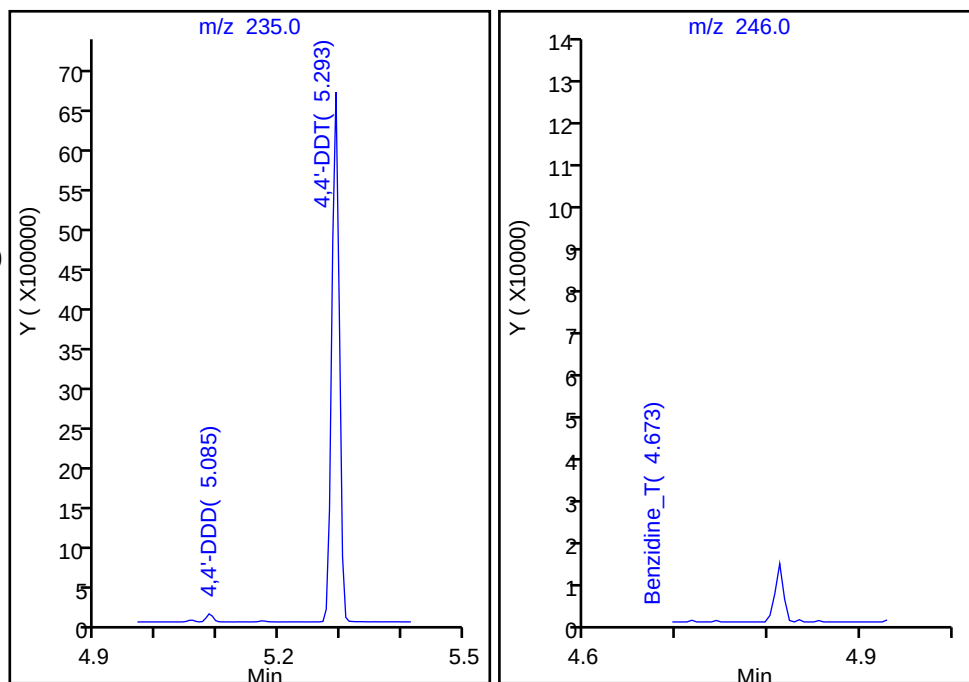
44 4,4'-DDT, Area = 5737670

42 4,4'-DDE, Area = 8576

43 4,4'-DDD, Area = 79827

%Breakdown: 1.52%, <= 20.00%

Passed



TestAmerica Denver

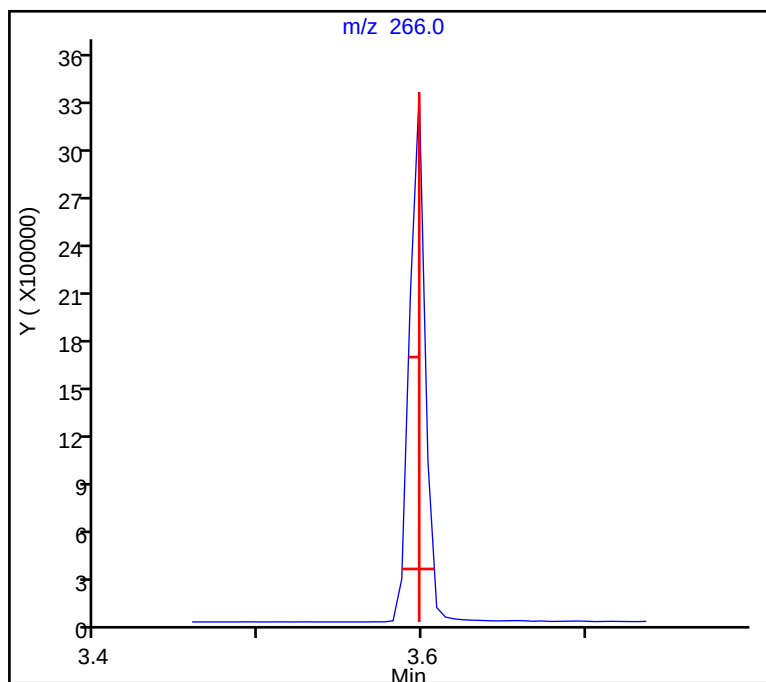
Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7420.D
Injection Date: 21-Mar-2019 20:02:30 Instrument ID: SMS_X4
Lims ID: DFTPP
Client ID:
Operator ID: HOEFLERA ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: SMS_X4_SIMX_5.1 Limit Group: MSSV - 8270C-SIM

39 Pentachlorophenol_T, Detector: MS SCAN

Peak Tailing Factor =
BackWidth/FrontWidth @ 10% Peak Height

Back Width = 0.009 (min.)
Front Width = 0.011 (min.)

Tailing Factor = 0.9, Max. Tailing < 3.00
Passed



TestAmerica Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7420.D
Injection Date: 21-Mar-2019 20:02:30 Instrument ID: SMS_X4
Lims ID: DFTPP
Client ID:
Operator ID: HOEFLERA
Injection Vol: 1.0 ul
Method: SMS_X4_SIMX_5.1

ALS Bottle#: 1 Worklist Smp#: 2
Dil. Factor: 1.0000
Limit Group: MSSV - 8270C-SIM

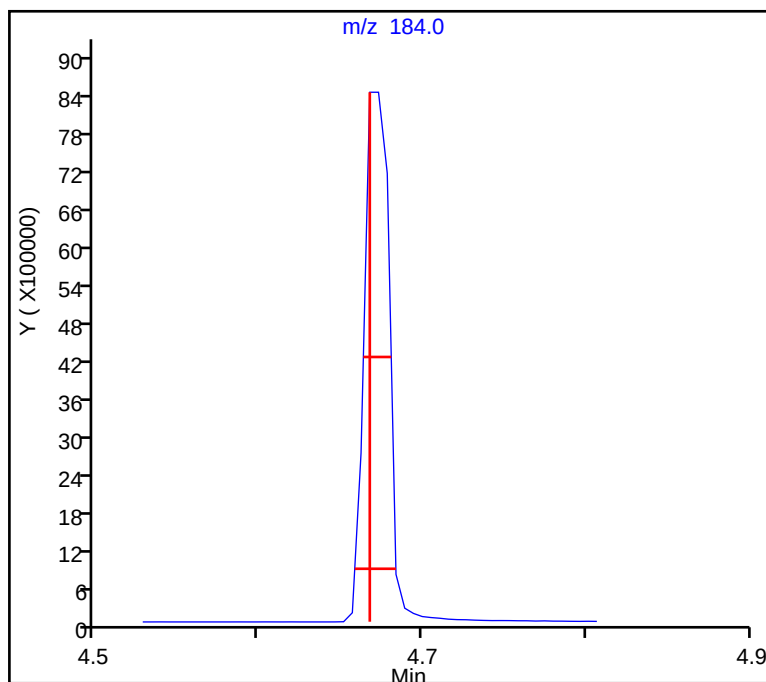
41 Benzidine_T, Detector: MS SCAN

Peak Tailing Factor =
BackWidth/FrontWidth @ 10% Peak Height

Back Width = 0.016 (min.)

Front Width = 0.009 (min.)

Tailing Factor = 1.7, Max. Tailing < 5.00
Passed



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\X4_8401.D
 Lims ID: DFTPP
 Client ID:
 Sample Type: DFTPP
 Inject. Date: 10-May-2019 15:22:30 ALS Bottle#: 1 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: dftpp
 Operator ID: WICKHAMM Instrument ID: SMS_X4
 Method: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 11-May-2019 08:36:58 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0312

First Level Reviewer: wickhamm

Date: 10-May-2019 15:40:19

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164		7.418				600.0	ND	
* 2 Phenanthrene-d10	188		8.899				600.0	ND	
* 3 Chrysene-d12	240		12.800				600.0	ND	
* 49 Perylene-d12	264		16.630				600.0	ND	
39 Pentachlorophenol_T	266	3.598	3.598	0.000	0	832079	NR	NR	
40 DFTPP									
41 Benzidine_T	184	4.668	4.668	0.000	0	7384977	NR	NR	e
42 4,4'-DDE	246	4.807	4.807	0.000	0	5005	NR	NR	
43 4,4'-DDD	235	5.080	5.080	0.000	0	12284	NR	NR	
44 4,4'-DDT	235	5.288	5.288	0.000	0	3272659	NR	NR	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

e - Potential Peak Saturated

Reagents:

MS-DFTPP_00049

Amount Added: 0.50

Units: uL

MS-SIM IS_00034

Amount Added: 20.00

Units: uL

Run Reagent

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\X4_8401.D

Injection Date: 10-May-2019 15:22:30

Instrument ID: SMS_X4

Lims ID: DFTPP

Client ID:

Operator ID: WICKHAMM

ALS Bottle#: 1 Worklist Smp#: 2

Injection Vol: 1.0 ul

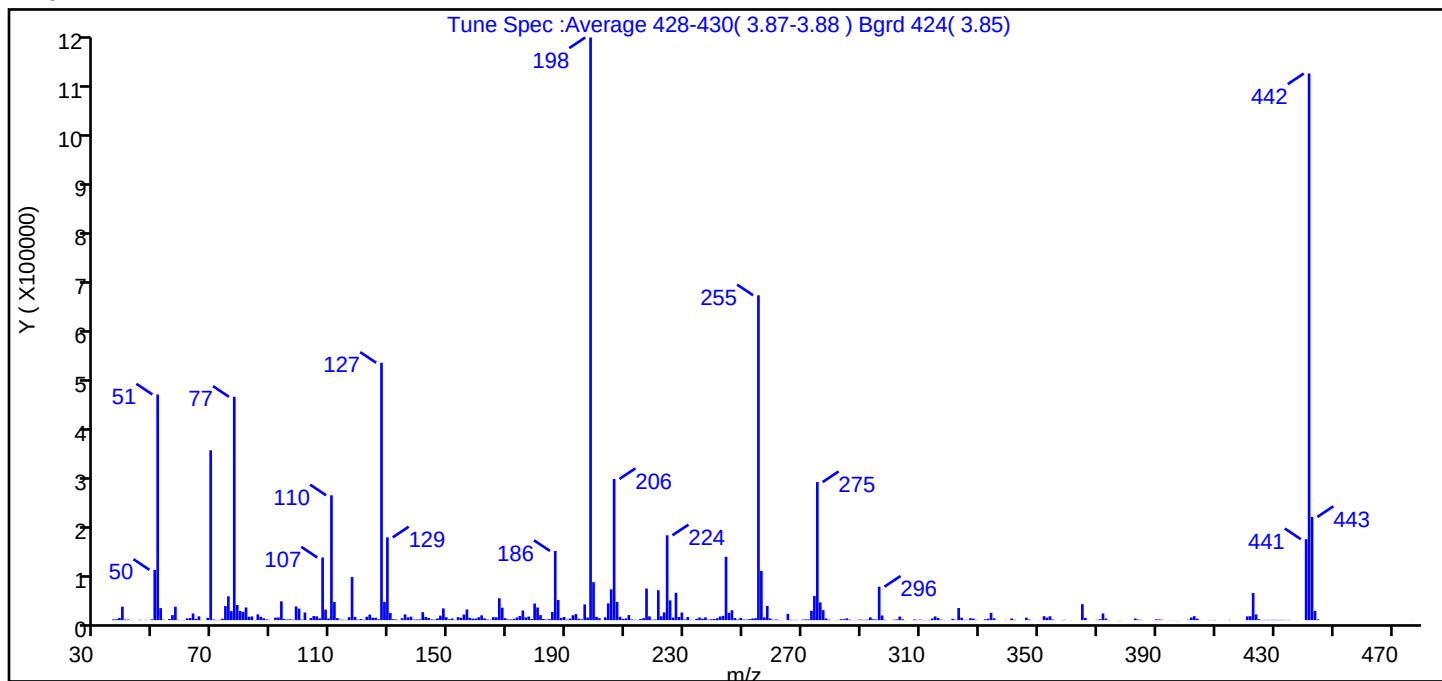
Dil. Factor: 1.0000

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM

Tune Method: DFTPP Method 8270

40 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	Base peak, 100% relative abundance	100.0
51	30-60% of mass 198	38.7
68	<2% of mass 69	0.4 (1.3)
69	Present	29.2
70	<2% of mass 69	0.1 (0.4)
127	40-60% of mass 198	44.2
197	<1% of mass 198	0.4
199	5-9% of mass 198	6.5
275	10-30% of mass 198	23.7
365	>1% of mass 198	2.7
441	Present but less than mass 443	13.9 (78.4)
442	>40% of mass 198	93.8
443	17-23% of mass 442	17.7 (18.9)

Data File: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\X4_8401.D\SMS_X4_SIMX_5.1.rslt\spectra.d
Injection Date: 10-May-2019 15:22:30
Spectrum: Tune Spec :Average 428-430(3.87-3.88) Bgrd 424(3.85)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 357

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1614	131.00	1808	222.00	7699	319.00	111
37.00	1827	132.00	1258	223.00	15462	320.00	402
38.00	4398	133.00	228	224.00	168896	321.00	2550
39.00	26704	134.00	3711	225.00	39328	322.00	791
40.00	1077	135.00	11536	226.00	5207	323.00	24128
41.00	1226	136.00	5401	227.00	54384	324.00	4828
42.00	245	137.00	6950	228.00	6203	325.00	719
45.00	715	138.00	1192	229.00	15144	326.00	555
47.00	537	139.00	1380	230.00	1375	327.00	3851
49.00	1628	140.00	1517	231.00	6184	328.00	2995
50.00	100056	141.00	15845	232.00	796	329.00	546
51.00	449152	142.00	6383	233.00	373	332.00	1826
52.00	23968	143.00	4485	234.00	2573	333.00	2758
53.00	819	144.00	1292	235.00	5221	334.00	14422
55.00	2244	145.00	984	236.00	2823	335.00	3716
56.00	10101	146.00	3233	237.00	5532	336.00	346
57.00	26696	147.00	9052	238.00	883	339.00	464
58.00	593	148.00	23336	239.00	1760	341.00	3286
59.00	342	149.00	5735	240.00	2264	342.00	817
60.00	254	150.00	1693	241.00	3813	343.00	130
61.00	3698	151.00	3247	242.00	7268	345.00	128
62.00	4138	152.00	263	243.00	8578	346.00	4941
63.00	13218	153.00	5862	244.00	126048	347.00	1208
64.00	2577	154.00	4754	245.00	14608	350.00	301
65.00	7583	155.00	11258	246.00	19608	352.00	7821
66.00	450	156.00	21296	247.00	4102	353.00	5106
67.00	9	157.00	4679	248.00	1209	354.00	7750
68.00	4557	158.00	2975	249.00	4410	355.00	1346
69.00	338048	159.00	3076	250.00	1159	358.00	310
70.00	1361	160.00	5647	251.00	1108	359.00	622
71.00	346	161.00	9553	252.00	1999	361.00	236
72.00	576	162.00	3515	253.00	3174	363.00	154
73.00	2719	163.00	1231	254.00	3841	365.00	31672

Data File: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\X4_8401.D\SMS_X4_SIMX_5.1.rslt\spectra.d

Injection Date: 10-May-2019 15:22:30

Spectrum: Tune Spec :Average 428-430(3.87-3.88) Bgrd 424(3.85)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 357

m/z	Y	m/z	Y	m/z	Y	m/z	Y
74.00	28024	164.00	801	255.00	646592	366.00	4579
75.00	47424	165.00	5921	256.00	97888	367.00	200
76.00	17920	166.00	5676	257.00	5488	370.00	686
77.00	444544	167.00	43584	258.00	28056	371.00	1816
78.00	30208	168.00	24840	259.00	3356	372.00	13369
79.00	18184	169.00	3885	260.00	802	373.00	3145
80.00	16440	170.00	1402	261.00	1307	374.00	291
81.00	25200	171.00	1353	262.00	406	377.00	249
82.00	6677	172.00	2738	263.00	69	378.00	322
83.00	7322	173.00	5312	265.00	12576	383.00	3267
84.00	263	174.00	8323	266.00	798	384.00	1031
85.00	11510	175.00	19176	267.00	521	385.00	615
86.00	6731	176.00	5476	268.00	554	389.00	124
87.00	3742	177.00	7083	270.00	1028	390.00	1685
88.00	1450	178.00	2179	271.00	1452	391.00	1405
89.00	581	179.00	32984	272.00	1467	392.00	857
90.00	120	180.00	25232	273.00	18680	395.00	244
91.00	5043	181.00	10014	274.00	48000	396.00	117
92.00	5276	182.00	2262	275.00	274816	397.00	162
93.00	37432	183.00	1100	276.00	35304	398.00	215
94.00	2130	184.00	2085	277.00	19928	401.00	847
95.00	1170	185.00	16223	278.00	3236	402.00	5255
96.00	1685	186.00	137728	279.00	1057	403.00	7844
97.00	913	187.00	40056	281.00	226	404.00	3033
98.00	27200	188.00	4375	282.00	373	405.00	190
99.00	22856	189.00	6353	283.00	1911	408.00	240
100.00	929	190.00	1109	284.00	1811	409.00	176
101.00	15136	191.00	3081	285.00	3633	410.00	503
102.00	348	192.00	9751	286.00	1161	415.00	458
103.00	4169	193.00	11980	287.00	211	418.00	106
104.00	8128	194.00	2751	288.00	250	420.00	116
105.00	7543	195.00	1544	289.00	911	421.00	7491
106.00	3405	196.00	31304	290.00	990	422.00	7866
107.00	124656	197.00	5110	291.00	549	423.00	53952

Report Date: 11-May-2019 08:36:59

Chrom Revision: 2.3 03-May-2019 15:52:00

Data File: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\X4_8401.D\SMS_X4_SIMX_5.1.rslt\spectra.d

Injection Date: 10-May-2019 15:22:30

Spectrum: Tune Spec :Average 428-430(3.87-3.88) Bgrd 424(3.85)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 357

m/z	Y	m/z	Y	m/z	Y	m/z	Y
108.00	21056	198.00	1159680	292.00	1096	424.00	11437
109.00	3297	199.00	75592	293.00	5514	425.00	1855
110.00	248448	200.00	6529	294.00	1736	426.00	360
111.00	35992	201.00	3886	295.00	1304	427.00	597
112.00	4153	203.00	5646	296.00	66592	428.00	639
113.00	1080	204.00	33360	297.00	9332	429.00	587
114.00	780	205.00	61272	298.00	781	430.00	806
115.00	550	206.00	280960	301.00	861	431.00	606
116.00	5969	207.00	36248	302.00	1454	432.00	614
117.00	85752	208.00	6730	303.00	7132	433.00	731
118.00	6404	209.00	2498	304.00	1761	434.00	317
119.00	1053	210.00	3446	305.00	239	435.00	472
120.00	2119	211.00	10044	308.00	1410	436.00	118
121.00	734	212.00	1279	309.00	662	438.00	138
122.00	6681	213.00	772	310.00	1042	441.00	161088
123.00	11015	214.00	561	311.00	349	442.00	1088000
124.00	4811	215.00	2389	312.00	288	443.00	205376
125.00	4801	216.00	3917	313.00	562	444.00	18456
126.00	1679	217.00	62920	314.00	3273	445.00	1624
127.00	512256	218.00	7582	315.00	7392	477.00	146
128.00	36248	219.00	882	316.00	4330		
129.00	164736	220.00	1250	317.00	927		
130.00	14195	221.00	59528	318.00	332		

Report Date: 11-May-2019 08:36:59

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\X4_8401.D

Injection Date: 10-May-2019 15:22:30

Instrument ID: SMS_X4

Operator ID: WICKHAMM

Lims ID: DFTPP

Worklist Smp#: 2

Client ID:

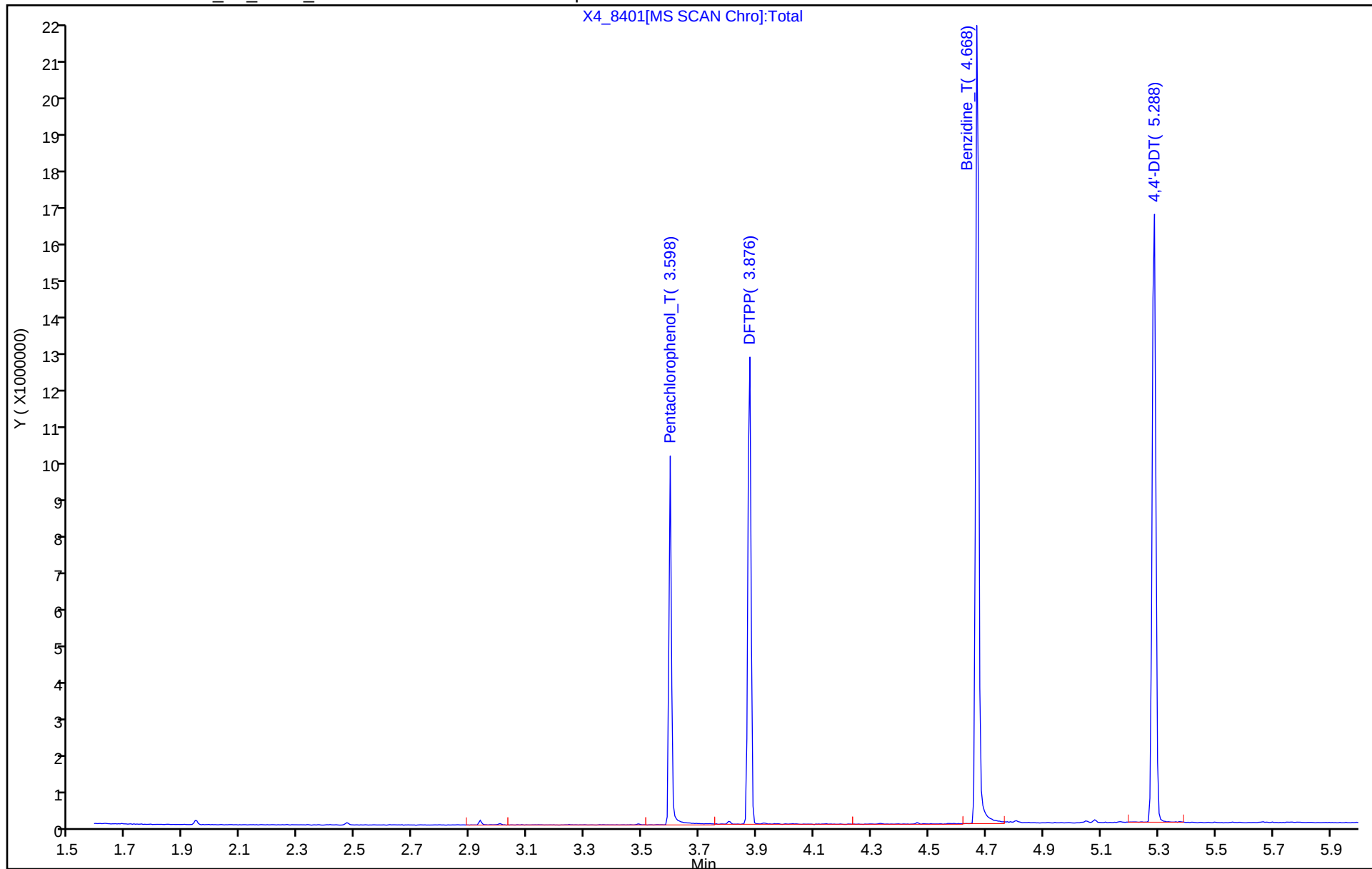
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 1

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\X4_8401.D
Injection Date: 10-May-2019 15:22:30 Instrument ID: SMS_X4
Lims ID: DFTPP
Client ID:
Operator ID: WICKHAMM ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: SMS_X4_SIMX_5.1 Limit Group: MSSV - 8270C-SIM

44 4,4'-DDT, Detector: MS SCAN

SW-846 Method

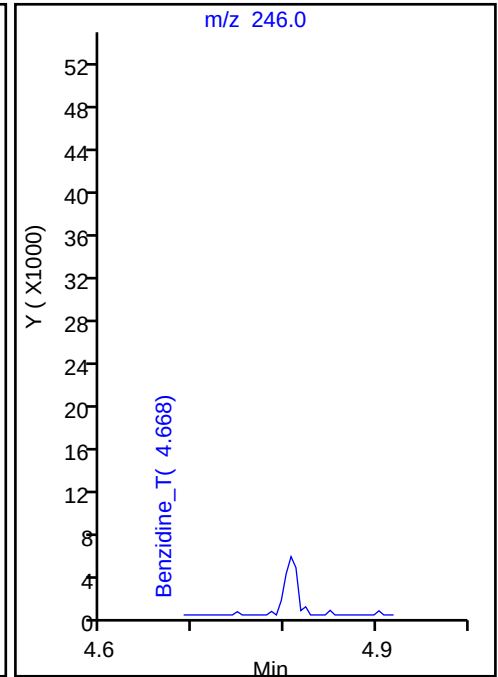
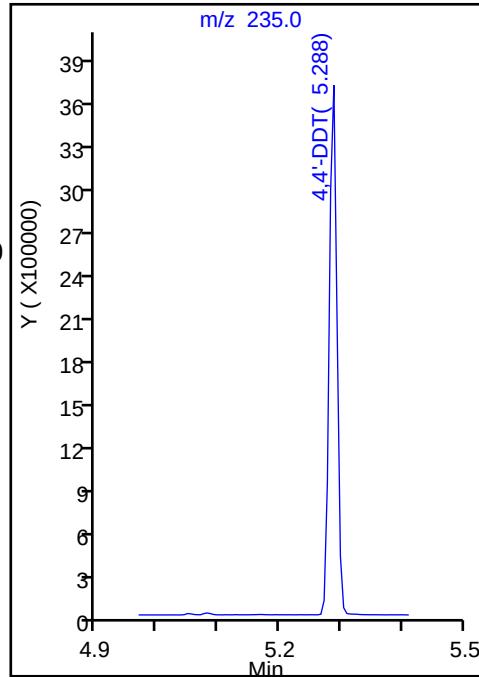
%Breakdown =
(Area Breakdown Cpnds/
Total Area Breakdown Cpnds) * 100

44 4,4'-DDT, Area = 3272659

42 4,4'-DDE, Area = 5005

43 4,4'-DDD, Area = 12284

%Breakdown: 0.53%, <= 20.00%
Passed



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\X4_8401.D
Injection Date: 10-May-2019 15:22:30 Instrument ID: SMS_X4
Lims ID: DFTPP
Client ID:
Operator ID: WICKHAMM
Injection Vol: 1.0 ul
Method: SMS_X4_SIMX_5.1

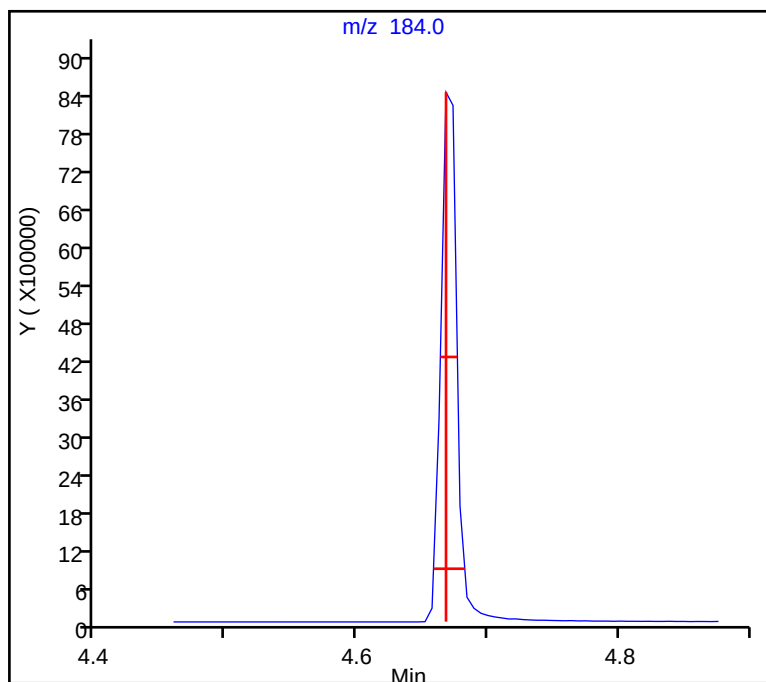
ALS Bottle#: 1 Worklist Smp#: 2
Dil. Factor: 1.0000
Limit Group: MSSV - 8270C-SIM

41 Benzidine_T, Detector: MS SCAN

Peak Tailing Factor =
BackWidth/FrontWidth @ 10% Peak Height

Back Width = 0.014 (min.)
Front Width = 0.010 (min.)

Tailing Factor = 1.5, Max. Tailing < 5.00
Passed



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\X4_8401.D
Injection Date: 10-May-2019 15:22:30 Instrument ID: SMS_X4
Lims ID: DFTPP
Client ID:
Operator ID: WICKHAMM
Injection Vol: 1.0 ul
Method: SMS_X4_SIMX_5.1

ALS Bottle#: 1 Worklist Smp#: 2
Dil. Factor: 1.0000
Limit Group: MSSV - 8270C-SIM

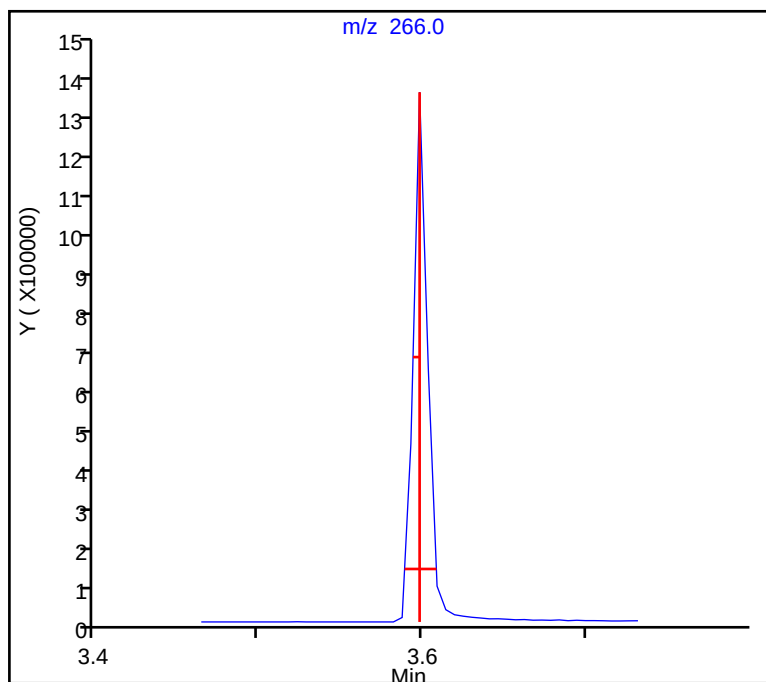
39 Pentachlorophenol_T, Detector: MS SCAN

Peak Tailing Factor =
BackWidth/FrontWidth @ 10% Peak Height

Back Width = 0.010 (min.)

Front Width = 0.009 (min.)

Tailing Factor = 1.1, Max. Tailing < 3.00
Passed



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\X4_8453.D
 Lims ID: DFTPP
 Client ID:
 Sample Type: DFTPP
 Inject. Date: 13-May-2019 18:15:30 ALS Bottle#: 1 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: dftpp
 Operator ID: WICKHAMM Instrument ID: SMS_X4
 Method: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 14-May-2019 23:07:25 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: wickhamm

Date: 13-May-2019 18:29:44

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164		7.408				600.0	ND	
* 2 Phenanthrene-d10	188		8.899				600.0	ND	
* 3 Chrysene-d12	240		12.786				600.0	ND	
* 49 Perylene-d12	264		16.624				600.0	ND	
39 Pentachlorophenol_T	266	3.598	3.598	0.000	0	1200468	NR	NR	
40 DFTPP									
41 Benizidine_T	184	4.668	4.668	0.000	0	7637658	NR	NR	e
42 4,4'-DDE	246	4.807	4.807	0.000	0	4749	NR	NR	
43 4,4'-DDD	235	5.080	5.080	0.000	0	20381	NR	NR	
44 4,4'-DDT	235	5.288	5.288	0.000	0	4170807	NR	NR	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

e - Potential Peak Saturated

Reagents:

MS-DFTPP_00049 Amount Added: 0.50 Units: uL
 MS-SIM IS_00034 Amount Added: 20.00 Units: uL Run Reagent

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\X4_8453.D

Injection Date: 13-May-2019 18:15:30

Instrument ID: SMS_X4

Lims ID: DFTPP

Client ID:

Operator ID: WICKHAMM

ALS Bottle#: 1 Worklist Smp#: 2

Injection Vol: 1.0 ul

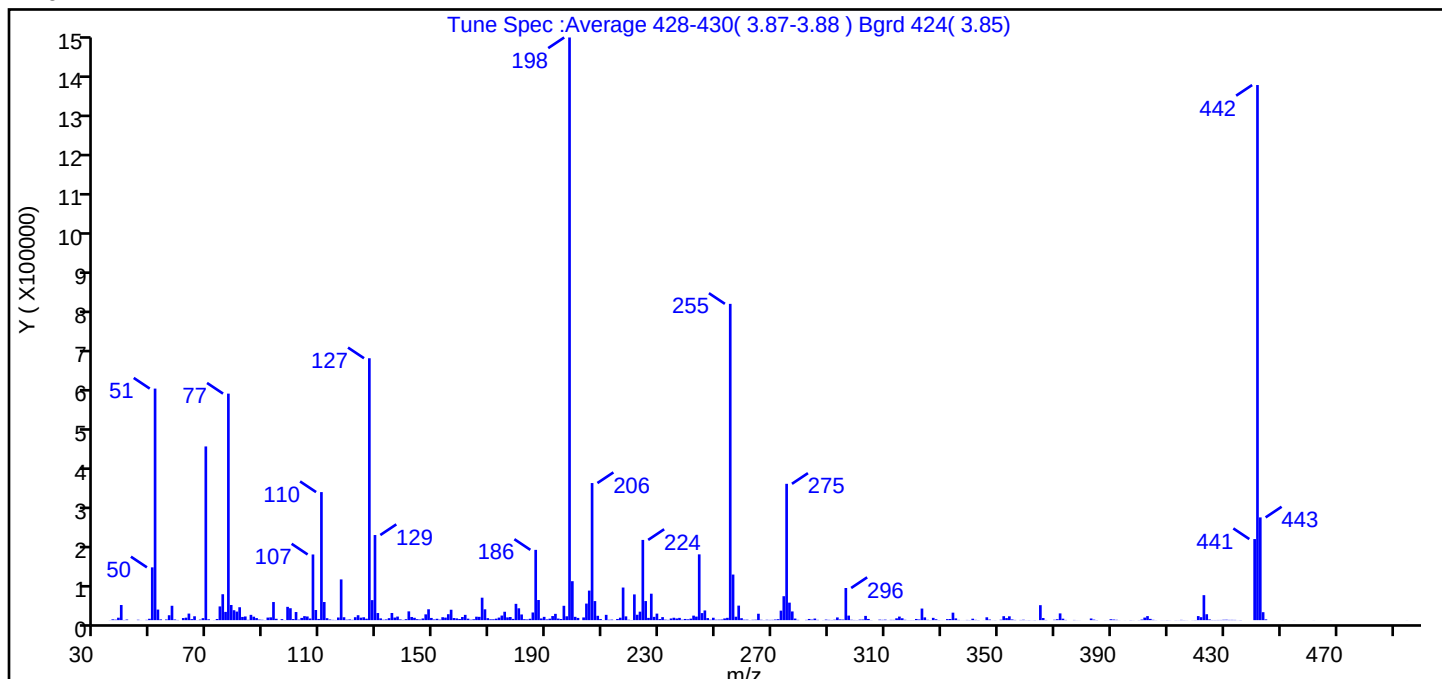
Dil. Factor: 1.0000

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM

Tune Method: DFTPP Method 8270

40 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	Base peak, 100% relative abundance	100.0
51	30-60% of mass 198	39.7
68	<2% of mass 69	0.3 (1.1)
69	Present	29.8
70	<2% of mass 69	0.1 (0.5)
127	40-60% of mass 198	44.9
197	<1% of mass 198	0.7
199	5-9% of mass 198	6.7
275	10-30% of mass 198	23.4
365	>1% of mass 198	2.6
441	Present but less than mass 443	13.9 (78.9)
442	>40% of mass 198	91.8
443	17-23% of mass 442	17.6 (19.2)

Data File: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\X4_8453.D\SMS_X4_SIMX_5.1.rslt\spectra.d
Injection Date: 13-May-2019 18:15:30
Spectrum: Tune Spec :Average 428-430(3.87-3.88) Bgrd 424(3.85)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 382

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	230	137.00	8708	234.00	4047	335.00	4247
36.00	1981	138.00	1788	235.00	5835	336.00	583
37.00	1201	139.00	643	236.00	4029	337.00	129
38.00	5947	140.00	2341	237.00	5506	338.00	133
39.00	36808	141.00	21360	238.00	1030	339.00	529
40.00	417	142.00	7697	239.00	2885	340.00	295
41.00	1546	143.00	5725	240.00	2034	341.00	3508
45.00	971	144.00	2328	241.00	3651	342.00	749
46.00	136	145.00	1530	242.00	10972	343.00	335
47.00	53	146.00	4099	243.00	8588	345.00	131
48.00	648	147.00	14103	244.00	160064	346.00	6940
49.00	3335	148.00	26456	245.00	17168	347.00	1532
50.00	128456	149.00	5365	246.00	23576	348.00	110
51.00	563392	150.00	1638	247.00	5013	349.00	211
52.00	25728	151.00	3313	248.00	1030	351.00	1061
53.00	1845	152.00	1187	249.00	5839	352.00	9612
55.00	1635	153.00	7143	250.00	1065	353.00	5001
56.00	11926	154.00	6173	251.00	1221	354.00	9369
57.00	34968	155.00	14437	252.00	1501	355.00	1721
58.00	1633	156.00	25336	253.00	4137	356.00	547
59.00	467	157.00	5103	254.00	5626	358.00	488
61.00	5071	158.00	4267	255.00	769600	359.00	1007
62.00	5996	159.00	2839	256.00	110936	360.00	228
63.00	15979	160.00	7667	257.00	8337	361.00	355
64.00	2486	161.00	12874	258.00	35336	362.00	133
65.00	9421	162.00	3600	259.00	4721	363.00	348
66.00	257	163.00	1053	260.00	1046	364.00	112
67.00	1311	164.00	2108	261.00	1179	365.00	36432
68.00	4822	165.00	8385	262.00	234	366.00	5158
69.00	422656	166.00	8004	263.00	860	367.00	473
70.00	2046	167.00	54648	264.00	1102	370.00	1003
71.00	60	168.00	26368	265.00	15587	371.00	2264
72.00	234	169.00	4844	266.00	897	372.00	16440

Data File: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\X4_8453.D\SMS_X4_SIMX_5.1.rslt\spectra.d

Injection Date: 13-May-2019 18:15:30

Spectrum: Tune Spec :Average 428-430(3.87-3.88) Bgrd 424(3.85)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 382

m/z	Y	m/z	Y	m/z	Y	m/z	Y
73.00	2797	170.00	2016	267.00	284	373.00	3560
74.00	33416	171.00	2042	268.00	923	374.00	529
75.00	63048	172.00	3583	269.00	608	377.00	493
76.00	20048	173.00	6194	270.00	742	378.00	148
77.00	551168	174.00	11167	271.00	1534	379.00	105
78.00	36840	175.00	20408	272.00	2321	383.00	4014
79.00	24160	176.00	6696	273.00	23112	384.00	1276
80.00	20808	177.00	7561	274.00	58248	385.00	353
81.00	31416	178.00	3061	275.00	331712	388.00	152
82.00	7807	179.00	39664	276.00	42584	389.00	108
83.00	8943	180.00	28808	277.00	21152	390.00	2192
84.00	744	181.00	13831	278.00	3828	391.00	1459
85.00	12889	182.00	2249	279.00	684	392.00	864
86.00	8412	183.00	1697	282.00	618	393.00	153
87.00	4995	184.00	3380	283.00	2881	395.00	109
88.00	1444	185.00	18664	284.00	1376	397.00	342
89.00	903	186.00	171008	285.00	3843	398.00	152
90.00	294	187.00	48968	286.00	684	400.00	248
91.00	6238	188.00	4118	288.00	202	401.00	1447
92.00	6803	189.00	7997	289.00	1360	402.00	6201
93.00	44080	190.00	1859	290.00	729	403.00	9840
94.00	3314	191.00	3585	291.00	465	404.00	3069
96.00	2440	192.00	9957	292.00	1127	405.00	790
97.00	289	193.00	15336	293.00	6588	406.00	190
98.00	32344	194.00	3825	294.00	1781	408.00	160
99.00	29008	195.00	2720	295.00	1397	409.00	124
100.00	2671	196.00	34936	296.00	78208	410.00	288
101.00	19776	197.00	9407	297.00	11047	411.00	141
102.00	1243	198.00	1417728	298.00	959	413.00	200
103.00	5436	199.00	94776	299.00	470	414.00	157
104.00	9726	200.00	8060	300.00	312	415.00	650
105.00	8917	201.00	5423	301.00	1336	416.00	284
106.00	3976	203.00	6564	302.00	1466	417.00	158
107.00	159808	204.00	40328	303.00	10325	419.00	191

Data File: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\X4_8453.D\SMS_X4_SIMX_5.1.rslt\spectra.d

Injection Date: 13-May-2019 18:15:30

Spectrum: Tune Spec :Average 428-430(3.87-3.88) Bgrd 424(3.85)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 382

m/z	Y	m/z	Y	m/z	Y	m/z	Y
108.00	24648	205.00	71880	304.00	2887	420.00	377
109.00	2966	206.00	333568	305.00	239	421.00	9870
110.00	311552	207.00	46360	308.00	1241	422.00	7194
111.00	44096	208.00	10579	309.00	787	423.00	60784
112.00	4756	209.00	2633	310.00	1226	424.00	14391
113.00	1619	210.00	257	311.00	172	425.00	1814
114.00	680	211.00	12903	312.00	727	426.00	394
115.00	494	212.00	904	313.00	686	427.00	386
116.00	6434	213.00	1286	314.00	4451	428.00	468
117.00	99104	214.00	144	315.00	8690	429.00	493
118.00	7061	215.00	2838	316.00	4561	430.00	947
119.00	1154	216.00	5967	317.00	880	431.00	1095
120.00	1808	217.00	79336	318.00	233	432.00	636
121.00	753	218.00	9205	319.00	314	433.00	706
122.00	7117	219.00	1016	320.00	302	434.00	597
123.00	11989	220.00	380	321.00	2848	435.00	105
124.00	6009	221.00	62640	322.00	1617	436.00	338
125.00	6929	222.00	13086	323.00	28216	441.00	197248
126.00	3493	223.00	20624	324.00	6702	442.00	1302016
127.00	637248	224.00	195200	325.00	860	443.00	249984
128.00	48712	225.00	46408	326.00	314	444.00	19368
129.00	207104	226.00	5529	327.00	5611	445.00	1891
130.00	17304	227.00	64360	328.00	2203	451.00	125
131.00	4312	228.00	7971	329.00	358	455.00	113
132.00	963	229.00	15893	330.00	132	462.00	105
133.00	1731	230.00	2635	331.00	100	468.00	107
134.00	4798	231.00	7367	332.00	2493	495.00	109
135.00	17408	232.00	1252	333.00	2775		
136.00	6307	233.00	674	334.00	18200		

Report Date: 14-May-2019 23:07:25

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\X4_8453.D

Injection Date: 13-May-2019 18:15:30

Instrument ID: SMS_X4

Operator ID: WICKHAMM

Lims ID: DFTPP

Worklist Smp#: 2

Client ID:

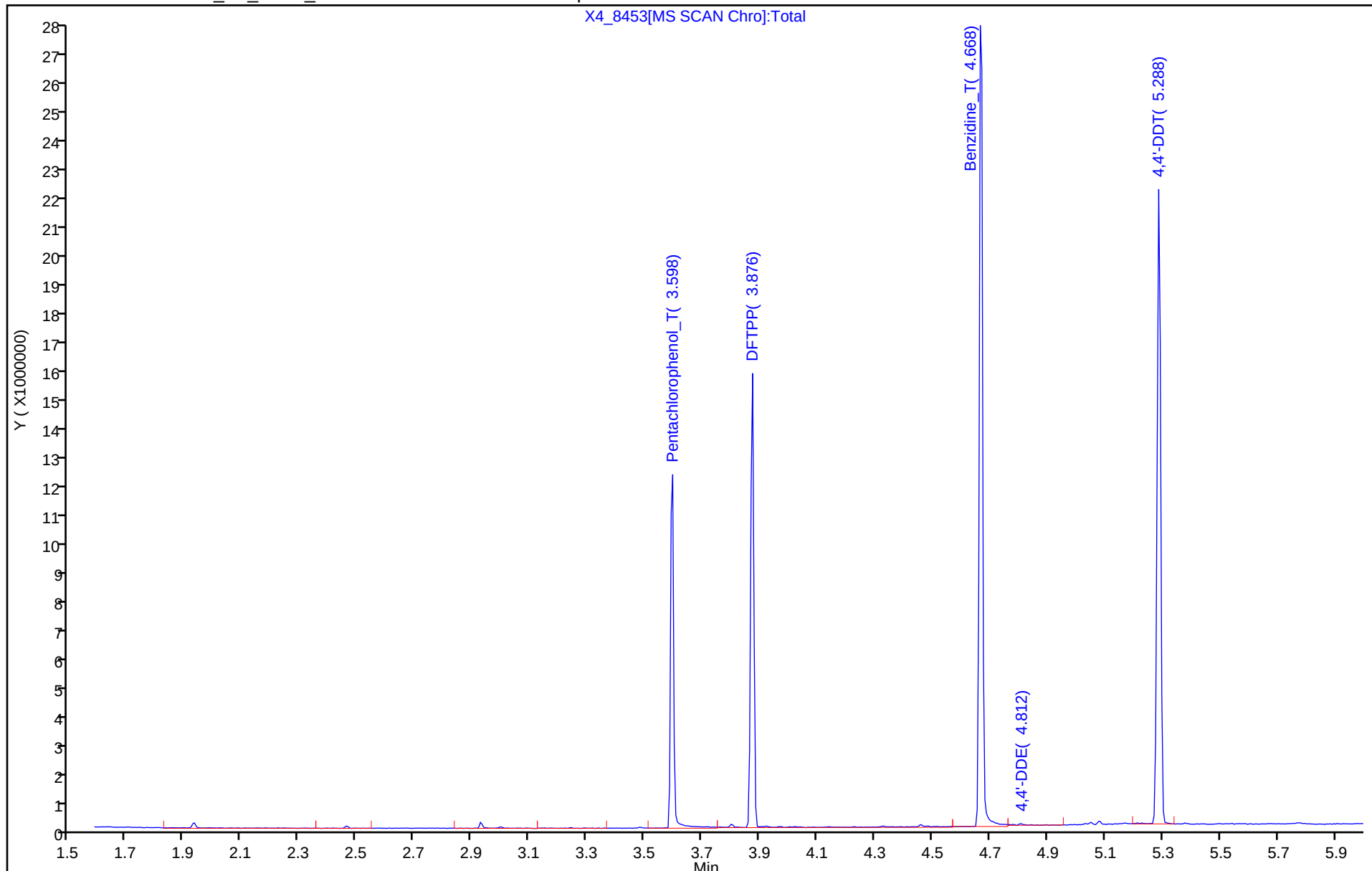
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 1

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\X4_8453.D
Injection Date: 13-May-2019 18:15:30 Instrument ID: SMS_X4
Lims ID: DFTPP
Client ID:
Operator ID: WICKHAMM ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: SMS_X4_SIMX_5.1 Limit Group: MSSV - 8270C-SIM

44 4,4'-DDT, Detector: MS SCAN

SW-846 Method

%Breakdown =
(Area Breakdown Cpnds/
Total Area Breakdown Cpnds) * 100

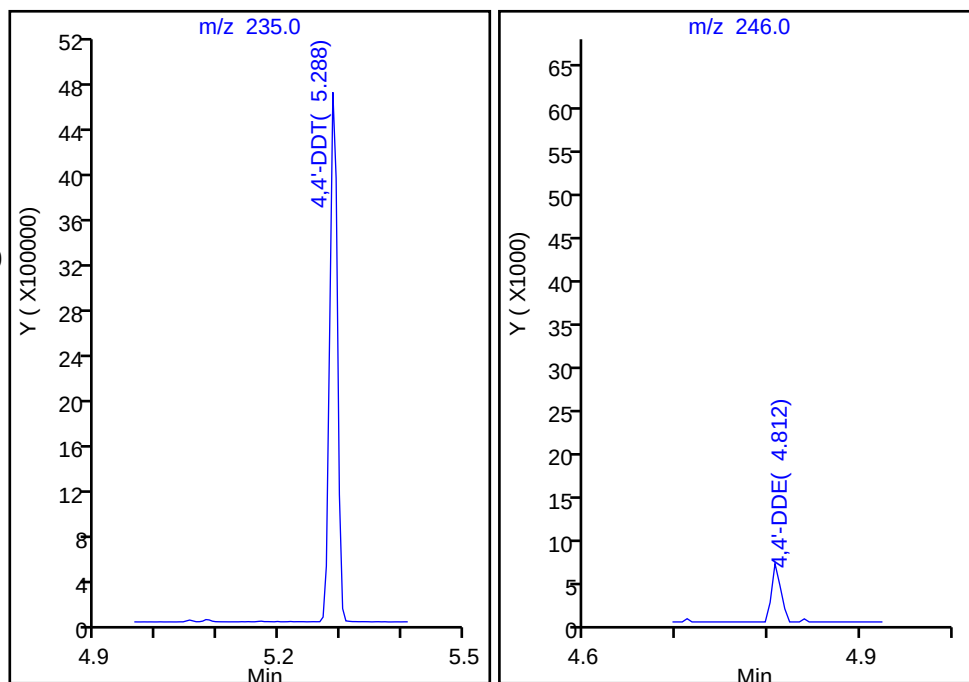
44 4,4'-DDT, Area = 4170807

42 4,4'-DDE, Area = 4749

43 4,4'-DDD, Area = 20381

%Breakdown: 0.60%, <= 20.00%

Passed



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\X4_8453.D
Injection Date: 13-May-2019 18:15:30 Instrument ID: SMS_X4
Lims ID: DFTPP
Client ID:
Operator ID: WICKHAMM
Injection Vol: 1.0 ul
Method: SMS_X4_SIMX_5.1

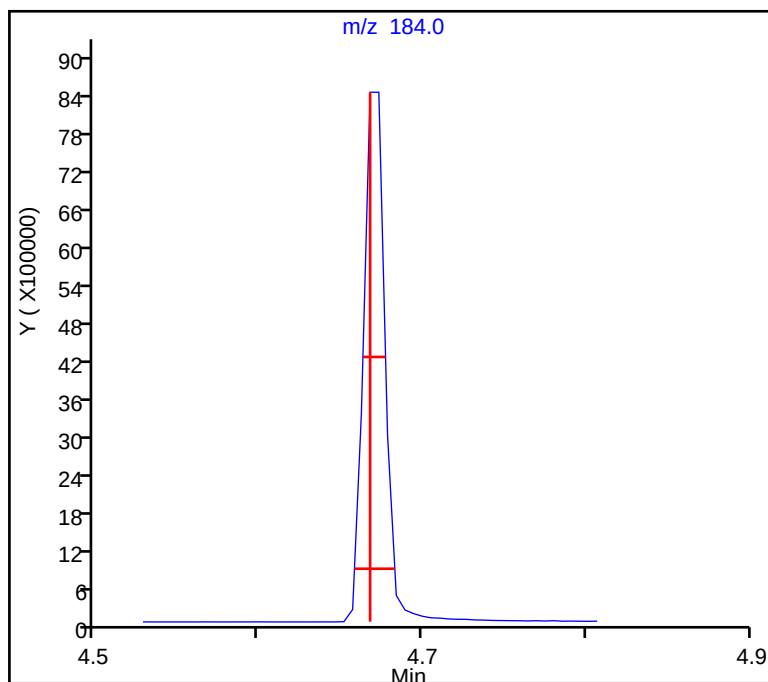
ALS Bottle#: 1 Worklist Smp#: 2
Dil. Factor: 1.0000
Limit Group: MSSV - 8270C-SIM

41 Benzidine_T, Detector: MS SCAN

Peak Tailing Factor =
BackWidth/FrontWidth @ 10% Peak Height

Back Width = 0.015 (min.)
Front Width = 0.010 (min.)

Tailing Factor = 1.6, Max. Tailing < 5.00
Passed



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\X4_8453.D

Injection Date: 13-May-2019 18:15:30

Instrument ID: SMS_X4

Lims ID: DFTPP

Client ID:

Operator ID: WICKHAMM

ALS Bottle#: 1 Worklist Smp#: 2

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM

39 Pentachlorophenol_T, Detector: MS SCAN

Peak Tailing Factor =

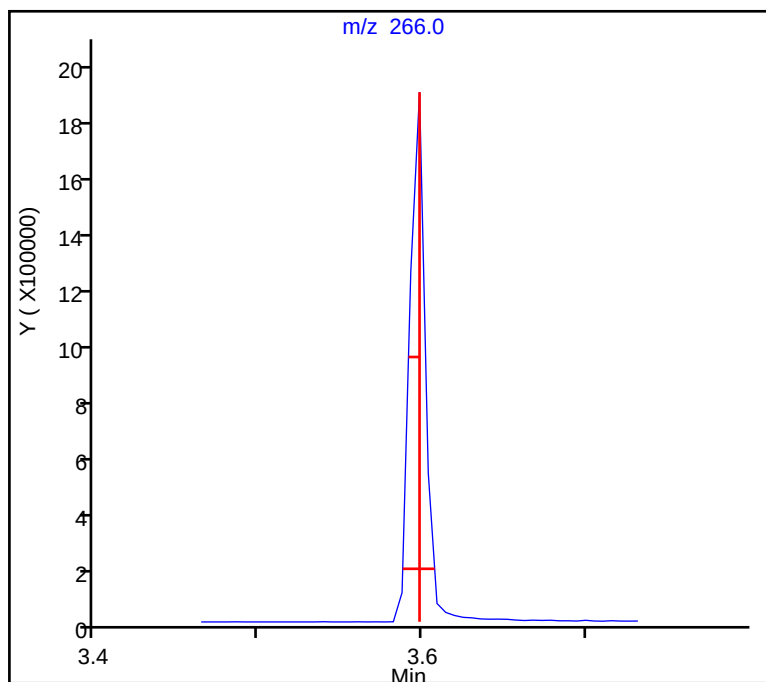
BackWidth/FrontWidth @ 10% Peak Height

Back Width = 0.009 (min.)

Front Width = 0.010 (min.)

Tailing Factor = 0.9, Max. Tailing < 3.00

Passed



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\X4_8701.D
 Lims ID: DFTPP
 Client ID:
 Sample Type: DFTPP
 Inject. Date: 16-May-2019 15:58:30 ALS Bottle#: 1 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: dftpp
 Operator ID: WICKHAMM Instrument ID: SMS_X4
 Method: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 17-May-2019 19:19:45 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0304

First Level Reviewer: wickhamm

Date: 16-May-2019 16:07:32

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164		7.408				600.0	ND	
* 2 Phenanthrene-d10	188		8.899				600.0	ND	
* 3 Chrysene-d12	240		12.800				600.0	ND	
* 49 Perylene-d12	264		16.618				600.0	ND	
39 Pentachlorophenol_T	266	3.598	3.598	0.000	0	1254979	NR	NR	
40 DFTPP									
41 Benizidine_T	184	4.668	4.668	0.000	0	7942654	NR	NR	e
42 4,4'-DDE	246	4.807	4.807	0.000	0	6112	NR	NR	
43 4,4'-DDD	235	5.053	5.053	0.000	0	18194	NR	NR	
44 4,4'-DDT	235	5.288	5.288	0.000	0	4246706	NR	NR	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

e - Potential Peak Saturated

Reagents:

MS-DFTPP_00049 Amount Added: 0.50 Units: uL
 MS-SIM IS_00034 Amount Added: 20.00 Units: uL Run Reagent

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\X4_8701.D

Injection Date: 16-May-2019 15:58:30

Instrument ID: SMS_X4

Lims ID: DFTPP

Client ID:

Operator ID: WICKHAMM

ALS Bottle#: 1 Worklist Smp#: 2

Injection Vol: 1.0 ul

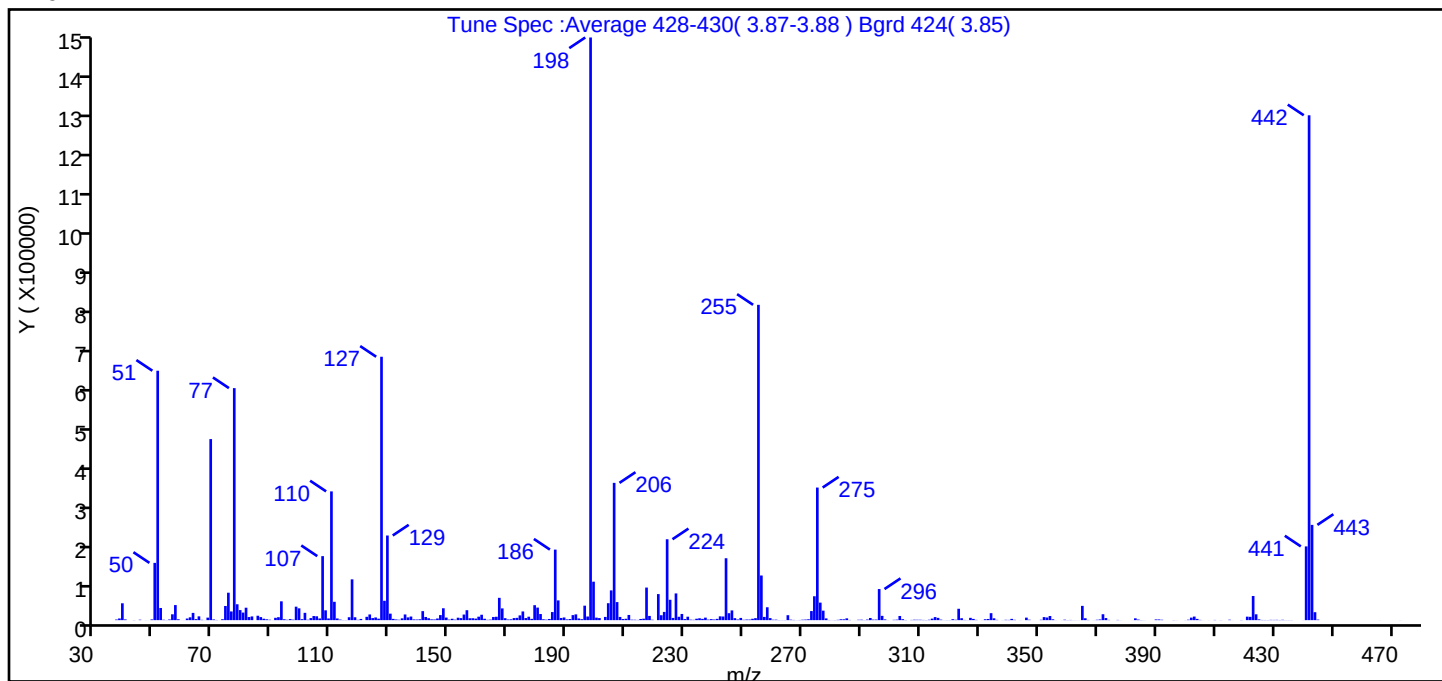
Dil. Factor: 1.0000

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM

Tune Method: DFTPP Method 8270

40 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	Base peak, 100% relative abundance	100.0
51	30-60% of mass 198	42.8
68	<2% of mass 69	0.4 (1.4)
69	Present	31.1
70	<2% of mass 69	0.1 (0.4)
127	40-60% of mass 198	45.2
197	<1% of mass 198	0.6
199	5-9% of mass 198	6.6
275	10-30% of mass 198	22.8
365	>1% of mass 198	2.4
441	Present but less than mass 443	12.7 (77.4)
442	>40% of mass 198	86.6
443	17-23% of mass 442	16.3 (18.9)

Data File: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\X4_8701.D\SMS_X4_SIMX_5.1.rslt\spectra.d
Injection Date: 16-May-2019 15:58:30
Spectrum: Tune Spec :Average 428-430(3.87-3.88) Bgrd 424(3.85)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 368

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	1584	134.00	4549	228.00	8531	323.00	28888
38.00	4260	135.00	14454	229.00	15711	324.00	4885
39.00	42848	136.00	6998	230.00	2762	325.00	599
40.00	1839	137.00	9166	231.00	8743	326.00	263
43.00	292	138.00	1867	232.00	1214	327.00	5831
45.00	1106	139.00	1573	233.00	855	328.00	3160
47.00	122	140.00	2135	234.00	3597	329.00	638
48.00	78	141.00	22896	235.00	4754	331.00	109
49.00	1856	142.00	8071	236.00	3239	332.00	2281
50.00	145472	143.00	4871	237.00	6383	333.00	2952
51.00	633600	144.00	2025	238.00	1366	334.00	17712
52.00	30896	145.00	1739	239.00	2591	335.00	4626
53.00	1061	146.00	4238	240.00	1636	336.00	713
54.00	287	147.00	12853	241.00	3254	338.00	155
55.00	1716	148.00	30200	242.00	9649	339.00	854
56.00	14865	149.00	6558	243.00	9259	340.00	610
57.00	38288	150.00	1398	244.00	157248	341.00	3237
58.00	2210	151.00	3515	245.00	17664	342.00	828
59.00	99	152.00	1257	246.00	24704	344.00	170
60.00	141	153.00	6190	247.00	5006	346.00	6373
61.00	4103	154.00	5115	248.00	1697	347.00	1111
62.00	7148	155.00	14222	249.00	5633	351.00	984
63.00	18416	156.00	25216	250.00	921	352.00	7728
64.00	2609	157.00	4788	251.00	1587	353.00	6705
65.00	9655	158.00	4879	252.00	1504	354.00	10508
66.00	804	159.00	3933	253.00	3492	355.00	2150
67.00	168	160.00	8778	254.00	5041	356.00	157
68.00	6362	161.00	13718	255.00	801024	358.00	110
69.00	459968	162.00	3524	256.00	113400	359.00	1167
70.00	1806	163.00	883	257.00	8210	360.00	310
71.00	444	164.00	1394	258.00	32736	361.00	527
72.00	113	165.00	8067	259.00	5219	362.00	205
73.00	2349	166.00	8575	260.00	1070	363.00	147

Data File: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\X4_8701.D\SMS_X4_SIMX_5.1.rslt\spectra.d

Injection Date: 16-May-2019 15:58:30

Spectrum: Tune Spec :Average 428-430(3.87-3.88) Bgrd 424(3.85)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 368

m/z	Y	m/z	Y	m/z	Y	m/z	Y
74.00	35976	167.00	56688	261.00	1226	364.00	141
75.00	69672	168.00	29840	262.00	352	365.00	36224
76.00	22104	169.00	4924	263.00	269	366.00	4778
77.00	589440	170.00	1717	264.00	325	367.00	541
78.00	40336	171.00	2143	265.00	12573	369.00	161
79.00	25560	172.00	5270	266.00	1215	370.00	1001
80.00	19208	173.00	5856	267.00	541	371.00	1682
81.00	31576	174.00	12086	268.00	210	372.00	15006
82.00	7870	175.00	22088	269.00	468	373.00	5252
83.00	9437	176.00	5312	270.00	1127	374.00	643
85.00	11199	177.00	8721	271.00	1522	377.00	571
86.00	7742	178.00	3276	272.00	2195	378.00	132
87.00	3615	179.00	38008	273.00	23072	382.00	109
88.00	2163	180.00	31888	274.00	60696	383.00	4596
89.00	1089	181.00	15528	275.00	336832	384.00	1512
90.00	113	182.00	2216	276.00	44520	385.00	315
91.00	5934	183.00	1229	277.00	24144	386.00	153
92.00	7489	184.00	2995	278.00	4402	390.00	1794
93.00	47816	185.00	20512	279.00	461	391.00	1806
94.00	2238	186.00	179200	280.00	186	392.00	998
95.00	941	187.00	50184	281.00	344	396.00	280
96.00	2703	188.00	5519	282.00	802	397.00	145
97.00	1308	189.00	6779	283.00	2217	400.00	172
98.00	34208	190.00	1929	284.00	2090	401.00	1150
99.00	30000	191.00	2764	285.00	4530	402.00	6433
100.00	2494	192.00	12792	286.00	539	403.00	9071
101.00	18576	193.00	14691	288.00	100	404.00	3209
102.00	1009	194.00	4235	289.00	973	405.00	635
103.00	5202	195.00	2436	290.00	1179	406.00	106
104.00	10423	196.00	36744	291.00	297	408.00	113
105.00	9779	197.00	9213	292.00	1478	410.00	539
106.00	4217	198.00	1480192	293.00	5466	412.00	236
107.00	162624	199.00	97712	294.00	1360	415.00	1085
108.00	24960	200.00	6357	295.00	1415	416.00	100

Report Date: 17-May-2019 19:19:46

Chrom Revision: 2.3 03-May-2019 15:52:00

Data File: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\X4_8701.D\SMS_X4_SIMX_5.1.rslt\spectra.d

Injection Date: 16-May-2019 15:58:30

Spectrum: Tune Spec :Average 428-430(3.87-3.88) Bgrd 424(3.85)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 368

m/z	Y	m/z	Y	m/z	Y	m/z	Y
109.00	4268	201.00	5272	296.00	78992	419.00	399
110.00	327104	203.00	8177	297.00	10899	421.00	8851
111.00	46608	204.00	43040	298.00	1851	422.00	8400
112.00	4259	205.00	75584	299.00	168	423.00	61328
113.00	1423	206.00	348736	301.00	810	424.00	14876
114.00	329	207.00	45856	302.00	1239	425.00	1952
115.00	304	208.00	8140	303.00	10566	426.00	513
116.00	7421	209.00	2925	304.00	2411	427.00	434
117.00	103640	210.00	3520	305.00	430	428.00	339
118.00	7314	211.00	13178	307.00	554	429.00	737
119.00	831	212.00	1197	308.00	1126	430.00	622
120.00	3054	213.00	1026	309.00	990	431.00	773
121.00	6	214.00	573	310.00	967	432.00	431
122.00	8457	215.00	2942	311.00	548	433.00	904
123.00	14461	216.00	3686	312.00	383	434.00	275
124.00	5259	217.00	82768	313.00	1052	435.00	276
125.00	6869	218.00	10738	314.00	3852	436.00	259
126.00	3711	219.00	1026	315.00	7749	440.00	136
127.00	669120	221.00	66192	316.00	5761	441.00	187328
128.00	49208	222.00	12522	317.00	1287	442.00	1282560
129.00	215040	223.00	20880	318.00	161	443.00	241984
130.00	16480	224.00	205504	319.00	275	444.00	20192
131.00	3210	225.00	51736	320.00	277	445.00	1414
132.00	1712	226.00	5619	321.00	2411	466.00	104
133.00	986	227.00	67904	322.00	1071	473.00	141

Report Date: 17-May-2019 19:19:46

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\X4_8701.D

Injection Date: 16-May-2019 15:58:30

Instrument ID: SMS_X4

Operator ID: WICKHAMM

Lims ID: DFTPP

Worklist Smp#: 2

Client ID:

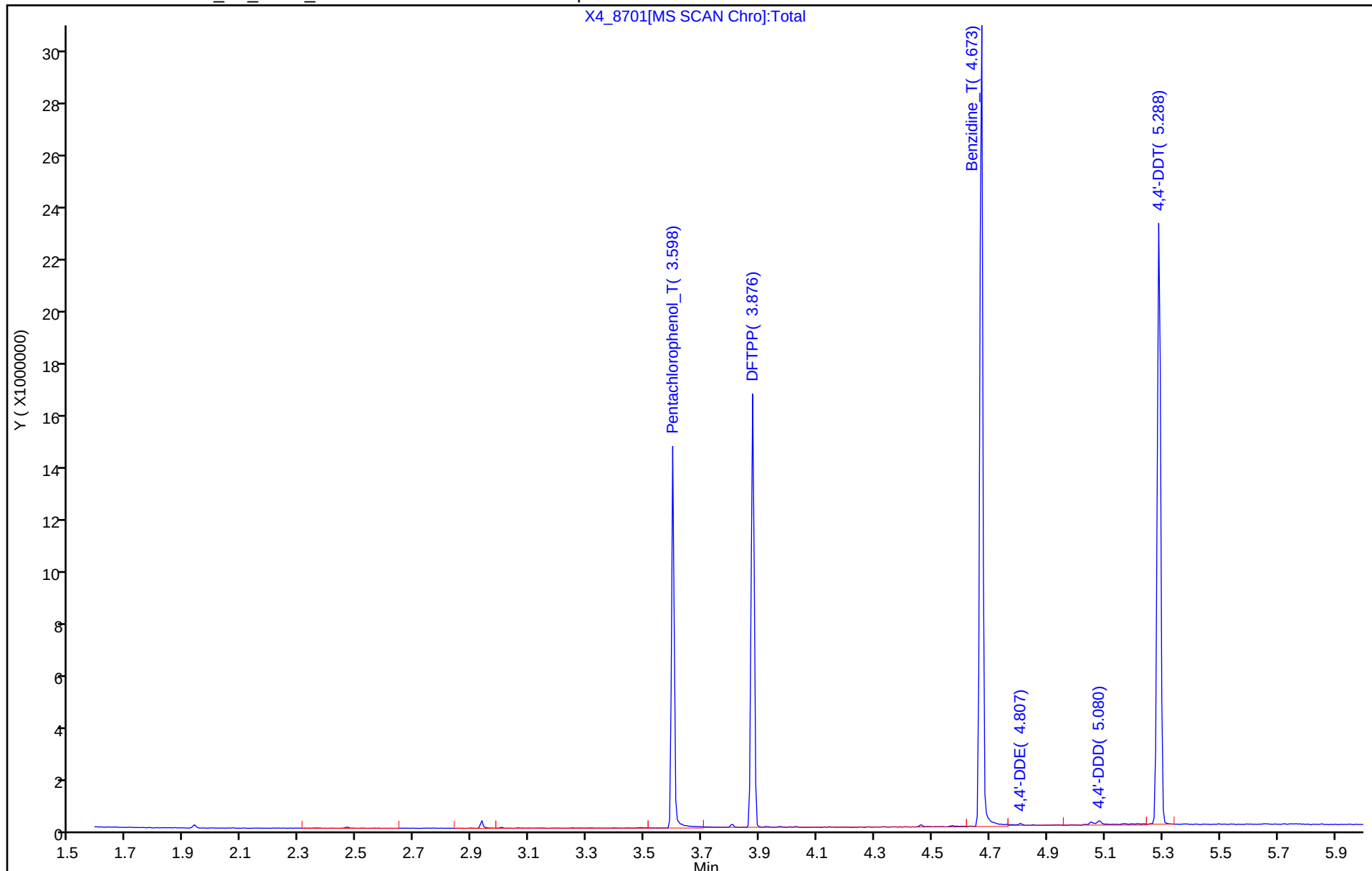
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 1

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\X4_8701.D
Injection Date: 16-May-2019 15:58:30 Instrument ID: SMS_X4
Lims ID: DFTPP
Client ID:
Operator ID: WICKHAMM ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: SMS_X4_SIMX_5.1 Limit Group: MSSV - 8270C-SIM

44 4,4'-DDT, Detector: MS SCAN

SW-846 Method

%Breakdown =
(Area Breakdown Cpnds/
Total Area Breakdown Cpnds) * 100

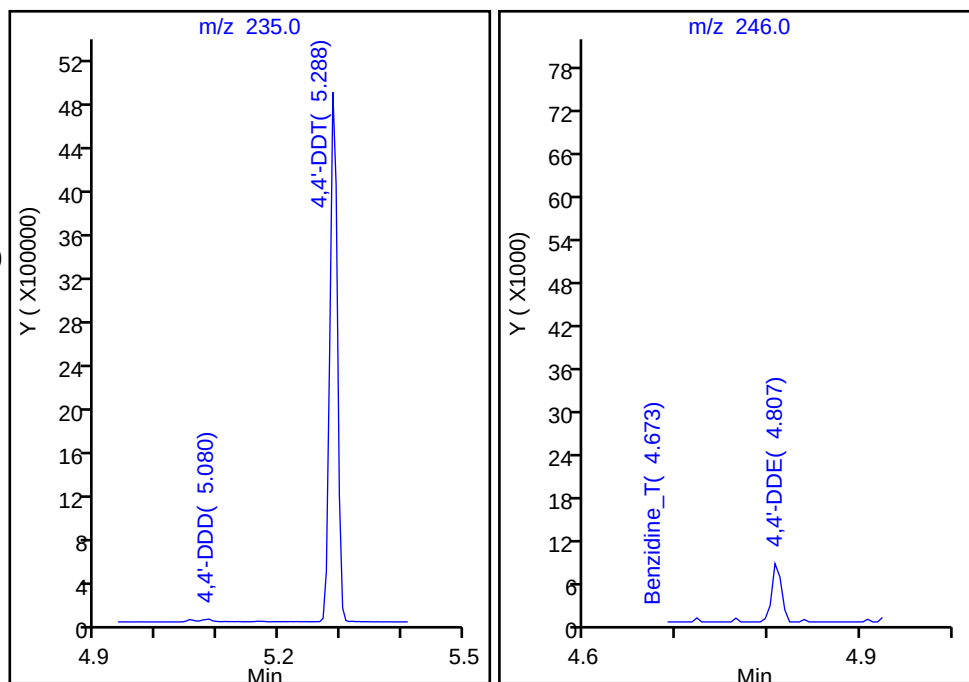
44 4,4'-DDT, Area = 4246706

42 4,4'-DDE, Area = 6112

43 4,4'-DDD, Area = 18194

%Breakdown: 0.57%, <= 20.00%

Passed



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\X4_8701.D

Injection Date: 16-May-2019 15:58:30

Instrument ID: SMS_X4

Lims ID: DFTPP

Client ID:

Operator ID: WICKHAMM

ALS Bottle#: 1 Worklist Smp#: 2

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM

39 Pentachlorophenol_T, Detector: MS SCAN

Peak Tailing Factor =

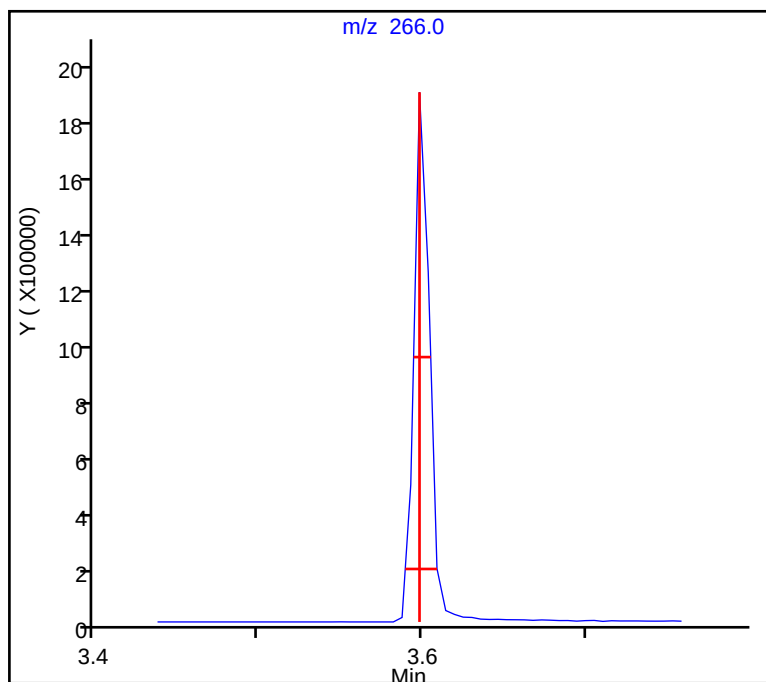
BackWidth/FrontWidth @ 10% Peak Height

Back Width = 0.011 (min.)

Front Width = 0.009 (min.)

Tailing Factor = 1.2, Max. Tailing < 3.00

Passed



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190516-81972.b\X4_8701.D
Injection Date: 16-May-2019 15:58:30 Instrument ID: SMS_X4
Lims ID: DFTPP
Client ID:
Operator ID: WICKHAMM
Injection Vol: 1.0 ul
Method: SMS_X4_SIMX_5.1

ALS Bottle#: 1 Worklist Smp#: 2
Dil. Factor: 1.0000
Limit Group: MSSV - 8270C-SIM

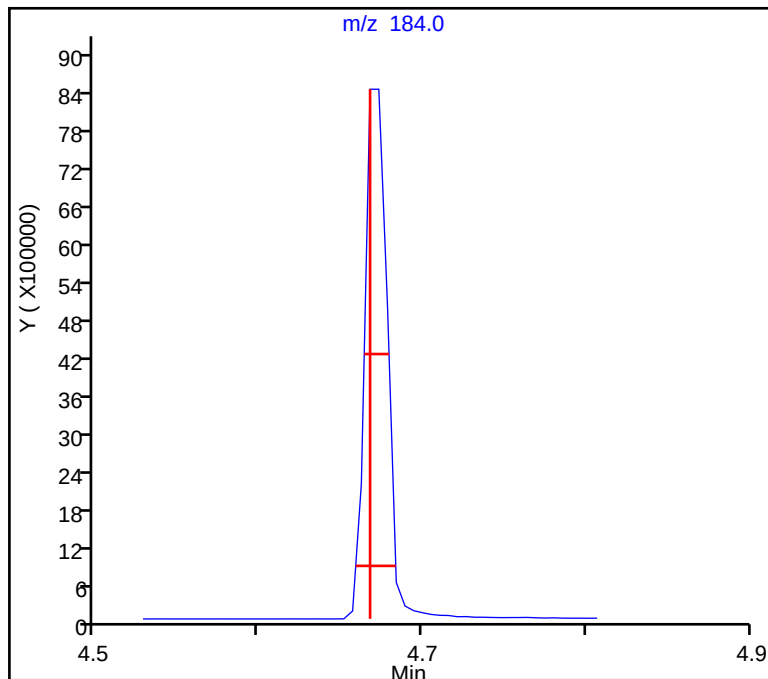
41 Benzidine_T, Detector: MS SCAN

Peak Tailing Factor =
BackWidth/FrontWidth @ 10% Peak Height

Back Width = 0.016 (min.)

Front Width = 0.009 (min.)

Tailing Factor = 1.8, Max. Tailing < 5.00
Passed



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 280-457182/1-A
 Matrix: Water Lab File ID: X4_8411.D
 Analysis Method: 8270D SIM Date Collected: _____
 Extract. Method: 3510C Date Extracted: 05/06/2019 12:22
 Sample wt/vol: 250 (mL) Date Analyzed: 05/10/2019 20:33
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 457763 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
90-12-0	1-Methylnaphthalene	0.040	U	0.10	0.040	0.018
91-57-6	2-Methylnaphthalene	0.050	U	0.10	0.050	0.021
83-32-9	Acenaphthene	0.040	U	0.10	0.040	0.0042
208-96-8	Acenaphthylene	0.040	U	0.10	0.040	0.0051
120-12-7	Anthracene	0.10	U	0.10	0.10	0.031
56-55-3	Benzo[a]anthracene	0.10	U	0.10	0.10	0.028
50-32-8	Benzo[a]pyrene	0.050	U	0.10	0.050	0.025
205-99-2	Benzo[b]fluoranthene	0.10	U	0.10	0.10	0.040
191-24-2	Benzo[g,h,i]perylene	0.10	U	0.10	0.10	0.037
207-08-9	Benzo[k]fluoranthene	0.050	U	0.10	0.050	0.023
218-01-9	Chrysene	0.10	U	0.10	0.10	0.033
53-70-3	Dibenz(a,h)anthracene	0.10	U	0.10	0.10	0.028
206-44-0	Fluoranthene	0.10	U	0.10	0.10	0.049
86-73-7	Fluorene	0.040	U	0.10	0.040	0.019
193-39-5	Indeno[1,2,3-cd]pyrene	0.10	U	0.10	0.10	0.039
91-20-3	Naphthalene	0.050	U	0.10	0.050	0.023
85-01-8	Phenanthrene	0.10	U	0.10	0.10	0.049
129-00-0	Pyrene	0.10	U	0.10	0.10	0.045

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	90		53-106
4165-60-0	Nitrobenzene-d5	80		55-111
1718-51-0	Terphenyl-d14	87		58-132

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\X4_8411.D
 Lims ID: MB 280-457182/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 10-May-2019 20:33:30 ALS Bottle#: 11 Worklist Smp#: 12
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: mb280-457182_1-a
 Operator ID: WICKHAMM Instrument ID: SMS_X4
 Method: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 11-May-2019 08:37:00 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0312

First Level Reviewer: wickhamm

Date: 11-May-2019 08:21:13

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164	7.418	7.418	0.000	88	42901	600.0	600.0	
* 2 Phenanthrene-d10	188	8.899	8.899	0.000	100	95294	600.0	600.0	
* 3 Chrysene-d12	240	12.800	12.800	0.000	1	71441	600.0	600.0	
* 49 Perylene-d12	264	16.631	16.630	0.001	0	51420	600.0	600.0	s
\$ 4 Nitrobenzene-d5	82	4.964	4.964	0.000	99	18804	500.0	401.5	
\$ 7 2-methylnaphthalene-d10	152	6.339	6.339	0.000	99	27886	500.0	364.7	
\$ 5 2-Fluorobiphenyl	172	6.737	6.737	0.000	99	53237	500.0	448.9	
\$ 8 Fluoranthene-d10	212	10.216	10.216	0.000	96	65725	500.0	387.9	
\$ 6 Terphenyl-d14	244	10.771	10.771	0.000	100	49716	500.0	434.4	
9 1,4-Dioxane	88		1.992					ND	
10 N-Nitrosodimethylamine	74		2.203					ND	U
11 Naphthalene	128		5.690					ND	
12 2-Methylnaphthalene	142		6.371					ND	
13 1-Methylnaphthalene	142		6.474					ND	
14 Dimethyl phthalate	163		7.124					ND	
15 Acenaphthylene	152		7.271					ND	
16 Acenaphthene	153		7.439					ND	
17 Dibenzofuran	168		7.617					ND	
18 Diethyl phthalate	149		7.935					ND	
20 Fluorene	166		7.959					ND	
19 N-Nitrosodiphenylamine	169		8.062					ND	
21 Phenanthrene	178		8.921					ND	
22 Anthracene	178		8.967					ND	
23 Di-n-butyl phthalate	149		9.455					ND	
24 Fluoranthene	202		10.238					ND	
25 Pyrene	202		10.556					ND	
26 Butyl benzyl phthalate	149		11.619					ND	
28 Benzo[a]anthracene	228		12.772					ND	
29 Chrysene	228		12.856					ND	
27 Bis(2-ethylhexyl) phthalat	149		12.939					ND	
30 Di-n-octyl phthalate	149	14.825	14.686	0.138	0	2203		89.7	
31 Benzo[b]fluoranthene	252		15.552					ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
32 Benzo[k]fluoranthene	252		15.627					ND	
33 Benzo[a]pyrene	252		16.461					ND	
34 Indeno[1,2,3-cd]pyrene	276		19.696					ND	
35 Dibenzo(a,h)anthracene	278		19.794					ND	
36 Benzo[g,h,i]perylene	276		20.423					ND	
39 Pentachlorophenol_T	266		3.598					ND	
38 N-Nitrosodiethylamine	102		3.603					ND	
41 Benzidine_T	184		4.668					ND	
42 4,4'-DDE	246		4.807					ND	
37 N-Nitrosodi-n-propylamine	70		4.919					ND	
43 4,4'-DDD	235		5.080					ND	
44 4,4'-DDT	235		5.288					ND	
S 45 TPAH	1		0.000					ND	

QC Flag Legend

Processing Flags

s - Failed ISTD Recovery Test

Review Flags

U - Marked Undetected

Reagents:

MS-SIM IS_00034

Amount Added: 20.00

Units: uL

Run Reagent

Report Date: 11-May-2019 08:37:18

Chrom Revision: 2.3 03-May-2019 15:52:00

Euofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\X4_8411.D

Injection Date: 10-May-2019 20:33:30

Instrument ID: SMS_X4

Operator ID: WICKHAMM

Lims ID: MB 280-457182/1-A

Worklist Smp#: 12

Client ID:

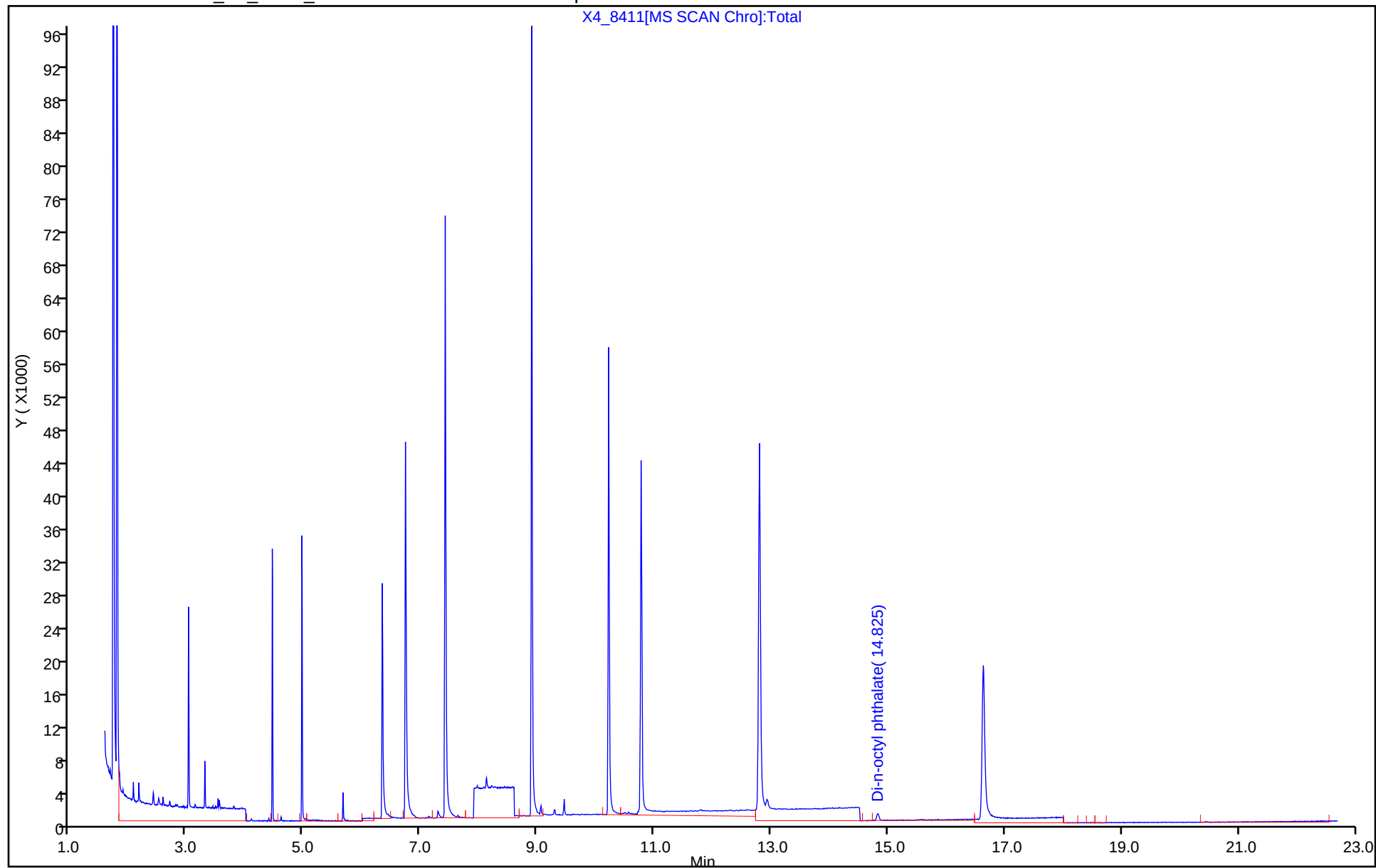
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 11

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\X4_8411.D
 Lims ID: MB 280-457182/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 10-May-2019 20:33:30 ALS Bottle#: 11 Worklist Smp#: 12
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: mb280-457182_1-a
 Operator ID: WICKHAMM Instrument ID: SMS_X4
 Method: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 11-May-2019 08:37:00 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0312

First Level Reviewer: wickhamm

Date: 11-May-2019 08:21:13

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Nitrobenzene-d5	500.0	401.5	80.29
\$ 7 2-methylnaphthalene-d10	500.0	364.7	72.95
\$ 5 2-Fluorobiphenyl	500.0	448.9	89.77
\$ 8 Fluoranthene-d10	500.0	387.9	77.59
\$ 6 Terphenyl-d14	500.0	434.4	86.88

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 280-457236/1-A
 Matrix: Water Lab File ID: X4_8460.D
 Analysis Method: 8270D SIM Date Collected: _____
 Extract. Method: 3510C Date Extracted: 05/07/2019 06:23
 Sample wt/vol: 250 (mL) Date Analyzed: 05/13/2019 21:50
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 458021 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
90-12-0	1-Methylnaphthalene	0.040	U	0.10	0.040	0.018
91-57-6	2-Methylnaphthalene	0.050	U	0.10	0.050	0.021
83-32-9	Acenaphthene	0.040	U	0.10	0.040	0.0042
208-96-8	Acenaphthylene	0.040	U	0.10	0.040	0.0051
120-12-7	Anthracene	0.10	U	0.10	0.10	0.031
56-55-3	Benzo[a]anthracene	0.10	U	0.10	0.10	0.028
50-32-8	Benzo[a]pyrene	0.050	U	0.10	0.050	0.025
205-99-2	Benzo[b]fluoranthene	0.10	U	0.10	0.10	0.040
191-24-2	Benzo[g,h,i]perylene	0.10	U	0.10	0.10	0.037
207-08-9	Benzo[k]fluoranthene	0.050	U	0.10	0.050	0.023
218-01-9	Chrysene	0.10	U	0.10	0.10	0.033
53-70-3	Dibenz(a,h)anthracene	0.10	U	0.10	0.10	0.028
206-44-0	Fluoranthene	0.10	U	0.10	0.10	0.049
86-73-7	Fluorene	0.040	U	0.10	0.040	0.019
193-39-5	Indeno[1,2,3-cd]pyrene	0.10	U	0.10	0.10	0.039
91-20-3	Naphthalene	0.050	U	0.10	0.050	0.023
85-01-8	Phenanthrene	0.10	U	0.10	0.10	0.049
129-00-0	Pyrene	0.10	U	0.10	0.10	0.045

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	81		53-106
4165-60-0	Nitrobenzene-d5	81		55-111
1718-51-0	Terphenyl-d14	87		58-132

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\X4_8460.D
 Lims ID: MB 280-457236/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 13-May-2019 21:50:30 ALS Bottle#: 8 Worklist Smp#: 9
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: mb280-457236_1-a
 Operator ID: WICKHAMM Instrument ID: SMS_X4
 Method: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 14-May-2019 23:07:26 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: wickhamm

Date: 14-May-2019 23:02:31

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164	7.408	7.408	0.000	87	49115	600.0	600.0	
* 2 Phenanthrene-d10	188	8.888	8.899	-0.011	99	104653	600.0	600.0	
* 3 Chrysene-d12	240	12.786	12.786	0.000	1	100418	600.0	600.0	
* 49 Perylene-d12	264	16.618	16.624	-0.006	0	97351	600.0	600.0	
\$ 4 Nitrobenzene-d5	82	4.960	4.964	-0.004	100	21823	500.0	407.0	
\$ 7 2-methylnaphthalene-d10	152	6.340	6.339	0.001	94	30142	500.0	344.4	
\$ 5 2-Fluorobiphenyl	172	6.729	6.729	0.000	99	55309	500.0	407.3	
\$ 8 Fluoranthene-d10	212	10.216	10.216	0.000	96	75133	500.0	403.8	
\$ 6 Terphenyl-d14	244	10.771	10.771	0.000	99	54987	500.0	437.5	
9 1,4-Dioxane	88		1.976					ND	
10 N-Nitrosodimethylamine	74		2.187					ND	U
11 Naphthalene	128		5.690					ND	
12 2-Methylnaphthalene	142		6.371					ND	
13 1-Methylnaphthalene	142		6.467					ND	
14 Dimethyl phthalate	163		7.114					ND	
15 Acenaphthylene	152		7.261					ND	
16 Acenaphthene	153		7.439					ND	
17 Dibenzofuran	168		7.618					ND	
18 Diethyl phthalate	149		7.935					ND	
20 Fluorene	166		7.951					ND	
19 N-Nitrosodiphenylamine	169		8.063					ND	
21 Phenanthrene	178		8.922					ND	
22 Anthracene	178		8.967					ND	
23 Di-n-butyl phthalate	149		9.455					ND	
24 Fluoranthene	202		10.239					ND	
25 Pyrene	202		10.557					ND	
26 Butyl benzyl phthalate	149		11.619					ND	
28 Benzo[a]anthracene	228		12.772					ND	
29 Chrysene	228		12.856					ND	
27 Bis(2-ethylhexyl) phthalat	149		12.939					ND	
30 Di-n-octyl phthalate	149		14.687					ND	U
31 Benzo[b]fluoranthene	252		15.552					ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
32 Benzo[k]fluoranthene	252		15.627					ND	
33 Benzo[a]pyrene	252		16.455					ND	
34 Indeno[1,2,3-cd]pyrene	276		19.691					ND	
35 Dibenzo[a,h]anthracene	278		19.789					ND	
36 Benzo[g,h,i]perylene	276		20.418					ND	
39 Pentachlorophenol_T	266		3.598					ND	
38 N-Nitrosodiethylamine	102		3.603					ND	
41 Benzidine_T	184		4.668					ND	
42 4,4'-DDE	246		4.807					ND	
37 N-Nitrosodi-n-propylamine	70		4.919					ND	
43 4,4'-DDD	235		5.080					ND	
44 4,4'-DDT	235		5.288					ND	
S 45 TPAH	1		0.000					ND	

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MS-SIM IS_00034

Amount Added: 20.00

Units: uL

Run Reagent

Report Date: 14-May-2019 23:07:33

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\X4_8460.D

Injection Date: 13-May-2019 21:50:30

Instrument ID: SMS_X4

Operator ID: WICKHAMM

Lims ID: MB 280-457236/1-A

Worklist Smp#: 9

Client ID:

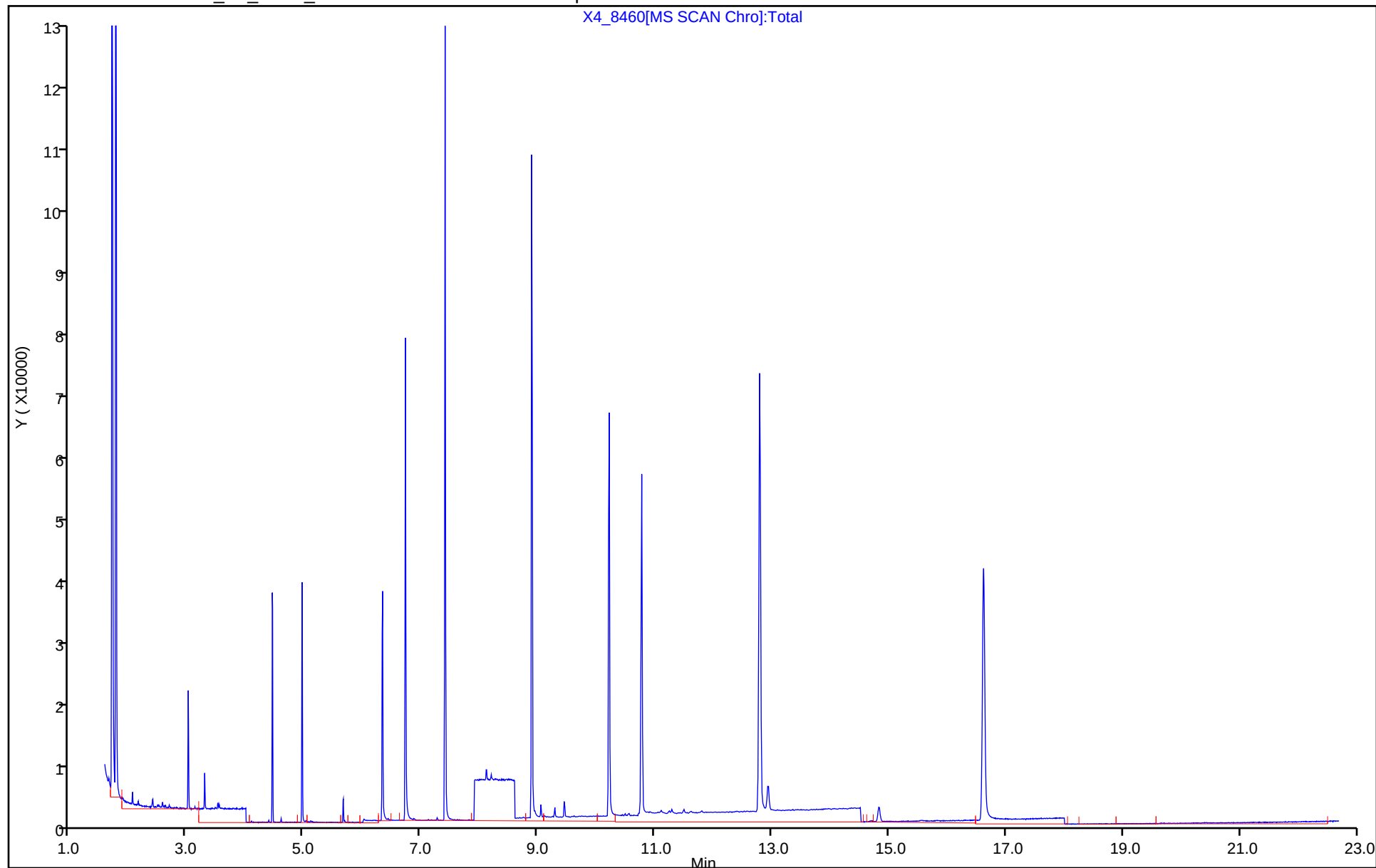
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 8

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\X4_8460.D
 Lims ID: MB 280-457236/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 13-May-2019 21:50:30 ALS Bottle#: 8 Worklist Smp#: 9
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: mb280-457236_1-a
 Operator ID: WICKHAMM Instrument ID: SMS_X4
 Method: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 14-May-2019 23:07:26 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: wickhamm

Date: 14-May-2019 23:02:31

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Nitrobenzene-d5	500.0	407.0	81.39
\$ 7 2-methylnaphthalene-d10	500.0	344.4	68.87
\$ 5 2-Fluorobiphenyl	500.0	407.3	81.47
\$ 8 Fluoranthene-d10	500.0	403.8	80.76
\$ 6 Terphenyl-d14	500.0	437.5	87.50

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCS 280-457182/2-A
 Matrix: Water Lab File ID: X4_8412.D
 Analysis Method: 8270D SIM Date Collected: _____
 Extract. Method: 3510C Date Extracted: 05/06/2019 12:22
 Sample wt/vol: 250 (mL) Date Analyzed: 05/10/2019 21:03
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 457763 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
90-12-0	1-Methylnaphthalene	0.827		0.10	0.040	0.018
91-57-6	2-Methylnaphthalene	0.805		0.10	0.050	0.021
83-32-9	Acenaphthene	0.874		0.10	0.040	0.0042
208-96-8	Acenaphthylene	0.739		0.10	0.040	0.0051
120-12-7	Anthracene	0.869		0.10	0.10	0.031
56-55-3	Benzo[a]anthracene	0.673		0.10	0.10	0.028
50-32-8	Benzo[a]pyrene	0.622		0.10	0.050	0.025
205-99-2	Benzo[b]fluoranthene	0.674		0.10	0.10	0.040
191-24-2	Benzo[g,h,i]perylene	0.708		0.10	0.10	0.037
207-08-9	Benzo[k]fluoranthene	0.786		0.10	0.050	0.023
218-01-9	Chrysene	1.01		0.10	0.10	0.033
53-70-3	Dibenz(a,h)anthracene	0.635		0.10	0.10	0.028
206-44-0	Fluoranthene	0.845		0.10	0.10	0.049
86-73-7	Fluorene	0.878		0.10	0.040	0.019
193-39-5	Indeno[1,2,3-cd]pyrene	0.575		0.10	0.10	0.039
91-20-3	Naphthalene	0.827		0.10	0.050	0.023
85-01-8	Phenanthrene	0.840		0.10	0.10	0.049
129-00-0	Pyrene	0.819		0.10	0.10	0.045

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	87		53-106
4165-60-0	Nitrobenzene-d5	80		55-111
1718-51-0	Terphenyl-d14	93		58-132

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\X4_8412.D

Lims ID: LCS 280-457182/2-A

Client ID:

Sample Type: LCS

Inject. Date: 10-May-2019 21:03:30

ALS Bottle#: 12

Worklist Smp#: 13

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Sample Info: lcs280-457182_2-a

Operator ID: WICKHAMM

Instrument ID: SMS_X4

Method: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\SMS_X4_SIMX_5.1.m

Limit Group: MSSV - 8270C-SIM

Last Update: 11-May-2019 08:37:00

Calib Date: 22-Mar-2019 00:16:30

Integrator: RTE

ID Type: RT Order ID

Quant Method: Internal Standard

Quant By: Initial Calibration

Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D

Column 1 :

Det: MS SCAN

Process Host: CTX0312

First Level Reviewer: wickhamm

Date: 11-May-2019 08:21:32

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164	7.418	7.418	0.000	82	43744	600.0	600.0	
* 2 Phenanthrene-d10	188	8.899	8.899	0.000	100	100858	600.0	600.0	
* 3 Chrysene-d12	240	12.800	12.800	0.000	1	81152	600.0	600.0	
* 49 Perylene-d12	264	16.631	16.630	0.001	0	58734	600.0	600.0	
\$ 4 Nitrobenzene-d5	82	4.964	4.964	0.000	99	19097	500.0	399.9	
\$ 7 2-methylnaphthalene-d10	152	6.339	6.339	0.000	98	28076	500.0	360.2	
\$ 5 2-Fluorobiphenyl	172	6.737	6.737	0.000	98	52586	500.0	434.8	
\$ 8 Fluoranthene-d10	212	10.216	10.216	0.000	96	70853	500.0	395.1	
\$ 6 Terphenyl-d14	244	10.771	10.771	0.000	100	56159	500.0	463.6	
9 1,4-Dioxane	88	1.998	1.992	0.006	93	2997	225.0	143.8	
10 N-Nitrosodimethylamine	74	2.203	2.203	0.000	78	4403	225.0	136.9	
11 Naphthalene	128	5.690	5.690	0.000	100	32721	225.0	206.7	
12 2-Methylnaphthalene	142	6.371	6.371	0.000	93	20979	225.0	201.2	
13 1-Methylnaphthalene	142	6.474	6.474	0.000	88	19474	225.0	206.8	
14 Dimethyl phthalate	163	7.124	7.124	0.000	100	27012	225.0	227.6	
15 Acenaphthylene	152	7.271	7.271	0.000	99	29601	225.0	184.9	
16 Acenaphthene	153	7.439	7.439	0.000	96	22145	225.0	218.6	
17 Dibenzofuran	168	7.628	7.617	0.011	61	34014	225.0	226.5	
18 Diethyl phthalate	149		7.935				ND	ND	
20 Fluorene	166	7.959	7.959	0.000	97	25915	225.0	219.6	
19 N-Nitrosodiphenylamine	169	8.070	8.062	0.008	98	17983	225.0	189.1	
21 Phenanthrene	178	8.922	8.921	0.001	98	45061	225.0	209.9	
22 Anthracene	178	8.967	8.967	0.000	100	41816	225.0	217.3	
23 Di-n-butyl phthalate	149	9.455	9.455	0.000	100	34336	225.0	165.7	
24 Fluoranthene	202	10.239	10.238	0.001	76	48802	225.0	211.2	
25 Pyrene	202	10.556	10.556	0.000	73	48108	225.0	204.9	
26 Butyl benzyl phthalate	149	11.619	11.619	0.000	93	7820	225.0	108.6	
28 Benzo[a]anthracene	228	12.772	12.772	0.000	92	30762	225.0	168.3	
29 Chrysene	228	12.856	12.856	0.000	100	47390	225.0	251.4	
27 Bis(2-ethylhexyl) phthalat	149		12.939				ND	ND	
30 Di-n-octyl phthalate	149	14.680	14.686	-0.006	0	7936	225.0	139.9	
31 Benzo[b]fluoranthene	252	15.552	15.552	0.000	100	29626	225.0	168.5	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
32 Benzo[k]fluoranthene	252	15.627	15.627	0.000	99	35567	225.0	196.5	
33 Benzo[a]pyrene	252	16.461	16.461	0.000	99	24331	225.0	155.6	
34 Indeno[1,2,3-cd]pyrene	276	19.702	19.696	0.006	97	20401	225.0	143.9	
35 Dibenzo[a,h]anthracene	278	19.794	19.794	0.000	95	21839	225.0	158.8	
36 Benzo[g,h,i]perylene	276	20.429	20.423	0.006	97	30354	225.0	176.9	
37 N-Nitrosodi-n-propylamine	70		4.919				ND	ND	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Reagents:

MS-SIM IS_00034

Amount Added: 20.00

Units: uL

Run Reagent

Report Date: 11-May-2019 08:37:20

Chrom Revision: 2.3 03-May-2019 15:52:00

Euofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\X4_8412.D

Injection Date: 10-May-2019 21:03:30

Instrument ID: SMS_X4

Operator ID: WICKHAMM

Lims ID: LCS 280-457182/2-A

Worklist Smp#: 13

Client ID:

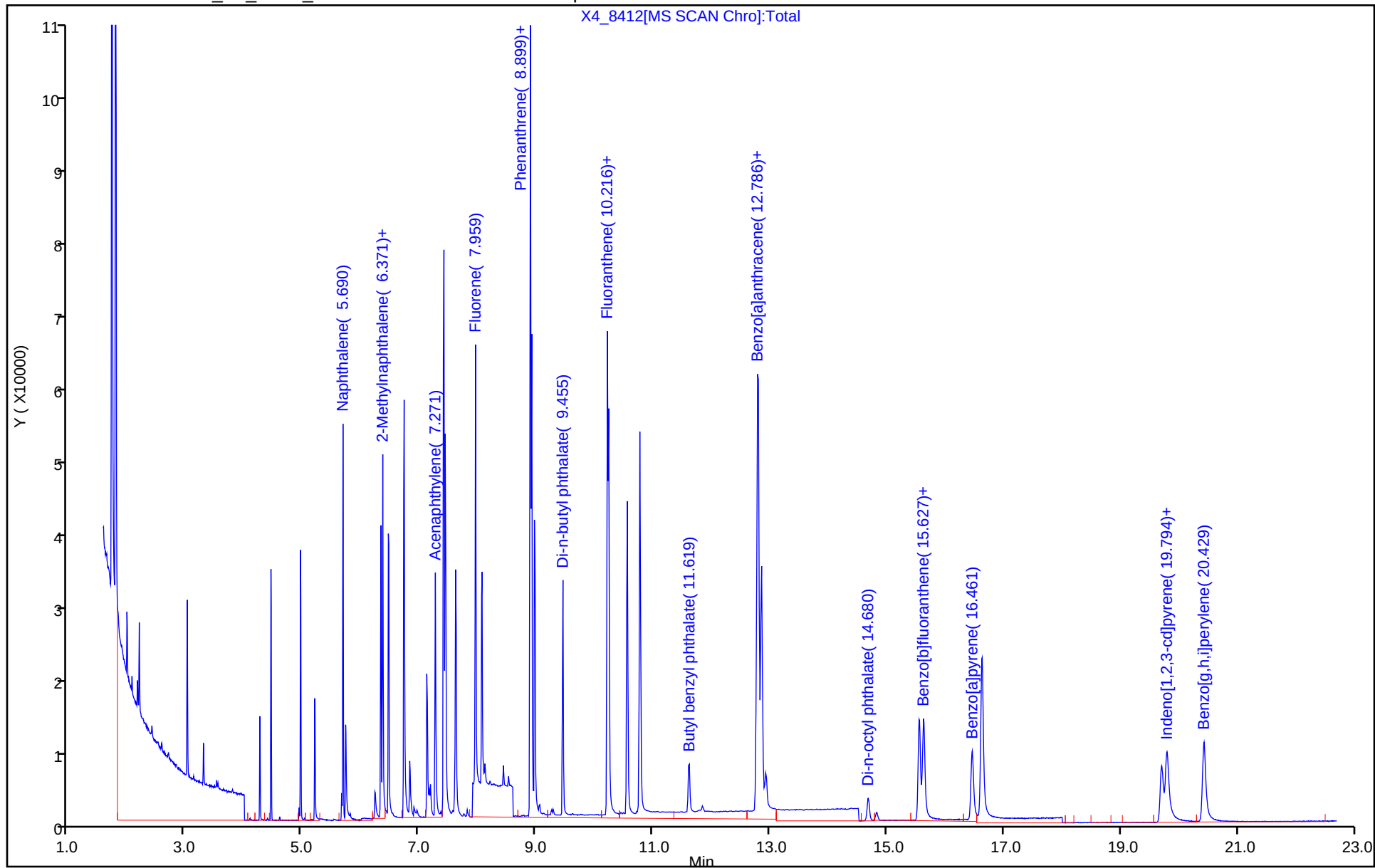
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 12

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\X4_8412.D
 Lims ID: LCS 280-457182/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 10-May-2019 21:03:30 ALS Bottle#: 12 Worklist Smp#: 13
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: lcs280-457182_2-a
 Operator ID: WICKHAMM Instrument ID: SMS_X4
 Method: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 11-May-2019 08:37:00 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0312

First Level Reviewer: wickhamm

Date: 11-May-2019 08:21:32

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Nitrobenzene-d5	500.0	399.9	79.97
\$ 7 2-methylnaphthalene-d10	500.0	360.2	72.03
\$ 5 2-Fluorobiphenyl	500.0	434.8	86.97
\$ 8 Fluoranthene-d10	500.0	395.1	79.03
\$ 6 Terphenyl-d14	500.0	463.6	92.73

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCS 280-457236/2-A
 Matrix: Water Lab File ID: X4_8461.D
 Analysis Method: 8270D SIM Date Collected: _____
 Extract. Method: 3510C Date Extracted: 05/07/2019 06:23
 Sample wt/vol: 250 (mL) Date Analyzed: 05/13/2019 22:20
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 458021 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
90-12-0	1-Methylnaphthalene	0.777		0.10	0.040	0.018
91-57-6	2-Methylnaphthalene	0.746		0.10	0.050	0.021
83-32-9	Acenaphthene	0.787		0.10	0.040	0.0042
208-96-8	Acenaphthylene	0.703		0.10	0.040	0.0051
120-12-7	Anthracene	0.810		0.10	0.10	0.031
56-55-3	Benzo[a]anthracene	0.707		0.10	0.10	0.028
50-32-8	Benzo[a]pyrene	0.772		0.10	0.050	0.025
205-99-2	Benzo[b]fluoranthene	0.782		0.10	0.10	0.040
191-24-2	Benzo[g,h,i]perylene	0.814		0.10	0.10	0.037
207-08-9	Benzo[k]fluoranthene	0.748		0.10	0.050	0.023
218-01-9	Chrysene	0.849		0.10	0.10	0.033
53-70-3	Dibenz(a,h)anthracene	0.726		0.10	0.10	0.028
206-44-0	Fluoranthene	0.822		0.10	0.10	0.049
86-73-7	Fluorene	0.771		0.10	0.040	0.019
193-39-5	Indeno[1,2,3-cd]pyrene	0.795		0.10	0.10	0.039
91-20-3	Naphthalene	0.764		0.10	0.050	0.023
85-01-8	Phenanthrene	0.780		0.10	0.10	0.049
129-00-0	Pyrene	0.820		0.10	0.10	0.045

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	77		53-106
4165-60-0	Nitrobenzene-d5	76		55-111
1718-51-0	Terphenyl-d14	84		58-132

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\X4_8461.D

Lims ID: LCS 280-457236/2-A

Client ID:

Sample Type: LCS

Inject. Date: 13-May-2019 22:20:30

ALS Bottle#: 9

Worklist Smp#: 10

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Sample Info: lcs280-457236_2-a

Operator ID: WICKHAMM

Instrument ID: SMS_X4

Method: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\SMS_X4_SIMX_5.1.m

Limit Group: MSSV - 8270C-SIM

Last Update: 14-May-2019 23:07:26

Calib Date: 22-Mar-2019 00:16:30

Integrator: RTE

ID Type: RT Order ID

Quant Method: Internal Standard

Quant By: Initial Calibration

Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D

Column 1:

Det: MS SCAN

Process Host: CTX0321

First Level Reviewer: wickhamm

Date: 14-May-2019 23:02:53

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164	7.408	7.408	0.000	86	49256	600.0	600.0	
* 2 Phenanthrene-d10	188	8.888	8.899	-0.011	100	109483	600.0	600.0	
* 3 Chrysene-d12	240	12.786	12.786	0.000	1	102373	600.0	600.0	
* 49 Perylene-d12	264	16.618	16.624	-0.006	0	92065	600.0	600.0	
\$ 4 Nitrobenzene-d5	82	4.960	4.964	-0.004	100	20454	500.0	380.3	
\$ 7 2-methylnaphthalene-d10	152	6.340	6.339	0.001	93	28067	500.0	319.7	
\$ 5 2-Fluorobiphenyl	172	6.729	6.729	0.000	99	52330	500.0	384.3	
\$ 8 Fluoranthene-d10	212	10.205	10.216	-0.011	96	73441	500.0	377.3	
\$ 6 Terphenyl-d14	244	10.771	10.771	0.000	98	55155	500.0	419.5	
9 1,4-Dioxane	88	1.977	1.976	0.000	87	2423	225.0	103.3	
10 N-Nitrosodimethylamine	74	2.187	2.187	0.000	95	4086	225.0	112.9	
11 Naphthalene	128	5.690	5.690	0.000	100	34075	225.0	191.1	
12 2-Methylnaphthalene	142	6.371	6.371	0.000	99	21898	225.0	186.5	
13 1-Methylnaphthalene	142	6.467	6.467	0.000	95	20596	225.0	194.2	
14 Dimethyl phthalate	163	7.114	7.114	0.000	100	29282	225.0	219.1	
15 Acenaphthylene	152	7.261	7.261	0.000	99	31666	225.0	175.6	
16 Acenaphthene	153	7.439	7.439	0.000	96	22438	225.0	196.7	
17 Dibenzofuran	168	7.618	7.618	0.000	60	33647	225.0	199.0	
18 Diethyl phthalate	149		7.935				ND	ND	
20 Fluorene	166	7.951	7.951	0.000	98	25619	225.0	192.8	
19 N-Nitrosodiphenylamine	169	8.063	8.063	0.000	96	19148	225.0	185.5	
21 Phenanthrene	178	8.910	8.922	-0.012	99	45442	225.0	195.0	
22 Anthracene	178	8.967	8.967	0.000	99	42314	225.0	202.6	
23 Di-n-butyl phthalate	149	9.444	9.455	-0.011	100	44459	225.0	197.7	
24 Fluoranthene	202	10.227	10.239	-0.012	77	51536	225.0	205.5	
25 Pyrene	202	10.545	10.557	-0.012	72	52261	225.0	205.0	
26 Butyl benzyl phthalate	149	11.605	11.619	-0.014	98	12915	225.0	165.2	
28 Benzo[a]anthracene	228	12.759	12.772	-0.013	97	40753	225.0	176.8	
29 Chrysene	228	12.842	12.856	-0.014	99	50484	225.0	212.3	
27 Bis(2-ethylhexyl) phthalat	149		12.939				ND	ND	
30 Di-n-octyl phthalate	149	14.687	14.687	0.000	0	10446	225.0	143.1	
31 Benzo[b]fluoranthene	252	15.546	15.552	-0.006	100	43346	225.0	195.4	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
32 Benzo[k]fluoranthene	252	15.621	15.627	-0.006	99	42715	225.0	187.0	
33 Benzo[a]pyrene	252	16.449	16.455	-0.006	99	38067	225.0	192.9	
34 Indeno[1,2,3-cd]pyrene	276	19.680	19.691	-0.011	98	35560	225.0	198.8	
35 Dibenzo[a,h]anthracene	278	19.773	19.789	-0.016	95	31502	225.0	181.6	
36 Benzo[g,h,i]perylene	276	20.407	20.418	-0.011	98	44048	225.0	203.5	
37 N-Nitrosodi-n-propylamine	70		4.919				ND	ND	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Reagents:

MS-SIM IS_00034

Amount Added: 20.00

Units: uL

Run Reagent

Report Date: 14-May-2019 23:07:34

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\X4_8461.D

Injection Date: 13-May-2019 22:20:30

Instrument ID: SMS_X4

Operator ID: WICKHAMM

Lims ID: LCS 280-457236/2-A

Worklist Smp#: 10

Client ID:

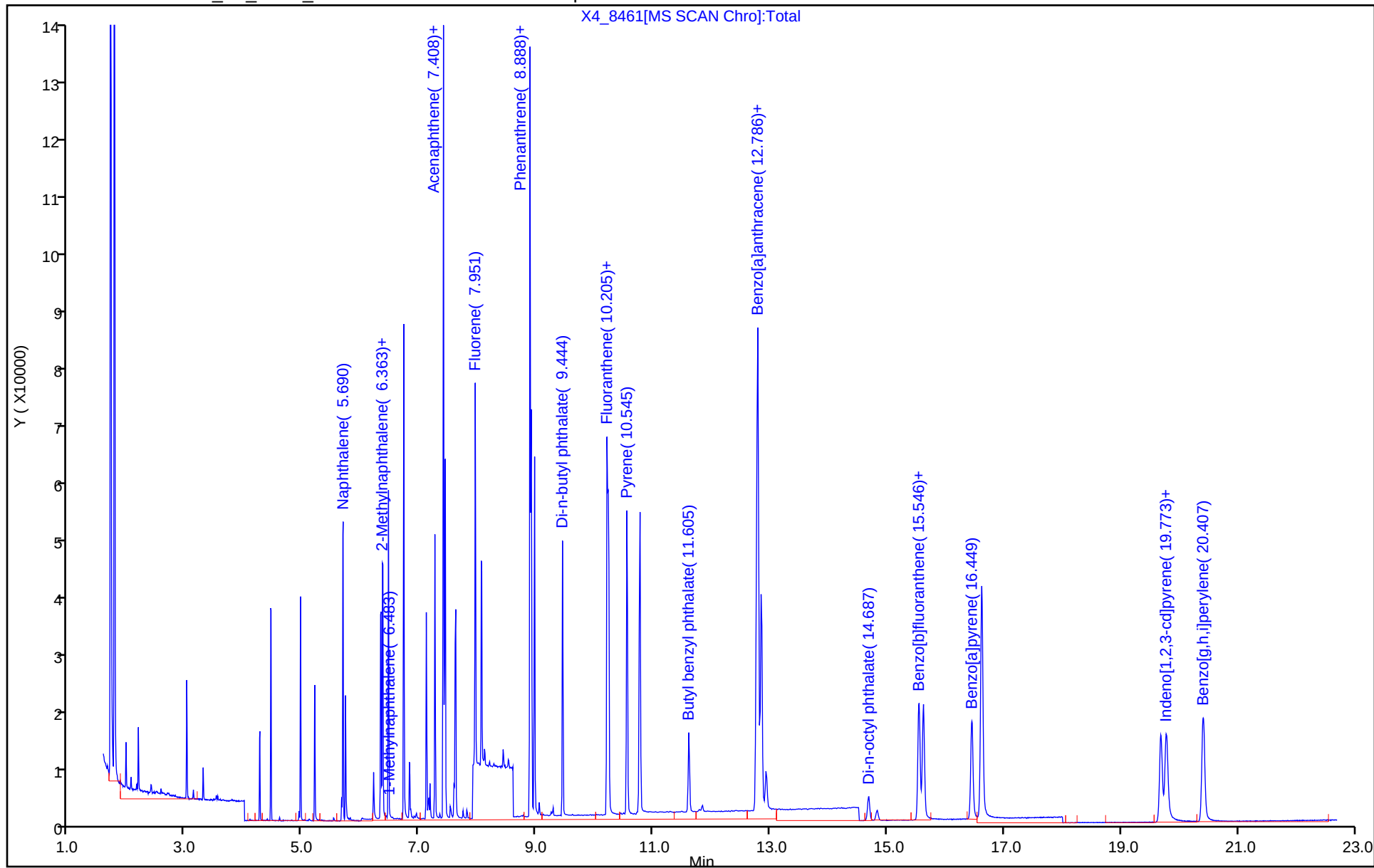
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 9

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\X4_8461.D
Lims ID: LCS 280-457236/2-A
Client ID:
Sample Type: LCS
Inject. Date: 13-May-2019 22:20:30 ALS Bottle#: 9 Worklist Smp#: 10
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: lcs280-457236_2-a
Operator ID: WICKHAMM Instrument ID: SMS_X4
Method: \\chromna\Denver\ChromData\SMS_X4\20190513-81837.b\SMS_X4_SIMX_5.1.m
Limit Group: MSSV - 8270C-SIM
Last Update: 14-May-2019 23:07:26 Calib Date: 22-Mar-2019 00:16:30
Integrator: RTE ID Type: RT Order ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
Column 1 : Det: MS SCAN
Process Host: CTX0321

First Level Reviewer: wickhamm

Date: 14-May-2019 23:02:53

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Nitrobenzene-d5	500.0	380.3	76.07
\$ 7 2-methylnaphthalene-d10	500.0	319.7	63.95
\$ 5 2-Fluorobiphenyl	500.0	384.3	76.86
\$ 8 Fluoranthene-d10	500.0	377.3	75.46
\$ 6 Terphenyl-d14	500.0	419.5	83.90

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCSD 280-457182/3-A
 Matrix: Water Lab File ID: X4_8413.D
 Analysis Method: 8270D SIM Date Collected: _____
 Extract. Method: 3510C Date Extracted: 05/06/2019 12:22
 Sample wt/vol: 250 (mL) Date Analyzed: 05/10/2019 21:33
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 457763 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
90-12-0	1-Methylnaphthalene	0.815		0.10	0.040	0.018
91-57-6	2-Methylnaphthalene	0.748		0.10	0.050	0.021
83-32-9	Acenaphthene	0.794		0.10	0.040	0.0042
208-96-8	Acenaphthylene	0.678		0.10	0.040	0.0051
120-12-7	Anthracene	0.821		0.10	0.10	0.031
56-55-3	Benzo[a]anthracene	0.659		0.10	0.10	0.028
50-32-8	Benzo[a]pyrene	0.588		0.10	0.050	0.025
205-99-2	Benzo[b]fluoranthene	0.646		0.10	0.10	0.040
191-24-2	Benzo[g,h,i]perylene	0.700		0.10	0.10	0.037
207-08-9	Benzo[k]fluoranthene	0.747		0.10	0.050	0.023
218-01-9	Chrysene	0.965		0.10	0.10	0.033
53-70-3	Dibenz(a,h)anthracene	0.581		0.10	0.10	0.028
206-44-0	Fluoranthene	0.818		0.10	0.10	0.049
86-73-7	Fluorene	0.813		0.10	0.040	0.019
193-39-5	Indeno[1,2,3-cd]pyrene	0.559		0.10	0.10	0.039
91-20-3	Naphthalene	0.773		0.10	0.050	0.023
85-01-8	Phenanthrene	0.798		0.10	0.10	0.049
129-00-0	Pyrene	0.812		0.10	0.10	0.045

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	81		53-106
4165-60-0	Nitrobenzene-d5	78		55-111
1718-51-0	Terphenyl-d14	88		58-132

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\X4_8413.D

Lims ID: LCSD 280-457182/3-A

Client ID:

Sample Type: LCSD

Inject. Date: 10-May-2019 21:33:30

ALS Bottle#: 13

Worklist Smp#: 14

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Sample Info: lcsd280-457182_3-a

Operator ID: WICKHAMM

Instrument ID: SMS_X4

Method: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\SMS_X4_SIMX_5.1.m

Limit Group: MSSV - 8270C-SIM

Last Update: 11-May-2019 08:37:00

Calib Date: 22-Mar-2019 00:16:30

Integrator: RTE

ID Type: RT Order ID

Quant Method: Internal Standard

Quant By: Initial Calibration

Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D

Column 1 :

Det: MS SCAN

Process Host: CTX0312

First Level Reviewer: wickhamm

Date: 11-May-2019 08:21:51

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
* 1 Acenaphthene-d10	164	7.418	7.418	0.000	81	44890	600.0	600.0	
* 2 Phenanthrene-d10	188	8.899	8.899	0.000	100	101224	600.0	600.0	
* 3 Chrysene-d12	240	12.800	12.800	0.000	1	80820	600.0	600.0	
* 49 Perylene-d12	264	16.624	16.630	-0.006	0	56904	600.0	600.0	
\$ 4 Nitrobenzene-d5	82	4.964	4.964	0.000	99	19193	500.0	391.6	
\$ 7 2-methylnaphthalene-d10	152	6.339	6.339	0.000	98	27550	500.0	344.4	
\$ 5 2-Fluorobiphenyl	172	6.737	6.737	0.000	98	50206	500.0	404.6	
\$ 8 Fluoranthene-d10	212	10.216	10.216	0.000	96	69575	500.0	386.6	
\$ 6 Terphenyl-d14	244	10.771	10.771	0.000	100	53265	500.0	438.2	
9 1,4-Dioxane	88	1.998	1.992	0.006	92	2940	225.0	137.5	
10 N-Nitrosodimethylamine	74	2.204	2.203	0.001	95	4466	225.0	135.4	
11 Naphthalene	128	5.690	5.690	0.000	100	31381	225.0	193.1	
12 2-Methylnaphthalene	142	6.371	6.371	0.000	93	20016	225.0	187.1	
13 1-Methylnaphthalene	142	6.475	6.474	0.001	88	19698	225.0	203.8	
14 Dimethyl phthalate	163	7.124	7.124	0.000	100	26434	225.0	217.0	
15 Acenaphthylene	152	7.271	7.271	0.000	99	27835	225.0	169.4	
16 Acenaphthene	153	7.439	7.439	0.000	95	20624	225.0	198.4	
17 Dibenzofuran	168	7.628	7.617	0.011	61	32606	225.0	211.6	
18 Diethyl phthalate	149		7.935				ND	ND	
20 Fluorene	166	7.959	7.959	0.000	97	24626	225.0	203.4	
19 N-Nitrosodiphenylamine	169	8.070	8.062	0.008	97	17688	225.0	185.3	
21 Phenanthrene	178	8.922	8.921	0.001	97	42990	225.0	199.6	
22 Anthracene	178	8.967	8.967	0.000	100	39620	225.0	205.1	
23 Di-n-butyl phthalate	149	9.455	9.455	0.000	100	34525	225.0	166.0	
24 Fluoranthene	202	10.239	10.238	0.001	76	47424	225.0	204.5	
25 Pyrene	202	10.557	10.556	0.000	73	47860	225.0	203.1	
26 Butyl benzyl phthalate	149	11.619	11.619	0.000	94	7768	225.0	107.5	
28 Benzo[a]anthracene	228	12.772	12.772	0.000	88	29984	225.0	164.7	
29 Chrysene	228	12.856	12.856	0.000	99	45297	225.0	241.3	
27 Bis(2-ethylhexyl) phthalat	149		12.939				ND	ND	
30 Di-n-octyl phthalate	149	14.680	14.686	-0.006	0	7337	225.0	134.7	
31 Benzo[b]fluoranthene	252	15.552	15.552	0.000	100	28270	225.0	161.4	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
32 Benzo[k]fluoranthene	252	15.627	15.627	0.000	100	33652	225.0	186.7	
33 Benzo[a]pyrene	252	16.461	16.461	0.000	99	22880	225.0	146.9	
34 Indeno[1,2,3-cd]pyrene	276	19.702	19.696	0.006	97	19745	225.0	139.8	
35 Dibenzo[a,h]anthracene	278	19.800	19.794	0.006	95	19900	225.0	145.3	
36 Benzo[g,h,i]perylene	276	20.423	20.423	0.000	97	29900	225.0	175.0	
37 N-Nitrosodi-n-propylamine	70		4.919				ND	ND	

QC Flag Legend

Processing Flags

ND - Not Detected or Marked ND

Reagents:

MS-SIM IS_00034

Amount Added: 20.00

Units: uL

Run Reagent

Report Date: 11-May-2019 08:37:23

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\X4_8413.D

Injection Date: 10-May-2019 21:33:30

Instrument ID: SMS_X4

Operator ID: WICKHAMM

Lims ID: LCSD 280-457182/3-A

Worklist Smp#: 14

Client ID:

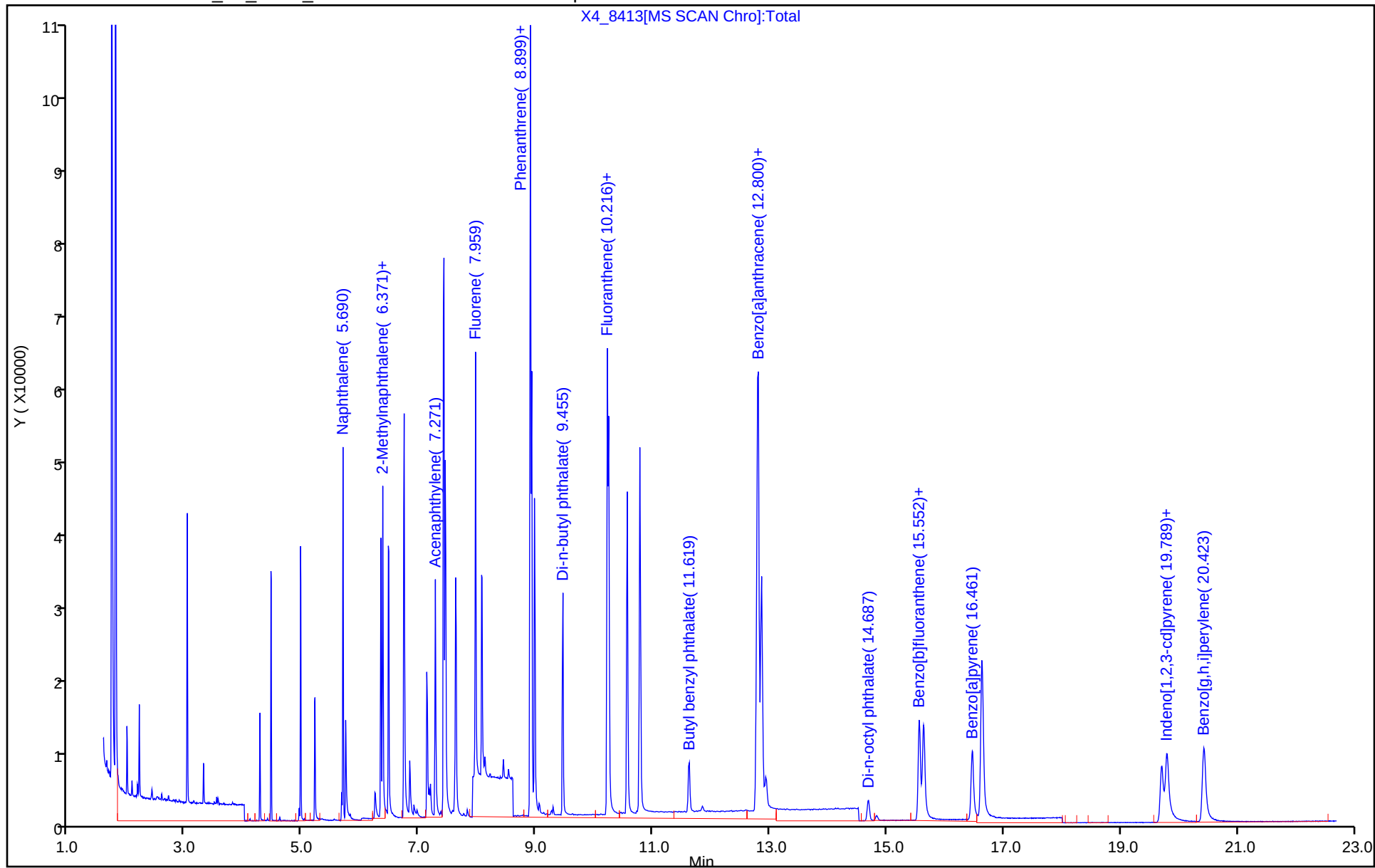
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 13

Method: SMS_X4_SIMX_5.1

Limit Group: MSSV - 8270C-SIM



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\X4_8413.D
 Lims ID: LCSD 280-457182/3-A
 Client ID:
 Sample Type: LCSD
 Inject. Date: 10-May-2019 21:33:30 ALS Bottle#: 13 Worklist Smp#: 14
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: lcsd280-457182_3-a
 Operator ID: WICKHAMM Instrument ID: SMS_X4
 Method: \\chromna\Denver\ChromData\SMS_X4\20190510-81772.b\SMS_X4_SIMX_5.1.m
 Limit Group: MSSV - 8270C-SIM
 Last Update: 11-May-2019 08:37:00 Calib Date: 22-Mar-2019 00:16:30
 Integrator: RTE ID Type: RT Order ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SMS_X4\20190321-80092.b\X4_7429.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0312

First Level Reviewer: wickhamm

Date: 11-May-2019 08:21:51

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Nitrobenzene-d5	500.0	391.6	78.32
\$ 7 2-methylnaphthalene-d10	500.0	344.4	68.88
\$ 5 2-Fluorobiphenyl	500.0	404.6	80.91
\$ 8 Fluoranthene-d10	500.0	386.6	77.32
\$ 6 Terphenyl-d14	500.0	438.2	87.63

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, DenverJob No.: 280-123221-1

SDG No.: _____

Instrument ID: SMS_X4Start Date: 03/21/2019 20:02Analysis Batch Number: 451426End Date: 03/22/2019 06:59

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 280-451426/2		03/21/2019 20:02	1	X4_7420.D	Rxi-5Sil MS 0.25 (mm)
STD0001 280-451426/3 IC		03/21/2019 20:15	1	X4_7421.D	Rxi-5Sil MS 0.25 (mm)
STD0002 280-451426/4 IC		03/21/2019 20:45	1	X4_7422.D	Rxi-5Sil MS 0.25 (mm)
STD0050 280-451426/5 IC		03/21/2019 21:15	1	X4_7423.D	Rxi-5Sil MS 0.25 (mm)
STD0100 280-451426/6 IC		03/21/2019 21:45	1	X4_7424.D	Rxi-5Sil MS 0.25 (mm)
STD0300 280-451426/7 IC		03/21/2019 22:15	1	X4_7425.D	Rxi-5Sil MS 0.25 (mm)
ICIS 280-451426/8		03/21/2019 22:45	1	X4_7426.D	Rxi-5Sil MS 0.25 (mm)
STD1200 280-451426/9 IC		03/21/2019 23:15	1	X4_7427.D	Rxi-5Sil MS 0.25 (mm)
STD2500 280-451426/10 IC		03/21/2019 23:45	1	X4_7428.D	Rxi-5Sil MS 0.25 (mm)
STD5000 280-451426/11 IC		03/22/2019 00:16	1	X4_7429.D	Rxi-5Sil MS 0.25 (mm)
ICV 280-451426/12		03/22/2019 06:59	1	X4_7430.D	Rxi-5Sil MS 0.25 (mm)

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, DenverJob No.: 280-123221-1

SDG No.: _____

Instrument ID: SMS_X4Start Date: 05/10/2019 15:22Analysis Batch Number: 457763End Date: 05/11/2019 02:34

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 280-457763/2		05/10/2019 15:22	1	X4_8401.D	Rxi-5Sil MS 0.25 (mm)
CCV 280-457763/3		05/10/2019 15:34	1	X4_8402.D	Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/10/2019 16:34	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/10/2019 17:04	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/10/2019 17:34	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/10/2019 18:04	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/10/2019 18:34	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/10/2019 19:04	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/10/2019 19:34	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/10/2019 20:04	1		Rxi-5Sil MS 0.25 (mm)
MB 280-457182/1-A		05/10/2019 20:33	1	X4_8411.D	Rxi-5Sil MS 0.25 (mm)
LCS 280-457182/2-A		05/10/2019 21:03	1	X4_8412.D	Rxi-5Sil MS 0.25 (mm)
LCSD 280-457182/3-A		05/10/2019 21:33	1	X4_8413.D	Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/10/2019 22:03	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/10/2019 22:34	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/10/2019 23:04	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/10/2019 23:34	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/11/2019 00:04	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/11/2019 00:34	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/11/2019 01:04	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/11/2019 01:34	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/11/2019 02:04	1		Rxi-5Sil MS 0.25 (mm)
CCVC 280-457763/24		05/11/2019 02:34	1	X4_8423.D	Rxi-5Sil MS 0.25 (mm)

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, DenverJob No.: 280-123221-1

SDG No.: _____

Instrument ID: SMS_X4Start Date: 05/13/2019 18:15Analysis Batch Number: 458021End Date: 05/14/2019 04:50

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 280-458021/2		05/13/2019 18:15	1	X4_8453.D	Rxi-5Sil MS 0.25 (mm)
CCV 280-458021/3		05/13/2019 18:28	1	X4_8454.D	Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/13/2019 18:58	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/13/2019 19:28	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/13/2019 19:58	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/13/2019 20:28	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/13/2019 21:20	1		Rxi-5Sil MS 0.25 (mm)
MB 280-457236/1-A		05/13/2019 21:50	1	X4_8460.D	Rxi-5Sil MS 0.25 (mm)
LCS 280-457236/2-A		05/13/2019 22:20	1	X4_8461.D	Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/13/2019 22:50	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/13/2019 23:20	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/13/2019 23:50	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/14/2019 00:20	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/14/2019 00:50	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/14/2019 01:21	1		Rxi-5Sil MS 0.25 (mm)
280-123221-2		05/14/2019 01:50	1	X4_8468.D	Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/14/2019 02:20	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/14/2019 02:50	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/14/2019 03:20	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/14/2019 03:50	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/14/2019 04:20	1		Rxi-5Sil MS 0.25 (mm)
CCVC 280-458021/23		05/14/2019 04:50	1	X4_8474.D	Rxi-5Sil MS 0.25 (mm)

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, DenverJob No.: 280-123221-1

SDG No.: _____

Instrument ID: SMS_X4Start Date: 05/16/2019 15:58Analysis Batch Number: 458474End Date: 05/16/2019 21:13

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 280-458474/2		05/16/2019 15:58	1	X4_8701.D	Rxi-5Sil MS 0.25 (mm)
CCV 280-458474/3		05/16/2019 16:11	1	X4_8702.D	Rxi-5Sil MS 0.25 (mm)
280-123221-4		05/16/2019 16:41	1	X4_8703.D	Rxi-5Sil MS 0.25 (mm)
280-123221-7		05/16/2019 17:11	1	X4_8704.D	Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/16/2019 17:41	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/16/2019 18:12	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/16/2019 18:42	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/16/2019 19:12	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/16/2019 19:42	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/16/2019 20:13	1		Rxi-5Sil MS 0.25 (mm)
ZZZZZ		05/16/2019 20:43	1		Rxi-5Sil MS 0.25 (mm)
CCVC 280-458474/13		05/16/2019 21:13	1	X4_8712.D	Rxi-5Sil MS 0.25 (mm)

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457182 Batch Start Date: 05/06/19 12:22 Batch Analyst: Exstrum, Adam JBatch Method: 3510C Batch End Date: 05/07/19 17:57

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	8270BO-SIMLCS 00033
MB 280-457182/1		3510C, 8270D SIM				250 mL	1 mL	7 SU	
LCS 280-457182/2		3510C, 8270D SIM				250 mL	1 mL	7 SU	0.25 mL
LCSD 280-457182/3		3510C, 8270D SIM				250 mL	1 mL	7 SU	0.25 mL
280-123221-G-4	DET-003-190401-G W	3510C, 8270D SIM	T	406.0 g	177.7 g	228.3 mL	1 mL	6 SU	
280-123221-H-7	DET-004-190401-G W	3510C, 8270D SIM	T	414.1 g	178.9 g	235.2 mL	1 mL	6 SU	

Lab Sample ID	Client Sample ID	Method Chain	Basis	SIM_LVI_SURR 00008					
MB 280-457182/1		3510C, 8270D SIM		0.25 mL					
LCS 280-457182/2		3510C, 8270D SIM		0.25 mL					
LCSD 280-457182/3		3510C, 8270D SIM		0.25 mL					
280-123221-G-4	DET-003-190401-G W	3510C, 8270D SIM	T	0.25 mL					
280-123221-H-7	DET-004-190401-G W	3510C, 8270D SIM	T	0.25 mL					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

8270D SIM

Page 1 of 2

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457182 Batch Start Date: 05/06/19 12:22 Batch Analyst: Exstrum, Adam JBatch Method: 3510C Batch End Date: 05/07/19 17:57

Batch Notes	
Balance ID	24750399
Batch Comment	DV-OP-0006/0007
Analyst ID - Concentration	CR/MM
Concentration 1 Corrected Temperature	84 Degrees C
Equipment ID - Concentration 1	A
Analyst ID - Extraction	AE (trainer) / AG (trainee)
Method/Fraction	3510C_LVI/8270_SIM_DOD5
Na2SO4 ID	0000218677_00004
NaCl ID	185572
Pipette/Syringe/Dispenser ID	1n2s
Prep Solvent ID	MeCl2_Cycl_00436
Prep Solvent Volume Used	90 mL
Analyst ID - Spike Analyst	AE
Analyst ID - Spike Witness Analyst	Reviewer: MM
Sufficient Volume for Batch QC	Yes
Concentration 1 Uncorrected Temperature	84 Degrees C
Reagent Water ID	S. ELGA

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

8270D SIM

Page 2 of 2

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457236 Batch Start Date: 05/07/19 06:23 Batch Analyst: Matsumoto, Jordan TBatch Method: 3510C Batch End Date: 05/07/19 18:28

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	8270BO-SIMLCS 00033
MB 280-457236/1		3510C, 8270D SIM				250 mL	1 mL	7 SU	
LCS 280-457236/2		3510C, 8270D SIM				250 mL	1 mL	7 SU	0.25 mL
280-123221-D-2	NTAmw-119-190401 -GW	3510C, 8270D SIM	T	409.8 g	181.0 g	228.8 mL	1 mL	7 SU	

Lab Sample ID	Client Sample ID	Method Chain	Basis	SIM_LVI_SURR 00008					
MB 280-457236/1		3510C, 8270D SIM		0.25 mL					
LCS 280-457236/2		3510C, 8270D SIM		0.25 mL					
280-123221-D-2	NTAmw-119-190401 -GW	3510C, 8270D SIM	T	0.25 mL					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457236 Batch Start Date: 05/07/19 06:23 Batch Analyst: Matsumoto, Jordan TBatch Method: 3510C Batch End Date: 05/07/19 18:28

Batch Notes	
Balance ID	24750399
Batch Comment	DV-OP-0006/0007
Analyst ID - Concentration	CR/MM
Concentration 1 Corrected Temperature	84 Degrees C
Equipment ID - Concentration 1	A
Analyst ID - Extraction	JM
Method/Fraction	3510C_LVI/8270_SIM_DOD5
Na2SO4 ID	0000218677_00004
NaCl ID	185572
Pipette/Syringe/Dispenser ID	1n2s
Prep Solvent ID	MeCl2_Cycl_00436
Prep Solvent Volume Used	90 mL
Analyst ID - Spike Analyst	JM
Analyst ID - Spike Witness Analyst	Reviewer:
Sufficient Volume for Batch QC	Yes
Concentration 1 Uncorrected Temperature	84 Degrees C
Reagent Water ID	S. ELGA

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

8270D SIM

Page 2 of 2

8081B_DOD5

Organochlorine Pesticides (GC)

FORM II
PESTICIDES SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Matrix: Water Level: Low
GC Column (1): CLP1 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCX1 #	DCBP1 #
DET-003-190401-GW	280-123221-4	72	81
DET-003-190402-GW	280-123221-5	75	85
DET-004-190401-GW	280-123221-7	72	87
	MB 280-457201/1-A	78	82
	LCS 280-457201/2-A	76	86
	LCS 280-457201/4-A	69	88
DET-003-190401-GWM S MS	280-123221-4 MS	75	82
DET-003-190401-GWM SD MSD	280-123221-4 MSD	75	79

TCX = Tetrachloro-m-xylene
DCBP = DCB Decachlorobiphenyl

QC LIMITS
44-124
34-122

Column to be used to flag recovery values

FORM III
PESTICIDES LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 05170015.D
 Lab ID: LCS 280-457201/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
4,4'-DDD	0.500	0.445	89	56-143	
4,4'-DDE	0.500	0.450	90	57-135	
4,4'-DDT	0.500	0.518	104	51-143	
Aldrin	0.500	0.375	75	45-134	
alpha-BHC	0.500	0.449	90	54-138	
alpha-Chlordane	0.500	0.438	88	60-129	
beta-BHC	0.500	0.448	90	56-136	
delta-BHC	0.500	0.451	90	52-142	
Dieldrin	0.500	0.445	89	60-136	
Endosulfan I	0.500	0.431	86	62-126	
Endosulfan II	0.500	0.411	82	52-135	
Endosulfan sulfate	0.500	0.446	89	62-133	
Endrin	0.500	0.450	90	60-138	
Endrin aldehyde	0.500	0.385	77	51-132	
Endrin ketone	0.500	0.444	89	58-134	
gamma-BHC (Lindane)	0.500	0.457	91	59-134	
gamma-Chlordane	0.500	0.440	88	56-136	
Heptachlor	0.500	0.430	86	54-130	
Heptachlor epoxide	0.500	0.448	90	61-133	
Methoxychlor	0.500	0.486	97	54-145	

Column to be used to flag recovery and RPD values

FORM III
PESTICIDES LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Matrix: Water Level: Low Lab File ID: 05170024.D
Lab ID: LCS 280-457201/4-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
Toxaphene	20.0	15.8	79	33-134	

Column to be used to flag recovery and RPD values

FORM III
PESTICIDES MATRIX SPIKE RECOVERY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Matrix: Water Level: Low

Lab File ID: 05170017.D

Lab ID: 280-123221-4 MS

Client ID: DET-003-190401-GWMS MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
4,4'-DDD	0.523	0.022 U	0.457	87	56-143	
4,4'-DDE	0.523	0.022 U	0.475	91	57-135	
4,4'-DDT	0.523	0.054 U	0.540	103	51-143	
Aldrin	0.523	0.022 U	0.369	71	45-134	
alpha-BHC	0.523	0.022 U	0.477	91	54-138	
alpha-Chlordane	0.523	0.022 U	0.459	88	60-129	
beta-BHC	0.523	0.022 U	0.474	91	56-136	
delta-BHC	0.523	0.022 U	0.471	90	52-142	
Dieldrin	0.523	0.022 U	0.469	90	60-136	
Endosulfan I	0.523	0.022 U	0.456	87	62-126	
Endosulfan II	0.523	0.022 U	0.432	83	52-135	
Endosulfan sulfate	0.523	0.022 U	0.469	90	62-133	
Endrin	0.523	0.022 U	0.459	88	60-138	
Endrin aldehyde	0.523	0.022 U	0.384	74	51-132	
Endrin ketone	0.523	0.022 U	0.471	90	58-134	
gamma-BHC (Lindane)	0.523	0.022 U	0.482	92	59-134	
gamma-Chlordane	0.523	0.022 U	0.459	88	56-136	
Heptachlor	0.523	0.022 U	0.428	82	54-130	
Heptachlor epoxide	0.523	0.022 U	0.470	90	61-133	
Methoxychlor	0.523	0.054 U	0.498	95	54-145	

Column to be used to flag recovery and RPD values

FORM III
PESTICIDES MATRIX SPIKE RECOVERY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Matrix: Water Level: Low Lab File ID: 05170019.D
Lab ID: 280-123221-4 MS Client ID: DET-003-190401-GWMS MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
Toxaphene	20.6	0.86 U	18.6	90	33-134	

Column to be used to flag recovery and RPD values

FORM III
PESTICIDES MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Matrix: Water Level: Low

Lab File ID: 05170018.D

Lab ID: 280-123221-4 MSD

Client ID: DET-003-190401-GWMSD MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
4,4'-DDD	0.524	0.460	88	0	30	56-143	
4,4'-DDE	0.524	0.475	91	0	30	57-135	
4,4'-DDT	0.524	0.542	103	0	30	51-143	
Aldrin	0.524	0.395	75	7	30	45-134	
alpha-BHC	0.524	0.476	91	0	30	54-138	
alpha-Chlordane	0.524	0.466	89	1	30	60-129	
beta-BHC	0.524	0.477	91	1	30	56-136	
delta-BHC	0.524	0.476	91	1	30	52-142	
Dieldrin	0.524	0.471	90	0	30	60-136	
Endosulfan I	0.524	0.459	88	1	30	62-126	
Endosulfan II	0.524	0.435	83	1	30	52-135	
Endosulfan sulfate	0.524	0.476	91	2	30	62-133	
Endrin	0.524	0.468	89	2	30	60-138	
Endrin aldehyde	0.524	0.404	77	5	30	51-132	
Endrin ketone	0.524	0.475	91	1	30	58-134	
gamma-BHC (Lindane)	0.524	0.485	93	1	30	59-134	
gamma-Chlordane	0.524	0.467	89	2	30	56-136	
Heptachlor	0.524	0.450	86	5	30	54-130	
Heptachlor epoxide	0.524	0.474	90	1	30	61-133	
Methoxychlor	0.524	0.501	96	1	30	54-145	

Column to be used to flag recovery and RPD values

FORM III
PESTICIDES MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Matrix: Water Level: Low Lab File ID: 05170020.D
Lab ID: 280-123221-4 MSD Client ID: DET-003-190401-GWMSD MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Toxaphene	22.1	19.2	87	3	30	33-134	

Column to be used to flag recovery and RPD values

FORM IV
PESTICIDES METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: MB 280-457201/1-A
 Matrix: Water Date Extracted: 05/06/2019 15:29
 Lab File ID: (1) 05170014.D Lab File ID: (2) 05170014.D
 Date Analyzed: (1) 05/17/2019 17:06 Date Analyzed: (2) 05/17/2019 17:06
 Instrument ID: (1) SGC_P1 Instrument ID: (2) SGC_P1
 GC Column: (1) CLP1 ID: 0.32 (mm) GC Column: (2) CLP2 ID: 0.32 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
	LCS 280-457201/2-A	05/17/2019 17:24	05/17/2019 17:24
DET-003-190401-GW	280-123221-4	05/17/2019 17:41	05/17/2019 17:41
DET-003-190401-GWMS MS	280-123221-4 MS	05/17/2019 17:58	05/17/2019 17:58
DET-003-190401-GWMSD MSD	280-123221-4 MSD	05/17/2019 18:16	05/17/2019 18:16
DET-003-190401-GWMS MS	280-123221-4 MS	05/17/2019 18:33	05/17/2019 18:33
DET-003-190401-GWMSD MSD	280-123221-4 MSD	05/17/2019 18:50	05/17/2019 18:50
DET-003-190402-GW	280-123221-5	05/17/2019 19:08	05/17/2019 19:08
DET-004-190401-GW	280-123221-7	05/17/2019 19:25	05/17/2019 19:25
	LCS 280-457201/4-A	05/17/2019 20:00	05/17/2019 20:00

FORM VIII
PESTICIDES INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Sample No.: STD4 280-453267/29 Date Analyzed: 04/04/2019 21:27
 Instrument ID: SGC_P1 GC Column: CLP1 ID: 0.32 (mm)
 Lab File ID (Standard): 04040029.D Heated Purge: (Y/N) N
 Calibration ID: 35938

		BNB					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		86545497	3.04				
UPPER LIMIT		173090994	3.54				
LOWER LIMIT		43272749	2.54				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 280-453267/33		91950958	3.03				
ICV 280-453267/34		91124036	3.03				
ICV 280-453267/35		90126651	3.03				
ICV 280-453267/36		98377481	3.03				

BNB = 1-Bromo-2-nitrobenzene

Area Limit = 50%-200% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
PESTICIDES INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Sample No.: STD4 280-453267/29 Date Analyzed: 04/04/2019 21:27
 Instrument ID: SGC_P1 GC Column: CLP2 ID: 0.32 (mm)
 Lab File ID (Standard): 04040029.D Heated Purge: (Y/N) N
 Calibration ID: 35939

		BNB					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		92968873	2.79				
UPPER LIMIT		185937746	3.29				
LOWER LIMIT		46484437	2.29				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 280-453267/33		96526376	2.78				
ICV 280-453267/34		95281777	2.78				
ICV 280-453267/35		93608783	2.78				
ICV 280-453267/36		102603360	2.78				

BNB = 1-Bromo-2-nitrobenzene

Area Limit = 50%-200% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
PESTICIDES INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Sample No.: CCVIS 280-458587/13 Date Analyzed: 05/17/2019 16:49
 Instrument ID: SGC_P1 GC Column: CLP1 ID: 0.32 (mm)
 Lab File ID (Standard): 05170013.D Heated Purge: (Y/N) N
 Calibration ID: 35938

		BNB					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		92449945	3.01				
UPPER LIMIT		184899890	3.51				
LOWER LIMIT		46224973	2.51				
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 280-457201/1-A		90409519	3.02				
LCS 280-457201/2-A		92343173	3.02				
280-123221-4	DET-003-190401-GW	92003720	3.02				
280-123221-4 MS	DET-003-190401-GWMS MS	90752228	3.02				
280-123221-4 MSD	DET-003-190401-GWMSD MSD	92203589	3.02				
280-123221-4 MS	DET-003-190401-GWMS MS	91816190	3.02				
280-123221-4 MSD	DET-003-190401-GWMSD MSD	93022306	3.02				
280-123221-5	DET-003-190402-GW	89695225	3.02				
280-123221-7	DET-004-190401-GW	88811208	3.02				
LCS 280-457201/4-A		93260773	3.02				
CCV 280-458587/26		89994644	3.02				
CCV 280-458587/28		87455261	3.02				

BNB = 1-Bromo-2-nitrobenzene

Area Limit = 50%-200% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
PESTICIDES INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Sample No.: CCVIS 280-458587/13 Date Analyzed: 05/17/2019 16:49
 Instrument ID: SGC_P1 GC Column: CLP2 ID: 0.32 (mm)
 Lab File ID (Standard): 05170013.D Heated Purge: (Y/N) N
 Calibration ID: 35939

		BNB					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		97605799	2.78				
UPPER LIMIT		195211598	3.28				
LOWER LIMIT		48802900	2.28				
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 280-457201/1-A		95612958	2.78				
LCS 280-457201/2-A		96939415	2.78				
280-123221-4	DET-003-190401-GW	96227594	2.78				
280-123221-4 MS	DET-003-190401-GWMS MS	95207585	2.78				
280-123221-4 MSD	DET-003-190401-GWMSD MSD	96576511	2.78				
280-123221-4 MS	DET-003-190401-GWMS MS	96054763	2.78				
280-123221-4 MSD	DET-003-190401-GWMSD MSD	96601591	2.78				
280-123221-5	DET-003-190402-GW	93738578	2.78				
280-123221-7	DET-004-190401-GW	94031579	2.78				
LCS 280-457201/4-A		99354580	2.78				
CCV 280-458587/26		95474592	2.78				
CCV 280-458587/28		93072722	2.78				

BNB = 1-Bromo-2-nitrobenzene

Area Limit = 50%-200% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: DET-003-190401-GWMS MS Lab Sample ID: 280-123221-4 MS
 Instrument ID (1): SGC_P1 Instrument ID (2): SGC_P1
 Date Analyzed (1): 05/17/2019 17:58 Date Analyzed (2): 05/17/2019 17:58
 GC Column (1): CLP1 ID: 0.32 (mm) GC Column (2): CLP2 ID: 0.32 (mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
alpha-BHC	1		4.50	4.49	4.51	0.477		0.2
	2		4.39	4.37	4.39	0.476		
gamma-BHC (Lindane)	1		4.79	4.78	4.80	0.482		2.2
	2		4.70	4.69	4.71	0.472		
beta-BHC	1		4.86	4.85	4.87	0.474		2.1
	2		4.77	4.76	4.78	0.464		
delta-BHC	1		5.01	5.00	5.02	0.471		0.3
	2		5.01	4.99	5.01	0.469		
Heptachlor	1		5.19	5.18	5.20	0.428		2.1
	2		5.05	5.04	5.06	0.419		
Aldrin	1		5.46	5.45	5.47	0.369		2.0
	2		5.31	5.30	5.32	0.362		
Heptachlor epoxide	1		6.07	6.06	6.08	0.470		2.1
	2		5.84	5.83	5.85	0.460		
gamma-Chlordane	1		6.20	6.19	6.21	0.459		1.1
	2		6.04	6.02	6.04	0.464		
alpha-Chlordane	1		6.34	6.33	6.35	0.459		1.3
	2		6.19	6.18	6.20	0.453		
4,4'-DDE	1		6.41	6.40	6.42	0.475		8.0
	2		6.37	6.35	6.37	0.438		
Endosulfan I	1		6.48	6.47	6.49	0.456		3.1
	2		6.25	6.23	6.25	0.442		
Dieldrin	1		6.72	6.71	6.73	0.469		3.0
	2		6.52	6.51	6.53	0.455		
Endrin	1		6.96	6.95	6.97	0.459		1.5
	2		6.82	6.81	6.83	0.452		
4,4'-DDD	1		7.01	7.00	7.02	0.457		1.4
	2		6.94	6.93	6.95	0.464		
Endosulfan II	1		7.17	7.16	7.18	0.432		4.3
	2		7.03	7.02	7.04	0.414		
4,4'-DDT	1		7.28	7.27	7.29	0.540		17.7
	2		7.24	7.23	7.25	0.453		
Endrin aldehyde	1		7.58	7.56	7.58	0.384		2.8
	2		7.36	7.35	7.37	0.374		
Methoxychlor	1		7.73	7.72	7.74	0.498		6.7
	2		7.89	7.88	7.90	0.466		
Endosulfan sulfate	1		7.98	7.97	7.99	0.469		4.3
	2		7.62	7.60	7.62	0.449		
Endrin ketone	1		8.24	8.23	8.25	0.471		8.5
	2		8.10	8.09	8.11	0.432		

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: DET-003-190401-GWMS MS Lab Sample ID: 280-123221-4 MS
 Instrument ID (1): SGC_P1 Instrument ID (2): SGC_P1
 Date Analyzed (1): 05/17/2019 18:33 Date Analyzed (2): 05/17/2019 18:33
 GC Column (1): CLP1 ID: 0.32 (mm) GC Column (2): CLP2 ID: 0.32 (mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
Toxaphene	1	1	6.22	6.21	6.25	9.54	18.6	9.3
		2	6.82	6.80	6.84	20.2		
		3	7.04	7.02	7.06	20.6		
		4	7.49	7.47	7.51	20.5		
		5	7.70	7.68	7.72	22.3		
	2	1	6.11	6.09	6.13	22.5	17.0	
		2	6.80	6.78	6.82	12.7		
		3	7.11	7.09	7.13	12.7		
		4	7.49	7.47	7.51	17.6		
		5	7.84	7.82	7.86	19.2		

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: DET-003-190401-GWMSD MSD Lab Sample ID: 280-123221-4 MSD
 Instrument ID (1): SGC_P1 Instrument ID (2): SGC_P1
 Date Analyzed (1): 05/17/2019 18:16 Date Analyzed (2): 05/17/2019 18:16
 GC Column (1): CLP1 ID: 0.32 (mm) GC Column (2): CLP2 ID: 0.32 (mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
alpha-BHC	1		4.50	4.49	4.51	0.476		0.5
	2		4.38	4.37	4.39	0.478		
gamma-BHC (Lindane)	1		4.79	4.78	4.80	0.485		2.2
	2		4.70	4.69	4.71	0.475		
beta-BHC	1		4.86	4.85	4.87	0.477		2.1
	2		4.77	4.76	4.78	0.467		
delta-BHC	1		5.01	5.00	5.02	0.476		0.3
	2		5.00	4.99	5.01	0.474		
Heptachlor	1		5.19	5.18	5.20	0.450		1.9
	2		5.05	5.04	5.06	0.441		
Aldrin	1		5.46	5.45	5.47	0.395		2.0
	2		5.31	5.30	5.32	0.387		
Heptachlor epoxide	1		6.07	6.06	6.08	0.474		2.0
	2		5.84	5.83	5.85	0.464		
gamma-Chlordane	1		6.20	6.19	6.21	0.467		1.1
	2		6.03	6.02	6.04	0.472		
alpha-Chlordane	1		6.34	6.33	6.35	0.466		1.8
	2		6.19	6.18	6.20	0.457		
4,4'-DDE	1		6.41	6.40	6.42	0.475		6.6
	2		6.37	6.35	6.37	0.445		
Endosulfan I	1		6.48	6.47	6.49	0.459		3.2
	2		6.24	6.23	6.25	0.445		
Dieldrin	1		6.72	6.71	6.73	0.471		2.4
	2		6.52	6.51	6.53	0.460		
Endrin	1		6.96	6.95	6.97	0.468		1.5
	2		6.82	6.81	6.83	0.461		
4,4'-DDD	1		7.01	7.00	7.02	0.460		1.6
	2		6.94	6.93	6.95	0.467		
Endosulfan II	1		7.17	7.16	7.18	0.435		4.0
	2		7.03	7.02	7.04	0.418		
4,4'-DDT	1		7.28	7.27	7.29	0.542		17.5
	2		7.24	7.23	7.25	0.455		
Endrin aldehyde	1		7.58	7.56	7.58	0.404		2.7
	2		7.36	7.35	7.37	0.393		
Methoxychlor	1		7.73	7.72	7.74	0.501		7.6
	2		7.89	7.88	7.90	0.465		
Endosulfan sulfate	1		7.98	7.97	7.99	0.476		4.7
	2		7.61	7.60	7.62	0.454		
Endrin ketone	1		8.24	8.23	8.25	0.475		9.1
	2		8.10	8.09	8.11	0.433		

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: DET-003-190401-GWMSD MSD Lab Sample ID: 280-123221-4 MSD
 Instrument ID (1): SGC_P1 Instrument ID (2): SGC_P1
 Date Analyzed (1): 05/17/2019 18:50 Date Analyzed (2): 05/17/2019 18:50
 GC Column (1): CLP1 ID: 0.32 (mm) GC Column (2): CLP2 ID: 0.32 (mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
Toxaphene	1	1	6.22	6.21	6.25	10.3	19.2	6.3
		2	6.82	6.80	6.84	16.7		
		3	7.04	7.02	7.06	23.0		
		4	7.49	7.47	7.51	22.1		
		5	7.70	7.68	7.72	24.1		
	2	1	6.11	6.09	6.13	24.0	18.1	
		2	6.80	6.78	6.82	13.5		
		3	7.11	7.09	7.13	13.7		
		4	7.49	7.47	7.51	18.4		
		5	7.84	7.82	7.86	20.6		

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCS 280-457201/2-A
 Instrument ID (1): SGC_P1 Instrument ID (2): SGC_P1
 Date Analyzed (1): 05/17/2019 17:24 Date Analyzed (2): 05/17/2019 17:24
 GC Column (1): CLP1 ID: 0.32 (mm) GC Column (2): CLP2 ID: 0.32 (mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
alpha-BHC	1		4.50	4.49	4.51	0.449		0.2
	2		4.38	4.37	4.39	0.448		
gamma-BHC (Lindane)	1		4.79	4.78	4.80	0.457		1.7
	2		4.70	4.69	4.71	0.449		
beta-BHC	1		4.86	4.85	4.87	0.448		1.8
	2		4.77	4.76	4.78	0.440		
delta-BHC	1		5.01	5.00	5.02	0.451		0.8
	2		5.00	4.99	5.01	0.448		
Heptachlor	1		5.19	5.18	5.20	0.430		1.3
	2		5.05	5.04	5.06	0.424		
Aldrin	1		5.46	5.45	5.47	0.375		1.5
	2		5.31	5.30	5.32	0.369		
Heptachlor epoxide	1		6.07	6.06	6.08	0.448		2.3
	2		5.84	5.83	5.85	0.438		
gamma-Chlordane	1		6.20	6.19	6.21	0.440		1.1
	2		6.03	6.02	6.04	0.445		
alpha-Chlordane	1		6.34	6.33	6.35	0.438		1.4
	2		6.19	6.18	6.20	0.432		
4,4'-DDE	1		6.41	6.40	6.42	0.450		7.1
	2		6.36	6.35	6.37	0.419		
Endosulfan I	1		6.48	6.47	6.49	0.431		2.9
	2		6.24	6.23	6.25	0.419		
Dieldrin	1		6.72	6.71	6.73	0.445		2.4
	2		6.52	6.51	6.53	0.435		
Endrin	1		6.96	6.95	6.97	0.450		2.0
	2		6.82	6.81	6.83	0.441		
4,4'-DDD	1		7.01	7.00	7.02	0.445		0.2
	2		6.94	6.93	6.95	0.444		
Endosulfan II	1		7.17	7.16	7.18	0.411		3.9
	2		7.03	7.02	7.04	0.395		
4,4'-DDT	1		7.28	7.27	7.29	0.518		16.4
	2		7.24	7.23	7.25	0.440		
Endrin aldehyde	1		7.57	7.56	7.58	0.385		1.8
	2		7.35	7.35	7.37	0.378		
Methoxychlor	1		7.73	7.72	7.74	0.486		6.5
	2		7.89	7.88	7.90	0.456		
Endosulfan sulfate	1		7.98	7.97	7.99	0.446		3.9
	2		7.61	7.60	7.62	0.429		
Endrin ketone	1		8.24	8.23	8.25	0.444		8.4
	2		8.10	8.09	8.11	0.408		

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCS 280-457201/4-A
 Instrument ID (1): SGC_P1 Instrument ID (2): SGC_P1
 Date Analyzed (1): 05/17/2019 20:00 Date Analyzed (2): 05/17/2019 20:00
 GC Column (1): CLP1 ID: 0.32 (mm) GC Column (2): CLP2 ID: 0.32 (mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
Toxaphene	1	1	6.23	6.21	6.25	8.81	15.8	6.3
		2	6.82	6.80	6.84	17.2		
		3	7.04	7.02	7.06	18.0		
		4	7.49	7.47	7.51	17.6		
		5	7.70	7.68	7.72	17.2		
	2	1	6.11	6.09	6.13	19.5	14.8	
		2	6.80	6.78	6.82	11.0		
		3	7.11	7.09	7.13	11.1		
		4	7.49	7.47	7.51	15.3		
		5	7.84	7.82	7.86	17.1		

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Client Sample ID: DET-003-190401-GW Lab Sample ID: 280-123221-4

Matrix: Water Lab File ID: 05170016.D

Analysis Method: 8081B Date Collected: 04/29/2019 10:53

Extraction Method: 3510C Date Extracted: 05/06/2019 15:29

Sample wt/vol: 927.8(mL) Date Analyzed: 05/17/2019 17:41

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: CLP1 ID: 0.32 (mm)

% Moisture: _____ GPC Cleanup: (Y/N) N

Analysis Batch No.: 458587 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
72-54-8	4,4'-DDD	0.022	U	0.054	0.022	0.0083
72-55-9	4,4'-DDE	0.022	U	0.054	0.022	0.0081
50-29-3	4,4'-DDT	0.054	U	0.054	0.054	0.016
309-00-2	Aldrin	0.022	U	0.054	0.022	0.0064
319-84-6	alpha-BHC	0.022	U	0.054	0.022	0.0057
5103-71-9	alpha-Chlordane	0.022	U	0.054	0.022	0.0057
319-85-7	beta-BHC	0.022	U	0.054	0.022	0.0094
319-86-8	delta-BHC	0.022	U	0.054	0.022	0.0063
60-57-1	Dieldrin	0.022	U	0.054	0.022	0.0068
959-98-8	Endosulfan I	0.022	U	0.054	0.022	0.0063
33213-65-9	Endosulfan II	0.022	U	0.054	0.022	0.0075
1031-07-8	Endosulfan sulfate	0.022	U	0.054	0.022	0.0061
72-20-8	Endrin	0.022	U	0.054	0.022	0.0085
7421-93-4	Endrin aldehyde	0.022	U	0.054	0.022	0.0095
53494-70-5	Endrin ketone	0.022	U	0.054	0.022	0.0075
58-89-9	gamma-BHC (Lindane)	0.022	U	0.054	0.022	0.0074
5103-74-2	gamma-Chlordane	0.022	U	0.054	0.022	0.0098
76-44-8	Heptachlor	0.022	U	0.054	0.022	0.0083
1024-57-3	Heptachlor epoxide	0.022	U	0.054	0.022	0.0081
72-43-5	Methoxychlor	0.054	U	0.054	0.054	0.014
8001-35-2	Toxaphene	0.86	U	2.2	0.86	0.40

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	81		34-122
877-09-8	Tetrachloro-m-xylene	72		44-124

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170016.D
 Lims ID: 280-123221-D-4-A
 Client ID: DET-003-190401-GW
 Sample Type: Client
 Inject. Date: 17-May-2019 17:41:26 ALS Bottle#: 10 Worklist Smp#: 16
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-D-4-A
 Misc. Info.: 280-0082009-016
 Operator ID: TEM Instrument ID: SGC_P1
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 29-May-2019 17:23:59 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0314

First Level Reviewer: mooret

Date: 20-May-2019 13:11:24

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/mL	Flags
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S 1 Hexachlorocyclohexane, technical

1		1.000			ND
2		0.000			

* 2 1-Bromo-2-nitrobenzene

1	3.015	3.016	0.000	92003720	150.0
2	2.777	2.778	-0.001	96227594	150.0

\$ 4 Tetrachloro-m-xylene

1	3.921	3.921	0.000	13205466	14.4
2	3.765	3.765	0.000	12356526	14.4

RPD = 0.24

7 Propachlor

1		4.138			ND
2		3.952			

5 Hexachlorobenzene

1	4.331	4.330	0.001	368000	-0.4590
2	4.241	4.242	-0.001	149992	-1.05

RPD = -78.00

LOD = 0.002000

6 Diallate

1		4.353			ND
2		4.194			

8 alpha-BHC

1		4.497			ND
2		4.384			

9 gamma-BHC (Lindane)

1		4.787			ND
2		4.696			

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170016.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	--------------------	-------

11 2,4,5-Trichlorophenol

1	4.838	ND
2	4.774	

10 beta-BHC

1	4.861	ND
2	4.771	

12 delta-BHC

1	5.010	ND
2	5.003	

13 Technical Chlordane

1	5.122	ND
1	5.589	
1	6.198	
1	6.335	
1	7.107	
2	4.934	
2	5.446	
2	6.033	
2	6.188	
2	7.076	

14 Chlordane (technical)

1	5.122	ND
1	5.589	
1	6.198	
1	6.335	
1	7.107	
2	4.934	
2	5.446	
2	6.033	
2	6.188	
2	7.076	

15 Heptachlor

1	5.190	ND
2	5.047	

16 Aldrin

1	5.460	ND
2	5.310	

17 Chlorpyrifos

1	5.686	ND
2	5.525	

18 Isodrin

1	5.782	ND
2	5.662	

19 Dicofol

1	5.817	ND
2	5.621	

20 2,4'-DDE

1	6.051	ND
2	6.040	

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170016.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	--------------------	-------

21 Heptachlor epoxide

1	6.067				ND	
2	5.837					

22 trans-Chlordane

1	6.197				ND	
2	6.032					

28 Toxaphene

1	6.231				ND	
1	6.817					
1	7.042					
1	7.489					
1	7.700					
2	6.106					
2	6.796					
2	7.112					
2	7.486					
2	7.835					

23 cis-Chlordane

1	6.337				ND	
2	6.187					

24 4,4'-DDE

1	6.410				ND	
2	6.363					

25 Endosulfan I

1	6.480				ND	
2	6.243					

26 2,4'-DDD

1	6.586				ND	
2	6.566					

27 Dieldrin

1	6.722				ND	
2	6.522					

29 2,4'-DDT

1	6.841				ND	
2	6.867					

30 Endrin

1	6.955				ND	
2	6.823					

31 Kepone

1	7.000	6.996	0.004	217631	20.5	
2	6.935	6.933	0.002	124824	15.6	
RPD = 27.38						

32 4,4'-DDD

1	7.008				ND	
2	6.939					

33 Chlorobenzilate

1	7.019				ND	
2	6.816					

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170016.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	--------------------	-------

34 Endosulfan II

1	7.172				ND	
2	7.030					

35 4,4'-DDT

1	7.279				ND	
2	7.242					

36 Endrin aldehyde

1	7.573				ND	
2	7.355					

37 Methoxychlor

1	7.731				ND	
2	7.885					

38 Mirex

1	7.886				ND	
2	8.065					

39 Endosulfan sulfate

1	7.982				ND	
2	7.614					

40 Endrin ketone

1	8.241				ND	
2	8.101					

\$ 41 DCB Decachlorobiphenyl

1	9.153	9.153	0.000	11062382	16.3	
2	9.231	9.231	0.000	10921921	15.0	
RPD = 8.05						

42 Tris(2,3-dibromopropyl)phosphate

1	10.868				ND	
2	10.896					

S 3 Endosulfan, Total

1	0.000				ND	
2	0.000					

QC Flag Legend

Processing Flags

7 - Failed Limit of Detection

Reagents:

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 29-May-2019 17:24:31

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170016.D

Injection Date: 17-May-2019 17:41:26

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: 280-123221-D-4-A

Lab Sample ID: 280-123221-4

Worklist Smp#: 16

Client ID: DET-003-190401-GW

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

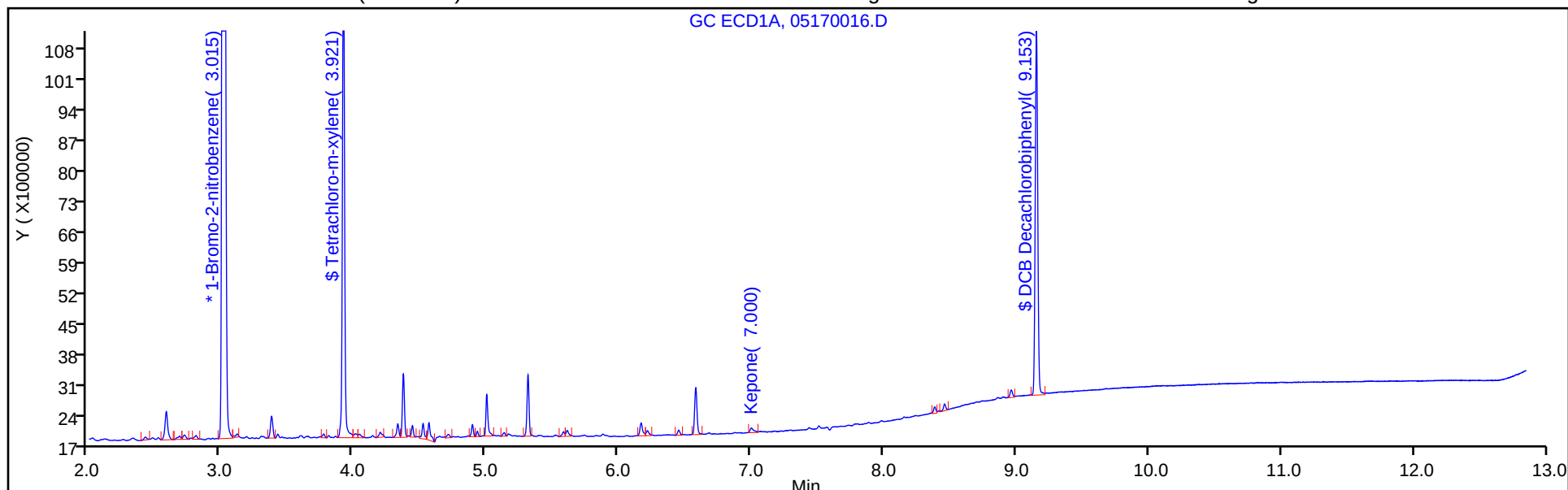
ALS Bottle#: 10

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

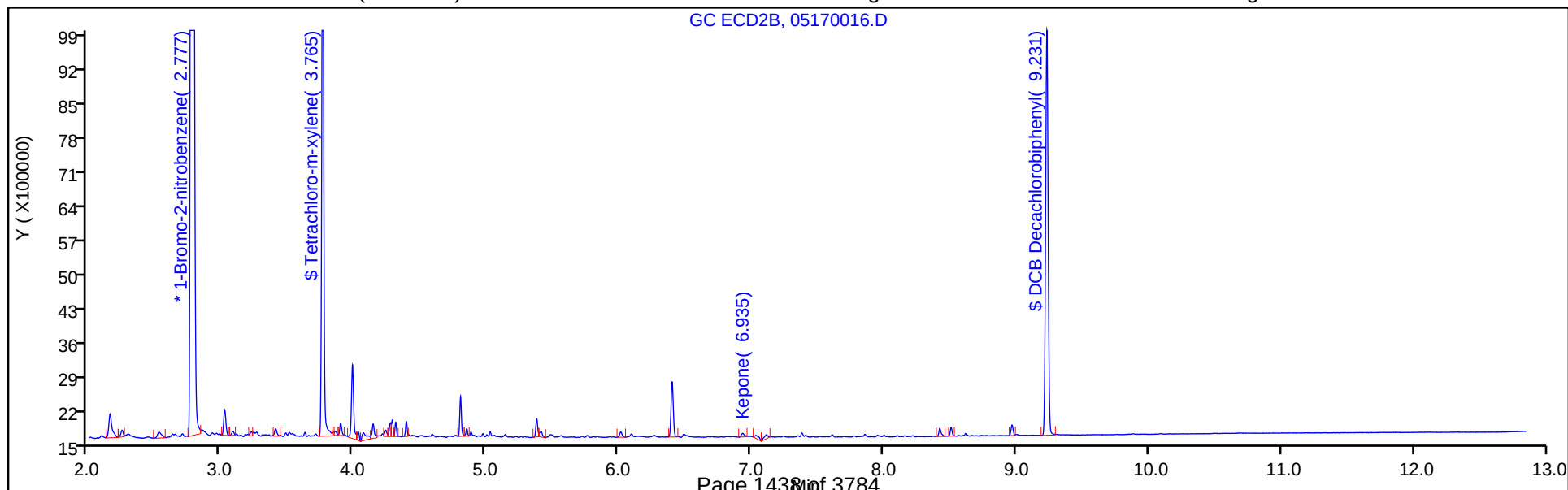
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170016.D
Lims ID: 280-123221-D-4-A
Client ID: DET-003-190401-GW
Sample Type: Client
Inject. Date: 17-May-2019 17:41:26 ALS Bottle#: 10 Worklist Smp#: 16
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-D-4-A
Misc. Info.: 280-0082009-016
Operator ID: TEM Instrument ID: SGC_P1
Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
Limit Group: GCSV - 8081A - IS
Last Update: 29-May-2019 17:23:59 Calib Date: 04-Apr-2019 22:17:45
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
Process Host: CTX0314

First Level Reviewer: mooret

Date: 20-May-2019 13:11:24

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Tetrachloro-m-xylene	20.0	14.4	72.22
\$ 41 DCB Decachlorobiphenyl	20.0	16.3	81.30

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Tetrachloro-m-xylene	20.0	14.4	72.05
\$ 41 DCB Decachlorobiphenyl	20.0	15.0	75.01

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Client Sample ID: DET-003-190402-GW Lab Sample ID: 280-123221-5

Matrix: Water Lab File ID: 05170021.D

Analysis Method: 8081B Date Collected: 04/29/2019 10:53

Extraction Method: 3510C Date Extracted: 05/06/2019 15:29

Sample wt/vol: 901.2 (mL) Date Analyzed: 05/17/2019 19:08

Con. Extract Vol.: 10 (mL) Dilution Factor: 1

Injection Volume: 1 (uL) GC Column: CLP1 ID: 0.32 (mm)

% Moisture: _____ GPC Cleanup: (Y/N) N

Analysis Batch No.: 458587 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
72-54-8	4,4'-DDD	0.022	U	0.055	0.022	0.0085
72-55-9	4,4'-DDE	0.022	U	0.055	0.022	0.0083
50-29-3	4,4'-DDT	0.055	U	0.055	0.055	0.016
309-00-2	Aldrin	0.022	U	0.055	0.022	0.0065
319-84-6	alpha-BHC	0.022	U	0.055	0.022	0.0059
5103-71-9	alpha-Chlordane	0.022	U	0.055	0.022	0.0059
319-85-7	beta-BHC	0.022	U	0.055	0.022	0.0097
319-86-8	delta-BHC	0.022	U	0.055	0.022	0.0064
60-57-1	Dieldrin	0.022	U	0.055	0.022	0.0070
959-98-8	Endosulfan I	0.022	U	0.055	0.022	0.0064
33213-65-9	Endosulfan II	0.022	U	0.055	0.022	0.0078
1031-07-8	Endosulfan sulfate	0.022	U	0.055	0.022	0.0063
72-20-8	Endrin	0.022	U	0.055	0.022	0.0088
7421-93-4	Endrin aldehyde	0.022	U	0.055	0.022	0.0098
53494-70-5	Endrin ketone	0.022	U	0.055	0.022	0.0078
58-89-9	gamma-BHC (Lindane)	0.022	U	0.055	0.022	0.0077
5103-74-2	gamma-Chlordane	0.022	U	0.055	0.022	0.010
76-44-8	Heptachlor	0.022	U	0.055	0.022	0.0085
1024-57-3	Heptachlor epoxide	0.022	U	0.055	0.022	0.0083
72-43-5	Methoxychlor	0.055	U	0.055	0.055	0.014
8001-35-2	Toxaphene	0.89	U	2.2	0.89	0.41

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	85		34-122
877-09-8	Tetrachloro-m-xylene	75		44-124

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170021.D
 Lims ID: 280-123221-B-5-A
 Client ID: DET-003-190402-GW
 Sample Type: Client
 Inject. Date: 17-May-2019 19:08:19 ALS Bottle#: 15 Worklist Smp#: 21
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-B-5-A
 Misc. Info.: 280-0082009-021
 Operator ID: TEM Instrument ID: SGC_P1
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 29-May-2019 17:23:59 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0314

First Level Reviewer: mooret

Date: 29-May-2019 17:22:13

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	--------------------	-------

S 1 Hexachlorocyclohexane, technical

1		1.000			ND
2		0.000			

* 2 1-Bromo-2-nitrobenzene

1	3.016	3.016	0.000	89695225	150.0
2	2.778	2.778	0.000	93738578	150.0

\$ 4 Tetrachloro-m-xylene

1	3.922	3.921	0.001	13284244	14.9
2	3.766	3.765	0.001	12705058	15.3

RPD = 2.21

7 Propachlor

1		4.138			ND
2		3.952			

5 Hexachlorobenzene

1	4.332	4.330	0.002	457632	-0.3498
2	4.242	4.242	0.000	529162	-0.6106

RPD = -54.32

LOD = 0.002000

6 Diallate

1		4.353			ND
2		4.194			

8 alpha-BHC

1		4.497			ND
2		4.384			

9 gamma-BHC (Lindane)

1		4.787			ND
2		4.696			

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170021.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	--------------------	-------

11 2,4,5-Trichlorophenol

1	4.838	ND
2	4.774	

10 beta-BHC

1	4.861	ND
2	4.771	

12 delta-BHC

1	5.010	ND
2	5.003	

13 Technical Chlordane

1	5.122	ND
1	5.589	
1	6.198	
1	6.335	
1	7.107	
2	4.934	
2	5.446	
2	6.033	
2	6.188	
2	7.076	

14 Chlordane (technical)

1	5.122	ND
1	5.589	
1	6.198	
1	6.335	
1	7.107	
2	4.934	
2	5.446	
2	6.033	
2	6.188	
2	7.076	

15 Heptachlor

1	5.190	ND
2	5.047	

16 Aldrin

1	5.460	ND
2	5.310	

17 Chlorpyrifos

1	5.686	ND
2	5.525	

18 Isodrin

1	5.782	ND
2	5.662	

19 Dicofol

1	5.817	ND
2	5.621	

20 2,4'-DDE

1	6.051	ND
2	6.040	

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170021.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	--------------------	-------

21 Heptachlor epoxide

1	6.067				ND	
2	5.837					

22 trans-Chlordane

1	6.197				ND	
2	6.032					

28 Toxaphene

1	6.231				ND	
1	6.817					
1	7.042					
1	7.489					
1	7.700					
2	6.106					
2	6.796					
2	7.112					
2	7.486					
2	7.835					

23 cis-Chlordane

1	6.337				ND	
2	6.187					

24 4,4'-DDE

1	6.410				ND	
2	6.363					

25 Endosulfan I

1	6.480				ND	
2	6.243					

26 2,4'-DDD

1	6.586				ND	
2	6.566					

27 Dieldrin

1	6.722				ND	
2	6.522					

29 2,4'-DDT

1	6.841				ND	
2	6.867					

30 Endrin

1	6.955				ND	
2	6.823					

31 Kepone

1	6.996				ND	
2	6.933					

32 4,4'-DDD

1	7.008				ND	
2	6.939					

33 Chlorobenzilate

1	7.019				ND	
2	6.816					

34 Endosulfan II

1	7.172				ND	
2	7.030					

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170021.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	--------------------	-------

35 4,4'-DDT

1	7.279				ND	
2	7.242					

36 Endrin aldehyde

1	7.573				ND	
2	7.355					

37 Methoxychlor

1	7.731				ND	
2	7.885					

38 Mirex

1	7.886				ND	
2	8.065					

39 Endosulfan sulfate

1	7.982				ND	
2	7.614					

40 Endrin ketone

1	8.241				ND	
2	8.101					

\$ 41 DCB Decachlorobiphenyl

1	9.152	9.153	-0.001	11261358	17.0	
2	9.231	9.231	0.000	11097270	15.7	
						RPD = 8.06

42 Tris(2,3-dibromopropyl)phosphate

1	10.868				ND	
2	10.896					

S 3 Endosulfan, Total

1	0.000				ND	
2	0.000					

QC Flag Legend

Processing Flags

7 - Failed Limit of Detection

Reagents:

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 29-May-2019 17:24:24

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170021.D

Injection Date: 17-May-2019 19:08:19

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: 280-123221-B-5-A

Lab Sample ID: 280-123221-5

Worklist Smp#: 21

Client ID: DET-003-190402-GW

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

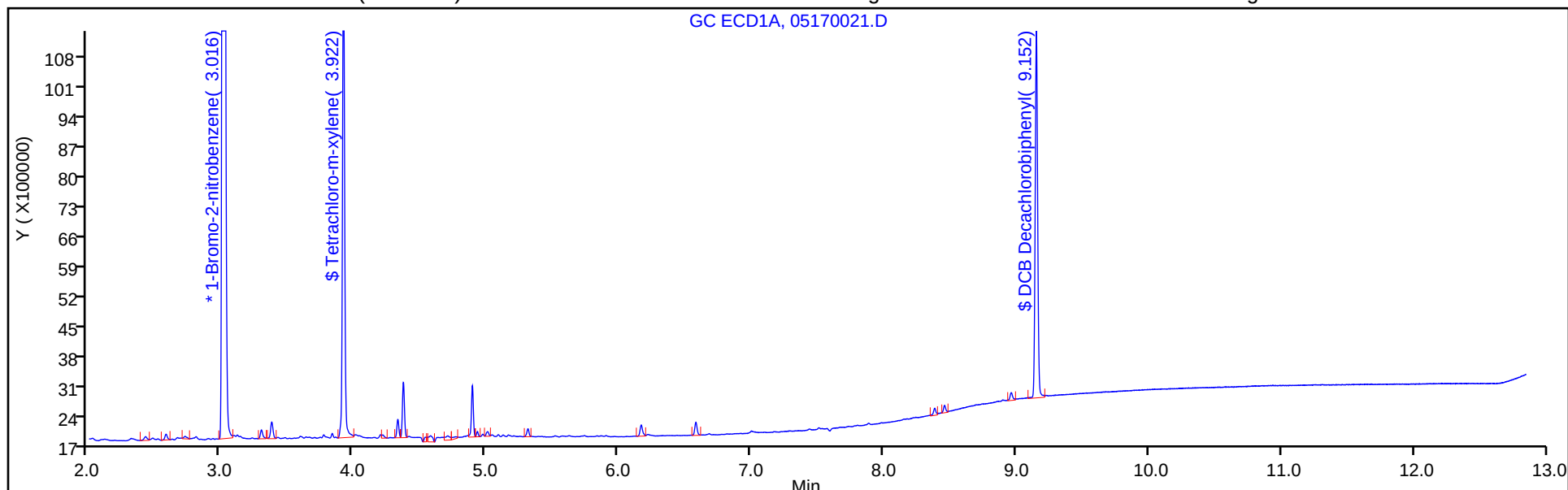
ALS Bottle#: 15

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

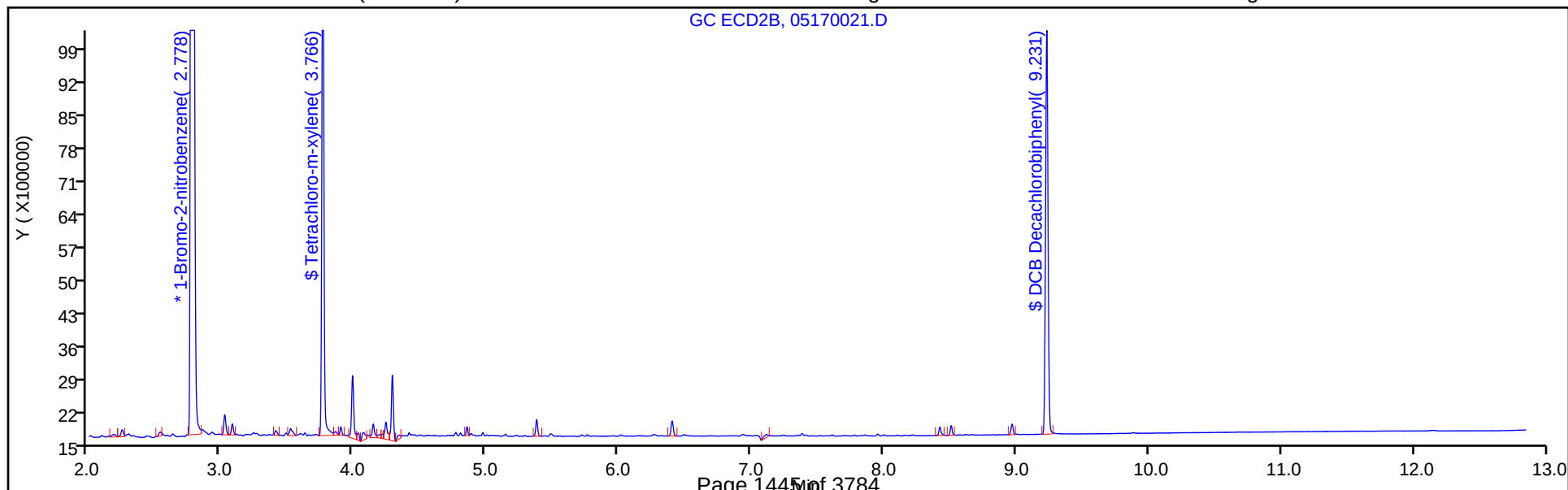
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170021.D
 Lims ID: 280-123221-B-5-A
 Client ID: DET-003-190402-GW
 Sample Type: Client
 Inject. Date: 17-May-2019 19:08:19 ALS Bottle#: 15 Worklist Smp#: 21
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-B-5-A
 Misc. Info.: 280-0082009-021
 Operator ID: TEM Instrument ID: SGC_P1
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 29-May-2019 17:23:59 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0314

First Level Reviewer: mooret

Date: 29-May-2019 17:22:13

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Tetrachloro-m-xylene	20.0	14.9	74.62
\$ 41 DCB Decachlorobiphenyl	20.0	17.0	85.10

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Tetrachloro-m-xylene	20.0	15.3	76.29
\$ 41 DCB Decachlorobiphenyl	20.0	15.7	78.51

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>DET-004-190401-GW</u>	Lab Sample ID: <u>280-123221-7</u>
Matrix: <u>Water</u>	Lab File ID: <u>05170022.D</u>
Analysis Method: <u>8081B</u>	Date Collected: <u>04/29/2019 10:04</u>
Extraction Method: <u>3510C</u>	Date Extracted: <u>05/06/2019 15:29</u>
Sample wt/vol: <u>996.4 (mL)</u>	Date Analyzed: <u>05/17/2019 19:25</u>
Con. Extract Vol.: <u>10 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>1 (uL)</u>	GC Column: <u>CLP1</u> ID: <u>0.32 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>458587</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
72-54-8	4,4'-DDD	0.020	U	0.050	0.020	0.0077
72-55-9	4,4'-DDE	0.020	U	0.050	0.020	0.0075
50-29-3	4,4'-DDT	0.050	U	0.050	0.050	0.015
309-00-2	Aldrin	0.020	U	0.050	0.020	0.0059
319-84-6	alpha-BHC	0.020	U	0.050	0.020	0.0053
5103-71-9	alpha-Chlordane	0.020	U	0.050	0.020	0.0053
319-85-7	beta-BHC	0.020	U	0.050	0.020	0.0087
319-86-8	delta-BHC	0.020	U	0.050	0.020	0.0058
60-57-1	Dieldrin	0.020	U	0.050	0.020	0.0063
959-98-8	Endosulfan I	0.020	U	0.050	0.020	0.0058
33213-65-9	Endosulfan II	0.020	U	0.050	0.020	0.0070
1031-07-8	Endosulfan sulfate	0.020	U	0.050	0.020	0.0057
72-20-8	Endrin	0.020	U	0.050	0.020	0.0079
7421-93-4	Endrin aldehyde	0.020	U	0.050	0.020	0.0088
53494-70-5	Endrin ketone	0.020	U	0.050	0.020	0.0070
58-89-9	gamma-BHC (Lindane)	0.020	U	0.050	0.020	0.0069
5103-74-2	gamma-Chlordane	0.020	U	0.050	0.020	0.0091
76-44-8	Heptachlor	0.020	U	0.050	0.020	0.0077
1024-57-3	Heptachlor epoxide	0.020	U	0.050	0.020	0.0075
72-43-5	Methoxychlor	0.050	U	0.050	0.050	0.013
8001-35-2	Toxaphene	0.80	U	2.0	0.80	0.37

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	87		34-122
877-09-8	Tetrachloro-m-xylene	72		44-124

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170022.D
 Lims ID: 280-123221-A-7-A
 Client ID: DET-004-190401-GW
 Sample Type: Client
 Inject. Date: 17-May-2019 19:25:51 ALS Bottle#: 16 Worklist Smp#: 22
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-A-7-A
 Misc. Info.: 280-0082009-022
 Operator ID: TEM Instrument ID: SGC_P1
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 29-May-2019 17:23:59 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0314

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	--------------------	-------

S 1 Hexachlorocyclohexane, technical

1		1.000			ND	
2		0.000				

* 2 1-Bromo-2-nitrobenzene

1	3.015	3.016	-0.001	88811208	150.0	
2	2.777	2.778	-0.001	94031579	150.0	

\$ 4 Tetrachloro-m-xylene

1	3.921	3.921	0.000	12700303	14.4	
2	3.765	3.765	0.000	11963191	14.3	

RPD = 0.84

7 Propachlor

1		4.138			ND	
2		3.952				

5 Hexachlorobenzene

1		4.330			ND	
2		4.242				

6 Diallate

1		4.353			ND	
2		4.194				

8 alpha-BHC

1		4.497			ND	
2		4.384				

9 gamma-BHC (Lindane)

1		4.787			ND	
2		4.696				

11 2,4,5-Trichlorophenol

1		4.838			ND	
2		4.774				

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170022.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	--------------------	-------

10 beta-BHC

1	4.861				ND	
2	4.771					

12 delta-BHC

1	5.010				ND	
2	5.003					

13 Technical Chlordane

1	5.122				ND	
1	5.589					
1	6.198					
1	6.335					
1	7.107					
2	4.934					
2	5.446					
2	6.033					
2	6.188					
2	7.076					

14 Chlordane (technical)

1	5.122				ND	
1	5.589					
1	6.198					
1	6.335					
1	7.107					
2	4.934					
2	5.446					
2	6.033					
2	6.188					
2	7.076					

15 Heptachlor

1	5.190				ND	
2	5.047					

16 Aldrin

1	5.460				ND	
2	5.310					

17 Chlorpyrifos

1	5.686				ND	
2	5.525					

18 Isodrin

1	5.782				ND	
2	5.662					

19 Dicofol

1	5.817				ND	
2	5.621					

20 2,4'-DDE

1	6.051				ND	
2	6.040					

21 Heptachlor epoxide

1	6.067				ND	
2	5.837					

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	--------------------	-------

22 trans-Chlordane

1	6.197				ND	
2	6.032					

28 Toxaphene

1	6.231				ND	
1	6.817					
1	7.042					
1	7.489					
1	7.700					
2	6.106					
2	6.796					
2	7.112					
2	7.486					
2	7.835					

23 cis-Chlordane

1	6.337				ND	
2	6.187					

24 4,4'-DDE

1	6.410				ND	
2	6.363					

25 Endosulfan I

1	6.480				ND	
2	6.243					

26 2,4'-DDD

1	6.586				ND	
2	6.566					

27 Dieldrin

1	6.722				ND	
2	6.522					

29 2,4'-DDT

1	6.841				ND	
2	6.867					

30 Endrin

1	6.955				ND	
2	6.823					

31 Kepone

1	6.996				ND	
2	6.933					

32 4,4'-DDD

1	7.008				ND	
2	6.939					

33 Chlorobenzilate

1	7.019				ND	
2	6.816					

34 Endosulfan II

1	7.172				ND	
2	7.030					

35 4,4'-DDT

1	7.279				ND	
2	7.242					

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170022.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	--------------------	-------

36 Endrin aldehyde

1	7.573				ND	
2	7.355					

37 Methoxychlor

1	7.731				ND	
2	7.885					

38 Mirex

1	7.886				ND	
2	8.065					

39 Endosulfan sulfate

1	7.982				ND	
2	7.614					

40 Endrin ketone

1	8.241				ND	
2	8.101					

\$ 41 DCB Decachlorobiphenyl

1	9.152	9.153	-0.001	11392453	17.4	
2	9.231	9.231	0.000	11461223	16.2	
RPD = 7.18						

42 Tris(2,3-dibromopropyl)phosphate

1	10.868				ND	
2	10.896					

S 3 Endosulfan, Total

1	0.000				ND	
2	0.000					

Reagents:

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 29-May-2019 17:24:23

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170022.D

Injection Date: 17-May-2019 19:25:51

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: 280-123221-A-7-A

Lab Sample ID: 280-123221-7

Worklist Smp#: 22

Client ID: DET-004-190401-GW

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

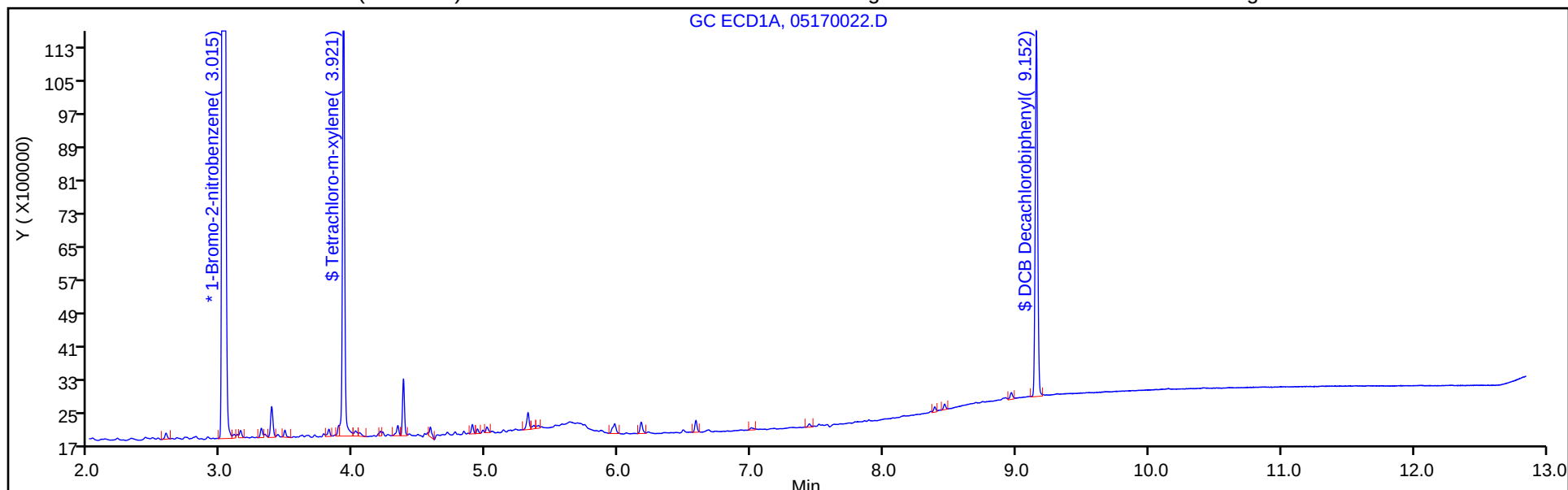
ALS Bottle#: 16

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

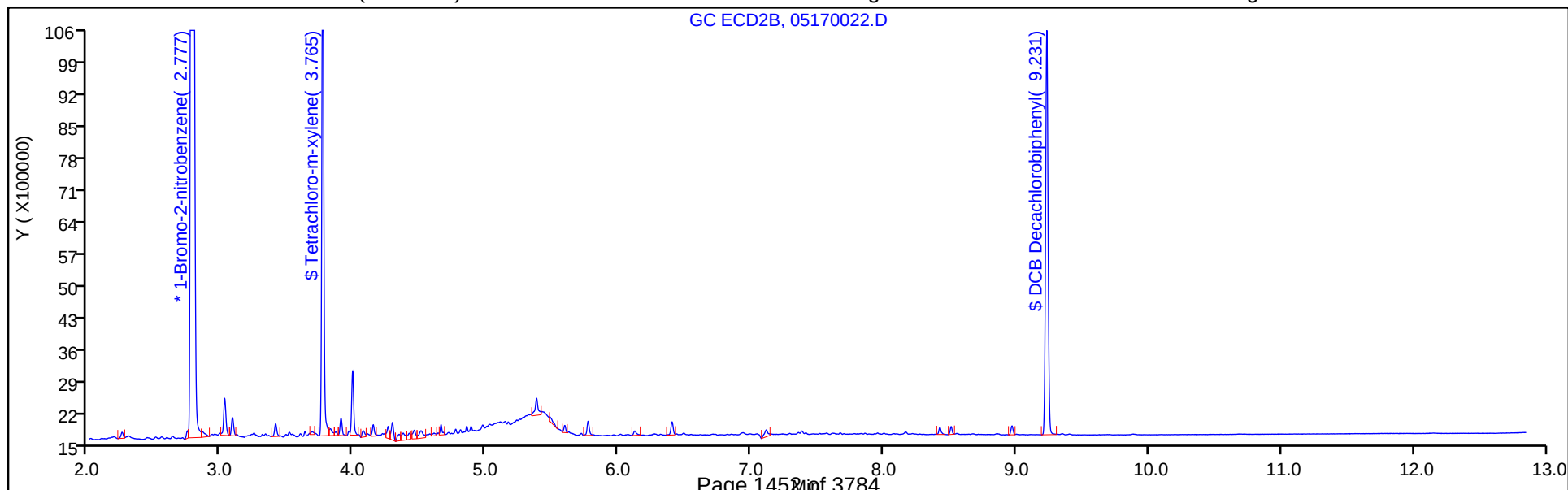
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170022.D
 Lims ID: 280-123221-A-7-A
 Client ID: DET-004-190401-GW
 Sample Type: Client
 Inject. Date: 17-May-2019 19:25:51 ALS Bottle#: 16 Worklist Smp#: 22
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-A-7-A
 Misc. Info.: 280-0082009-022
 Operator ID: TEM Instrument ID: SGC_P1
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 29-May-2019 17:23:59 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0314

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Tetrachloro-m-xylene	20.0	14.4	71.94
\$ 41 DCB Decachlorobiphenyl	20.0	17.4	87.05

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Tetrachloro-m-xylene	20.0	14.3	71.35
\$ 41 DCB Decachlorobiphenyl	20.0	16.2	81.02

FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 453267

SDG No.: _____

Instrument ID: SGC_P1 GC Column: CLP1 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/04/2019 17:49 Calibration End Date: 04/04/2019 19:13 Calibration ID: 35946

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-453267/21	04040021.D
Level 2	STD2 280-453267/20	04040020.D
Level 3	STD3 280-453267/19	04040019.D
Level 4	STD4 280-453267/18	04040018.D
Level 5	STD5 280-453267/17	04040017.D
Level 6	STD6 280-453267/16	04040016.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
Toxaphene Peak 1	0.0085 0.0100	0.0079	0.0105	0.0109	0.0103	Lin2	-0.449	0.0103							0.9900		0.9900
Toxaphene Peak 2	0.0214 0.0241	0.0231	0.0254	0.0259	0.0245	Lin2	-0.742	0.0251							0.9980		0.9900
Toxaphene Peak 3	0.0159 0.0189	0.0157	0.0177	0.0179	0.0182	Lin2	-0.583	0.0182							0.9970		0.9900
Toxaphene Peak 4	0.0350 0.0398	0.0383	0.0398	0.0388	0.0394	Lin2	-0.937	0.0399							1.0000		0.9900
Toxaphene Peak 5	0.0242 0.0270	0.0254	0.0270	0.0292	0.0297	Lin2	-0.940	0.0285							0.9970		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 453267

SDG No.: _____

Instrument ID: SGC_P1 GC Column: CLP1 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/04/2019 17:49 Calibration End Date: 04/04/2019 19:13 Calibration ID: 35946

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-453267/21	04040021.D
Level 2	STD2 280-453267/20	04040020.D
Level 3	STD3 280-453267/19	04040019.D
Level 4	STD4 280-453267/18	04040018.D
Level 5	STD5 280-453267/17	04040017.D
Level 6	STD6 280-453267/16	04040016.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
Toxaphene Peak 1	BNB	Lin2	992319 57631646	2232783	5977646	12684512	29058708	200 10000	500	1000	2000	5000
Toxaphene Peak 2	BNB	Lin2	2487255 138858602	6553067	14393572	30173159	69040474	200 10000	500	1000	2000	5000
Toxaphene Peak 3	BNB	Lin2	1842997 108835654	4442896	10052897	20892253	51389967	200 10000	500	1000	2000	5000
Toxaphene Peak 4	BNB	Lin2	4066677 228577290	10873861	22553690	45310042	111234649	200 10000	500	1000	2000	5000
Toxaphene Peak 5	BNB	Lin2	2813220 155413236	7215597	15329153	34032019	83944574	200 10000	500	1000	2000	5000

Curve Type Legend:

Lin2 = Linear 1/conc^2 ISTD

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040016.D
 Lims ID: STD6 TOX
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 04-Apr-2019 17:49:26 ALS Bottle#: 11 Worklist Smp#: 16
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD6 TOX
 Misc. Info.: 280-0080574-016
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub3
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 05-Apr-2019 14:14:34 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0337

First Level Reviewer: mooret

Date: 05-Apr-2019 13:06:47

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

* 2 1-Bromo-2-nitrobenzene

1	3.035	3.036	-0.001	86252912	150.0	150.0
2	2.782	2.782	0.000	91456905	150.0	150.0

28 Toxaphene

Ma

1	6.259	6.258	0.001	57631646	10000	9730.4
1	6.844	6.843	0.001	138858602	10000	9634.1
1	7.070	7.070	0.000	108835654	10000	10413
1	7.517	7.518	-0.001	228577290	10000	9990.8
1	7.727	7.727	0.000	155413236	10000	9524.8

Average of Peak Amounts = 9858.6

2	6.106	6.105	0.001	69183638	10000	9105.7	M
2	6.798	6.799	-0.001	116114299	10000	8803.6	M
2	7.116	7.115	0.001	445587105	10000	9504.5	M
2	7.489	7.489	0.000	119787910	10000	9489.9	M
2	7.838	7.838	0.000	263250963	10000	9696.6	M

Average of Peak Amounts = 9320.1

RPD = 5.62

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

8081ToxL6_00024

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 05-Apr-2019 14:14:35

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040016.D

Injection Date: 04-Apr-2019 17:49:26

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: STD6 TOX

Worklist Smp#: 16

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

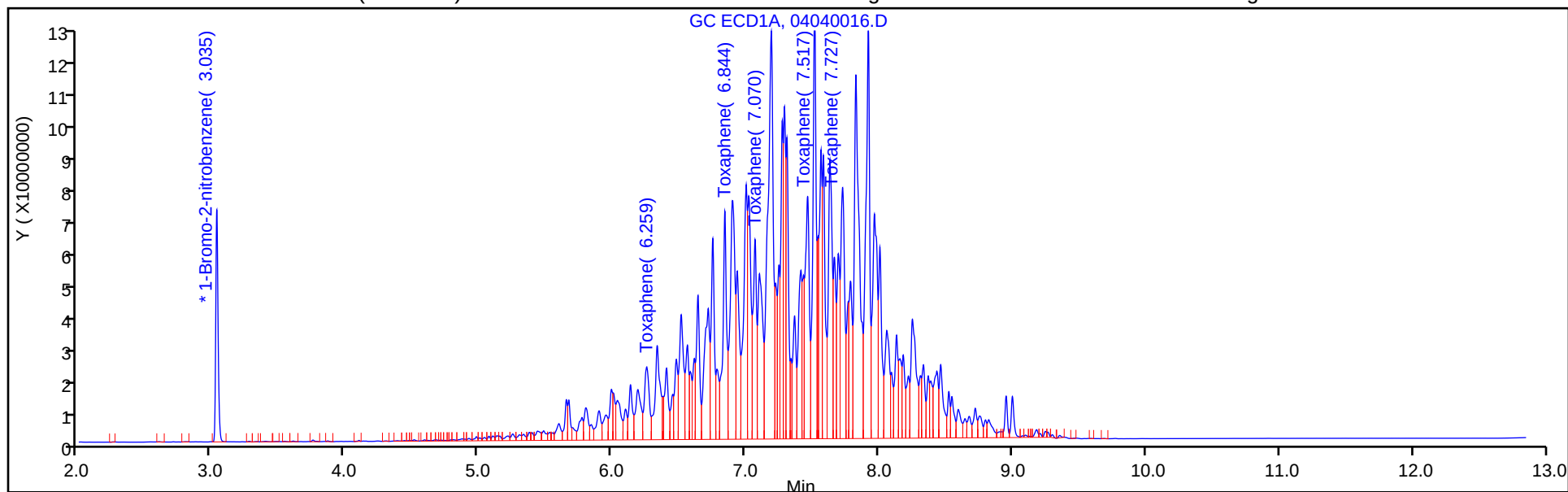
ALS Bottle#: 11

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

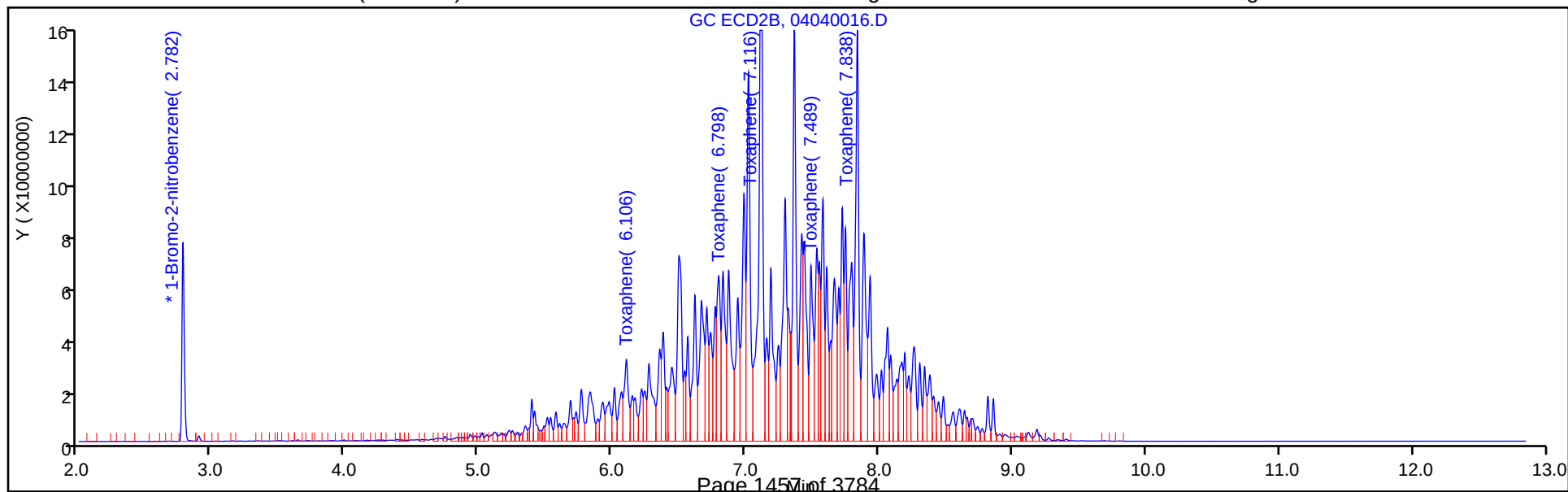
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040017.D
 Lims ID: STD5 TOX
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 04-Apr-2019 18:06:11 ALS Bottle#: 12 Worklist Smp#: 17
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD5 TOX
 Misc. Info.: 280-0080574-017
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub3
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 05-Apr-2019 14:14:31 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0337

First Level Reviewer: mooret

Date: 05-Apr-2019 13:16:29

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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* 2 1-Bromo-2-nitrobenzene

1	3.035	3.036	-0.001	84689226	150.0	150.0	
2	2.782	2.782	0.000	90211211	150.0	150.0	

28 Toxaphene

Ma

1	6.259	6.258	0.001	29058708	5000.0	5017.9	M
1	6.844	6.843	0.001	69040474	5000.0	4893.1	M
1	7.071	7.070	0.001	51389967	5000.0	5024.1	M
1	7.516	7.518	-0.002	111234649	5000.0	4963.6	M
1	7.724	7.727	-0.003	83944574	5000.0	5254.5	M

Average of Peak Amounts =

5030.6

2	6.106	6.105	0.001	36259996	5000.0	4803.8	a
2	6.798	6.799	-0.001	69569393	5000.0	5335.6	
2	7.115	7.115	0.000	226859510	5000.0	4900.4	
2	7.489	7.489	0.000	61741081	5000.0	4942.2	
2	7.837	7.838	-0.001	132879685	5000.0	4953.4	

Average of Peak Amounts =

4987.1

RPD = 0.87

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

8081ToxL5_00022

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 05-Apr-2019 14:14:32

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040017.D

Injection Date: 04-Apr-2019 18:06:11

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: STD5 TOX

Worklist Smp#: 17

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

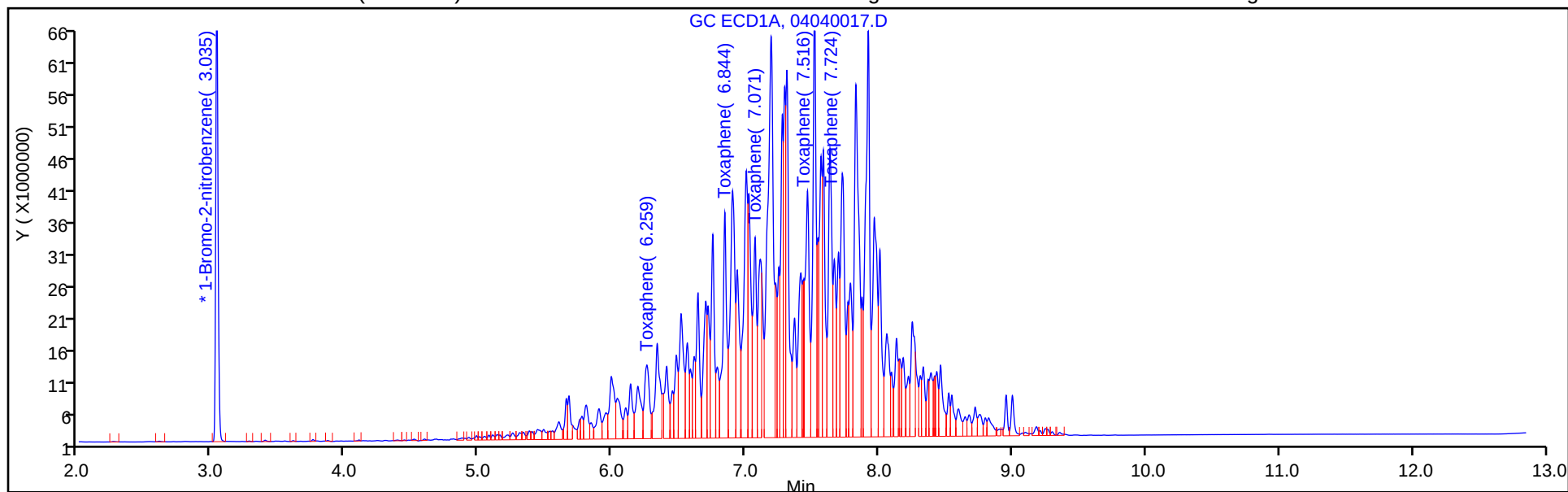
ALS Bottle#: 12

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

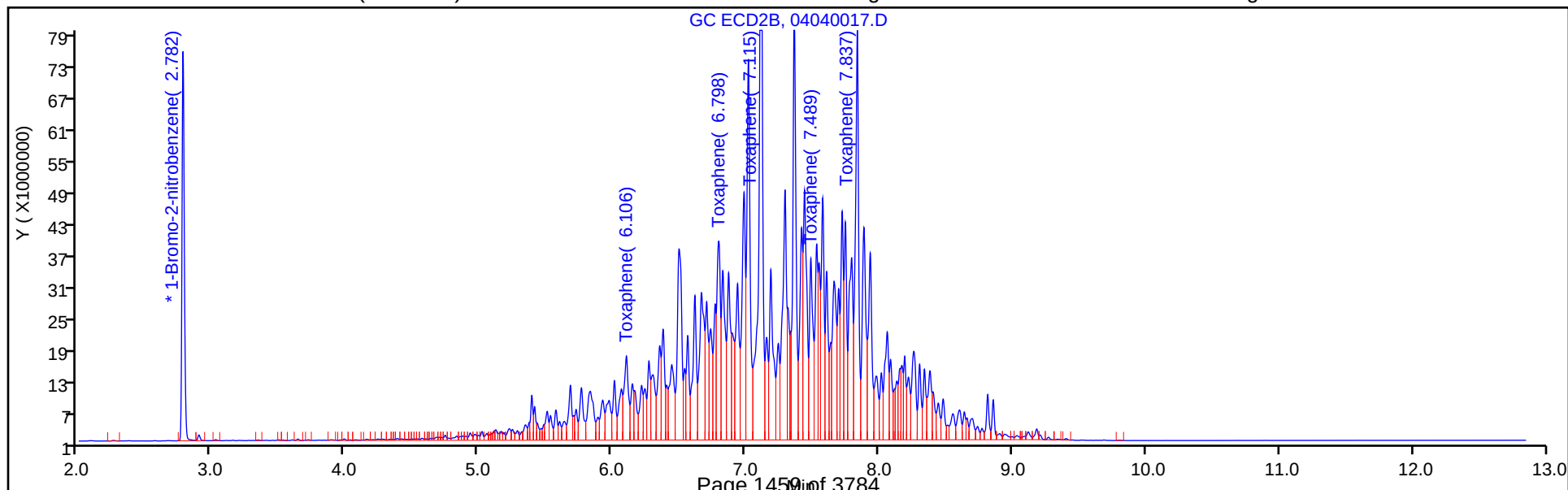
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040017.D

Injection Date: 04-Apr-2019 18:06:11

Instrument ID: SGC_P1

Lims ID: STD5 TOX

Client ID:

Operator ID: TEM

ALS Bottle#:

12

Worklist Smp#:

17

Injection Vol: 1.0 ul

Dil. Factor:

1.0000

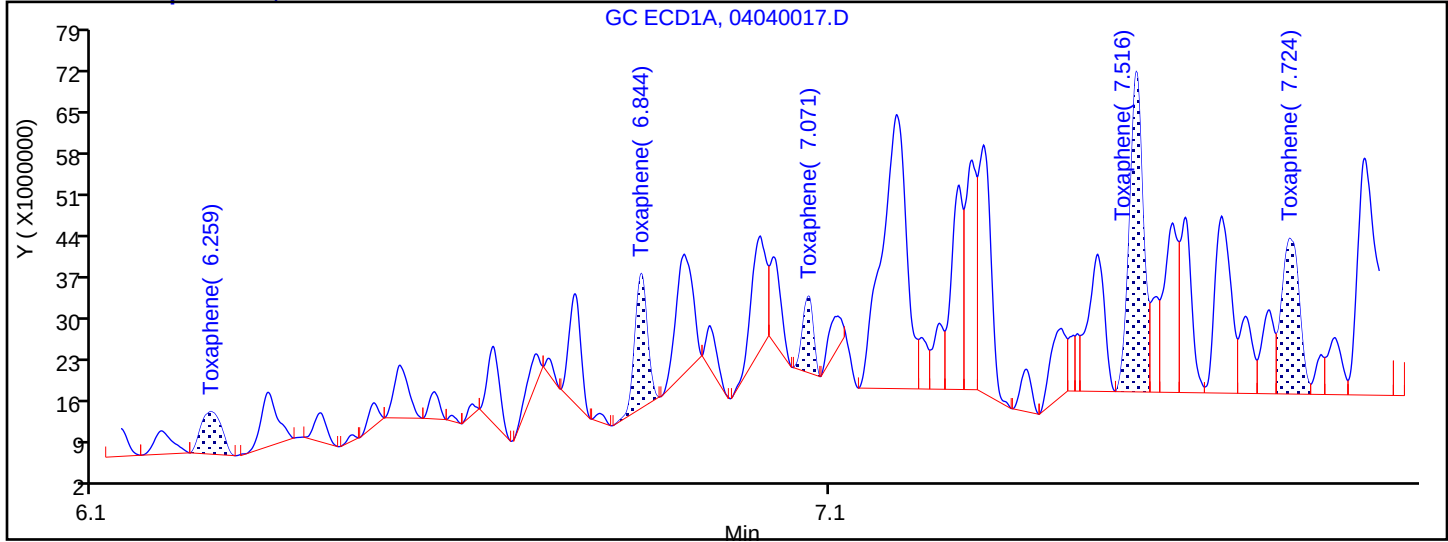
Method: P1 8081 IS

Limit Group:

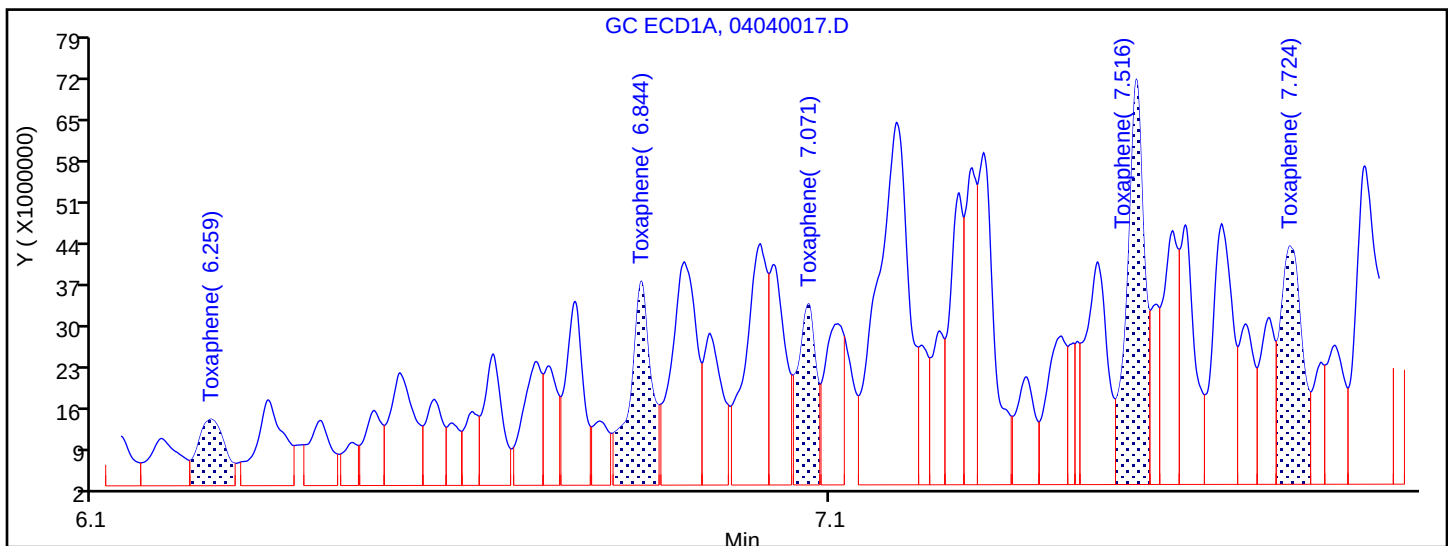
GCSV - 8081A - IS

Column: CLP1 Pesticides Column 1 (0.32 mm) Detector

GC ECD1A

28 Toxaphene, CAS: 8001-35-2**Processing Integration Results**

6.259	Response = 14027540
6.844	Response = 26800408
7.071	Response = 12857099
7.516	Response = 70686104
7.724	Response = 44551681

**Manual Integration Results**

6.259	Response = 29058708	M
6.844	Response = 69040474	M
7.071	Response = 51389967	M
7.516	Response = 111234649	M
7.724	Response = 83944574	M

Reviewer: mooret, 05-Apr-2019 13:35:35

Audit Action: Assigned New Baseline

Audit Reason: Baseline Smoothing
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Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040018.D
 Lims ID: STD4 TOX
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 04-Apr-2019 18:22:55 ALS Bottle#: 13 Worklist Smp#: 18
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD4 TOX
 Misc. Info.: 280-0080574-018
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub3
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 05-Apr-2019 14:14:27 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0337

First Level Reviewer: mooret

Date: 05-Apr-2019 13:12:06

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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* 2 1-Bromo-2-nitrobenzene

1	3.036	3.036	0.000	87537849	150.0	150.0
2	2.782	2.782	0.000	93682677	150.0	150.0

28 Toxaphene

a

1	6.258	6.258	0.000	12684512	2000.0	2144.2
1	6.843	6.843	0.000	30173159	2000.0	2085.9
1	7.070	7.070	0.000	20892253	2000.0	1995.4
1	7.518	7.518	0.000	45310042	2000.0	1970.3
1	7.727	7.727	0.000	34032019	2000.0	2081.0

Average of Peak Amounts =

2055.4

2	6.105	6.105	0.000	16606439	2000.0	2077.4
2	6.799	6.799	0.000	30579777	2000.0	2241.0
2	7.115	7.115	0.000	92804453	2000.0	1923.7
2	7.489	7.489	0.000	27202163	2000.0	2076.7
2	7.838	7.838	0.000	56092968	2000.0	2003.0

Average of Peak Amounts =

2064.4

RPD = 0.44

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

8081TOXCCVL4_00015

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 05-Apr-2019 14:14:28

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040018.D

Injection Date: 04-Apr-2019 18:22:55

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: STD4 TOX

Worklist Smp#: 18

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

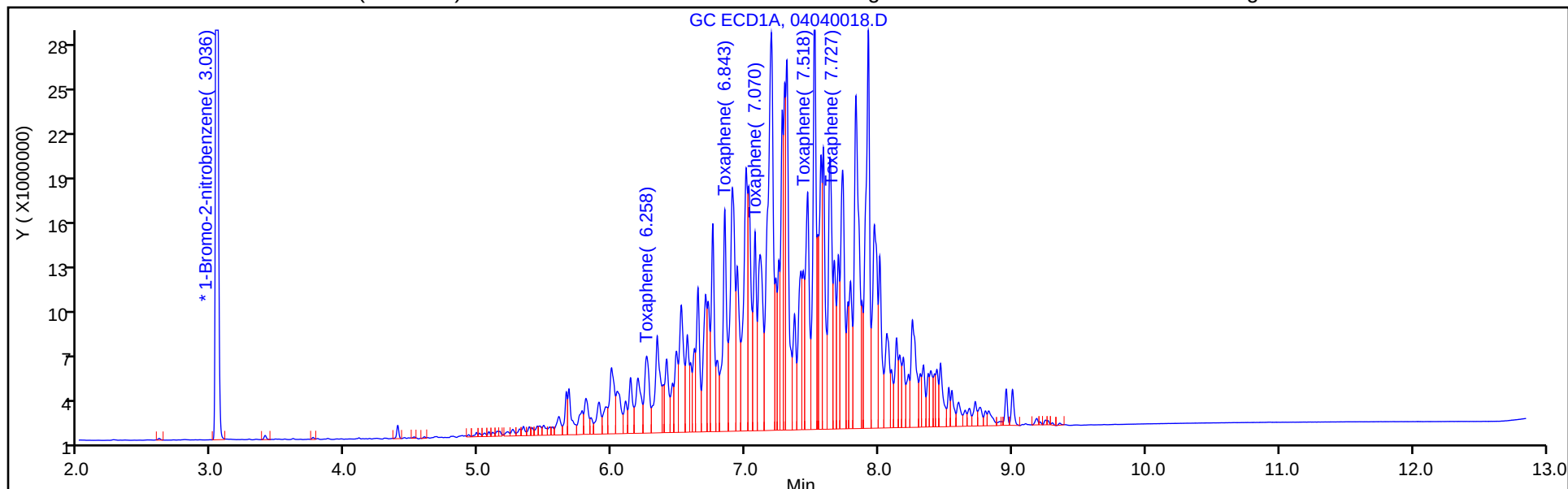
ALS Bottle#: 13

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

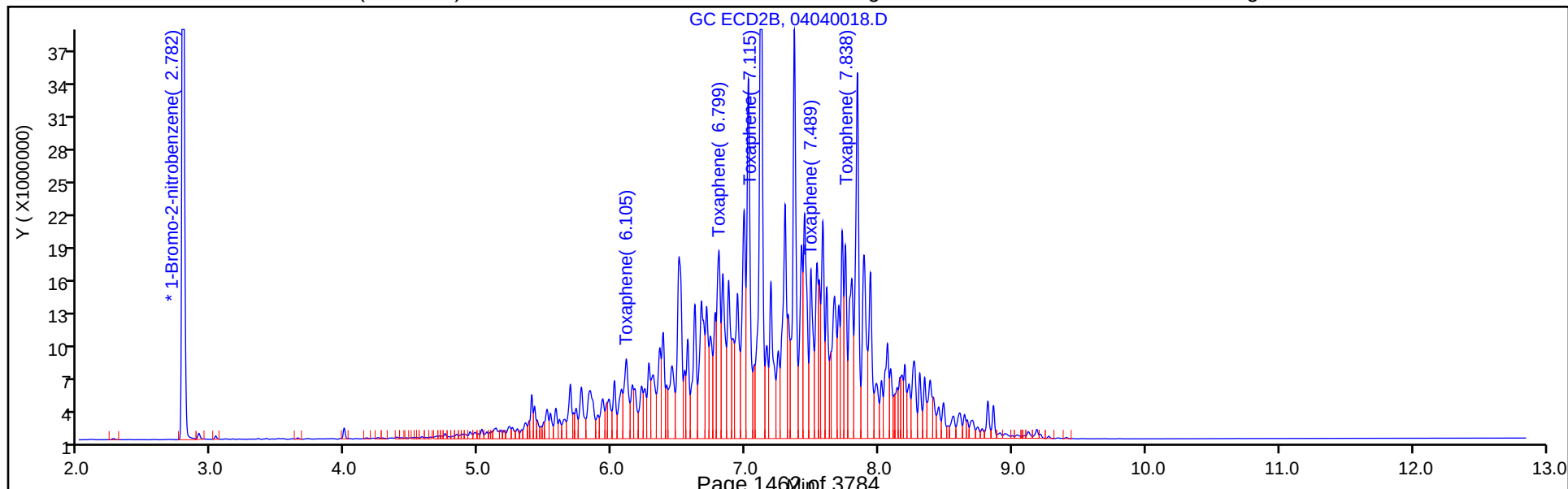
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040019.D
 Lims ID: STD3 TOX
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 04-Apr-2019 18:39:47 ALS Bottle#: 14 Worklist Smp#: 19
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD3 TOX
 Misc. Info.: 280-0080574-019
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub3
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 05-Apr-2019 14:14:24 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0337

First Level Reviewer: mooret

Date: 05-Apr-2019 13:15:17

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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* 2 1-Bromo-2-nitrobenzene

1	3.036	3.036	0.000	85046686	150.0	150.0	
2	2.782	2.782	0.000	91816312	150.0	150.0	

28 Toxaphene

Ma

1	6.257	6.258	-0.001	5977646	1000.0	1062.4	M
1	6.843	6.843	0.000	14393572	1000.0	1039.2	M
1	7.070	7.070	0.000	10052897	1000.0	1004.4	M
1	7.516	7.518	-0.002	22553690	1000.0	1020.9	M
1	7.722	7.727	-0.005	15329153	1000.0	982.5	M

Average of Peak Amounts = 1021.9

2	6.105	6.105	0.000	8624161	1000.0	1066.2	M
2	6.796	6.799	-0.003	12999785	1000.0	955.0	M
2	7.114	7.115	-0.001	50560782	1000.0	1064.4	M
2	7.489	7.489	0.000	13285678	1000.0	1017.4	M
2	7.837	7.838	-0.001	28227754	1000.0	1019.9	M

Average of Peak Amounts = 1024.6

RPD = 0.26

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

8081ToxL3_00021

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 05-Apr-2019 14:14:25

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040019.D

Injection Date: 04-Apr-2019 18:39:47

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: STD3 TOX

Worklist Smp#: 19

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

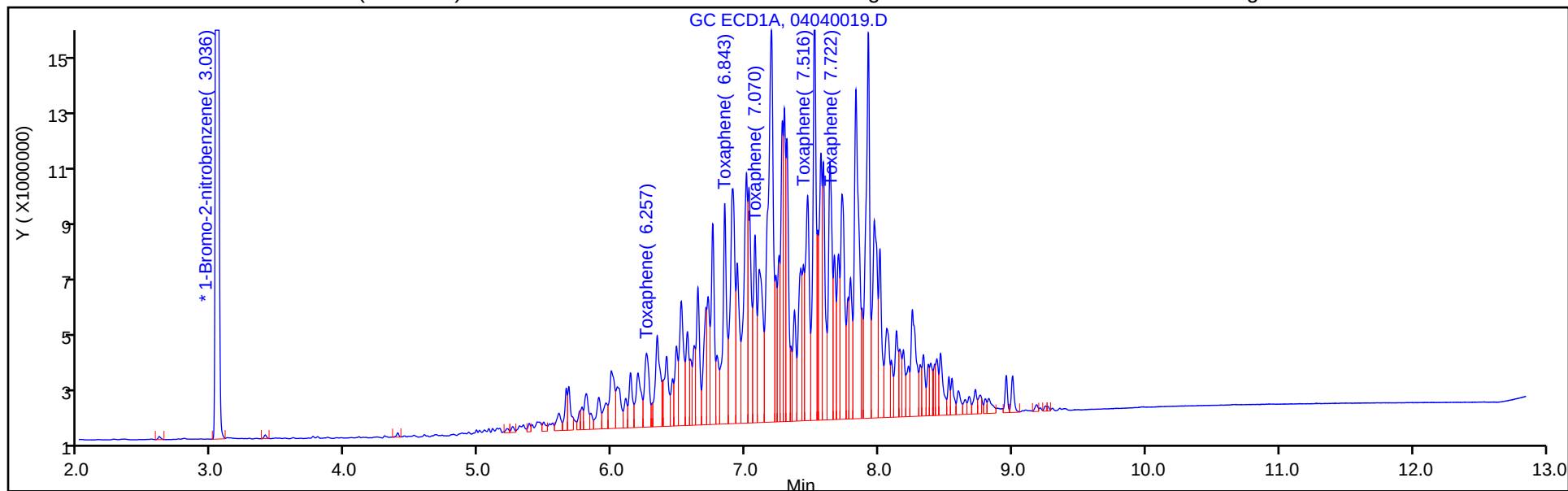
ALS Bottle#: 14

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

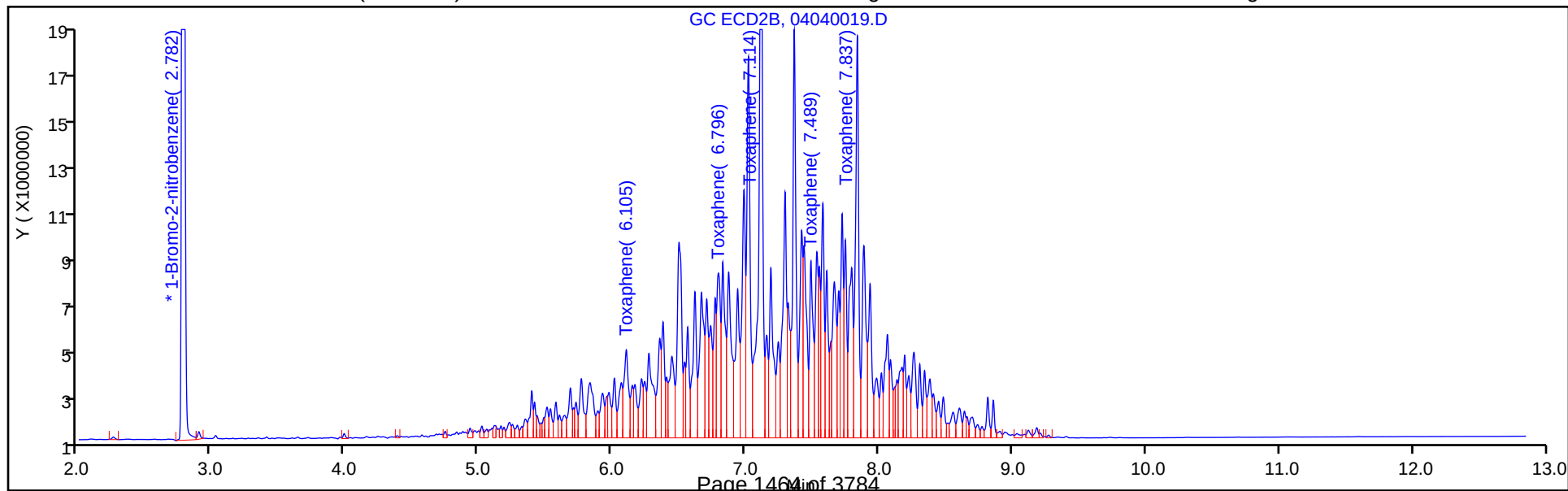
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040019.D

Injection Date: 04-Apr-2019 18:39:47

Instrument ID: SGC_P1

Lims ID: STD3 TOX

Client ID:

Operator ID: TEM

ALS Bottle#:

14

Worklist Smp#:

19

Injection Vol: 1.0 ul

Dil. Factor:

1.0000

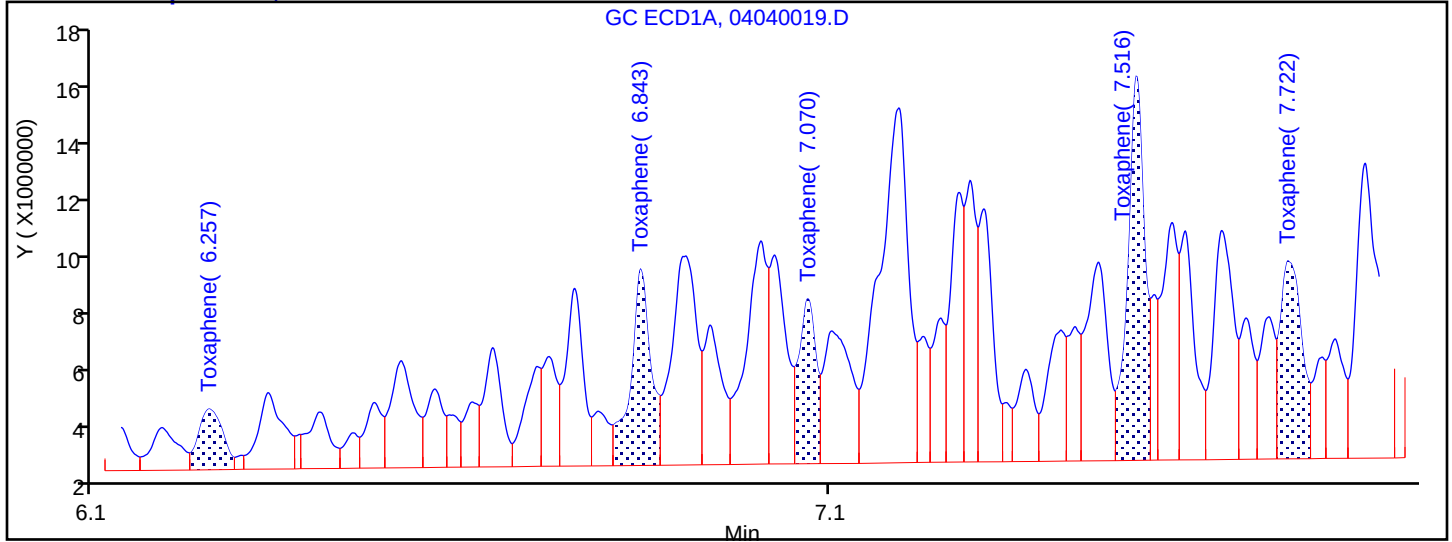
Method: P1 8081 IS

Limit Group:

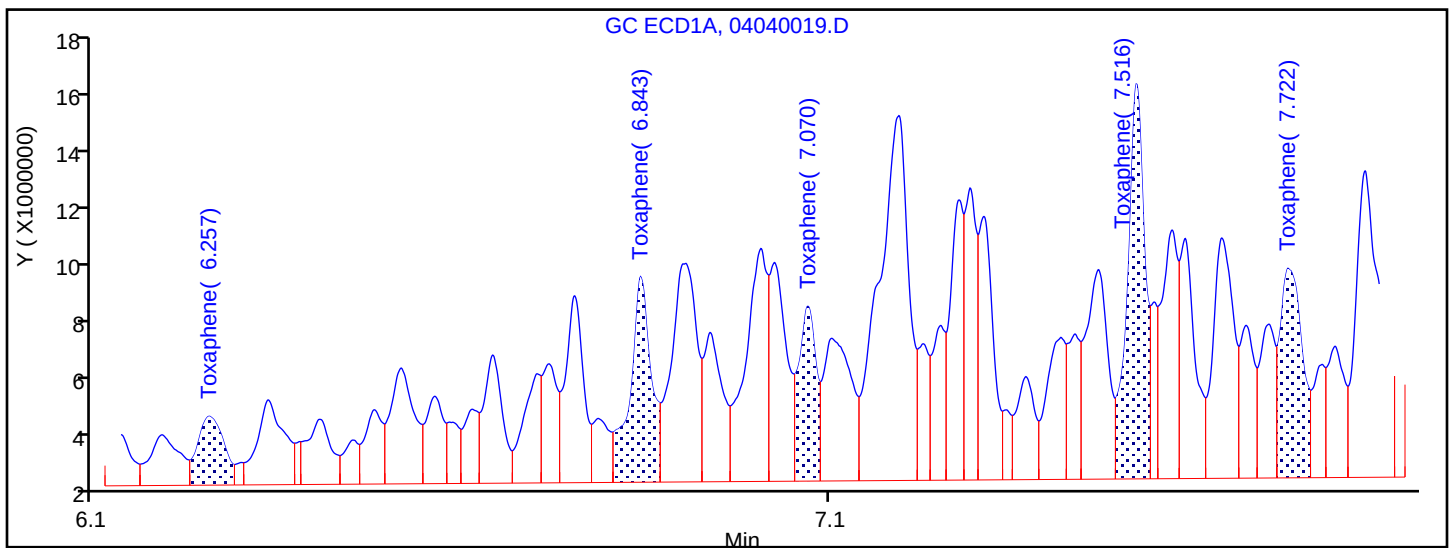
GCSV - 8081A - IS

Column: CLP1 Pesticides Column 1 (0.32 mm) Detector

GC ECD1A

28 Toxaphene, CAS: 8001-35-2**Processing Integration Results**

6.257	Response = 4926953
6.843	Response = 13100488
7.070	Response = 9300109
7.516	Response = 21423254
7.722	Response = 14187616

**Manual Integration Results**

6.257	Response = 5977646	M
6.843	Response = 14393572	M
7.070	Response = 10052897	M
7.516	Response = 22553690	M
7.722	Response = 15329153	M

Reviewer: mooret, 05-Apr-2019 13:35:59

Audit Action: Assigned New Baseline

Audit Reason: Baseline Smoothing
Page 1465 of 3784

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040020.D
 Lims ID: STD2 TOX
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 04-Apr-2019 18:56:33 ALS Bottle#: 15 Worklist Smp#: 20
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD2 TOX
 Misc. Info.: 280-0080574-020
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub3
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 05-Apr-2019 14:14:21 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0337

First Level Reviewer: mooret

Date: 05-Apr-2019 13:18:57

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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* 2 1-Bromo-2-nitrobenzene

1	3.036	3.036	0.000	85155370	150.0	150.0	
2	2.782	2.782	0.000	91519204	150.0	150.0	

28 Toxaphene

1	6.257	6.258	-0.001	2232783	500.0	423.5	a
1	6.843	6.843	0.000	6553067	500.0	488.6	
1	7.070	7.070	0.000	4442896	500.0	461.2	
1	7.516	7.518	-0.002	10873861	500.0	503.8	
1	7.725	7.727	-0.002	7215597	500.0	479.4	

Average of Peak Amounts =

471.3

2	6.106	6.105	0.001	4561397	500.0	531.2	a
2	6.795	6.799	-0.004	6757726	500.0	483.6	
2	7.115	7.115	0.000	25917882	500.0	542.0	
2	7.490	7.489	0.001	6865270	500.0	510.6	
2	7.837	7.838	-0.001	14523258	500.0	517.9	

Average of Peak Amounts =

517.1

RPD = 9.26

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

8081ToxL2_00022

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 05-Apr-2019 14:14:21

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040020.D

Injection Date: 04-Apr-2019 18:56:33

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: STD2 TOX

Worklist Smp#: 20

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

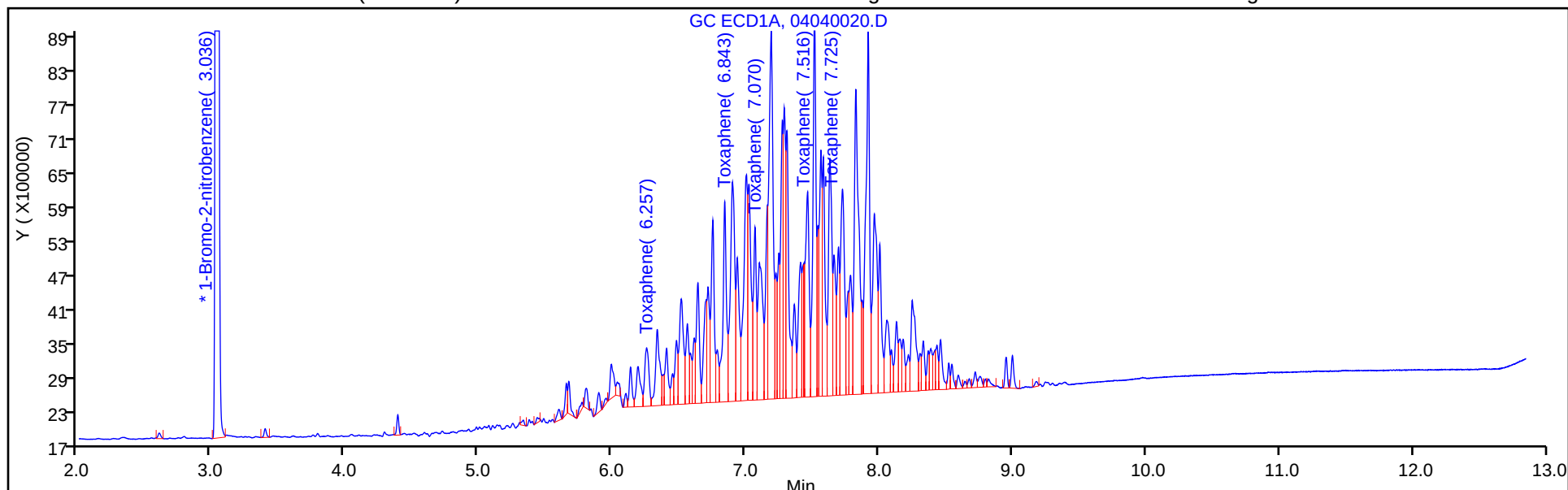
ALS Bottle#: 15

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

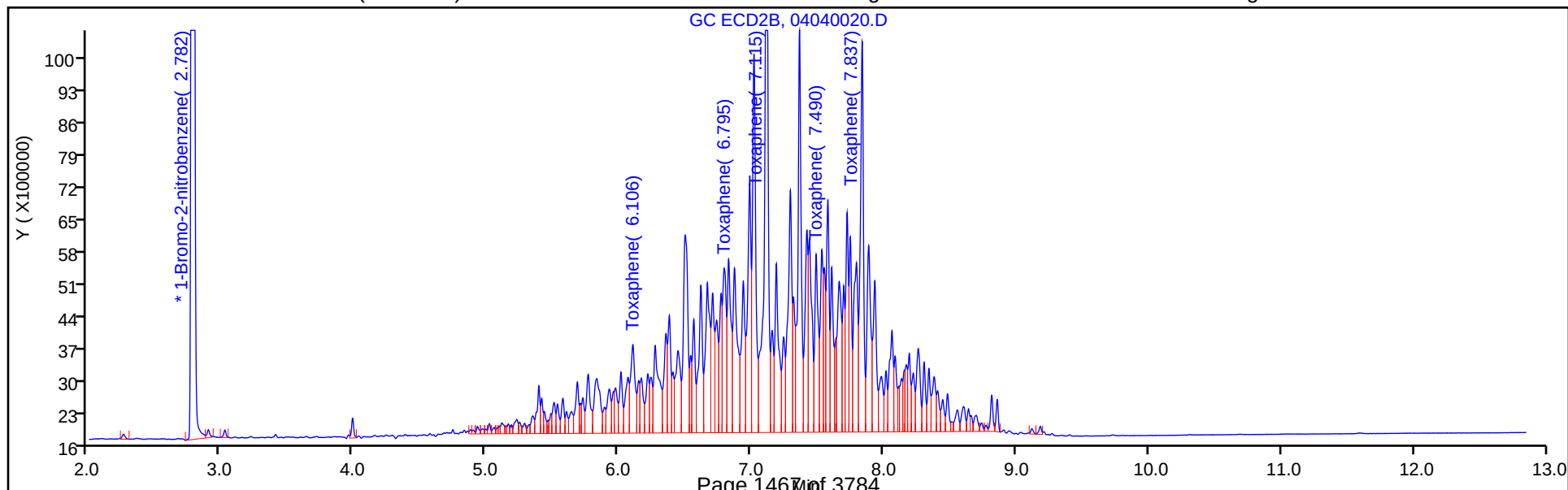
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040021.D
 Lims ID: STD1 TOX
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 04-Apr-2019 19:13:18 ALS Bottle#: 16 Worklist Smp#: 21
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD1 TOX
 Misc. Info.: 280-0080574-021
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub3
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 05-Apr-2019 14:14:18 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0337

First Level Reviewer: mooret

Date: 05-Apr-2019 13:15:48

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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* 2 1-Bromo-2-nitrobenzene

1	3.035	3.036	-0.001	87191406	150.0	150.0	
2	2.782	2.782	0.000	94261879	150.0	150.0	

28 Toxaphene

Ma

1	6.256	6.258	-0.002	992319	200.0	208.4	M
1	6.844	6.843	0.001	2487255	200.0	199.7	M
1	7.070	7.070	0.000	1842997	200.0	205.9	M
1	7.516	7.518	-0.002	4066677	200.0	198.9	M
1	7.726	7.727	-0.001	2813220	200.0	203.0	M

Average of Peak Amounts =

203.2

2	6.105	6.105	0.000	2064829	200.0	192.3	M
2	6.796	6.799	-0.003	3144196	200.0	202.0	M
2	7.115	7.115	0.000	9791170	200.0	191.8	M
2	7.489	7.489	0.000	3007856	200.0	197.1	M
2	7.837	7.838	-0.001	5983378	200.0	196.5	M

Average of Peak Amounts =

195.9

RPD = 3.63

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

8081ToxL1_00021

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 05-Apr-2019 14:14:18

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040021.D

Injection Date: 04-Apr-2019 19:13:18

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: STD1 TOX

Worklist Smp#: 21

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

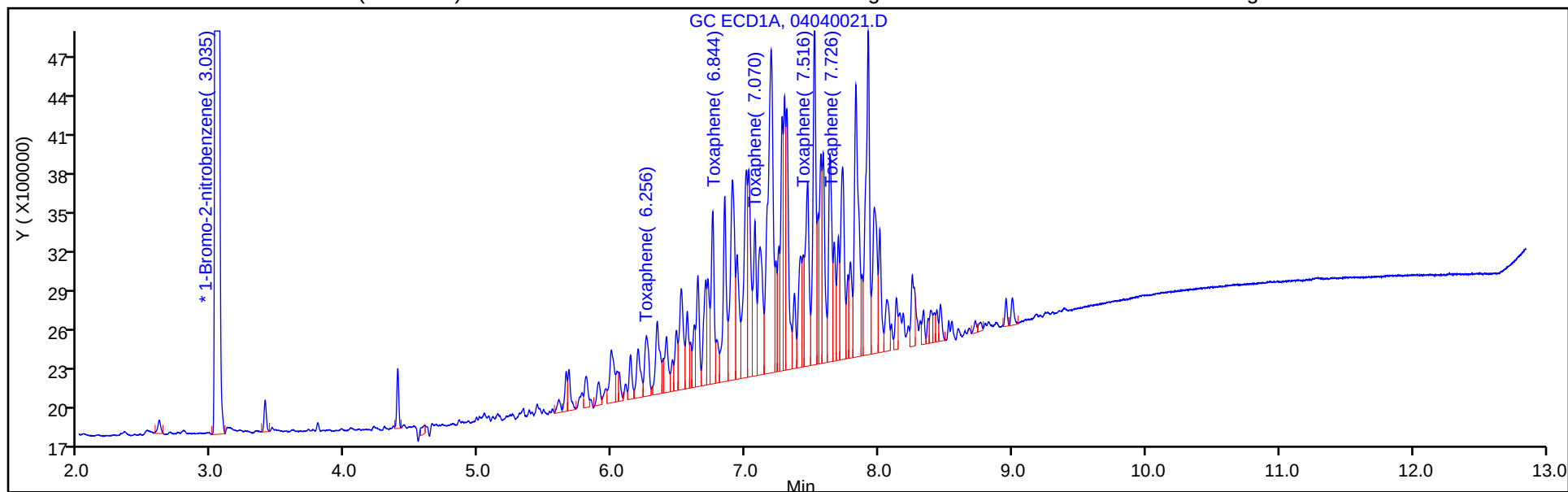
ALS Bottle#: 16

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

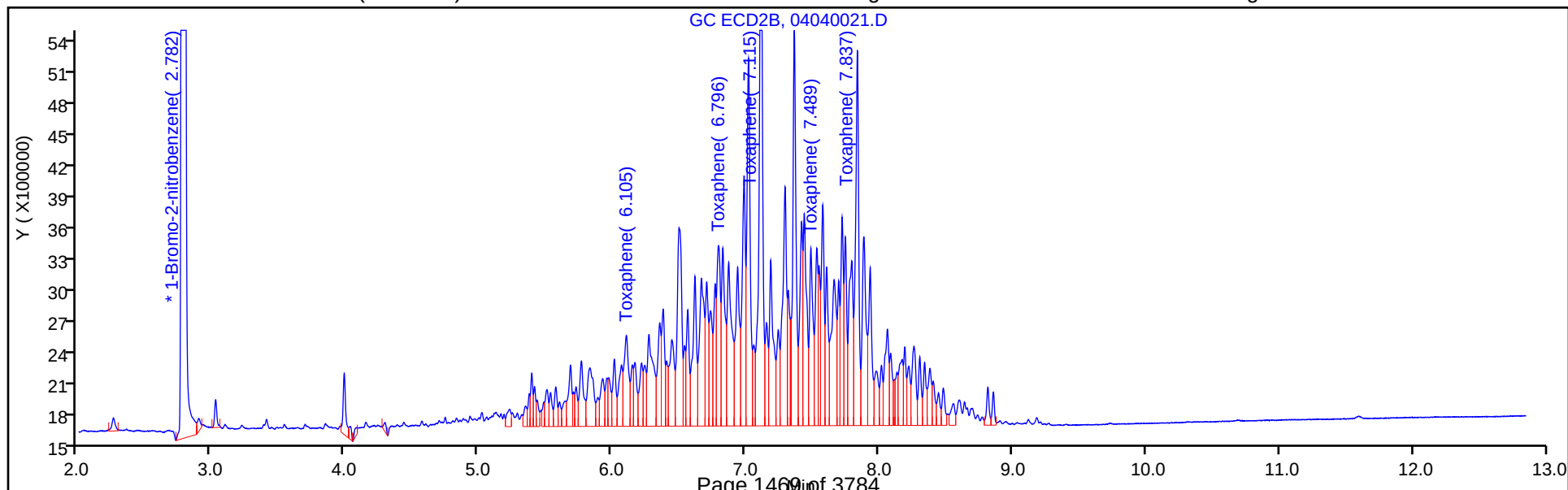
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040021.D

Injection Date: 04-Apr-2019 19:13:18

Instrument ID: SGC_P1

Lims ID: STD1 TOX

Client ID:

Operator ID: TEM

ALS Bottle#:

16

Worklist Smp#:

21

Injection Vol: 1.0 ul

Dil. Factor:

1.0000

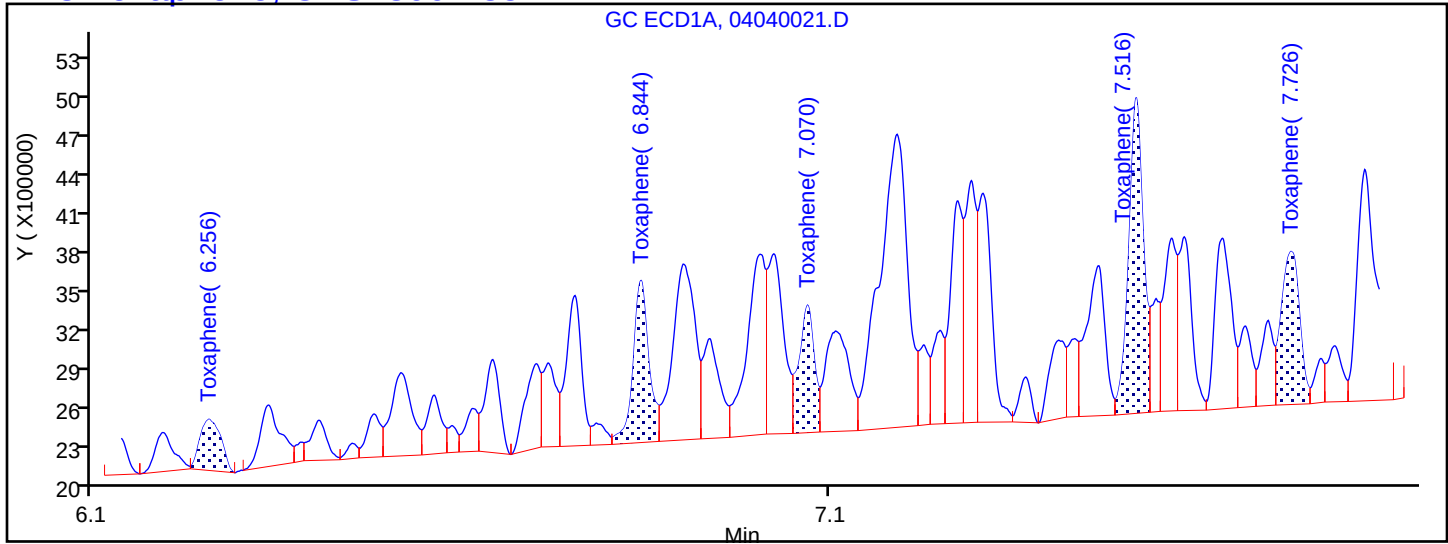
Method: P1 8081 IS

Limit Group:

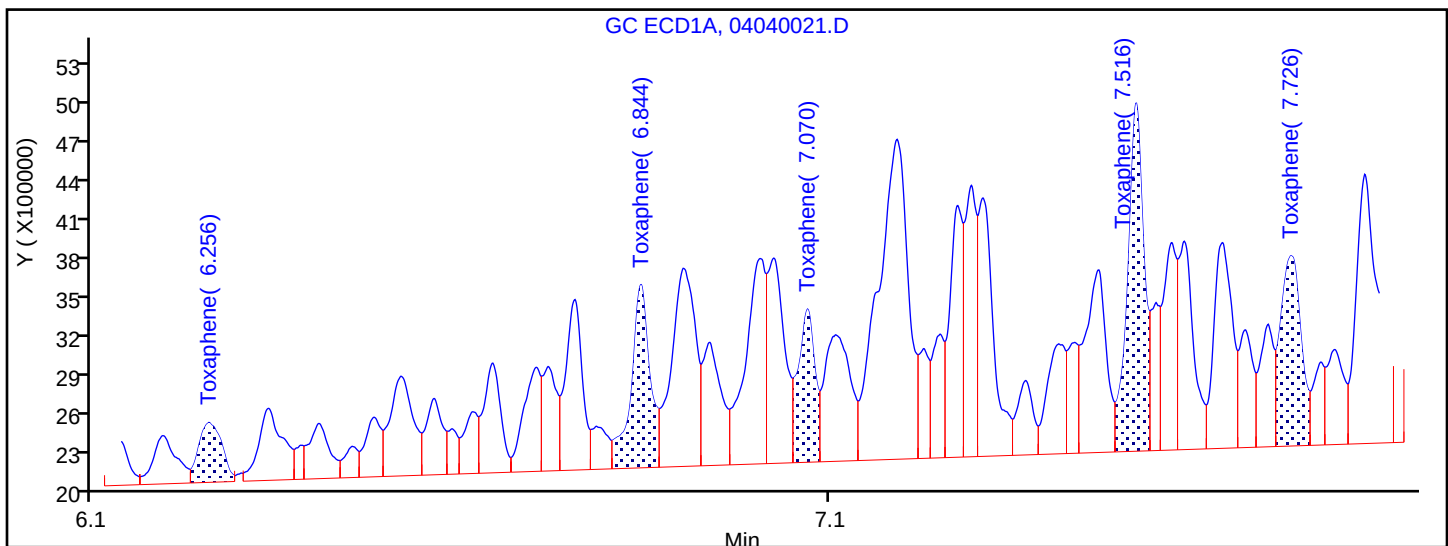
GCSV - 8081A - IS

Column: CLP1 Pesticides Column 1 (0.32 mm) Detector

GC ECD1A

28 Toxaphene, CAS: 8001-35-2**Processing Integration Results**

6.256	Response = 757941
6.844	Response = 1842846
7.070	Response = 1401923
7.516	Response = 3322388
7.726	Response = 2001735

**Manual Integration Results**

6.256	Response = 992319	M
6.844	Response = 2487255	M
7.070	Response = 1842997	M
7.516	Response = 4066677	M
7.726	Response = 2813220	M

Reviewer: mooret, 05-Apr-2019 13:36:20

Audit Action: Assigned New Baseline

Audit Reason: Baseline Smoothing
Page 1470 of 3784

FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 453267

SDG No.: _____

Instrument ID: SGC_P1 GC Column: CLP2 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/04/2019 17:49 Calibration End Date: 04/04/2019 19:13 Calibration ID: 35947

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-453267/21	04040021.D
Level 2	STD2 280-453267/20	04040020.D
Level 3	STD3 280-453267/19	04040019.D
Level 4	STD4 280-453267/18	04040018.D
Level 5	STD5 280-453267/17	04040017.D
Level 6	STD6 280-453267/16	04040016.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
Toxaphene Peak 1	0.0164 0.0113	0.0150	0.0141	0.0133	0.0121	Lin2	0.9093	0.0124							0.9940		0.9900
Toxaphene Peak 2	0.0250 0.0190	0.0222	0.0212	0.0245	0.0231	Lin2	0.6496	0.0216							0.9900		0.9900
Toxaphene Peak 3	0.0779 0.0731	0.0850	0.0826	0.0743	0.0754	Lin2	0.8489	0.0768							0.9950		0.9900
Toxaphene Peak 4	0.0239 0.0196	0.0225	0.0217	0.0218	0.0205	Lin2	0.7201	0.0206							0.9990		0.9900
Toxaphene Peak 5	0.0476 0.0432	0.0476	0.0461	0.0449	0.0442	Lin2	0.7871	0.0444							0.9990		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 453267

SDG No.: _____

Instrument ID: SGC_P1 GC Column: CLP2 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/04/2019 17:49 Calibration End Date: 04/04/2019 19:13 Calibration ID: 35947

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-453267/21	04040021.D
Level 2	STD2 280-453267/20	04040020.D
Level 3	STD3 280-453267/19	04040019.D
Level 4	STD4 280-453267/18	04040018.D
Level 5	STD5 280-453267/17	04040017.D
Level 6	STD6 280-453267/16	04040016.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
Toxaphene Peak 1	BNB	Lin2	2064829 69183638	4561397	8624161	16606439	36259996	200 10000	500	1000	2000	5000
Toxaphene Peak 2	BNB	Lin2	3144196 116114299	6757726	12999785	30579777	69569393	200 10000	500	1000	2000	5000
Toxaphene Peak 3	BNB	Lin2	9791170 445587105	25917882	50560782	92804453	226859510	200 10000	500	1000	2000	5000
Toxaphene Peak 4	BNB	Lin2	3007856 119787910	6865270	13285678	27202163	61741081	200 10000	500	1000	2000	5000
Toxaphene Peak 5	BNB	Lin2	5983378 263250963	14523258	28227754	56092968	132879685	200 10000	500	1000	2000	5000

Curve Type Legend:

Lin2 = Linear 1/conc^2 ISTD

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040016.D
 Lims ID: STD6 TOX
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 04-Apr-2019 17:49:26 ALS Bottle#: 11 Worklist Smp#: 16
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD6 TOX
 Misc. Info.: 280-0080574-016
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub3
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 05-Apr-2019 14:14:34 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0337

First Level Reviewer: mooret

Date: 05-Apr-2019 13:06:47

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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* 2 1-Bromo-2-nitrobenzene

1	3.035	3.036	-0.001	86252912	150.0	150.0
2	2.782	2.782	0.000	91456905	150.0	150.0

28 Toxaphene

Ma

1	6.259	6.258	0.001	57631646	10000	9730.4
1	6.844	6.843	0.001	138858602	10000	9634.1
1	7.070	7.070	0.000	108835654	10000	10413
1	7.517	7.518	-0.001	228577290	10000	9990.8
1	7.727	7.727	0.000	155413236	10000	9524.8

Average of Peak Amounts = 9858.6

2	6.106	6.105	0.001	69183638	10000	9105.7	M
2	6.798	6.799	-0.001	116114299	10000	8803.6	M
2	7.116	7.115	0.001	445587105	10000	9504.5	M
2	7.489	7.489	0.000	119787910	10000	9489.9	M
2	7.838	7.838	0.000	263250963	10000	9696.6	M

Average of Peak Amounts = 9320.1

RPD = 5.62

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

8081ToxL6_00024

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 05-Apr-2019 14:14:35

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040016.D

Injection Date: 04-Apr-2019 17:49:26

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: STD6 TOX

Worklist Smp#: 16

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

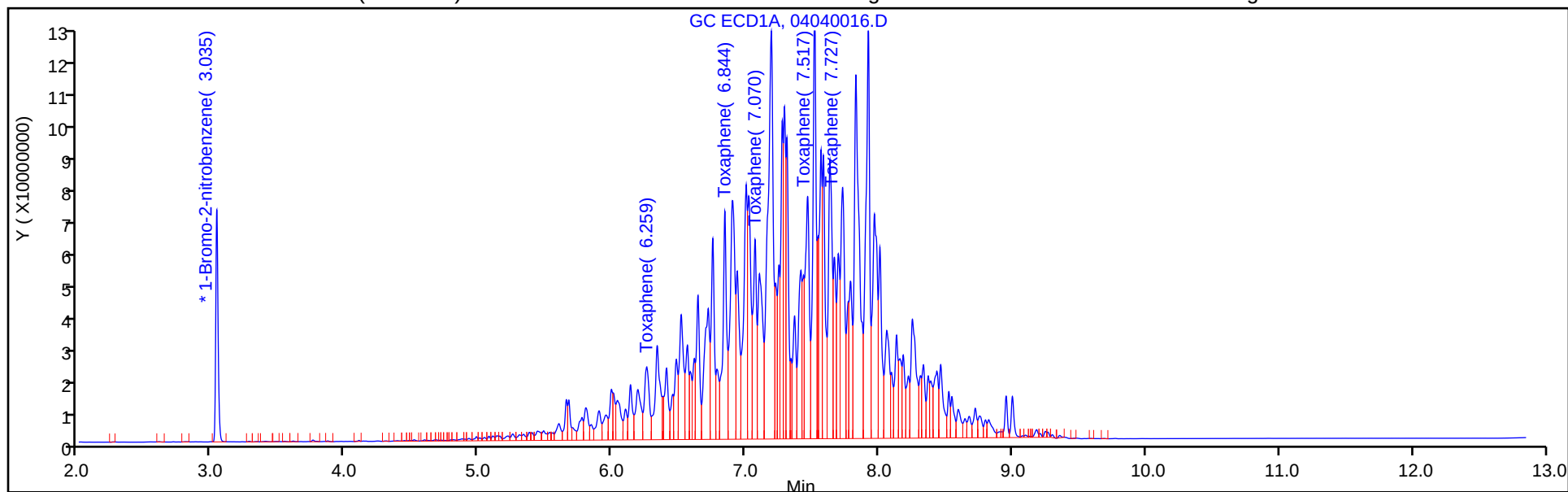
ALS Bottle#: 11

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

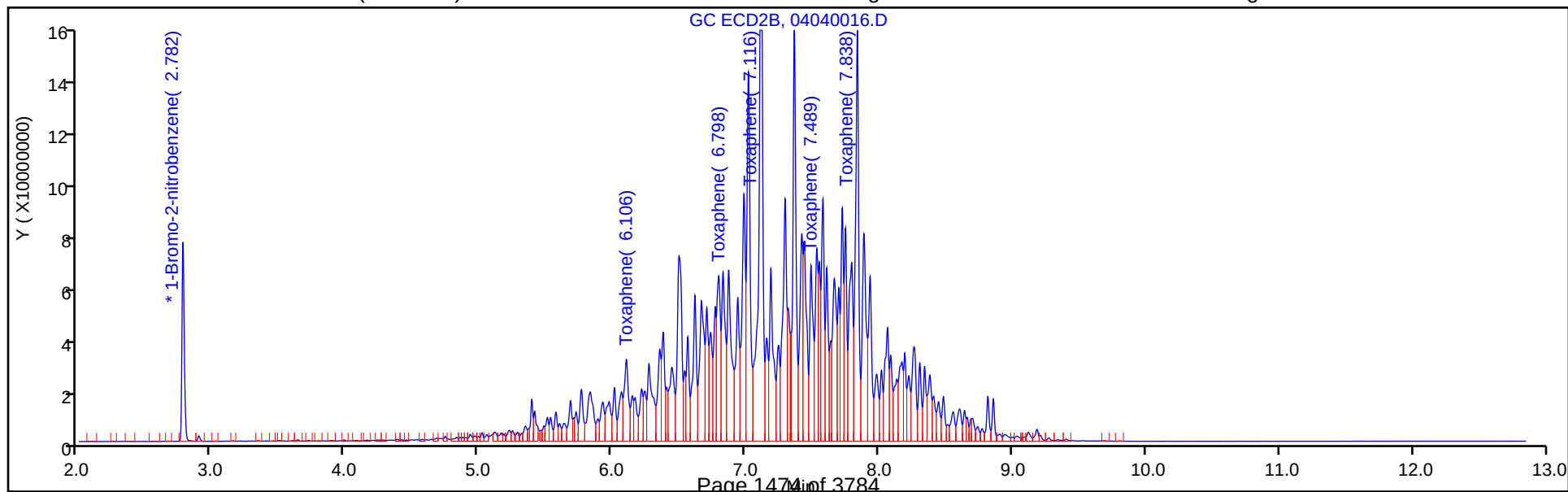
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040016.D

Injection Date: 04-Apr-2019 17:49:26

Instrument ID: SGC_P1

Lims ID: STD6 TOX

Client ID:

Operator ID: TEM

ALS Bottle#: 11

Worklist Smp#: 16

Injection Vol: 1.0 ul

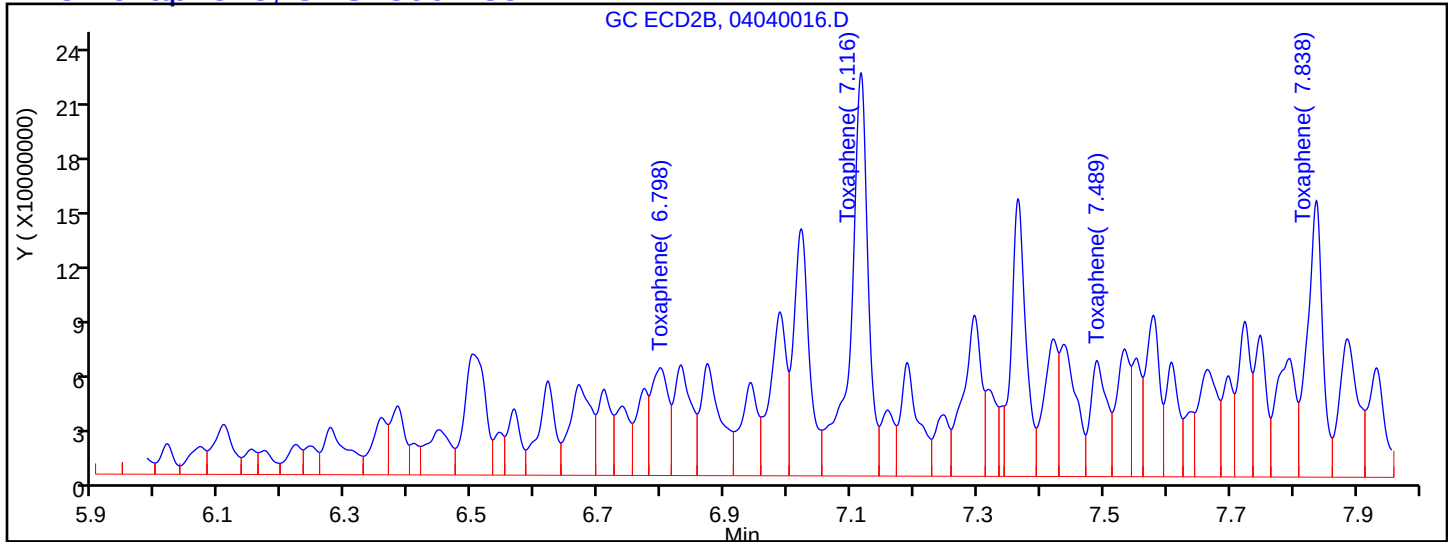
Dil. Factor: 1.0000

Method: P1 8081 IS

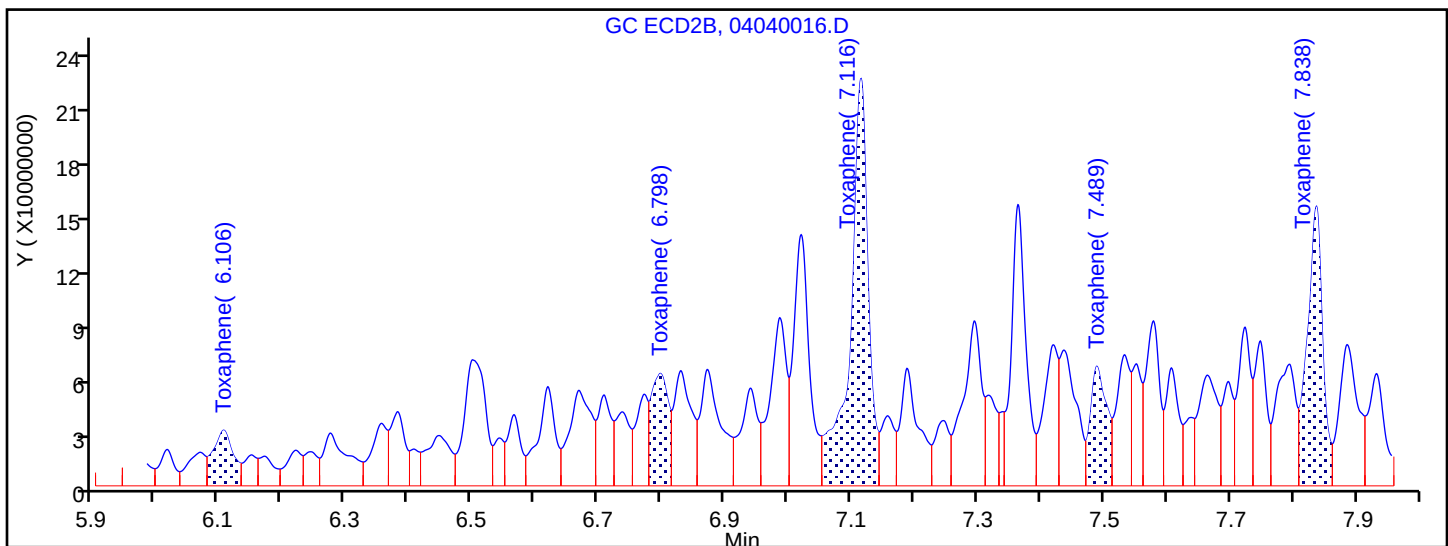
Limit Group: GCSV - 8081A - IS

Column: CLP2 Pesticides Column 2 (0.32 mm) Detector

GC ECD2B

28 Toxaphene, CAS: 8001-35-2**Processing Integration Results**

5.687	Response = 16603457
6.798	Response = 110601300
7.116	Response = 433054361
7.489	Response = 114902365
7.838	Response = 257961136

**Manual Integration Results**

6.106	Response = 69183638	M
6.798	Response = 116114299	M
7.116	Response = 445587105	M
7.489	Response = 119787910	M
7.838	Response = 263250963	M

Reviewer: mooret, 05-Apr-2019 13:35:00

Audit Action: Assigned New Baseline

Audit Reason: Baseline Smoothing
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Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040017.D
 Lims ID: STD5 TOX
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 04-Apr-2019 18:06:11 ALS Bottle#: 12 Worklist Smp#: 17
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD5 TOX
 Misc. Info.: 280-0080574-017
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub3
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 05-Apr-2019 14:14:31 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0337

First Level Reviewer: mooret

Date: 05-Apr-2019 13:16:29

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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* 2 1-Bromo-2-nitrobenzene

1	3.035	3.036	-0.001	84689226	150.0	150.0
2	2.782	2.782	0.000	90211211	150.0	150.0

28 Toxaphene

Ma

1	6.259	6.258	0.001	29058708	5000.0	5017.9	M
1	6.844	6.843	0.001	69040474	5000.0	4893.1	M
1	7.071	7.070	0.001	51389967	5000.0	5024.1	M
1	7.516	7.518	-0.002	111234649	5000.0	4963.6	M
1	7.724	7.727	-0.003	83944574	5000.0	5254.5	M

Average of Peak Amounts =

5030.6

2	6.106	6.105	0.001	36259996	5000.0	4803.8	a
2	6.798	6.799	-0.001	69569393	5000.0	5335.6	
2	7.115	7.115	0.000	226859510	5000.0	4900.4	
2	7.489	7.489	0.000	61741081	5000.0	4942.2	
2	7.837	7.838	-0.001	132879685	5000.0	4953.4	

Average of Peak Amounts =

4987.1

RPD = 0.87

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

8081ToxL5_00022

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 05-Apr-2019 14:14:32

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040017.D

Injection Date: 04-Apr-2019 18:06:11

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: STD5 TOX

Worklist Smp#: 17

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

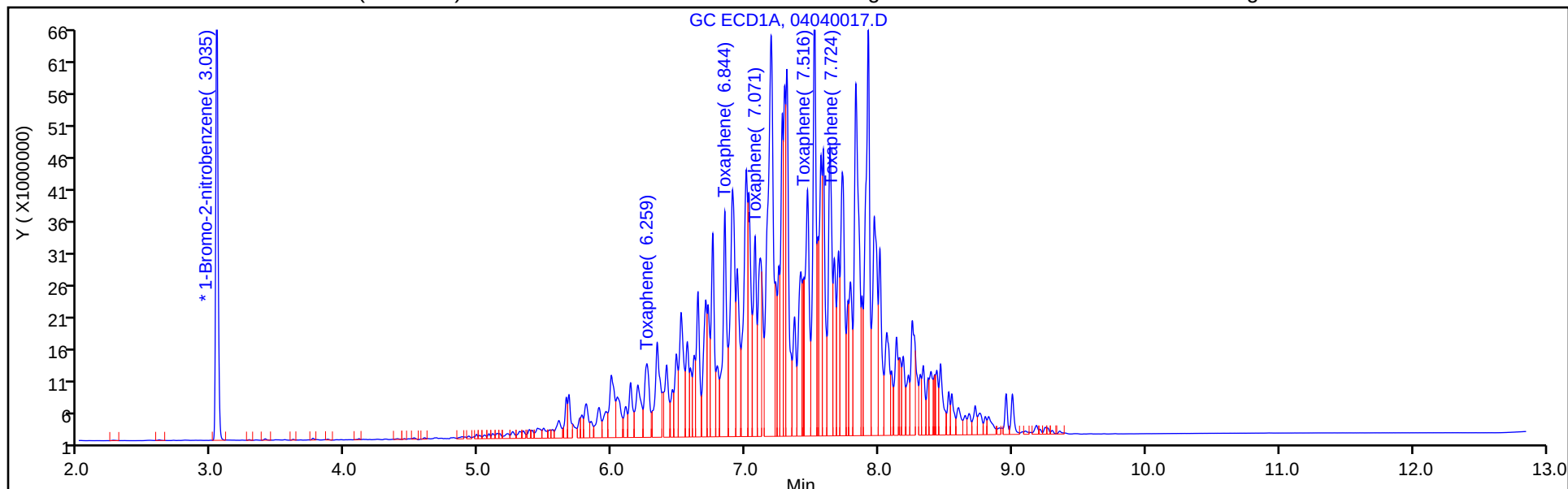
ALS Bottle#: 12

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

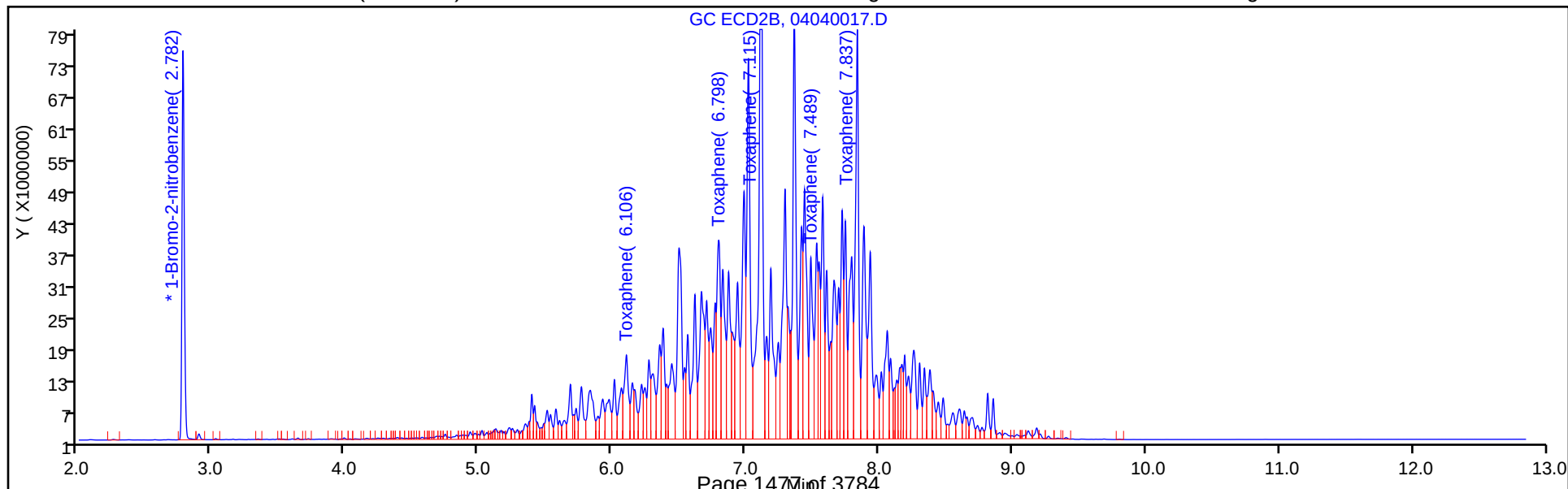
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040017.D

Injection Date: 04-Apr-2019 18:06:11

Instrument ID: SGC_P1

Lims ID: STD5 TOX

Client ID:

Operator ID: TEM

ALS Bottle#:

12

Worklist Smp#:

17

Injection Vol: 1.0 ul

Dil. Factor:

1.0000

Method: P1 8081 IS

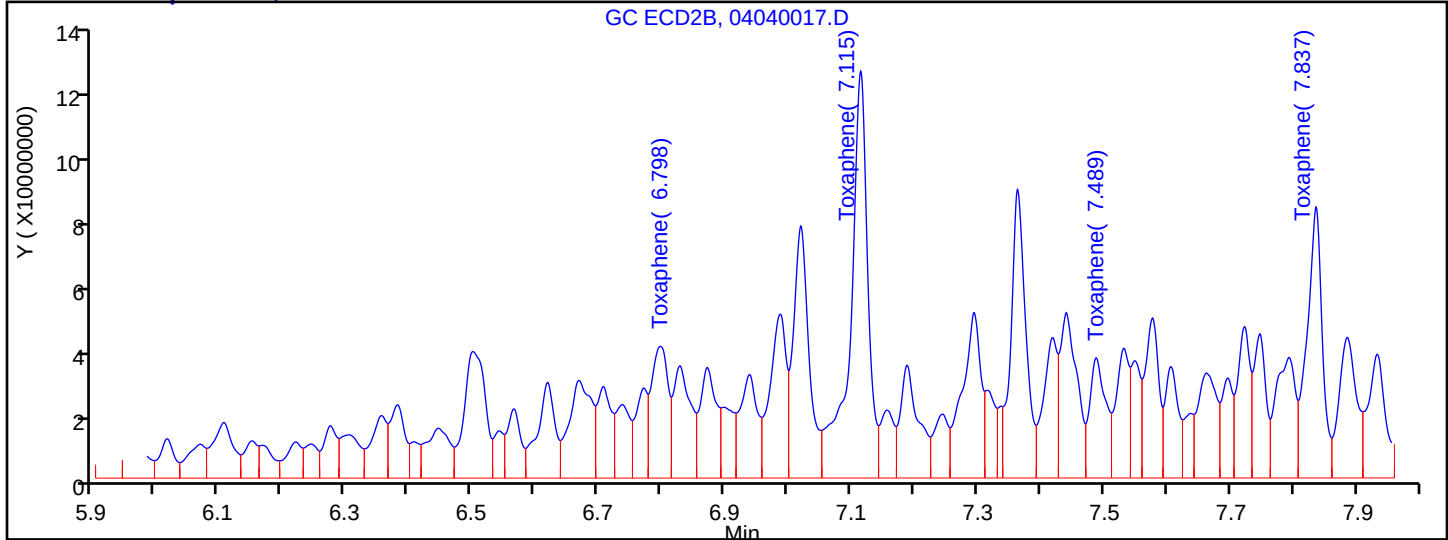
Limit Group:

GCSV - 8081A - IS

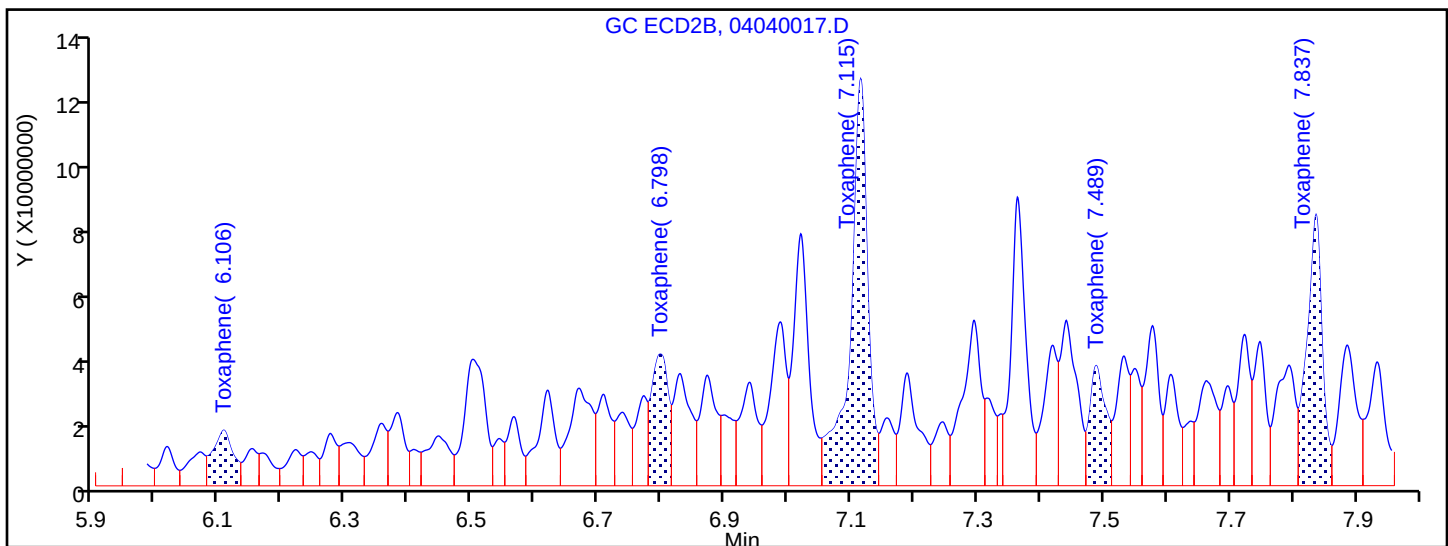
Column: CLP2 Pesticides Column 2 (0.32 mm)

Detector

GC ECD2B

28 Toxaphene, CAS: 8001-35-2**Processing Integration Results**

5.686	Response = 17790646
6.798	Response = 69569393
7.115	Response = 226859510
7.489	Response = 61741081
7.837	Response = 132879685

**Manual Integration Results**

6.106	Response = 36259996	M
6.798	Response = 69569393	
7.115	Response = 226859510	
7.489	Response = 61741081	
7.837	Response = 132879685	

Reviewer: mooret, 05-Apr-2019 13:45:13

Audit Action: Assigned Compound ID

Audit Reason:
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Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040018.D
 Lims ID: STD4 TOX
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 04-Apr-2019 18:22:55 ALS Bottle#: 13 Worklist Smp#: 18
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD4 TOX
 Misc. Info.: 280-0080574-018
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub3
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 05-Apr-2019 14:14:27 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0337

First Level Reviewer: mooret

Date: 05-Apr-2019 13:12:06

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

* 2 1-Bromo-2-nitrobenzene

1	3.036	3.036	0.000	87537849	150.0	150.0
2	2.782	2.782	0.000	93682677	150.0	150.0

28 Toxaphene

a

1	6.258	6.258	0.000	12684512	2000.0	2144.2
1	6.843	6.843	0.000	30173159	2000.0	2085.9
1	7.070	7.070	0.000	20892253	2000.0	1995.4
1	7.518	7.518	0.000	45310042	2000.0	1970.3
1	7.727	7.727	0.000	34032019	2000.0	2081.0

Average of Peak Amounts =

2055.4

2	6.105	6.105	0.000	16606439	2000.0	2077.4
2	6.799	6.799	0.000	30579777	2000.0	2241.0
2	7.115	7.115	0.000	92804453	2000.0	1923.7
2	7.489	7.489	0.000	27202163	2000.0	2076.7
2	7.838	7.838	0.000	56092968	2000.0	2003.0

Average of Peak Amounts =

2064.4

RPD = 0.44

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

8081TOXCCVL4_00015

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 05-Apr-2019 14:14:28

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040018.D

Injection Date: 04-Apr-2019 18:22:55

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: STD4 TOX

Worklist Smp#: 18

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

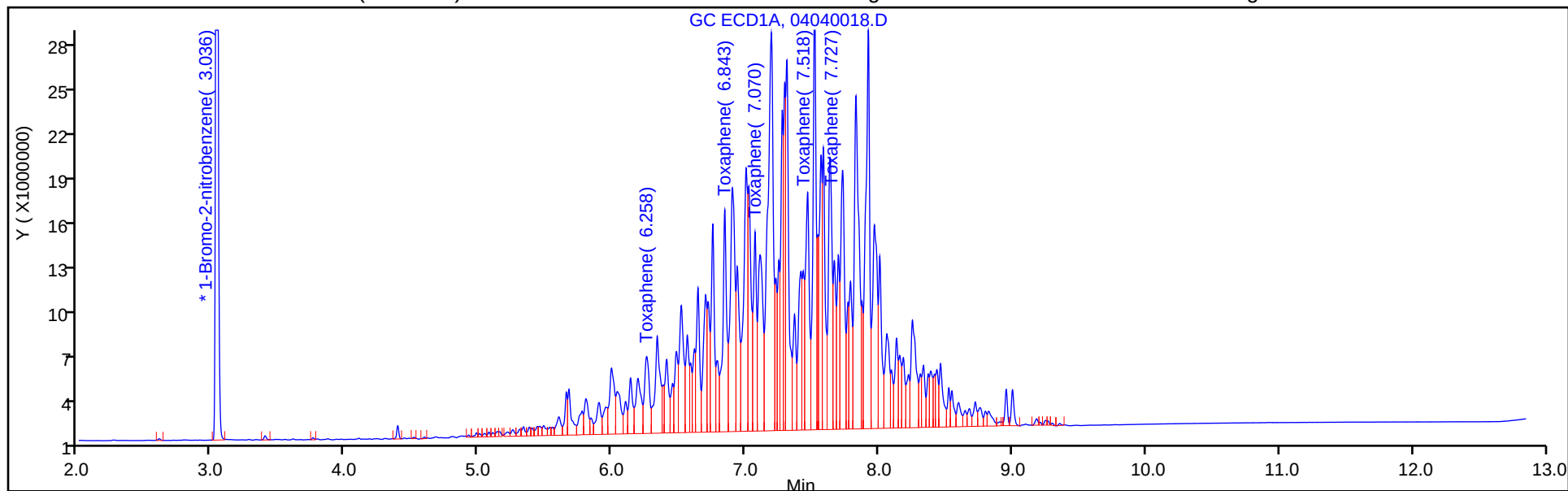
ALS Bottle#: 13

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

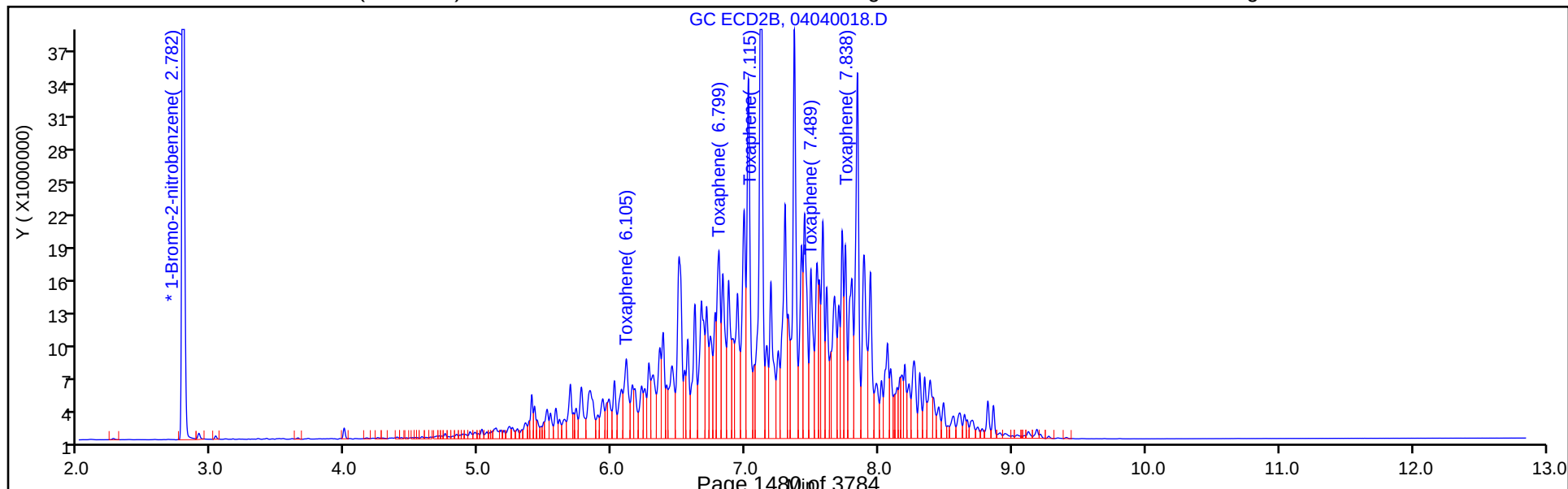
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040018.D

Injection Date: 04-Apr-2019 18:22:55

Instrument ID: SGC_P1

Lims ID: STD4 TOX

Client ID:

Operator ID: TEM

ALS Bottle#:

13

Worklist Smp#:

18

Injection Vol: 1.0 ul

Dil. Factor:

1.0000

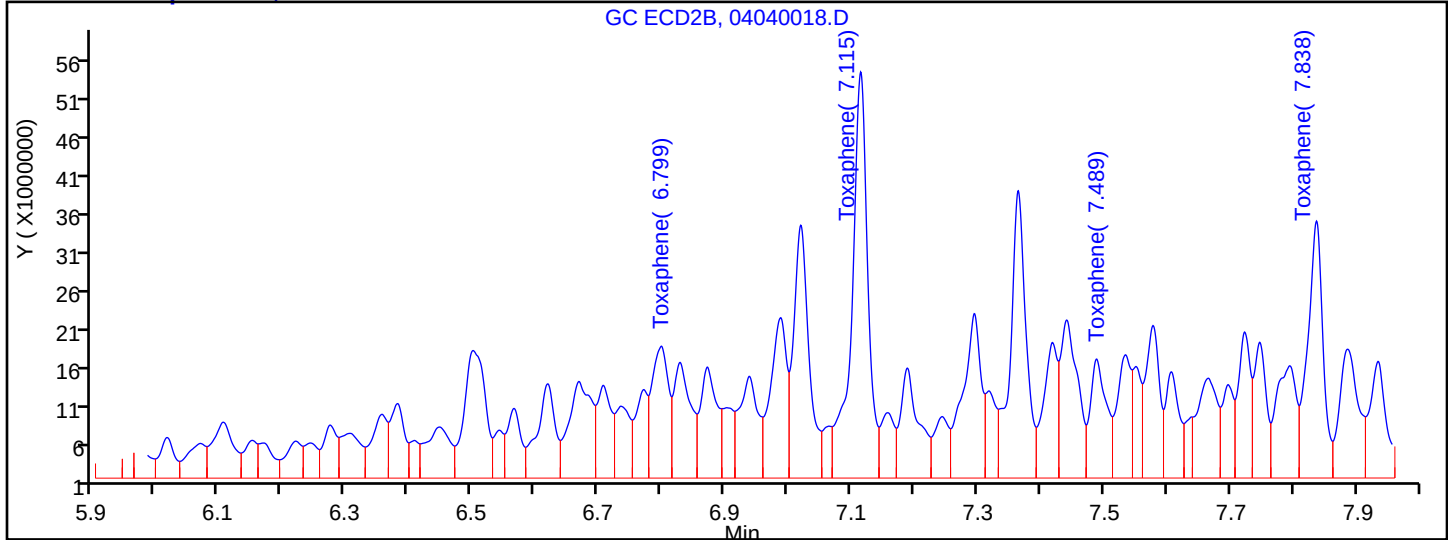
Method: P1 8081 IS

Limit Group:

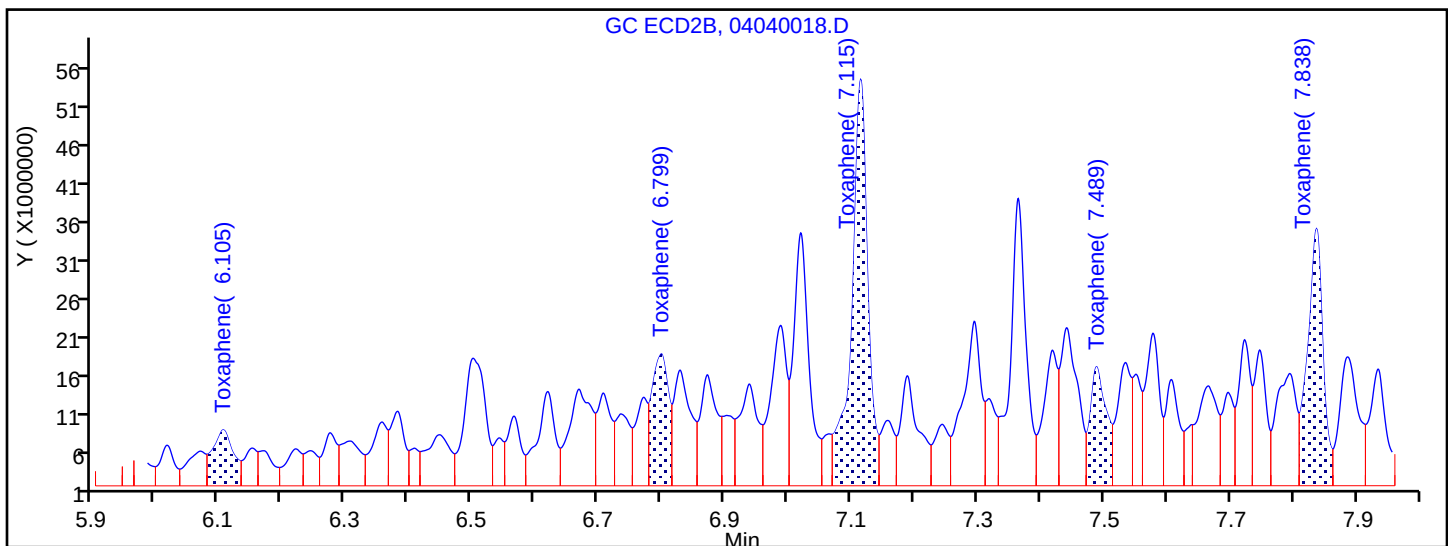
GCSV - 8081A - IS

Column: CLP2 Pesticides Column 2 (0.32 mm) Detector

GC ECD2B

28 Toxaphene, CAS: 8001-35-2**Processing Integration Results**

5.686	Response = 8723987
6.799	Response = 30579777
7.115	Response = 92804453
7.489	Response = 27202163
7.838	Response = 56092968

**Manual Integration Results**

6.105	Response = 16606439
6.799	Response = 30579777
7.115	Response = 92804453
7.489	Response = 27202163
7.838	Response = 56092968

M

Reviewer: mooret, 05-Apr-2019 13:44:59

Audit Action: Assigned Compound ID

Audit Reason:
Page 1481 of 3784

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040019.D
 Lims ID: STD3 TOX
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 04-Apr-2019 18:39:47 ALS Bottle#: 14 Worklist Smp#: 19
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD3 TOX
 Misc. Info.: 280-0080574-019
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub3
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 05-Apr-2019 14:14:24 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0337

First Level Reviewer: mooret

Date: 05-Apr-2019 13:15:17

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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* 2 1-Bromo-2-nitrobenzene

1	3.036	3.036	0.000	85046686	150.0	150.0	
2	2.782	2.782	0.000	91816312	150.0	150.0	

28 Toxaphene

Ma

1	6.257	6.258	-0.001	5977646	1000.0	1062.4	M
1	6.843	6.843	0.000	14393572	1000.0	1039.2	M
1	7.070	7.070	0.000	10052897	1000.0	1004.4	M
1	7.516	7.518	-0.002	22553690	1000.0	1020.9	M
1	7.722	7.727	-0.005	15329153	1000.0	982.5	M

Average of Peak Amounts = 1021.9

2	6.105	6.105	0.000	8624161	1000.0	1066.2	M
2	6.796	6.799	-0.003	12999785	1000.0	955.0	M
2	7.114	7.115	-0.001	50560782	1000.0	1064.4	M
2	7.489	7.489	0.000	13285678	1000.0	1017.4	M
2	7.837	7.838	-0.001	28227754	1000.0	1019.9	M

Average of Peak Amounts = 1024.6

RPD = 0.26

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

8081ToxL3_00021

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 05-Apr-2019 14:14:25

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040019.D

Injection Date: 04-Apr-2019 18:39:47

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: STD3 TOX

Worklist Smp#: 19

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

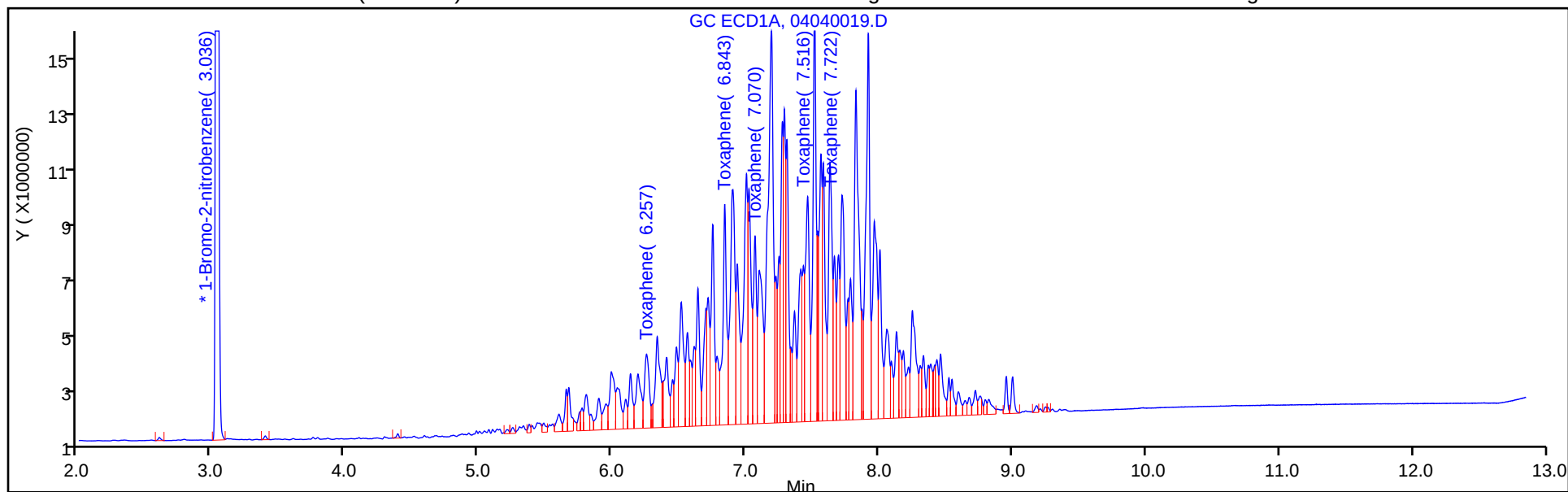
ALS Bottle#: 14

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

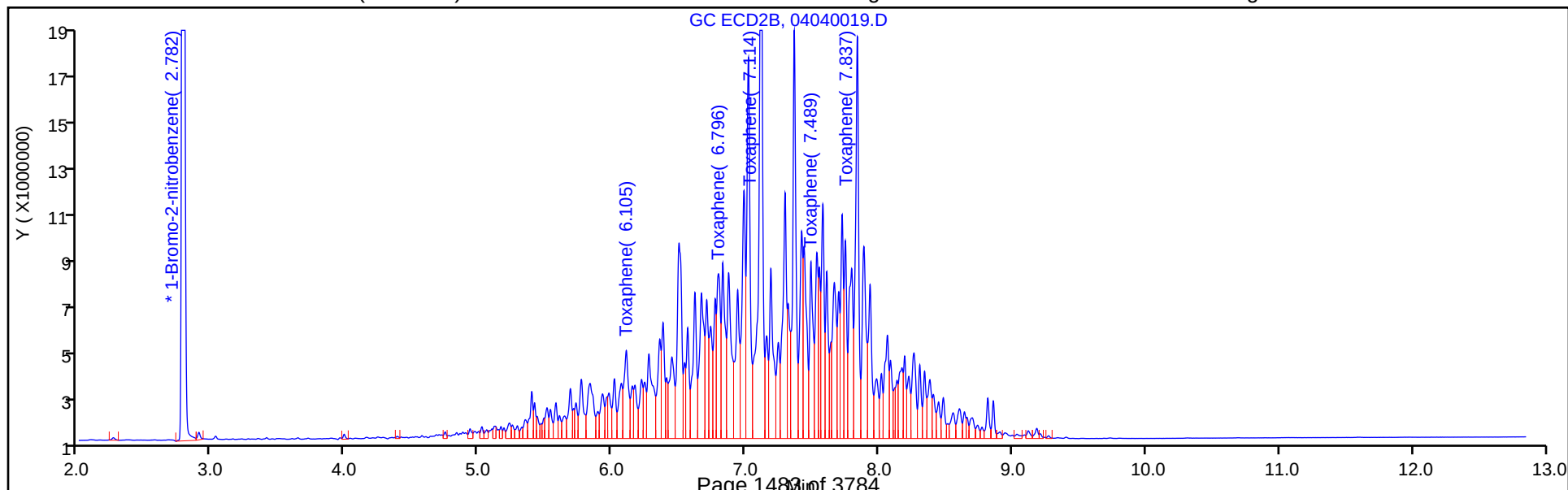
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040019.D

Injection Date: 04-Apr-2019 18:39:47

Instrument ID: SGC_P1

Lims ID: STD3 TOX

Client ID:

Operator ID: TEM

ALS Bottle#:

14

Worklist Smp#:

19

Injection Vol: 1.0 ul

Dil. Factor:

1.0000

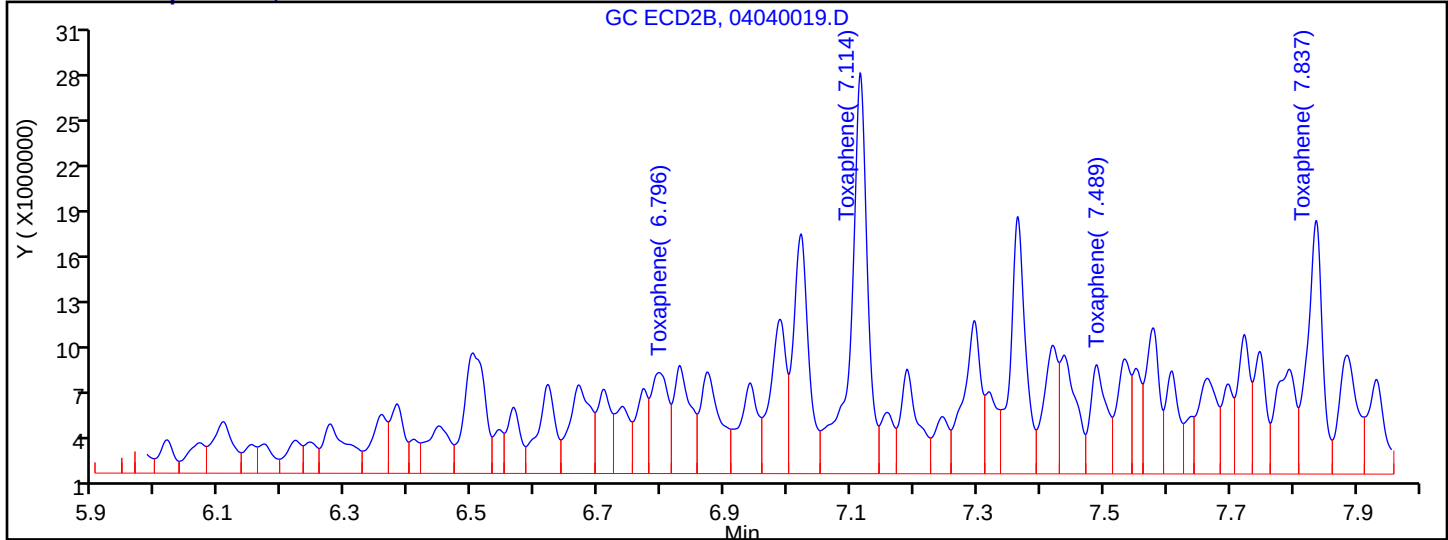
Method: P1 8081 IS

Limit Group:

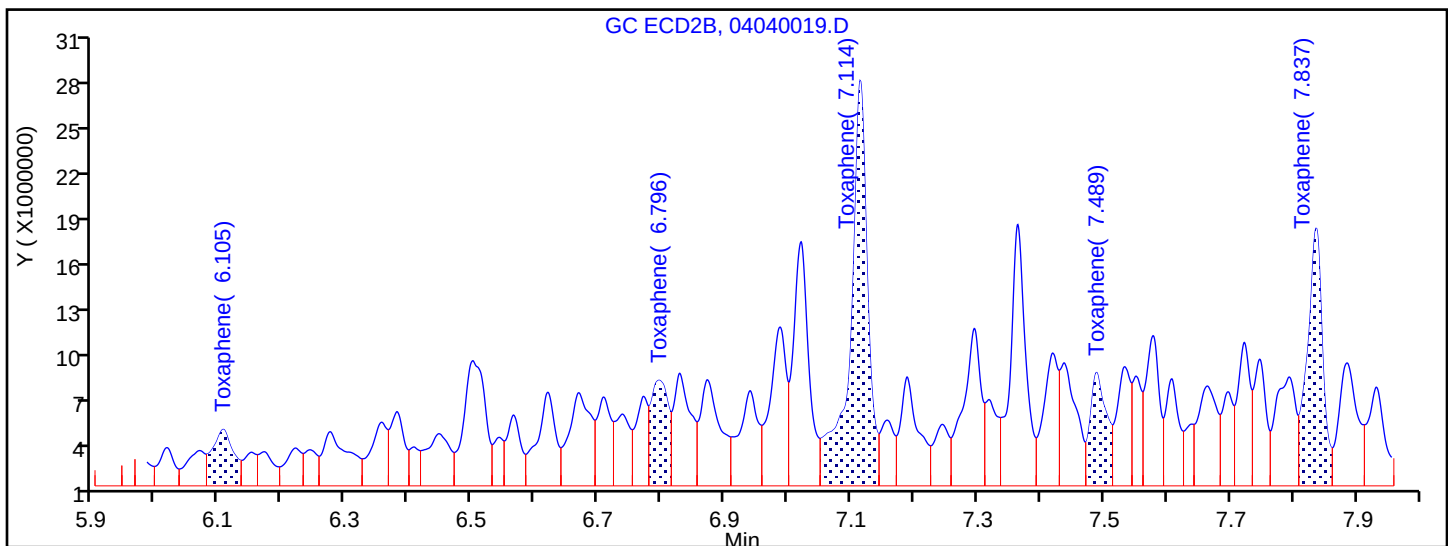
GCSV - 8081A - IS

Column: CLP2 Pesticides Column 2 (0.32 mm) Detector

GC ECD2B

28 Toxaphene, CAS: 8001-35-2**Processing Integration Results**

5.686	Response = 2867081
6.796	Response = 12355728
7.114	Response = 48937658
7.489	Response = 12579194
7.837	Response = 27376684

**Manual Integration Results**

6.105	Response = 8624161	M
6.796	Response = 12999785	M
7.114	Response = 50560782	M
7.489	Response = 13285678	M
7.837	Response = 28227754	M

Reviewer: mooret, 05-Apr-2019 13:36:06

Audit Action: Assigned New Baseline

Audit Reason: Baseline Smoothing
Page 1484 of 3784

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040020.D
 Lims ID: STD2 TOX
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 04-Apr-2019 18:56:33 ALS Bottle#: 15 Worklist Smp#: 20
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD2 TOX
 Misc. Info.: 280-0080574-020
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub3
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 05-Apr-2019 14:14:21 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0337

First Level Reviewer: mooret

Date: 05-Apr-2019 13:18:57

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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* 2 1-Bromo-2-nitrobenzene

1	3.036	3.036	0.000	85155370	150.0	150.0	
2	2.782	2.782	0.000	91519204	150.0	150.0	

28 Toxaphene

1	6.257	6.258	-0.001	2232783	500.0	423.5	a
1	6.843	6.843	0.000	6553067	500.0	488.6	
1	7.070	7.070	0.000	4442896	500.0	461.2	
1	7.516	7.518	-0.002	10873861	500.0	503.8	
1	7.725	7.727	-0.002	7215597	500.0	479.4	

Average of Peak Amounts =

471.3

2	6.106	6.105	0.001	4561397	500.0	531.2	a
2	6.795	6.799	-0.004	6757726	500.0	483.6	
2	7.115	7.115	0.000	25917882	500.0	542.0	
2	7.490	7.489	0.001	6865270	500.0	510.6	
2	7.837	7.838	-0.001	14523258	500.0	517.9	

Average of Peak Amounts =

517.1

RPD = 9.26

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

8081ToxL2_00022

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 05-Apr-2019 14:14:22

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040020.D

Injection Date: 04-Apr-2019 18:56:33

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: STD2 TOX

Worklist Smp#: 20

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

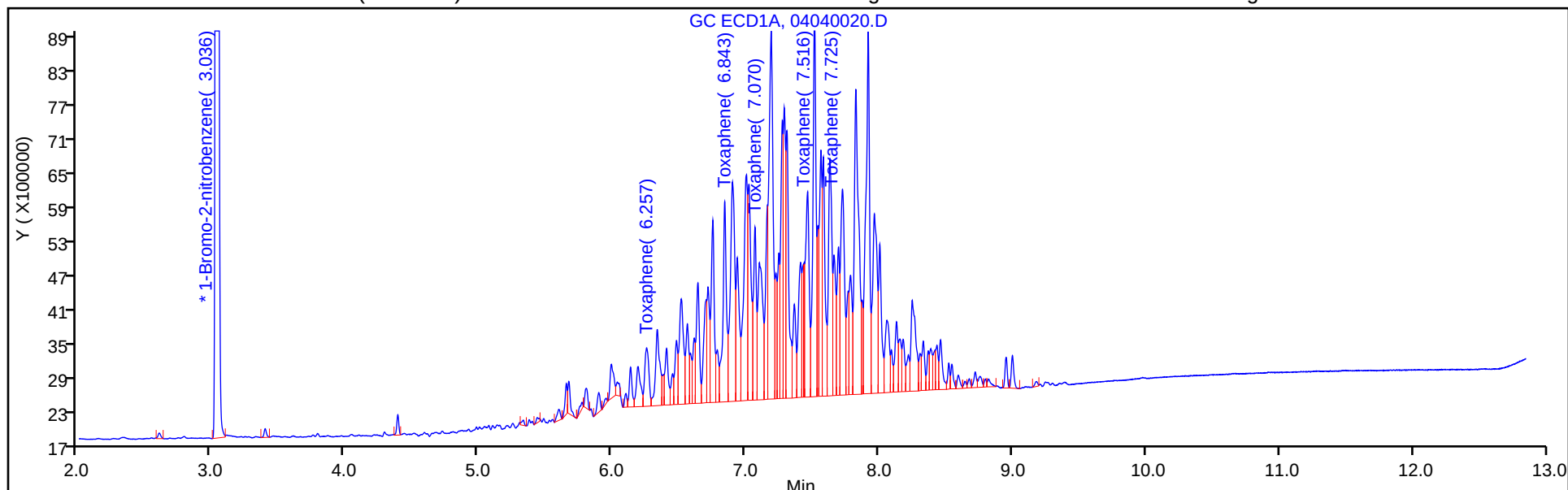
ALS Bottle#: 15

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

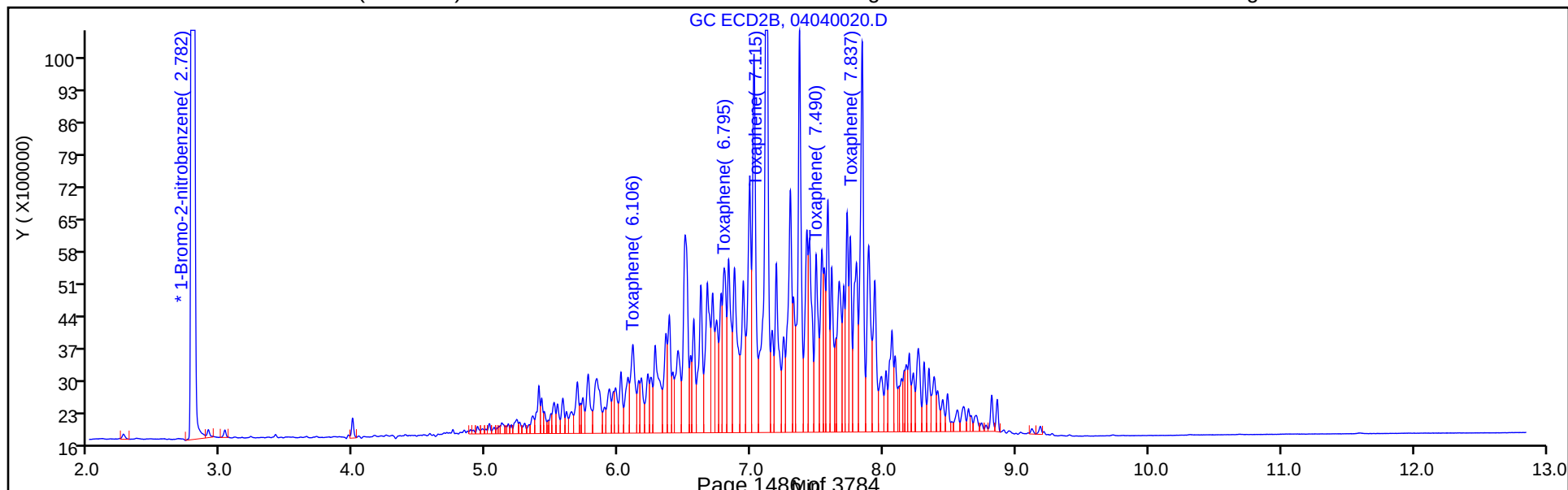
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040020.D

Injection Date: 04-Apr-2019 18:56:33

Instrument ID: SGC_P1

Lims ID: STD2 TOX

Client ID:

Operator ID: TEM

ALS Bottle#:

15

Worklist Smp#:

20

Injection Vol: 1.0 ul

Dil. Factor:

1.0000

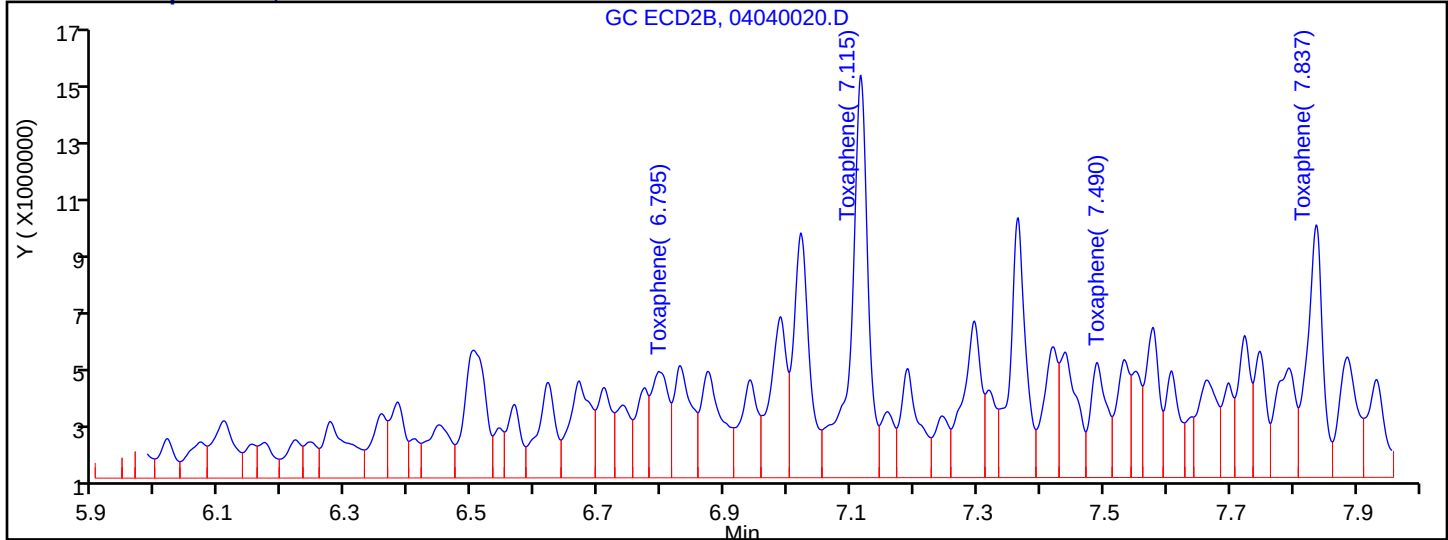
Method: P1 8081 IS

Limit Group:

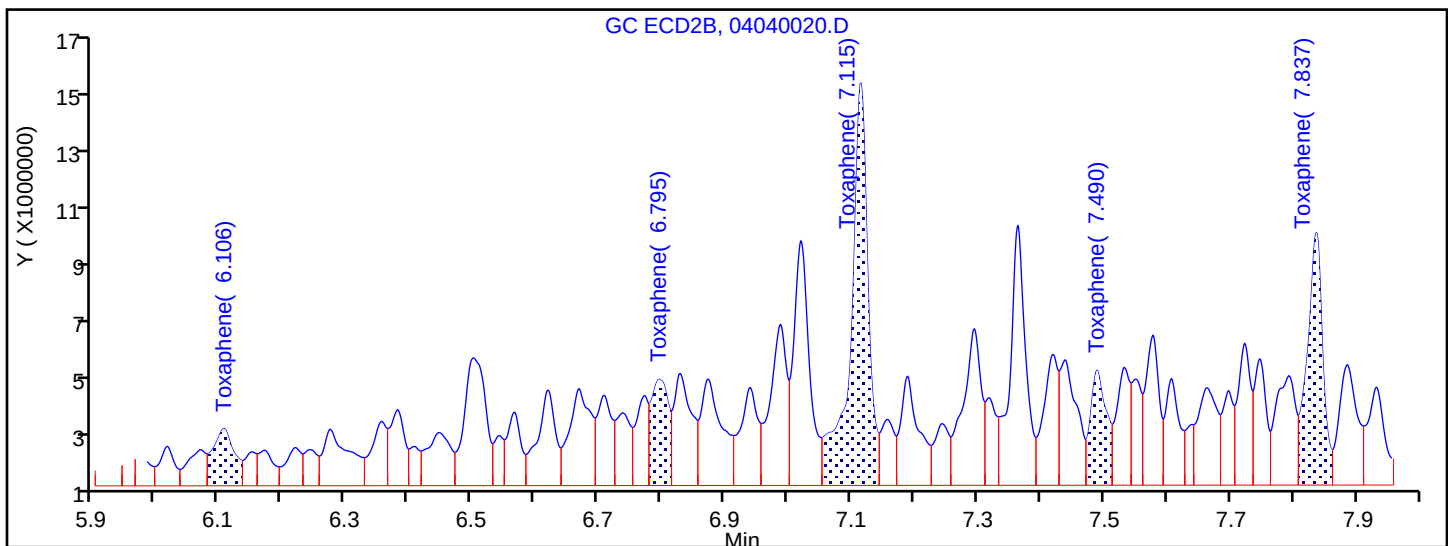
GCSV - 8081A - IS

Column: CLP2 Pesticides Column 2 (0.32 mm) Detector

GC ECD2B

28 Toxaphene, CAS: 8001-35-2**Processing Integration Results**

5.687	Response = 1941850
6.795	Response = 6757726
7.115	Response = 25917882
7.490	Response = 6865270
7.837	Response = 14523258

**Manual Integration Results**

6.106	Response = 4561397
6.795	Response = 6757726
7.115	Response = 25917882
7.490	Response = 6865270
7.837	Response = 14523258

M

Reviewer: mooret, 05-Apr-2019 13:46:03

Audit Action: Assigned Compound ID

Audit Reason:
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Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040021.D
 Lims ID: STD1 TOX
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 04-Apr-2019 19:13:18 ALS Bottle#: 16 Worklist Smp#: 21
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD1 TOX
 Misc. Info.: 280-0080574-021
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub3
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 05-Apr-2019 14:14:18 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0337

First Level Reviewer: mooret

Date: 05-Apr-2019 13:15:48

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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* 2 1-Bromo-2-nitrobenzene

1	3.035	3.036	-0.001	87191406	150.0	150.0	
2	2.782	2.782	0.000	94261879	150.0	150.0	

28 Toxaphene

Ma

1	6.256	6.258	-0.002	992319	200.0	208.4	M
1	6.844	6.843	0.001	2487255	200.0	199.7	M
1	7.070	7.070	0.000	1842997	200.0	205.9	M
1	7.516	7.518	-0.002	4066677	200.0	198.9	M
1	7.726	7.727	-0.001	2813220	200.0	203.0	M

Average of Peak Amounts =

203.2

2	6.105	6.105	0.000	2064829	200.0	192.3	M
2	6.796	6.799	-0.003	3144196	200.0	202.0	M
2	7.115	7.115	0.000	9791170	200.0	191.8	M
2	7.489	7.489	0.000	3007856	200.0	197.1	M
2	7.837	7.838	-0.001	5983378	200.0	196.5	M

Average of Peak Amounts =

195.9

RPD = 3.63

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

8081ToxL1_00021

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 05-Apr-2019 14:14:19

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040021.D

Injection Date: 04-Apr-2019 19:13:18

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: STD1 TOX

Worklist Smp#: 21

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

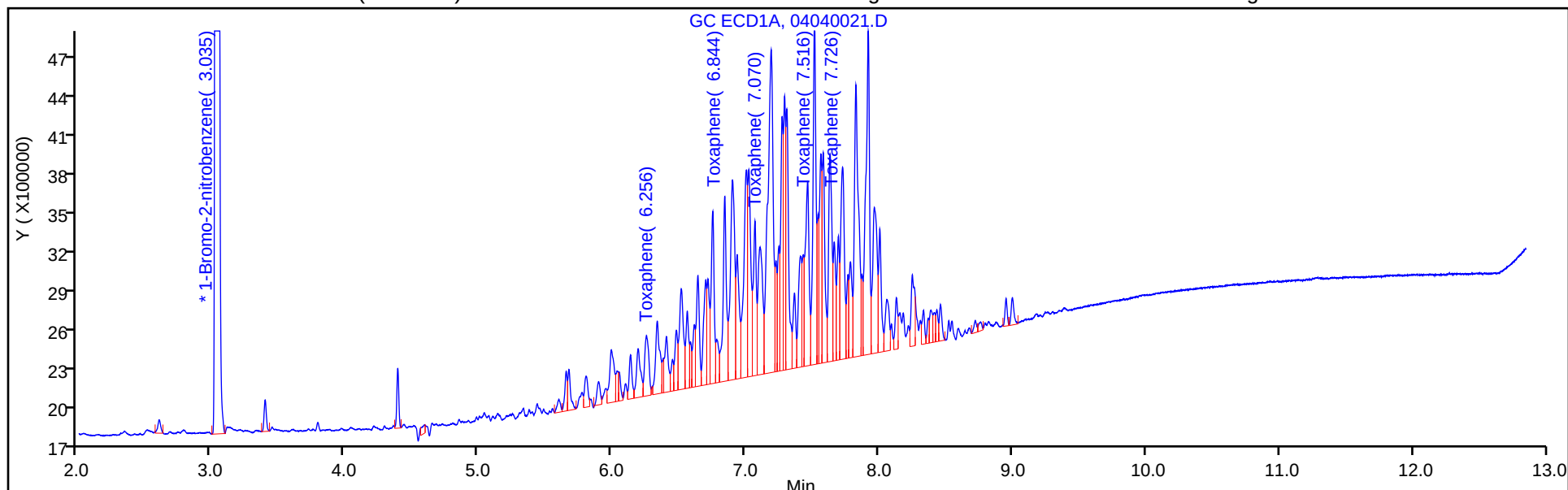
ALS Bottle#: 16

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

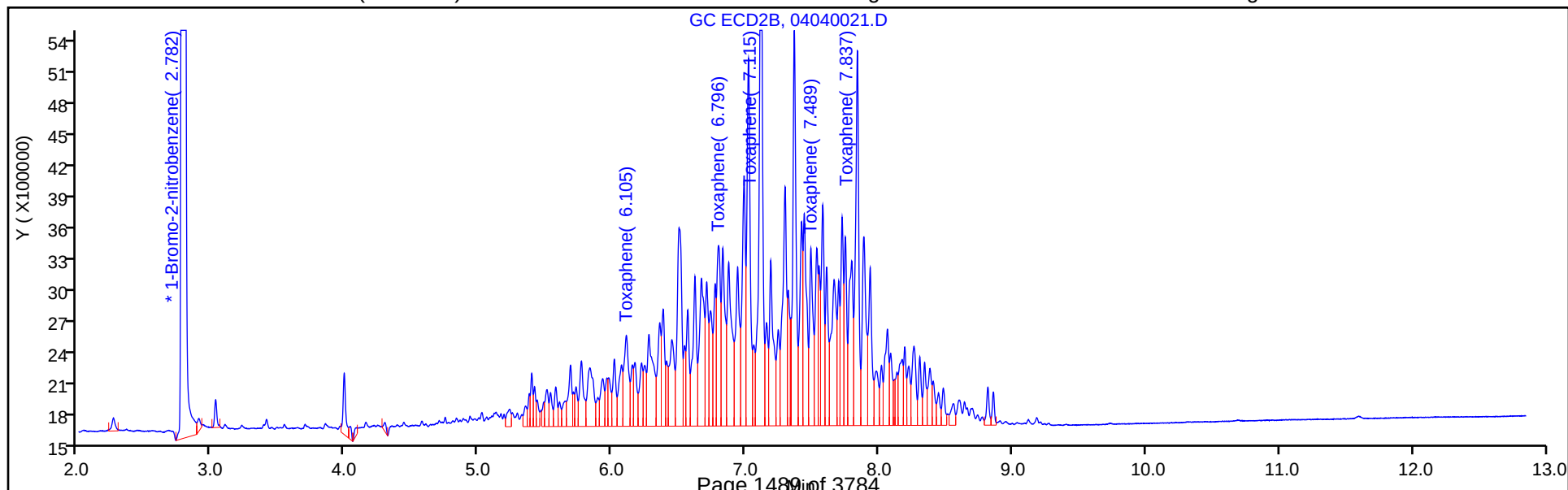
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040021.D

Injection Date: 04-Apr-2019 19:13:18

Instrument ID: SGC_P1

Lims ID: STD1 TOX

Client ID:

Operator ID: TEM

ALS Bottle#: 16

Worklist Smp#: 21

Injection Vol: 1.0 ul

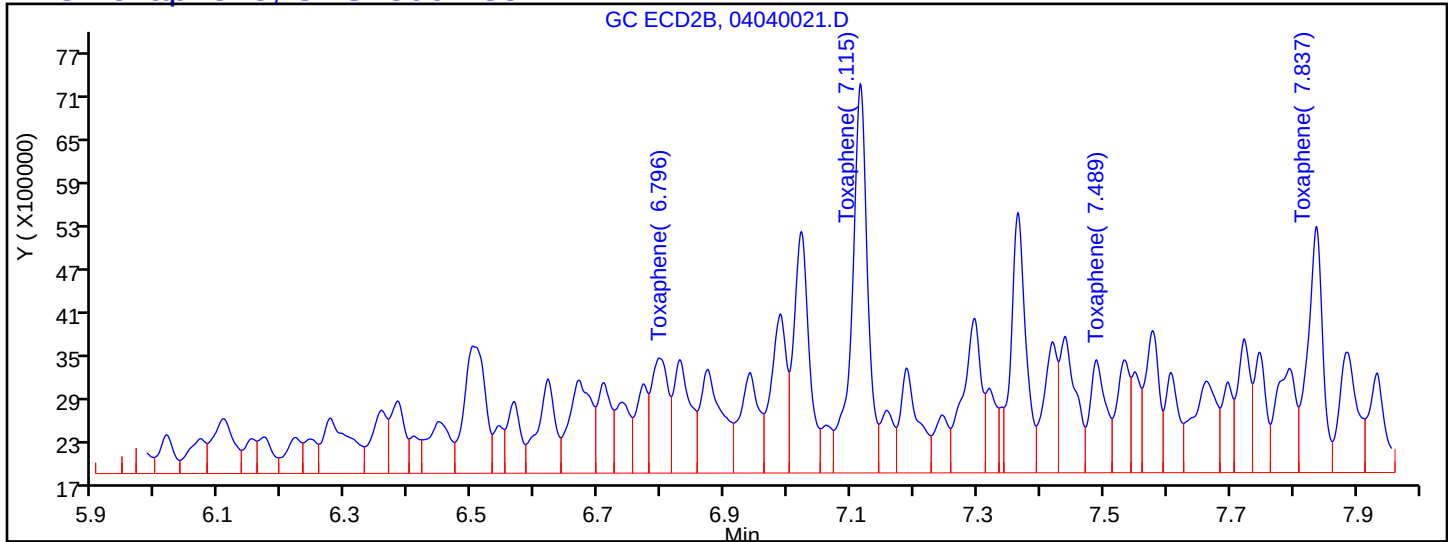
Dil. Factor: 1.0000

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

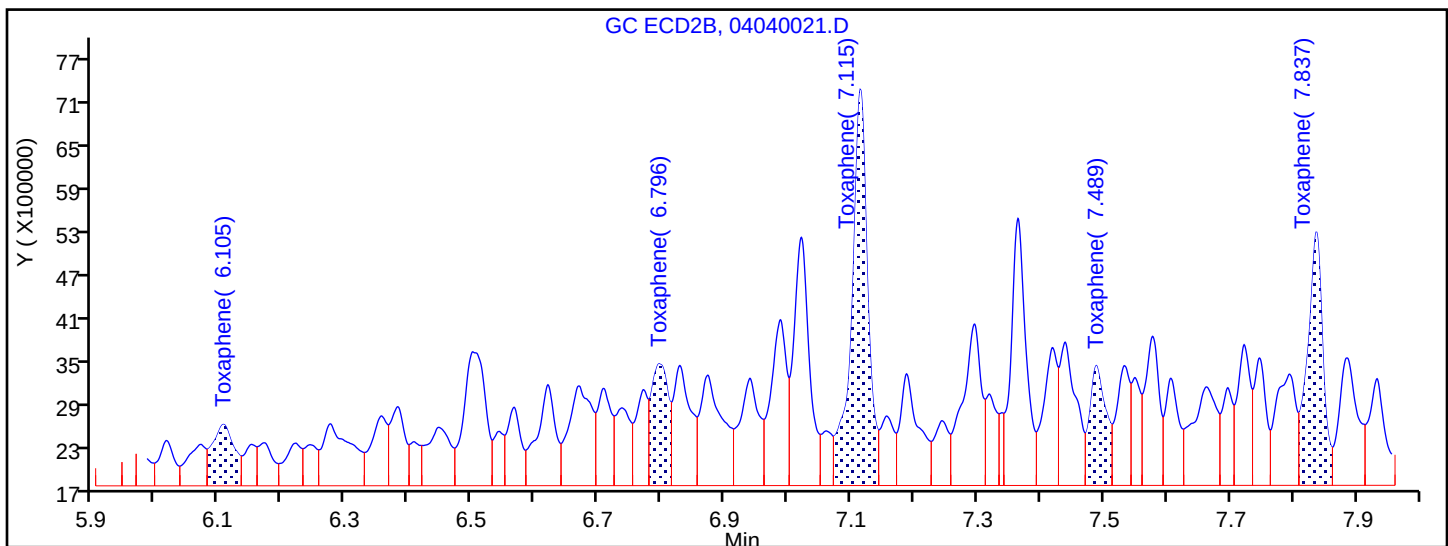
Column: CLP2 Pesticides Column 2 (0.32 mm) Detector

GC ECD2B

28 Toxaphene, CAS: 8001-35-2

Processing Integration Results

5.687	Response = 811617
6.796	Response = 2940472
7.115	Response = 9379017
7.489	Response = 2759905
7.837	Response = 5668183



Manual Integration Results

6.105	Response = 2064829	M
6.796	Response = 3144196	M
7.115	Response = 9791170	M
7.489	Response = 3007856	M
7.837	Response = 5983378	M

Reviewer: mooret, 05-Apr-2019 13:41:05

Audit Action: Assigned New Baseline

Audit Reason: Baseline Smoothing
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FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 453267

SDG No.: _____

Instrument ID: SGC_P1 GC Column: CLP1 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/04/2019 20:54 Calibration End Date: 04/04/2019 22:17 Calibration ID: 35938

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-453267/32	04040032.D
Level 2	STD2 280-453267/31	04040031.D
Level 3	STD3 280-453267/30	04040030.D
Level 4	STD4 280-453267/29	04040029.D
Level 5	STD5 280-453267/28	04040028.D
Level 6	STD6 280-453267/27	04040027.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
Hexachlorobenzene	1.8333 1.5655	1.6447	1.6047	1.5126	1.4808	Lin2	1.2947	1.5134							0.9990		0.9900
alpha-BHC	2.1310 2.0152	1.9996	2.0353	1.9383	1.8976	Lin2	0.7002	1.9523							0.9990		0.9900
gamma-BHC (Lindane)	1.8963 1.7647	1.7439	1.8026	1.7013	1.6666	Lin2	0.7056	1.7116							0.9990		0.9900
beta-BHC	0.9311 0.7482	0.7995	0.7878	0.7279	0.7096	Lin2	0.8278	0.7243							0.9990		0.9900
delta-BHC	1.9208 1.8028	1.7713	1.8274	1.7381	1.7121	Lin2	0.6445	1.7489							0.9990		0.9900
Heptachlor	1.8335 1.6527	1.6749	1.7222	1.5750	1.5458	Lin2	0.9399	1.5995							0.9980		0.9900
Aldrin	1.9373 1.8607	1.8084	1.8587	1.7712	1.7514	Lin2	0.5368	1.7925							0.9990		0.9900
Heptachlor epoxide	1.7848 1.6030	1.6195	1.6464	1.5464	1.5195	Lin2	0.9026	1.5548							0.9990		0.9900
gamma-Chlordane	1.8983 1.6879	1.6947	1.6767	1.6139	1.5958	Lin2	1.0866	1.6161							0.9990		0.9900
alpha-Chlordane	1.8181 1.6366	1.6466	1.6370	1.5710	1.5568	Lin2	0.9351	1.5768							0.9990		0.9900
4,4'-DDE	1.6685 1.5217	1.6783	1.5252	1.5796	1.6389	Lin2	0.4693	1.5681							0.9980		0.9900
Endosulfan I	1.7284 1.5394	1.5795	1.5607	1.4910	1.4600	Lin2	0.9483	1.4913							0.9990		0.9900
Dieldrin	1.7681 1.7043	1.6680	1.6876	1.6452	1.6167	Lin2	0.4395	1.6499							0.9990		0.9900
Endrin	1.6187 1.4998	1.5510	1.5022	1.4584	1.4966	Lin2	0.5709	1.4799							1.0000		0.9900
4,4'-DDD	1.3774 1.2951	1.2896	1.2558	1.2789	1.2708	Lin2	0.4145	1.2647							1.0000		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 453267
SDG No.: _____
Instrument ID: SGC_P1 GC Column: CLP1 ID: 0.32 (mm) Heated Purge: (Y/N) N
Calibration Start Date: 04/04/2019 20:54 Calibration End Date: 04/04/2019 22:17 Calibration ID: 35938

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
Endosulfan II	1.4943 1.4088	1.3812	1.3839	1.3709	1.3255	Lin2	0.5087	1.3573							0.9990		0.9900
4,4'-DDT	1.0805 0.9892	1.0975	0.9609	0.9870	1.1253	Lin2	0.2816	1.0197							0.9940		0.9900
Endrin aldehyde	1.2191 1.1047	1.1284	1.0930	1.0869	1.0902	Lin2	0.5326	1.0819							1.0000		0.9900
Methoxychlor	0.6249 0.5289	0.4823	0.4952	0.5154	0.4995	Lin	-0.296	0.5212							0.9980		0.9900
Endosulfan sulfate	1.3714 1.2816	1.2390	1.2442	1.2340	1.2168	Lin2	0.5127	1.2275							0.9990		0.9900
Endrin ketone	1.4735 1.3549	1.3330	1.2953	1.3676	1.3324	Lin2	0.5302	1.3212							0.9990		0.9900
Tetrachloro-m-xylene	1.6628 1.4906	1.4878	1.4957	1.4124	1.4101	Lin2	0.9016	1.4281							0.9990		0.9900
DCB Decachlorobiphenyl	1.3096 1.1057	1.1137	1.0774	1.0762	1.0362	Lin2	0.9892	1.0484							0.9990		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 453267

SDG No.: _____

Instrument ID: SGC_P1 GC Column: CLP1 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/04/2019 20:54 Calibration End Date: 04/04/2019 22:17 Calibration ID: 35938

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-453267/32	04040032.D
Level 2	STD2 280-453267/31	04040031.D
Level 3	STD3 280-453267/30	04040030.D
Level 4	STD4 280-453267/29	04040029.D
Level 5	STD5 280-453267/28	04040028.D
Level 6	STD6 280-453267/27	04040027.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
Hexachlorobenzene	BNB	Lin2	4518959 87962023	9751069	24112468	43635842	62633152	4.00 100	10.0	25.0	50.0	75.0
alpha-BHC	BNB	Lin2	5252761 113228401	11855110	30583250	55918140	80259471	4.00 100	10.0	25.0	50.0	75.0
gamma-BHC (Lindane)	BNB	Lin2	4674286 99155091	10338934	27086208	49080440	70492356	4.00 100	10.0	25.0	50.0	75.0
beta-BHC	BNB	Lin2	2295066 42040635	4740197	11837745	20998884	30015211	4.00 100	10.0	25.0	50.0	75.0
delta-BHC	BNB	Lin2	4734544 101292772	10501567	27459383	50142415	72415039	4.00 100	10.0	25.0	50.0	75.0
Heptachlor	BNB	Lin2	4519351 92857776	9929979	25878322	45435195	65381486	4.00 100	10.0	25.0	50.0	75.0
Aldrin	BNB	Lin2	4775215 104543802	10721865	27928784	51095372	74077110	4.00 100	10.0	25.0	50.0	75.0
Heptachlor epoxide	BNB	Lin2	4399341 90067581	9601679	24738331	44612490	64270990	4.00 100	10.0	25.0	50.0	75.0
gamma-Chlordane	BNB	Lin2	4679200 94834954	10047593	25194878	46558079	67497225	4.00 100	10.0	25.0	50.0	75.0
alpha-Chlordane	BNB	Lin2	4481494 91956679	9762254	24597686	45320168	65846932	4.00 100	10.0	25.0	50.0	75.0
4,4'-DDE	BNB	Lin2	4112635 85499449	9950387	22918329	45568260	69318956	4.00 100	10.0	25.0	50.0	75.0
Endosulfan I	BNB	Lin2	4260400 86492733	9364220	23450713	43013046	61753796	4.00 100	10.0	25.0	50.0	75.0
Dieldrin	BNB	Lin2	4358158 95757225	9889046	25358697	47461815	68380872	4.00 100	10.0	25.0	50.0	75.0
Endrin	BNB	Lin2	3989883 84271241	9195244	22571870	42072019	63300122	4.00 100	10.0	25.0	50.0	75.0
4,4'-DDD	BNB	Lin2	3395277 72770004	7645634	18870263	36895639	53749371	4.00 100	10.0	25.0	50.0	75.0
Endosulfan II	BNB	Lin2	3683267 79153440	8188624	20795251	39548273	56062083	4.00 100	10.0	25.0	50.0	75.0

FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 453267

SDG No.: _____

Instrument ID: SGC_P1 GC Column: CLP1 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/04/2019 20:54 Calibration End Date: 04/04/2019 22:17 Calibration ID: 35938

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
4,4'-DDT	BNB	Lin2	2663327 55580765	6506578	14438216	28474102	47596942	4.00 100	10.0	25.0	50.0	75.0
Endrin aldehyde	BNB	Lin2	3004982 62068487	6690210	16423428	31356078	46110267	4.00 100	10.0	25.0	50.0	75.0
Methoxychlor	BNB	Lin	1540298 29717916	2859171	7440579	14867331	21125413	4.00 100	10.0	25.0	50.0	75.0
Endosulfan sulfate	BNB	Lin2	3380448 72007370	7345565	18695541	35600171	51465608	4.00 100	10.0	25.0	50.0	75.0
Endrin ketone	BNB	Lin2	3632067 76129530	7902990	19463777	39453691	56354715	4.00 100	10.0	25.0	50.0	75.0
Tetrachloro-m-xylene	BNB	Lin2	4098678 83751214	8820884	22474093	40744490	59640135	4.00 100	10.0	25.0	50.0	75.0
DCB Decachlorobiphenyl	BNB	Lin2	3227979 62122825	6603123	16189285	31048086	43826213	4.00 100	10.0	25.0	50.0	75.0

Curve Type Legend:

Lin = Linear ISTD

Lin2 = Linear 1/conc^2 ISTD

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040027.D
 Lims ID: STD6 AB
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 04-Apr-2019 20:54:00 ALS Bottle#: 22 Worklist Smp#: 27
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD6 AB
 Misc. Info.: 280-0080574-027
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub6
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 05-Apr-2019 14:13:51 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0337

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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S 1 Hexachlorocyclohexane, technical

1					410.4		
2					400.1		
RPD = 2.56							

* 2 1-Bromo-2-nitrobenzene

1	3.036	3.037	-0.001	84279878	150.0	150.0	
2	2.783	2.785	-0.002	90845629	150.0	150.0	

\$ 4 Tetrachloro-m-xylene

1	3.940	3.940	0.000	83751214	100.0	103.7	
2	3.765	3.766	-0.001	78275126	100.0	101.6	
RPD = 2.08							

5 Hexachlorobenzene

1	4.349	4.349	0.000	87962023	100.0	102.6	
2	4.242	4.242	0.000	87396858	100.0	101.3	
RPD = 1.28							

8 alpha-BHC

1	4.517	4.517	0.000	113228401	100.0	102.9	
2	4.385	4.386	-0.001	112026432	100.0	99.4	
RPD = 3.41							

9 gamma-BHC (Lindane)

1	4.805	4.806	-0.001	99155091	100.0	102.7	
2	4.697	4.697	0.000	102288620	100.0	100.9	
RPD = 1.72							

10 beta-BHC

1	4.881	4.881	0.000	42040635	100.0	102.2	
2	4.771	4.772	-0.001	43070942	100.0	100.0	
RPD = 2.16							

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040027.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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12 delta-BHC

1	5.029	5.029	0.000	101292772	100.0	102.7	
2	5.004	5.004	0.000	102376824	100.0	99.7	
RPD = 2.96							

15 Heptachlor

1	5.209	5.209	0.000	92857776	100.0	102.7	
2	5.048	5.047	0.001	94073772	100.0	100.3	
RPD = 2.43							

16 Aldrin

1	5.480	5.480	0.000	104543802	100.0	103.5	
2	5.309	5.309	0.000	106193465	100.0	101.3	
RPD = 2.20							

18 Isodrin

1	5.806	5.805	0.001	86699104	100.0	103.1	
2	5.659	5.661	-0.002	76802636	100.0	92.5	
RPD = 10.86							

21 Heptachlor epoxide

1	6.094	6.092	0.002	90067581	100.0	102.5	
2	5.835	5.835	0.000	92906310	100.0	100.3	
RPD = 2.22							

22 trans-Chlordane

1	6.223	6.222	0.001	94834954	100.0	103.8	
2	6.031	6.031	0.000	91478752	100.0	96.8	
RPD = 6.99							

23 cis-Chlordane

1	6.362	6.361	0.001	91956679	100.0	103.2	
2	6.187	6.187	0.000	92867205	100.0	99.4	
RPD = 3.80							

24 4,4'-DDE

1	6.434	6.435	-0.001	85499449	100.0	96.7	
2	6.365	6.364	0.001	100532188	100.0	101.3	
RPD = 4.57							

25 Endosulfan I

1	6.506	6.505	0.001	86492733	100.0	102.6	
2	6.244	6.243	0.001	89219100	100.0	100.6	
RPD = 2.00							

27 Dieldrin

1	6.749	6.748	0.001	95757225	100.0	103.0	
2	6.524	6.523	0.001	99870736	100.0	100.4	
RPD = 2.55							

30 Endrin

1	6.983	6.982	0.001	84271241	100.0	101.0	
2	6.826	6.827	-0.001	86908723	100.0	97.9	
RPD = 3.09							

32 4,4'-DDD

1	7.035	7.034	0.001	72770004	100.0	102.1	
2	6.941	6.942	-0.001	75227535	100.0	97.7	
RPD = 4.40							

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040027.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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34 Endosulfan II

1	7.199	7.199	0.000	79153440	100.0	103.4	
2	7.032	7.033	-0.001	85223504	100.0	101.2	
RPD = 2.17							

35 4,4'-DDT

1	7.305	7.305	0.000	55580765	100.0	96.7	
2	7.244	7.243	0.001	71445843	100.0	103.5	
RPD = 6.73							

36 Endrin aldehyde

1	7.602	7.601	0.001	62068487	100.0	101.6	
2	7.357	7.357	0.000	66590724	100.0	98.5	
RPD = 3.13							

37 Methoxychlor

1	7.754	7.754	0.000	29717916	100.0	102.0	
2	7.885	7.886	-0.001	31421530	100.0	101.3	
RPD = 0.78							

38 Mirex

1	7.911	7.911	0.000	53503224	100.0	101.8	
2	8.066	8.067	-0.001	60241402	100.0	101.6	
RPD = 0.18							

39 Endosulfan sulfate

1	8.009	8.009	0.000	72007370	100.0	104.0	
2	7.616	7.616	0.000	77057322	100.0	101.1	
RPD = 2.80							

40 Endrin ketone

1	8.267	8.267	0.000	76129530	100.0	102.2	
2	8.102	8.102	0.000	87752977	100.0	101.6	
RPD = 0.57							

\$ 41 DCB Decachlorobiphenyl

1	9.179	9.177	0.002	62122825	100.0	104.5	
2	9.229	9.229	0.000	63939611	100.0	99.6	
RPD = 4.82							

S 3 Endosulfan, Total

1						310.0	
2						302.9	
RPD = 2.32							

Reagents:

8081IcalL6_00026

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 05-Apr-2019 14:13:52

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040027.D

Injection Date: 04-Apr-2019 20:54:00

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: STD6 AB

Worklist Smp#: 27

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

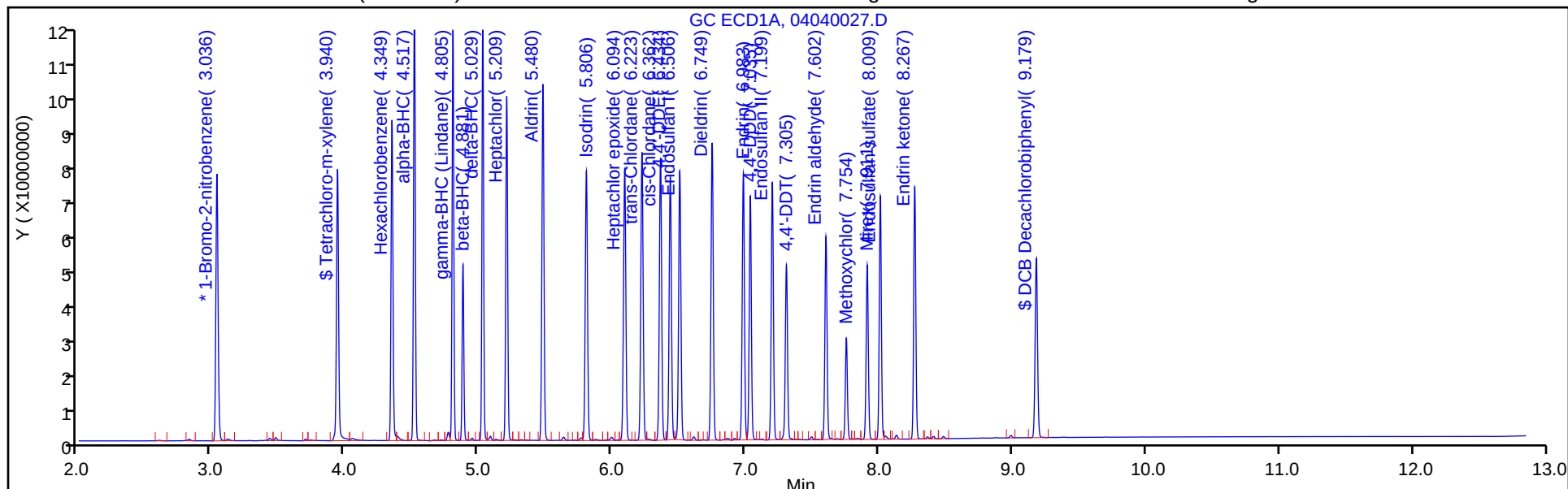
ALS Bottle#: 22

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

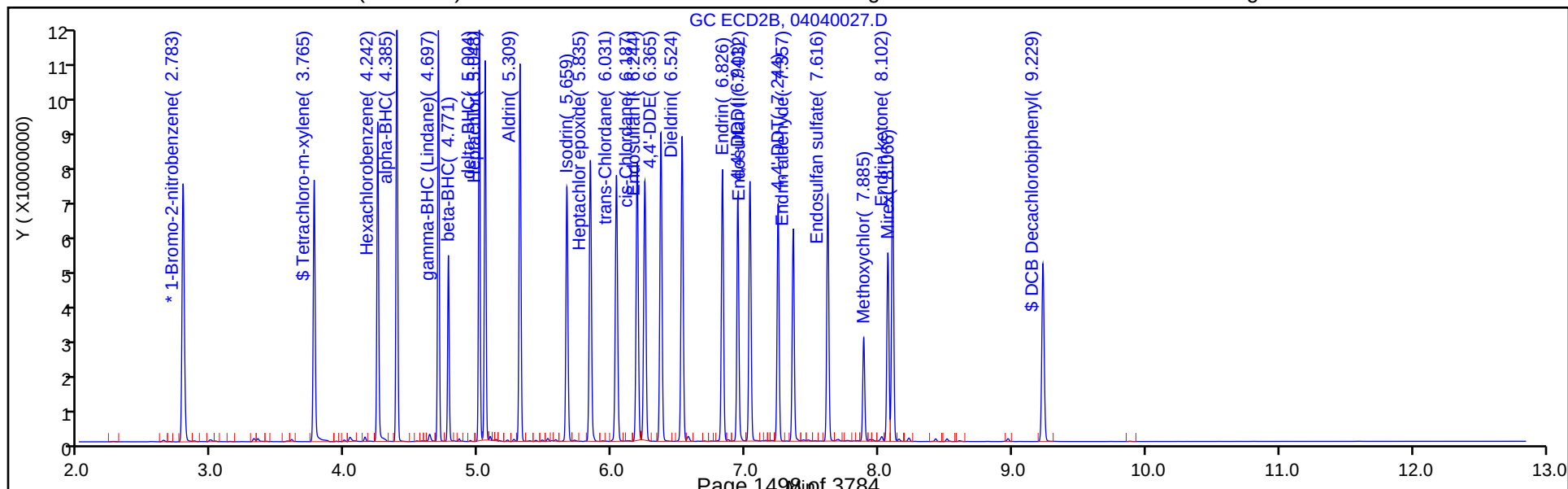
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040028.D
 Lims ID: STD5 AB
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 04-Apr-2019 21:10:44 ALS Bottle#: 23 Worklist Smp#: 28
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD5 AB
 Misc. Info.: 280-0080574-028
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub6
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 05-Apr-2019 14:13:48 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0337

First Level Reviewer: mooret

Date: 05-Apr-2019 12:47:20

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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S 1 Hexachlorocyclohexane, technical

1					290.6		
2					290.7		
RPD = 0.06							

* 2 1-Bromo-2-nitrobenzene

1	3.036	3.037	-0.002	84592175	150.0	150.0	
2	2.783	2.785	-0.002	90896747	150.0	150.0	

\$ 4 Tetrachloro-m-xylene

M

1	3.940	3.940	0.000	59640135	75.0	73.4	
2	3.766	3.766	0.000	55924958	75.0	72.3	M
RPD = 1.52							

5 Hexachlorobenzene

1	4.348	4.349	-0.001	62633152	75.0	72.5	
2	4.242	4.242	0.000	63130225	75.0	72.8	
RPD = 0.35							

8 alpha-BHC

1	4.517	4.517	0.000	80259471	75.0	72.5	
2	4.386	4.386	0.000	82998800	75.0	73.4	
RPD = 1.24							

9 gamma-BHC (Lindane)

1	4.806	4.806	0.000	70492356	75.0	72.6	
2	4.697	4.697	0.000	73208065	75.0	72.0	
RPD = 0.85							

10 beta-BHC

1	4.881	4.881	0.000	30015211	75.0	72.3	
2	4.772	4.772	0.000	31215616	75.0	72.1	
RPD = 0.41							

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040028.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
12 delta-BHC							
1	5.029	5.029	0.000	72415039	75.0	73.1	
2	5.003	5.004	-0.001	75369416	75.0	73.2	
						RPD = 0.23	
15 Heptachlor							
1	5.209	5.209	0.000	65381486	75.0	71.9	
2	5.047	5.047	0.000	67452201	75.0	71.6	
						RPD = 0.44	
16 Aldrin							
1	5.480	5.480	0.000	74077110	75.0	73.0	
2	5.308	5.309	-0.001	76072967	75.0	72.3	
						RPD = 0.92	
18 Isodrin							
1	5.806	5.805	0.001	61669349	75.0	72.9	
2	5.662	5.661	0.001	64279300	75.0	77.2	
						RPD = 5.79	
21 Heptachlor epoxide							
1	6.092	6.092	0.000	64270990	75.0	72.7	
2	5.836	5.835	0.001	67286819	75.0	72.3	
						RPD = 0.53	
22 trans-Chlordane							
1	6.222	6.222	0.000	67497225	75.0	73.4	
2	6.032	6.031	0.001	72011948	75.0	76.0	
						RPD = 3.51	
23 cis-Chlordane							
1	6.362	6.361	0.001	65846932	75.0	73.5	
2	6.187	6.187	0.000	69723938	75.0	74.4	
						RPD = 1.22	
24 4,4'-DDE							
1	6.435	6.435	0.000	69318956	75.0	78.1	
2	6.364	6.364	0.000	73048753	75.0	73.4	
						RPD = 6.15	
25 Endosulfan I							
1	6.505	6.505	0.000	61753796	75.0	72.8	
2	6.244	6.243	0.001	64436030	75.0	72.3	
						RPD = 0.66	
27 Dieldrin							
1	6.748	6.748	0.000	68380872	75.0	73.2	
2	6.523	6.523	0.000	72899947	75.0	73.1	
						RPD = 0.15	
30 Endrin							
1	6.982	6.982	0.000	63300122	75.0	75.5	
2	6.826	6.827	-0.001	66934707	75.0	75.2	
						RPD = 0.36	
32 4,4'-DDD							
1	7.034	7.034	0.000	53749371	75.0	75.0	
2	6.942	6.942	0.000	59575744	75.0	77.1	
						RPD = 2.78	

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040028.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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34 Endosulfan II

1	7.200	7.199	0.001	56062083	75.0	72.9	
2	7.033	7.033	0.000	61415904	75.0	72.6	
RPD = 0.36							

35 4,4'-DDT

1	7.305	7.305	0.000	47596942	75.0	82.5	
2	7.243	7.243	0.000	51537440	75.0	74.6	
RPD = 10.11							

36 Endrin aldehyde

1	7.601	7.601	0.000	46110267	75.0	75.1	
2	7.357	7.357	0.000	50520736	75.0	74.5	
RPD = 0.83							

37 Methoxychlor

1	7.754	7.754	0.000	21125413	75.0	72.4	
2	7.886	7.886	0.000	23263968	75.0	74.8	
RPD = 3.22							

38 Mirex

1	7.911	7.911	0.000	39619401	75.0	74.8	
2	8.066	8.067	-0.001	43592670	75.0	73.1	
RPD = 2.20							

39 Endosulfan sulfate

1	8.009	8.009	0.000	51465608	75.0	73.9	
2	7.616	7.616	0.000	56049247	75.0	73.3	
RPD = 0.86							

40 Endrin ketone

1	8.267	8.267	0.000	56354715	75.0	75.2	
2	8.102	8.102	0.000	63346014	75.0	73.1	
RPD = 2.85							

\$ 41 DCB Decachlorobiphenyl

1	9.178	9.177	0.001	43826213	75.0	73.2	
2	9.228	9.229	-0.001	48453001	75.0	75.1	
RPD = 2.62							

S 3 Endosulfan, Total

1						219.6	
2						218.2	
RPD = 0.63							

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

8081IcalL5_00027

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 05-Apr-2019 14:13:49

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040028.D

Injection Date: 04-Apr-2019 21:10:44

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: STD5 AB

Worklist Smp#: 28

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

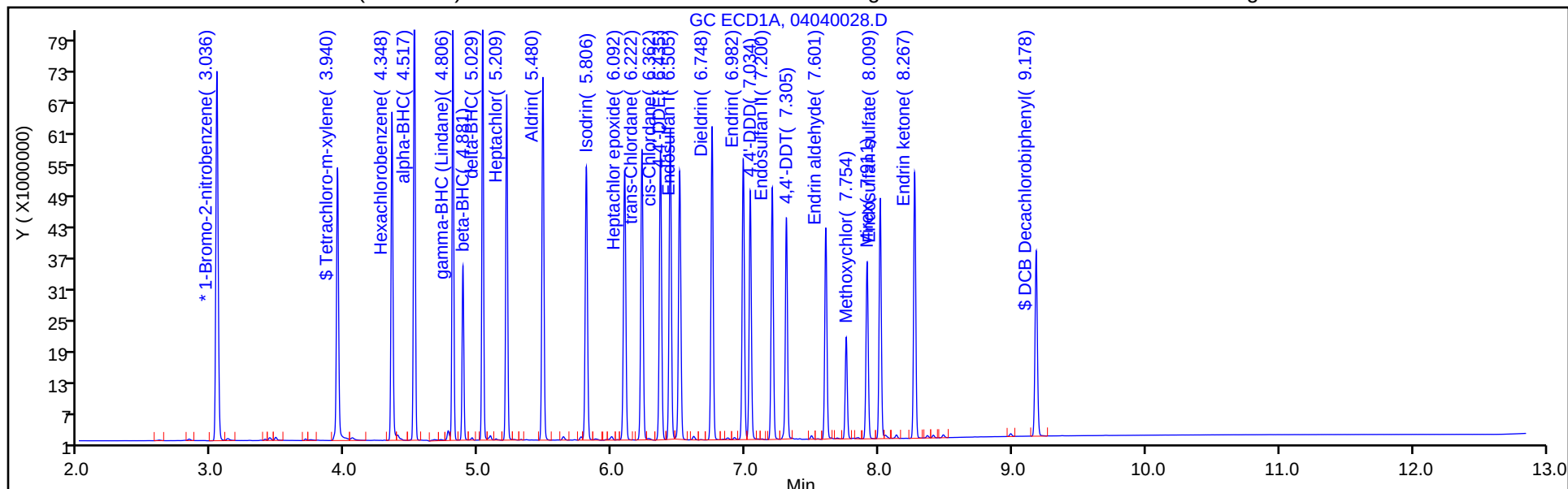
ALS Bottle#: 23

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

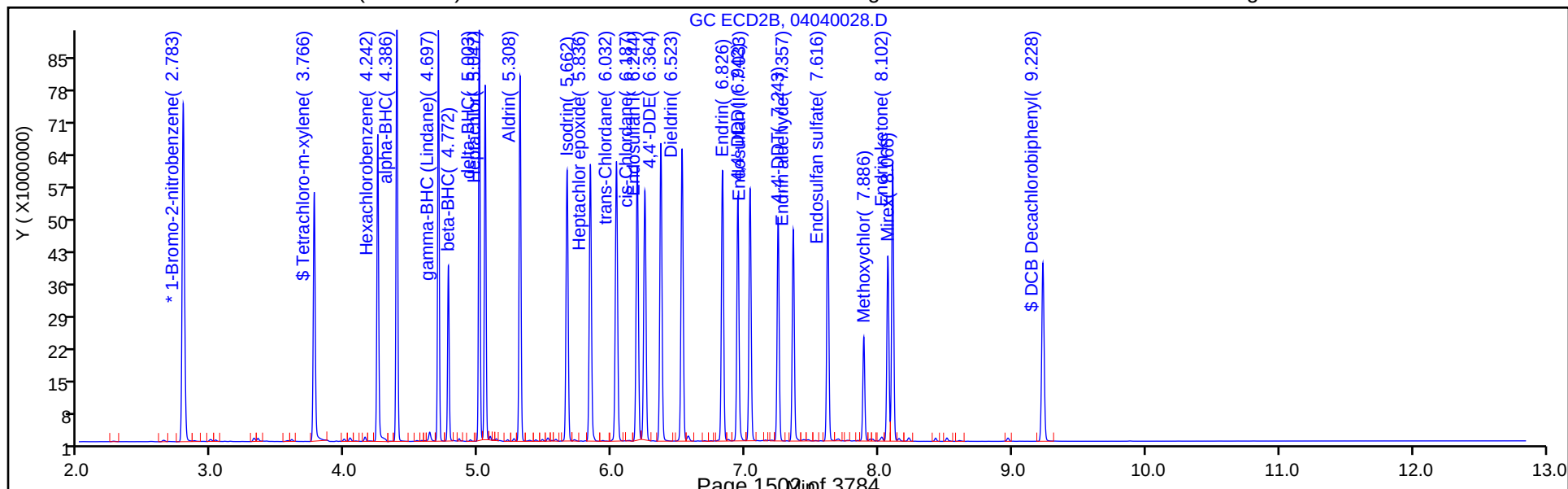
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040029.D
 Lims ID: STD4 AB
 Client ID:
 Sample Type: ICIS Calib Level: 4
 Inject. Date: 04-Apr-2019 21:27:29 ALS Bottle#: 24 Worklist Smp#: 29
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD4 AB
 Misc. Info.: 280-0080574-029
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub6
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 05-Apr-2019 14:13:44 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0337

First Level Reviewer: mooret

Date: 05-Apr-2019 12:52:18

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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* 2 1-Bromo-2-nitrobenzene

1	3.037	3.037	0.000	86545497	150.0	150.0
2	2.785	2.785	0.000	92968873	150.0	150.0

\$ 4 Tetrachloro-m-xylene

1	3.940	3.940	0.000	40744490	50.0	48.8
2	3.766	3.766	0.000	39425307	50.0	49.6

RPD = 1.54

5 Hexachlorobenzene

1	4.349	4.349	0.000	43635842	50.0	49.1
2	4.242	4.242	0.000	44560666	50.0	49.9

RPD = 1.49

8 alpha-BHC

1	4.517	4.517	0.000	55918140	50.0	49.3
2	4.386	4.386	0.000	58132463	50.0	50.1

RPD = 1.62

9 gamma-BHC (Lindane)

1	4.806	4.806	0.000	49080440	50.0	49.3
2	4.697	4.697	0.000	51319746	50.0	49.1

RPD = 0.32

10 beta-BHC

1	4.881	4.881	0.000	20998884	50.0	49.1
2	4.772	4.772	0.000	21968799	50.0	49.2

RPD = 0.10

12 delta-BHC

1	5.029	5.029	0.000	50142415	50.0	49.3
2	5.004	5.004	0.000	51957463	50.0	49.2

RPD = 0.32

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040029.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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15 Heptachlor

1	5.209	5.209	0.000	45435195	50.0	48.6	
2	5.047	5.047	0.000	47090232	50.0	48.6	
RPD = 0.20							

16 Aldrin

1	5.480	5.480	0.000	51095372	50.0	49.1	
2	5.309	5.309	0.000	53002216	50.0	49.1	
RPD = 0.09							

18 Isodrin

1	5.805	5.805	0.000	42612233	50.0	49.1	
2	5.661	5.661	0.000	42043729	50.0	49.2	
RPD = 0.22							

21 Heptachlor epoxide

1	6.092	6.092	0.000	44612490	50.0	49.2	
2	5.835	5.835	0.000	47010369	50.0	49.1	
RPD = 0.04							

22 trans-Chlordane

1	6.222	6.222	0.000	46558079	50.0	49.3	
2	6.031	6.031	0.000	48045202	50.0	49.4	
RPD = 0.26							

23 cis-Chlordane

1	6.361	6.361	0.000	45320168	50.0	49.2	
2	6.187	6.187	0.000	47444559	50.0	49.2	
RPD = 0.02							

24 4,4'-DDE

1	6.435	6.435	0.000	45568260	50.0	50.1	
2	6.364	6.364	0.000	50477774	50.0	49.5	
RPD = 1.17							

25 Endosulfan I

1	6.505	6.505	0.000	43013046	50.0	49.4	
2	6.243	6.243	0.000	45106461	50.0	49.2	
RPD = 0.35							

27 Dieldrin

1	6.748	6.748	0.000	47461815	50.0	49.6	
2	6.523	6.523	0.000	50644581	50.0	49.5	
RPD = 0.23							

30 Endrin

1	6.982	6.982	0.000	42072019	50.0	48.9	
2	6.827	6.827	0.000	44770212	50.0	48.9	
RPD = 0.08							

32 4,4'-DDD

1	7.034	7.034	0.000	36895639	50.0	50.2	
2	6.942	6.942	0.000	39182494	50.0	49.3	
RPD = 1.84							

34 Endosulfan II

1	7.199	7.199	0.000	39548273	50.0	50.1	
2	7.033	7.033	0.000	43551862	50.0	50.0	
RPD = 0.20							

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040029.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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35 4,4'-DDT

1	7.305	7.305	0.000	28474102	50.0	48.1	
2	7.243	7.243	0.000	35192055	50.0	49.7	
RPD = 3.27							

36 Endrin aldehyde

1	7.601	7.601	0.000	31356078	50.0	49.7	
2	7.357	7.357	0.000	35094503	50.0	50.3	
RPD = 1.10							

37 Methoxychlor

1	7.754	7.754	0.000	14867331	50.0	50.0	
2	7.886	7.886	0.000	16468664	50.0	51.6	
RPD = 3.22							

38 Mirex

1	7.911	7.911	0.000	27315246	50.0	50.0	
2	8.067	8.067	0.000	30606752	50.0	49.8	
RPD = 0.31							

39 Endosulfan sulfate

1	8.009	8.009	0.000	35600171	50.0	49.8	
2	7.616	7.616	0.000	39378769	50.0	50.1	
RPD = 0.51							

40 Endrin ketone

1	8.267	8.267	0.000	39453691	50.0	51.4	
2	8.102	8.102	0.000	45210652	50.0	50.8	
RPD = 1.01							

\$ 41 DCB Decachlorobiphenyl

1	9.177	9.177	0.000	31048086	50.0	50.4	
2	9.229	9.229	0.000	33417127	50.0	50.2	
RPD = 0.28							

Reagents:

8081IcalL4_00033

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 05-Apr-2019 14:13:45

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040029.D

Injection Date: 04-Apr-2019 21:27:29

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: STD4 AB

Worklist Smp#: 29

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

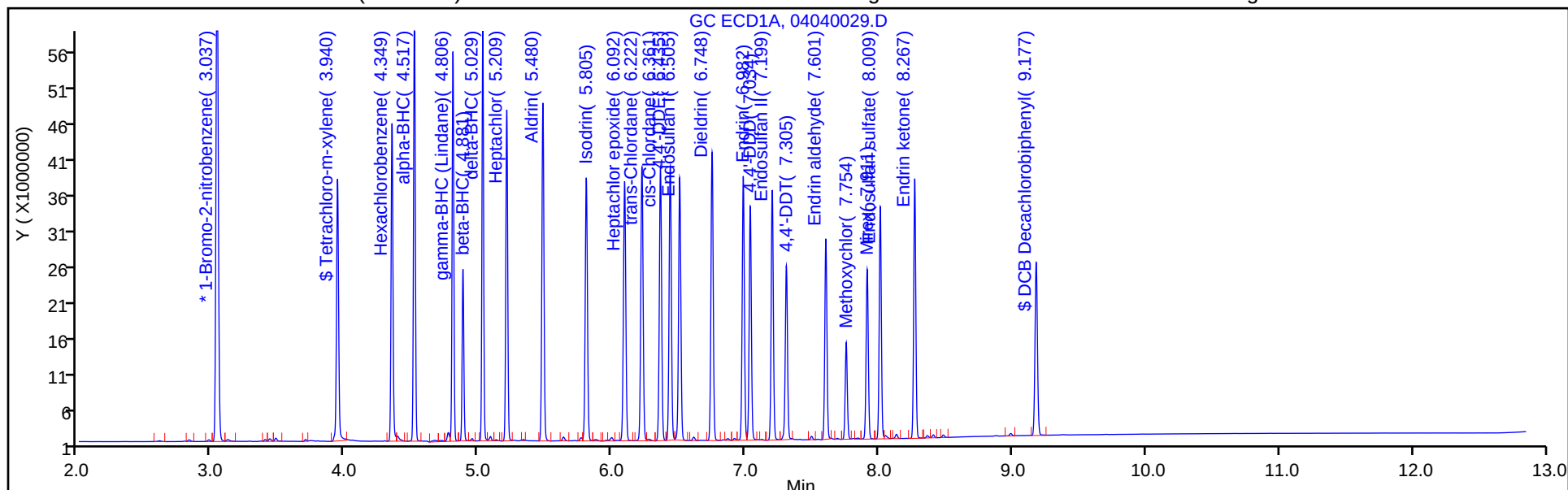
ALS Bottle#: 24

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

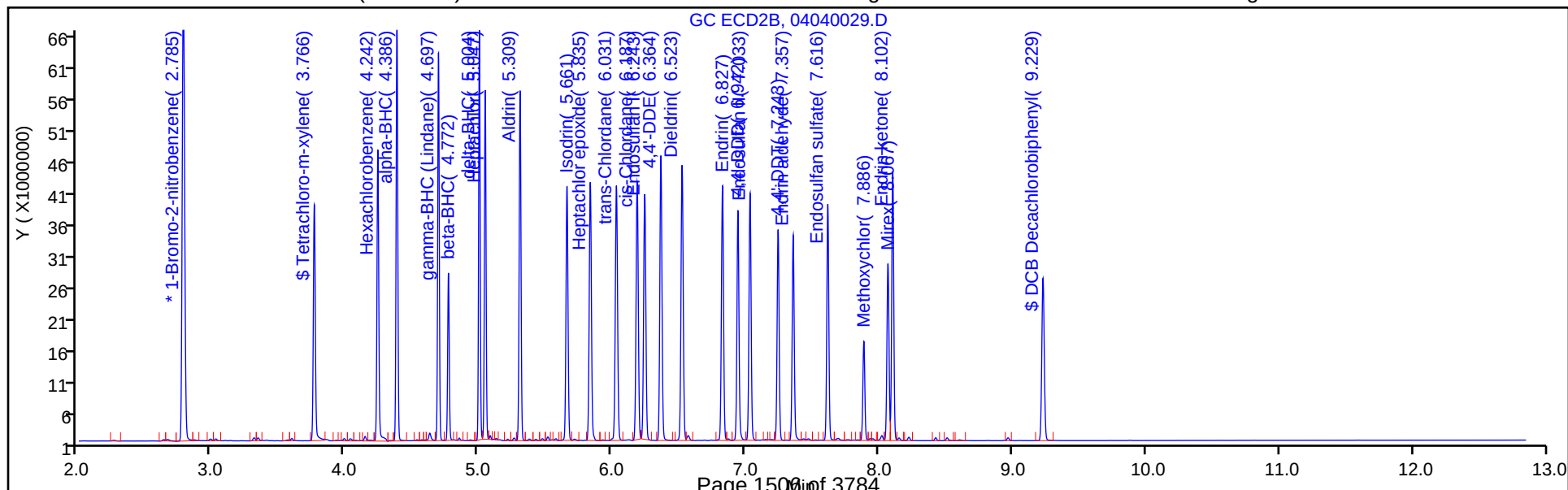
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040030.D
 Lims ID: STD3 AB
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 04-Apr-2019 21:44:13 ALS Bottle#: 25 Worklist Smp#: 30
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD3 AB
 Misc. Info.: 280-0080574-030
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub6
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 05-Apr-2019 14:13:41 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0337

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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S 1 Hexachlorocyclohexane, technical

1					103.4		
2					104.6		
RPD = 1.08							

* 2 1-Bromo-2-nitrobenzene

1	3.035	3.035	-0.001	90156628	150.0	150.0	
2	2.781	2.782	-0.001	95954170	150.0	150.0	

\$ 4 Tetrachloro-m-xylene

1	3.940	3.940	0.000	22474093	25.0	25.6	
2	3.765	3.766	-0.001	21581998	25.0	25.9	
RPD = 1.31							

5 Hexachlorobenzene

1	4.348	4.349	-0.001	24112468	25.0	25.7	
2	4.241	4.242	-0.001	24270024	25.0	25.7	
RPD = 0.32							

8 alpha-BHC

1	4.516	4.517	-0.001	30583250	25.0	25.7	
2	4.385	4.386	-0.001	31196478	25.0	25.7	
RPD = 0.11							

9 gamma-BHC (Lindane)

1	4.805	4.806	-0.001	27086208	25.0	25.9	
2	4.697	4.697	0.000	28783289	25.0	26.4	
RPD = 1.77							

10 beta-BHC

1	4.880	4.881	-0.001	11837745	25.0	26.1	
2	4.771	4.772	-0.001	12499080	25.0	26.5	
RPD = 1.67							

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040030.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
12 delta-BHC							
1	5.029	5.029	0.000	27459383	25.0	25.8	
2	5.004	5.004	0.000	28596127	25.0	26.0	
						RPD = 0.76	
15 Heptachlor							
1	5.209	5.209	0.000	25878322	25.0	26.3	
2	5.047	5.047	0.000	27066441	25.0	26.6	
						RPD = 1.04	
16 Aldrin							
1	5.480	5.480	0.000	27928784	25.0	25.6	
2	5.309	5.309	0.000	29435948	25.0	26.1	
						RPD = 1.89	
18 Isodrin							
1	5.806	5.805	0.001	23492500	25.0	25.7	
2	5.660	5.661	-0.001	22180687	25.0	24.8	
						RPD = 3.52	
21 Heptachlor epoxide							
1	6.093	6.092	0.001	24738331	25.0	25.9	
2	5.836	5.835	0.001	26209299	25.0	26.1	
						RPD = 0.91	
22 trans-Chlordane							
1	6.223	6.222	0.001	25194878	25.0	25.3	
2	6.032	6.031	0.001	25337007	25.0	25.0	
						RPD = 1.21	
23 cis-Chlordane							
1	6.361	6.361	0.000	24597686	25.0	25.4	
2	6.187	6.187	0.000	25629992	25.0	25.4	
						RPD = 0.10	
24 4,4'-DDE							
1	6.435	6.435	0.000	22918329	25.0	24.0	
2	6.365	6.364	0.001	27022411	25.0	25.5	
						RPD = 5.89	
25 Endosulfan I							
1	6.505	6.505	0.000	23450713	25.0	25.5	
2	6.245	6.243	0.002	25040634	25.0	26.0	
						RPD = 1.84	
27 Dieldrin							
1	6.749	6.748	0.001	25358697	25.0	25.3	
2	6.524	6.523	0.001	27474476	25.0	25.7	
						RPD = 1.66	
30 Endrin							
1	6.982	6.982	0.000	22571870	25.0	25.0	
2	6.826	6.827	-0.001	24213496	25.0	25.3	
						RPD = 1.26	
32 4,4'-DDD							
1	7.035	7.034	0.001	18870263	25.0	24.5	
2	6.942	6.942	0.000	20516169	25.0	24.6	
						RPD = 0.50	

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040030.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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34 Endosulfan II

1	7.200	7.199	0.001	20795251	25.0	25.1	
2	7.033	7.033	0.000	23310102	25.0	25.5	
RPD = 1.34							

35 4,4'-DDT

1	7.305	7.305	0.000	14438216	25.0	23.3	
2	7.245	7.243	0.002	18163065	25.0	24.8	
RPD = 6.25							

36 Endrin aldehyde

1	7.602	7.601	0.001	16423428	25.0	24.8	
2	7.357	7.357	0.000	18386513	25.0	25.1	
RPD = 1.33							

37 Methoxychlor

1	7.755	7.754	0.001	7440579	25.0	24.3	
2	7.886	7.886	0.000	8015613	25.0	24.1	
RPD = 0.81							

38 Mirex

1	7.912	7.911	0.001	14490421	25.0	24.9	
2	8.067	8.067	0.000	16346029	25.0	25.2	
RPD = 1.39							

39 Endosulfan sulfate

1	8.010	8.009	0.001	18695541	25.0	24.9	
2	7.615	7.616	-0.001	20740432	25.0	25.2	
RPD = 1.04							

40 Endrin ketone

1	8.268	8.267	0.001	19463777	25.0	24.1	
2	8.102	8.102	0.000	23267208	25.0	25.1	
RPD = 3.83							

\$ 41 DCB Decachlorobiphenyl

1	9.178	9.177	0.001	16189285	25.0	24.7	
2	9.228	9.229	-0.001	17458591	25.0	24.8	
RPD = 0.24							

S 3 Endosulfan, Total

1						75.6	
2						76.6	
RPD = 1.41							

Reagents:

8081IcalL3_00029

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 05-Apr-2019 14:13:41

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040030.D

Injection Date: 04-Apr-2019 21:44:13

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: STD3 AB

Worklist Smp#: 30

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

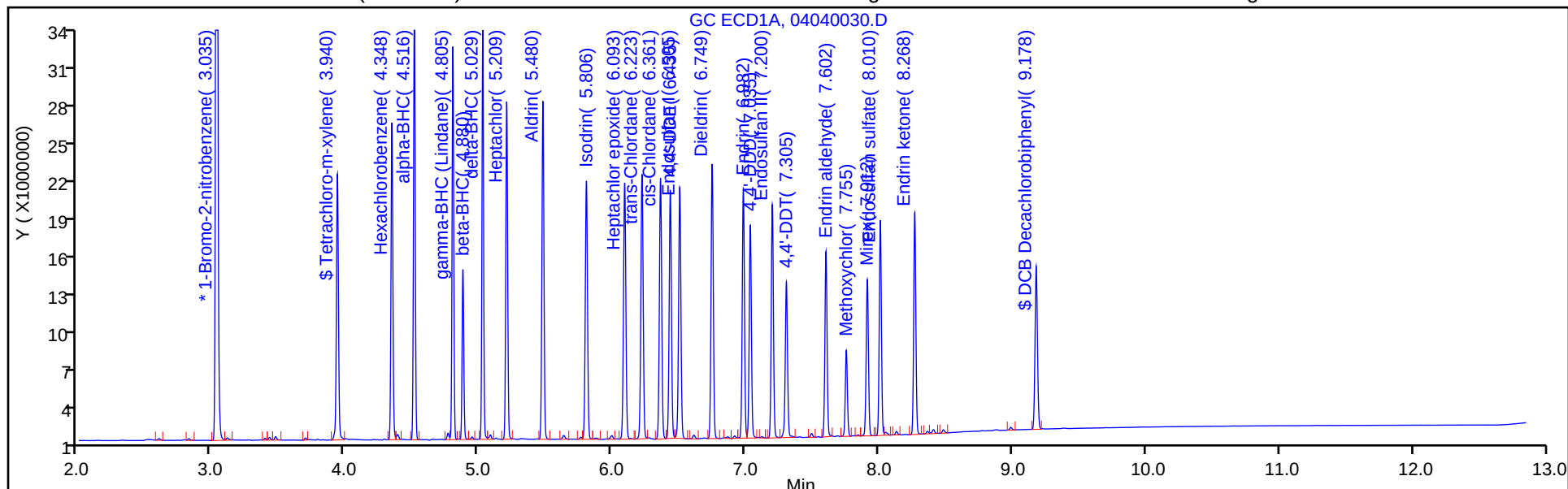
ALS Bottle#: 25

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

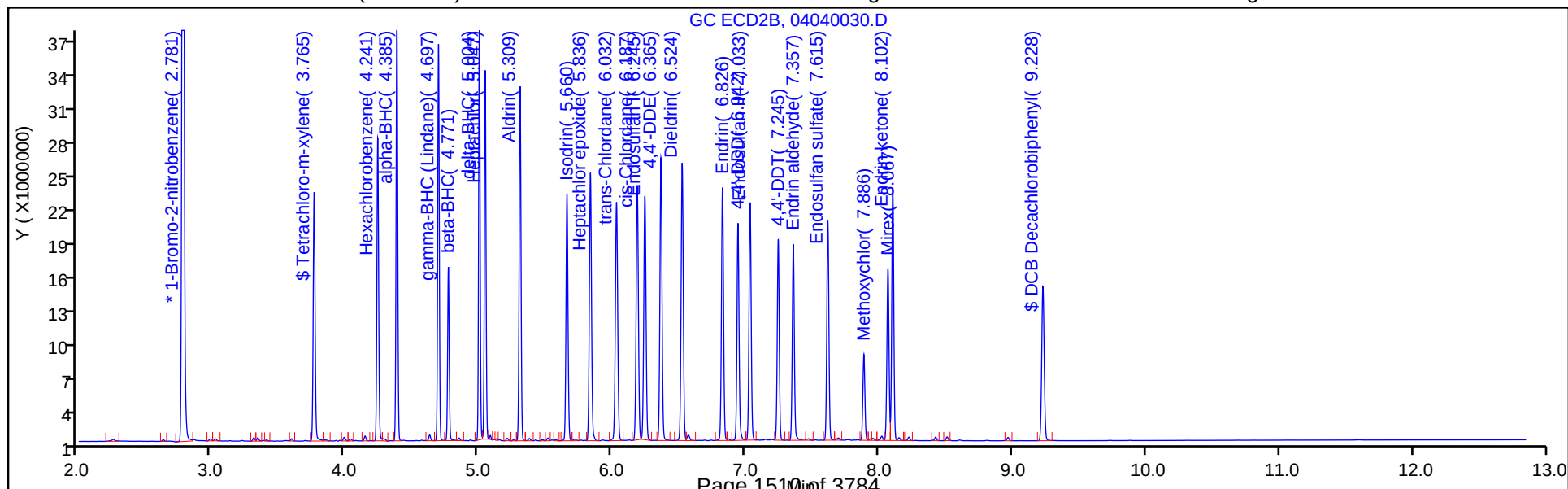
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040031.D
 Lims ID: STD2 AB
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 04-Apr-2019 22:01:03 ALS Bottle#: 26 Worklist Smp#: 31
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD2 AB
 Misc. Info.: 280-0080574-031
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub6
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 05-Apr-2019 14:13:38 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0337

First Level Reviewer: mooret

Date: 05-Apr-2019 12:47:00

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

S 1 Hexachlorocyclohexane, technical

1					39.3		
2					40.1		
						RPD = 2.09	

* 2 1-Bromo-2-nitrobenzene

1	3.035	3.035	0.000	88931565	150.0	150.0	
2	2.782	2.782	0.000	94291416	150.0	150.0	

\$ 4 Tetrachloro-m-xylene

1	3.940	3.940	0.000	8820884	10.0	9.79	
2	3.765	3.766	-0.001	8565376	10.0	9.94	
						RPD = 1.57	

5 Hexachlorobenzene

1	4.348	4.349	-0.001	9751069	10.0	10.0	
2	4.242	4.242	0.000	9831817	10.0	9.90	
						RPD = 1.16	

8 alpha-BHC

1	4.516	4.517	-0.001	11855110	10.0	9.88	
2	4.385	4.386	-0.001	12353878	10.0	9.98	
						RPD = 1.00	

9 gamma-BHC (Lindane)

1	4.805	4.806	-0.001	10338934	10.0	9.78	
2	4.696	4.697	-0.001	11146089	10.0	9.97	
						RPD = 1.99	

10 beta-BHC

1	4.881	4.881	0.000	4740197	10.0	9.90	
2	4.771	4.772	-0.001	5028590	10.0	10.0	
						RPD = 1.51	

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040031.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

12 delta-BHC

1	5.029	5.029	0.000	10501567	10.0	9.76	
2	5.003	5.004	-0.001	11351460	10.0	10.1	
RPD = 3.84							

15 Heptachlor

1	5.208	5.209	-0.001	9929979	10.0	9.88	
2	5.048	5.047	0.001	10792536	10.0	10.2	
RPD = 3.34							

16 Aldrin

1	5.480	5.480	0.000	10721865	10.0	9.79	
2	5.308	5.309	-0.001	11522704	10.0	10.0	
RPD = 2.41							

18 Isodrin

1	5.806	5.805	0.001	9169902	10.0	9.84	
2	5.661	5.661	0.000	10048122	10.0	11.1	
RPD = 11.96							

21 Heptachlor epoxide

1	6.093	6.092	0.001	9601679	10.0	9.84	
2	5.836	5.835	0.001	10522976	10.0	10.2	
RPD = 3.15							

22 trans-Chlordane

1	6.223	6.222	0.001	10047593	10.0	9.81	
2	6.031	6.031	0.000	10800115	10.0	10.5	
RPD = 6.88							

23 cis-Chlordane

1	6.363	6.361	0.002	9762254	10.0	9.85	
2	6.187	6.187	0.000	10628648	10.0	10.3	
RPD = 4.13							

24 4,4'-DDE

1	6.435	6.435	0.000	9950387	10.0	10.4	
2	6.364	6.364	0.000	10692105	10.0	10.0	
RPD = 3.73							

25 Endosulfan I

1	6.507	6.505	0.002	9364220	10.0	9.95	
2	6.243	6.243	0.000	10169553	10.0	10.2	
RPD = 2.13							

27 Dieldrin

1	6.749	6.748	0.001	9889046	10.0	9.84	
2	6.523	6.523	0.000	10939620	10.0	10.1	
RPD = 2.37							

30 Endrin

1	6.983	6.982	0.001	9195244	10.0	10.1	
2	6.825	6.827	-0.002	10204648	10.0	10.5	
RPD = 3.51							

32 4,4'-DDD

1	7.035	7.034	0.001	7645634	10.0	9.87	
2	6.941	6.942	-0.001	8839333	10.0	10.3	
RPD = 4.66							

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040031.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

34 Endosulfan II

1	7.200	7.199	0.001	8188624	10.0	9.80	
2	7.032	7.033	-0.001	9578600	10.0	10.1	
RPD = 2.55							

35 4,4'-DDT

1	7.306	7.305	0.001	6506578	10.0	10.5	
2	7.243	7.243	0.000	7088202	10.0	9.75	
RPD = 7.31							

36 Endrin aldehyde

1	7.602	7.601	0.001	6690210	10.0	9.94	
2	7.356	7.357	-0.001	7718221	10.0	10.2	
RPD = 2.77							

37 Methoxychlor

1	7.755	7.754	0.001	2859171	10.0	9.82	
2	7.885	7.886	-0.001	3291703	10.0	9.83	
RPD = 0.06							

38 Mirex

1	7.912	7.911	0.001	6044436	10.0	9.84	
2	8.066	8.067	-0.001	6831731	10.0	10.1	
RPD = 2.23							

39 Endosulfan sulfate

1	8.010	8.009	0.001	7345565	10.0	9.68	
2	7.615	7.616	-0.001	8500278	10.0	10.0	
RPD = 3.75							

40 Endrin ketone

1	8.268	8.267	0.001	7902990	10.0	9.69	
2	8.102	8.102	0.000	9318109	10.0	9.86	
RPD = 1.72							

\$ 41 DCB Decachlorobiphenyl

1	9.179	9.177	0.002	6603123	10.0	9.68	
2	9.229	9.229	0.000	7456749	10.0	10.1	
RPD = 3.94							

S 3 Endosulfan, Total

1						29.4	
2						30.3	
RPD = 2.80							

Reagents:

8081lcalL2_00026

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 05-Apr-2019 14:13:38

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Euofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040031.D

Injection Date: 04-Apr-2019 22:01:03

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: STD2 AB

Worklist Smp#: 31

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

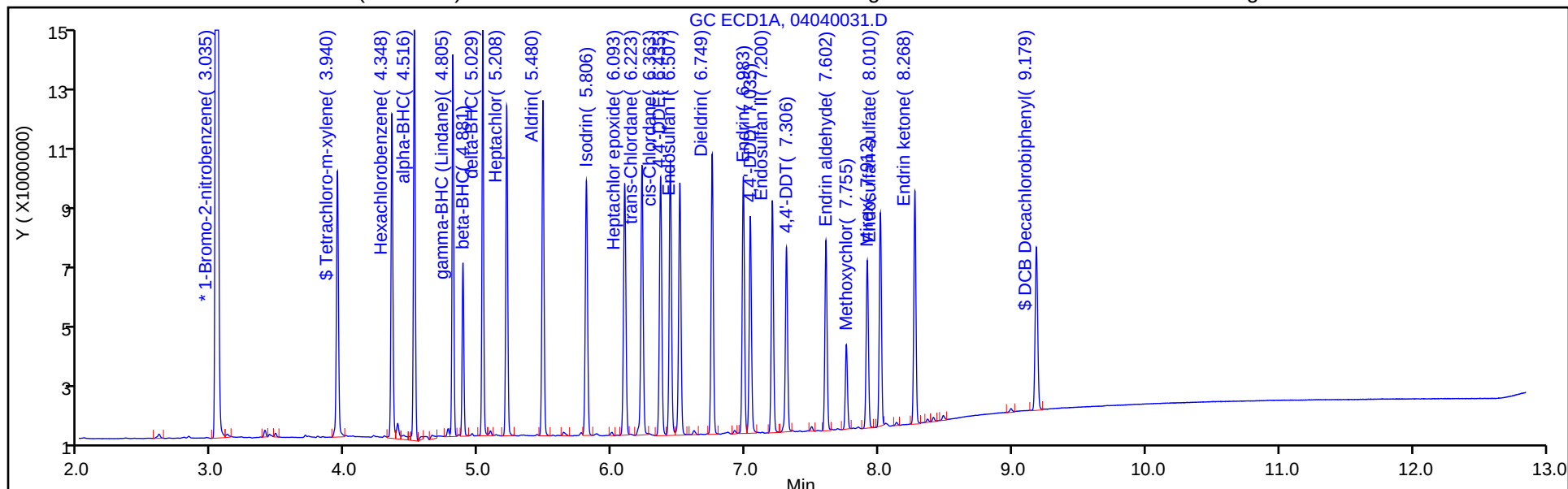
ALS Bottle#: 26

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

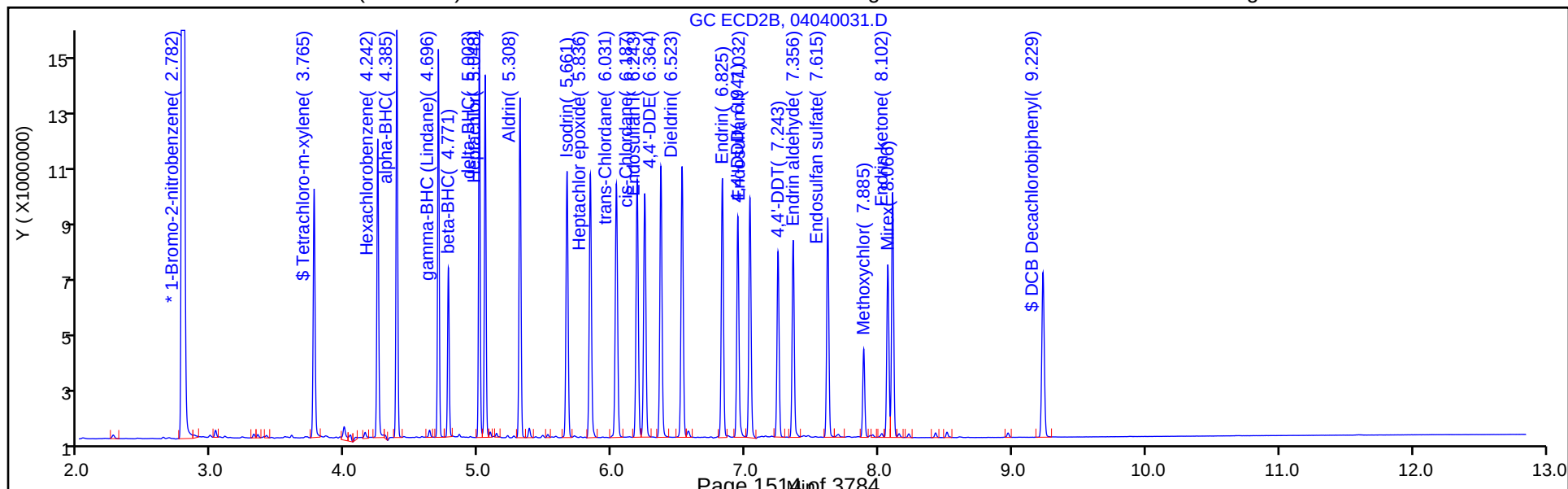
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Lims ID: STD1 AB
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 04-Apr-2019 22:17:45 ALS Bottle#: 27 Worklist Smp#: 32
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD1 AB
 Misc. Info.: 280-0080574-032
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub6
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 05-Apr-2019 14:13:35 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0337

First Level Reviewer: mooret

Date: 05-Apr-2019 12:47:56

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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S 1 Hexachlorocyclohexane, technical

1					16.1		
2					15.9		
RPD = 0.93							

* 2 1-Bromo-2-nitrobenzene

1	3.035	3.035	0.000	92434445	150.0	150.0	
2	2.782	2.782	0.000	97686137	150.0	150.0	

\$ 4 Tetrachloro-m-xylene

1	3.939	3.940	-0.001	4098678	4.00	4.03	
2	3.765	3.766	-0.001	3988775	4.00	3.99	
RPD = 0.79							

5 Hexachlorobenzene

1	4.348	4.349	-0.001	4518959	4.00	3.99	
2	4.242	4.242	0.000	4781784	4.00	4.00	
RPD = 0.33							

8 alpha-BHC

1	4.516	4.517	-0.001	5252761	4.00	4.01	
2	4.385	4.386	-0.001	5581497	4.00	3.99	
RPD = 0.47							

9 gamma-BHC (Lindane)

1	4.805	4.806	-0.001	4674286	4.00	4.02	
2	4.697	4.697	0.000	5063579	4.00	3.98	
RPD = 0.95							

10 beta-BHC

1	4.881	4.881	0.000	2295066	4.00	4.00	
2	4.772	4.772	0.000	2431559	4.00	3.97	
RPD = 0.79							

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
12 delta-BHC							
1	5.028	5.029	-0.001	4734544	4.00	4.02	
2	5.003	5.004	-0.001	4978703	4.00	3.96	
						RPD = 1.52	
15 Heptachlor							
1	5.208	5.209	-0.001	4519351	4.00	4.00	
2	5.047	5.047	0.000	4908885	4.00	3.94	
						RPD = 1.39	
16 Aldrin							
1	5.479	5.480	-0.001	4775215	4.00	4.02	
2	5.309	5.309	0.000	5155984	4.00	3.98	
						RPD = 1.13	
18 Isodrin							
1	5.805	5.805	0.000	4186991	4.00	4.01	
2	5.660	5.661	-0.001	3980231	4.00	3.84	
						RPD = 4.42	
21 Heptachlor epoxide							
1	6.092	6.092	0.000	4399341	4.00	4.01	
2	5.836	5.835	0.001	4788424	4.00	3.96	
						RPD = 1.29	
22 trans-Chlordane							
1	6.222	6.222	0.000	4679200	4.00	4.03	
2	6.032	6.031	0.001	4530204	4.00	3.93	
						RPD = 2.54	
23 cis-Chlordane							
1	6.361	6.361	0.000	4481494	4.00	4.02	
2	6.187	6.187	0.000	4719403	4.00	3.96	
						RPD = 1.59	
24 4,4'-DDE							
1	6.435	6.435	0.000	4112635	4.00	3.96	
2	6.365	6.364	0.001	4661931	4.00	3.99	
						RPD = 0.84	
25 Endosulfan I							
1	6.506	6.505	0.001	4260400	4.00	4.00	
2	6.244	6.243	0.001	4668368	4.00	3.96	
						RPD = 1.02	
27 Dieldrin							
1	6.748	6.748	0.000	4358158	4.00	4.02	
2	6.524	6.523	0.001	4845583	4.00	3.98	
						RPD = 1.09	
30 Endrin							
1	6.982	6.982	0.000	3989883	4.00	3.99	
2	6.826	6.827	-0.001	4386188	4.00	3.93	
						RPD = 1.52	
32 4,4'-DDD							
1	7.034	7.034	0.000	3395277	4.00	4.03	
2	6.942	6.942	0.000	3915184	4.00	3.96	
						RPD = 1.79	

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

34 Endosulfan II

1	7.199	7.199	0.000	3683267	4.00	4.03	
2	7.032	7.033	-0.001	4481476	4.00	3.98	
RPD = 1.10							

35 4,4'-DDT

1	7.305	7.305	0.000	2663327	4.00	3.96	
2	7.243	7.243	0.000	3115871	4.00	4.04	
RPD = 2.04							

36 Endrin aldehyde

1	7.601	7.601	0.000	3004982	4.00	4.01	
2	7.357	7.357	0.000	3490864	4.00	3.97	
RPD = 1.25							

37 Methoxychlor

1	7.754	7.754	0.000	1540298	4.00	5.36	
2	7.885	7.886	-0.001	1487240	4.00	4.04	
RPD = 28.18							

38 Mirex

1	7.910	7.911	-0.001	2970987	4.00	4.03	
2	8.065	8.067	-0.002	3250491	4.00	3.99	
RPD = 0.96							

39 Endosulfan sulfate

1	8.008	8.009	-0.001	3380448	4.00	4.05	
2	7.616	7.616	0.000	3883079	4.00	3.99	
RPD = 1.52							

40 Endrin ketone

1	8.267	8.267	0.000	3632067	4.00	4.06	
2	8.102	8.102	0.000	4263129	4.00	4.02	
RPD = 1.01							

\$ 41 DCB Decachlorobiphenyl

1	9.178	9.177	0.001	3227979	4.00	4.05	
2	9.228	9.229	-0.001	3583224	4.00	3.99	
RPD = 1.50							

S 3 Endosulfan, Total

1						12.1	
2						11.9	
RPD = 1.21							

Reagents:

8081IcalL1_00026

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 05-Apr-2019 14:13:35

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D

Injection Date: 04-Apr-2019 22:17:45

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: STD1 AB

Worklist Smp#: 32

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

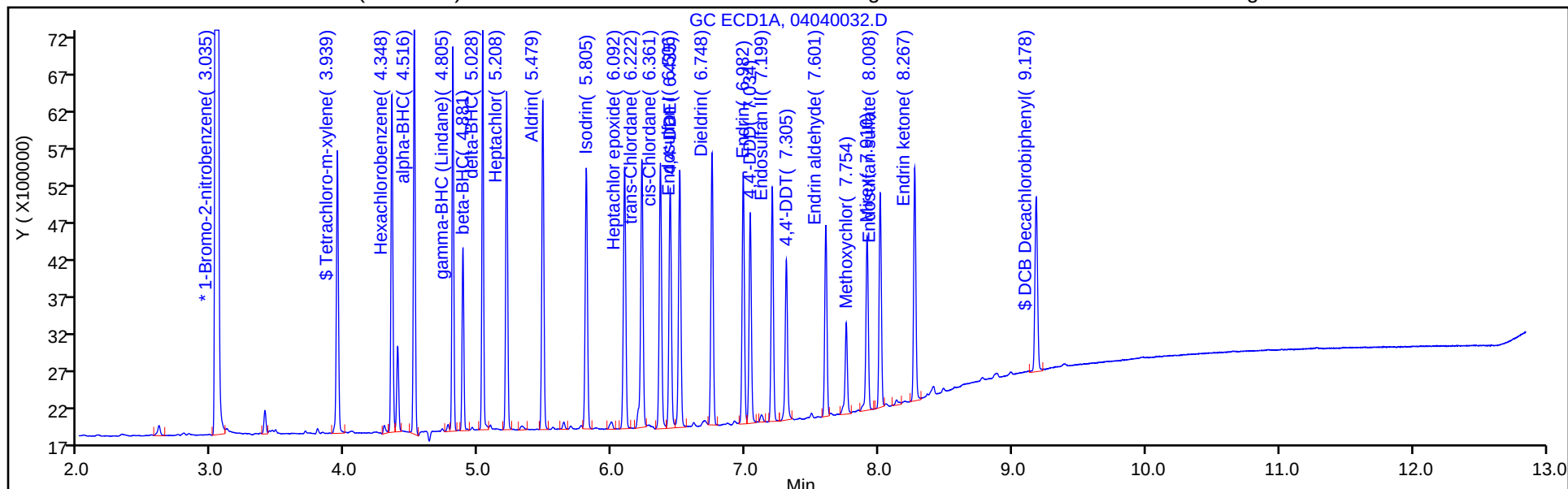
ALS Bottle#: 27

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

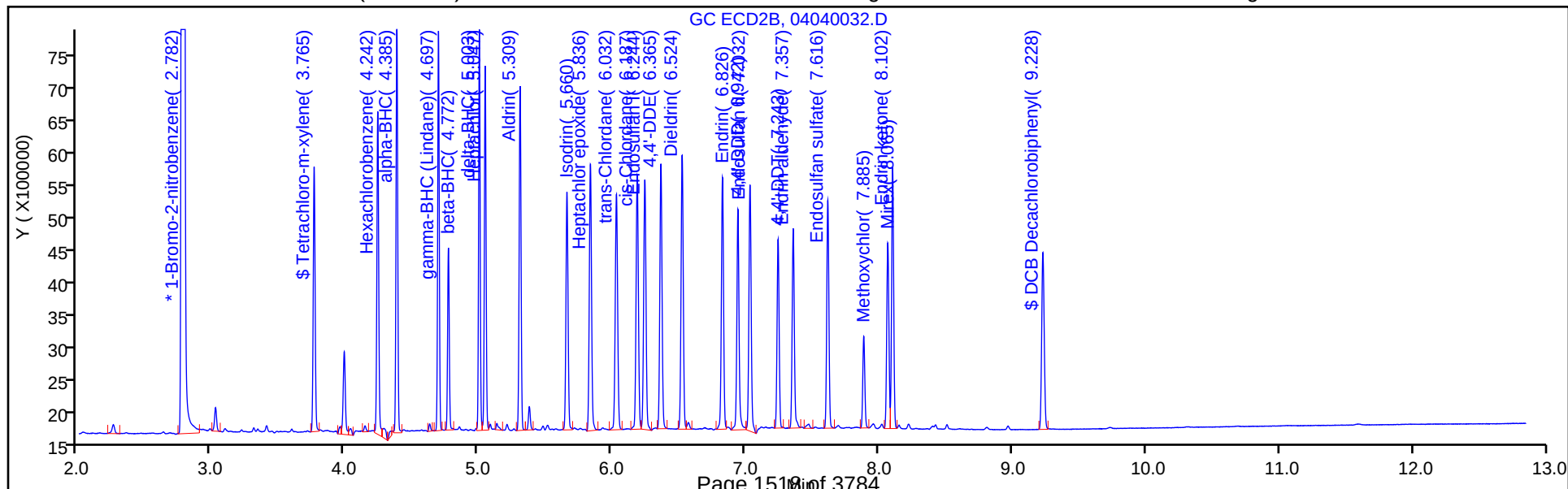
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 453267

SDG No.: _____

Instrument ID: SGC_P1 GC Column: CLP2 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/04/2019 20:54 Calibration End Date: 04/04/2019 22:17 Calibration ID: 35939

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-453267/32	04040032.D
Level 2	STD2 280-453267/31	04040031.D
Level 3	STD3 280-453267/30	04040030.D
Level 4	STD4 280-453267/29	04040029.D
Level 5	STD5 280-453267/28	04040028.D
Level 6	STD6 280-453267/27	04040027.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
Hexachlorobenzene	1.8356 1.4431	1.5641	1.5176	1.4379	1.3891	Lin2	1.7065	1.4080							0.9990		0.9900
alpha-BHC	2.1426 1.8497	1.9653	1.9507	1.8759	1.8262	Lin2	1.1970	1.8486							1.0000		0.9900
gamma-BHC (Lindane)	1.9438 1.6889	1.7731	1.7998	1.6560	1.6108	Lin2	1.1591	1.6617							0.9990		0.9900
beta-BHC	0.9334 0.7112	0.8000	0.7816	0.7089	0.6868	Lin2	0.9490	0.7018							0.9980		0.9900
delta-BHC	1.9112 1.6904	1.8058	1.7881	1.6766	1.6584	Lin2	0.9642	1.6854							0.9990		0.9900
Heptachlor	1.8844 1.5533	1.7169	1.6925	1.5195	1.4841	Lin2	1.4894	1.5342							0.9980		0.9900
Aldrin	1.9793 1.7534	1.8330	1.8406	1.7103	1.6738	Lin2	1.0693	1.7212							0.9990		0.9900
Heptachlor epoxide	1.8382 1.5340	1.6740	1.6389	1.5170	1.4805	Lin2	1.3483	1.5164							0.9990		0.9900
gamma-Chlordane	1.7391 1.5105	1.7181	1.5843	1.5504	1.5845	Lin2	0.8644	1.5520							0.9990		0.9900
alpha-Chlordane	1.8117 1.5334	1.6908	1.6026	1.5310	1.5341	Lin2	1.1890	1.5314							1.0000		0.9900
Endosulfan I	1.7921 1.4731	1.6178	1.5658	1.4555	1.4178	Lin2	1.4240	1.4508							0.9990		0.9900
4,4'-DDE	1.7896 1.6599	1.7009	1.6897	1.6289	1.6073	Lin2	0.6430	1.6330							1.0000		0.9900
Dieldrin	1.8601 1.6490	1.7403	1.7180	1.6342	1.6040	Lin2	0.9491	1.6324							1.0000		0.9900
Endrin	1.6838 1.4350	1.6234	1.5141	1.4447	1.4728	Lin2	1.0161	1.4556							0.9990		0.9900
4,4'-DDD	1.5030 1.2421	1.4062	1.2829	1.2644	1.3108	Lin2	1.0213	1.2611							0.9990		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 453267

SDG No.: _____

Instrument ID: SGC_P1 GC Column: CLP2 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/04/2019 20:54 Calibration End Date: 04/04/2019 22:17 Calibration ID: 35939

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
Endosulfan II	1.7204 1.4072	1.5238	1.4576	1.4054	1.3513	Lin2	1.3954	1.3768							1.0000		0.9900
4,4'-DDT	1.1961 1.1797	1.1276	1.1357	1.1356	1.1340	Lin2	0.1814	1.1384							0.9990		0.9900
Endrin aldehyde	1.3401 1.0995	1.2278	1.1497	1.1325	1.1116	Lin2	0.9724	1.1066							1.0000		0.9900
Endosulfan sulfate	1.4906 1.2723	1.3522	1.2969	1.2707	1.2333	Lin2	0.9803	1.2485							1.0000		0.9900
Methoxychlor	0.5709 0.5188	0.5236	0.5012	0.5314	0.5119	Lin2	0.2234	0.5102							0.9990		0.9900
Endrin ketone	1.6365 1.4489	1.4823	1.4549	1.4589	1.3938	Lin2	0.8467	1.4181							1.0000		0.9900
Tetrachloro-m-xylene	1.5312 1.2924	1.3626	1.3495	1.2722	1.2305	Lin2	1.0870	1.2612							0.9990		0.9900
DCB Decachlorobiphenyl	1.3755 1.0557	1.1862	1.0917	1.0783	1.0661	Lin2	1.3231	1.0467							1.0000		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 453267

SDG No.: _____

Instrument ID: SGC_P1 GC Column: CLP2 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/04/2019 20:54 Calibration End Date: 04/04/2019 22:17 Calibration ID: 35939

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-453267/32	04040032.D
Level 2	STD2 280-453267/31	04040031.D
Level 3	STD3 280-453267/30	04040030.D
Level 4	STD4 280-453267/29	04040029.D
Level 5	STD5 280-453267/28	04040028.D
Level 6	STD6 280-453267/27	04040027.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
Hexachlorobenzene	BNB	Lin2	4781784 87396858	9831817	24270024	44560666	63130225	4.00 100	10.0	25.0	50.0	75.0
alpha-BHC	BNB	Lin2	5581497 112026432	12353878	31196478	58132463	82998800	4.00 100	10.0	25.0	50.0	75.0
gamma-BHC (Lindane)	BNB	Lin2	5063579 102288620	11146089	28783289	51319746	73208065	4.00 100	10.0	25.0	50.0	75.0
beta-BHC	BNB	Lin2	2431559 43070942	5028590	12499080	21968799	31215616	4.00 100	10.0	25.0	50.0	75.0
delta-BHC	BNB	Lin2	4978703 102376824	11351460	28596127	51957463	75369416	4.00 100	10.0	25.0	50.0	75.0
Heptachlor	BNB	Lin2	4908885 94073772	10792536	27066441	47090232	67452201	4.00 100	10.0	25.0	50.0	75.0
Aldrin	BNB	Lin2	5155984 106193465	11522704	29435948	53002216	76072967	4.00 100	10.0	25.0	50.0	75.0
Heptachlor epoxide	BNB	Lin2	4788424 92906310	10522976	26209299	47010369	67286819	4.00 100	10.0	25.0	50.0	75.0
gamma-Chlordane	BNB	Lin2	4530204 91478752	10800115	25337007	48045202	72011948	4.00 100	10.0	25.0	50.0	75.0
alpha-Chlordane	BNB	Lin2	4719403 92867205	10628648	25629992	47444559	69723938	4.00 100	10.0	25.0	50.0	75.0
Endosulfan I	BNB	Lin2	4668368 89219100	10169553	25040634	45106461	64436030	4.00 100	10.0	25.0	50.0	75.0
4,4'-DDE	BNB	Lin2	4661931 100532188	10692105	27022411	50477774	73048753	4.00 100	10.0	25.0	50.0	75.0
Dieldrin	BNB	Lin2	4845583 99870736	10939620	27474476	50644581	72899947	4.00 100	10.0	25.0	50.0	75.0
Endrin	BNB	Lin2	4386188 86908723	10204648	24213496	44770212	66934707	4.00 100	10.0	25.0	50.0	75.0
4,4'-DDD	BNB	Lin2	3915184 75227535	8839333	20516169	39182494	59575744	4.00 100	10.0	25.0	50.0	75.0
Endosulfan II	BNB	Lin2	4481476 85223504	9578600	23310102	43551862	61415904	4.00 100	10.0	25.0	50.0	75.0

FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 453267

SDG No.: _____

Instrument ID: SGC_P1 GC Column: CLP2 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/04/2019 20:54 Calibration End Date: 04/04/2019 22:17 Calibration ID: 35939

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
4,4'-DDT	BNB	Lin2	3115871 71445843	7088202	18163065	35192055	51537440	4.00 100	10.0	25.0	50.0	75.0
Endrin aldehyde	BNB	Lin2	3490864 66590724	7718221	18386513	35094503	50520736	4.00 100	10.0	25.0	50.0	75.0
Endosulfan sulfate	BNB	Lin2	3883079 77057322	8500278	20740432	39378769	56049247	4.00 100	10.0	25.0	50.0	75.0
Methoxychlor	BNB	Lin2	1487240 31421530	3291703	8015613	16468664	23263968	4.00 100	10.0	25.0	50.0	75.0
Endrin ketone	BNB	Lin2	4263129 87752977	9318109	23267208	45210652	63346014	4.00 100	10.0	25.0	50.0	75.0
Tetrachloro-m-xylene	BNB	Lin2	3988775 78275126	8565376	21581998	39425307	55924958	4.00 100	10.0	25.0	50.0	75.0
DCB Decachlorobiphenyl	BNB	Lin2	3583224 63939611	7456749	17458591	33417127	48453001	4.00 100	10.0	25.0	50.0	75.0

Curve Type Legend:

Lin2 = Linear 1/conc^2 ISTD

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040027.D
 Lims ID: STD6 AB
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 04-Apr-2019 20:54:00 ALS Bottle#: 22 Worklist Smp#: 27
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD6 AB
 Misc. Info.: 280-0080574-027
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub6
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 05-Apr-2019 14:13:51 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0337

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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S 1 Hexachlorocyclohexane, technical

1					410.4		
2					400.1		
RPD = 2.56							

* 2 1-Bromo-2-nitrobenzene

1	3.036	3.037	-0.001	84279878	150.0	150.0	
2	2.783	2.785	-0.002	90845629	150.0	150.0	

\$ 4 Tetrachloro-m-xylene

1	3.940	3.940	0.000	83751214	100.0	103.7	
2	3.765	3.766	-0.001	78275126	100.0	101.6	
RPD = 2.08							

5 Hexachlorobenzene

1	4.349	4.349	0.000	87962023	100.0	102.6	
2	4.242	4.242	0.000	87396858	100.0	101.3	
RPD = 1.28							

8 alpha-BHC

1	4.517	4.517	0.000	113228401	100.0	102.9	
2	4.385	4.386	-0.001	112026432	100.0	99.4	
RPD = 3.41							

9 gamma-BHC (Lindane)

1	4.805	4.806	-0.001	99155091	100.0	102.7	
2	4.697	4.697	0.000	102288620	100.0	100.9	
RPD = 1.72							

10 beta-BHC

1	4.881	4.881	0.000	42040635	100.0	102.2	
2	4.771	4.772	-0.001	43070942	100.0	100.0	
RPD = 2.16							

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040027.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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12 delta-BHC

1	5.029	5.029	0.000	101292772	100.0	102.7	
2	5.004	5.004	0.000	102376824	100.0	99.7	
RPD = 2.96							

15 Heptachlor

1	5.209	5.209	0.000	92857776	100.0	102.7	
2	5.048	5.047	0.001	94073772	100.0	100.3	
RPD = 2.43							

16 Aldrin

1	5.480	5.480	0.000	104543802	100.0	103.5	
2	5.309	5.309	0.000	106193465	100.0	101.3	
RPD = 2.20							

18 Isodrin

1	5.806	5.805	0.001	86699104	100.0	103.1	
2	5.659	5.661	-0.002	76802636	100.0	92.5	
RPD = 10.86							

21 Heptachlor epoxide

1	6.094	6.092	0.002	90067581	100.0	102.5	
2	5.835	5.835	0.000	92906310	100.0	100.3	
RPD = 2.22							

22 trans-Chlordane

1	6.223	6.222	0.001	94834954	100.0	103.8	
2	6.031	6.031	0.000	91478752	100.0	96.8	
RPD = 6.99							

23 cis-Chlordane

1	6.362	6.361	0.001	91956679	100.0	103.2	
2	6.187	6.187	0.000	92867205	100.0	99.4	
RPD = 3.80							

24 4,4'-DDE

1	6.434	6.435	-0.001	85499449	100.0	96.7	
2	6.365	6.364	0.001	100532188	100.0	101.3	
RPD = 4.57							

25 Endosulfan I

1	6.506	6.505	0.001	86492733	100.0	102.6	
2	6.244	6.243	0.001	89219100	100.0	100.6	
RPD = 2.00							

27 Dieldrin

1	6.749	6.748	0.001	95757225	100.0	103.0	
2	6.524	6.523	0.001	99870736	100.0	100.4	
RPD = 2.55							

30 Endrin

1	6.983	6.982	0.001	84271241	100.0	101.0	
2	6.826	6.827	-0.001	86908723	100.0	97.9	
RPD = 3.09							

32 4,4'-DDD

1	7.035	7.034	0.001	72770004	100.0	102.1	
2	6.941	6.942	-0.001	75227535	100.0	97.7	
RPD = 4.40							

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040027.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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34 Endosulfan II

1	7.199	7.199	0.000	79153440	100.0	103.4	
2	7.032	7.033	-0.001	85223504	100.0	101.2	
RPD = 2.17							

35 4,4'-DDT

1	7.305	7.305	0.000	55580765	100.0	96.7	
2	7.244	7.243	0.001	71445843	100.0	103.5	
RPD = 6.73							

36 Endrin aldehyde

1	7.602	7.601	0.001	62068487	100.0	101.6	
2	7.357	7.357	0.000	66590724	100.0	98.5	
RPD = 3.13							

37 Methoxychlor

1	7.754	7.754	0.000	29717916	100.0	102.0	
2	7.885	7.886	-0.001	31421530	100.0	101.3	
RPD = 0.78							

38 Mirex

1	7.911	7.911	0.000	53503224	100.0	101.8	
2	8.066	8.067	-0.001	60241402	100.0	101.6	
RPD = 0.18							

39 Endosulfan sulfate

1	8.009	8.009	0.000	72007370	100.0	104.0	
2	7.616	7.616	0.000	77057322	100.0	101.1	
RPD = 2.80							

40 Endrin ketone

1	8.267	8.267	0.000	76129530	100.0	102.2	
2	8.102	8.102	0.000	87752977	100.0	101.6	
RPD = 0.57							

\$ 41 DCB Decachlorobiphenyl

1	9.179	9.177	0.002	62122825	100.0	104.5	
2	9.229	9.229	0.000	63939611	100.0	99.6	
RPD = 4.82							

S 3 Endosulfan, Total

1						310.0	
2						302.9	
RPD = 2.32							

Reagents:

8081IcalL6_00026

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 05-Apr-2019 14:13:52

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040027.D

Injection Date: 04-Apr-2019 20:54:00

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: STD6 AB

Worklist Smp#: 27

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

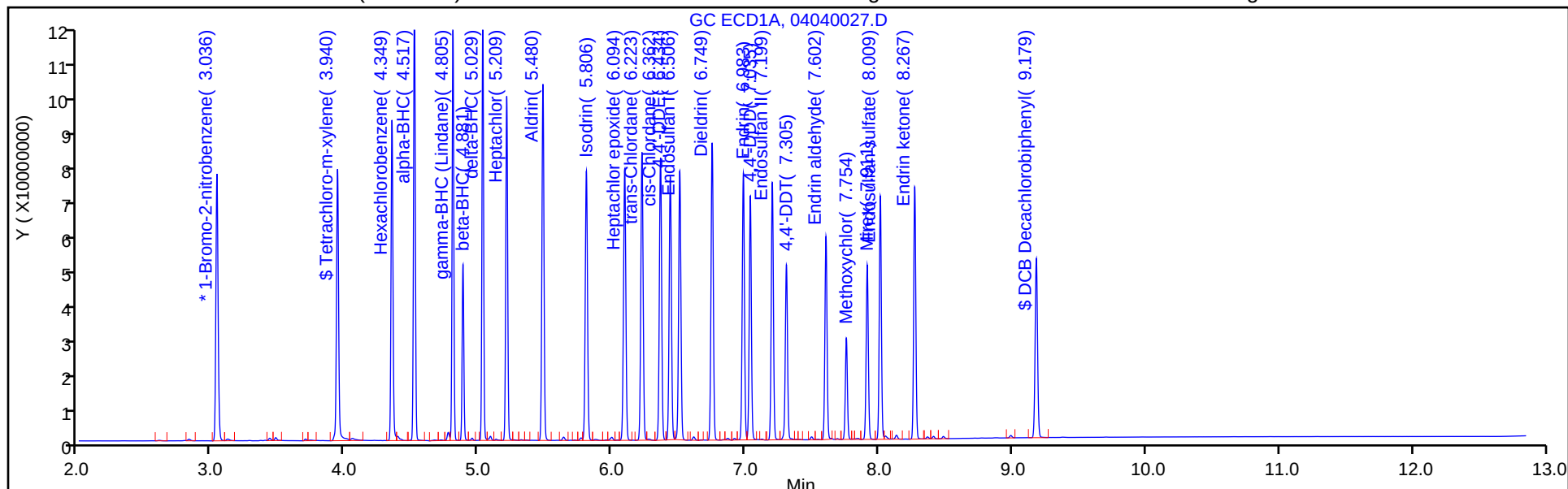
ALS Bottle#: 22

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

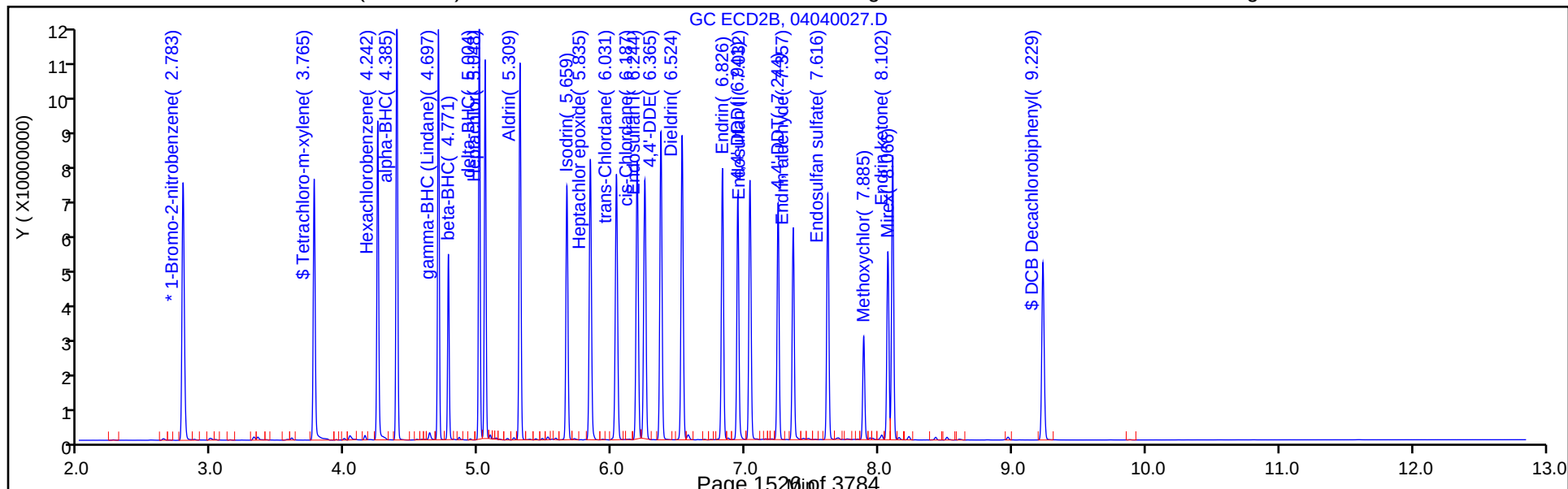
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040028.D
 Lims ID: STD5 AB
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 04-Apr-2019 21:10:44 ALS Bottle#: 23 Worklist Smp#: 28
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD5 AB
 Misc. Info.: 280-0080574-028
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub6
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 05-Apr-2019 14:13:48 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0337

First Level Reviewer: mooret

Date: 05-Apr-2019 12:47:20

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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S 1 Hexachlorocyclohexane, technical

1					290.6		
2					290.7		
RPD = 0.06							

* 2 1-Bromo-2-nitrobenzene

1	3.036	3.037	-0.002	84592175	150.0	150.0	
2	2.783	2.785	-0.002	90896747	150.0	150.0	

\$ 4 Tetrachloro-m-xylene

M

1	3.940	3.940	0.000	59640135	75.0	73.4	
2	3.766	3.766	0.000	55924958	75.0	72.3	M
RPD = 1.52							

5 Hexachlorobenzene

1	4.348	4.349	-0.001	62633152	75.0	72.5	
2	4.242	4.242	0.000	63130225	75.0	72.8	
RPD = 0.35							

8 alpha-BHC

1	4.517	4.517	0.000	80259471	75.0	72.5	
2	4.386	4.386	0.000	82998800	75.0	73.4	
RPD = 1.24							

9 gamma-BHC (Lindane)

1	4.806	4.806	0.000	70492356	75.0	72.6	
2	4.697	4.697	0.000	73208065	75.0	72.0	
RPD = 0.85							

10 beta-BHC

1	4.881	4.881	0.000	30015211	75.0	72.3	
2	4.772	4.772	0.000	31215616	75.0	72.1	
RPD = 0.41							

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040028.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
12 delta-BHC							
1	5.029	5.029	0.000	72415039	75.0	73.1	
2	5.003	5.004	-0.001	75369416	75.0	73.2	
						RPD = 0.23	
15 Heptachlor							
1	5.209	5.209	0.000	65381486	75.0	71.9	
2	5.047	5.047	0.000	67452201	75.0	71.6	
						RPD = 0.44	
16 Aldrin							
1	5.480	5.480	0.000	74077110	75.0	73.0	
2	5.308	5.309	-0.001	76072967	75.0	72.3	
						RPD = 0.92	
18 Isodrin							
1	5.806	5.805	0.001	61669349	75.0	72.9	
2	5.662	5.661	0.001	64279300	75.0	77.2	
						RPD = 5.79	
21 Heptachlor epoxide							
1	6.092	6.092	0.000	64270990	75.0	72.7	
2	5.836	5.835	0.001	67286819	75.0	72.3	
						RPD = 0.53	
22 trans-Chlordane							
1	6.222	6.222	0.000	67497225	75.0	73.4	
2	6.032	6.031	0.001	72011948	75.0	76.0	
						RPD = 3.51	
23 cis-Chlordane							
1	6.362	6.361	0.001	65846932	75.0	73.5	
2	6.187	6.187	0.000	69723938	75.0	74.4	
						RPD = 1.22	
24 4,4'-DDE							
1	6.435	6.435	0.000	69318956	75.0	78.1	
2	6.364	6.364	0.000	73048753	75.0	73.4	
						RPD = 6.15	
25 Endosulfan I							
1	6.505	6.505	0.000	61753796	75.0	72.8	
2	6.244	6.243	0.001	64436030	75.0	72.3	
						RPD = 0.66	
27 Dieldrin							
1	6.748	6.748	0.000	68380872	75.0	73.2	
2	6.523	6.523	0.000	72899947	75.0	73.1	
						RPD = 0.15	
30 Endrin							
1	6.982	6.982	0.000	63300122	75.0	75.5	
2	6.826	6.827	-0.001	66934707	75.0	75.2	
						RPD = 0.36	
32 4,4'-DDD							
1	7.034	7.034	0.000	53749371	75.0	75.0	
2	6.942	6.942	0.000	59575744	75.0	77.1	
						RPD = 2.78	

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040028.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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34 Endosulfan II

1	7.200	7.199	0.001	56062083	75.0	72.9	
2	7.033	7.033	0.000	61415904	75.0	72.6	
RPD = 0.36							

35 4,4'-DDT

1	7.305	7.305	0.000	47596942	75.0	82.5	
2	7.243	7.243	0.000	51537440	75.0	74.6	
RPD = 10.11							

36 Endrin aldehyde

1	7.601	7.601	0.000	46110267	75.0	75.1	
2	7.357	7.357	0.000	50520736	75.0	74.5	
RPD = 0.83							

37 Methoxychlor

1	7.754	7.754	0.000	21125413	75.0	72.4	
2	7.886	7.886	0.000	23263968	75.0	74.8	
RPD = 3.22							

38 Mirex

1	7.911	7.911	0.000	39619401	75.0	74.8	
2	8.066	8.067	-0.001	43592670	75.0	73.1	
RPD = 2.20							

39 Endosulfan sulfate

1	8.009	8.009	0.000	51465608	75.0	73.9	
2	7.616	7.616	0.000	56049247	75.0	73.3	
RPD = 0.86							

40 Endrin ketone

1	8.267	8.267	0.000	56354715	75.0	75.2	
2	8.102	8.102	0.000	63346014	75.0	73.1	
RPD = 2.85							

\$ 41 DCB Decachlorobiphenyl

1	9.178	9.177	0.001	43826213	75.0	73.2	
2	9.228	9.229	-0.001	48453001	75.0	75.1	
RPD = 2.62							

S 3 Endosulfan, Total

1						219.6	
2						218.2	
RPD = 0.63							

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

8081IcalL5_00027

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 05-Apr-2019 14:13:49

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040028.D

Injection Date: 04-Apr-2019 21:10:44

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: STD5 AB

Worklist Smp#: 28

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

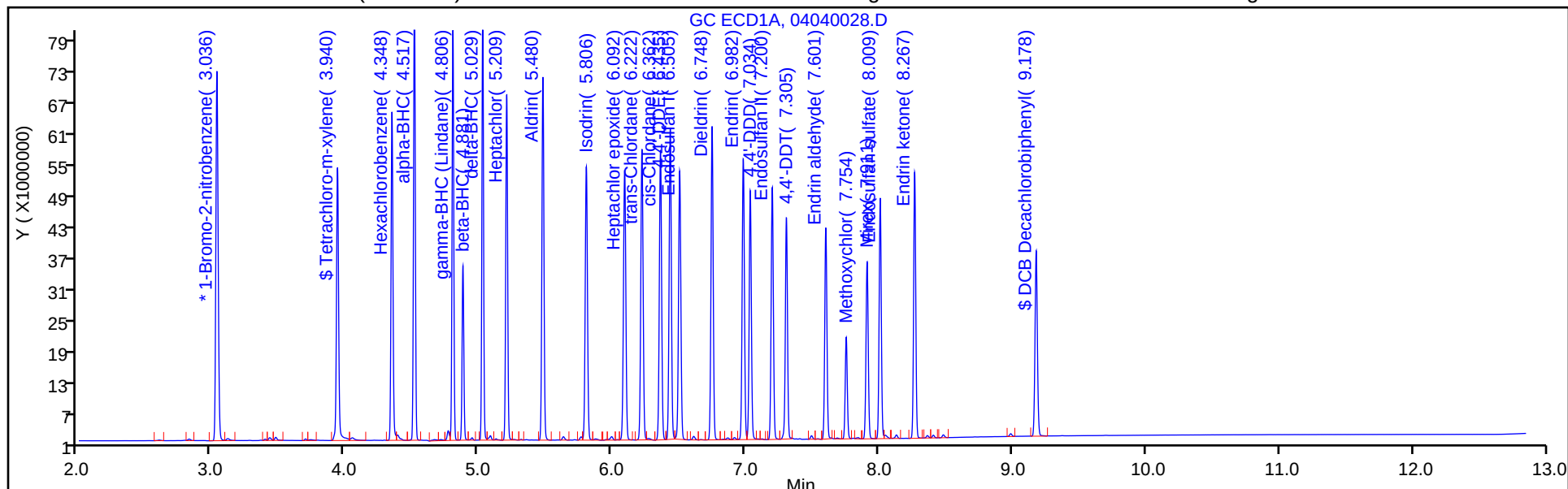
ALS Bottle#: 23

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

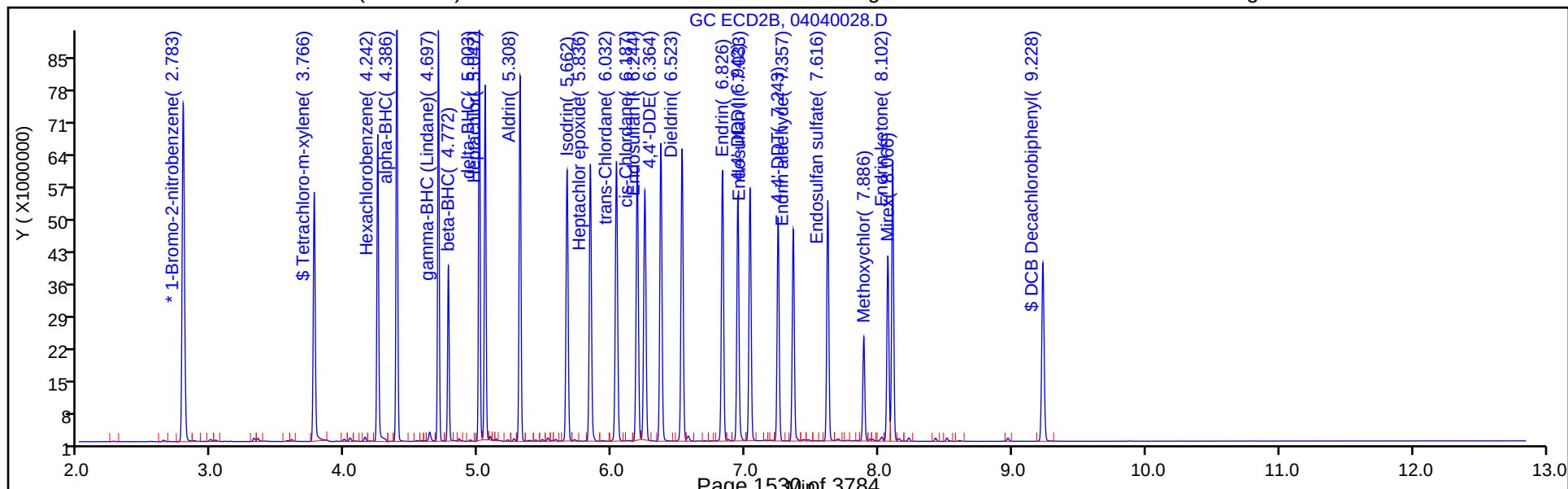
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040028.D

Injection Date: 04-Apr-2019 21:10:44

Instrument ID: SGC_P1

Lims ID: STD5 AB

Client ID:

Operator ID: TEM

ALS Bottle#:

23

Worklist Smp#: 28

Injection Vol: 1.0 ul

Dil. Factor:

1.0000

Method: P1 8081 IS

Limit Group:

GCSV - 8081A - IS

Column: CLP2 Pesticides Column 2 (0.32 mm)

Detector

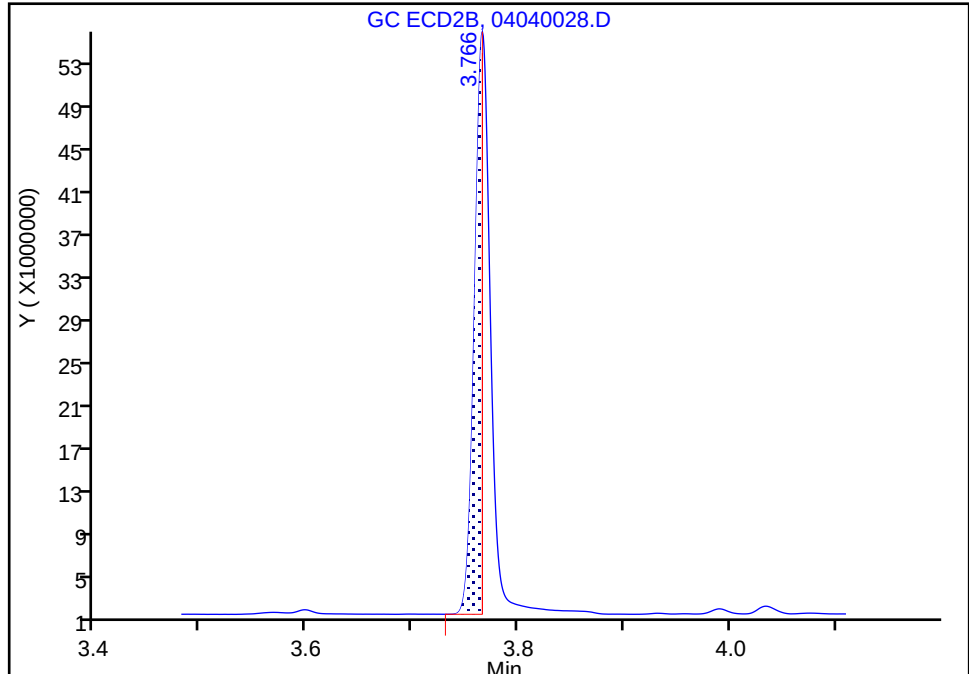
GC ECD2B

\$ 4 Tetrachloro-m-xylene, CAS: 877-09-8

Signal: 2

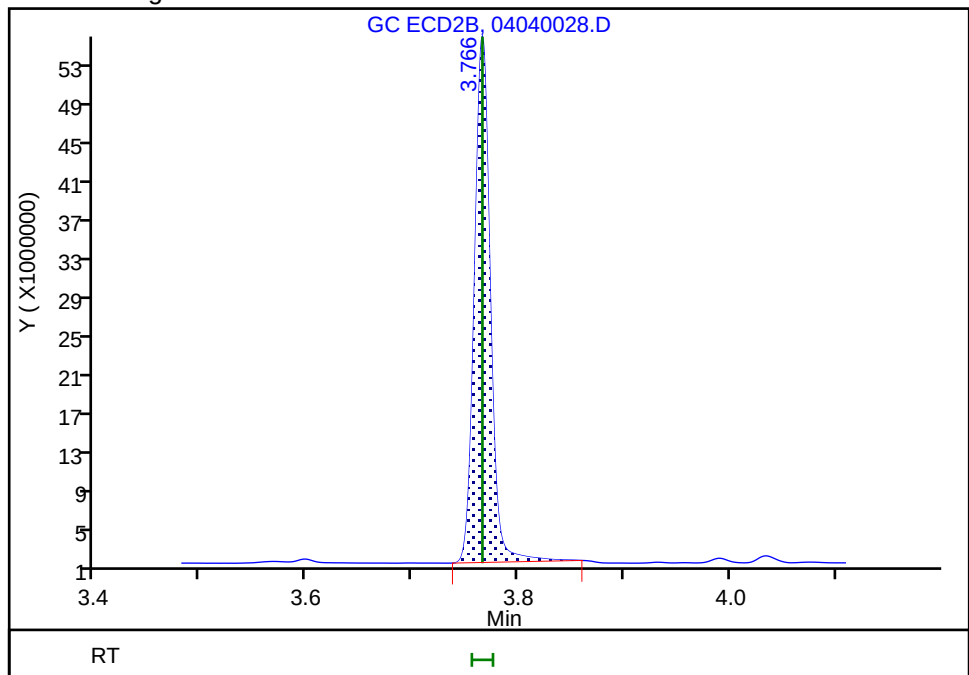
RT: 3.77
Area: 27097937
Amount: 40.360720
Amount Units: ng/mL

Processing Integration Results



RT: 3.77
Area: 55924958
Amount: 72.310747
Amount Units: ng/mL

Manual Integration Results



Reviewer: mooret, 05-Apr-2019 12:47:17

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040029.D
 Lims ID: STD4 AB
 Client ID:
 Sample Type: ICIS Calib Level: 4
 Inject. Date: 04-Apr-2019 21:27:29 ALS Bottle#: 24 Worklist Smp#: 29
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD4 AB
 Misc. Info.: 280-0080574-029
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub6
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 05-Apr-2019 14:13:44 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0337

First Level Reviewer: mooret

Date: 05-Apr-2019 12:52:18

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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* 2 1-Bromo-2-nitrobenzene

1	3.037	3.037	0.000	86545497	150.0	150.0	
2	2.785	2.785	0.000	92968873	150.0	150.0	

\$ 4 Tetrachloro-m-xylene

1	3.940	3.940	0.000	40744490	50.0	48.8	
2	3.766	3.766	0.000	39425307	50.0	49.6	

RPD = 1.54

5 Hexachlorobenzene

1	4.349	4.349	0.000	43635842	50.0	49.1	
2	4.242	4.242	0.000	44560666	50.0	49.9	

RPD = 1.49

8 alpha-BHC

1	4.517	4.517	0.000	55918140	50.0	49.3	
2	4.386	4.386	0.000	58132463	50.0	50.1	

RPD = 1.62

9 gamma-BHC (Lindane)

1	4.806	4.806	0.000	49080440	50.0	49.3	
2	4.697	4.697	0.000	51319746	50.0	49.1	

RPD = 0.32

10 beta-BHC

1	4.881	4.881	0.000	20998884	50.0	49.1	
2	4.772	4.772	0.000	21968799	50.0	49.2	

RPD = 0.10

12 delta-BHC

1	5.029	5.029	0.000	50142415	50.0	49.3	
2	5.004	5.004	0.000	51957463	50.0	49.2	

RPD = 0.32

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040029.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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15 Heptachlor

1	5.209	5.209	0.000	45435195	50.0	48.6	
2	5.047	5.047	0.000	47090232	50.0	48.6	
RPD = 0.20							

16 Aldrin

1	5.480	5.480	0.000	51095372	50.0	49.1	
2	5.309	5.309	0.000	53002216	50.0	49.1	
RPD = 0.09							

18 Isodrin

1	5.805	5.805	0.000	42612233	50.0	49.1	
2	5.661	5.661	0.000	42043729	50.0	49.2	
RPD = 0.22							

21 Heptachlor epoxide

1	6.092	6.092	0.000	44612490	50.0	49.2	
2	5.835	5.835	0.000	47010369	50.0	49.1	
RPD = 0.04							

22 trans-Chlordane

1	6.222	6.222	0.000	46558079	50.0	49.3	
2	6.031	6.031	0.000	48045202	50.0	49.4	
RPD = 0.26							

23 cis-Chlordane

1	6.361	6.361	0.000	45320168	50.0	49.2	
2	6.187	6.187	0.000	47444559	50.0	49.2	
RPD = 0.02							

24 4,4'-DDE

1	6.435	6.435	0.000	45568260	50.0	50.1	
2	6.364	6.364	0.000	50477774	50.0	49.5	
RPD = 1.17							

25 Endosulfan I

1	6.505	6.505	0.000	43013046	50.0	49.4	
2	6.243	6.243	0.000	45106461	50.0	49.2	
RPD = 0.35							

27 Dieldrin

1	6.748	6.748	0.000	47461815	50.0	49.6	
2	6.523	6.523	0.000	50644581	50.0	49.5	
RPD = 0.23							

30 Endrin

1	6.982	6.982	0.000	42072019	50.0	48.9	
2	6.827	6.827	0.000	44770212	50.0	48.9	
RPD = 0.08							

32 4,4'-DDD

1	7.034	7.034	0.000	36895639	50.0	50.2	
2	6.942	6.942	0.000	39182494	50.0	49.3	
RPD = 1.84							

34 Endosulfan II

1	7.199	7.199	0.000	39548273	50.0	50.1	
2	7.033	7.033	0.000	43551862	50.0	50.0	
RPD = 0.20							

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040029.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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35 4,4'-DDT

1	7.305	7.305	0.000	28474102	50.0	48.1
2	7.243	7.243	0.000	35192055	50.0	49.7

RPD = 3.27

36 Endrin aldehyde

1	7.601	7.601	0.000	31356078	50.0	49.7
2	7.357	7.357	0.000	35094503	50.0	50.3

RPD = 1.10

37 Methoxychlor

1	7.754	7.754	0.000	14867331	50.0	50.0
2	7.886	7.886	0.000	16468664	50.0	51.6

RPD = 3.22

38 Mirex

1	7.911	7.911	0.000	27315246	50.0	50.0
2	8.067	8.067	0.000	30606752	50.0	49.8

RPD = 0.31

39 Endosulfan sulfate

1	8.009	8.009	0.000	35600171	50.0	49.8
2	7.616	7.616	0.000	39378769	50.0	50.1

RPD = 0.51

40 Endrin ketone

1	8.267	8.267	0.000	39453691	50.0	51.4
2	8.102	8.102	0.000	45210652	50.0	50.8

RPD = 1.01

\$ 41 DCB Decachlorobiphenyl

1	9.177	9.177	0.000	31048086	50.0	50.4
2	9.229	9.229	0.000	33417127	50.0	50.2

RPD = 0.28

Reagents:

8081IcalL4_00033

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 05-Apr-2019 14:13:45

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040029.D

Injection Date: 04-Apr-2019 21:27:29

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: STD4 AB

Worklist Smp#: 29

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

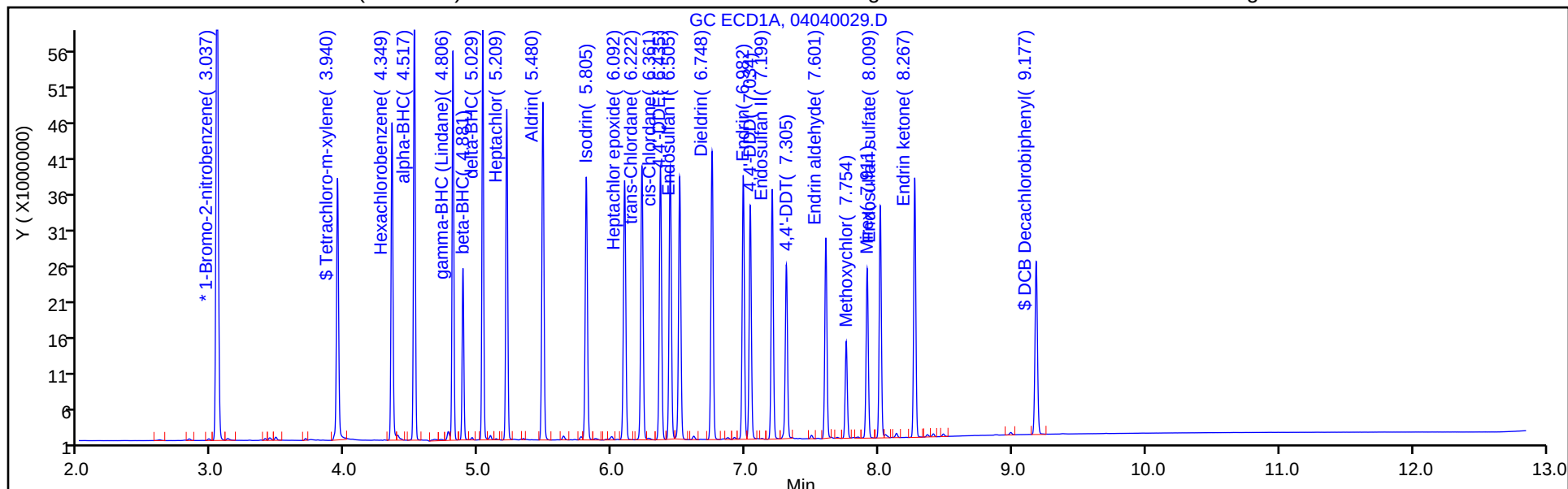
ALS Bottle#: 24

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

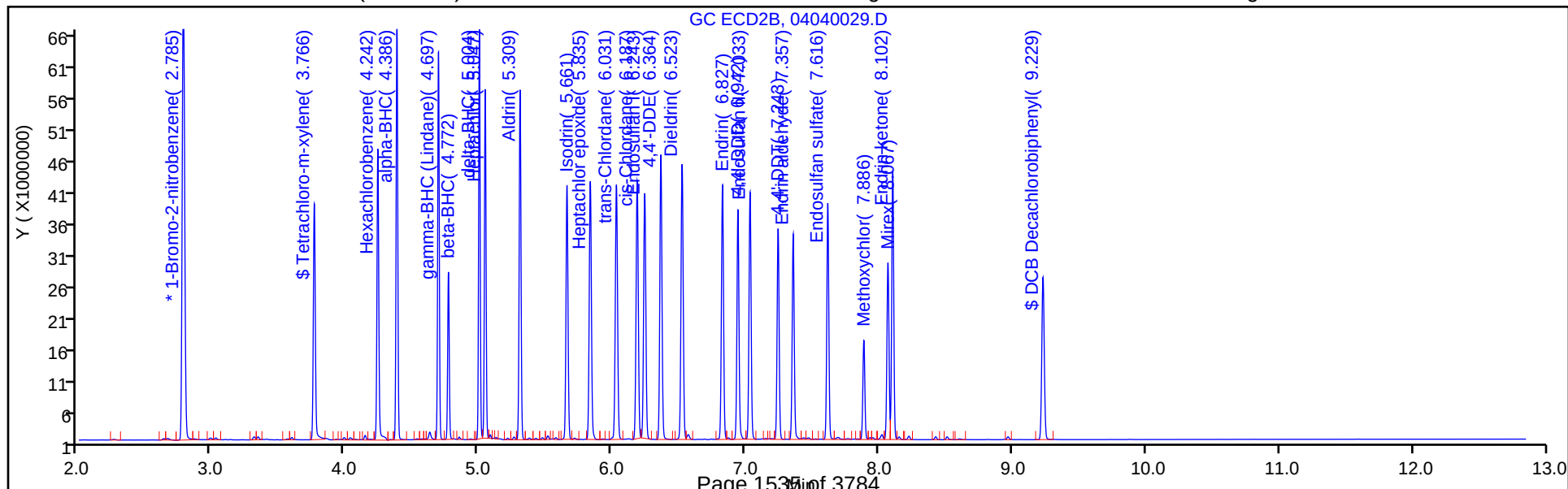
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040030.D
 Lims ID: STD3 AB
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 04-Apr-2019 21:44:13 ALS Bottle#: 25 Worklist Smp#: 30
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD3 AB
 Misc. Info.: 280-0080574-030
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub6
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 05-Apr-2019 14:13:41 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0337

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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S 1 Hexachlorocyclohexane, technical

1					103.4		
2					104.6		
RPD = 1.08							

* 2 1-Bromo-2-nitrobenzene

1	3.035	3.035	-0.001	90156628	150.0	150.0	
2	2.781	2.782	-0.001	95954170	150.0	150.0	

\$ 4 Tetrachloro-m-xylene

1	3.940	3.940	0.000	22474093	25.0	25.6	
2	3.765	3.766	-0.001	21581998	25.0	25.9	
RPD = 1.31							

5 Hexachlorobenzene

1	4.348	4.349	-0.001	24112468	25.0	25.7	
2	4.241	4.242	-0.001	24270024	25.0	25.7	
RPD = 0.32							

8 alpha-BHC

1	4.516	4.517	-0.001	30583250	25.0	25.7	
2	4.385	4.386	-0.001	31196478	25.0	25.7	
RPD = 0.11							

9 gamma-BHC (Lindane)

1	4.805	4.806	-0.001	27086208	25.0	25.9	
2	4.697	4.697	0.000	28783289	25.0	26.4	
RPD = 1.77							

10 beta-BHC

1	4.880	4.881	-0.001	11837745	25.0	26.1	
2	4.771	4.772	-0.001	12499080	25.0	26.5	
RPD = 1.67							

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
12 delta-BHC							
1	5.029	5.029	0.000	27459383	25.0	25.8	
2	5.004	5.004	0.000	28596127	25.0	26.0	
						RPD = 0.76	
15 Heptachlor							
1	5.209	5.209	0.000	25878322	25.0	26.3	
2	5.047	5.047	0.000	27066441	25.0	26.6	
						RPD = 1.04	
16 Aldrin							
1	5.480	5.480	0.000	27928784	25.0	25.6	
2	5.309	5.309	0.000	29435948	25.0	26.1	
						RPD = 1.89	
18 Isodrin							
1	5.806	5.805	0.001	23492500	25.0	25.7	
2	5.660	5.661	-0.001	22180687	25.0	24.8	
						RPD = 3.52	
21 Heptachlor epoxide							
1	6.093	6.092	0.001	24738331	25.0	25.9	
2	5.836	5.835	0.001	26209299	25.0	26.1	
						RPD = 0.91	
22 trans-Chlordane							
1	6.223	6.222	0.001	25194878	25.0	25.3	
2	6.032	6.031	0.001	25337007	25.0	25.0	
						RPD = 1.21	
23 cis-Chlordane							
1	6.361	6.361	0.000	24597686	25.0	25.4	
2	6.187	6.187	0.000	25629992	25.0	25.4	
						RPD = 0.10	
24 4,4'-DDE							
1	6.435	6.435	0.000	22918329	25.0	24.0	
2	6.365	6.364	0.001	27022411	25.0	25.5	
						RPD = 5.89	
25 Endosulfan I							
1	6.505	6.505	0.000	23450713	25.0	25.5	
2	6.245	6.243	0.002	25040634	25.0	26.0	
						RPD = 1.84	
27 Dieldrin							
1	6.749	6.748	0.001	25358697	25.0	25.3	
2	6.524	6.523	0.001	27474476	25.0	25.7	
						RPD = 1.66	
30 Endrin							
1	6.982	6.982	0.000	22571870	25.0	25.0	
2	6.826	6.827	-0.001	24213496	25.0	25.3	
						RPD = 1.26	
32 4,4'-DDD							
1	7.035	7.034	0.001	18870263	25.0	24.5	
2	6.942	6.942	0.000	20516169	25.0	24.6	
						RPD = 0.50	

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040030.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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34 Endosulfan II

1	7.200	7.199	0.001	20795251	25.0	25.1	
2	7.033	7.033	0.000	23310102	25.0	25.5	
RPD = 1.34							

35 4,4'-DDT

1	7.305	7.305	0.000	14438216	25.0	23.3	
2	7.245	7.243	0.002	18163065	25.0	24.8	
RPD = 6.25							

36 Endrin aldehyde

1	7.602	7.601	0.001	16423428	25.0	24.8	
2	7.357	7.357	0.000	18386513	25.0	25.1	
RPD = 1.33							

37 Methoxychlor

1	7.755	7.754	0.001	7440579	25.0	24.3	
2	7.886	7.886	0.000	8015613	25.0	24.1	
RPD = 0.81							

38 Mirex

1	7.912	7.911	0.001	14490421	25.0	24.9	
2	8.067	8.067	0.000	16346029	25.0	25.2	
RPD = 1.39							

39 Endosulfan sulfate

1	8.010	8.009	0.001	18695541	25.0	24.9	
2	7.615	7.616	-0.001	20740432	25.0	25.2	
RPD = 1.04							

40 Endrin ketone

1	8.268	8.267	0.001	19463777	25.0	24.1	
2	8.102	8.102	0.000	23267208	25.0	25.1	
RPD = 3.83							

\$ 41 DCB Decachlorobiphenyl

1	9.178	9.177	0.001	16189285	25.0	24.7	
2	9.228	9.229	-0.001	17458591	25.0	24.8	
RPD = 0.24							

S 3 Endosulfan, Total

1						75.6	
2						76.6	
RPD = 1.41							

Reagents:

8081IcalL3_00029

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 05-Apr-2019 14:13:42

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040030.D

Injection Date: 04-Apr-2019 21:44:13

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: STD3 AB

Worklist Smp#: 30

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

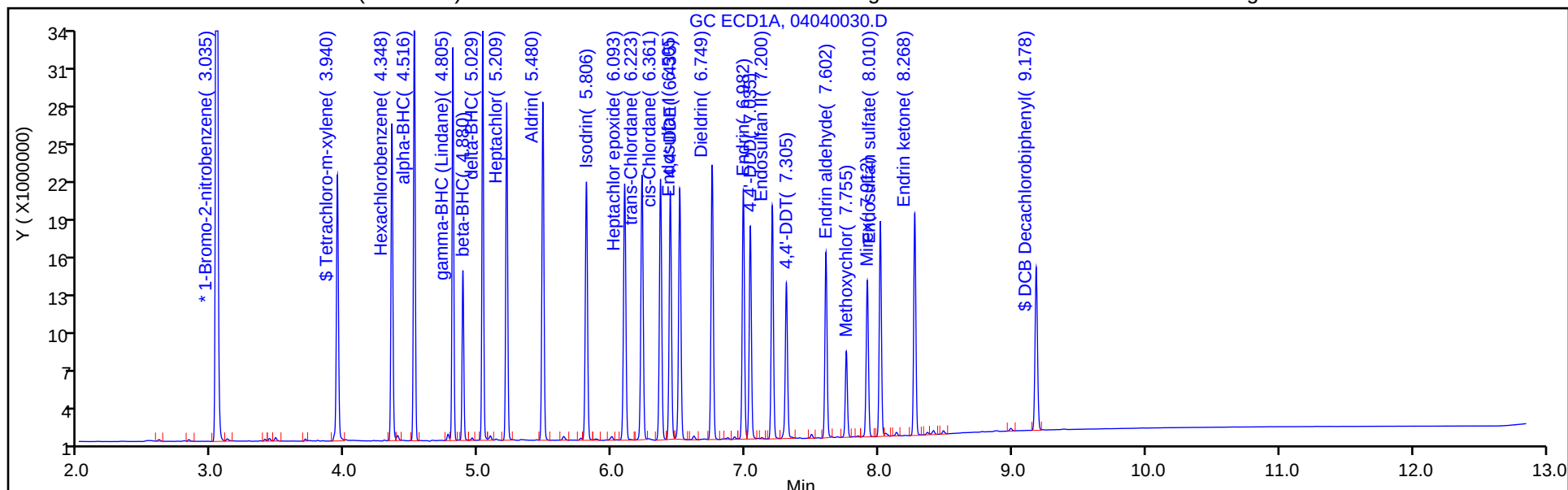
ALS Bottle#: 25

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

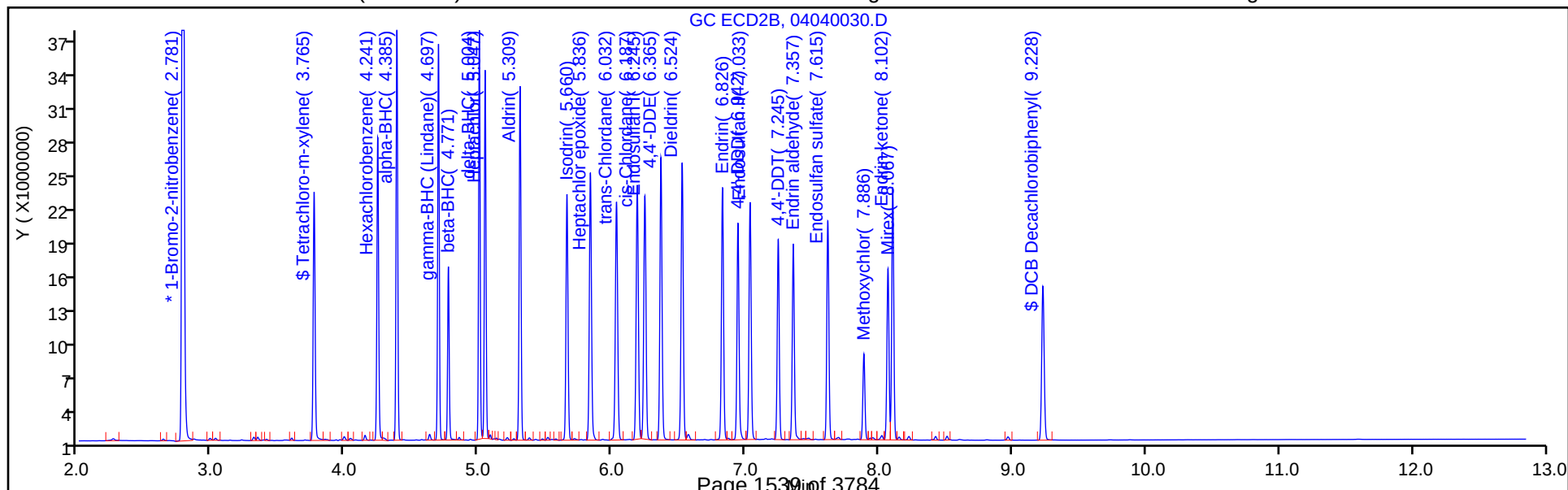
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040031.D
 Lims ID: STD2 AB
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 04-Apr-2019 22:01:03 ALS Bottle#: 26 Worklist Smp#: 31
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD2 AB
 Misc. Info.: 280-0080574-031
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub6
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 05-Apr-2019 14:13:38 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0337

First Level Reviewer: mooret

Date: 05-Apr-2019 12:47:00

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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S 1 Hexachlorocyclohexane, technical

1					39.3		
2					40.1		
						RPD = 2.09	

* 2 1-Bromo-2-nitrobenzene

1	3.035	3.035	0.000	88931565	150.0	150.0	
2	2.782	2.782	0.000	94291416	150.0	150.0	

\$ 4 Tetrachloro-m-xylene

1	3.940	3.940	0.000	8820884	10.0	9.79	
2	3.765	3.766	-0.001	8565376	10.0	9.94	
						RPD = 1.57	

5 Hexachlorobenzene

1	4.348	4.349	-0.001	9751069	10.0	10.0	
2	4.242	4.242	0.000	9831817	10.0	9.90	
						RPD = 1.16	

8 alpha-BHC

1	4.516	4.517	-0.001	11855110	10.0	9.88	
2	4.385	4.386	-0.001	12353878	10.0	9.98	
						RPD = 1.00	

9 gamma-BHC (Lindane)

1	4.805	4.806	-0.001	10338934	10.0	9.78	
2	4.696	4.697	-0.001	11146089	10.0	9.97	
						RPD = 1.99	

10 beta-BHC

1	4.881	4.881	0.000	4740197	10.0	9.90	
2	4.771	4.772	-0.001	5028590	10.0	10.0	
						RPD = 1.51	

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040031.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
12 delta-BHC							
1	5.029	5.029	0.000	10501567	10.0	9.76	
2	5.003	5.004	-0.001	11351460	10.0	10.1	
						RPD = 3.84	
15 Heptachlor							
1	5.208	5.209	-0.001	9929979	10.0	9.88	
2	5.048	5.047	0.001	10792536	10.0	10.2	
						RPD = 3.34	
16 Aldrin							
1	5.480	5.480	0.000	10721865	10.0	9.79	
2	5.308	5.309	-0.001	11522704	10.0	10.0	
						RPD = 2.41	
18 Isodrin							
1	5.806	5.805	0.001	9169902	10.0	9.84	
2	5.661	5.661	0.000	10048122	10.0	11.1	
						RPD = 11.96	
21 Heptachlor epoxide							
1	6.093	6.092	0.001	9601679	10.0	9.84	
2	5.836	5.835	0.001	10522976	10.0	10.2	
						RPD = 3.15	
22 trans-Chlordane							
1	6.223	6.222	0.001	10047593	10.0	9.81	
2	6.031	6.031	0.000	10800115	10.0	10.5	
						RPD = 6.88	
23 cis-Chlordane							
1	6.363	6.361	0.002	9762254	10.0	9.85	
2	6.187	6.187	0.000	10628648	10.0	10.3	
						RPD = 4.13	
24 4,4'-DDE							
1	6.435	6.435	0.000	9950387	10.0	10.4	
2	6.364	6.364	0.000	10692105	10.0	10.0	
						RPD = 3.73	
25 Endosulfan I							
1	6.507	6.505	0.002	9364220	10.0	9.95	
2	6.243	6.243	0.000	10169553	10.0	10.2	
						RPD = 2.13	
27 Dieldrin							
1	6.749	6.748	0.001	9889046	10.0	9.84	
2	6.523	6.523	0.000	10939620	10.0	10.1	
						RPD = 2.37	
30 Endrin							
1	6.983	6.982	0.001	9195244	10.0	10.1	
2	6.825	6.827	-0.002	10204648	10.0	10.5	
						RPD = 3.51	
32 4,4'-DDD							
1	7.035	7.034	0.001	7645634	10.0	9.87	
2	6.941	6.942	-0.001	8839333	10.0	10.3	
						RPD = 4.66	

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040031.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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34 Endosulfan II

1	7.200	7.199	0.001	8188624	10.0	9.80	
2	7.032	7.033	-0.001	9578600	10.0	10.1	
RPD = 2.55							

35 4,4'-DDT

1	7.306	7.305	0.001	6506578	10.0	10.5	
2	7.243	7.243	0.000	7088202	10.0	9.75	
RPD = 7.31							

36 Endrin aldehyde

1	7.602	7.601	0.001	6690210	10.0	9.94	
2	7.356	7.357	-0.001	7718221	10.0	10.2	
RPD = 2.77							

37 Methoxychlor

1	7.755	7.754	0.001	2859171	10.0	9.82	
2	7.885	7.886	-0.001	3291703	10.0	9.83	
RPD = 0.06							

38 Mirex

1	7.912	7.911	0.001	6044436	10.0	9.84	
2	8.066	8.067	-0.001	6831731	10.0	10.1	
RPD = 2.23							

39 Endosulfan sulfate

1	8.010	8.009	0.001	7345565	10.0	9.68	
2	7.615	7.616	-0.001	8500278	10.0	10.0	
RPD = 3.75							

40 Endrin ketone

1	8.268	8.267	0.001	7902990	10.0	9.69	
2	8.102	8.102	0.000	9318109	10.0	9.86	
RPD = 1.72							

\$ 41 DCB Decachlorobiphenyl

1	9.179	9.177	0.002	6603123	10.0	9.68	
2	9.229	9.229	0.000	7456749	10.0	10.1	
RPD = 3.94							

S 3 Endosulfan, Total

1						29.4	
2						30.3	
RPD = 2.80							

Reagents:

8081lcalL2_00026

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 05-Apr-2019 14:13:38

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040031.D

Injection Date: 04-Apr-2019 22:01:03

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: STD2 AB

Worklist Smp#: 31

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

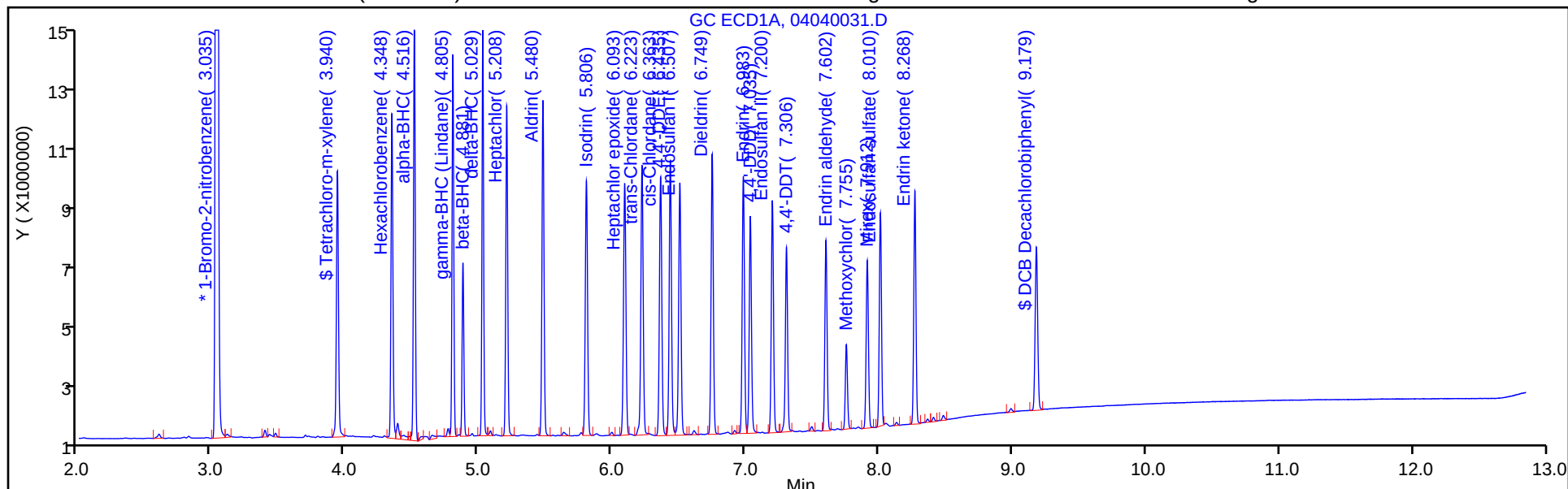
ALS Bottle#: 26

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

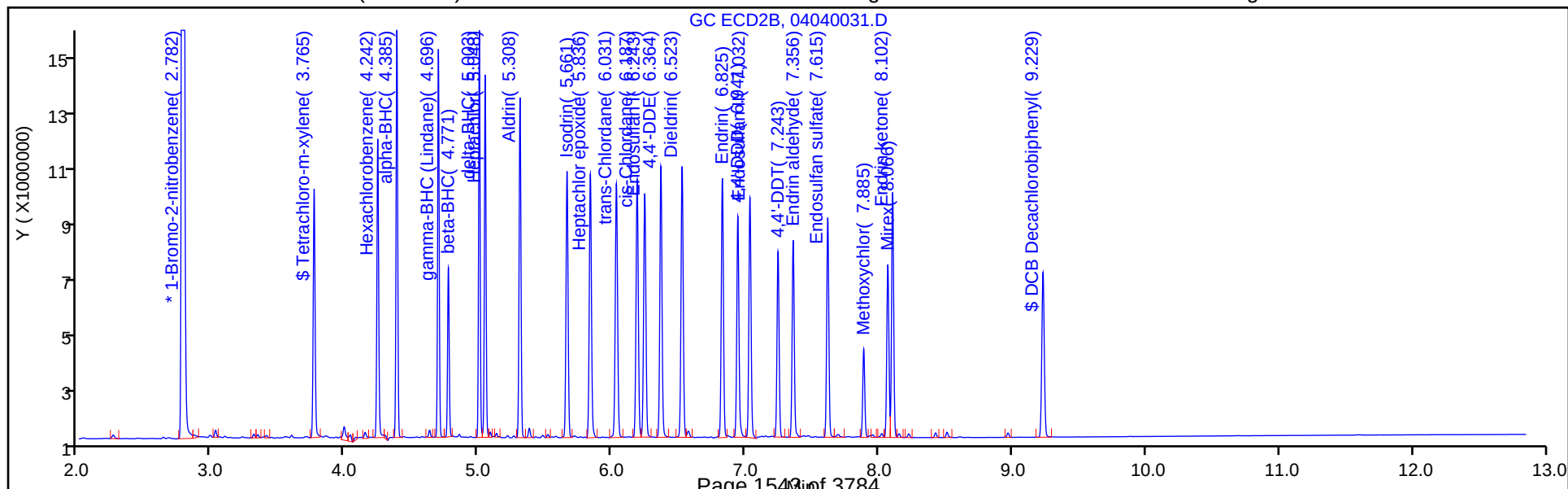
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Lims ID: STD1 AB
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 04-Apr-2019 22:17:45 ALS Bottle#: 27 Worklist Smp#: 32
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD1 AB
 Misc. Info.: 280-0080574-032
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub6
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 05-Apr-2019 14:13:35 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0337

First Level Reviewer: mooret

Date: 05-Apr-2019 12:47:56

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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S 1 Hexachlorocyclohexane, technical

1					16.1		
2					15.9		
RPD = 0.93							

* 2 1-Bromo-2-nitrobenzene

1	3.035	3.035	0.000	92434445	150.0	150.0	
2	2.782	2.782	0.000	97686137	150.0	150.0	

\$ 4 Tetrachloro-m-xylene

1	3.939	3.940	-0.001	4098678	4.00	4.03	
2	3.765	3.766	-0.001	3988775	4.00	3.99	
RPD = 0.79							

5 Hexachlorobenzene

1	4.348	4.349	-0.001	4518959	4.00	3.99	
2	4.242	4.242	0.000	4781784	4.00	4.00	
RPD = 0.33							

8 alpha-BHC

1	4.516	4.517	-0.001	5252761	4.00	4.01	
2	4.385	4.386	-0.001	5581497	4.00	3.99	
RPD = 0.47							

9 gamma-BHC (Lindane)

1	4.805	4.806	-0.001	4674286	4.00	4.02	
2	4.697	4.697	0.000	5063579	4.00	3.98	
RPD = 0.95							

10 beta-BHC

1	4.881	4.881	0.000	2295066	4.00	4.00	
2	4.772	4.772	0.000	2431559	4.00	3.97	
RPD = 0.79							

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
12 delta-BHC							
1	5.028	5.029	-0.001	4734544	4.00	4.02	
2	5.003	5.004	-0.001	4978703	4.00	3.96	
						RPD = 1.52	
15 Heptachlor							
1	5.208	5.209	-0.001	4519351	4.00	4.00	
2	5.047	5.047	0.000	4908885	4.00	3.94	
						RPD = 1.39	
16 Aldrin							
1	5.479	5.480	-0.001	4775215	4.00	4.02	
2	5.309	5.309	0.000	5155984	4.00	3.98	
						RPD = 1.13	
18 Isodrin							
1	5.805	5.805	0.000	4186991	4.00	4.01	
2	5.660	5.661	-0.001	3980231	4.00	3.84	
						RPD = 4.42	
21 Heptachlor epoxide							
1	6.092	6.092	0.000	4399341	4.00	4.01	
2	5.836	5.835	0.001	4788424	4.00	3.96	
						RPD = 1.29	
22 trans-Chlordane							
1	6.222	6.222	0.000	4679200	4.00	4.03	
2	6.032	6.031	0.001	4530204	4.00	3.93	
						RPD = 2.54	
23 cis-Chlordane							
1	6.361	6.361	0.000	4481494	4.00	4.02	
2	6.187	6.187	0.000	4719403	4.00	3.96	
						RPD = 1.59	
24 4,4'-DDE							
1	6.435	6.435	0.000	4112635	4.00	3.96	
2	6.365	6.364	0.001	4661931	4.00	3.99	
						RPD = 0.84	
25 Endosulfan I							
1	6.506	6.505	0.001	4260400	4.00	4.00	
2	6.244	6.243	0.001	4668368	4.00	3.96	
						RPD = 1.02	
27 Dieldrin							
1	6.748	6.748	0.000	4358158	4.00	4.02	
2	6.524	6.523	0.001	4845583	4.00	3.98	
						RPD = 1.09	
30 Endrin							
1	6.982	6.982	0.000	3989883	4.00	3.99	
2	6.826	6.827	-0.001	4386188	4.00	3.93	
						RPD = 1.52	
32 4,4'-DDD							
1	7.034	7.034	0.000	3395277	4.00	4.03	
2	6.942	6.942	0.000	3915184	4.00	3.96	
						RPD = 1.79	

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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34 Endosulfan II

1	7.199	7.199	0.000	3683267	4.00	4.03	
2	7.032	7.033	-0.001	4481476	4.00	3.98	
RPD = 1.10							

35 4,4'-DDT

1	7.305	7.305	0.000	2663327	4.00	3.96	
2	7.243	7.243	0.000	3115871	4.00	4.04	
RPD = 2.04							

36 Endrin aldehyde

1	7.601	7.601	0.000	3004982	4.00	4.01	
2	7.357	7.357	0.000	3490864	4.00	3.97	
RPD = 1.25							

37 Methoxychlor

1	7.754	7.754	0.000	1540298	4.00	5.36	
2	7.885	7.886	-0.001	1487240	4.00	4.04	
RPD = 28.18							

38 Mirex

1	7.910	7.911	-0.001	2970987	4.00	4.03	
2	8.065	8.067	-0.002	3250491	4.00	3.99	
RPD = 0.96							

39 Endosulfan sulfate

1	8.008	8.009	-0.001	3380448	4.00	4.05	
2	7.616	7.616	0.000	3883079	4.00	3.99	
RPD = 1.52							

40 Endrin ketone

1	8.267	8.267	0.000	3632067	4.00	4.06	
2	8.102	8.102	0.000	4263129	4.00	4.02	
RPD = 1.01							

\$ 41 DCB Decachlorobiphenyl

1	9.178	9.177	0.001	3227979	4.00	4.05	
2	9.228	9.229	-0.001	3583224	4.00	3.99	
RPD = 1.50							

S 3 Endosulfan, Total

1						12.1	
2						11.9	
RPD = 1.21							

Reagents:

8081IcalL1_00026

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 05-Apr-2019 14:13:36

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D

Injection Date: 04-Apr-2019 22:17:45

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: STD1 AB

Worklist Smp#: 32

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

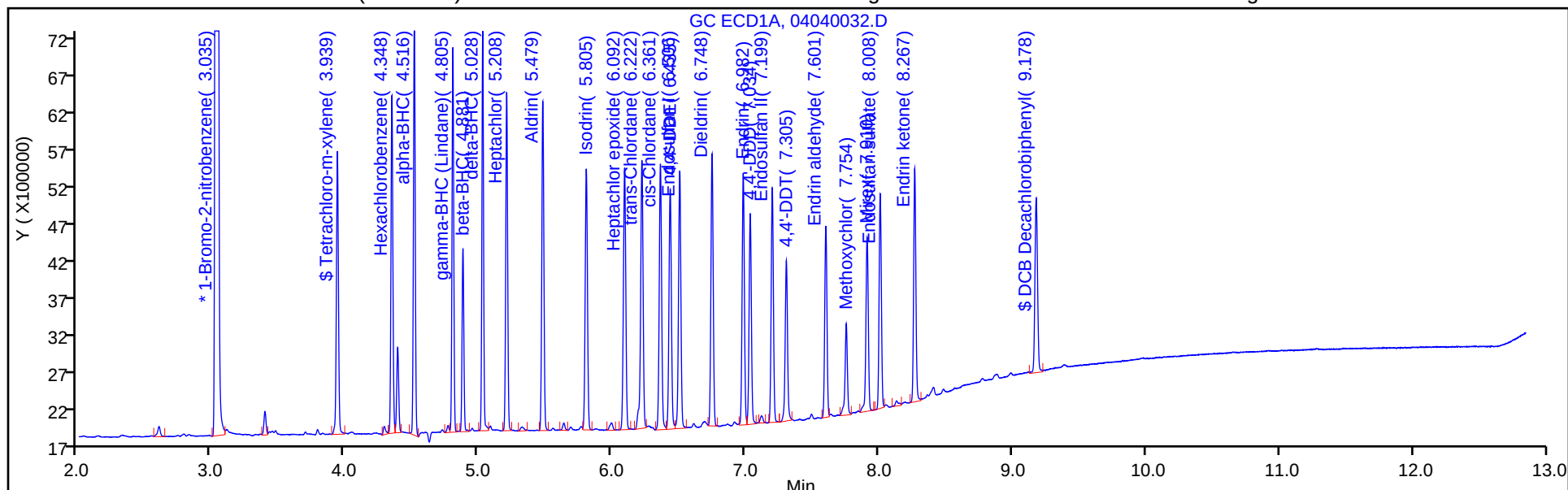
ALS Bottle#: 27

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

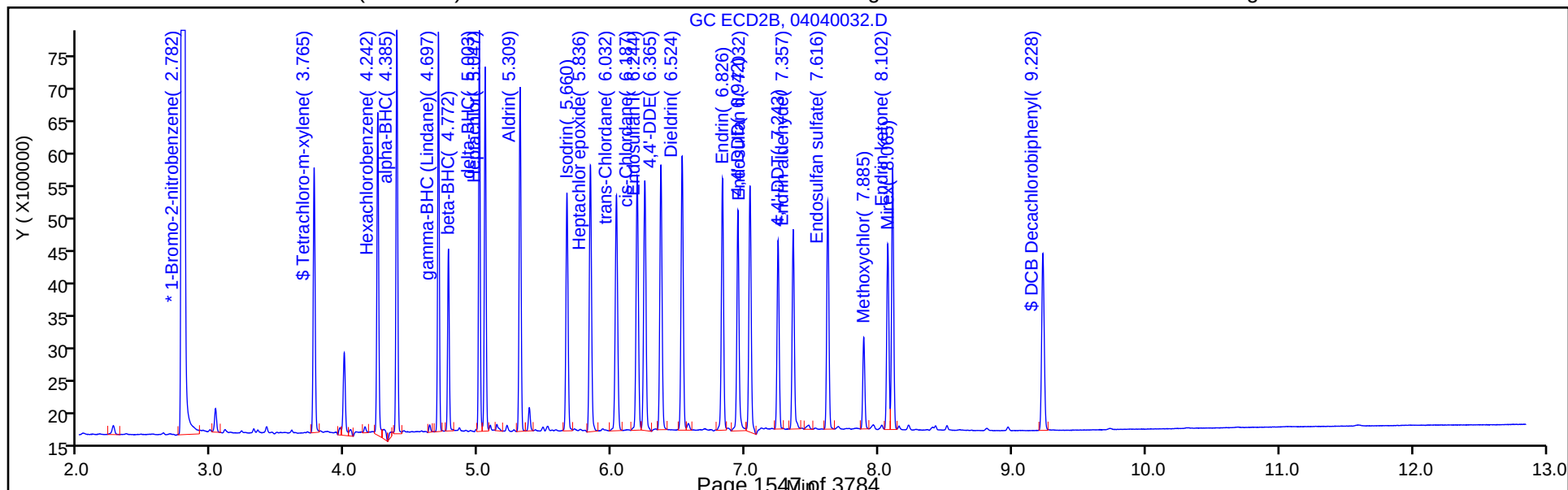
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



FORM VII
PESTICIDES PERFORMANCE EVALUATION MIXTURE (PEM)

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: PEM 280-458587/7 Calibration Date: 05/17/2019 15:04
 Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 20:54
 GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 04/04/2019 22:17
 Lab File ID: 05170007.D Conc. Units: ug/L

ANALYTE	RT	RESPONSE	BREAKDOWN (%)	LIMIT	#
Endrin	6.96	35233546	3.20	15	
Endrin aldehyde	7.58	484144			
Endrin ketone	8.24	680065			

ANALYTE	RT	RESPONSE	BREAKDOWN (%)	LIMIT	#
4,4'-DDT	7.28	28216245	1.69	15	
4,4'-DDD	7.01	484522			
4,4'-DDE		0			

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170007.D
 Lims ID: PEM
 Client ID:
 Sample Type: PEM
 Inject. Date: 17-May-2019 15:04:49 ALS Bottle#: 2 Worklist Smp#: 7
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: PEM
 Misc. Info.: 280-0082009-007
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist:
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 20-May-2019 19:08:51 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0310

First Level Reviewer: mooret

Date: 17-May-2019 20:04:09

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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* 2 1-Bromo-2-nitrobenzene

1	3.015	3.016	0.000	90568537	150.0	150.0
2	2.778	2.778	0.000	95992674	150.0	150.0

24 4,4'-DDE

1		6.410				ND
2		6.363				

30 Endrin

1	6.956	6.955	0.001	35233546	40.0	39.0
2	6.823	6.823	0.000	34637700	40.0	36.5

RPD = 6.77

32 4,4'-DDD

1	7.009	7.008	0.001	484522		0.3068
2	6.940	6.939	0.001	533329		-0.1490

RPD = 577.77

35 4,4'-DDT

1	7.280	7.279	0.001	28216245	40.0	45.6
2	7.241	7.242	-0.001	27749136	40.0	37.9

RPD = 18.25

36 Endrin aldehyde

1	7.575	7.573	0.002	484144		0.2488
2	7.355	7.355	0.000	553843		-0.0967

RPD = 454.04

40 Endrin ketone

1	8.241	8.241	0.000	680065		0.4512
2	8.101	8.101	0.000	732257		0.2098

RPD = 73.02

Reagents:

8081_EvalBPEM_00014

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 20-May-2019 19:08:53

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170007.D

Injection Date: 17-May-2019 15:04:49

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: PEM

Worklist Smp#: 7

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

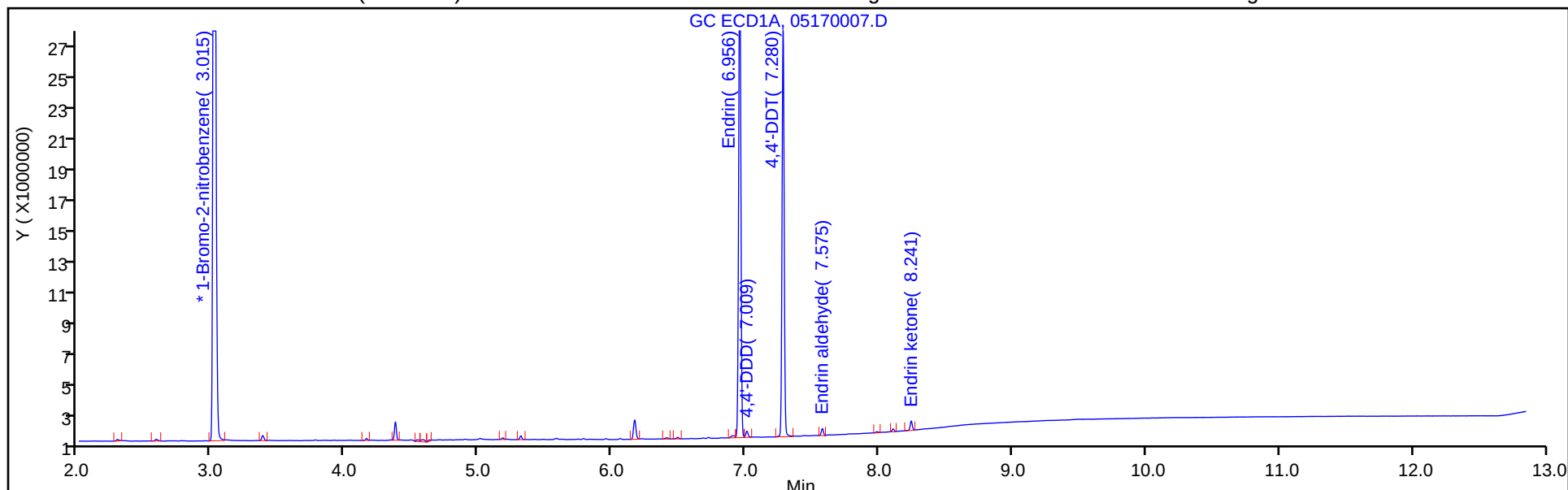
ALS Bottle#: 2

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

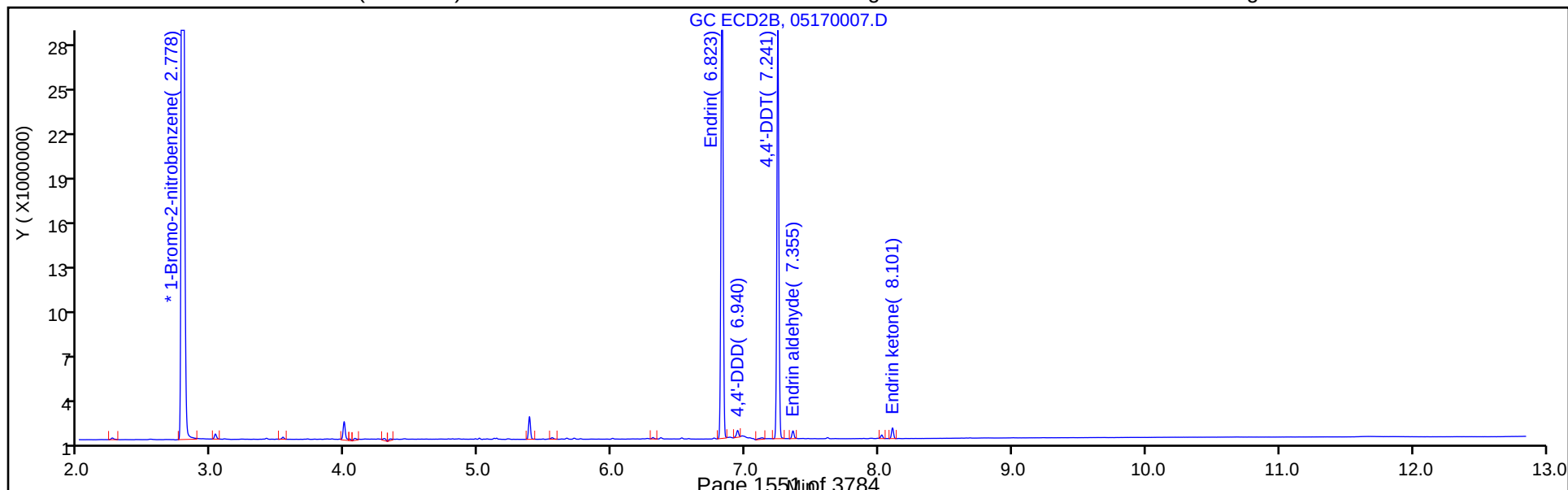
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



FORM VII
PESTICIDES PERFORMANCE EVALUATION MIXTURE (PEM)

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab Sample ID: PEM 280-458587/7 Calibration Date: 05/17/2019 15:04
Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 20:54
GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 04/04/2019 22:17
Lab File ID: 05170007.D Conc. Units: ug/L

ANALYTE	RT	RESPONSE	BREAKDOWN (%)	LIMIT	#
Endrin	6.82	34637700	3.58	15	
Endrin aldehyde	7.36	553843			
Endrin ketone	8.10	732257			

ANALYTE	RT	RESPONSE	BREAKDOWN (%)	LIMIT	#
4,4'-DDT	7.24	27749136	1.89	15	
4,4'-DDD	6.94	533329			
4,4'-DDE		0			

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170007.D
 Lims ID: PEM
 Client ID:
 Sample Type: PEM
 Inject. Date: 17-May-2019 15:04:49 ALS Bottle#: 2 Worklist Smp#: 7
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: PEM
 Misc. Info.: 280-0082009-007
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist:
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 20-May-2019 19:08:51 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0310

First Level Reviewer: mooret

Date: 17-May-2019 20:04:09

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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* 2 1-Bromo-2-nitrobenzene

1	3.015	3.016	0.000	90568537	150.0	150.0
2	2.778	2.778	0.000	95992674	150.0	150.0

24 4,4'-DDE

1		6.410				ND
2		6.363				

30 Endrin

1	6.956	6.955	0.001	35233546	40.0	39.0
2	6.823	6.823	0.000	34637700	40.0	36.5

RPD = 6.77

32 4,4'-DDD

1	7.009	7.008	0.001	484522		0.3068
2	6.940	6.939	0.001	533329		-0.1490

RPD = 577.77

35 4,4'-DDT

1	7.280	7.279	0.001	28216245	40.0	45.6
2	7.241	7.242	-0.001	27749136	40.0	37.9

RPD = 18.25

36 Endrin aldehyde

1	7.575	7.573	0.002	484144		0.2488
2	7.355	7.355	0.000	553843		-0.0967

RPD = 454.04

40 Endrin ketone

1	8.241	8.241	0.000	680065		0.4512
2	8.101	8.101	0.000	732257		0.2098

RPD = 73.02

Reagents:

8081_EvalBPEM_00014

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 20-May-2019 19:08:54

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170007.D

Injection Date: 17-May-2019 15:04:49

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: PEM

Worklist Smp#: 7

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

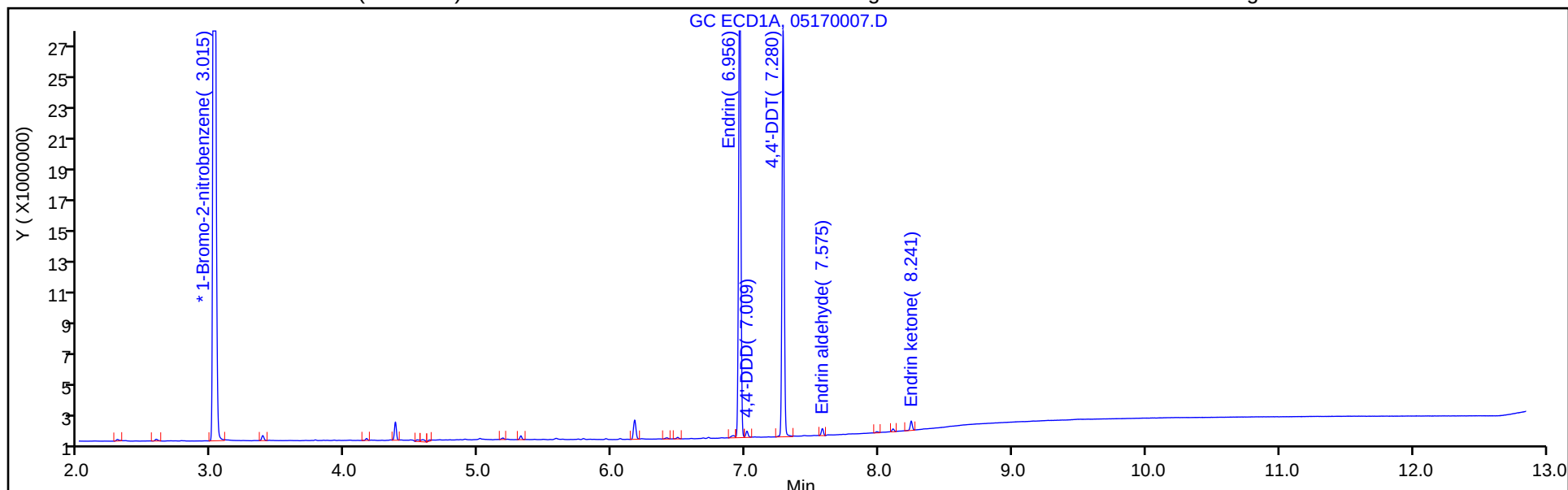
ALS Bottle#: 2

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

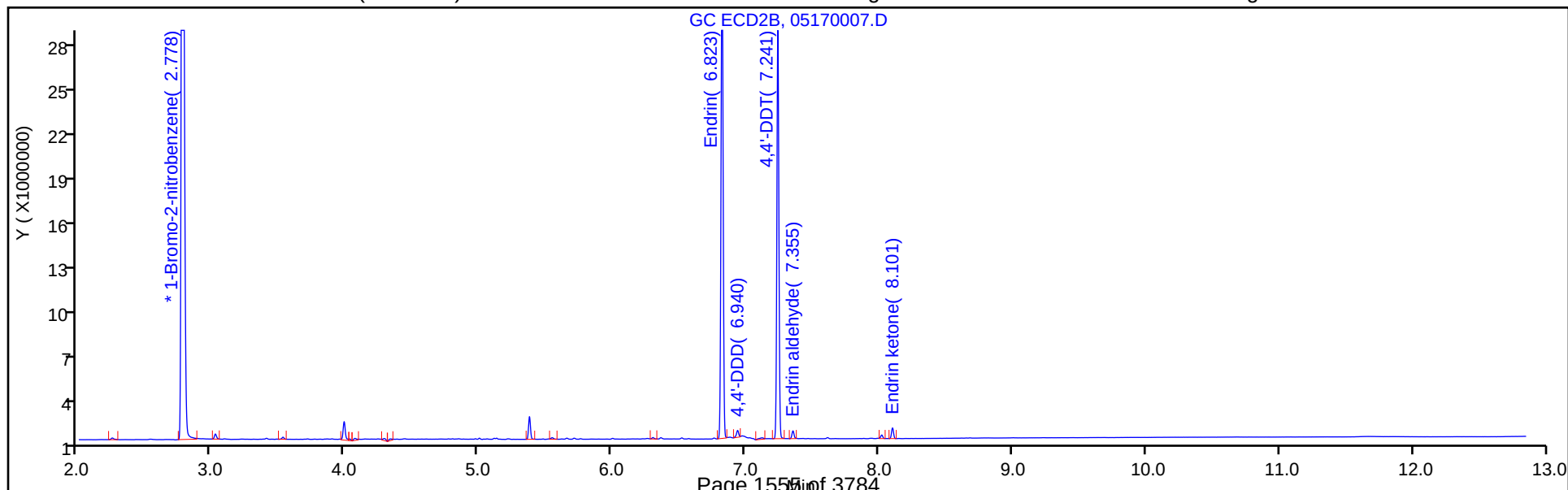
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-453267/34 Calibration Date: 04/04/2019 22:51
 Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 17:49
 GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 04/04/2019 19:13
 Lab File ID: 04040034.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Toxaphene Peak 1	Lin2		0.0054		567	1000	-43.3*	20.0
Toxaphene Peak 2	Lin2		0.0195		805	1000	-19.5	20.0
Toxaphene Peak 3	Lin2		0.0204		1150	1000	14.9	20.0
Toxaphene Peak 4	Lin2		0.0391		1000	1000	0.3	20.0
Toxaphene Peak 5	Lin2		0.0277		1010	1000	0.5	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab Sample ID: ICV 280-453267/34 Calibration Date: 04/04/2019 22:51
Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 17:49
GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 04/04/2019 19:13
Lab File ID: 04040034.D

Analyte	RT	RT WINDOW	
		FROM	TO
Toxaphene Peak 1	6.25	6.24	6.28
Toxaphene Peak 2	6.84	6.82	6.86
Toxaphene Peak 3	7.07	7.05	7.09
Toxaphene Peak 4	7.52	7.50	7.54
Toxaphene Peak 5	7.73	7.71	7.75

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040034.D
 Lims ID: ICV TOX
 Client ID:
 Sample Type: ICV
 Inject. Date: 04-Apr-2019 22:51:11 ALS Bottle#: 29 Worklist Smp#: 34
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: ICV TOX
 Misc. Info.: 280-0080574-034
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist:

Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 09-Apr-2019 13:11:17 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1: CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2: CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0331

First Level Reviewer: mooret

Date: 05-Apr-2019 13:24:04

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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* 2 1-Bromo-2-nitrobenzene

1	3.034	3.035	-0.001	91124036	150.0	150.0	
2	2.782	2.780	0.001	95281777	150.0	150.0	

28 Toxaphene

1	6.251	6.258	-0.007	3292533	1000.0	567.2	M
1	6.843	6.843	0.000	11848212	1000.0	805.2	M
1	7.068	7.070	-0.002	12368201	1000.0	1148.6	M
1	7.517	7.518	-0.001	23729265	1000.0	1002.9	M
1	7.730	7.727	0.003	16820078	1000.0	1005.4	M

Average of Peak Amounts =

905.9

2	6.105	6.105	0.000	10112536	1000.0	1214.3	M
2	6.801	6.799	0.002	9245565	1000.0	645.0	M
2	7.114	7.115	-0.001	36500701	1000.0	737.1	M
2	7.490	7.489	0.001	7083413	1000.0	505.7	M
2	7.837	7.838	-0.001	33613882	1000.0	1172.9	M

Average of Peak Amounts =

855.0

RPD = 5.78

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

8081ToxICVL3_00014

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 09-Apr-2019 13:12:23

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040034.D

Injection Date: 04-Apr-2019 22:51:11

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: ICV TOX

Worklist Smp#: 34

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

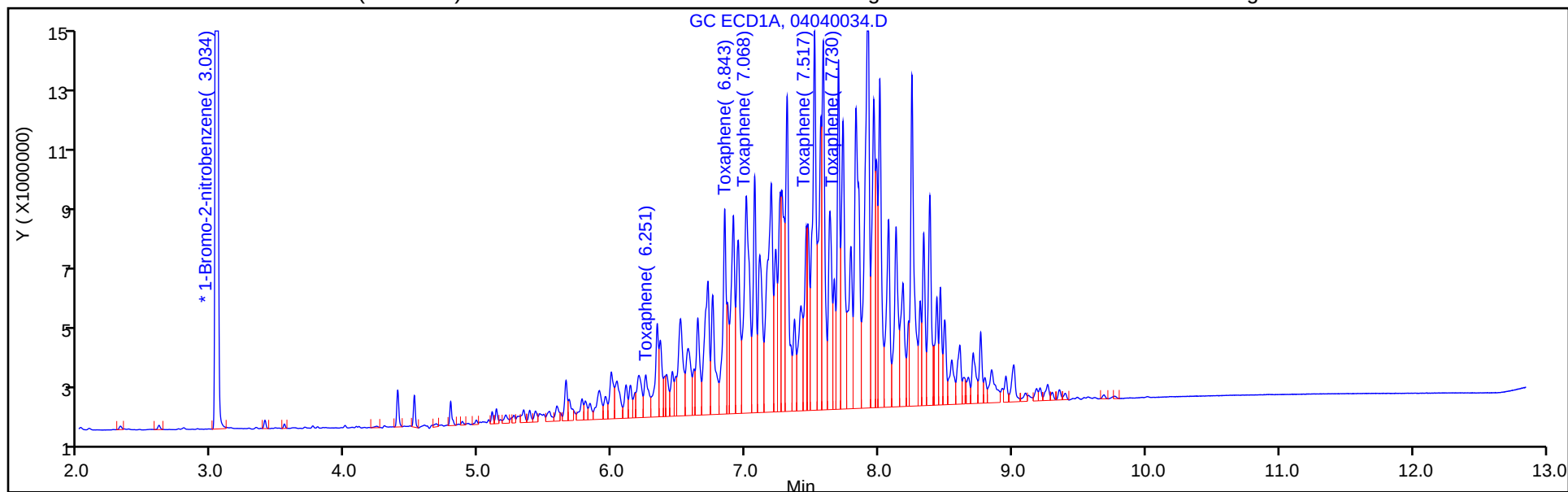
ALS Bottle#: 29

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

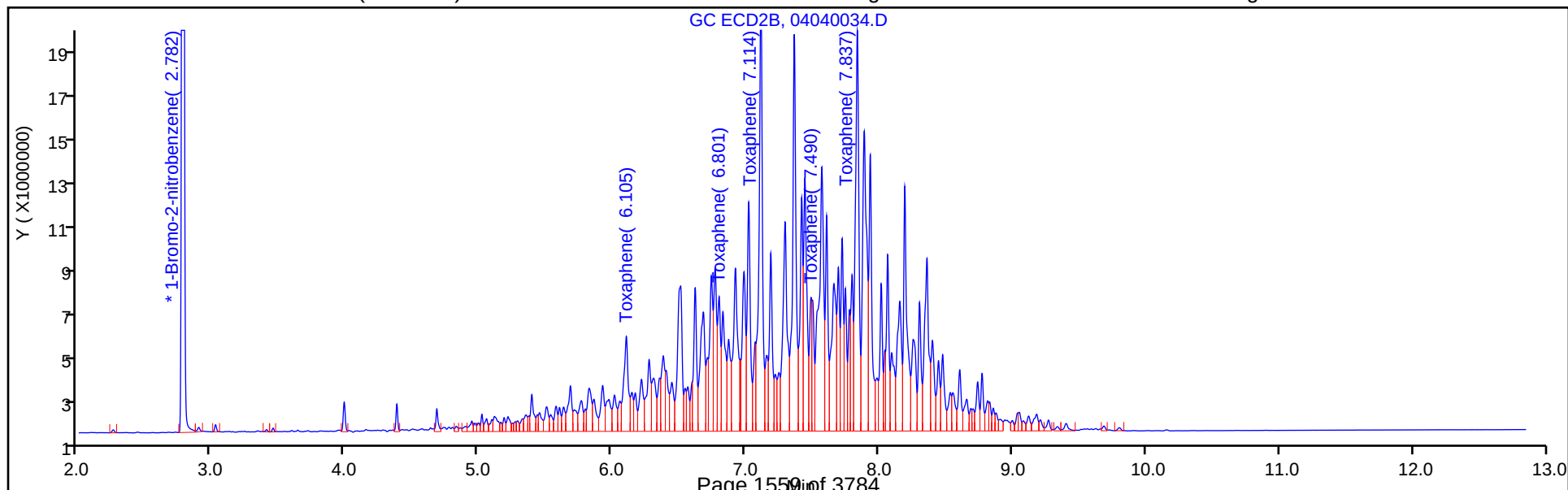
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040034.D

Injection Date: 04-Apr-2019 22:51:11

Instrument ID: SGC_P1

Lims ID: ICV TOX

Client ID:

Operator ID: TEM

ALS Bottle#: 29

Worklist Smp#: 34

Injection Vol: 1.0 ul

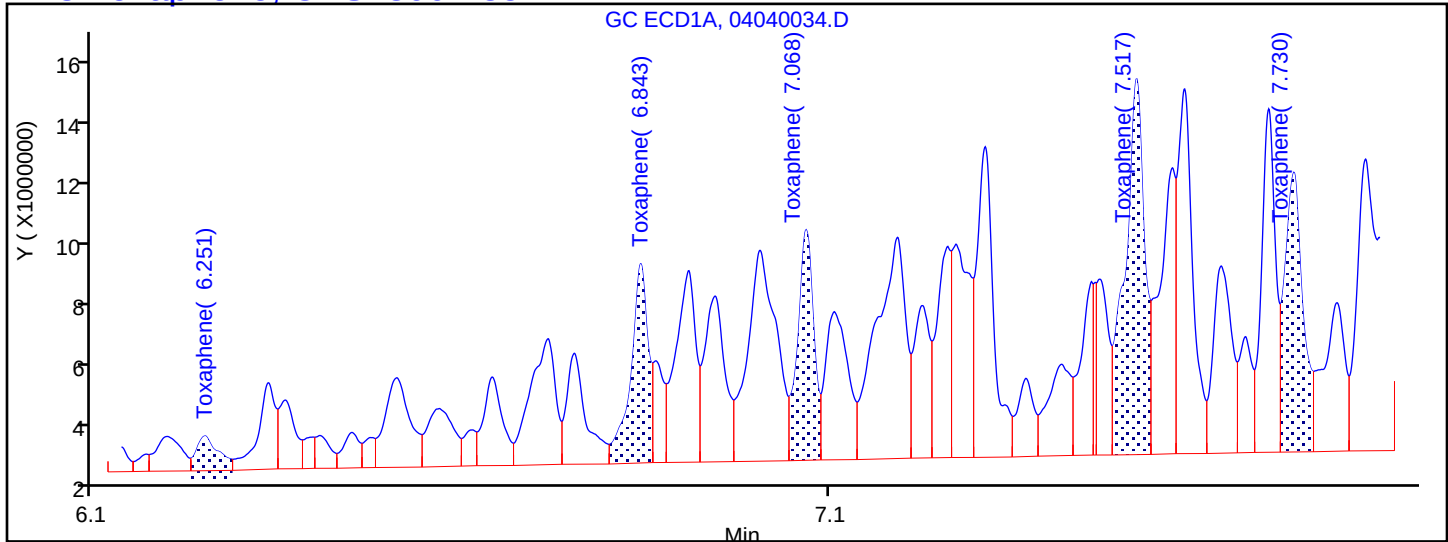
Dil. Factor: 1.0000

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

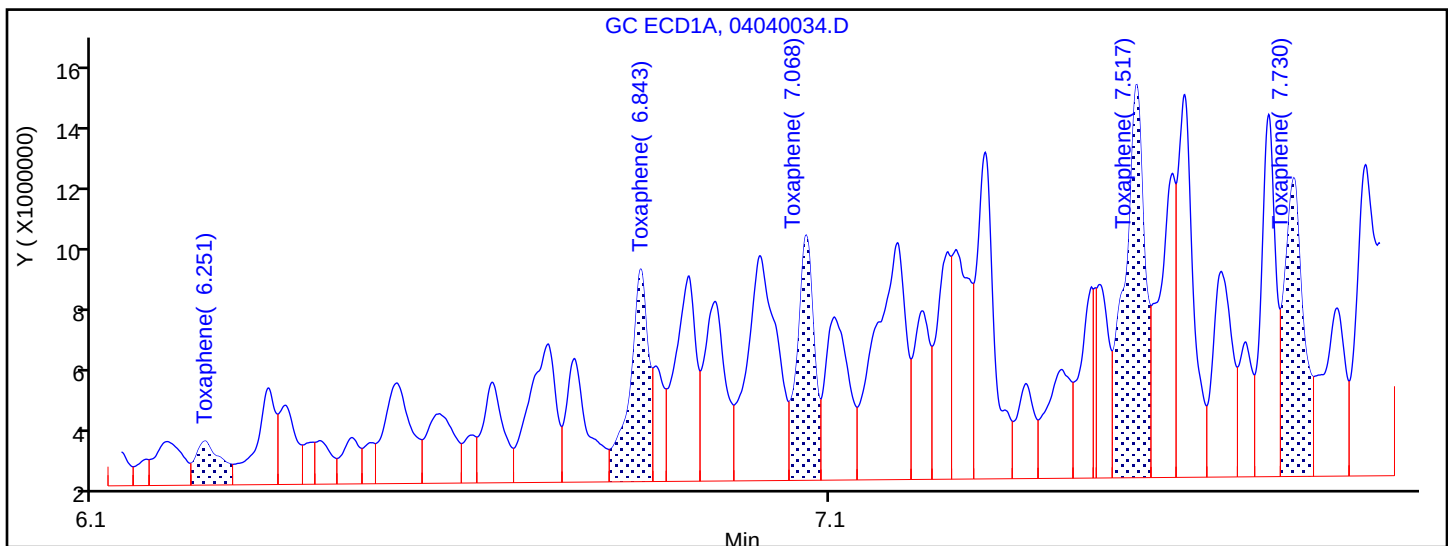
Column: CLP1 Pesticides Column 1 (0.32 mm) Detector

GC ECD1A

28 Toxaphene, CAS: 8001-35-2

Processing Integration Results

6.251	Response = 2292013
6.843	Response = 10355641
7.068	Response = 11145181
7.517	Response = 21946830
7.730	Response = 15168816



Manual Integration Results

6.251	Response = 3292533	M
6.843	Response = 11848212	M
7.068	Response = 12368201	M
7.517	Response = 23729265	M
7.730	Response = 16820078	M

Reviewer: mooret, 05-Apr-2019 13:46:48

Audit Action: Assigned New Baseline

Audit Reason: Baseline Smoothing
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FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-453267/34 Calibration Date: 04/04/2019 22:51
 Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 17:49
 GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 04/04/2019 19:13
 Lab File ID: 04040034.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Toxaphene Peak 1	Lin2		0.0159		1210	1000	21.4*	20.0
Toxaphene Peak 2	Lin2		0.0146		645	1000	-35.5*	20.0
Toxaphene Peak 3	Lin2		0.0575		737	1000	-26.3*	20.0
Toxaphene Peak 4	Lin2		0.0112		506	1000	-49.4*	20.0
Toxaphene Peak 5	Lin2		0.0529		1170	1000	17.3	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab Sample ID: ICV 280-453267/34 Calibration Date: 04/04/2019 22:51
Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 17:49
GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 04/04/2019 19:13
Lab File ID: 04040034.D

Analyte	RT	RT WINDOW	
		FROM	TO
Toxaphene Peak 1	6.11	6.09	6.13
Toxaphene Peak 2	6.80	6.78	6.82
Toxaphene Peak 3	7.11	7.10	7.14
Toxaphene Peak 4	7.49	7.47	7.51
Toxaphene Peak 5	7.84	7.82	7.86

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040034.D
 Lims ID: ICV TOX
 Client ID:
 Sample Type: ICV
 Inject. Date: 04-Apr-2019 22:51:11 ALS Bottle#: 29 Worklist Smp#: 34
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: ICV TOX
 Misc. Info.: 280-0080574-034
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist:

Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 09-Apr-2019 13:11:17 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1: CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2: CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0331

First Level Reviewer: mooret

Date: 05-Apr-2019 13:24:04

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

* 2 1-Bromo-2-nitrobenzene

1	3.034	3.035	-0.001	91124036	150.0	150.0	
2	2.782	2.780	0.001	95281777	150.0	150.0	

28 Toxaphene

1	6.251	6.258	-0.007	3292533	1000.0	567.2	M
1	6.843	6.843	0.000	11848212	1000.0	805.2	M
1	7.068	7.070	-0.002	12368201	1000.0	1148.6	M
1	7.517	7.518	-0.001	23729265	1000.0	1002.9	M
1	7.730	7.727	0.003	16820078	1000.0	1005.4	M

Average of Peak Amounts = 905.9

2	6.105	6.105	0.000	10112536	1000.0	1214.3	M
2	6.801	6.799	0.002	9245565	1000.0	645.0	M
2	7.114	7.115	-0.001	36500701	1000.0	737.1	M
2	7.490	7.489	0.001	7083413	1000.0	505.7	M
2	7.837	7.838	-0.001	33613882	1000.0	1172.9	M

Average of Peak Amounts = 855.0

RPD = 5.78

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

8081ToxICVL3_00014

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 09-Apr-2019 13:12:24

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040034.D

Injection Date: 04-Apr-2019 22:51:11

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: ICV TOX

Worklist Smp#: 34

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

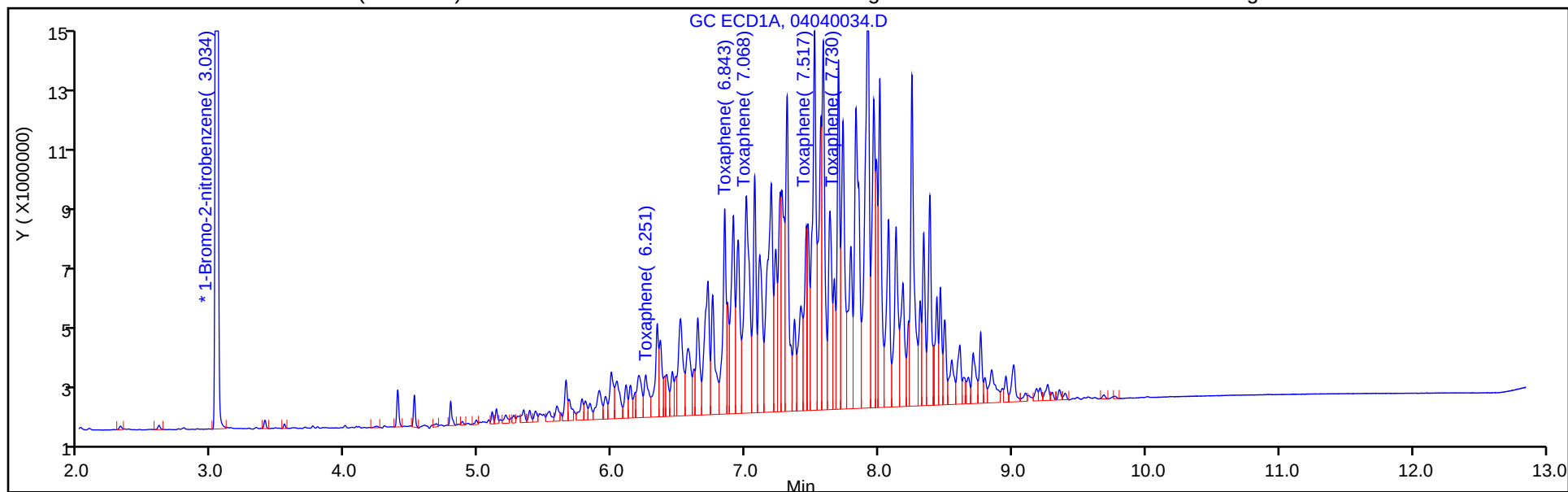
ALS Bottle#: 29

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

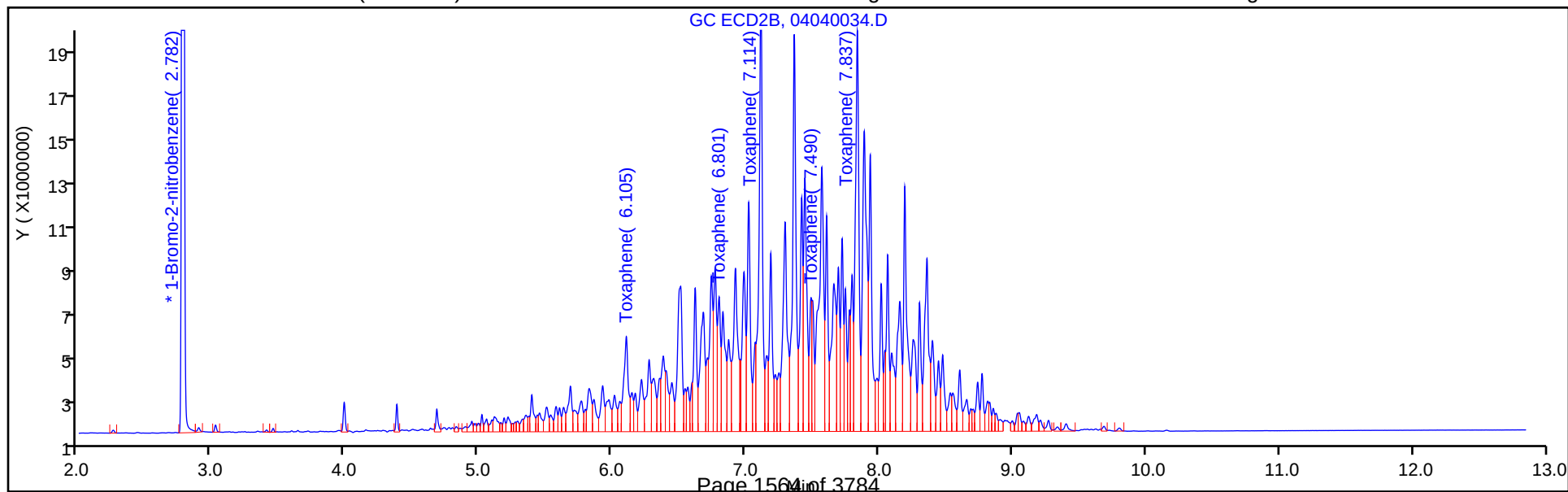
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040034.D

Injection Date: 04-Apr-2019 22:51:11

Instrument ID: SGC_P1

Lims ID: ICV TOX

Client ID:

Operator ID: TEM

ALS Bottle#: 29

Worklist Smp#: 34

Injection Vol: 1.0 ul

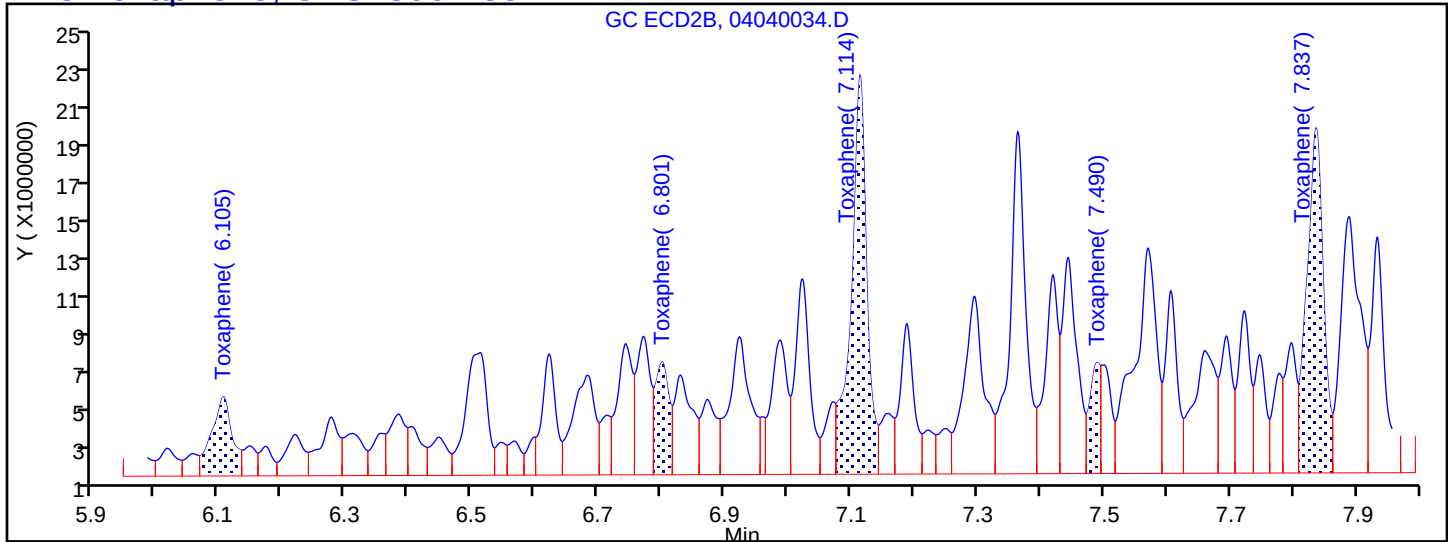
Dil. Factor: 1.0000

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

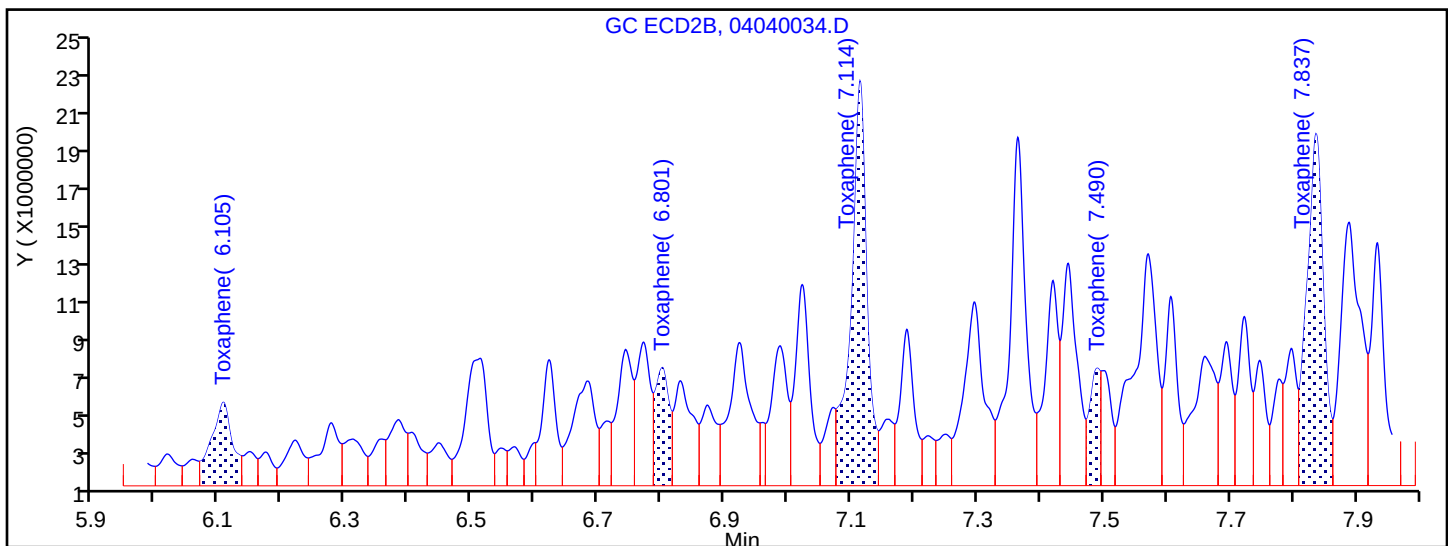
Column: CLP2 Pesticides Column 2 (0.32 mm) Detector

GC ECD2B

28 Toxaphene, CAS: 8001-35-2

Processing Integration Results

6.105	Response = 9256880
6.801	Response = 8754965
7.114	Response = 35293344
7.490	Response = 6622152
7.837	Response = 32452147



Manual Integration Results

6.105	Response = 10112536	M
6.801	Response = 9245565	M
7.114	Response = 36500701	M
7.490	Response = 7083413	M
7.837	Response = 33613882	M

Reviewer: mooret, 05-Apr-2019 13:46:55

Audit Action: Assigned New Baseline

Audit Reason: Baseline Smoothing
Page 1565 of 3784

FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-453267/36 Calibration Date: 04/04/2019 23:24
 Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 20:54
 GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 04/04/2019 22:17
 Lab File ID: 04040036.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Hexachlorobenzene	Lin2		1.500		23.9	25.0	-4.3	20.0
alpha-BHC	Lin2		1.904		24.0	25.0	-3.9	20.0
gamma-BHC (Lindane)	Lin2		1.673		24.0	25.0	-3.9	20.0
beta-BHC	Lin2		0.7297		24.0	25.0	-3.8	20.0
delta-BHC	Lin2		1.676		23.6	25.0	-5.6	20.0
Heptachlor	Lin2		1.554		23.7	25.0	-5.2	20.0
Aldrin	Lin2		1.705		23.5	25.0	-6.1	20.0
Heptachlor epoxide	Lin2		1.487		23.3	25.0	-6.7	20.0
gamma-Chlordane	Lin2		1.528		23.0	25.0	-8.1	20.0
alpha-Chlordane	Lin2		1.490		23.0	25.0	-7.9	20.0
4,4'-DDE	Lin2		1.520		23.9	25.0	-4.3	20.0
Endosulfan I	Lin2		1.426		23.3	25.0	-6.9	20.0
Dieldrin	Lin2		1.565		23.4	25.0	-6.2	20.0
Endrin	Lin2		1.349		22.4	25.0	-10.4	20.0
4,4'-DDD	Lin2		1.152		22.4	25.0	-10.2	20.0
Endosulfan II	Lin2		1.209		21.9	25.0	-12.4	20.0
4,4'-DDT	Lin2		0.9946		24.1	25.0	-3.6	20.0
Endrin aldehyde	Lin2		1.003		22.7	25.0	-9.2	20.0
Methoxychlor	Lin		0.4244		20.9	25.0	-16.3	20.0
Endosulfan sulfate	Lin2		1.109		22.2	25.0	-11.3	20.0
Endrin ketone	Lin2		1.185		22.0	25.0	-11.9	20.0
Tetrachloro-m-xylene	Lin2		1.396		23.8	25.0	-4.7	20.0
DCB Decachlorobiphenyl	Lin2		0.9667		22.1	25.0	-11.6	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-453267/36 Calibration Date: 04/04/2019 23:24
 Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 20:54
 GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 04/04/2019 22:17
 Lab File ID: 04040036.D

Analyte	RT	RT WINDOW	
		FROM	TO
Hexachlorobenzene	4.35	4.34	4.36
alpha-BHC	4.52	4.51	4.53
gamma-BHC (Lindane)	4.80	4.80	4.82
beta-BHC	4.88	4.87	4.89
delta-BHC	5.03	5.02	5.04
Heptachlor	5.21	5.20	5.22
Aldrin	5.48	5.47	5.49
Heptachlor epoxide	6.09	6.08	6.10
gamma-Chlordane	6.22	6.21	6.23
alpha-Chlordane	6.36	6.35	6.37
4,4'-DDE	6.43	6.43	6.45
Endosulfan I	6.51	6.50	6.52
Dieldrin	6.75	6.74	6.76
Endrin	6.98	6.97	6.99
4,4'-DDD	7.03	7.02	7.04
Endosulfan II	7.20	7.19	7.21
4,4'-DDT	7.30	7.30	7.32
Endrin aldehyde	7.60	7.59	7.61
Methoxychlor	7.75	7.74	7.76
Endosulfan sulfate	8.01	8.00	8.02
Endrin ketone	8.27	8.26	8.28
Tetrachloro-m-xylene	3.94	3.93	3.95
DCB Decachlorobiphenyl	9.18	9.17	9.19

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040036.D
 Lims ID: ICV AB
 Client ID:
 Sample Type: ICV
 Inject. Date: 04-Apr-2019 23:24:43 ALS Bottle#: 31 Worklist Smp#: 36
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: ICV AB
 Misc. Info.: 280-0080574-036
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist:
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 09-Apr-2019 13:11:17 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0331

First Level Reviewer: mooret

Date: 05-Apr-2019 12:51:41

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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S 1 Hexachlorocyclohexane, technical

1					100.0	95.7	
2					100.0	98.9	
						RPD = 3.31	

* 2 1-Bromo-2-nitrobenzene

1	3.034	3.035	-0.001	98377481	150.0	150.0	
2	2.782	2.780	0.002	102603360	150.0	150.0	

\$ 4 Tetrachloro-m-xylene

1	3.939	3.940	-0.001	22895665	25.0	23.8	
2	3.764	3.766	-0.002	21867882	25.0	24.5	
						RPD = 2.78	

5 Hexachlorobenzene

1	4.348	4.349	-0.001	24596918	25.0	23.9	
2	4.241	4.242	-0.001	24344796	25.0	24.1	
						RPD = 0.59	

8 alpha-BHC

1	4.516	4.517	-0.001	31214693	25.0	24.0	
2	4.385	4.386	-0.001	32347552	25.0	24.9	
						RPD = 3.73	

9 gamma-BHC (Lindane)

1	4.804	4.806	-0.002	27436582	25.0	24.0	
2	4.697	4.697	0.000	28876363	25.0	24.7	
						RPD = 2.78	

10 beta-BHC

1	4.880	4.881	-0.001	11963551	25.0	24.0	
2	4.771	4.772	-0.001	12551508	25.0	24.8	
						RPD = 3.08	

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040036.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
12 delta-BHC							
1	5.029	5.029	0.000	27477618	25.0	23.6	
2	5.003	5.004	-0.001	28860327	25.0	24.5	
						RPD = 3.64	
15 Heptachlor							
1	5.209	5.209	0.000	25481820	25.0	23.7	
2	5.047	5.047	0.000	26945397	25.0	24.7	
						RPD = 4.14	
16 Aldrin							
1	5.479	5.480	-0.001	27948850	25.0	23.5	
2	5.308	5.309	-0.001	29238983	25.0	24.2	
						RPD = 3.10	
18 Isodrin							
1	5.805	5.805	0.000	22564802	25.0	22.6	
2	5.660	5.661	-0.001	23537699	25.0	24.6	
						RPD = 8.74	
21 Heptachlor epoxide							
1	6.093	6.092	0.001	24386514	25.0	23.3	
2	5.835	5.835	0.000	25370632	25.0	23.6	
						RPD = 1.00	
22 trans-Chlordane							
1	6.222	6.222	0.000	25054327	25.0	23.0	
2	6.030	6.031	-0.001	26859202	25.0	24.7	
						RPD = 7.45	
23 cis-Chlordane							
1	6.362	6.361	0.001	24435821	25.0	23.0	
2	6.186	6.187	-0.001	26165242	25.0	24.2	
						RPD = 4.94	
24 4,4'-DDE							
1	6.434	6.435	-0.001	24920068	25.0	23.9	
2	6.364	6.364	0.000	26465069	25.0	23.3	
						RPD = 2.67	
25 Endosulfan I							
1	6.506	6.505	0.001	23378865	25.0	23.3	
2	6.244	6.243	0.001	24936771	25.0	24.1	
						RPD = 3.71	
27 Dieldrin							
1	6.749	6.748	0.001	25662181	25.0	23.4	
2	6.524	6.523	0.001	27588652	25.0	24.1	
						RPD = 2.85	
30 Endrin							
1	6.982	6.982	0.000	22121764	25.0	22.4	
2	6.825	6.827	-0.002	24101132	25.0	23.5	
						RPD = 4.80	
32 4,4'-DDD							
1	7.034	7.034	0.000	18892405	25.0	22.4	
2	6.941	6.942	-0.001	21122277	25.0	23.7	
						RPD = 5.32	

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040036.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

34 Endosulfan II

1	7.199	7.199	0.000	19818837	25.0	21.9	
2	7.033	7.033	0.000	22673672	25.0	23.1	
RPD = 5.22							

35 4,4'-DDT

1	7.304	7.305	-0.001	16306919	25.0	24.1	
2	7.243	7.243	0.000	18180884	25.0	23.2	
RPD = 3.88							

36 Endrin aldehyde

1	7.601	7.601	0.000	16449750	25.0	22.7	
2	7.356	7.357	-0.001	18519750	25.0	23.6	
RPD = 3.88							

37 Methoxychlor

1	7.754	7.754	0.000	6957994	25.0	20.9	
2	7.885	7.886	-0.001	7709883	25.0	21.7	
RPD = 3.44							

38 Mirex

1	7.910	7.911	-0.001	14712494	25.0	23.1	
2	8.066	8.067	-0.001	16252611	25.0	23.4	
RPD = 1.33							

39 Endosulfan sulfate

1	8.009	8.009	0.000	18191447	25.0	22.2	
2	7.614	7.616	-0.002	20207948	25.0	22.9	
RPD = 3.10							

40 Endrin ketone

1	8.268	8.267	0.001	19428463	25.0	22.0	
2	8.103	8.102	0.001	22232389	25.0	22.3	
RPD = 1.36							

\$ 41 DCB Decachlorobiphenyl

1	9.179	9.177	0.002	15850861	25.0	22.1	
2	9.229	9.229	0.000	17417752	25.0	23.1	
RPD = 4.22							

S 3 Endosulfan, Total

1					75.0	67.3	
2					75.0	70.1	
RPD = 4.00							

Reagents:

8081ABICVL3_00036

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 09-Apr-2019 13:12:30

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Euofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040036.D

Injection Date: 04-Apr-2019 23:24:43

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: ICV AB

Worklist Smp#: 36

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

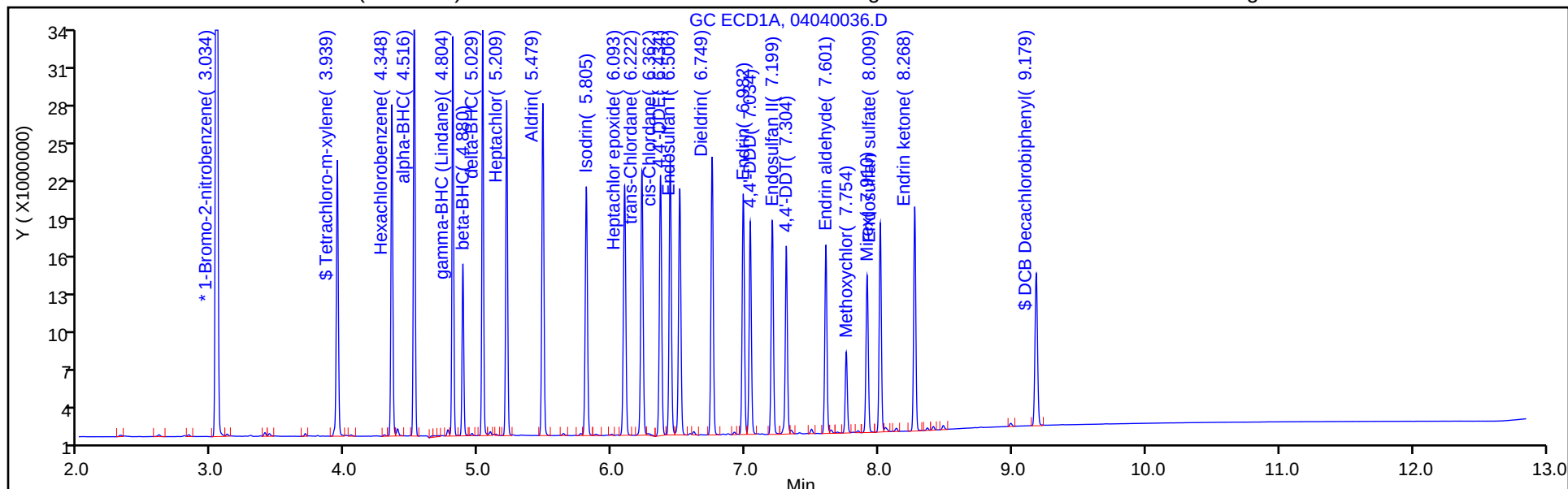
ALS Bottle#: 31

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

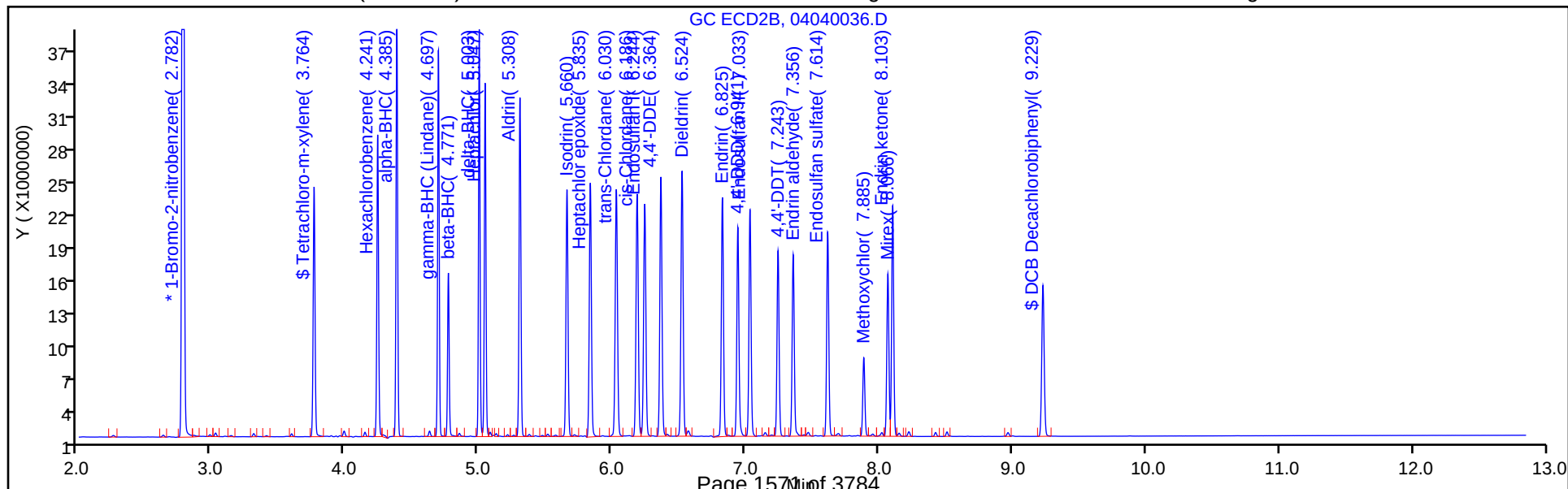
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-453267/36 Calibration Date: 04/04/2019 23:24
 Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 20:54
 GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 04/04/2019 22:17
 Lab File ID: 04040036.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Hexachlorobenzene	Lin2		1.424		24.1	25.0	-3.7	20.0
alpha-BHC	Lin2		1.892		24.9	25.0	-0.3	20.0
gamma-BHC (Lindane)	Lin2		1.689		24.7	25.0	-1.2	20.0
beta-BHC	Lin2		0.7340		24.8	25.0	-0.8	20.0
delta-BHC	Lin2		1.688		24.5	25.0	-2.2	20.0
Heptachlor	Lin2		1.576		24.7	25.0	-1.2	20.0
Aldrin	Lin2		1.710		24.2	25.0	-3.1	20.0
Heptachlor epoxide	Lin2		1.484		23.6	25.0	-5.7	20.0
gamma-Chlordane	Lin2		1.571		24.7	25.0	-1.0	20.0
alpha-Chlordane	Lin2		1.530		24.2	25.0	-3.2	20.0
Endosulfan I	Lin2		1.458		24.1	25.0	-3.4	20.0
4,4'-DDE	Lin2		1.548		23.3	25.0	-6.8	20.0
Dieldrin	Lin2		1.613		24.1	25.0	-3.5	20.0
Endrin	Lin2		1.409		23.5	25.0	-6.0	20.0
4,4'-DDD	Lin2		1.235		23.7	25.0	-5.3	20.0
Endosulfan II	Lin2		1.326		23.1	25.0	-7.8	20.0
4,4'-DDT	Lin2		1.063		23.2	25.0	-7.2	20.0
Endrin aldehyde	Lin2		1.083		23.6	25.0	-5.7	20.0
Endosulfan sulfate	Lin2		1.182		22.9	25.0	-8.5	20.0
Methoxychlor	Lin2		0.4509		21.7	25.0	-13.4	20.0
Endrin ketone	Lin2		1.300		22.3	25.0	-10.7	20.0
Tetrachloro-m-xylene	Lin2		1.279		24.5	25.0	-2.1	20.0
DCB Decachlorobiphenyl	Lin2		1.019		23.1	25.0	-7.7	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-453267/36 Calibration Date: 04/04/2019 23:24
 Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 20:54
 GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 04/04/2019 22:17
 Lab File ID: 04040036.D

Analyte	RT	RT WINDOW	
		FROM	TO
Hexachlorobenzene	4.24	4.23	4.25
alpha-BHC	4.39	4.38	4.40
gamma-BHC (Lindane)	4.70	4.69	4.71
beta-BHC	4.77	4.76	4.78
delta-BHC	5.00	4.99	5.01
Heptachlor	5.05	5.04	5.06
Aldrin	5.31	5.30	5.32
Heptachlor epoxide	5.84	5.83	5.85
gamma-Chlordane	6.03	6.02	6.04
alpha-Chlordane	6.19	6.18	6.20
Endosulfan I	6.24	6.23	6.25
4,4'-DDE	6.36	6.35	6.37
Dieldrin	6.52	6.51	6.53
Endrin	6.83	6.82	6.84
4,4'-DDD	6.94	6.93	6.95
Endosulfan II	7.03	7.02	7.04
4,4'-DDT	7.24	7.23	7.25
Endrin aldehyde	7.36	7.35	7.37
Endosulfan sulfate	7.61	7.61	7.63
Methoxychlor	7.89	7.88	7.90
Endrin ketone	8.10	8.09	8.11
Tetrachloro-m-xylene	3.76	3.76	3.78
DCB Decachlorobiphenyl	9.23	9.22	9.24

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040036.D
 Lims ID: ICV AB
 Client ID:
 Sample Type: ICV
 Inject. Date: 04-Apr-2019 23:24:43 ALS Bottle#: 31 Worklist Smp#: 36
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: ICV AB
 Misc. Info.: 280-0080574-036
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist:
 Method: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 09-Apr-2019 13:11:17 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0331

First Level Reviewer: mooret

Date: 05-Apr-2019 12:51:41

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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S 1 Hexachlorocyclohexane, technical

1					100.0	95.7	
2					100.0	98.9	
						RPD = 3.31	

* 2 1-Bromo-2-nitrobenzene

1	3.034	3.035	-0.001	98377481	150.0	150.0	
2	2.782	2.780	0.002	102603360	150.0	150.0	

\$ 4 Tetrachloro-m-xylene

1	3.939	3.940	-0.001	22895665	25.0	23.8	
2	3.764	3.766	-0.002	21867882	25.0	24.5	
						RPD = 2.78	

5 Hexachlorobenzene

1	4.348	4.349	-0.001	24596918	25.0	23.9	
2	4.241	4.242	-0.001	24344796	25.0	24.1	
						RPD = 0.59	

8 alpha-BHC

1	4.516	4.517	-0.001	31214693	25.0	24.0	
2	4.385	4.386	-0.001	32347552	25.0	24.9	
						RPD = 3.73	

9 gamma-BHC (Lindane)

1	4.804	4.806	-0.002	27436582	25.0	24.0	
2	4.697	4.697	0.000	28876363	25.0	24.7	
						RPD = 2.78	

10 beta-BHC

1	4.880	4.881	-0.001	11963551	25.0	24.0	
2	4.771	4.772	-0.001	12551508	25.0	24.8	
						RPD = 3.08	

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040036.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
12 delta-BHC							
1	5.029	5.029	0.000	27477618	25.0	23.6	
2	5.003	5.004	-0.001	28860327	25.0	24.5	
						RPD = 3.64	
15 Heptachlor							
1	5.209	5.209	0.000	25481820	25.0	23.7	
2	5.047	5.047	0.000	26945397	25.0	24.7	
						RPD = 4.14	
16 Aldrin							
1	5.479	5.480	-0.001	27948850	25.0	23.5	
2	5.308	5.309	-0.001	29238983	25.0	24.2	
						RPD = 3.10	
18 Isodrin							
1	5.805	5.805	0.000	22564802	25.0	22.6	
2	5.660	5.661	-0.001	23537699	25.0	24.6	
						RPD = 8.74	
21 Heptachlor epoxide							
1	6.093	6.092	0.001	24386514	25.0	23.3	
2	5.835	5.835	0.000	25370632	25.0	23.6	
						RPD = 1.00	
22 trans-Chlordane							
1	6.222	6.222	0.000	25054327	25.0	23.0	
2	6.030	6.031	-0.001	26859202	25.0	24.7	
						RPD = 7.45	
23 cis-Chlordane							
1	6.362	6.361	0.001	24435821	25.0	23.0	
2	6.186	6.187	-0.001	26165242	25.0	24.2	
						RPD = 4.94	
24 4,4'-DDE							
1	6.434	6.435	-0.001	24920068	25.0	23.9	
2	6.364	6.364	0.000	26465069	25.0	23.3	
						RPD = 2.67	
25 Endosulfan I							
1	6.506	6.505	0.001	23378865	25.0	23.3	
2	6.244	6.243	0.001	24936771	25.0	24.1	
						RPD = 3.71	
27 Dieldrin							
1	6.749	6.748	0.001	25662181	25.0	23.4	
2	6.524	6.523	0.001	27588652	25.0	24.1	
						RPD = 2.85	
30 Endrin							
1	6.982	6.982	0.000	22121764	25.0	22.4	
2	6.825	6.827	-0.002	24101132	25.0	23.5	
						RPD = 4.80	
32 4,4'-DDD							
1	7.034	7.034	0.000	18892405	25.0	22.4	
2	6.941	6.942	-0.001	21122277	25.0	23.7	
						RPD = 5.32	

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040036.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

34 Endosulfan II

1	7.199	7.199	0.000	19818837	25.0	21.9	
2	7.033	7.033	0.000	22673672	25.0	23.1	
RPD = 5.22							

35 4,4'-DDT

1	7.304	7.305	-0.001	16306919	25.0	24.1	
2	7.243	7.243	0.000	18180884	25.0	23.2	
RPD = 3.88							

36 Endrin aldehyde

1	7.601	7.601	0.000	16449750	25.0	22.7	
2	7.356	7.357	-0.001	18519750	25.0	23.6	
RPD = 3.88							

37 Methoxychlor

1	7.754	7.754	0.000	6957994	25.0	20.9	
2	7.885	7.886	-0.001	7709883	25.0	21.7	
RPD = 3.44							

38 Mirex

1	7.910	7.911	-0.001	14712494	25.0	23.1	
2	8.066	8.067	-0.001	16252611	25.0	23.4	
RPD = 1.33							

39 Endosulfan sulfate

1	8.009	8.009	0.000	18191447	25.0	22.2	
2	7.614	7.616	-0.002	20207948	25.0	22.9	
RPD = 3.10							

40 Endrin ketone

1	8.268	8.267	0.001	19428463	25.0	22.0	
2	8.103	8.102	0.001	22232389	25.0	22.3	
RPD = 1.36							

\$ 41 DCB Decachlorobiphenyl

1	9.179	9.177	0.002	15850861	25.0	22.1	
2	9.229	9.229	0.000	17417752	25.0	23.1	
RPD = 4.22							

S 3 Endosulfan, Total

1					75.0	67.3	
2					75.0	70.1	
RPD = 4.00							

Reagents:

8081ABICVL3_00036

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 09-Apr-2019 13:12:31

Chrom Revision: 2.3 24-Mar-2019 20:11:04

Euofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040036.D

Injection Date: 04-Apr-2019 23:24:43

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: ICV AB

Worklist Smp#: 36

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

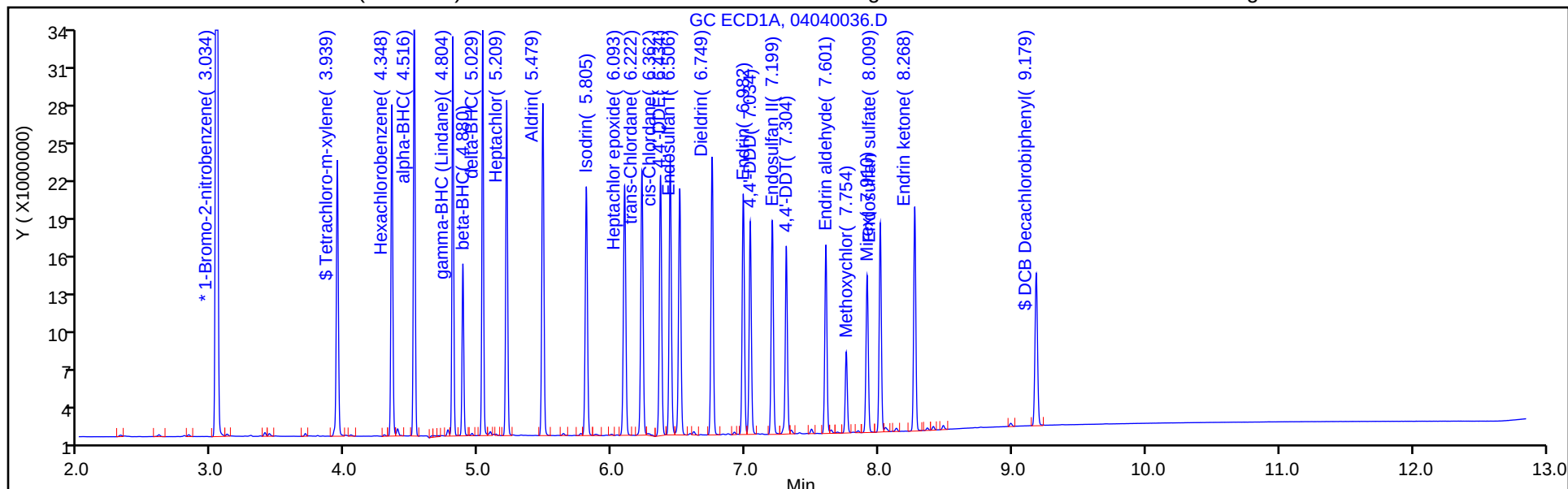
ALS Bottle#: 31

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

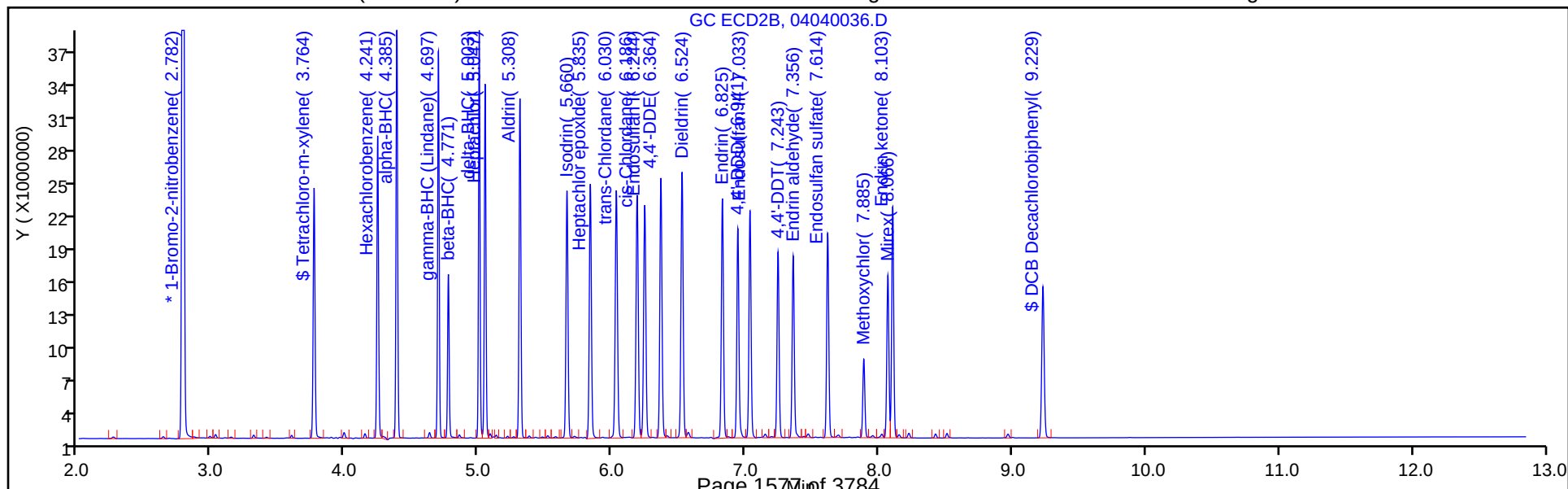
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458587/11 Calibration Date: 05/17/2019 16:14
 Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 17:49
 GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 04/04/2019 19:13
 Lab File ID: 05170011.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Toxaphene Peak 1	Lin2		0.0086		1710	2000	-14.6	20.0
Toxaphene Peak 2	Lin2		0.0216		1750	2000	-12.6	20.0
Toxaphene Peak 3	Lin2		0.0166		1850	2000	-7.3	20.0
Toxaphene Peak 4	Lin2		0.0351		1780	2000	-10.8	20.0
Toxaphene Peak 5	Lin2		0.0263		1880	2000	-6.1	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab Sample ID: CCV 280-458587/11 Calibration Date: 05/17/2019 16:14
Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 17:49
GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 04/04/2019 19:13
Lab File ID: 05170011.D

Analyte	RT	RT WINDOW	
		FROM	TO
Toxaphene Peak 1	6.23	6.21	6.25
Toxaphene Peak 2	6.82	6.80	6.84
Toxaphene Peak 3	7.04	7.02	7.06
Toxaphene Peak 4	7.49	7.47	7.51
Toxaphene Peak 5	7.70	7.68	7.72

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170011.D
 Lims ID: CCV TOX
 Client ID:
 Sample Type: CCV
 Inject. Date: 17-May-2019 16:14:33 ALS Bottle#: 5 Worklist Smp#: 11
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: CCV TOX
 Misc. Info.: 280-0082009-011
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub3
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 20-May-2019 19:08:47 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0310

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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* 2 1-Bromo-2-nitrobenzene

1	3.014	3.014	0.000	89318566	150.0	150.0
2	2.778	2.778	0.000	94861172	150.0	150.0

28 Toxaphene

1	6.231	6.231	0.000	10250124	2000.0	1707.1
1	6.817	6.817	0.000	25723935	2000.0	1747.7
1	7.042	7.042	0.000	19776447	2000.0	1853.5
1	7.489	7.489	0.000	41812694	2000.0	1784.2
1	7.700	7.700	0.000	31273102	2000.0	1877.4

Average of Peak Amounts = 1794.0

2	6.106	6.106	0.000	14769790	2000.0	1815.8
2	6.796	6.796	0.000	25998416	2000.0	1876.8
2	7.112	7.112	0.000	86285124	2000.0	1765.4
2	7.486	7.486	0.000	22677838	2000.0	1703.6
2	7.835	7.835	0.000	45356088	2000.0	1595.9

Average of Peak Amounts = 1751.5

RPD = 2.40

Reagents:

8081TOXCCVL4_00016

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 20-May-2019 19:08:47

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170011.D

Injection Date: 17-May-2019 16:14:33

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: CCV TOX

Worklist Smp#: 11

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

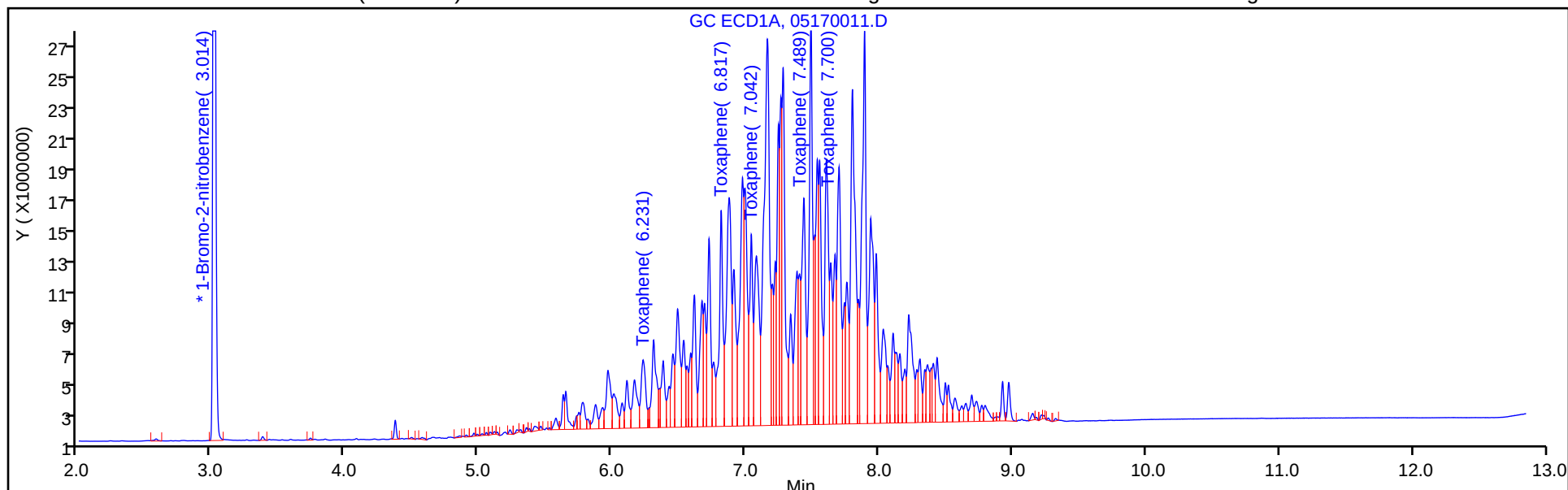
ALS Bottle#: 5

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

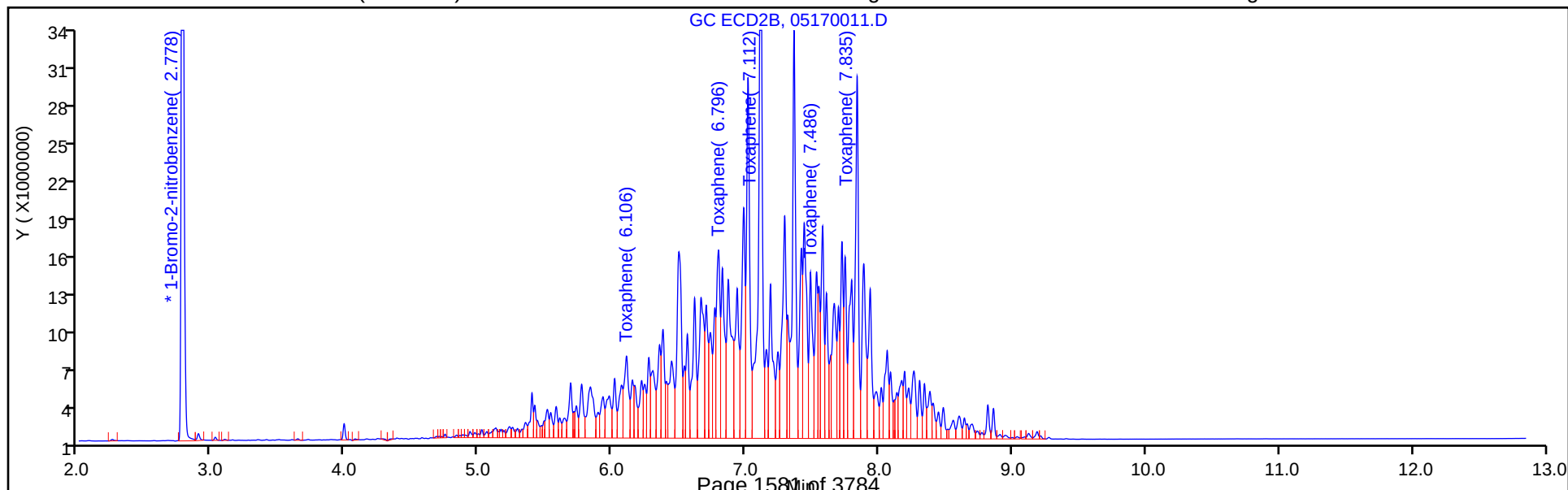
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458587/11 Calibration Date: 05/17/2019 16:14
 Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 17:49
 GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 04/04/2019 19:13
 Lab File ID: 05170011.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Toxaphene Peak 1	Lin2		0.0117		1820	2000	-9.2	20.0
Toxaphene Peak 2	Lin2		0.0206		1880	2000	-6.2	20.0
Toxaphene Peak 3	Lin2		0.0682		1770	2000	-11.7	20.0
Toxaphene Peak 4	Lin2		0.0179		1700	2000	-14.8	20.0
Toxaphene Peak 5	Lin2		0.0359		1600	2000	-20.2*	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab Sample ID: CCV 280-458587/11 Calibration Date: 05/17/2019 16:14
Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 17:49
GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 04/04/2019 19:13
Lab File ID: 05170011.D

Analyte	RT	RT WINDOW	
		FROM	TO
Toxaphene Peak 1	6.11	6.09	6.13
Toxaphene Peak 2	6.80	6.78	6.82
Toxaphene Peak 3	7.11	7.09	7.13
Toxaphene Peak 4	7.49	7.47	7.51
Toxaphene Peak 5	7.84	7.82	7.86

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170011.D
 Lims ID: CCV TOX
 Client ID:
 Sample Type: CCV
 Inject. Date: 17-May-2019 16:14:33 ALS Bottle#: 5 Worklist Smp#: 11
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: CCV TOX
 Misc. Info.: 280-0082009-011
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub3
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 20-May-2019 19:08:47 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0310

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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* 2 1-Bromo-2-nitrobenzene

1	3.014	3.014	0.000	89318566	150.0	150.0
2	2.778	2.778	0.000	94861172	150.0	150.0

28 Toxaphene

1	6.231	6.231	0.000	10250124	2000.0	1707.1
1	6.817	6.817	0.000	25723935	2000.0	1747.7
1	7.042	7.042	0.000	19776447	2000.0	1853.5
1	7.489	7.489	0.000	41812694	2000.0	1784.2
1	7.700	7.700	0.000	31273102	2000.0	1877.4

Average of Peak Amounts = 1794.0

2	6.106	6.106	0.000	14769790	2000.0	1815.8
2	6.796	6.796	0.000	25998416	2000.0	1876.8
2	7.112	7.112	0.000	86285124	2000.0	1765.4
2	7.486	7.486	0.000	22677838	2000.0	1703.6
2	7.835	7.835	0.000	45356088	2000.0	1595.9

Average of Peak Amounts = 1751.5

RPD = 2.40

Reagents:

8081TOXCCVL4_00016	Amount Added: 1.00	Units: mL	
8081_IS_00011	Amount Added: 100.00	Units: uL	Run Reagent

Report Date: 20-May-2019 19:08:48

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170011.D

Injection Date: 17-May-2019 16:14:33

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: CCV TOX

Worklist Smp#: 11

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

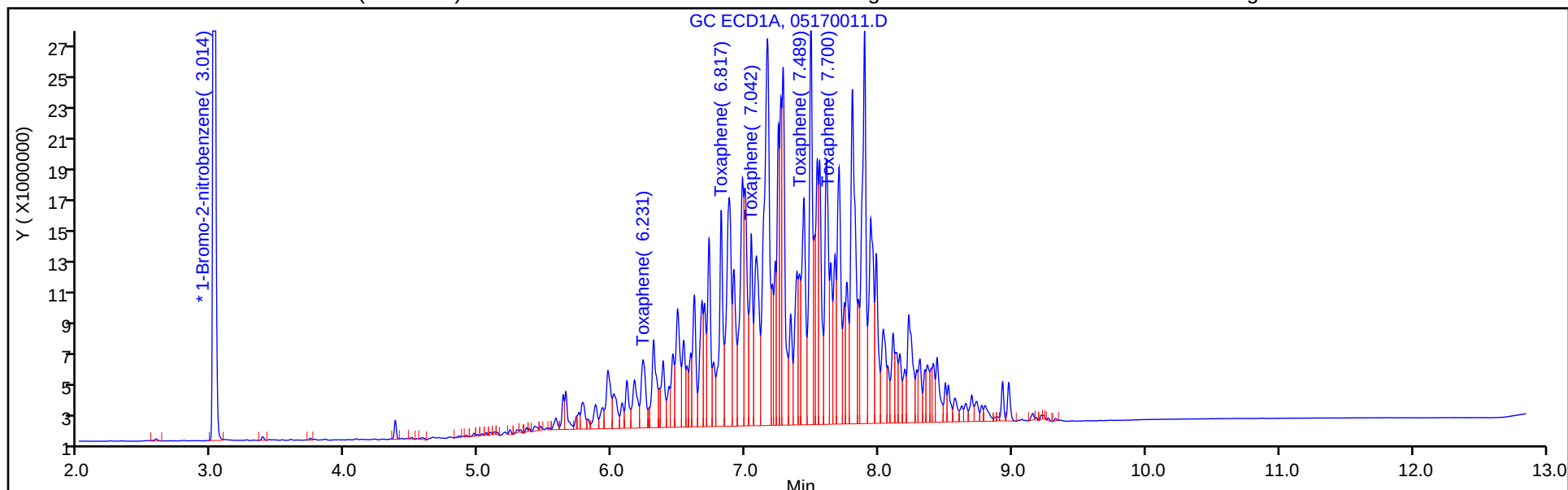
ALS Bottle#: 5

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

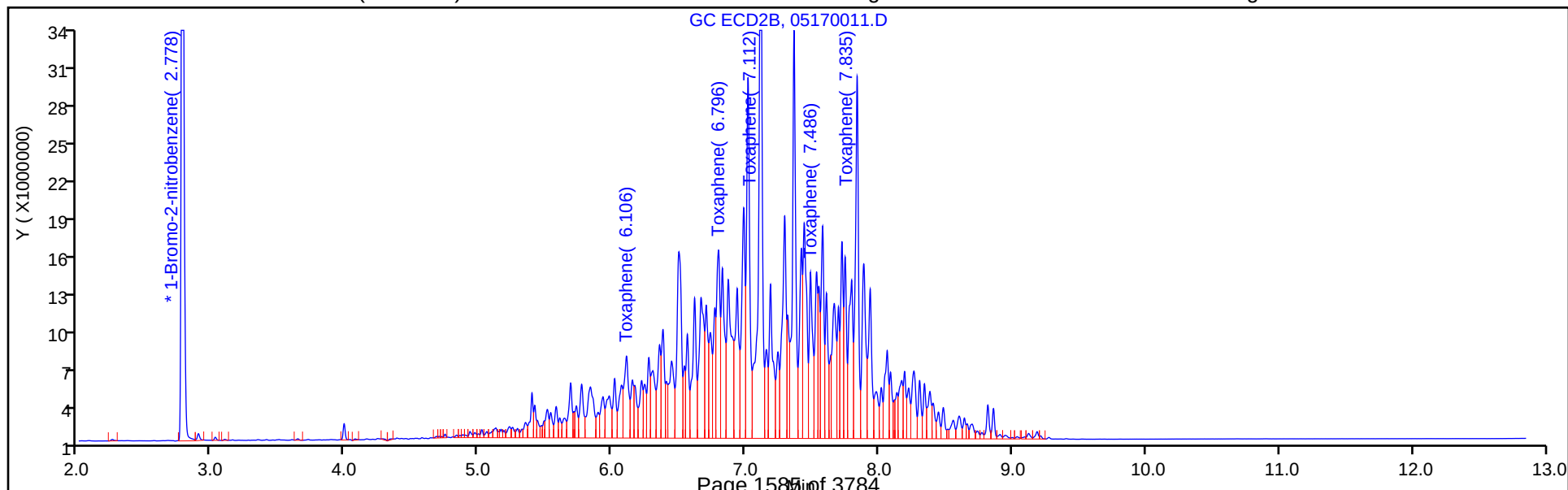
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCVIS 280-458587/13 Calibration Date: 05/17/2019 16:49
 Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 20:54
 GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 04/04/2019 22:17
 Lab File ID: 05170013.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Hexachlorobenzene	Lin2		1.415		45.9	50.0	-8.2	20.0
alpha-BHC	Lin2		1.865		47.4	50.0	-5.2	20.0
gamma-BHC (Lindane)	Lin2		1.656		48.0	50.0	-4.1	20.0
beta-BHC	Lin2		0.7050		47.5	50.0	-4.9	20.0
delta-BHC	Lin2		1.670		47.4	50.0	-5.2	20.0
Heptachlor	Lin2		1.575		48.6	50.0	-2.7	20.0
Aldrin	Lin2		1.677		46.5	50.0	-7.0	20.0
Heptachlor epoxide	Lin2		1.466		46.6	50.0	-6.9	20.0
gamma-Chlordane	Lin2		1.518		46.3	50.0	-7.4	20.0
alpha-Chlordane	Lin2		1.473		46.1	50.0	-7.8	20.0
4,4'-DDE	Lin2		1.440		45.6	50.0	-8.8	20.0
Endosulfan I	Lin2		1.412		46.7	50.0	-6.6	20.0
Dieldrin	Lin2		1.529		46.1	50.0	-7.9	20.0
Endrin	Lin2		1.407		47.2	50.0	-5.7	20.0
4,4'-DDD	Lin2		1.181		46.4	50.0	-7.2	20.0
Endosulfan II	Lin2		1.284		46.9	50.0	-6.1	20.0
4,4'-DDT	Lin2		1.010		49.3	50.0	-1.5	20.0
Endrin aldehyde	Lin2		1.003		45.9	50.0	-8.3	20.0
Methoxychlor	Lin		0.5346		51.9	50.0	3.7	20.0
Endosulfan sulfate	Lin2		1.158		46.7	50.0	-6.5	20.0
Endrin ketone	Lin2		1.298		48.7	50.0	-2.6	20.0
Tetrachloro-m-xylene	Lin2		1.327		45.8	50.0	-8.3	20.0
DCB Decachlorobiphenyl	Lin2		1.007		47.1	50.0	-5.9	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCVIS 280-458587/13 Calibration Date: 05/17/2019 16:49
 Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 20:54
 GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 04/04/2019 22:17
 Lab File ID: 05170013.D

Analyte	RT	RT WINDOW	
		FROM	TO
Hexachlorobenzene	4.33	4.32	4.34
alpha-BHC	4.50	4.49	4.51
gamma-BHC (Lindane)	4.79	4.78	4.80
beta-BHC	4.86	4.85	4.87
delta-BHC	5.01	5.00	5.02
Heptachlor	5.19	5.18	5.20
Aldrin	5.46	5.45	5.47
Heptachlor epoxide	6.07	6.06	6.08
gamma-Chlordane	6.20	6.19	6.21
alpha-Chlordane	6.34	6.33	6.35
4,4'-DDE	6.41	6.40	6.42
Endosulfan I	6.48	6.47	6.49
Dieldrin	6.72	6.71	6.73
Endrin	6.96	6.95	6.97
4,4'-DDD	7.01	7.00	7.02
Endosulfan II	7.17	7.16	7.18
4,4'-DDT	7.28	7.27	7.29
Endrin aldehyde	7.57	7.56	7.58
Methoxychlor	7.73	7.72	7.74
Endosulfan sulfate	7.98	7.97	7.99
Endrin ketone	8.24	8.23	8.25
Tetrachloro-m-xylene	3.92	3.91	3.93
DCB Decachlorobiphenyl	9.15	9.14	9.16

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170013.D
 Lims ID: CCVIS AB
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 17-May-2019 16:49:16 ALS Bottle#: 7 Worklist Smp#: 13
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: CCVIS AB
 Misc. Info.: 280-0082009-013
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub6
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 20-May-2019 19:08:51 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0310

First Level Reviewer: mooret

Date: 17-May-2019 20:00:30

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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* 2 1-Bromo-2-nitrobenzene

1	3.014	3.014	0.000	92449945	150.0	150.0
2	2.777	2.777	0.000	97605799	150.0	150.0

\$ 4 Tetrachloro-m-xylene

1	3.921	3.921	0.000	40904894	50.0	45.8
2	3.765	3.765	0.000	38070057	50.0	45.5

RPD = 0.69

5 Hexachlorobenzene

1	4.330	4.330	0.000	43598055	50.0	45.9
2	4.242	4.242	0.000	43401347	50.0	46.2

RPD = 0.60

8 alpha-BHC

1	4.497	4.497	0.000	57478811	50.0	47.4
2	4.384	4.384	0.000	57974081	50.0	47.5

RPD = 0.29

9 gamma-BHC (Lindane)

1	4.787	4.787	0.000	51042252	50.0	48.0
2	4.696	4.696	0.000	51528392	50.0	47.0

RPD = 2.14

10 beta-BHC

1	4.861	4.861	0.000	21726809	50.0	47.5
2	4.771	4.771	0.000	21908325	50.0	46.6

RPD = 1.92

12 delta-BHC

1	5.010	5.010	0.000	51471896	50.0	47.4
2	5.003	5.003	0.000	51803254	50.0	46.7

RPD = 1.53

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170013.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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15 Heptachlor

1	5.190	5.190	0.000	48522146	50.0	48.6	
2	5.047	5.047	0.000	48426029	50.0	47.5	
RPD = 2.28							

16 Aldrin

1	5.460	5.460	0.000	51680104	50.0	46.5	
2	5.310	5.310	0.000	51487963	50.0	45.4	
RPD = 2.46							

18 Isodrin

1	5.782	5.782	0.000	43156786	50.0	46.5	
2	5.662	5.662	0.000	40659989	50.0	45.2	
RPD = 2.72							

21 Heptachlor epoxide

1	6.067	6.067	0.000	45169804	50.0	46.6	
2	5.837	5.837	0.000	45623171	50.0	45.3	
RPD = 2.63							

22 trans-Chlordane

1	6.197	6.197	0.000	46791558	50.0	46.3	
2	6.032	6.032	0.000	46275004	50.0	45.3	
RPD = 2.27							

23 cis-Chlordane

1	6.337	6.337	0.000	45388297	50.0	46.1	
2	6.187	6.187	0.000	45426491	50.0	44.8	
RPD = 2.86							

24 4,4'-DDE

1	6.410	6.410	0.000	44380926	50.0	45.6	
2	6.363	6.363	0.000	47114999	50.0	43.9	
RPD = 3.74							

25 Endosulfan I

1	6.480	6.480	0.000	43521488	50.0	46.7	
2	6.243	6.243	0.000	43362144	50.0	44.9	
RPD = 3.85							

27 Dieldrin

1	6.722	6.722	0.000	47111677	50.0	46.1	
2	6.522	6.522	0.000	47929475	50.0	44.5	
RPD = 3.36							

30 Endrin

1	6.955	6.955	0.000	43357319	50.0	47.2	
2	6.823	6.823	0.000	44138022	50.0	45.9	
RPD = 2.68							

32 4,4'-DDD

1	7.008	7.008	0.000	36409347	50.0	46.4	
2	6.939	6.939	0.000	37299924	50.0	44.6	
RPD = 3.82							

34 Endosulfan II

1	7.172	7.172	0.000	39571627	50.0	46.9	
2	7.030	7.030	0.000	40880170	50.0	44.6	
RPD = 5.05							

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170013.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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35 4,4'-DDT

1	7.279	7.279	0.000	31135891	50.0	49.3
2	7.242	7.242	0.000	33556532	50.0	45.1

RPD = 8.73

36 Endrin aldehyde

1	7.573	7.573	0.000	30904133	50.0	45.9
2	7.355	7.355	0.000	32286793	50.0	44.0

RPD = 4.22

37 Methoxychlor

1	7.731	7.731	0.000	16474875	50.0	51.9
2	7.885	7.885	0.000	16048658	50.0	47.9

RPD = 7.92

38 Mirex

1	7.886	7.886	0.000	27300305	50.0	46.7
2	8.065	8.065	0.000	26838705	50.0	41.4

RPD = 11.94

39 Endosulfan sulfate

1	7.982	7.982	0.000	35678045	50.0	46.7
2	7.614	7.614	0.000	36805965	50.0	44.5

RPD = 4.87

40 Endrin ketone

1	8.241	8.241	0.000	39998922	50.0	48.7
2	8.101	8.101	0.000	41690295	50.0	44.6

RPD = 8.87

\$ 41 DCB Decachlorobiphenyl

1	9.153	9.153	0.000	31022773	50.0	47.1
2	9.231	9.231	0.000	29833654	50.0	42.5

RPD = 10.11

Reagents:

8081IcalL4_00033

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 20-May-2019 19:08:52

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170013.D

Injection Date: 17-May-2019 16:49:16

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: CCVIS AB

Worklist Smp#: 13

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

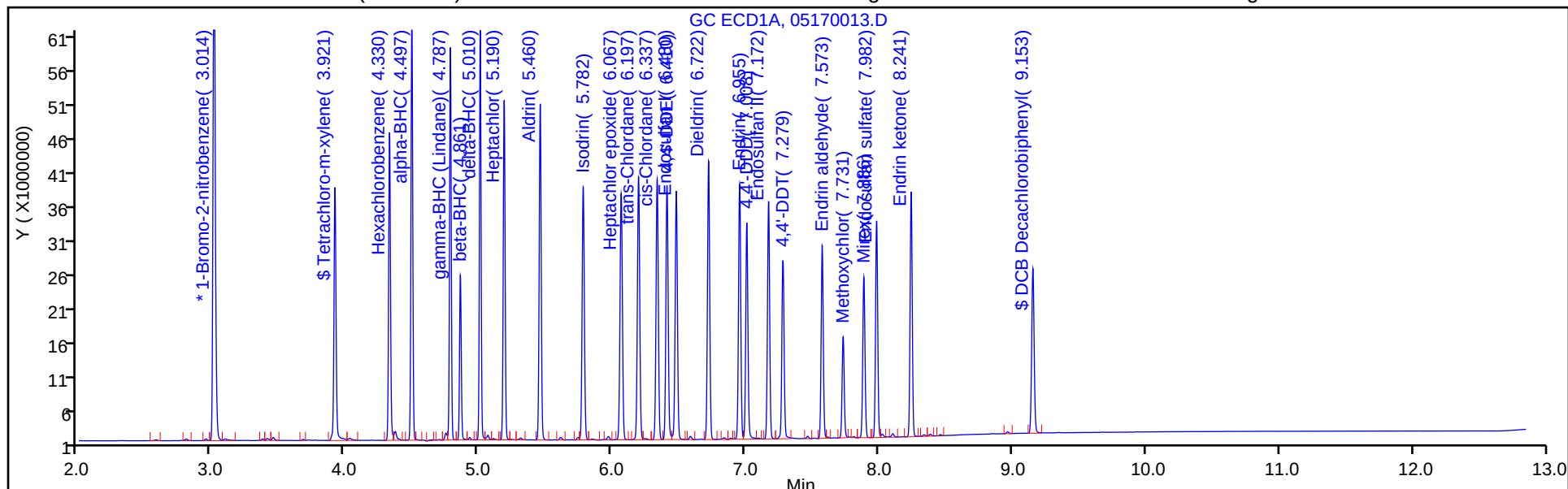
ALS Bottle#: 7

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

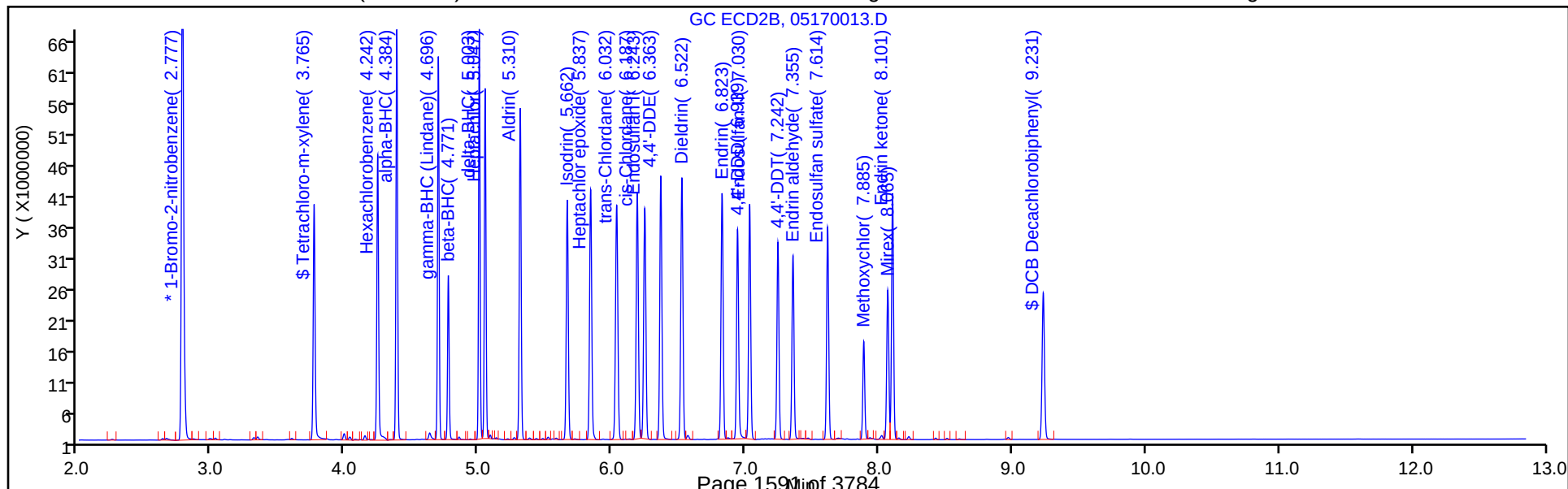
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCVIS 280-458587/13 Calibration Date: 05/17/2019 16:49
 Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 20:54
 GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 04/04/2019 22:17
 Lab File ID: 05170013.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Hexachlorobenzene	Lin2		1.334		46.2	50.0	-7.7	20.0
alpha-BHC	Lin2		1.782		47.5	50.0	-4.9	20.0
gamma-BHC (Lindane)	Lin2		1.584		47.0	50.0	-6.1	20.0
beta-BHC	Lin2		0.6734		46.6	50.0	-6.8	20.0
delta-BHC	Lin2		1.592		46.7	50.0	-6.7	20.0
Heptachlor	Lin2		1.488		47.5	50.0	-4.9	20.0
Aldrin	Lin2		1.583		45.4	50.0	-9.3	20.0
Heptachlor epoxide	Lin2		1.402		45.3	50.0	-9.3	20.0
gamma-Chlordane	Lin2		1.422		45.3	50.0	-9.5	20.0
alpha-Chlordane	Lin2		1.396		44.8	50.0	-10.4	20.0
Endosulfan I	Lin2		1.333		44.9	50.0	-10.1	20.0
4,4'-DDE	Lin2		1.448		43.9	50.0	-12.1	20.0
Dieldrin	Lin2		1.473		44.5	50.0	-10.9	20.0
Endrin	Lin2		1.357		45.9	50.0	-8.2	20.0
4,4'-DDD	Lin2		1.146		44.6	50.0	-10.7	20.0
Endosulfan II	Lin2		1.256		44.6	50.0	-10.8	20.0
4,4'-DDT	Lin2		1.031		45.1	50.0	-9.7	20.0
Endrin aldehyde	Lin2		0.9924		44.0	50.0	-12.1	20.0
Endosulfan sulfate	Lin2		1.131		44.5	50.0	-11.0	20.0
Methoxychlor	Lin2		0.4933		47.9	50.0	-4.2	20.0
Endrin ketone	Lin2		1.281		44.6	50.0	-10.8	20.0
Tetrachloro-m-xylene	Lin2		1.170		45.5	50.0	-8.9	20.0
DCB Decachlorobiphenyl	Lin2		0.9170		42.5	50.0	-14.9	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCVIS 280-458587/13 Calibration Date: 05/17/2019 16:49
 Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 20:54
 GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 04/04/2019 22:17
 Lab File ID: 05170013.D

Analyte	RT	RT WINDOW	
		FROM	TO
Hexachlorobenzene	4.24	4.23	4.25
alpha-BHC	4.38	4.37	4.39
gamma-BHC (Lindane)	4.70	4.69	4.71
beta-BHC	4.77	4.76	4.78
delta-BHC	5.00	4.99	5.01
Heptachlor	5.05	5.04	5.06
Aldrin	5.31	5.30	5.32
Heptachlor epoxide	5.84	5.83	5.85
gamma-Chlordane	6.03	6.02	6.04
alpha-Chlordane	6.19	6.18	6.20
Endosulfan I	6.24	6.23	6.25
4,4'-DDE	6.36	6.35	6.37
Dieldrin	6.52	6.51	6.53
Endrin	6.82	6.81	6.83
4,4'-DDD	6.94	6.93	6.95
Endosulfan II	7.03	7.02	7.04
4,4'-DDT	7.24	7.23	7.25
Endrin aldehyde	7.36	7.35	7.37
Endosulfan sulfate	7.61	7.60	7.62
Methoxychlor	7.89	7.88	7.90
Endrin ketone	8.10	8.09	8.11
Tetrachloro-m-xylene	3.77	3.76	3.78
DCB Decachlorobiphenyl	9.23	9.22	9.24

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170013.D
 Lims ID: CCVIS AB
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 17-May-2019 16:49:16 ALS Bottle#: 7 Worklist Smp#: 13
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: CCVIS AB
 Misc. Info.: 280-0082009-013
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub6
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 20-May-2019 19:08:51 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0310

First Level Reviewer: mooret

Date: 17-May-2019 20:00:30

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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* 2 1-Bromo-2-nitrobenzene

1	3.014	3.014	0.000	92449945	150.0	150.0	
2	2.777	2.777	0.000	97605799	150.0	150.0	

\$ 4 Tetrachloro-m-xylene

1	3.921	3.921	0.000	40904894	50.0	45.8	
2	3.765	3.765	0.000	38070057	50.0	45.5	

RPD = 0.69

5 Hexachlorobenzene

1	4.330	4.330	0.000	43598055	50.0	45.9	
2	4.242	4.242	0.000	43401347	50.0	46.2	

RPD = 0.60

8 alpha-BHC

1	4.497	4.497	0.000	57478811	50.0	47.4	
2	4.384	4.384	0.000	57974081	50.0	47.5	

RPD = 0.29

9 gamma-BHC (Lindane)

1	4.787	4.787	0.000	51042252	50.0	48.0	
2	4.696	4.696	0.000	51528392	50.0	47.0	

RPD = 2.14

10 beta-BHC

1	4.861	4.861	0.000	21726809	50.0	47.5	
2	4.771	4.771	0.000	21908325	50.0	46.6	

RPD = 1.92

12 delta-BHC

1	5.010	5.010	0.000	51471896	50.0	47.4	
2	5.003	5.003	0.000	51803254	50.0	46.7	

RPD = 1.53

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170013.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

15 Heptachlor

1	5.190	5.190	0.000	48522146	50.0	48.6	
2	5.047	5.047	0.000	48426029	50.0	47.5	
RPD = 2.28							

16 Aldrin

1	5.460	5.460	0.000	51680104	50.0	46.5	
2	5.310	5.310	0.000	51487963	50.0	45.4	
RPD = 2.46							

18 Isodrin

1	5.782	5.782	0.000	43156786	50.0	46.5	
2	5.662	5.662	0.000	40659989	50.0	45.2	
RPD = 2.72							

21 Heptachlor epoxide

1	6.067	6.067	0.000	45169804	50.0	46.6	
2	5.837	5.837	0.000	45623171	50.0	45.3	
RPD = 2.63							

22 trans-Chlordane

1	6.197	6.197	0.000	46791558	50.0	46.3	
2	6.032	6.032	0.000	46275004	50.0	45.3	
RPD = 2.27							

23 cis-Chlordane

1	6.337	6.337	0.000	45388297	50.0	46.1	
2	6.187	6.187	0.000	45426491	50.0	44.8	
RPD = 2.86							

24 4,4'-DDE

1	6.410	6.410	0.000	44380926	50.0	45.6	
2	6.363	6.363	0.000	47114999	50.0	43.9	
RPD = 3.74							

25 Endosulfan I

1	6.480	6.480	0.000	43521488	50.0	46.7	
2	6.243	6.243	0.000	43362144	50.0	44.9	
RPD = 3.85							

27 Dieldrin

1	6.722	6.722	0.000	47111677	50.0	46.1	
2	6.522	6.522	0.000	47929475	50.0	44.5	
RPD = 3.36							

30 Endrin

1	6.955	6.955	0.000	43357319	50.0	47.2	
2	6.823	6.823	0.000	44138022	50.0	45.9	
RPD = 2.68							

32 4,4'-DDD

1	7.008	7.008	0.000	36409347	50.0	46.4	
2	6.939	6.939	0.000	37299924	50.0	44.6	
RPD = 3.82							

34 Endosulfan II

1	7.172	7.172	0.000	39571627	50.0	46.9	
2	7.030	7.030	0.000	40880170	50.0	44.6	
RPD = 5.05							

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170013.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

35 4,4'-DDT

1	7.279	7.279	0.000	31135891	50.0	49.3
2	7.242	7.242	0.000	33556532	50.0	45.1

RPD = 8.73

36 Endrin aldehyde

1	7.573	7.573	0.000	30904133	50.0	45.9
2	7.355	7.355	0.000	32286793	50.0	44.0

RPD = 4.22

37 Methoxychlor

1	7.731	7.731	0.000	16474875	50.0	51.9
2	7.885	7.885	0.000	16048658	50.0	47.9

RPD = 7.92

38 Mirex

1	7.886	7.886	0.000	27300305	50.0	46.7
2	8.065	8.065	0.000	26838705	50.0	41.4

RPD = 11.94

39 Endosulfan sulfate

1	7.982	7.982	0.000	35678045	50.0	46.7
2	7.614	7.614	0.000	36805965	50.0	44.5

RPD = 4.87

40 Endrin ketone

1	8.241	8.241	0.000	39998922	50.0	48.7
2	8.101	8.101	0.000	41690295	50.0	44.6

RPD = 8.87

\$ 41 DCB Decachlorobiphenyl

1	9.153	9.153	0.000	31022773	50.0	47.1
2	9.231	9.231	0.000	29833654	50.0	42.5

RPD = 10.11

Reagents:

8081IcalL4_00033

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 20-May-2019 19:08:52

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170013.D

Injection Date: 17-May-2019 16:49:16

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: CCVIS AB

Worklist Smp#: 13

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

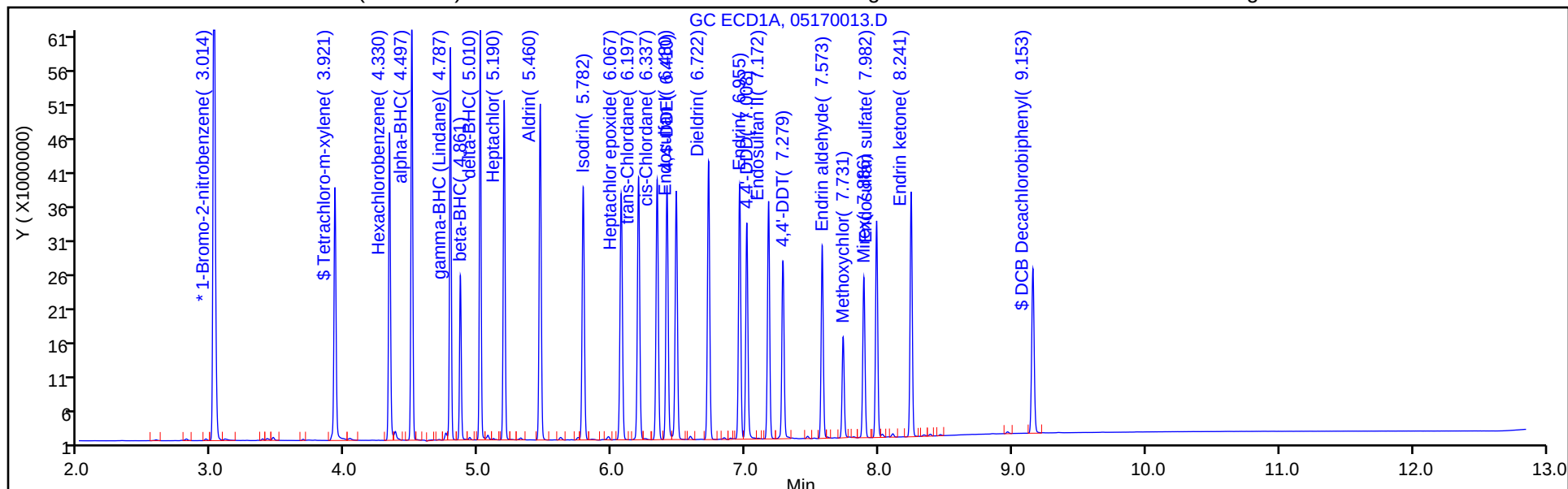
ALS Bottle#: 7

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

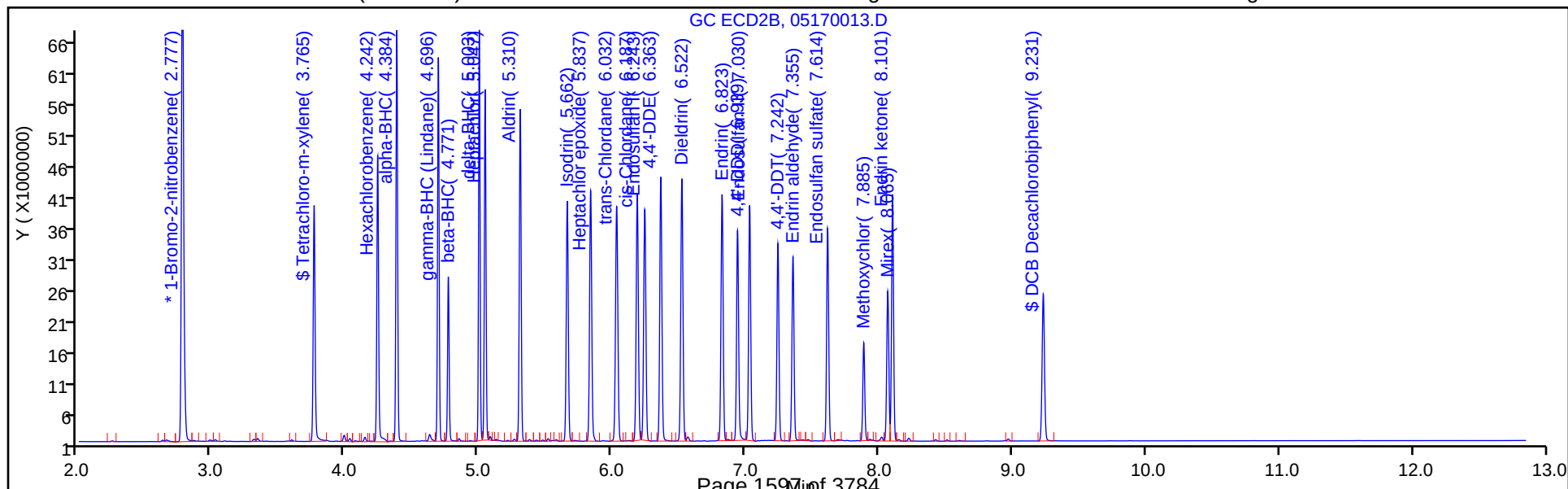
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab Sample ID: CCV 280-458587/26 Calibration Date: 05/17/2019 20:35
Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 17:49
GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 04/04/2019 19:13
Lab File ID: 05170026.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Toxaphene Peak 1	Lin2		0.0095		1880	2000	-5.9	20.0
Toxaphene Peak 2	Lin2		0.0228		1840	2000	-8.0	20.0
Toxaphene Peak 3	Lin2		0.0162		1810	2000	-9.7	20.0
Toxaphene Peak 4	Lin2		0.0353		1790	2000	-10.3	20.0
Toxaphene Peak 5	Lin2		0.0264		1880	2000	-5.8	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab Sample ID: CCV 280-458587/26 Calibration Date: 05/17/2019 20:35
Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 17:49
GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 04/04/2019 19:13
Lab File ID: 05170026.D

Analyte	RT	RT WINDOW	
		FROM	TO
Toxaphene Peak 1	6.23	6.21	6.25
Toxaphene Peak 2	6.82	6.80	6.84
Toxaphene Peak 3	7.04	7.02	7.06
Toxaphene Peak 4	7.49	7.47	7.51
Toxaphene Peak 5	7.70	7.68	7.72

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170026.D
 Lims ID: CCV TOX
 Client ID:
 Sample Type: CCV
 Inject. Date: 17-May-2019 20:35:31 ALS Bottle#: 20 Worklist Smp#: 26
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: CCV TOX
 Misc. Info.: 280-0082009-026
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub3
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 20-May-2019 19:08:30 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0310

First Level Reviewer: mooret

Date: 20-May-2019 19:06:22

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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* 2 1-Bromo-2-nitrobenzene

1	3.019	3.014	0.005	89994644	150.0	150.0
2	2.782	2.777	0.005	95474592	150.0	150.0

28 Toxaphene

1	6.232	6.231	0.001	11414676	2000.0	1882.2	M
1	6.817	6.817	0.000	27305093	2000.0	1839.6	M
1	7.044	7.042	0.002	19414143	2000.0	1806.7	M
1	7.490	7.489	0.001	42377105	2000.0	1794.6	M
1	7.700	7.700	0.000	31629069	2000.0	1884.4	M

Average of Peak Amounts = 1841.5

2	6.108	6.106	0.002	15641667	2000.0	1914.4	M
2	6.797	6.796	0.001	26771349	2000.0	1920.9	M
2	7.114	7.112	0.002	87598742	2000.0	1780.9	M
2	7.487	7.486	0.001	22633797	2000.0	1689.1	M
2	7.836	7.835	0.001	45228271	2000.0	1581.0	M

Average of Peak Amounts = 1777.3

RPD = 3.55

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

8081TOXCCVL4_00016

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 20-May-2019 19:08:31

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170026.D

Injection Date: 17-May-2019 20:35:31

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: CCV TOX

Worklist Smp#: 26

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

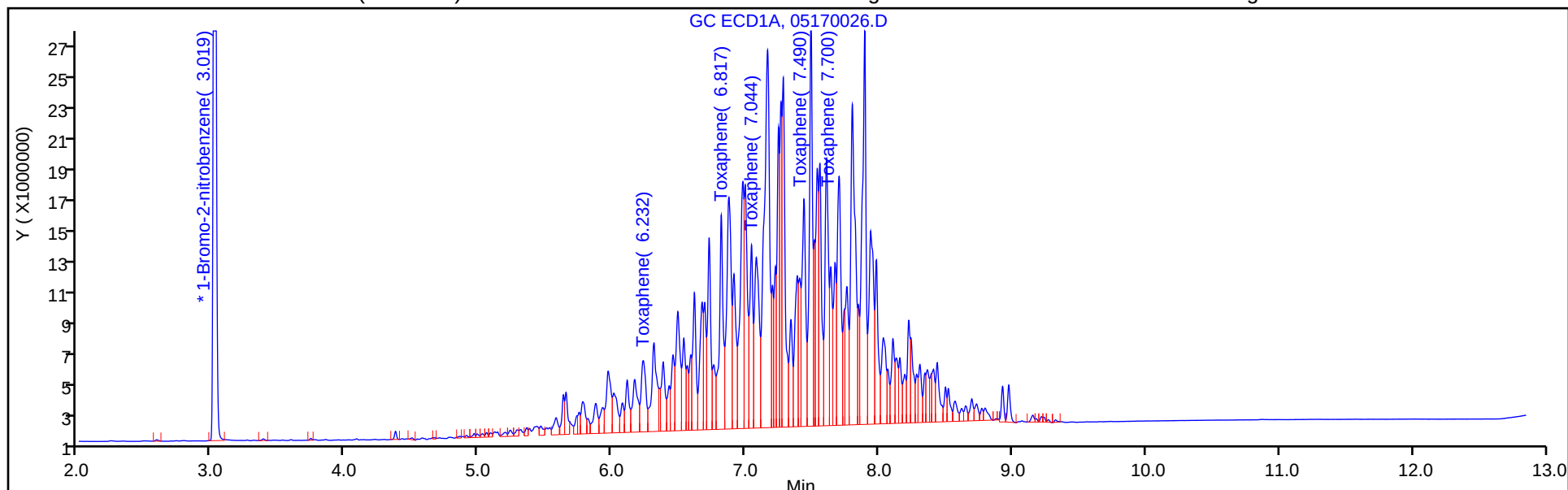
ALS Bottle#: 20

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

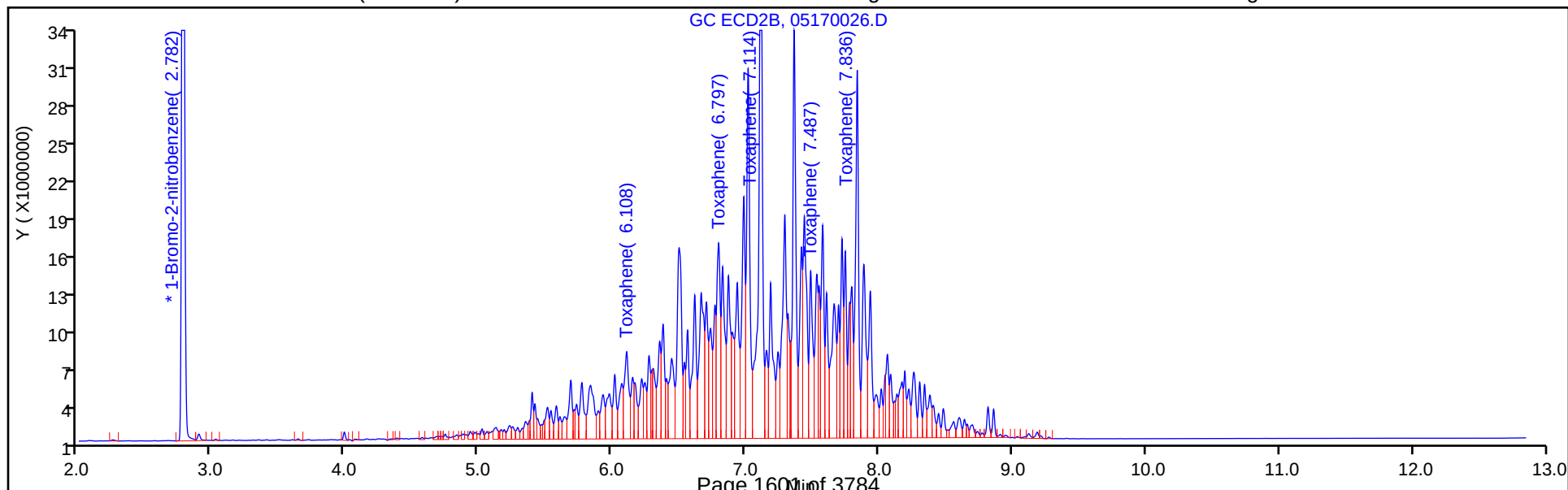
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170026.D

Injection Date: 17-May-2019 20:35:31

Instrument ID: SGC_P1

Lims ID: CCV TOX

Client ID:

Operator ID: TEM

ALS Bottle#: 20

Worklist Smp#: 26

Injection Vol: 1.0 ul

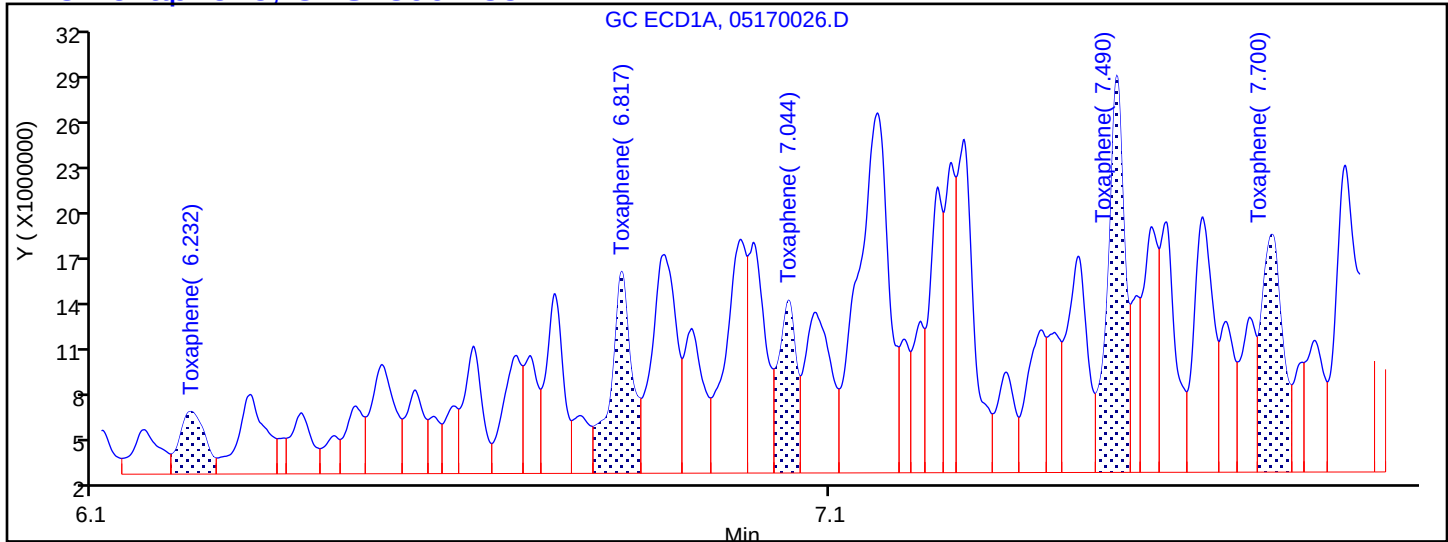
Dil. Factor: 1.0000

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

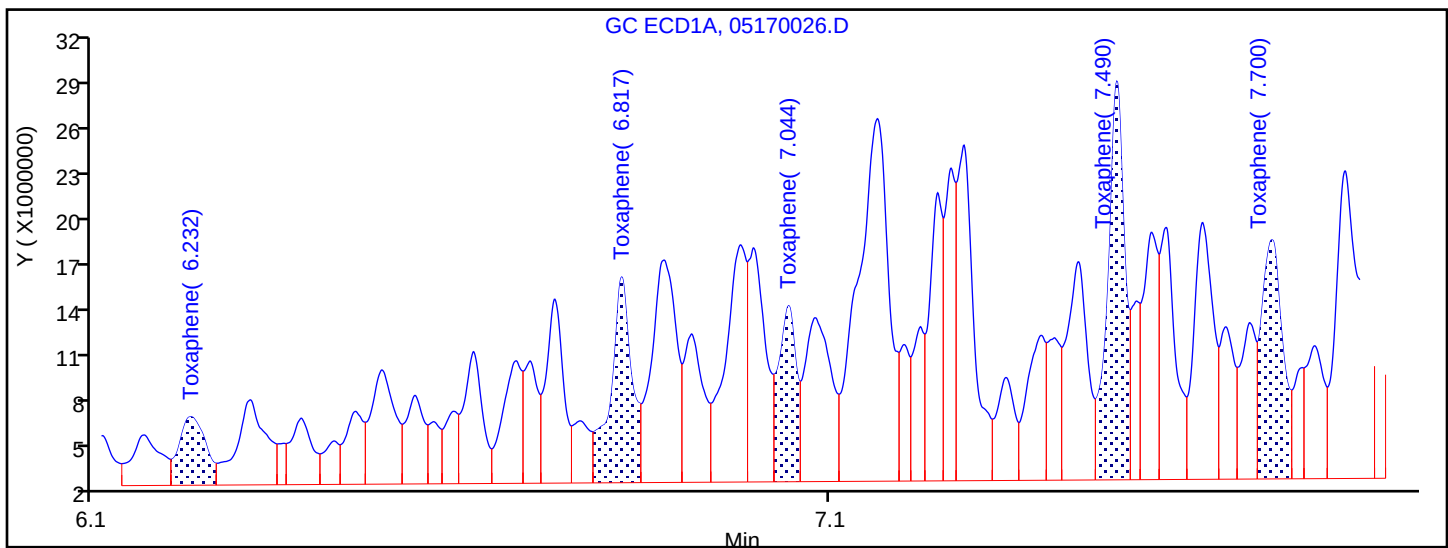
Column: CLP1 Pesticides Column 1 (0.32 mm) Detector

GC ECD1A

28 Toxaphene, CAS: 8001-35-2

Processing Integration Results

6.232	Response = 9965706
6.817	Response = 26218978
7.044	Response = 18912141
7.490	Response = 41959191
7.700	Response = 31339959



Manual Integration Results

6.232	Response = 11414676	M
6.817	Response = 27305093	M
7.044	Response = 19414143	M
7.490	Response = 42377105	M
7.700	Response = 31629069	M

Reviewer: mooret, 20-May-2019 19:06:11

Audit Action: Assigned New Baseline

Audit Reason: Baseline Smoothing
Page 1602 of 3784

FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458587/26 Calibration Date: 05/17/2019 20:35
 Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 17:49
 GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 04/04/2019 19:13
 Lab File ID: 05170026.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Toxaphene Peak 1	Lin2		0.0123		1910	2000	-4.3	20.0
Toxaphene Peak 2	Lin2		0.0210		1920	2000	-4.0	20.0
Toxaphene Peak 3	Lin2		0.0688		1780	2000	-11.0	20.0
Toxaphene Peak 4	Lin2		0.0178		1690	2000	-15.5	20.0
Toxaphene Peak 5	Lin2		0.0355		1580	2000	-20.9*	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab Sample ID: CCV 280-458587/26 Calibration Date: 05/17/2019 20:35
Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 17:49
GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 04/04/2019 19:13
Lab File ID: 05170026.D

Analyte	RT	RT WINDOW	
		FROM	TO
Toxaphene Peak 1	6.11	6.09	6.13
Toxaphene Peak 2	6.80	6.78	6.82
Toxaphene Peak 3	7.11	7.09	7.13
Toxaphene Peak 4	7.49	7.47	7.51
Toxaphene Peak 5	7.84	7.82	7.86

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170026.D
 Lims ID: CCV TOX
 Client ID:
 Sample Type: CCV
 Inject. Date: 17-May-2019 20:35:31 ALS Bottle#: 20 Worklist Smp#: 26
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: CCV TOX
 Misc. Info.: 280-0082009-026
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub3
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 20-May-2019 19:08:30 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0310

First Level Reviewer: mooret

Date: 20-May-2019 19:06:22

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

* 2 1-Bromo-2-nitrobenzene

1	3.019	3.014	0.005	89994644	150.0	150.0	
2	2.782	2.777	0.005	95474592	150.0	150.0	

28 Toxaphene

1	6.232	6.231	0.001	11414676	2000.0	1882.2	M
1	6.817	6.817	0.000	27305093	2000.0	1839.6	M
1	7.044	7.042	0.002	19414143	2000.0	1806.7	M
1	7.490	7.489	0.001	42377105	2000.0	1794.6	M
1	7.700	7.700	0.000	31629069	2000.0	1884.4	M

Average of Peak Amounts = 1841.5

2	6.108	6.106	0.002	15641667	2000.0	1914.4	M
2	6.797	6.796	0.001	26771349	2000.0	1920.9	M
2	7.114	7.112	0.002	87598742	2000.0	1780.9	M
2	7.487	7.486	0.001	22633797	2000.0	1689.1	M
2	7.836	7.835	0.001	45228271	2000.0	1581.0	M

Average of Peak Amounts = 1777.3

RPD = 3.55

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

8081TOXCCVL4_00016

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 20-May-2019 19:08:32

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170026.D

Injection Date: 17-May-2019 20:35:31

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: CCV TOX

Worklist Smp#: 26

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

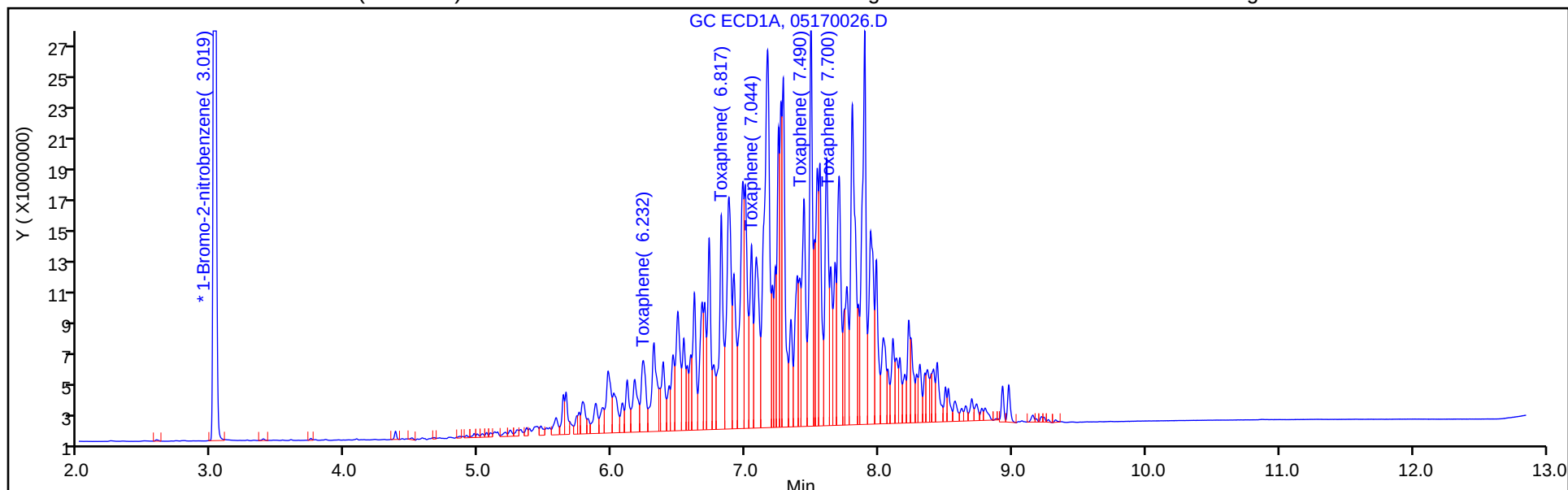
ALS Bottle#: 20

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

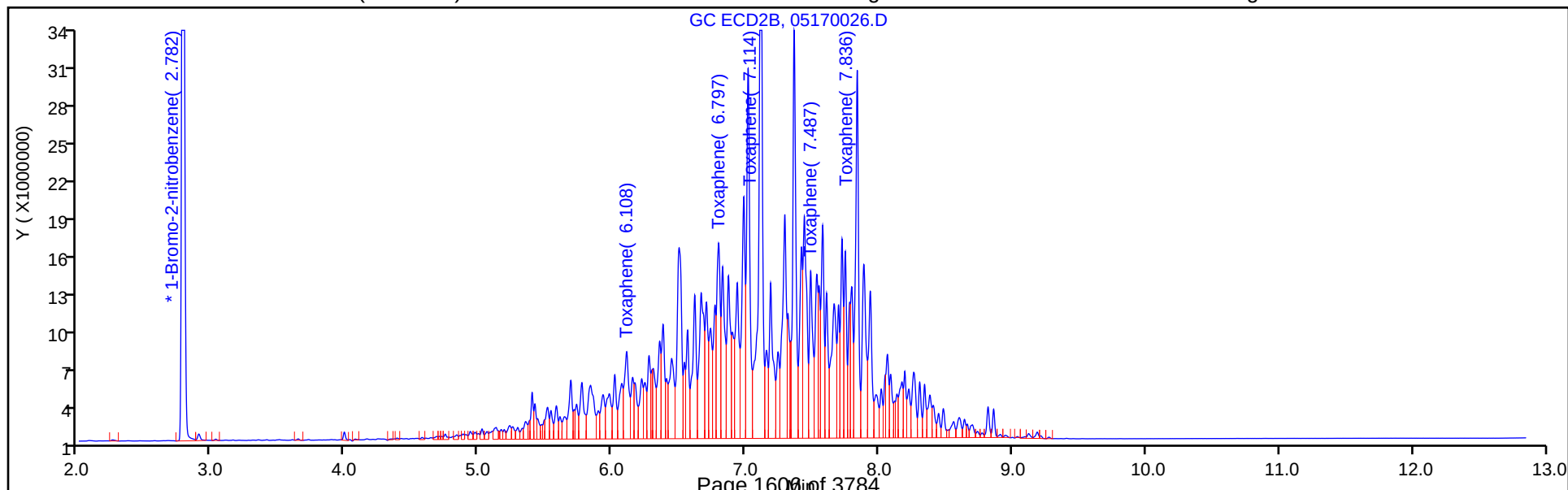
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170026.D

Injection Date: 17-May-2019 20:35:31

Instrument ID: SGC_P1

Lims ID: CCV TOX

Client ID:

Operator ID: TEM

ALS Bottle#: 20

Worklist Smp#: 26

Injection Vol: 1.0 ul

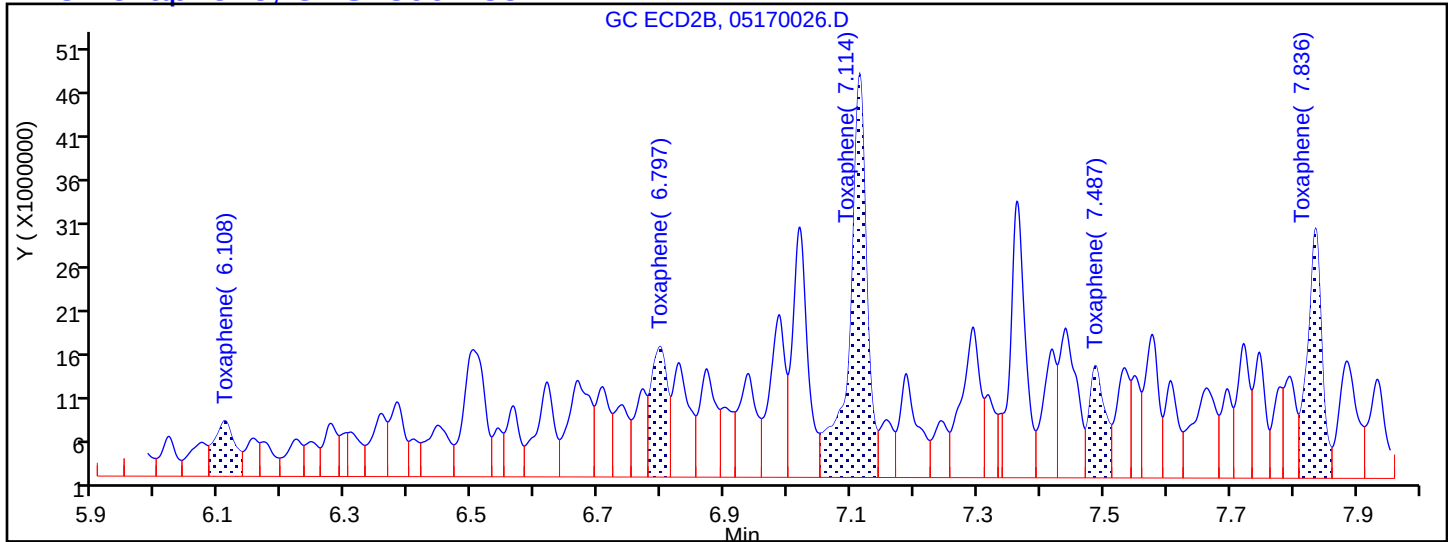
Dil. Factor: 1.0000

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

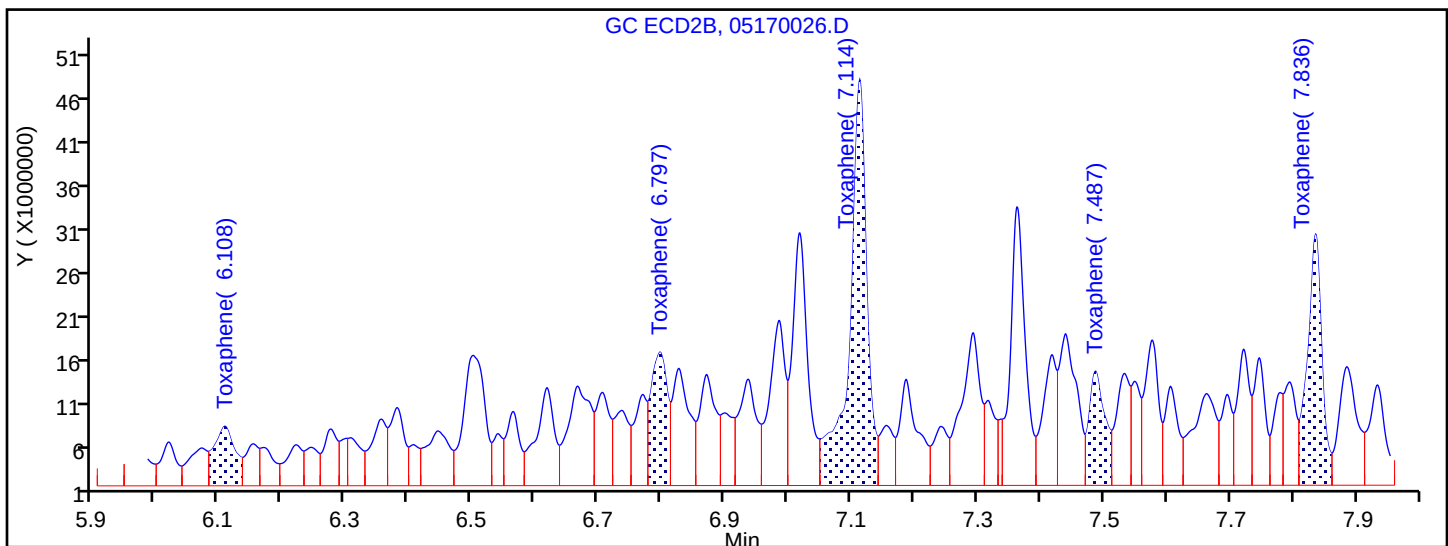
Column: CLP2 Pesticides Column 2 (0.32 mm) Detector

GC ECD2B

28 Toxaphene, CAS: 8001-35-2

Processing Integration Results

6.108	Response = 14254932
6.797	Response = 26086571
7.114	Response = 86110160
7.487	Response = 22128512
7.836	Response = 44772617



Manual Integration Results

6.108	Response = 15641667	M
6.797	Response = 26771349	M
7.114	Response = 87598742	M
7.487	Response = 22633797	M
7.836	Response = 45228271	M

Reviewer: mooret, 20-May-2019 19:06:20

Audit Action: Assigned New Baseline

Audit Reason: Baseline Smoothing
Page 1607 of 3784

FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458587/28 Calibration Date: 05/17/2019 21:10
 Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 20:54
 GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 04/04/2019 22:17
 Lab File ID: 05170028.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Hexachlorobenzene	Lin2		1.454		47.2	50.0	-5.6	20.0
alpha-BHC	Lin2		1.930		49.1	50.0	-1.8	20.0
gamma-BHC (Lindane)	Lin2		1.706		49.4	50.0	-1.1	20.0
beta-BHC	Lin2		0.7217		48.7	50.0	-2.6	20.0
delta-BHC	Lin2		1.720		48.8	50.0	-2.4	20.0
Heptachlor	Lin2		1.595		49.3	50.0	-1.4	20.0
Aldrin	Lin2		1.732		48.0	50.0	-4.0	20.0
Heptachlor epoxide	Lin2		1.519		48.3	50.0	-3.4	20.0
gamma-Chlordane	Lin2		1.576		48.1	50.0	-3.8	20.0
alpha-Chlordane	Lin2		1.525		47.8	50.0	-4.4	20.0
4,4'-DDE	Lin2		1.491		47.3	50.0	-5.5	20.0
Endosulfan I	Lin2		1.473		48.8	50.0	-2.5	20.0
Dieldrin	Lin2		1.588		47.9	50.0	-4.3	20.0
Endrin	Lin2		1.392		46.6	50.0	-6.7	20.0
4,4'-DDD	Lin2		1.257		49.4	50.0	-1.3	20.0
Endosulfan II	Lin2		1.345		49.2	50.0	-1.6	20.0
4,4'-DDT	Lin2		1.035		50.5	50.0	1.0	20.0
Endrin aldehyde	Lin2		1.066		48.8	50.0	-2.5	20.0
Methoxychlor	Lin		0.5660		54.9	50.0	9.7	20.0
Endosulfan sulfate	Lin2		1.221		49.3	50.0	-1.4	20.0
Endrin ketone	Lin2		1.409		52.9	50.0	5.9	20.0
Tetrachloro-m-xylene	Lin2		1.359		47.0	50.0	-6.1	20.0
DCB Decachlorobiphenyl	Lin2		1.058		49.5	50.0	-1.0	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458587/28 Calibration Date: 05/17/2019 21:10
 Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 20:54
 GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 04/04/2019 22:17
 Lab File ID: 05170028.D

Analyte	RT	RT WINDOW	
		FROM	TO
Hexachlorobenzene	4.33	4.32	4.34
alpha-BHC	4.50	4.49	4.51
gamma-BHC (Lindane)	4.79	4.78	4.80
beta-BHC	4.86	4.85	4.87
delta-BHC	5.01	5.00	5.02
Heptachlor	5.19	5.18	5.20
Aldrin	5.46	5.45	5.47
Heptachlor epoxide	6.07	6.06	6.08
gamma-Chlordane	6.20	6.19	6.21
alpha-Chlordane	6.34	6.33	6.35
4,4'-DDE	6.41	6.40	6.42
Endosulfan I	6.48	6.47	6.49
Dieldrin	6.72	6.71	6.73
Endrin	6.96	6.95	6.97
4,4'-DDD	7.01	7.00	7.02
Endosulfan II	7.17	7.16	7.18
4,4'-DDT	7.28	7.27	7.29
Endrin aldehyde	7.57	7.56	7.58
Methoxychlor	7.73	7.72	7.74
Endosulfan sulfate	7.98	7.97	7.99
Endrin ketone	8.24	8.23	8.25
Tetrachloro-m-xylene	3.92	3.91	3.93
DCB Decachlorobiphenyl	9.15	9.14	9.16

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170028.D
 Lims ID: CCV AB
 Client ID:
 Sample Type: CCV
 Inject. Date: 17-May-2019 21:10:19 ALS Bottle#: 22 Worklist Smp#: 28
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: CCV AB
 Misc. Info.: 280-0082009-028
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub6
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 20-May-2019 19:08:35 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0310

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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S 1 Hexachlorocyclohexane, technical

1					196.0		
2					192.3		
RPD = 1.93							

* 2 1-Bromo-2-nitrobenzene

1	3.017	3.014	0.003	87455261	150.0	150.0	
2	2.780	2.777	0.002	93072722	150.0	150.0	

\$ 4 Tetrachloro-m-xylene

1	3.923	3.921	0.002	39627614	50.0	47.0	
2	3.766	3.765	0.001	37876396	50.0	47.5	
RPD = 1.22							

5 Hexachlorobenzene

1	4.332	4.330	0.002	42398588	50.0	47.2	
2	4.242	4.242	0.000	42345366	50.0	47.3	
RPD = 0.14							

8 alpha-BHC

1	4.499	4.497	0.002	56277045	50.0	49.1	
2	4.386	4.384	0.002	56641250	50.0	48.7	
RPD = 0.72							

9 gamma-BHC (Lindane)

1	4.787	4.787	0.000	49744229	50.0	49.4	
2	4.697	4.696	0.001	50519650	50.0	48.3	
RPD = 2.32							

10 beta-BHC

1	4.862	4.861	0.001	21038240	50.0	48.7	
2	4.772	4.771	0.001	21360681	50.0	47.7	
RPD = 2.03							

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170028.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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12 delta-BHC

1	5.011	5.010	0.001	50141138	50.0	48.8	
2	5.005	5.003	0.002	50305004	50.0	47.5	
RPD = 2.65							

15 Heptachlor

1	5.190	5.190	0.000	46507974	50.0	49.3	
2	5.048	5.047	0.001	46632904	50.0	48.0	
RPD = 2.61							

16 Aldrin

1	5.460	5.460	0.000	50498679	50.0	48.0	
2	5.311	5.310	0.001	50897159	50.0	47.0	
RPD = 2.07							

18 Isodrin

1	5.783	5.782	0.001	42220692	50.0	48.1	
2	5.663	5.662	0.001	40379097	50.0	47.1	
RPD = 2.00							

21 Heptachlor epoxide

1	6.067	6.067	0.000	44290756	50.0	48.3	
2	5.839	5.837	0.002	45097513	50.0	47.0	
RPD = 2.60							

22 trans-Chlordane

1	6.197	6.197	0.000	45939171	50.0	48.1	
2	6.034	6.032	0.002	45863452	50.0	47.1	
RPD = 2.13							

23 cis-Chlordane

1	6.337	6.337	0.000	44468114	50.0	47.8	
2	6.188	6.187	0.001	44967773	50.0	46.5	
RPD = 2.61							

24 4,4'-DDE

1	6.411	6.410	0.001	43475818	50.0	47.3	
2	6.365	6.363	0.002	47002458	50.0	46.0	
RPD = 2.70							

25 Endosulfan I

1	6.481	6.480	0.001	42954076	50.0	48.8	
2	6.245	6.243	0.002	43129895	50.0	46.9	
RPD = 3.84							

27 Dieldrin

1	6.722	6.722	0.000	46295028	50.0	47.9	
2	6.523	6.522	0.001	47747018	50.0	46.6	
RPD = 2.76							

30 Endrin

1	6.955	6.955	0.000	40570466	50.0	46.6	
2	6.825	6.823	0.002	41947577	50.0	45.7	
RPD = 1.92							

32 4,4'-DDD

1	7.008	7.008	0.000	36633974	50.0	49.4	
2	6.941	6.939	0.002	37754093	50.0	47.4	
RPD = 3.96							

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170028.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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34 Endosulfan II

1	7.171	7.172	-0.001	39217388	50.0	49.2	
2	7.031	7.030	0.001	41035179	50.0	47.0	
RPD = 4.49							

35 4,4'-DDT

1	7.280	7.279	0.001	30180126	50.0	50.5	
2	7.242	7.242	0.000	32853783	50.0	46.4	
RPD = 8.53							

36 Endrin aldehyde

1	7.574	7.573	0.001	31062116	50.0	48.8	
2	7.355	7.355	0.000	33156629	50.0	47.4	
RPD = 2.79							

37 Methoxychlor

1	7.731	7.731	0.000	16498421	50.0	54.9	
2	7.886	7.885	0.001	15858885	50.0	49.7	
RPD = 9.95							

38 Mirex

1	7.887	7.886	0.001	27277267	50.0	49.4	
2	8.065	8.065	0.000	27090859	50.0	43.9	
RPD = 11.70							

39 Endosulfan sulfate

1	7.981	7.982	-0.001	35598279	50.0	49.3	
2	7.615	7.614	0.001	37094814	50.0	47.1	
RPD = 4.62							

40 Endrin ketone

1	8.241	8.241	0.000	41082937	50.0	52.9	
2	8.101	8.101	0.000	43153376	50.0	48.4	
RPD = 8.85							

\$ 41 DCB Decachlorobiphenyl

1	9.153	9.153	0.000	30844424	50.0	49.5	
2	9.231	9.231	0.000	30103899	50.0	45.1	
RPD = 9.37							

S 3 Endosulfan, Total

1						147.3	
2						141.0	
RPD = 4.32							

Reagents:

8081IcalL4_00033

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 20-May-2019 19:08:36

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170028.D

Injection Date: 17-May-2019 21:10:19

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: CCV AB

Worklist Smp#: 28

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

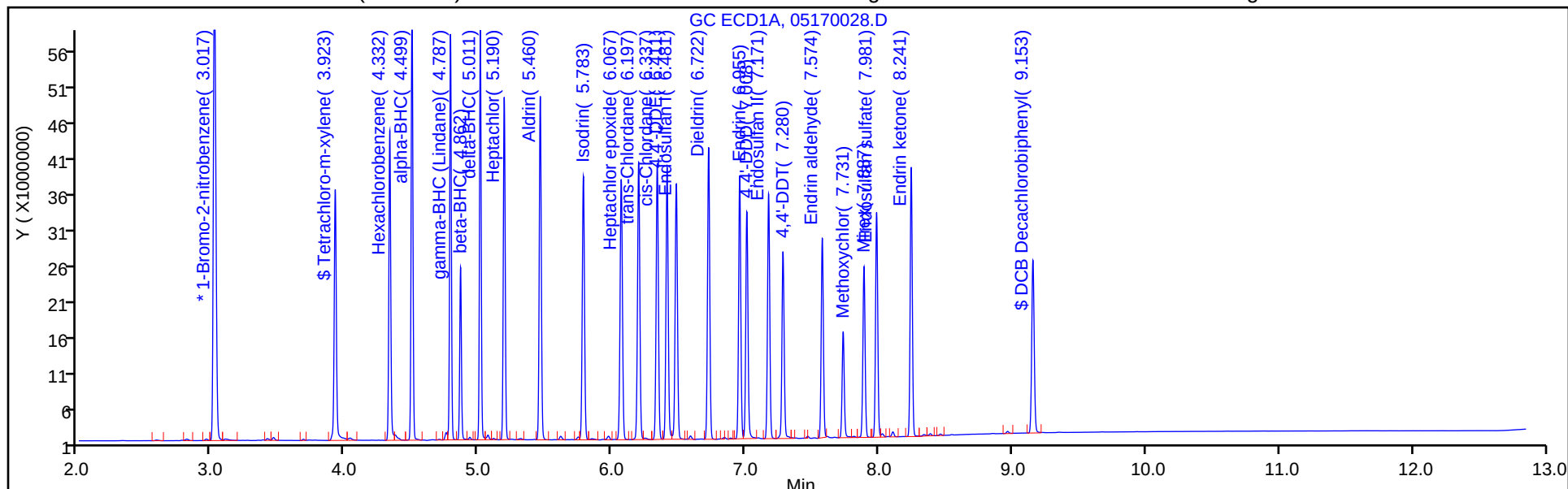
ALS Bottle#: 22

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

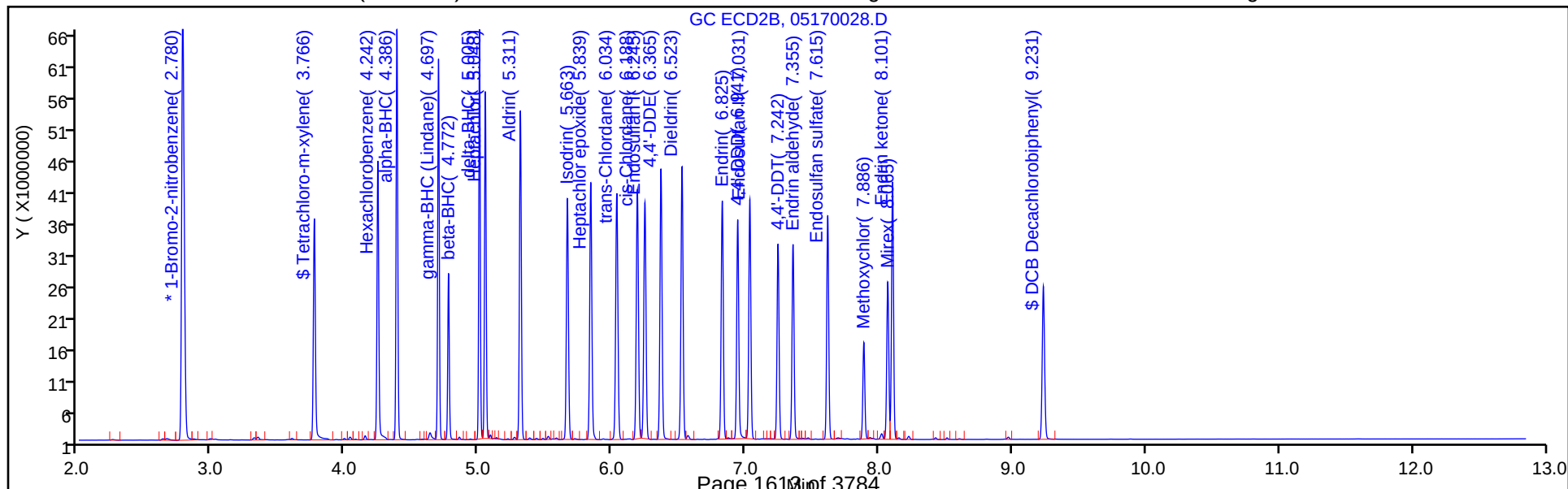
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458587/28 Calibration Date: 05/17/2019 21:10
 Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 20:54
 GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 04/04/2019 22:17
 Lab File ID: 05170028.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Hexachlorobenzene	Lin2		1.365		47.3	50.0	-5.5	20.0
alpha-BHC	Lin2		1.826		48.7	50.0	-2.5	20.0
gamma-BHC (Lindane)	Lin2		1.628		48.3	50.0	-3.4	20.0
beta-BHC	Lin2		0.6885		47.7	50.0	-4.6	20.0
delta-BHC	Lin2		1.621		47.5	50.0	-4.9	20.0
Heptachlor	Lin2		1.503		48.0	50.0	-4.0	20.0
Aldrin	Lin2		1.641		47.0	50.0	-5.9	20.0
Heptachlor epoxide	Lin2		1.454		47.0	50.0	-5.9	20.0
gamma-Chlordane	Lin2		1.478		47.1	50.0	-5.9	20.0
alpha-Chlordane	Lin2		1.449		46.5	50.0	-6.9	20.0
Endosulfan I	Lin2		1.390		46.9	50.0	-6.1	20.0
4,4'-DDE	Lin2		1.515		46.0	50.0	-8.0	20.0
Dieldrin	Lin2		1.539		46.6	50.0	-6.9	20.0
Endrin	Lin2		1.352		45.7	50.0	-8.5	20.0
4,4'-DDD	Lin2		1.217		47.4	50.0	-5.1	20.0
Endosulfan II	Lin2		1.323		47.0	50.0	-6.0	20.0
4,4'-DDT	Lin2		1.059		46.4	50.0	-7.3	20.0
Endrin aldehyde	Lin2		1.069		47.4	50.0	-5.2	20.0
Endosulfan sulfate	Lin2		1.196		47.1	50.0	-5.8	20.0
Methoxychlor	Lin2		0.5112		49.7	50.0	-0.7	20.0
Endrin ketone	Lin2		1.391		48.4	50.0	-3.1	20.0
Tetrachloro-m-xylene	Lin2		1.221		47.5	50.0	-4.9	20.0
DCB Decachlorobiphenyl	Lin2		0.9703		45.1	50.0	-9.8	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458587/28 Calibration Date: 05/17/2019 21:10
 Instrument ID: SGC_P1 Calib Start Date: 04/04/2019 20:54
 GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 04/04/2019 22:17
 Lab File ID: 05170028.D

Analyte	RT	RT WINDOW	
		FROM	TO
Hexachlorobenzene	4.24	4.23	4.25
alpha-BHC	4.39	4.37	4.39
gamma-BHC (Lindane)	4.70	4.69	4.71
beta-BHC	4.77	4.76	4.78
delta-BHC	5.01	4.99	5.01
Heptachlor	5.05	5.04	5.06
Aldrin	5.31	5.30	5.32
Heptachlor epoxide	5.84	5.83	5.85
gamma-Chlordane	6.03	6.02	6.04
alpha-Chlordane	6.19	6.18	6.20
Endosulfan I	6.25	6.23	6.25
4,4'-DDE	6.37	6.35	6.37
Dieldrin	6.52	6.51	6.53
Endrin	6.83	6.81	6.83
4,4'-DDD	6.94	6.93	6.95
Endosulfan II	7.03	7.02	7.04
4,4'-DDT	7.24	7.23	7.25
Endrin aldehyde	7.36	7.35	7.37
Endosulfan sulfate	7.62	7.60	7.62
Methoxychlor	7.89	7.88	7.90
Endrin ketone	8.10	8.09	8.11
Tetrachloro-m-xylene	3.77	3.76	3.78
DCB Decachlorobiphenyl	9.23	9.22	9.24

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170028.D
 Lims ID: CCV AB
 Client ID:
 Sample Type: CCV
 Inject. Date: 17-May-2019 21:10:19 ALS Bottle#: 22 Worklist Smp#: 28
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: CCV AB
 Misc. Info.: 280-0082009-028
 Operator ID: TEM Instrument ID: SGC_P1
 Sublist: chrom-P1 8081 IS*sub6
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 20-May-2019 19:08:35 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0310

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

S 1 Hexachlorocyclohexane, technical

1					196.0		
2					192.3		
RPD = 1.93							

* 2 1-Bromo-2-nitrobenzene

1	3.017	3.014	0.003	87455261	150.0	150.0	
2	2.780	2.777	0.002	93072722	150.0	150.0	

\$ 4 Tetrachloro-m-xylene

1	3.923	3.921	0.002	39627614	50.0	47.0	
2	3.766	3.765	0.001	37876396	50.0	47.5	
RPD = 1.22							

5 Hexachlorobenzene

1	4.332	4.330	0.002	42398588	50.0	47.2	
2	4.242	4.242	0.000	42345366	50.0	47.3	
RPD = 0.14							

8 alpha-BHC

1	4.499	4.497	0.002	56277045	50.0	49.1	
2	4.386	4.384	0.002	56641250	50.0	48.7	
RPD = 0.72							

9 gamma-BHC (Lindane)

1	4.787	4.787	0.000	49744229	50.0	49.4	
2	4.697	4.696	0.001	50519650	50.0	48.3	
RPD = 2.32							

10 beta-BHC

1	4.862	4.861	0.001	21038240	50.0	48.7	
2	4.772	4.771	0.001	21360681	50.0	47.7	
RPD = 2.03							

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170028.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

12 delta-BHC

1	5.011	5.010	0.001	50141138	50.0	48.8	
2	5.005	5.003	0.002	50305004	50.0	47.5	
RPD = 2.65							

15 Heptachlor

1	5.190	5.190	0.000	46507974	50.0	49.3	
2	5.048	5.047	0.001	46632904	50.0	48.0	
RPD = 2.61							

16 Aldrin

1	5.460	5.460	0.000	50498679	50.0	48.0	
2	5.311	5.310	0.001	50897159	50.0	47.0	
RPD = 2.07							

18 Isodrin

1	5.783	5.782	0.001	42220692	50.0	48.1	
2	5.663	5.662	0.001	40379097	50.0	47.1	
RPD = 2.00							

21 Heptachlor epoxide

1	6.067	6.067	0.000	44290756	50.0	48.3	
2	5.839	5.837	0.002	45097513	50.0	47.0	
RPD = 2.60							

22 trans-Chlordane

1	6.197	6.197	0.000	45939171	50.0	48.1	
2	6.034	6.032	0.002	45863452	50.0	47.1	
RPD = 2.13							

23 cis-Chlordane

1	6.337	6.337	0.000	44468114	50.0	47.8	
2	6.188	6.187	0.001	44967773	50.0	46.5	
RPD = 2.61							

24 4,4'-DDE

1	6.411	6.410	0.001	43475818	50.0	47.3	
2	6.365	6.363	0.002	47002458	50.0	46.0	
RPD = 2.70							

25 Endosulfan I

1	6.481	6.480	0.001	42954076	50.0	48.8	
2	6.245	6.243	0.002	43129895	50.0	46.9	
RPD = 3.84							

27 Dieldrin

1	6.722	6.722	0.000	46295028	50.0	47.9	
2	6.523	6.522	0.001	47747018	50.0	46.6	
RPD = 2.76							

30 Endrin

1	6.955	6.955	0.000	40570466	50.0	46.6	
2	6.825	6.823	0.002	41947577	50.0	45.7	
RPD = 1.92							

32 4,4'-DDD

1	7.008	7.008	0.000	36633974	50.0	49.4	
2	6.941	6.939	0.002	37754093	50.0	47.4	
RPD = 3.96							

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170028.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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34 Endosulfan II

1	7.171	7.172	-0.001	39217388	50.0	49.2	
2	7.031	7.030	0.001	41035179	50.0	47.0	
RPD = 4.49							

35 4,4'-DDT

1	7.280	7.279	0.001	30180126	50.0	50.5	
2	7.242	7.242	0.000	32853783	50.0	46.4	
RPD = 8.53							

36 Endrin aldehyde

1	7.574	7.573	0.001	31062116	50.0	48.8	
2	7.355	7.355	0.000	33156629	50.0	47.4	
RPD = 2.79							

37 Methoxychlor

1	7.731	7.731	0.000	16498421	50.0	54.9	
2	7.886	7.885	0.001	15858885	50.0	49.7	
RPD = 9.95							

38 Mirex

1	7.887	7.886	0.001	27277267	50.0	49.4	
2	8.065	8.065	0.000	27090859	50.0	43.9	
RPD = 11.70							

39 Endosulfan sulfate

1	7.981	7.982	-0.001	35598279	50.0	49.3	
2	7.615	7.614	0.001	37094814	50.0	47.1	
RPD = 4.62							

40 Endrin ketone

1	8.241	8.241	0.000	41082937	50.0	52.9	
2	8.101	8.101	0.000	43153376	50.0	48.4	
RPD = 8.85							

\$ 41 DCB Decachlorobiphenyl

1	9.153	9.153	0.000	30844424	50.0	49.5	
2	9.231	9.231	0.000	30103899	50.0	45.1	
RPD = 9.37							

S 3 Endosulfan, Total

1						147.3	
2						141.0	
RPD = 4.32							

Reagents:

8081IcalL4_00033

Amount Added: 1.00

Units: mL

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 20-May-2019 19:08:36

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170028.D

Injection Date: 17-May-2019 21:10:19

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: CCV AB

Worklist Smp#: 28

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

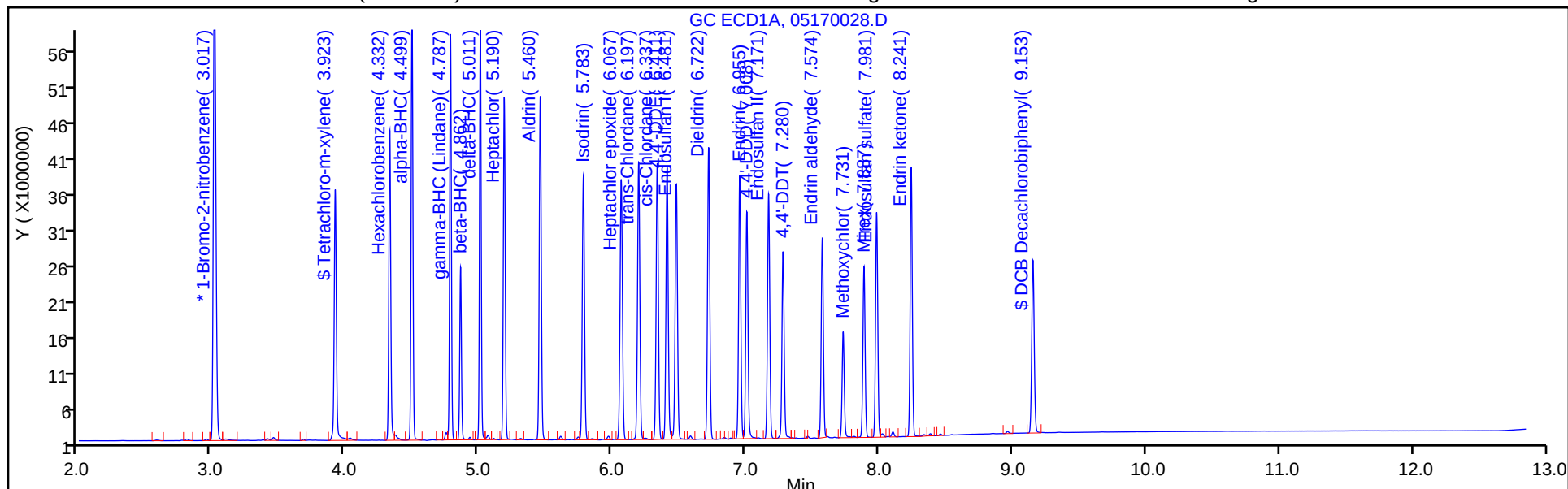
ALS Bottle#: 22

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

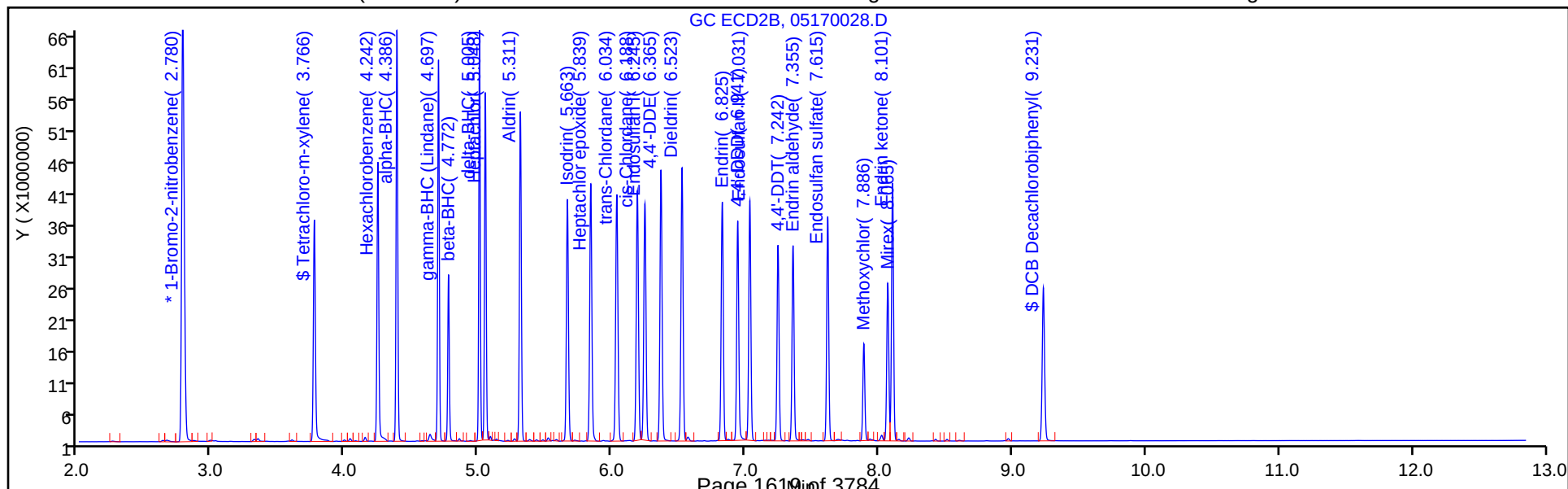
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: MB 280-457201/1-A
Matrix: Water Lab File ID: 05170014.D
Analysis Method: 8081B Date Collected: _____
Extraction Method: 3510C Date Extracted: 05/06/2019 15:29
Sample wt/vol: 1000 (mL) Date Analyzed: 05/17/2019 17:06
Con. Extract Vol.: 10 (mL) Dilution Factor: 1
Injection Volume: 1 (uL) GC Column: CLP1 ID: 0.32 (mm)
% Moisture: _____ GPC Cleanup: (Y/N) N
Analysis Batch No.: 458587 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
72-54-8	4,4'-DDD	0.020	U	0.050	0.020	0.0077
72-55-9	4,4'-DDE	0.020	U	0.050	0.020	0.0075
50-29-3	4,4'-DDT	0.050	U	0.050	0.050	0.015
309-00-2	Aldrin	0.020	U	0.050	0.020	0.0059
319-84-6	alpha-BHC	0.020	U	0.050	0.020	0.0053
5103-71-9	alpha-Chlordane	0.020	U	0.050	0.020	0.0053
319-85-7	beta-BHC	0.020	U	0.050	0.020	0.0087
319-86-8	delta-BHC	0.020	U	0.050	0.020	0.0058
60-57-1	Dieldrin	0.020	U	0.050	0.020	0.0063
959-98-8	Endosulfan I	0.020	U	0.050	0.020	0.0058
33213-65-9	Endosulfan II	0.020	U	0.050	0.020	0.0070
1031-07-8	Endosulfan sulfate	0.020	U	0.050	0.020	0.0057
72-20-8	Endrin	0.020	U	0.050	0.020	0.0079
7421-93-4	Endrin aldehyde	0.020	U	0.050	0.020	0.0088
53494-70-5	Endrin ketone	0.020	U	0.050	0.020	0.0070
58-89-9	gamma-BHC (Lindane)	0.020	U	0.050	0.020	0.0069
5103-74-2	gamma-Chlordane	0.020	U	0.050	0.020	0.0091
76-44-8	Heptachlor	0.020	U	0.050	0.020	0.0077
1024-57-3	Heptachlor epoxide	0.020	U	0.050	0.020	0.0075
72-43-5	Methoxychlor	0.050	U	0.050	0.050	0.013
8001-35-2	Toxaphene	0.80	U	2.0	0.80	0.37

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	82		34-122
877-09-8	Tetrachloro-m-xylene	78		44-124

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170014.D
 Lims ID: MB 280-457201/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 17-May-2019 17:06:44 ALS Bottle#: 8 Worklist Smp#: 14
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: MB 280-457201/1-
 Misc. Info.: 280-0082009-014
 Operator ID: TEM Instrument ID: SGC_P1
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 29-May-2019 17:23:59 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0314

First Level Reviewer: mooret

Date: 20-May-2019 13:10:02

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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S 1 Hexachlorocyclohexane, technical

1	1.000	ND
2	0.000	

* 2 1-Bromo-2-nitrobenzene

1	3.016	3.016	0.001	90409519	150.0	150.0
2	2.778	2.778	0.000	95612958	150.0	150.0

\$ 4 Tetrachloro-m-xylene

1	3.921	3.921	0.000	13947995	20.0	15.6
2	3.765	3.765	0.000	13263086	20.0	15.6

RPD = 0.40

7 Propachlor

1	4.138	ND
2	3.952	

5 Hexachlorobenzene

1	4.330	ND
2	4.242	

6 Diallate

1	4.353	ND
2	4.194	

8 alpha-BHC

1	4.497	ND
2	4.384	

9 gamma-BHC (Lindane)

1	4.787	ND
2	4.696	

11 2,4,5-Trichlorophenol

1	4.838	ND
2	4.774	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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10 beta-BHC

1	4.861					ND	
2	4.771						

12 delta-BHC

1	5.010					ND	
2	5.003						

13 Technical Chlordane

1	5.122					ND	
1	5.589						
1	6.198						
1	6.335						
1	7.107						
2	4.934						
2	5.446						
2	6.033						
2	6.188						
2	7.076						

14 Chlordane (technical)

1	5.122					ND	
1	5.589						
1	6.198						
1	6.335						
1	7.107						
2	4.934						
2	5.446						
2	6.033						
2	6.188						
2	7.076						

15 Heptachlor

1	5.190					ND	
2	5.047						

16 Aldrin

1	5.460					ND	
2	5.310						

17 Chlorpyrifos

1	5.686					ND	
2	5.525						

18 Isodrin

1	5.782					ND	
2	5.662						

19 Dicofof

1	5.817					ND	
2	5.621						

20 2,4'-DDE

1	6.051					ND	
2	6.040						

21 Heptachlor epoxide

1	6.067					ND	
2	5.837						

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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22 trans-Chlordane

1	6.197					ND	
2	6.032						

28 Toxaphene

1	6.231					ND	
1	6.817						
1	7.042						
1	7.489						
1	7.700						
2	6.106						
2	6.796						
2	7.112						
2	7.486						
2	7.835						

23 cis-Chlordane

1	6.337					ND	
2	6.187						

24 4,4'-DDE

1	6.410					ND	
2	6.363						

25 Endosulfan I

1	6.480					ND	
2	6.243						

26 2,4'-DDD

1	6.586					ND	
2	6.566						

27 Dieldrin

1	6.722					ND	
2	6.522						

29 2,4'-DDT

1	6.841					ND	
2	6.867						

30 Endrin

1	6.955					ND	
2	6.823						

31 Kepone

1	7.001	6.996	0.005	210592		20.5	
2	6.936	6.933	0.003	166813		15.7	
						RPD = 26.70	

32 4,4'-DDD

1	7.008					ND	
2	6.939						

33 Chlorobenzilate

1	7.019					ND	
2	6.816						

34 Endosulfan II

1	7.172					ND	
2	7.030						

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170014.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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35 4,4'-DDT

1	7.279					ND	
2	7.242						

36 Endrin aldehyde

1	7.573					ND	
2	7.355						

37 Methoxychlor

1	7.731					ND	
2	7.885						

38 Mirex

1	7.886					ND	
2	8.065						

39 Endosulfan sulfate

1	7.982					ND	
2	7.614						

40 Endrin ketone

1	8.241					ND	
2	8.101						

\$ 41 DCB Decachlorobiphenyl

1	9.153	9.153	0.000	10975377	20.0	16.4	
2	9.231	9.231	0.000	10746702	20.0	14.8	
RPD = 10.12							

42 Tris(2,3-dibromopropyl)phosphate

1	10.868					ND	
2	10.896						

S 3 Endosulfan, Total

1	0.000					ND	
2	0.000						

Reagents:

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 29-May-2019 17:24:35

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170014.D

Injection Date: 17-May-2019 17:06:44

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: MB 280-457201/1-A

Worklist Smp#: 14

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

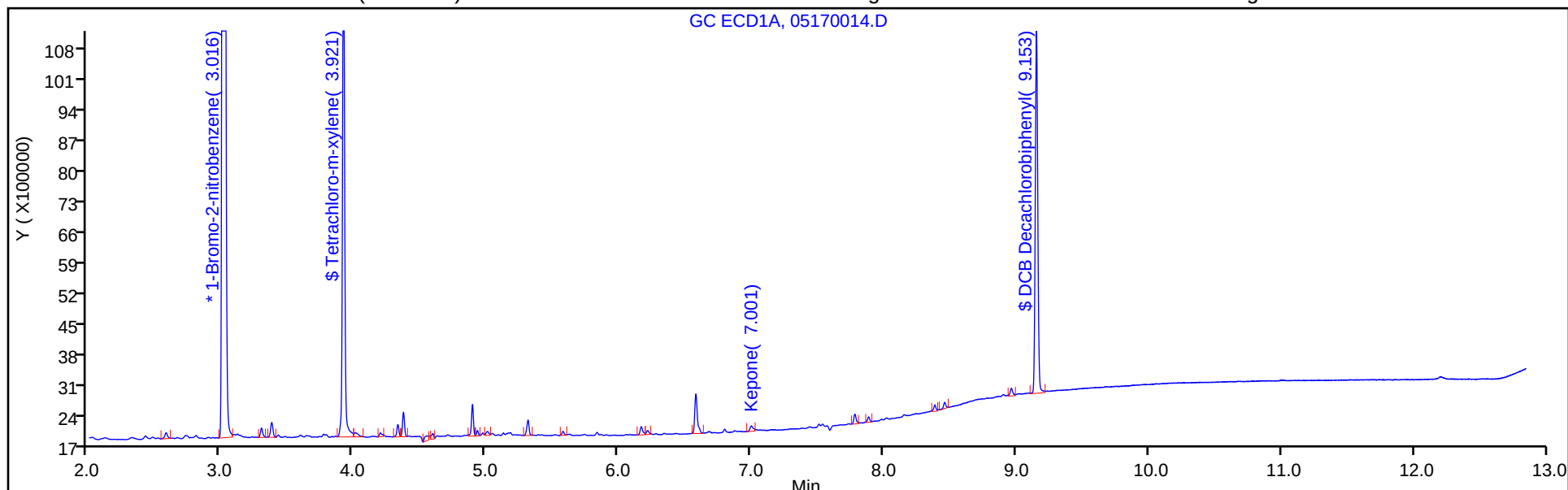
ALS Bottle#: 8

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

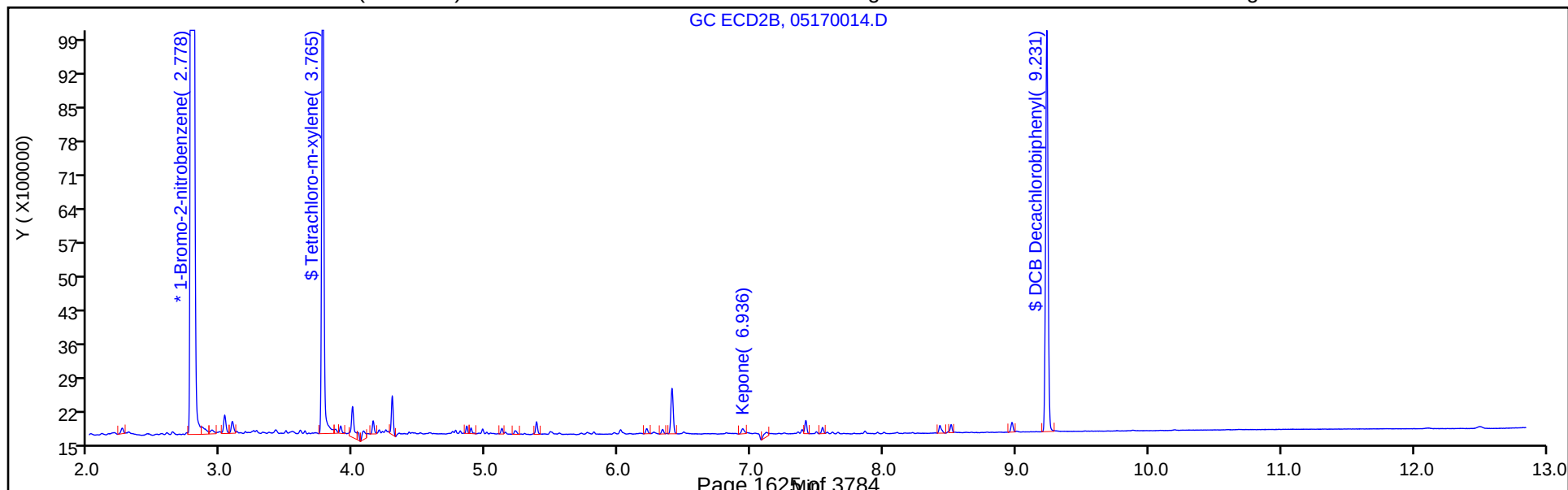
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170014.D
 Lims ID: MB 280-457201/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 17-May-2019 17:06:44 ALS Bottle#: 8 Worklist Smp#: 14
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: MB 280-457201/1-
 Misc. Info.: 280-0082009-014
 Operator ID: TEM Instrument ID: SGC_P1
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 29-May-2019 17:23:59 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0314
 First Level Reviewer: mooret Date: 20-May-2019 13:10:02

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Tetrachloro-m-xylene	20.0	15.6	77.86
\$ 41 DCB Decachlorobiphenyl	20.0	16.4	82.13

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Tetrachloro-m-xylene	20.0	15.6	78.18
\$ 41 DCB Decachlorobiphenyl	20.0	14.8	74.22

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCS 280-457201/2-A
 Matrix: Water Lab File ID: 05170015.D
 Analysis Method: 8081B Date Collected: _____
 Extraction Method: 3510C Date Extracted: 05/06/2019 15:29
 Sample wt/vol: 1000 (mL) Date Analyzed: 05/17/2019 17:24
 Con. Extract Vol.: 10 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) GC Column: CLP1 ID: 0.32 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 458587 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
72-54-8	4,4'-DDD	0.445		0.050	0.020	0.0077
72-55-9	4,4'-DDE	0.450		0.050	0.020	0.0075
50-29-3	4,4'-DDT	0.518		0.050	0.050	0.015
309-00-2	Aldrin	0.375		0.050	0.020	0.0059
319-84-6	alpha-BHC	0.449		0.050	0.020	0.0053
5103-71-9	alpha-Chlordane	0.438		0.050	0.020	0.0053
319-85-7	beta-BHC	0.448		0.050	0.020	0.0087
319-86-8	delta-BHC	0.451		0.050	0.020	0.0058
60-57-1	Dieldrin	0.445		0.050	0.020	0.0063
959-98-8	Endosulfan I	0.431		0.050	0.020	0.0058
33213-65-9	Endosulfan II	0.411		0.050	0.020	0.0070
1031-07-8	Endosulfan sulfate	0.446		0.050	0.020	0.0057
72-20-8	Endrin	0.450		0.050	0.020	0.0079
7421-93-4	Endrin aldehyde	0.385		0.050	0.020	0.0088
53494-70-5	Endrin ketone	0.444		0.050	0.020	0.0070
58-89-9	gamma-BHC (Lindane)	0.457		0.050	0.020	0.0069
5103-74-2	gamma-Chlordane	0.440		0.050	0.020	0.0091
76-44-8	Heptachlor	0.430		0.050	0.020	0.0077
1024-57-3	Heptachlor epoxide	0.448		0.050	0.020	0.0075
72-43-5	Methoxychlor	0.486		0.050	0.050	0.013

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	86		34-122
877-09-8	Tetrachloro-m-xylene	76		44-124

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170015.D
 Lims ID: LCS 280-457201/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 17-May-2019 17:24:04 ALS Bottle#: 9 Worklist Smp#: 15
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: LCS 280-457201/2
 Misc. Info.: 280-0082009-015
 Operator ID: TEM Instrument ID: SGC_P1
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 29-May-2019 17:23:59 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0314

First Level Reviewer: mooret

Date: 20-May-2019 13:10:23

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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* 2 1-Bromo-2-nitrobenzene

1	3.015	3.016	-0.001	92343173	150.0	150.0
2	2.778	2.778	0.000	96939415	150.0	150.0

\$ 4 Tetrachloro-m-xylene

1	3.921	3.921	0.000	13863660	20.0	15.1
2	3.765	3.765	0.000	13436884	20.0	15.6

RPD = 3.16

5 Hexachlorobenzene

1	4.330	4.330	0.000	40212832	50.0	42.3
2	4.241	4.242	-0.001	39280630	50.0	42.0

RPD = 0.83

8 alpha-BHC

1	4.497	4.497	0.000	54431538	50.0	44.9
2	4.384	4.384	0.000	54346126	50.0	44.8

RPD = 0.20

9 gamma-BHC (Lindane)

1	4.787	4.787	0.000	48554437	50.0	45.7
2	4.697	4.696	0.001	48964428	50.0	44.9

RPD = 1.70

10 beta-BHC

1	4.862	4.861	0.001	20465567	50.0	44.8
2	4.772	4.771	0.001	20556023	50.0	44.0

RPD = 1.77

12 delta-BHC

1	5.011	5.010	0.001	48977542	50.0	45.1
2	5.004	5.003	0.001	49373287	50.0	44.8

RPD = 0.82

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170015.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

15 Heptachlor

1	5.189	5.190	-0.001	42874477	50.0	43.0	
2	5.047	5.047	0.000	42992852	50.0	42.4	
RPD = 1.32							

16 Aldrin

1	5.459	5.460	-0.001	41736630	50.0	37.5	
2	5.310	5.310	0.000	41790208	50.0	36.9	
RPD = 1.54							

21 Heptachlor epoxide

1	6.067	6.067	0.000	43462998	50.0	44.8	
2	5.838	5.837	0.001	43813019	50.0	43.8	
RPD = 2.28							

22 trans-Chlordane

1	6.197	6.197	0.000	44489066	50.0	44.0	
2	6.033	6.032	0.001	45237945	50.0	44.5	
RPD = 1.13							

23 cis-Chlordane

1	6.337	6.337	0.000	43103881	50.0	43.8	
2	6.187	6.187	0.000	43538944	50.0	43.2	
RPD = 1.37							

24 4,4'-DDE

1	6.410	6.410	0.000	43704749	50.0	45.0	
2	6.364	6.363	0.001	44632693	50.0	41.9	
RPD = 7.08							

25 Endosulfan I

1	6.481	6.480	0.001	40185708	50.0	43.1	
2	6.244	6.243	0.001	40226908	50.0	41.9	
RPD = 2.85							

27 Dieldrin

1	6.722	6.722	0.000	45494342	50.0	44.5	
2	6.522	6.522	0.000	46482814	50.0	43.5	
RPD = 2.37							

30 Endrin

1	6.955	6.955	0.000	41349665	50.0	45.0	
2	6.823	6.823	0.000	42130171	50.0	44.1	
RPD = 2.05							

32 4,4'-DDD

1	7.009	7.008	0.001	34925095	50.0	44.5	
2	6.939	6.939	0.000	36882285	50.0	44.4	
RPD = 0.20							

34 Endosulfan II

1	7.172	7.172	0.000	34620270	50.0	41.1	
2	7.031	7.030	0.001	36045752	50.0	39.5	
RPD = 3.87							

35 4,4'-DDT

1	7.280	7.279	0.001	32690012	50.0	51.8	
2	7.242	7.242	0.000	32455779	50.0	44.0	
RPD = 16.37							

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170015.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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36 Endrin aldehyde

1	7.574	7.573	0.001	25962171	50.0	38.5	
2	7.354	7.355	-0.001	27674536	50.0	37.8	
RPD = 1.76							

37 Methoxychlor

1	7.730	7.731	-0.001	15410152	50.0	48.6	
2	7.886	7.885	0.001	15163521	50.0	45.6	
RPD = 6.46							

39 Endosulfan sulfate

1	7.982	7.982	0.000	33984399	50.0	44.6	
2	7.614	7.614	0.000	35211317	50.0	42.9	
RPD = 3.89							

40 Endrin ketone

1	8.240	8.241	-0.001	36446796	50.0	44.4	
2	8.102	8.101	0.001	37954105	50.0	40.8	
RPD = 8.43							

\$ 41 DCB Decachlorobiphenyl

1	9.153	9.153	0.000	11693421	20.0	17.2	
2	9.232	9.231	0.001	11501978	20.0	15.7	
RPD = 8.72							

Reagents:

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 29-May-2019 17:24:33

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170015.D

Injection Date: 17-May-2019 17:24:04

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: LCS 280-457201/2-A

Worklist Smp#: 15

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

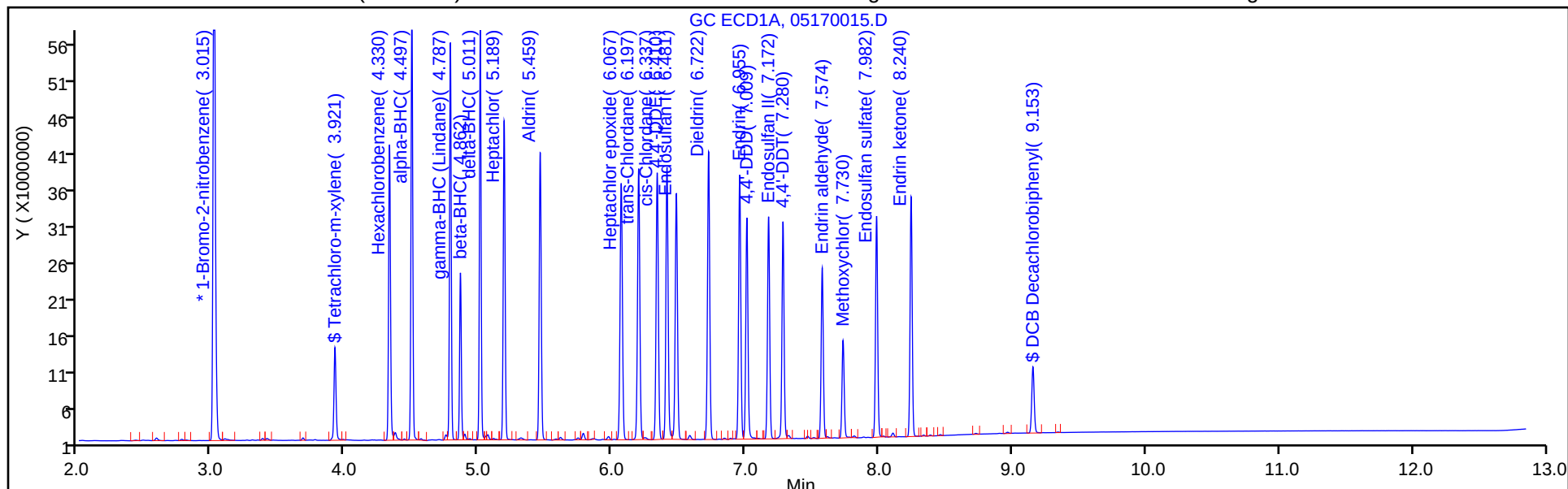
ALS Bottle#: 9

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

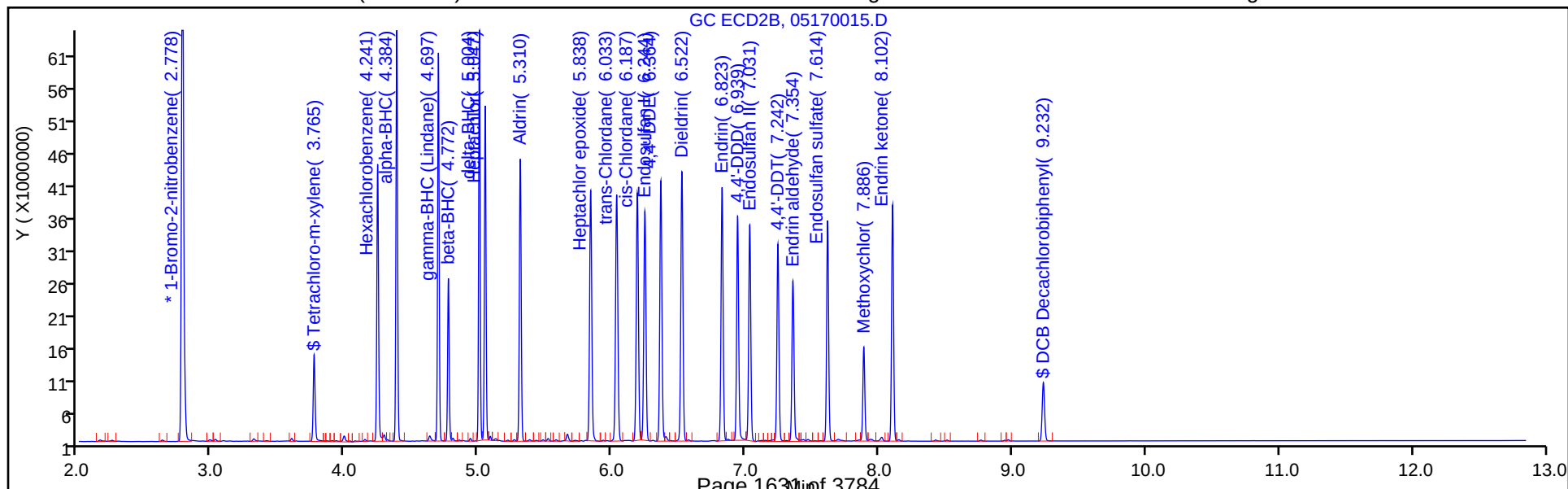
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170015.D
 Lims ID: LCS 280-457201/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 17-May-2019 17:24:04 ALS Bottle#: 9 Worklist Smp#: 15
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: LCS 280-457201/2
 Misc. Info.: 280-0082009-015
 Operator ID: TEM Instrument ID: SGC_P1
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 29-May-2019 17:23:59 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0314

First Level Reviewer: mooret

Date: 20-May-2019 13:10:23

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Tetrachloro-m-xylene	20.0	15.1	75.69
\$ 41 DCB Decachlorobiphenyl	20.0	17.2	85.87

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Tetrachloro-m-xylene	20.0	15.6	78.12
\$ 41 DCB Decachlorobiphenyl	20.0	15.7	78.70

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCS 280-457201/4-A
 Matrix: Water Lab File ID: 05170024.D
 Analysis Method: 8081B Date Collected: _____
 Extraction Method: 3510C Date Extracted: 05/06/2019 15:29
 Sample wt/vol: 1000 (mL) Date Analyzed: 05/17/2019 20:00
 Con. Extract Vol.: 10 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) GC Column: CLP1 ID: 0.32 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 458587 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
8001-35-2	Toxaphene	15.8		2.0	0.80	0.37

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	88		34-122
877-09-8	Tetrachloro-m-xylene	69		44-124

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170024.D
 Lims ID: LCS 280-457201/4-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 17-May-2019 20:00:39 ALS Bottle#: 18 Worklist Smp#: 24
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: LCS 280-457201/4
 Misc. Info.: 280-0082009-024
 Operator ID: TEM Instrument ID: SGC_P1
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 29-May-2019 17:23:59 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0314

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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* 2 1-Bromo-2-nitrobenzene

1	3.018	3.016	0.003	93260773	150.0	150.0	
2	2.781	2.778	0.003	99354580	150.0	150.0	

\$ 4 Tetrachloro-m-xylene

1	3.923	3.921	0.002	12830987	20.0	13.8	
2	3.767	3.765	0.002	13102344	20.0	14.8	

RPD = 7.00

28 Toxaphene

1	6.225	6.231	-0.006	5387986	2000.0	881.0	
1	6.816	6.817	-0.001	26393066	2000.0	1717.9	
1	7.041	7.042	-0.001	20090738	2000.0	1804.2	
1	7.491	7.489	0.002	43101824	2000.0	1761.8	
1	7.702	7.700	0.002	29919065	2000.0	1723.0	

Average of Peak Amounts = 1577.6

2	6.108	6.106	0.002	16564241	2000.0	1949.5	
2	6.798	6.796	0.002	16195445	2000.0	1104.0	
2	7.112	7.112	0.000	57053472	2000.0	1110.5	
2	7.488	7.486	0.002	21433046	2000.0	1533.8	
2	7.836	7.835	0.001	50878164	2000.0	1710.5	

Average of Peak Amounts = 1481.7

RPD = 6.27

\$ 41 DCB Decachlorobiphenyl

1	9.152	9.153	-0.001	12092953	20.0	17.6	
2	9.232	9.231	0.001	11723716	20.0	15.6	

RPD = 11.81

Reagents:

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 29-May-2019 17:24:19

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170024.D

Injection Date: 17-May-2019 20:00:39

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: LCS 280-457201/4-A

Worklist Smp#: 24

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

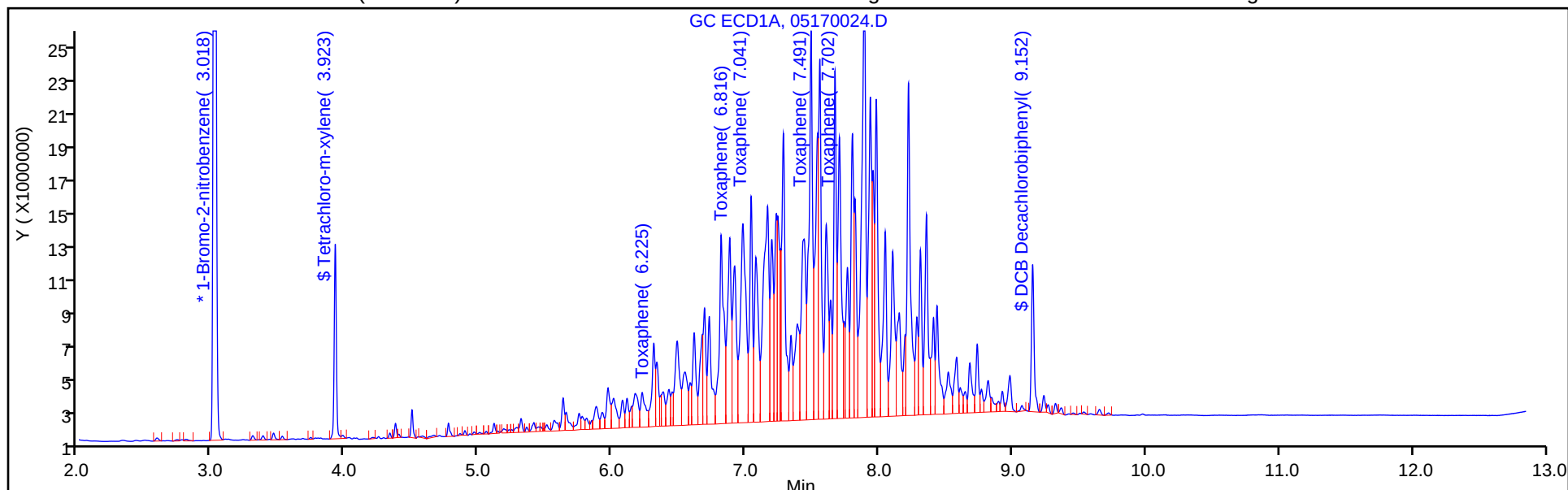
ALS Bottle#: 18

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

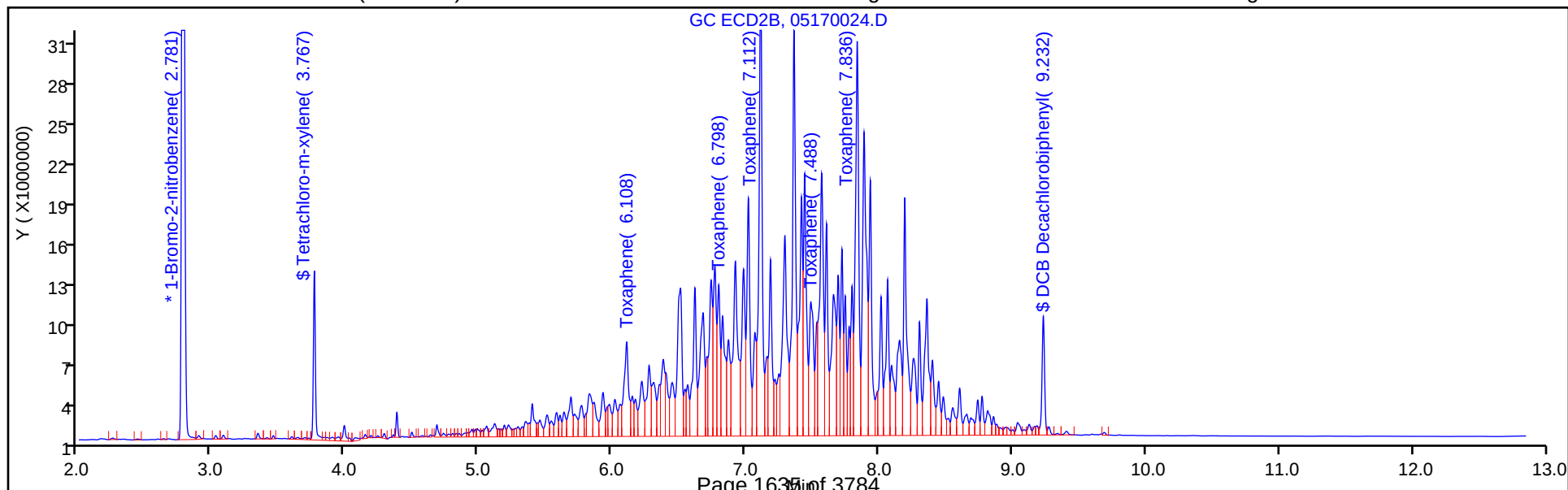
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170024.D
 Lims ID: LCS 280-457201/4-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 17-May-2019 20:00:39 ALS Bottle#: 18 Worklist Smp#: 24
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: LCS 280-457201/4
 Misc. Info.: 280-0082009-024
 Operator ID: TEM Instrument ID: SGC_P1
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 29-May-2019 17:23:59 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0314

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Tetrachloro-m-xylene	20.0	13.8	69.10
\$ 41 DCB Decachlorobiphenyl	20.0	17.6	88.05

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Tetrachloro-m-xylene	20.0	14.8	74.11
\$ 41 DCB Decachlorobiphenyl	20.0	15.6	78.23

Report Date: 29-May-2019 17:24:20

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170024.D

Injection Date: 17-May-2019 20:00:39

Instrument ID: SGC_P1

Lims ID: LCS 280-457201/4-A

Client ID:

Operator ID: TEM

ALS Bottle#: 18

Worklist Smp#: 24

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: P1 8081 IS

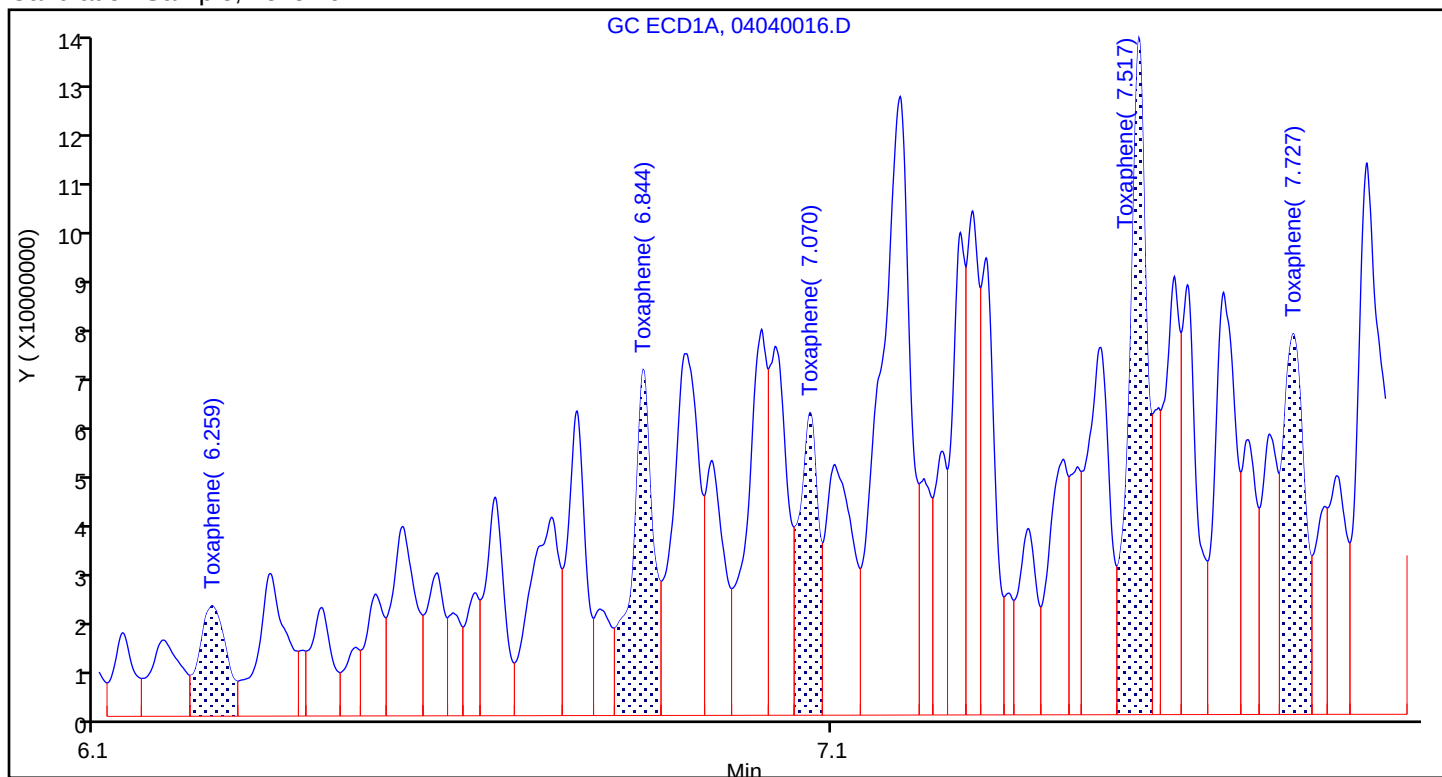
Limit Group: GCSV - 8081A - IS

Column: CLP1 Pesticides Column 1 (0.32 mm) Detector

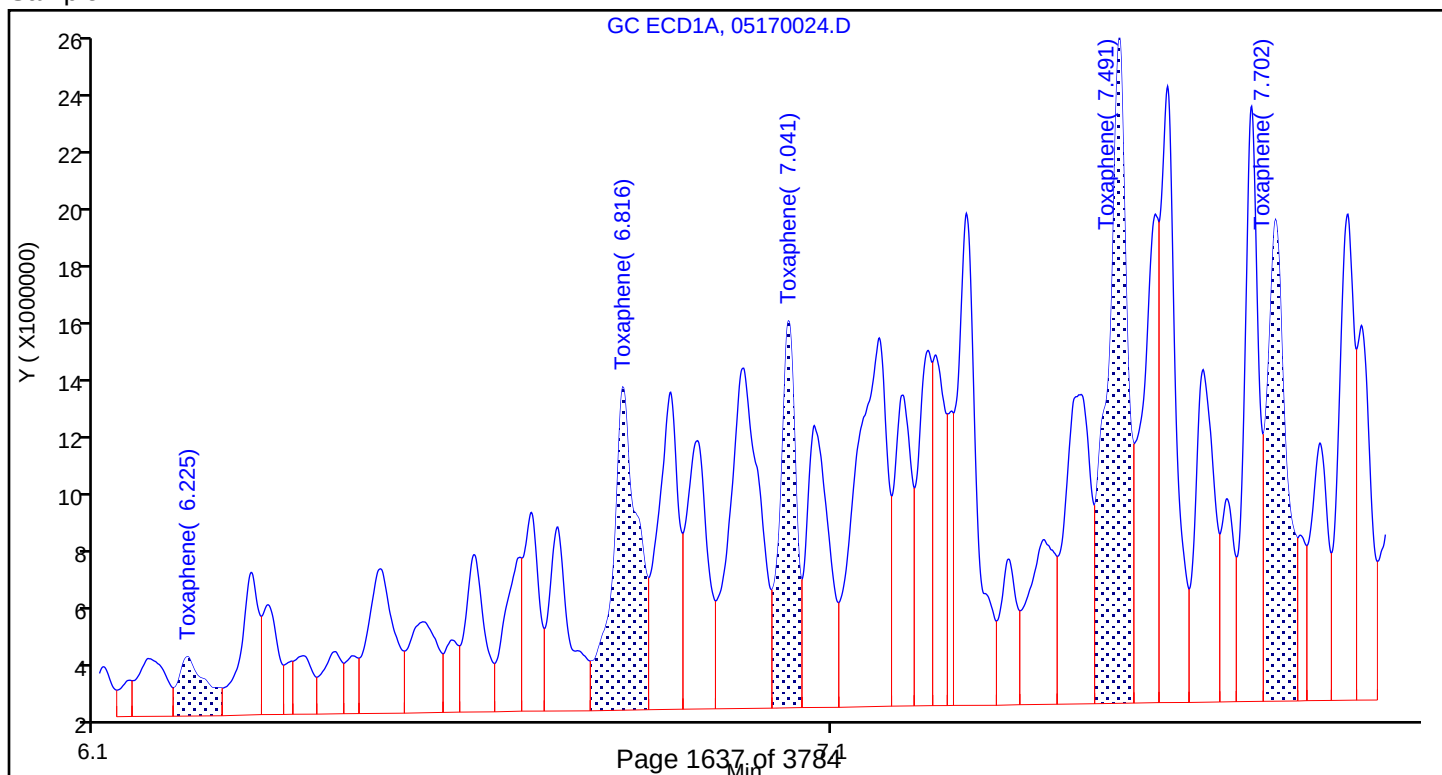
GC ECD1A

28 Toxaphene, CAS: 8001-35-2

Calibration Sample, Level: 6



Sample



FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: DET-003-190401-GWMS MS Lab Sample ID: 280-123221-4 MS
 Matrix: Water Lab File ID: 05170017.D
 Analysis Method: 8081B Date Collected: 04/29/2019 10:53
 Extraction Method: 3510C Date Extracted: 05/06/2019 15:29
 Sample wt/vol: 956.2 (mL) Date Analyzed: 05/17/2019 17:58
 Con. Extract Vol.: 10 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) GC Column: CLP1 ID: 0.32 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 458587 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
72-54-8	4,4'-DDD	0.457		0.052	0.021	0.0081
72-55-9	4,4'-DDE	0.475		0.052	0.021	0.0078
50-29-3	4,4'-DDT	0.540		0.052	0.052	0.015
309-00-2	Aldrin	0.369		0.052	0.021	0.0062
319-84-6	alpha-BHC	0.477		0.052	0.021	0.0055
5103-71-9	alpha-Chlordane	0.459		0.052	0.021	0.0055
319-85-7	beta-BHC	0.474		0.052	0.021	0.0091
319-86-8	delta-BHC	0.471		0.052	0.021	0.0061
60-57-1	Dieldrin	0.469		0.052	0.021	0.0066
959-98-8	Endosulfan I	0.456		0.052	0.021	0.0061
33213-65-9	Endosulfan II	0.432		0.052	0.021	0.0073
1031-07-8	Endosulfan sulfate	0.469		0.052	0.021	0.0060
72-20-8	Endrin	0.459		0.052	0.021	0.0083
7421-93-4	Endrin aldehyde	0.384		0.052	0.021	0.0092
53494-70-5	Endrin ketone	0.471		0.052	0.021	0.0073
58-89-9	gamma-BHC (Lindane)	0.482		0.052	0.021	0.0072
5103-74-2	gamma-Chlordane	0.459		0.052	0.021	0.0095
76-44-8	Heptachlor	0.428		0.052	0.021	0.0081
1024-57-3	Heptachlor epoxide	0.470		0.052	0.021	0.0078
72-43-5	Methoxychlor	0.498		0.052	0.052	0.014

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	82		34-122
877-09-8	Tetrachloro-m-xylene	75		44-124

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170017.D
 Lims ID: 280-123221-B-4-B MS
 Client ID: DET-003-190401-GWMS
 Sample Type: MS
 Inject. Date: 17-May-2019 17:58:48 ALS Bottle#: 11 Worklist Smp#: 17
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-B-4-B
 Misc. Info.: 280-0082009-017
 Operator ID: TEM Instrument ID: SGC_P1
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 29-May-2019 17:23:59 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0314

First Level Reviewer: mooret

Date: 29-May-2019 17:20:17

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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S 1 Hexachlorocyclohexane, technical

1					182.0		
2					179.9		
RPD = 1.19							

* 2 1-Bromo-2-nitrobenzene

1	3.016	3.016	0.001	90752228	150.0	150.0	
2	2.779	2.778	0.001	95207585	150.0	150.0	

\$ 4 Tetrachloro-m-xylene

1	3.922	3.921	0.001	13582719	20.0	15.1	
2	3.765	3.765	0.000	12944141	20.0	15.3	
RPD = 1.44							

7 Propachlor

1		4.138				ND	
2		3.952					

5 Hexachlorobenzene

1	4.330	4.330	0.000	39195234	50.0	42.0	
2	4.242	4.242	0.000	38841993	50.0	42.3	
RPD = 0.72							

6 Diallate

1		4.353				ND	
2		4.194					

8 alpha-BHC

1	4.498	4.497	0.001	54265085	50.0	45.6	
2	4.385	4.384	0.001	54153738	50.0	45.5	
RPD = 0.17							

9 gamma-BHC (Lindane)

1	4.787	4.787	0.000	48161128	50.0	46.1	
2	4.697	4.696	0.001	48310854	50.0	45.1	
RPD = 2.17							

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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11 2,4,5-Trichlorophenol

1	4.838					ND	
2	4.774						

10 beta-BHC

1	4.862	4.861	0.001	20352697	50.0	45.3	
2	4.772	4.771	0.001	20364767	50.0	44.4	
RPD = 2.09							

12 delta-BHC

1	5.011	5.010	0.001	48036527	50.0	45.0	
2	5.005	5.003	0.002	48629173	50.0	44.9	
RPD = 0.32							

13 Technical Chlordane

1	5.122					ND	
1	5.589						
1	6.198						
1	6.335						
1	7.107						
2	4.934						
2	5.446						
2	6.033						
2	6.188						
2	7.076						

14 Chlordane (technical)

1	5.122					ND	
1	5.589						
1	6.198						
1	6.335						
1	7.107						
2	4.934						
2	5.446						
2	6.033						
2	6.188						
2	7.076						

15 Heptachlor

1	5.190	5.190	0.000	40147253	50.0	40.9	
2	5.048	5.047	0.001	39954045	50.0	40.1	
RPD = 2.08							

16 Aldrin

1	5.460	5.460	0.000	38573752	50.0	35.3	
2	5.310	5.310	0.000	38444227	50.0	34.6	
RPD = 2.01							

17 Chlorpyrifos

1	5.686					ND	
2	5.525						

18 Isodrin

1	5.782					ND	
2	5.662						

19 Dicofol

1	5.817					ND	
2	5.621						

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170017.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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20 2,4'-DDE

1		6.051				ND	
2		6.040					

21 Heptachlor epoxide

1	6.068	6.067	0.001	42806836	50.0	44.9	
2	5.839	5.837	0.002	43211698	50.0	44.0	
RPD = 2.07							

22 trans-Chlordane

1	6.198	6.197	0.001	43572731	50.0	43.9	
2	6.035	6.032	0.003	44272500	50.0	44.4	
RPD = 1.12							

28 Toxaphene

1		6.231				ND	
1		6.817					
1		7.042					
1		7.489					
1		7.700					
2		6.106					
2		6.796					
2		7.112					
2		7.486					
2		7.835					

23 cis-Chlordane

1	6.337	6.337	0.000	42458979	50.0	43.9	
2	6.188	6.187	0.001	42870817	50.0	43.3	
RPD = 1.34							

24 4,4'-DDE

1	6.411	6.410	0.001	43333448	50.0	45.4	
2	6.365	6.363	0.002	43820586	50.0	41.9	
RPD = 8.00							

25 Endosulfan I

1	6.480	6.480	0.000	39952711	50.0	43.6	
2	6.245	6.243	0.002	39863178	50.0	42.3	
RPD = 3.11							

26 2,4'-DDD

1		6.586				ND	
2		6.566					

27 Dieldrin

1	6.723	6.722	0.001	45049024	50.0	44.9	
2	6.522	6.522	0.000	45706003	50.0	43.5	
RPD = 3.01							

29 2,4'-DDT

1		6.841				ND	
2		6.867					

30 Endrin

1	6.955	6.955	0.000	39626942	50.0	43.9	
2	6.824	6.823	0.001	40574891	50.0	43.2	
RPD = 1.50							

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170017.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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31 Kepone

1		6.996				ND	
2		6.933					

32 4,4'-DDD

1	7.010	7.008	0.002	33718824	50.0	43.7	
2	6.940	6.939	0.001	36144843	50.0	44.3	
RPD = 1.37							

33 Chlorobenzilate

1		7.019				ND	
2		6.816					

34 Endosulfan II

1	7.173	7.172	0.001	34254434	50.0	41.3	
2	7.030	7.030	0.000	35483368	50.0	39.6	
RPD = 4.32							

35 4,4'-DDT

1	7.280	7.279	0.001	32050947	50.0	51.7	
2	7.242	7.242	0.000	31383333	50.0	43.3	
RPD = 17.69							

36 Endrin aldehyde

1	7.575	7.573	0.002	24384419	50.0	36.8	
2	7.355	7.355	0.000	25719233	50.0	35.7	
RPD = 2.82							

37 Methoxychlor

1	7.730	7.731	-0.001	14836666	50.0	47.6	
2	7.885	7.885	0.000	14558620	50.0	44.5	
RPD = 6.72							

38 Mirex

1		7.886				ND	
2		8.065					

39 Endosulfan sulfate

1	7.982	7.982	0.000	33608587	50.0	44.8	
2	7.615	7.614	0.001	34664168	50.0	43.0	
RPD = 4.29							

40 Endrin ketone

1	8.240	8.241	-0.001	36302373	50.0	45.0	
2	8.101	8.101	0.000	37744138	50.0	41.3	
RPD = 8.52							

\$ 41 DCB Decachlorobiphenyl

1	9.153	9.153	0.000	11044158	20.0	16.5	
2	9.232	9.231	0.001	10772063	20.0	14.9	
RPD = 9.67							

42 Tris(2,3-dibromopropyl)phosphate

1		10.868				ND	
2		10.896					

S 3 Endosulfan, Total

1						129.8	
2						124.9	
RPD = 3.90							

Reagents:

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 29-May-2019 17:24:30

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170017.D

Injection Date: 17-May-2019 17:58:48

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: 280-123221-B-4-B MS

Worklist Smp#: 17

Client ID: DET-003-190401-GWMS

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

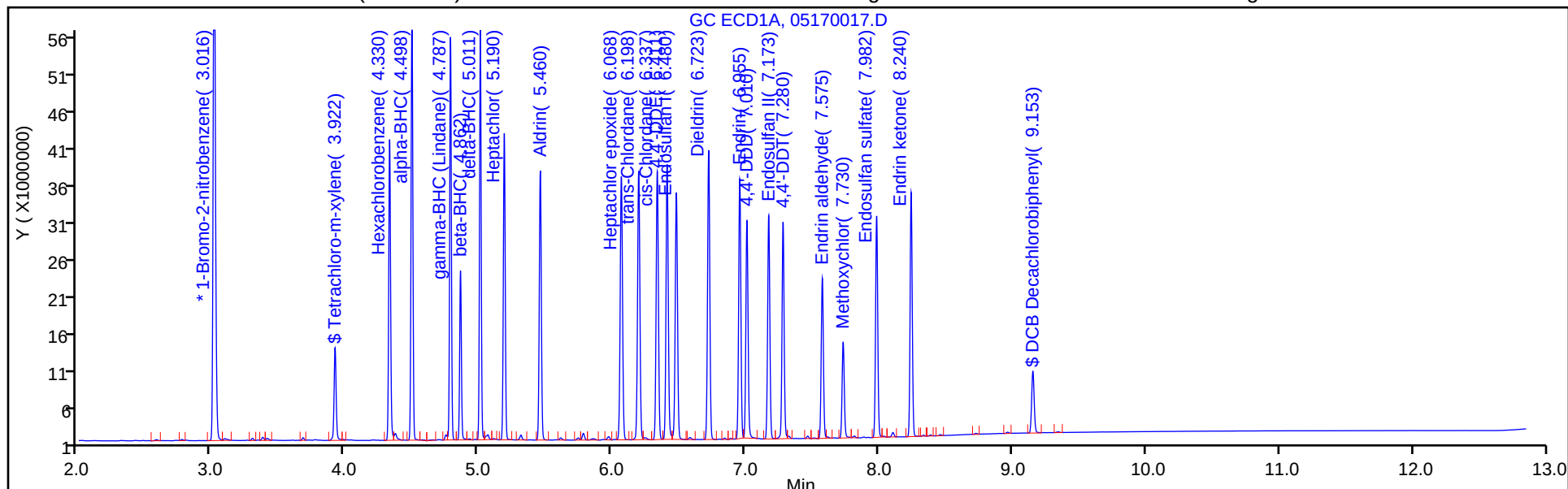
ALS Bottle#: 11

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

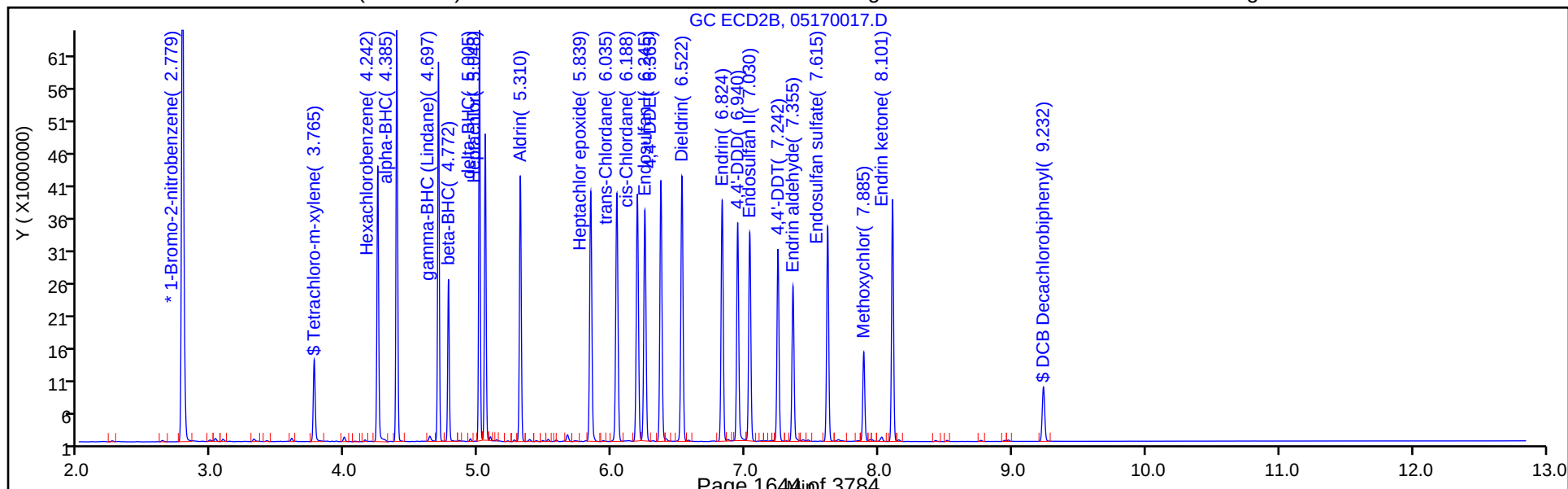
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170017.D
 Lims ID: 280-123221-B-4-B MS
 Client ID: DET-003-190401-GWMS
 Sample Type: MS
 Inject. Date: 17-May-2019 17:58:48 ALS Bottle#: 11 Worklist Smp#: 17
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-B-4-B
 Misc. Info.: 280-0082009-017
 Operator ID: TEM Instrument ID: SGC_P1
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 29-May-2019 17:23:59 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0314
 First Level Reviewer: mooret Date: 29-May-2019 17:20:17

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Tetrachloro-m-xylene	20.0	15.1	75.45
\$ 41 DCB Decachlorobiphenyl	20.0	16.5	82.34

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Tetrachloro-m-xylene	20.0	15.3	76.54
\$ 41 DCB Decachlorobiphenyl	20.0	14.9	74.75

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Client Sample ID: DET-003-190401-GWMS MS Lab Sample ID: 280-123221-4 MS
Matrix: Water Lab File ID: 05170019.D
Analysis Method: 8081B Date Collected: 04/29/2019 10:53
Extraction Method: 3510C Date Extracted: 05/06/2019 15:29
Sample wt/vol: 970.8 (mL) Date Analyzed: 05/17/2019 18:33
Con. Extract Vol.: 10 (mL) Dilution Factor: 1
Injection Volume: 1 (uL) GC Column: CLP1 ID: 0.32 (mm)
% Moisture: _____ GPC Cleanup: (Y/N) N
Analysis Batch No.: 458587 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
8001-35-2	Toxaphene	18.6		2.1	0.82	0.38

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170019.D
 Lims ID: 280-123221-D-4-B MS
 Client ID: DET-003-190401-GWMS
 Sample Type: MS
 Inject. Date: 17-May-2019 18:33:34 ALS Bottle#: 13 Worklist Smp#: 19
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-D-4-B
 Misc. Info.: 280-0082009-019
 Operator ID: TEM Instrument ID: SGC_P1
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 29-May-2019 17:23:59 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0314

First Level Reviewer: mooret

Date: 29-May-2019 17:21:22

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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* 2 1-Bromo-2-nitrobenzene

1	3.015	3.016	0.000	91816190	150.0	150.0	
2	2.779	2.778	0.001	96054763	150.0	150.0	

\$ 4 Tetrachloro-m-xylene

1	3.922	3.921	0.001	13613435	20.0	14.9	
2	3.765	3.765	0.000	13031161	20.0	15.3	

RPD = 2.19

28 Toxaphene

1	6.224	6.231	-0.007	5589531	2000.0	926.0	M
1	6.816	6.817	-0.001	29729885	2000.0	1961.3	M
1	7.042	7.042	0.000	21958072	2000.0	1999.4	M
1	7.490	7.489	0.001	47973894	2000.0	1988.7	M
1	7.704	7.700	0.004	37133958	2000.0	2163.5	M

Average of Peak Amounts = 1807.8

2	6.107	6.106	0.001	17887314	2000.0	2186.1	
2	6.797	6.796	0.001	17488547	2000.0	1236.7	
2	7.112	7.112	0.000	61380929	2000.0	1237.0	
2	7.489	7.486	0.003	23081478	2000.0	1712.5	
2	7.836	7.835	0.001	53646452	2000.0	1867.2	

Average of Peak Amounts = 1647.9

RPD = 9.25

\$ 41 DCB Decachlorobiphenyl

1	9.154	9.153	0.001	11576640	20.0	17.1	M
2	9.232	9.231	0.001	11331790	20.0	15.6	

RPD = 8.89

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 29-May-2019 17:24:27

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170019.D

Injection Date: 17-May-2019 18:33:34

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: 280-123221-D-4-B MS

Worklist Smp#: 19

Client ID: DET-003-190401-GWMS

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

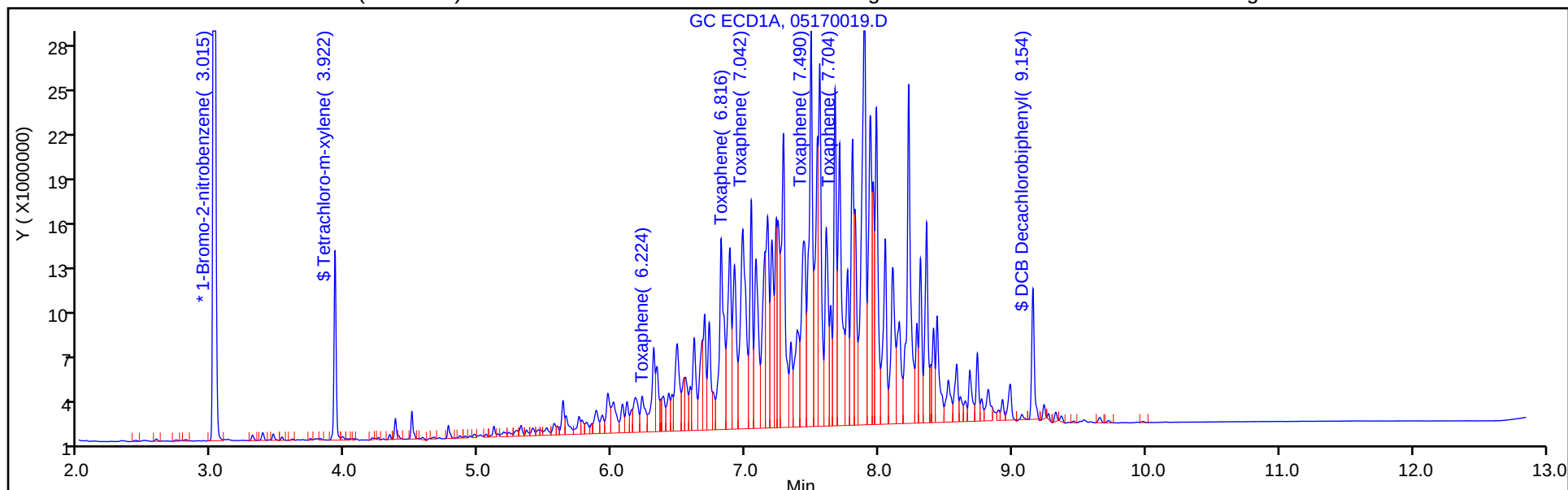
ALS Bottle#: 13

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

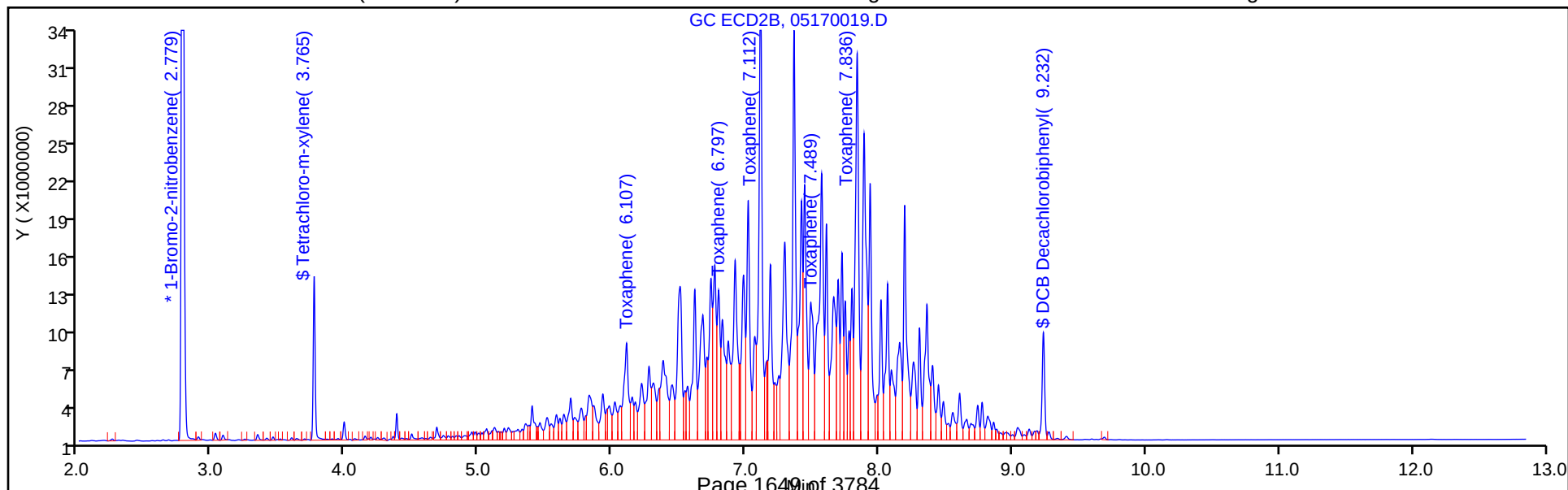
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170019.D
 Lims ID: 280-123221-D-4-B MS
 Client ID: DET-003-190401-GWMS
 Sample Type: MS
 Inject. Date: 17-May-2019 18:33:34 ALS Bottle#: 13 Worklist Smp#: 19
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-D-4-B
 Misc. Info.: 280-0082009-019
 Operator ID: TEM Instrument ID: SGC_P1
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 29-May-2019 17:23:59 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0314

First Level Reviewer: mooret

Date: 29-May-2019 17:21:22

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Tetrachloro-m-xylene	20.0	14.9	74.71
\$ 41 DCB Decachlorobiphenyl	20.0	17.1	85.48

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Tetrachloro-m-xylene	20.0	15.3	76.36
\$ 41 DCB Decachlorobiphenyl	20.0	15.6	78.21

Report Date: 29-May-2019 17:24:27

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170019.D

Injection Date: 17-May-2019 18:33:34

Instrument ID: SGC_P1

Lims ID: 280-123221-D-4-B MS

Client ID: DET-003-190401-GWMS

Operator ID: TEM

ALS Bottle#: 13

Worklist Smp#: 19

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: P1 8081 IS

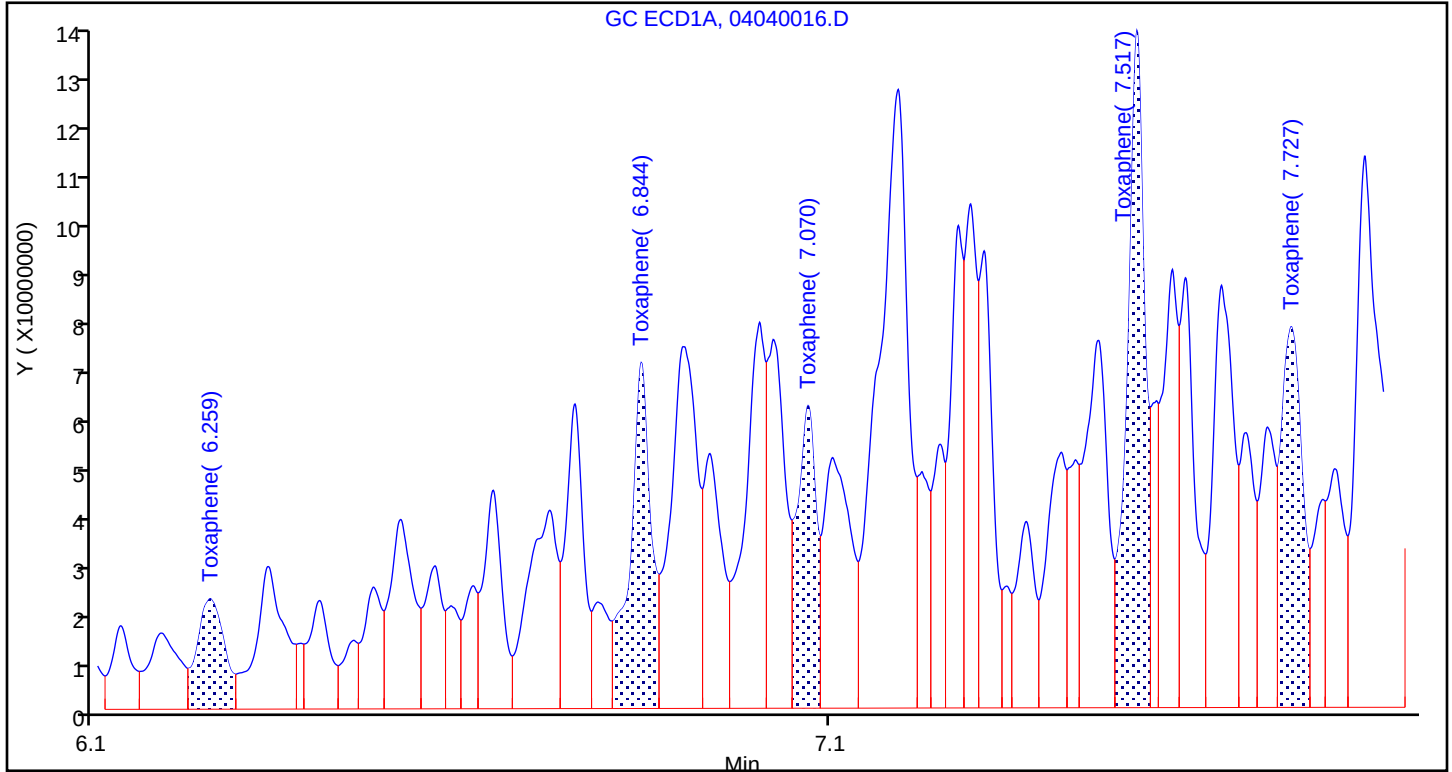
Limit Group: GCSV - 8081A - IS

Column: CLP1 Pesticides Column 1 (0.32 mm) Detector

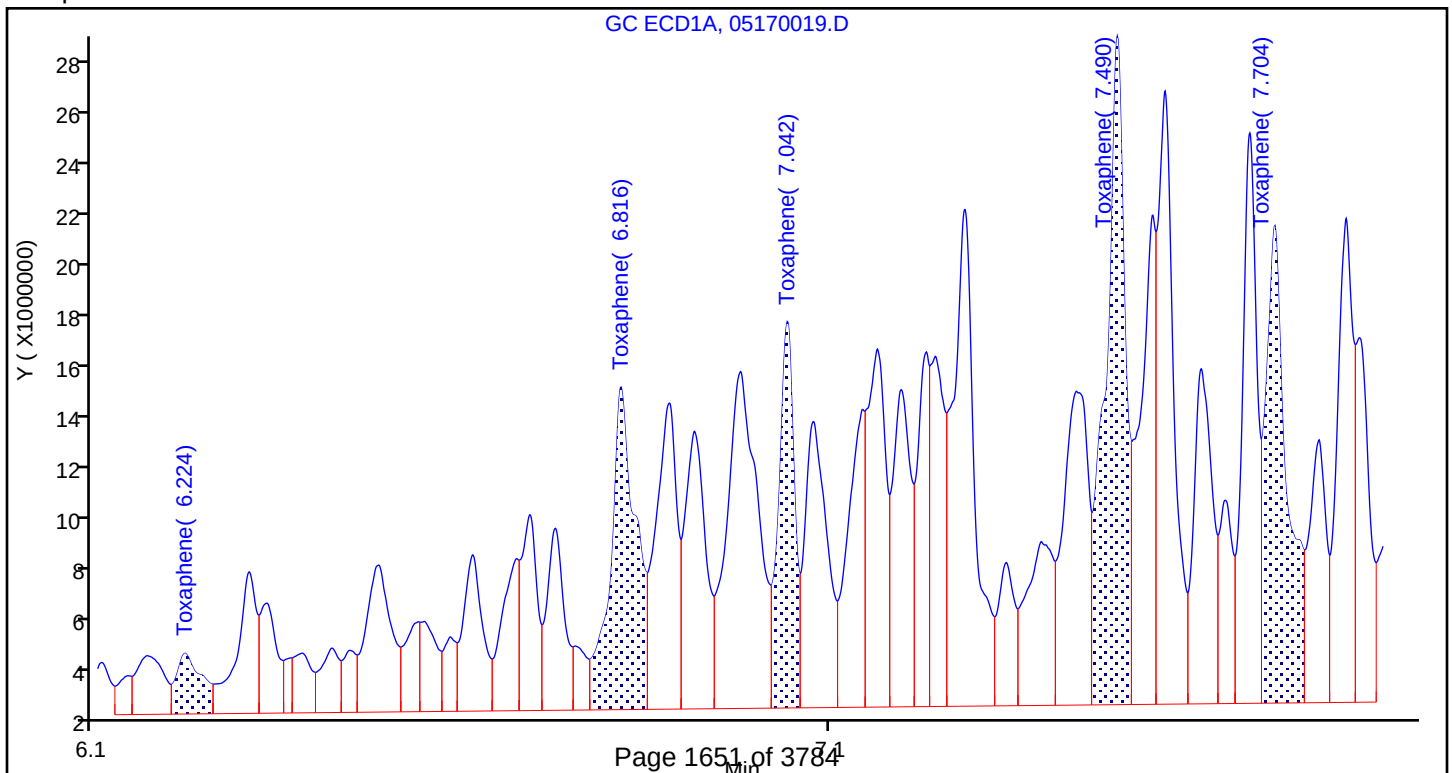
GC ECD1A

28 Toxaphene, CAS: 8001-35-2

Calibration Sample, Level: 6



Sample



Eurofins TestAmerica, Denver

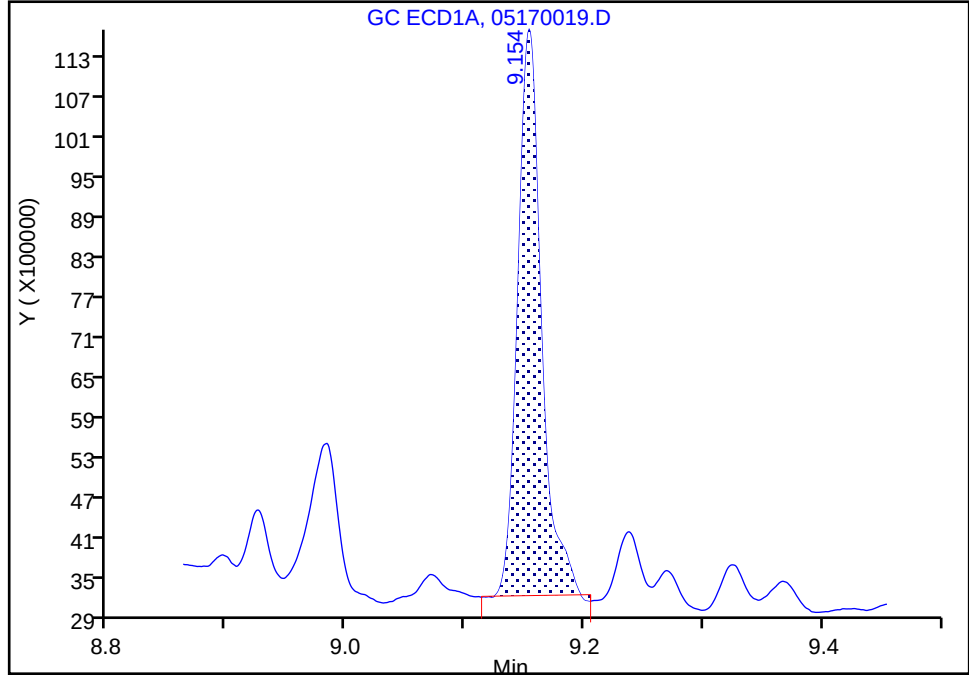
Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170019.D
Injection Date: 17-May-2019 18:33:34 Instrument ID: SGC_P1
Lims ID: 280-123221-D-4-B MS
Client ID: DET-003-190401-GWMS
Operator ID: TEM ALS Bottle#: 13 Worklist Smp#: 19
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: P1 8081 IS Limit Group: GCSV - 8081A - IS
Column: CLP1 Pesticides Column 1 (0.32 mm) Detector: GC ECD1A

\$ 41 DCB Decachlorobiphenyl, CAS: 2051-24-3

Signal: 1

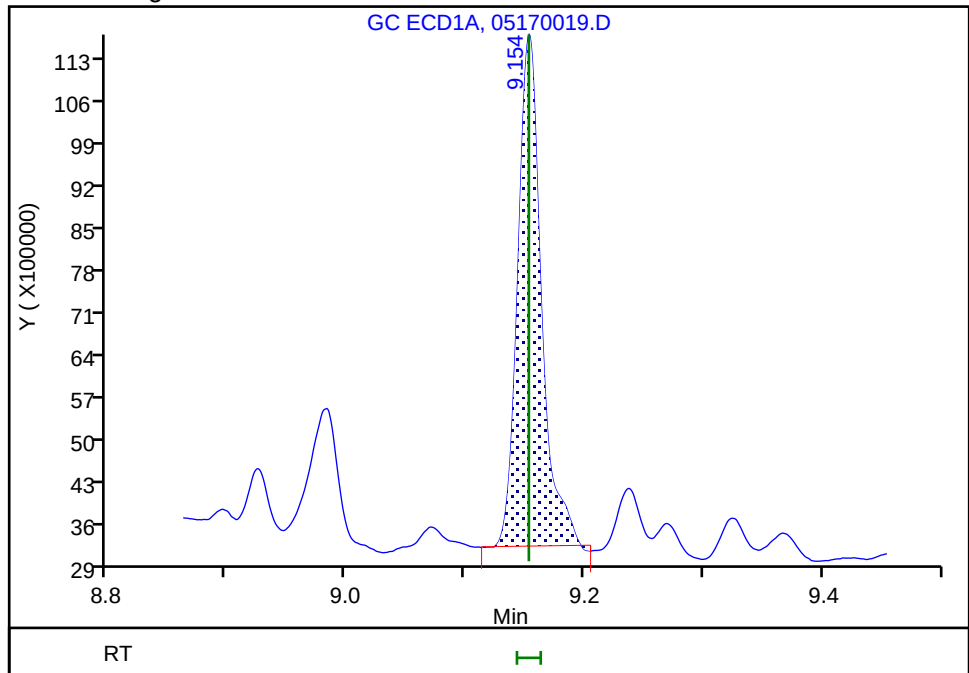
RT: 9.15
Area: 11874473
Amount: 17.560926
Amount Units: ng/mL

Processing Integration Results



RT: 9.15
Area: 11576640
Amount: 17.096799
Amount Units: ng/mL

Manual Integration Results



Reviewer: mooret, 29-May-2019 17:21:47

Audit Action: Assigned New Baseline

Audit Reason: Baseline Smoothing

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170019.D

Injection Date: 17-May-2019 18:33:34

Instrument ID: SGC_P1

Lims ID: 280-123221-D-4-B MS

Client ID: DET-003-190401-GWMS

Operator ID: TEM

ALS Bottle#: 13

Worklist Smp#: 19

Injection Vol: 1.0 ul

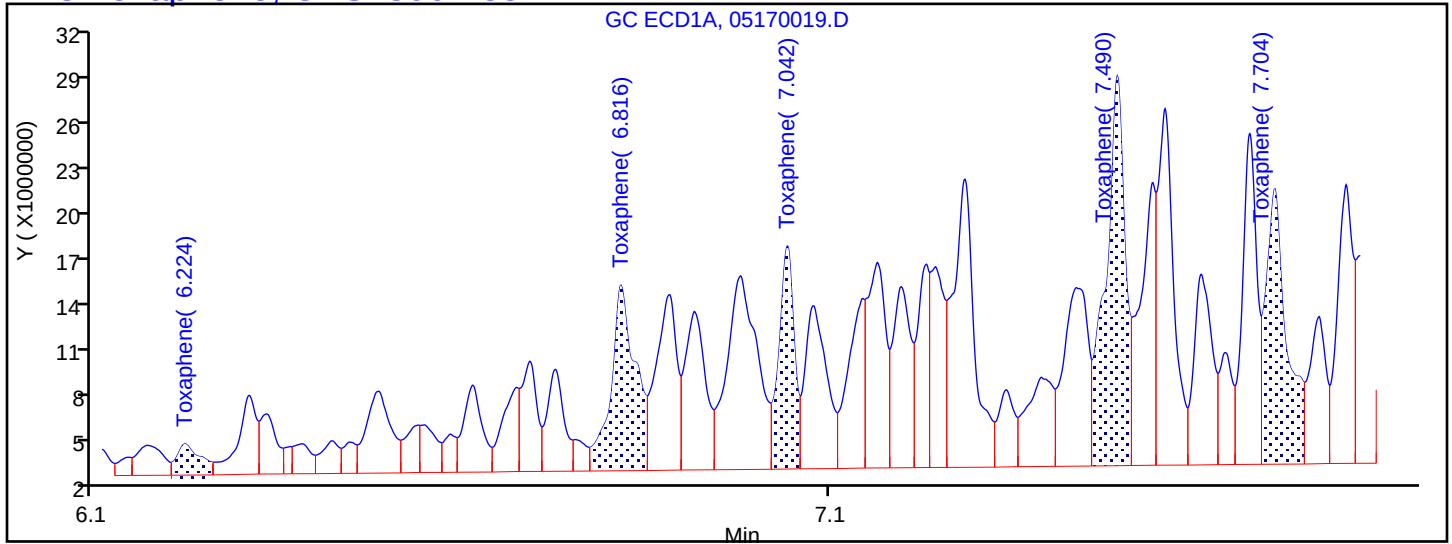
Dil. Factor: 1.0000

Method: P1 8081 IS

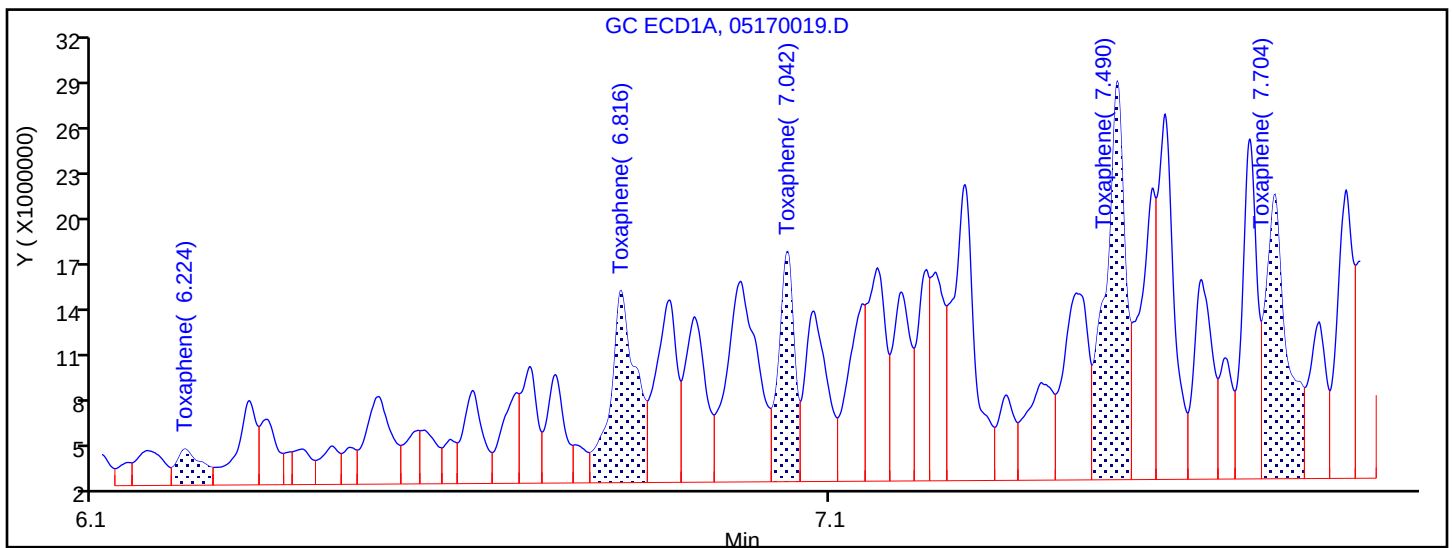
Limit Group: GCSV - 8081A - IS

Column: CLP1 Pesticides Column 1 (0.32 mm) Detector

GC ECD1A

28 Toxaphene, CAS: 8001-35-2**Processing Integration Results**

6.224	Response = 4507666
6.816	Response = 27712522
7.042	Response = 20837181
7.490	Response = 46144865
7.704	Response = 35031548

**Manual Integration Results**

6.224	Response = 5589531	M
6.816	Response = 29729885	M
7.042	Response = 21958072	M
7.490	Response = 47973894	M
7.704	Response = 37133958	M

Reviewer: mooret, 29-May-2019 17:21:47

Audit Action: Assigned New Baseline

Audit Reason: Baseline Smoothing
Page 1653 of 3784

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: DET-003-190401-GWMSD MSD Lab Sample ID: 280-123221-4 MSD
 Matrix: Water Lab File ID: 05170018.D
 Analysis Method: 8081B Date Collected: 04/29/2019 10:53
 Extraction Method: 3510C Date Extracted: 05/06/2019 15:29
 Sample wt/vol: 954.5 (mL) Date Analyzed: 05/17/2019 18:16
 Con. Extract Vol.: 10 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) GC Column: CLP1 ID: 0.32 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 458587 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
72-54-8	4,4'-DDD	0.460		0.052	0.021	0.0081
72-55-9	4,4'-DDE	0.475		0.052	0.021	0.0079
50-29-3	4,4'-DDT	0.542		0.052	0.052	0.016
309-00-2	Aldrin	0.395		0.052	0.021	0.0062
319-84-6	alpha-BHC	0.476		0.052	0.021	0.0056
5103-71-9	alpha-Chlordane	0.466		0.052	0.021	0.0056
319-85-7	beta-BHC	0.477		0.052	0.021	0.0091
319-86-8	delta-BHC	0.476		0.052	0.021	0.0061
60-57-1	Dieldrin	0.471		0.052	0.021	0.0066
959-98-8	Endosulfan I	0.459		0.052	0.021	0.0061
33213-65-9	Endosulfan II	0.435		0.052	0.021	0.0073
1031-07-8	Endosulfan sulfate	0.476		0.052	0.021	0.0060
72-20-8	Endrin	0.468		0.052	0.021	0.0083
7421-93-4	Endrin aldehyde	0.404		0.052	0.021	0.0092
53494-70-5	Endrin ketone	0.475		0.052	0.021	0.0073
58-89-9	gamma-BHC (Lindane)	0.485		0.052	0.021	0.0072
5103-74-2	gamma-Chlordane	0.467		0.052	0.021	0.0095
76-44-8	Heptachlor	0.450		0.052	0.021	0.0081
1024-57-3	Heptachlor epoxide	0.474		0.052	0.021	0.0079
72-43-5	Methoxychlor	0.501		0.052	0.052	0.014

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	79		34-122
877-09-8	Tetrachloro-m-xylene	75		44-124

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170018.D
 Lims ID: 280-123221-C-4-A MSD
 Client ID: DET-003-190401-GWMSD
 Sample Type: MSD
 Inject. Date: 17-May-2019 18:16:15 ALS Bottle#: 12 Worklist Smp#: 18
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-C-4-A
 Misc. Info.: 280-0082009-018
 Operator ID: TEM Instrument ID: SGC_P1
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 29-May-2019 17:23:59 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0314

First Level Reviewer: mooret

Date: 29-May-2019 17:20:29

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

S 1 Hexachlorocyclohexane, technical

1					182.7		
2					180.9		
RPD = 1.04							

* 2 1-Bromo-2-nitrobenzene

1	3.016	3.016	0.001	92203589	150.0	150.0	
2	2.779	2.778	0.001	96576511	150.0	150.0	

\$ 4 Tetrachloro-m-xylene

1	3.923	3.921	0.002	13800420	20.0	15.1	
2	3.765	3.765	0.000	13293403	20.0	15.5	
RPD = 2.74							

7 Propachlor

1		4.138				ND	
2		3.952					

5 Hexachlorobenzene

1	4.331	4.330	0.001	41023259	50.0	43.2	
2	4.242	4.242	0.000	40647111	50.0	43.6	
RPD = 0.89							

6 Diallate

1		4.353				ND	
2		4.194					

8 alpha-BHC

1	4.499	4.497	0.002	54937274	50.0	45.4	
2	4.384	4.384	0.000	55106888	50.0	45.7	
RPD = 0.51							

9 gamma-BHC (Lindane)

1	4.787	4.787	0.000	49170482	50.0	46.3	
2	4.696	4.696	0.000	49223548	50.0	45.3	
RPD = 2.21							

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170018.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

11 2,4,5-Trichlorophenol

1	4.838					ND	
2	4.774						

10 beta-BHC

1	4.862	4.861	0.001	20792996	50.0	45.6	
2	4.772	4.771	0.001	20767096	50.0	44.6	
RPD = 2.11							

12 delta-BHC

1	5.010	5.010	0.000	49245428	50.0	45.4	
2	5.004	5.003	0.001	49761962	50.0	45.3	
RPD = 0.34							

13 Technical Chlordane

1	5.122					ND	
1	5.589						
1	6.198						
1	6.335						
1	7.107						
2	4.934						
2	5.446						
2	6.033						
2	6.188						
2	7.076						

14 Chlordane (technical)

1	5.122					ND	
1	5.589						
1	6.198						
1	6.335						
1	7.107						
2	4.934						
2	5.446						
2	6.033						
2	6.188						
2	7.076						

15 Heptachlor

1	5.190	5.190	0.000	42768886	50.0	42.9	
2	5.048	5.047	0.001	42565790	50.0	42.1	
RPD = 1.86							

16 Aldrin

1	5.460	5.460	0.000	41850186	50.0	37.7	
2	5.310	5.310	0.000	41623520	50.0	36.9	
RPD = 1.99							

17 Chlorpyrifos

1	5.686					ND	
2	5.525						

18 Isodrin

1	5.782					ND	
2	5.662						

19 Dicofol

1	5.817					ND	
2	5.621						

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170018.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

20 2,4'-DDE

1		6.051				ND	
2		6.040					

21 Heptachlor epoxide

1	6.068	6.067	0.001	43777422	50.0	45.2	
2	5.839	5.837	0.002	44131180	50.0	44.3	
RPD = 2.04							

22 trans-Chlordane

1	6.199	6.197	0.002	44923569	50.0	44.6	
2	6.034	6.032	0.002	45549965	50.0	45.0	
RPD = 1.06							

28 Toxaphene

1		6.231				ND	
1		6.817					
1		7.042					
1		7.489					
1		7.700					
2		6.106					
2		6.796					
2		7.112					
2		7.486					
2		7.835					

23 cis-Chlordane

1	6.337	6.337	0.000	43646066	50.0	44.4	
2	6.188	6.187	0.001	43818610	50.0	43.7	
RPD = 1.75							

24 4,4'-DDE

1	6.411	6.410	0.001	44014286	50.0	45.4	
2	6.365	6.363	0.002	45066185	50.0	42.5	
RPD = 6.58							

25 Endosulfan I

1	6.480	6.480	0.000	40742739	50.0	43.8	
2	6.244	6.243	0.001	40557409	50.0	42.4	
RPD = 3.18							

26 2,4'-DDD

1		6.586				ND	
2		6.566					

27 Dieldrin

1	6.723	6.722	0.001	45869070	50.0	45.0	
2	6.523	6.522	0.001	46725834	50.0	43.9	
RPD = 2.44							

29 2,4'-DDT

1		6.841				ND	
2		6.867					

30 Endrin

1	6.956	6.955	0.001	41005935	50.0	44.7	
2	6.824	6.823	0.001	41894073	50.0	44.0	
RPD = 1.55							

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170018.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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31 Kepone

1		6.996				ND	
2		6.933					

32 4,4'-DDD

1	7.009	7.008	0.001	34367253	50.0	43.9	
2	6.940	6.939	0.001	36862211	50.0	44.6	
RPD = 1.60							

33 Chlorobenzilate

1		7.019				ND	
2		6.816					

34 Endosulfan II

1	7.174	7.172	0.002	34984256	50.0	41.6	
2	7.030	7.030	0.000	36298739	50.0	39.9	
RPD = 3.98							

35 4,4'-DDT

1	7.281	7.279	0.002	32608332	50.0	51.7	
2	7.242	7.242	0.000	31930664	50.0	43.4	
RPD = 17.53							

36 Endrin aldehyde

1	7.575	7.573	0.002	25977510	50.0	38.6	
2	7.355	7.355	0.000	27381121	50.0	37.6	
RPD = 2.67							

37 Methoxychlor

1	7.731	7.731	0.000	15143370	50.0	47.8	
2	7.885	7.885	0.000	14710905	50.0	44.3	
RPD = 7.57							

38 Mirex

1		7.886				ND	
2		8.065					

39 Endosulfan sulfate

1	7.983	7.982	0.001	34608593	50.0	45.5	
2	7.614	7.614	0.000	35490837	50.0	43.4	
RPD = 4.70							

40 Endrin ketone

1	8.242	8.241	0.001	37114000	50.0	45.3	
2	8.101	8.101	0.000	38316696	50.0	41.4	
RPD = 9.07							

\$ 41 DCB Decachlorobiphenyl

1	9.154	9.153	0.001	10825220	20.0	15.9	
2	9.232	9.231	0.001	10638078	20.0	14.5	
RPD = 8.78							

42 Tris(2,3-dibromopropyl)phosphate

1		10.868				ND	
2		10.896					

S 3 Endosulfan, Total

1						130.8	
2						125.7	
RPD = 3.96							

Reagents:

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 29-May-2019 17:24:29

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170018.D

Injection Date: 17-May-2019 18:16:15

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: 280-123221-C-4-A MSD

Worklist Smp#: 18

Client ID: DET-003-190401-GWMSD

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

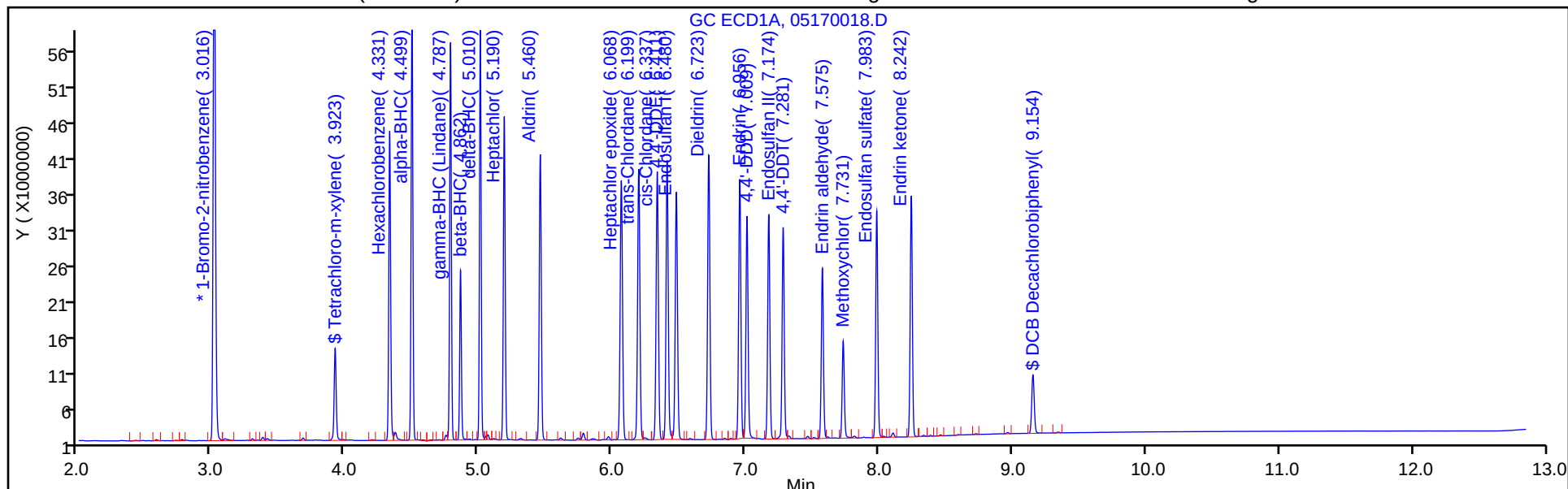
ALS Bottle#: 12

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

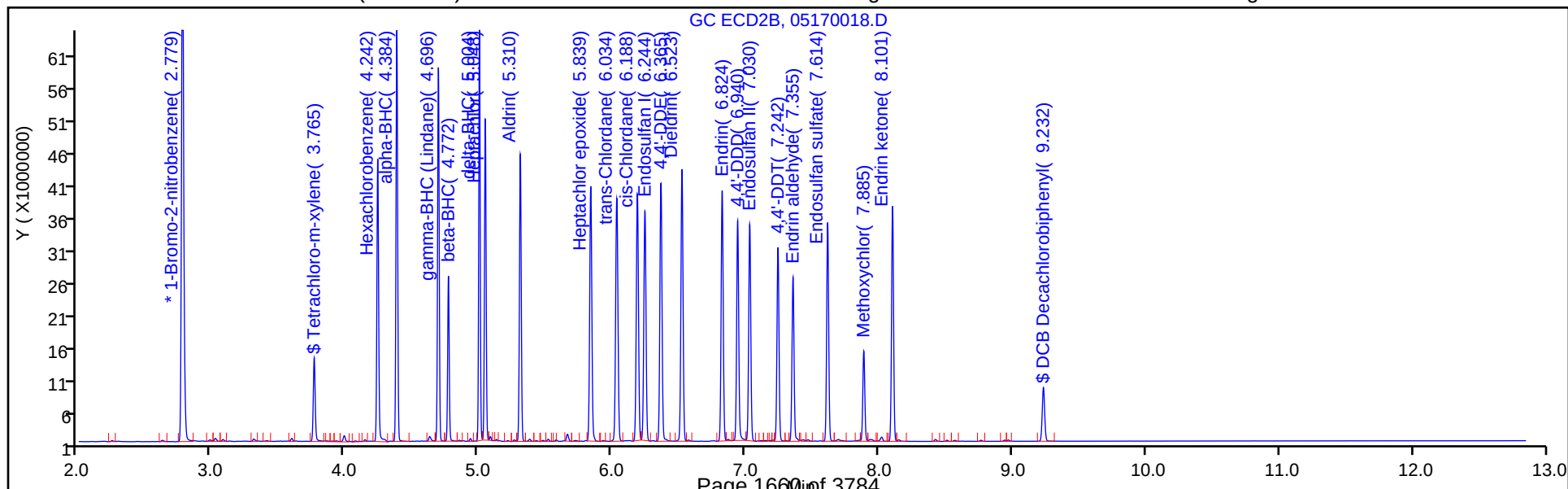
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170018.D
 Lims ID: 280-123221-C-4-A MSD
 Client ID: DET-003-190401-GWMSD
 Sample Type: MSD
 Inject. Date: 17-May-2019 18:16:15 ALS Bottle#: 12 Worklist Smp#: 18
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-C-4-A
 Misc. Info.: 280-0082009-018
 Operator ID: TEM Instrument ID: SGC_P1
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 29-May-2019 17:23:59 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0314

First Level Reviewer: mooret

Date: 29-May-2019 17:20:29

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Tetrachloro-m-xylene	20.0	15.1	75.45
\$ 41 DCB Decachlorobiphenyl	20.0	15.9	79.27

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Tetrachloro-m-xylene	20.0	15.5	77.54
\$ 41 DCB Decachlorobiphenyl	20.0	14.5	72.61

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Client Sample ID: DET-003-190401-GWMSD MSD Lab Sample ID: 280-123221-4 MSD
Matrix: Water Lab File ID: 05170020.D
Analysis Method: 8081B Date Collected: 04/29/2019 10:53
Extraction Method: 3510C Date Extracted: 05/06/2019 15:29
Sample wt/vol: 905.2 (mL) Date Analyzed: 05/17/2019 18:50
Con. Extract Vol.: 10 (mL) Dilution Factor: 1
Injection Volume: 1 (uL) GC Column: CLP1 ID: 0.32 (mm)
% Moisture: _____ GPC Cleanup: (Y/N) N
Analysis Batch No.: 458587 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
8001-35-2	Toxaphene	19.2		2.2	0.88	0.41

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170020.D
 Lims ID: 280-123221-A-4-A MSD
 Client ID: DET-003-190401-GWMSD
 Sample Type: MSD
 Inject. Date: 17-May-2019 18:50:56 ALS Bottle#: 14 Worklist Smp#: 20
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-A-4-A
 Misc. Info.: 280-0082009-020
 Operator ID: TEM Instrument ID: SGC_P1
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 29-May-2019 17:23:59 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0314

First Level Reviewer: mooret

Date: 29-May-2019 17:21:32

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/mL	OnCol Amt ng/mL	Flags
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* 2 1-Bromo-2-nitrobenzene

1	3.015	3.016	-0.001	93022306	150.0	150.0	
2	2.777	2.778	-0.001	96601591	150.0	150.0	

\$ 4 Tetrachloro-m-xylene

1	3.922	3.921	0.001	13321709	20.0	14.4	
2	3.765	3.765	0.000	12807339	20.0	14.9	

RPD = 3.38

28 Toxaphene

M

1	6.223	6.231	-0.008	5676411	2000.0	928.1	
1	6.816	6.817	-0.001	23060365	2000.0	1508.5	
1	7.041	7.042	-0.001	23132404	2000.0	2077.8	
1	7.490	7.489	0.001	49005635	2000.0	2004.9	
1	7.704	7.700	0.004	38018528	2000.0	2186.0	

Average of Peak Amounts = 1741.1

2	6.107	6.106	0.001	17886042	2000.0	2173.2	M
2	6.797	6.796	0.001	17364263	2000.0	1220.5	M
2	7.113	7.112	0.001	61976299	2000.0	1242.0	M
2	7.489	7.486	0.003	22643177	2000.0	1669.7	M
2	7.836	7.835	0.001	53869862	2000.0	1864.3	M

Average of Peak Amounts = 1633.9

RPD = 6.35

\$ 41 DCB Decachlorobiphenyl

1	9.153	9.153	0.000	13027575	20.0	19.1	
2	9.231	9.231	0.000	11653882	20.0	16.0	

RPD = 17.49

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

8081_IS_00011

Amount Added: 100.00

Units: uL

Run Reagent

Report Date: 29-May-2019 17:24:26

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170020.D

Injection Date: 17-May-2019 18:50:56

Instrument ID: SGC_P1

Operator ID: TEM

Lims ID: 280-123221-A-4-A MSD

Worklist Smp#: 20

Client ID: DET-003-190401-GWMSD

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

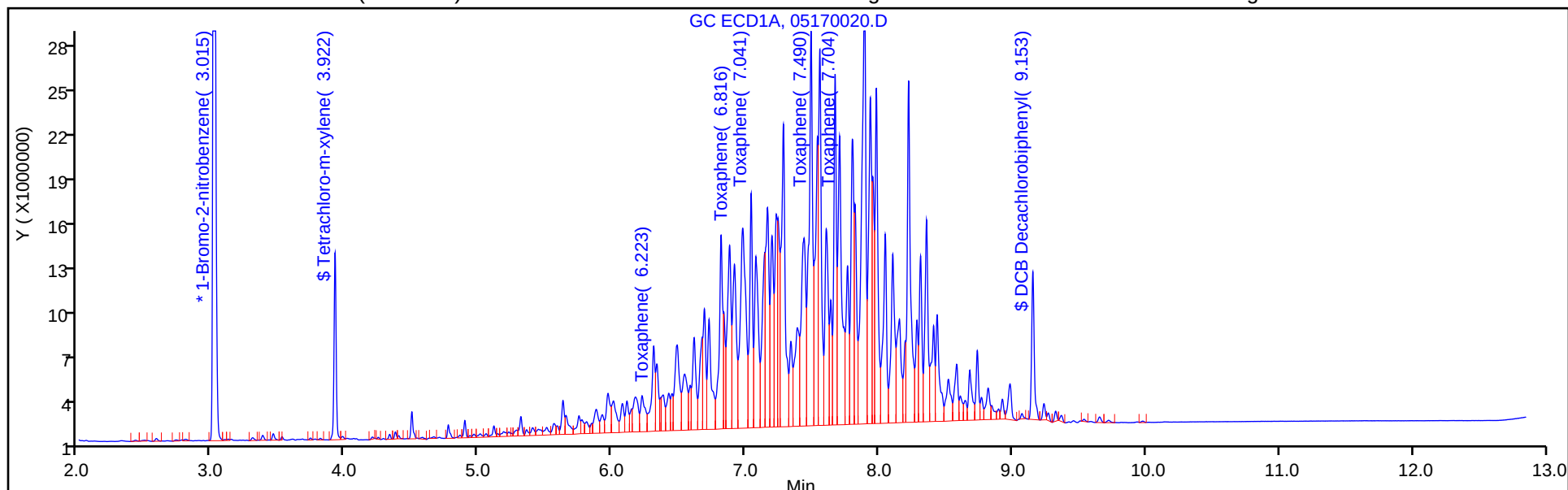
ALS Bottle#: 14

Method: P1 8081 IS

Limit Group: GCSV - 8081A - IS

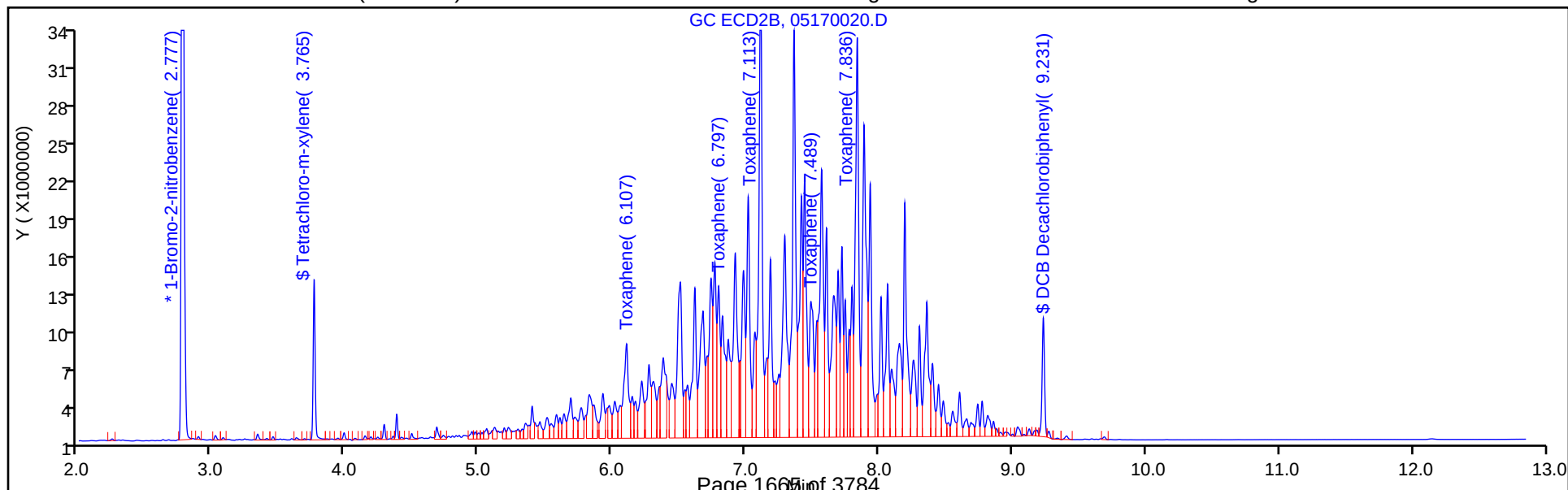
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 3



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170020.D
 Lims ID: 280-123221-A-4-A MSD
 Client ID: DET-003-190401-GWMSD
 Sample Type: MSD
 Inject. Date: 17-May-2019 18:50:56 ALS Bottle#: 14 Worklist Smp#: 20
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-A-4-A
 Misc. Info.: 280-0082009-020
 Operator ID: TEM Instrument ID: SGC_P1
 Method: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\P1 8081 IS.m
 Limit Group: GCSV - 8081A - IS
 Last Update: 29-May-2019 17:23:59 Calib Date: 04-Apr-2019 22:17:45
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P1\20190404-80574.b\04040032.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0314

First Level Reviewer: mooret

Date: 29-May-2019 17:21:32

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Tetrachloro-m-xylene	20.0	14.4	72.05
\$ 41 DCB Decachlorobiphenyl	20.0	19.1	95.47

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
\$ 4 Tetrachloro-m-xylene	20.0	14.9	74.53
\$ 41 DCB Decachlorobiphenyl	20.0	16.0	80.12

Report Date: 29-May-2019 17:24:26

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P1\20190517-82009.b\05170020.D

Injection Date: 17-May-2019 18:50:56

Instrument ID: SGC_P1

Lims ID: 280-123221-A-4-A MSD

Client ID: DET-003-190401-GWMSD

Operator ID: TEM

ALS Bottle#: 14

Worklist Smp#: 20

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: P1 8081 IS

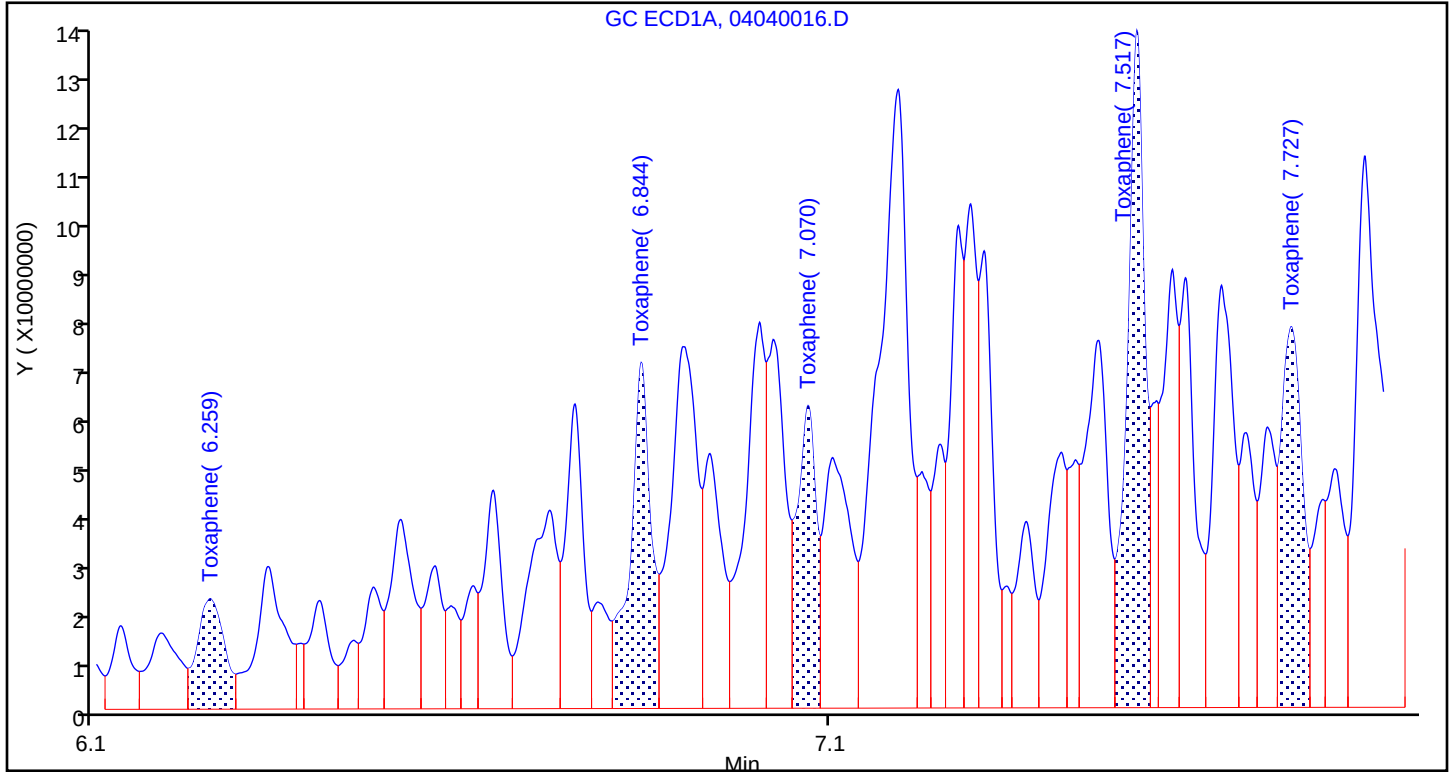
Limit Group: GCSV - 8081A - IS

Column: CLP1 Pesticides Column 1 (0.32 mm) Detector

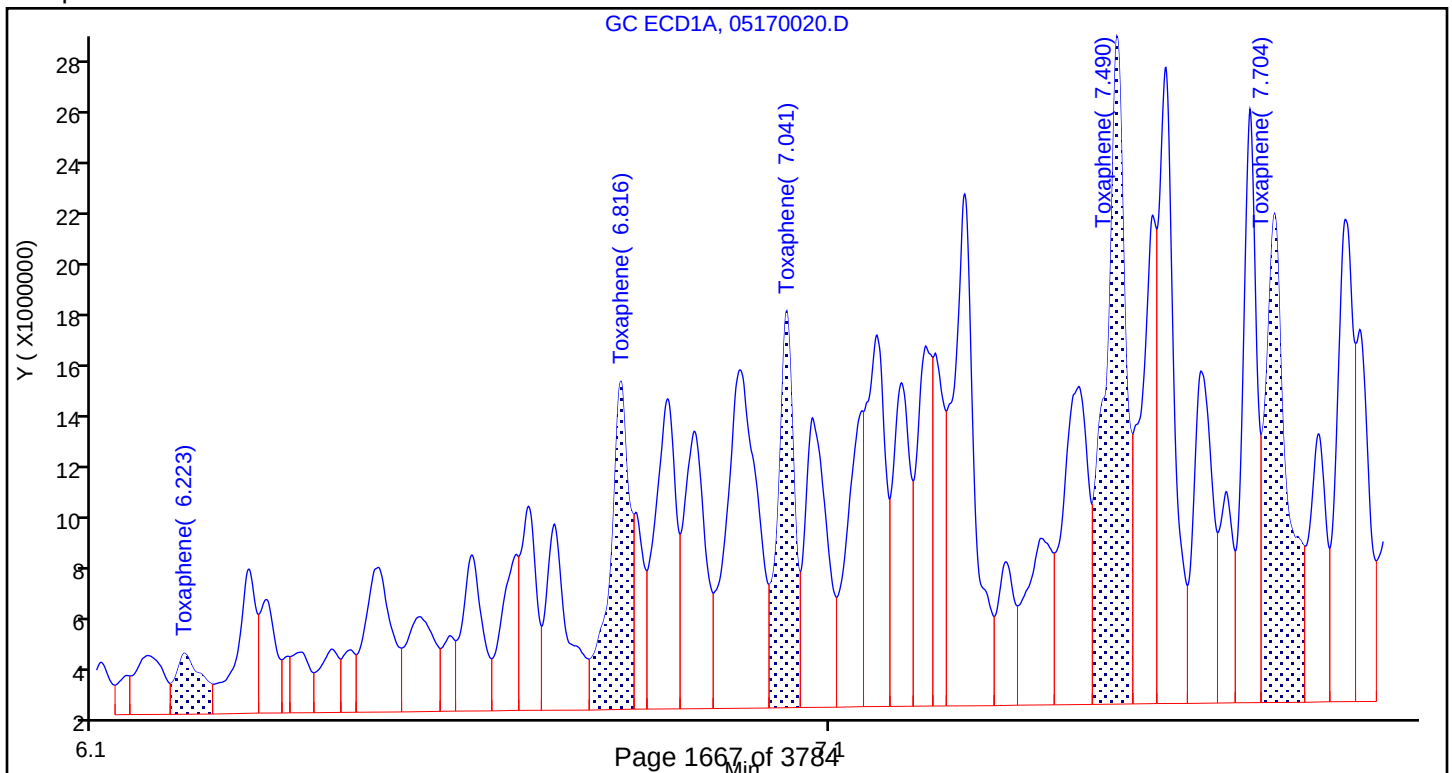
GC ECD1A

28 Toxaphene, CAS: 8001-35-2

Calibration Sample, Level: 6



Sample



PESTICIDES ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, DenverJob No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P1Start Date: 04/04/2019 15:01Analysis Batch Number: 453267End Date: 04/05/2019 07:13

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
PEM 280-453267/6		04/04/2019 15:01	1		CLP1 0.32 (mm)
PEM 280-453267/6		04/04/2019 15:01	1		CLP2 0.32 (mm)
STD7 280-453267/9 IC		04/04/2019 15:51	1		CLP1 0.32 (mm)
STD7 280-453267/9 IC		04/04/2019 15:51	1		CLP2 0.32 (mm)
STD6 280-453267/10 IC		04/04/2019 16:08	1		CLP1 0.32 (mm)
STD6 280-453267/10 IC		04/04/2019 16:08	1		CLP2 0.32 (mm)
STD5 280-453267/11 IC		04/04/2019 16:25	1		CLP1 0.32 (mm)
STD5 280-453267/11 IC		04/04/2019 16:25	1		CLP2 0.32 (mm)
STD4 280-453267/12 IC		04/04/2019 16:42	1		CLP1 0.32 (mm)
STD4 280-453267/12 IC		04/04/2019 16:42	1		CLP2 0.32 (mm)
STD3 280-453267/13 IC		04/04/2019 16:59	1		CLP1 0.32 (mm)
STD3 280-453267/13 IC		04/04/2019 16:59	1		CLP2 0.32 (mm)
STD2 280-453267/14 IC		04/04/2019 17:15	1		CLP1 0.32 (mm)
STD2 280-453267/14 IC		04/04/2019 17:15	1		CLP2 0.32 (mm)
STD1 280-453267/15 IC		04/04/2019 17:32	1		CLP1 0.32 (mm)
STD1 280-453267/15 IC		04/04/2019 17:32	1		CLP2 0.32 (mm)
STD6 280-453267/16 IC		04/04/2019 17:49	1	04040016.D	CLP1 0.32 (mm)
STD6 280-453267/16 IC		04/04/2019 17:49	1	04040016.D	CLP2 0.32 (mm)
STD5 280-453267/17 IC		04/04/2019 18:06	1	04040017.D	CLP1 0.32 (mm)
STD5 280-453267/17 IC		04/04/2019 18:06	1	04040017.D	CLP2 0.32 (mm)
STD4 280-453267/18 IC		04/04/2019 18:22	1	04040018.D	CLP1 0.32 (mm)
STD4 280-453267/18 IC		04/04/2019 18:22	1	04040018.D	CLP2 0.32 (mm)
STD3 280-453267/19 IC		04/04/2019 18:39	1	04040019.D	CLP1 0.32 (mm)
STD3 280-453267/19 IC		04/04/2019 18:39	1	04040019.D	CLP2 0.32 (mm)
STD2 280-453267/20 IC		04/04/2019 18:56	1	04040020.D	CLP1 0.32 (mm)
STD2 280-453267/20 IC		04/04/2019 18:56	1	04040020.D	CLP2 0.32 (mm)
STD1 280-453267/21 IC		04/04/2019 19:13	1	04040021.D	CLP1 0.32 (mm)
STD1 280-453267/21 IC		04/04/2019 19:13	1	04040021.D	CLP2 0.32 (mm)
STD5 280-453267/22 IC		04/04/2019 19:30	1		CLP1 0.32 (mm)
STD5 280-453267/22 IC		04/04/2019 19:30	1		CLP2 0.32 (mm)
STD4 280-453267/23 IC		04/04/2019 19:46	1		CLP1 0.32 (mm)
STD4 280-453267/23 IC		04/04/2019 19:46	1		CLP2 0.32 (mm)
STD3 280-453267/24 IC		04/04/2019 20:03	1		CLP1 0.32 (mm)

PESTICIDES ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.:

Instrument ID: SGC_P1

Start Date: 04/04/2019 15:01

Analysis Batch Number: 453267

End Date: 04/05/2019 07:13

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
STD3 280-453267/24 IC		04/04/2019 20:03	1		CLP2 0.32 (mm)
STD2 280-453267/25 IC		04/04/2019 20:20	1		CLP1 0.32 (mm)
STD2 280-453267/25 IC		04/04/2019 20:20	1		CLP2 0.32 (mm)
STD1 280-453267/26 IC		04/04/2019 20:37	1		CLP1 0.32 (mm)
STD1 280-453267/26 IC		04/04/2019 20:37	1		CLP2 0.32 (mm)
STD6 280-453267/27 IC		04/04/2019 20:54	1	04040027.D	CLP1 0.32 (mm)
STD6 280-453267/27 IC		04/04/2019 20:54	1	04040027.D	CLP2 0.32 (mm)
STD5 280-453267/28 IC		04/04/2019 21:10	1	04040028.D	CLP1 0.32 (mm)
STD5 280-453267/28 IC		04/04/2019 21:10	1	04040028.D	CLP2 0.32 (mm)
STD4 280-453267/29 ICIS		04/04/2019 21:27	1	04040029.D	CLP1 0.32 (mm)
STD4 280-453267/29 ICIS		04/04/2019 21:27	1	04040029.D	CLP2 0.32 (mm)
STD3 280-453267/30 IC		04/04/2019 21:44	1	04040030.D	CLP1 0.32 (mm)
STD3 280-453267/30 IC		04/04/2019 21:44	1	04040030.D	CLP2 0.32 (mm)
STD2 280-453267/31 IC		04/04/2019 22:01	1	04040031.D	CLP1 0.32 (mm)
STD2 280-453267/31 IC		04/04/2019 22:01	1	04040031.D	CLP2 0.32 (mm)
STD1 280-453267/32 IC		04/04/2019 22:17	1	04040032.D	CLP1 0.32 (mm)
STD1 280-453267/32 IC		04/04/2019 22:17	1	04040032.D	CLP2 0.32 (mm)
ICV 280-453267/33		04/04/2019 22:34	1	04040033.D	CLP1 0.32 (mm)
ICV 280-453267/33		04/04/2019 22:34	1	04040033.D	CLP2 0.32 (mm)
ICV 280-453267/34		04/04/2019 22:51	1	04040034.D	CLP1 0.32 (mm)
ICV 280-453267/34		04/04/2019 22:51	1	04040034.D	CLP2 0.32 (mm)
ICV 280-453267/35		04/04/2019 23:08	1	04040035.D	CLP1 0.32 (mm)
ICV 280-453267/35		04/04/2019 23:08	1	04040035.D	CLP2 0.32 (mm)
ICV 280-453267/36		04/04/2019 23:24	1	04040036.D	CLP1 0.32 (mm)
ICV 280-453267/36		04/04/2019 23:24	1	04040036.D	CLP2 0.32 (mm)
PEM 280-453267/37		04/04/2019 23:41	1		CLP1 0.32 (mm)
PEM 280-453267/37		04/04/2019 23:41	1		CLP2 0.32 (mm)
ZZZZZ		04/04/2019 23:58	10		CLP1 0.32 (mm)
ZZZZZ		04/04/2019 23:58	10		CLP2 0.32 (mm)
ZZZZZ		04/05/2019 00:14	1		CLP1 0.32 (mm)
ZZZZZ		04/05/2019 00:14	1		CLP2 0.32 (mm)
ZZZZZ		04/05/2019 00:31	1		CLP1 0.32 (mm)
ZZZZZ		04/05/2019 00:31	1		CLP2 0.32 (mm)
CCV 280-453267/41		04/05/2019 00:48	1		CLP1 0.32 (mm)
CCV 280-453267/41		04/05/2019 00:48	1		CLP2 0.32 (mm)
CCV 280-453267/42		04/05/2019 01:05	1		CLP1 0.32 (mm)
CCV 280-453267/42		04/05/2019 01:05	1		CLP2 0.32 (mm)
CCV 280-453267/43		04/05/2019 01:21	1		CLP1 0.32 (mm)

PESTICIDES ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, DenverJob No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P1Start Date: 04/04/2019 15:01Analysis Batch Number: 453267End Date: 04/05/2019 07:13

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 280-453267/43		04/05/2019 01:21	1		CLP2 0.32 (mm)
CCV 280-453267/44		04/05/2019 01:38	1		CLP1 0.32 (mm)
CCV 280-453267/44		04/05/2019 01:38	1		CLP2 0.32 (mm)
ZZZZZ		04/05/2019 01:55	1		CLP1 0.32 (mm)
ZZZZZ		04/05/2019 01:55	1		CLP2 0.32 (mm)
ZZZZZ		04/05/2019 02:12	1		CLP1 0.32 (mm)
ZZZZZ		04/05/2019 02:12	1		CLP2 0.32 (mm)
ZZZZZ		04/05/2019 02:28	1		CLP1 0.32 (mm)
ZZZZZ		04/05/2019 02:28	1		CLP2 0.32 (mm)
ZZZZZ		04/05/2019 02:45	1		CLP1 0.32 (mm)
ZZZZZ		04/05/2019 02:45	1		CLP2 0.32 (mm)
ZZZZZ		04/05/2019 03:02	1		CLP1 0.32 (mm)
ZZZZZ		04/05/2019 03:02	1		CLP2 0.32 (mm)
ZZZZZ		04/05/2019 03:19	1		CLP1 0.32 (mm)
ZZZZZ		04/05/2019 03:19	1		CLP2 0.32 (mm)
ZZZZZ		04/05/2019 03:35	1		CLP1 0.32 (mm)
ZZZZZ		04/05/2019 03:35	1		CLP2 0.32 (mm)
ZZZZZ		04/05/2019 03:52	1		CLP1 0.32 (mm)
ZZZZZ		04/05/2019 03:52	1		CLP2 0.32 (mm)
ZZZZZ		04/05/2019 04:09	1		CLP1 0.32 (mm)
ZZZZZ		04/05/2019 04:09	1		CLP2 0.32 (mm)
ZZZZZ		04/05/2019 04:26	1		CLP1 0.32 (mm)
ZZZZZ		04/05/2019 04:26	1		CLP2 0.32 (mm)
ZZZZZ		04/05/2019 04:42	1		CLP1 0.32 (mm)
ZZZZZ		04/05/2019 04:42	1		CLP2 0.32 (mm)
ZZZZZ		04/05/2019 04:59	1		CLP1 0.32 (mm)
ZZZZZ		04/05/2019 04:59	1		CLP2 0.32 (mm)
ZZZZZ		04/05/2019 05:16	1		CLP1 0.32 (mm)
ZZZZZ		04/05/2019 05:16	1		CLP2 0.32 (mm)
ZZZZZ		04/05/2019 05:33	1		CLP1 0.32 (mm)
ZZZZZ		04/05/2019 05:33	1		CLP2 0.32 (mm)
ZZZZZ		04/05/2019 05:49	1		CLP1 0.32 (mm)
ZZZZZ		04/05/2019 05:49	1		CLP2 0.32 (mm)
ZZZZZ		04/05/2019 06:06	1		CLP1 0.32 (mm)
ZZZZZ		04/05/2019 06:06	1		CLP2 0.32 (mm)
ZZZZZ		04/05/2019 06:23	1		CLP1 0.32 (mm)
ZZZZZ		04/05/2019 06:23	1		CLP2 0.32 (mm)
ZZZZZ		04/05/2019 06:40	1		CLP1 0.32 (mm)
ZZZZZ		04/05/2019 06:40	1		CLP2 0.32 (mm)
ZZZZZ		04/05/2019 06:57	1		CLP1 0.32 (mm)
ZZZZZ		04/05/2019 06:57	1		CLP2 0.32 (mm)
ZZZZZ		04/05/2019 07:13	1		CLP1 0.32 (mm)
ZZZZZ		04/05/2019 07:13	1		CLP2 0.32 (mm)

PESTICIDES ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, DenverJob No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P1Start Date: 05/17/2019 15:04Analysis Batch Number: 458587End Date: 05/18/2019 01:48

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
PEM 280-458587/7		05/17/2019 15:04	1	05170007.D	CLP1 0.32 (mm)
PEM 280-458587/7		05/17/2019 15:04	1	05170007.D	CLP2 0.32 (mm)
CCV 280-458587/10		05/17/2019 15:57	1		CLP1 0.32 (mm)
CCV 280-458587/10		05/17/2019 15:57	1		CLP2 0.32 (mm)
CCV 280-458587/11		05/17/2019 16:14	1	05170011.D	CLP1 0.32 (mm)
CCV 280-458587/11		05/17/2019 16:14	1	05170011.D	CLP2 0.32 (mm)
CCV 280-458587/12		05/17/2019 16:31	1		CLP1 0.32 (mm)
CCV 280-458587/12		05/17/2019 16:31	1		CLP2 0.32 (mm)
CCVIS 280-458587/13		05/17/2019 16:49	1	05170013.D	CLP1 0.32 (mm)
CCVIS 280-458587/13		05/17/2019 16:49	1	05170013.D	CLP2 0.32 (mm)
MB 280-457201/1-A		05/17/2019 17:06	1	05170014.D	CLP1 0.32 (mm)
MB 280-457201/1-A		05/17/2019 17:06	1	05170014.D	CLP2 0.32 (mm)
LCS 280-457201/2-A		05/17/2019 17:24	1	05170015.D	CLP1 0.32 (mm)
LCS 280-457201/2-A		05/17/2019 17:24	1	05170015.D	CLP2 0.32 (mm)
280-123221-4		05/17/2019 17:41	1	05170016.D	CLP1 0.32 (mm)
280-123221-4		05/17/2019 17:41	1	05170016.D	CLP2 0.32 (mm)
280-123221-4 MS		05/17/2019 17:58	1	05170017.D	CLP1 0.32 (mm)
280-123221-4 MS		05/17/2019 17:58	1	05170017.D	CLP2 0.32 (mm)
280-123221-4 MSD		05/17/2019 18:16	1	05170018.D	CLP1 0.32 (mm)
280-123221-4 MSD		05/17/2019 18:16	1	05170018.D	CLP2 0.32 (mm)
280-123221-4 MS		05/17/2019 18:33	1	05170019.D	CLP1 0.32 (mm)
280-123221-4 MS		05/17/2019 18:33	1	05170019.D	CLP2 0.32 (mm)
280-123221-4 MSD		05/17/2019 18:50	1	05170020.D	CLP1 0.32 (mm)
280-123221-4 MSD		05/17/2019 18:50	1	05170020.D	CLP2 0.32 (mm)
280-123221-5		05/17/2019 19:08	1	05170021.D	CLP1 0.32 (mm)
280-123221-5		05/17/2019 19:08	1	05170021.D	CLP2 0.32 (mm)
280-123221-7		05/17/2019 19:25	1	05170022.D	CLP1 0.32 (mm)
280-123221-7		05/17/2019 19:25	1	05170022.D	CLP2 0.32 (mm)
ZZZZZ		05/17/2019 19:43	1		CLP1 0.32 (mm)
ZZZZZ		05/17/2019 19:43	1		CLP2 0.32 (mm)
LCS 280-457201/4-A		05/17/2019 20:00	1	05170024.D	CLP1 0.32 (mm)
LCS 280-457201/4-A		05/17/2019 20:00	1	05170024.D	CLP2 0.32 (mm)
CCV 280-458587/25		05/17/2019 20:18	1		CLP1 0.32 (mm)
CCV 280-458587/25		05/17/2019 20:18	1		CLP2 0.32 (mm)
CCV 280-458587/26		05/17/2019 20:35	1	05170026.D	CLP1 0.32 (mm)
CCV 280-458587/26		05/17/2019 20:35	1	05170026.D	CLP2 0.32 (mm)
CCV 280-458587/27		05/17/2019 20:52	1		CLP1 0.32 (mm)
CCV 280-458587/27		05/17/2019 20:52	1		CLP2 0.32 (mm)
CCV 280-458587/28		05/17/2019 21:10	1	05170028.D	CLP1 0.32 (mm)
CCV 280-458587/28		05/17/2019 21:10	1	05170028.D	CLP2 0.32 (mm)
ZZZZZ		05/17/2019 21:27	1		CLP1 0.32 (mm)
ZZZZZ		05/17/2019 21:27	1		CLP2 0.32 (mm)
ZZZZZ		05/17/2019 21:45	1		CLP1 0.32 (mm)
ZZZZZ		05/17/2019 21:45	1		CLP2 0.32 (mm)
ZZZZZ		05/17/2019 22:02	1		CLP1 0.32 (mm)

PESTICIDES ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, DenverJob No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P1Start Date: 05/17/2019 15:04Analysis Batch Number: 458587End Date: 05/18/2019 01:48

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		05/17/2019 22:02	1		CLP2 0.32 (mm)
ZZZZZ		05/17/2019 22:19	1		CLP1 0.32 (mm)
ZZZZZ		05/17/2019 22:19	1		CLP2 0.32 (mm)
ZZZZZ		05/17/2019 22:37	1		CLP1 0.32 (mm)
ZZZZZ		05/17/2019 22:37	1		CLP2 0.32 (mm)
ZZZZZ		05/17/2019 22:54	1		CLP1 0.32 (mm)
ZZZZZ		05/17/2019 22:54	1		CLP2 0.32 (mm)
ZZZZZ		05/17/2019 23:12	1		CLP1 0.32 (mm)
ZZZZZ		05/17/2019 23:12	1		CLP2 0.32 (mm)
ZZZZZ		05/17/2019 23:29	1		CLP1 0.32 (mm)
ZZZZZ		05/17/2019 23:29	1		CLP2 0.32 (mm)
ZZZZZ		05/17/2019 23:46	1		CLP1 0.32 (mm)
ZZZZZ		05/17/2019 23:46	1		CLP2 0.32 (mm)
ZZZZZ		05/18/2019 00:04	1		CLP1 0.32 (mm)
ZZZZZ		05/18/2019 00:04	1		CLP2 0.32 (mm)
ZZZZZ		05/18/2019 00:21	1		CLP1 0.32 (mm)
ZZZZZ		05/18/2019 00:21	1		CLP2 0.32 (mm)
ZZZZZ		05/18/2019 00:39	1		CLP1 0.32 (mm)
ZZZZZ		05/18/2019 00:39	1		CLP2 0.32 (mm)
ZZZZZ		05/18/2019 00:56	1		CLP1 0.32 (mm)
ZZZZZ		05/18/2019 00:56	1		CLP2 0.32 (mm)
ZZZZZ		05/18/2019 01:13	1		CLP1 0.32 (mm)
ZZZZZ		05/18/2019 01:13	1		CLP2 0.32 (mm)
ZZZZZ		05/18/2019 01:31	10		CLP1 0.32 (mm)
ZZZZZ		05/18/2019 01:31	10		CLP2 0.32 (mm)
ZZZZZ		05/18/2019 01:48	10		CLP1 0.32 (mm)
ZZZZZ		05/18/2019 01:48	10		CLP2 0.32 (mm)

PESTICIDES BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457201 Batch Start Date: 05/06/19 15:29 Batch Analyst: Exstrum, Adam J

Batch Method: 3510C Batch End Date: 05/07/19 19:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	8081 LCS 00474
MB 280-457201/1		3510C, 8081B				1000 mL	10 mL	7 SU	
LCS 280-457201/2		3510C, 8081B				1000 mL	10 mL	7 SU	1 mL
LCS 280-457201/4		3510C, 8081B				1000 mL	10 mL	7 SU	
280-123221-D-4	DET-003-190401-G W	3510C, 8081B	T	1439.8 g	512.0 g	927.8 mL	10 mL	7 SU	
280-123221-B-4 MS	DET-003-190401-G WMS	3510C, 8081B	T	1469.6 g	513.4 g	956.2 mL	10 mL	7 SU	1 mL
280-123221-C-4 MSD	DET-003-190401-G WMSD	3510C, 8081B	T	1468.1 g	513.6 g	954.5 mL	10 mL	7 SU	1 mL
280-123221-D-4 MS	DET-003-190401-G WMS	3510C, 8081B	T	1477.0 g	506.2 g	970.8 mL	10 mL	7 SU	
280-123221-A-4 MSD	DET-003-190401-G WMSD	3510C, 8081B	T	1415.6 g	510.4 g	905.2 mL	10 mL	7 SU	
280-123221-B-5	DET-003-190402-G W	3510C, 8081B	T	1412.7 g	511.5 g	901.2 mL	10 mL	7 SU	
280-123221-A-7	DET-004-190401-G W	3510C, 8081B	T	1506.6 g	510.2 g	996.4 mL	10 mL	7 SU	

Lab Sample ID	Client Sample ID	Method Chain	Basis	8081/82 Surr 00111	8081Toxaphene 00035	AnalysisComment			
MB 280-457201/1		3510C, 8081B		1 mL					
LCS 280-457201/2		3510C, 8081B		1 mL		8081			
LCS 280-457201/4		3510C, 8081B		1 mL	1 mL	Tox			
280-123221-D-4	DET-003-190401-G W	3510C, 8081B	T	1 mL					
280-123221-B-4 MS	DET-003-190401-G WMS	3510C, 8081B	T	1 mL		8081			
280-123221-C-4 MSD	DET-003-190401-G WMSD	3510C, 8081B	T	1 mL		8081			
280-123221-D-4 MS	DET-003-190401-G WMS	3510C, 8081B	T	1 mL	1 mL	Tox			
280-123221-A-4 MSD	DET-003-190401-G WMSD	3510C, 8081B	T	1 mL	1 mL	Tox			
280-123221-B-5	DET-003-190402-G W	3510C, 8081B	T	1 mL					
280-123221-A-7	DET-004-190401-G W	3510C, 8081B	T	1 mL					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

8081B

Page 1 of 2

PESTICIDES BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457201 Batch Start Date: 05/06/19 15:29 Batch Analyst: Exstrum, Adam JBatch Method: 3510C Batch End Date: 05/07/19 19:30

Batch Notes	
Balance ID	24750399
Batch Comment	DV-OP-0006/0007; TROLL @ 10.00 mL
Analyst ID - Concentration	CR/MM
Concentration 1 Corrected Temperature	88/88 Degrees C
Equipment ID - Concentration 1	A/C
Exchange Solvent ID	Hexane_Cycl_00057
Analyst ID - Extraction	AE (trainer) / AG (trainee)
Method/Fraction	3510C/8081/8082/DOD5
Na2SO4 ID	0000218677_00004
NaCl ID	185572
Pipette/Syringe/Dispenser ID	1n2s
Prep Solvent ID	MeCl2_Cycl_00436
Prep Solvent Volume Used	180 mL
Analyst ID - Spike Analyst	AE
Analyst ID - Spike Witness Analyst	Reviewer: DC
Sufficient Volume for Batch QC	Yes
Concentration 1 Uncorrected Temperature	88/87 Degrees C
Reagent Water ID	S. ELGA

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

8082A_DOD5

Polychlorinated Biphenyls (PCBs) by
Gas Chromatography

FORM II
PCBS SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Matrix: Water Level: Low

GC Column (1): CLP2 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCX1 #	DCBP1 #
DET-003-190401-GW	280-123221-4	78	84
DET-003-190402-GW	280-123221-5	85	92
DET-004-190401-GW	280-123221-7	88	101
	MB 280-457201/1-A	90	87
	LCS 280-457201/3-A	85	90
DET-003-190401-GWM S MS	280-123221-4 MS	92	87
DET-003-190401-GWM SD MSD	280-123221-4 MSD	84	79

TCX = Tetrachloro-m-xylene
DCBP = DCB Decachlorobiphenyl

QC LIMITS
25-120
30-136

Column to be used to flag recovery values

FORM II 8082A

FORM III
PCBS LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Matrix: Water Level: Low Lab File ID: 006B0701.D
Lab ID: LCS 280-457201/3-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
PCB-1016	2.00	1.88	94	46-129	
PCB-1260	2.00	2.00	100	45-134	

Column to be used to flag recovery and RPD values

FORM III
PCBS MATRIX SPIKE RECOVERY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Matrix: Water Level: Low Lab File ID: 008B0901.D
Lab ID: 280-123221-4 MS Client ID: DET-003-190401-GWMS MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
PCB-1016	2.19	0.43 U	2.31	105	46-129	
PCB-1260	2.19	0.43 U	2.37	108	45-134	

Column to be used to flag recovery and RPD values

FORM III
PCBS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Matrix: Water Level: Low Lab File ID: 009B1001.D
Lab ID: 280-123221-4 MSD Client ID: DET-003-190401-GWMSD MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
PCB-1016	2.12	2.01	95	14	30	46-129	
PCB-1260	2.12	2.01	95	16	30	45-134	

Column to be used to flag recovery and RPD values

FORM IV
PCBS METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: MB 280-457201/1-A
 Matrix: Water Date Extracted: 05/06/2019 15:29
 Lab File ID: (1) 005B0601.D Lab File ID: (2) 005B0601.D
 Date Analyzed: (1) 05/23/2019 15:14 Date Analyzed: (2) 05/23/2019 15:14
 Instrument ID: (1) SGC_P3 Instrument ID: (2) SGC_P3
 GC Column: (1) CLP2 ID: 0.32 (mm) GC Column: (2) CLP1 ID: 0.32 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
	LCS 280-457201/3-A	05/23/2019 15:36	05/23/2019 15:36
DET-003-190401-GW	280-123221-4	05/23/2019 15:58	05/23/2019 15:58
DET-003-190401-GWMS MS	280-123221-4 MS	05/23/2019 16:19	05/23/2019 16:19
DET-003-190401-GWMSD MSD	280-123221-4 MSD	05/23/2019 16:41	05/23/2019 16:41
DET-003-190402-GW	280-123221-5	05/23/2019 17:03	05/23/2019 17:03
DET-004-190401-GW	280-123221-7	05/23/2019 17:25	05/23/2019 17:25

FORM VIII
PCBS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Sample No.: STD5 280-459083/21 Date Analyzed: 05/21/2019 19:29
 Instrument ID: SGC_P3 GC Column: CLP1 ID: 0.32 (mm)
 Lab File ID (Standard): 021B2201.D Heated Purge: (Y/N) N
 Calibration ID: 36513

		BNB					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		116703599	1.81				
UPPER LIMIT		233407198	2.31				
LOWER LIMIT		58351800	1.31				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 280-459083/38		92213081	1.81				
ICV 280-459083/39		94883569	1.81				
ICV 280-459083/40		94863442	1.81				
ICV 280-459083/41		89438313	1.81				
ICV 280-459083/42		97507955	1.81				

BNB = 1-Bromo-2-nitrobenzene

Area Limit = 50%-200% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
PCBS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Sample No.: STD5 280-459083/21 Date Analyzed: 05/21/2019 19:29
 Instrument ID: SGC_P3 GC Column: CLP2 ID: 0.32 (mm)
 Lab File ID (Standard): 021B2201.D Heated Purge: (Y/N) N
 Calibration ID: 36514

		BNB					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		145727773	1.73				
UPPER LIMIT		291455546	2.23				
LOWER LIMIT		72863887	1.23				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 280-459083/38		116252901	1.73				
ICV 280-459083/39		122077949	1.73				
ICV 280-459083/40		122018722	1.73				
ICV 280-459083/41		114710535	1.73				
ICV 280-459083/42		122825383	1.73				

BNB = 1-Bromo-2-nitrobenzene

Area Limit = 50%-200% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
PCBS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Sample No.: CCVIS 280-459265/4 Date Analyzed: 05/23/2019 14:52
 Instrument ID: SGC_P3 GC Column: CLP1 ID: 0.32 (mm)
 Lab File ID (Standard): 004B0501.D Heated Purge: (Y/N) N
 Calibration ID: 36521

		BNB					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		114115914	1.81				
UPPER LIMIT		228231828	2.31				
LOWER LIMIT		57057957	1.31				
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 280-457201/1-A		112868199	1.81				
LCS 280-457201/3-A		113700587	1.81				
280-123221-4	DET-003-190401-GW	117324771	1.81				
280-123221-4 MS	DET-003-190401-GWMS MS	103779867	1.81				
280-123221-4 MSD	DET-003-190401-GWMSD MSD	113249936	1.81				
280-123221-5	DET-003-190402-GW	110646197	1.81				
280-123221-7	DET-004-190401-GW	100896507	1.81				
CCV 280-459265/17		108563266	1.81				

BNB = 1-Bromo-2-nitrobenzene

Area Limit = 50%-200% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
PCBS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Sample No.: CCVIS 280-459265/4 Date Analyzed: 05/23/2019 14:52
 Instrument ID: SGC_P3 GC Column: CLP2 ID: 0.32 (mm)
 Lab File ID (Standard): 004B0501.D Heated Purge: (Y/N) N
 Calibration ID: 36522

		BNB					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		147255714	1.73				
UPPER LIMIT		294511428	2.23				
LOWER LIMIT		73627857	1.23				
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 280-457201/1-A		135114031	1.73				
LCS 280-457201/3-A		137747301	1.73				
280-123221-4	DET-003-190401-GW	143256570	1.73				
280-123221-4 MS	DET-003-190401-GWMS MS	126325218	1.73				
280-123221-4 MSD	DET-003-190401-GWMSD MSD	137017307	1.73				
280-123221-5	DET-003-190402-GW	134154292	1.73				
280-123221-7	DET-004-190401-GW	126694945	1.73				
CCV 280-459265/17		138617422	1.73				

BNB = 1-Bromo-2-nitrobenzene

Area Limit = 50%-200% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: DET-003-190401-GWMS MS Lab Sample ID: 280-123221-4 MS
 Instrument ID (1): SGC_P3 Instrument ID (2): SGC_P3
 Date Analyzed (1): 05/23/2019 16:19 Date Analyzed (2): 05/23/2019 16:19
 GC Column (1): CLP2 ID: 0.32 (mm) GC Column (2): CLP1 ID: 0.32 (mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
PCB-1016	1	1	3.69	3.43	3.93	2.23	2.31	5.6
		2	4.15	3.90	4.40	2.27		
		3	4.30	4.04	4.54	2.33		
		4	4.53	4.28	4.78	2.38		
		5	4.83	4.57	5.07	2.34		
	2	1	3.17	2.92	3.42	2.15	2.18	
		2	3.52	3.27	3.77	2.15		
		3	4.00	3.75	4.25	2.16		
		4	4.14	3.89	4.39	2.26		
		5	4.59	4.34	4.84	2.18		
PCB-1260	1	1	6.70	6.44	6.94	2.38	2.37	6.7
		2	7.16	6.91	7.41	2.24		
		3	7.30	7.04	7.54	2.47		
		4	8.06	7.81	8.31	2.40		
		5	8.56	8.31	8.81	2.36		
	2	1	6.09	5.84	6.34	2.19	2.21	
		2	6.62	6.37	6.87	2.17		
		3	7.31	7.06	7.56	2.17		
		4	7.75	7.50	8.00	2.24		
		5	8.14	7.89	8.39	2.30		

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: DET-003-190401-GWMSD MSD Lab Sample ID: 280-123221-4 MSD
 Instrument ID (1): SGC_P3 Instrument ID (2): SGC_P3
 Date Analyzed (1): 05/23/2019 16:41 Date Analyzed (2): 05/23/2019 16:41
 GC Column (1): CLP2 ID: 0.32 (mm) GC Column (2): CLP1 ID: 0.32 (mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
PCB-1016	1	1	3.69	3.43	3.93	1.97	2.01	4.5
		2	4.15	3.90	4.40	2.00		
		3	4.30	4.04	4.54	2.04		
		4	4.53	4.28	4.78	2.11		
		5	4.82	4.57	5.07	1.91		
	2	1	3.17	2.92	3.42	1.85	1.92	
		2	3.52	3.27	3.77	1.91		
		3	4.00	3.75	4.25	1.91		
		4	4.14	3.89	4.39	2.01		
		5	4.59	4.34	4.84	1.92		
PCB-1260	1	1	6.70	6.44	6.94	1.98	2.01	5.4
		2	7.16	6.91	7.41	1.90		
		3	7.30	7.04	7.54	2.07		
		4	8.06	7.81	8.31	2.07		
		5	8.56	8.31	8.81	2.04		
	2	1	6.09	5.84	6.34	1.89	1.91	
		2	6.62	6.37	6.87	1.88		
		3	7.31	7.06	7.56	1.86		
		4	7.75	7.50	8.00	1.92		
		5	8.14	7.89	8.39	1.97		

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCS 280-457201/3-A
 Instrument ID (1): SGC_P3 Instrument ID (2): SGC_P3
 Date Analyzed (1): 05/23/2019 15:36 Date Analyzed (2): 05/23/2019 15:36
 GC Column (1): CLP2 ID: 0.32 (mm) GC Column (2): CLP1 ID: 0.32 (mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
PCB-1016	1	1	3.68	3.43	3.93	1.81	1.88	6.7
		2	4.15	3.90	4.40	1.86		
		3	4.29	4.04	4.54	1.90		
		4	4.53	4.28	4.78	1.98		
		5	4.82	4.57	5.07	1.86		
	2	1	3.17	2.92	3.42	1.65	1.76	
		2	3.52	3.27	3.77	1.74		
		3	4.00	3.75	4.25	1.75		
		4	4.14	3.89	4.39	1.87		
		5	4.59	4.34	4.84	1.79		
PCB-1260	1	1	6.69	6.44	6.94	1.99	2.00	6.0
		2	7.16	6.91	7.41	1.86		
		3	7.29	7.04	7.54	2.08		
		4	8.06	7.81	8.31	2.05		
		5	8.56	8.31	8.81	2.05		
	2	1	6.09	5.84	6.34	1.84	1.89	
		2	6.62	6.37	6.87	1.83		
		3	7.31	7.06	7.56	1.87		
		4	7.75	7.50	8.00	1.91		
		5	8.14	7.89	8.39	1.98		

FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: DET-003-190401-GW Lab Sample ID: 280-123221-4
 Matrix: Water Lab File ID: 007B0801.D
 Analysis Method: 8082A Date Collected: 04/29/2019 10:53
 Extraction Method: 3510C Date Extracted: 05/06/2019 15:29
 Sample wt/vol: 927.8 (mL) Date Analyzed: 05/23/2019 15:58
 Con. Extract Vol.: 10 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) GC Column: CLP2 ID: 0.32 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 459265 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
12674-11-2	PCB-1016	0.43	U M	1.1	0.43	0.13
11104-28-2	PCB-1221	0.27	U M	1.1	0.27	0.23
11141-16-5	PCB-1232	0.65	U M	1.1	0.65	0.18
53469-21-9	PCB-1242	1.1	U	1.1	1.1	0.45
12672-29-6	PCB-1248	0.32	U	1.1	0.32	0.099
11097-69-1	PCB-1254	0.27	U	1.1	0.27	0.12
11096-82-5	PCB-1260	0.43	U	1.1	0.43	0.17

CAS NO.	SURROGATE	%REC	Q	LIMITS
877-09-8	Tetrachloro-m-xylene	78		25-120
2051-24-3	DCB Decachlorobiphenyl	84		30-136

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\007B0801.D
 Lims ID: 280-123221-D-4-A
 Client ID: DET-003-190401-GW
 Sample Type: Client
 Inject. Date: 23-May-2019 15:58:05 ALS Bottle#: 7 Worklist Smp#: 7
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-D-4-A
 Operator ID: TEM Instrument ID: SGC_P3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 28-May-2019 09:56:57 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0328

First Level Reviewer: mooret

Date: 28-May-2019 09:56:19

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	--------------------	-------

* 17 1-Bromo-2-nitrobenzene

1	1.812	1.810	0.002	117324771	100.0
2	1.727	1.728	-0.001	143256570	100.0

RPD = 0.00

\$ 14 Tetrachloro-m-xylene

1	2.769	2.770	-0.001	29380912	15.1
2	2.783	2.784	-0.001	42668219	15.6

RPD = 3.23

3 PCB-1221

1	2.984	ND	U
1	3.131		
1	3.168		
2	3.102		
2	3.232		
2	3.289		

1 PCB-1016

1	3.167	ND	U
1	3.520		
1	3.997		
1	4.137		
1	4.593		
2	3.684		
2	4.148		
2	4.294		
2	4.531		
2	4.824		

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\007B0801.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	--------------------	-------

7 PCB-1232

U

1	3.167				ND	
1	3.520					
1	3.997					
1	4.140					
1	4.597					
2	3.288					
2	3.685					
2	4.151					
2	4.295					
2	4.531					

10 PCB-1242

1	3.521				ND	
1	3.998					
1	4.595					
1	5.091					
1	5.118					
2	3.686					
2	4.149					
2	4.296					
2	4.826					
2	4.966					

4 PCB-1248

1	4.353				ND	
1	4.593					
1	4.690					
1	5.356					
1	5.846					
2	4.148					
2	4.531					
2	4.824					
2	4.964					
2	6.144					

9 PCB-1254

1	5.358				ND	
1	5.694					
1	5.848					
1	6.208					
1	6.824					
2	5.572					
2	5.995					
2	6.145					
2	6.695					
2	7.165					

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\007B0801.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	--------------------	-------

12 PCB-1260

1	6.087				ND	
1	6.617					
1	7.313					
1	7.750					
1	8.137					
2	6.694					
2	7.161					
2	7.294					
2	8.058					
2	8.564					

5 PCB-1262

1	6.457				ND	
1	6.987					
1	7.317					
1	7.754					
1	8.140					
2	6.695					
2	7.295					
2	7.691					
2	8.061					
2	8.565					

13 PCB-1268

1	8.201				ND	U
1	8.258					
1	8.528					
1	8.648					
1	9.455					
2	8.562					
2	8.622					
2	8.976					
2	9.116					
2	9.872					

\$ 15 DCB Decachlorobiphenyl

1	9.722	9.720	0.002	29960392	17.6	
2	10.230	10.231	-0.001	42928631	16.9	
						RPD = 3.83

S 8 Polychlorinated biphenyls, Total

1	0.000				ND	
2	0.000					

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\007B0801.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	--------------------	-------

2 PCB-5460

1	0.000				ND	
1	12.739					
1	0.000					
1	13.802					
1	14.259					
2	0.000					
2	0.000					
2	0.000					
2	0.000					
2	0.000					

6 PCB-5432

1	7.063				ND	
1	7.693					
1	8.203					
1	9.029					
1	9.459					
2	0.000					
2	0.000					
2	0.000					
2	0.000					
2	0.000					

11 PCB-5442

1	9.459				ND	
1	9.923					
1	10.079					
1	10.289					
1	0.000					
2	0.000					
2	0.000					
2	0.000					
2	0.000					
2	0.000					

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 28-May-2019 09:57:18

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\007B0801.D

Injection Date: 23-May-2019 15:58:05

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: 280-123221-D-4-A

Lab Sample ID: 280-123221-4

Worklist Smp#: 7

Client ID: DET-003-190401-GW

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

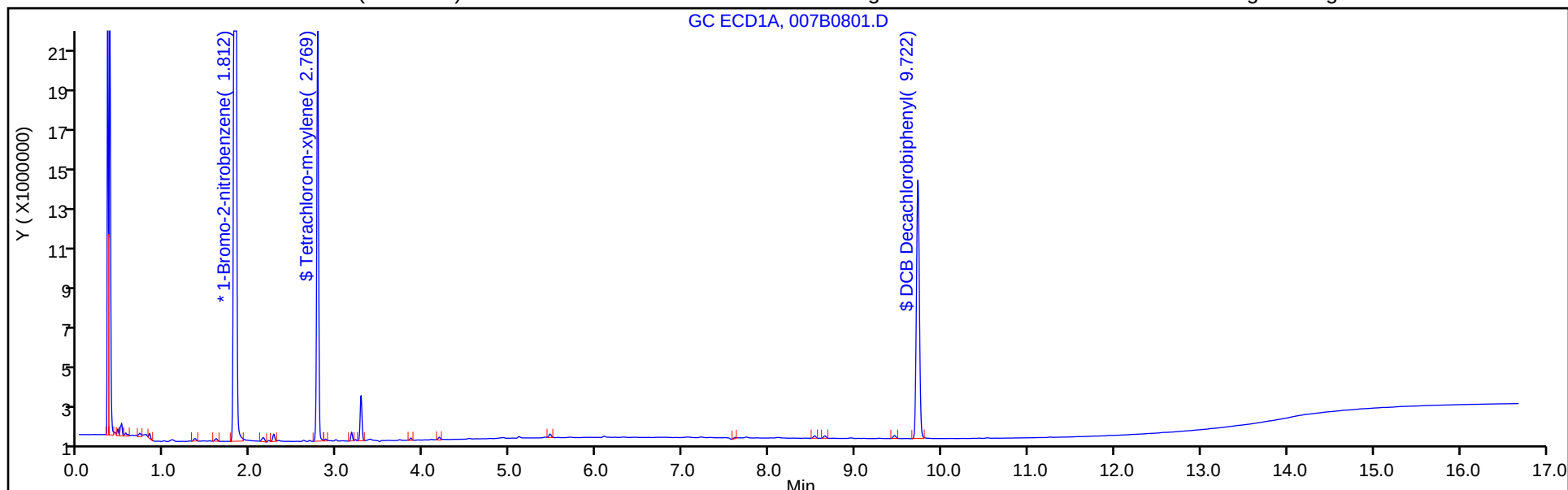
ALS Bottle#: 7

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

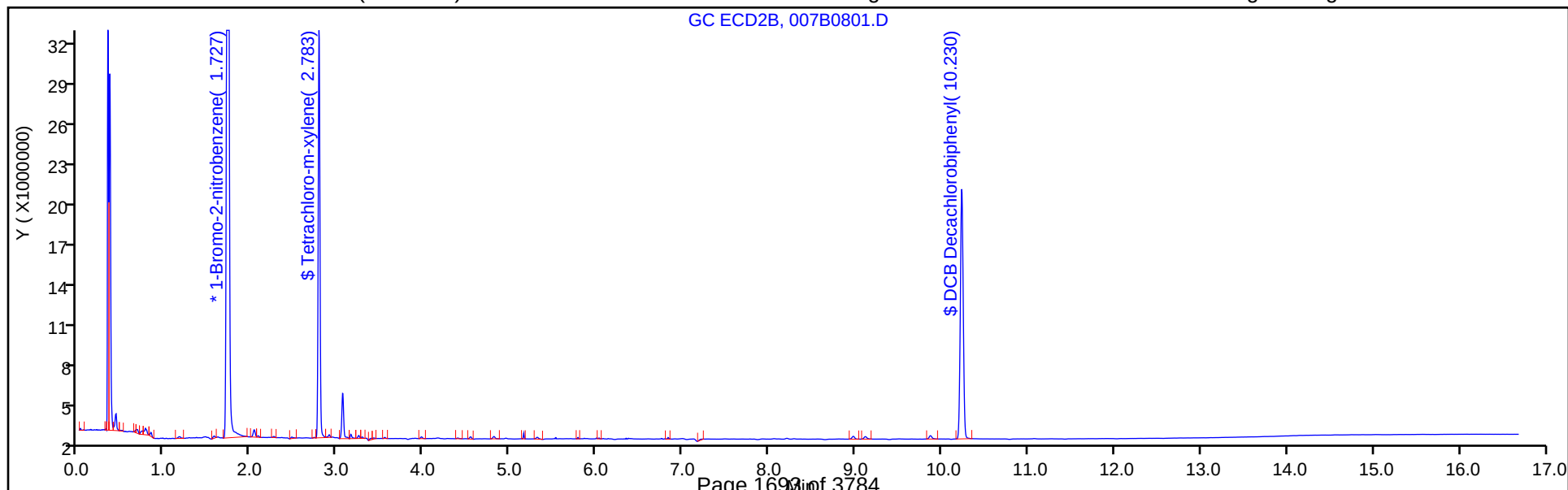
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\007B0801.D
Lims ID: 280-123221-D-4-A
Client ID: DET-003-190401-GW
Sample Type: Client
Inject. Date: 23-May-2019 15:58:05 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-D-4-A
Operator ID: TEM Instrument ID: SGC_P3
Method: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\PCB_P3.m
Limit Group: GCSV - 8082 - IS
Last Update: 28-May-2019 09:56:57 Calib Date: 22-May-2019 01:20:05
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
Process Host: CTX0328
First Level Reviewer: mooret Date: 28-May-2019 09:56:19

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
\$ 14 Tetrachloro-m-xylene	20.0	15.1	75.61
\$ 15 DCB Decachlorobiphenyl	20.0	17.6	87.76

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
\$ 14 Tetrachloro-m-xylene	20.0	15.6	78.09
\$ 15 DCB Decachlorobiphenyl	20.0	16.9	84.46

FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: DET-003-190402-GW Lab Sample ID: 280-123221-5
 Matrix: Water Lab File ID: 010B1101.D
 Analysis Method: 8082A Date Collected: 04/29/2019 10:53
 Extraction Method: 3510C Date Extracted: 05/06/2019 15:29
 Sample wt/vol: 901.2 (mL) Date Analyzed: 05/23/2019 17:03
 Con. Extract Vol.: 10 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) GC Column: CLP2 ID: 0.32 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 459265 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
12674-11-2	PCB-1016	0.44	U M	1.1	0.44	0.14
11104-28-2	PCB-1221	0.28	U M	1.1	0.28	0.24
11141-16-5	PCB-1232	0.67	U M	1.1	0.67	0.18
53469-21-9	PCB-1242	1.1	U M	1.1	1.1	0.46
12672-29-6	PCB-1248	0.33	U M	1.1	0.33	0.10
11097-69-1	PCB-1254	0.28	U M	1.1	0.28	0.13
11096-82-5	PCB-1260	0.44	U M	1.1	0.44	0.18

CAS NO.	SURROGATE	%REC	Q	LIMITS
877-09-8	Tetrachloro-m-xylene	85		25-120
2051-24-3	DCB Decachlorobiphenyl	92		30-136

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\010B1101.D
 Lims ID: 280-123221-B-5-A
 Client ID: DET-003-190402-GW
 Sample Type: Client
 Inject. Date: 23-May-2019 17:03:38 ALS Bottle#: 10 Worklist Smp#: 10
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-B-5-A
 Operator ID: TEM Instrument ID: SGC_P3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 28-May-2019 09:56:57 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0328

First Level Reviewer: mooret

Date: 28-May-2019 09:56:45

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.811	1.810	0.001	110646197	100.0
2	1.729	1.728	0.001	134154292	100.0

RPD = 0.00

\$ 14 Tetrachloro-m-xylene

1	2.768	2.770	-0.002	29603500	16.2
2	2.785	2.784	0.001	43589321	17.1

RPD = 5.39

3 PCB-1221

1	2.984	ND	U
1	3.131		
1	3.168		
2	3.102		
2	3.232		
2	3.289		

1 PCB-1016

1	3.167	ND	U
1	3.520		
1	3.997		
1	4.137		
1	4.593		
2	3.684		
2	4.148		
2	4.294		
2	4.531		
2	4.824		

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\010B1101.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ml	Flags
7 PCB-1232						U
1	3.167			ND		
1	3.520					
1	3.997					
1	4.140					
1	4.597					
2	3.288					
2	3.685					
2	4.151					
2	4.295					
2	4.531					
10 PCB-1242						U
1	3.521			ND		
1	3.998					
1	4.595					
1	5.091					
1	5.118					
2	3.686					
2	4.149					
2	4.296					
2	4.826					
2	4.966					
4 PCB-1248						U
1	4.353			ND		
1	4.593					
1	4.690					
1	5.356					
1	5.846					
2	4.148					
2	4.531					
2	4.824					
2	4.964					
2	6.144					
9 PCB-1254						U
1	5.358			ND		
1	5.694					
1	5.848					
1	6.208					
1	6.824					
2	5.572					
2	5.995					
2	6.145					
2	6.695					
2	7.165					

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\010B1101.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ml	Flags
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12 PCB-1260

1	6.087			ND		U
1	6.617					
1	7.313					
1	7.750					
1	8.137					
2	6.694					
2	7.161					
2	7.294					
2	8.058					
2	8.564					

5 PCB-1262

1	6.457			ND		U
1	6.987					
1	7.317					
1	7.754					
1	8.140					
2	6.695					
2	7.295					
2	7.691					
2	8.061					
2	8.565					

13 PCB-1268

1	8.201			ND		U
1	8.258					
1	8.528					
1	8.648					
1	9.455					
2	8.562					
2	8.622					
2	8.976					
2	9.116					
2	9.872					

\$ 15 DCB Decachlorobiphenyl

1	9.721	9.720	0.001	30469186	19.0	
2	10.232	10.231	0.001	43742395	18.5	
RPD = 2.79						

S 8 Polychlorinated biphenyls, Total

1	0.000			ND		
2	0.000					

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\010B1101.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	--------------------	-------

2 PCB-5460

1	0.000				ND	
1	12.739					
1	0.000					
1	13.802					
1	14.259					
2	0.000					
2	0.000					
2	0.000					
2	0.000					
2	0.000					

6 PCB-5432

1	7.063				ND	
1	7.693					
1	8.203					
1	9.029					
1	9.459					
2	0.000					
2	0.000					
2	0.000					
2	0.000					
2	0.000					

11 PCB-5442

1	9.459				ND	
1	9.923					
1	10.079					
1	10.289					
1	0.000					
2	0.000					
2	0.000					
2	0.000					
2	0.000					
2	0.000					

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 28-May-2019 09:57:12

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\010B1101.D

Injection Date: 23-May-2019 17:03:38

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: 280-123221-B-5-A

Lab Sample ID: 280-123221-5

Worklist Smp#: 10

Client ID: DET-003-190402-GW

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

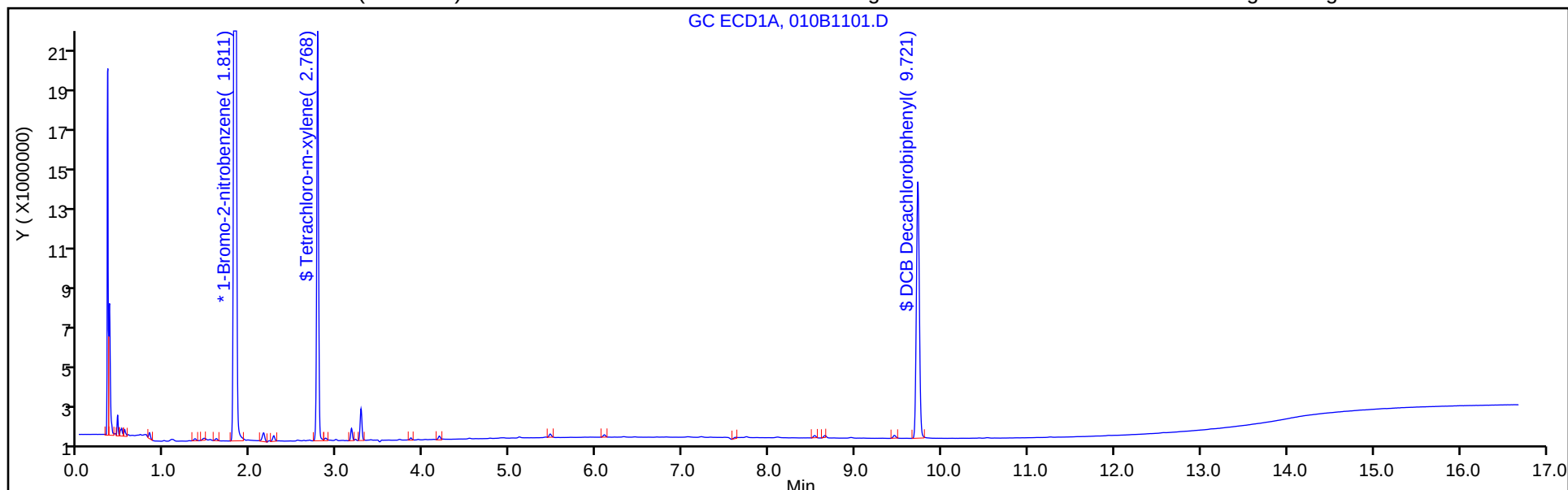
ALS Bottle#: 10

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

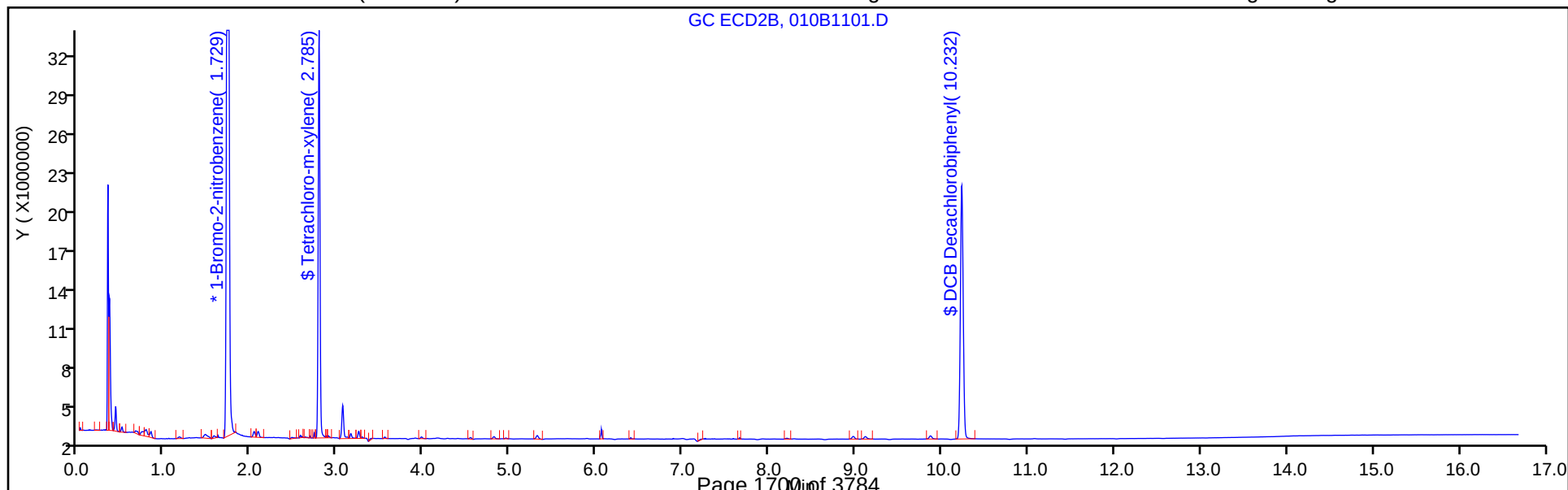
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\010B1101.D
 Lims ID: 280-123221-B-5-A
 Client ID: DET-003-190402-GW
 Sample Type: Client
 Inject. Date: 23-May-2019 17:03:38 ALS Bottle#: 10 Worklist Smp#: 10
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-B-5-A
 Operator ID: TEM Instrument ID: SGC_P3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 28-May-2019 09:56:57 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0328
 First Level Reviewer: mooret Date: 28-May-2019 09:56:45

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
\$ 14 Tetrachloro-m-xylene	20.0	16.2	81.01
\$ 15 DCB Decachlorobiphenyl	20.0	19.0	94.87

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
\$ 14 Tetrachloro-m-xylene	20.0	17.1	85.50
\$ 15 DCB Decachlorobiphenyl	20.0	18.5	92.26

FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: DET-004-190401-GW Lab Sample ID: 280-123221-7
 Matrix: Water Lab File ID: 011B1201.D
 Analysis Method: 8082A Date Collected: 04/29/2019 10:04
 Extraction Method: 3510C Date Extracted: 05/06/2019 15:29
 Sample wt/vol: 996.4 (mL) Date Analyzed: 05/23/2019 17:25
 Con. Extract Vol.: 10 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) GC Column: CLP2 ID: 0.32 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 459265 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
12674-11-2	PCB-1016	0.40	U M	1.0	0.40	0.12
11104-28-2	PCB-1221	0.25	U M	1.0	0.25	0.21
11141-16-5	PCB-1232	0.60	U M	1.0	0.60	0.17
53469-21-9	PCB-1242	1.0	U M	1.0	1.0	0.42
12672-29-6	PCB-1248	0.30	U M	1.0	0.30	0.092
11097-69-1	PCB-1254	0.25	U M	1.0	0.25	0.11
11096-82-5	PCB-1260	0.40	U M	1.0	0.40	0.16

CAS NO.	SURROGATE	%REC	Q	LIMITS
877-09-8	Tetrachloro-m-xylene	88		25-120
2051-24-3	DCB Decachlorobiphenyl	101		30-136

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\011B1201.D
 Lims ID: 280-123221-A-7-A
 Client ID: DET-004-190401-GW
 Sample Type: Client
 Inject. Date: 23-May-2019 17:25:31 ALS Bottle#: 11 Worklist Smp#: 11
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-A-7-A
 Operator ID: TEM Instrument ID: SGC_P3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 28-May-2019 09:56:57 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0328

First Level Reviewer: mooret

Date: 28-May-2019 09:56:51

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	--------------------	-------

* 17 1-Bromo-2-nitrobenzene

1	1.810	1.810	0.000	100896507	100.0
2	1.728	1.728	0.000	126694945	100.0

RPD = 0.00

\$ 14 Tetrachloro-m-xylene

1	2.770	2.770	0.000	28873734	17.4
2	2.784	2.784	0.000	42123223	17.5

RPD = 0.79

3 PCB-1221

1	2.984	ND	U
1	3.131		
1	3.168		
2	3.102		
2	3.232		
2	3.289		

1 PCB-1016

1	3.167	ND	U
1	3.520		
1	3.997		
1	4.137		
1	4.593		
2	3.684		
2	4.148		
2	4.294		
2	4.531		
2	4.824		

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\011B1201.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ml	Flags
7 PCB-1232						U
1	3.167			ND		
1	3.520					
1	3.997					
1	4.140					
1	4.597					
2	3.288					
2	3.685					
2	4.151					
2	4.295					
2	4.531					
10 PCB-1242						U
1	3.521			ND		
1	3.998					
1	4.595					
1	5.091					
1	5.118					
2	3.686					
2	4.149					
2	4.296					
2	4.826					
2	4.966					
4 PCB-1248						U
1	4.353			ND		
1	4.593					
1	4.690					
1	5.356					
1	5.846					
2	4.148					
2	4.531					
2	4.824					
2	4.964					
2	6.144					
9 PCB-1254						U
1	5.358			ND		
1	5.694					
1	5.848					
1	6.208					
1	6.824					
2	5.572					
2	5.995					
2	6.145					
2	6.695					
2	7.165					

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\011B1201.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	--------------------	-------

12 PCB-1260

1	6.087			ND		U
1	6.617					
1	7.313					
1	7.750					
1	8.137					
2	6.694					
2	7.161					
2	7.294					
2	8.058					
2	8.564					

5 PCB-1262

1	6.457			ND		U
1	6.987					
1	7.317					
1	7.754					
1	8.140					
2	6.695					
2	7.295					
2	7.691					
2	8.061					
2	8.565					

13 PCB-1268

1	8.201			ND		U
1	8.258					
1	8.528					
1	8.648					
1	9.455					
2	8.562					
2	8.622					
2	8.976					
2	9.116					
2	9.872					

\$ 15 DCB Decachlorobiphenyl

1	9.723	9.720	0.003	31383824	21.5	
2	10.231	10.231	0.000	45162107	20.2	
RPD = 6.03						

S 8 Polychlorinated biphenyls, Total

1	0.000			ND		
2	0.000					

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\011B1201.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	--------------------	-------

2 PCB-5460

1	0.000				ND	
1	12.739					
1	0.000					
1	13.802					
1	14.259					
2	0.000					
2	0.000					
2	0.000					
2	0.000					
2	0.000					

6 PCB-5432

1	7.063				ND	
1	7.693					
1	8.203					
1	9.029					
1	9.459					
2	0.000					
2	0.000					
2	0.000					
2	0.000					
2	0.000					

11 PCB-5442

1	9.459				ND	
1	9.923					
1	10.079					
1	10.289					
1	0.000					
2	0.000					
2	0.000					
2	0.000					
2	0.000					
2	0.000					

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 28-May-2019 09:57:11

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\011B1201.D

Injection Date: 23-May-2019 17:25:31

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: 280-123221-A-7-A

Lab Sample ID: 280-123221-7

Worklist Smp#: 11

Client ID: DET-004-190401-GW

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

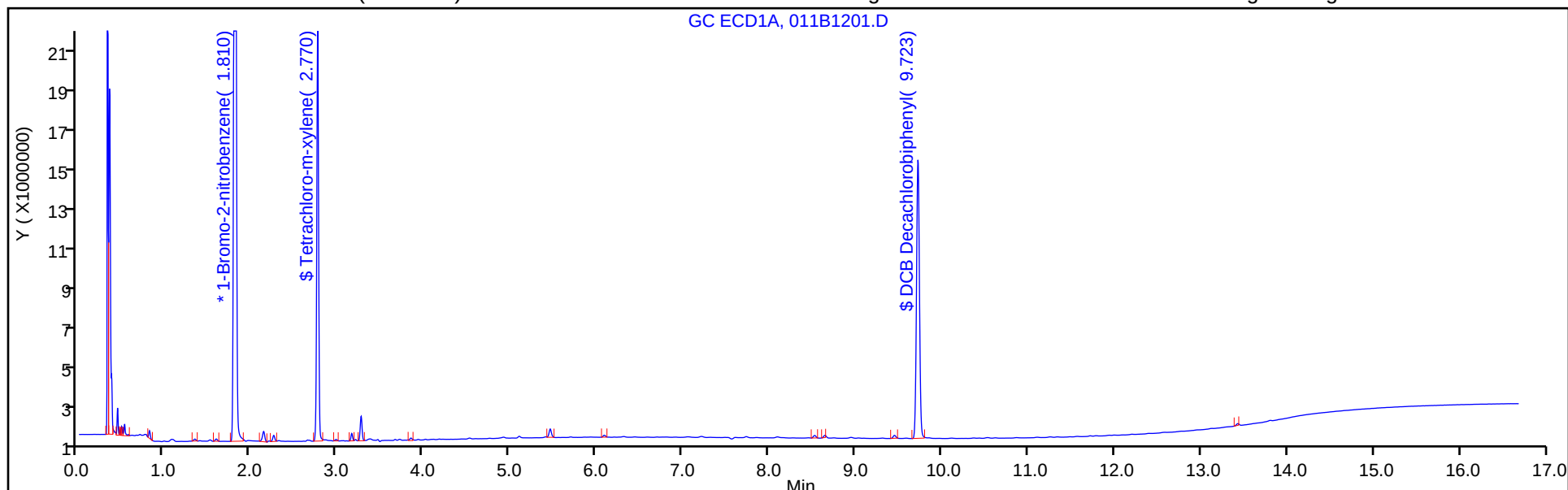
ALS Bottle#: 11

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

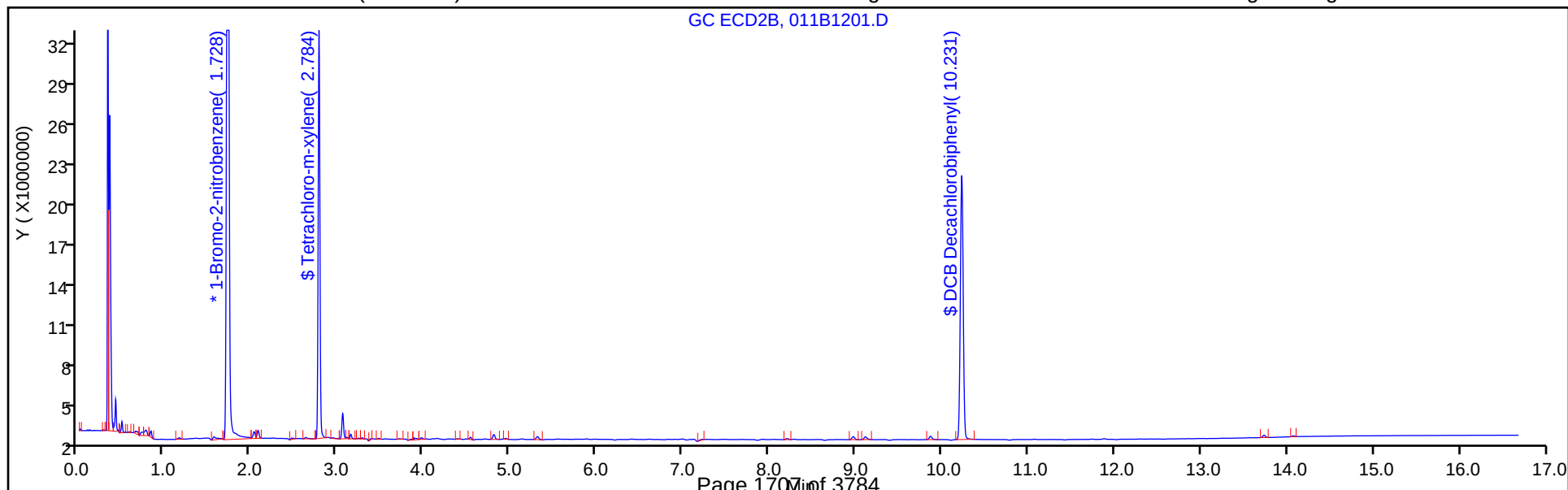
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\011B1201.D
 Lims ID: 280-123221-A-7-A
 Client ID: DET-004-190401-GW
 Sample Type: Client
 Inject. Date: 23-May-2019 17:25:31 ALS Bottle#: 11 Worklist Smp#: 11
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-A-7-A
 Operator ID: TEM Instrument ID: SGC_P3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 28-May-2019 09:56:57 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0328
 First Level Reviewer: mooret Date: 28-May-2019 09:56:51

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
\$ 14 Tetrachloro-m-xylene	20.0	17.4	86.88
\$ 15 DCB Decachlorobiphenyl	20.0	21.5	107.54

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
\$ 14 Tetrachloro-m-xylene	20.0	17.5	87.56
\$ 15 DCB Decachlorobiphenyl	20.0	20.2	101.24

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 459083

SDG No.: _____

Instrument ID: SGC_P3 GC Column: CLP1 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/21/2019 12:56 Calibration End Date: 05/21/2019 15:07 Calibration ID: 36525

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-459083/3	003B0401.D
Level 2	STD2 280-459083/4	004B0501.D
Level 3	STD3 280-459083/5	005B0601.D
Level 4	STD4 280-459083/6	006B0701.D
Level 5	STD5 280-459083/7	007B0801.D
Level 6	STD6 280-459083/8	008B0901.D
Level 7	STD7 280-459083/9	009B1001.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7															
PCB-1248 Peak 1	0.0998 0.0717	0.0761 +++++	0.0747	0.0694	0.0677	Ave		0.0766				15.4		20.0			
PCB-1248 Peak 2	0.0919 0.0682	0.0739 +++++	0.0713	0.0674	0.0645	Ave		0.0729				13.6		20.0			
PCB-1248 Peak 3	0.0555 0.0421	0.0446 +++++	0.0427	0.0417	0.0397	Ave		0.0444				12.8		20.0			
PCB-1248 Peak 4	0.0651 0.0506	0.0527 +++++	0.0516	0.0496	0.0478	Ave		0.0529				11.7		20.0			
PCB-1248 Peak 5	0.0422 0.0339	0.0345 +++++	0.0340	0.0332	0.0317	Ave		0.0349				10.6		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 459083

SDG No.: _____

Instrument ID: SGC_P3 GC Column: CLP1 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/21/2019 12:56 Calibration End Date: 05/21/2019 15:07 Calibration ID: 36525

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-459083/3	003B0401.D
Level 2	STD2 280-459083/4	004B0501.D
Level 3	STD3 280-459083/5	005B0601.D
Level 4	STD4 280-459083/6	006B0701.D
Level 5	STD5 280-459083/7	007B0801.D
Level 6	STD6 280-459083/8	008B0901.D
Level 7	STD7 280-459083/9	009B1001.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
PCB-1248 Peak 1	BNB	Ave	2659178 56976751	4659458 +++++	8908983	20444893	39280003	25.0 750	50.0 +++++	100	250	500
PCB-1248 Peak 2	BNB	Ave	2448895 54205479	4521686 +++++	8501909	19870561	37432665	25.0 750	50.0 +++++	100	250	500
PCB-1248 Peak 3	BNB	Ave	1479025 33457169	2730246 +++++	5092445	12304399	23062598	25.0 750	50.0 +++++	100	250	500
PCB-1248 Peak 4	BNB	Ave	1733635 40200475	3229639 +++++	6158699	14609111	27738200	25.0 750	50.0 +++++	100	250	500
PCB-1248 Peak 5	BNB	Ave	1122885 26915856	2111766 +++++	4056665	9776897	18378801	25.0 750	50.0 +++++	100	250	500

Curve Type Legend:

Ave = Average ISTD

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\003B0401.D
 Lims ID: STD1 1248
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 21-May-2019 12:56:12 ALS Bottle#: 3 Worklist Smp#: 3
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD1
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub2
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:18:24 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:42:45

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

* 17 1-Bromo-2-nitrobenzene

1	1.811	1.813	-0.002	106556624	100.0	100.0
2	1.728	1.731	-0.003	126512352	100.0	100.0

RPD = 0.00

4 PCB-1248

1	4.354	4.353	0.001	2659178	25.0	32.6
1	4.594	4.593	0.001	2448895	25.0	31.5
1	4.691	4.690	0.001	1479025	25.0	31.3
1	5.357	5.356	0.001	1733635	25.0	30.8
1	5.851	5.846	0.005	1122885	25.0	30.2

Average of Peak Amounts =

31.3

2	4.148	4.148	0.000	3491538	25.0	32.0
2	4.532	4.531	0.001	2260946	25.0	33.3
2	4.822	4.824	-0.002	3746136	25.0	29.2
2	4.965	4.964	0.001	3253827	25.0	33.3
2	6.148	6.144	0.004	2029129	25.0	32.7

Average of Peak Amounts =

32.1

RPD = 2.56

S 8 Polychlorinated biphenyls, Total

1						31.3
2						32.1

RPD = 2.56

Reagents:

AR_1248_L7_00018

Amount Added: 0.03

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:18:25

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\003B0401.D

Injection Date: 21-May-2019 12:56:12

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD1 1248

Worklist Smp#: 3

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

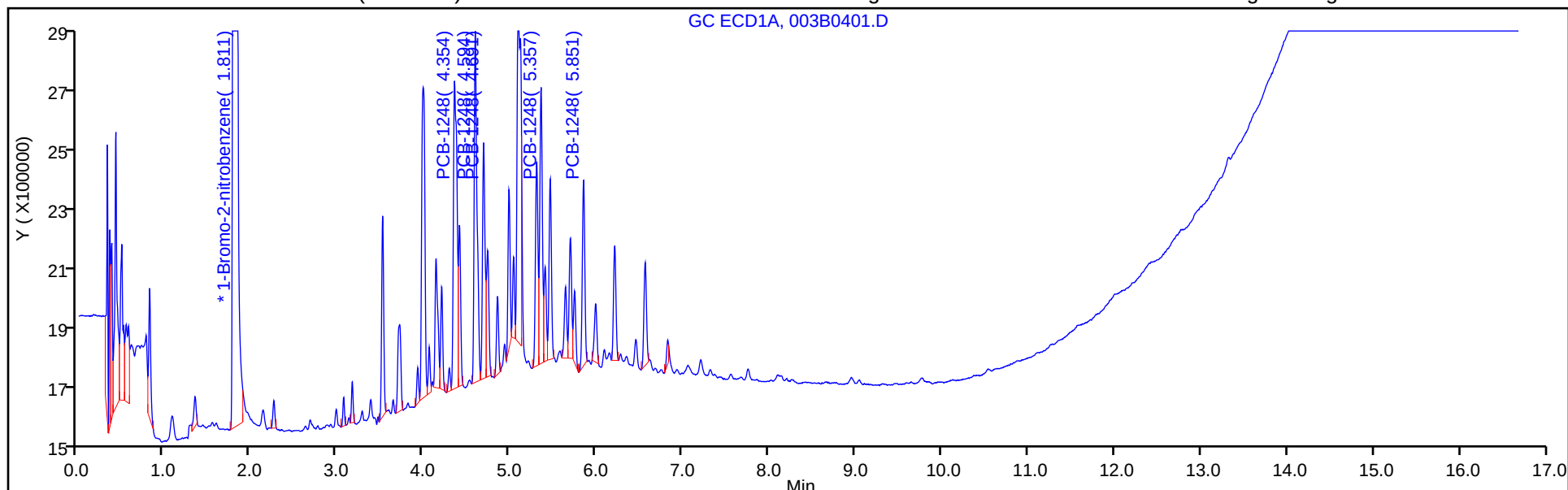
ALS Bottle#: 3

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

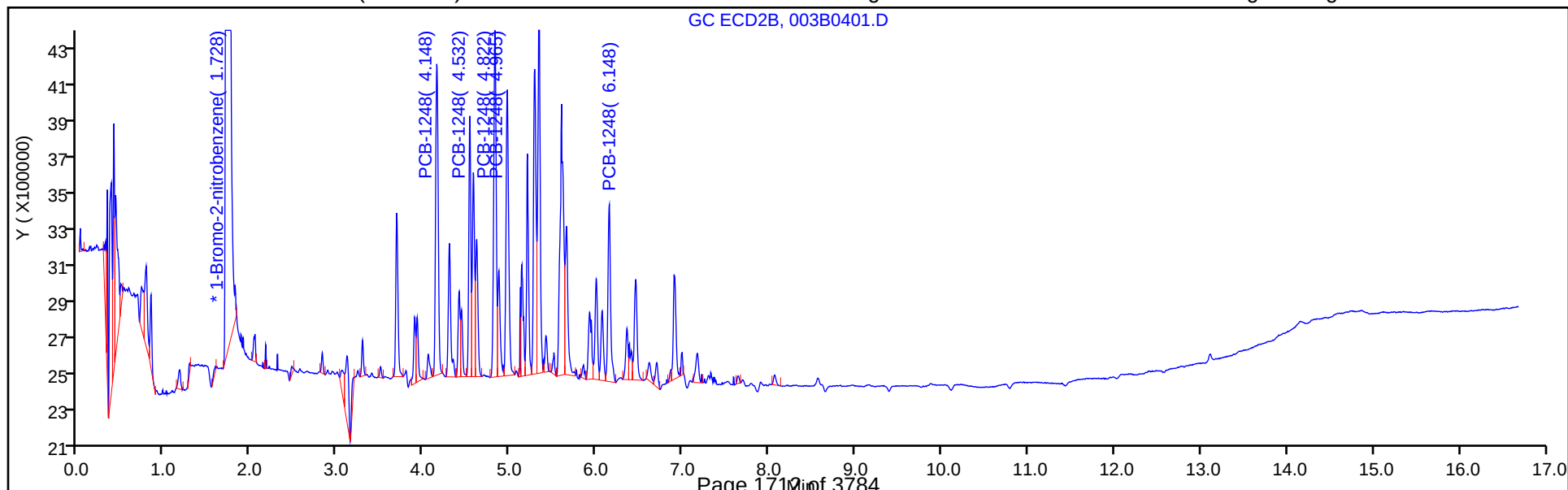
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\004B0501.D
 Lims ID: STD2
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 21-May-2019 13:18:02 ALS Bottle#: 4 Worklist Smp#: 4
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD2
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub2
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:18:13 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.813	0.000	122451198	100.0	100.0
2	1.731	1.731	0.000	150118486	100.0	100.0

RPD = 0.00

4 PCB-1248

1	4.353	4.353	0.000	4659458	50.0	49.7
1	4.593	4.593	0.000	4521686	50.0	50.7
1	4.690	4.690	0.000	2730246	50.0	50.2
1	5.357	5.356	0.001	3229639	50.0	49.9
1	5.847	5.846	0.001	2111766	50.0	49.4

Average of Peak Amounts = 50.0

2	4.148	4.148	0.000	6798873	50.0	52.6
2	4.531	4.531	0.000	4300803	50.0	53.3
2	4.824	4.824	0.000	6065974	50.0	46.7
2	4.964	4.964	0.000	5889796	50.0	50.8
2	6.144	6.144	0.000	3742674	50.0	50.8

Average of Peak Amounts = 50.8

RPD = 1.70

S 8 Polychlorinated biphenyls, Total

1						50.0
2						50.8

RPD = 1.70

Reagents:

AR_1248_L7_00018	Amount Added: 0.05	Units: mL	
BNB IS_00013	Amount Added: 0.10	Units: mL	Run Reagent

Report Date: 22-May-2019 20:18:15

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\004B0501.D

Injection Date: 21-May-2019 13:18:02

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD2

Worklist Smp#: 4

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

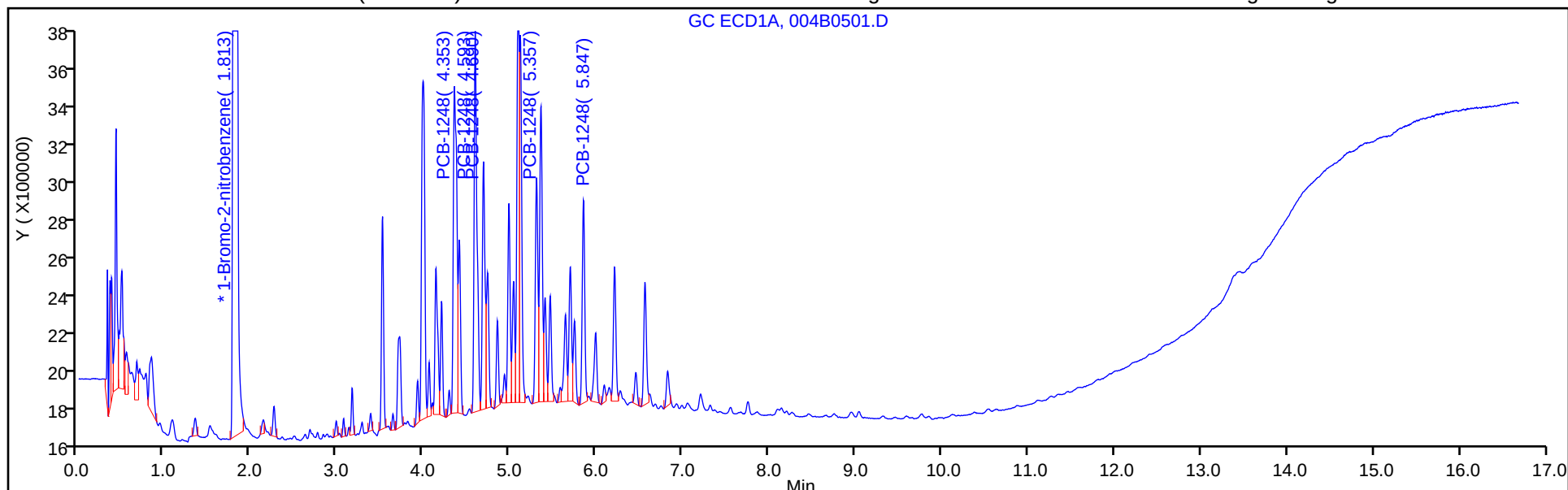
ALS Bottle#: 4

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

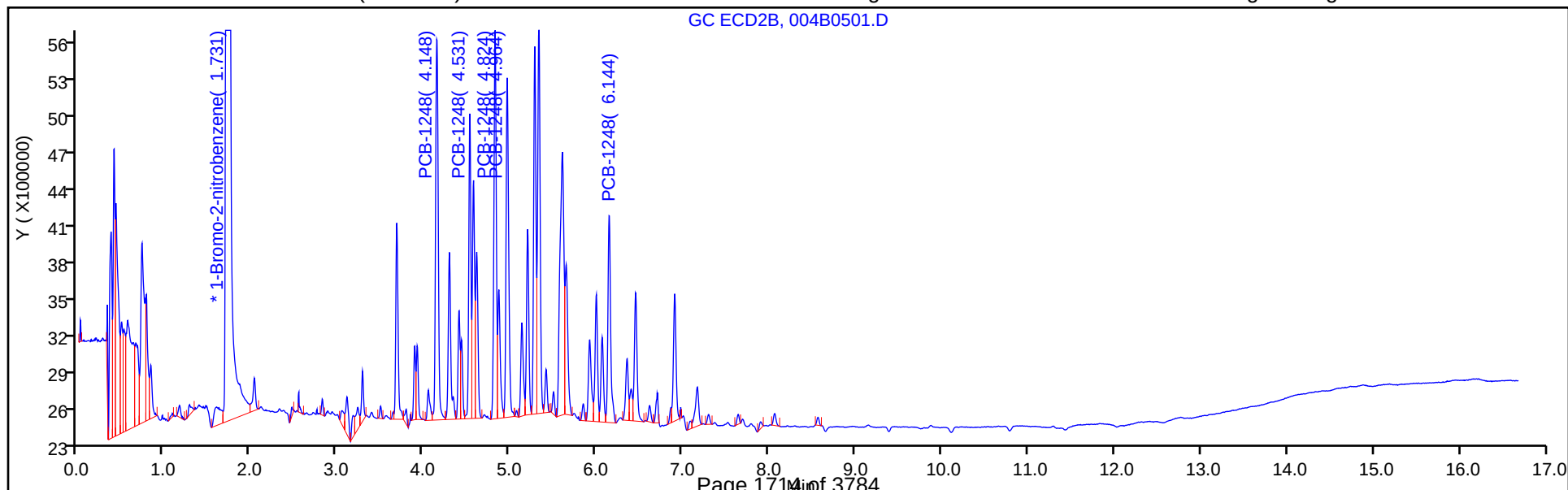
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\005B0601.D
 Lims ID: STD3
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 21-May-2019 13:39:55 ALS Bottle#: 5 Worklist Smp#: 5
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD3
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub2
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:17:52 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1: CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2: CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.813	0.000	119320080	100.0	100.0
2	1.731	1.731	0.000	146465373	100.0	100.0

RPD = 0.00

4 PCB-1248

1	4.357	4.353	0.004	8908983	100.0	97.5
1	4.597	4.593	0.003	8501909	100.0	97.8
1	4.690	4.690	0.000	5092445	100.0	96.1
1	5.356	5.356	0.000	6158699	100.0	97.6
1	5.846	5.846	0.000	4056665	100.0	97.4

Average of Peak Amounts = 97.3

2	4.148	4.148	0.000	12025926	100.0	95.3
2	4.531	4.531	0.000	7456063	100.0	94.8
2	4.824	4.824	0.000	11589296	100.0	109.7
2	4.964	4.964	0.000	10957197	100.0	96.8
2	6.144	6.144	0.000	6840165	100.0	95.1

Average of Peak Amounts = 98.3

RPD = 1.07

S 8 Polychlorinated biphenyls, Total

1						97.3
2						98.3

RPD = 1.07

Reagents:

AR_1248_L7_00018	Amount Added: 0.10	Units: mL	
BNB IS_00013	Amount Added: 0.10	Units: mL	Run Reagent

Report Date: 22-May-2019 20:17:54

Chrom Revision: 2.3 03-May-2019 15:52:00

Euofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\005B0601.D

Injection Date: 21-May-2019 13:39:55

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD3

Worklist Smp#: 5

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

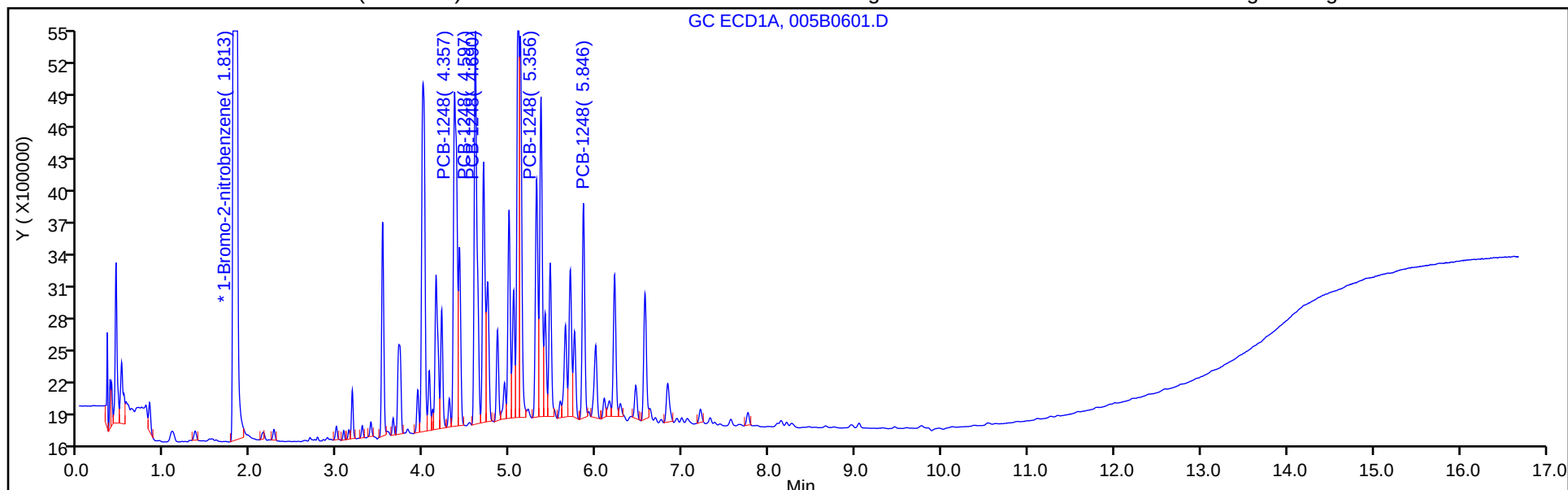
ALS Bottle#: 5

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

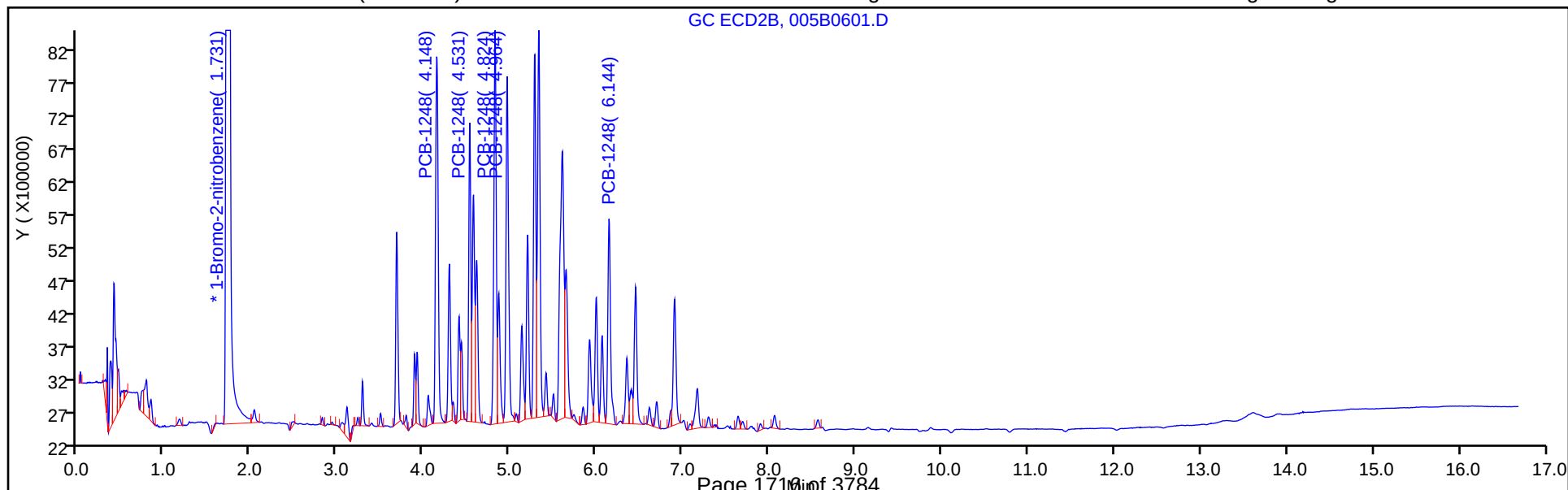
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\006B0701.D
 Lims ID: STD4
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 21-May-2019 14:01:46 ALS Bottle#: 6 Worklist Smp#: 6
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD4
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub2
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:17:31 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1: CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2: CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:44:54

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.814	1.813	0.001	117913645	100.0	100.0
2	1.732	1.731	0.001	146937645	100.0	100.0

RPD = 0.00

4 PCB-1248

1	4.354	4.353	0.001	20444893	250.0	226.5
1	4.594	4.593	0.001	19870561	250.0	231.3
1	4.691	4.690	0.001	12304399	250.0	235.0
1	5.354	5.356	-0.002	14609111	250.0	234.2
1	5.848	5.846	0.002	9776897	250.0	237.6

Average of Peak Amounts = 232.9

2	4.149	4.148	0.001	28675035	250.0	226.6
2	4.532	4.531	0.001	17477113	250.0	221.4
2	4.825	4.824	0.001	23871319	250.0	245.2
2	4.965	4.964	0.001	24657661	250.0	217.2
2	6.145	6.144	0.001	16027265	250.0	222.1

Average of Peak Amounts = 226.5

RPD = 2.80

S 8 Polychlorinated biphenyls, Total

1						232.9
2						226.5

RPD = 2.80

Reagents:

AR_1248_L7_00018

Amount Added: 0.25

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:17:32

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\006B0701.D

Injection Date: 21-May-2019 14:01:46

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD4

Worklist Smp#: 6

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

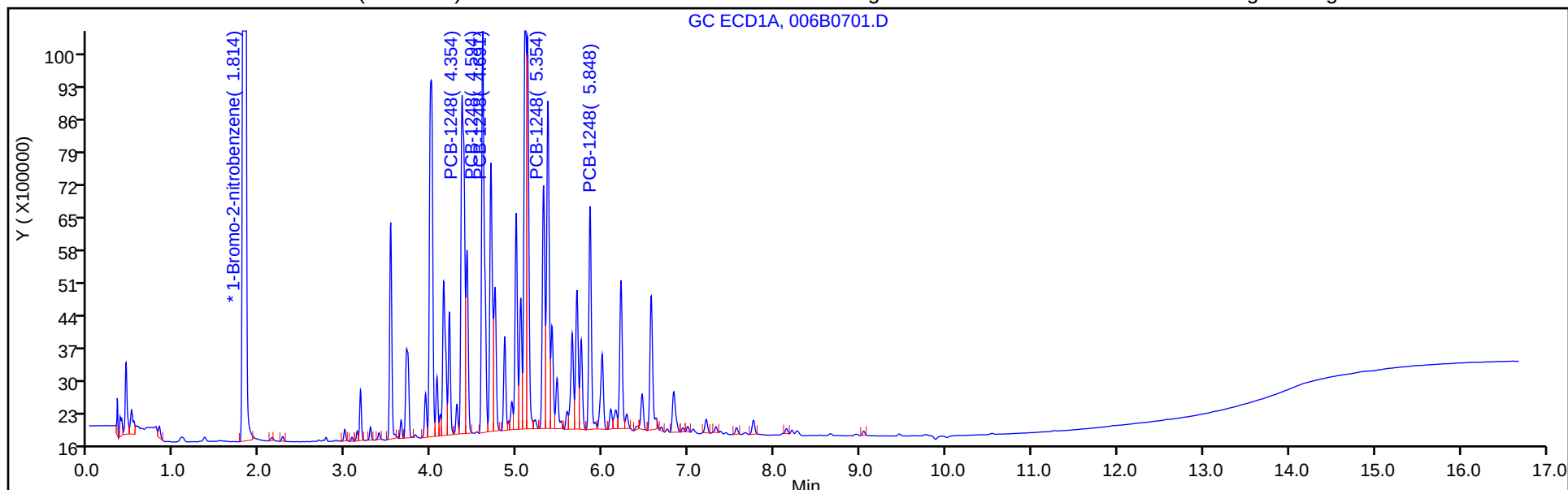
ALS Bottle#: 6

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

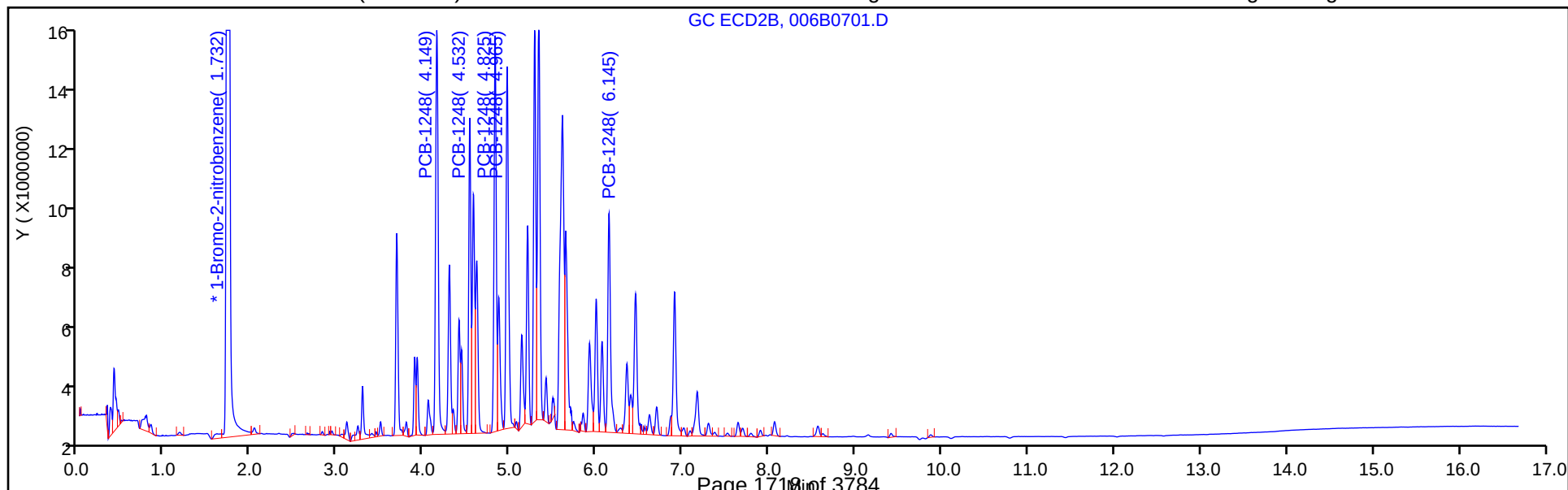
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\007B0801.D
 Lims ID: STD5
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 21-May-2019 14:23:37 ALS Bottle#: 7 Worklist Smp#: 7
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD5
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub2
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:16:59 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.813	0.000	116102776	100.0	100.0
2	1.731	1.731	0.000	143824417	100.0	100.0

RPD = 0.00

4 PCB-1248

1	4.353	4.353	0.000	39280003	500.0	441.9
1	4.593	4.593	0.000	37432665	500.0	442.5
1	4.690	4.690	0.000	23062598	500.0	447.4
1	5.356	5.356	0.000	27738200	500.0	451.6
1	5.846	5.846	0.000	18378801	500.0	453.7

Average of Peak Amounts = 447.4

2	4.148	4.148	0.000	54363262	500.0	438.9
2	4.531	4.531	0.000	32806266	500.0	424.7
2	4.824	4.824	0.000	44247722	500.0	481.4
2	4.964	4.964	0.000	49264912	500.0	443.3
2	6.144	6.144	0.000	31507568	500.0	446.0

Average of Peak Amounts = 446.8

RPD = 0.13

Reagents:

AR_1248_L7_00018

Amount Added: 0.50

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:17:01

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\007B0801.D

Injection Date: 21-May-2019 14:23:37

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD5

Worklist Smp#: 7

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

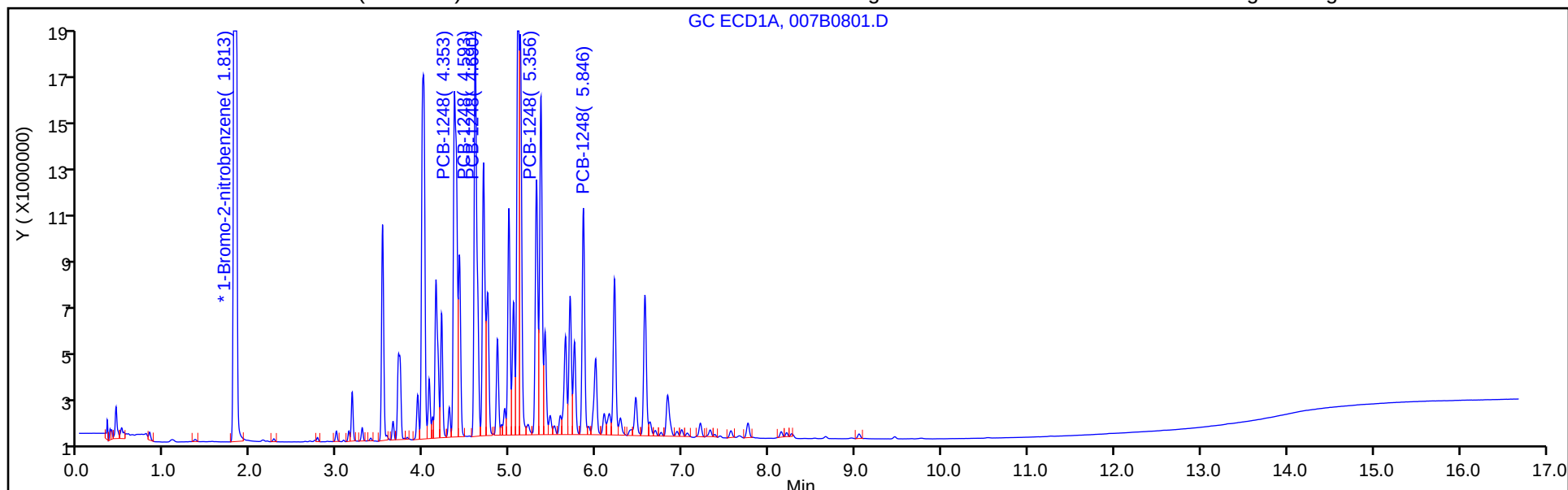
ALS Bottle#: 7

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

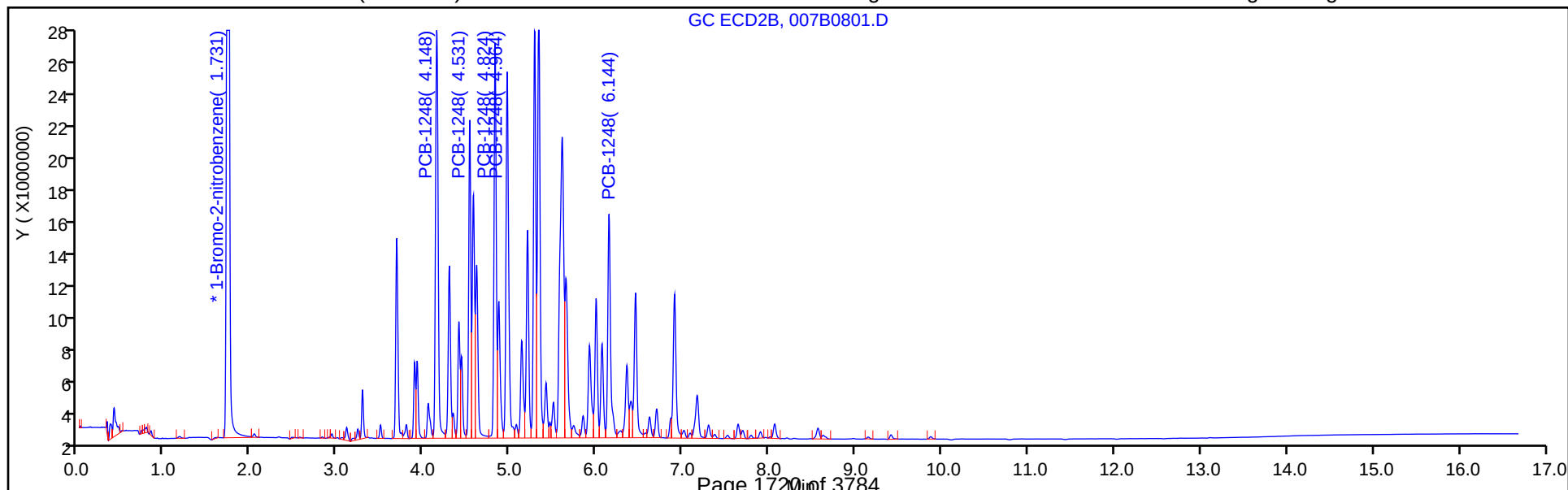
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\008B0901.D
 Lims ID: STD6
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 21-May-2019 14:45:28 ALS Bottle#: 8 Worklist Smp#: 8
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD6
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub2
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:16:26 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1: CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2: CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.812	1.811	0.001	105915731	100.0	100.0
2	1.730	1.729	0.001	131601798	100.0	100.0

RPD = 0.00

4 PCB-1248

1	4.352	4.353	-0.001	56976751	750.0	702.7
1	4.592	4.593	-0.001	54205479	750.0	702.4
1	4.689	4.690	-0.001	33457169	750.0	711.5
1	5.356	5.356	0.000	40200475	750.0	717.5
1	5.846	5.846	0.000	26915856	750.0	728.3

Average of Peak Amounts = 712.5

2	4.150	4.148	0.002	78940104	750.0	696.5
2	4.530	4.531	-0.001	48756874	750.0	689.7
2	4.823	4.824	-0.001	63257159	750.0	762.8
2	4.963	4.964	-0.001	70881819	750.0	697.1
2	6.143	6.144	-0.001	45959344	750.0	711.0

Average of Peak Amounts = 711.4

RPD = 0.15

S 8 Polychlorinated biphenyls, Total

1						712.5
2						711.4

RPD = 0.15

Reagents:

AR_1248_L7_00018	Amount Added: 0.75	Units: mL	
BNB IS_00013	Amount Added: 0.10	Units: mL	Run Reagent

Report Date: 22-May-2019 20:16:27

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\008B0901.D

Injection Date: 21-May-2019 14:45:28

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD6

Worklist Smp#: 8

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

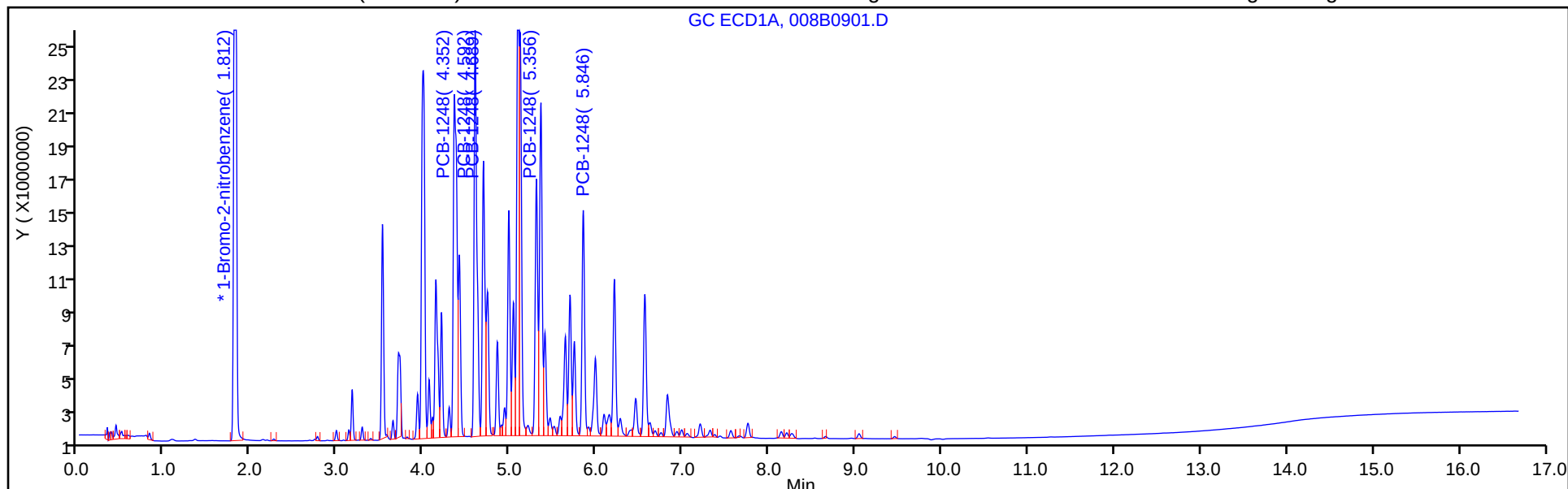
ALS Bottle#: 8

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

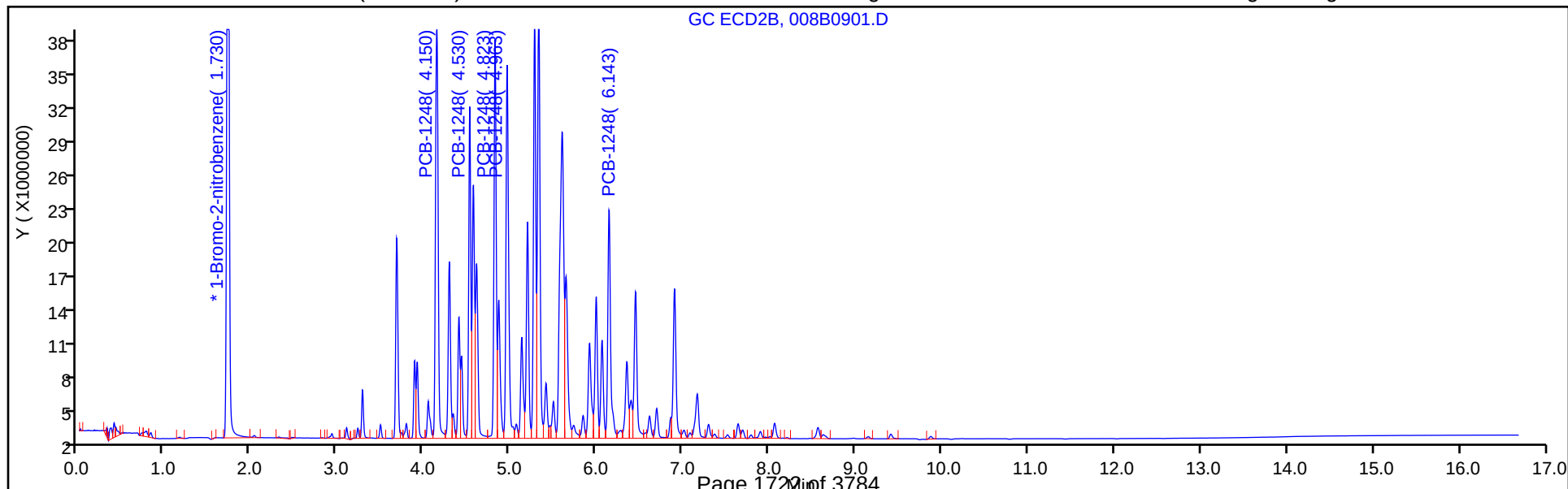
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\009B1001.D
 Lims ID: STD7
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 21-May-2019 15:07:20 ALS Bottle#: 9 Worklist Smp#: 9
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD7
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub2
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:15:31 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:43:52

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.811	0.002	106008158	100.0	100.0
2	1.730	1.729	0.001	132267204	100.0	100.0

RPD = 0.00

4 PCB-1248

1	4.353	4.353	0.000	74010986	1000.0	912.0
1	4.593	4.593	0.000	70489328	1000.0	912.6
1	4.689	4.690	-0.001	43511802	1000.0	924.5
1	5.356	5.356	0.000	52571652	1000.0	937.5
1	5.849	5.846	0.003	34985714	1000.0	945.9

Average of Peak Amounts = 926.5

2	4.147	4.148	-0.001	101457121	1000.0	890.7
2	4.530	4.531	-0.001	62965679	1000.0	886.3
2	4.824	4.824	0.000	80998772	1000.0	977.0
2	4.964	4.964	0.000	91401609	1000.0	894.3
2	6.144	6.144	0.000	59154752	1000.0	910.5

Average of Peak Amounts = 911.8

RPD = 1.60

S 8 Polychlorinated biphenyls, Total

1						926.5
2						911.8

RPD = 1.60

Reagents:

AR_1248_L7_00018

Amount Added: 1.00

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:15:32

Chrom Revision: 2.3 03-May-2019 15:52:00

Euofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\009B1001.D

Injection Date: 21-May-2019 15:07:20

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD7

Worklist Smp#: 9

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

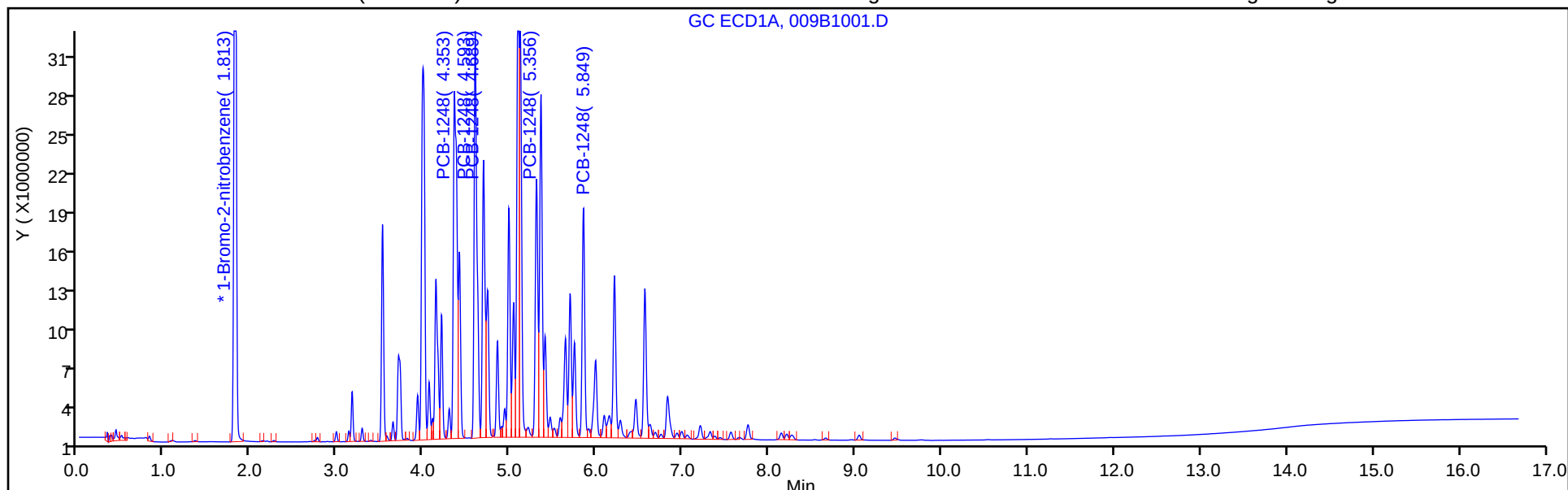
ALS Bottle#: 9

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

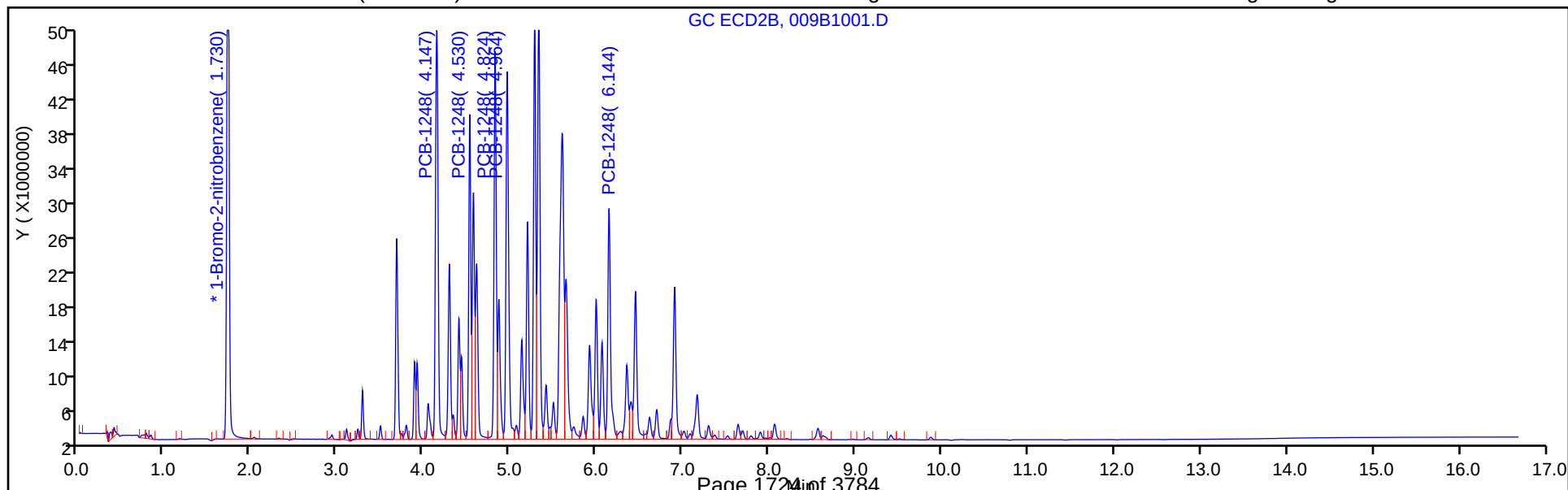
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 459083

SDG No.: _____

Instrument ID: SGC_P3 GC Column: CLP2 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/21/2019 12:56 Calibration End Date: 05/21/2019 15:07 Calibration ID: 36526

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-459083/3	003B0401.D
Level 2	STD2 280-459083/4	004B0501.D
Level 3	STD3 280-459083/5	005B0601.D
Level 4	STD4 280-459083/6	006B0701.D
Level 5	STD5 280-459083/7	007B0801.D
Level 6	STD6 280-459083/8	008B0901.D
Level 7	STD7 280-459083/9	009B1001.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7															
PCB-1248 Peak 1	0.1104 0.0800	0.0906 +++++	0.0821	0.0781	0.0756	Ave		0.0861				15.0		20.0			
PCB-1248 Peak 2	0.0715 0.0494	0.0573 +++++	0.0509	0.0476	0.0456	Ave		0.0537				17.8		20.0			
PCB-1248 Peak 3	0.1184 0.0641	0.0808 +++++	0.0791	0.0650	0.0615	Lin	1.1677	0.0615							0.9980		0.9900
PCB-1248 Peak 4	0.1029 0.0718	0.0785 +++++	0.0748	0.0671	0.0685	Ave		0.0773				17.1		20.0			
PCB-1248 Peak 5	0.0642 0.0466	0.0499 +++++	0.0467	0.0436	0.0438	Ave		0.0491				15.7		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 459083

SDG No.: _____

Instrument ID: SGC_P3 GC Column: CLP2 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/21/2019 12:56 Calibration End Date: 05/21/2019 15:07 Calibration ID: 36526

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-459083/3	003B0401.D
Level 2	STD2 280-459083/4	004B0501.D
Level 3	STD3 280-459083/5	005B0601.D
Level 4	STD4 280-459083/6	006B0701.D
Level 5	STD5 280-459083/7	007B0801.D
Level 6	STD6 280-459083/8	008B0901.D
Level 7	STD7 280-459083/9	009B1001.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
PCB-1248 Peak 1	BNB	Ave	3491538 78940104	6798873 +++++	12025926	28675035	54363262	25.0 750	50.0 +++++	100	250	500
PCB-1248 Peak 2	BNB	Ave	2260946 48756874	4300803 +++++	7456063	17477113	32806266	25.0 750	50.0 +++++	100	250	500
PCB-1248 Peak 3	BNB	Lin	3746136 63257159	6065974 +++++	11589296	23871319	44247722	25.0 750	50.0 +++++	100	250	500
PCB-1248 Peak 4	BNB	Ave	3253827 70881819	5889796 +++++	10957197	24657661	49264912	25.0 750	50.0 +++++	100	250	500
PCB-1248 Peak 5	BNB	Ave	2029129 45959344	3742674 +++++	6840165	16027265	31507568	25.0 750	50.0 +++++	100	250	500

Curve Type Legend:

Ave = Average ISTD
Lin = Linear ISTD

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\003B0401.D
 Lims ID: STD1 1248
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 21-May-2019 12:56:12 ALS Bottle#: 3 Worklist Smp#: 3
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD1
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub2
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:18:24 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:42:45

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.811	1.813	-0.002	106556624	100.0	100.0
2	1.728	1.731	-0.003	126512352	100.0	100.0

RPD = 0.00

4 PCB-1248

1	4.354	4.353	0.001	2659178	25.0	32.6
1	4.594	4.593	0.001	2448895	25.0	31.5
1	4.691	4.690	0.001	1479025	25.0	31.3
1	5.357	5.356	0.001	1733635	25.0	30.8
1	5.851	5.846	0.005	1122885	25.0	30.2

Average of Peak Amounts =

31.3

2	4.148	4.148	0.000	3491538	25.0	32.0
2	4.532	4.531	0.001	2260946	25.0	33.3
2	4.822	4.824	-0.002	3746136	25.0	29.2
2	4.965	4.964	0.001	3253827	25.0	33.3
2	6.148	6.144	0.004	2029129	25.0	32.7

Average of Peak Amounts =

32.1

RPD = 2.56

S 8 Polychlorinated biphenyls, Total

1						31.3
2						32.1

RPD = 2.56

Reagents:

AR_1248_L7_00018

Amount Added: 0.03

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:18:25

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\003B0401.D

Injection Date: 21-May-2019 12:56:12

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD1 1248

Worklist Smp#: 3

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

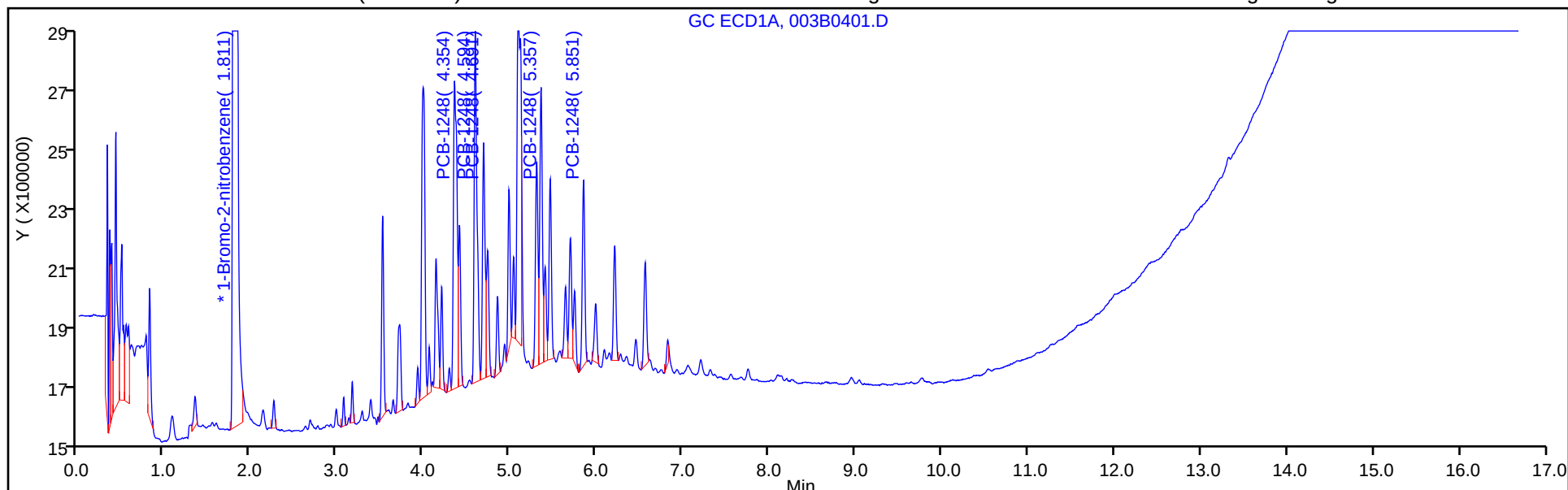
ALS Bottle#: 3

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

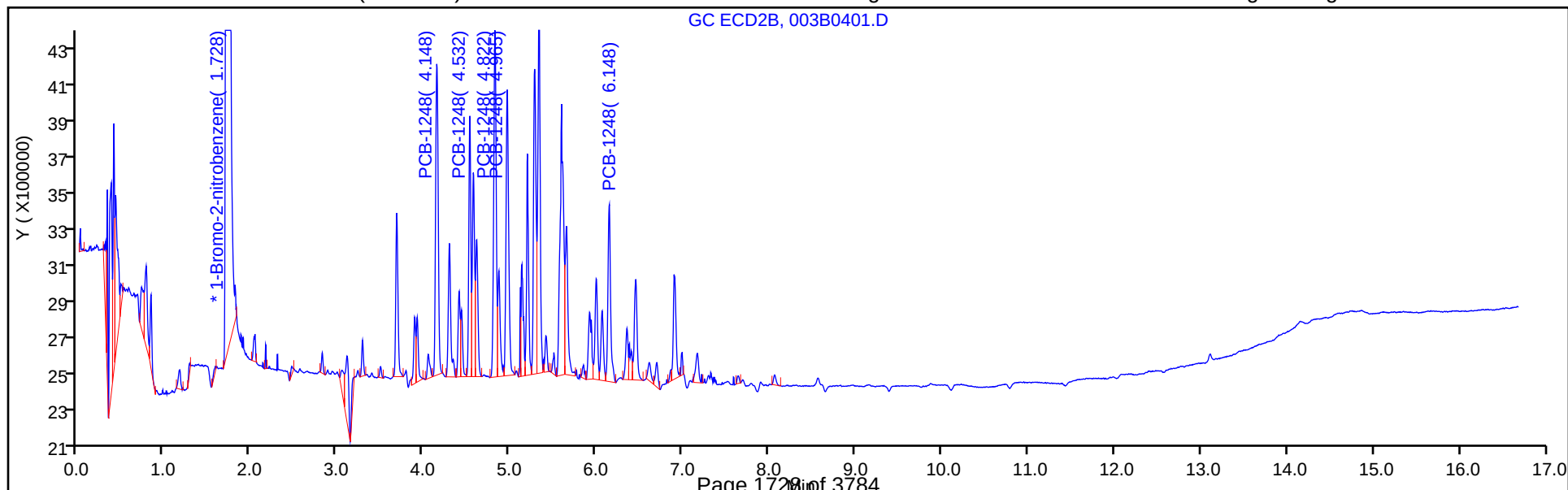
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\004B0501.D
 Lims ID: STD2
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 21-May-2019 13:18:02 ALS Bottle#: 4 Worklist Smp#: 4
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD2
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub2
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:18:13 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.813	0.000	122451198	100.0	100.0
2	1.731	1.731	0.000	150118486	100.0	100.0

RPD = 0.00

4 PCB-1248

1	4.353	4.353	0.000	4659458	50.0	49.7
1	4.593	4.593	0.000	4521686	50.0	50.7
1	4.690	4.690	0.000	2730246	50.0	50.2
1	5.357	5.356	0.001	3229639	50.0	49.9
1	5.847	5.846	0.001	2111766	50.0	49.4

Average of Peak Amounts = 50.0

2	4.148	4.148	0.000	6798873	50.0	52.6
2	4.531	4.531	0.000	4300803	50.0	53.3
2	4.824	4.824	0.000	6065974	50.0	46.7
2	4.964	4.964	0.000	5889796	50.0	50.8
2	6.144	6.144	0.000	3742674	50.0	50.8

Average of Peak Amounts = 50.8

RPD = 1.70

S 8 Polychlorinated biphenyls, Total

1						50.0
2						50.8

RPD = 1.70

Reagents:

AR_1248_L7_00018	Amount Added: 0.05	Units: mL	
BNB IS_00013	Amount Added: 0.10	Units: mL	Run Reagent

Report Date: 22-May-2019 20:18:15

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\004B0501.D

Injection Date: 21-May-2019 13:18:02

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD2

Worklist Smp#: 4

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

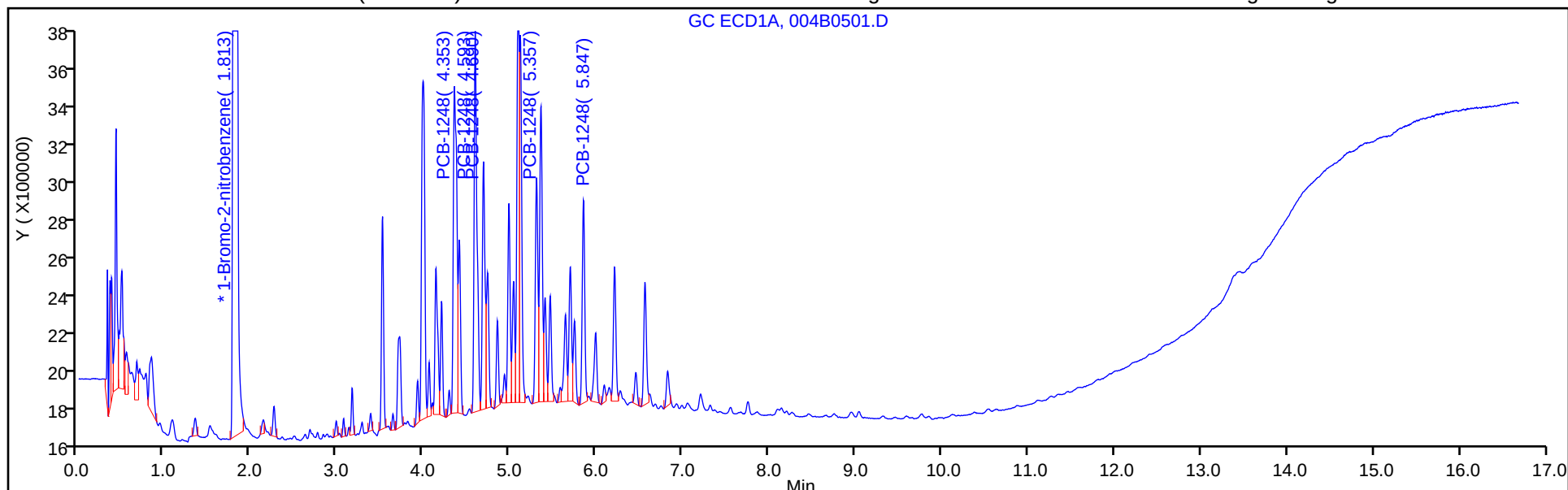
ALS Bottle#: 4

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

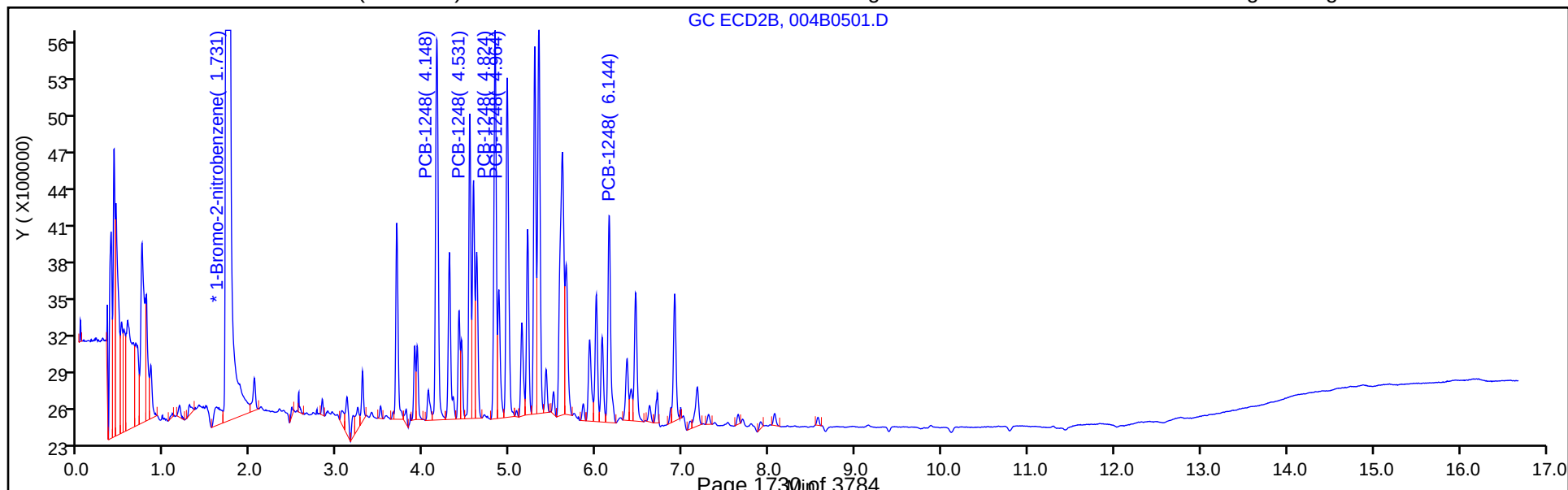
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\005B0601.D
 Lims ID: STD3
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 21-May-2019 13:39:55 ALS Bottle#: 5 Worklist Smp#: 5
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD3
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub2
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:17:52 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.813	0.000	119320080	100.0	100.0
2	1.731	1.731	0.000	146465373	100.0	100.0

RPD = 0.00

4 PCB-1248

1	4.357	4.353	0.004	8908983	100.0	97.5
1	4.597	4.593	0.003	8501909	100.0	97.8
1	4.690	4.690	0.000	5092445	100.0	96.1
1	5.356	5.356	0.000	6158699	100.0	97.6
1	5.846	5.846	0.000	4056665	100.0	97.4

Average of Peak Amounts = 97.3

2	4.148	4.148	0.000	12025926	100.0	95.3
2	4.531	4.531	0.000	7456063	100.0	94.8
2	4.824	4.824	0.000	11589296	100.0	109.7
2	4.964	4.964	0.000	10957197	100.0	96.8
2	6.144	6.144	0.000	6840165	100.0	95.1

Average of Peak Amounts = 98.3

RPD = 1.07

S 8 Polychlorinated biphenyls, Total

1						97.3
2						98.3

RPD = 1.07

Reagents:

AR_1248_L7_00018	Amount Added: 0.10	Units: mL	
BNB IS_00013	Amount Added: 0.10	Units: mL	Run Reagent

Report Date: 22-May-2019 20:17:54

Chrom Revision: 2.3 03-May-2019 15:52:00

Euofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\005B0601.D

Injection Date: 21-May-2019 13:39:55

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD3

Worklist Smp#: 5

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

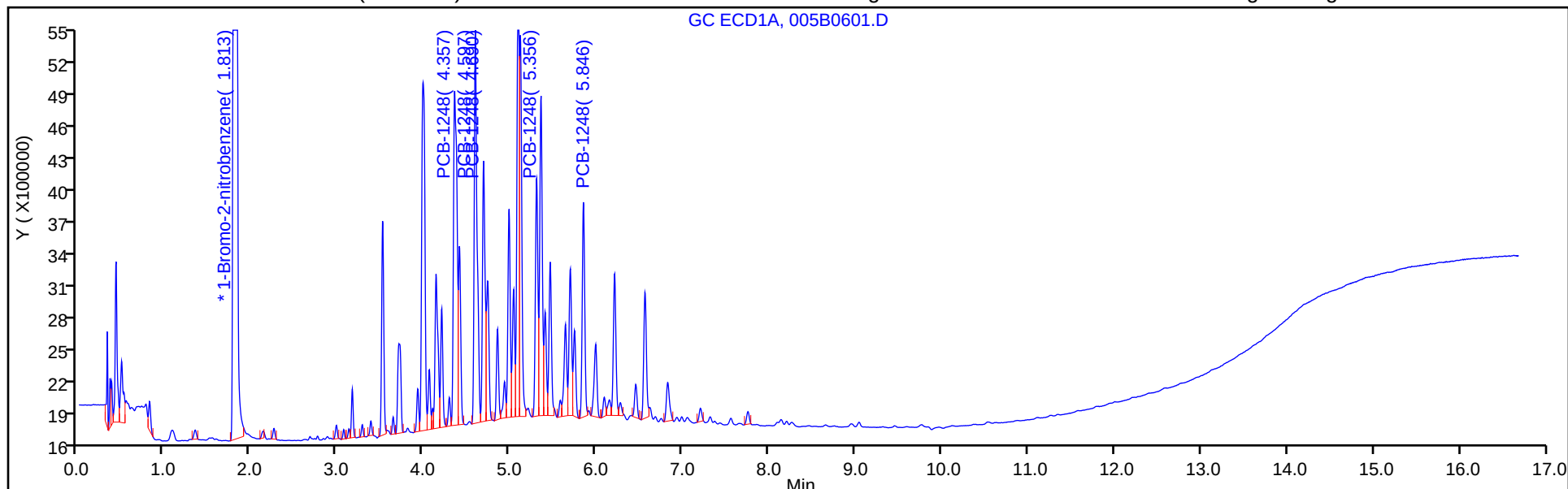
ALS Bottle#: 5

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

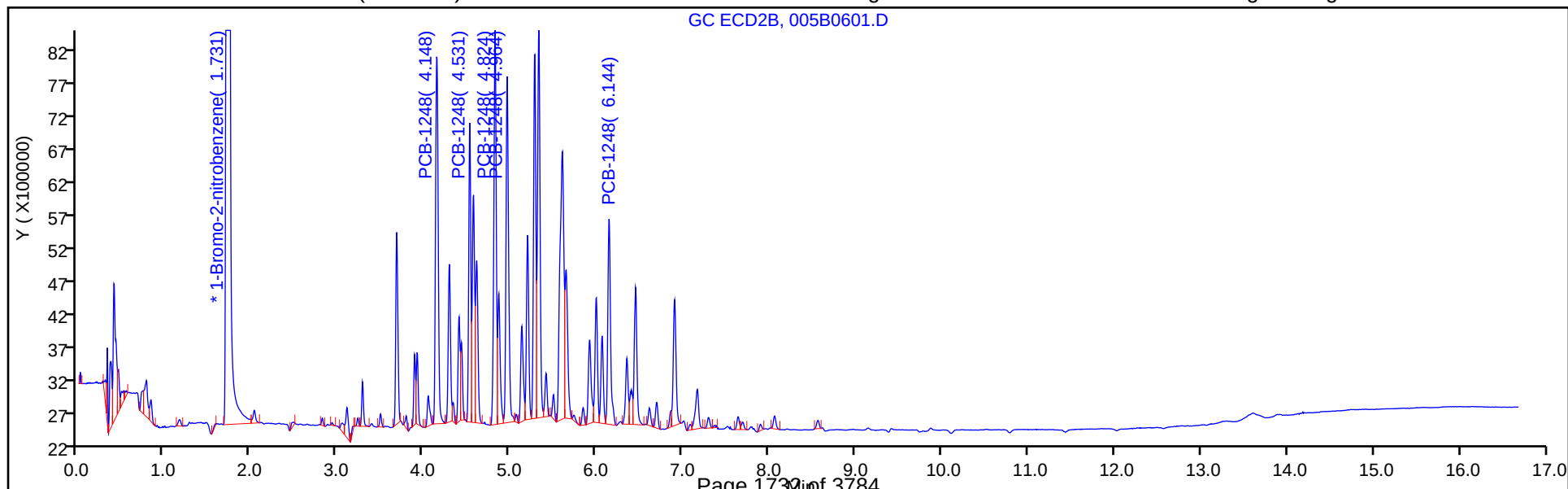
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\006B0701.D
 Lims ID: STD4
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 21-May-2019 14:01:46 ALS Bottle#: 6 Worklist Smp#: 6
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD4
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub2
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:17:31 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:44:54

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.814	1.813	0.001	117913645	100.0	100.0
2	1.732	1.731	0.001	146937645	100.0	100.0

RPD = 0.00

4 PCB-1248

1	4.354	4.353	0.001	20444893	250.0	226.5
1	4.594	4.593	0.001	19870561	250.0	231.3
1	4.691	4.690	0.001	12304399	250.0	235.0
1	5.354	5.356	-0.002	14609111	250.0	234.2
1	5.848	5.846	0.002	9776897	250.0	237.6

Average of Peak Amounts = 232.9

2	4.149	4.148	0.001	28675035	250.0	226.6
2	4.532	4.531	0.001	17477113	250.0	221.4
2	4.825	4.824	0.001	23871319	250.0	245.2
2	4.965	4.964	0.001	24657661	250.0	217.2
2	6.145	6.144	0.001	16027265	250.0	222.1

Average of Peak Amounts = 226.5

RPD = 2.80

S 8 Polychlorinated biphenyls, Total

1						232.9
2						226.5

RPD = 2.80

Reagents:

AR_1248_L7_00018

Amount Added: 0.25

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:17:33

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\006B0701.D

Injection Date: 21-May-2019 14:01:46

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD4

Worklist Smp#: 6

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

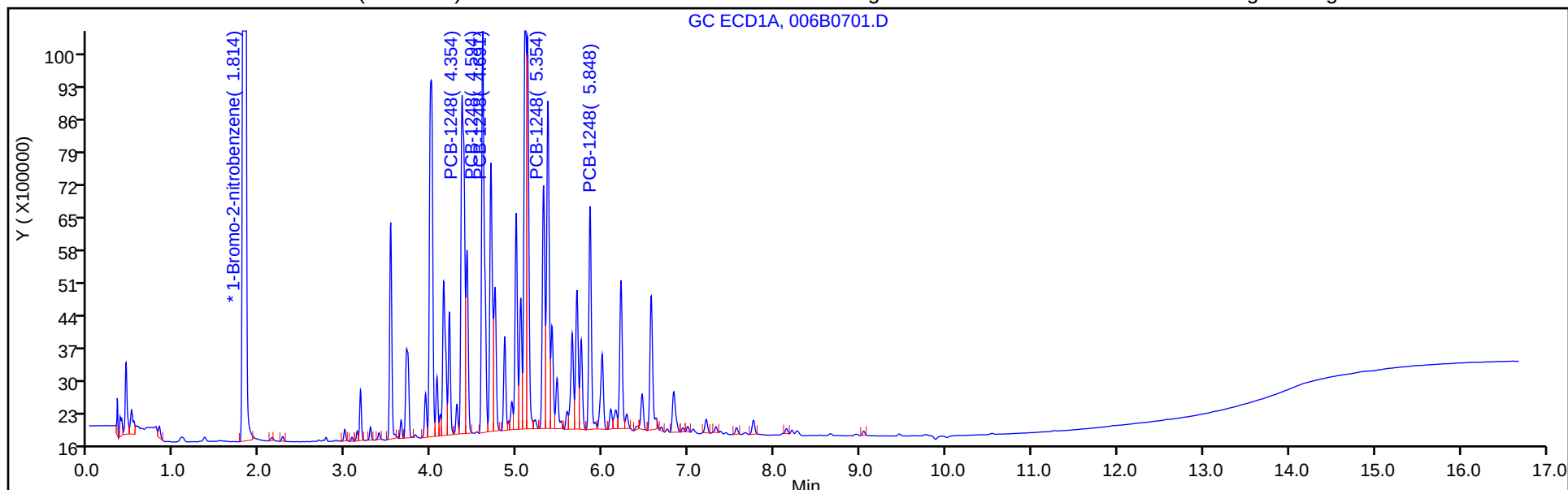
ALS Bottle#: 6

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

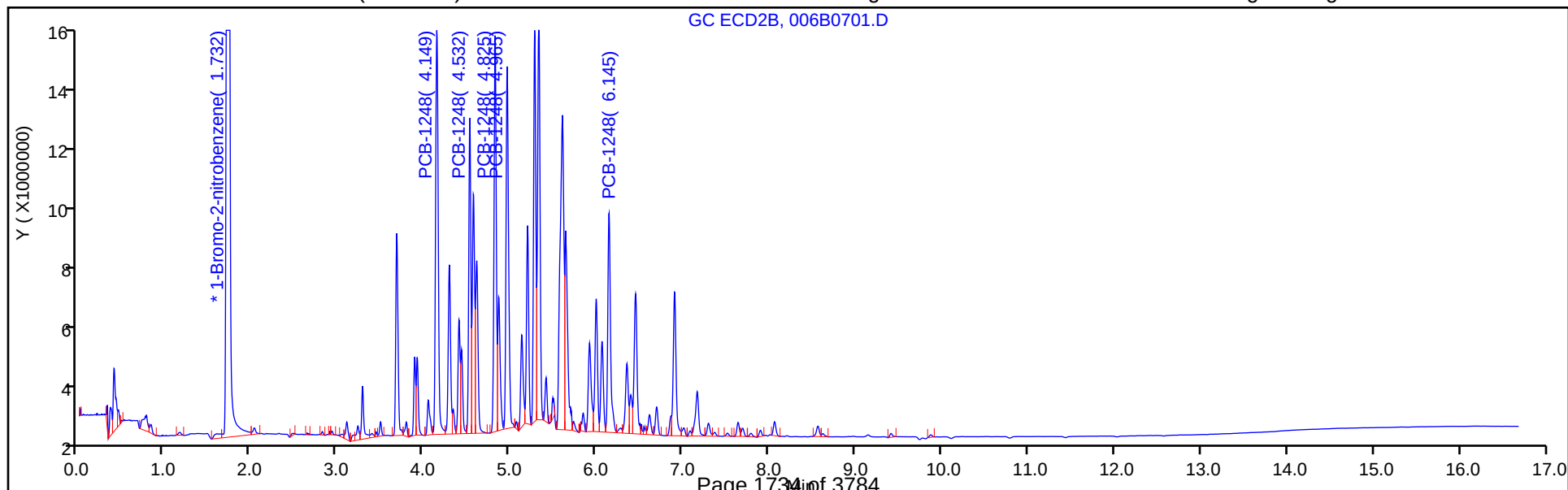
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\007B0801.D
 Lims ID: STD5
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 21-May-2019 14:23:37 ALS Bottle#: 7 Worklist Smp#: 7
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD5
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub2
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:16:59 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1: CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2: CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.813	0.000	116102776	100.0	100.0
2	1.731	1.731	0.000	143824417	100.0	100.0

RPD = 0.00

4 PCB-1248

1	4.353	4.353	0.000	39280003	500.0	441.9
1	4.593	4.593	0.000	37432665	500.0	442.5
1	4.690	4.690	0.000	23062598	500.0	447.4
1	5.356	5.356	0.000	27738200	500.0	451.6
1	5.846	5.846	0.000	18378801	500.0	453.7

Average of Peak Amounts = 447.4

2	4.148	4.148	0.000	54363262	500.0	438.9
2	4.531	4.531	0.000	32806266	500.0	424.7
2	4.824	4.824	0.000	44247722	500.0	481.4
2	4.964	4.964	0.000	49264912	500.0	443.3
2	6.144	6.144	0.000	31507568	500.0	446.0

Average of Peak Amounts = 446.8

RPD = 0.13

Reagents:

AR_1248_L7_00018

Amount Added: 0.50

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:17:01

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\007B0801.D

Injection Date: 21-May-2019 14:23:37

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD5

Worklist Smp#: 7

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

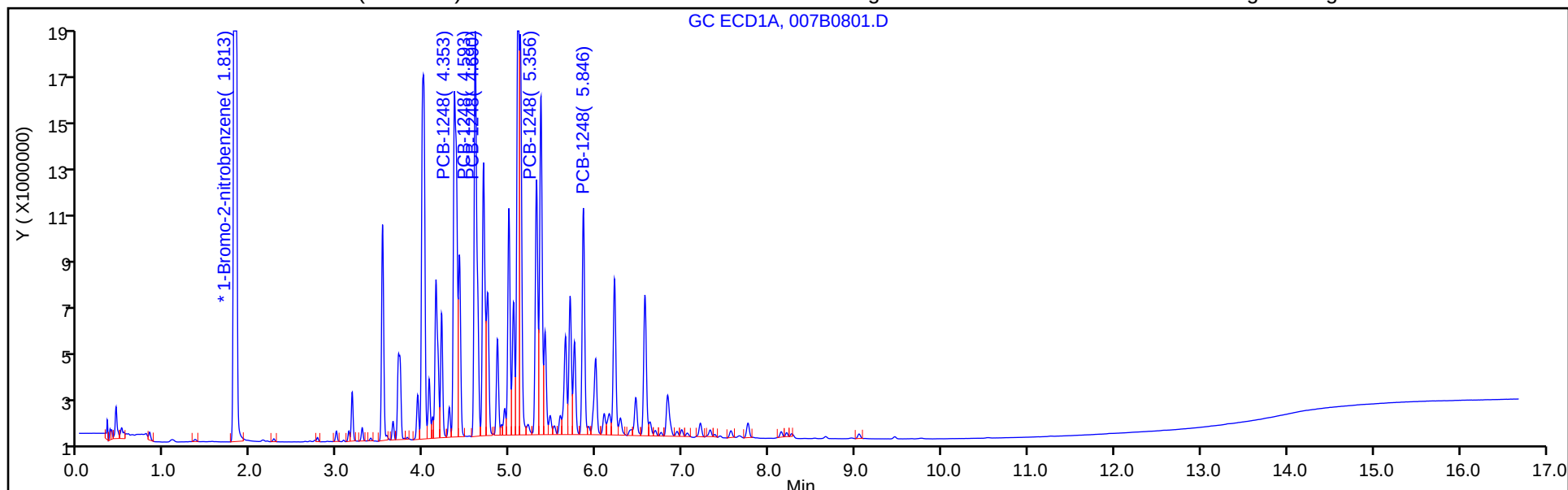
ALS Bottle#: 7

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

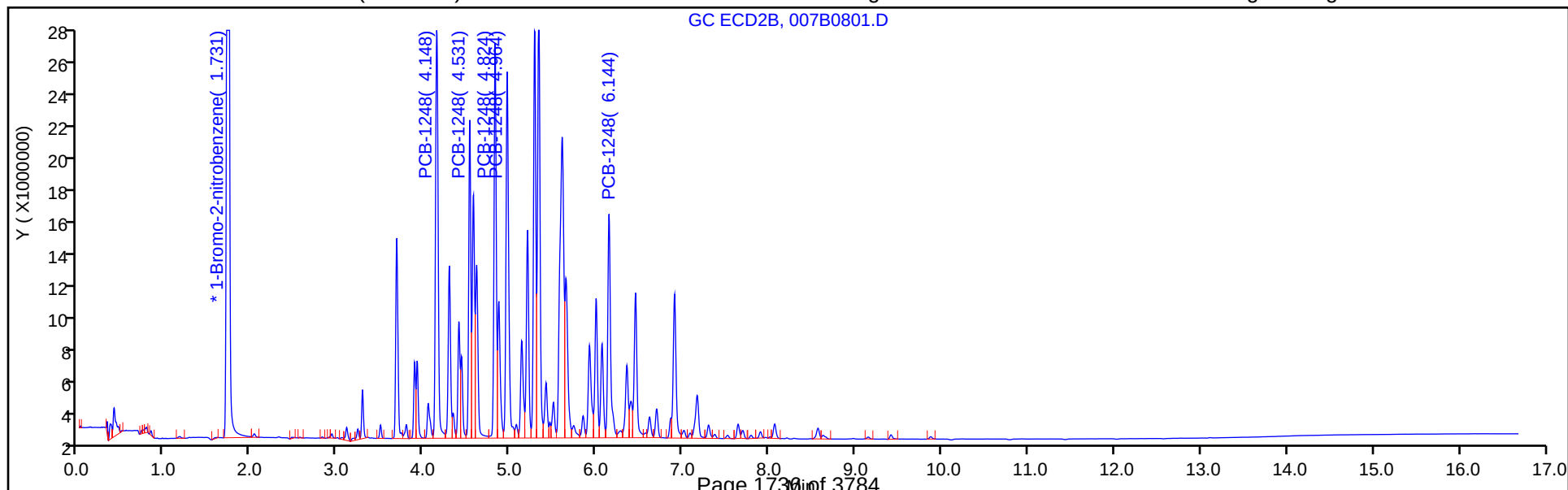
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\008B0901.D
 Lims ID: STD6
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 21-May-2019 14:45:28 ALS Bottle#: 8 Worklist Smp#: 8
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD6
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub2
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:16:26 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1: CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2: CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.812	1.811	0.001	105915731	100.0	100.0
2	1.730	1.729	0.001	131601798	100.0	100.0

RPD = 0.00

4 PCB-1248

1	4.352	4.353	-0.001	56976751	750.0	702.7
1	4.592	4.593	-0.001	54205479	750.0	702.4
1	4.689	4.690	-0.001	33457169	750.0	711.5
1	5.356	5.356	0.000	40200475	750.0	717.5
1	5.846	5.846	0.000	26915856	750.0	728.3

Average of Peak Amounts = 712.5

2	4.150	4.148	0.002	78940104	750.0	696.5
2	4.530	4.531	-0.001	48756874	750.0	689.7
2	4.823	4.824	-0.001	63257159	750.0	762.8
2	4.963	4.964	-0.001	70881819	750.0	697.1
2	6.143	6.144	-0.001	45959344	750.0	711.0

Average of Peak Amounts = 711.4

RPD = 0.15

S 8 Polychlorinated biphenyls, Total

1						712.5
2						711.4

RPD = 0.15

Reagents:

AR_1248_L7_00018	Amount Added: 0.75	Units: mL	
BNB IS_00013	Amount Added: 0.10	Units: mL	Run Reagent

Report Date: 22-May-2019 20:16:27

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\008B0901.D

Injection Date: 21-May-2019 14:45:28

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD6

Worklist Smp#: 8

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

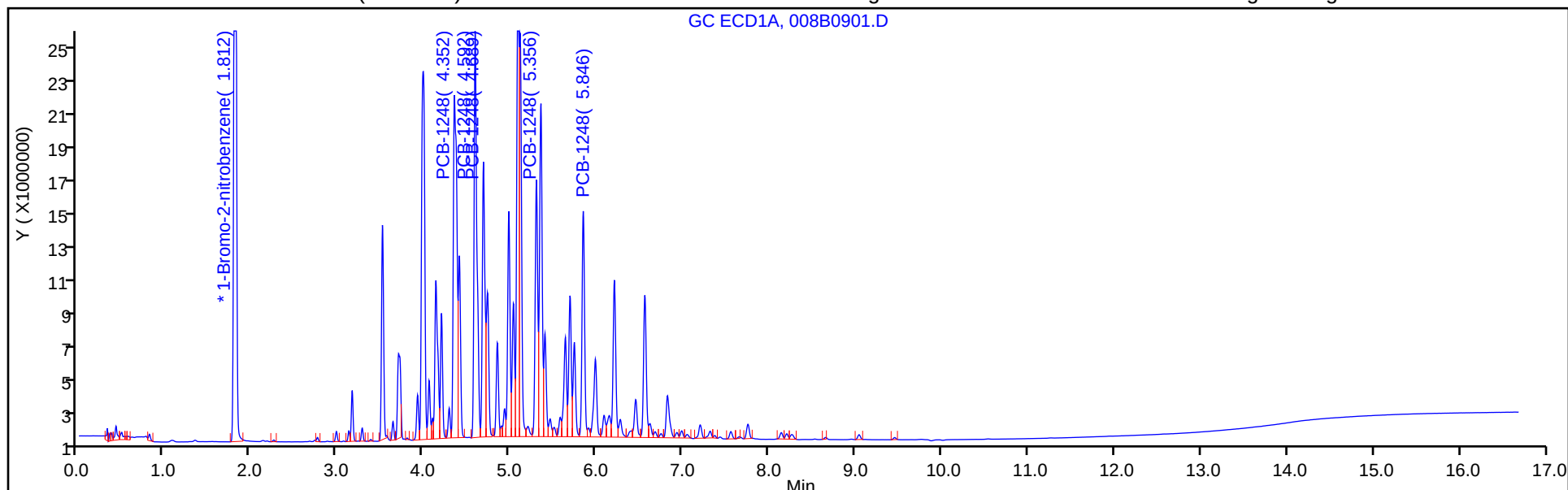
ALS Bottle#: 8

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

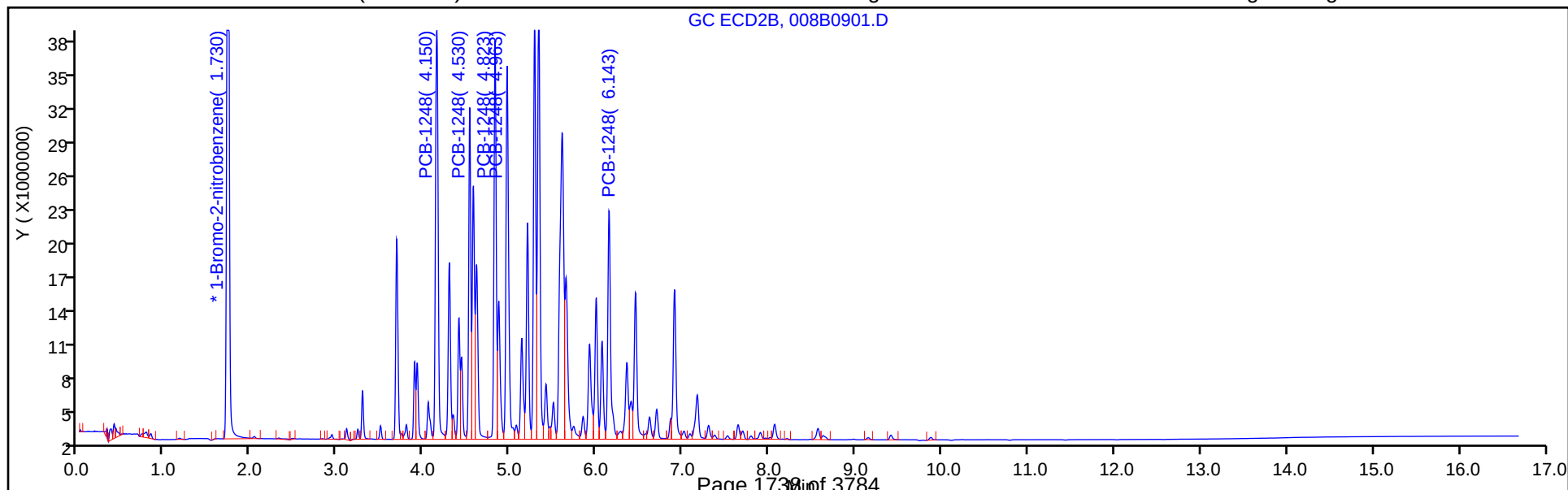
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\009B1001.D
 Lims ID: STD7
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 21-May-2019 15:07:20 ALS Bottle#: 9 Worklist Smp#: 9
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD7
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub2
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:15:31 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:43:52

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.811	0.002	106008158	100.0	100.0
2	1.730	1.729	0.001	132267204	100.0	100.0

RPD = 0.00

4 PCB-1248

1	4.353	4.353	0.000	74010986	1000.0	912.0
1	4.593	4.593	0.000	70489328	1000.0	912.6
1	4.689	4.690	-0.001	43511802	1000.0	924.5
1	5.356	5.356	0.000	52571652	1000.0	937.5
1	5.849	5.846	0.003	34985714	1000.0	945.9

Average of Peak Amounts =

926.5

2	4.147	4.148	-0.001	101457121	1000.0	890.7
2	4.530	4.531	-0.001	62965679	1000.0	886.3
2	4.824	4.824	0.000	80998772	1000.0	977.0
2	4.964	4.964	0.000	91401609	1000.0	894.3
2	6.144	6.144	0.000	59154752	1000.0	910.5

Average of Peak Amounts =

911.8

RPD = 1.60

S 8 Polychlorinated biphenyls, Total

1						926.5
2						911.8

RPD = 1.60

Reagents:

AR_1248_L7_00018

Amount Added: 1.00

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:15:32

Chrom Revision: 2.3 03-May-2019 15:52:00

Euofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\009B1001.D

Injection Date: 21-May-2019 15:07:20

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD7

Worklist Smp#: 9

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

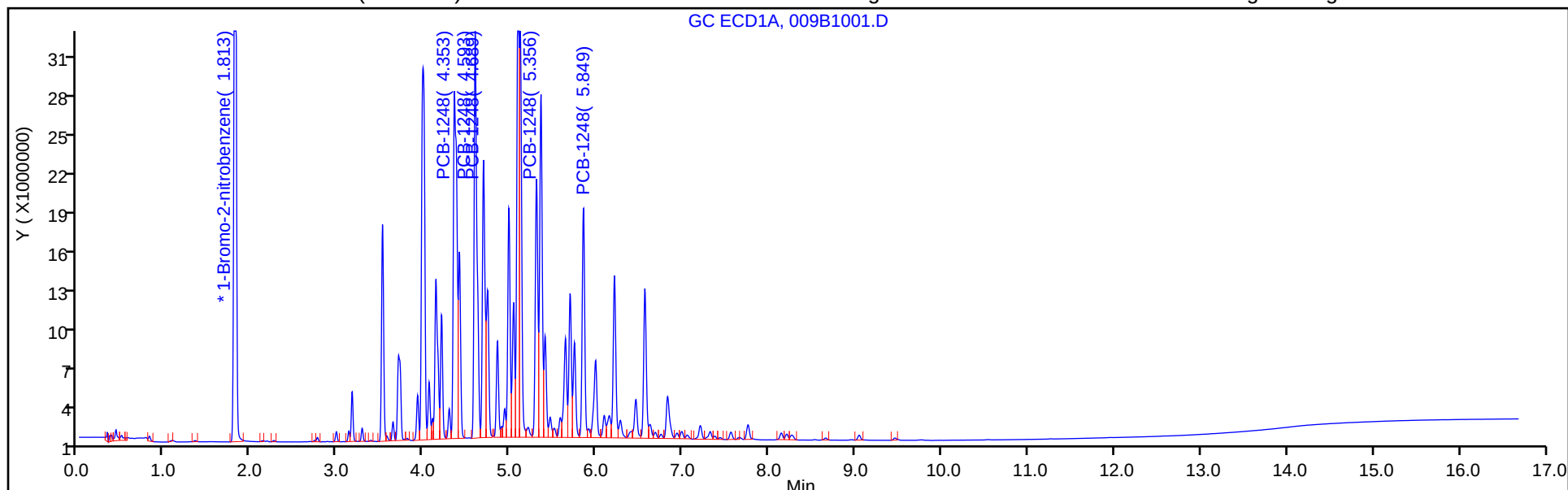
ALS Bottle#: 9

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

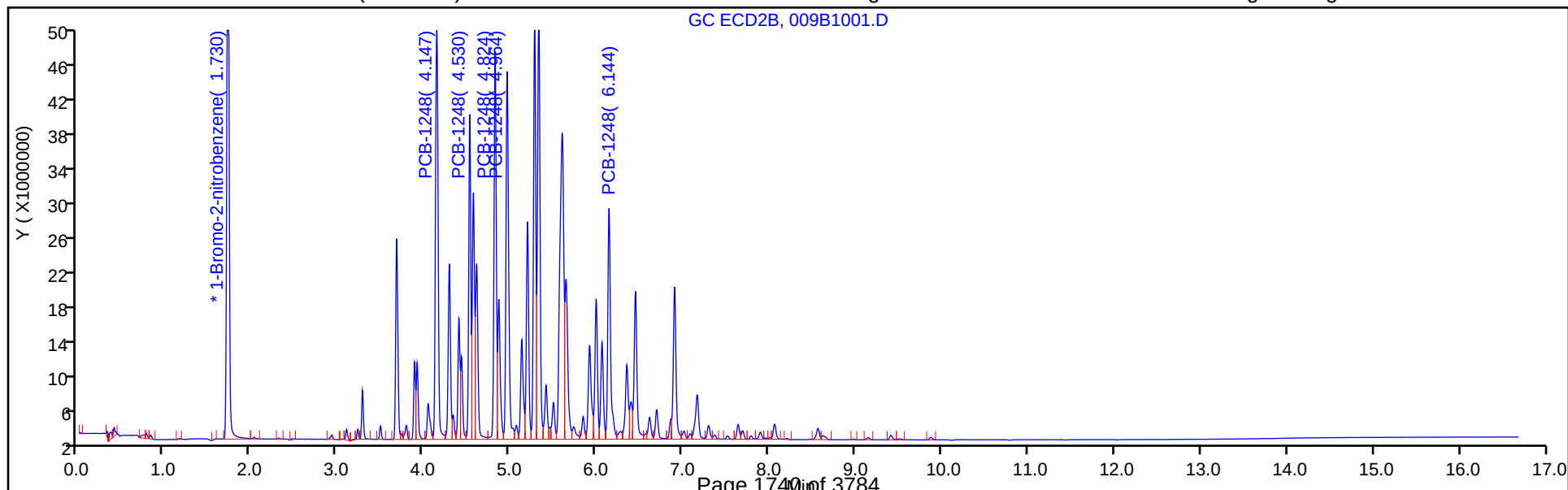
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 459083

SDG No.: _____

Instrument ID: SGC_P3 GC Column: CLP1 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/21/2019 15:29 Calibration End Date: 05/21/2019 17:40 Calibration ID: 36509

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-459083/10	010B1101.D
Level 2	STD2 280-459083/11	011B1201.D
Level 3	STD3 280-459083/12	012B1301.D
Level 4	STD4 280-459083/13	013B1401.D
Level 5	STD5 280-459083/14	014B1501.D
Level 6	STD6 280-459083/15	015B1601.D
Level 7	STD7 280-459083/16	016B1701.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
PCB-1221 Peak 1	0.0349 0.0160	0.0277 0.0150	0.0213	0.0176	0.0165	Qua	0.4755	0.0167	-0.000002						1.0000		0.9900
PCB-1221 Peak 2	0.0192 0.0109	0.0164 0.0104	0.0139	0.0123	0.0116	Qua	0.1908	0.0122	-0.000002						1.0000		0.9900
PCB-1221 Peak 3	0.0681 0.0413	0.0585 0.0385	0.0472	0.0423	0.0419	Qua	0.4629	0.0441	-0.000006						0.9990		0.9900
PCB-1254 Peak 1	0.1129 0.0717	0.0972 0.0686	0.0808	0.0725	0.0737	Ave		0.0825				20.0		20.0			
PCB-1254 Peak 2	0.0889 0.0569	0.0760 0.0547	0.0660	0.0606	0.0601	Ave		0.0662				18.5		20.0			
PCB-1254 Peak 3	0.1457 0.0962	0.1267 0.0923	0.1065	0.0998	0.0988	Ave		0.1094				17.9		20.0			
PCB-1254 Peak 4	0.1089 0.0773	0.0967 0.0744	0.0822	0.0795	0.0793	Ave		0.0855				14.7		20.0			
PCB-1254 Peak 5	0.1498 0.1030	0.1326 0.0990	0.1134	0.1062	0.1054	Lin2	1.2769	0.1013							0.9990		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 459083

SDG No.: _____

Instrument ID: SGC_P3 GC Column: CLP1 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/21/2019 15:29 Calibration End Date: 05/21/2019 17:40 Calibration ID: 36509

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-459083/10	010B1101.D
Level 2	STD2 280-459083/11	011B1201.D
Level 3	STD3 280-459083/12	012B1301.D
Level 4	STD4 280-459083/13	013B1401.D
Level 5	STD5 280-459083/14	014B1501.D
Level 6	STD6 280-459083/15	015B1601.D
Level 7	STD7 280-459083/16	016B1701.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
PCB-1221 Peak 1	BNB	Qua	846865 13310323	1446688 17520452	2515357	5210567	9405483	25.0 750	50.0 1000	100	250	500
PCB-1221 Peak 2	BNB	Qua	466920 9125793	856201 12136934	1636154	3635530	6623109	25.0 750	50.0 1000	100	250	500
PCB-1221 Peak 3	BNB	Qua	1651978 34435916	3048993 44833797	5563100	12494596	23826856	25.0 750	50.0 1000	100	250	500
PCB-1254 Peak 1	BNB	Ave	2740039 59797306	5070965 79923380	9529149	21421863	41947592	25.0 750	50.0 1000	100	250	500
PCB-1254 Peak 2	BNB	Ave	2158064 47481033	3962432 63719188	7783519	17890306	34166919	25.0 750	50.0 1000	100	250	500
PCB-1254 Peak 3	BNB	Ave	3534919 80246715	6609332 107523172	12556566	29498034	56177446	25.0 750	50.0 1000	100	250	500
PCB-1254 Peak 4	BNB	Ave	2641958 64468575	5045910 86626473	9694056	23498422	45100124	25.0 750	50.0 1000	100	250	500
PCB-1254 Peak 5	BNB	Lin2	3634396 85910345	6918418 115332052	13364504	31384104	59940253	25.0 750	50.0 1000	100	250	500

Curve Type Legend:

Ave = Average ISTD
Lin2 = Linear 1/conc^2 ISTD
Qua = Quadratic ISTD

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\010B1101.D
 Lims ID: STD1 2154
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 21-May-2019 15:29:10 ALS Bottle#: 10 Worklist Smp#: 10
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD1
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:15:25 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:17:54

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.812	1.811	0.001	97074083	100.0	100.0	
2	1.726	1.729	-0.003	123097006	100.0	100.0	

RPD = 0.00

3 PCB-1221

M

1	2.985	2.984	0.001	846865	25.0	23.8	
1	3.128	3.131	-0.003	466920	25.0	23.9	
1	3.168	3.168	0.000	1651978	25.0	28.2	
Average of Peak Amounts =						25.3	
2	3.103	3.102	0.001	1174758	25.0	25.2	M
2	3.233	3.232	0.001	680798	25.0	25.0	M
2	3.289	3.289	0.000	2558578	25.0	25.3	M

Average of Peak Amounts =

25.2

RPD = 0.71

9 PCB-1254

1	5.362	5.358	0.004	2740039	25.0	34.2	
1	5.695	5.694	0.001	2158064	25.0	33.6	
1	5.848	5.848	0.000	3534919	25.0	33.3	
1	6.208	6.208	0.000	2641958	25.0	31.8	
1	6.825	6.824	0.001	3634396	25.0	24.3	
Average of Peak Amounts =						31.5	
2	5.573	5.572	0.001	4183379	25.0	23.8	
2	5.996	5.995	0.001	3033383	25.0	23.7	
2	6.146	6.145	0.001	5973831	25.0	23.4	
2	6.696	6.695	0.001	2400230	25.0	22.0	
2	7.166	7.165	0.001	6152082	25.0	24.0	

Average of Peak Amounts =

23.4

RPD = 29.47

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\010B1101.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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S 8 Polychlorinated biphenyls, Total

1

56.8

2

48.5

RPD = 15.68

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_2154_L7_00022

Amount Added: 0.03

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:15:27

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\010B1101.D

Injection Date: 21-May-2019 15:29:10

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD1 2154

Worklist Smp#: 10

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

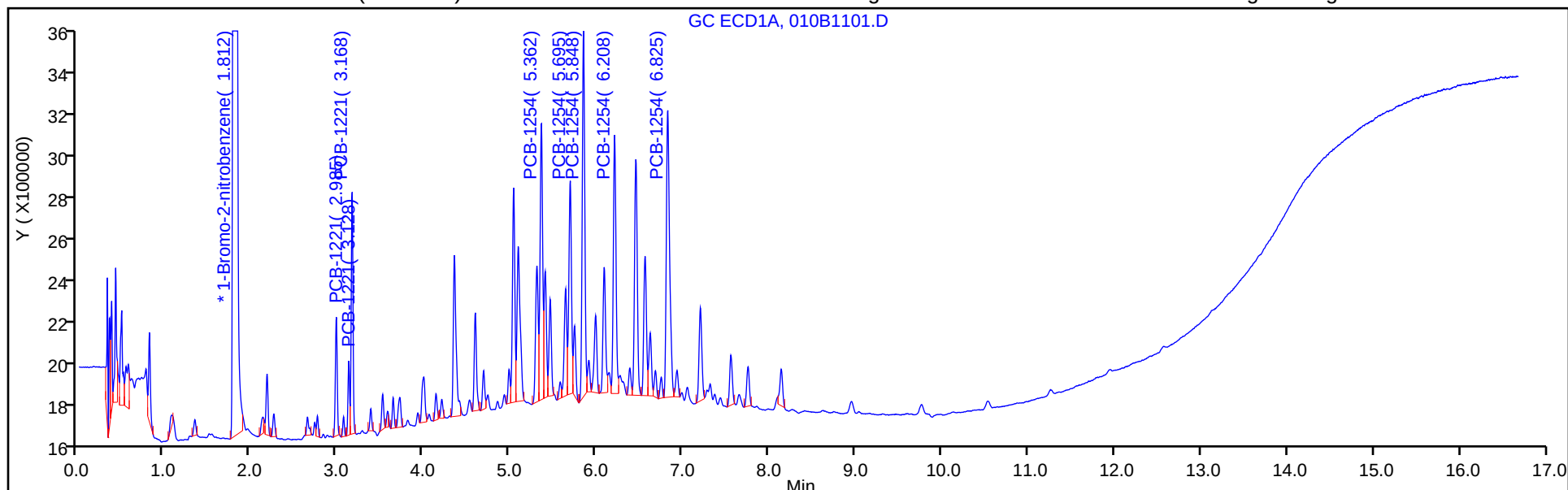
ALS Bottle#: 10

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

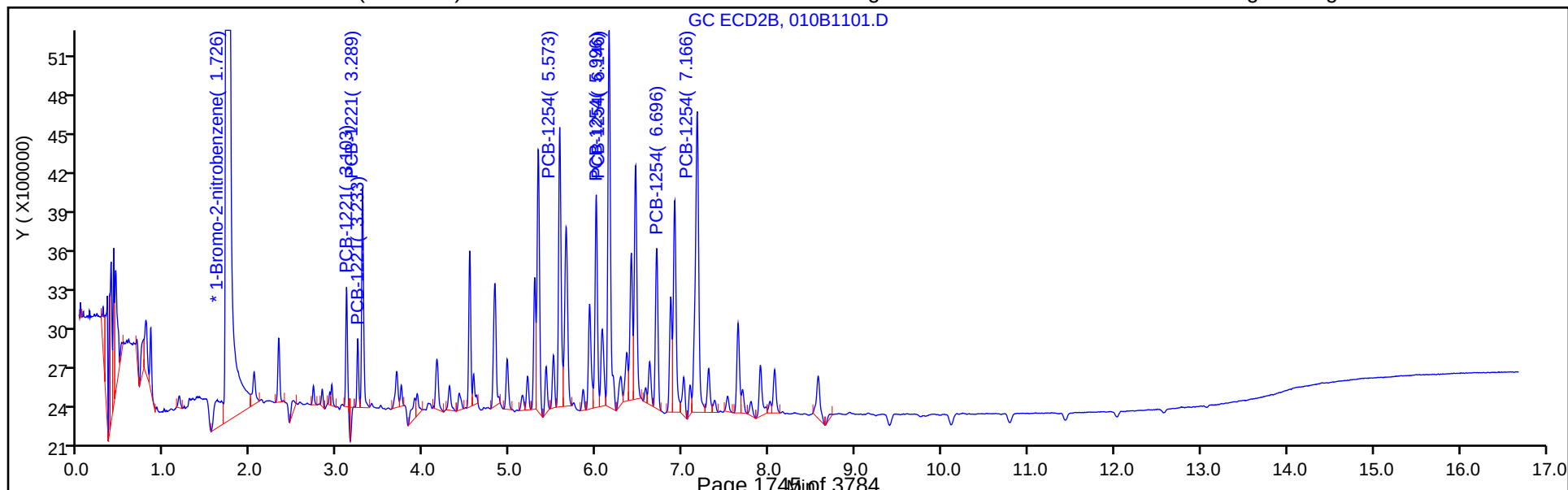
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\011B1201.D
 Lims ID: STD2
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 21-May-2019 15:51:02 ALS Bottle#: 11 Worklist Smp#: 11
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD2
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:15:13 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:18:24

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.810	1.811	-0.001	104326010	100.0	100.0	
2	1.728	1.729	-0.001	133316423	100.0	100.0	

RPD = 0.00

3 PCB-1221

M

1	2.984	2.984	0.000	1446688	50.0	55.0	
1	3.130	3.131	-0.001	856201	50.0	52.2	
1	3.167	3.168	-0.001	3048993	50.0	56.2	

Average of Peak Amounts = 54.5

2	3.105	3.102	0.003	2110779	50.0	54.9	M
2	3.235	3.232	0.003	1280053	50.0	53.9	M
2	3.288	3.289	-0.001	4683213	50.0	54.4	M

Average of Peak Amounts = 54.4

RPD = 0.11

9 PCB-1254

1	5.360	5.358	0.002	5070965	50.0	58.9	
1	5.694	5.694	0.000	3962432	50.0	57.4	
1	5.847	5.848	-0.001	6609332	50.0	57.9	
1	6.207	6.208	-0.001	5045910	50.0	56.6	
1	6.824	6.824	0.000	6918418	50.0	52.8	

Average of Peak Amounts = 56.7

2	5.575	5.572	0.003	7816950	50.0	54.6	
2	5.998	5.995	0.003	5828830	50.0	54.9	
2	6.145	6.145	0.000	11410847	50.0	57.0	
2	6.698	6.695	0.003	4611557	50.0	52.7	
2	7.165	7.165	0.000	11407245	50.0	54.1	

Average of Peak Amounts = 54.7

RPD = 3.69

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\011B1201.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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S 8 Polychlorinated biphenyls, Total

1	111.2
2	109.1
RPD = 1.92	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_2154_L7_00022

Amount Added: 0.05

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:15:15

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\011B1201.D

Injection Date: 21-May-2019 15:51:02

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD2

Worklist Smp#: 11

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

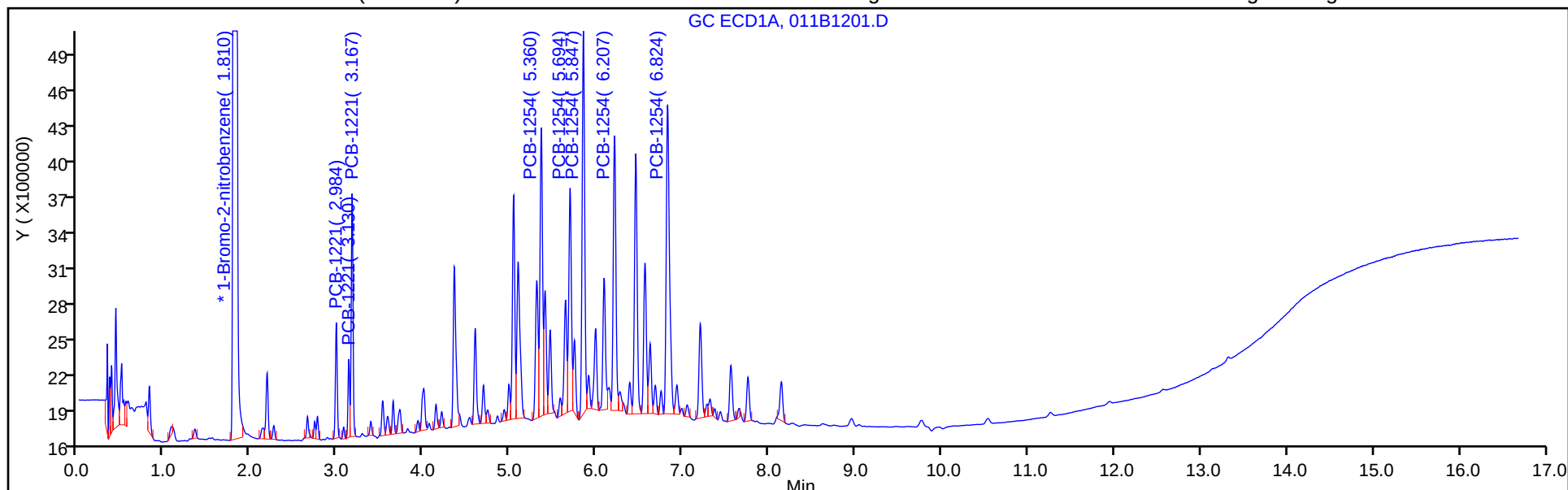
ALS Bottle#: 11

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

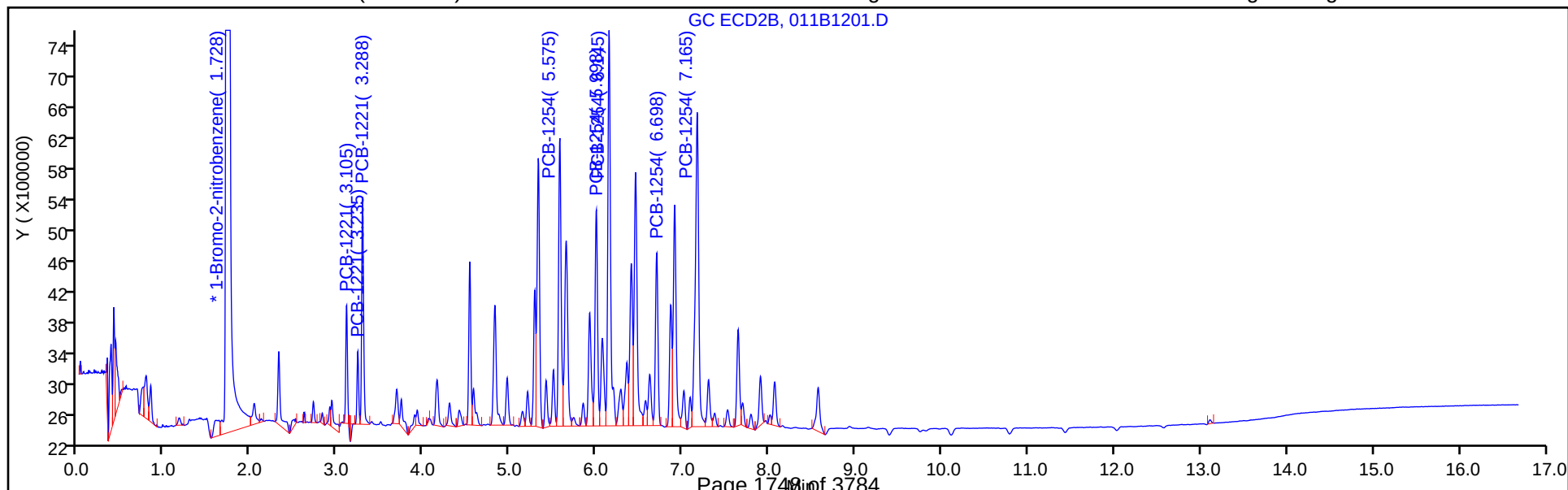
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\012B1301.D
 Lims ID: STD3
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 21-May-2019 16:12:54 ALS Bottle#: 12 Worklist Smp#: 12
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD3
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:15:00 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:18:51

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.812	1.811	0.001	117878154	100.0	100.0	
2	1.730	1.729	0.001	150427416	100.0	100.0	

RPD = 0.00

3 PCB-1221

M

1	2.986	2.984	0.002	2515357	100.0	100.6	
1	3.129	3.131	-0.002	1636154	100.0	100.0	
1	3.169	3.168	0.001	5563100	100.0	97.8	

Average of Peak Amounts = 99.5

2	3.103	3.102	0.001	3716624	100.0	97.2	M
2	3.233	3.232	0.001	2369395	100.0	98.1	M
2	3.290	3.289	0.001	8432726	100.0	97.5	M

Average of Peak Amounts = 97.6

RPD = 1.90

9 PCB-1254

1	5.359	5.358	0.001	9529149	100.0	98.0	
1	5.692	5.694	-0.002	7783519	100.0	99.8	
1	5.846	5.848	-0.002	12556566	100.0	97.3	
1	6.206	6.208	-0.002	9694056	100.0	96.2	
1	6.822	6.824	-0.002	13364504	100.0	99.3	

Average of Peak Amounts = 98.1

2	5.573	5.572	0.001	14409504	100.0	101.1	
2	5.997	5.995	0.002	10845982	100.0	101.3	
2	6.147	6.145	0.002	19711889	100.0	98.3	
2	6.697	6.695	0.002	8984401	100.0	103.8	
2	7.167	7.165	0.002	21034472	100.0	100.1	

Average of Peak Amounts = 100.9

RPD = 2.79

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\012B1301.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

S 8 Polychlorinated biphenyls, Total

1 197.6

2 198.5

RPD = 0.46

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_2154_L7_00022

Amount Added: 0.10

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:15:01

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\012B1301.D

Injection Date: 21-May-2019 16:12:54

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD3

Worklist Smp#: 12

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

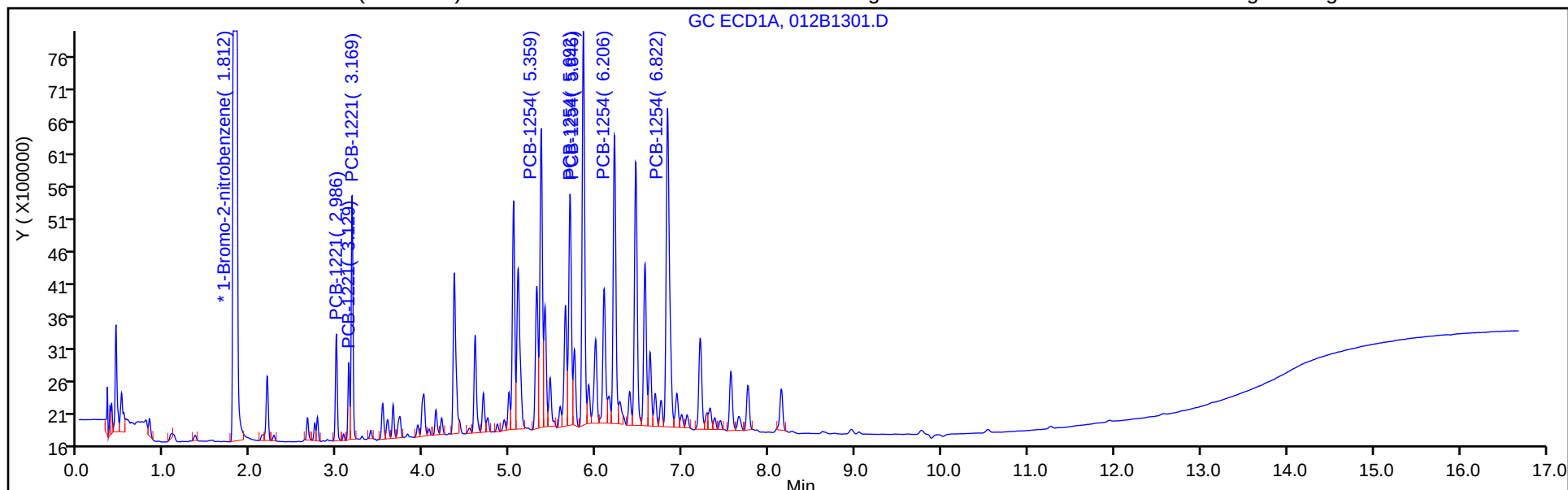
ALS Bottle#: 12

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

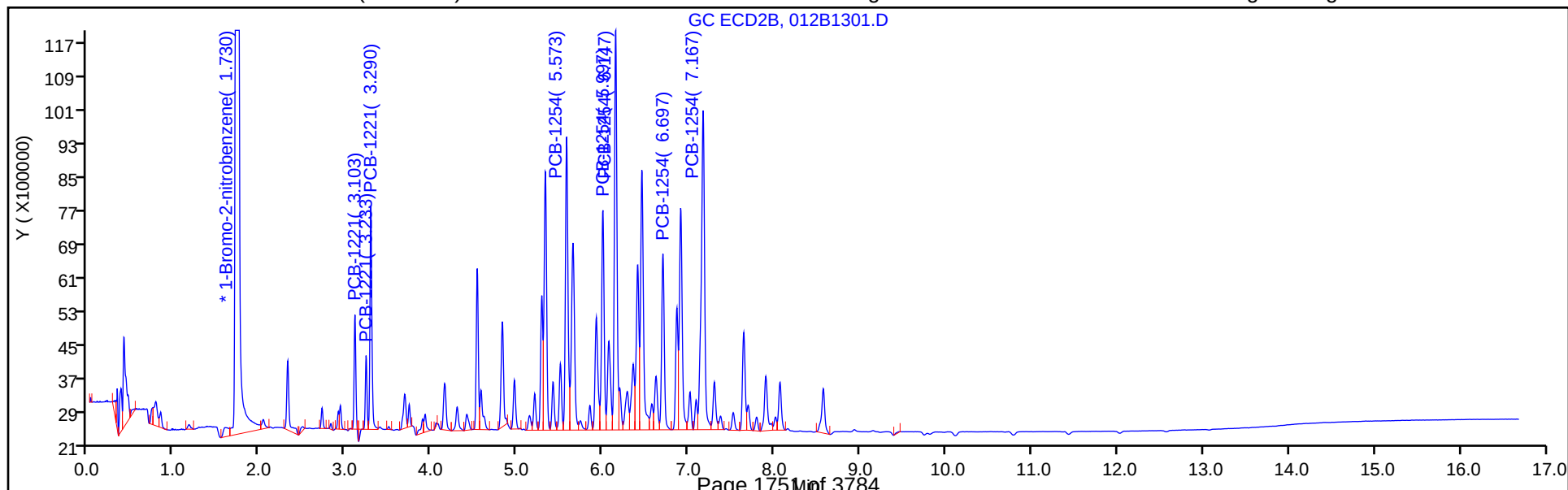
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\013B1401.D
 Lims ID: STD4
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 21-May-2019 16:34:47 ALS Bottle#: 13 Worklist Smp#: 13
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD4
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:57 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:27:08

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.812	1.811	0.001	118183860	100.0	100.0	
2	1.729	1.729	0.000	149186509	100.0	100.0	

RPD = 0.00

3 PCB-1221

M

1	2.985	2.984	0.001	5210567	250.0	242.9	
1	3.128	3.131	-0.003	3635530	250.0	246.9	
1	3.168	3.168	0.000	12494596	250.0	236.6	
Average of Peak Amounts =						242.1	
2	3.103	3.102	0.001	8241140	250.0	246.3	M
2	3.233	3.232	0.001	5268908	250.0	243.9	M
2	3.286	3.289	-0.003	18595877	250.0	243.4	M

Average of Peak Amounts = 244.5

RPD = 0.99

9 PCB-1254

1	5.358	5.358	0.000	21421863	250.0	219.7	
1	5.692	5.694	-0.002	17890306	250.0	228.8	
1	5.848	5.848	0.000	29498034	250.0	228.1	
1	6.208	6.208	0.000	23498422	250.0	232.6	
1	6.822	6.824	-0.002	31384104	250.0	249.4	
Average of Peak Amounts =						231.7	
2	5.573	5.572	0.001	31951748	250.0	249.2	
2	5.996	5.995	0.001	24312138	250.0	249.8	
2	6.143	6.145	-0.002	44538530	250.0	250.3	
2	6.696	6.695	0.001	20011894	250.0	255.1	
2	7.166	7.165	0.001	47553353	250.0	251.6	

Average of Peak Amounts = 251.2

RPD = 8.06

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\013B1401.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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S 8 Polychlorinated biphenyls, Total

1 473.9

2 495.7

RPD = 4.51

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_2154_L7_00022

Amount Added: 0.25

Units: mL

BNB IS_00013

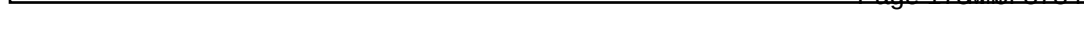
Amount Added: 0.10

Units: mL

Run Reagent

Chrom Revision: 2.3 03-May-2019 15:52:00

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\014B1501.D
 Lims ID: STD5
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 21-May-2019 16:56:41 ALS Bottle#: 14 Worklist Smp#: 14
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD5
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:55 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:19:24

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.811	1.811	0.000	113759993	100.0	100.0	
2	1.729	1.729	0.000	145700588	100.0	100.0	

RPD = 0.00

3 PCB-1221

M

1	2.984	2.984	0.000	9405483	500.0	497.4	
1	3.131	3.131	0.000	6623109	500.0	503.3	
1	3.168	3.168	0.000	23826856	500.0	496.8	

Average of Peak Amounts = 499.2

2	3.102	3.102	0.000	15105423	500.0	495.9	M
2	3.232	3.232	0.000	9882029	500.0	506.0	M
2	3.289	3.289	0.000	34795088	500.0	506.0	M

Average of Peak Amounts = 502.6

RPD = 0.70

9 PCB-1254

1	5.358	5.358	0.000	41947592	500.0	446.9	
1	5.694	5.694	0.000	34166919	500.0	453.9	
1	5.848	5.848	0.000	56177446	500.0	451.3	
1	6.208	6.208	0.000	45100124	500.0	463.8	
1	6.824	6.824	0.000	59940253	500.0	507.3	

Average of Peak Amounts = 464.7

2	5.572	5.572	0.000	61316658	500.0	507.6	
2	5.995	5.995	0.000	46398175	500.0	503.9	
2	6.145	6.145	0.000	84223567	500.0	503.9	
2	6.695	6.695	0.000	38152002	500.0	514.8	
2	7.165	7.165	0.000	90336878	500.0	506.7	

Average of Peak Amounts = 507.4

RPD = 8.79

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_2154_L7_00022

Amount Added: 0.50

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:56

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\014B1501.D

Injection Date: 21-May-2019 16:56:41

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD5

Worklist Smp#: 14

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

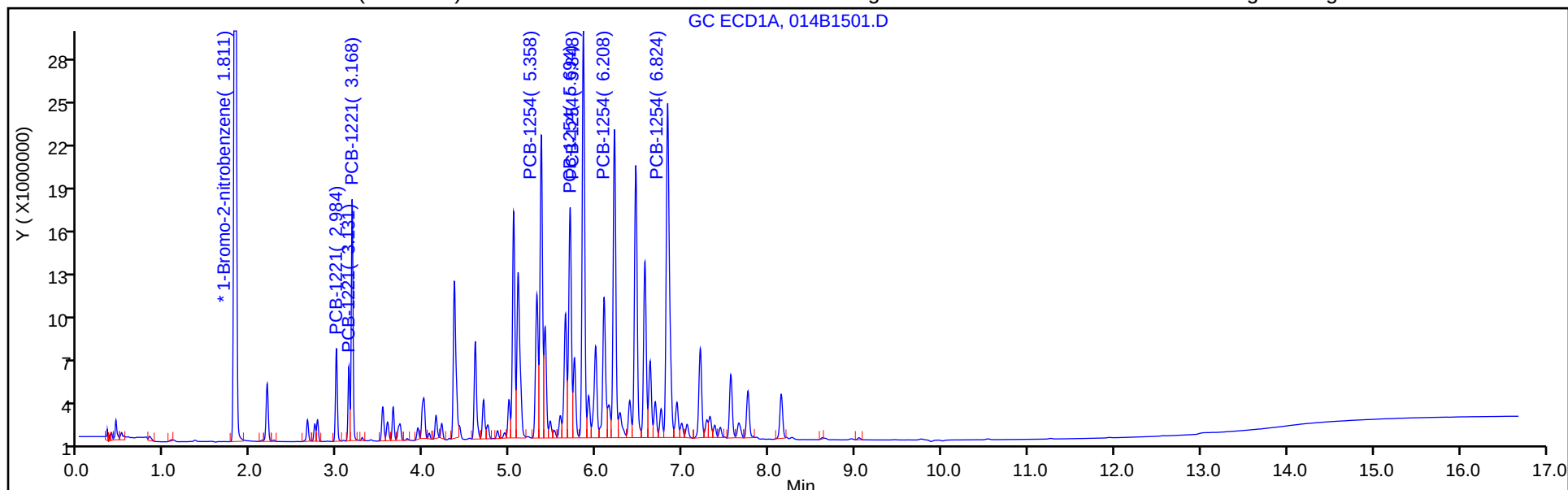
ALS Bottle#: 14

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

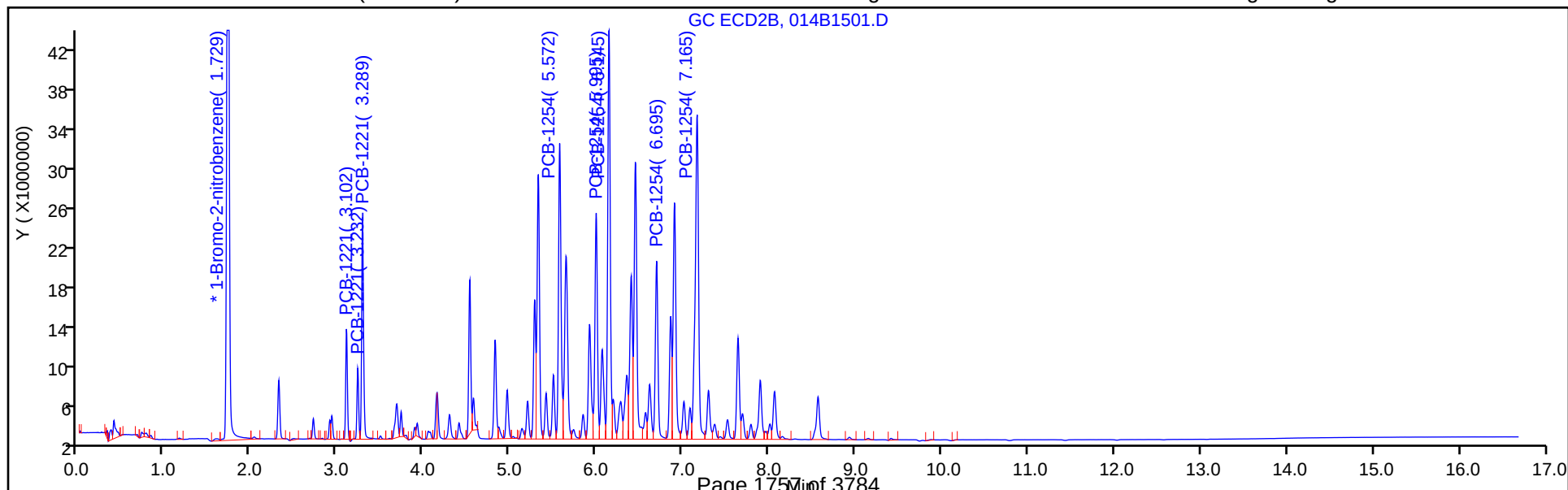
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\015B1601.D
 Lims ID: STD6
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 21-May-2019 17:18:34 ALS Bottle#: 15 Worklist Smp#: 15
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD6
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:53 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:29:02

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.813	0.000	111183278	100.0	100.0
2	1.727	1.727	0.000	141891676	100.0	100.0

RPD = 0.00

3 PCB-1221

1	2.986	2.984	0.002	13310323	750.0	760.2
1	3.130	3.131	-0.001	9125793	750.0	748.3
1	3.166	3.168	-0.002	34435916	750.0	769.2
Average of Peak Amounts =						759.2
2	3.101	3.102	-0.001	21470966	750.0	760.2
2	3.234	3.232	0.002	13454175	750.0	748.5
2	3.287	3.289	-0.002	47390475	750.0	749.3
Average of Peak Amounts =						752.6

RPD = 0.87

9 PCB-1254

1	5.360	5.358	0.002	59797306	750.0	651.9
1	5.693	5.694	-0.001	47481033	750.0	645.4
1	5.846	5.848	-0.002	80246715	750.0	659.5
1	6.206	6.208	-0.002	64468575	750.0	678.4
1	6.823	6.824	-0.001	85910345	750.0	749.9
Average of Peak Amounts =						677.0
2	5.574	5.572	0.002	85931776	750.0	738.7
2	5.994	5.995	-0.001	65853150	750.0	741.9
2	6.144	6.145	-0.001	118849000	750.0	739.5
2	6.694	6.695	-0.001	54180866	750.0	758.8
2	7.164	7.165	-0.001	127433939	750.0	742.2
Average of Peak Amounts =						744.2

RPD = 9.46

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\015B1601.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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S 8 Polychlorinated biphenyls, Total

1 1436.3

2 1496.9

RPD = 4.13

Reagents:

AR_2154_L7_00022

Amount Added: 0.75

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:54

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\015B1601.D

Injection Date: 21-May-2019 17:18:34

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD6

Worklist Smp#: 15

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

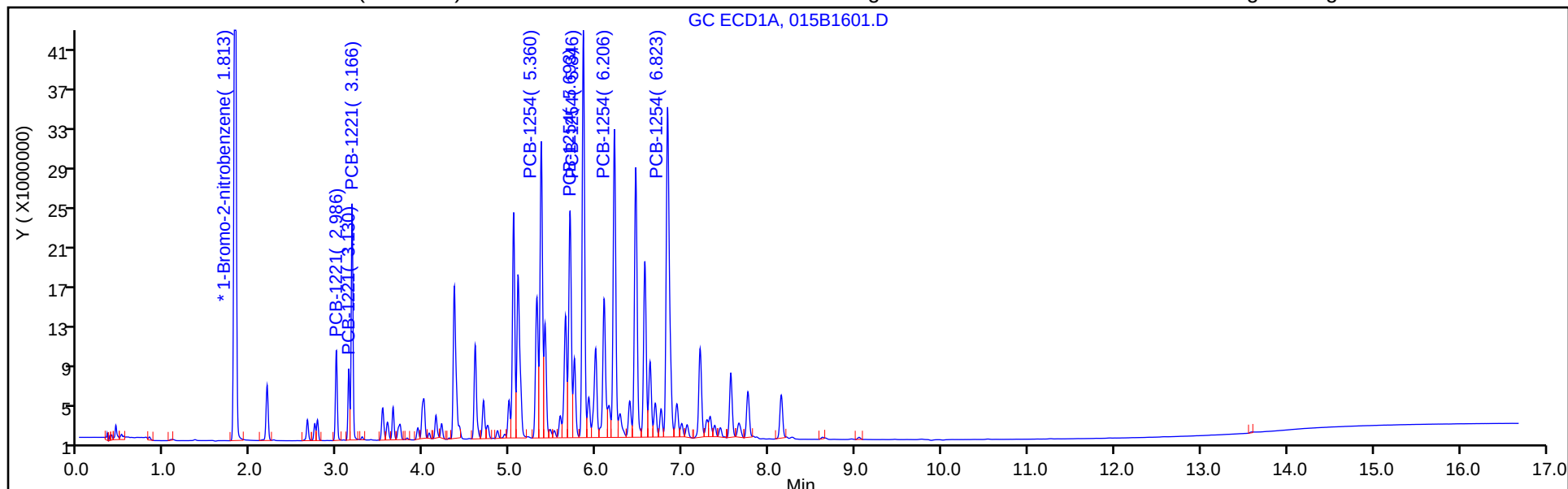
ALS Bottle#: 15

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

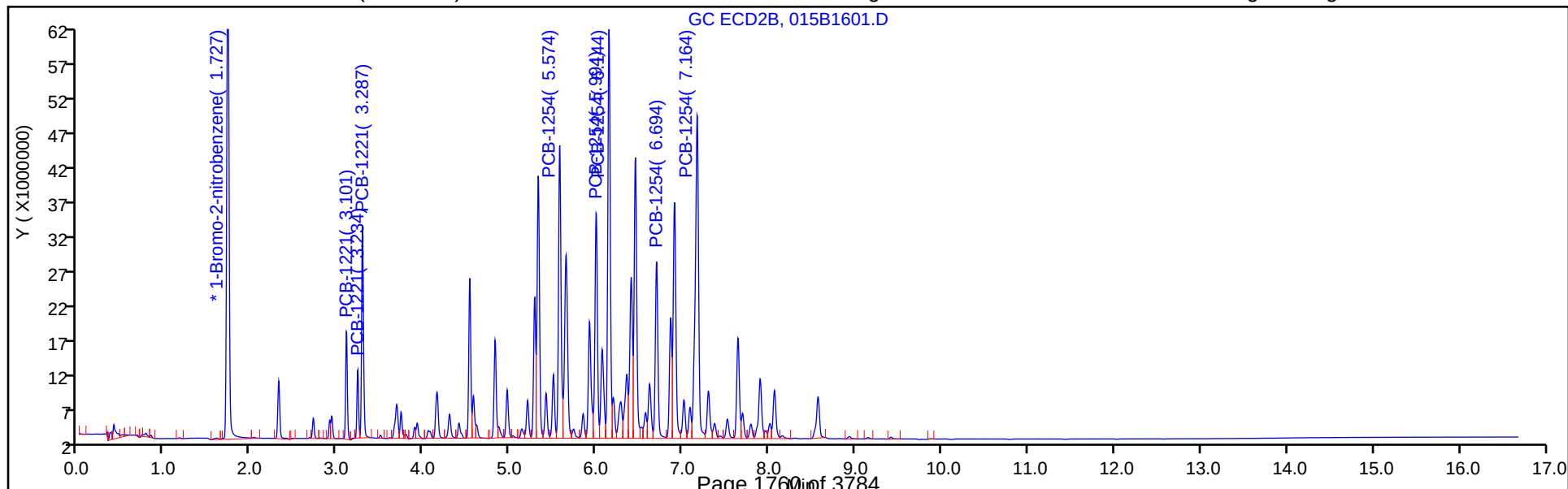
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\016B1701.D
 Lims ID: STD7
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 21-May-2019 17:40:27 ALS Bottle#: 16 Worklist Smp#: 16
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD7
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:51 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:21:59

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.813	0.000	116496232	100.0	100.0
2	1.727	1.727	0.000	148384675	100.0	100.0

RPD = 0.00

3 PCB-1221

1	2.983	2.984	-0.001	17520452	1000.0	995.1
1	3.129	3.131	-0.002	12136934	1000.0	1000.3
1	3.166	3.168	-0.002	44833797	1000.0	990.3

Average of Peak Amounts = 995.2

2	3.100	3.102	-0.002	28278213	1000.0	995.3
2	3.234	3.232	0.002	17758820	1000.0	999.6
2	3.287	3.289	-0.002	62484840	1000.0	999.1

Average of Peak Amounts = 998.0

RPD = 0.28

9 PCB-1254

1	5.359	5.358	0.001	79923380	1000.0	831.6
1	5.693	5.694	-0.001	63719188	1000.0	826.6
1	5.846	5.848	-0.002	107523172	1000.0	843.4
1	6.206	6.208	-0.002	86626473	1000.0	870.0
1	6.823	6.824	-0.001	115332052	1000.0	964.3

Average of Peak Amounts = 867.2

2	5.570	5.572	-0.002	114607932	1000.0	947.2
2	5.994	5.995	-0.001	87208512	1000.0	943.9
2	6.144	6.145	-0.001	158136546	1000.0	946.5
2	6.694	6.695	-0.001	71923413	1000.0	967.9
2	7.164	7.165	-0.001	169405826	1000.0	948.5

Average of Peak Amounts = 950.8

RPD = 9.20

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\016B1701.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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S 8 Polychlorinated biphenyls, Total

1 1862.4

2 1948.8

RPD = 4.54

Reagents:

AR_2154_L7_00022

Amount Added: 1.00

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:52

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\016B1701.D

Injection Date: 21-May-2019 17:40:27

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD7

Worklist Smp#: 16

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

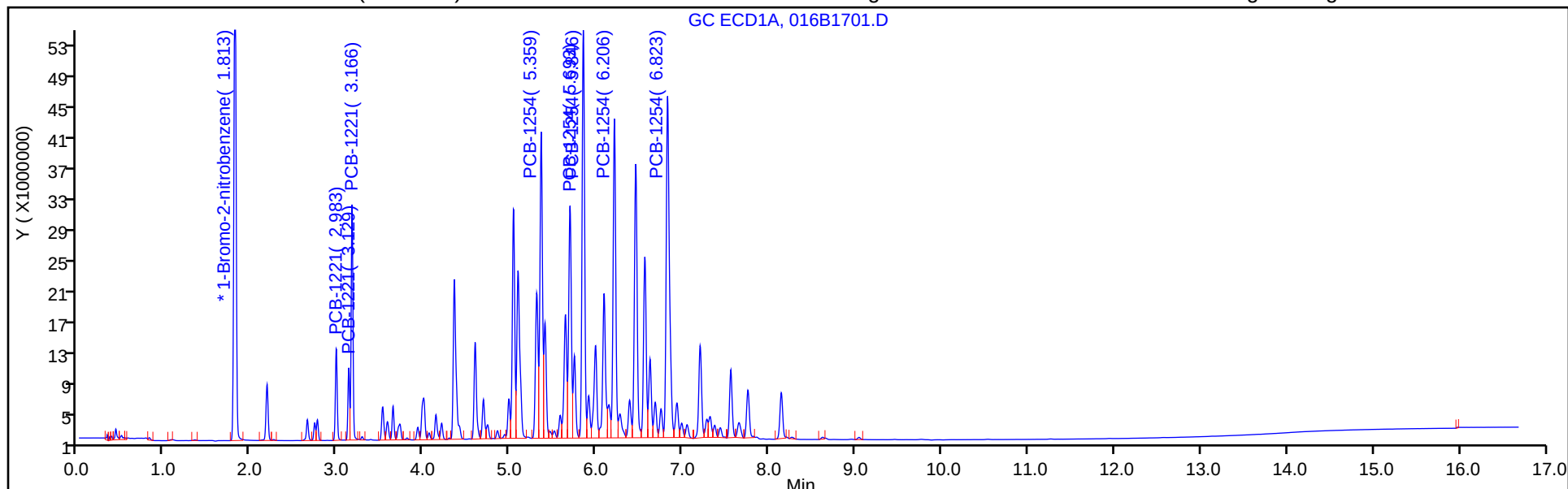
ALS Bottle#: 16

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

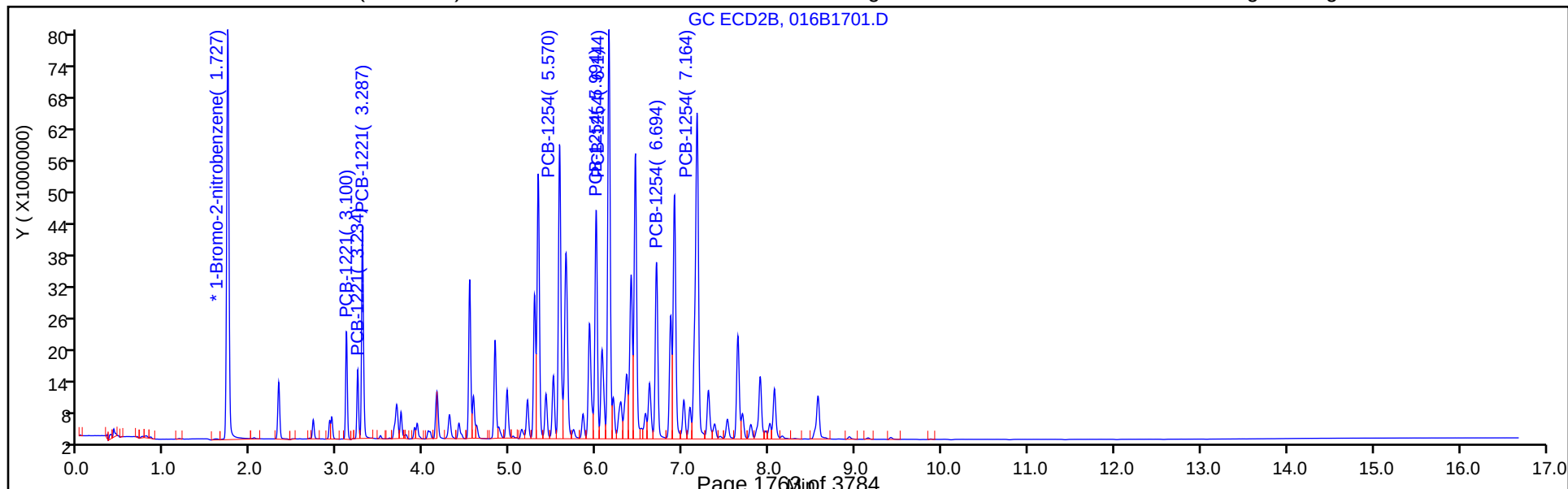
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 459083

SDG No.: _____

Instrument ID: SGC_P3 GC Column: CLP2 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/21/2019 15:29 Calibration End Date: 05/21/2019 17:40 Calibration ID: 36510

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-459083/10	010B1101.D
Level 2	STD2 280-459083/11	011B1201.D
Level 3	STD3 280-459083/12	012B1301.D
Level 4	STD4 280-459083/13	013B1401.D
Level 5	STD5 280-459083/14	014B1501.D
Level 6	STD6 280-459083/15	015B1601.D
Level 7	STD7 280-459083/16	016B1701.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
PCB-1221 Peak 1	0.0382 0.0202	0.0317 0.0191	0.0247	0.0221	0.0207	Qua	0.4172	0.0214	-0.000003						1.0000		0.9900
PCB-1221 Peak 2	0.0221 0.0126	0.0192 0.0120	0.0158	0.0141	0.0136	Qua	0.1978	0.0143	-0.000003						1.0000		0.9900
PCB-1221 Peak 3	0.0831 0.0445	0.0703 0.0421	0.0561	0.0499	0.0478	Qua	0.8212	0.0499	-0.000009						1.0000		0.9900
PCB-1254 Peak 1	0.1359 0.0807	0.1173 0.0772	0.0958	0.0857	0.0842	Lin2	1.4948	0.0800							0.9970		0.9900
PCB-1254 Peak 2	0.0986 0.0619	0.0874 0.0588	0.0721	0.0652	0.0637	Lin2	1.0121	0.0612							0.9960		0.9900
PCB-1254 Peak 3	0.1941 0.1117	0.1712 0.1066	0.1310	0.1194	0.1156	Lin2	2.2761	0.1102							0.9930		0.9900
PCB-1254 Peak 4	0.0780 0.0509	0.0692 0.0485	0.0597	0.0537	0.0524	Lin1	0.8688	0.0492							0.9990		0.9900
PCB-1254 Peak 5	0.1999 0.1197	0.1711 0.1142	0.1398	0.1275	0.1240	Lin2	2.1668	0.1181							0.9970		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 459083

SDG No.: _____

Instrument ID: SGC_P3 GC Column: CLP2 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/21/2019 15:29 Calibration End Date: 05/21/2019 17:40 Calibration ID: 36510

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-459083/10	010B1101.D
Level 2	STD2 280-459083/11	011B1201.D
Level 3	STD3 280-459083/12	012B1301.D
Level 4	STD4 280-459083/13	013B1401.D
Level 5	STD5 280-459083/14	014B1501.D
Level 6	STD6 280-459083/15	015B1601.D
Level 7	STD7 280-459083/16	016B1701.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
PCB-1221 Peak 1	BNB	Qua	1174758 21470966	2110779 28278213	3716624	8241140	15105423	25.0 750	50.0 1000	100	250	500
PCB-1221 Peak 2	BNB	Qua	680798 13454175	1280053 17758820	2369395	5268908	9882029	25.0 750	50.0 1000	100	250	500
PCB-1221 Peak 3	BNB	Qua	2558578 47390475	4683213 62484840	8432726	18595877	34795088	25.0 750	50.0 1000	100	250	500
PCB-1254 Peak 1	BNB	Lin2	4183379 85931776	7816950 114607932	14409504	31951748	61316658	25.0 750	50.0 1000	100	250	500
PCB-1254 Peak 2	BNB	Lin2	3033383 65853150	5828830 87208512	10845982	24312138	46398175	25.0 750	50.0 1000	100	250	500
PCB-1254 Peak 3	BNB	Lin2	5973831 118849000	11410847 158136546	19711889	44538530	84223567	25.0 750	50.0 1000	100	250	500
PCB-1254 Peak 4	BNB	Lin1	2400230 54180866	4611557 71923413	8984401	20011894	38152002	25.0 750	50.0 1000	100	250	500
PCB-1254 Peak 5	BNB	Lin2	6152082 127433939	11407245 169405826	21034472	47553353	90336878	25.0 750	50.0 1000	100	250	500

Curve Type Legend:

Lin1 = Linear 1/conc ISTD
Lin2 = Linear 1/conc^2 ISTD
Qua = Quadratic ISTD

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\010B1101.D
 Lims ID: STD1 2154
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 21-May-2019 15:29:10 ALS Bottle#: 10 Worklist Smp#: 10
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD1
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:15:25 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:17:54

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.812	1.811	0.001	97074083	100.0	100.0	
2	1.726	1.729	-0.003	123097006	100.0	100.0	

RPD = 0.00

3 PCB-1221

M

1	2.985	2.984	0.001	846865	25.0	23.8	
1	3.128	3.131	-0.003	466920	25.0	23.9	
1	3.168	3.168	0.000	1651978	25.0	28.2	
Average of Peak Amounts =						25.3	
2	3.103	3.102	0.001	1174758	25.0	25.2	M
2	3.233	3.232	0.001	680798	25.0	25.0	M
2	3.289	3.289	0.000	2558578	25.0	25.3	M

Average of Peak Amounts =

25.2

RPD = 0.71

9 PCB-1254

1	5.362	5.358	0.004	2740039	25.0	34.2	
1	5.695	5.694	0.001	2158064	25.0	33.6	
1	5.848	5.848	0.000	3534919	25.0	33.3	
1	6.208	6.208	0.000	2641958	25.0	31.8	
1	6.825	6.824	0.001	3634396	25.0	24.3	
Average of Peak Amounts =						31.5	
2	5.573	5.572	0.001	4183379	25.0	23.8	
2	5.996	5.995	0.001	3033383	25.0	23.7	
2	6.146	6.145	0.001	5973831	25.0	23.4	
2	6.696	6.695	0.001	2400230	25.0	22.0	
2	7.166	7.165	0.001	6152082	25.0	24.0	

Average of Peak Amounts =

23.4

RPD = 29.47

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\010B1101.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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S 8 Polychlorinated biphenyls, Total

1	56.8
2	48.5
RPD = 15.68	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_2154_L7_00022

Amount Added: 0.03

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:15:27

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\010B1101.D

Injection Date: 21-May-2019 15:29:10

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD1 2154

Worklist Smp#: 10

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

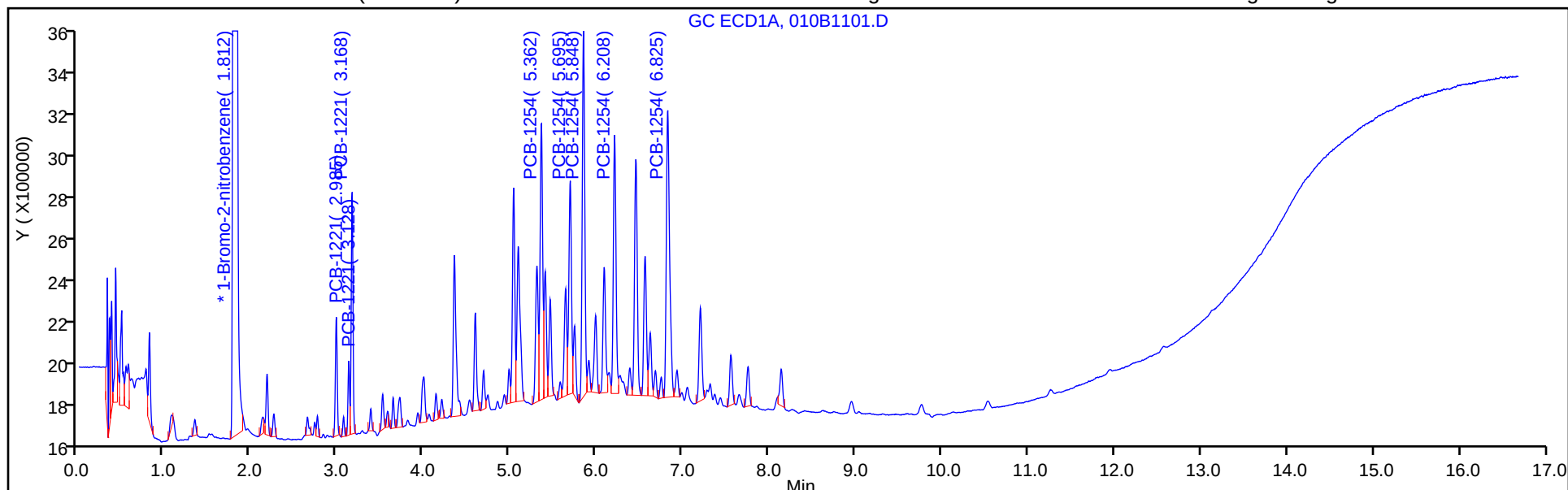
ALS Bottle#: 10

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

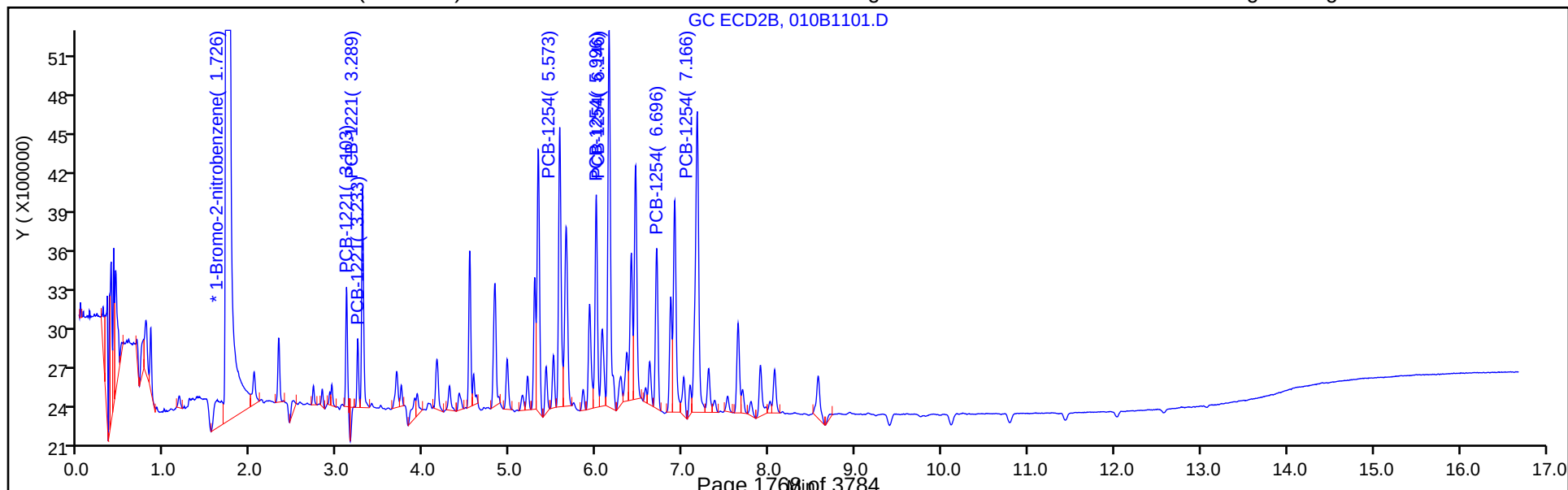
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Report Date: 22-May-2019 20:15:27

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\010B1101.D

Injection Date: 21-May-2019 15:29:10

Instrument ID: SGC_P3

Lims ID: STD1 2154

Client ID:

Operator ID: TEM

ALS Bottle#: 10

Worklist Smp#: 10

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

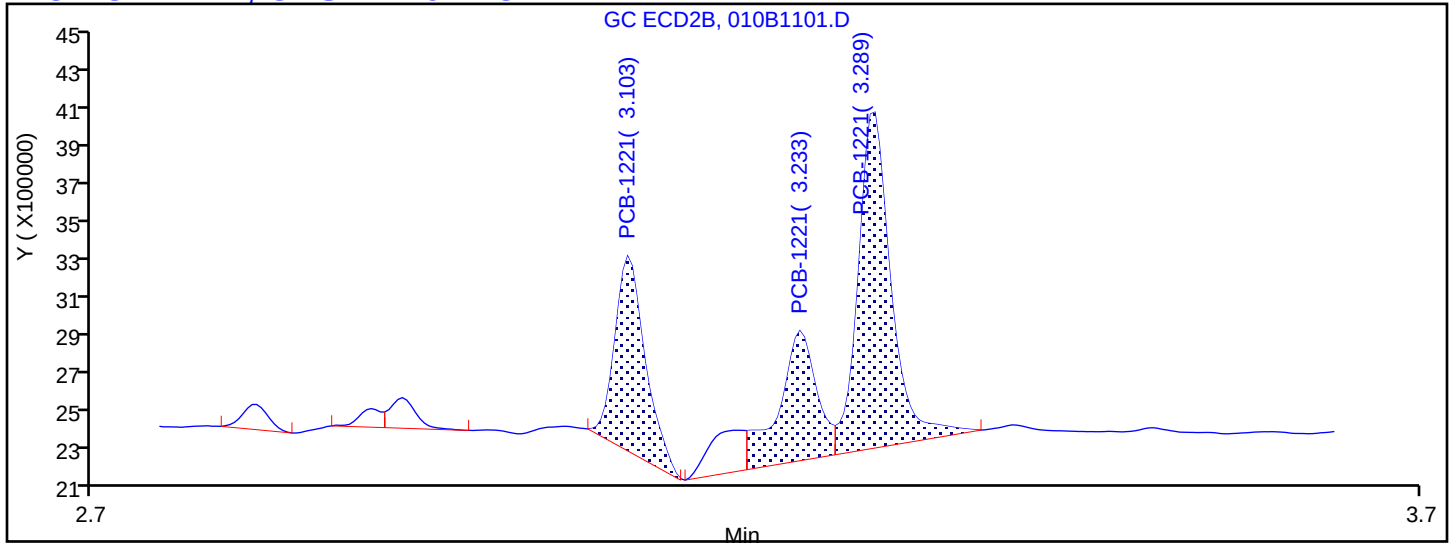
Method: PCB_P3

Limit Group: GCSV - 8082 - IS

Column: CLP2 Pesticides Column 2 (0.32 mm)

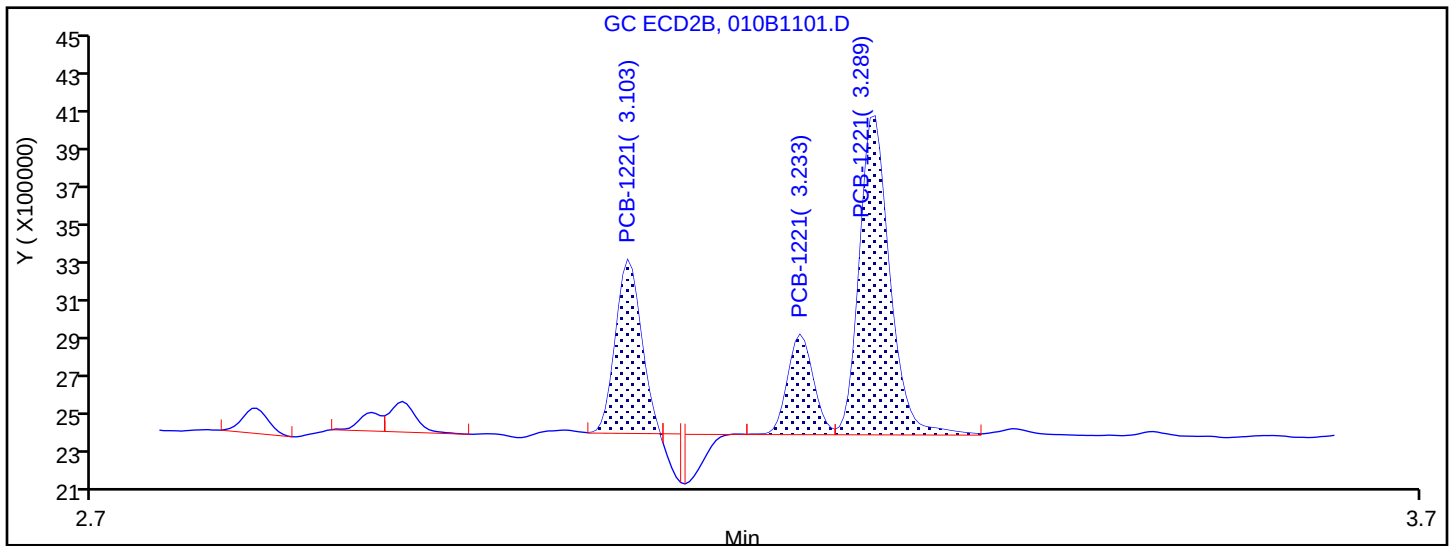
Detector: GC ECD2B

3 PCB-1221, CAS: 11104-28-2



Processing Integration Results

3.103	Response = 1572058
3.233	Response = 1314230
3.289	Response = 2934409



Manual Integration Results

3.103	Response = 1174758	M
3.233	Response = 680798	M
3.289	Response = 2558578	M

Reviewer: mooret, 22-May-2019 19:35:09

Audit Action: Assigned New Baseline

Audit Reason: Baseline Smoothing

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\011B1201.D
 Lims ID: STD2
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 21-May-2019 15:51:02 ALS Bottle#: 11 Worklist Smp#: 11
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD2
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:15:13 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:18:24

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.810	1.811	-0.001	104326010	100.0	100.0	
2	1.728	1.729	-0.001	133316423	100.0	100.0	

RPD = 0.00

3 PCB-1221

M

1	2.984	2.984	0.000	1446688	50.0	55.0	
1	3.130	3.131	-0.001	856201	50.0	52.2	
1	3.167	3.168	-0.001	3048993	50.0	56.2	

Average of Peak Amounts = 54.5

2	3.105	3.102	0.003	2110779	50.0	54.9	M
2	3.235	3.232	0.003	1280053	50.0	53.9	M
2	3.288	3.289	-0.001	4683213	50.0	54.4	M

Average of Peak Amounts = 54.4

RPD = 0.11

9 PCB-1254

1	5.360	5.358	0.002	5070965	50.0	58.9	
1	5.694	5.694	0.000	3962432	50.0	57.4	
1	5.847	5.848	-0.001	6609332	50.0	57.9	
1	6.207	6.208	-0.001	5045910	50.0	56.6	
1	6.824	6.824	0.000	6918418	50.0	52.8	

Average of Peak Amounts = 56.7

2	5.575	5.572	0.003	7816950	50.0	54.6	
2	5.998	5.995	0.003	5828830	50.0	54.9	
2	6.145	6.145	0.000	11410847	50.0	57.0	
2	6.698	6.695	0.003	4611557	50.0	52.7	
2	7.165	7.165	0.000	11407245	50.0	54.1	

Average of Peak Amounts = 54.7

RPD = 3.69

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\011B1201.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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S 8 Polychlorinated biphenyls, Total

1	111.2
2	109.1
RPD = 1.92	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_2154_L7_00022

Amount Added: 0.05

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:15:15

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\011B1201.D

Injection Date: 21-May-2019 15:51:02

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD2

Worklist Smp#: 11

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

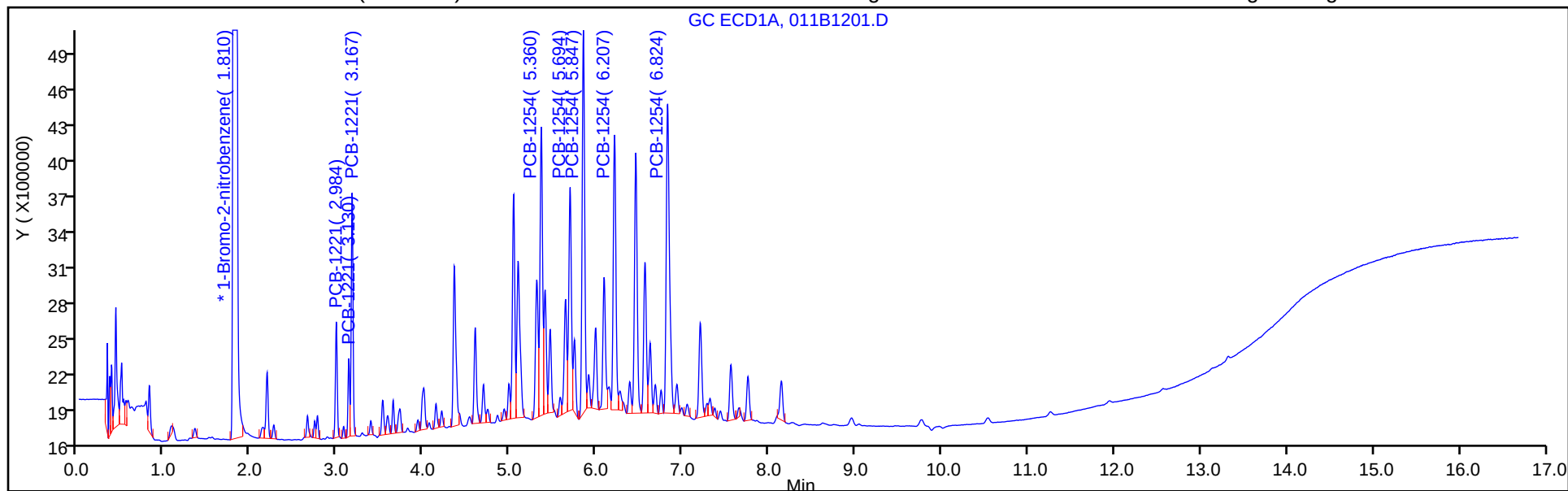
ALS Bottle#: 11

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

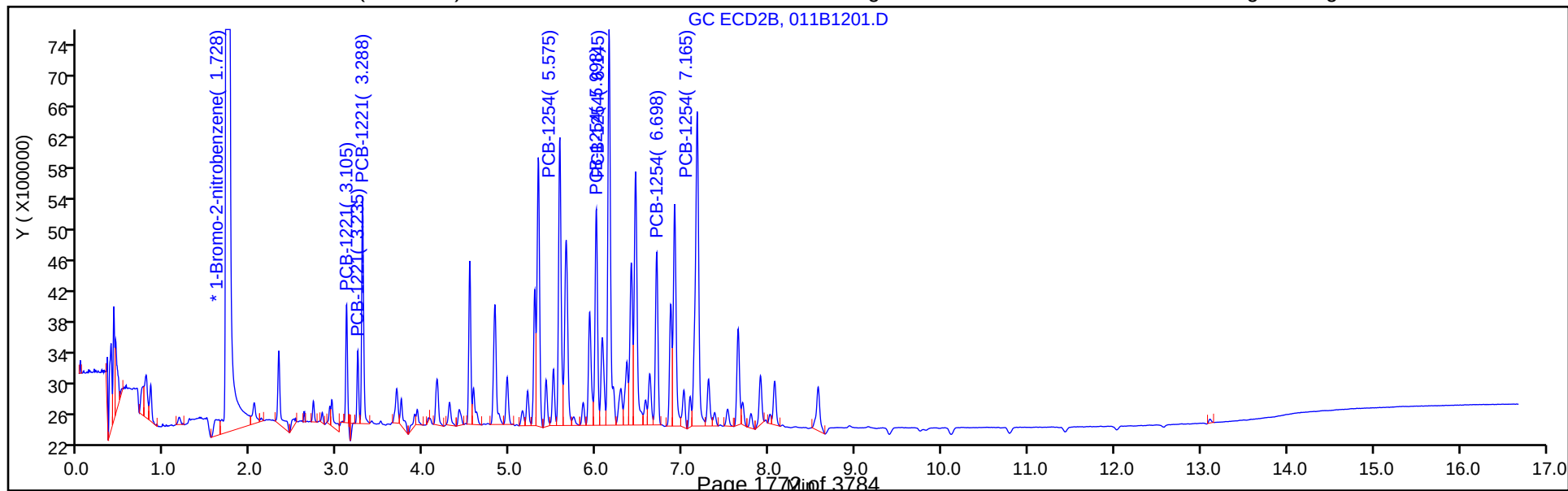
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Report Date: 22-May-2019 20:15:15

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\011B1201.D

Injection Date: 21-May-2019 15:51:02

Instrument ID: SGC_P3

Lims ID: STD2

Client ID:

Operator ID: TEM

ALS Bottle#: 11

Worklist Smp#: 11

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

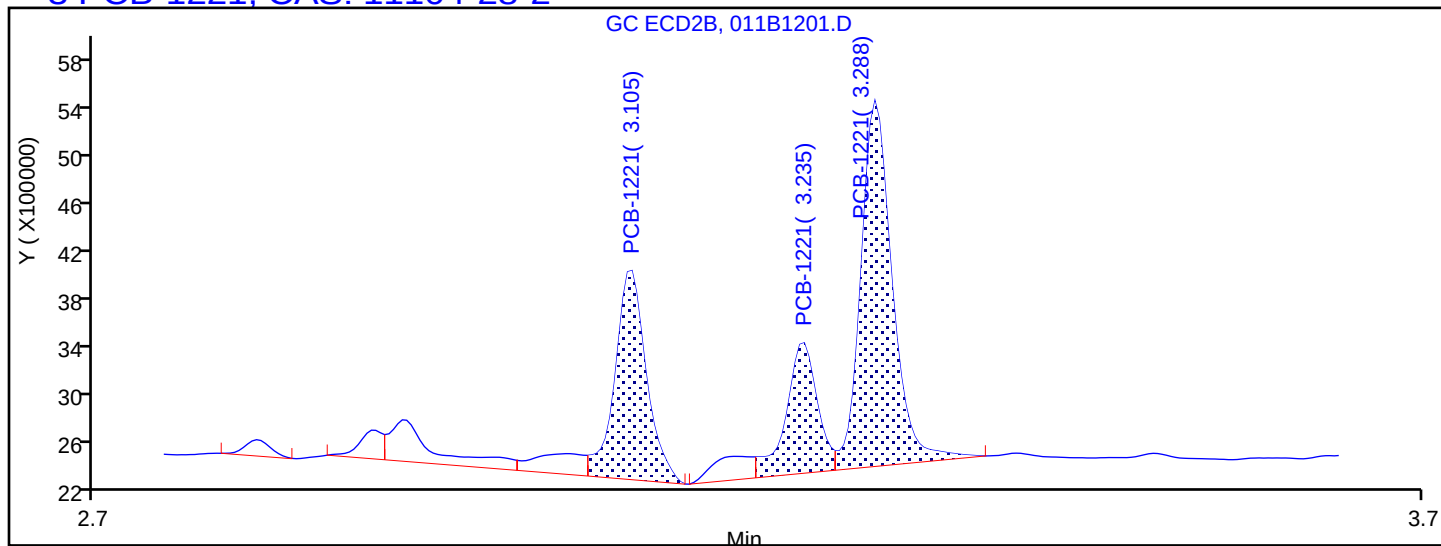
Method: PCB_P3

Limit Group: GCSV - 8082 - IS

Column: CLP2 Pesticides Column 2 (0.32 mm) Detector

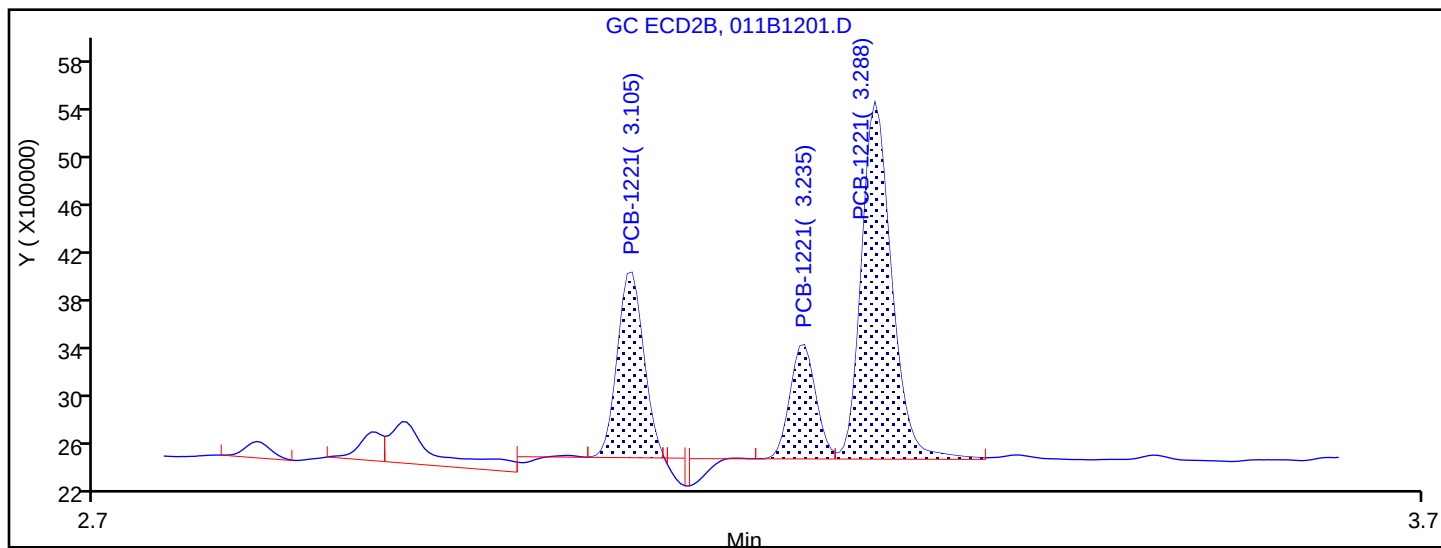
GC ECD2B

3 PCB-1221, CAS: 11104-28-2



Processing Integration Results

3.105	Response = 2863554
3.235	Response = 1788192
3.288	Response = 5006540



Manual Integration Results

3.105	Response = 2110779	M
3.235	Response = 1280053	M
3.288	Response = 4683213	M

Reviewer: mooret, 22-May-2019 19:36:16

Audit Action: Assigned New Baseline

Audit Reason: Baseline Smoothing

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\012B1301.D
 Lims ID: STD3
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 21-May-2019 16:12:54 ALS Bottle#: 12 Worklist Smp#: 12
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD3
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:15:00 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:18:51

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.812	1.811	0.001	117878154	100.0	100.0	
2	1.730	1.729	0.001	150427416	100.0	100.0	

RPD = 0.00

3 PCB-1221

M

1	2.986	2.984	0.002	2515357	100.0	100.6	
1	3.129	3.131	-0.002	1636154	100.0	100.0	
1	3.169	3.168	0.001	5563100	100.0	97.8	

Average of Peak Amounts = 99.5

2	3.103	3.102	0.001	3716624	100.0	97.2	M
2	3.233	3.232	0.001	2369395	100.0	98.1	M
2	3.290	3.289	0.001	8432726	100.0	97.5	M

Average of Peak Amounts = 97.6

RPD = 1.90

9 PCB-1254

1	5.359	5.358	0.001	9529149	100.0	98.0	
1	5.692	5.694	-0.002	7783519	100.0	99.8	
1	5.846	5.848	-0.002	12556566	100.0	97.3	
1	6.206	6.208	-0.002	9694056	100.0	96.2	
1	6.822	6.824	-0.002	13364504	100.0	99.3	

Average of Peak Amounts = 98.1

2	5.573	5.572	0.001	14409504	100.0	101.1	
2	5.997	5.995	0.002	10845982	100.0	101.3	
2	6.147	6.145	0.002	19711889	100.0	98.3	
2	6.697	6.695	0.002	8984401	100.0	103.8	
2	7.167	7.165	0.002	21034472	100.0	100.1	

Average of Peak Amounts = 100.9

RPD = 2.79

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\012B1301.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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S 8 Polychlorinated biphenyls, Total

1 197.6

2 198.5

RPD = 0.46

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_2154_L7_00022

Amount Added: 0.10

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:15:01

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\012B1301.D

Injection Date: 21-May-2019 16:12:54

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD3

Worklist Smp#: 12

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

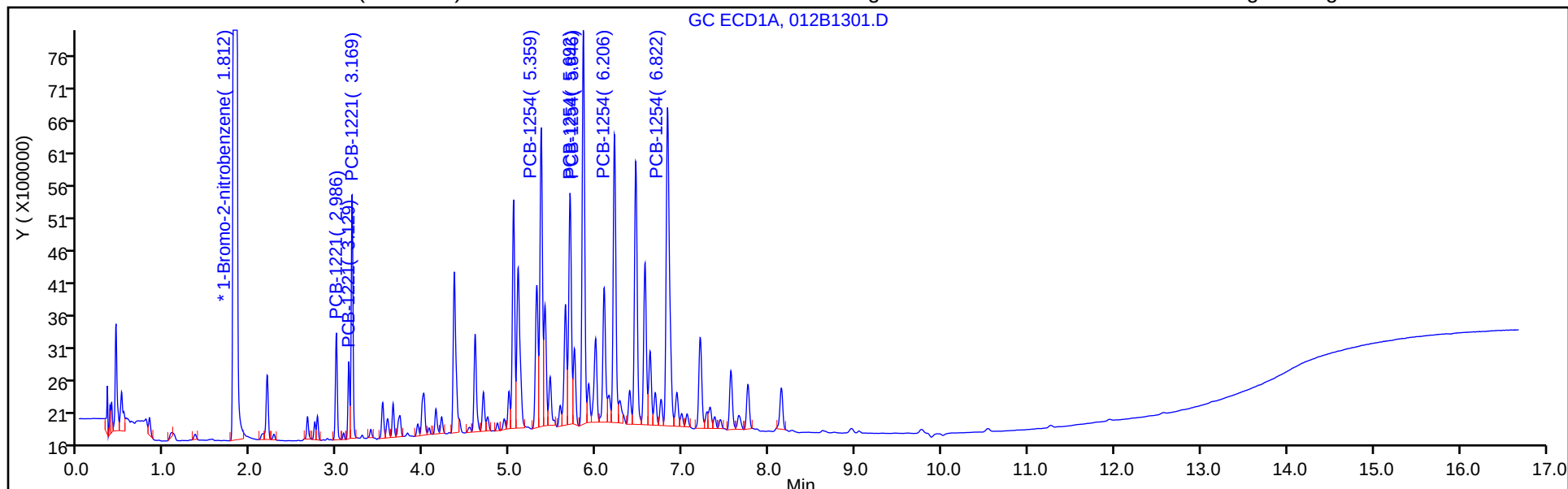
ALS Bottle#: 12

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

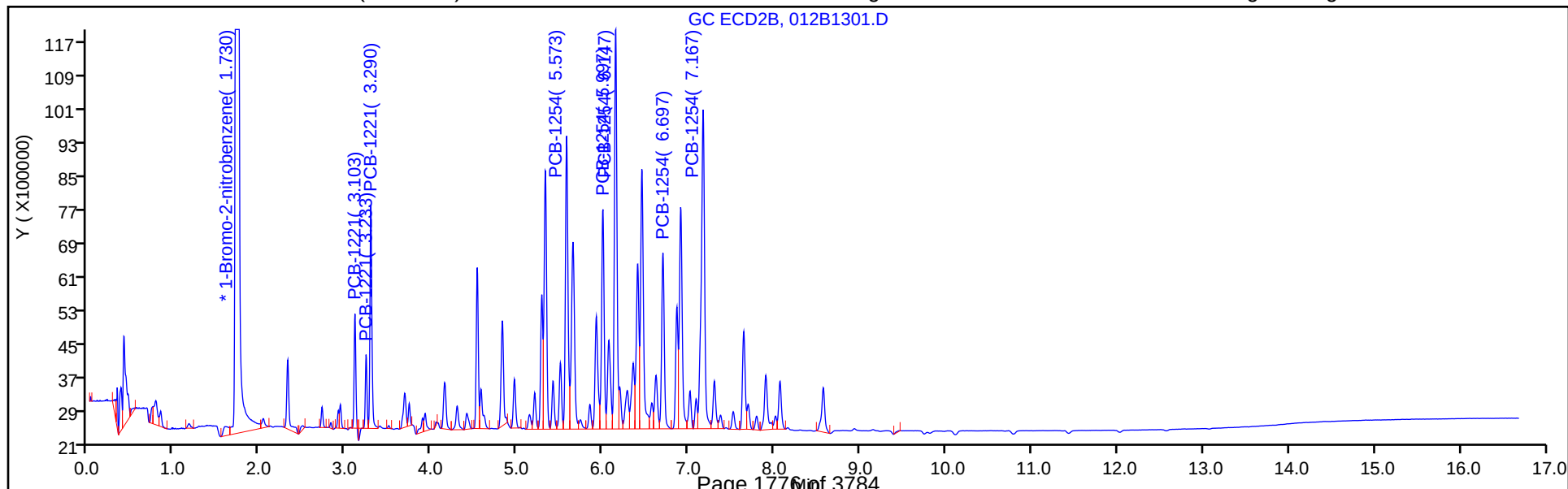
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Report Date: 22-May-2019 20:15:01

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\012B1301.D

Injection Date: 21-May-2019 16:12:54

Instrument ID: SGC_P3

Lims ID: STD3

Client ID:

Operator ID: TEM

ALS Bottle#: 12

Worklist Smp#: 12

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: PCB_P3

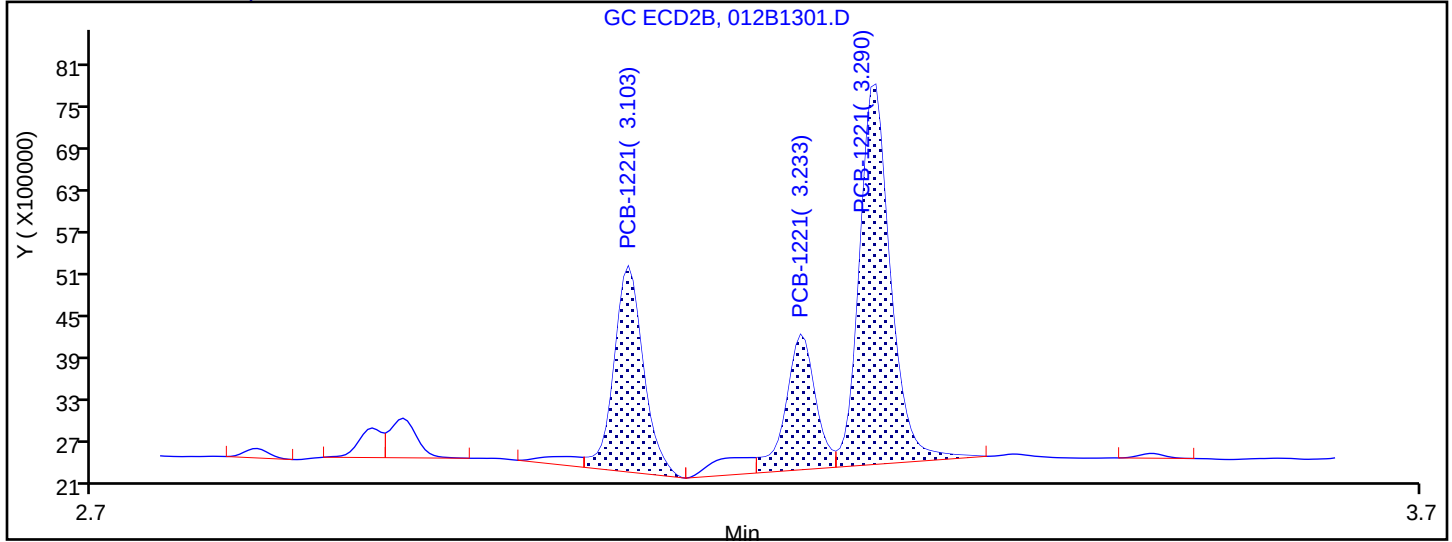
Limit Group: GCSV - 8082 - IS

Column: CLP2 Pesticides Column 2 (0.32 mm)

Detector

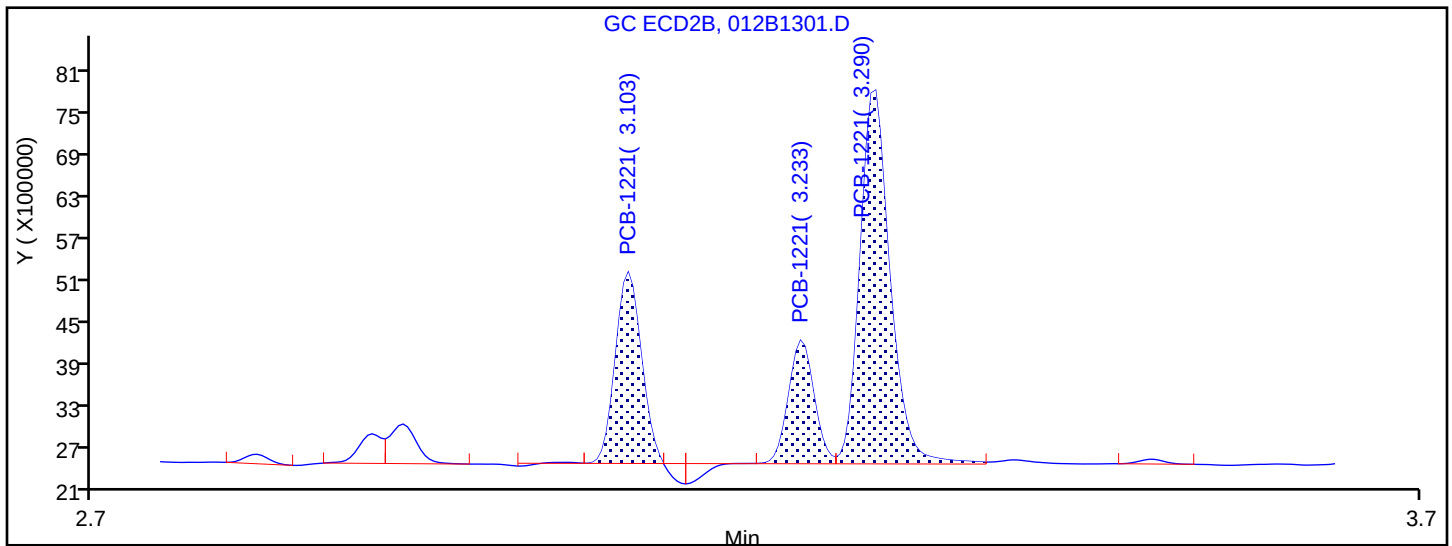
GC ECD2B

3 PCB-1221, CAS: 11104-28-2



Processing Integration Results

3.103	Response = 4512029
3.233	Response = 2997086
3.290	Response = 8788886



Manual Integration Results

3.103	Response = 3716624	M
3.233	Response = 2369395	M
3.290	Response = 8432726	M

Reviewer: mooret, 22-May-2019 19:38:23

Audit Action: Assigned New Baseline

Audit Reason: Baseline Smoothing

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\013B1401.D
 Lims ID: STD4
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 21-May-2019 16:34:47 ALS Bottle#: 13 Worklist Smp#: 13
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD4
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:57 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:27:08

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.812	1.811	0.001	118183860	100.0	100.0	
2	1.729	1.729	0.000	149186509	100.0	100.0	

RPD = 0.00

3 PCB-1221

M

1	2.985	2.984	0.001	5210567	250.0	242.9	
1	3.128	3.131	-0.003	3635530	250.0	246.9	
1	3.168	3.168	0.000	12494596	250.0	236.6	

Average of Peak Amounts = 242.1

2	3.103	3.102	0.001	8241140	250.0	246.3	M
2	3.233	3.232	0.001	5268908	250.0	243.9	M
2	3.286	3.289	-0.003	18595877	250.0	243.4	M

Average of Peak Amounts = 244.5

RPD = 0.99

9 PCB-1254

1	5.358	5.358	0.000	21421863	250.0	219.7	
1	5.692	5.694	-0.002	17890306	250.0	228.8	
1	5.848	5.848	0.000	29498034	250.0	228.1	
1	6.208	6.208	0.000	23498422	250.0	232.6	
1	6.822	6.824	-0.002	31384104	250.0	249.4	

Average of Peak Amounts = 231.7

2	5.573	5.572	0.001	31951748	250.0	249.2	
2	5.996	5.995	0.001	24312138	250.0	249.8	
2	6.143	6.145	-0.002	44538530	250.0	250.3	
2	6.696	6.695	0.001	20011894	250.0	255.1	
2	7.166	7.165	0.001	47553353	250.0	251.6	

Average of Peak Amounts = 251.2

RPD = 8.06

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\013B1401.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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S 8 Polychlorinated biphenyls, Total

1 473.9

2 495.7

RPD = 4.51

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_2154_L7_00022

Amount Added: 0.25

Units: mL

BNB IS_00013

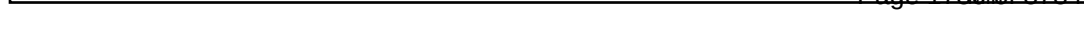
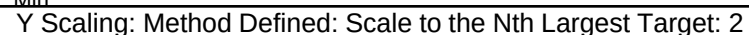
Amount Added: 0.10

Units: mL

Run Reagent

Chrom Revision: 2.3 03-May-2019 15:52:00

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Report Date: 22-May-2019 20:14:58

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\013B1401.D

Injection Date: 21-May-2019 16:34:47

Instrument ID: SGC_P3

Lims ID: STD4

Client ID:

Operator ID: TEM

ALS Bottle#: 13

Worklist Smp#: 13

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

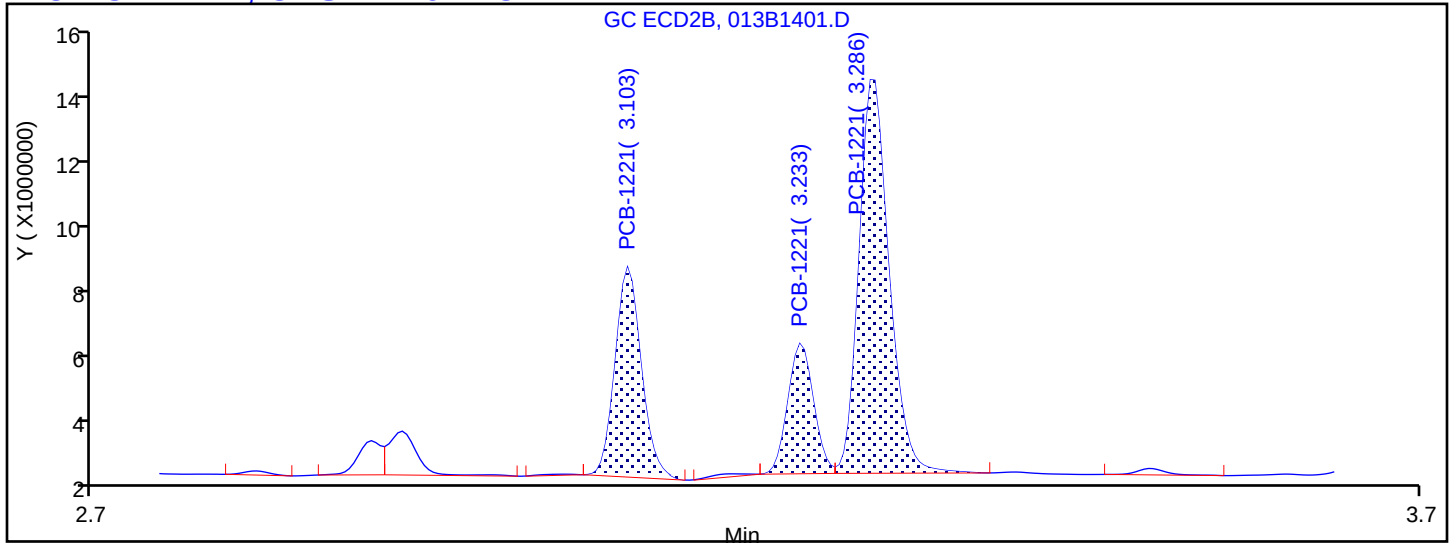
Method: PCB_P3

Limit Group: GCSV - 8082 - IS

Column: CLP2 Pesticides Column 2 (0.32 mm) Detector

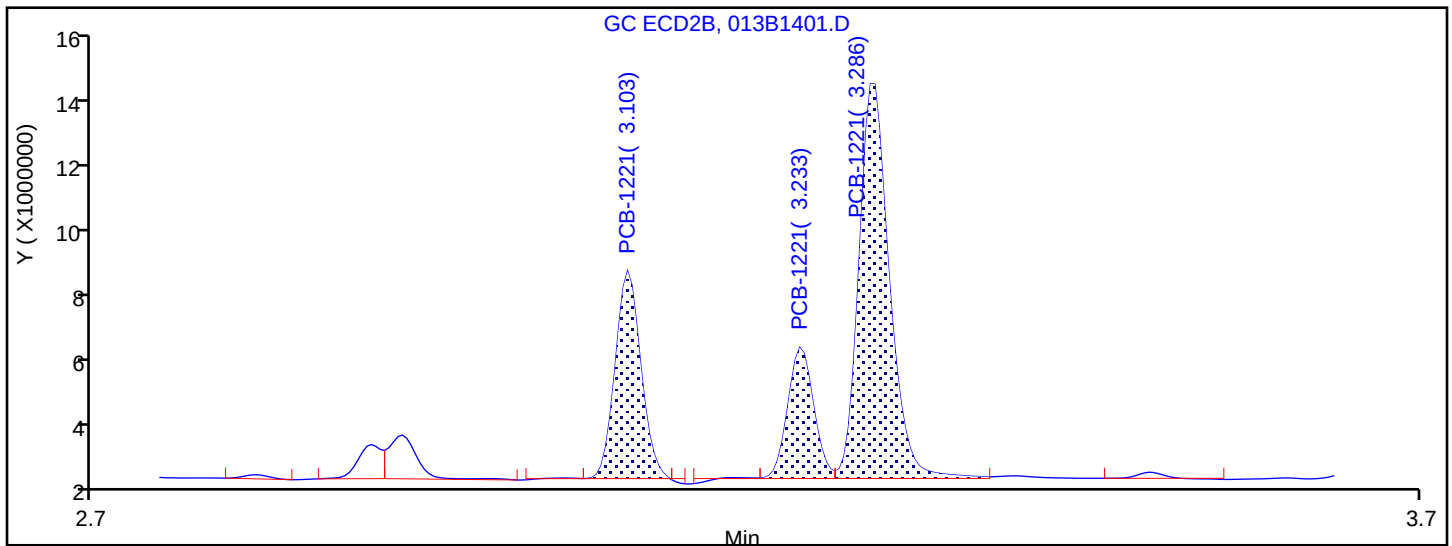
GC ECD2B

3 PCB-1221, CAS: 11104-28-2



Processing Integration Results

3.103	Response = 8534010
3.233	Response = 5177657
3.286	Response = 18286998



Manual Integration Results

3.103	Response = 8241140	M
3.233	Response = 5268908	M
3.286	Response = 18595877	M

Reviewer: mooret, 22-May-2019 19:42:21

Audit Action: Assigned New Baseline

Audit Reason: Baseline Smoothing

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\014B1501.D
 Lims ID: STD5
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 21-May-2019 16:56:41 ALS Bottle#: 14 Worklist Smp#: 14
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD5
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:55 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:19:24

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.811	1.811	0.000	113759993	100.0	100.0	
2	1.729	1.729	0.000	145700588	100.0	100.0	

RPD = 0.00

3 PCB-1221

M

1	2.984	2.984	0.000	9405483	500.0	497.4	
1	3.131	3.131	0.000	6623109	500.0	503.3	
1	3.168	3.168	0.000	23826856	500.0	496.8	

Average of Peak Amounts = 499.2

2	3.102	3.102	0.000	15105423	500.0	495.9	M
2	3.232	3.232	0.000	9882029	500.0	506.0	M
2	3.289	3.289	0.000	34795088	500.0	506.0	M

Average of Peak Amounts = 502.6

RPD = 0.70

9 PCB-1254

1	5.358	5.358	0.000	41947592	500.0	446.9	
1	5.694	5.694	0.000	34166919	500.0	453.9	
1	5.848	5.848	0.000	56177446	500.0	451.3	
1	6.208	6.208	0.000	45100124	500.0	463.8	
1	6.824	6.824	0.000	59940253	500.0	507.3	

Average of Peak Amounts = 464.7

2	5.572	5.572	0.000	61316658	500.0	507.6	
2	5.995	5.995	0.000	46398175	500.0	503.9	
2	6.145	6.145	0.000	84223567	500.0	503.9	
2	6.695	6.695	0.000	38152002	500.0	514.8	
2	7.165	7.165	0.000	90336878	500.0	506.7	

Average of Peak Amounts = 507.4

RPD = 8.79

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_2154_L7_00022

Amount Added: 0.50

Units: mL

BNB IS_00013

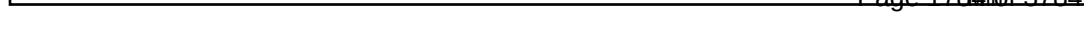
Amount Added: 0.10

Units: mL

Run Reagent

Chrom Revision: 2.3 03-May-2019 15:52:00

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Report Date: 22-May-2019 20:14:56

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\014B1501.D

Injection Date: 21-May-2019 16:56:41

Instrument ID: SGC_P3

Lims ID: STD5

Client ID:

Operator ID: TEM

ALS Bottle#: 14

Worklist Smp#: 14

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

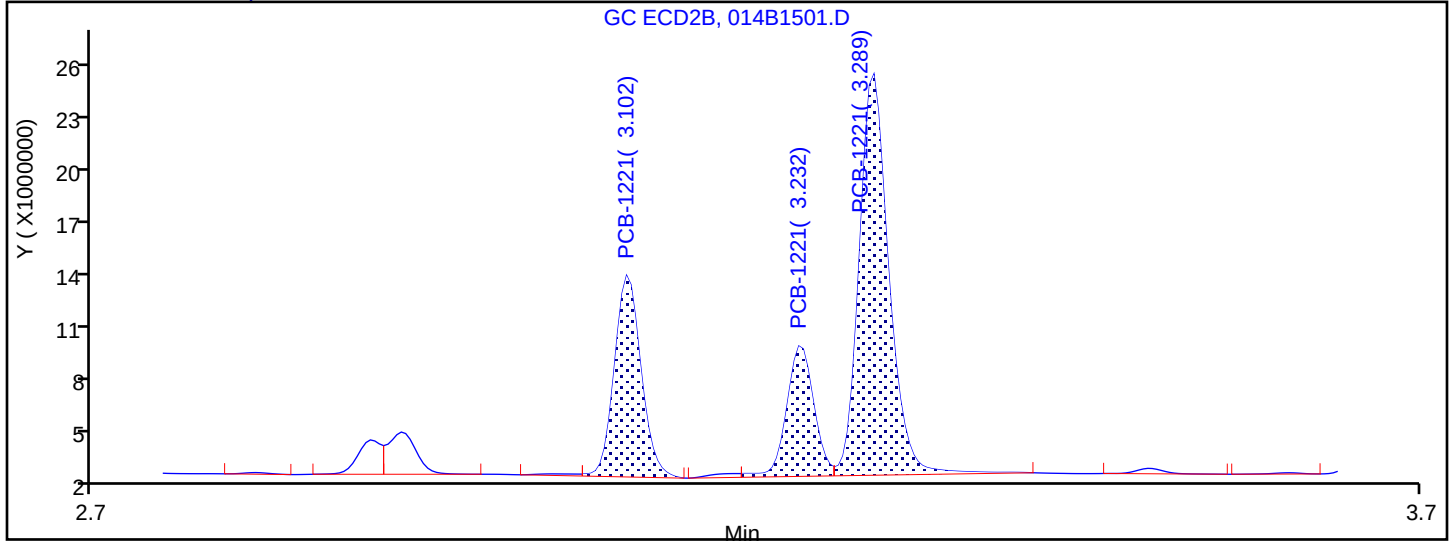
Method: PCB_P3

Limit Group: GCSV - 8082 - IS

Column: CLP2 Pesticides Column 2 (0.32 mm) Detector

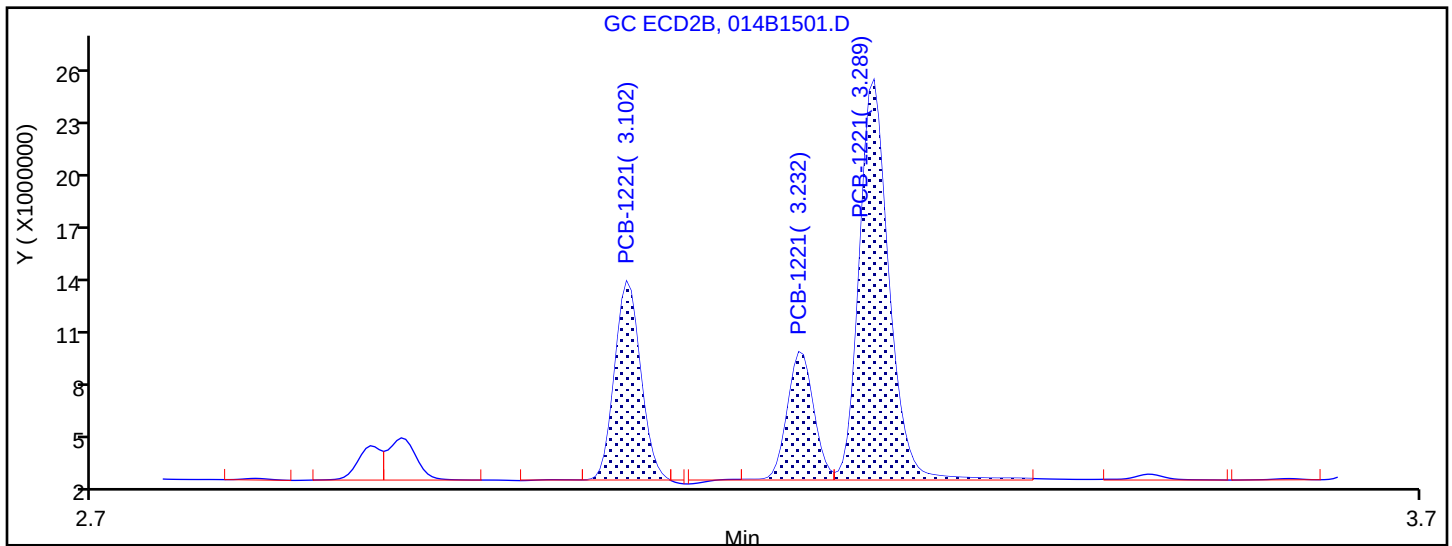
GC ECD2B

3 PCB-1221, CAS: 11104-28-2



Processing Integration Results

3.102	Response = 15766336
3.232	Response = 10444751
3.289	Response = 34842383



Manual Integration Results

3.102	Response = 15105423	M
3.232	Response = 9882029	M
3.289	Response = 34795088	M

Reviewer: mooret, 22-May-2019 19:43:17

Audit Action: Assigned New Baseline

Audit Reason: Baseline Smoothing

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\015B1601.D
 Lims ID: STD6
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 21-May-2019 17:18:34 ALS Bottle#: 15 Worklist Smp#: 15
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD6
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:53 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:29:02

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.813	0.000	111183278	100.0	100.0
2	1.727	1.727	0.000	141891676	100.0	100.0

RPD = 0.00

3 PCB-1221

1	2.986	2.984	0.002	13310323	750.0	760.2
1	3.130	3.131	-0.001	9125793	750.0	748.3
1	3.166	3.168	-0.002	34435916	750.0	769.2
Average of Peak Amounts =						759.2
2	3.101	3.102	-0.001	21470966	750.0	760.2
2	3.234	3.232	0.002	13454175	750.0	748.5
2	3.287	3.289	-0.002	47390475	750.0	749.3
Average of Peak Amounts =						752.6

RPD = 0.87

9 PCB-1254

1	5.360	5.358	0.002	59797306	750.0	651.9
1	5.693	5.694	-0.001	47481033	750.0	645.4
1	5.846	5.848	-0.002	80246715	750.0	659.5
1	6.206	6.208	-0.002	64468575	750.0	678.4
1	6.823	6.824	-0.001	85910345	750.0	749.9
Average of Peak Amounts =						677.0
2	5.574	5.572	0.002	85931776	750.0	738.7
2	5.994	5.995	-0.001	65853150	750.0	741.9
2	6.144	6.145	-0.001	118849000	750.0	739.5
2	6.694	6.695	-0.001	54180866	750.0	758.8
2	7.164	7.165	-0.001	127433939	750.0	742.2
Average of Peak Amounts =						744.2

RPD = 9.46

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\015B1601.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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S 8 Polychlorinated biphenyls, Total

1 1436.3

2 1496.9

RPD = 4.13

Reagents:

AR_2154_L7_00022

Amount Added: 0.75

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:54

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\015B1601.D

Injection Date: 21-May-2019 17:18:34

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD6

Worklist Smp#: 15

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

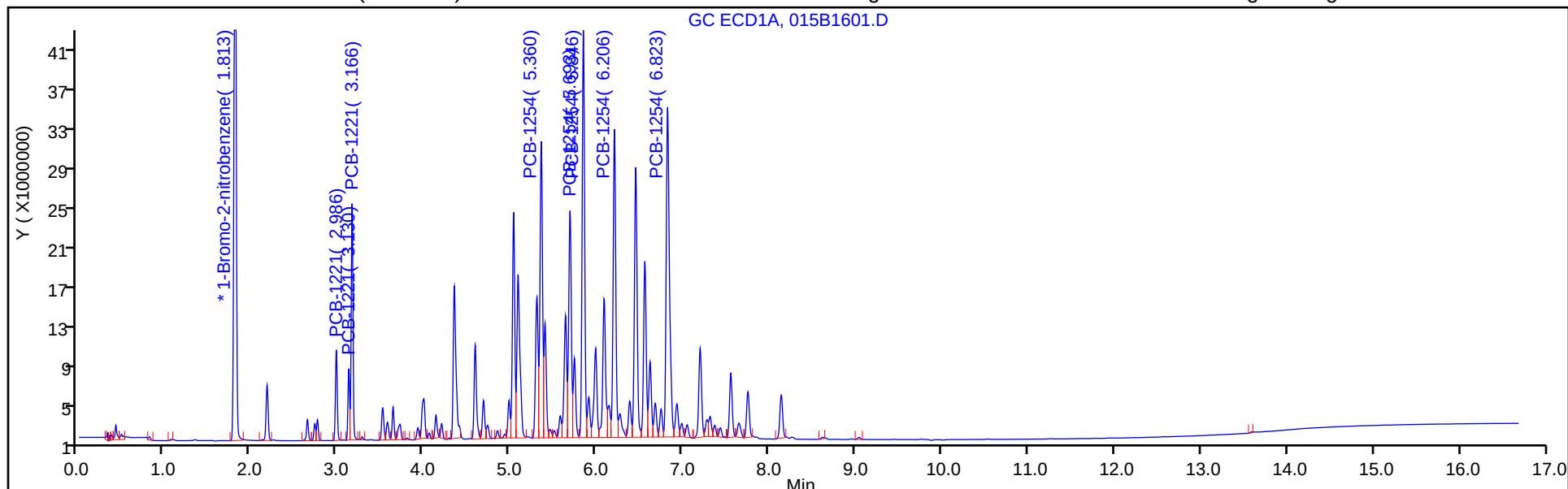
ALS Bottle#: 15

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

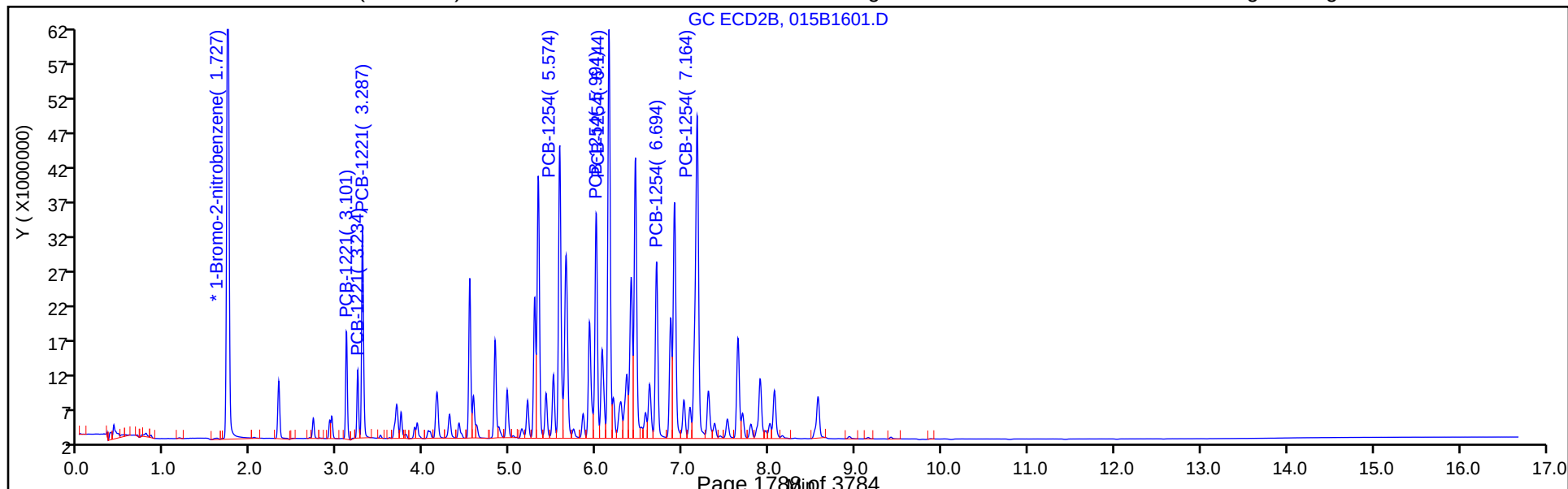
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\016B1701.D
 Lims ID: STD7
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 21-May-2019 17:40:27 ALS Bottle#: 16 Worklist Smp#: 16
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD7
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:51 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:21:59

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.813	0.000	116496232	100.0	100.0
2	1.727	1.727	0.000	148384675	100.0	100.0

RPD = 0.00

3 PCB-1221

1	2.983	2.984	-0.001	17520452	1000.0	995.1
1	3.129	3.131	-0.002	12136934	1000.0	1000.3
1	3.166	3.168	-0.002	44833797	1000.0	990.3

Average of Peak Amounts = 995.2

2	3.100	3.102	-0.002	28278213	1000.0	995.3
2	3.234	3.232	0.002	17758820	1000.0	999.6
2	3.287	3.289	-0.002	62484840	1000.0	999.1

Average of Peak Amounts = 998.0

RPD = 0.28

9 PCB-1254

1	5.359	5.358	0.001	79923380	1000.0	831.6
1	5.693	5.694	-0.001	63719188	1000.0	826.6
1	5.846	5.848	-0.002	107523172	1000.0	843.4
1	6.206	6.208	-0.002	86626473	1000.0	870.0
1	6.823	6.824	-0.001	115332052	1000.0	964.3

Average of Peak Amounts = 867.2

2	5.570	5.572	-0.002	114607932	1000.0	947.2
2	5.994	5.995	-0.001	87208512	1000.0	943.9
2	6.144	6.145	-0.001	158136546	1000.0	946.5
2	6.694	6.695	-0.001	71923413	1000.0	967.9
2	7.164	7.165	-0.001	169405826	1000.0	948.5

Average of Peak Amounts = 950.8

RPD = 9.20

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\016B1701.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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S 8 Polychlorinated biphenyls, Total

1 1862.4

2 1948.8

RPD = 4.54

Reagents:

AR_2154_L7_00022

Amount Added: 1.00

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:52

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\016B1701.D

Injection Date: 21-May-2019 17:40:27

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD7

Worklist Smp#: 16

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

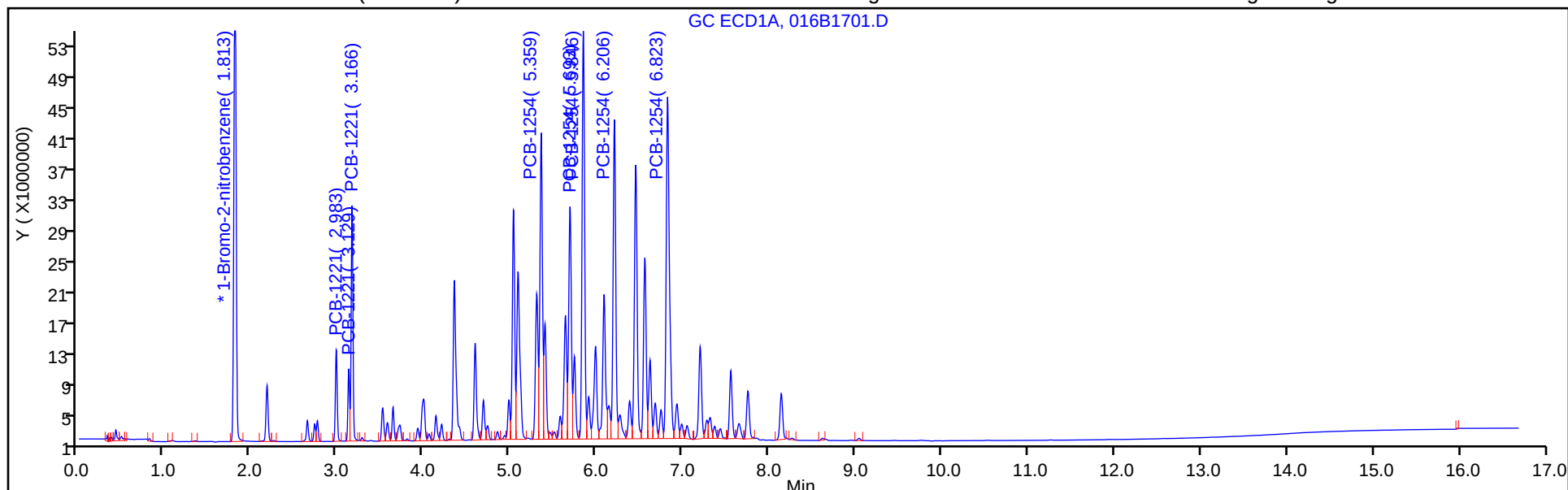
ALS Bottle#: 16

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

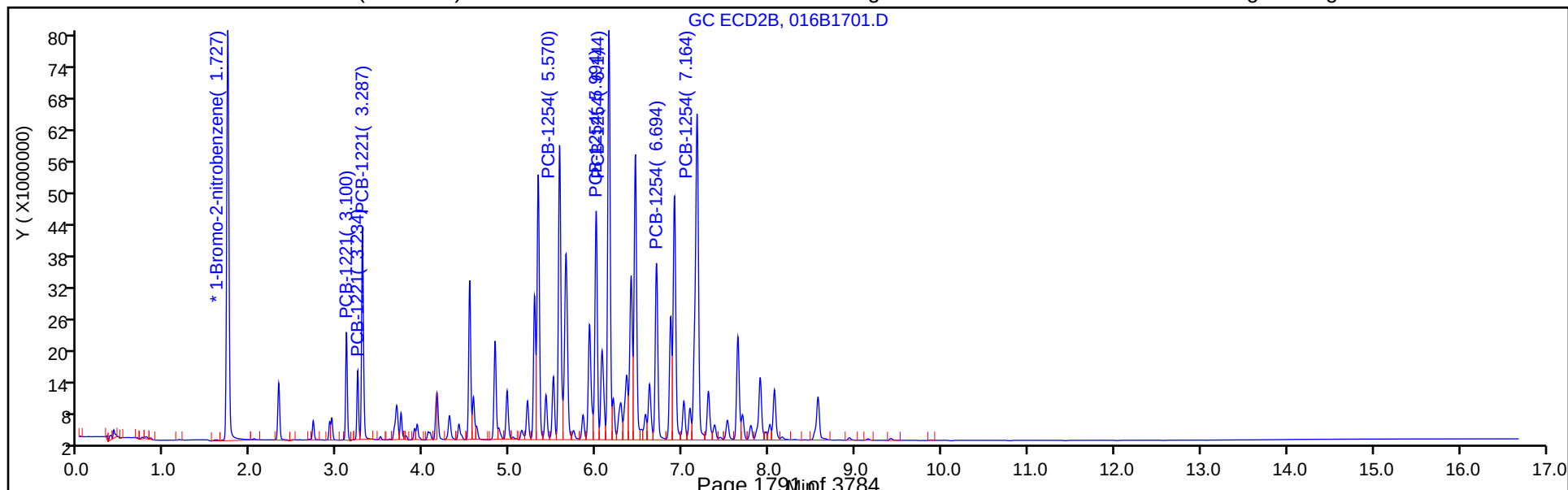
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 459083

SDG No.: _____

Instrument ID: SGC_P3 GC Column: CLP1 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/21/2019 18:02 Calibration End Date: 05/21/2019 20:13 Calibration ID: 36513

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-459083/17	017B1801.D
Level 2	STD2 280-459083/18	018B1901.D
Level 3	STD3 280-459083/19	019B2001.D
Level 4	STD4 280-459083/20	020B2101.D
Level 5	STD5 280-459083/21	021B2201.D
Level 6	STD6 280-459083/22	022B2301.D
Level 7	STD7 280-459083/23	023B2401.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
PCB-1016 Peak 1	0.0377 0.0275	0.0343 0.0269	0.0327	0.0300	0.0279	Ave		0.0310				13.0		20.0			
PCB-1016 Peak 2	0.0796 0.0544	0.0729 0.0544	0.0694	0.0621	0.0566	Ave		0.0642				15.5		20.0			
PCB-1016 Peak 3	0.1595 0.1184	0.1471 0.1193	0.1421	0.1310	0.1211	Ave		0.1341				11.9		20.0			
PCB-1016 Peak 4	0.0654 0.0489	0.0515 0.0489	0.0602	0.0543	0.0499	Ave		0.0542				11.8		20.0			
PCB-1016 Peak 5	0.0680 0.0508	0.0646 0.0516	0.0619	0.0561	0.0523	Ave		0.0579				12.0		20.0			
PCB-1260 Peak 1	0.0894 0.0683	0.0832 0.0685	0.0792	0.0730	0.0680	Ave		0.0757				11.2		20.0			
PCB-1260 Peak 2	0.0604 0.0515	0.0565 0.0520	0.0567	0.0527	0.0470	Ave		0.0538				8.1		20.0			
PCB-1260 Peak 3	0.0926 0.0759	0.0872 0.0759	0.0825	0.0763	0.0720	Lin2	0.4866	0.0749							0.9990		0.9900
PCB-1260 Peak 4	0.2140 0.1685	0.2031 0.1708	0.1891	0.1776	0.1679	Lin2	1.2103	0.1709							0.9990		0.9900
PCB-1260 Peak 5	0.1045 0.0824	0.1015 0.0828	0.0957	0.0893	0.0849	Lin2	0.5706	0.0852							0.9970		0.9900
Tetrachloro-m-xylene	2.1854 1.5819	2.0482 1.5845	1.9323	1.7799	1.6495	Lin1	1.0592	1.5860							0.9980		0.9900
DCB Decachlorobiphenyl	1.9241 1.4077	1.7788 1.4226	1.6616	1.5200	1.4400	Lin1	0.8309	1.4076							0.9990		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 459083

SDG No.: _____

Instrument ID: SGC_P3 GC Column: CLP1 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/21/2019 18:02 Calibration End Date: 05/21/2019 20:13 Calibration ID: 36513

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-459083/17	017B1801.D
Level 2	STD2 280-459083/18	018B1901.D
Level 3	STD3 280-459083/19	019B2001.D
Level 4	STD4 280-459083/20	020B2101.D
Level 5	STD5 280-459083/21	021B2201.D
Level 6	STD6 280-459083/22	022B2301.D
Level 7	STD7 280-459083/23	023B2401.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
PCB-1016 Peak 1	BNB	Ave	1071828 23778156	1939961 29981793	3685691	8559454	16265509	25.0 750	50.0 1000	100	250	500
PCB-1016 Peak 2	BNB	Ave	2264082 47093615	4123098 60532932	7818567	17753056	33006505	25.0 750	50.0 1000	100	250	500
PCB-1016 Peak 3	BNB	Ave	4538660 102427409	8326204 132766769	16006138	37432850	70642014	25.0 750	50.0 1000	100	250	500
PCB-1016 Peak 4	BNB	Ave	1861851 42277077	2912007 54468596	6779064	15516857	29089966	25.0 750	50.0 1000	100	250	500
PCB-1016 Peak 5	BNB	Ave	1934962 43939654	3657044 57392004	6971151	16023915	30513735	25.0 750	50.0 1000	100	250	500
PCB-1260 Peak 1	BNB	Ave	2544261 59097177	4710591 76179441	8923993	20857123	39684137	25.0 750	50.0 1000	100	250	500
PCB-1260 Peak 2	BNB	Ave	1719746 44608762	3196615 57908598	6385348	15059161	27427011	25.0 750	50.0 1000	100	250	500
PCB-1260 Peak 3	BNB	Lin2	2635348 65653781	4933028 84445933	9293919	21797948	42037835	25.0 750	50.0 1000	100	250	500
PCB-1260 Peak 4	BNB	Lin2	6089071 145782933	11490023 190021136	21299331	50734812	97993540	25.0 750	50.0 1000	100	250	500
PCB-1260 Peak 5	BNB	Lin2	2972255 71308697	5742283 92165149	10781045	25500859	49556252	25.0 750	50.0 1000	100	250	500
Tetrachloro-m-xylene	BNB	Lin1	3108843 68447546	5794699 88163569	10881291	25422298	48125499	1.25 37.5	2.50 50.0	5.00	12.5	25.0
DCB Decachlorobiphenyl	BNB	Lin1	2737163 60910554	5032682 79157442	9356629	21710492	42011969	1.25 37.5	2.50 50.0	5.00	12.5	25.0

Curve Type Legend:

Ave = Average ISTD
Lin1 = Linear 1/conc ISTD
Lin2 = Linear 1/conc^2 ISTD

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\017B1801.D
 Lims ID: STD1 1660
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 21-May-2019 18:02:18 ALS Bottle#: 17 Worklist Smp#: 17
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD1
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub1
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:50 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:54:33

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.811	1.813	-0.002	113806467	100.0	100.0	
2	1.729	1.727	0.002	143314901	100.0	100.0	
RPD = 0.00							

\$ 14 Tetrachloro-m-xylene

1	2.768	2.769	-0.001	3108843	1.25	1.05	
2	2.786	2.784	0.002	4605553	1.25	1.09	
RPD = 2.87							

1 PCB-1016

1	3.168	3.166	0.002	1071828	25.0	30.4	
1	3.521	3.523	-0.002	2264082	25.0	31.0	
1	3.998	3.996	0.002	4538660	25.0	29.7	
1	4.138	4.139	-0.001	1861851	25.0	30.2	
1	4.595	4.596	-0.001	1934962	25.0	29.4	
Average of Peak Amounts =						30.1	
2	3.686	3.684	0.002	3448157	25.0	31.9	
2	4.152	4.150	0.002	6605050	25.0	30.3	
2	4.296	4.294	0.002	2909149	25.0	30.8	
2	4.529	4.530	-0.001	1661038	25.0	31.3	
2	4.822	4.824	-0.002	3444741	25.0	25.1	
Average of Peak Amounts =						29.9	
RPD = 0.78							

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\017B1801.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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12 PCB-1260

1	6.088	6.089	-0.001	2544261	25.0	29.5	
1	6.618	6.619	-0.001	1719746	25.0	28.1	
1	7.315	7.316	-0.001	2635348	25.0	24.4	
1	7.751	7.753	-0.002	6089071	25.0	24.2	
1	8.138	8.139	-0.001	2972255	25.0	24.0	

Average of Peak Amounts = 26.0

2	6.696	6.694	0.002	4769358	25.0	30.7	
2	7.162	7.164	-0.002	6495754	25.0	29.4	
2	7.296	7.297	-0.001	3679603	25.0	23.2	
2	8.062	8.060	0.002	8723476	25.0	23.6	
2	8.566	8.564	0.002	6722302	25.0	23.9	

Average of Peak Amounts = 26.2

RPD = 0.48

\$ 15 DCB Decachlorobiphenyl

1	9.725	9.726	-0.001	2737163	1.25	1.12	
2	10.232	10.234	-0.002	4382580	1.25	0.9890	

RPD = 12.28

S 8 Polychlorinated biphenyls, Total

1						56.2	
2						56.1	

RPD = 0.19

Reagents:

AR_1660_L7_00028
BNB IS_00013Amount Added: 0.03
Amount Added: 0.10Units: mL
Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:50

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\017B1801.D

Injection Date: 21-May-2019 18:02:18

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD1 1660

Worklist Smp#: 17

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

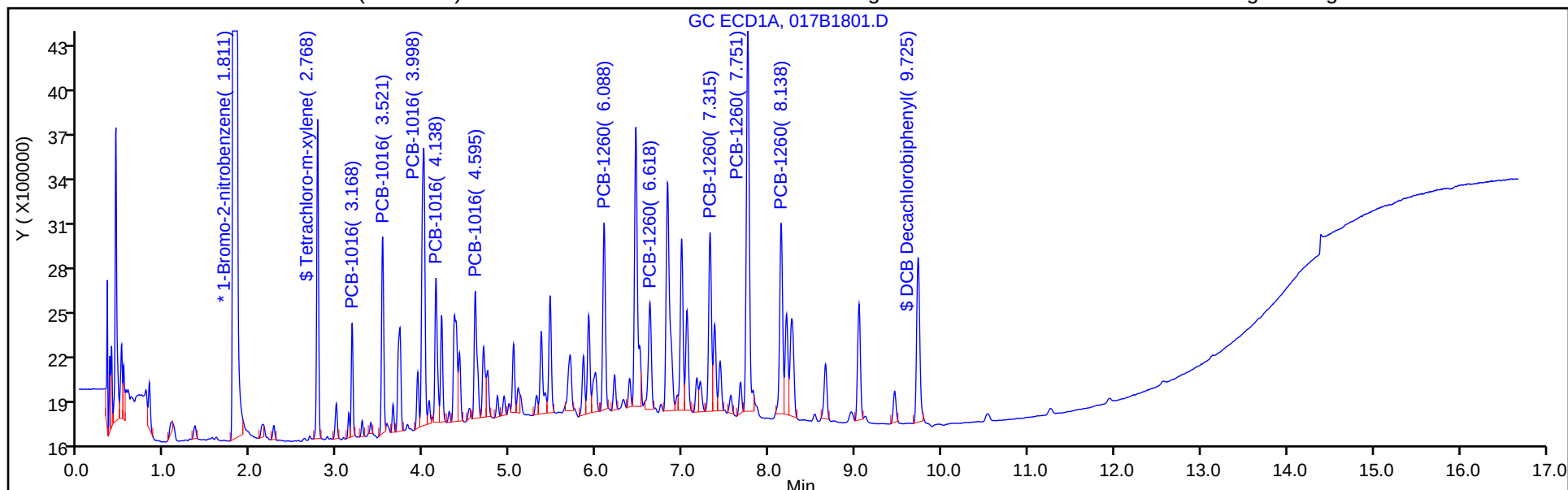
ALS Bottle#: 17

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

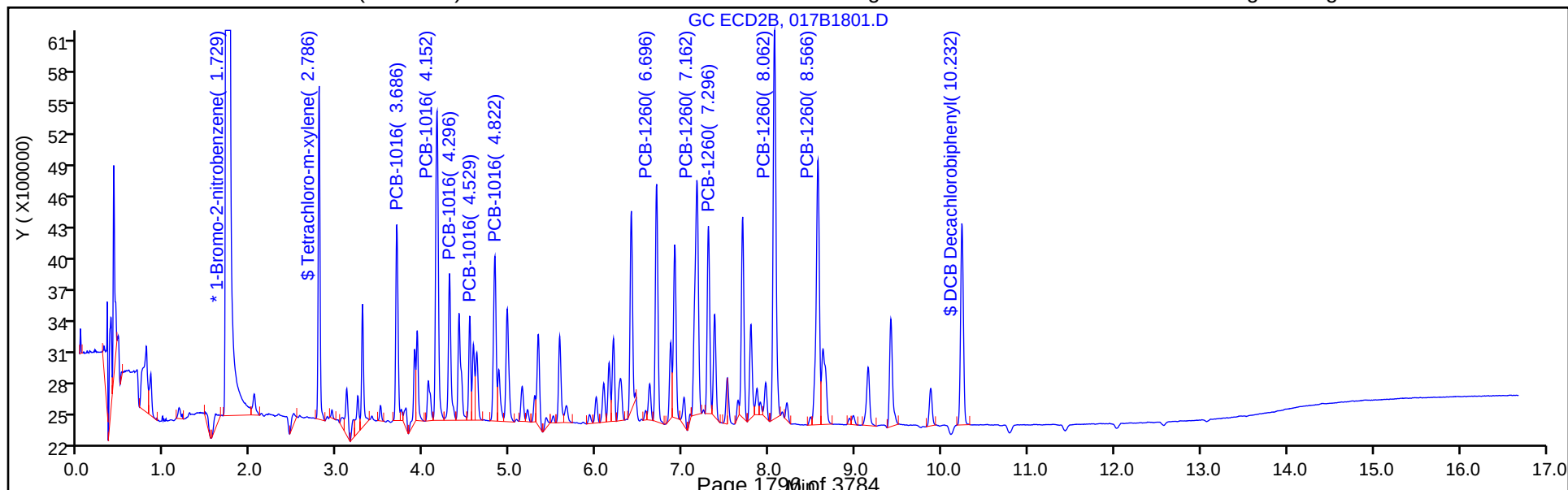
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\018B1901.D
 Lims ID: STD2
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 21-May-2019 18:24:10 ALS Bottle#: 18 Worklist Smp#: 18
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD2
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub1
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:48 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1: CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2: CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.809	1.813	-0.004	113169104	100.0	100.0	
2	1.727	1.727	0.000	142408131	100.0	100.0	
RPD = 0.00							

\$ 14 Tetrachloro-m-xylene

1	2.769	2.769	0.000	5794699	2.50	2.56	
2	2.784	2.784	0.000	8411056	2.50	2.56	
RPD = 0.10							

1 PCB-1016

1	3.166	3.166	0.000	1939961	50.0	55.3	
1	3.519	3.523	-0.004	4123098	50.0	56.8	
1	3.996	3.996	0.000	8326204	50.0	54.9	
1	4.139	4.139	0.000	2912007	50.0	47.5	
1	4.596	4.596	0.000	3657044	50.0	55.8	
Average of Peak Amounts =						54.1	
2	3.684	3.684	0.000	6296592	50.0	58.7	
2	4.150	4.150	0.000	12211801	50.0	56.5	
2	4.297	4.294	0.003	5377308	50.0	57.3	
2	4.530	4.530	0.000	2956094	50.0	56.1	
2	4.824	4.824	0.000	5162370	50.0	50.6	
Average of Peak Amounts =						55.8	
RPD = 3.23							

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\018B1901.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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12 PCB-1260

1	6.089	6.089	0.000	4710591	50.0	55.0	
1	6.619	6.619	0.000	3196615	50.0	52.5	
1	7.316	7.316	0.000	4933028	50.0	51.7	
1	7.753	7.753	0.000	11490023	50.0	52.3	
1	8.139	8.139	0.000	5742283	50.0	52.9	

Average of Peak Amounts = 52.9

2	6.697	6.694	0.003	8655144	50.0	56.1	
2	7.164	7.164	0.000	12534679	50.0	57.1	
2	7.297	7.297	0.000	7367330	50.0	55.5	
2	8.060	8.060	0.000	16638929	50.0	53.6	
2	8.564	8.564	0.000	12325167	50.0	52.7	

Average of Peak Amounts = 55.0

RPD = 3.90

\$ 15 DCB Decachlorobiphenyl

1	9.726	9.726	0.000	5032682	2.50	2.57	
2	10.234	10.234	0.000	8474823	2.50	2.70	

RPD = 4.92

S 8 Polychlorinated biphenyls, Total

1						106.9	
2						110.8	

RPD = 3.56

Reagents:

AR_1660_L7_00028
BNB IS_00013Amount Added: 0.05
Amount Added: 0.10Units: mL
Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:48

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\018B1901.D

Injection Date: 21-May-2019 18:24:10

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD2

Worklist Smp#: 18

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

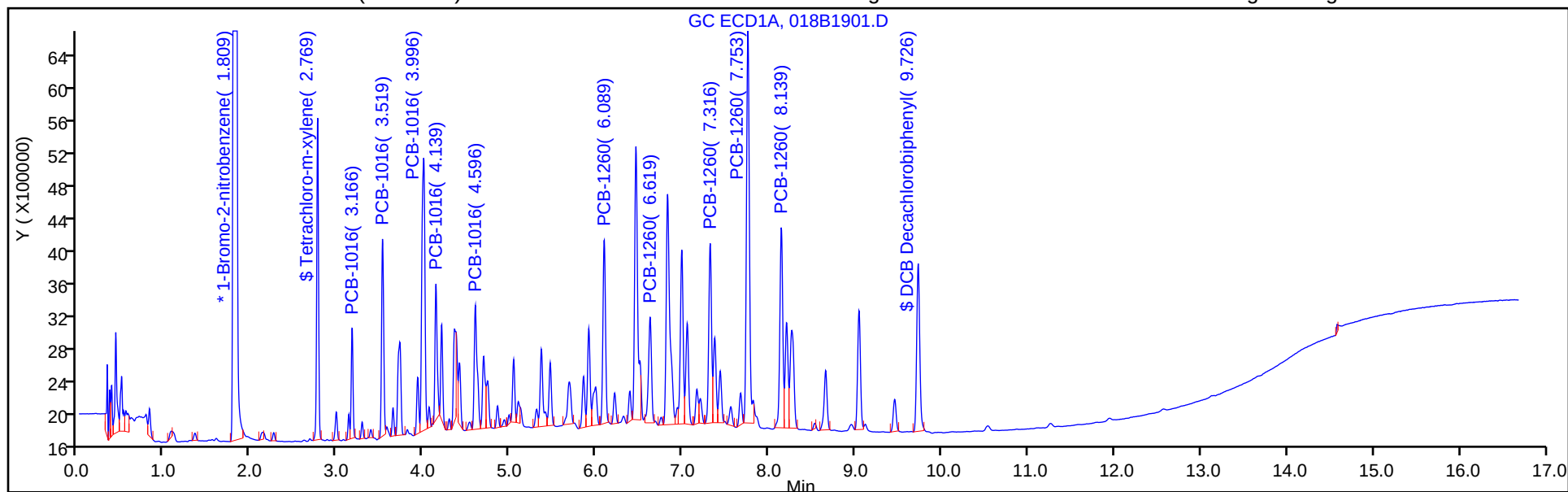
ALS Bottle#: 18

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

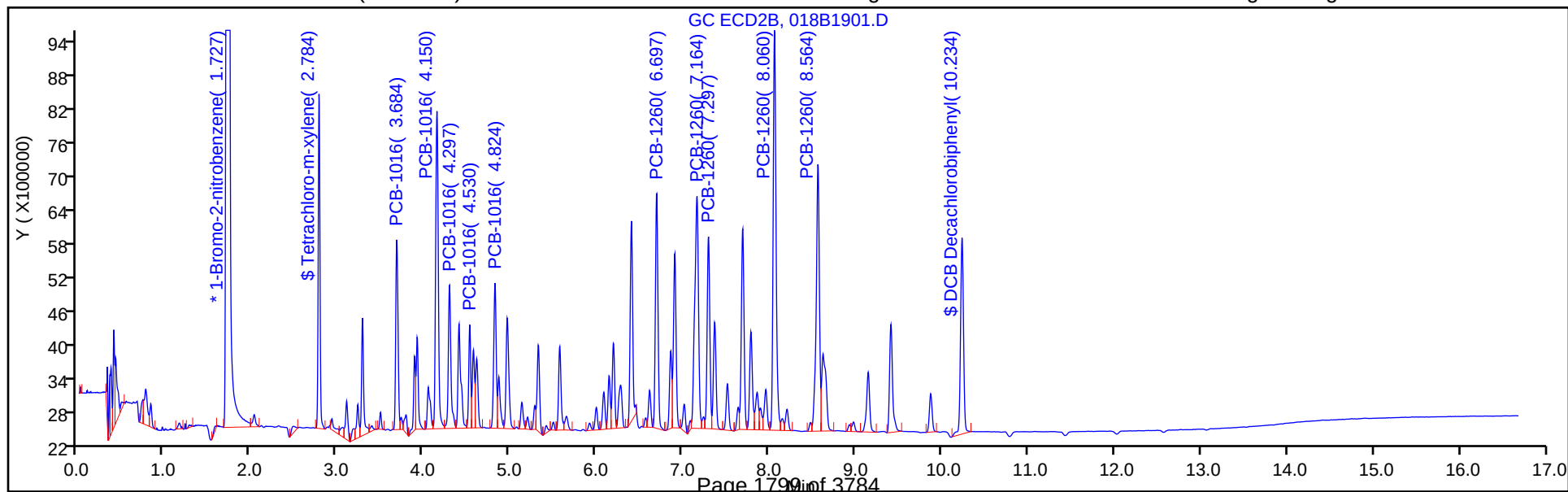
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\019B2001.D
 Lims ID: STD3
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 21-May-2019 18:46:02 ALS Bottle#: 19 Worklist Smp#: 19
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD3
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub1
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:47 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:55:20

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.811	1.813	-0.002	112625217	100.0	100.0	
2	1.728	1.727	0.001	142445856	100.0	100.0	
RPD = 0.00							

\$ 14 Tetrachloro-m-xylene

1	2.767	2.769	-0.002	10881291	5.00	5.42	
2	2.785	2.784	0.001	15684342	5.00	5.35	
RPD = 1.37							

1 PCB-1016

1	3.167	3.166	0.001	3685691	100.0	105.6	
1	3.521	3.523	-0.002	7818567	100.0	108.1	
1	3.997	3.996	0.001	16006138	100.0	106.0	
1	4.141	4.139	0.002	6779064	100.0	111.2	
1	4.594	4.596	-0.002	6971151	100.0	106.9	
Average of Peak Amounts =						107.6	
2	3.685	3.684	0.001	11487320	100.0	107.0	
2	4.152	4.150	0.002	22823949	100.0	105.5	
2	4.295	4.294	0.001	9979309	100.0	106.4	
2	4.532	4.530	0.002	5575735	100.0	105.8	
2	4.825	4.824	0.001	8285295	100.0	96.6	
Average of Peak Amounts =						104.2	
RPD = 3.13							

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\019B2001.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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12 PCB-1260

1	6.087	6.089	-0.002	8923993	100.0	104.7	
1	6.617	6.619	-0.002	6385348	100.0	105.3	
1	7.314	7.316	-0.002	9293919	100.0	103.7	
1	7.754	7.753	0.001	21299331	100.0	103.6	
1	8.141	8.139	0.002	10781045	100.0	105.7	

Average of Peak Amounts = 104.6

2	6.695	6.694	0.001	16297856	100.0	105.6	
2	7.165	7.164	0.001	23527898	100.0	107.1	
2	7.295	7.297	-0.002	13763651	100.0	111.0	
2	8.062	8.060	0.002	31249226	100.0	108.4	
2	8.565	8.564	0.001	23084727	100.0	107.5	

Average of Peak Amounts = 107.9

RPD = 3.14

\$ 15 DCB Decachlorobiphenyl

1	9.724	9.726	-0.002	9356629	5.00	5.31	
2	10.235	10.234	0.001	15222574	5.00	5.50	

RPD = 3.43

S 8 Polychlorinated biphenyls, Total

1						212.1	
2						212.2	

RPD = 0.01

Reagents:

AR_1660_L7_00028
BNB IS_00013Amount Added: 0.10
Amount Added: 0.10Units: mL
Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:47

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\019B2001.D

Injection Date: 21-May-2019 18:46:02

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD3

Worklist Smp#: 19

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

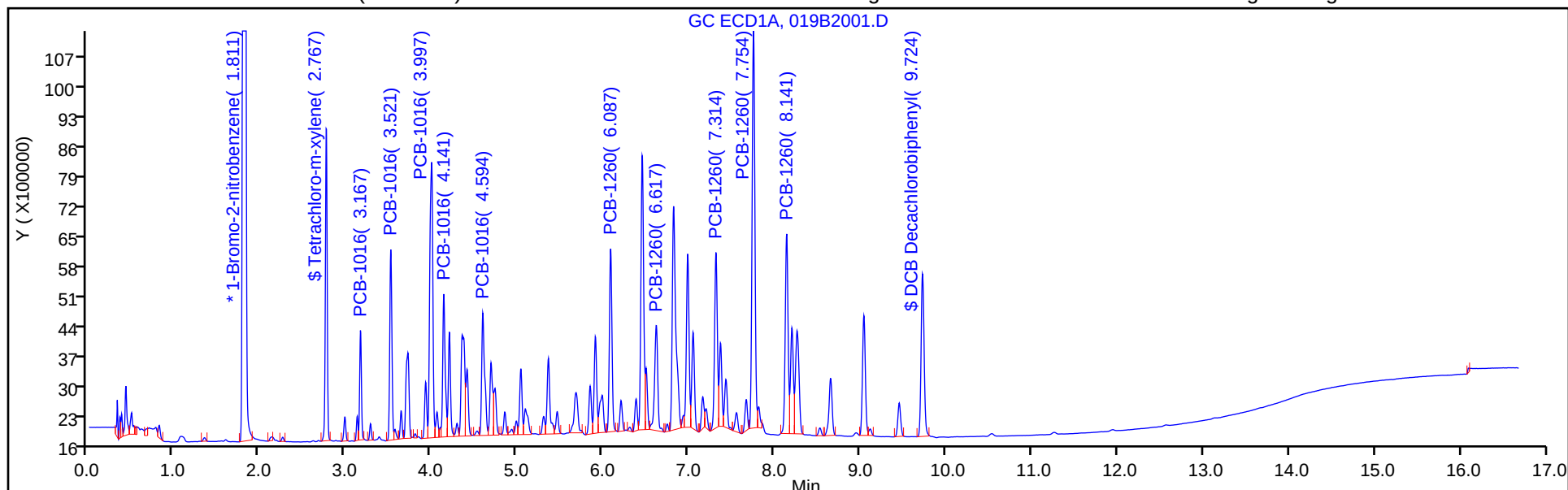
ALS Bottle#: 19

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

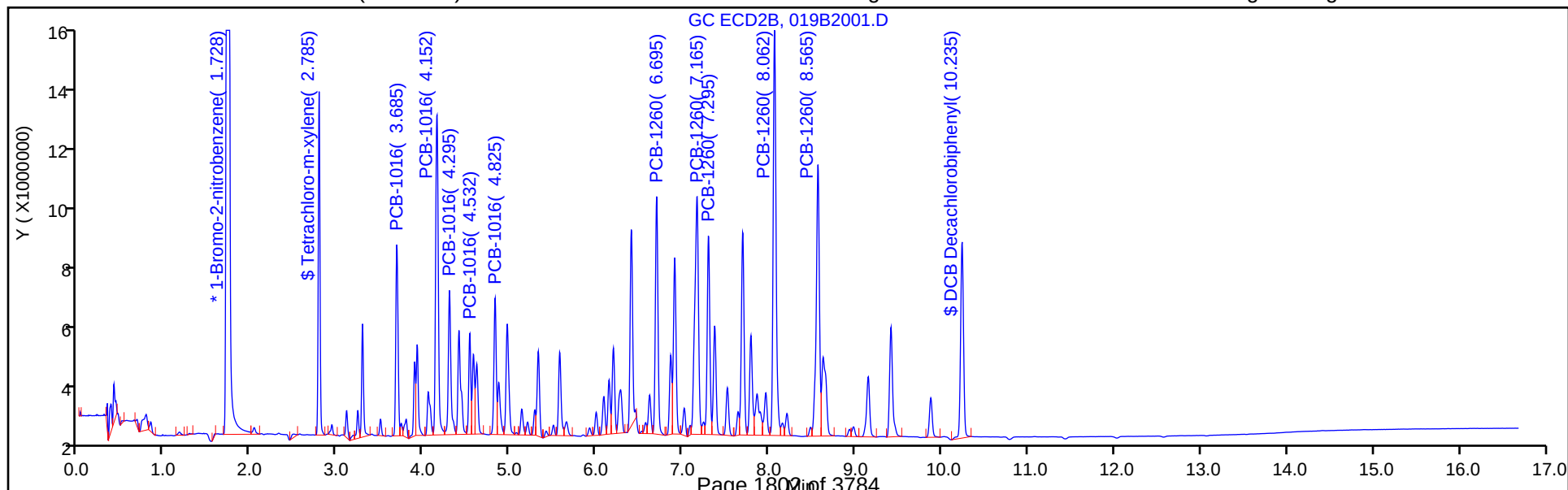
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\020B2101.D
 Lims ID: STD4
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 21-May-2019 19:07:54 ALS Bottle#: 20 Worklist Smp#: 20
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD4
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub1
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:45 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.812	1.813	-0.001	114263920	100.0	100.0	
2	1.727	1.727	0.000	143619140	100.0	100.0	
RPD = 0.00							

\$ 14 Tetrachloro-m-xylene

1	2.769	2.769	0.000	25422298	12.5	13.4	
2	2.787	2.784	0.003	36679118	12.5	13.3	
RPD = 0.48							

1 PCB-1016

1	3.169	3.166	0.003	8559454	250.0	241.7	
1	3.522	3.523	-0.001	17753056	250.0	242.0	
1	3.999	3.996	0.003	37432850	250.0	244.3	
1	4.139	4.139	0.000	15516857	250.0	250.8	
1	4.596	4.596	-0.001	16023915	250.0	242.2	
Average of Peak Amounts =						244.2	
2	3.687	3.684	0.003	26035425	250.0	240.6	
2	4.150	4.150	0.000	53558963	250.0	245.5	
2	4.297	4.294	0.003	23270646	250.0	246.0	
2	4.530	4.530	0.000	13236867	250.0	249.1	
2	4.823	4.824	-0.001	19040590	250.0	255.7	
Average of Peak Amounts =						247.4	
RPD = 1.29							

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\020B2101.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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12 PCB-1260

1	6.089	6.089	0.000	20857123	250.0	241.2	
1	6.619	6.619	0.000	15059161	250.0	244.7	
1	7.315	7.316	-0.001	21797948	250.0	248.2	
1	7.752	7.753	-0.001	50734812	250.0	252.8	
1	8.139	8.139	0.000	25500859	250.0	255.2	

Average of Peak Amounts = 248.4

2	6.696	6.694	0.002	36985560	250.0	237.6	
2	7.163	7.164	-0.001	50633794	250.0	228.6	
2	7.296	7.297	-0.001	27503244	250.0	228.5	
2	8.060	8.060	0.000	70192418	250.0	252.5	
2	8.563	8.564	-0.001	53210600	250.0	258.8	

Average of Peak Amounts = 241.2

RPD = 2.96

\$ 15 DCB Decachlorobiphenyl

1	9.725	9.726	-0.001	21710492	12.5	12.9	
2	10.233	10.234	-0.001	34188345	12.5	13.3	

RPD = 2.61

S 8 Polychlorinated biphenyls, Total

1						492.6	
2						488.6	

RPD = 0.83

Reagents:

AR_1660_L7_00028
BNB IS_00013Amount Added: 0.25
Amount Added: 0.10Units: mL
Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:45

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\020B2101.D

Injection Date: 21-May-2019 19:07:54

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD4

Worklist Smp#: 20

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

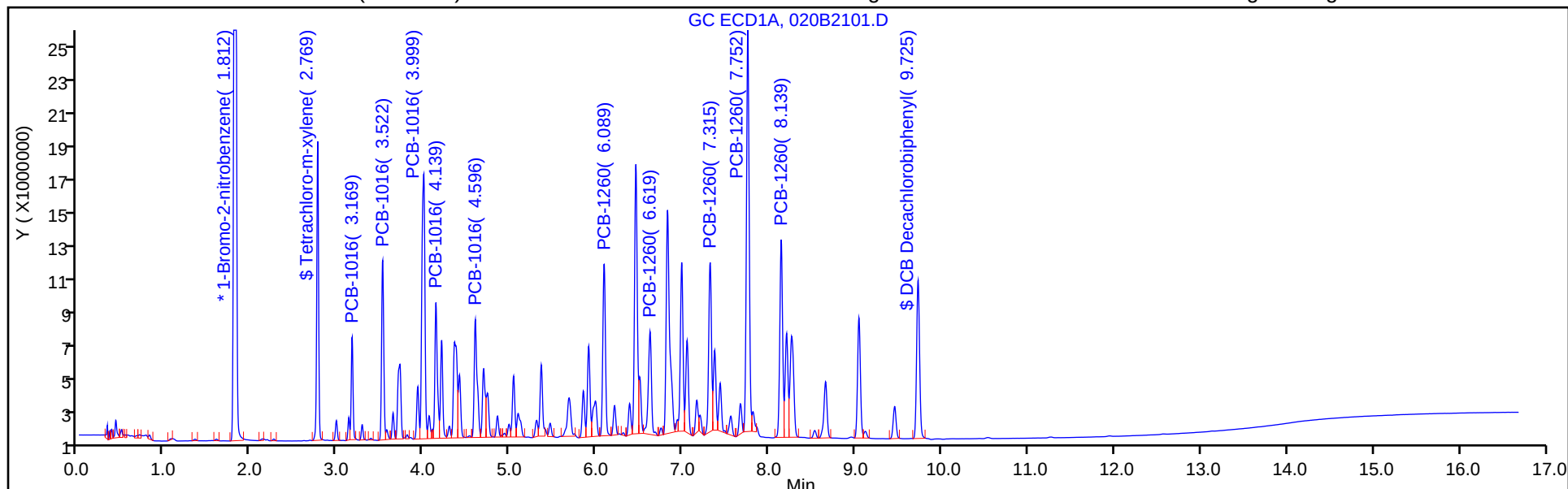
ALS Bottle#: 20

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

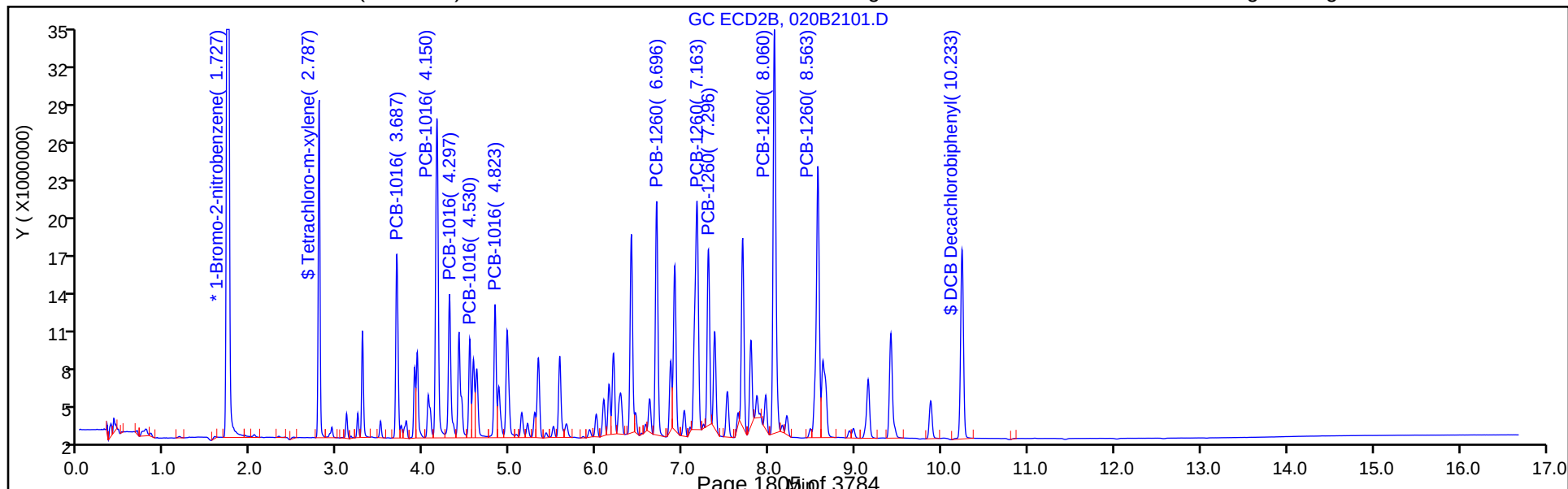
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\021B2201.D
 Lims ID: STD5
 Client ID:
 Sample Type: ICIS Calib Level: 5
 Inject. Date: 21-May-2019 19:29:49 ALS Bottle#: 21 Worklist Smp#: 21
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD5
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub1
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:43 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:55:28

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.813	0.000	116703599	100.0	100.0	
2	1.727	1.727	0.000	145727773	100.0	100.0	
RPD = 0.00							

\$ 14 Tetrachloro-m-xylene

1	2.769	2.769	0.000	48125499	25.0	25.3	
2	2.784	2.784	0.000	69183511	25.0	25.3	
RPD = 0.15							

1 PCB-1016

1	3.166	3.166	0.000	16265509	500.0	449.7	
1	3.523	3.523	0.000	33006505	500.0	440.5	
1	3.996	3.996	0.000	70642014	500.0	451.5	
1	4.139	4.139	0.000	29089966	500.0	460.3	
1	4.596	4.596	0.000	30513735	500.0	451.6	

Average of Peak Amounts = 450.7

2	3.684	3.684	0.000	48196010	500.0	438.9	
2	4.150	4.150	0.000	100717985	500.0	455.1	
2	4.294	4.294	0.000	43416341	500.0	452.3	
2	4.530	4.530	0.000	23908347	500.0	443.4	
2	4.824	4.824	0.000	35578483	500.0	503.8	

Average of Peak Amounts = 458.7

RPD = 1.75

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\021B2201.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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12 PCB-1260

1	6.089	6.089	0.000	39684137	500.0	449.4	
1	6.619	6.619	0.000	27427011	500.0	436.4	
1	7.316	7.316	0.000	42037835	500.0	474.4	
1	7.753	7.753	0.000	97993540	500.0	484.3	
1	8.139	8.139	0.000	49556252	500.0	491.7	

Average of Peak Amounts = 467.3

2	6.694	6.694	0.000	71967609	500.0	455.7	
2	7.164	7.164	0.000	104287117	500.0	464.1	
2	7.297	7.297	0.000	60278317	500.0	503.4	
2	8.060	8.060	0.000	137039222	500.0	494.0	
2	8.564	8.564	0.000	100455449	500.0	490.3	

Average of Peak Amounts = 481.5

RPD = 3.00

\$ 15 DCB Decachlorobiphenyl

1	9.726	9.726	0.000	42011969	25.0	25.0	
2	10.234	10.234	0.000	64112680	25.0	25.2	

RPD = 0.79

Reagents:

AR_1660_L7_00028

Amount Added: 0.50

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:43

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\021B2201.D

Injection Date: 21-May-2019 19:29:49

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD5

Worklist Smp#: 21

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

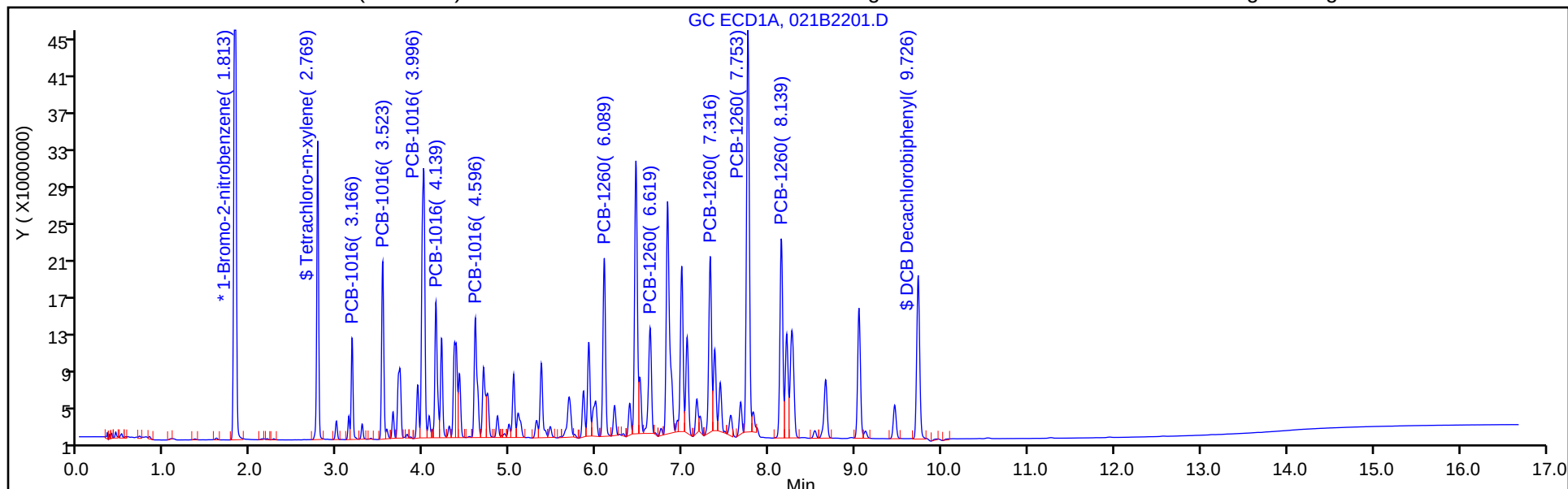
ALS Bottle#: 21

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

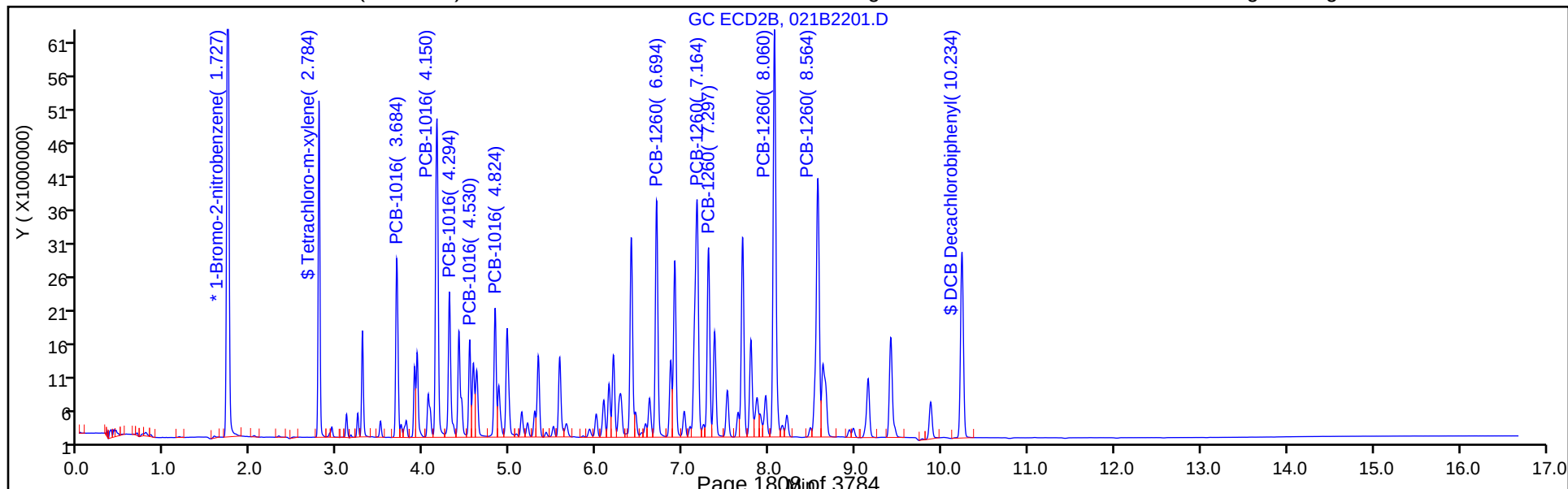
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\022B2301.D
 Lims ID: STD6
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 21-May-2019 19:51:44 ALS Bottle#: 22 Worklist Smp#: 22
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD6
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub1
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:41 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.810	1.810	0.000	115382496	100.0	100.0	
2	1.728	1.728	0.000	148358047	100.0	100.0	
RPD = 0.00							

\$ 14 Tetrachloro-m-xylene

1	2.767	2.769	-0.002	68447546	37.5	36.7	
2	2.785	2.784	0.001	99414485	37.5	36.0	
RPD = 2.08							

1 PCB-1016

1	3.167	3.166	0.001	23778156	750.0	665.0	
1	3.520	3.523	-0.003	47093615	750.0	635.8	
1	3.997	3.996	0.001	102427409	750.0	662.1	
1	4.137	4.139	-0.002	42277077	750.0	676.6	
1	4.594	4.596	-0.002	43939654	750.0	657.8	

Average of Peak Amounts = 659.4

2	3.685	3.684	0.001	68361540	750.0	611.5	
2	4.151	4.150	0.001	143934109	750.0	638.8	
2	4.295	4.294	0.001	62380968	750.0	638.3	
2	4.531	4.530	0.001	34843690	750.0	634.8	
2	4.825	4.824	0.001	50880034	750.0	734.3	

Average of Peak Amounts = 651.5

RPD = 1.20

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\022B2301.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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12 PCB-1260

1	6.087	6.089	-0.002	59097177	750.0	676.9	
1	6.620	6.619	0.001	44608762	750.0	718.0	
1	7.314	7.316	-0.002	65653781	750.0	753.2	
1	7.754	7.753	0.001	145782933	750.0	732.3	
1	8.140	8.139	0.001	71308697	750.0	718.7	

Average of Peak Amounts = 719.8

2	6.695	6.694	0.001	102768727	750.0	639.2	
2	7.161	7.164	-0.003	149115519	750.0	651.8	
2	7.295	7.297	-0.002	86224675	750.0	710.9	
2	8.061	8.060	0.001	196228493	750.0	698.4	
2	8.565	8.564	0.001	144093572	750.0	695.0	

Average of Peak Amounts = 679.0

RPD = 5.83

\$ 15 DCB Decachlorobiphenyl

1	9.724	9.726	-0.002	60910554	37.5	36.9	
2	10.235	10.234	0.001	92389385	37.5	36.0	

RPD = 2.55

S 8 Polychlorinated biphenyls, Total

1						1379.3	
2						1330.6	

RPD = 3.59

Reagents:

AR_1660_L7_00028
BNB IS_00013Amount Added: 0.75
Amount Added: 0.10Units: mL
Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:41

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\022B2301.D

Injection Date: 21-May-2019 19:51:44

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD6

Worklist Smp#: 22

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

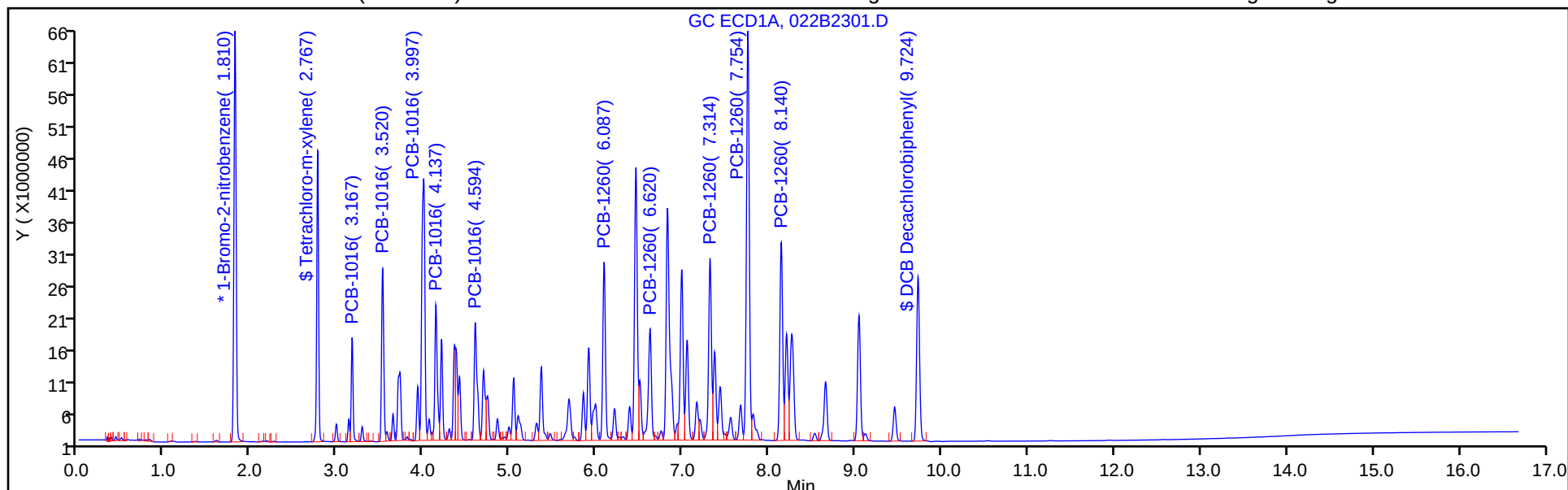
ALS Bottle#: 22

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

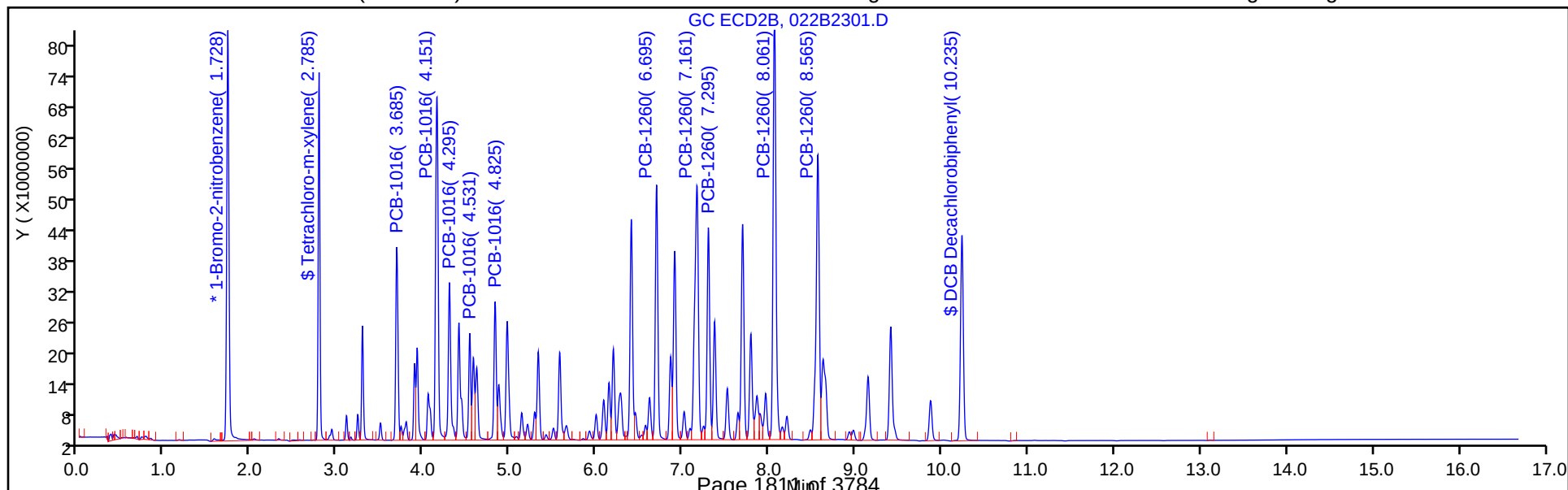
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\023B2401.D
 Lims ID: STD7
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 21-May-2019 20:13:38 ALS Bottle#: 23 Worklist Smp#: 23
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD7
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub1
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:39 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:57:09

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.810	0.003	111285745	100.0	100.0	
2	1.727	1.728	-0.001	137675574	100.0	100.0	
RPD = 0.00							

\$ 14 Tetrachloro-m-xylene

1	2.770	2.769	0.001	88163569	50.0	49.3	
2	2.784	2.784	0.000	128017698	50.0	50.2	
RPD = 1.82							

1 PCB-1016

1	3.166	3.166	0.000	29981793	1000.0	869.3	
1	3.520	3.523	-0.003	60532932	1000.0	847.3	
1	3.996	3.996	0.000	132766769	1000.0	889.8	
1	4.140	4.139	0.001	54468596	1000.0	903.8	
1	4.593	4.596	-0.003	57392004	1000.0	890.8	
Average of Peak Amounts =						880.2	
2	3.684	3.684	0.000	85448169	1000.0	823.6	
2	4.151	4.150	0.001	179385599	1000.0	857.9	
2	4.297	4.294	0.003	74176967	1000.0	817.9	
2	4.531	4.530	0.001	42641434	1000.0	837.1	
2	4.824	4.824	0.000	62590112	1000.0	1009.1	
Average of Peak Amounts =						869.1	
RPD = 1.27							

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\023B2401.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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12 PCB-1260

1	6.086	6.089	-0.003	76179441	1000.0	904.7	
1	6.620	6.619	0.001	57908598	1000.0	966.3	
1	7.316	7.316	0.000	84445933	1000.0	1006.6	
1	7.753	7.753	0.000	190021136	1000.0	992.2	
1	8.140	8.139	0.001	92165149	1000.0	965.4	

Average of Peak Amounts = 967.0

2	6.694	6.694	0.000	131284780	1000.0	879.9	
2	7.164	7.164	0.000	191054836	1000.0	899.9	
2	7.294	7.297	-0.003	110357190	1000.0	983.7	
2	8.061	8.060	0.001	251909977	1000.0	969.6	
2	8.564	8.564	0.000	186660268	1000.0	974.2	

Average of Peak Amounts = 941.4

RPD = 2.68

\$ 15 DCB Decachlorobiphenyl

1	9.723	9.726	-0.003	79157442	50.0	49.9	
2	10.234	10.234	0.000	118728986	50.0	50.1	

RPD = 0.41

S 8 Polychlorinated biphenyls, Total

1						1847.2	
2						1810.6	

RPD = 2.00

Reagents:

AR_1660_L7_00028
BNB IS_00013Amount Added: 1.00
Amount Added: 0.10Units: mL
Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:39

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\023B2401.D

Injection Date: 21-May-2019 20:13:38

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD7

Worklist Smp#: 23

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

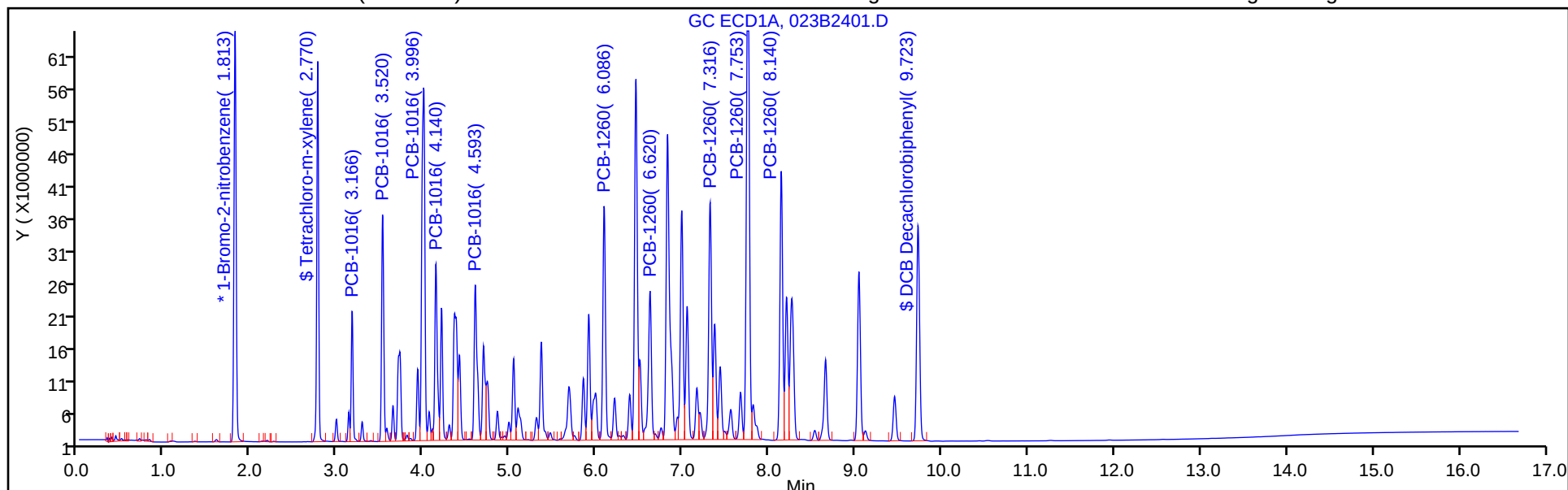
ALS Bottle#: 23

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

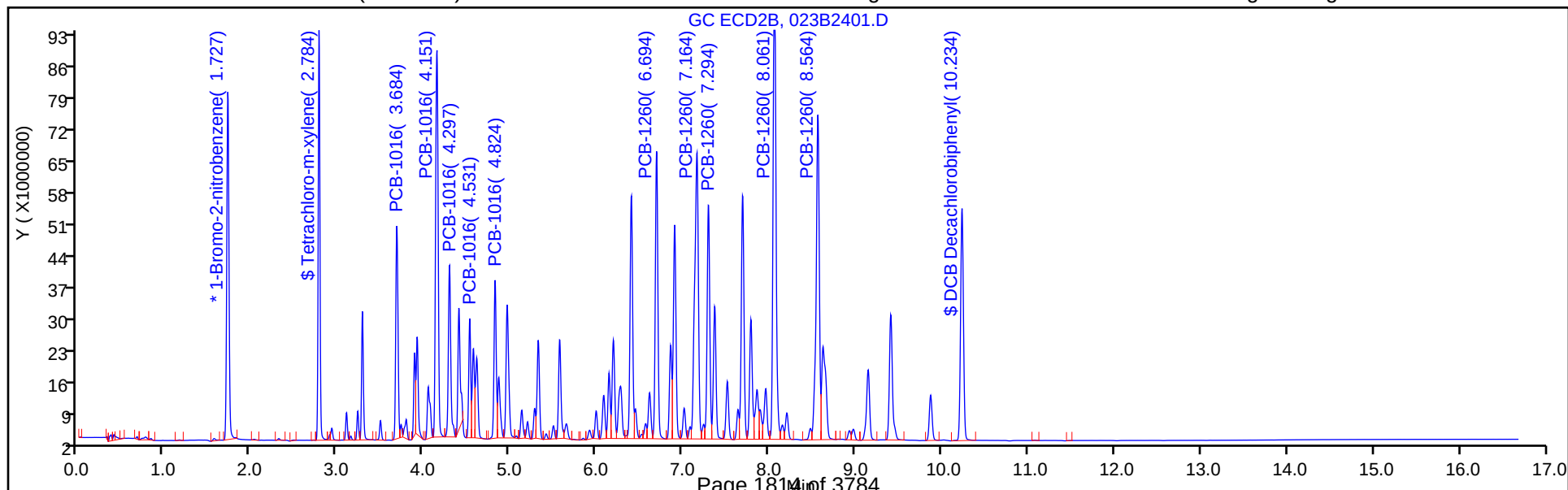
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 459083

SDG No.: _____

Instrument ID: SGC_P3 GC Column: CLP2 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/21/2019 18:02 Calibration End Date: 05/21/2019 20:13 Calibration ID: 36514

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-459083/17	017B1801.D
Level 2	STD2 280-459083/18	018B1901.D
Level 3	STD3 280-459083/19	019B2001.D
Level 4	STD4 280-459083/20	020B2101.D
Level 5	STD5 280-459083/21	021B2201.D
Level 6	STD6 280-459083/22	022B2301.D
Level 7	STD7 280-459083/23	023B2401.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
PCB-1016 Peak 1	0.0962 0.0614	0.0884 0.0621	0.0806	0.0725	0.0661	Ave		0.0754				18.0		20.0			
PCB-1016 Peak 2	0.1844 0.1294	0.1715 0.1303	0.1602	0.1492	0.1382	Ave		0.1519				13.9		20.0			
PCB-1016 Peak 3	0.0812 0.0561	0.0755 0.0539	0.0701	0.0648	0.0596	Ave		0.0659				15.5		20.0			
PCB-1016 Peak 4	0.0464 0.0313	0.0415 0.0310	0.0391	0.0369	0.0328	Ave		0.0370				15.6		20.0			
PCB-1016 Peak 5	0.0961 0.0457	0.0725 0.0455	0.0582	0.0530	0.0488	Qual	1.1931	0.0483	-0.000004						1.0000		0.9900
PCB-1260 Peak 1	0.1331 0.0924	0.1216 0.0954	0.1144	0.1030	0.0988	Ave		0.1084				13.9		20.0			
PCB-1260 Peak 2	0.1813 0.1340	0.1760 0.1388	0.1652	0.1410	0.1431	Ave		0.1542				12.6		20.0			
PCB-1260 Peak 3	0.1027 0.0775	0.1035 0.0802	0.0966	0.0766	0.0827	Lin2	0.6928	0.0808							0.9900		0.9900
PCB-1260 Peak 4	0.2435 0.1764	0.2337 0.1830	0.2194	0.1955	0.1881	Lin2	1.6649	0.1870							0.9950		0.9900
PCB-1260 Peak 5	0.1876 0.1295	0.1731 0.1356	0.1621	0.1482	0.1379	Lin2	1.4015	0.1377							0.9960		0.9900
Tetrachloro-m-xylene	2.5709 1.7869	2.3625 1.8597	2.2021	2.0431	1.8990	Lin1	1.2296	1.8283							0.9980		0.9900
DCB Decachlorobiphenyl	2.4464 1.6607	2.3804 1.7248	2.1373	1.9044	1.7598	Lin1	1.3846	1.6921							0.9980		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 459083

SDG No.: _____

Instrument ID: SGC_P3 GC Column: CLP2 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/21/2019 18:02 Calibration End Date: 05/21/2019 20:13 Calibration ID: 36514

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-459083/17	017B1801.D
Level 2	STD2 280-459083/18	018B1901.D
Level 3	STD3 280-459083/19	019B2001.D
Level 4	STD4 280-459083/20	020B2101.D
Level 5	STD5 280-459083/21	021B2201.D
Level 6	STD6 280-459083/22	022B2301.D
Level 7	STD7 280-459083/23	023B2401.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
PCB-1016 Peak 1	BNB	Ave	3448157 68361540	6296592 85448169	11487320	26035425	48196010	25.0 750	50.0 1000	100	250	500
PCB-1016 Peak 2	BNB	Ave	6605050 143934109	12211801 179385599	22823949	53558963	100717985	25.0 750	50.0 1000	100	250	500
PCB-1016 Peak 3	BNB	Ave	2909149 62380968	5377308 74176967	9979309	23270646	43416341	25.0 750	50.0 1000	100	250	500
PCB-1016 Peak 4	BNB	Ave	1661038 34843690	2956094 42641434	5575735	13236867	23908347	25.0 750	50.0 1000	100	250	500
PCB-1016 Peak 5	BNB	Qual	3444741 50880034	5162370 62590112	8285295	19040590	35578483	25.0 750	50.0 1000	100	250	500
PCB-1260 Peak 1	BNB	Ave	4769358 102768727	8655144 131284780	16297856	36985560	71967609	25.0 750	50.0 1000	100	250	500
PCB-1260 Peak 2	BNB	Ave	6495754 149115519	12534679 191054836	23527898	50633794	104287117	25.0 750	50.0 1000	100	250	500
PCB-1260 Peak 3	BNB	Lin2	3679603 86224675	7367330 110357190	13763651	27503244	60278317	25.0 750	50.0 1000	100	250	500
PCB-1260 Peak 4	BNB	Lin2	8723476 196228493	16638929 251909977	31249226	70192418	137039222	25.0 750	50.0 1000	100	250	500
PCB-1260 Peak 5	BNB	Lin2	6722302 144093572	12325167 186660268	23084727	53210600	100455449	25.0 750	50.0 1000	100	250	500
Tetrachloro-m-xylene	BNB	Lin1	4605553 99414485	8411056 128017698	15684342	36679118	69183511	1.25 37.5	2.50 50.0	5.00	12.5	25.0
DCB Decachlorobiphenyl	BNB	Lin1	4382580 92389385	8474823 118728986	15222574	34188345	64112680	1.25 37.5	2.50 50.0	5.00	12.5	25.0

Curve Type Legend:

Ave = Average ISTD
Lin1 = Linear 1/conc ISTD
Lin2 = Linear 1/conc^2 ISTD
Qual = Quadratic 1/conc ISTD

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\017B1801.D
 Lims ID: STD1 1660
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 21-May-2019 18:02:18 ALS Bottle#: 17 Worklist Smp#: 17
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD1
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub1
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:50 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:54:33

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.811	1.813	-0.002	113806467	100.0	100.0	
2	1.729	1.727	0.002	143314901	100.0	100.0	
RPD = 0.00							

\$ 14 Tetrachloro-m-xylene

1	2.768	2.769	-0.001	3108843	1.25	1.05	
2	2.786	2.784	0.002	4605553	1.25	1.09	
RPD = 2.87							

1 PCB-1016

1	3.168	3.166	0.002	1071828	25.0	30.4	
1	3.521	3.523	-0.002	2264082	25.0	31.0	
1	3.998	3.996	0.002	4538660	25.0	29.7	
1	4.138	4.139	-0.001	1861851	25.0	30.2	
1	4.595	4.596	-0.001	1934962	25.0	29.4	
Average of Peak Amounts =						30.1	
2	3.686	3.684	0.002	3448157	25.0	31.9	
2	4.152	4.150	0.002	6605050	25.0	30.3	
2	4.296	4.294	0.002	2909149	25.0	30.8	
2	4.529	4.530	-0.001	1661038	25.0	31.3	
2	4.822	4.824	-0.002	3444741	25.0	25.1	
Average of Peak Amounts =						29.9	
RPD = 0.78							

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\017B1801.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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12 PCB-1260

1	6.088	6.089	-0.001	2544261	25.0	29.5	
1	6.618	6.619	-0.001	1719746	25.0	28.1	
1	7.315	7.316	-0.001	2635348	25.0	24.4	
1	7.751	7.753	-0.002	6089071	25.0	24.2	
1	8.138	8.139	-0.001	2972255	25.0	24.0	

Average of Peak Amounts = 26.0

2	6.696	6.694	0.002	4769358	25.0	30.7	
2	7.162	7.164	-0.002	6495754	25.0	29.4	
2	7.296	7.297	-0.001	3679603	25.0	23.2	
2	8.062	8.060	0.002	8723476	25.0	23.6	
2	8.566	8.564	0.002	6722302	25.0	23.9	

Average of Peak Amounts = 26.2

RPD = 0.48

\$ 15 DCB Decachlorobiphenyl

1	9.725	9.726	-0.001	2737163	1.25	1.12	
2	10.232	10.234	-0.002	4382580	1.25	0.9890	

RPD = 12.28

S 8 Polychlorinated biphenyls, Total

1						56.2	
2						56.1	

RPD = 0.19

Reagents:

AR_1660_L7_00028
BNB IS_00013Amount Added: 0.03
Amount Added: 0.10Units: mL
Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:50

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\017B1801.D

Injection Date: 21-May-2019 18:02:18

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD1 1660

Worklist Smp#: 17

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

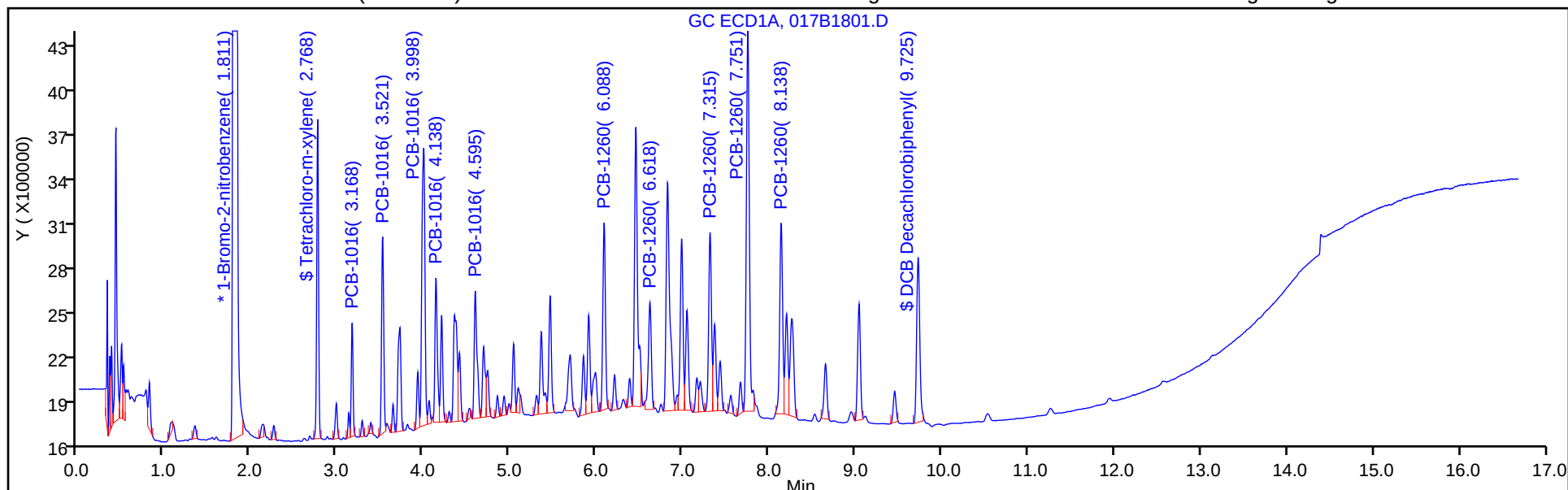
ALS Bottle#: 17

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

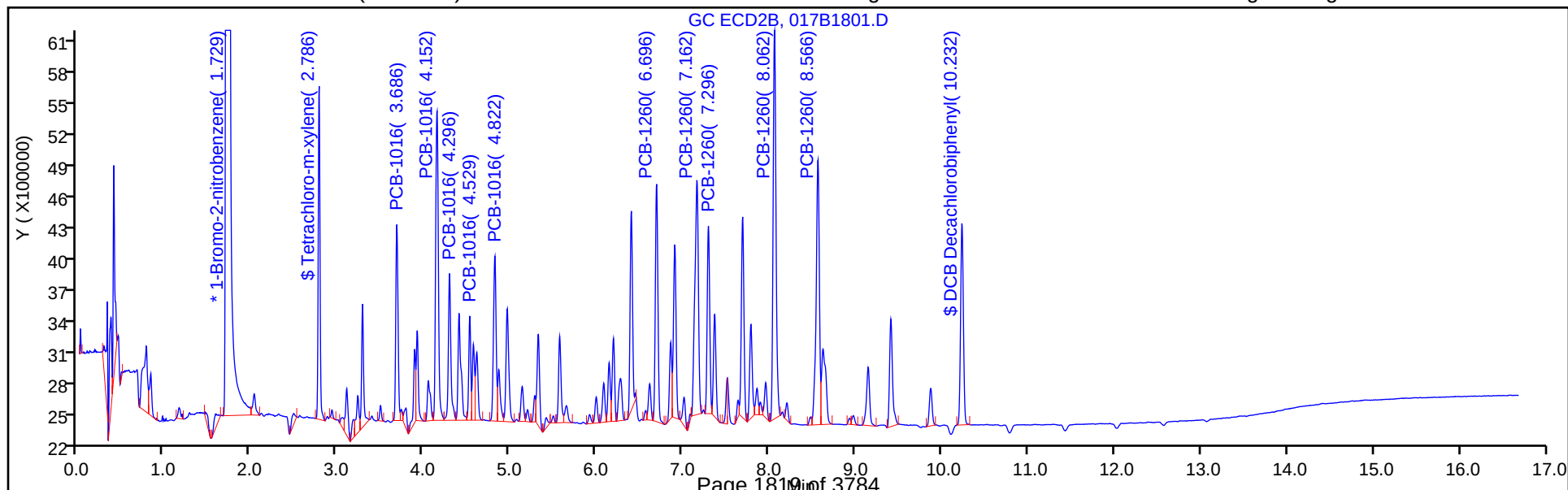
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\018B1901.D
 Lims ID: STD2
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 21-May-2019 18:24:10 ALS Bottle#: 18 Worklist Smp#: 18
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD2
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub1
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:48 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.809	1.813	-0.004	113169104	100.0	100.0	
2	1.727	1.727	0.000	142408131	100.0	100.0	
RPD = 0.00							

\$ 14 Tetrachloro-m-xylene

1	2.769	2.769	0.000	5794699	2.50	2.56	
2	2.784	2.784	0.000	8411056	2.50	2.56	
RPD = 0.10							

1 PCB-1016

1	3.166	3.166	0.000	1939961	50.0	55.3	
1	3.519	3.523	-0.004	4123098	50.0	56.8	
1	3.996	3.996	0.000	8326204	50.0	54.9	
1	4.139	4.139	0.000	2912007	50.0	47.5	
1	4.596	4.596	0.000	3657044	50.0	55.8	
Average of Peak Amounts =						54.1	
2	3.684	3.684	0.000	6296592	50.0	58.7	
2	4.150	4.150	0.000	12211801	50.0	56.5	
2	4.297	4.294	0.003	5377308	50.0	57.3	
2	4.530	4.530	0.000	2956094	50.0	56.1	
2	4.824	4.824	0.000	5162370	50.0	50.6	
Average of Peak Amounts =						55.8	
RPD = 3.23							

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\018B1901.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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12 PCB-1260

1	6.089	6.089	0.000	4710591	50.0	55.0
1	6.619	6.619	0.000	3196615	50.0	52.5
1	7.316	7.316	0.000	4933028	50.0	51.7
1	7.753	7.753	0.000	11490023	50.0	52.3
1	8.139	8.139	0.000	5742283	50.0	52.9

Average of Peak Amounts = 52.9

2	6.697	6.694	0.003	8655144	50.0	56.1
2	7.164	7.164	0.000	12534679	50.0	57.1
2	7.297	7.297	0.000	7367330	50.0	55.5
2	8.060	8.060	0.000	16638929	50.0	53.6
2	8.564	8.564	0.000	12325167	50.0	52.7

Average of Peak Amounts = 55.0

RPD = 3.90

\$ 15 DCB Decachlorobiphenyl

1	9.726	9.726	0.000	5032682	2.50	2.57
2	10.234	10.234	0.000	8474823	2.50	2.70

RPD = 4.92

S 8 Polychlorinated biphenyls, Total

1						106.9
2						110.8

RPD = 3.56

Reagents:

AR_1660_L7_00028
BNB IS_00013Amount Added: 0.05
Amount Added: 0.10Units: mL
Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:49

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\018B1901.D

Injection Date: 21-May-2019 18:24:10

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD2

Worklist Smp#: 18

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

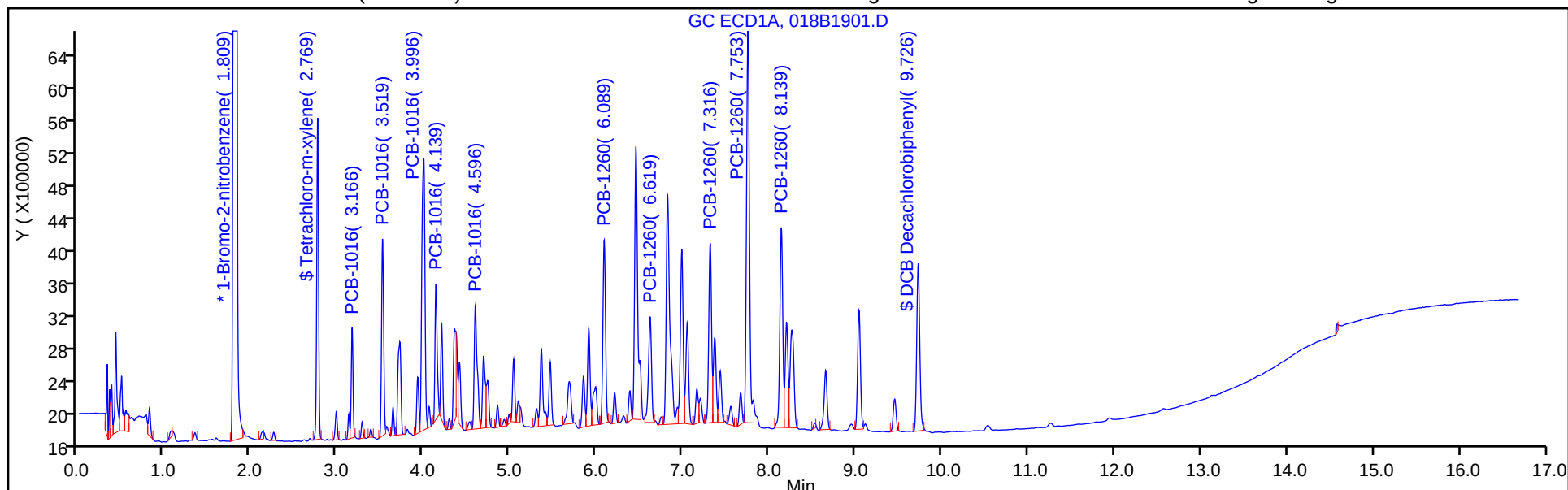
ALS Bottle#: 18

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

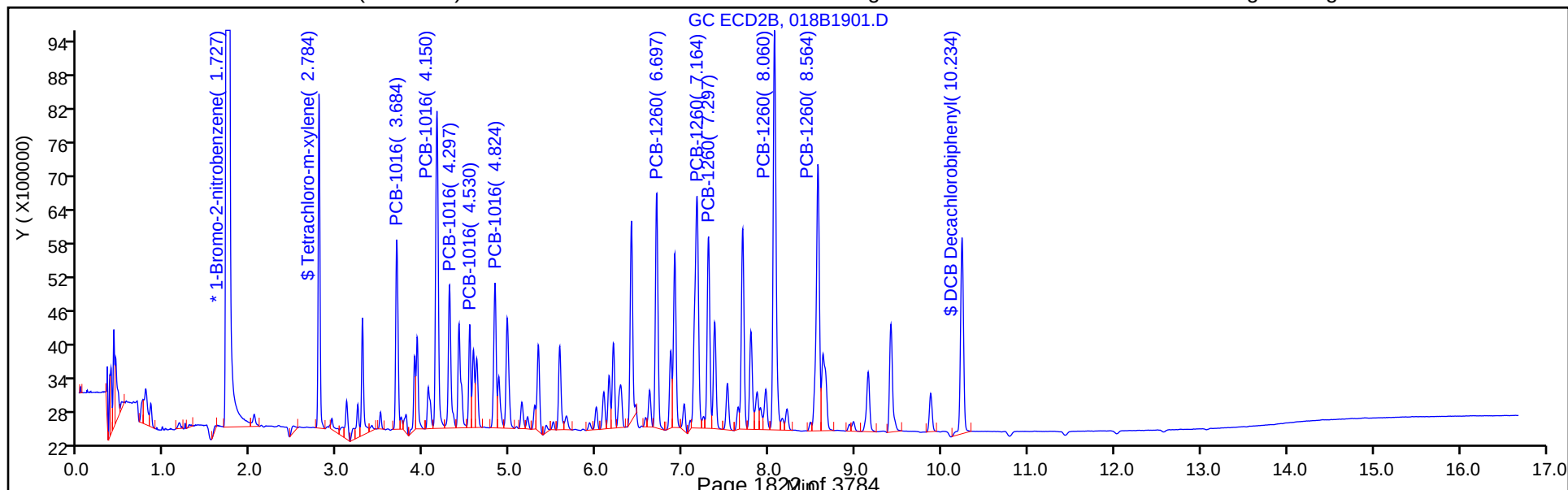
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\019B2001.D
 Lims ID: STD3
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 21-May-2019 18:46:02 ALS Bottle#: 19 Worklist Smp#: 19
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD3
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub1
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:47 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:55:20

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.811	1.813	-0.002	112625217	100.0	100.0	
2	1.728	1.727	0.001	142445856	100.0	100.0	
RPD = 0.00							

\$ 14 Tetrachloro-m-xylene

1	2.767	2.769	-0.002	10881291	5.00	5.42	
2	2.785	2.784	0.001	15684342	5.00	5.35	
RPD = 1.37							

1 PCB-1016

1	3.167	3.166	0.001	3685691	100.0	105.6	
1	3.521	3.523	-0.002	7818567	100.0	108.1	
1	3.997	3.996	0.001	16006138	100.0	106.0	
1	4.141	4.139	0.002	6779064	100.0	111.2	
1	4.594	4.596	-0.002	6971151	100.0	106.9	
Average of Peak Amounts =						107.6	
2	3.685	3.684	0.001	11487320	100.0	107.0	
2	4.152	4.150	0.002	22823949	100.0	105.5	
2	4.295	4.294	0.001	9979309	100.0	106.4	
2	4.532	4.530	0.002	5575735	100.0	105.8	
2	4.825	4.824	0.001	8285295	100.0	96.6	
Average of Peak Amounts =						104.2	
RPD = 3.13							

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\019B2001.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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12 PCB-1260

1	6.087	6.089	-0.002	8923993	100.0	104.7	
1	6.617	6.619	-0.002	6385348	100.0	105.3	
1	7.314	7.316	-0.002	9293919	100.0	103.7	
1	7.754	7.753	0.001	21299331	100.0	103.6	
1	8.141	8.139	0.002	10781045	100.0	105.7	

Average of Peak Amounts = 104.6

2	6.695	6.694	0.001	16297856	100.0	105.6	
2	7.165	7.164	0.001	23527898	100.0	107.1	
2	7.295	7.297	-0.002	13763651	100.0	111.0	
2	8.062	8.060	0.002	31249226	100.0	108.4	
2	8.565	8.564	0.001	23084727	100.0	107.5	

Average of Peak Amounts = 107.9

RPD = 3.14

\$ 15 DCB Decachlorobiphenyl

1	9.724	9.726	-0.002	9356629	5.00	5.31	
2	10.235	10.234	0.001	15222574	5.00	5.50	

RPD = 3.43

S 8 Polychlorinated biphenyls, Total

1						212.1	
2						212.2	

RPD = 0.01

Reagents:

AR_1660_L7_00028
BNB IS_00013Amount Added: 0.10
Amount Added: 0.10Units: mL
Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:47

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\019B2001.D

Injection Date: 21-May-2019 18:46:02

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD3

Worklist Smp#: 19

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

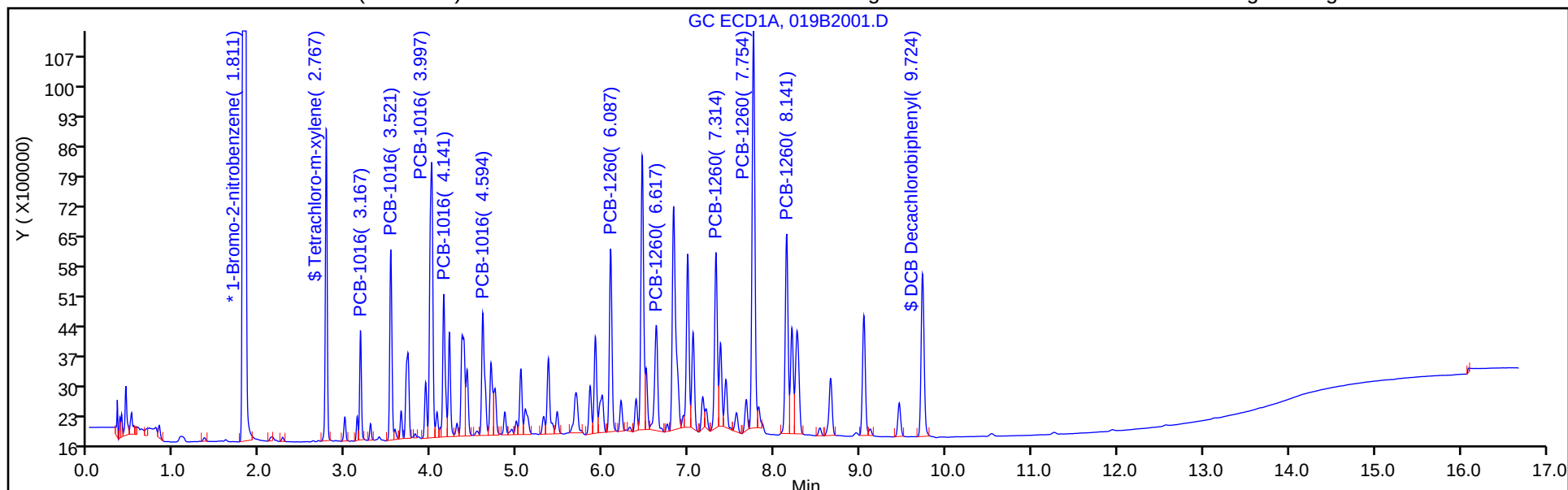
ALS Bottle#: 19

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

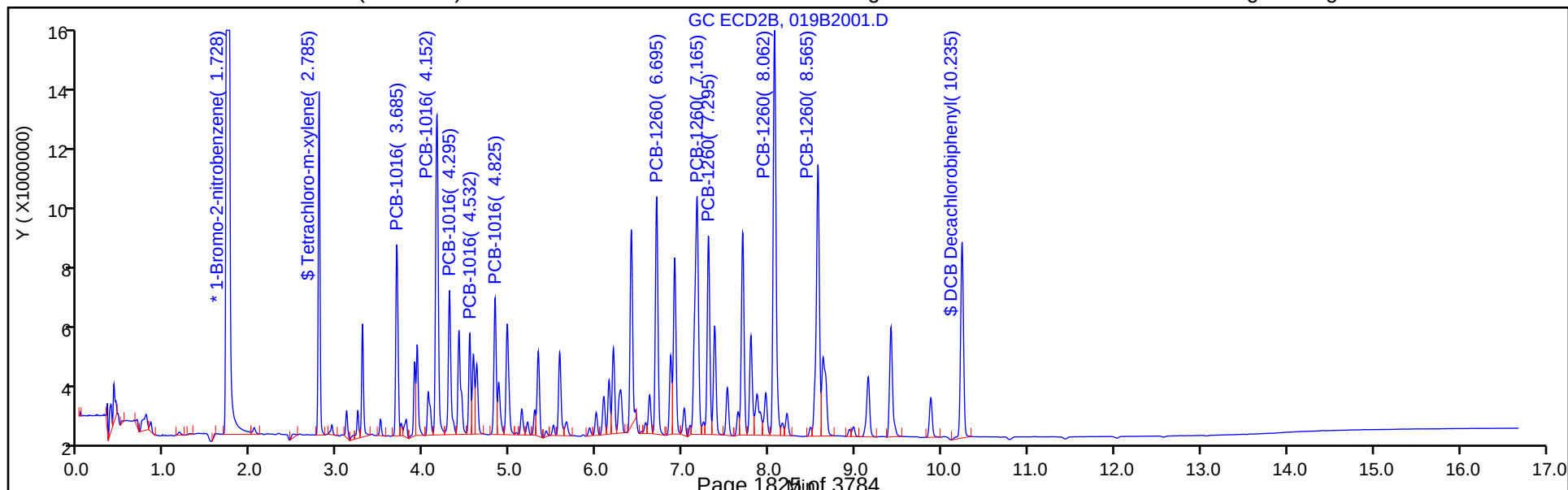
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\020B2101.D
 Lims ID: STD4
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 21-May-2019 19:07:54 ALS Bottle#: 20 Worklist Smp#: 20
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD4
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub1
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:45 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.812	1.813	-0.001	114263920	100.0	100.0	
2	1.727	1.727	0.000	143619140	100.0	100.0	
RPD = 0.00							

\$ 14 Tetrachloro-m-xylene

1	2.769	2.769	0.000	25422298	12.5	13.4	
2	2.787	2.784	0.003	36679118	12.5	13.3	
RPD = 0.48							

1 PCB-1016

1	3.169	3.166	0.003	8559454	250.0	241.7	
1	3.522	3.523	-0.001	17753056	250.0	242.0	
1	3.999	3.996	0.003	37432850	250.0	244.3	
1	4.139	4.139	0.000	15516857	250.0	250.8	
1	4.596	4.596	-0.001	16023915	250.0	242.2	
Average of Peak Amounts =						244.2	
2	3.687	3.684	0.003	26035425	250.0	240.6	
2	4.150	4.150	0.000	53558963	250.0	245.5	
2	4.297	4.294	0.003	23270646	250.0	246.0	
2	4.530	4.530	0.000	13236867	250.0	249.1	
2	4.823	4.824	-0.001	19040590	250.0	255.7	
Average of Peak Amounts =						247.4	
RPD = 1.29							

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\020B2101.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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12 PCB-1260

1	6.089	6.089	0.000	20857123	250.0	241.2	
1	6.619	6.619	0.000	15059161	250.0	244.7	
1	7.315	7.316	-0.001	21797948	250.0	248.2	
1	7.752	7.753	-0.001	50734812	250.0	252.8	
1	8.139	8.139	0.000	25500859	250.0	255.2	

Average of Peak Amounts = 248.4

2	6.696	6.694	0.002	36985560	250.0	237.6	
2	7.163	7.164	-0.001	50633794	250.0	228.6	
2	7.296	7.297	-0.001	27503244	250.0	228.5	
2	8.060	8.060	0.000	70192418	250.0	252.5	
2	8.563	8.564	-0.001	53210600	250.0	258.8	

Average of Peak Amounts = 241.2

RPD = 2.96

\$ 15 DCB Decachlorobiphenyl

1	9.725	9.726	-0.001	21710492	12.5	12.9	
2	10.233	10.234	-0.001	34188345	12.5	13.3	

RPD = 2.61

S 8 Polychlorinated biphenyls, Total

1						492.6	
2						488.6	

RPD = 0.83

Reagents:

AR_1660_L7_00028
BNB IS_00013Amount Added: 0.25
Amount Added: 0.10Units: mL
Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:45

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\020B2101.D

Injection Date: 21-May-2019 19:07:54

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD4

Worklist Smp#: 20

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

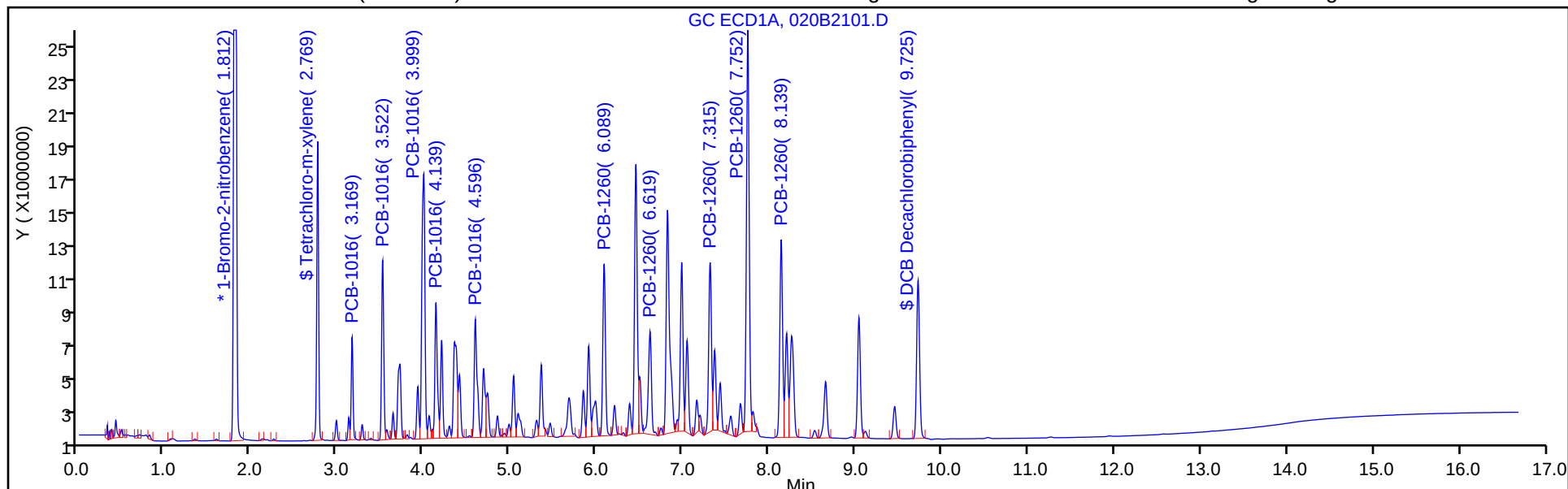
ALS Bottle#: 20

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

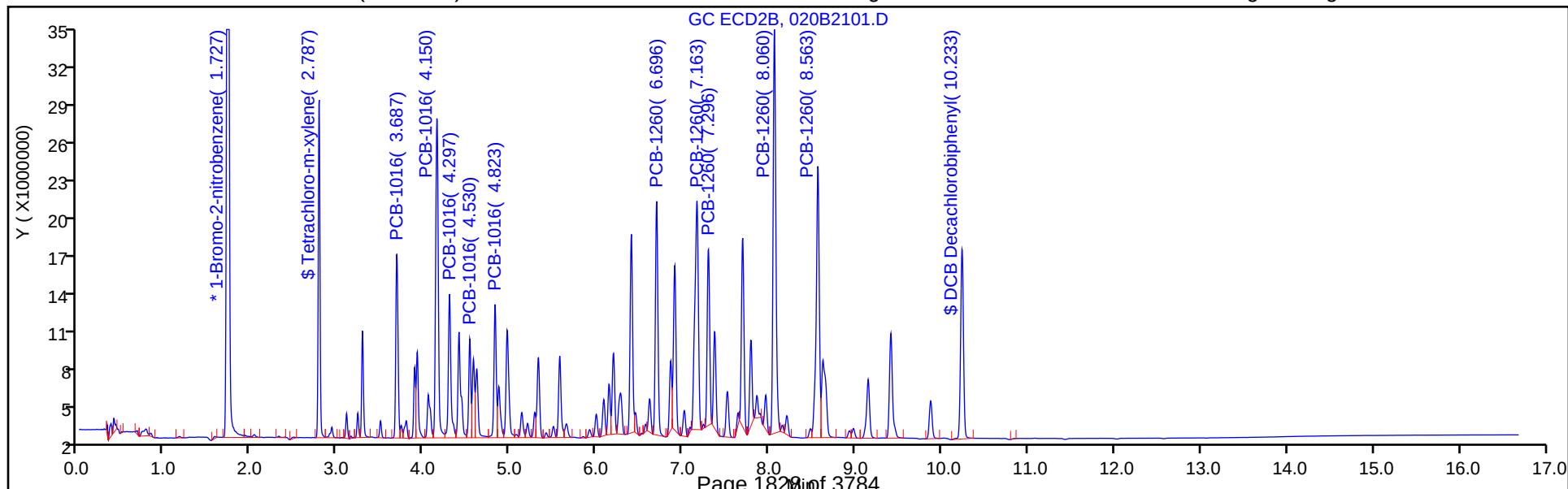
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\021B2201.D
 Lims ID: STD5
 Client ID:
 Sample Type: ICIS Calib Level: 5
 Inject. Date: 21-May-2019 19:29:49 ALS Bottle#: 21 Worklist Smp#: 21
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD5
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub1
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:43 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:55:28

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.813	0.000	116703599	100.0	100.0	
2	1.727	1.727	0.000	145727773	100.0	100.0	
RPD = 0.00							

\$ 14 Tetrachloro-m-xylene

1	2.769	2.769	0.000	48125499	25.0	25.3	
2	2.784	2.784	0.000	69183511	25.0	25.3	
RPD = 0.15							

1 PCB-1016

1	3.166	3.166	0.000	16265509	500.0	449.7	
1	3.523	3.523	0.000	33006505	500.0	440.5	
1	3.996	3.996	0.000	70642014	500.0	451.5	
1	4.139	4.139	0.000	29089966	500.0	460.3	
1	4.596	4.596	0.000	30513735	500.0	451.6	
Average of Peak Amounts =						450.7	
2	3.684	3.684	0.000	48196010	500.0	438.9	
2	4.150	4.150	0.000	100717985	500.0	455.1	
2	4.294	4.294	0.000	43416341	500.0	452.3	
2	4.530	4.530	0.000	23908347	500.0	443.4	
2	4.824	4.824	0.000	35578483	500.0	503.8	
Average of Peak Amounts =						458.7	
RPD = 1.75							

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\021B2201.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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12 PCB-1260

1	6.089	6.089	0.000	39684137	500.0	449.4	
1	6.619	6.619	0.000	27427011	500.0	436.4	
1	7.316	7.316	0.000	42037835	500.0	474.4	
1	7.753	7.753	0.000	97993540	500.0	484.3	
1	8.139	8.139	0.000	49556252	500.0	491.7	

Average of Peak Amounts = 467.3

2	6.694	6.694	0.000	71967609	500.0	455.7	
2	7.164	7.164	0.000	104287117	500.0	464.1	
2	7.297	7.297	0.000	60278317	500.0	503.4	
2	8.060	8.060	0.000	137039222	500.0	494.0	
2	8.564	8.564	0.000	100455449	500.0	490.3	

Average of Peak Amounts = 481.5

RPD = 3.00

\$ 15 DCB Decachlorobiphenyl

1	9.726	9.726	0.000	42011969	25.0	25.0	
2	10.234	10.234	0.000	64112680	25.0	25.2	

RPD = 0.79

Reagents:

AR_1660_L7_00028

Amount Added: 0.50

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:43

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\021B2201.D

Injection Date: 21-May-2019 19:29:49

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD5

Worklist Smp#: 21

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

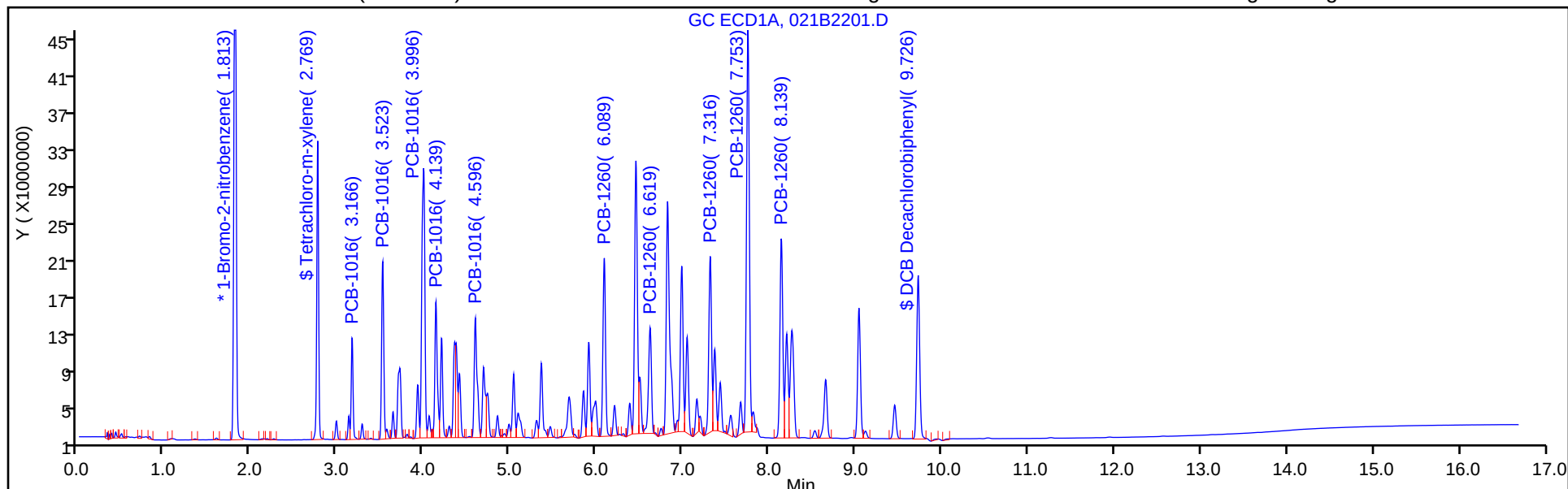
ALS Bottle#: 21

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

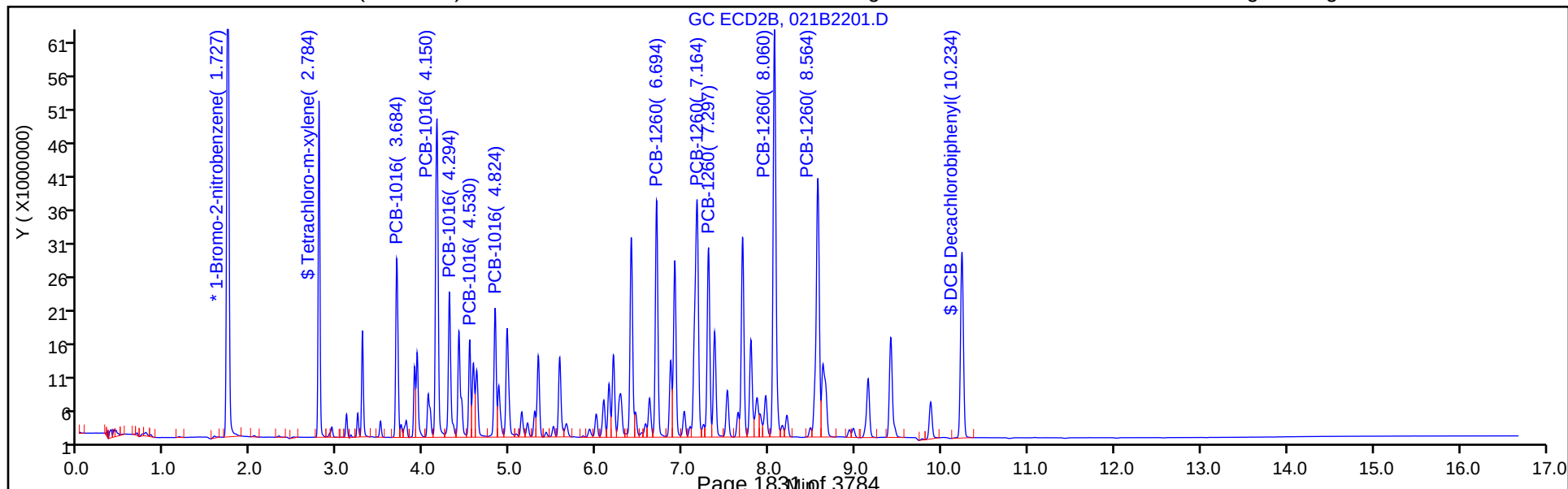
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\022B2301.D
 Lims ID: STD6
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 21-May-2019 19:51:44 ALS Bottle#: 22 Worklist Smp#: 22
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD6
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub1
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:41 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.810	1.810	0.000	115382496	100.0	100.0	
2	1.728	1.728	0.000	148358047	100.0	100.0	
RPD = 0.00							

\$ 14 Tetrachloro-m-xylene

1	2.767	2.769	-0.002	68447546	37.5	36.7	
2	2.785	2.784	0.001	99414485	37.5	36.0	
RPD = 2.08							

1 PCB-1016

1	3.167	3.166	0.001	23778156	750.0	665.0	
1	3.520	3.523	-0.003	47093615	750.0	635.8	
1	3.997	3.996	0.001	102427409	750.0	662.1	
1	4.137	4.139	-0.002	42277077	750.0	676.6	
1	4.594	4.596	-0.002	43939654	750.0	657.8	
Average of Peak Amounts =						659.4	
2	3.685	3.684	0.001	68361540	750.0	611.5	
2	4.151	4.150	0.001	143934109	750.0	638.8	
2	4.295	4.294	0.001	62380968	750.0	638.3	
2	4.531	4.530	0.001	34843690	750.0	634.8	
2	4.825	4.824	0.001	50880034	750.0	734.3	
Average of Peak Amounts =						651.5	
RPD = 1.20							

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\022B2301.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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12 PCB-1260

1	6.087	6.089	-0.002	59097177	750.0	676.9	
1	6.620	6.619	0.001	44608762	750.0	718.0	
1	7.314	7.316	-0.002	65653781	750.0	753.2	
1	7.754	7.753	0.001	145782933	750.0	732.3	
1	8.140	8.139	0.001	71308697	750.0	718.7	

Average of Peak Amounts = 719.8

2	6.695	6.694	0.001	102768727	750.0	639.2	
2	7.161	7.164	-0.003	149115519	750.0	651.8	
2	7.295	7.297	-0.002	86224675	750.0	710.9	
2	8.061	8.060	0.001	196228493	750.0	698.4	
2	8.565	8.564	0.001	144093572	750.0	695.0	

Average of Peak Amounts = 679.0

RPD = 5.83

\$ 15 DCB Decachlorobiphenyl

1	9.724	9.726	-0.002	60910554	37.5	36.9	
2	10.235	10.234	0.001	92389385	37.5	36.0	

RPD = 2.55

S 8 Polychlorinated biphenyls, Total

1						1379.3	
2						1330.6	

RPD = 3.59

Reagents:

AR_1660_L7_00028
BNB IS_00013Amount Added: 0.75
Amount Added: 0.10Units: mL
Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:41

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\022B2301.D

Injection Date: 21-May-2019 19:51:44

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD6

Worklist Smp#: 22

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

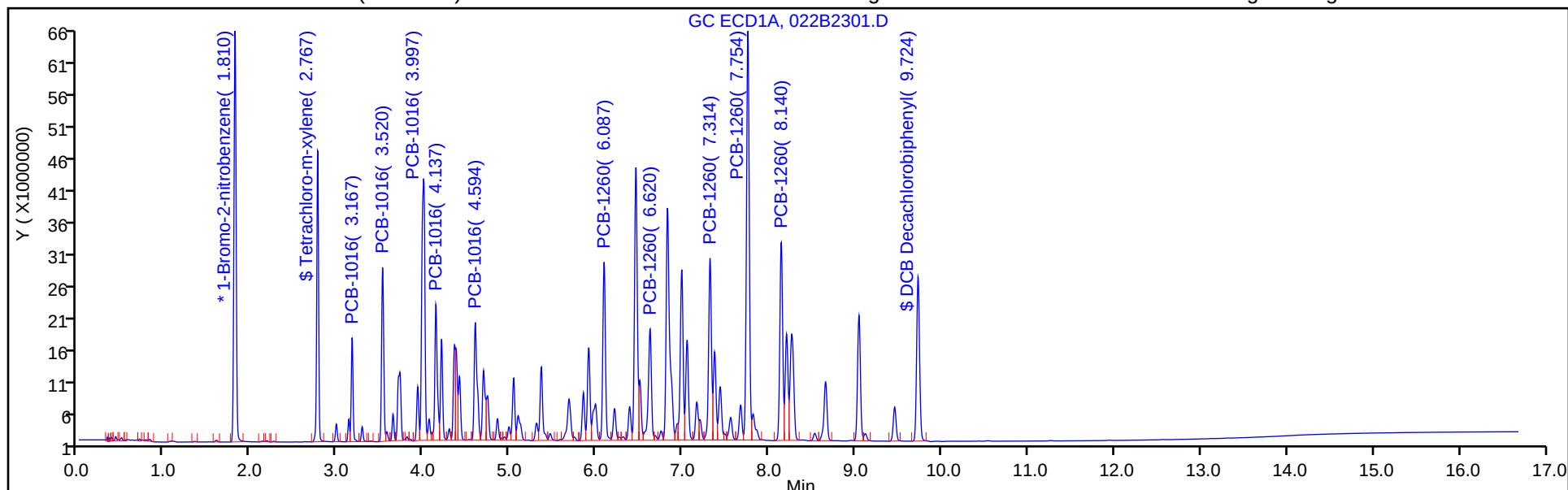
ALS Bottle#: 22

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

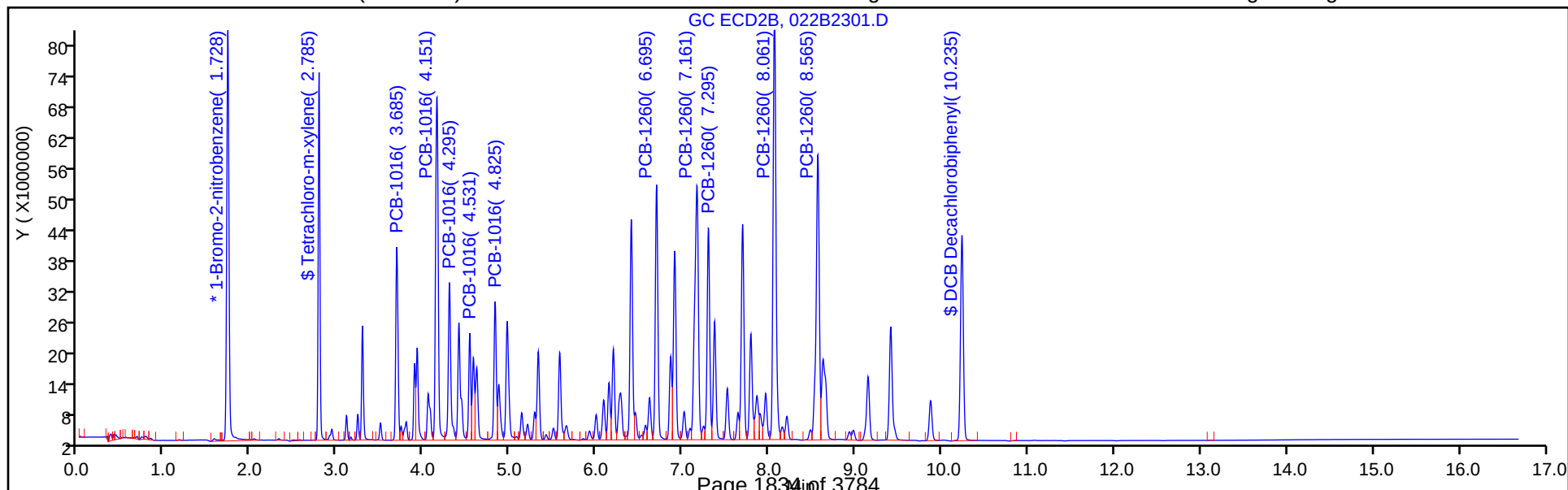
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\023B2401.D
 Lims ID: STD7
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 21-May-2019 20:13:38 ALS Bottle#: 23 Worklist Smp#: 23
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD7
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub1
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:39 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:57:09

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.810	0.003	111285745	100.0	100.0	
2	1.727	1.728	-0.001	137675574	100.0	100.0	
RPD = 0.00							

\$ 14 Tetrachloro-m-xylene

1	2.770	2.769	0.001	88163569	50.0	49.3	
2	2.784	2.784	0.000	128017698	50.0	50.2	
RPD = 1.82							

1 PCB-1016

1	3.166	3.166	0.000	29981793	1000.0	869.3	
1	3.520	3.523	-0.003	60532932	1000.0	847.3	
1	3.996	3.996	0.000	132766769	1000.0	889.8	
1	4.140	4.139	0.001	54468596	1000.0	903.8	
1	4.593	4.596	-0.003	57392004	1000.0	890.8	
Average of Peak Amounts =						880.2	
2	3.684	3.684	0.000	85448169	1000.0	823.6	
2	4.151	4.150	0.001	179385599	1000.0	857.9	
2	4.297	4.294	0.003	74176967	1000.0	817.9	
2	4.531	4.530	0.001	42641434	1000.0	837.1	
2	4.824	4.824	0.000	62590112	1000.0	1009.1	
Average of Peak Amounts =						869.1	
RPD = 1.27							

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\023B2401.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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12 PCB-1260

1	6.086	6.089	-0.003	76179441	1000.0	904.7	
1	6.620	6.619	0.001	57908598	1000.0	966.3	
1	7.316	7.316	0.000	84445933	1000.0	1006.6	
1	7.753	7.753	0.000	190021136	1000.0	992.2	
1	8.140	8.139	0.001	92165149	1000.0	965.4	

Average of Peak Amounts = 967.0

2	6.694	6.694	0.000	131284780	1000.0	879.9	
2	7.164	7.164	0.000	191054836	1000.0	899.9	
2	7.294	7.297	-0.003	110357190	1000.0	983.7	
2	8.061	8.060	0.001	251909977	1000.0	969.6	
2	8.564	8.564	0.000	186660268	1000.0	974.2	

Average of Peak Amounts = 941.4

RPD = 2.68

\$ 15 DCB Decachlorobiphenyl

1	9.723	9.726	-0.003	79157442	50.0	49.9	
2	10.234	10.234	0.000	118728986	50.0	50.1	

RPD = 0.41

S 8 Polychlorinated biphenyls, Total

1						1847.2	
2						1810.6	

RPD = 2.00

Reagents:

AR_1660_L7_00028
BNB IS_00013Amount Added: 1.00
Amount Added: 0.10Units: mL
Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:39

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\023B2401.D

Injection Date: 21-May-2019 20:13:38

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD7

Worklist Smp#: 23

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

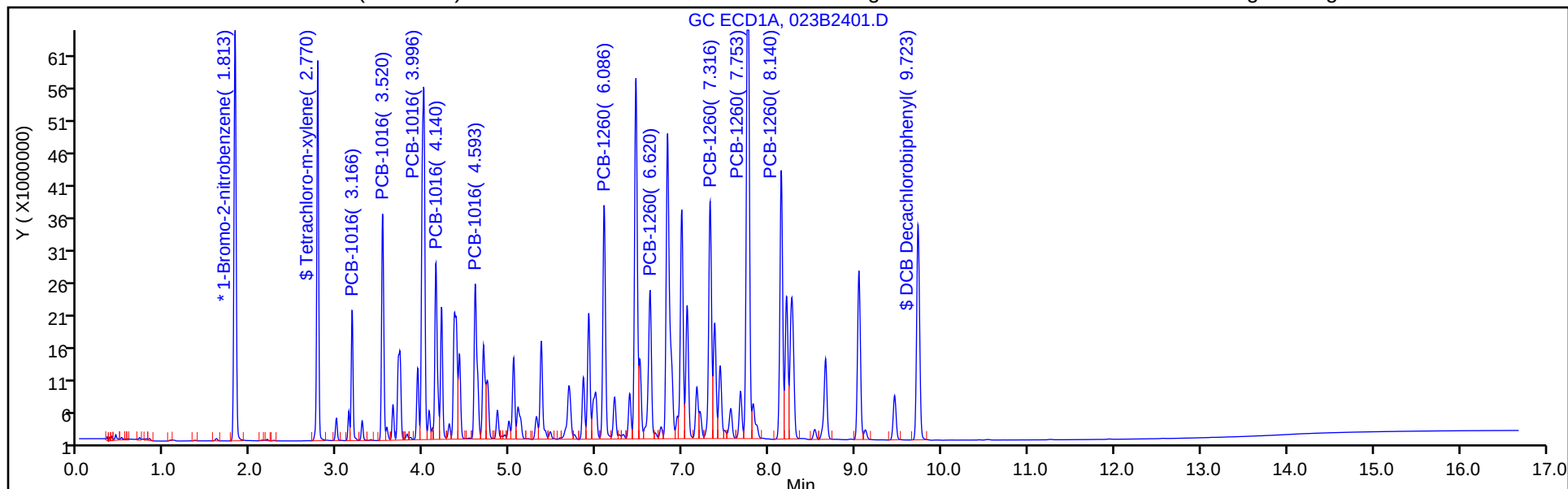
ALS Bottle#: 23

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

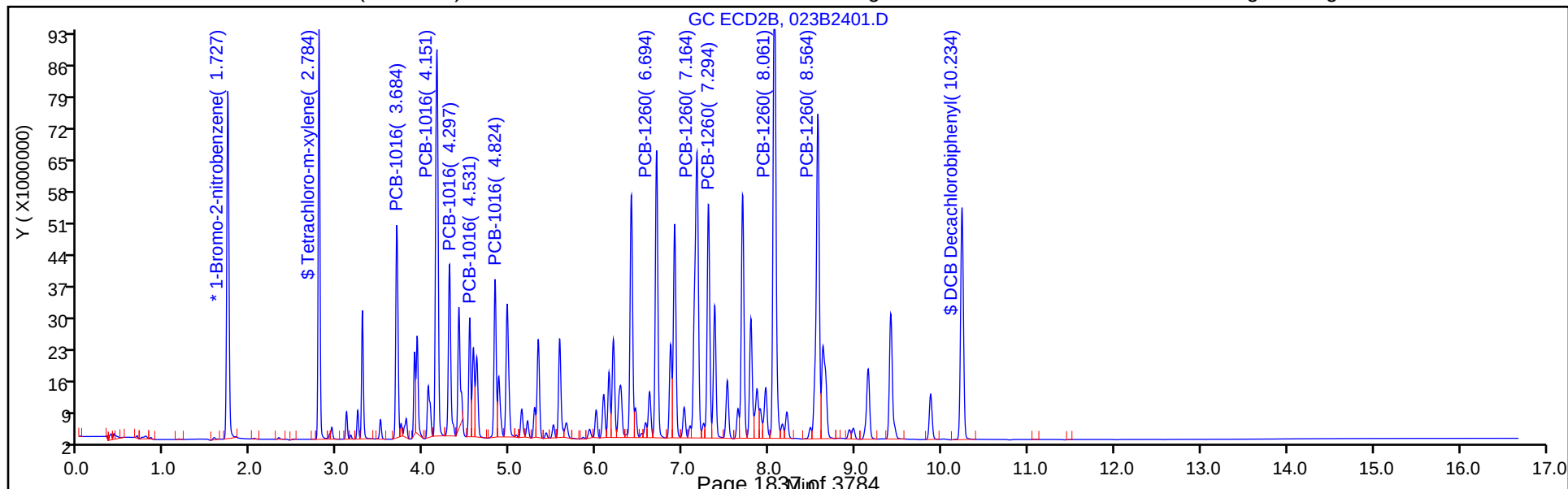
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 459083

SDG No.: _____

Instrument ID: SGC_P3 GC Column: CLP1 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/21/2019 20:35 Calibration End Date: 05/21/2019 22:46 Calibration ID: 36517

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-459083/24	024B2501.D
Level 2	STD2 280-459083/25	025B2601.D
Level 3	STD3 280-459083/26	026B2701.D
Level 4	STD4 280-459083/27	027B2801.D
Level 5	STD5 280-459083/28	028B2901.D
Level 6	STD6 280-459083/29	029B3001.D
Level 7	STD7 280-459083/30	030B3101.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
PCB-1232 Peak 1	0.0476 0.0311	0.0437 +++++	0.0389	0.0383	0.0331	Ave		0.0388				16.0		20.0			
PCB-1232 Peak 2	0.0417 0.0259	0.0367 +++++	0.0329	0.0320	0.0284	Ave		0.0329				17.2		20.0			
PCB-1232 Peak 3	0.0834 0.0546	0.0745 +++++	0.0672	0.0656	0.0595	Ave		0.0675				15.4		20.0			
PCB-1232 Peak 4	0.0323 0.0230	0.0319 +++++	0.0292	0.0282	0.0251	Ave		0.0283				13.0		20.0			
PCB-1232 Peak 5	0.0317 0.0221	0.0300 +++++	0.0267	0.0267	0.0240	Ave		0.0269				13.3		20.0			
PCB-1262 Peak 1	0.1163 0.0856	0.1093 +++++	0.0971	0.1018	0.0925	Ave		0.1004				11.1		20.0			
PCB-1262 Peak 2	0.1390 0.1052	0.1378 +++++	0.1257	0.1257	0.1145	Ave		0.1246				10.5		20.0			
PCB-1262 Peak 3	0.1304 0.0949	0.1251 +++++	0.1117	0.1109	0.1010	Ave		0.1123				12.1		20.0			
PCB-1262 Peak 4	0.2722 0.1997	0.2610 +++++	0.2336	0.2357	0.2158	Ave		0.2363				11.5		20.0			
PCB-1262 Peak 5	0.0930 0.0682	0.0881 +++++	0.0816	0.0797	0.0738	Ave		0.0807				11.2		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 459083

SDG No.: _____

Instrument ID: SGC_P3 GC Column: CLP1 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/21/2019 20:35 Calibration End Date: 05/21/2019 22:46 Calibration ID: 36517

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-459083/24	024B2501.D
Level 2	STD2 280-459083/25	025B2601.D
Level 3	STD3 280-459083/26	026B2701.D
Level 4	STD4 280-459083/27	027B2801.D
Level 5	STD5 280-459083/28	028B2901.D
Level 6	STD6 280-459083/29	029B3001.D
Level 7	STD7 280-459083/30	030B3101.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
PCB-1232 Peak 1	BNB	Ave	1271909 26316394	2288489 +++++	4319414	10122038	18222917	25.0 750	50.0 +++++	100	250	500
PCB-1232 Peak 2	BNB	Ave	1115846 21970911	1921229 +++++	3654259	8446503	15662127	25.0 750	50.0 +++++	100	250	500
PCB-1232 Peak 3	BNB	Ave	2229341 46214458	3904035 +++++	7452336	17348806	32744986	25.0 750	50.0 +++++	100	250	500
PCB-1232 Peak 4	BNB	Ave	864517 19515808	1671935 +++++	3235835	7447674	13840273	25.0 750	50.0 +++++	100	250	500
PCB-1232 Peak 5	BNB	Ave	847894 18733869	1569887 +++++	2958346	7064476	13214443	25.0 750	50.0 +++++	100	250	500
PCB-1262 Peak 1	BNB	Ave	3108703 72445326	5722803 +++++	10775264	26898069	50907067	25.0 750	50.0 +++++	100	250	500
PCB-1262 Peak 2	BNB	Ave	3715460 89103738	7218230 +++++	13950693	33212815	63024067	25.0 750	50.0 +++++	100	250	500
PCB-1262 Peak 3	BNB	Ave	3487695 80318898	6553791 +++++	12392698	29308661	55597771	25.0 750	50.0 +++++	100	250	500
PCB-1262 Peak 4	BNB	Ave	7279088 169090141	13669637 +++++	25927622	62307398	118832370	25.0 750	50.0 +++++	100	250	500
PCB-1262 Peak 5	BNB	Ave	2486440 57753672	4615411 +++++	9056467	21069211	40626356	25.0 750	50.0 +++++	100	250	500

Curve Type Legend:

Ave = Average ISTD

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\024B2501.D
 Lims ID: STD1 3262
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 21-May-2019 20:35:32 ALS Bottle#: 24 Worklist Smp#: 24
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD1
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub4
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:37 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:57:45

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.810	1.810	0.000	106956778	100.0	100.0
2	1.727	1.728	-0.001	134450423	100.0	100.0

RPD = 0.00

7 PCB-1232

M

1	3.166	3.167	-0.001	1271909	25.0	30.7
1	3.520	3.520	0.000	1115846	25.0	31.7
1	3.996	3.997	-0.001	2229341	25.0	30.9
1	4.140	4.140	0.000	864517	25.0	28.6
1	4.593	4.597	-0.004	847894	25.0	29.5

Average of Peak Amounts =

30.3

2	3.287	3.288	-0.001	1979416	25.0	32.1	M
2	3.684	3.685	-0.001	1682974	25.0	31.0	
2	4.151	4.151	0.000	3324936	25.0	32.2	
2	4.297	4.295	0.002	1465034	25.0	32.0	
2	4.531	4.531	0.000	700573	25.0	31.3	

Average of Peak Amounts =

31.7

RPD = 4.74

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\024B2501.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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5 PCB-1262

1	6.456	6.457	-0.001	3108703	25.0	28.9	
1	6.986	6.987	-0.001	3715460	25.0	27.9	
1	7.316	7.317	-0.001	3487695	25.0	29.0	
1	7.753	7.754	-0.001	7279088	25.0	28.8	
1	8.140	8.140	0.000	2486440	25.0	28.8	

Average of Peak Amounts = 28.7

2	6.694	6.695	-0.001	3856572	25.0	30.2	
2	7.297	7.295	0.002	5746701	25.0	30.9	
2	7.694	7.691	0.003	5337998	25.0	30.3	
2	8.061	8.061	0.000	9990136	25.0	29.8	
2	8.564	8.565	-0.001	7679067	25.0	30.4	

Average of Peak Amounts = 30.3

RPD = 5.50

S 8 Polychlorinated biphenyls, Total

1	58.9	
2	62.0	

RPD = 5.11

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_3262_L7_00018

Amount Added: 0.03

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:38

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\024B2501.D

Injection Date: 21-May-2019 20:35:32

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD1 3262

Worklist Smp#: 24

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

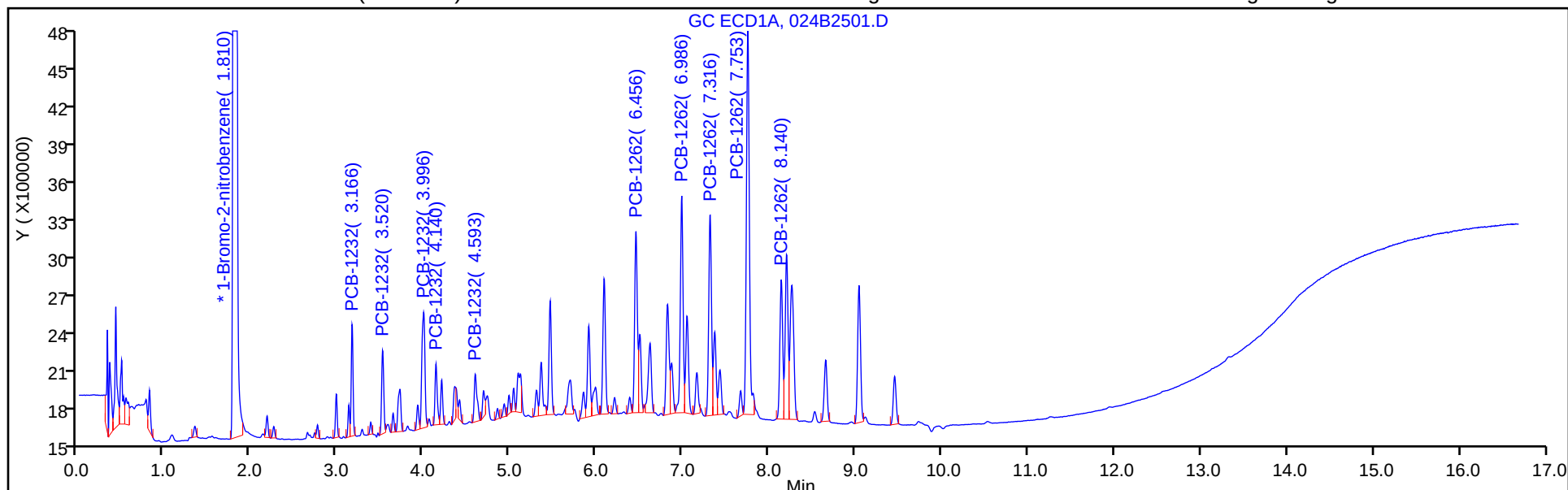
ALS Bottle#: 24

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

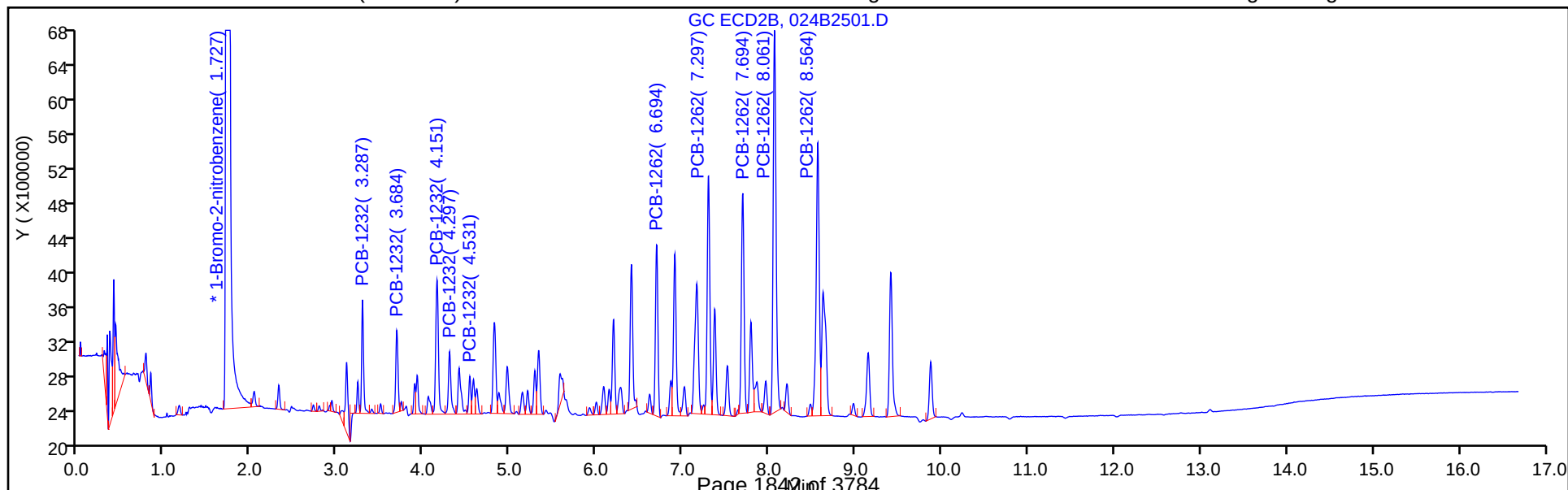
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\025B2601.D
 Lims ID: STD2
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 21-May-2019 20:57:25 ALS Bottle#: 25 Worklist Smp#: 25
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD2
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub4
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:36 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:58:07

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.810	0.003	104762685	100.0	100.0
2	1.727	1.728	-0.001	131830501	100.0	100.0

RPD = 0.00

7 PCB-1232

M

1	3.169	3.167	0.002	2288489	50.0	56.3
1	3.523	3.520	0.003	1921229	50.0	55.7
1	3.999	3.997	0.002	3904035	50.0	55.2
1	4.139	4.140	-0.001	1671935	50.0	56.4
1	4.596	4.597	-0.001	1569887	50.0	55.8

Average of Peak Amounts =

55.9

2	3.287	3.288	-0.001	3502968	50.0	58.0	M
2	3.687	3.685	0.002	3082115	50.0	57.9	
2	4.150	4.151	-0.001	5666975	50.0	56.0	
2	4.297	4.295	0.002	2531100	50.0	56.4	
2	4.530	4.531	-0.001	1269572	50.0	57.9	

Average of Peak Amounts =

57.2

RPD = 2.38

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\025B2601.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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5 PCB-1262

1	6.456	6.457	-0.001	5722803	50.0	54.4	
1	6.989	6.987	0.002	7218230	50.0	55.3	
1	7.316	7.317	-0.001	6553791	50.0	55.7	
1	7.753	7.754	-0.001	13669637	50.0	55.2	
1	8.139	8.140	-0.001	4615411	50.0	54.6	

Average of Peak Amounts = 55.0

2	6.697	6.695	0.002	7060576	50.0	56.4	
2	7.297	7.295	0.002	10060569	50.0	55.1	
2	7.694	7.691	0.003	9443546	50.0	54.6	
2	8.060	8.061	-0.001	18110448	50.0	55.1	
2	8.564	8.565	-0.001	13899683	50.0	56.1	

Average of Peak Amounts = 55.5

RPD = 0.80

S 8 Polychlorinated biphenyls, Total

1	110.9
2	112.7

RPD = 1.60

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_3262_L7_00018

Amount Added: 0.05

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:36

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\025B2601.D

Injection Date: 21-May-2019 20:57:25

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD2

Worklist Smp#: 25

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

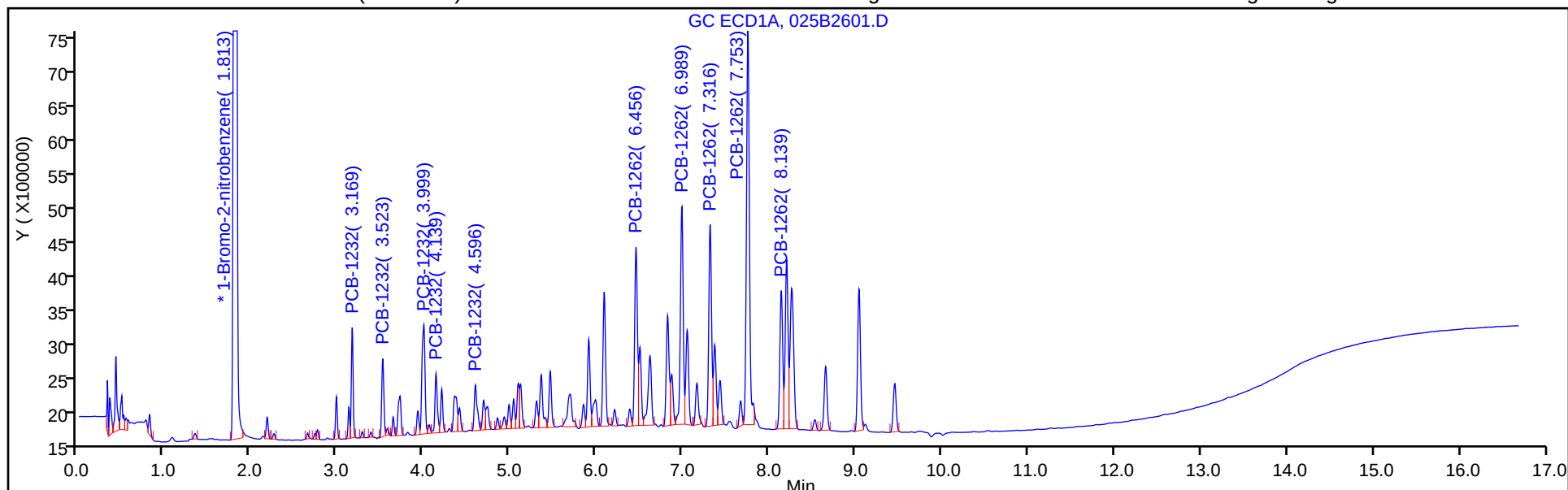
ALS Bottle#: 25

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

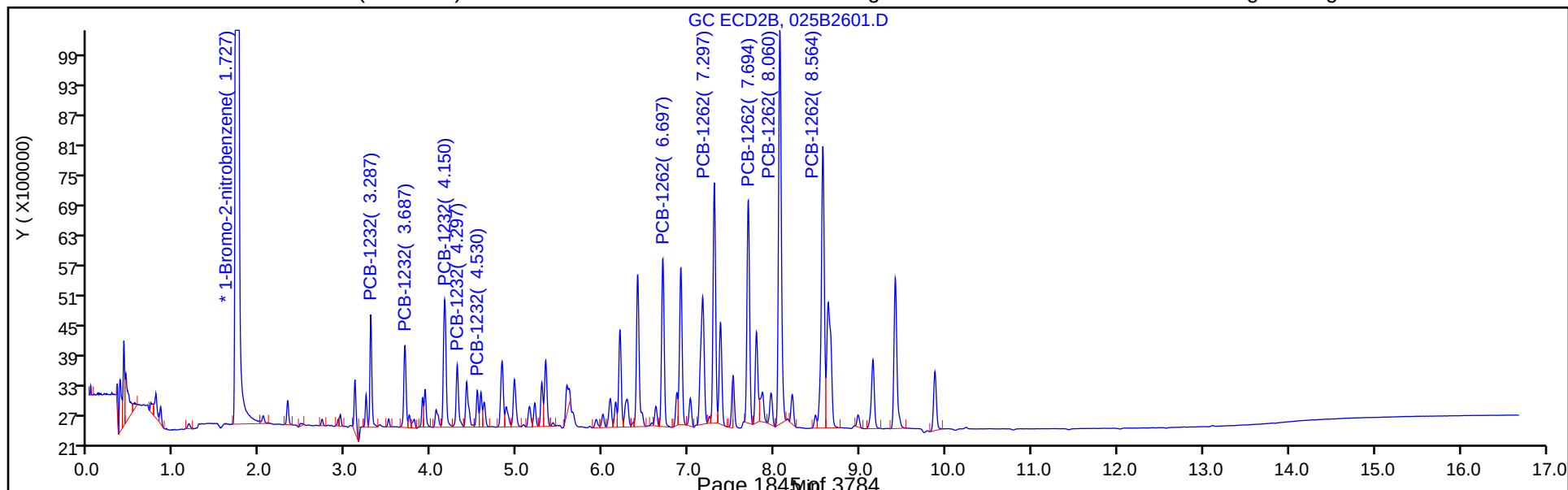
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\026B2701.D
 Lims ID: STD3
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 21-May-2019 21:19:18 ALS Bottle#: 26 Worklist Smp#: 26
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD3
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub4
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:34 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:58:30

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.811	1.810	0.001	110972951	100.0	100.0	
2	1.729	1.728	0.001	140392043	100.0	100.0	

RPD = 0.00

7 PCB-1232

M

1	3.168	3.167	0.001	4319414	100.0	100.4	
1	3.521	3.520	0.001	3654259	100.0	99.9	
1	3.998	3.997	0.001	7452336	100.0	99.5	M
1	4.141	4.140	0.001	3235835	100.0	103.1	M
1	4.594	4.597	-0.003	2958346	100.0	99.2	

Average of Peak Amounts =

100.4

2	3.289	3.288	0.001	6481259	100.0	100.7	M
2	3.685	3.685	0.000	5880539	100.0	103.7	
2	4.152	4.151	0.001	10570120	100.0	98.0	
2	4.295	4.295	0.000	4725166	100.0	98.9	
2	4.532	4.531	0.001	2339669	100.0	100.2	

Average of Peak Amounts =

100.3

RPD = 0.12

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\026B2701.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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5 PCB-1262

1	6.458	6.457	0.001	10775264	100.0	96.7	
1	6.988	6.987	0.001	13950693	100.0	100.9	
1	7.314	7.317	-0.003	12392698	100.0	99.4	
1	7.754	7.754	0.000	25927622	100.0	98.9	
1	8.141	8.140	0.001	9056467	100.0	101.1	

Average of Peak Amounts = 99.4

2	6.695	6.695	0.000	13165519	100.0	98.7	
2	7.295	7.295	0.000	19416621	100.0	99.9	
2	7.692	7.691	0.001	18563119	100.0	100.8	
2	8.062	8.061	0.001	35366203	100.0	101.1	
2	8.562	8.565	-0.003	26378723	100.0	100.0	

Average of Peak Amounts = 100.1

RPD = 0.72

S 8 Polychlorinated biphenyls, Total

1						199.8	
2						200.4	

RPD = 0.30

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_3262_L7_00018

Amount Added: 0.10

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:34

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\026B2701.D

Injection Date: 21-May-2019 21:19:18

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD3

Worklist Smp#: 26

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

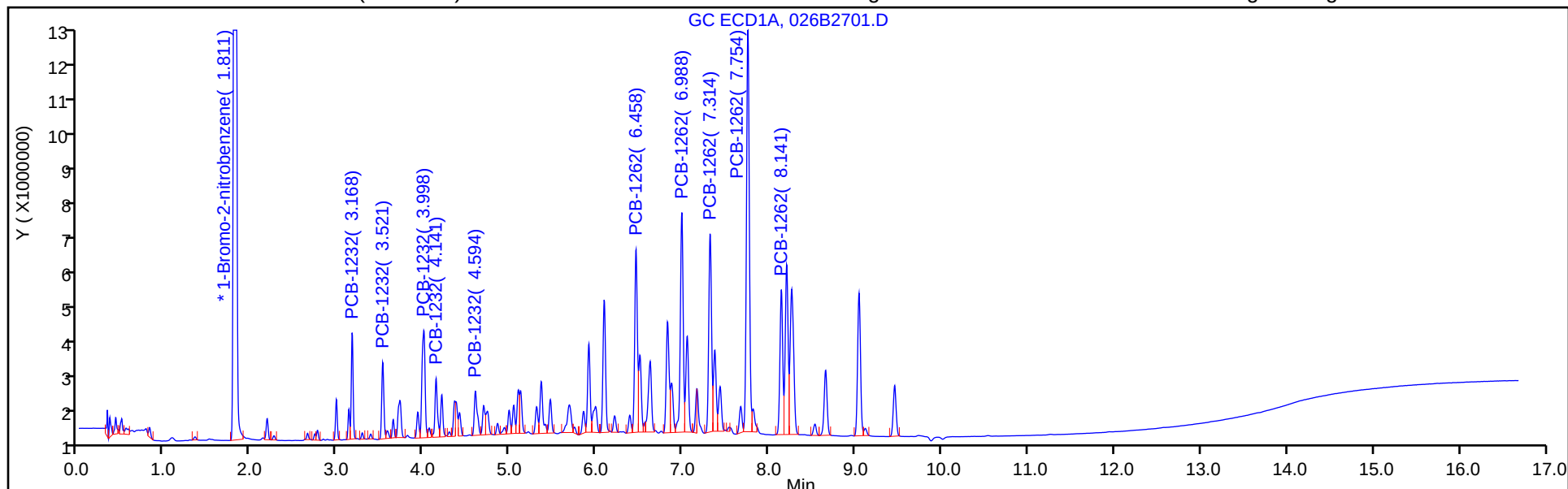
ALS Bottle#: 26

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

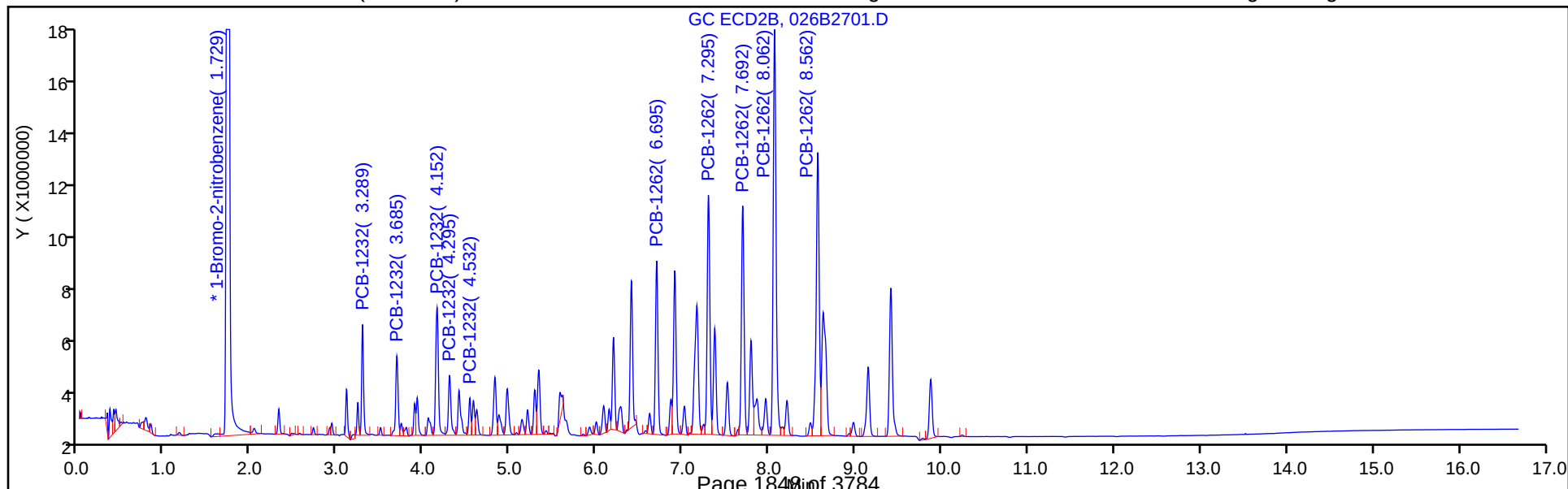
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\026B2701.D

Injection Date: 21-May-2019 21:19:18

Instrument ID: SGC_P3

Lims ID: STD3

Client ID:

Operator ID: TEM

ALS Bottle#:

26

Worklist Smp#:

26

Injection Vol: 1.0 ul

Dil. Factor:

1.0000

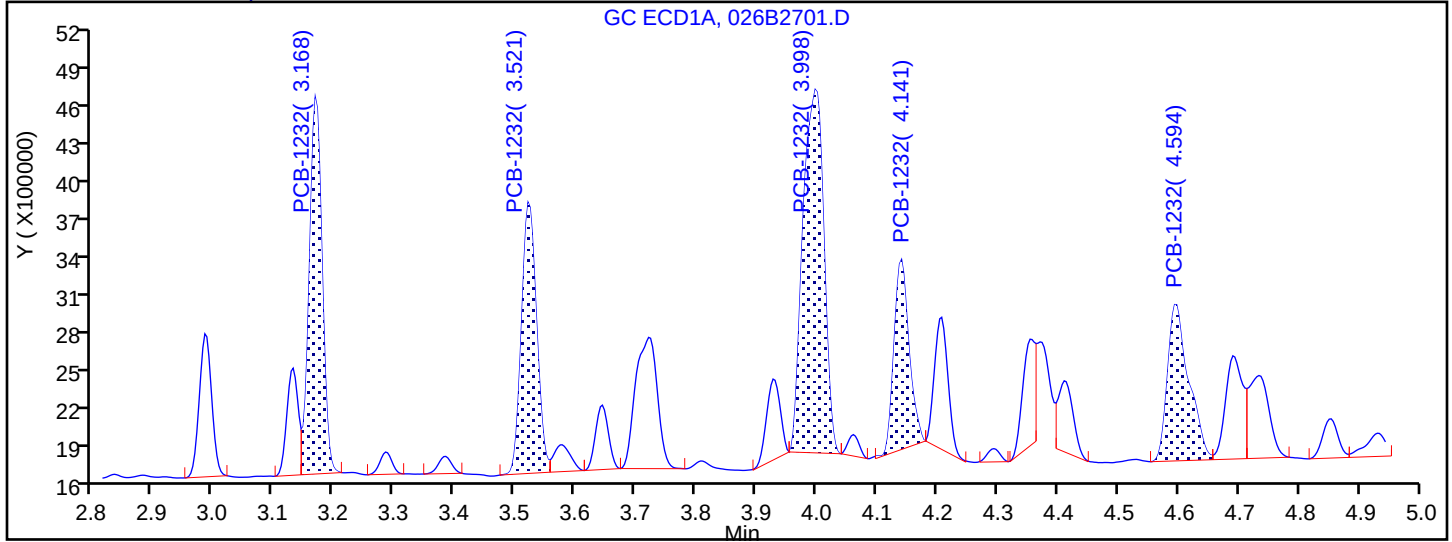
Method: PCB_P3

Limit Group:

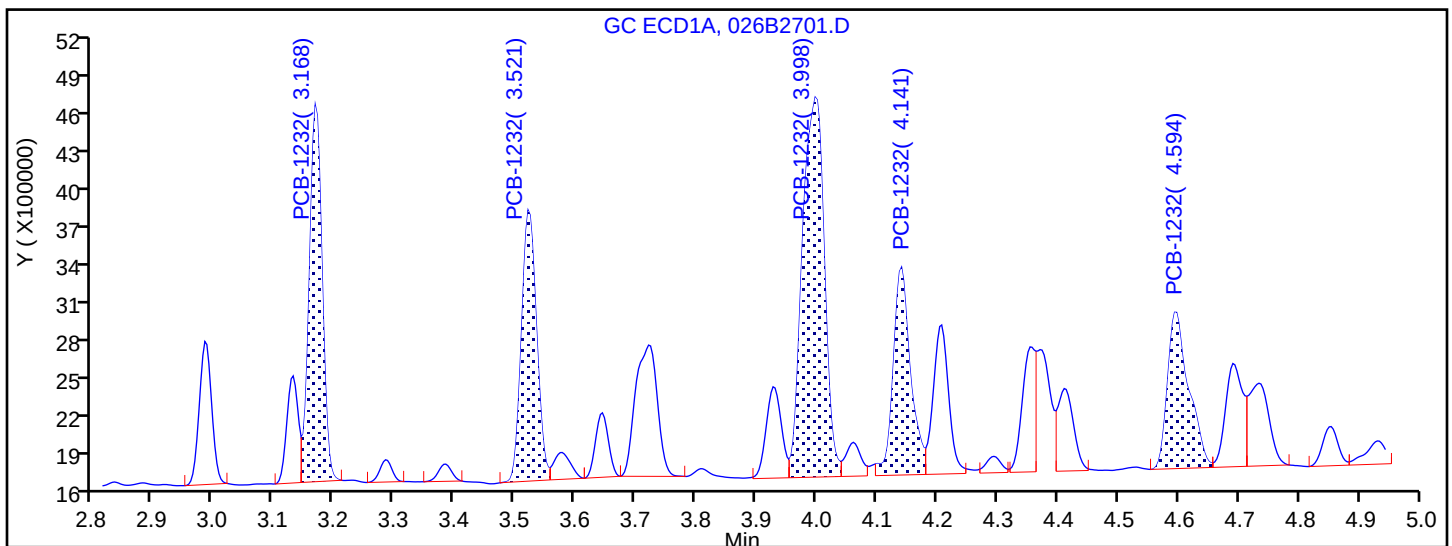
GCSV - 8082 - IS

Column: CLP1 Pesticides Column 1 (0.32 mm) Detector

GC ECD1A

7 PCB-1232, CAS: 11141-16-5**Processing Integration Results**

3.168	Response = 4319414
3.521	Response = 3654259
3.998	Response = 6782124
4.141	Response = 2553127
4.594	Response = 2958346

**Manual Integration Results**

3.168	Response = 4319414	
3.521	Response = 3654259	
3.998	Response = 7452336	M
4.141	Response = 3235835	M
4.594	Response = 2958346	

Reviewer: mooret, 22-May-2019 20:06:48

Audit Action: Assigned New Baseline

Audit Reason: Baseline Smoothing
Page 1849 of 3784

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\027B2801.D
 Lims ID: STD4
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 21-May-2019 21:41:13 ALS Bottle#: 27 Worklist Smp#: 27
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD4
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub4
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:32 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:58:57

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.810	1.810	0.000	105719367	100.0	100.0
2	1.728	1.728	0.000	133994243	100.0	100.0

RPD = 0.00

7 PCB-1232

M

1	3.167	3.167	0.000	10122038	250.0	246.9
1	3.524	3.520	0.004	8446503	250.0	242.5
1	3.997	3.997	0.000	17348806	250.0	243.3
1	4.140	4.140	0.000	7447674	250.0	249.0
1	4.594	4.597	-0.003	7064476	250.0	248.7

Average of Peak Amounts =

246.1

2	3.288	3.288	0.000	14606951	250.0	237.8
2	3.685	3.685	0.000	12868364	250.0	237.7
2	4.151	4.151	0.000	24575975	250.0	238.8
2	4.295	4.295	0.000	10874676	250.0	238.6
2	4.531	4.531	0.000	5335500	250.0	239.4

Average of Peak Amounts =

238.5

RPD = 3.14

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\027B2801.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

5 PCB-1262

1	6.457	6.457	0.000	26898069	250.0	253.4	
1	6.987	6.987	0.000	33212815	250.0	252.1	
1	7.317	7.317	0.000	29308661	250.0	246.8	
1	7.754	7.754	0.000	62307398	250.0	249.4	
1	8.140	8.140	0.000	21069211	250.0	246.8	

Average of Peak Amounts = 249.7

2	6.695	6.695	0.000	31461171	250.0	247.2	
2	7.298	7.295	0.003	45537134	250.0	245.5	
2	7.691	7.691	0.000	43464188	250.0	247.2	
2	8.061	8.061	0.000	82765689	250.0	247.8	
2	8.561	8.565	-0.004	61527138	250.0	244.4	

Average of Peak Amounts = 246.4

RPD = 1.31

S 8 Polychlorinated biphenyls, Total

1	495.8	
2	484.9	

RPD = 2.22

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_3262_L7_00018

Amount Added: 0.25

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:32

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\027B2801.D

Injection Date: 21-May-2019 21:41:13

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD4

Worklist Smp#: 27

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

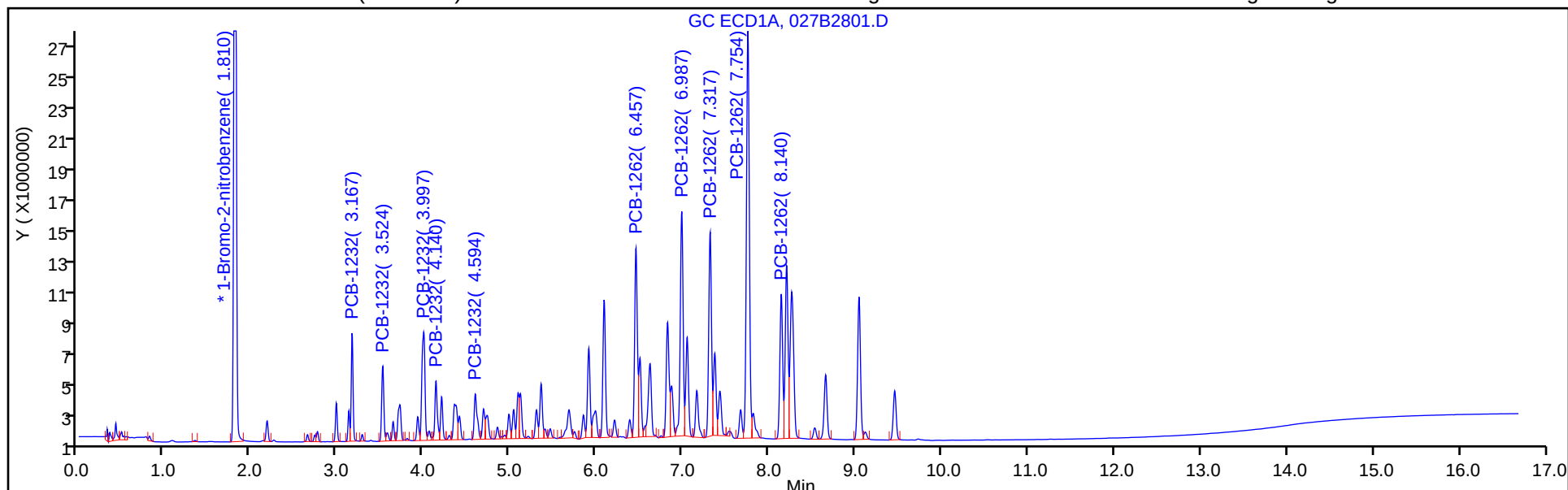
ALS Bottle#: 27

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

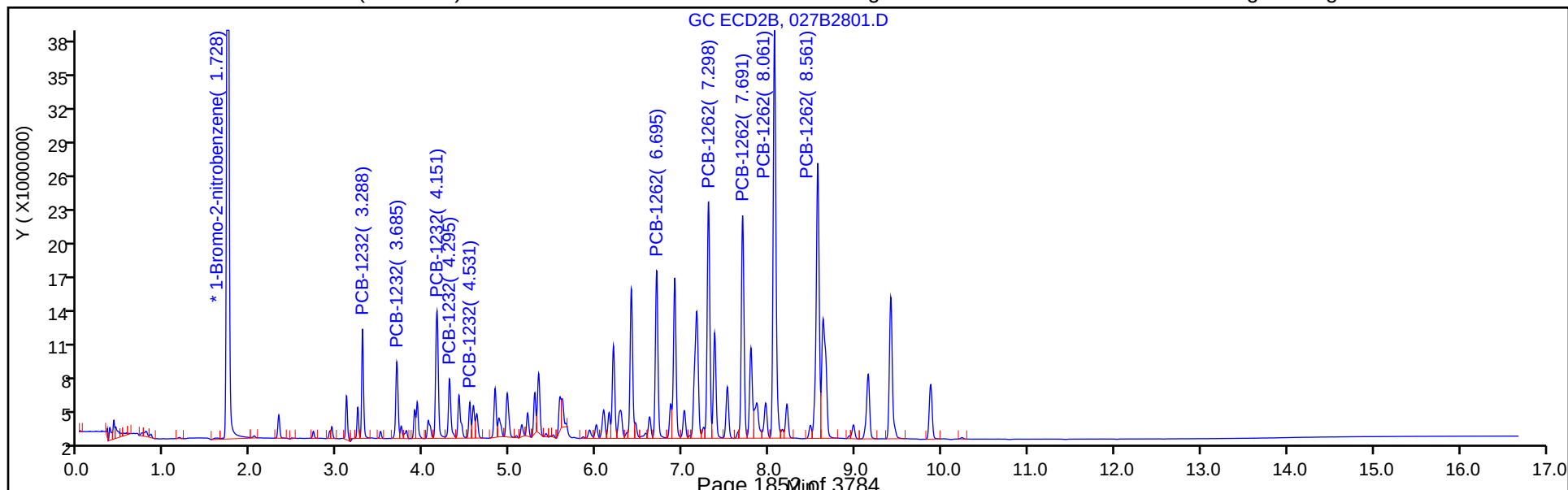
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\028B2901.D
 Lims ID: STD5
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 21-May-2019 22:03:07 ALS Bottle#: 28 Worklist Smp#: 28
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD5
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub4
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:31 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:56:57

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

* 17 1-Bromo-2-nitrobenzene

1	1.810	1.810	0.000	110118299	100.0	100.0	
2	1.728	1.728	0.000	137530059	100.0	100.0	

RPD = 0.00

7 PCB-1232

M

1	3.167	3.167	0.000	18222917	500.0	426.8	
1	3.520	3.520	0.000	15662127	500.0	431.7	
1	3.997	3.997	0.000	32744986	500.0	440.8	
1	4.140	4.140	0.000	13840273	500.0	444.2	
1	4.597	4.597	0.000	13214443	500.0	446.7	

Average of Peak Amounts =

438.0

2	3.288	3.288	0.000	26574003	500.0	421.5	
2	3.685	3.685	0.000	23764034	500.0	427.7	M
2	4.151	4.151	0.000	46199453	500.0	437.3	M
2	4.295	4.295	0.000	20340452	500.0	434.8	M
2	4.531	4.531	0.000	9926905	500.0	434.0	M

Average of Peak Amounts =

431.1

RPD = 1.60

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\028B2901.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

5 PCB-1262

1	6.457	6.457	0.000	50907067	500.0	460.5	
1	6.987	6.987	0.000	63024067	500.0	459.2	
1	7.317	7.317	0.000	55597771	500.0	449.5	
1	7.754	7.754	0.000	118832370	500.0	456.6	
1	8.140	8.140	0.000	40626356	500.0	457.0	

Average of Peak Amounts = 456.5

2	6.695	6.695	0.000	58086696	500.0	444.7	
2	7.295	7.295	0.000	84202854	500.0	442.3	
2	7.691	7.691	0.000	80644624	500.0	447.0	
2	8.061	8.061	0.000	153801559	500.0	448.7	
2	8.565	8.565	0.000	114415564	500.0	442.8	

Average of Peak Amounts = 445.1

RPD = 2.54

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_3262_L7_00018

Amount Added: 0.50

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:31

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\028B2901.D

Injection Date: 21-May-2019 22:03:07

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD5

Worklist Smp#: 28

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

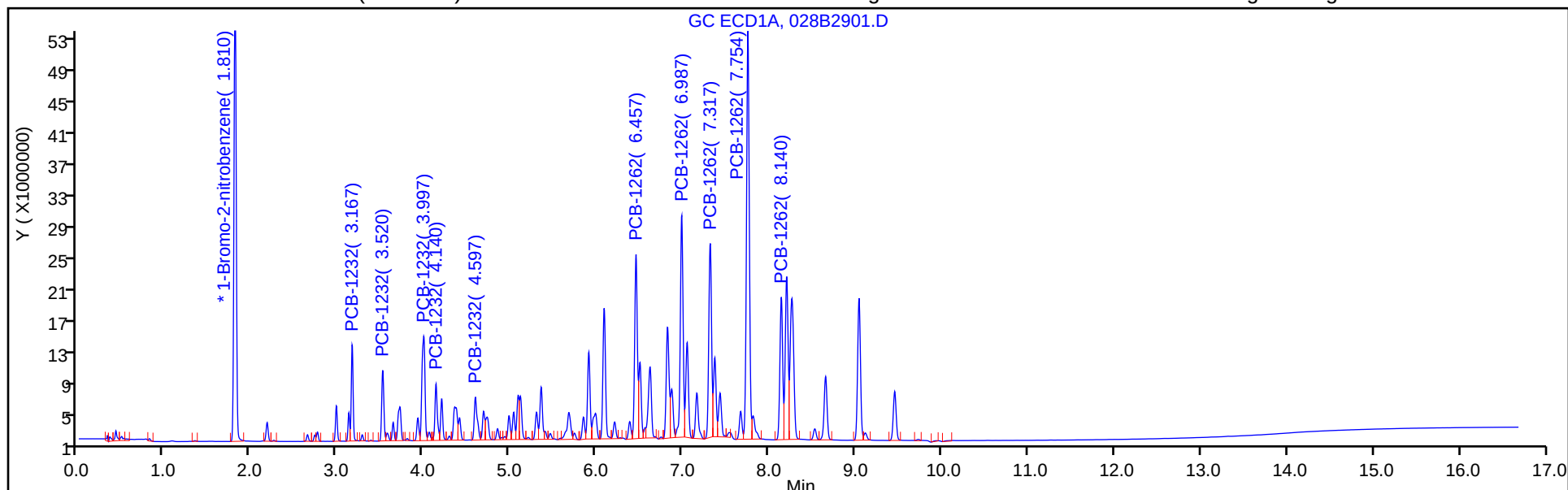
ALS Bottle#: 28

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

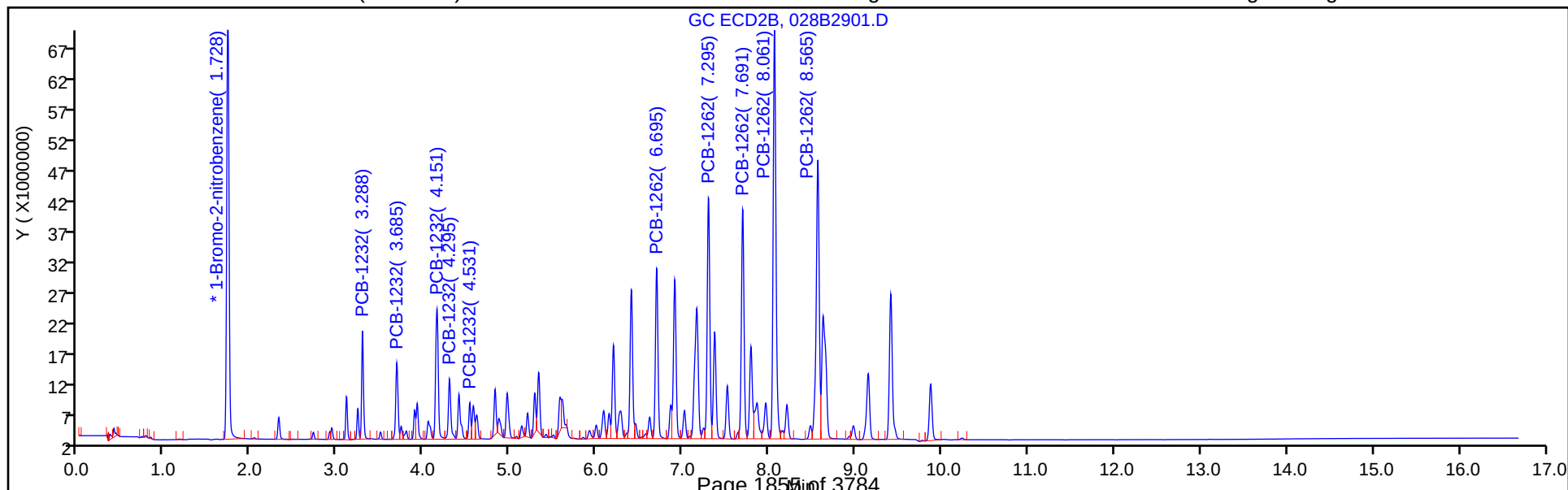
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\029B3001.D
 Lims ID: STD6
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 21-May-2019 22:25:00 ALS Bottle#: 29 Worklist Smp#: 29
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD6
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub4
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:29 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 20:01:17

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.811	0.002	112898808	100.0	100.0
2	1.727	1.729	-0.002	142924478	100.0	100.0

RPD = 0.00

7 PCB-1232

1	3.166	3.167	-0.001	26316394	750.0	601.1
1	3.523	3.520	0.003	21970911	750.0	590.6
1	3.996	3.997	-0.001	46214458	750.0	606.8
1	4.139	4.140	-0.001	19515808	750.0	610.9
1	4.593	4.597	-0.004	18733869	750.0	617.7

Average of Peak Amounts = 605.4

2	3.287	3.288	-0.001	37059003	750.0	565.7
2	3.684	3.685	-0.001	32943814	750.0	570.5
2	4.150	4.151	-0.001	64520321	750.0	587.6
2	4.297	4.295	0.002	28314021	750.0	582.4
2	4.530	4.531	-0.001	13559631	750.0	570.5

Average of Peak Amounts = 575.3

RPD = 5.10

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\029B3001.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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5 PCB-1262

1	6.456	6.457	-0.001	72445326	750.0	639.1	
1	6.986	6.987	-0.001	89103738	750.0	633.2	
1	7.316	7.317	-0.001	80318898	750.0	633.4	
1	7.753	7.754	-0.001	169090141	750.0	633.7	
1	8.139	8.140	-0.001	57753672	750.0	633.6	

Average of Peak Amounts = 634.6

2	6.694	6.695	-0.001	81271097	750.0	598.7	
2	7.297	7.295	0.002	118210290	750.0	597.5	
2	7.694	7.691	0.003	113444356	750.0	605.0	
2	8.060	8.061	-0.001	215380019	750.0	604.6	
2	8.564	8.565	-0.001	160760071	750.0	598.7	

Average of Peak Amounts = 600.9

RPD = 5.46

S 8 Polychlorinated biphenyls, Total

1	1240.0
2	1176.2

RPD = 5.28

Reagents:

AR_3262_L7_00018

Amount Added: 0.75

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:29

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\029B3001.D

Injection Date: 21-May-2019 22:25:00

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD6

Worklist Smp#: 29

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

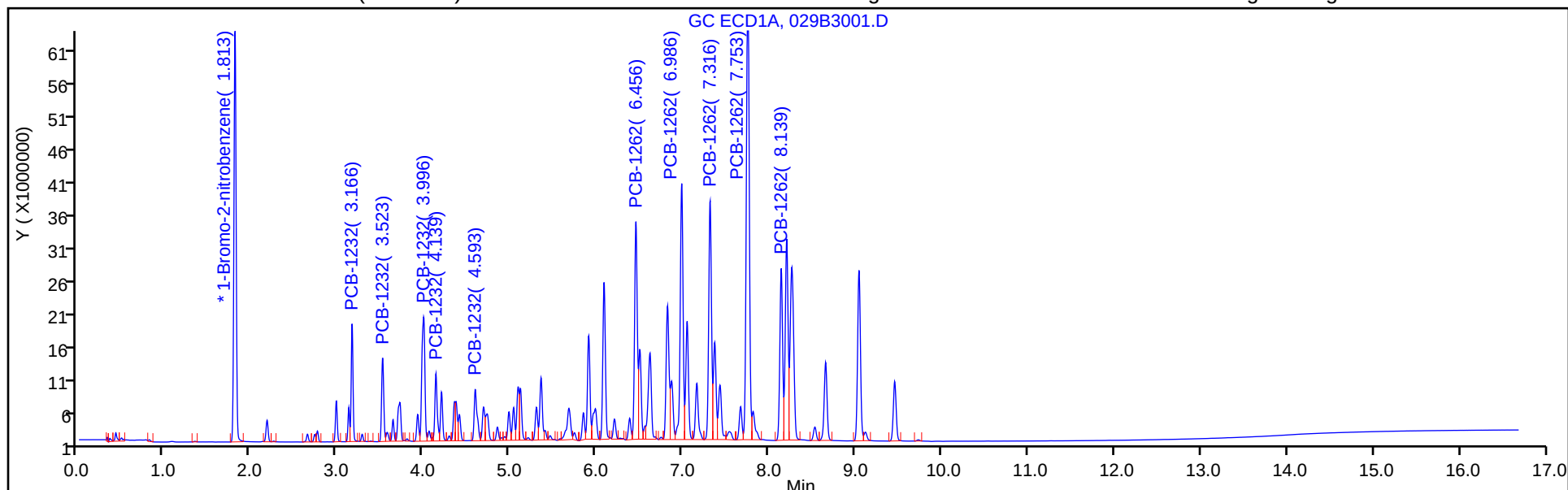
ALS Bottle#: 29

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

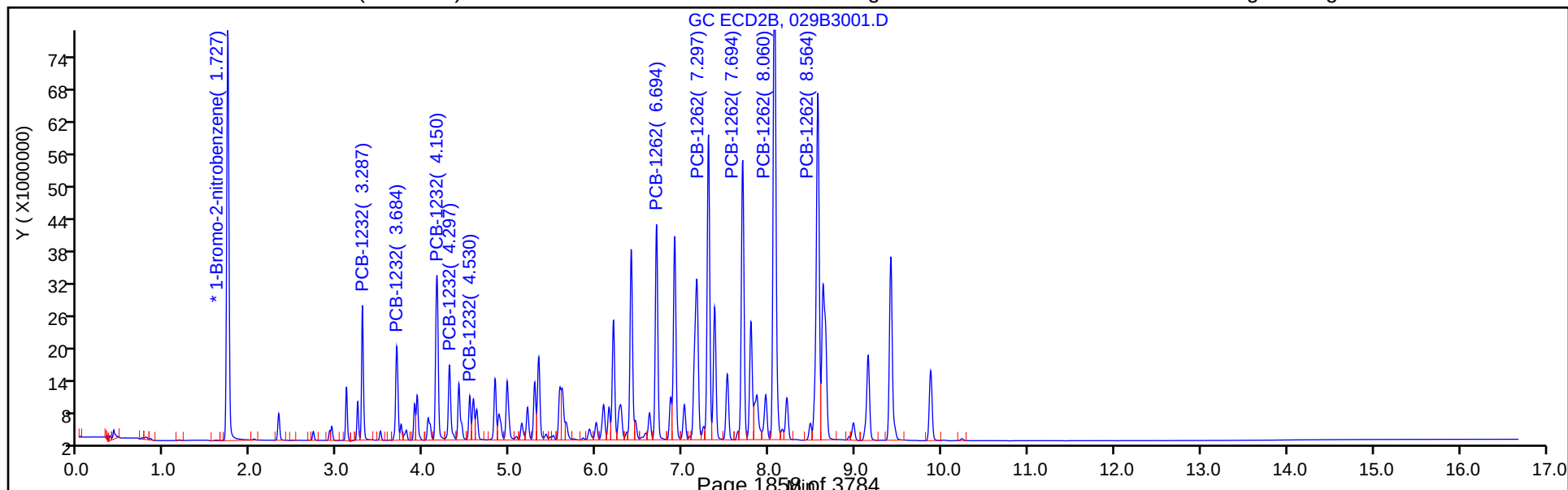
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\030B3101.D
 Lims ID: STD7
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 21-May-2019 22:46:51 ALS Bottle#: 30 Worklist Smp#: 30
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD7
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub4
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:28 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:56:18

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.814	1.811	0.003	111940685	100.0	100.0
2	1.728	1.729	-0.001	142176749	100.0	100.0

RPD = 0.00

7 PCB-1232

M

1	3.167	3.167	0.000	34844691	1000.0	802.8
1	3.520	3.520	0.000	28572840	1000.0	774.7
1	3.997	3.997	0.000	60880942	1000.0	806.2
1	4.140	4.140	0.000	25790360	1000.0	814.2
1	4.594	4.597	-0.003	24662845	1000.0	820.1

Average of Peak Amounts =

803.6

2	3.288	3.288	0.000	48888887	1000.0	750.2	M
2	3.685	3.685	0.000	43222049	1000.0	752.4	M
2	4.151	4.151	0.000	84981310	1000.0	778.1	M
2	4.295	4.295	0.000	37371055	1000.0	772.7	M
2	4.531	4.531	0.000	18001981	1000.0	761.4	M

Average of Peak Amounts =

762.9

RPD = 5.19

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\030B3101.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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5 PCB-1262

1	6.457	6.457	0.000	96233359	1000.0	856.3	
1	6.987	6.987	0.000	121606232	1000.0	871.6	
1	7.317	7.317	0.000	106784125	1000.0	849.3	
1	7.754	7.754	0.000	222444317	1000.0	840.8	
1	8.140	8.140	0.000	77407121	1000.0	856.5	

Average of Peak Amounts = 854.9

2	6.695	6.695	0.000	107013239	1000.0	792.5	
2	7.295	7.295	0.000	154655990	1000.0	785.8	
2	7.691	7.691	0.000	147802355	1000.0	792.4	
2	8.061	8.061	0.000	281866190	1000.0	795.4	
2	8.565	8.565	0.000	211121165	1000.0	790.4	

Average of Peak Amounts = 791.3

RPD = 7.72

S 8 Polychlorinated biphenyls, Total

1	1658.5
2	1554.2

RPD = 6.49

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_3262_L7_00018

Amount Added: 1.00

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:28

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\030B3101.D

Injection Date: 21-May-2019 22:46:51

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD7

Worklist Smp#: 30

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

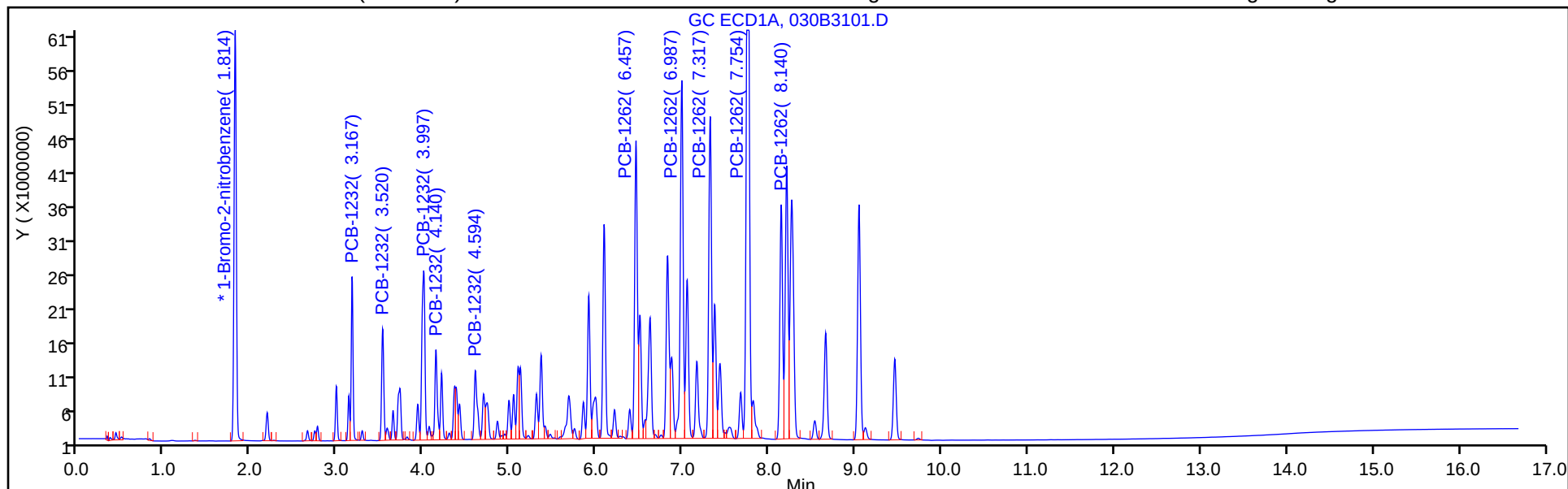
ALS Bottle#: 30

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

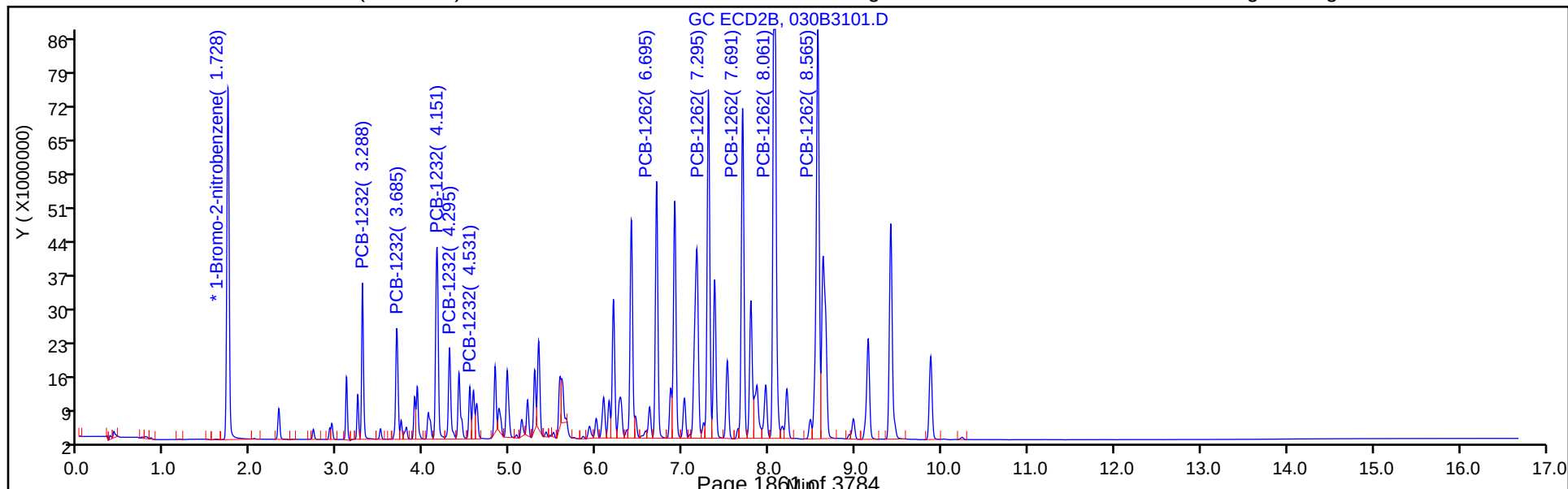
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 459083

SDG No.: _____

Instrument ID: SGC_P3 GC Column: CLP2 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/21/2019 20:35 Calibration End Date: 05/21/2019 22:46 Calibration ID: 36518

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-459083/24	024B2501.D
Level 2	STD2 280-459083/25	025B2601.D
Level 3	STD3 280-459083/26	026B2701.D
Level 4	STD4 280-459083/27	027B2801.D
Level 5	STD5 280-459083/28	028B2901.D
Level 6	STD6 280-459083/29	029B3001.D
Level 7	STD7 280-459083/30	030B3101.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7															
PCB-1232 Peak 1	0.0589 0.0346	0.0531 +++++	0.0462	0.0436	0.0386	Ave		0.0458				19.7		20.0			
PCB-1232 Peak 2	0.0501 0.0307	0.0468 +++++	0.0419	0.0384	0.0346	Ave		0.0404				18.1		20.0			
PCB-1232 Peak 3	0.0989 0.0602	0.0860 +++++	0.0753	0.0734	0.0672	Ave		0.0768				18.0		20.0			
PCB-1232 Peak 4	0.0436 0.0264	0.0384 +++++	0.0337	0.0325	0.0296	Ave		0.0340				18.2		20.0			
PCB-1232 Peak 5	0.0208 0.0126	0.0193 +++++	0.0167	0.0159	0.0144	Ave		0.0166				18.2		20.0			
PCB-1262 Peak 1	0.1147 0.0758	0.1071 +++++	0.0938	0.0939	0.0845	Ave		0.0950				15.0		20.0			
PCB-1262 Peak 2	0.1710 0.1103	0.1526 +++++	0.1383	0.1359	0.1225	Ave		0.1384				15.5		20.0			
PCB-1262 Peak 3	0.1588 0.1058	0.1433 +++++	0.1322	0.1297	0.1173	Ave		0.1312				14.3		20.0			
PCB-1262 Peak 4	0.2972 0.2009	0.2748 +++++	0.2519	0.2471	0.2237	Ave		0.2493				13.8		20.0			
PCB-1262 Peak 5	0.2285 0.1500	0.2109 +++++	0.1879	0.1837	0.1664	Ave		0.1879				15.2		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 459083

SDG No.: _____

Instrument ID: SGC_P3 GC Column: CLP2 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/21/2019 20:35 Calibration End Date: 05/21/2019 22:46 Calibration ID: 36518

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-459083/24	024B2501.D
Level 2	STD2 280-459083/25	025B2601.D
Level 3	STD3 280-459083/26	026B2701.D
Level 4	STD4 280-459083/27	027B2801.D
Level 5	STD5 280-459083/28	028B2901.D
Level 6	STD6 280-459083/29	029B3001.D
Level 7	STD7 280-459083/30	030B3101.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
PCB-1232 Peak 1	BNB	Ave	1979416 37059003	3502968 +++++	6481259	14606951	26574003	25.0 750	50.0 +++++	100	250	500
PCB-1232 Peak 2	BNB	Ave	1682974 32943814	3082115 +++++	5880539	12868364	23764034	25.0 750	50.0 +++++	100	250	500
PCB-1232 Peak 3	BNB	Ave	3324936 64520321	5666975 +++++	10570120	24575975	46199453	25.0 750	50.0 +++++	100	250	500
PCB-1232 Peak 4	BNB	Ave	1465034 28314021	2531100 +++++	4725166	10874676	20340452	25.0 750	50.0 +++++	100	250	500
PCB-1232 Peak 5	BNB	Ave	700573 13559631	1269572 +++++	2339669	5335500	9926905	25.0 750	50.0 +++++	100	250	500
PCB-1262 Peak 1	BNB	Ave	3856572 81271097	7060576 +++++	13165519	31461171	58086696	25.0 750	50.0 +++++	100	250	500
PCB-1262 Peak 2	BNB	Ave	5746701 118210290	10060569 +++++	19416621	45537134	84202854	25.0 750	50.0 +++++	100	250	500
PCB-1262 Peak 3	BNB	Ave	5337998 113444356	9443546 +++++	18563119	43464188	80644624	25.0 750	50.0 +++++	100	250	500
PCB-1262 Peak 4	BNB	Ave	9990136 215380019	18110448 +++++	35366203	82765689	153801559	25.0 750	50.0 +++++	100	250	500
PCB-1262 Peak 5	BNB	Ave	7679067 160760071	13899683 +++++	26378723	61527138	114415564	25.0 750	50.0 +++++	100	250	500

Curve Type Legend:

Ave = Average ISTD

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\024B2501.D
 Lims ID: STD1 3262
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 21-May-2019 20:35:32 ALS Bottle#: 24 Worklist Smp#: 24
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD1
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub4
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:37 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:57:45

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

* 17 1-Bromo-2-nitrobenzene

1	1.810	1.810	0.000	106956778	100.0	100.0
2	1.727	1.728	-0.001	134450423	100.0	100.0

RPD = 0.00

7 PCB-1232

M

1	3.166	3.167	-0.001	1271909	25.0	30.7
1	3.520	3.520	0.000	1115846	25.0	31.7
1	3.996	3.997	-0.001	2229341	25.0	30.9
1	4.140	4.140	0.000	864517	25.0	28.6
1	4.593	4.597	-0.004	847894	25.0	29.5

Average of Peak Amounts =

30.3

2	3.287	3.288	-0.001	1979416	25.0	32.1	M
2	3.684	3.685	-0.001	1682974	25.0	31.0	
2	4.151	4.151	0.000	3324936	25.0	32.2	
2	4.297	4.295	0.002	1465034	25.0	32.0	
2	4.531	4.531	0.000	700573	25.0	31.3	

Average of Peak Amounts =

31.7

RPD = 4.74

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\024B2501.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

5 PCB-1262

1	6.456	6.457	-0.001	3108703	25.0	28.9	
1	6.986	6.987	-0.001	3715460	25.0	27.9	
1	7.316	7.317	-0.001	3487695	25.0	29.0	
1	7.753	7.754	-0.001	7279088	25.0	28.8	
1	8.140	8.140	0.000	2486440	25.0	28.8	

Average of Peak Amounts = 28.7

2	6.694	6.695	-0.001	3856572	25.0	30.2	
2	7.297	7.295	0.002	5746701	25.0	30.9	
2	7.694	7.691	0.003	5337998	25.0	30.3	
2	8.061	8.061	0.000	9990136	25.0	29.8	
2	8.564	8.565	-0.001	7679067	25.0	30.4	

Average of Peak Amounts = 30.3

RPD = 5.50

S 8 Polychlorinated biphenyls, Total

1	58.9	
2	62.0	

RPD = 5.11

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_3262_L7_00018

Amount Added: 0.03

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:38

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\024B2501.D

Injection Date: 21-May-2019 20:35:32

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD1 3262

Worklist Smp#: 24

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

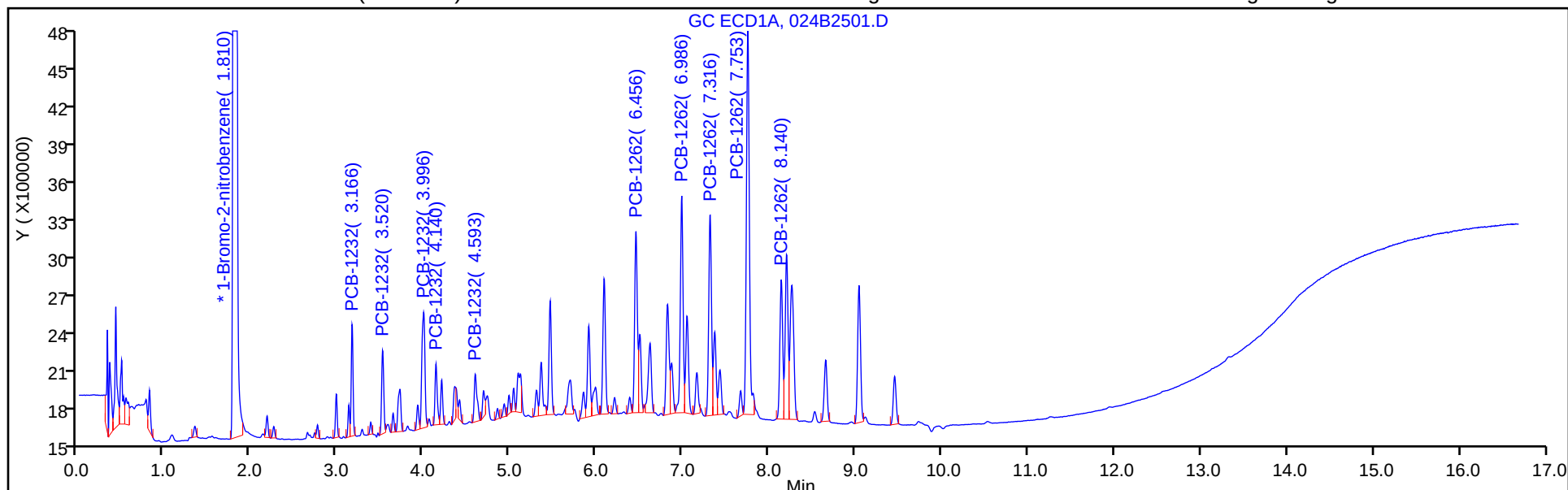
ALS Bottle#: 24

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

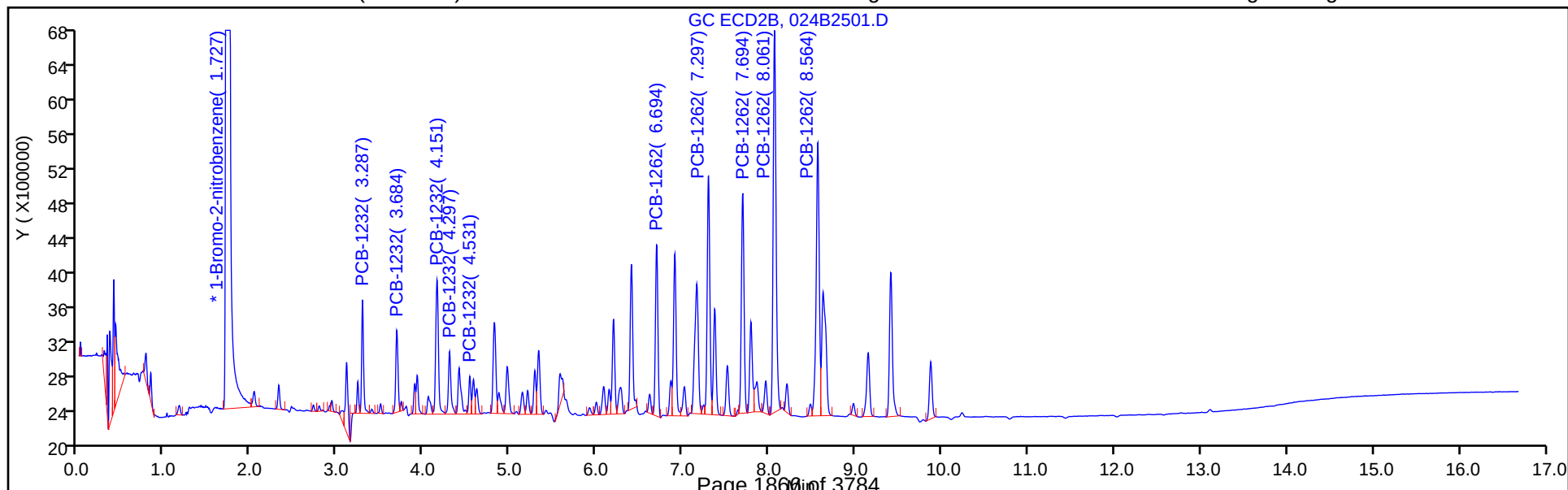
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\024B2501.D

Injection Date: 21-May-2019 20:35:32

Instrument ID: SGC_P3

Lims ID: STD1 3262

Client ID:

Operator ID: TEM

ALS Bottle#: 24

Worklist Smp#: 24

Injection Vol: 1.0 ul

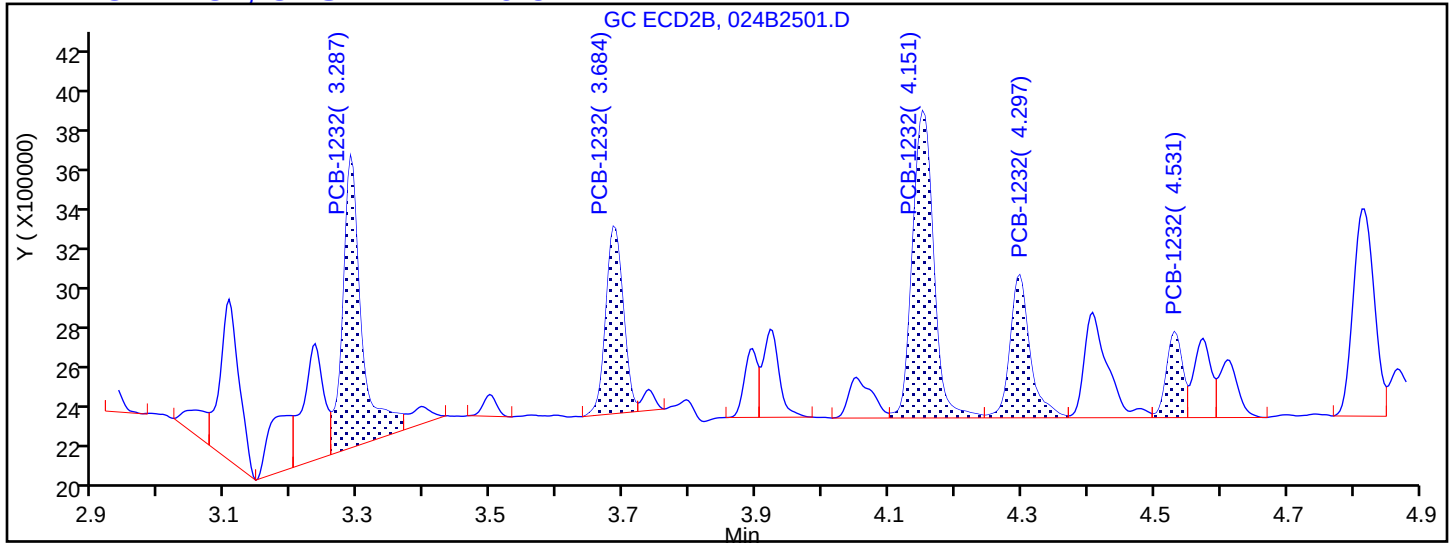
Dil. Factor: 1.0000

Method: PCB_P3

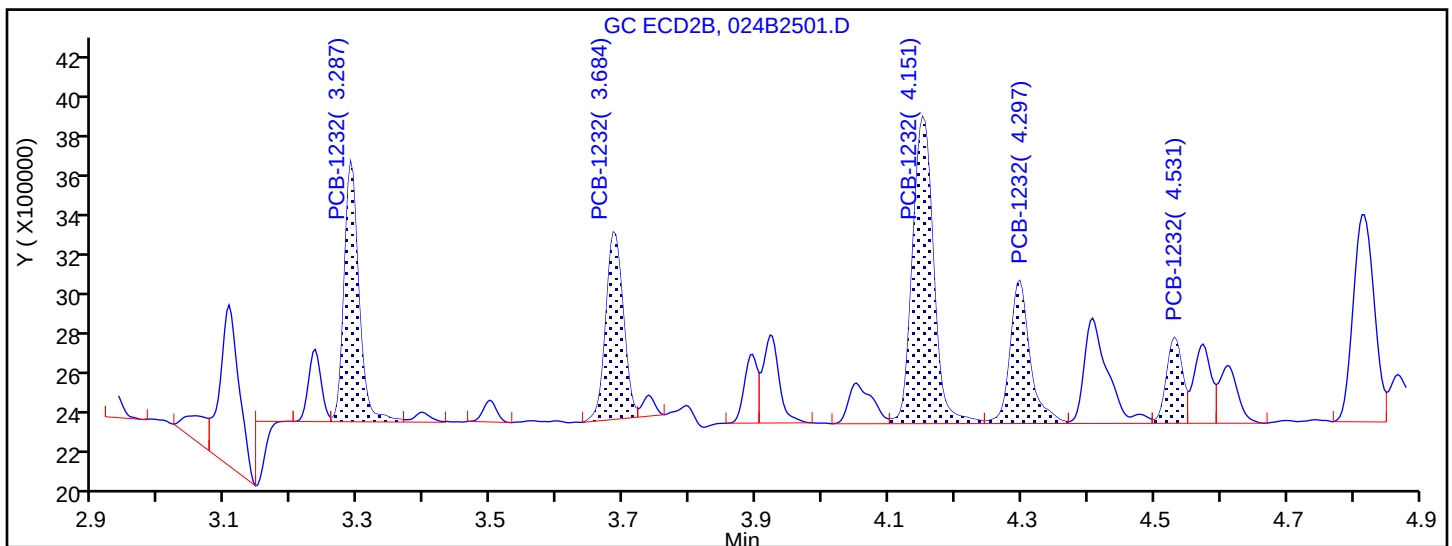
Limit Group: GCSV - 8082 - IS

Column: CLP2 Pesticides Column 2 (0.32 mm) Detector

GC ECD2B

7 PCB-1232, CAS: 11141-16-5**Processing Integration Results**

3.287	Response = 2831556
3.684	Response = 1682974
4.151	Response = 3324936
4.297	Response = 1465034
4.531	Response = 700573

**Manual Integration Results**

3.287	Response = 1979416
3.684	Response = 1682974
4.151	Response = 3324936
4.297	Response = 1465034
4.531	Response = 700573

M

Reviewer: mooret, 22-May-2019 19:57:42

Audit Action: Assigned New Baseline

Audit Reason: Baseline Smoothing
Page 1867 of 3784

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\025B2601.D
 Lims ID: STD2
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 21-May-2019 20:57:25 ALS Bottle#: 25 Worklist Smp#: 25
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD2
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub4
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:36 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:58:07

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.810	0.003	104762685	100.0	100.0
2	1.727	1.728	-0.001	131830501	100.0	100.0

RPD = 0.00

7 PCB-1232

M

1	3.169	3.167	0.002	2288489	50.0	56.3
1	3.523	3.520	0.003	1921229	50.0	55.7
1	3.999	3.997	0.002	3904035	50.0	55.2
1	4.139	4.140	-0.001	1671935	50.0	56.4
1	4.596	4.597	-0.001	1569887	50.0	55.8

Average of Peak Amounts = 55.9

2	3.287	3.288	-0.001	3502968	50.0	58.0
2	3.687	3.685	0.002	3082115	50.0	57.9
2	4.150	4.151	-0.001	5666975	50.0	56.0
2	4.297	4.295	0.002	2531100	50.0	56.4
2	4.530	4.531	-0.001	1269572	50.0	57.9

Average of Peak Amounts = 57.2

RPD = 2.38

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\025B2601.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

5 PCB-1262

1	6.456	6.457	-0.001	5722803	50.0	54.4	
1	6.989	6.987	0.002	7218230	50.0	55.3	
1	7.316	7.317	-0.001	6553791	50.0	55.7	
1	7.753	7.754	-0.001	13669637	50.0	55.2	
1	8.139	8.140	-0.001	4615411	50.0	54.6	

Average of Peak Amounts =

55.0

2	6.697	6.695	0.002	7060576	50.0	56.4	
2	7.297	7.295	0.002	10060569	50.0	55.1	
2	7.694	7.691	0.003	9443546	50.0	54.6	
2	8.060	8.061	-0.001	18110448	50.0	55.1	
2	8.564	8.565	-0.001	13899683	50.0	56.1	

Average of Peak Amounts =

55.5

RPD = 0.80

S 8 Polychlorinated biphenyls, Total

1	110.9
2	112.7

RPD = 1.60

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_3262_L7_00018

Amount Added: 0.05

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:36

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\025B2601.D

Injection Date: 21-May-2019 20:57:25

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD2

Worklist Smp#: 25

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

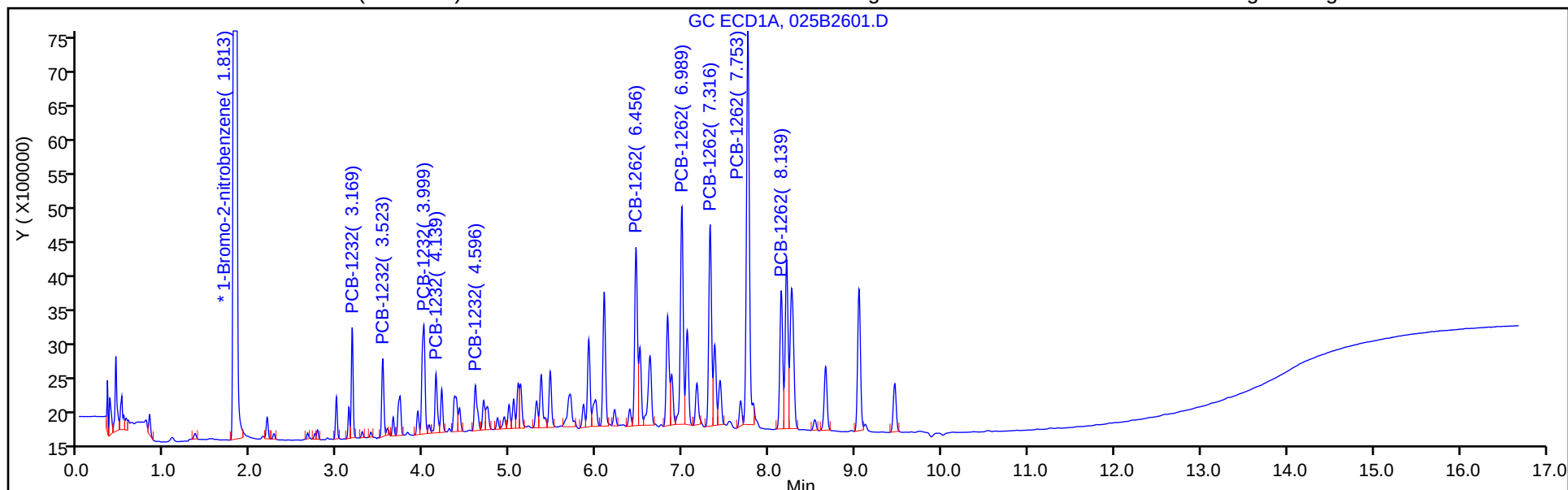
ALS Bottle#: 25

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

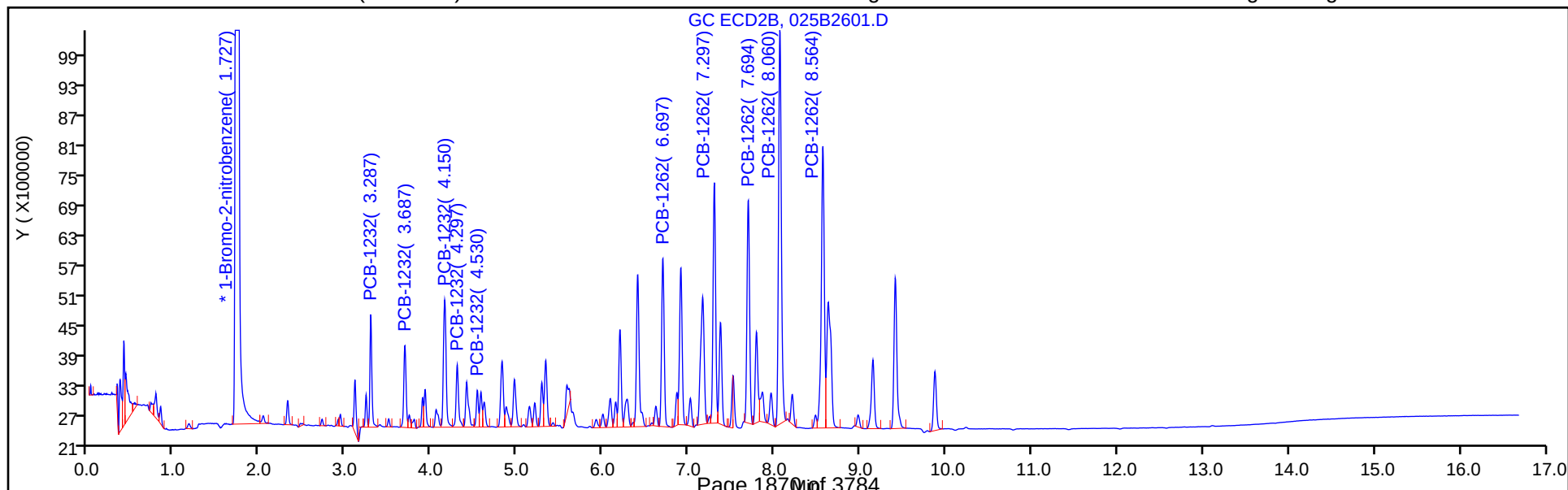
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\025B2601.D

Injection Date: 21-May-2019 20:57:25

Instrument ID: SGC_P3

Lims ID: STD2

Client ID:

Operator ID: TEM

ALS Bottle#: 25

Worklist Smp#: 25

Injection Vol: 1.0 ul

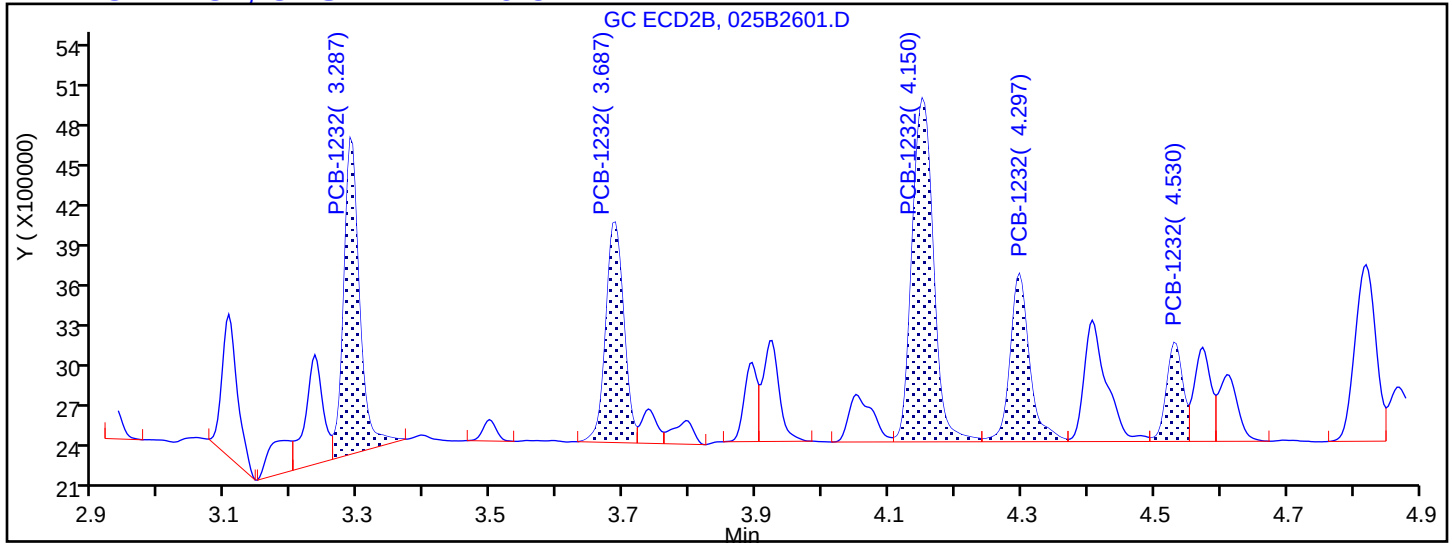
Dil. Factor: 1.0000

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

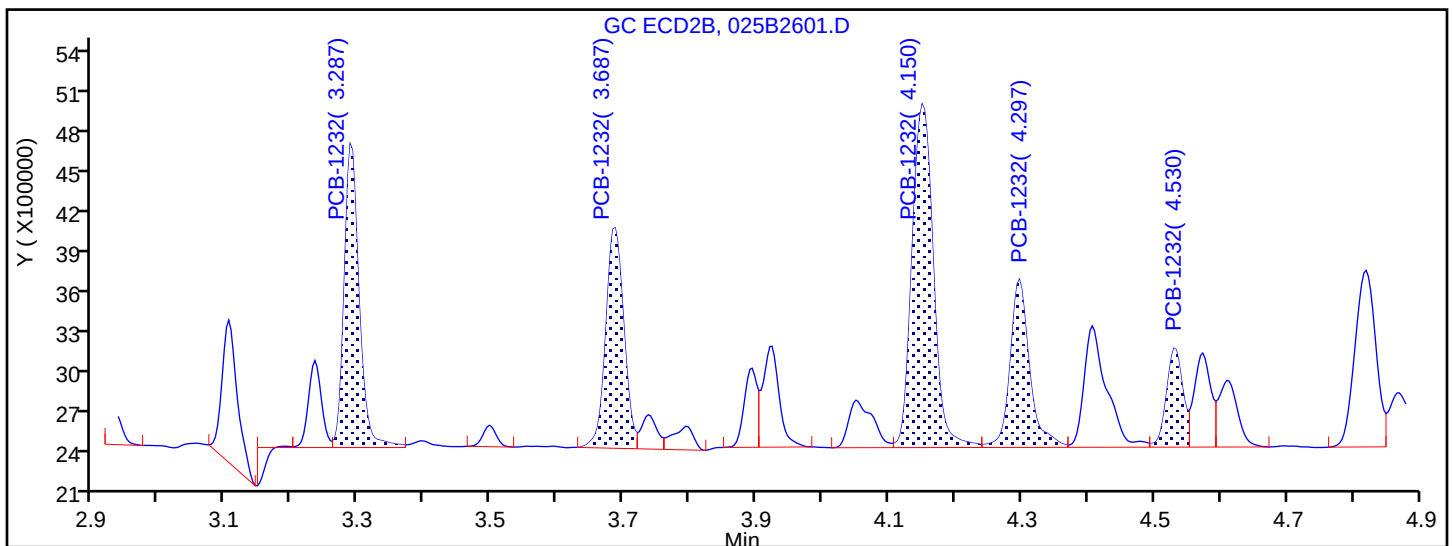
Column: CLP2 Pesticides Column 2 (0.32 mm) Detector

GC ECD2B

7 PCB-1232, CAS: 11141-16-5

Processing Integration Results

3.287	Response = 3865730
3.687	Response = 3082115
4.150	Response = 5666975
4.297	Response = 2531100
4.530	Response = 1269572



Manual Integration Results

3.287	Response = 3502968
3.687	Response = 3082115
4.150	Response = 5666975
4.297	Response = 2531100
4.530	Response = 1269572

M

Reviewer: mooret, 22-May-2019 19:58:05

Audit Action: Assigned New Baseline

Audit Reason: Baseline Smoothing
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Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\026B2701.D
 Lims ID: STD3
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 21-May-2019 21:19:18 ALS Bottle#: 26 Worklist Smp#: 26
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD3
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub4
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:34 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:58:30

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.811	1.810	0.001	110972951	100.0	100.0	
2	1.729	1.728	0.001	140392043	100.0	100.0	

RPD = 0.00

7 PCB-1232

M

1	3.168	3.167	0.001	4319414	100.0	100.4	
1	3.521	3.520	0.001	3654259	100.0	99.9	
1	3.998	3.997	0.001	7452336	100.0	99.5	M
1	4.141	4.140	0.001	3235835	100.0	103.1	M
1	4.594	4.597	-0.003	2958346	100.0	99.2	

Average of Peak Amounts =

100.4

2	3.289	3.288	0.001	6481259	100.0	100.7	M
2	3.685	3.685	0.000	5880539	100.0	103.7	
2	4.152	4.151	0.001	10570120	100.0	98.0	
2	4.295	4.295	0.000	4725166	100.0	98.9	
2	4.532	4.531	0.001	2339669	100.0	100.2	

Average of Peak Amounts =

100.3

RPD = 0.12

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\026B2701.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

5 PCB-1262

1	6.458	6.457	0.001	10775264	100.0	96.7	
1	6.988	6.987	0.001	13950693	100.0	100.9	
1	7.314	7.317	-0.003	12392698	100.0	99.4	
1	7.754	7.754	0.000	25927622	100.0	98.9	
1	8.141	8.140	0.001	9056467	100.0	101.1	

Average of Peak Amounts = 99.4

2	6.695	6.695	0.000	13165519	100.0	98.7	
2	7.295	7.295	0.000	19416621	100.0	99.9	
2	7.692	7.691	0.001	18563119	100.0	100.8	
2	8.062	8.061	0.001	35366203	100.0	101.1	
2	8.562	8.565	-0.003	26378723	100.0	100.0	

Average of Peak Amounts = 100.1

RPD = 0.72

S 8 Polychlorinated biphenyls, Total

1						199.8	
2						200.4	

RPD = 0.30

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_3262_L7_00018

Amount Added: 0.10

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:34

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\026B2701.D

Injection Date: 21-May-2019 21:19:18

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD3

Worklist Smp#: 26

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

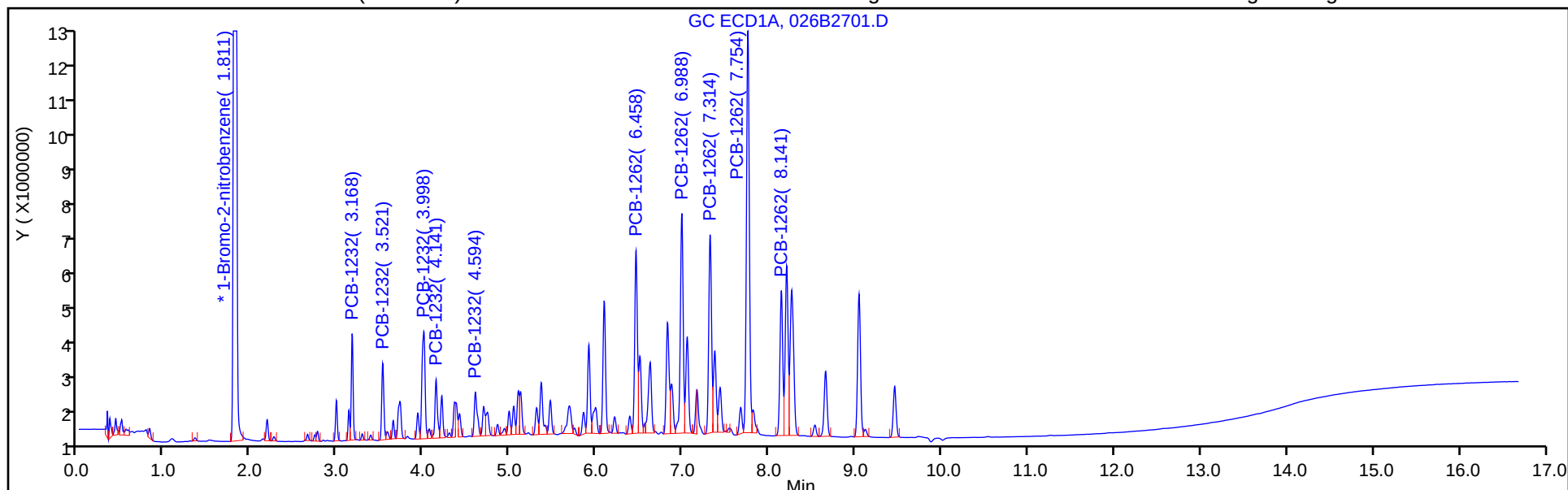
ALS Bottle#: 26

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

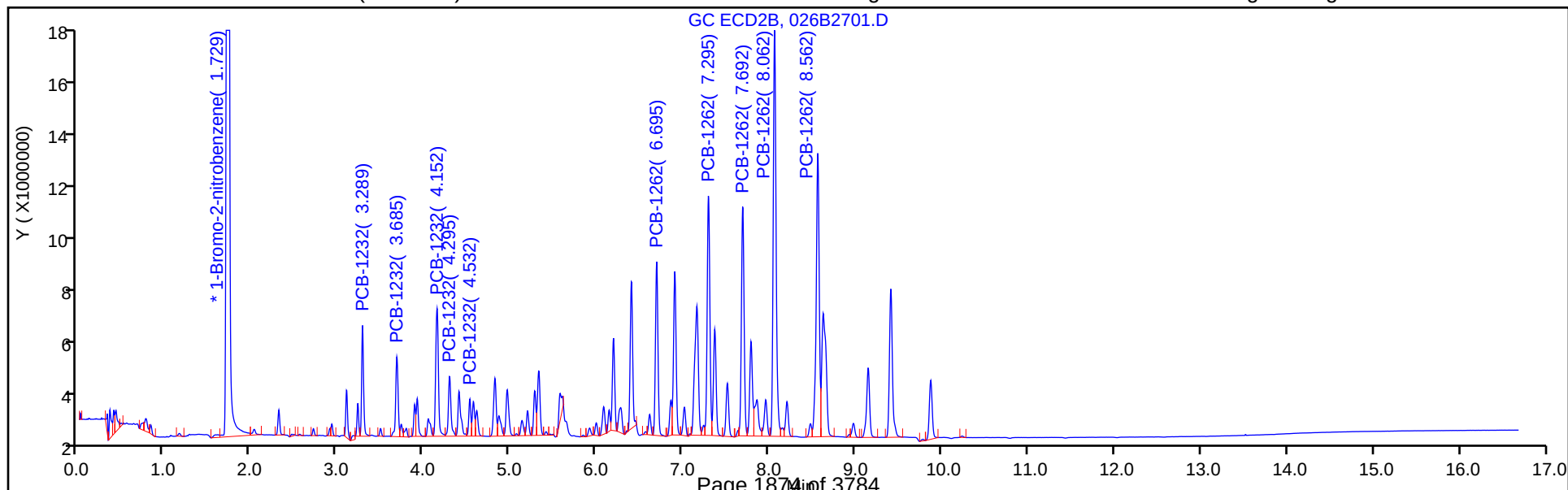
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\026B2701.D

Injection Date: 21-May-2019 21:19:18

Instrument ID: SGC_P3

Lims ID: STD3

Client ID:

Operator ID: TEM

ALS Bottle#: 26

Worklist Smp#: 26

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

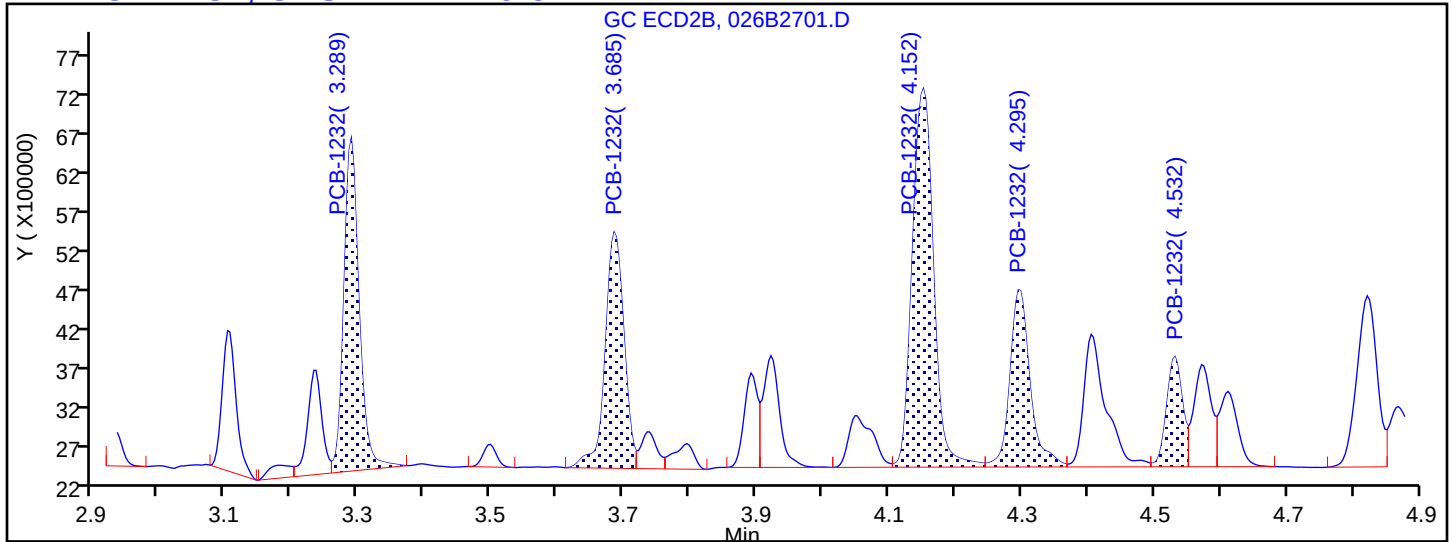
Method: PCB_P3

Limit Group: GCSV - 8082 - IS

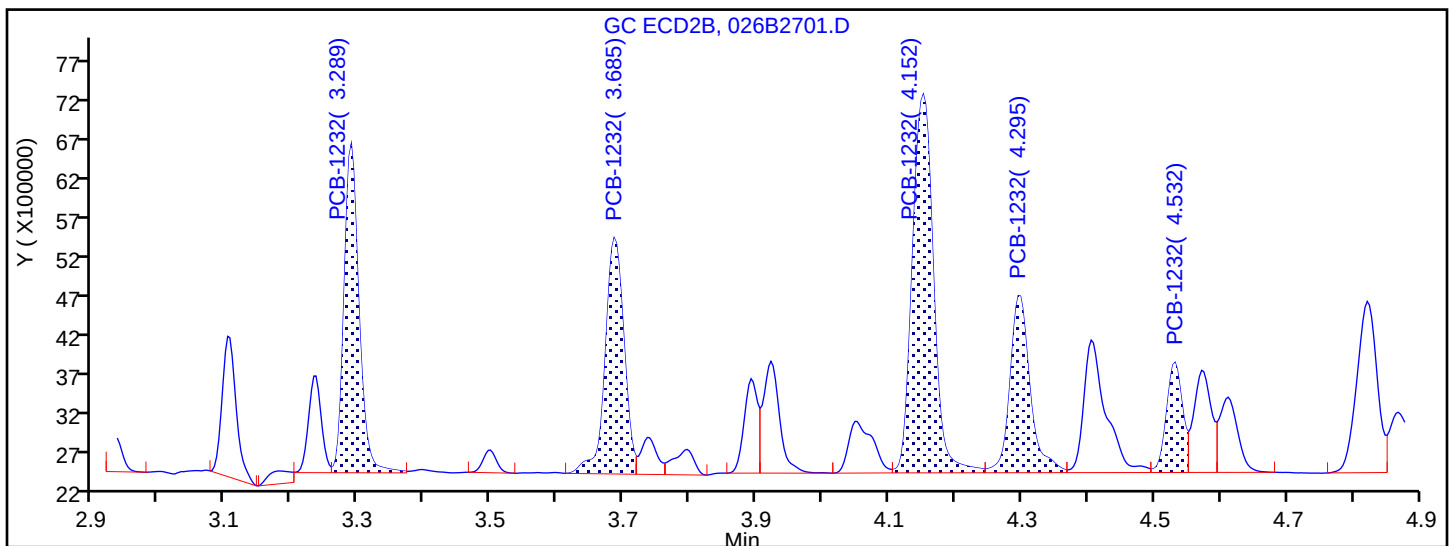
Column: CLP2 Pesticides Column 2 (0.32 mm)

Detector

GC ECD2B

7 PCB-1232, CAS: 11141-16-5**Processing Integration Results**

3.289	Response = 6674250
3.685	Response = 5880539
4.152	Response = 10570120
4.295	Response = 4725166
4.532	Response = 2339669

**Manual Integration Results**

3.289	Response = 6481259
3.685	Response = 5880539
4.152	Response = 10570120
4.295	Response = 4725166
4.532	Response = 2339669

M

Reviewer: mooret, 22-May-2019 19:58:27

Audit Action: Assigned New Baseline

Audit Reason: Baseline Smoothing
Page 1875 of 3784

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\027B2801.D
 Lims ID: STD4
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 21-May-2019 21:41:13 ALS Bottle#: 27 Worklist Smp#: 27
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD4
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub4
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:32 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:58:57

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.810	1.810	0.000	105719367	100.0	100.0
2	1.728	1.728	0.000	133994243	100.0	100.0

RPD = 0.00

7 PCB-1232

M

1	3.167	3.167	0.000	10122038	250.0	246.9
1	3.524	3.520	0.004	8446503	250.0	242.5
1	3.997	3.997	0.000	17348806	250.0	243.3
1	4.140	4.140	0.000	7447674	250.0	249.0
1	4.594	4.597	-0.003	7064476	250.0	248.7

Average of Peak Amounts =

246.1

2	3.288	3.288	0.000	14606951	250.0	237.8
2	3.685	3.685	0.000	12868364	250.0	237.7
2	4.151	4.151	0.000	24575975	250.0	238.8
2	4.295	4.295	0.000	10874676	250.0	238.6
2	4.531	4.531	0.000	5335500	250.0	239.4

Average of Peak Amounts =

238.5

RPD = 3.14

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\027B2801.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

5 PCB-1262

1	6.457	6.457	0.000	26898069	250.0	253.4	
1	6.987	6.987	0.000	33212815	250.0	252.1	
1	7.317	7.317	0.000	29308661	250.0	246.8	
1	7.754	7.754	0.000	62307398	250.0	249.4	
1	8.140	8.140	0.000	21069211	250.0	246.8	

Average of Peak Amounts = 249.7

2	6.695	6.695	0.000	31461171	250.0	247.2	
2	7.298	7.295	0.003	45537134	250.0	245.5	
2	7.691	7.691	0.000	43464188	250.0	247.2	
2	8.061	8.061	0.000	82765689	250.0	247.8	
2	8.561	8.565	-0.004	61527138	250.0	244.4	

Average of Peak Amounts = 246.4

RPD = 1.31

S 8 Polychlorinated biphenyls, Total

1	495.8	
2	484.9	

RPD = 2.22

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_3262_L7_00018

Amount Added: 0.25

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:33

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\027B2801.D

Injection Date: 21-May-2019 21:41:13

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD4

Worklist Smp#: 27

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

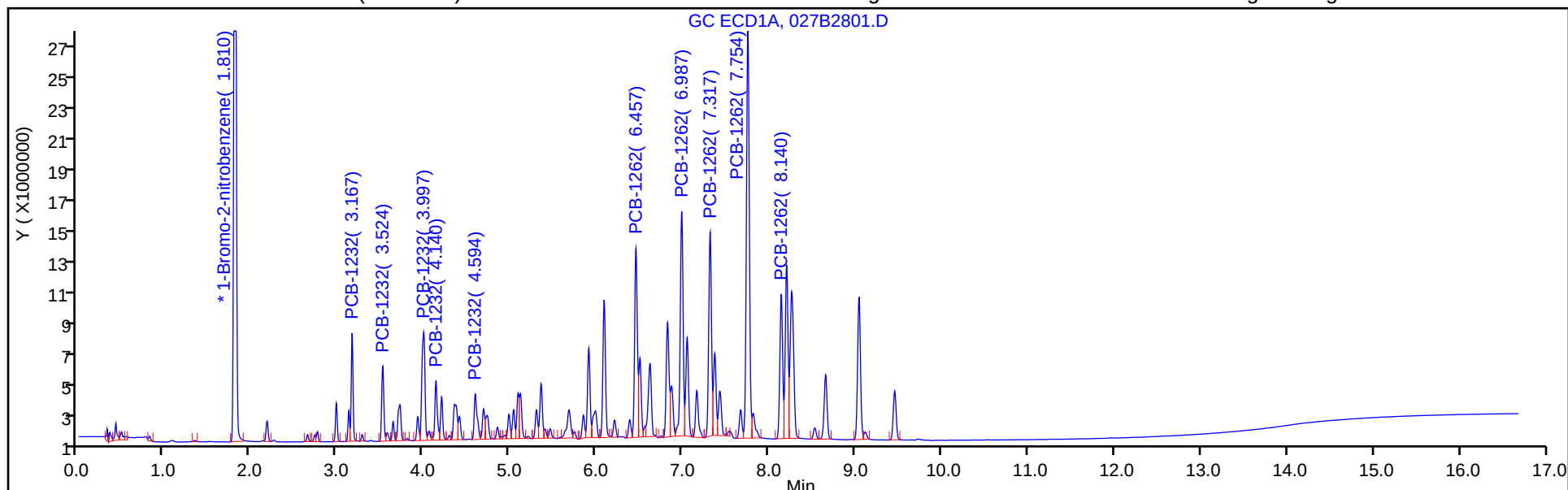
ALS Bottle#: 27

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

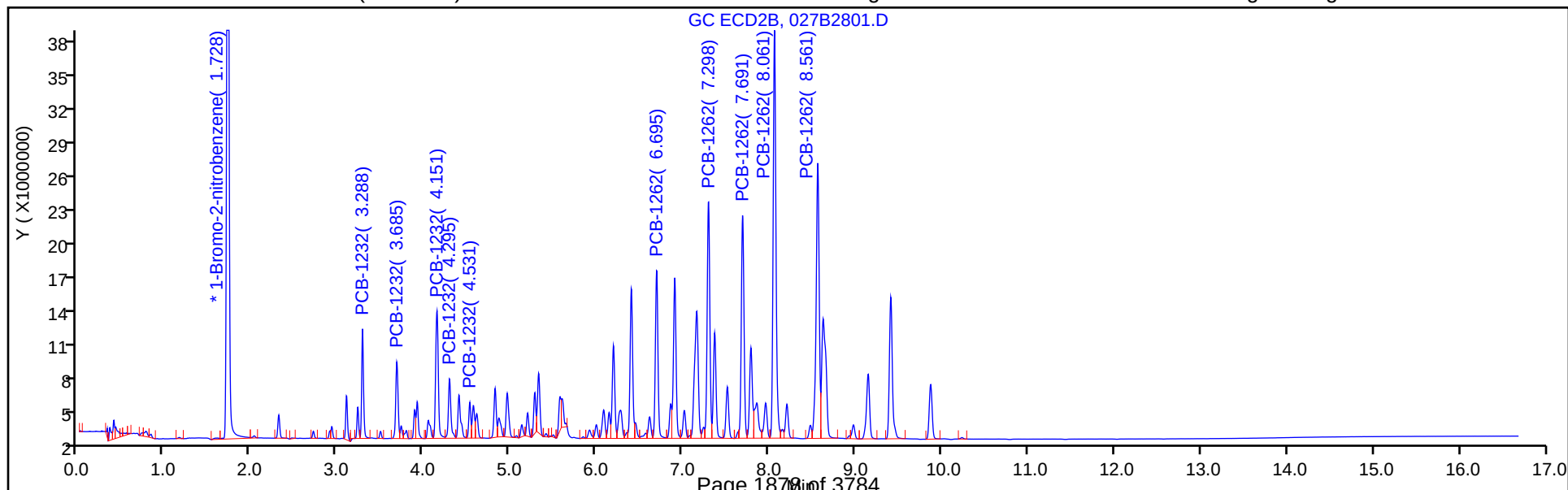
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\027B2801.D

Injection Date: 21-May-2019 21:41:13

Instrument ID: SGC_P3

Lims ID: STD4

Client ID:

Operator ID: TEM

ALS Bottle#: 27

Worklist Smp#: 27

Injection Vol: 1.0 ul

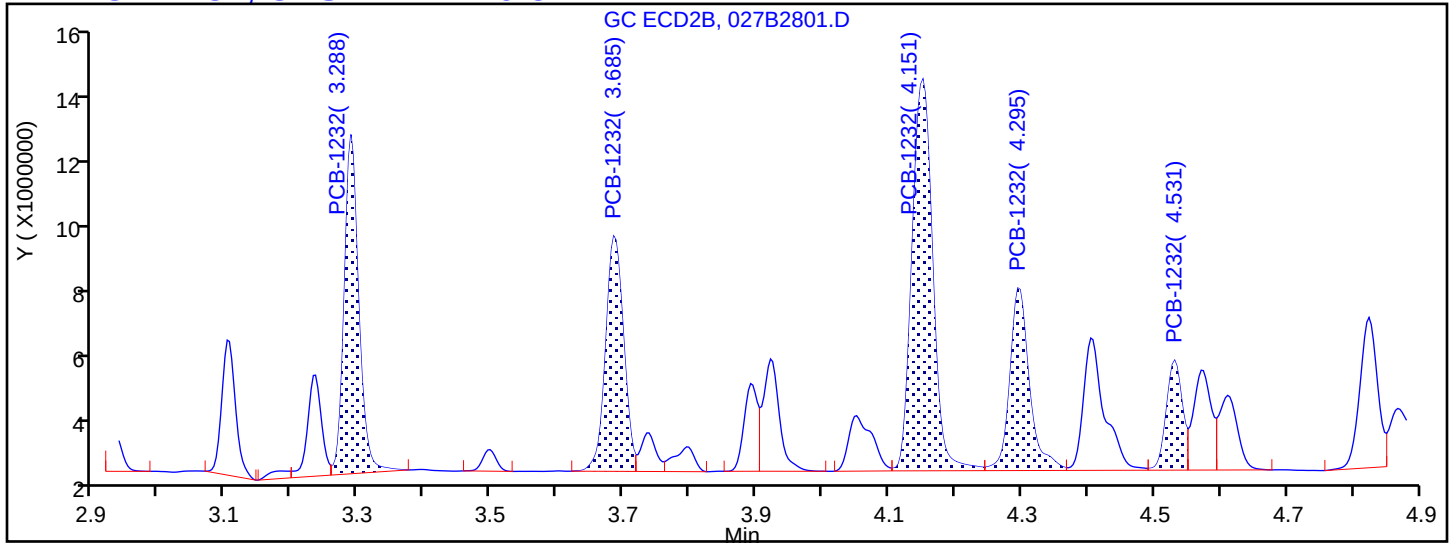
Dil. Factor: 1.0000

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

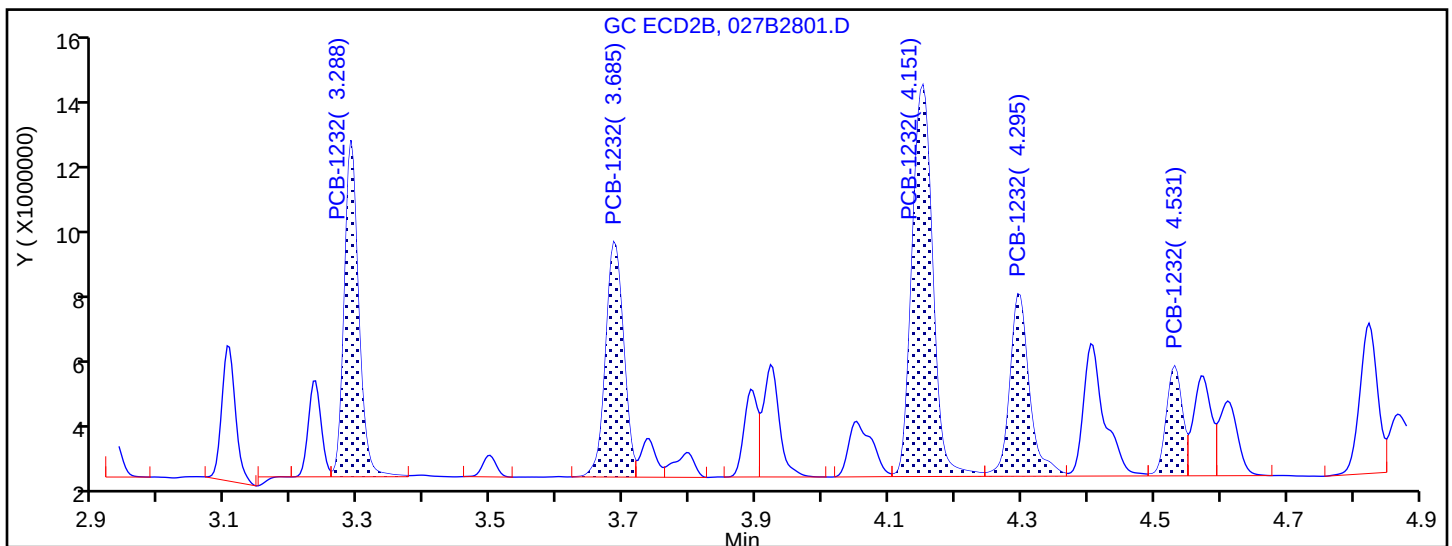
Column: CLP2 Pesticides Column 2 (0.32 mm) Detector

GC ECD2B

7 PCB-1232, CAS: 11141-16-5

Processing Integration Results

3.288	Response = 14904790
3.685	Response = 12868364
4.151	Response = 24575975
4.295	Response = 10874676
4.531	Response = 5335500



Manual Integration Results

3.288	Response = 14606951	M
3.685	Response = 12868364	
4.151	Response = 24575975	
4.295	Response = 10874676	
4.531	Response = 5335500	

Reviewer: mooret, 22-May-2019 19:58:54

Audit Action: Assigned New Baseline

Audit Reason: Baseline Smoothing
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Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\028B2901.D
 Lims ID: STD5
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 21-May-2019 22:03:07 ALS Bottle#: 28 Worklist Smp#: 28
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD5
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub4
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:31 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:56:57

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

* 17 1-Bromo-2-nitrobenzene

1	1.810	1.810	0.000	110118299	100.0	100.0
2	1.728	1.728	0.000	137530059	100.0	100.0

RPD = 0.00

7 PCB-1232

M

1	3.167	3.167	0.000	18222917	500.0	426.8
1	3.520	3.520	0.000	15662127	500.0	431.7
1	3.997	3.997	0.000	32744986	500.0	440.8
1	4.140	4.140	0.000	13840273	500.0	444.2
1	4.597	4.597	0.000	13214443	500.0	446.7

Average of Peak Amounts =

438.0

2	3.288	3.288	0.000	26574003	500.0	421.5
2	3.685	3.685	0.000	23764034	500.0	427.7
2	4.151	4.151	0.000	46199453	500.0	437.3
2	4.295	4.295	0.000	20340452	500.0	434.8
2	4.531	4.531	0.000	9926905	500.0	434.0

Average of Peak Amounts =

431.1

RPD = 1.60

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\028B2901.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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5 PCB-1262

1	6.457	6.457	0.000	50907067	500.0	460.5	
1	6.987	6.987	0.000	63024067	500.0	459.2	
1	7.317	7.317	0.000	55597771	500.0	449.5	
1	7.754	7.754	0.000	118832370	500.0	456.6	
1	8.140	8.140	0.000	40626356	500.0	457.0	

Average of Peak Amounts = 456.5

2	6.695	6.695	0.000	58086696	500.0	444.7	
2	7.295	7.295	0.000	84202854	500.0	442.3	
2	7.691	7.691	0.000	80644624	500.0	447.0	
2	8.061	8.061	0.000	153801559	500.0	448.7	
2	8.565	8.565	0.000	114415564	500.0	442.8	

Average of Peak Amounts = 445.1

RPD = 2.54

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_3262_L7_00018

Amount Added: 0.50

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:31

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\028B2901.D

Injection Date: 21-May-2019 22:03:07

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD5

Worklist Smp#: 28

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

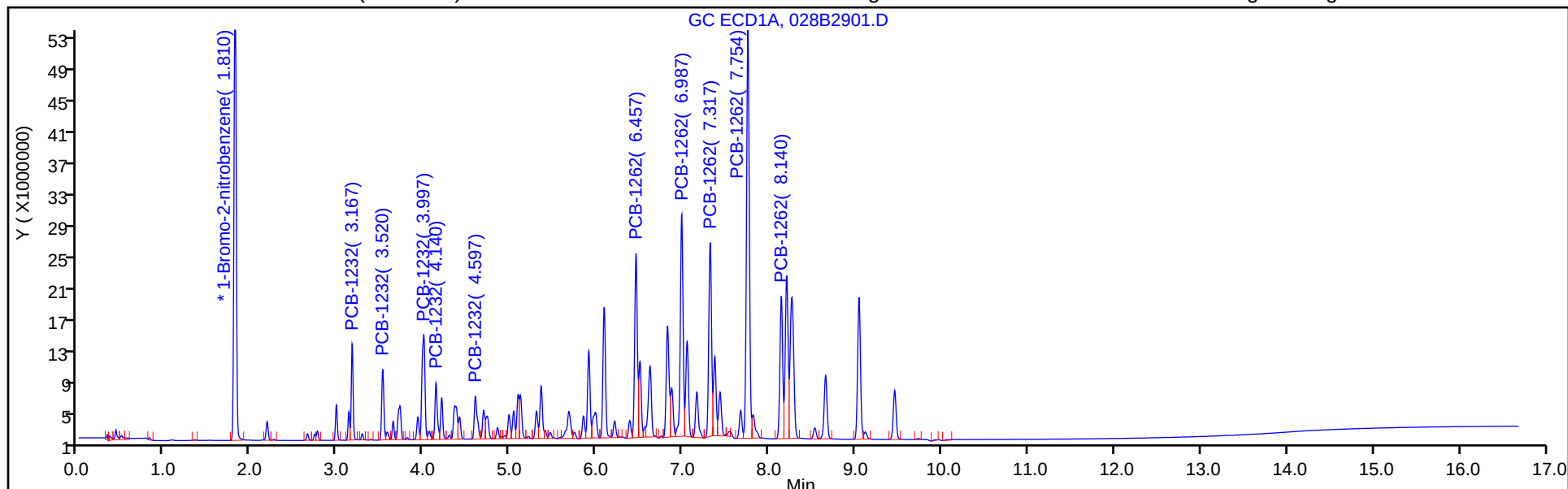
ALS Bottle#: 28

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

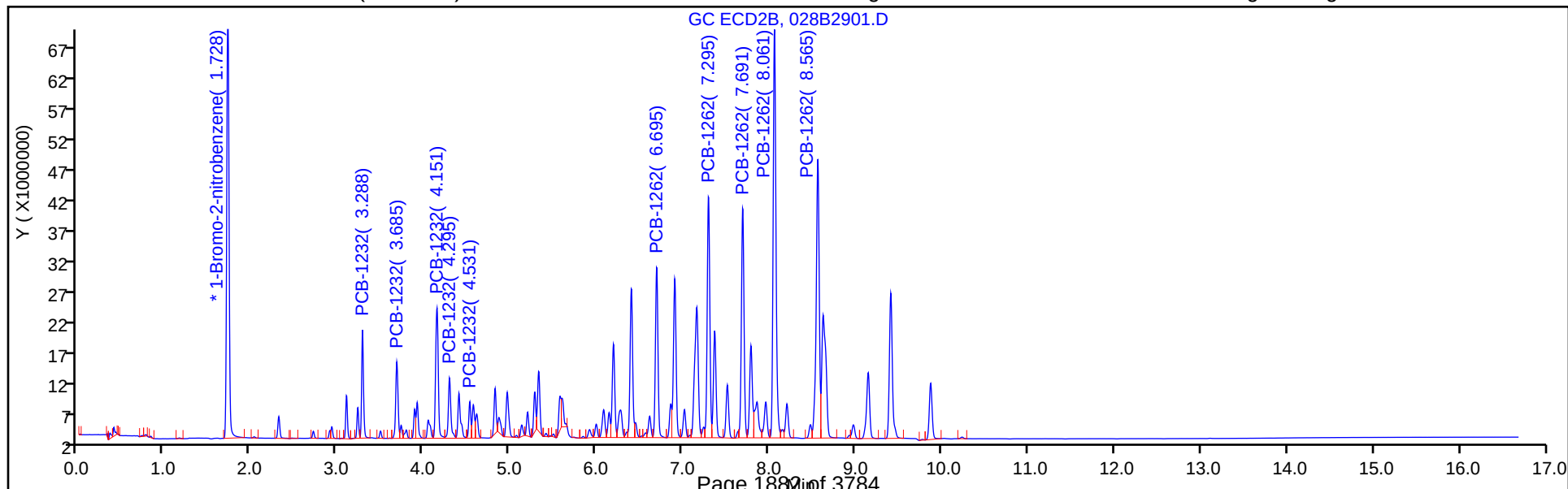
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\028B2901.D

Injection Date: 21-May-2019 22:03:07

Instrument ID: SGC_P3

Lims ID: STD5

Client ID:

Operator ID: TEM

ALS Bottle#: 28

Worklist Smp#: 28

Injection Vol: 1.0 ul

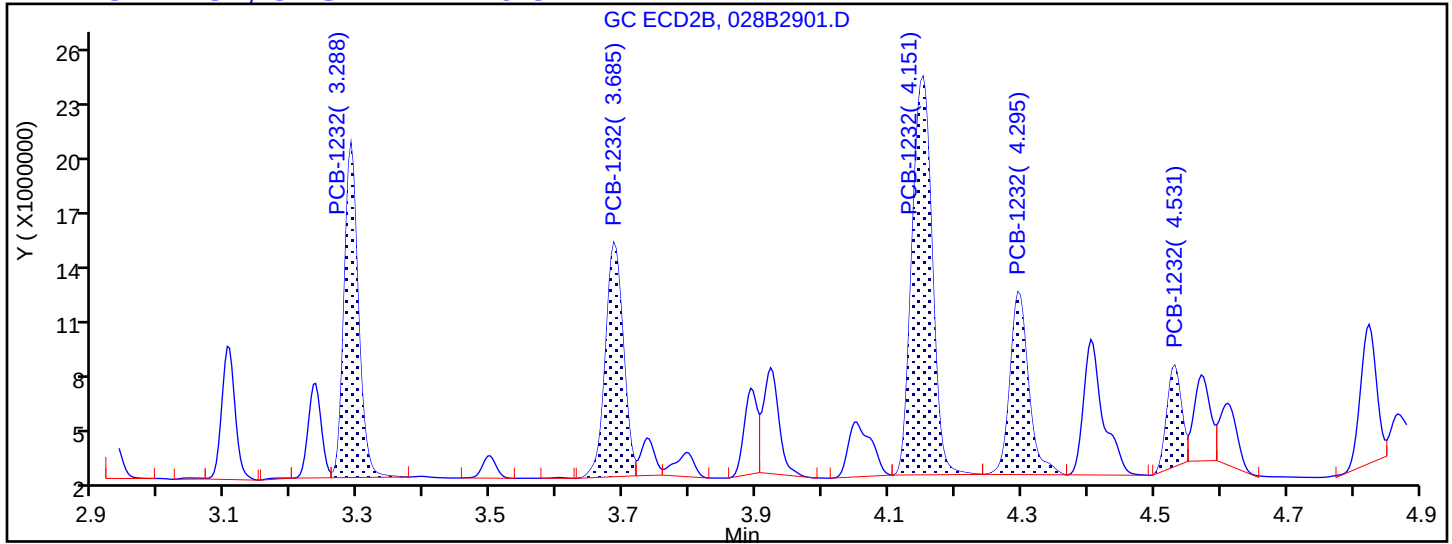
Dil. Factor: 1.0000

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

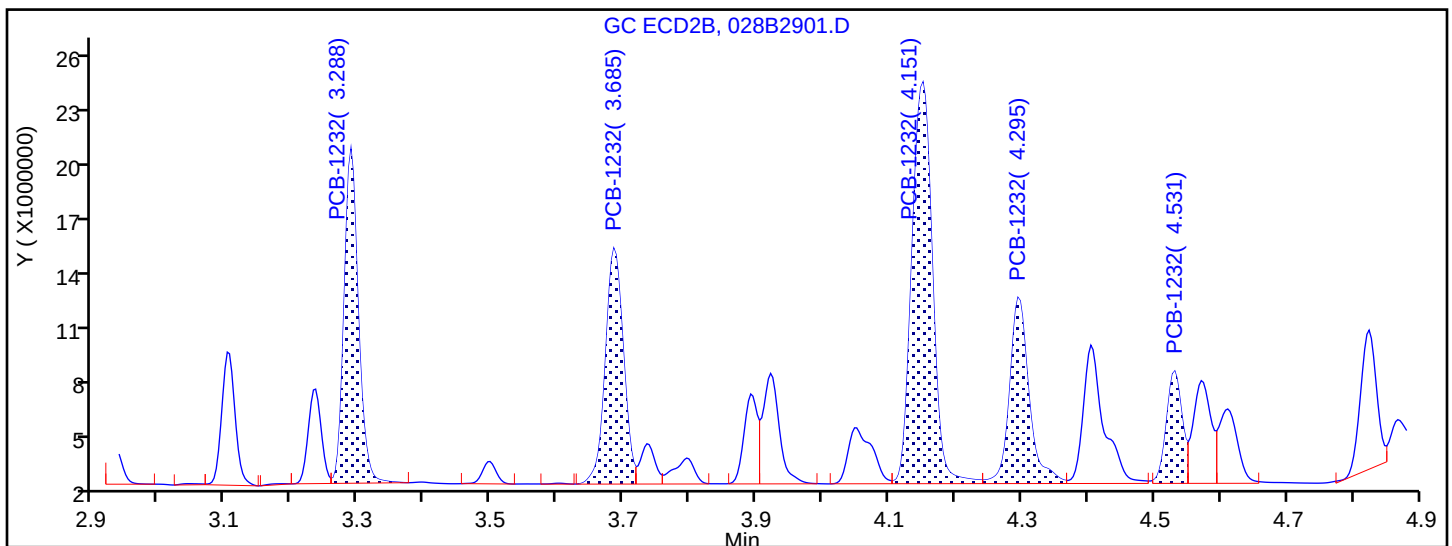
Column: CLP2 Pesticides Column 2 (0.32 mm) Detector

GC ECD2B

7 PCB-1232, CAS: 11141-16-5

Processing Integration Results

3.288	Response = 26574003
3.685	Response = 23388801
4.151	Response = 44777114
4.295	Response = 19014648
4.531	Response = 8318742



Manual Integration Results

3.288	Response = 26574003	
3.685	Response = 23764034	M
4.151	Response = 46199453	M
4.295	Response = 20340452	M
4.531	Response = 9926905	M

Reviewer: mooret, 22-May-2019 19:56:52

Audit Action: Assigned New Baseline

Audit Reason: Baseline Smoothing
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Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\029B3001.D
 Lims ID: STD6
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 21-May-2019 22:25:00 ALS Bottle#: 29 Worklist Smp#: 29
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD6
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub4
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:29 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 20:01:17

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.811	0.002	112898808	100.0	100.0
2	1.727	1.729	-0.002	142924478	100.0	100.0

RPD = 0.00

7 PCB-1232

1	3.166	3.167	-0.001	26316394	750.0	601.1
1	3.523	3.520	0.003	21970911	750.0	590.6
1	3.996	3.997	-0.001	46214458	750.0	606.8
1	4.139	4.140	-0.001	19515808	750.0	610.9
1	4.593	4.597	-0.004	18733869	750.0	617.7

Average of Peak Amounts = 605.4

2	3.287	3.288	-0.001	37059003	750.0	565.7
2	3.684	3.685	-0.001	32943814	750.0	570.5
2	4.150	4.151	-0.001	64520321	750.0	587.6
2	4.297	4.295	0.002	28314021	750.0	582.4
2	4.530	4.531	-0.001	13559631	750.0	570.5

Average of Peak Amounts = 575.3

RPD = 5.10

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\029B3001.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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5 PCB-1262

1	6.456	6.457	-0.001	72445326	750.0	639.1	
1	6.986	6.987	-0.001	89103738	750.0	633.2	
1	7.316	7.317	-0.001	80318898	750.0	633.4	
1	7.753	7.754	-0.001	169090141	750.0	633.7	
1	8.139	8.140	-0.001	57753672	750.0	633.6	

Average of Peak Amounts = 634.6

2	6.694	6.695	-0.001	81271097	750.0	598.7	
2	7.297	7.295	0.002	118210290	750.0	597.5	
2	7.694	7.691	0.003	113444356	750.0	605.0	
2	8.060	8.061	-0.001	215380019	750.0	604.6	
2	8.564	8.565	-0.001	160760071	750.0	598.7	

Average of Peak Amounts = 600.9

RPD = 5.46

S 8 Polychlorinated biphenyls, Total

1	1240.0
2	1176.2

RPD = 5.28

Reagents:

AR_3262_L7_00018

Amount Added: 0.75

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:30

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\029B3001.D

Injection Date: 21-May-2019 22:25:00

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD6

Worklist Smp#: 29

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

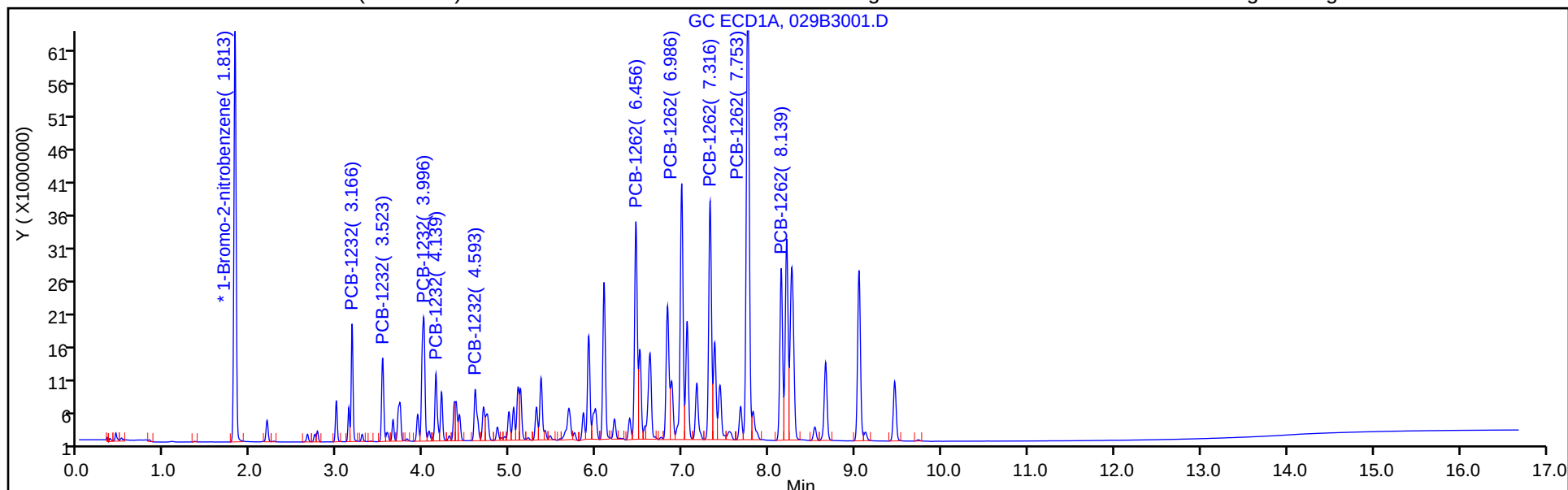
ALS Bottle#: 29

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

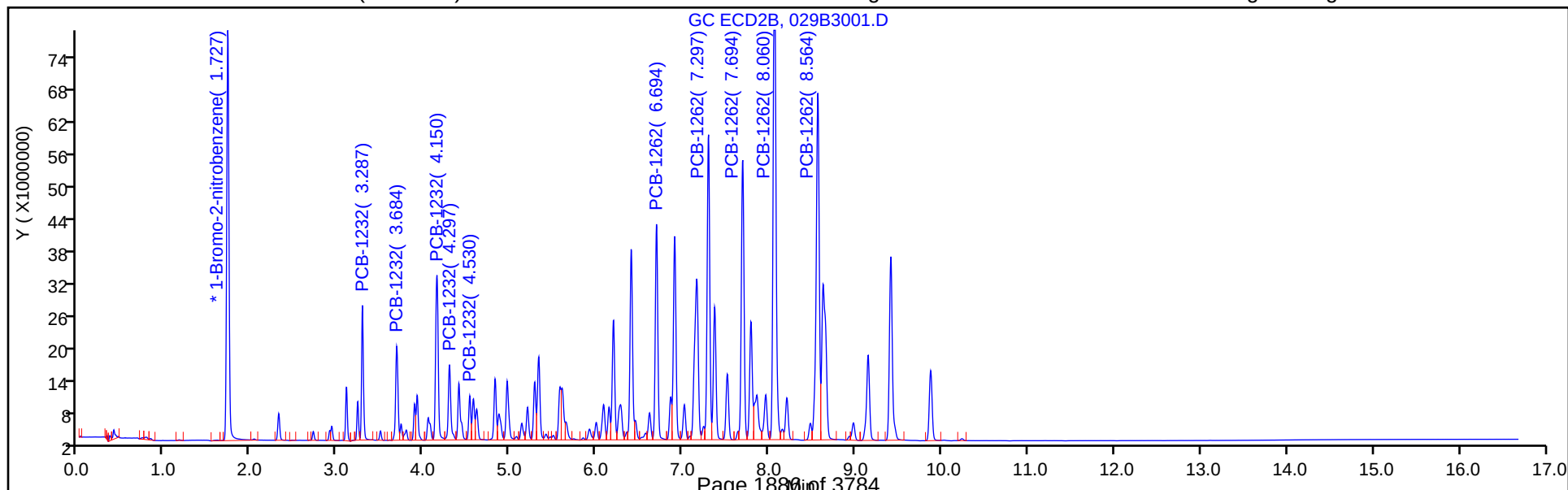
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\030B3101.D
 Lims ID: STD7
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 21-May-2019 22:46:51 ALS Bottle#: 30 Worklist Smp#: 30
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD7
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub4
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:28 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:56:18

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.814	1.811	0.003	111940685	100.0	100.0
2	1.728	1.729	-0.001	142176749	100.0	100.0

RPD = 0.00

7 PCB-1232

M

1	3.167	3.167	0.000	34844691	1000.0	802.8
1	3.520	3.520	0.000	28572840	1000.0	774.7
1	3.997	3.997	0.000	60880942	1000.0	806.2
1	4.140	4.140	0.000	25790360	1000.0	814.2
1	4.594	4.597	-0.003	24662845	1000.0	820.1

Average of Peak Amounts =

803.6

2	3.288	3.288	0.000	48888887	1000.0	750.2	M
2	3.685	3.685	0.000	43222049	1000.0	752.4	M
2	4.151	4.151	0.000	84981310	1000.0	778.1	M
2	4.295	4.295	0.000	37371055	1000.0	772.7	M
2	4.531	4.531	0.000	18001981	1000.0	761.4	M

Average of Peak Amounts =

762.9

RPD = 5.19

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\030B3101.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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5 PCB-1262

1	6.457	6.457	0.000	96233359	1000.0	856.3	
1	6.987	6.987	0.000	121606232	1000.0	871.6	
1	7.317	7.317	0.000	106784125	1000.0	849.3	
1	7.754	7.754	0.000	222444317	1000.0	840.8	
1	8.140	8.140	0.000	77407121	1000.0	856.5	

Average of Peak Amounts = 854.9

2	6.695	6.695	0.000	107013239	1000.0	792.5	
2	7.295	7.295	0.000	154655990	1000.0	785.8	
2	7.691	7.691	0.000	147802355	1000.0	792.4	
2	8.061	8.061	0.000	281866190	1000.0	795.4	
2	8.565	8.565	0.000	211121165	1000.0	790.4	

Average of Peak Amounts = 791.3

RPD = 7.72

S 8 Polychlorinated biphenyls, Total

1	1658.5
2	1554.2

RPD = 6.49

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_3262_L7_00018

Amount Added: 1.00

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:28

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\030B3101.D

Injection Date: 21-May-2019 22:46:51

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD7

Worklist Smp#: 30

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

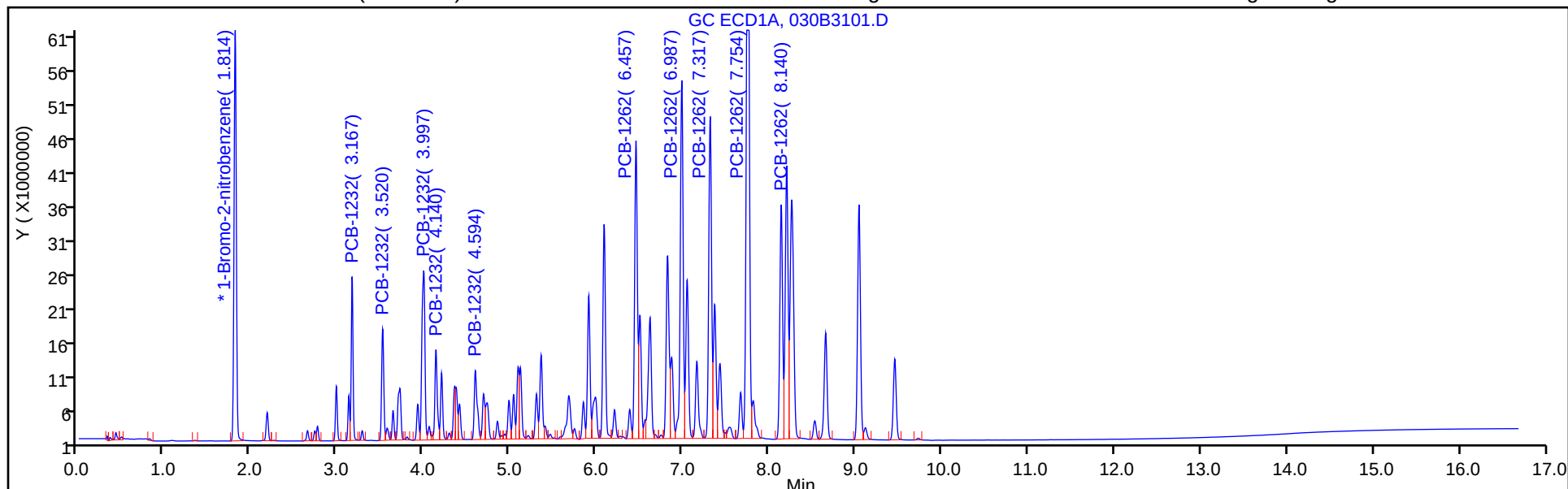
ALS Bottle#: 30

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

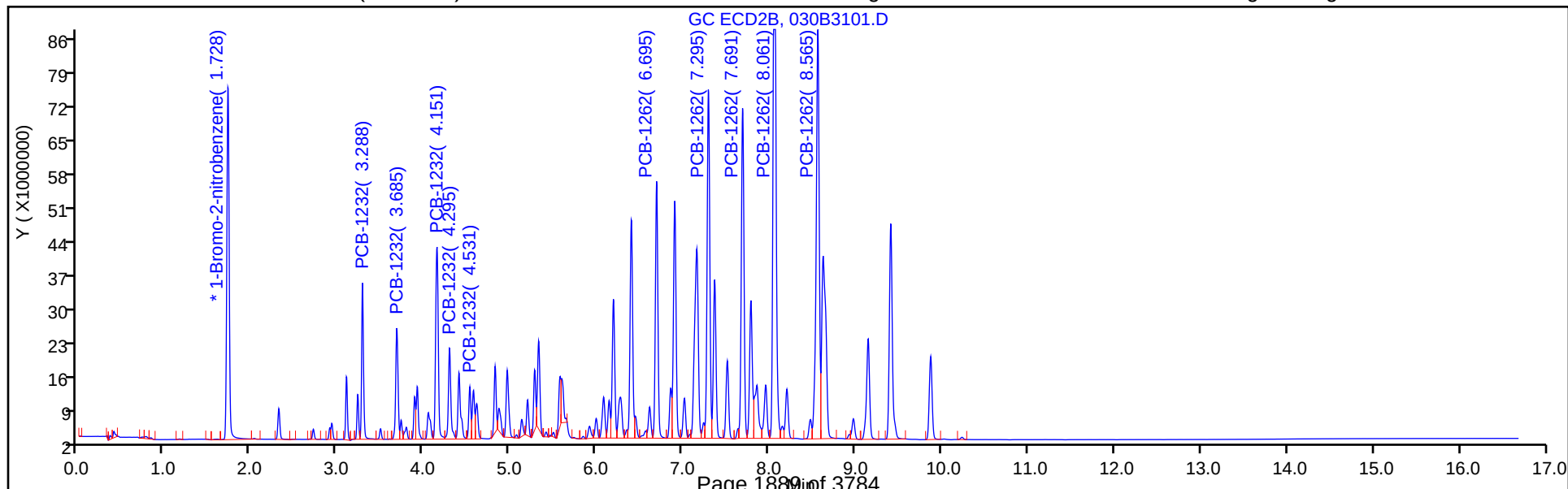
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\030B3101.D

Injection Date: 21-May-2019 22:46:51

Instrument ID: SGC_P3

Lims ID: STD7

Client ID:

Operator ID: TEM

ALS Bottle#:

30

Worklist Smp#:

30

Injection Vol: 1.0 ul

Dil. Factor:

1.0000

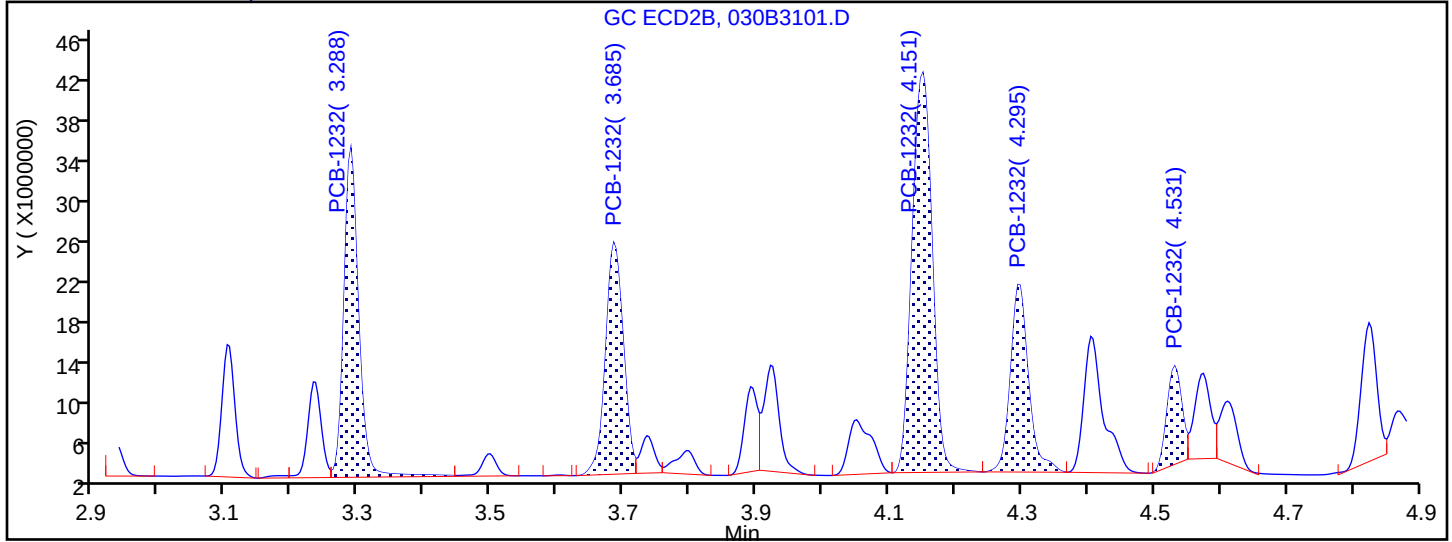
Method: PCB_P3

Limit Group:

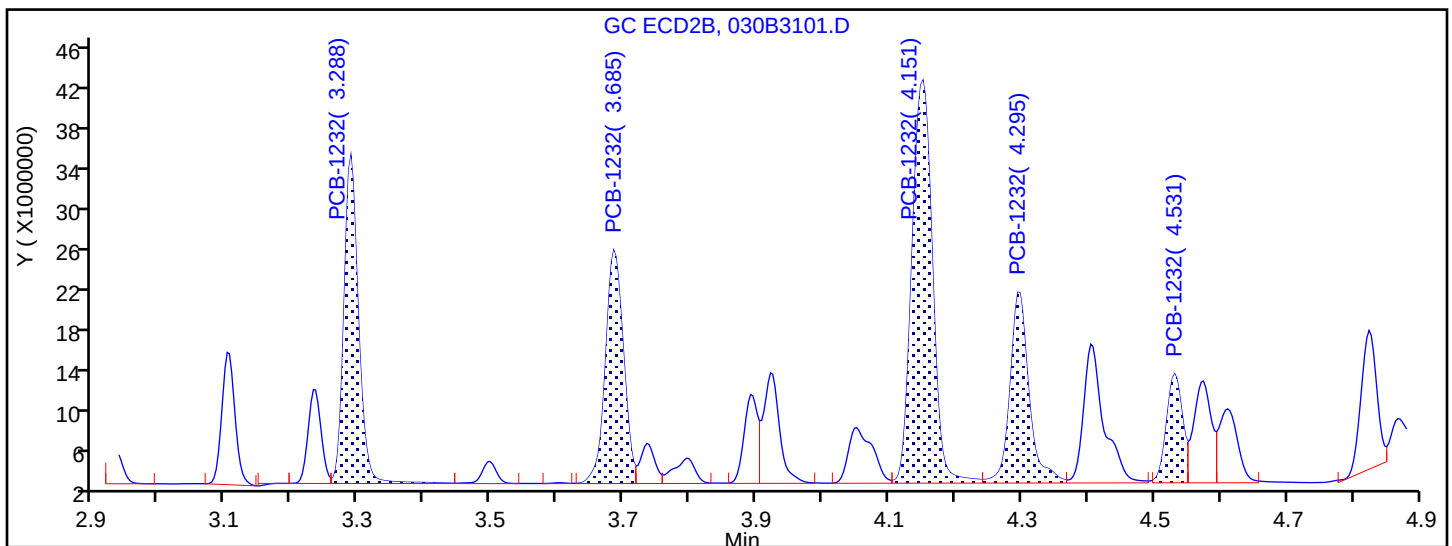
GCSV - 8082 - IS

Column: CLP2 Pesticides Column 2 (0.32 mm) Detector

GC ECD2B

7 PCB-1232, CAS: 11141-16-5**Processing Integration Results**

3.288	Response = 50108931
3.685	Response = 42510513
4.151	Response = 82454885
4.295	Response = 34936931
4.531	Response = 15171379

**Manual Integration Results**

3.288	Response = 48888887	M
3.685	Response = 43222049	M
4.151	Response = 84981310	M
4.295	Response = 37371055	M
4.531	Response = 18001981	M

Reviewer: mooret, 22-May-2019 19:59:34

Audit Action: Assigned New Baseline

Audit Reason: Baseline Smoothing
Page 1890 of 3784

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 459083

SDG No.: _____

Instrument ID: SGC_P3 GC Column: CLP1 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/21/2019 23:08 Calibration End Date: 05/22/2019 01:20 Calibration ID: 36521

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-459083/31	031B3201.D
Level 2	STD2 280-459083/32	032B3301.D
Level 3	STD3 280-459083/33	033B3401.D
Level 4	STD4 280-459083/34	034B3501.D
Level 5	STD5 280-459083/35	035B3601.D
Level 6	STD6 280-459083/36	036B3701.D
Level 7	STD7 280-459083/37	037B3801.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
PCB-1242 Peak 1	0.0765 0.0545	0.0712 0.0517	0.0646	0.0601	0.0573	Lin1	0.8026	0.0533							0.9970		0.9900
PCB-1242 Peak 2	0.1557 0.1168	0.1469 0.1116	0.1309	0.1255	0.1221	Lin1	1.3782	0.1145							0.9980		0.9900
PCB-1242 Peak 3	0.0680 0.0523	0.0641 0.0501	0.0584	0.0554	0.0540	Lin1	0.5586	0.0512							0.9990		0.9900
PCB-1242 Peak 4	0.0509 0.0390	0.0473 0.0377	0.0426	0.0430	0.0417	Lin1	0.3937	0.0388							0.9980		0.9900
PCB-1242 Peak 5	0.0503 0.0415	0.0485 0.0401	0.0465	0.0416	0.0418	Lin1	0.3370	0.0406							0.9990		0.9900
PCB-1268 Peak 1	0.3429 0.2759	0.3315 0.2698	0.3066	0.2838	0.2969	Lin1	2.3305	0.2750							0.9980		0.9900
PCB-1268 Peak 2	0.3220 0.2711	0.3027 0.2609	0.2847	0.2828	0.2759	Lin1	1.7359	0.2663							0.9990		0.9900
PCB-1268 Peak 3	0.2701 0.2341	0.2599 0.2246	0.2433	0.2417	0.2396	Lin1	1.3198	0.2300							0.9990		0.9900
PCB-1268 Peak 4	0.0792 0.0684	0.0760 0.0662	0.0710	0.0696	0.0699	Lin1	0.3689	0.0673							0.9990		0.9900
PCB-1268 Peak 5	0.7698 0.6539	0.7459 0.6249	0.6965	0.6841	0.6689	Lin1	4.5401	0.6412							0.9990		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 459083

SDG No.: _____

Instrument ID: SGC_P3 GC Column: CLP1 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/21/2019 23:08 Calibration End Date: 05/22/2019 01:20 Calibration ID: 36521

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-459083/31	031B3201.D
Level 2	STD2 280-459083/32	032B3301.D
Level 3	STD3 280-459083/33	033B3401.D
Level 4	STD4 280-459083/34	034B3501.D
Level 5	STD5 280-459083/35	035B3601.D
Level 6	STD6 280-459083/36	036B3701.D
Level 7	STD7 280-459083/37	037B3801.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
PCB-1242 Peak 1	BNB	Lin1	1765113 37811656	3368022 50112110	6301045	14801735	26675713	25.0 750	50.0 1000	100	250	500
PCB-1242 Peak 2	BNB	Lin1	3590974 80990929	6947567 108221803	12770866	30927953	56856894	25.0 750	50.0 1000	100	250	500
PCB-1242 Peak 3	BNB	Lin1	1569642 36255598	3030462 48619689	5694751	13656115	25124837	25.0 750	50.0 1000	100	250	500
PCB-1242 Peak 4	BNB	Lin1	1173527 27065419	2238908 36571030	4155873	10598517	19403021	25.0 750	50.0 1000	100	250	500
PCB-1242 Peak 5	BNB	Lin1	1160482 28790844	2294024 38859073	4532632	10254556	19466346	25.0 750	50.0 1000	100	250	500
PCB-1268 Peak 1	BNB	Lin1	7911185 191229929	15678505 261683128	29908886	69916217	138215815	25.0 750	50.0 1000	100	250	500
PCB-1268 Peak 2	BNB	Lin1	7428603 187925574	14314761 253062662	27771415	69682114	128432463	25.0 750	50.0 1000	100	250	500
PCB-1268 Peak 3	BNB	Lin1	6231016 162278997	12291736 217840973	23730748	59559483	111537914	25.0 750	50.0 1000	100	250	500
PCB-1268 Peak 4	BNB	Lin1	1827198 47441155	3593791 64168558	6921386	17149578	32539887	25.0 750	50.0 1000	100	250	500
PCB-1268 Peak 5	BNB	Lin1	17758801 453283842	35273592 606120555	67935090	168555987	311381496	25.0 750	50.0 1000	100	250	500

Curve Type Legend:

Lin1 = Linear 1/conc ISTD

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\031B3201.D
 Lims ID: STD1 4268
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 21-May-2019 23:08:46 ALS Bottle#: 31 Worklist Smp#: 31
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD1
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub5
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:26 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1: CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2: CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:54:40

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.811	0.002	92280633	100.0	100.0
2	1.728	1.729	-0.001	116296171	100.0	100.0

RPD = 0.00

10 PCB-1242

1	3.520	3.521	-0.001	1765113	25.0	20.8
1	3.997	3.998	-0.001	3590974	25.0	21.9
1	4.597	4.595	0.002	1569642	25.0	22.3
1	5.093	5.091	0.002	1173527	25.0	22.6
1	5.120	5.118	0.002	1160482	25.0	22.7

Average of Peak Amounts = 22.1

2	3.684	3.686	-0.002	2568915	25.0	19.7
2	4.151	4.149	0.002	5326472	25.0	22.3
2	4.298	4.296	0.002	2336877	25.0	21.9
2	4.821	4.826	-0.005	2430320	25.0	26.2
2	4.964	4.966	-0.002	2137913	25.0	23.0

Average of Peak Amounts = 22.6

RPD = 2.33

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\031B3201.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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13 PCB-1268

1	8.203	8.201	0.002	7911185	25.0	22.7
1	8.257	8.258	-0.001	7428603	25.0	23.7
1	8.530	8.528	0.002	6231016	25.0	23.6
1	8.650	8.648	0.002	1827198	25.0	23.9
1	9.453	9.455	-0.002	17758801	25.0	22.9

Average of Peak Amounts = 23.4

2	8.561	8.562	-0.001	11689898	25.0	22.1
2	8.624	8.622	0.002	10673795	25.0	21.7
2	8.974	8.976	-0.002	9274331	25.0	21.7
2	9.118	9.116	0.002	2993893	25.0	21.3
2	9.871	9.872	-0.001	26080296	25.0	21.7

Average of Peak Amounts = 21.7

RPD = 7.48

S 8 Polychlorinated biphenyls, Total

1	45.5
2	44.3

RPD = 2.60

Reagents:

AR_4268_L7_00017

Amount Added: 0.03

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:27

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\031B3201.D

Injection Date: 21-May-2019 23:08:46

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD1 4268

Worklist Smp#: 31

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

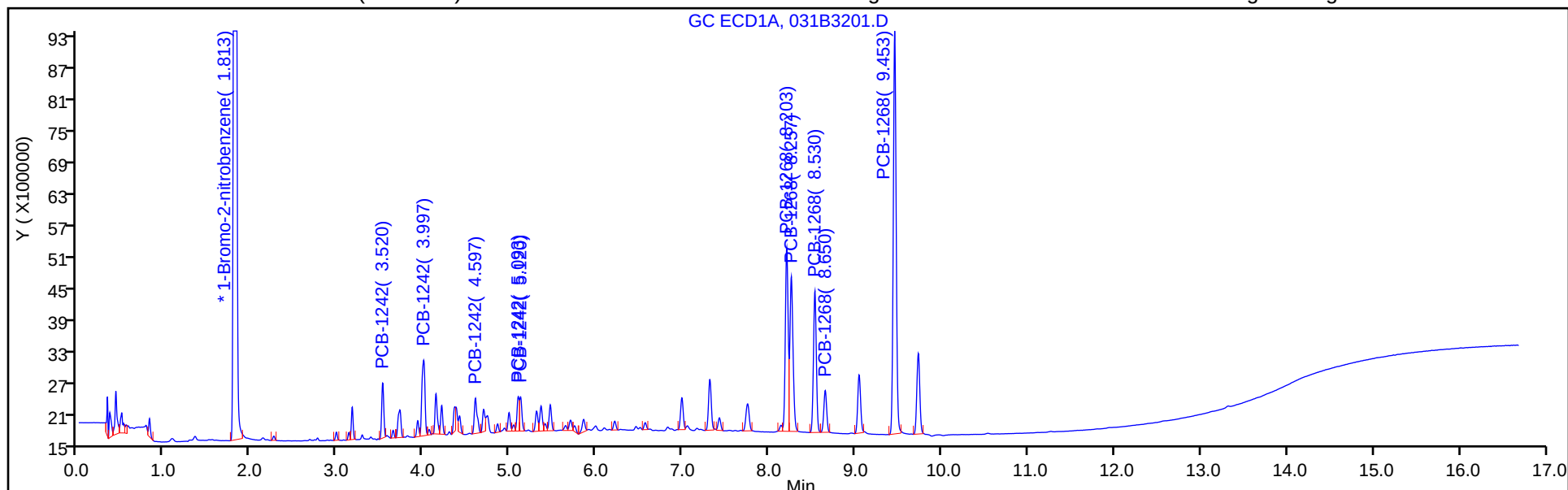
ALS Bottle#: 31

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

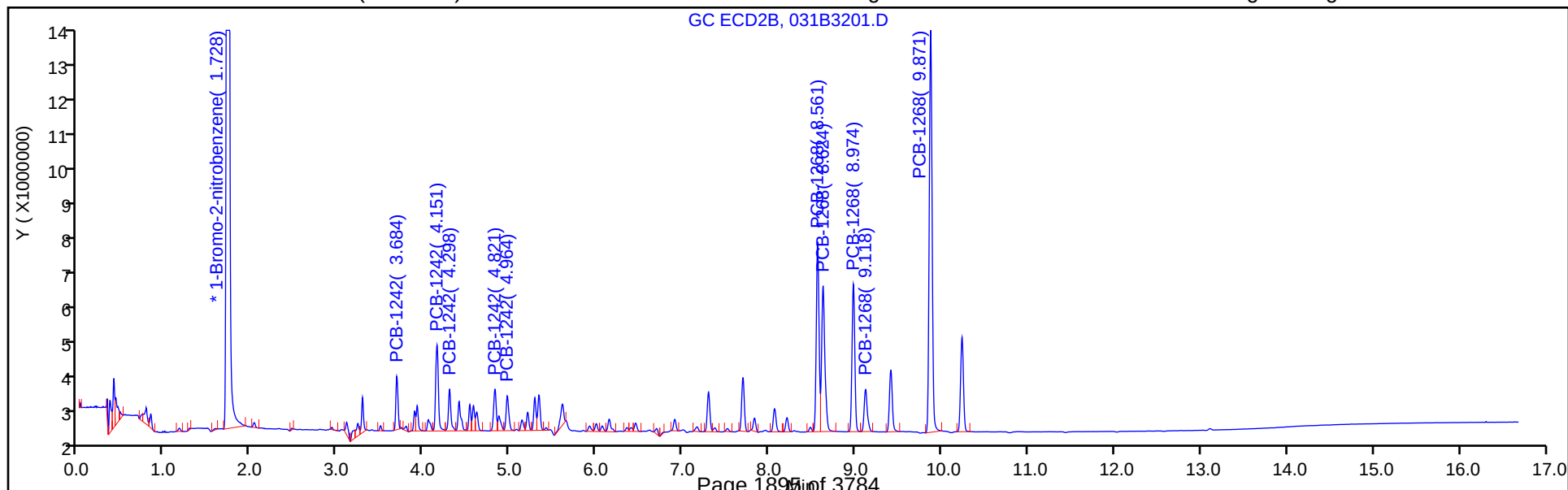
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\032B3301.D
 Lims ID: STD2
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 21-May-2019 23:30:39 ALS Bottle#: 32 Worklist Smp#: 32
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD2
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub5
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:25 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.811	0.002	94581023	100.0	100.0
2	1.727	1.729	-0.002	119651782	100.0	100.0

RPD = 0.00

10 PCB-1242

1	3.519	3.521	-0.002	3368022	50.0	51.8
1	3.996	3.998	-0.002	6947567	50.0	52.1
1	4.596	4.595	0.001	3030462	50.0	51.6
1	5.093	5.091	0.002	2238908	50.0	50.9
1	5.119	5.118	0.001	2294024	50.0	51.5

Average of Peak Amounts = 51.6

2	3.687	3.686	0.001	5131327	50.0	54.5
2	4.150	4.149	0.001	9809790	50.0	51.6
2	4.297	4.296	0.001	4385035	50.0	52.8
2	4.824	4.826	-0.002	3952941	50.0	54.4
2	4.964	4.966	-0.002	3982196	50.0	51.7

Average of Peak Amounts = 53.0

RPD = 2.69

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\032B3301.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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13 PCB-1268

1	8.203	8.201	0.002	15678505	50.0	51.8
1	8.256	8.258	-0.002	14314761	50.0	50.3
1	8.529	8.528	0.001	12291736	50.0	50.8
1	8.649	8.648	0.001	3593791	50.0	51.0
1	9.456	9.455	0.001	35273592	50.0	51.1

Average of Peak Amounts = 51.0

2	8.560	8.562	-0.002	21708729	50.0	51.4
2	8.624	8.622	0.002	19881820	50.0	51.5
2	8.974	8.976	-0.002	17643062	50.0	51.8
2	9.117	9.116	0.001	5744954	50.0	52.4
2	9.870	9.872	-0.002	49885343	50.0	52.3

Average of Peak Amounts = 51.9

RPD = 1.72

S 8 Polychlorinated biphenyls, Total

1	102.6
2	104.9

RPD = 2.21

Reagents:

AR_4268_L7_00017

Amount Added: 0.05

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:25

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\032B3301.D

Injection Date: 21-May-2019 23:30:39

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD2

Worklist Smp#: 32

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

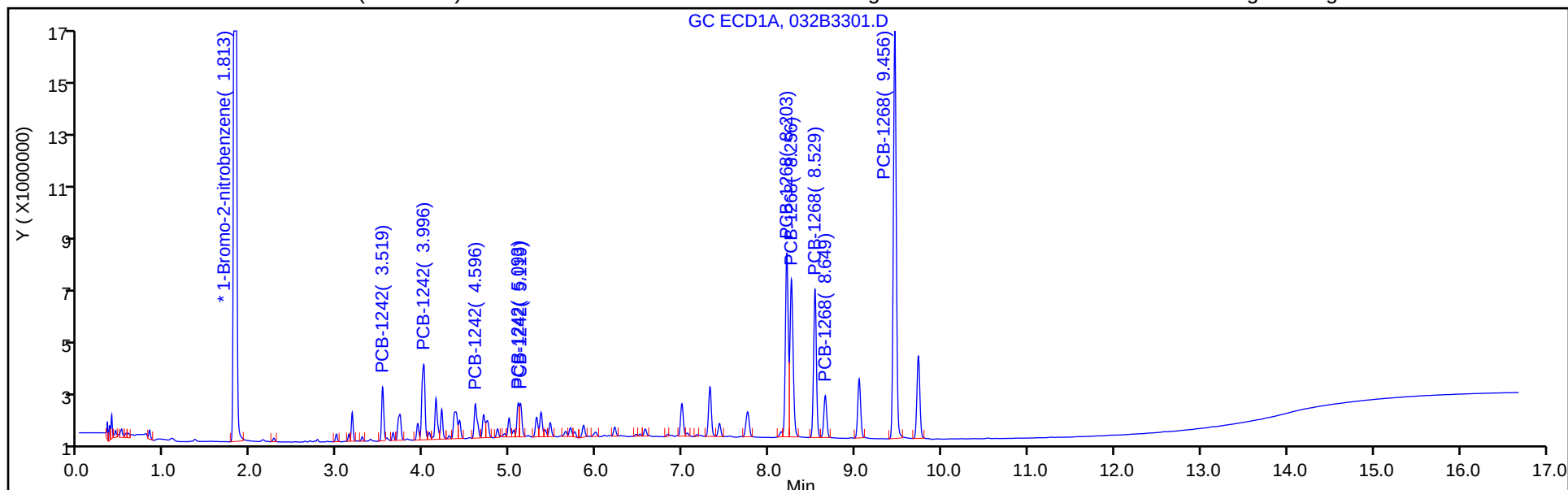
ALS Bottle#: 32

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

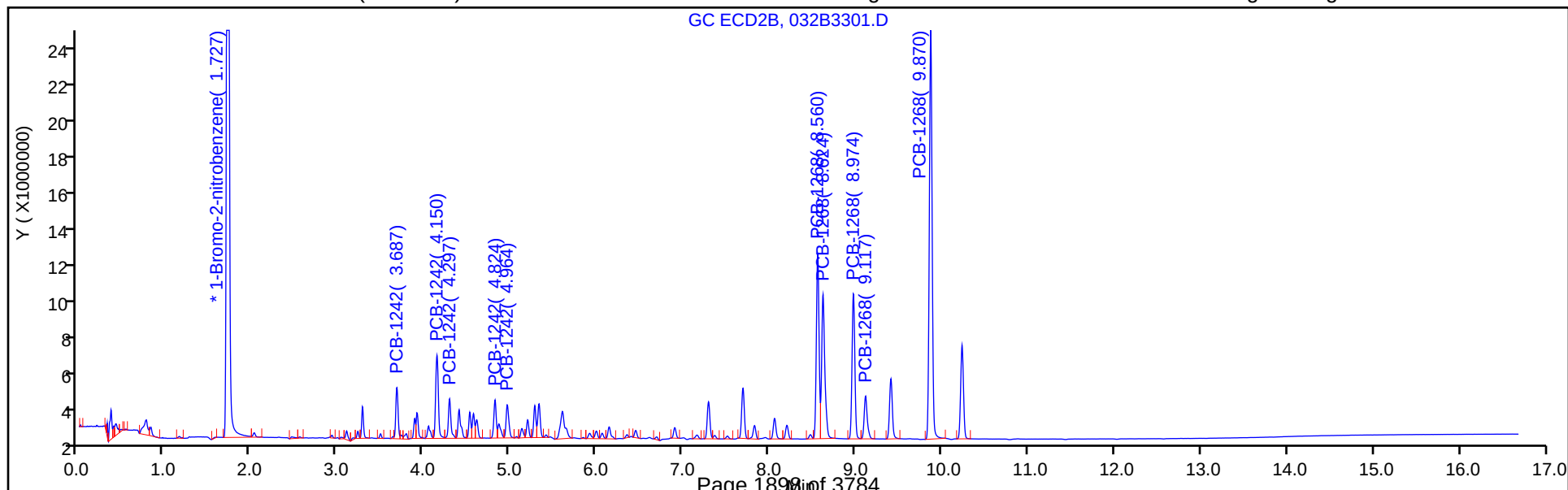
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\033B3401.D
 Lims ID: STD3
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 21-May-2019 23:52:31 ALS Bottle#: 33 Worklist Smp#: 33
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD3
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub5
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:23 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.811	1.811	0.000	97540283	100.0	100.0
2	1.729	1.729	0.000	124429123	100.0	100.0

RPD = 0.00

10 PCB-1242

1	3.521	3.521	0.000	6301045	100.0	106.2
1	3.998	3.998	0.000	12770866	100.0	102.3
1	4.595	4.595	0.000	5694751	100.0	103.1
1	5.091	5.091	0.000	4155873	100.0	99.7
1	5.118	5.118	0.000	4532632	100.0	106.3

Average of Peak Amounts = 103.5

2	3.686	3.686	0.000	9075479	100.0	104.8
2	4.149	4.149	0.000	18025229	100.0	102.6
2	4.296	4.296	0.000	8005087	100.0	104.4
2	4.826	4.826	0.000	6749901	100.0	103.5
2	4.966	4.966	0.000	7517431	100.0	104.1

Average of Peak Amounts = 103.9

RPD = 0.36

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\033B3401.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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13 PCB-1268

1	8.201	8.201	0.000	29908886	100.0	103.0	
1	8.258	8.258	0.000	27771415	100.0	100.4	
1	8.528	8.528	0.000	23730748	100.0	100.0	
1	8.648	8.648	0.000	6921386	100.0	99.9	
1	9.455	9.455	0.000	67935090	100.0	101.5	

Average of Peak Amounts = 101.0

2	8.562	8.562	0.000	40089467	100.0	102.5	
2	8.622	8.622	0.000	36695600	100.0	103.1	
2	8.976	8.976	0.000	32689974	100.0	102.9	
2	9.116	9.116	0.000	10650378	100.0	104.8	
2	9.872	9.872	0.000	92580134	100.0	104.2	

Average of Peak Amounts = 103.5

RPD = 2.47

S 8 Polychlorinated biphenyls, Total

1						204.5	
2						207.4	

RPD = 1.41

Reagents:

AR_4268_L7_00017

Amount Added: 0.10

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:24

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\033B3401.D

Injection Date: 21-May-2019 23:52:31

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD3

Worklist Smp#: 33

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

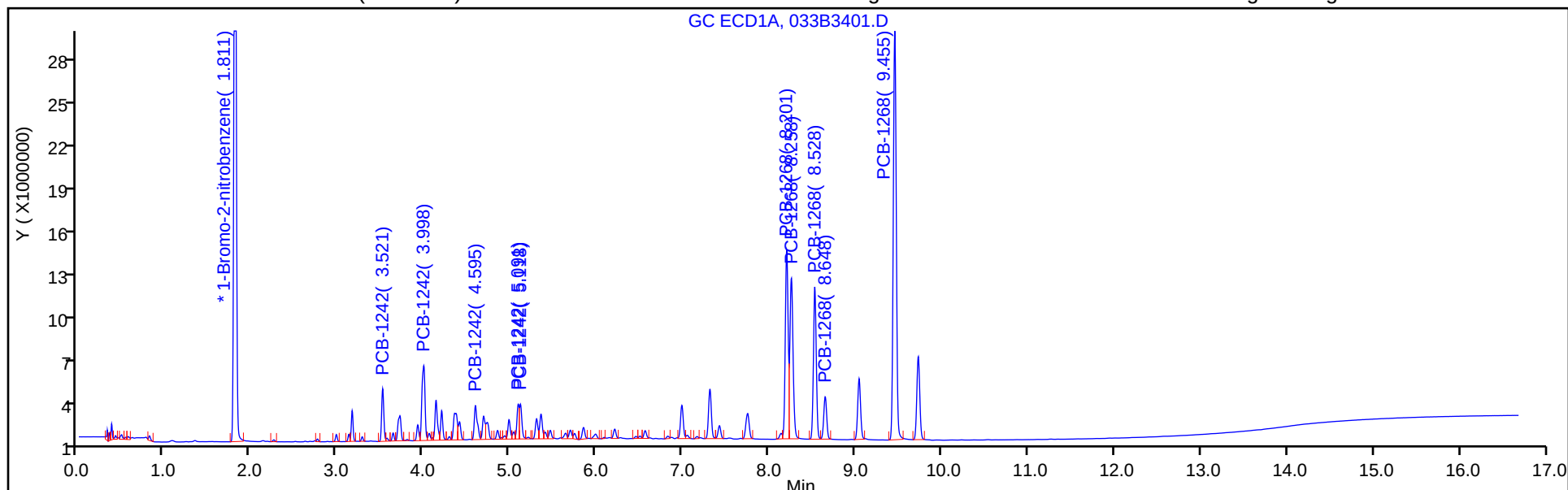
ALS Bottle#: 33

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

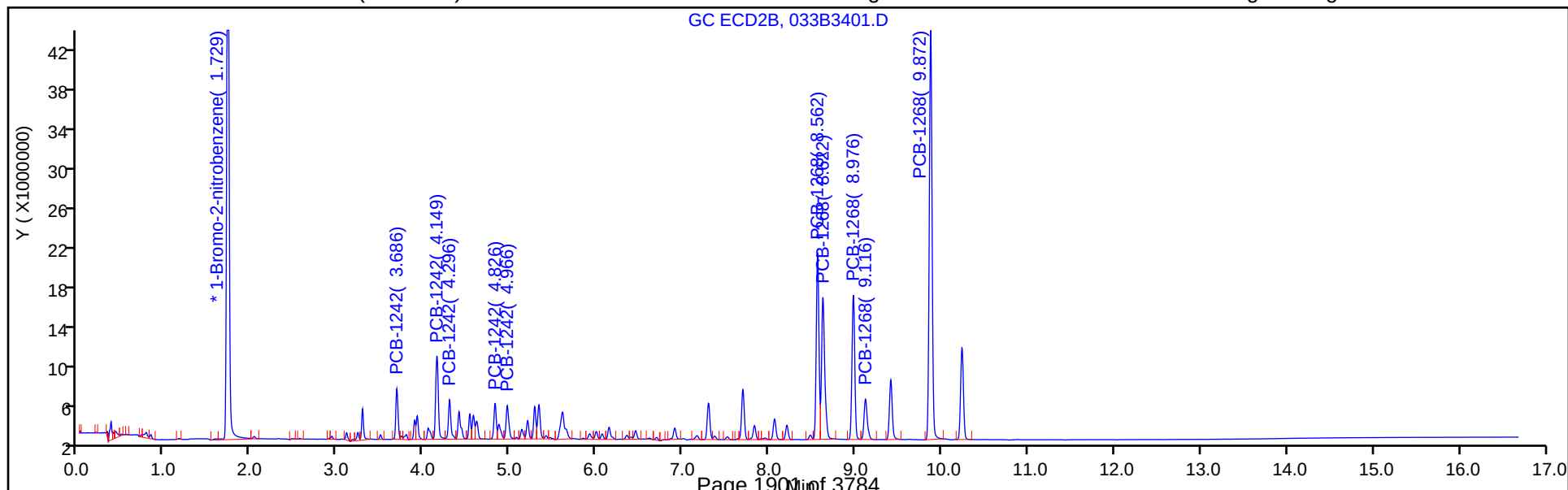
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\034B3501.D
 Lims ID: STD4
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 22-May-2019 00:14:26 ALS Bottle#: 34 Worklist Smp#: 34
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD4
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub5
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:22 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:50:38

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.812	0.001	98550774	100.0	100.0
2	1.730	1.729	0.001	124631527	100.0	100.0

RPD = 0.00

10 PCB-1242

1	3.523	3.522	0.001	14801735	250.0	266.8
1	3.999	3.995	0.004	30927953	250.0	262.0
1	4.596	4.595	0.001	13656115	250.0	259.6
1	5.093	5.092	0.001	10598517	250.0	267.2
1	5.119	5.118	0.001	10254556	250.0	248.2

Average of Peak Amounts = 260.8

2	3.687	3.686	0.001	21261166	250.0	268.2
2	4.150	4.149	0.001	42052907	250.0	258.8
2	4.297	4.296	0.001	17818829	250.0	251.0
2	4.824	4.826	-0.002	13243432	250.0	224.1
2	4.964	4.966	-0.002	16644711	250.0	245.2

Average of Peak Amounts = 249.5

RPD = 4.43

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\034B3501.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

13 PCB-1268

1	8.203	8.202	0.001	69916217	250.0	249.5	
1	8.256	8.258	-0.002	69682114	250.0	259.0	
1	8.529	8.528	0.001	59559483	250.0	257.0	
1	8.649	8.648	0.001	17149578	250.0	253.0	
1	9.453	9.455	-0.002	168555987	250.0	259.7	

Average of Peak Amounts = 255.6

2	8.560	8.559	0.001	95834448	250.0	264.7	
2	8.624	8.623	0.001	87341703	250.0	265.8	
2	8.977	8.976	0.001	78282713	250.0	265.0	
2	9.117	9.116	0.001	24710555	250.0	262.2	
2	9.870	9.869	0.001	214229504	250.0	258.8	

Average of Peak Amounts = 263.3

RPD = 2.95

S 8 Polychlorinated biphenyls, Total

1	516.4	
2	512.8	

RPD = 0.71

Reagents:

AR_4268_L7_00017

Amount Added: 0.25

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:22

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\034B3501.D

Injection Date: 22-May-2019 00:14:26

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD4

Worklist Smp#: 34

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

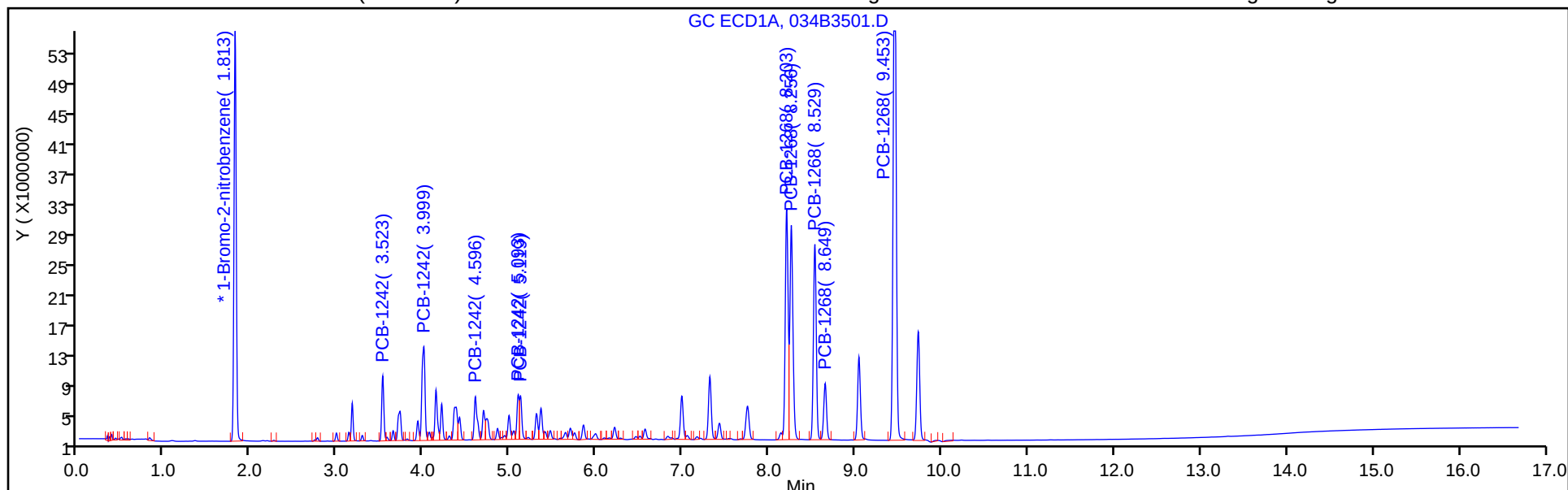
ALS Bottle#: 34

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

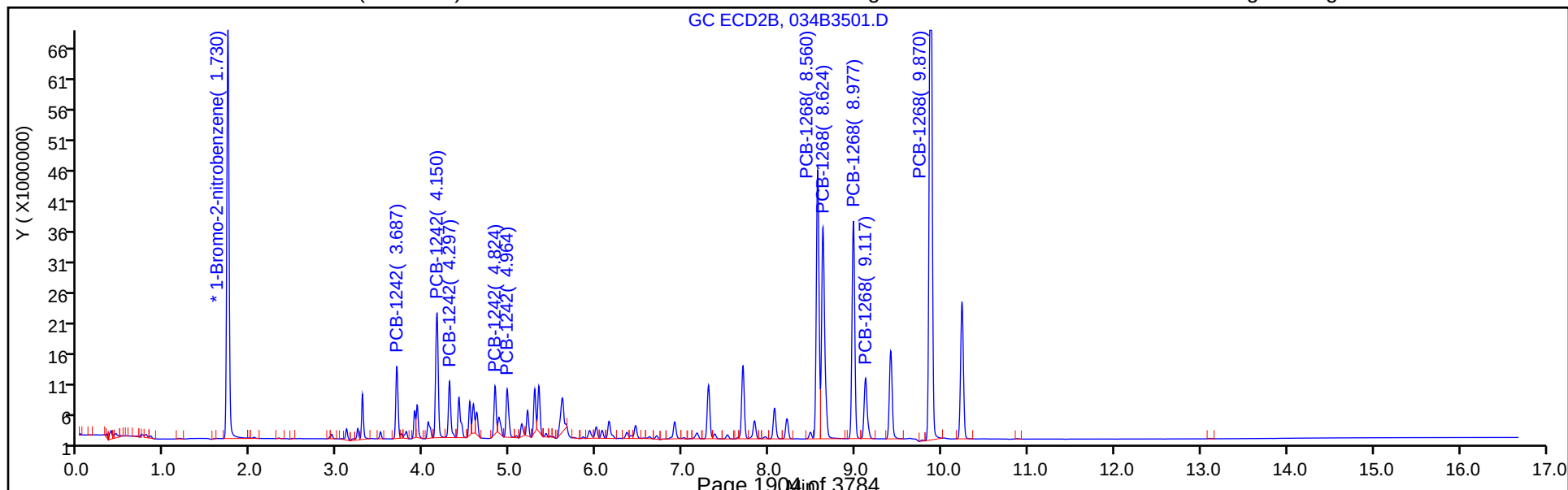
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\035B3601.D
 Lims ID: STD5
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 22-May-2019 00:36:19 ALS Bottle#: 35 Worklist Smp#: 35
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD5
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub5
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:20 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:59:06

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.812	1.812	0.000	93109171	100.0	100.0
2	1.729	1.729	0.000	117856009	100.0	100.0

RPD = 0.00

10 PCB-1242

1	3.522	3.522	0.000	26675713	500.0	522.5
1	3.995	3.995	0.000	56856894	500.0	521.2
1	4.595	4.595	0.000	25124837	500.0	515.9
1	5.092	5.092	0.000	19403021	500.0	527.3
1	5.118	5.118	0.000	19466346	500.0	507.2

Average of Peak Amounts = 518.8

2	3.686	3.686	0.000	38538342	500.0	530.0
2	4.149	4.149	0.000	79048326	500.0	529.1
2	4.296	4.296	0.000	34879490	500.0	536.3
2	4.826	4.826	0.000	27769173	500.0	523.9
2	4.966	4.966	0.000	33150927	500.0	530.4

Average of Peak Amounts = 529.9

RPD = 2.12

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\035B3601.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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13 PCB-1268

1	8.202	8.202	0.000	138215815	500.0	531.4	
1	8.258	8.258	0.000	128432463	500.0	511.5	
1	8.528	8.528	0.000	111537914	500.0	515.1	
1	8.648	8.648	0.000	32539887	500.0	513.5	
1	9.455	9.455	0.000	311381496	500.0	514.5	

Average of Peak Amounts = 517.2

2	8.559	8.559	0.000	174000416	500.0	521.4	
2	8.623	8.623	0.000	159812474	500.0	528.5	
2	8.976	8.976	0.000	142441774	500.0	522.4	
2	9.116	9.116	0.000	45106992	500.0	519.7	
2	9.869	9.869	0.000	399900319	500.0	524.5	

Average of Peak Amounts = 523.3

RPD = 1.18

Reagents:

AR_4268_L7_00017

Amount Added: 0.50

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:21

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\035B3601.D

Injection Date: 22-May-2019 00:36:19

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD5

Worklist Smp#: 35

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

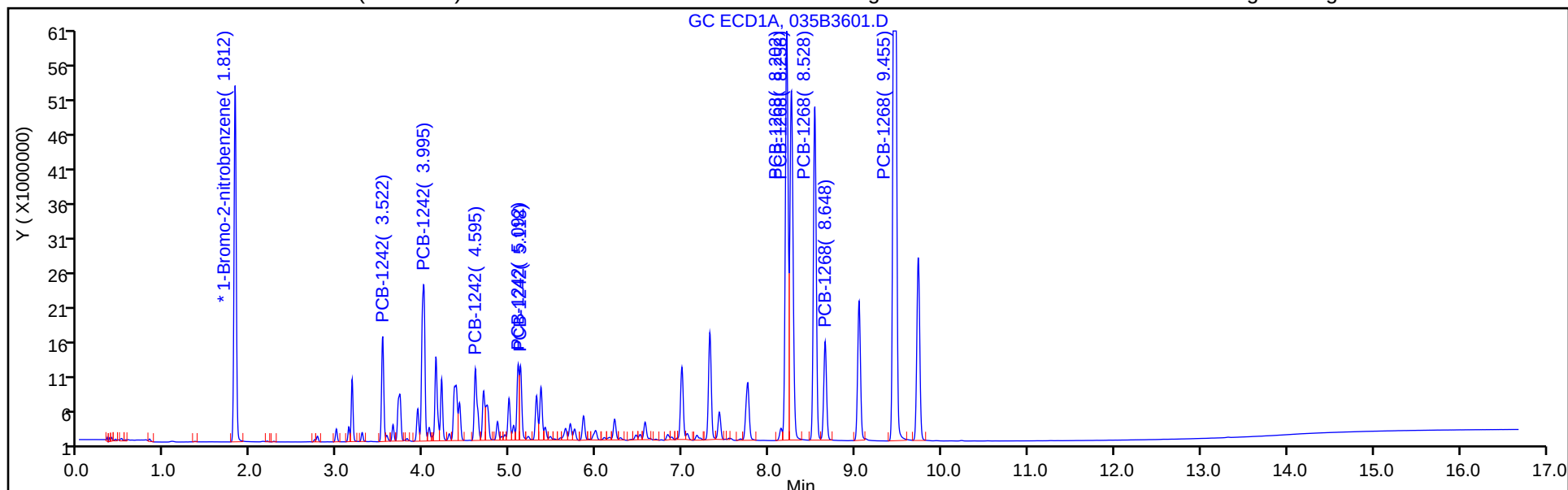
ALS Bottle#: 35

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

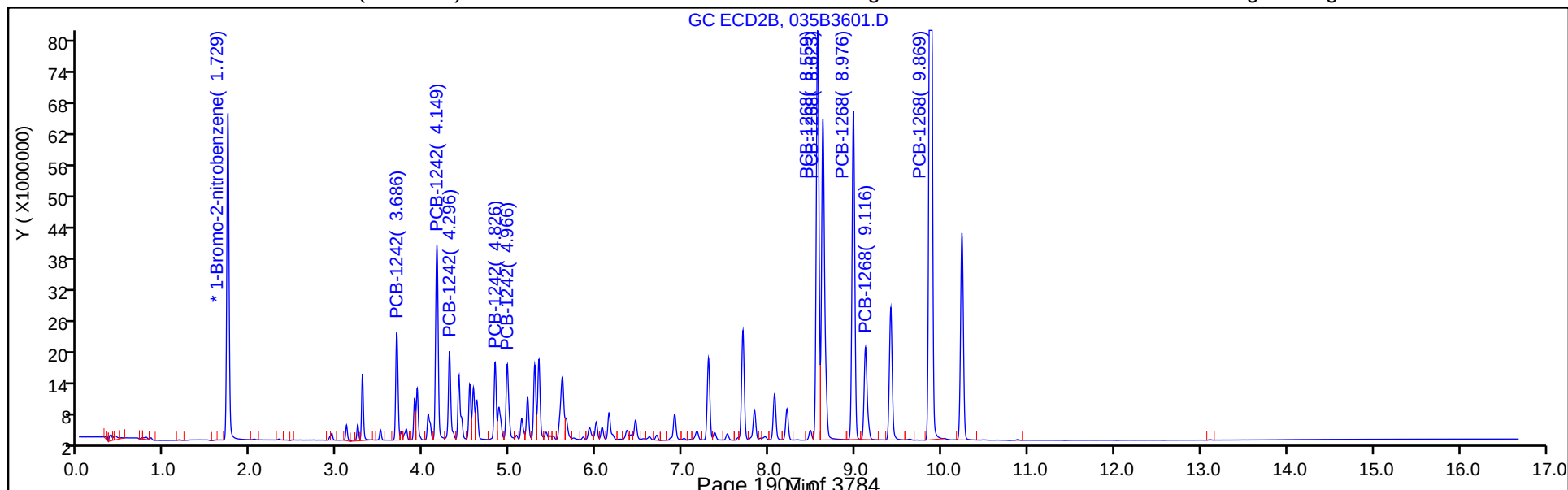
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\036B3701.D
 Lims ID: STD6
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 22-May-2019 00:58:10 ALS Bottle#: 36 Worklist Smp#: 36
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD6
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub5
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:19 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:53:08

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.810	1.810	0.000	92425086	100.0	100.0
2	1.727	1.728	-0.001	118233043	100.0	100.0

RPD = 0.00

10 PCB-1242

1	3.520	3.522	-0.002	37811656	750.0	752.6
1	3.996	3.995	0.001	80990929	750.0	753.2
1	4.593	4.595	-0.002	36255598	750.0	754.9
1	5.090	5.092	-0.002	27065419	750.0	745.1
1	5.116	5.118	-0.002	28790844	750.0	759.7

Average of Peak Amounts = 753.1

2	3.684	3.686	-0.002	53453453	750.0	739.3
2	4.151	4.149	0.002	109558943	750.0	736.6
2	4.297	4.296	0.001	46580853	750.0	719.0
2	4.824	4.826	-0.002	39182457	750.0	745.9
2	4.964	4.966	-0.002	45656954	750.0	732.8

Average of Peak Amounts = 734.7

RPD = 2.47

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\036B3701.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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13 PCB-1268

1	8.203	8.202	0.001	191229929	750.0	744.0	
1	8.256	8.258	-0.002	187925574	750.0	757.0	
1	8.530	8.528	0.002	162278997	750.0	757.7	
1	8.646	8.648	-0.002	47441155	750.0	756.8	
1	9.453	9.455	-0.002	453283842	750.0	757.8	

Average of Peak Amounts = 754.7

2	8.561	8.559	0.002	248913999	750.0	749.7	
2	8.624	8.623	0.001	221637403	750.0	736.4	
2	8.974	8.976	-0.002	203353336	750.0	749.2	
2	9.114	9.116	-0.002	64843919	750.0	751.1	
2	9.871	9.869	0.002	565187863	750.0	744.6	

Average of Peak Amounts = 746.2

RPD = 1.13

S 8 Polychlorinated biphenyls, Total

1	1507.7
2	1480.9

RPD = 1.79

Reagents:

AR_4268_L7_00017

Amount Added: 0.75

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:19

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\036B3701.D

Injection Date: 22-May-2019 00:58:10

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD6

Worklist Smp#: 36

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

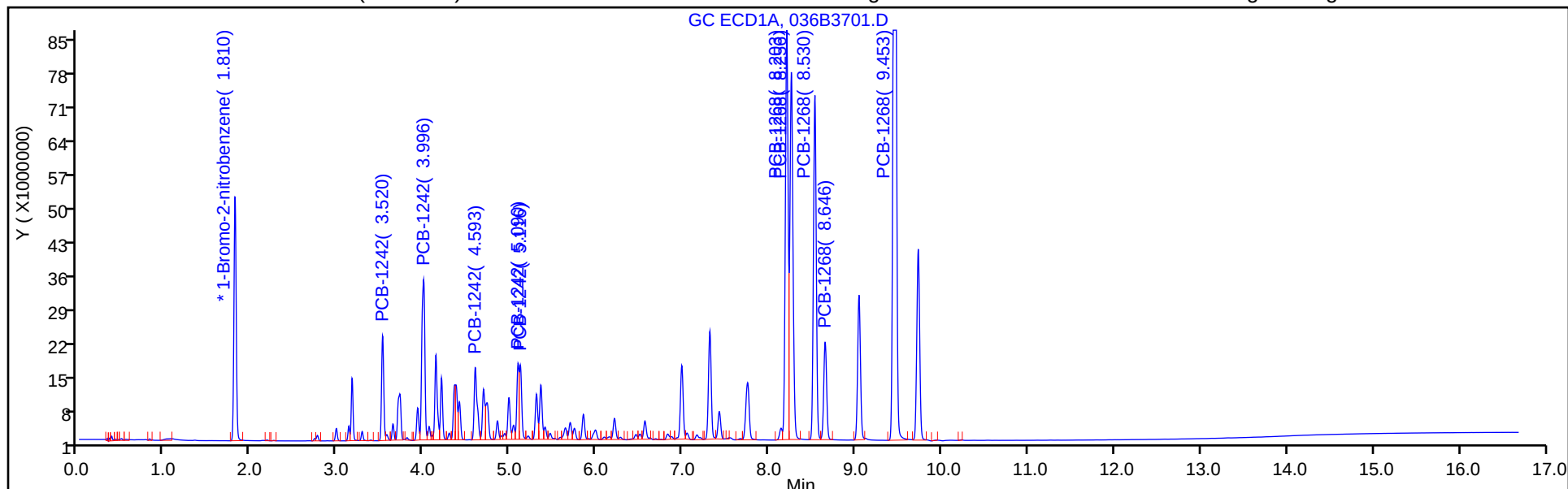
ALS Bottle#: 36

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

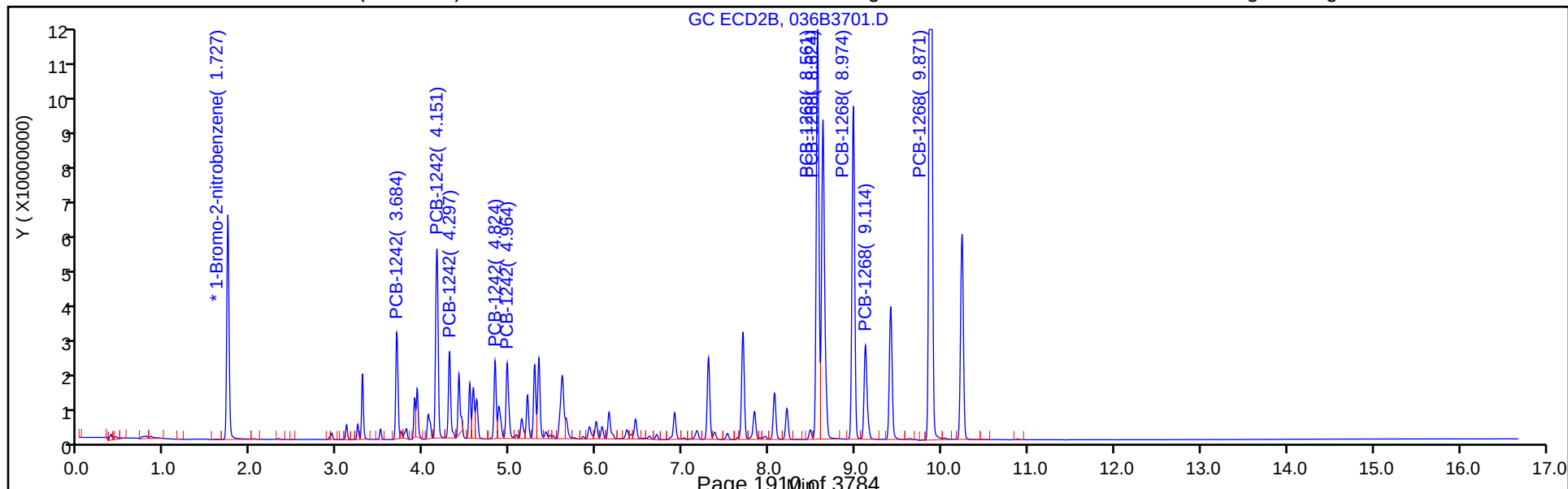
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Lims ID: STD7
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 22-May-2019 01:20:05 ALS Bottle#: 37 Worklist Smp#: 37
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD7
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub5
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:17 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:54:03

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.810	0.003	97001223	100.0	100.0
2	1.727	1.728	-0.001	122688497	100.0	100.0

RPD = 0.00

10 PCB-1242

1	3.520	3.522	-0.002	50112110	1000.0	954.3
1	3.996	3.995	0.001	108221803	1000.0	962.2
1	4.593	4.595	-0.002	48619689	1000.0	967.6
1	5.090	5.092	-0.002	36571030	1000.0	962.2
1	5.116	5.118	-0.002	38859073	1000.0	979.4

Average of Peak Amounts = 965.1

2	3.684	3.686	-0.002	71542439	1000.0	958.6
2	4.151	4.149	0.002	149586060	1000.0	973.9
2	4.294	4.296	-0.002	66143479	1000.0	989.7
2	4.824	4.826	-0.002	53948678	1000.0	997.0
2	4.964	4.966	-0.002	63588651	1000.0	987.8

Average of Peak Amounts = 981.4

RPD = 1.67

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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13 PCB-1268

1	8.203	8.202	0.001	261683128	1000.0	972.6	
1	8.256	8.258	-0.002	253062662	1000.0	973.1	
1	8.530	8.528	0.002	217840973	1000.0	970.7	
1	8.646	8.648	-0.002	64168558	1000.0	976.9	
1	9.456	9.455	0.001	606120555	1000.0	967.5	

Average of Peak Amounts = 972.2

2	8.561	8.559	0.002	330455811	1000.0	963.2	
2	8.624	8.623	0.001	300839307	1000.0	967.9	
2	8.977	8.976	0.001	269856068	1000.0	961.9	
2	9.114	9.116	-0.002	85953743	1000.0	963.5	
2	9.871	9.869	0.002	760045138	1000.0	969.0	

Average of Peak Amounts = 965.1

RPD = 0.73

S 8 Polychlorinated biphenyls, Total

1	1937.3
2	1946.5

RPD = 0.47

Reagents:

AR_4268_L7_00017

Amount Added: 1.00

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:18

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D

Injection Date: 22-May-2019 01:20:05

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD7

Worklist Smp#: 37

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

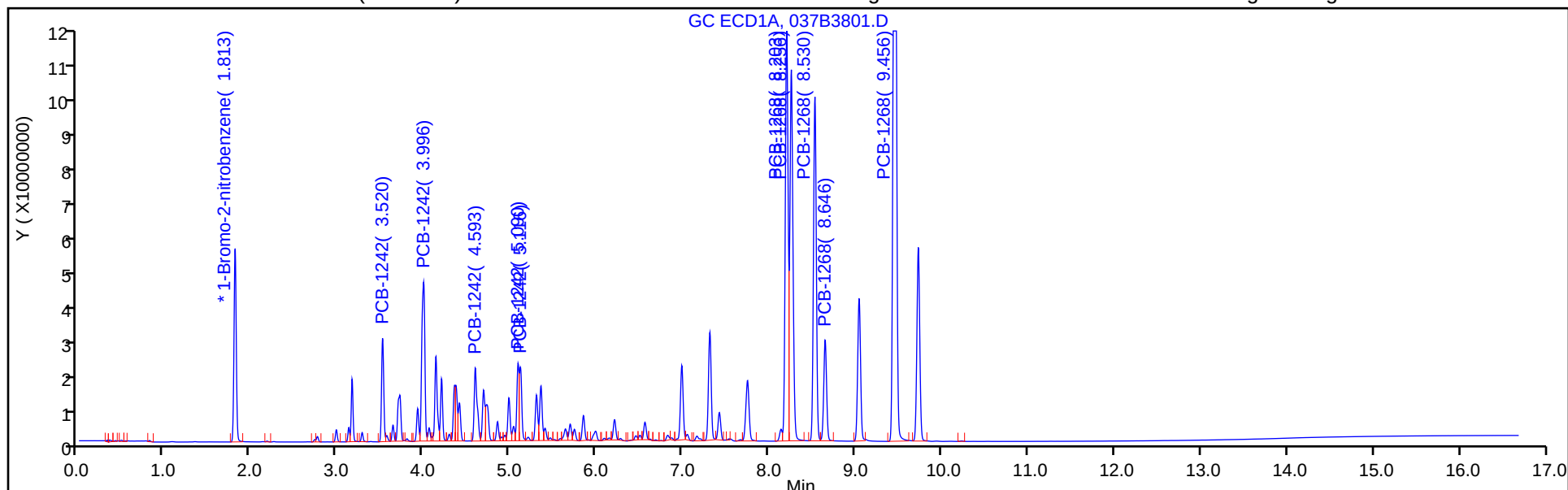
ALS Bottle#: 37

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

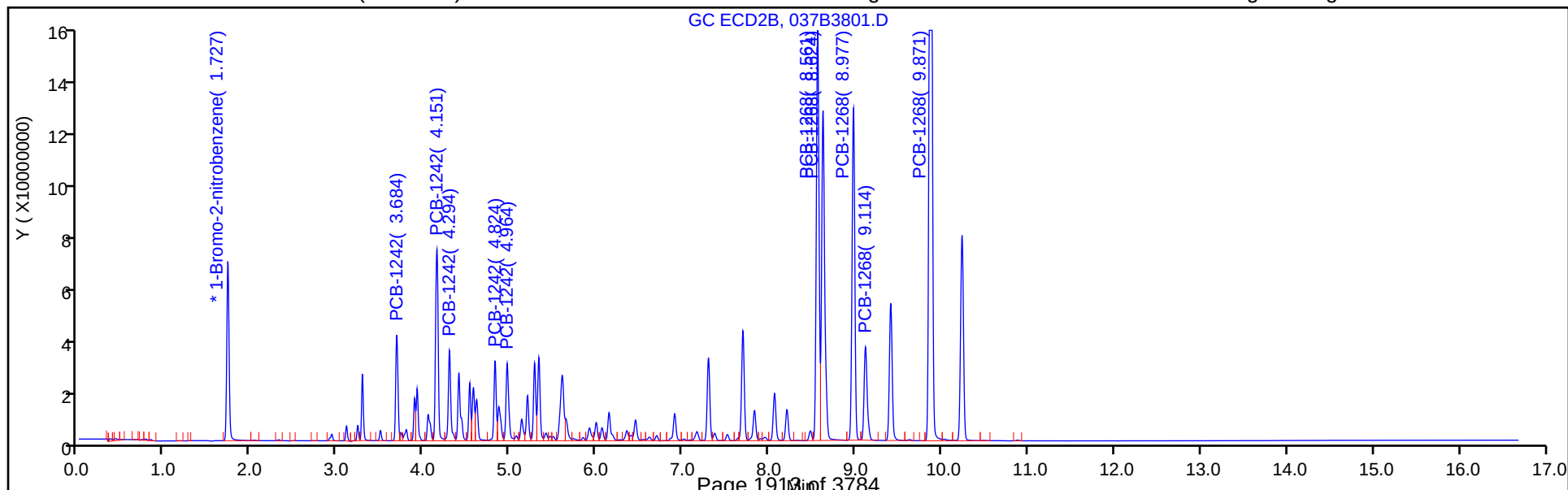
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 459083

SDG No.: _____

Instrument ID: SGC_P3 GC Column: CLP2 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/21/2019 23:08 Calibration End Date: 05/22/2019 01:20 Calibration ID: 36522

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-459083/31	031B3201.D
Level 2	STD2 280-459083/32	032B3301.D
Level 3	STD3 280-459083/33	033B3401.D
Level 4	STD4 280-459083/34	034B3501.D
Level 5	STD5 280-459083/35	035B3601.D
Level 6	STD6 280-459083/36	036B3701.D
Level 7	STD7 280-459083/37	037B3801.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
PCB-1242 Peak 1	0.0884 0.0603	0.0858 0.0583	0.0729	0.0682	0.0654	Lin1	1.0347	0.0597							0.9970		0.9900
PCB-1242 Peak 2	0.1832 0.1236	0.1640 0.1219	0.1449	0.1350	0.1341	Lin1	1.8317	0.1233							0.9980		0.9900
PCB-1242 Peak 3	0.0804 0.0525	0.0733 0.0539	0.0643	0.0572	0.0592	Lin1	0.8350	0.0536							0.9980		0.9900
PCB-1242 Peak 4	0.0836 0.0442	0.0661 0.0440	0.0542	0.0425	0.0471	Lin	0.9584	0.0431							0.9980		0.9900
PCB-1242 Peak 5	0.0735 0.0515	0.0666 0.0518	0.0604	0.0534	0.0563	Lin1	0.6489	0.0518							0.9990		0.9900
PCB-1268 Peak 1	0.4021 0.2807	0.3629 0.2693	0.3222	0.3076	0.2953	Lin1	3.9761	0.2755							0.9980		0.9900
PCB-1268 Peak 2	0.3671 0.2499	0.3323 0.2452	0.2949	0.2803	0.2712	Lin1	3.7645	0.2494							0.9980		0.9900
PCB-1268 Peak 3	0.3190 0.2293	0.2949 0.2200	0.2627	0.2512	0.2417	Lin1	3.0720	0.2255							0.9980		0.9900
PCB-1268 Peak 4	0.1030 0.0731	0.0960 0.0701	0.0856	0.0793	0.0765	Lin1	1.0506	0.0716							0.9980		0.9900
PCB-1268 Peak 5	0.8970 0.6374	0.8338 0.6195	0.7440	0.6876	0.6786	Lin1	8.7599	0.6303							0.9980		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 459083

SDG No.: _____

Instrument ID: SGC_P3 GC Column: CLP2 ID: 0.32 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/21/2019 23:08 Calibration End Date: 05/22/2019 01:20 Calibration ID: 36522

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD1 280-459083/31	031B3201.D
Level 2	STD2 280-459083/32	032B3301.D
Level 3	STD3 280-459083/33	033B3401.D
Level 4	STD4 280-459083/34	034B3501.D
Level 5	STD5 280-459083/35	035B3601.D
Level 6	STD6 280-459083/36	036B3701.D
Level 7	STD7 280-459083/37	037B3801.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
PCB-1242 Peak 1	BNB	Lin1	2568915 53453453	5131327 71542439	9075479	21261166	38538342	25.0 750	50.0 1000	100	250	500
PCB-1242 Peak 2	BNB	Lin1	5326472 109558943	9809790 149586060	18025229	42052907	79048326	25.0 750	50.0 1000	100	250	500
PCB-1242 Peak 3	BNB	Lin1	2336877 46580853	4385035 66143479	8005087	17818829	34879490	25.0 750	50.0 1000	100	250	500
PCB-1242 Peak 4	BNB	Lin	2430320 39182457	3952941 53948678	6749901	13243432	27769173	25.0 750	50.0 1000	100	250	500
PCB-1242 Peak 5	BNB	Lin1	2137913 45656954	3982196 63588651	7517431	16644711	33150927	25.0 750	50.0 1000	100	250	500
PCB-1268 Peak 1	BNB	Lin1	11689898 248913999	21708729 330455811	40089467	95834448	174000416	25.0 750	50.0 1000	100	250	500
PCB-1268 Peak 2	BNB	Lin1	10673795 221637403	19881820 300839307	36695600	87341703	159812474	25.0 750	50.0 1000	100	250	500
PCB-1268 Peak 3	BNB	Lin1	9274331 203353336	17643062 269856068	32689974	78282713	142441774	25.0 750	50.0 1000	100	250	500
PCB-1268 Peak 4	BNB	Lin1	2993893 64843919	5744954 85953743	10650378	24710555	45106992	25.0 750	50.0 1000	100	250	500
PCB-1268 Peak 5	BNB	Lin1	26080296 565187863	49885343 760045138	92580134	214229504	399900319	25.0 750	50.0 1000	100	250	500

Curve Type Legend:

Lin = Linear ISTD
Lin1 = Linear 1/conc ISTD

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\031B3201.D
 Lims ID: STD1 4268
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 21-May-2019 23:08:46 ALS Bottle#: 31 Worklist Smp#: 31
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD1
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub5
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:26 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:54:40

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.811	0.002	92280633	100.0	100.0
2	1.728	1.729	-0.001	116296171	100.0	100.0

RPD = 0.00

10 PCB-1242

1	3.520	3.521	-0.001	1765113	25.0	20.8
1	3.997	3.998	-0.001	3590974	25.0	21.9
1	4.597	4.595	0.002	1569642	25.0	22.3
1	5.093	5.091	0.002	1173527	25.0	22.6
1	5.120	5.118	0.002	1160482	25.0	22.7

Average of Peak Amounts = 22.1

2	3.684	3.686	-0.002	2568915	25.0	19.7
2	4.151	4.149	0.002	5326472	25.0	22.3
2	4.298	4.296	0.002	2336877	25.0	21.9
2	4.821	4.826	-0.005	2430320	25.0	26.2
2	4.964	4.966	-0.002	2137913	25.0	23.0

Average of Peak Amounts = 22.6

RPD = 2.33

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\031B3201.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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13 PCB-1268

1	8.203	8.201	0.002	7911185	25.0	22.7
1	8.257	8.258	-0.001	7428603	25.0	23.7
1	8.530	8.528	0.002	6231016	25.0	23.6
1	8.650	8.648	0.002	1827198	25.0	23.9
1	9.453	9.455	-0.002	17758801	25.0	22.9

Average of Peak Amounts = 23.4

2	8.561	8.562	-0.001	11689898	25.0	22.1
2	8.624	8.622	0.002	10673795	25.0	21.7
2	8.974	8.976	-0.002	9274331	25.0	21.7
2	9.118	9.116	0.002	2993893	25.0	21.3
2	9.871	9.872	-0.001	26080296	25.0	21.7

Average of Peak Amounts = 21.7

RPD = 7.48

S 8 Polychlorinated biphenyls, Total

1	45.5
2	44.3

RPD = 2.60

Reagents:

AR_4268_L7_00017

Amount Added: 0.03

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:27

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\031B3201.D

Injection Date: 21-May-2019 23:08:46

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD1 4268

Worklist Smp#: 31

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

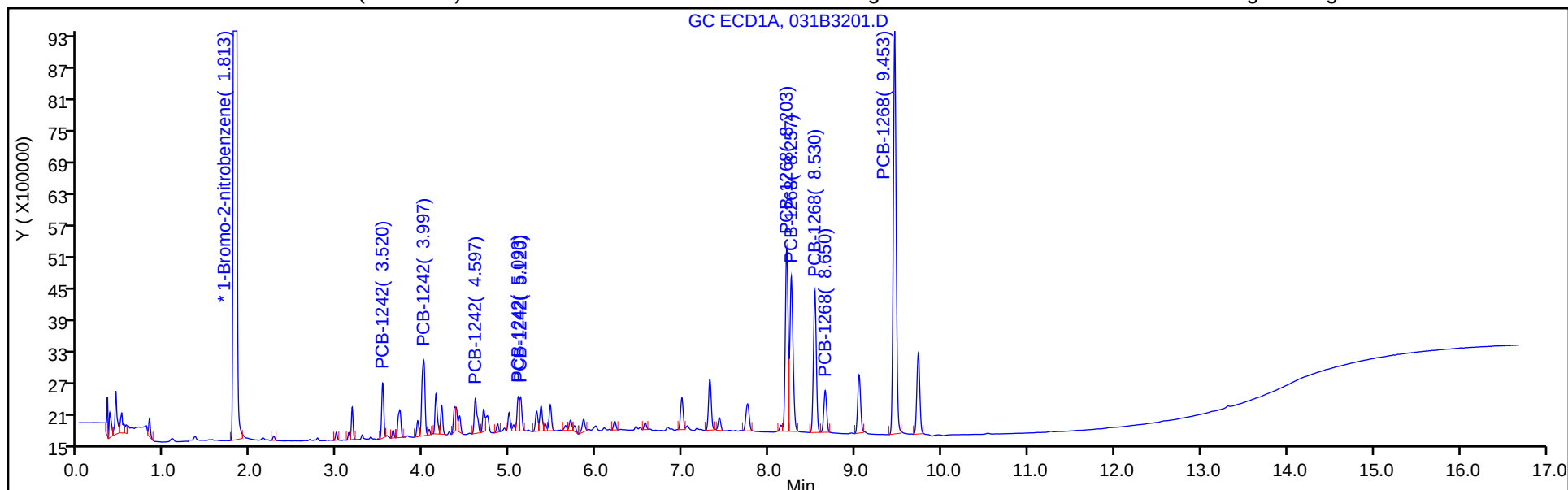
ALS Bottle#: 31

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

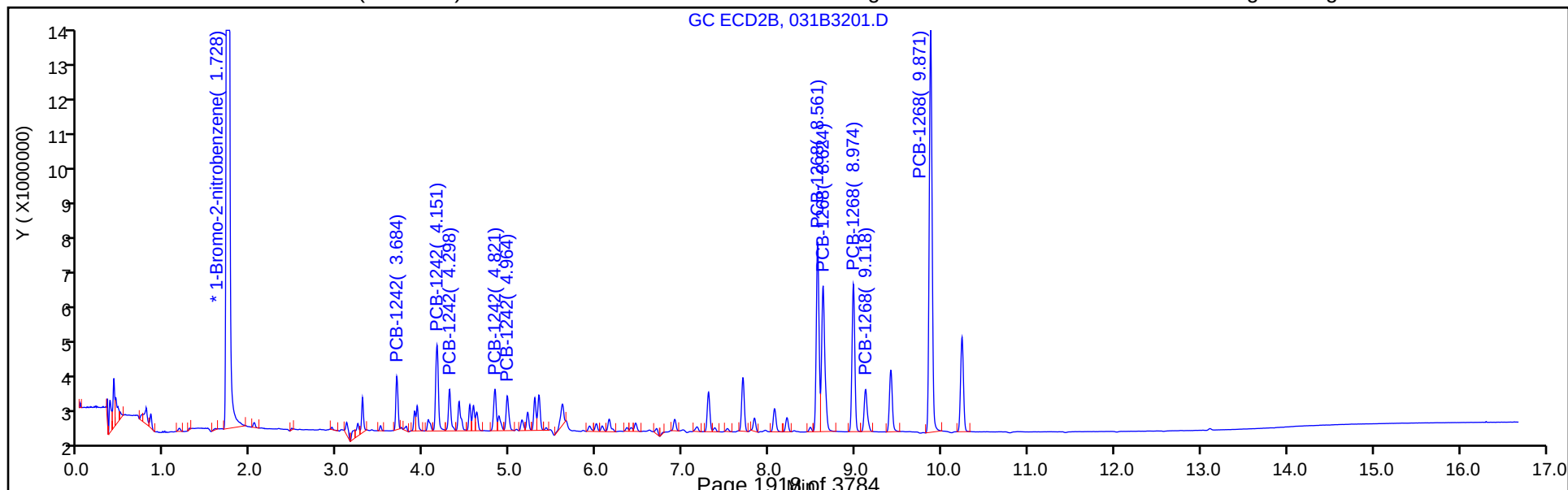
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\032B3301.D
 Lims ID: STD2
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 21-May-2019 23:30:39 ALS Bottle#: 32 Worklist Smp#: 32
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD2
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub5
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:25 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.811	0.002	94581023	100.0	100.0
2	1.727	1.729	-0.002	119651782	100.0	100.0

RPD = 0.00

10 PCB-1242

1	3.519	3.521	-0.002	3368022	50.0	51.8
1	3.996	3.998	-0.002	6947567	50.0	52.1
1	4.596	4.595	0.001	3030462	50.0	51.6
1	5.093	5.091	0.002	2238908	50.0	50.9
1	5.119	5.118	0.001	2294024	50.0	51.5

Average of Peak Amounts = 51.6

2	3.687	3.686	0.001	5131327	50.0	54.5
2	4.150	4.149	0.001	9809790	50.0	51.6
2	4.297	4.296	0.001	4385035	50.0	52.8
2	4.824	4.826	-0.002	3952941	50.0	54.4
2	4.964	4.966	-0.002	3982196	50.0	51.7

Average of Peak Amounts = 53.0

RPD = 2.69

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\032B3301.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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13 PCB-1268

1	8.203	8.201	0.002	15678505	50.0	51.8
1	8.256	8.258	-0.002	14314761	50.0	50.3
1	8.529	8.528	0.001	12291736	50.0	50.8
1	8.649	8.648	0.001	3593791	50.0	51.0
1	9.456	9.455	0.001	35273592	50.0	51.1

Average of Peak Amounts = 51.0

2	8.560	8.562	-0.002	21708729	50.0	51.4
2	8.624	8.622	0.002	19881820	50.0	51.5
2	8.974	8.976	-0.002	17643062	50.0	51.8
2	9.117	9.116	0.001	5744954	50.0	52.4
2	9.870	9.872	-0.002	49885343	50.0	52.3

Average of Peak Amounts = 51.9

RPD = 1.72

S 8 Polychlorinated biphenyls, Total

1	102.6
2	104.9

RPD = 2.21

Reagents:

AR_4268_L7_00017

Amount Added: 0.05

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:25

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\032B3301.D

Injection Date: 21-May-2019 23:30:39

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD2

Worklist Smp#: 32

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

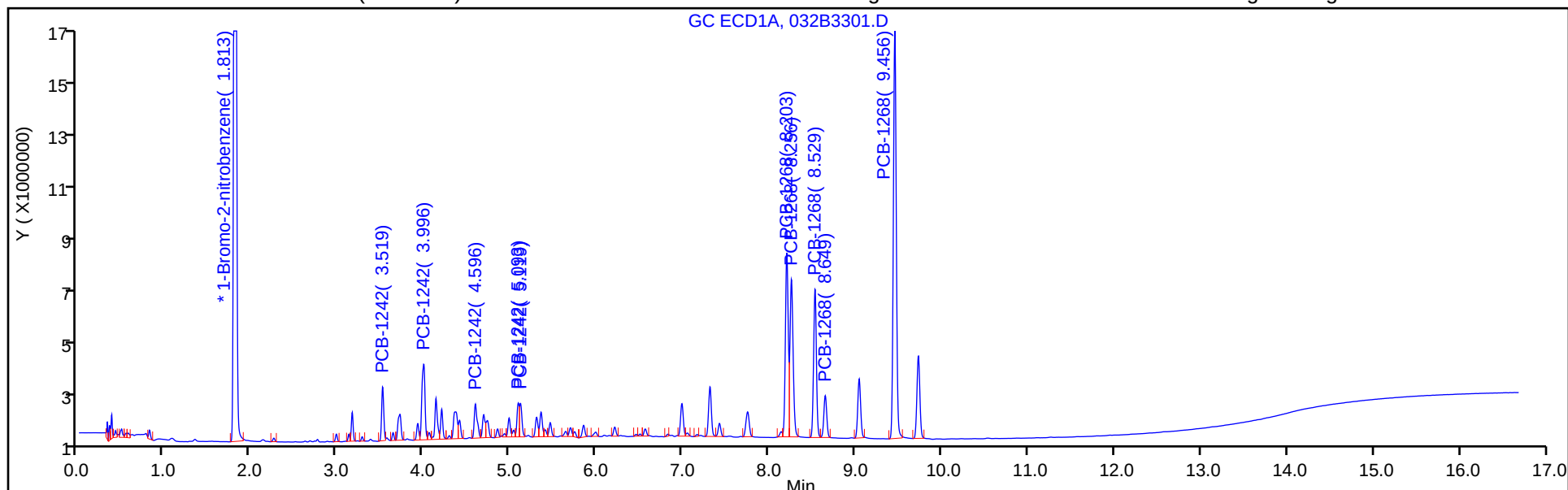
ALS Bottle#: 32

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

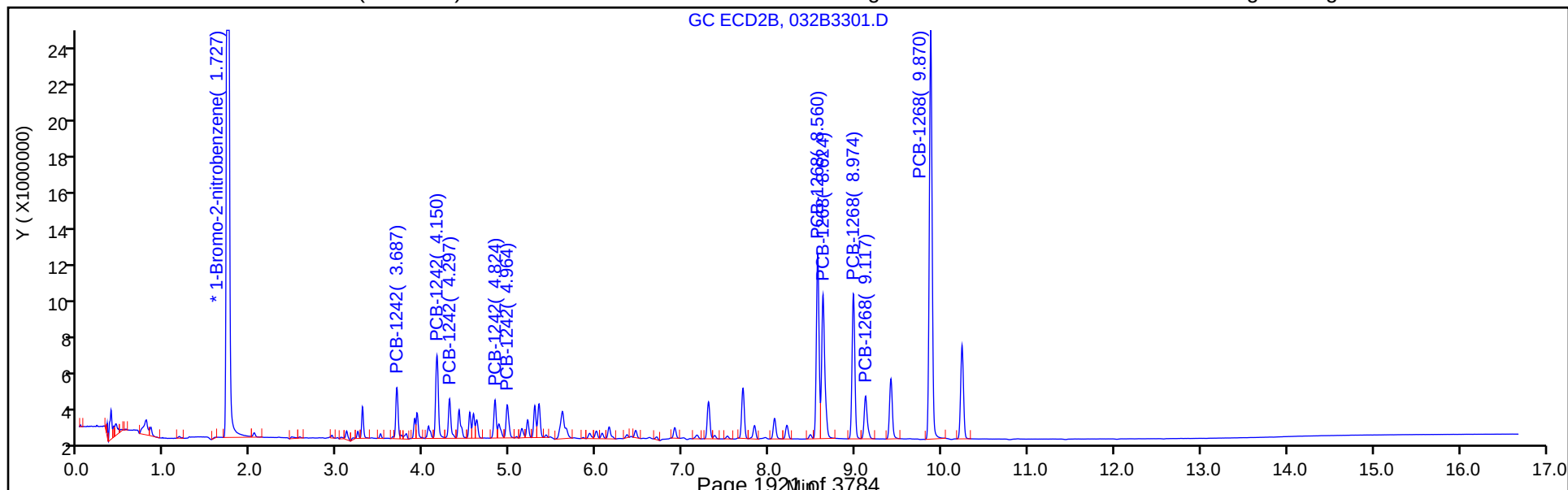
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\033B3401.D
 Lims ID: STD3
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 21-May-2019 23:52:31 ALS Bottle#: 33 Worklist Smp#: 33
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD3
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub5
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:23 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.811	1.811	0.000	97540283	100.0	100.0
2	1.729	1.729	0.000	124429123	100.0	100.0

RPD = 0.00

10 PCB-1242

1	3.521	3.521	0.000	6301045	100.0	106.2
1	3.998	3.998	0.000	12770866	100.0	102.3
1	4.595	4.595	0.000	5694751	100.0	103.1
1	5.091	5.091	0.000	4155873	100.0	99.7
1	5.118	5.118	0.000	4532632	100.0	106.3

Average of Peak Amounts = 103.5

2	3.686	3.686	0.000	9075479	100.0	104.8
2	4.149	4.149	0.000	18025229	100.0	102.6
2	4.296	4.296	0.000	8005087	100.0	104.4
2	4.826	4.826	0.000	6749901	100.0	103.5
2	4.966	4.966	0.000	7517431	100.0	104.1

Average of Peak Amounts = 103.9

RPD = 0.36

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\033B3401.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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13 PCB-1268

1	8.201	8.201	0.000	29908886	100.0	103.0	
1	8.258	8.258	0.000	27771415	100.0	100.4	
1	8.528	8.528	0.000	23730748	100.0	100.0	
1	8.648	8.648	0.000	6921386	100.0	99.9	
1	9.455	9.455	0.000	67935090	100.0	101.5	

Average of Peak Amounts = 101.0

2	8.562	8.562	0.000	40089467	100.0	102.5	
2	8.622	8.622	0.000	36695600	100.0	103.1	
2	8.976	8.976	0.000	32689974	100.0	102.9	
2	9.116	9.116	0.000	10650378	100.0	104.8	
2	9.872	9.872	0.000	92580134	100.0	104.2	

Average of Peak Amounts = 103.5

RPD = 2.47

S 8 Polychlorinated biphenyls, Total

1	204.5	
2	207.4	

RPD = 1.41

Reagents:

AR_4268_L7_00017

Amount Added: 0.10

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:24

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\033B3401.D

Injection Date: 21-May-2019 23:52:31

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD3

Worklist Smp#: 33

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

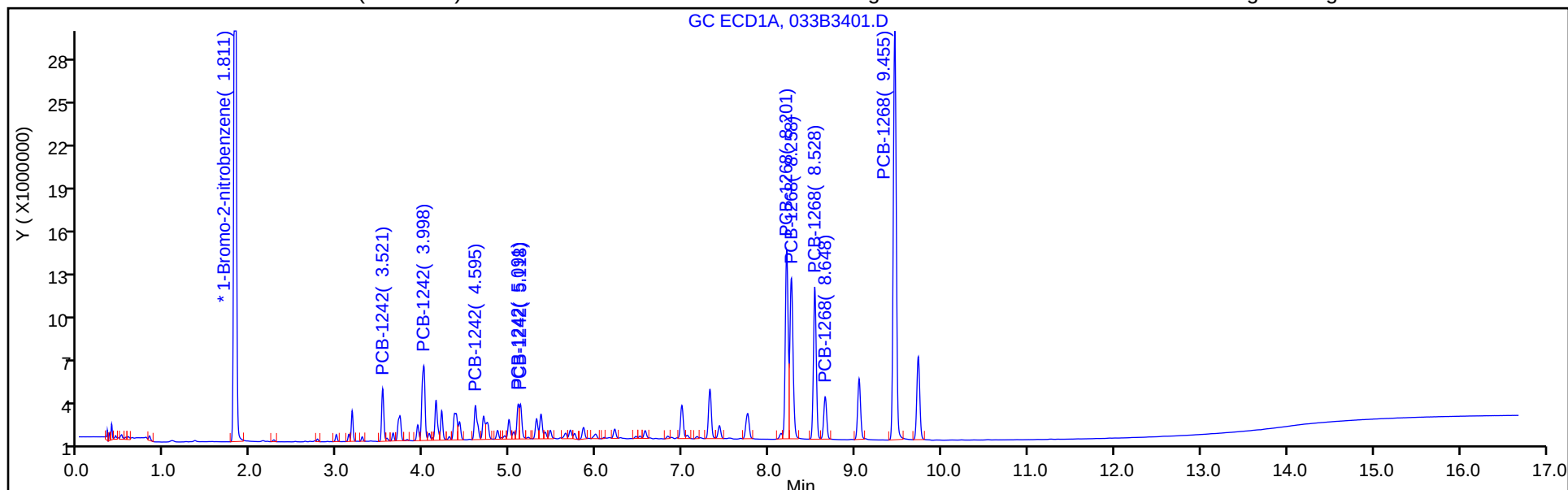
ALS Bottle#: 33

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

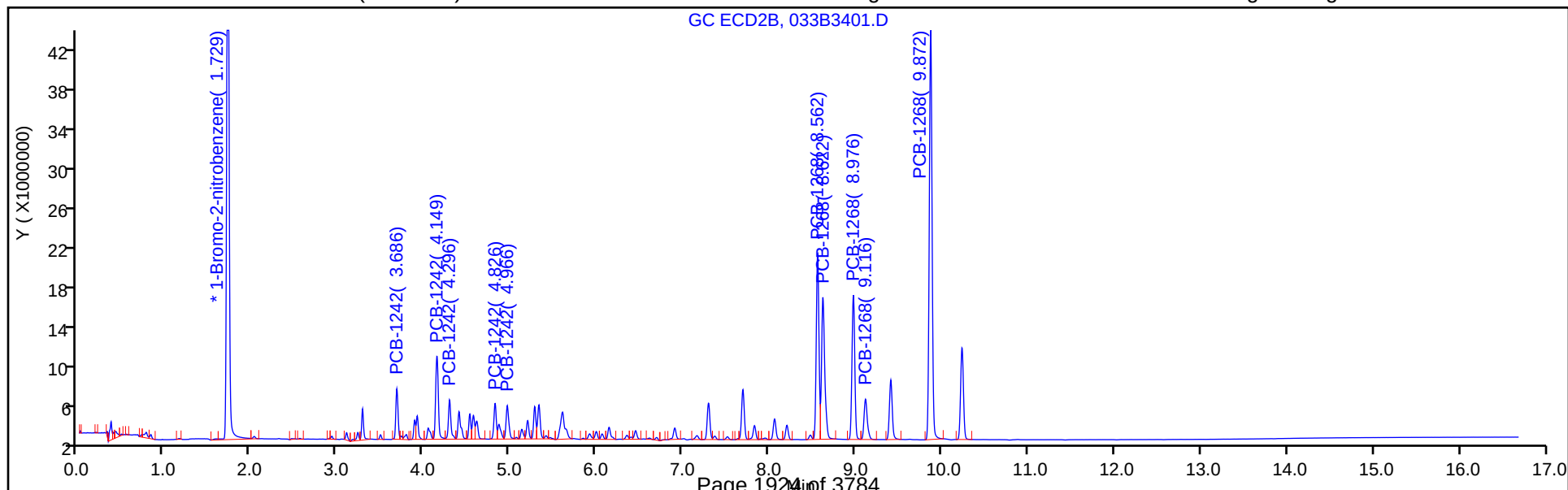
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\034B3501.D
 Lims ID: STD4
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 22-May-2019 00:14:26 ALS Bottle#: 34 Worklist Smp#: 34
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD4
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub5
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:22 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:50:38

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.812	0.001	98550774	100.0	100.0
2	1.730	1.729	0.001	124631527	100.0	100.0

RPD = 0.00

10 PCB-1242

1	3.523	3.522	0.001	14801735	250.0	266.8
1	3.999	3.995	0.004	30927953	250.0	262.0
1	4.596	4.595	0.001	13656115	250.0	259.6
1	5.093	5.092	0.001	10598517	250.0	267.2
1	5.119	5.118	0.001	10254556	250.0	248.2

Average of Peak Amounts = 260.8

2	3.687	3.686	0.001	21261166	250.0	268.2
2	4.150	4.149	0.001	42052907	250.0	258.8
2	4.297	4.296	0.001	17818829	250.0	251.0
2	4.824	4.826	-0.002	13243432	250.0	224.1
2	4.964	4.966	-0.002	16644711	250.0	245.2

Average of Peak Amounts = 249.5

RPD = 4.43

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\034B3501.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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13 PCB-1268

1	8.203	8.202	0.001	69916217	250.0	249.5
1	8.256	8.258	-0.002	69682114	250.0	259.0
1	8.529	8.528	0.001	59559483	250.0	257.0
1	8.649	8.648	0.001	17149578	250.0	253.0
1	9.453	9.455	-0.002	168555987	250.0	259.7

Average of Peak Amounts = 255.6

2	8.560	8.559	0.001	95834448	250.0	264.7
2	8.624	8.623	0.001	87341703	250.0	265.8
2	8.977	8.976	0.001	78282713	250.0	265.0
2	9.117	9.116	0.001	24710555	250.0	262.2
2	9.870	9.869	0.001	214229504	250.0	258.8

Average of Peak Amounts = 263.3

RPD = 2.95

S 8 Polychlorinated biphenyls, Total

1	516.4
2	512.8

RPD = 0.71

Reagents:

AR_4268_L7_00017

Amount Added: 0.25

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:22

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\034B3501.D

Injection Date: 22-May-2019 00:14:26

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD4

Worklist Smp#: 34

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

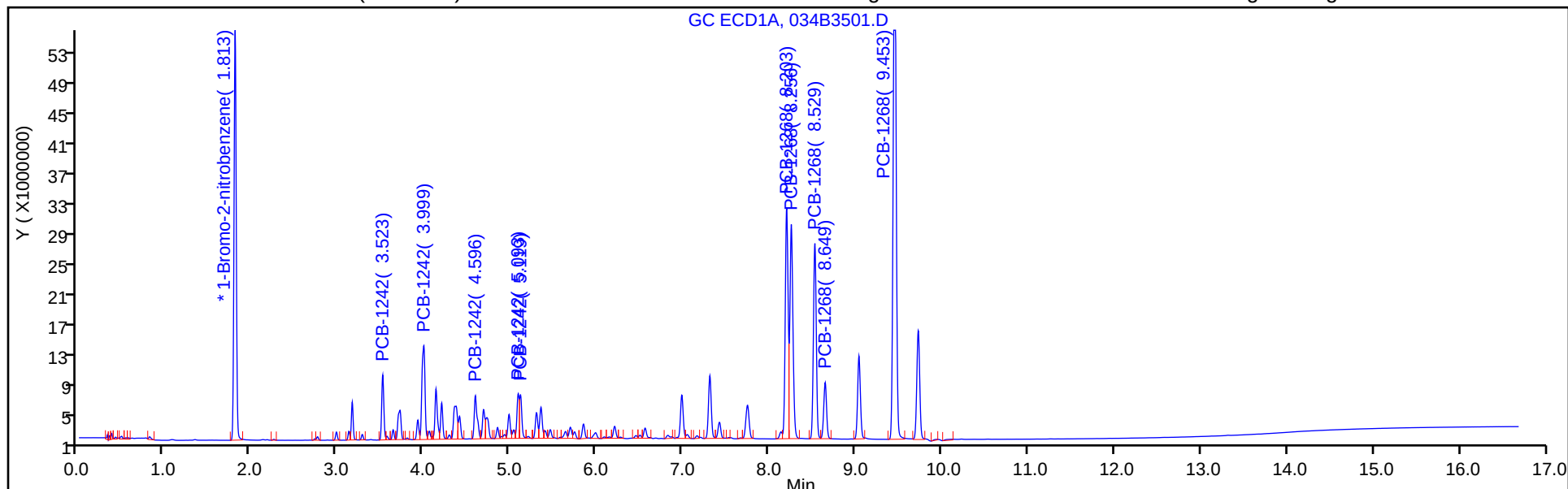
ALS Bottle#: 34

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

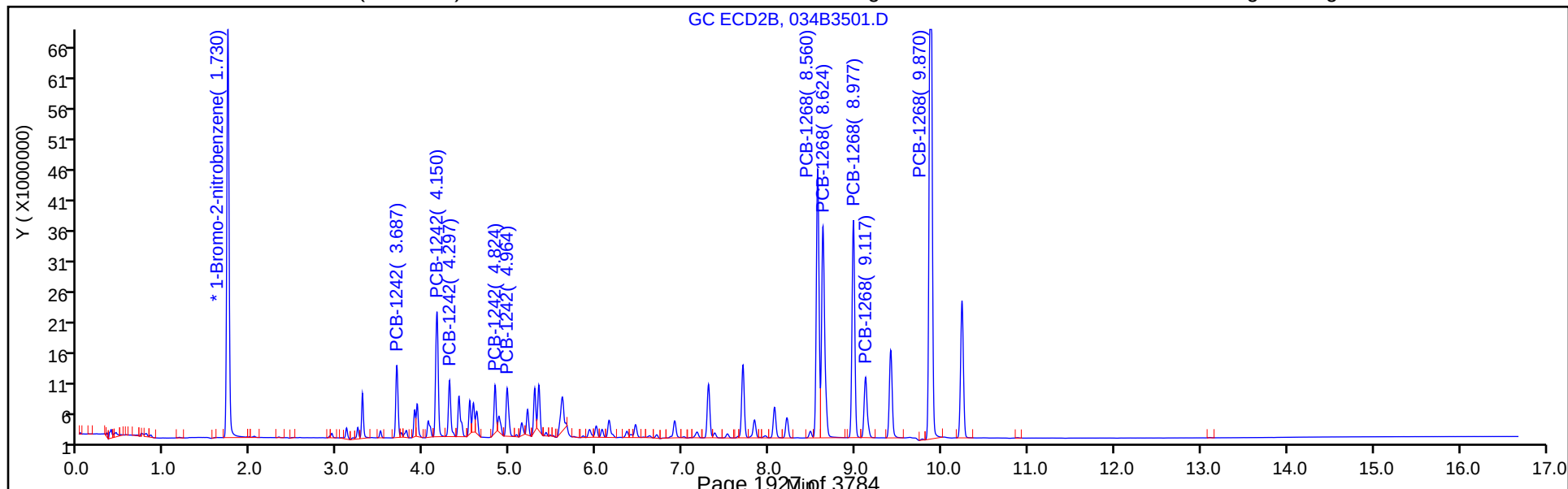
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\035B3601.D
 Lims ID: STD5
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 22-May-2019 00:36:19 ALS Bottle#: 35 Worklist Smp#: 35
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD5
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub5
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:20 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:59:06

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.812	1.812	0.000	93109171	100.0	100.0
2	1.729	1.729	0.000	117856009	100.0	100.0

RPD = 0.00

10 PCB-1242

1	3.522	3.522	0.000	26675713	500.0	522.5
1	3.995	3.995	0.000	56856894	500.0	521.2
1	4.595	4.595	0.000	25124837	500.0	515.9
1	5.092	5.092	0.000	19403021	500.0	527.3
1	5.118	5.118	0.000	19466346	500.0	507.2

Average of Peak Amounts = 518.8

2	3.686	3.686	0.000	38538342	500.0	530.0
2	4.149	4.149	0.000	79048326	500.0	529.1
2	4.296	4.296	0.000	34879490	500.0	536.3
2	4.826	4.826	0.000	27769173	500.0	523.9
2	4.966	4.966	0.000	33150927	500.0	530.4

Average of Peak Amounts = 529.9

RPD = 2.12

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\035B3601.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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13 PCB-1268

1	8.202	8.202	0.000	138215815	500.0	531.4	
1	8.258	8.258	0.000	128432463	500.0	511.5	
1	8.528	8.528	0.000	111537914	500.0	515.1	
1	8.648	8.648	0.000	32539887	500.0	513.5	
1	9.455	9.455	0.000	311381496	500.0	514.5	

Average of Peak Amounts = 517.2

2	8.559	8.559	0.000	174000416	500.0	521.4	
2	8.623	8.623	0.000	159812474	500.0	528.5	
2	8.976	8.976	0.000	142441774	500.0	522.4	
2	9.116	9.116	0.000	45106992	500.0	519.7	
2	9.869	9.869	0.000	399900319	500.0	524.5	

Average of Peak Amounts = 523.3

RPD = 1.18

Reagents:

AR_4268_L7_00017

Amount Added: 0.50

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:21

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\035B3601.D

Injection Date: 22-May-2019 00:36:19

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD5

Worklist Smp#: 35

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

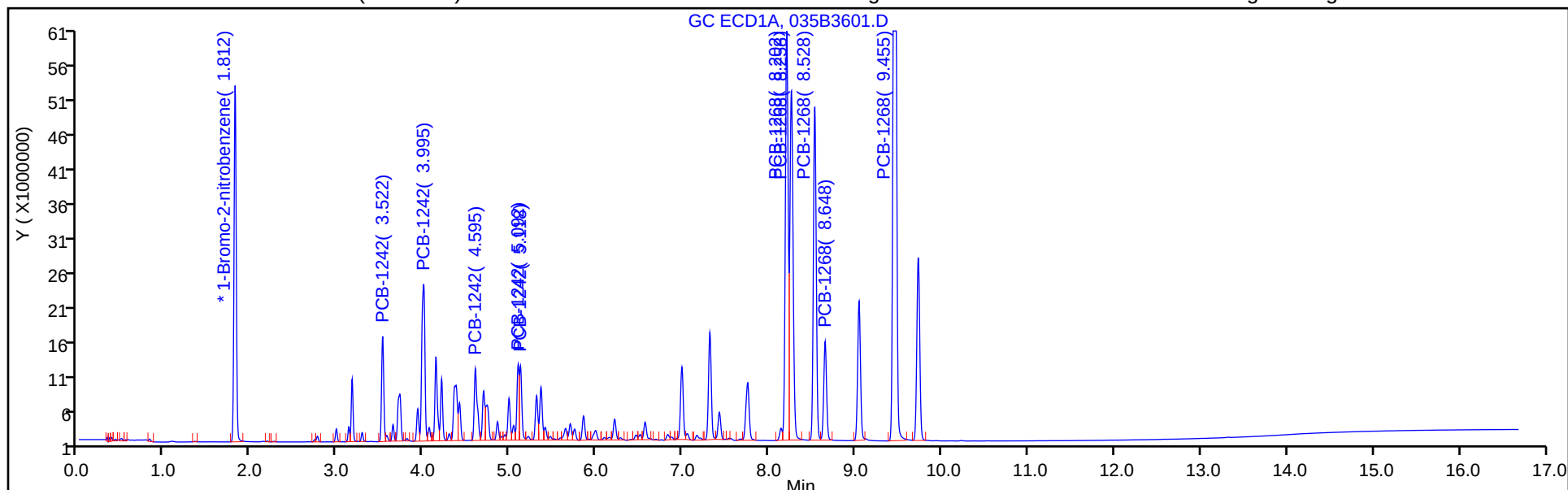
ALS Bottle#: 35

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

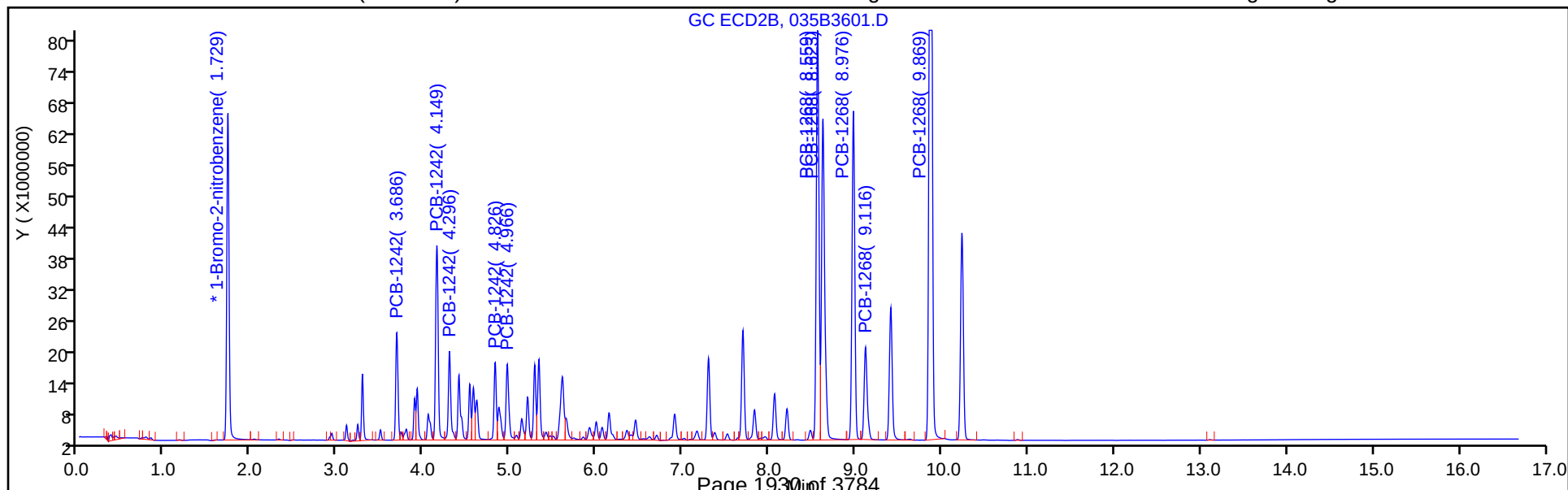
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\036B3701.D
 Lims ID: STD6
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 22-May-2019 00:58:10 ALS Bottle#: 36 Worklist Smp#: 36
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD6
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub5
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:19 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:53:08

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.810	1.810	0.000	92425086	100.0	100.0
2	1.727	1.728	-0.001	118233043	100.0	100.0

RPD = 0.00

10 PCB-1242

1	3.520	3.522	-0.002	37811656	750.0	752.6
1	3.996	3.995	0.001	80990929	750.0	753.2
1	4.593	4.595	-0.002	36255598	750.0	754.9
1	5.090	5.092	-0.002	27065419	750.0	745.1
1	5.116	5.118	-0.002	28790844	750.0	759.7

Average of Peak Amounts = 753.1

2	3.684	3.686	-0.002	53453453	750.0	739.3
2	4.151	4.149	0.002	109558943	750.0	736.6
2	4.297	4.296	0.001	46580853	750.0	719.0
2	4.824	4.826	-0.002	39182457	750.0	745.9
2	4.964	4.966	-0.002	45656954	750.0	732.8

Average of Peak Amounts = 734.7

RPD = 2.47

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\036B3701.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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13 PCB-1268

1	8.203	8.202	0.001	191229929	750.0	744.0	
1	8.256	8.258	-0.002	187925574	750.0	757.0	
1	8.530	8.528	0.002	162278997	750.0	757.7	
1	8.646	8.648	-0.002	47441155	750.0	756.8	
1	9.453	9.455	-0.002	453283842	750.0	757.8	

Average of Peak Amounts = 754.7

2	8.561	8.559	0.002	248913999	750.0	749.7	
2	8.624	8.623	0.001	221637403	750.0	736.4	
2	8.974	8.976	-0.002	203353336	750.0	749.2	
2	9.114	9.116	-0.002	64843919	750.0	751.1	
2	9.871	9.869	0.002	565187863	750.0	744.6	

Average of Peak Amounts = 746.2

RPD = 1.13

S 8 Polychlorinated biphenyls, Total

1	1507.7
2	1480.9

RPD = 1.79

Reagents:

AR_4268_L7_00017

Amount Added: 0.75

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:19

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\036B3701.D

Injection Date: 22-May-2019 00:58:10

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD6

Worklist Smp#: 36

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

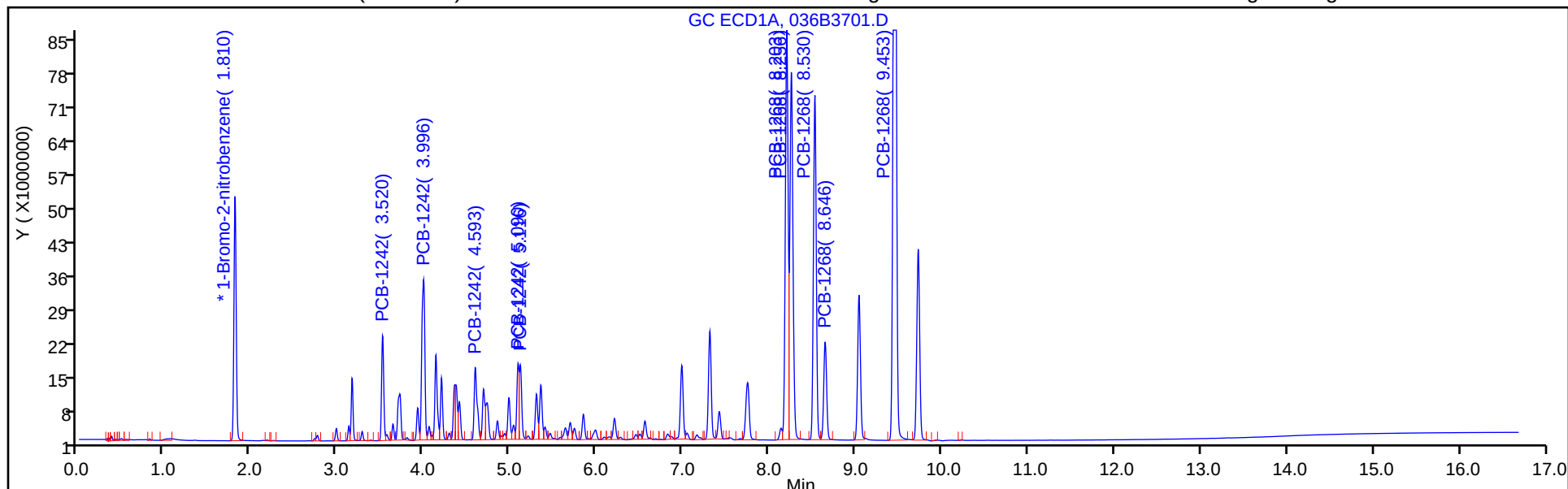
ALS Bottle#: 36

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

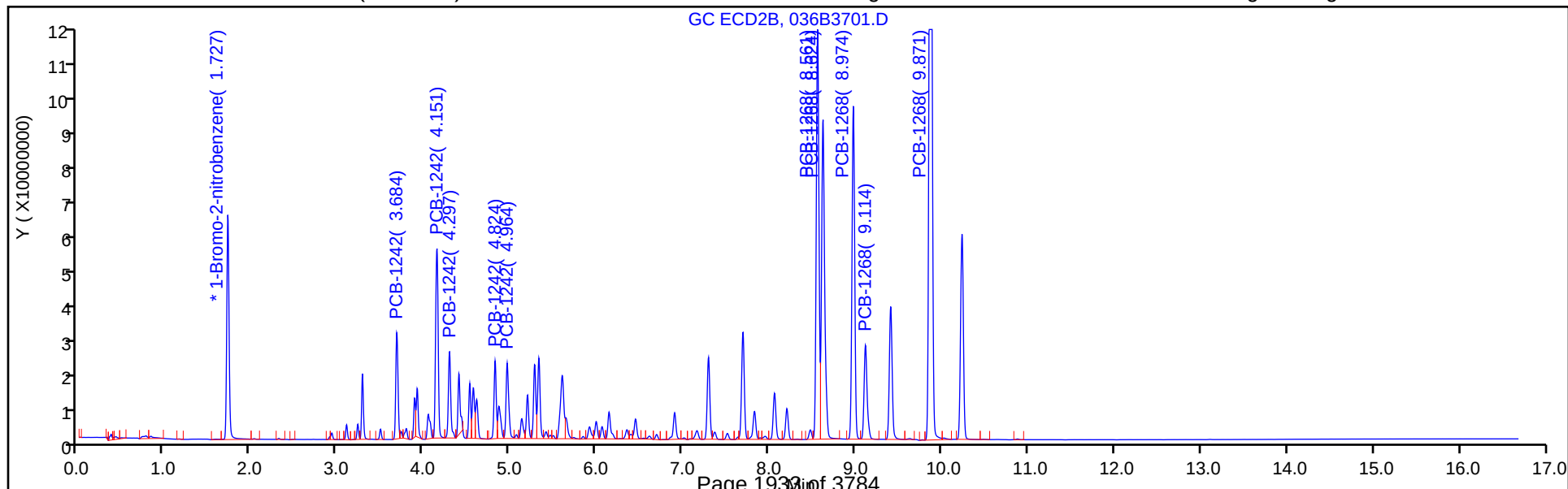
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Lims ID: STD7
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 22-May-2019 01:20:05 ALS Bottle#: 37 Worklist Smp#: 37
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: STD7
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub5
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:14:17 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:54:03

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.810	0.003	97001223	100.0	100.0
2	1.727	1.728	-0.001	122688497	100.0	100.0

RPD = 0.00

10 PCB-1242

1	3.520	3.522	-0.002	50112110	1000.0	954.3
1	3.996	3.995	0.001	108221803	1000.0	962.2
1	4.593	4.595	-0.002	48619689	1000.0	967.6
1	5.090	5.092	-0.002	36571030	1000.0	962.2
1	5.116	5.118	-0.002	38859073	1000.0	979.4

Average of Peak Amounts = 965.1

2	3.684	3.686	-0.002	71542439	1000.0	958.6
2	4.151	4.149	0.002	149586060	1000.0	973.9
2	4.294	4.296	-0.002	66143479	1000.0	989.7
2	4.824	4.826	-0.002	53948678	1000.0	997.0
2	4.964	4.966	-0.002	63588651	1000.0	987.8

Average of Peak Amounts = 981.4

RPD = 1.67

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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13 PCB-1268

1	8.203	8.202	0.001	261683128	1000.0	972.6	
1	8.256	8.258	-0.002	253062662	1000.0	973.1	
1	8.530	8.528	0.002	217840973	1000.0	970.7	
1	8.646	8.648	-0.002	64168558	1000.0	976.9	
1	9.456	9.455	0.001	606120555	1000.0	967.5	

Average of Peak Amounts = 972.2

2	8.561	8.559	0.002	330455811	1000.0	963.2	
2	8.624	8.623	0.001	300839307	1000.0	967.9	
2	8.977	8.976	0.001	269856068	1000.0	961.9	
2	9.114	9.116	-0.002	85953743	1000.0	963.5	
2	9.871	9.869	0.002	760045138	1000.0	969.0	

Average of Peak Amounts = 965.1

RPD = 0.73

S 8 Polychlorinated biphenyls, Total

1	1937.3
2	1946.5

RPD = 0.47

Reagents:

AR_4268_L7_00017

Amount Added: 1.00

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:18

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D

Injection Date: 22-May-2019 01:20:05

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: STD7

Worklist Smp#: 37

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

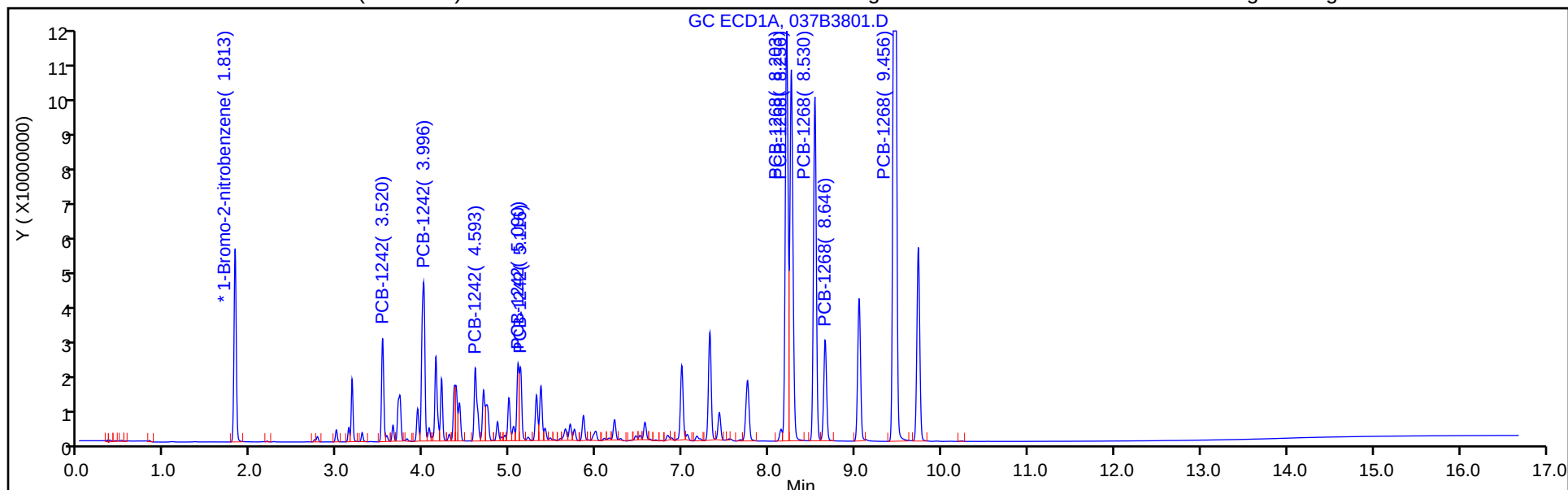
ALS Bottle#: 37

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

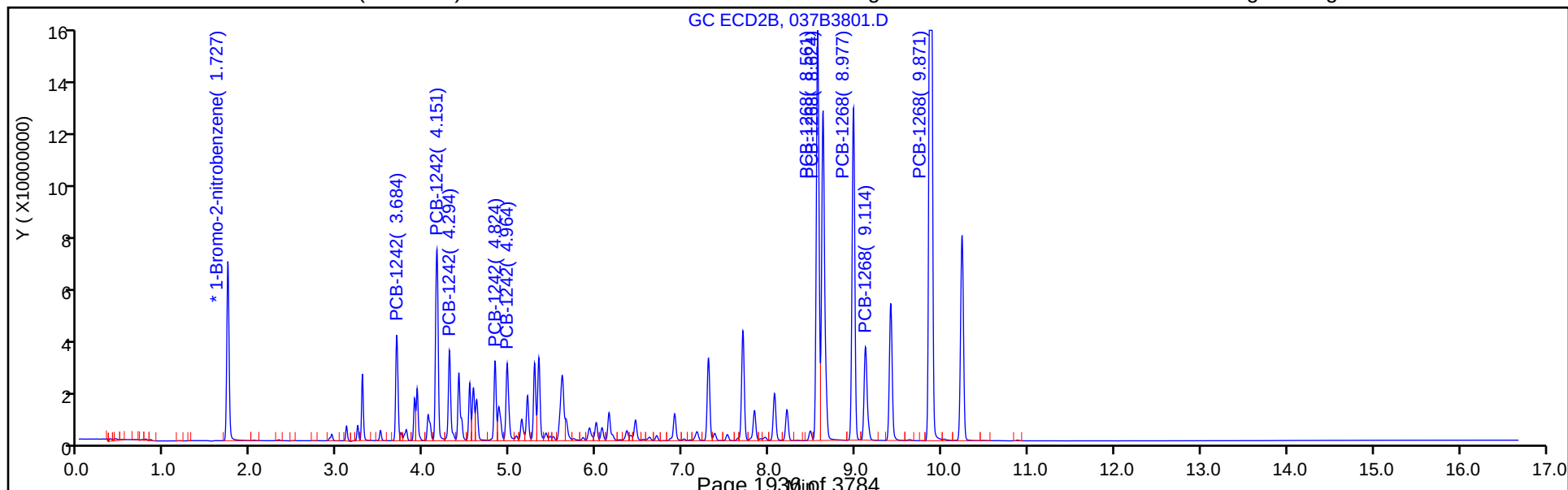
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-459083/38 Calibration Date: 05/22/2019 01:41
 Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 12:56
 GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 05/21/2019 15:07
 Lab File ID: 038B3901.D Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1248 Peak 1	Ave	0.0766	0.0930		304	250	21.4*	20.0
PCB-1248 Peak 2	Ave	0.0729	0.0893		306	250	22.5*	20.0
PCB-1248 Peak 3	Ave	0.0444	0.0557		313	250	25.4*	20.0
PCB-1248 Peak 4	Ave	0.0529	0.0655		310	250	23.8*	20.0
PCB-1248 Peak 5	Ave	0.0349	0.0412		295	250	18.0	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab Sample ID: ICV 280-459083/38 Calibration Date: 05/22/2019 01:41
Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 12:56
GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 05/21/2019 15:07
Lab File ID: 038B3901.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1248 Peak 1	4.36	4.10	4.60
PCB-1248 Peak 2	4.60	4.34	4.84
PCB-1248 Peak 3	4.69	4.44	4.94
PCB-1248 Peak 4	5.36	5.11	5.61
PCB-1248 Peak 5	5.85	5.60	6.10

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\038B3901.D
 Lims ID: ICV
 Client ID:
 Sample Type: ICV
 Inject. Date: 22-May-2019 01:41:59 ALS Bottle#: 38 Worklist Smp#: 38
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: ICV
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist:
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:13:52 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:46:37

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.810	0.003	92213081	100.0	100.0
2	1.727	1.728	-0.001	116252901	100.0	100.0

RPD = 0.00

4 PCB-1248

1	4.356	4.353	0.003	21430602	250.0	303.6
1	4.596	4.593	0.003	20576536	250.0	306.3
1	4.693	4.690	0.003	12830088	250.0	313.4
1	5.356	5.356	0.000	15102951	250.0	309.6
1	5.850	5.846	0.004	9493710	250.0	295.1

Average of Peak Amounts = 305.6

2	4.151	4.148	0.003	32093858	250.0	320.6
2	4.531	4.531	0.000	17273632	250.0	276.6
2	4.824	4.824	0.000	23695115	250.0	312.5
2	4.964	4.964	0.000	27201940	250.0	302.8
2	6.144	6.144	0.000	14180258	250.0	248.3

Average of Peak Amounts = 292.2

RPD = 4.49

Reagents:

AR_1248_ICV_00014

Amount Added: 1.00

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:15

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\038B3901.D

Injection Date: 22-May-2019 01:41:59

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: ICV

Worklist Smp#: 38

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

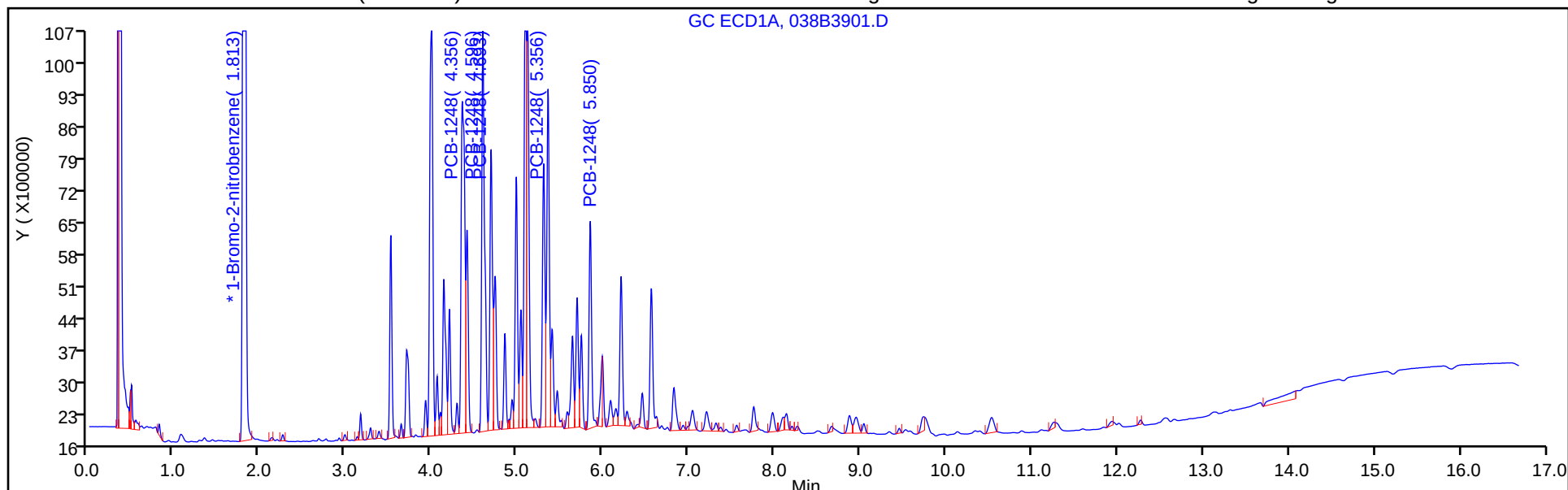
ALS Bottle#: 38

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

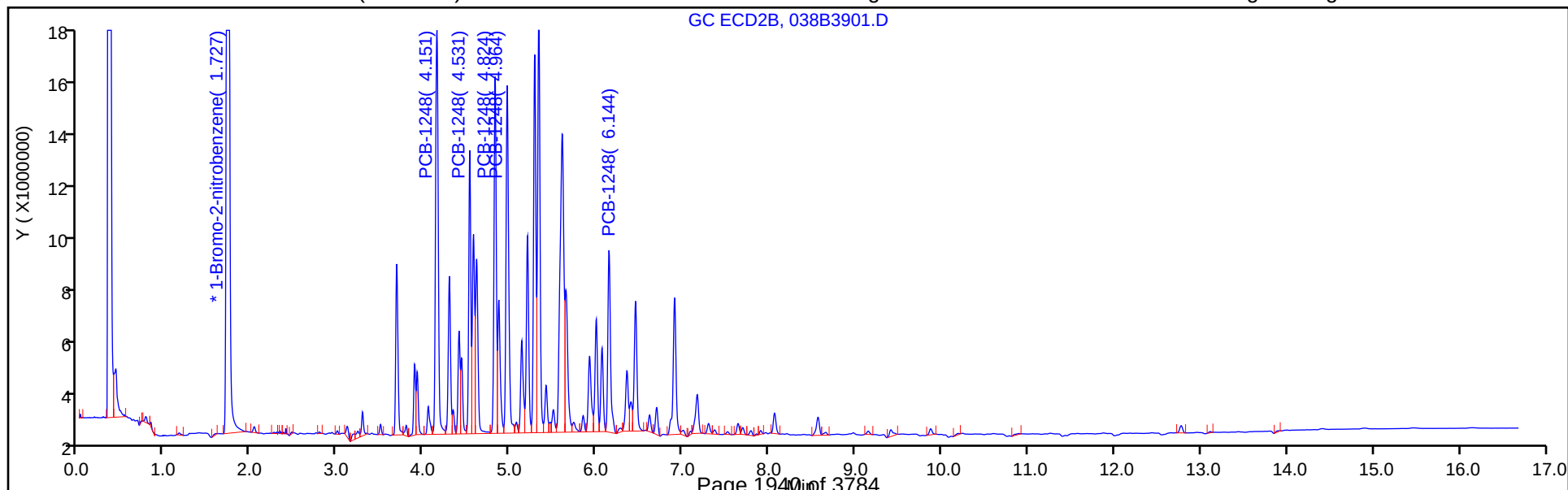
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-459083/38 Calibration Date: 05/22/2019 01:41
 Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 12:56
 GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 05/21/2019 15:07
 Lab File ID: 038B3901.D Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1248 Peak 1	Ave	0.0861	0.1104		321	250	28.2*	20.0
PCB-1248 Peak 2	Ave	0.0537	0.0594		277	250	10.6	20.0
PCB-1248 Peak 3	Lin		0.0815		313	250	25.0*	20.0
PCB-1248 Peak 4	Ave	0.0773	0.0936		303	250	21.1*	20.0
PCB-1248 Peak 5	Ave	0.0491	0.0488		248	250	-0.7	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab Sample ID: ICV 280-459083/38 Calibration Date: 05/22/2019 01:41
Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 12:56
GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 05/21/2019 15:07
Lab File ID: 038B3901.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1248 Peak 1	4.15	3.90	4.40
PCB-1248 Peak 2	4.53	4.28	4.78
PCB-1248 Peak 3	4.82	4.57	5.07
PCB-1248 Peak 4	4.96	4.71	5.21
PCB-1248 Peak 5	6.14	5.89	6.39

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\038B3901.D
 Lims ID: ICV
 Client ID:
 Sample Type: ICV
 Inject. Date: 22-May-2019 01:41:59 ALS Bottle#: 38 Worklist Smp#: 38
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: ICV
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist:
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:13:52 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:46:37

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

* 17 1-Bromo-2-nitrobenzene

1	1.813	1.810	0.003	92213081	100.0	100.0
2	1.727	1.728	-0.001	116252901	100.0	100.0

RPD = 0.00

4 PCB-1248

1	4.356	4.353	0.003	21430602	250.0	303.6
1	4.596	4.593	0.003	20576536	250.0	306.3
1	4.693	4.690	0.003	12830088	250.0	313.4
1	5.356	5.356	0.000	15102951	250.0	309.6
1	5.850	5.846	0.004	9493710	250.0	295.1

Average of Peak Amounts = 305.6

2	4.151	4.148	0.003	32093858	250.0	320.6
2	4.531	4.531	0.000	17273632	250.0	276.6
2	4.824	4.824	0.000	23695115	250.0	312.5
2	4.964	4.964	0.000	27201940	250.0	302.8
2	6.144	6.144	0.000	14180258	250.0	248.3

Average of Peak Amounts = 292.2

RPD = 4.49

Reagents:

AR_1248_ICV_00014

Amount Added: 1.00

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:16

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\038B3901.D

Injection Date: 22-May-2019 01:41:59

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: ICV

Worklist Smp#: 38

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

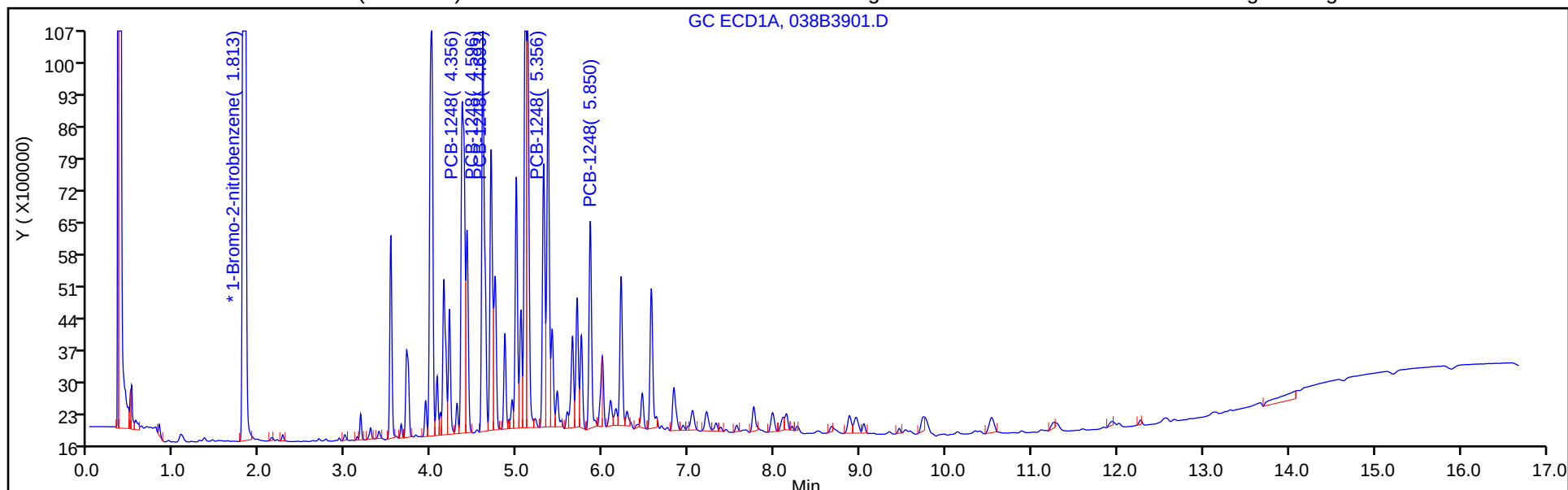
ALS Bottle#: 38

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

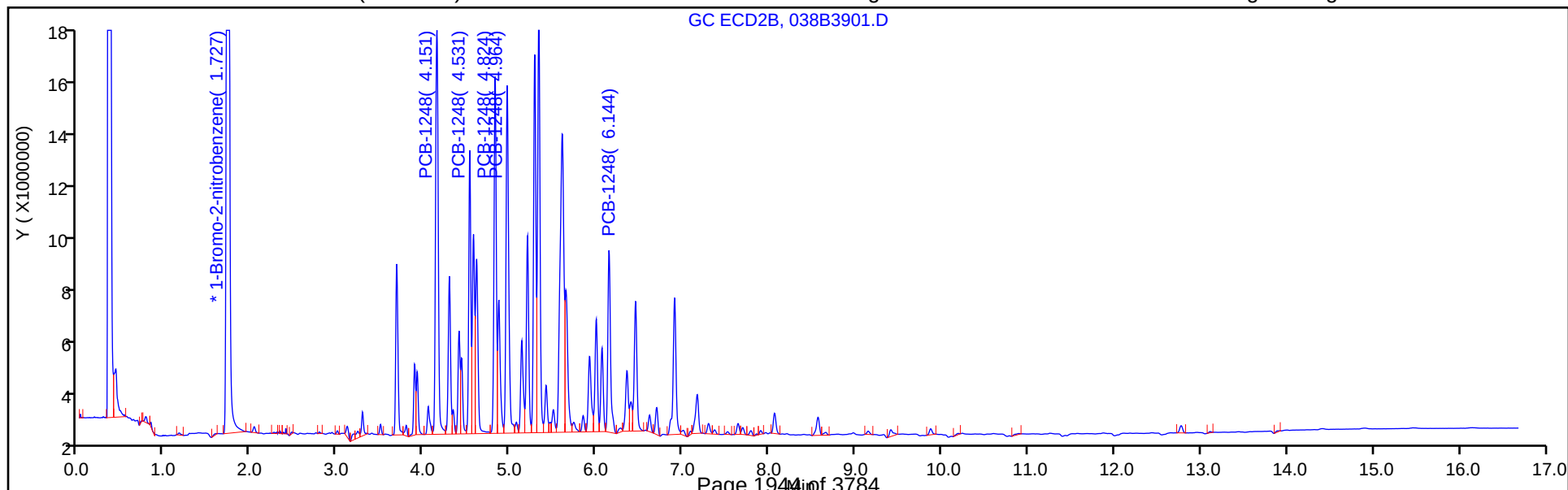
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-459083/39 Calibration Date: 05/22/2019 02:03
 Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 15:29
 GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 05/21/2019 17:40
 Lab File ID: 039B4001.D Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1221 Peak 1	Qua		0.0205		288	250	15.2	20.0
PCB-1221 Peak 2	Qua		0.0141		287	250	14.9	20.0
PCB-1221 Peak 3	Qua		0.0472		266	250	6.5	20.0
PCB-1254 Peak 1	Ave	0.0825	0.0872		264	250	5.7	20.0
PCB-1254 Peak 2	Ave	0.0662	0.0689		260	250	4.1	20.0
PCB-1254 Peak 3	Ave	0.1094	0.1141		261	250	4.3	20.0
PCB-1254 Peak 4	Ave	0.0855	0.0915		268	250	7.1	20.0
PCB-1254 Peak 5	Lin2		0.1311		311	250	24.3*	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab Sample ID: ICV 280-459083/39 Calibration Date: 05/22/2019 02:03
Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 15:29
GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 05/21/2019 17:40
Lab File ID: 039B4001.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1221 Peak 1	2.99	2.73	3.23
PCB-1221 Peak 2	3.13	2.88	3.38
PCB-1221 Peak 3	3.17	2.92	3.42
PCB-1254 Peak 1	5.36	5.11	5.61
PCB-1254 Peak 2	5.69	5.44	5.94
PCB-1254 Peak 3	5.85	5.60	6.10
PCB-1254 Peak 4	6.21	5.96	6.46
PCB-1254 Peak 5	6.82	6.57	7.07

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\039B4001.D
 Lims ID: ICV
 Client ID:
 Sample Type: ICV
 Inject. Date: 22-May-2019 02:03:52 ALS Bottle#: 39 Worklist Smp#: 39
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: ICV
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist:
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:13:52 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:32:09

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.810	0.003	94883569	100.0	100.0	
2	1.728	1.728	0.000	122077949	100.0	100.0	

RPD = 0.00

3 PCB-1221

M

1	2.987	2.984	0.003	4850454	250.0	288.0	
1	3.130	3.131	-0.001	3343634	250.0	287.1	
1	3.170	3.168	0.002	11189611	250.0	266.2	

Average of Peak Amounts = 280.5

2	3.104	3.102	0.002	7123332	250.0	261.9	M
2	3.234	3.232	0.002	4733778	250.0	270.5	M
2	3.288	3.289	-0.001	16568543	250.0	267.7	M

Average of Peak Amounts = 266.7

RPD = 5.03

9 PCB-1254

1	5.360	5.358	0.002	20687573	250.0	264.3	
1	5.693	5.694	-0.001	16340103	250.0	260.3	
1	5.846	5.848	-0.002	27064447	250.0	260.7	
1	6.206	6.208	-0.002	21708066	250.0	267.7	
1	6.823	6.824	-0.001	31100598	250.0	310.8	

Average of Peak Amounts = 272.7

2	5.574	5.572	0.002	28351442	250.0	271.7	
2	5.997	5.995	0.002	20514128	250.0	258.1	
2	6.144	6.145	-0.001	37774860	250.0	260.2	
2	6.694	6.695	-0.001	17419671	250.0	272.5	
2	7.164	7.165	-0.001	43247814	250.0	281.7	

Average of Peak Amounts = 268.8

RPD = 1.45

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_2154_ICV_00015

Amount Added: 1.00

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:12

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\039B4001.D

Injection Date: 22-May-2019 02:03:52

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: ICV

Worklist Smp#: 39

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

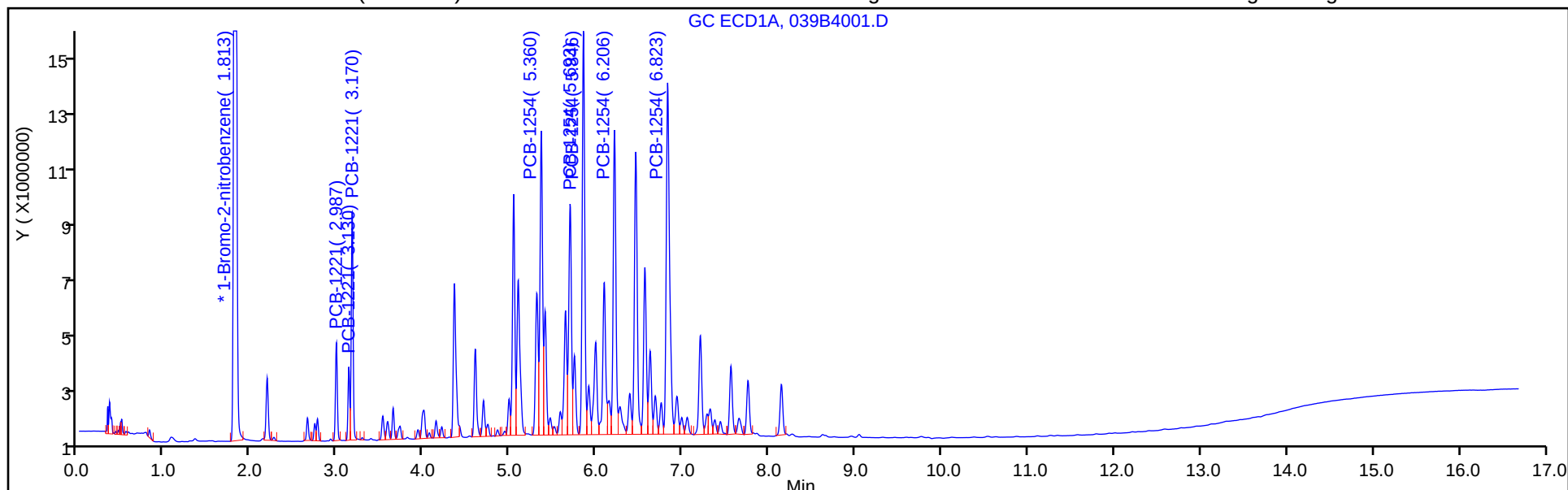
ALS Bottle#: 39

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

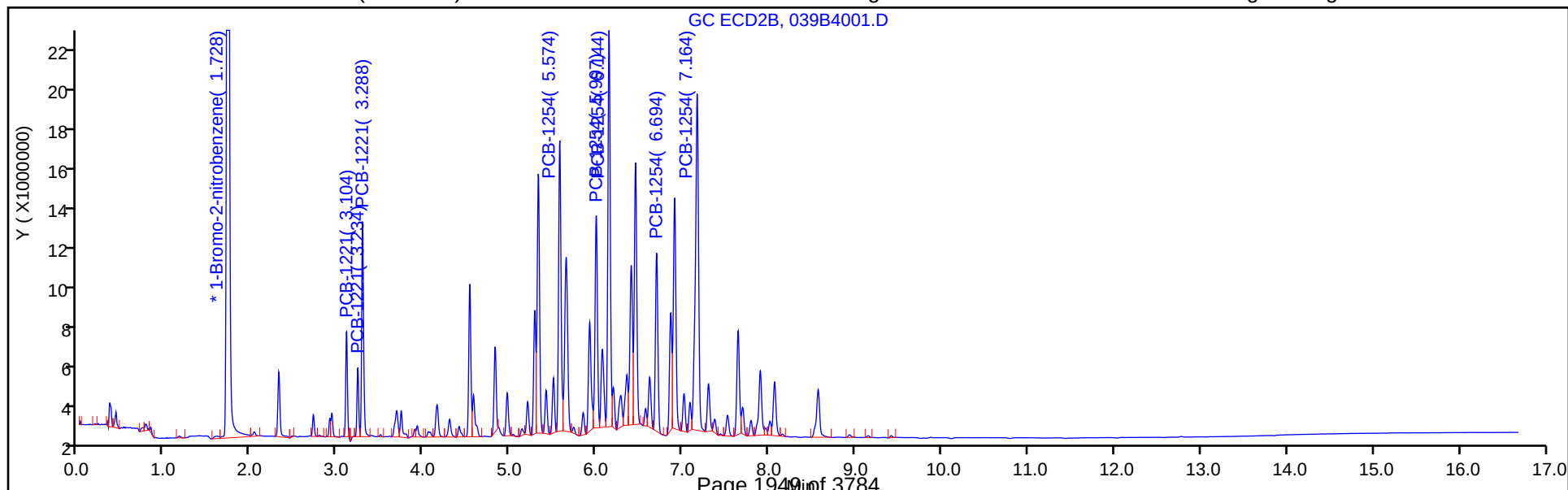
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-459083/39 Calibration Date: 05/22/2019 02:03
 Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 15:29
 GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 05/21/2019 17:40
 Lab File ID: 039B4001.D Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1221 Peak 1	Qua		0.0233		262	250	4.7	20.0
PCB-1221 Peak 2	Qua		0.0155		271	250	8.2	20.0
PCB-1221 Peak 3	Qua		0.0543		268	250	7.1	20.0
PCB-1254 Peak 1	Lin2		0.0929		272	250	8.7	20.0
PCB-1254 Peak 2	Lin2		0.0672		258	250	3.2	20.0
PCB-1254 Peak 3	Lin2		0.1238		260	250	4.1	20.0
PCB-1254 Peak 4	Lin1		0.0571		272	250	9.0	20.0
PCB-1254 Peak 5	Lin2		0.1417		282	250	12.7	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab Sample ID: ICV 280-459083/39 Calibration Date: 05/22/2019 02:03
Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 15:29
GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 05/21/2019 17:40
Lab File ID: 039B4001.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1221 Peak 1	3.10	2.85	3.35
PCB-1221 Peak 2	3.23	2.98	3.48
PCB-1221 Peak 3	3.29	3.04	3.54
PCB-1254 Peak 1	5.57	5.32	5.82
PCB-1254 Peak 2	6.00	5.75	6.25
PCB-1254 Peak 3	6.14	5.90	6.40
PCB-1254 Peak 4	6.69	6.45	6.95
PCB-1254 Peak 5	7.16	6.92	7.42

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\039B4001.D
 Lims ID: ICV
 Client ID:
 Sample Type: ICV
 Inject. Date: 22-May-2019 02:03:52 ALS Bottle#: 39 Worklist Smp#: 39
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: ICV
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist:
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:13:52 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 19:32:09

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.813	1.810	0.003	94883569	100.0	100.0	
2	1.728	1.728	0.000	122077949	100.0	100.0	

RPD = 0.00

3 PCB-1221

M

1	2.987	2.984	0.003	4850454	250.0	288.0	
1	3.130	3.131	-0.001	3343634	250.0	287.1	
1	3.170	3.168	0.002	11189611	250.0	266.2	

Average of Peak Amounts = 280.5

2	3.104	3.102	0.002	7123332	250.0	261.9	M
2	3.234	3.232	0.002	4733778	250.0	270.5	M
2	3.288	3.289	-0.001	16568543	250.0	267.7	M

Average of Peak Amounts = 266.7

RPD = 5.03

9 PCB-1254

1	5.360	5.358	0.002	20687573	250.0	264.3	
1	5.693	5.694	-0.001	16340103	250.0	260.3	
1	5.846	5.848	-0.002	27064447	250.0	260.7	
1	6.206	6.208	-0.002	21708066	250.0	267.7	
1	6.823	6.824	-0.001	31100598	250.0	310.8	

Average of Peak Amounts = 272.7

2	5.574	5.572	0.002	28351442	250.0	271.7	
2	5.997	5.995	0.002	20514128	250.0	258.1	
2	6.144	6.145	-0.001	37774860	250.0	260.2	
2	6.694	6.695	-0.001	17419671	250.0	272.5	
2	7.164	7.165	-0.001	43247814	250.0	281.7	

Average of Peak Amounts = 268.8

RPD = 1.45

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_2154_ICV_00015

Amount Added: 1.00

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:13

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\039B4001.D

Injection Date: 22-May-2019 02:03:52

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: ICV

Worklist Smp#: 39

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

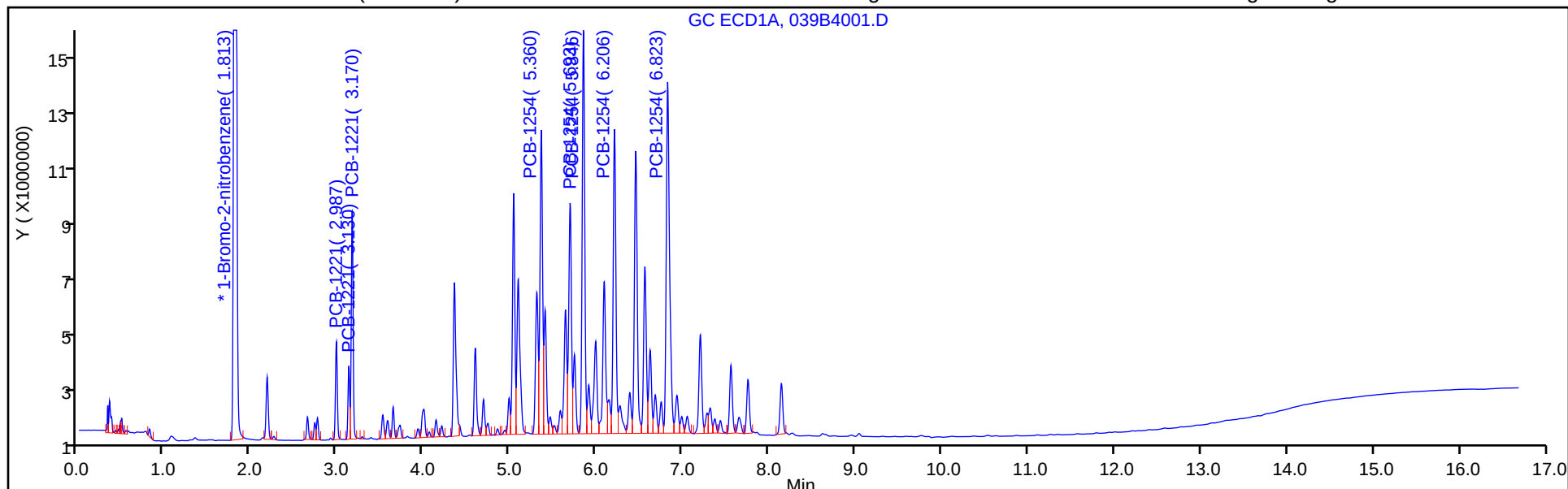
ALS Bottle#: 39

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

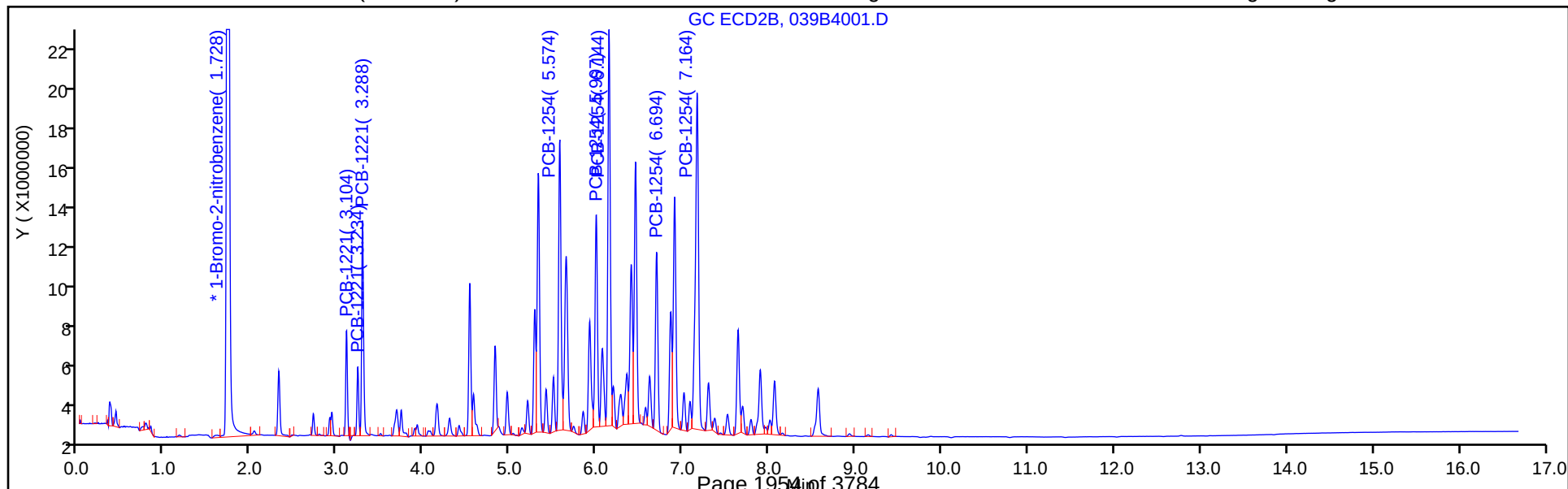
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Report Date: 22-May-2019 20:14:13

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\039B4001.D

Injection Date: 22-May-2019 02:03:52

Instrument ID: SGC_P3

Lims ID: ICV

Client ID:

Operator ID: TEM

ALS Bottle#: 39

Worklist Smp#: 39

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

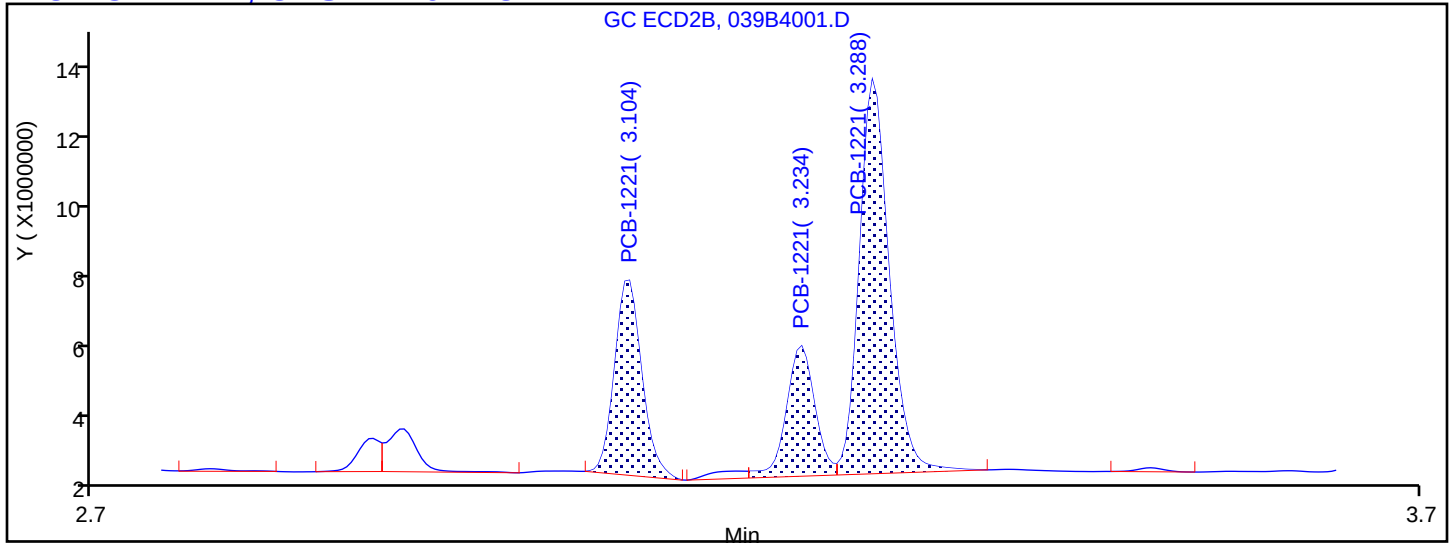
Method: PCB_P3

Limit Group: GCSV - 8082 - IS

Column: CLP2 Pesticides Column 2 (0.32 mm) Detector

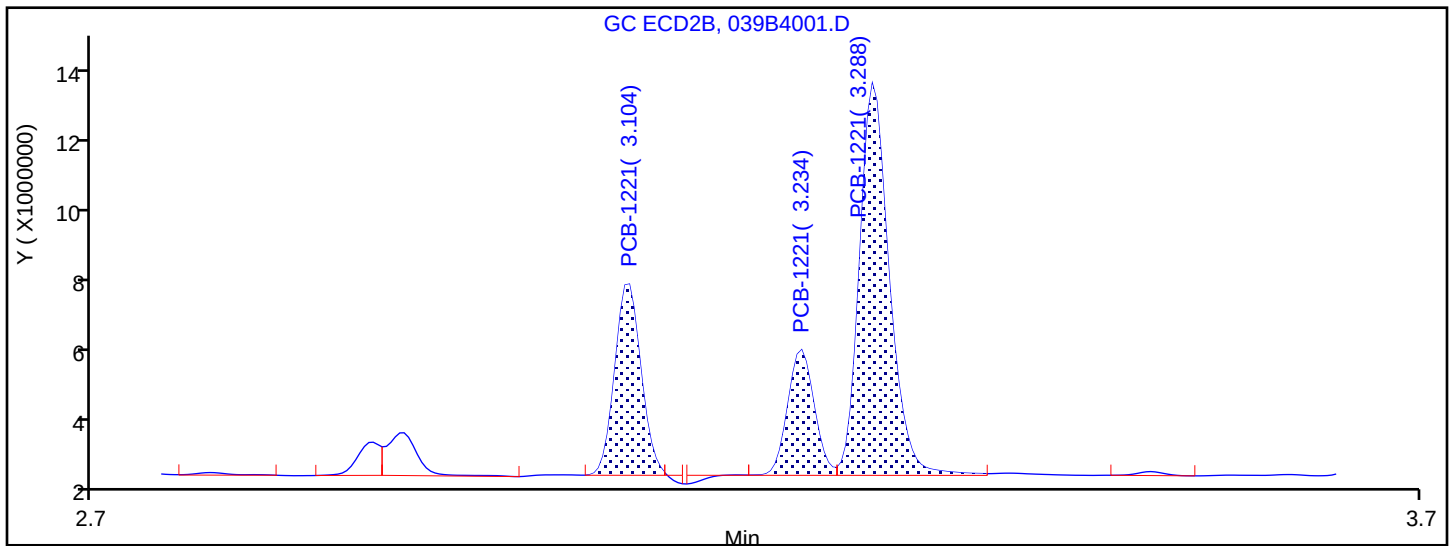
GC ECD2B

3 PCB-1221, CAS: 11104-28-2



Processing Integration Results

3.104	Response = 7541600
3.234	Response = 5276220
3.288	Response = 16729995



Manual Integration Results

3.104	Response = 7123332	M
3.234	Response = 4733778	M
3.288	Response = 16568543	M

Reviewer: mooret, 22-May-2019 19:46:27

Audit Action: Assigned New Baseline

Audit Reason: Baseline Smoothing

FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-459083/40 Calibration Date: 05/22/2019 02:25
 Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 18:02
 GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 05/21/2019 20:13
 Lab File ID: 040B4101.D Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1016 Peak 1	Ave	0.0310	0.0371		299	250	19.6	20.0
PCB-1016 Peak 2	Ave	0.0642	0.0721		281	250	12.3	20.0
PCB-1016 Peak 3	Ave	0.1341	0.1514		282	250	12.9	20.0
PCB-1016 Peak 4	Ave	0.0542	0.0646		298	250	19.2	20.0
PCB-1016 Peak 5	Ave	0.0579	0.0652		282	250	12.7	20.0
PCB-1260 Peak 1	Ave	0.0757	0.0867		287	250	14.6	20.0
PCB-1260 Peak 2	Ave	0.0538	0.0639		297	250	18.7	20.0
PCB-1260 Peak 3	Lin2		0.0844		275	250	10.1	20.0
PCB-1260 Peak 4	Lin2		0.1878		268	250	7.1	20.0
PCB-1260 Peak 5	Lin2		0.1041		299	250	19.5	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab Sample ID: ICV 280-459083/40 Calibration Date: 05/22/2019 02:25
Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 18:02
GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 05/21/2019 20:13
Lab File ID: 040B4101.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1016 Peak 1	3.17	2.92	3.42
PCB-1016 Peak 2	3.52	3.27	3.77
PCB-1016 Peak 3	4.00	3.75	4.25
PCB-1016 Peak 4	4.14	3.89	4.39
PCB-1016 Peak 5	4.59	4.35	4.85
PCB-1260 Peak 1	6.09	5.84	6.34
PCB-1260 Peak 2	6.62	6.37	6.87
PCB-1260 Peak 3	7.31	7.07	7.57
PCB-1260 Peak 4	7.75	7.50	8.00
PCB-1260 Peak 5	8.14	7.89	8.39

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\040B4101.D
 Lims ID: ICV
 Client ID:
 Sample Type: ICV
 Inject. Date: 22-May-2019 02:25:43 ALS Bottle#: 40 Worklist Smp#: 40
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: ICV
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist:
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:13:52 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:47:36

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.810	1.810	0.000	94863442	100.0	100.0
2	1.728	1.728	0.000	122018722	100.0	100.0

RPD = 0.00

1 PCB-1016

1	3.167	3.166	0.001	8793094	250.0	299.1
1	3.520	3.523	-0.003	17096311	250.0	280.7
1	3.997	3.996	0.001	35908958	250.0	282.3
1	4.137	4.139	-0.002	15307457	250.0	298.0
1	4.594	4.596	-0.002	15473080	250.0	281.7

Average of Peak Amounts = 288.4

2	3.685	3.684	0.001	24753533	250.0	269.2
2	4.151	4.150	0.001	50283325	250.0	271.3
2	4.295	4.294	0.001	21601055	250.0	268.7
2	4.531	4.530	0.001	11706778	250.0	259.3
2	4.825	4.824	0.001	18083119	250.0	289.7

Average of Peak Amounts = 271.7

RPD = 5.96

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\040B4101.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

12 PCB-1260

M

1	6.087	6.089	-0.002	20566323	250.0	286.5	
1	6.620	6.619	0.001	15159466	250.0	296.8	
1	7.314	7.316	-0.002	20024311	250.0	275.3	
1	7.750	7.753	-0.003	44541595	250.0	267.7	
1	8.140	8.139	0.001	24694920	250.0	298.8	M

Average of Peak Amounts = 285.0

2	6.695	6.694	0.001	38252247	250.0	289.3	
2	7.161	7.164	-0.003	58356156	250.0	310.1	
2	7.298	7.297	0.001	27511813	250.0	270.5	
2	8.061	8.060	0.001	62993206	250.0	267.2	
2	8.565	8.564	0.001	45875288	250.0	262.8	

Average of Peak Amounts = 280.0

RPD = 1.79

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_1660_ICV_00015

Amount Added: 1.00

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:09

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\040B4101.D

Injection Date: 22-May-2019 02:25:43

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: ICV

Worklist Smp#: 40

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

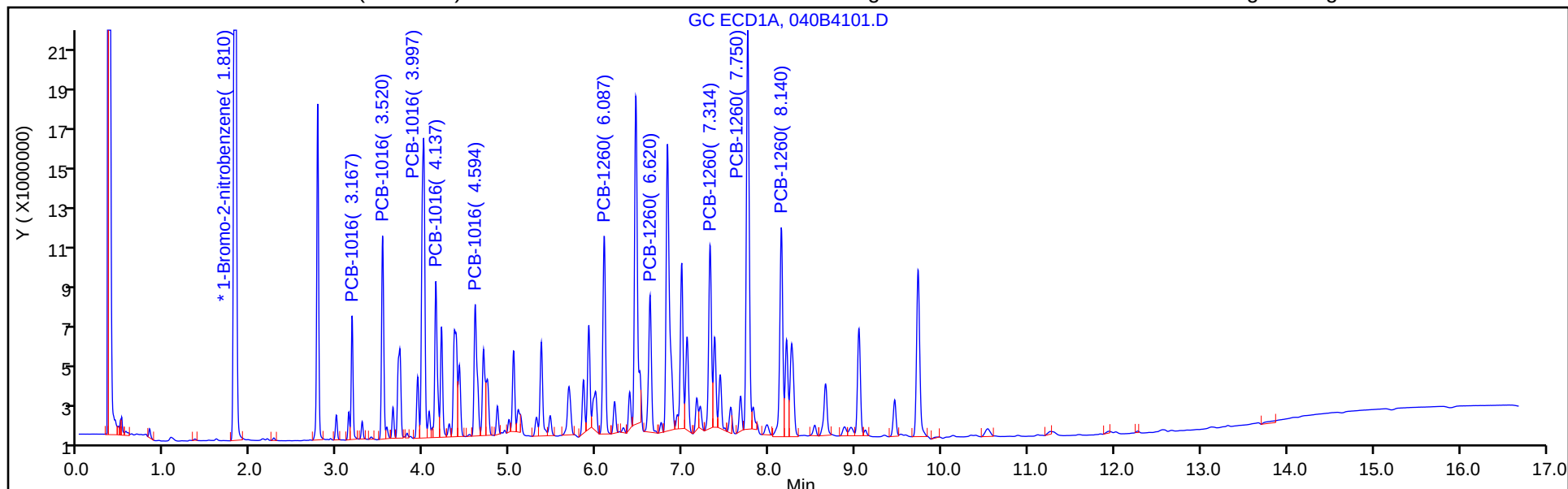
ALS Bottle#: 40

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

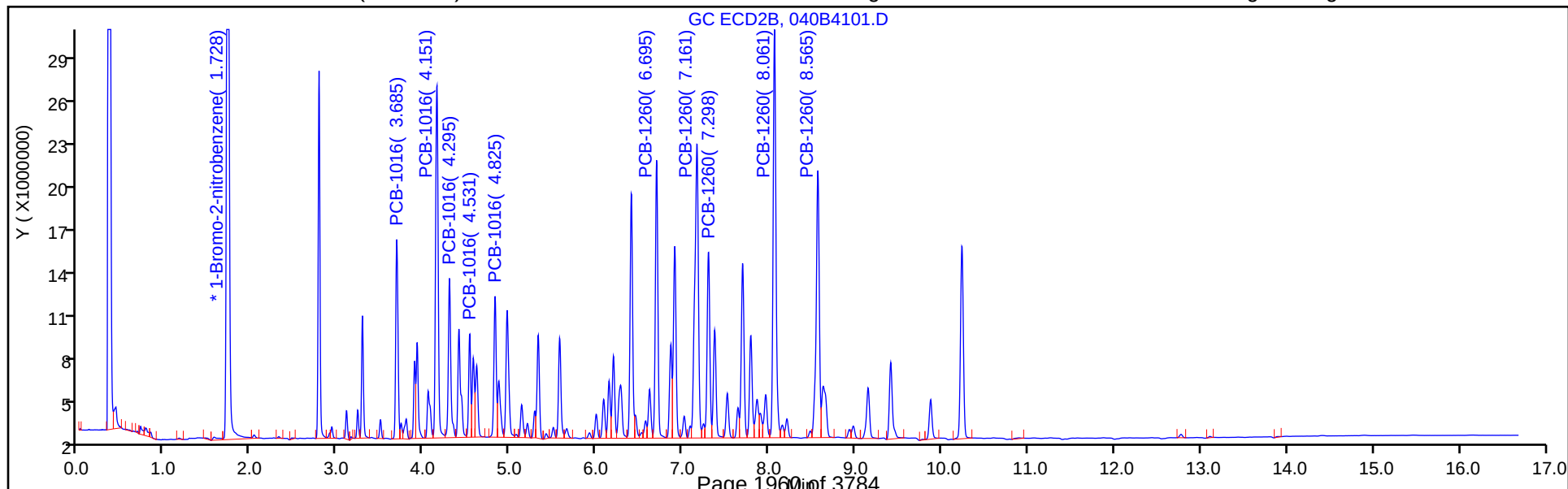
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\040B4101.D

Injection Date: 22-May-2019 02:25:43

Instrument ID: SGC_P3

Lims ID: ICV

Client ID:

Operator ID: TEM

ALS Bottle#:

40

Worklist Smp#:

40

Injection Vol: 1.0 ul

Dil. Factor:

1.0000

Method: PCB_P3

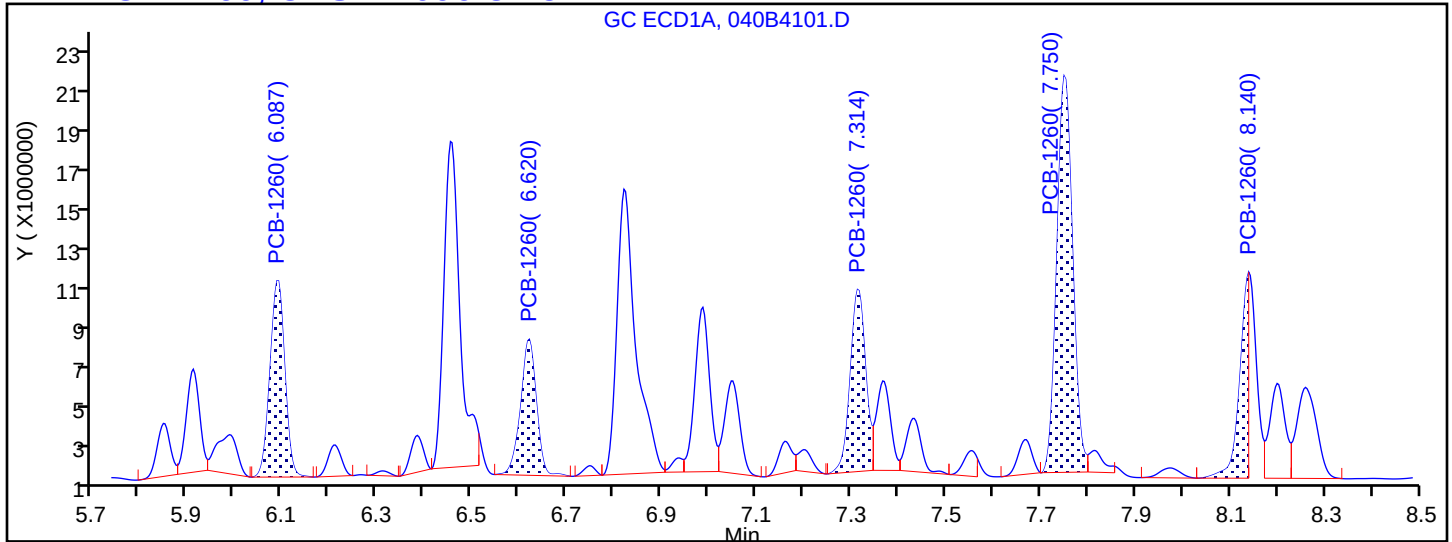
Limit Group:

GCSV - 8082 - IS

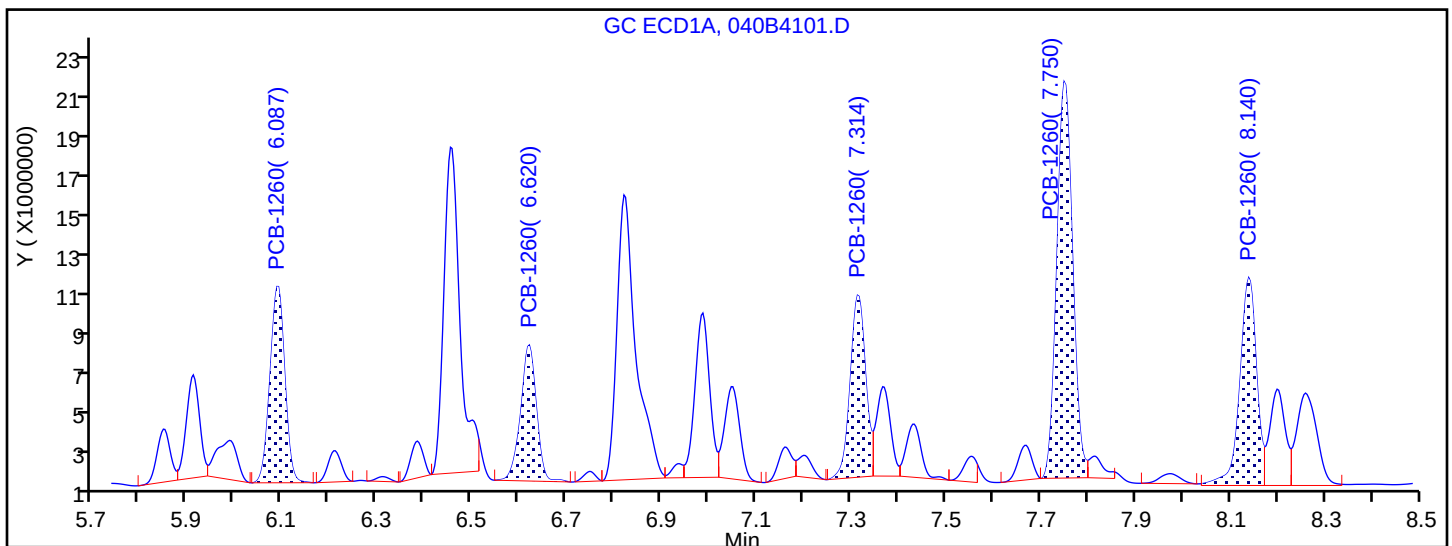
Column: CLP1 Pesticides Column 1 (0.32 mm)

Detector

GC ECD1A

12 PCB-1260, CAS: 11096-82-5**Processing Integration Results**

6.087	Response = 20566323
6.620	Response = 15159466
7.314	Response = 20024311
7.750	Response = 44541595
8.140	Response = 12628278

**Manual Integration Results**

6.087	Response = 20566323
6.620	Response = 15159466
7.314	Response = 20024311
7.750	Response = 44541595
8.140	Response = 24694920

M

Reviewer: mooret, 22-May-2019 19:01:48

Audit Action: Assigned New Baseline

Audit Reason: Incomplete Integration
Page 1961 of 3784

FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-459083/40 Calibration Date: 05/22/2019 02:25
 Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 18:02
 GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 05/21/2019 20:13
 Lab File ID: 040B4101.D Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1016 Peak 1	Ave	0.0754	0.0812		269	250	7.7	20.0
PCB-1016 Peak 2	Ave	0.1519	0.1648		271	250	8.5	20.0
PCB-1016 Peak 3	Ave	0.0659	0.0708		269	250	7.5	20.0
PCB-1016 Peak 4	Ave	0.0370	0.0384		259	250	3.7	20.0
PCB-1016 Peak 5	Qual		0.0593		290	250	15.9	20.0
PCB-1260 Peak 1	Ave	0.1084	0.1254		289	250	15.7	20.0
PCB-1260 Peak 2	Ave	0.1542	0.1913		310	250	24.1*	20.0
PCB-1260 Peak 3	Lin2		0.0902		271	250	8.2	20.0
PCB-1260 Peak 4	Lin2		0.2065		267	250	6.9	20.0
PCB-1260 Peak 5	Lin2		0.1504		263	250	5.1	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-459083/40 Calibration Date: 05/22/2019 02:25
 Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 18:02
 GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 05/21/2019 20:13
 Lab File ID: 040B4101.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1016 Peak 1	3.69	3.43	3.93
PCB-1016 Peak 2	4.15	3.90	4.40
PCB-1016 Peak 3	4.30	4.04	4.54
PCB-1016 Peak 4	4.53	4.28	4.78
PCB-1016 Peak 5	4.83	4.57	5.07
PCB-1260 Peak 1	6.70	6.44	6.94
PCB-1260 Peak 2	7.16	6.91	7.41
PCB-1260 Peak 3	7.30	7.05	7.55
PCB-1260 Peak 4	8.06	7.81	8.31
PCB-1260 Peak 5	8.57	8.31	8.81

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\040B4101.D
 Lims ID: ICV
 Client ID:
 Sample Type: ICV
 Inject. Date: 22-May-2019 02:25:43 ALS Bottle#: 40 Worklist Smp#: 40
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: ICV
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist:
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:13:52 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:47:36

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.810	1.810	0.000	94863442	100.0	100.0
2	1.728	1.728	0.000	122018722	100.0	100.0

RPD = 0.00

1 PCB-1016

1	3.167	3.166	0.001	8793094	250.0	299.1
1	3.520	3.523	-0.003	17096311	250.0	280.7
1	3.997	3.996	0.001	35908958	250.0	282.3
1	4.137	4.139	-0.002	15307457	250.0	298.0
1	4.594	4.596	-0.002	15473080	250.0	281.7

Average of Peak Amounts = 288.4

2	3.685	3.684	0.001	24753533	250.0	269.2
2	4.151	4.150	0.001	50283325	250.0	271.3
2	4.295	4.294	0.001	21601055	250.0	268.7
2	4.531	4.530	0.001	11706778	250.0	259.3
2	4.825	4.824	0.001	18083119	250.0	289.7

Average of Peak Amounts = 271.7

RPD = 5.96

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\040B4101.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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12 PCB-1260

M

1	6.087	6.089	-0.002	20566323	250.0	286.5	
1	6.620	6.619	0.001	15159466	250.0	296.8	
1	7.314	7.316	-0.002	20024311	250.0	275.3	
1	7.750	7.753	-0.003	44541595	250.0	267.7	
1	8.140	8.139	0.001	24694920	250.0	298.8	M

Average of Peak Amounts = 285.0

2	6.695	6.694	0.001	38252247	250.0	289.3	
2	7.161	7.164	-0.003	58356156	250.0	310.1	
2	7.298	7.297	0.001	27511813	250.0	270.5	
2	8.061	8.060	0.001	62993206	250.0	267.2	
2	8.565	8.564	0.001	45875288	250.0	262.8	

Average of Peak Amounts = 280.0

RPD = 1.79

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

AR_1660_ICV_00015

Amount Added: 1.00

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:10

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\040B4101.D

Injection Date: 22-May-2019 02:25:43

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: ICV

Worklist Smp#: 40

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

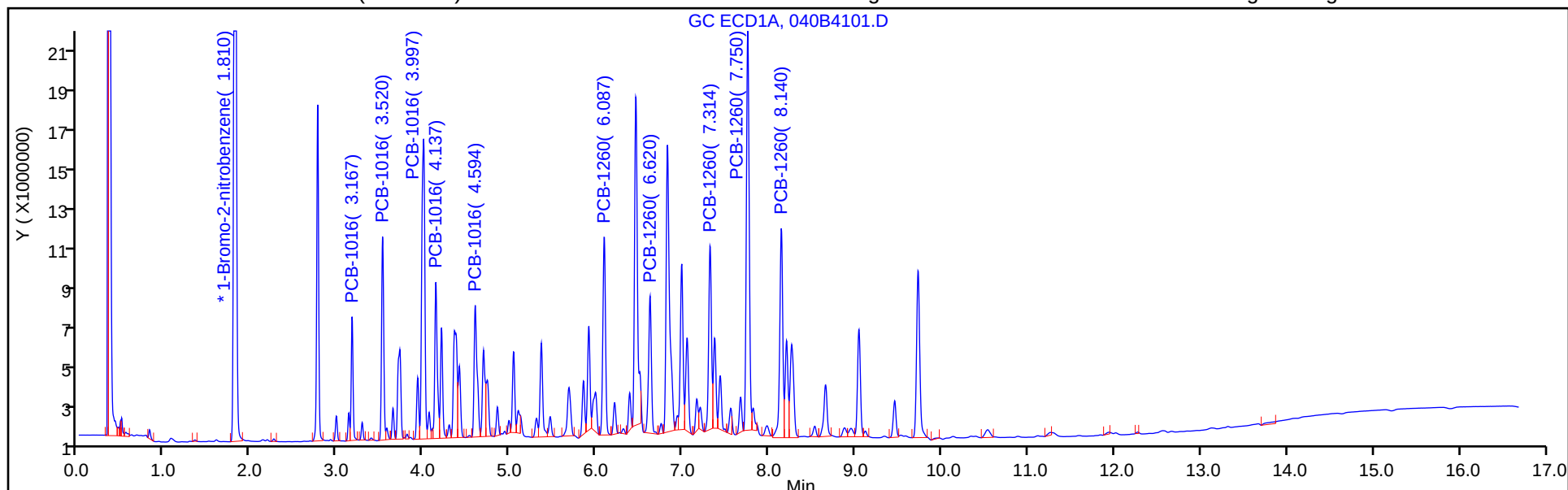
ALS Bottle#: 40

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

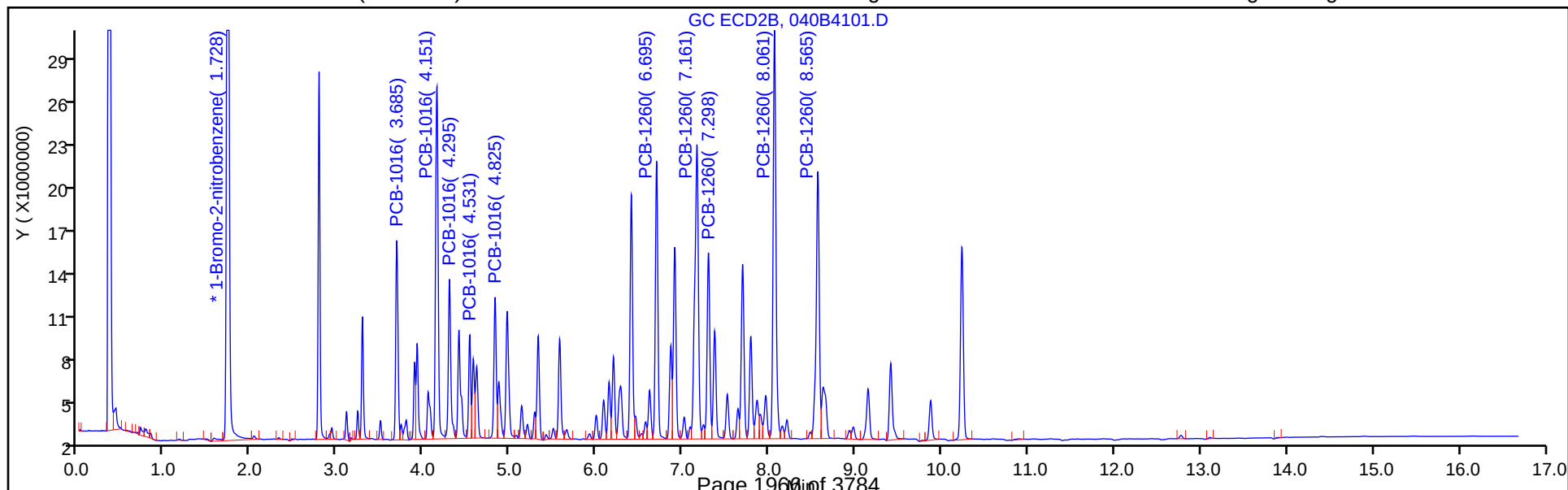
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-459083/41 Calibration Date: 05/22/2019 02:47
 Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 20:35
 GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 05/21/2019 22:46
 Lab File ID: 041B4201.D Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1232 Peak 1	Ave	0.0388	0.0425		274	250	9.7	20.0
PCB-1232 Peak 2	Ave	0.0329	0.0376		285	250	14.1	20.0
PCB-1232 Peak 3	Ave	0.0675	0.0772		286	250	14.4	20.0
PCB-1232 Peak 4	Ave	0.0283	0.0330		292	250	16.6	20.0
PCB-1232 Peak 5	Ave	0.0269	0.0328		305	250	22.1*	20.0
PCB-1262 Peak 1	Ave	0.1004	0.1172		292	250	16.7	20.0
PCB-1262 Peak 2	Ave	0.1246	0.1332		267	250	6.9	20.0
PCB-1262 Peak 3	Ave	0.1123	0.1225		273	250	9.1	20.0
PCB-1262 Peak 4	Ave	0.2363	0.2722		288	250	15.2	20.0
PCB-1262 Peak 5	Ave	0.0807	0.1009		312	250	25.0*	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab Sample ID: ICV 280-459083/41 Calibration Date: 05/22/2019 02:47
Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 20:35
GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 05/21/2019 22:46
Lab File ID: 041B4201.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1232 Peak 1	3.17	2.92	3.42
PCB-1232 Peak 2	3.52	3.27	3.77
PCB-1232 Peak 3	4.00	3.75	4.25
PCB-1232 Peak 4	4.14	3.89	4.39
PCB-1232 Peak 5	4.60	4.35	4.85
PCB-1262 Peak 1	6.46	6.21	6.71
PCB-1262 Peak 2	6.99	6.74	7.24
PCB-1262 Peak 3	7.32	7.07	7.57
PCB-1262 Peak 4	7.75	7.50	8.00
PCB-1262 Peak 5	8.14	7.89	8.39

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\041B4201.D
 Lims ID: ICV
 Client ID:
 Sample Type: ICV
 Inject. Date: 22-May-2019 02:47:37 ALS Bottle#: 41 Worklist Smp#: 41
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: ICV
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist:

Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:13:52 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.812	1.810	0.002	89438313	100.0	100.0
2	1.726	1.728	-0.002	114710535	100.0	100.0

RPD = 0.00

7 PCB-1232

1	3.168	3.167	0.001	9512871	250.0	274.3
1	3.522	3.520	0.002	8406477	250.0	285.3
1	3.995	3.997	-0.002	17261741	250.0	286.1
1	4.138	4.140	-0.002	7377965	250.0	291.5
1	4.595	4.597	-0.002	7336157	250.0	305.3

Average of Peak Amounts = 288.5

2	3.286	3.288	-0.002	13707323	250.0	260.7
2	3.686	3.685	0.001	12865427	250.0	277.6
2	4.149	4.151	-0.002	24238930	250.0	275.1
2	4.296	4.295	0.001	10778688	250.0	276.2
2	4.529	4.531	-0.002	5772423	250.0	302.6

Average of Peak Amounts = 278.4

RPD = 3.55

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\041B4201.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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5 PCB-1262

1	6.455	6.457	-0.002	26197707	250.0	291.7	
1	6.985	6.987	-0.002	29781506	250.0	267.2	
1	7.315	7.317	-0.002	27397121	250.0	272.7	
1	7.751	7.754	-0.003	60867373	250.0	287.9	
1	8.138	8.140	-0.002	22562783	250.0	312.5	

Average of Peak Amounts = 286.4

2	6.696	6.695	0.001	30502482	250.0	280.0	
2	7.296	7.295	0.001	40883948	250.0	257.5	
2	7.692	7.691	0.001	38861441	250.0	258.2	
2	8.059	8.061	-0.002	79864904	250.0	279.3	
2	8.562	8.565	-0.003	59778116	250.0	277.4	

Average of Peak Amounts = 270.5

RPD = 5.72

Reagents:

AR_3262_ICV_00015

Amount Added: 1.00

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:05

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\041B4201.D

Injection Date: 22-May-2019 02:47:37

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: ICV

Worklist Smp#: 41

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

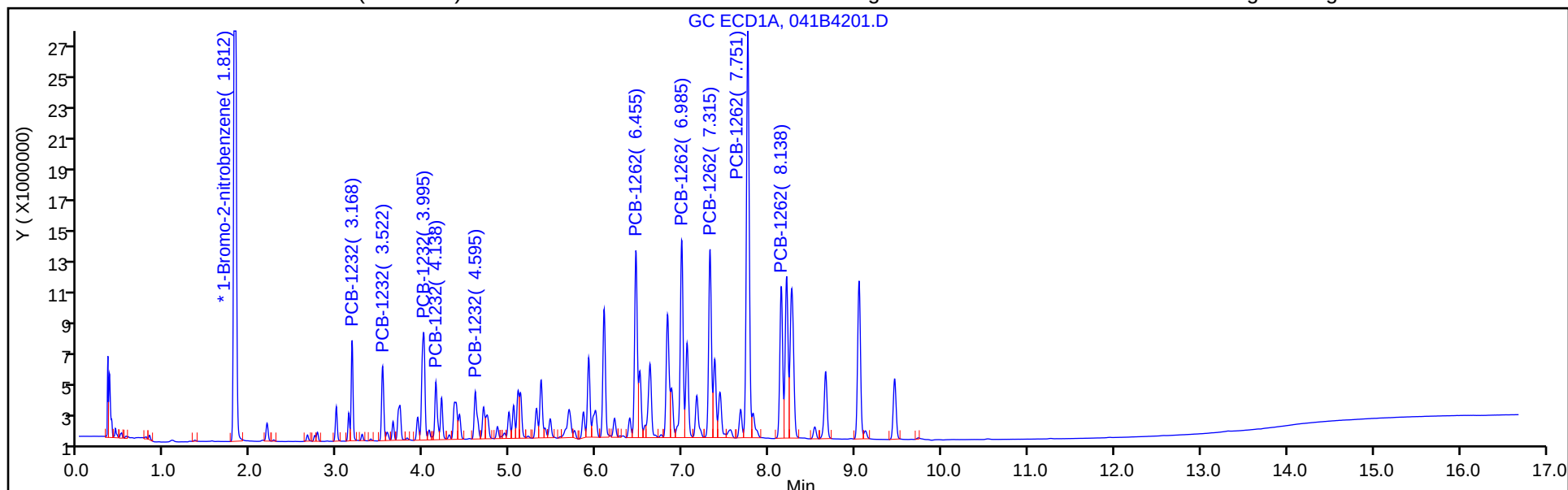
ALS Bottle#: 41

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

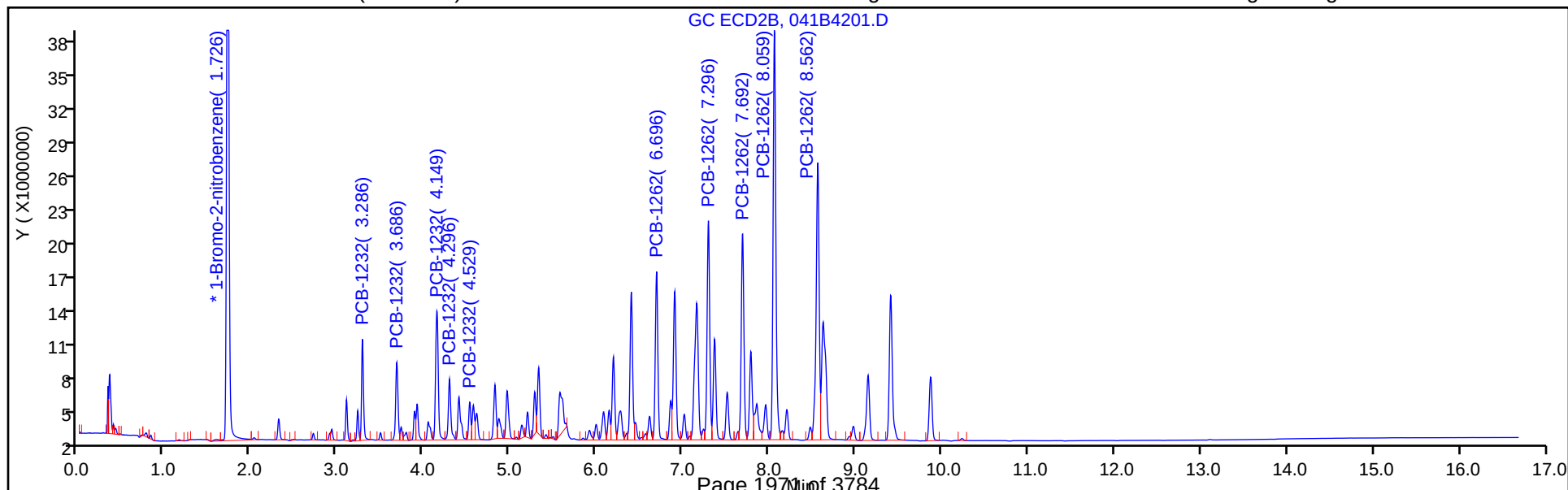
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-459083/41 Calibration Date: 05/22/2019 02:47
 Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 20:35
 GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 05/21/2019 22:46
 Lab File ID: 041B4201.D Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1232 Peak 1	Ave	0.0458	0.0478		261	250	4.3	20.0
PCB-1232 Peak 2	Ave	0.0404	0.0449		278	250	11.0	20.0
PCB-1232 Peak 3	Ave	0.0768	0.0845		275	250	10.0	20.0
PCB-1232 Peak 4	Ave	0.0340	0.0376		276	250	10.5	20.0
PCB-1232 Peak 5	Ave	0.0166	0.0201		303	250	21.0*	20.0
PCB-1262 Peak 1	Ave	0.0950	0.1064		280	250	12.0	20.0
PCB-1262 Peak 2	Ave	0.1384	0.1426		257	250	3.0	20.0
PCB-1262 Peak 3	Ave	0.1312	0.1355		258	250	3.3	20.0
PCB-1262 Peak 4	Ave	0.2493	0.2785		279	250	11.7	20.0
PCB-1262 Peak 5	Ave	0.1879	0.2085		277	250	11.0	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-459083/41 Calibration Date: 05/22/2019 02:47
 Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 20:35
 GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 05/21/2019 22:46
 Lab File ID: 041B4201.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1232 Peak 1	3.29	3.04	3.54
PCB-1232 Peak 2	3.69	3.44	3.94
PCB-1232 Peak 3	4.15	3.90	4.40
PCB-1232 Peak 4	4.30	4.05	4.55
PCB-1232 Peak 5	4.53	4.28	4.78
PCB-1262 Peak 1	6.70	6.45	6.95
PCB-1262 Peak 2	7.30	7.05	7.55
PCB-1262 Peak 3	7.69	7.44	7.94
PCB-1262 Peak 4	8.06	7.81	8.31
PCB-1262 Peak 5	8.56	8.32	8.82

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\041B4201.D
 Lims ID: ICV
 Client ID:
 Sample Type: ICV
 Inject. Date: 22-May-2019 02:47:37 ALS Bottle#: 41 Worklist Smp#: 41
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: ICV
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist:

Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:13:52 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

* 17 1-Bromo-2-nitrobenzene

1	1.812	1.810	0.002	89438313	100.0	100.0
2	1.726	1.728	-0.002	114710535	100.0	100.0

RPD = 0.00

7 PCB-1232

1	3.168	3.167	0.001	9512871	250.0	274.3
1	3.522	3.520	0.002	8406477	250.0	285.3
1	3.995	3.997	-0.002	17261741	250.0	286.1
1	4.138	4.140	-0.002	7377965	250.0	291.5
1	4.595	4.597	-0.002	7336157	250.0	305.3

Average of Peak Amounts = 288.5

2	3.286	3.288	-0.002	13707323	250.0	260.7
2	3.686	3.685	0.001	12865427	250.0	277.6
2	4.149	4.151	-0.002	24238930	250.0	275.1
2	4.296	4.295	0.001	10778688	250.0	276.2
2	4.529	4.531	-0.002	5772423	250.0	302.6

Average of Peak Amounts = 278.4

RPD = 3.55

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\041B4201.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

5 PCB-1262

1	6.455	6.457	-0.002	26197707	250.0	291.7	
1	6.985	6.987	-0.002	29781506	250.0	267.2	
1	7.315	7.317	-0.002	27397121	250.0	272.7	
1	7.751	7.754	-0.003	60867373	250.0	287.9	
1	8.138	8.140	-0.002	22562783	250.0	312.5	

Average of Peak Amounts = 286.4

2	6.696	6.695	0.001	30502482	250.0	280.0	
2	7.296	7.295	0.001	40883948	250.0	257.5	
2	7.692	7.691	0.001	38861441	250.0	258.2	
2	8.059	8.061	-0.002	79864904	250.0	279.3	
2	8.562	8.565	-0.003	59778116	250.0	277.4	

Average of Peak Amounts = 270.5

RPD = 5.72

Reagents:

AR_3262_ICV_00015

Amount Added: 1.00

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:05

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\041B4201.D

Injection Date: 22-May-2019 02:47:37

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: ICV

Worklist Smp#: 41

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

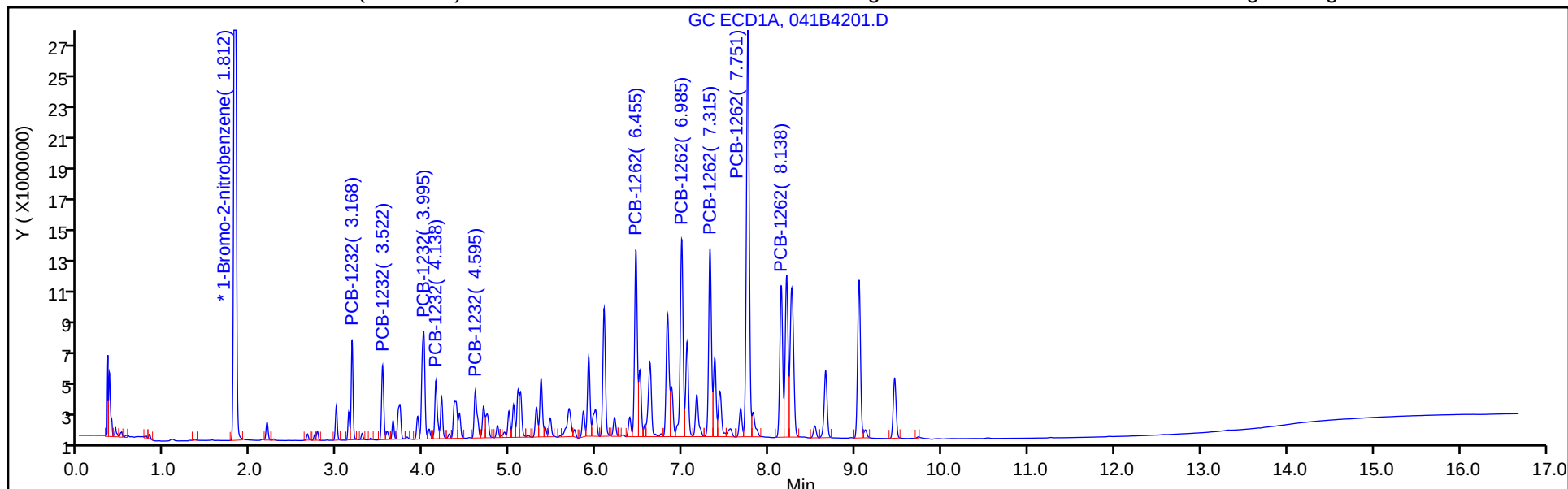
ALS Bottle#: 41

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

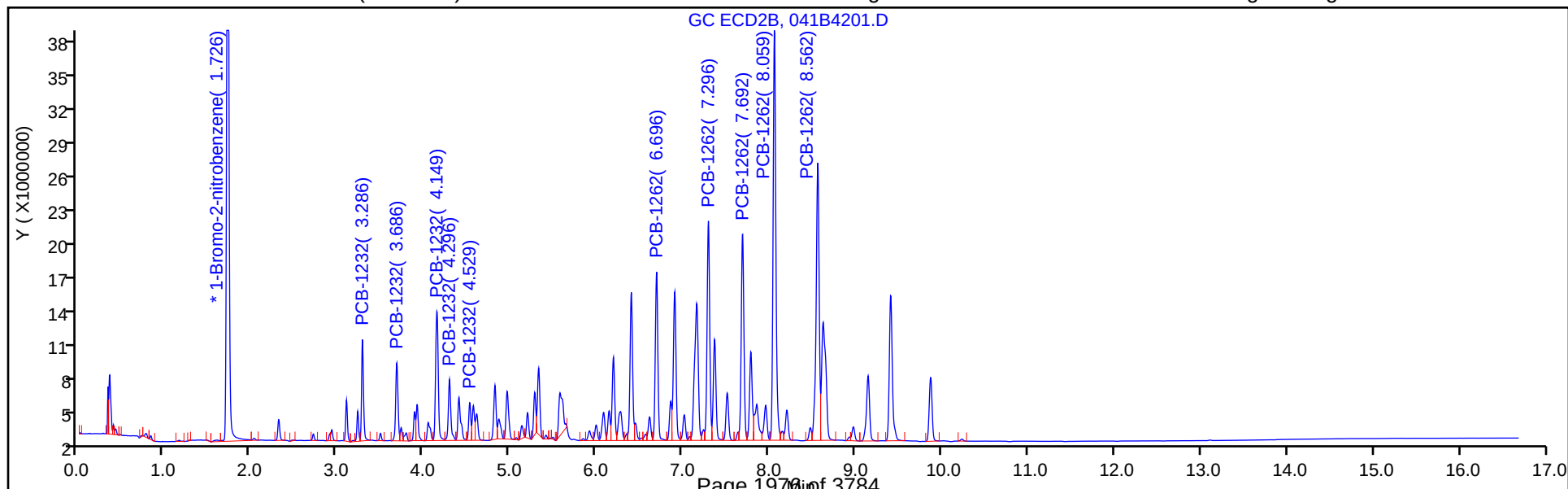
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-459083/42 Calibration Date: 05/22/2019 03:09
 Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 23:08
 GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 05/22/2019 01:20
 Lab File ID: 042B4301.D Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1242 Peak 1	Lin1		0.0568		251	250	0.6	20.0
PCB-1242 Peak 2	Lin1		0.1173		244	250	-2.4	20.0
PCB-1242 Peak 3	Lin1		0.0526		246	250	-1.7	20.0
PCB-1242 Peak 4	Lin1		0.0401		248	250	-0.8	20.0
PCB-1242 Peak 5	Lin1		0.0353		209	250	-16.3	20.0
PCB-1268 Peak 1	Lin1		0.3082		272	250	8.7	20.0
PCB-1268 Peak 2	Lin1		0.2840		260	250	4.0	20.0
PCB-1268 Peak 3	Lin1		0.2739		292	250	16.8	20.0
PCB-1268 Peak 4	Lin1		0.0701		255	250	2.0	20.0
PCB-1268 Peak 5	Lin1		0.6512		247	250	-1.3	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-459083/42 Calibration Date: 05/22/2019 03:09
 Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 23:08
 GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 05/22/2019 01:20
 Lab File ID: 042B4301.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1242 Peak 1	3.52	3.27	3.77
PCB-1242 Peak 2	4.00	3.75	4.25
PCB-1242 Peak 3	4.59	4.35	4.85
PCB-1242 Peak 4	5.09	4.84	5.34
PCB-1242 Peak 5	5.12	4.87	5.37
PCB-1268 Peak 1	8.20	7.95	8.45
PCB-1268 Peak 2	8.25	8.01	8.51
PCB-1268 Peak 3	8.53	8.28	8.78
PCB-1268 Peak 4	8.65	8.40	8.90
PCB-1268 Peak 5	9.45	9.21	9.71

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\042B4301.D
 Lims ID: ICV
 Client ID:
 Sample Type: ICV
 Inject. Date: 22-May-2019 03:09:31 ALS Bottle#: 42 Worklist Smp#: 42
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: ICV
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist:
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:13:52 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:48:35

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

* 17 1-Bromo-2-nitrobenzene

1	1.811	1.810	0.001	97507955	100.0	100.0
2	1.728	1.728	0.000	122825383	100.0	100.0

RPD = 0.00

10 PCB-1242

1	3.521	3.522	-0.001	13850139	250.0	251.5
1	3.997	3.995	0.002	28589378	250.0	244.0
1	4.594	4.595	-0.001	12818409	250.0	245.7
1	5.091	5.092	-0.001	9763887	250.0	248.1
1	5.117	5.118	-0.001	8607768	250.0	209.3

Average of Peak Amounts = 239.7

2	3.685	3.686	-0.001	20051800	250.0	255.9
2	4.152	4.149	0.003	40262513	250.0	251.0
2	4.295	4.296	-0.001	17648057	250.0	252.3
2	4.825	4.826	-0.001	15112432	250.0	263.0
2	4.965	4.966	-0.001	16635906	250.0	248.9

Average of Peak Amounts = 254.2

RPD = 5.87

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\042B4301.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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13 PCB-1268

1	8.201	8.202	-0.001	75130119	250.0	271.7	
1	8.254	8.258	-0.004	69226087	250.0	260.1	
1	8.527	8.528	-0.001	66766447	250.0	292.0	
1	8.647	8.648	-0.001	17097466	250.0	254.9	
1	9.454	9.455	-0.001	158752385	250.0	246.8	

Average of Peak Amounts = 265.1

2	8.562	8.559	0.003	95353291	250.0	267.3	
2	8.622	8.623	-0.001	85837875	250.0	265.1	
2	8.975	8.976	-0.001	84367908	250.0	291.0	
2	9.115	9.116	-0.001	23555212	250.0	253.1	
2	9.872	9.869	0.003	196874504	250.0	240.4	

Average of Peak Amounts = 263.4

RPD = 0.65

Reagents:

AR_4268_ICV_00015

Amount Added: 1.00

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 22-May-2019 20:14:01

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\042B4301.D

Injection Date: 22-May-2019 03:09:31

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: ICV

Worklist Smp#: 42

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

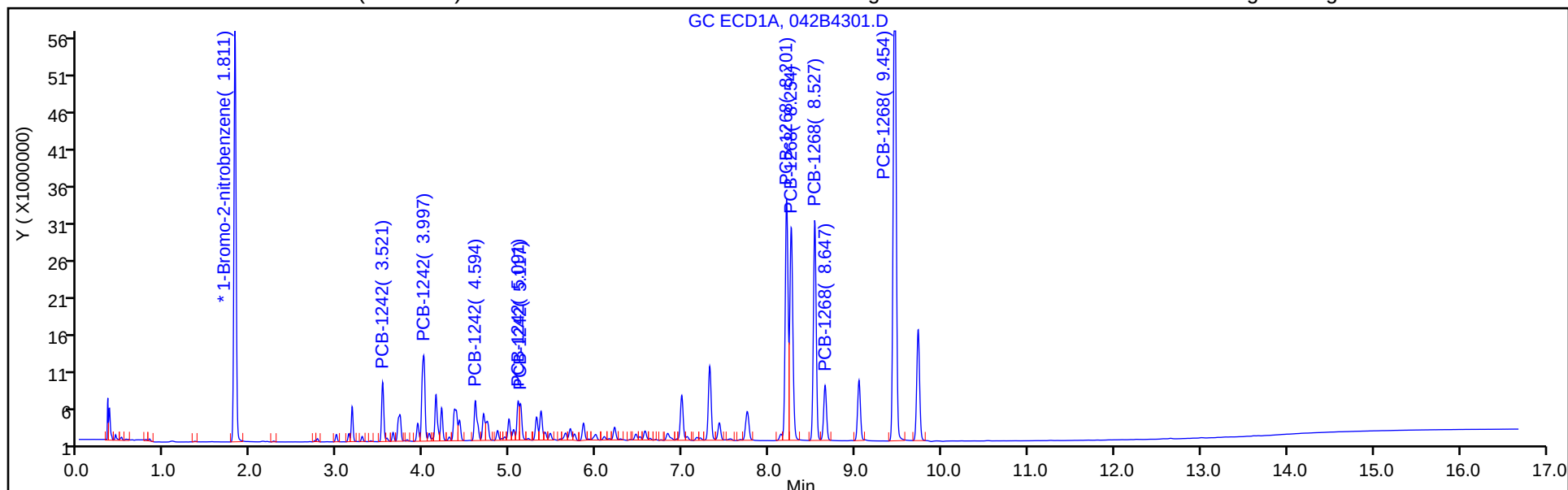
ALS Bottle#: 42

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

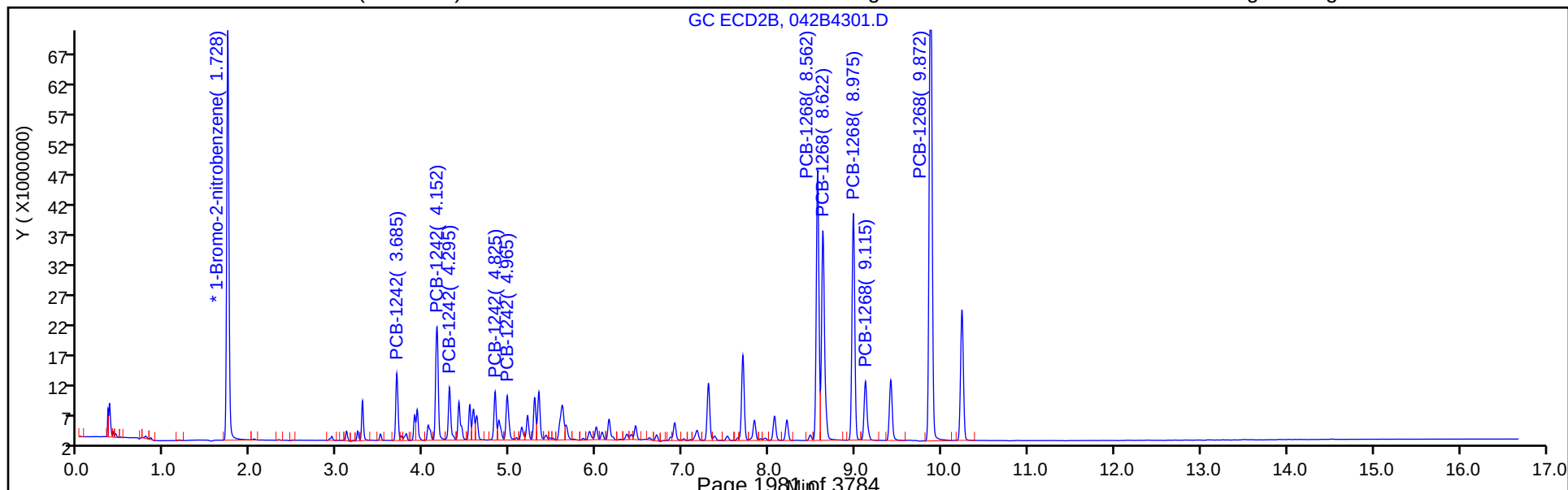
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-459083/42 Calibration Date: 05/22/2019 03:09
 Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 23:08
 GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 05/22/2019 01:20
 Lab File ID: 042B4301.D Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1242 Peak 1	Lin1		0.0653		256	250	2.4	20.0
PCB-1242 Peak 2	Lin1		0.1311		251	250	0.4	20.0
PCB-1242 Peak 3	Lin1		0.0575		252	250	0.9	20.0
PCB-1242 Peak 4	Lin		0.0492		263	250	5.2	20.0
PCB-1242 Peak 5	Lin1		0.0542		249	250	-0.4	20.0
PCB-1268 Peak 1	Lin1		0.3105		267	250	6.9	20.0
PCB-1268 Peak 2	Lin1		0.2795		265	250	6.0	20.0
PCB-1268 Peak 3	Lin1		0.2748		291	250	16.4	20.0
PCB-1268 Peak 4	Lin1		0.0767		253	250	1.2	20.0
PCB-1268 Peak 5	Lin1		0.6412		240	250	-3.8	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-459083/42 Calibration Date: 05/22/2019 03:09
 Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 23:08
 GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 05/22/2019 01:20
 Lab File ID: 042B4301.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1242 Peak 1	3.69	3.44	3.94
PCB-1242 Peak 2	4.15	3.90	4.40
PCB-1242 Peak 3	4.30	4.05	4.55
PCB-1242 Peak 4	4.83	4.58	5.08
PCB-1242 Peak 5	4.97	4.72	5.22
PCB-1268 Peak 1	8.56	8.31	8.81
PCB-1268 Peak 2	8.62	8.37	8.87
PCB-1268 Peak 3	8.98	8.73	9.23
PCB-1268 Peak 4	9.12	8.87	9.37
PCB-1268 Peak 5	9.87	9.62	10.12

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\042B4301.D
 Lims ID: ICV
 Client ID:
 Sample Type: ICV
 Inject. Date: 22-May-2019 03:09:31 ALS Bottle#: 42 Worklist Smp#: 42
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: ICV
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist:
 Method: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 22-May-2019 20:13:52 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0317

First Level Reviewer: mooret

Date: 22-May-2019 18:48:35

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.811	1.810	0.001	97507955	100.0	100.0
2	1.728	1.728	0.000	122825383	100.0	100.0

RPD = 0.00

10 PCB-1242

1	3.521	3.522	-0.001	13850139	250.0	251.5
1	3.997	3.995	0.002	28589378	250.0	244.0
1	4.594	4.595	-0.001	12818409	250.0	245.7
1	5.091	5.092	-0.001	9763887	250.0	248.1
1	5.117	5.118	-0.001	8607768	250.0	209.3

Average of Peak Amounts = 239.7

2	3.685	3.686	-0.001	20051800	250.0	255.9
2	4.152	4.149	0.003	40262513	250.0	251.0
2	4.295	4.296	-0.001	17648057	250.0	252.3
2	4.825	4.826	-0.001	15112432	250.0	263.0
2	4.965	4.966	-0.001	16635906	250.0	248.9

Average of Peak Amounts = 254.2

RPD = 5.87

Data File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\042B4301.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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13 PCB-1268

1	8.201	8.202	-0.001	75130119	250.0	271.7	
1	8.254	8.258	-0.004	69226087	250.0	260.1	
1	8.527	8.528	-0.001	66766447	250.0	292.0	
1	8.647	8.648	-0.001	17097466	250.0	254.9	
1	9.454	9.455	-0.001	158752385	250.0	246.8	

Average of Peak Amounts = 265.1

2	8.562	8.559	0.003	95353291	250.0	267.3	
2	8.622	8.623	-0.001	85837875	250.0	265.1	
2	8.975	8.976	-0.001	84367908	250.0	291.0	
2	9.115	9.116	-0.001	23555212	250.0	253.1	
2	9.872	9.869	0.003	196874504	250.0	240.4	

Average of Peak Amounts = 263.4

RPD = 0.65

Reagents:

AR_4268_ICV_00015

Amount Added: 1.00

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Chrom Revision: 2.3 03-May-2019 15:52:00

Operator ID: TEM

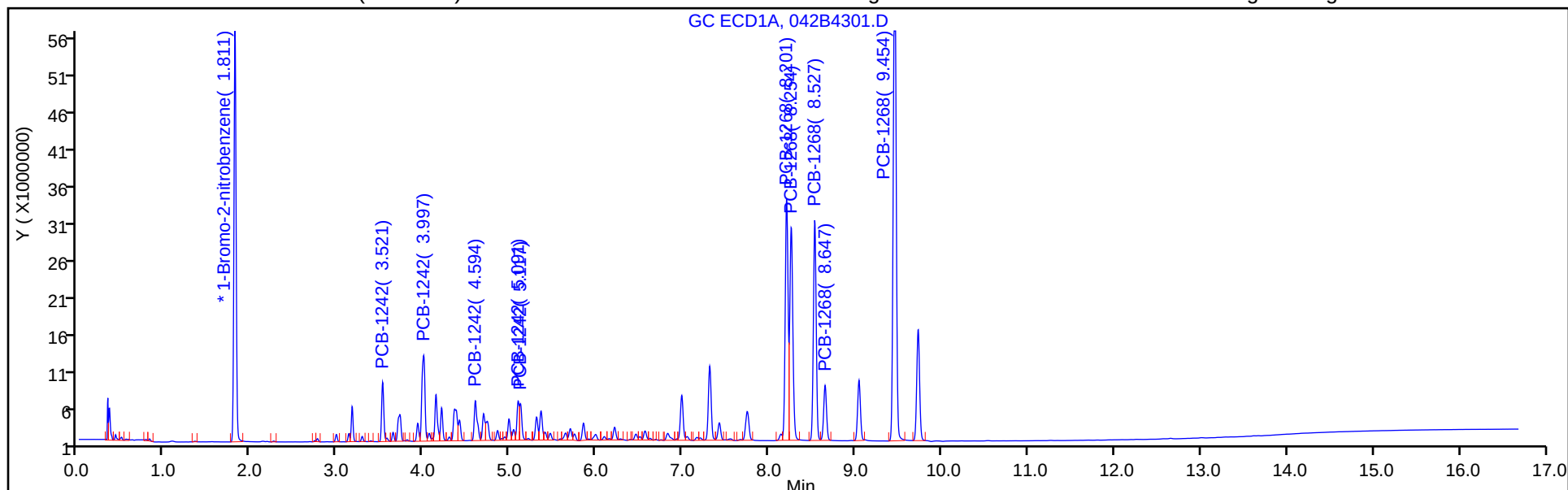
Worklist Smp#: 42

Client ID:

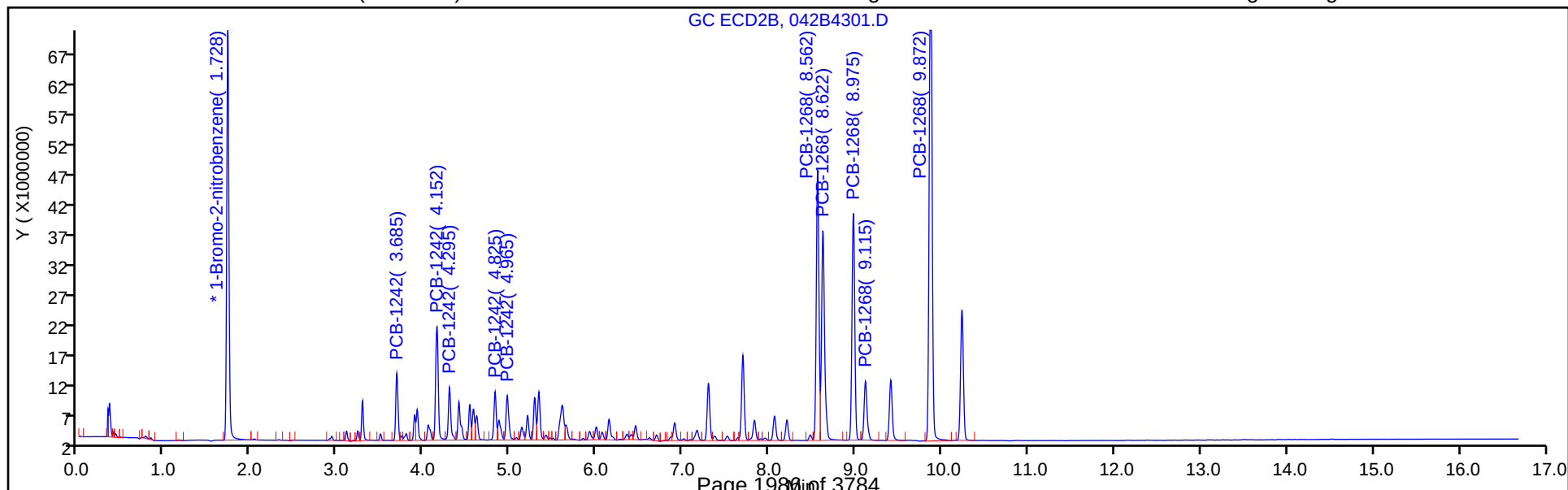
ALS Bottle#: 42

Limit Group: GCSV - 8082 - IS

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-459265/3 Calibration Date: 05/23/2019 14:30
 Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 12:56
 GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 05/21/2019 15:07
 Lab File ID: 003B0401.D Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1248 Peak 1	Ave	0.0766	0.0823		269	250	7.5	20.0
PCB-1248 Peak 2	Ave	0.0729	0.0780		268	250	7.1	20.0
PCB-1248 Peak 3	Ave	0.0444	0.0496		279	250	11.6	20.0
PCB-1248 Peak 4	Ave	0.0529	0.0567		268	250	7.2	20.0
PCB-1248 Peak 5	Ave	0.0349	0.0346		248	250	-1.0	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab Sample ID: ICV 280-459265/3 Calibration Date: 05/23/2019 14:30
Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 12:56
GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 05/21/2019 15:07
Lab File ID: 003B0401.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1248 Peak 1	4.35	4.10	4.60
PCB-1248 Peak 2	4.59	4.34	4.84
PCB-1248 Peak 3	4.69	4.44	4.94
PCB-1248 Peak 4	5.36	5.11	5.61
PCB-1248 Peak 5	5.85	5.60	6.10

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\003B0401.D
 Lims ID: ICV
 Client ID:
 Sample Type: ICV
 Inject. Date: 23-May-2019 14:30:39 ALS Bottle#: 3 Worklist Smp#: 3
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: ICV
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist:
 Method: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 28-May-2019 09:57:25 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0328

First Level Reviewer: mooret

Date: 23-May-2019 15:46:05

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.810	1.810	0.000	99707639	100.0	100.0
2	1.727	1.728	-0.001	124062251	100.0	100.0

RPD = 0.00

4 PCB-1248

1	4.353	4.353	0.000	20506615	250.0	268.7
1	4.593	4.593	0.000	19452406	250.0	267.8
1	4.690	4.690	0.000	12355034	250.0	279.1
1	5.356	5.356	0.000	14139508	250.0	268.1
1	5.846	5.846	0.000	8612856	250.0	247.6

Average of Peak Amounts = 266.2

2	4.147	4.148	-0.001	30850461	250.0	288.7
2	4.531	4.531	0.000	16433584	250.0	246.6
2	4.824	4.824	0.000	22557009	250.0	276.7
2	4.964	4.964	0.000	25999363	250.0	271.2
2	6.144	6.144	0.000	13374460	250.0	219.5

Average of Peak Amounts = 260.6

RPD = 2.16

Reagents:

AR_1248_ICV_00014

Amount Added: 1.00

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 28-May-2019 09:57:27

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\003B0401.D

Injection Date: 23-May-2019 14:30:39

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: ICV

Worklist Smp#: 3

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

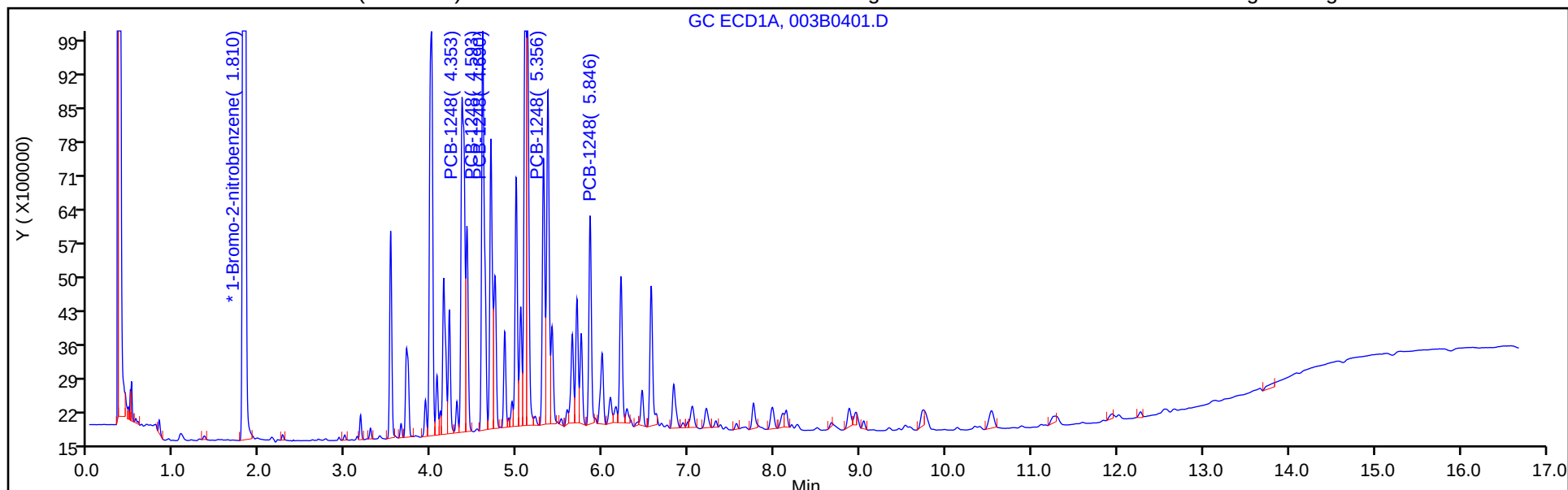
ALS Bottle#: 3

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

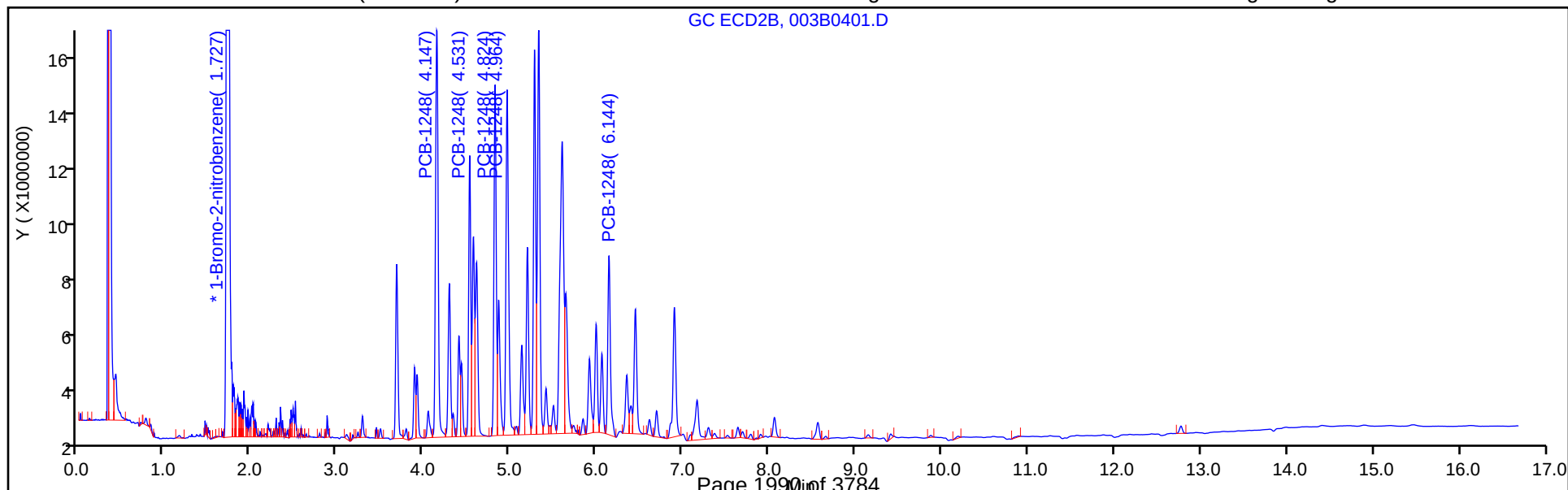
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-459265/3 Calibration Date: 05/23/2019 14:30
 Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 12:56
 GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 05/21/2019 15:07
 Lab File ID: 003B0401.D Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1248 Peak 1	Ave	0.0861	0.0995		289	250	15.5	20.0
PCB-1248 Peak 2	Ave	0.0537	0.0530		247	250	-1.4	20.0
PCB-1248 Peak 3	Lin		0.0727		277	250	10.7	20.0
PCB-1248 Peak 4	Ave	0.0773	0.0838		271	250	8.5	20.0
PCB-1248 Peak 5	Ave	0.0491	0.0431		219	250	-12.2	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab Sample ID: ICV 280-459265/3 Calibration Date: 05/23/2019 14:30
Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 12:56
GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 05/21/2019 15:07
Lab File ID: 003B0401.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1248 Peak 1	4.15	3.90	4.40
PCB-1248 Peak 2	4.53	4.28	4.78
PCB-1248 Peak 3	4.82	4.57	5.07
PCB-1248 Peak 4	4.96	4.71	5.21
PCB-1248 Peak 5	6.14	5.89	6.39

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\003B0401.D
 Lims ID: ICV
 Client ID:
 Sample Type: ICV
 Inject. Date: 23-May-2019 14:30:39 ALS Bottle#: 3 Worklist Smp#: 3
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: ICV
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist:
 Method: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 28-May-2019 09:57:25 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0328

First Level Reviewer: mooret

Date: 23-May-2019 15:46:05

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.810	1.810	0.000	99707639	100.0	100.0
2	1.727	1.728	-0.001	124062251	100.0	100.0

RPD = 0.00

4 PCB-1248

1	4.353	4.353	0.000	20506615	250.0	268.7
1	4.593	4.593	0.000	19452406	250.0	267.8
1	4.690	4.690	0.000	12355034	250.0	279.1
1	5.356	5.356	0.000	14139508	250.0	268.1
1	5.846	5.846	0.000	8612856	250.0	247.6

Average of Peak Amounts = 266.2

2	4.147	4.148	-0.001	30850461	250.0	288.7
2	4.531	4.531	0.000	16433584	250.0	246.6
2	4.824	4.824	0.000	22557009	250.0	276.7
2	4.964	4.964	0.000	25999363	250.0	271.2
2	6.144	6.144	0.000	13374460	250.0	219.5

Average of Peak Amounts = 260.6

RPD = 2.16

Reagents:

AR_1248_ICV_00014

Amount Added: 1.00

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 28-May-2019 09:57:27

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\003B0401.D

Injection Date: 23-May-2019 14:30:39

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: ICV

Worklist Smp#: 3

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

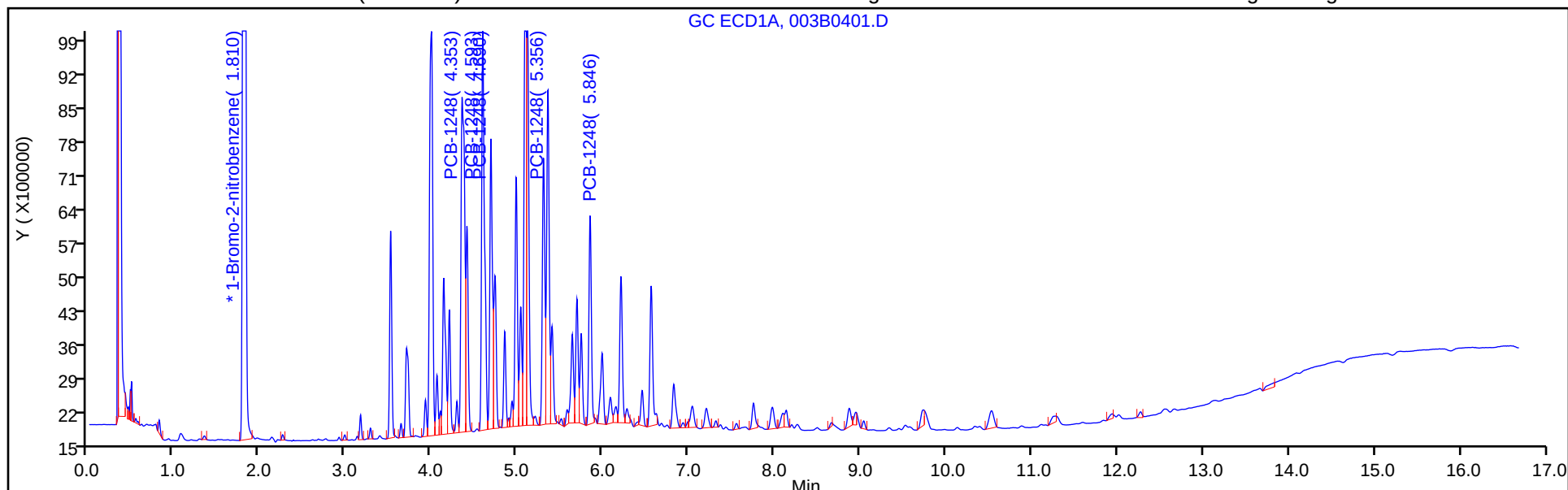
ALS Bottle#: 3

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

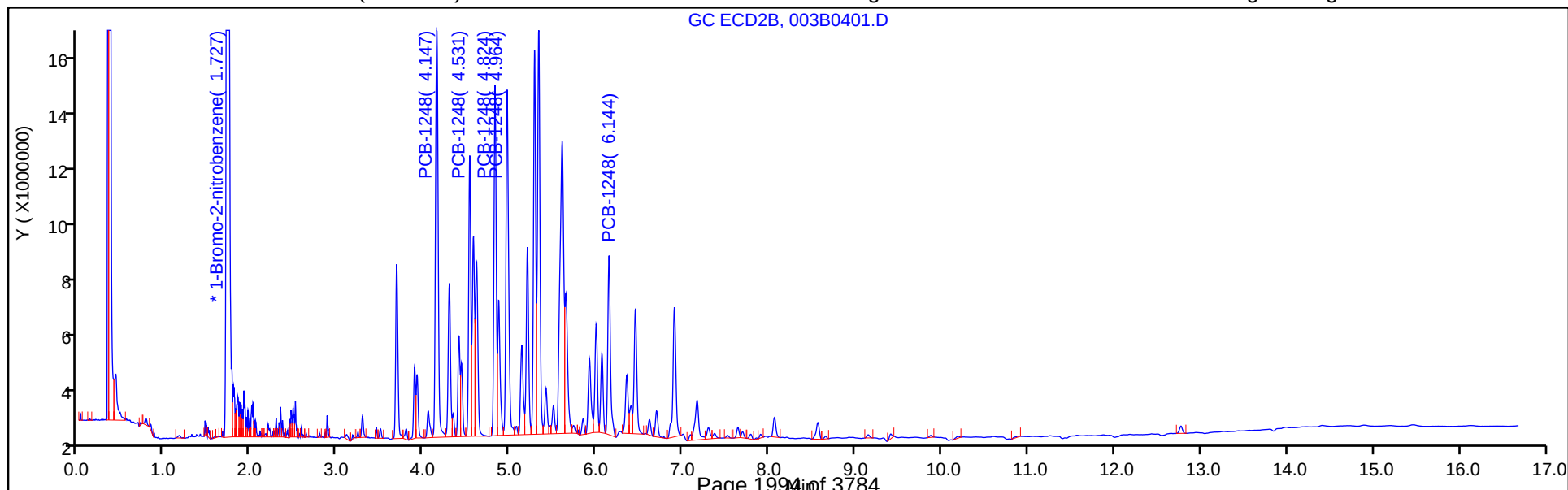
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCVIS 280-459265/4 Calibration Date: 05/23/2019 14:52
 Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 18:02
 GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 05/21/2019 20:13
 Lab File ID: 004B0501.D Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1016 Peak 1	Ave	0.0310	0.0263		424	500	-15.2	20.0
PCB-1016 Peak 2	Ave	0.0642	0.0548		427	500	-14.7	20.0
PCB-1016 Peak 3	Ave	0.1341	0.1158		432	500	-13.6	20.0
PCB-1016 Peak 4	Ave	0.0542	0.0486		449	500	-10.3	20.0
PCB-1016 Peak 5	Ave	0.0579	0.0498		430	500	-14.1	20.0
PCB-1260 Peak 1	Ave	0.0757	0.0672		444	500	-11.3	20.0
PCB-1260 Peak 2	Ave	0.0538	0.0515		478	500	-4.3	20.0
PCB-1260 Peak 3	Lin2		0.0725		477	500	-4.6	20.0
PCB-1260 Peak 4	Lin2		0.1675		483	500	-3.4	20.0
PCB-1260 Peak 5	Lin2		0.0825		478	500	-4.5	20.0
Tetrachloro-m-xylene	Lin1		1.605		24.6	25.0	-1.5	20.0
DCB Decachlorobiphenyl	Lin1		1.476		25.6	25.0	2.5	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCVIS 280-459265/4 Calibration Date: 05/23/2019 14:52
 Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 18:02
 GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 05/21/2019 20:13
 Lab File ID: 004B0501.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1016 Peak 1	3.17	2.92	3.42
PCB-1016 Peak 2	3.52	3.27	3.77
PCB-1016 Peak 3	4.00	3.75	4.25
PCB-1016 Peak 4	4.14	3.89	4.39
PCB-1016 Peak 5	4.59	4.34	4.84
PCB-1260 Peak 1	6.09	5.84	6.34
PCB-1260 Peak 2	6.62	6.37	6.87
PCB-1260 Peak 3	7.31	7.06	7.56
PCB-1260 Peak 4	7.75	7.50	8.00
PCB-1260 Peak 5	8.14	7.89	8.39
Tetrachloro-m-xylene	2.77	2.52	3.02
DCB Decachlorobiphenyl	9.72	9.47	9.97

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\004B0501.D
 Lims ID: CCVIS
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 23-May-2019 14:52:30 ALS Bottle#: 4 Worklist Smp#: 4
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: CCVIS
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub1
 Method: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 28-May-2019 09:57:25 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0328

First Level Reviewer: mooret

Date: 23-May-2019 15:46:26

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.810	1.810	0.000	114115914	100.0	100.0	
2	1.728	1.728	0.000	147255714	100.0	100.0	
RPD = 0.00							

\$ 14 Tetrachloro-m-xylene

1	2.770	2.770	0.000	45797043	25.0	24.6	
2	2.784	2.784	0.000	66842342	25.0	24.2	
RPD = 1.97							

1 PCB-1016

1	3.167	3.167	0.000	15001417	500.0	424.2	
1	3.520	3.520	0.000	31255171	500.0	426.6	
1	3.997	3.997	0.000	66071982	500.0	431.8	
1	4.137	4.137	0.000	27720423	500.0	448.6	
1	4.593	4.593	0.000	28389934	500.0	429.7	
Average of Peak Amounts =						432.2	
2	3.684	3.684	0.000	46061071	500.0	415.1	
2	4.148	4.148	0.000	95260775	500.0	425.9	
2	4.294	4.294	0.000	41707233	500.0	430.0	
2	4.531	4.531	0.000	23729171	500.0	435.5	
2	4.824	4.824	0.000	32410935	500.0	449.3	
Average of Peak Amounts =						431.2	
RPD = 0.24							

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\004B0501.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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12 PCB-1260

1	6.087	6.087	0.000	38313280	500.0	443.7	
1	6.617	6.617	0.000	29397647	500.0	478.4	
1	7.313	7.313	0.000	41339118	500.0	477.1	
1	7.750	7.750	0.000	95572547	500.0	483.0	
1	8.137	8.137	0.000	47083190	500.0	477.6	

Average of Peak Amounts = 472.0

2	6.694	6.694	0.000	68837463	500.0	431.4	
2	7.161	7.161	0.000	97094243	500.0	427.6	
2	7.294	7.294	0.000	56214115	500.0	464.0	
2	8.058	8.058	0.000	127691986	500.0	454.8	
2	8.564	8.564	0.000	93902419	500.0	452.8	

Average of Peak Amounts = 446.1

RPD = 5.64

\$ 15 DCB Decachlorobiphenyl

1	9.720	9.720	0.000	42122491	25.0	25.6	
2	10.231	10.231	0.000	58396839	25.0	22.6	

RPD = 12.50

19 1260 Res 1

1	8.137	8.137	0.000	47083190	NR	NR	
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16 1260 Res 2

1	8.197	8.197	0.000	25071660	NR	NR	
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18 1260 Res 3

1	8.260	8.260	0.000	31356230	NR	NR	
---	-------	-------	-------	----------	----	----	--

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Reagents:

AR_1660_L7_00028

Amount Added: 0.50

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 28-May-2019 09:57:25

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\004B0501.D

Injection Date: 23-May-2019 14:52:30

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: CCVIS

Worklist Smp#: 4

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

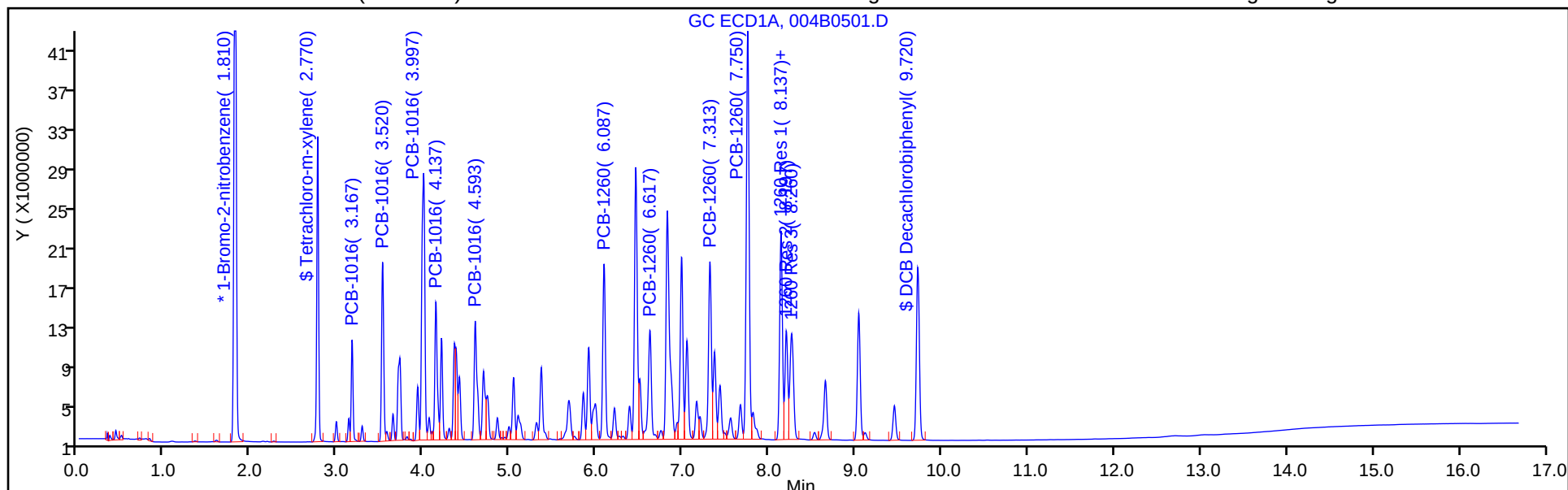
ALS Bottle#: 4

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCVIS 280-459265/4 Calibration Date: 05/23/2019 14:52
 Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 18:02
 GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 05/21/2019 20:13
 Lab File ID: 004B0501.D Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1016 Peak 1	Ave	0.0754	0.0626		415	500	-17.0	20.0
PCB-1016 Peak 2	Ave	0.1519	0.1294		426	500	-14.8	20.0
PCB-1016 Peak 3	Ave	0.0659	0.0567		430	500	-14.0	20.0
PCB-1016 Peak 4	Ave	0.0370	0.0322		436	500	-12.9	20.0
PCB-1016 Peak 5	Qual		0.0440		449	500	-10.1	20.0
PCB-1260 Peak 1	Ave	0.1084	0.0935		431	500	-13.7	20.0
PCB-1260 Peak 2	Ave	0.1542	0.1319		428	500	-14.5	20.0
PCB-1260 Peak 3	Lin2		0.0764		464	500	-7.2	20.0
PCB-1260 Peak 4	Lin2		0.1734		455	500	-9.0	20.0
PCB-1260 Peak 5	Lin2		0.1275		453	500	-9.4	20.0
Tetrachloro-m-xylene	Lin1		1.816		24.2	25.0	-3.4	20.0
DCB Decachlorobiphenyl	Lin1		1.586		22.6	25.0	-9.5	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCVIS 280-459265/4 Calibration Date: 05/23/2019 14:52
 Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 18:02
 GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 05/21/2019 20:13
 Lab File ID: 004B0501.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1016 Peak 1	3.68	3.43	3.93
PCB-1016 Peak 2	4.15	3.90	4.40
PCB-1016 Peak 3	4.29	4.04	4.54
PCB-1016 Peak 4	4.53	4.28	4.78
PCB-1016 Peak 5	4.82	4.57	5.07
PCB-1260 Peak 1	6.69	6.44	6.94
PCB-1260 Peak 2	7.16	6.91	7.41
PCB-1260 Peak 3	7.29	7.04	7.54
PCB-1260 Peak 4	8.06	7.81	8.31
PCB-1260 Peak 5	8.56	8.31	8.81
Tetrachloro-m-xylene	2.78	2.53	3.03
DCB Decachlorobiphenyl	10.23	9.98	10.48

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\004B0501.D
 Lims ID: CCVIS
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 23-May-2019 14:52:30 ALS Bottle#: 4 Worklist Smp#: 4
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: CCVIS
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub1
 Method: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 28-May-2019 09:57:25 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0328

First Level Reviewer: mooret

Date: 23-May-2019 15:46:26

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.810	1.810	0.000	114115914	100.0	100.0	
2	1.728	1.728	0.000	147255714	100.0	100.0	
RPD = 0.00							

\$ 14 Tetrachloro-m-xylene

1	2.770	2.770	0.000	45797043	25.0	24.6	
2	2.784	2.784	0.000	66842342	25.0	24.2	
RPD = 1.97							

1 PCB-1016

1	3.167	3.167	0.000	15001417	500.0	424.2	
1	3.520	3.520	0.000	31255171	500.0	426.6	
1	3.997	3.997	0.000	66071982	500.0	431.8	
1	4.137	4.137	0.000	27720423	500.0	448.6	
1	4.593	4.593	0.000	28389934	500.0	429.7	
Average of Peak Amounts =						432.2	
2	3.684	3.684	0.000	46061071	500.0	415.1	
2	4.148	4.148	0.000	95260775	500.0	425.9	
2	4.294	4.294	0.000	41707233	500.0	430.0	
2	4.531	4.531	0.000	23729171	500.0	435.5	
2	4.824	4.824	0.000	32410935	500.0	449.3	
Average of Peak Amounts =						431.2	
RPD = 0.24							

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\004B0501.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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12 PCB-1260

1	6.087	6.087	0.000	38313280	500.0	443.7	
1	6.617	6.617	0.000	29397647	500.0	478.4	
1	7.313	7.313	0.000	41339118	500.0	477.1	
1	7.750	7.750	0.000	95572547	500.0	483.0	
1	8.137	8.137	0.000	47083190	500.0	477.6	

Average of Peak Amounts = 472.0

2	6.694	6.694	0.000	68837463	500.0	431.4	
2	7.161	7.161	0.000	97094243	500.0	427.6	
2	7.294	7.294	0.000	56214115	500.0	464.0	
2	8.058	8.058	0.000	127691986	500.0	454.8	
2	8.564	8.564	0.000	93902419	500.0	452.8	

Average of Peak Amounts = 446.1

RPD = 5.64

\$ 15 DCB Decachlorobiphenyl

1	9.720	9.720	0.000	42122491	25.0	25.6	
2	10.231	10.231	0.000	58396839	25.0	22.6	

RPD = 12.50

19 1260 Res 1

1	8.137	8.137	0.000	47083190	NR	NR	
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16 1260 Res 2

1	8.197	8.197	0.000	25071660	NR	NR	
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18 1260 Res 3

1	8.260	8.260	0.000	31356230	NR	NR	
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QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Reagents:

AR_1660_L7_00028

Amount Added: 0.50

Units: mL

BNB IS_00013

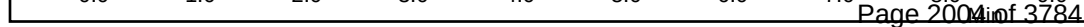
Amount Added: 0.10

Units: mL

Run Reagent

Chrom Revision: 2.3 03-May-2019 15:52:00

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-459265/17 Calibration Date: 05/23/2019 19:36
 Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 18:02
 GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 05/21/2019 20:13
 Lab File ID: 017B1801.D Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1016 Peak 1	Ave	0.0310	0.0273		440	500	-11.9	20.0
PCB-1016 Peak 2	Ave	0.0642	0.0574		447	500	-10.5	20.0
PCB-1016 Peak 3	Ave	0.1341	0.1223		456	500	-8.8	20.0
PCB-1016 Peak 4	Ave	0.0542	0.0512		473	500	-5.4	20.0
PCB-1016 Peak 5	Ave	0.0579	0.0525		453	500	-9.3	20.0
PCB-1260 Peak 1	Ave	0.0757	0.0684		452	500	-9.6	20.0
PCB-1260 Peak 2	Ave	0.0538	0.0486		452	500	-9.7	20.0
PCB-1260 Peak 3	Lin2		0.0721		474	500	-5.1	20.0
PCB-1260 Peak 4	Lin2		0.1716		495	500	-1.0	20.0
PCB-1260 Peak 5	Lin2		0.0877		508	500	1.6	20.0
Tetrachloro-m-xylene	Lin1		1.665		25.6	25.0	2.3	20.0
DCB Decachlorobiphenyl	Lin1		1.580		27.5	25.0	9.9	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-459265/17 Calibration Date: 05/23/2019 19:36
 Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 18:02
 GC Column: CLP1 ID: 0.32 (mm) Calib End Date: 05/21/2019 20:13
 Lab File ID: 017B1801.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1016 Peak 1	3.17	2.92	3.42
PCB-1016 Peak 2	3.52	3.27	3.77
PCB-1016 Peak 3	4.00	3.75	4.25
PCB-1016 Peak 4	4.14	3.89	4.39
PCB-1016 Peak 5	4.60	4.34	4.84
PCB-1260 Peak 1	6.09	5.84	6.34
PCB-1260 Peak 2	6.62	6.37	6.87
PCB-1260 Peak 3	7.32	7.06	7.56
PCB-1260 Peak 4	7.75	7.50	8.00
PCB-1260 Peak 5	8.14	7.89	8.39
Tetrachloro-m-xylene	2.77	2.52	3.02
DCB Decachlorobiphenyl	9.73	9.47	9.97

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\017B1801.D
 Lims ID: CCV
 Client ID:
 Sample Type: CCV
 Inject. Date: 23-May-2019 19:36:41 ALS Bottle#: 17 Worklist Smp#: 17
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: CCV
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub1
 Method: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 28-May-2019 10:06:20 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0328

First Level Reviewer: mooret

Date: 24-May-2019 09:50:05

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.811	1.810	0.001	108563266	100.0	100.0	
2	1.729	1.728	0.001	138617422	100.0	100.0	
RPD = 0.00							

\$ 14 Tetrachloro-m-xylene

1	2.768	2.770	-0.002	45182150	25.0	25.6	
2	2.786	2.784	0.002	65912737	25.0	25.3	
RPD = 0.93							

1 PCB-1016

1	3.168	3.167	0.001	14819722	500.0	440.5	
1	3.521	3.520	0.001	31175821	500.0	447.3	
1	3.995	3.997	-0.002	66386037	500.0	456.1	
1	4.138	4.137	0.001	27798790	500.0	472.9	
1	4.595	4.593	0.002	28492394	500.0	453.3	
Average of Peak Amounts =						454.0	
2	3.686	3.684	0.002	45998744	500.0	440.4	
2	4.149	4.148	0.001	96098791	500.0	456.5	
2	4.296	4.294	0.002	42298312	500.0	463.2	
2	4.529	4.531	-0.002	24190734	500.0	471.7	
2	4.822	4.824	-0.002	32823589	500.0	487.1	
Average of Peak Amounts =						463.8	
RPD = 2.13							

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\017B1801.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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12 PCB-1260

1	6.085	6.087	-0.002	37140358	500.0	452.1	
1	6.618	6.617	0.001	26396438	500.0	451.5	
1	7.315	7.313	0.002	39108463	500.0	474.5	
1	7.751	7.750	0.001	93130431	500.0	494.9	
1	8.138	8.137	0.001	47605401	500.0	508.0	

Average of Peak Amounts = 476.2

2	6.696	6.694	0.002	69159522	500.0	460.4	
2	7.162	7.161	0.001	98217691	500.0	459.5	
2	7.296	7.294	0.002	56522731	500.0	496.2	
2	8.059	8.058	0.001	129954478	500.0	492.4	
2	8.562	8.564	-0.002	95859255	500.0	491.9	

Average of Peak Amounts = 480.1

RPD = 0.81

\$ 15 DCB Decachlorobiphenyl

1	9.725	9.720	0.005	42890110	25.0	27.5	
2	10.232	10.231	0.001	60794542	25.0	25.1	

RPD = 9.04

S 8 Polychlorinated biphenyls, Total

1						930.2	
2						943.8	

RPD = 1.45

19 1260 Res 1

1	8.138	8.137	0.001	47605401	NR	NR	
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16 1260 Res 2

1	8.198	8.197	0.001	25409023	NR	NR	
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18 1260 Res 3

1	8.261	8.260	0.001	31247171	NR	NR	
---	-------	-------	-------	----------	----	----	--

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Reagents:

AR_1660_L7_00028

Amount Added: 0.50

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 28-May-2019 10:06:20

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\017B1801.D

Injection Date: 23-May-2019 19:36:41

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: CCV

Worklist Smp#: 17

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

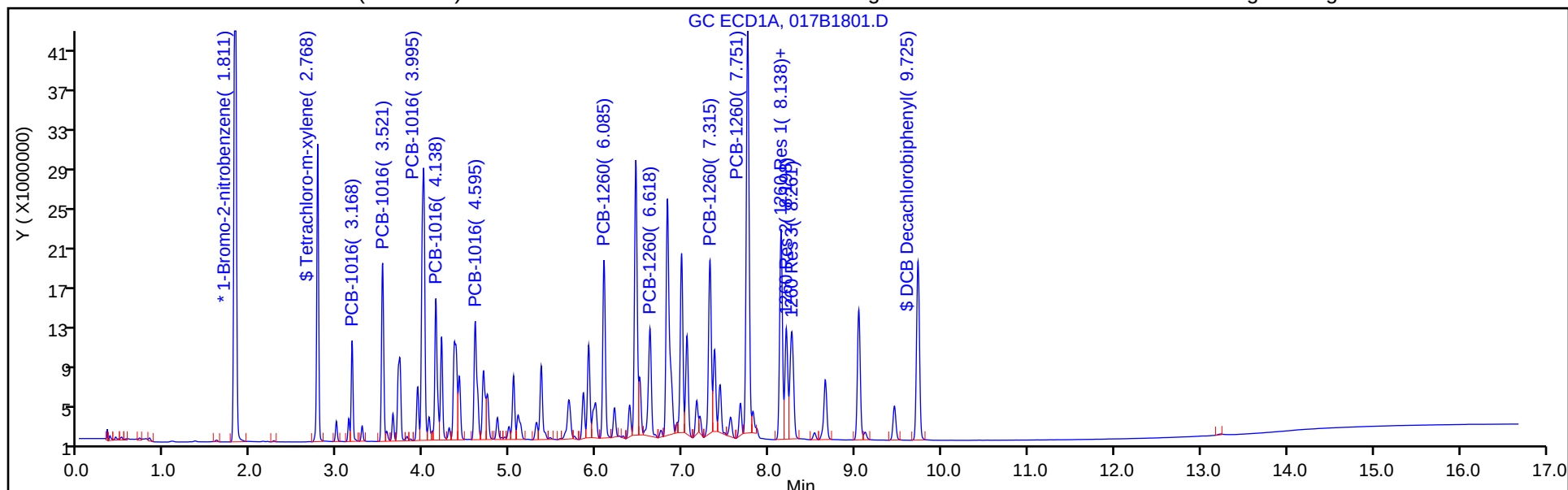
ALS Bottle#: 17

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

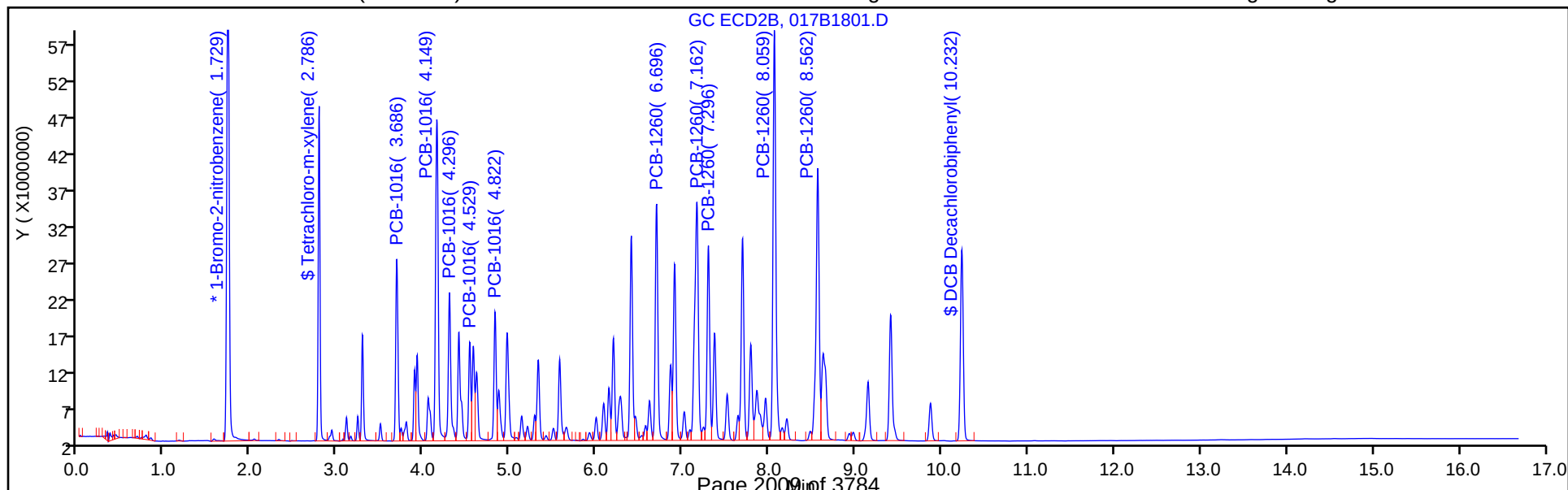
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-459265/17 Calibration Date: 05/23/2019 19:36
 Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 18:02
 GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 05/21/2019 20:13
 Lab File ID: 017B1801.D Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1016 Peak 1	Ave	0.0754	0.0664		440	500	-11.9	20.0
PCB-1016 Peak 2	Ave	0.1519	0.1387		456	500	-8.7	20.0
PCB-1016 Peak 3	Ave	0.0659	0.0610		463	500	-7.4	20.0
PCB-1016 Peak 4	Ave	0.0370	0.0349		472	500	-5.7	20.0
PCB-1016 Peak 5	Qual		0.0474		487	500	-2.6	20.0
PCB-1260 Peak 1	Ave	0.1084	0.0998		460	500	-7.9	20.0
PCB-1260 Peak 2	Ave	0.1542	0.1417		459	500	-8.1	20.0
PCB-1260 Peak 3	Lin2		0.0816		496	500	-0.8	20.0
PCB-1260 Peak 4	Lin2		0.1875		492	500	-1.5	20.0
PCB-1260 Peak 5	Lin2		0.1383		492	500	-1.6	20.0
Tetrachloro-m-xylene	Lin1		1.902		25.3	25.0	1.3	20.0
DCB Decachlorobiphenyl	Lin1		1.754		25.1	25.0	0.4	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Lab Sample ID: CCV 280-459265/17 Calibration Date: 05/23/2019 19:36
Instrument ID: SGC_P3 Calib Start Date: 05/21/2019 18:02
GC Column: CLP2 ID: 0.32 (mm) Calib End Date: 05/21/2019 20:13
Lab File ID: 017B1801.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1016 Peak 1	3.69	3.43	3.93
PCB-1016 Peak 2	4.15	3.90	4.40
PCB-1016 Peak 3	4.30	4.04	4.54
PCB-1016 Peak 4	4.53	4.28	4.78
PCB-1016 Peak 5	4.82	4.57	5.07
PCB-1260 Peak 1	6.70	6.44	6.94
PCB-1260 Peak 2	7.16	6.91	7.41
PCB-1260 Peak 3	7.30	7.04	7.54
PCB-1260 Peak 4	8.06	7.81	8.31
PCB-1260 Peak 5	8.56	8.31	8.81
Tetrachloro-m-xylene	2.79	2.53	3.03
DCB Decachlorobiphenyl	10.23	9.98	10.48

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\017B1801.D
 Lims ID: CCV
 Client ID:
 Sample Type: CCV
 Inject. Date: 23-May-2019 19:36:41 ALS Bottle#: 17 Worklist Smp#: 17
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: CCV
 Operator ID: TEM Instrument ID: SGC_P3
 Sublist: chrom-PCB_P3*sub1
 Method: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 28-May-2019 10:06:20 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0328

First Level Reviewer: mooret

Date: 24-May-2019 09:50:05

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.811	1.810	0.001	108563266	100.0	100.0	
2	1.729	1.728	0.001	138617422	100.0	100.0	
RPD = 0.00							

\$ 14 Tetrachloro-m-xylene

1	2.768	2.770	-0.002	45182150	25.0	25.6	
2	2.786	2.784	0.002	65912737	25.0	25.3	
RPD = 0.93							

1 PCB-1016

1	3.168	3.167	0.001	14819722	500.0	440.5	
1	3.521	3.520	0.001	31175821	500.0	447.3	
1	3.995	3.997	-0.002	66386037	500.0	456.1	
1	4.138	4.137	0.001	27798790	500.0	472.9	
1	4.595	4.593	0.002	28492394	500.0	453.3	
Average of Peak Amounts =						454.0	
2	3.686	3.684	0.002	45998744	500.0	440.4	
2	4.149	4.148	0.001	96098791	500.0	456.5	
2	4.296	4.294	0.002	42298312	500.0	463.2	
2	4.529	4.531	-0.002	24190734	500.0	471.7	
2	4.822	4.824	-0.002	32823589	500.0	487.1	
Average of Peak Amounts =						463.8	
RPD = 2.13							

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\017B1801.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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12 PCB-1260

1	6.085	6.087	-0.002	37140358	500.0	452.1	
1	6.618	6.617	0.001	26396438	500.0	451.5	
1	7.315	7.313	0.002	39108463	500.0	474.5	
1	7.751	7.750	0.001	93130431	500.0	494.9	
1	8.138	8.137	0.001	47605401	500.0	508.0	

Average of Peak Amounts = 476.2

2	6.696	6.694	0.002	69159522	500.0	460.4	
2	7.162	7.161	0.001	98217691	500.0	459.5	
2	7.296	7.294	0.002	56522731	500.0	496.2	
2	8.059	8.058	0.001	129954478	500.0	492.4	
2	8.562	8.564	-0.002	95859255	500.0	491.9	

Average of Peak Amounts = 480.1

RPD = 0.81

\$ 15 DCB Decachlorobiphenyl

1	9.725	9.720	0.005	42890110	25.0	27.5	
2	10.232	10.231	0.001	60794542	25.0	25.1	

RPD = 9.04

S 8 Polychlorinated biphenyls, Total

1						930.2	
2						943.8	

RPD = 1.45

19 1260 Res 1

1	8.138	8.137	0.001	47605401	NR	NR	
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16 1260 Res 2

1	8.198	8.197	0.001	25409023	NR	NR	
---	-------	-------	-------	----------	----	----	--

18 1260 Res 3

1	8.261	8.260	0.001	31247171	NR	NR	
---	-------	-------	-------	----------	----	----	--

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Reagents:

AR_1660_L7_00028

Amount Added: 0.50

Units: mL

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 28-May-2019 10:06:21

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\017B1801.D

Injection Date: 23-May-2019 19:36:41

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: CCV

Worklist Smp#: 17

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

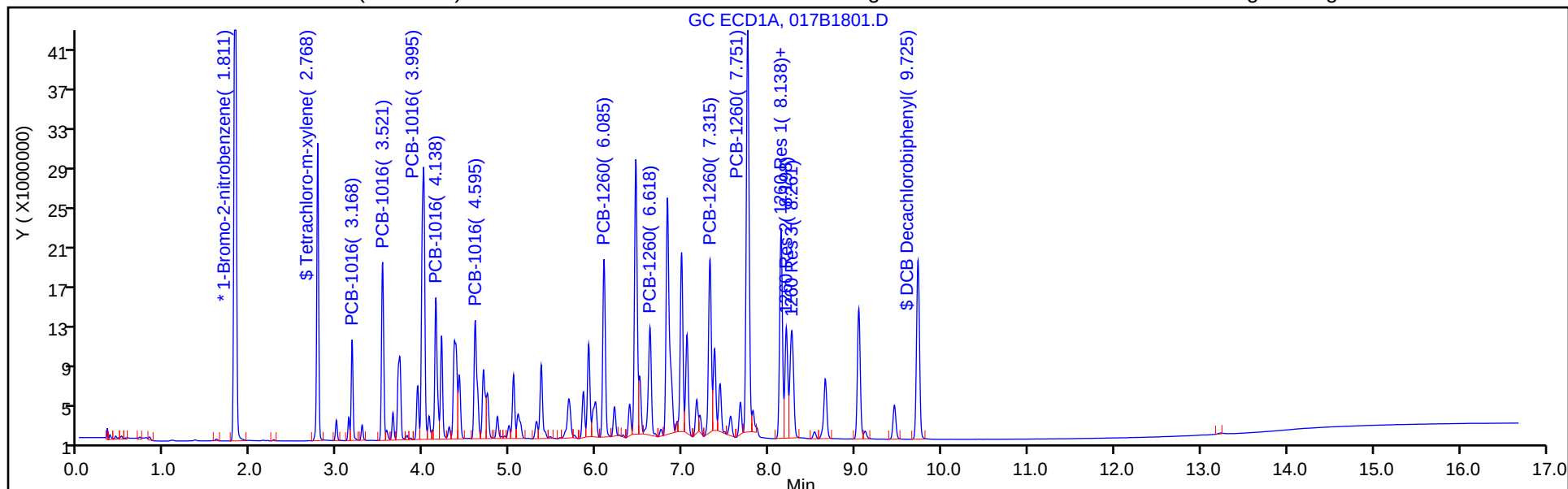
ALS Bottle#: 17

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

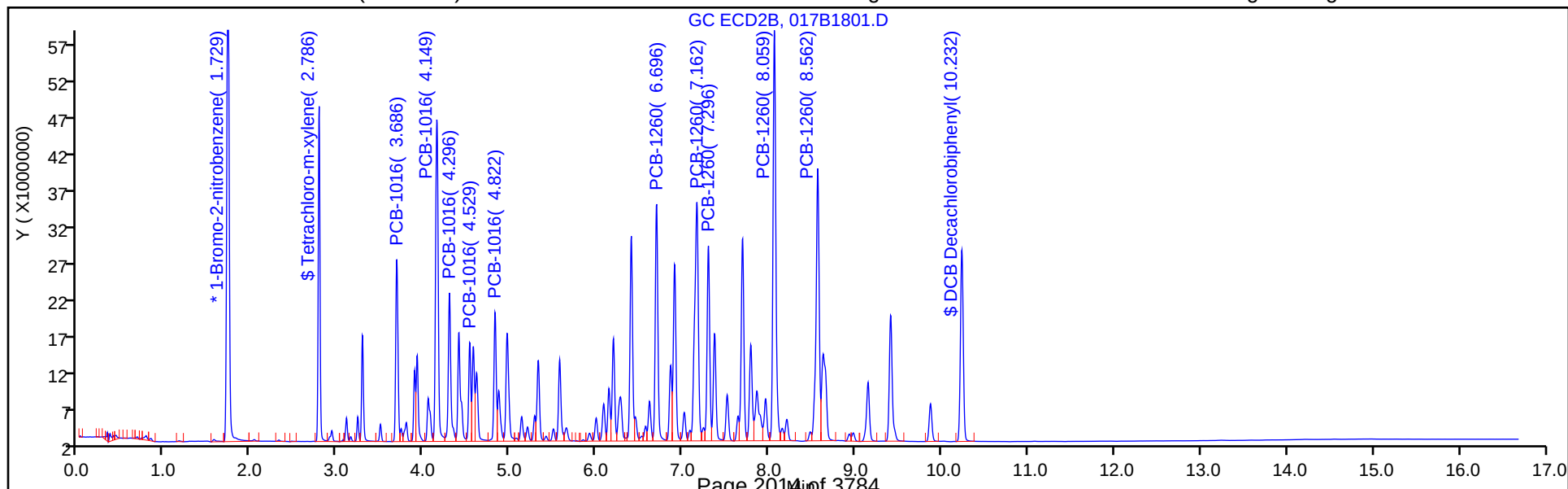
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 280-457201/1-A
 Matrix: Water Lab File ID: 005B0601.D
 Analysis Method: 8082A Date Collected: _____
 Extraction Method: 3510C Date Extracted: 05/06/2019 15:29
 Sample wt/vol: 1000 (mL) Date Analyzed: 05/23/2019 15:14
 Con. Extract Vol.: 10 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) GC Column: CLP2 ID: 0.32 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 459265 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
12674-11-2	PCB-1016	0.40	U M	1.0	0.40	0.12
11104-28-2	PCB-1221	0.25	U M	1.0	0.25	0.21
11141-16-5	PCB-1232	0.60	U M	1.0	0.60	0.17
53469-21-9	PCB-1242	1.0	U M	1.0	1.0	0.42
12672-29-6	PCB-1248	0.30	U M	1.0	0.30	0.092
11097-69-1	PCB-1254	0.25	U M	1.0	0.25	0.11
11096-82-5	PCB-1260	0.40	U M	1.0	0.40	0.16

CAS NO.	SURROGATE	%REC	Q	LIMITS
877-09-8	Tetrachloro-m-xylene	90		25-120
2051-24-3	DCB Decachlorobiphenyl	87		30-136

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\005B0601.D
 Lims ID: MB 280-457201/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 23-May-2019 15:14:20 ALS Bottle#: 5 Worklist Smp#: 5
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: MB 280-457201
 Operator ID: TEM Instrument ID: SGC_P3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 28-May-2019 10:06:04 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0328

First Level Reviewer: mooret

Date: 28-May-2019 10:06:04

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

* 17 1-Bromo-2-nitrobenzene

1	1.812	1.810	0.002	112868199	100.0	100.0	
2	1.727	1.728	-0.001	135114031	100.0	100.0	
RPD = 0.00							

\$ 14 Tetrachloro-m-xylene

1	2.769	2.770	-0.001	31495966	20.0	16.9	
2	2.783	2.784	-0.001	45963864	20.0	17.9	
RPD = 5.78							

3 PCB-1221

1		2.984				ND	U
1		3.131					
1		3.168					
2		3.102					
2		3.232					
2		3.289					

1 PCB-1016

1		3.167				ND	U
1		3.520					
1		3.997					
1		4.137					
1		4.593					
2		3.684					
2		4.148					
2		4.294					
2		4.531					
2		4.824					

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\005B0601.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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7 PCB-1232

1	3.167					ND	U
1	3.520						
1	3.997						
1	4.140						
1	4.597						
2	3.288						
2	3.685						
2	4.151						
2	4.295						
2	4.531						

10 PCB-1242

1	3.521					ND	U
1	3.998						
1	4.595						
1	5.091						
1	5.118						
2	3.686						
2	4.149						
2	4.296						
2	4.826						
2	4.966						

4 PCB-1248

1	4.353					ND	U
1	4.593						
1	4.690						
1	5.356						
1	5.846						
2	4.148						
2	4.531						
2	4.824						
2	4.964						
2	6.144						

9 PCB-1254

1	5.358					ND	U
1	5.694						
1	5.848						
1	6.208						
1	6.824						
2	5.572						
2	5.995						
2	6.145						
2	6.695						
2	7.165						

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

12 PCB-1260

1	6.087
1	6.617
1	7.313
1	7.750
1	8.137
2	6.694
2	7.161
2	7.294
2	8.058
2	8.564

ND

U

5 PCB-1262

1	6.457
1	6.987
1	7.317
1	7.754
1	8.140
2	6.695
2	7.295
2	7.691
2	8.061
2	8.565

ND

U

13 PCB-1268

1	8.201
1	8.258
1	8.528
1	8.648
1	9.455
2	8.562
2	8.622
2	8.976
2	9.116
2	9.872

ND

U

\$ 15 DCB Decachlorobiphenyl

1	9.722	9.720	0.002	29407876	20.0	17.9
2	10.233	10.231	0.002	41754119	20.0	17.4

RPD = 2.69

S 8 Polychlorinated biphenyls, Total

1	0.000
2	0.000

ND

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\005B0601.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

2 PCB-5460

1	0.000					ND	
1	12.739						
1	0.000						
1	13.802						
1	14.259						
2	0.000						
2	0.000						
2	0.000						
2	0.000						
2	0.000						

6 PCB-5432

1	7.063					ND	
1	7.693						
1	8.203						
1	9.029						
1	9.459						
2	0.000						
2	0.000						
2	0.000						
2	0.000						
2	0.000						

11 PCB-5442

1	9.459					ND	
1	9.923						
1	10.079						
1	10.289						
1	0.000						
2	0.000						
2	0.000						
2	0.000						
2	0.000						
2	0.000						

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 28-May-2019 10:06:05

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\005B0601.D

Injection Date: 23-May-2019 15:14:20

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: MB 280-457201/1-A

Worklist Smp#: 5

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

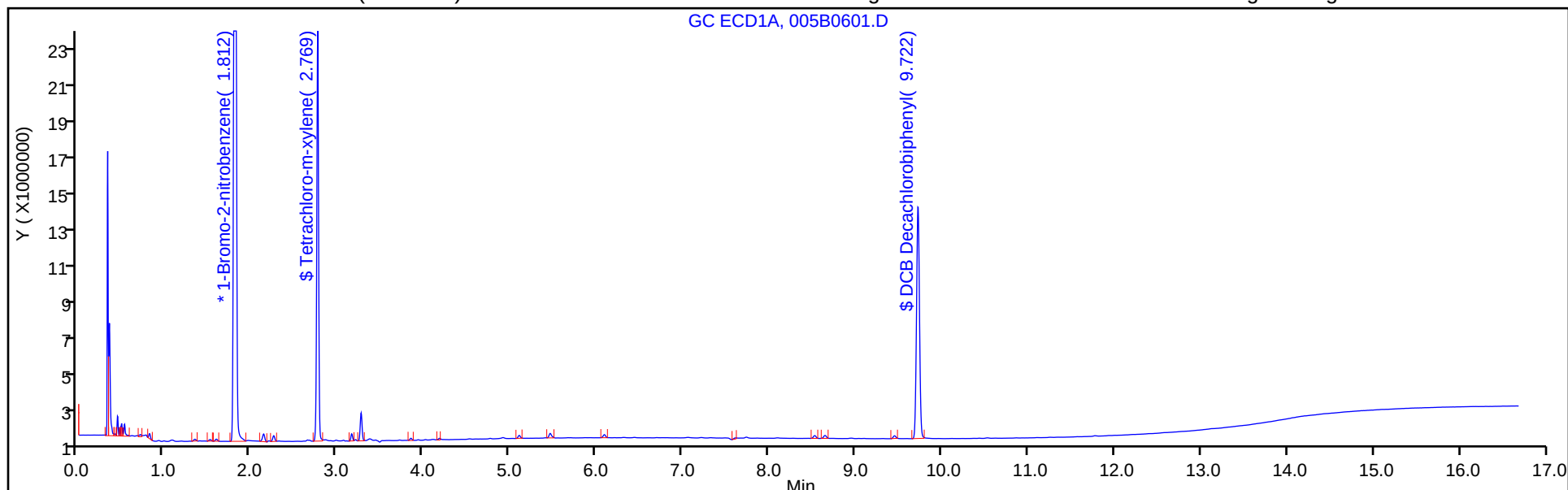
ALS Bottle#: 5

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

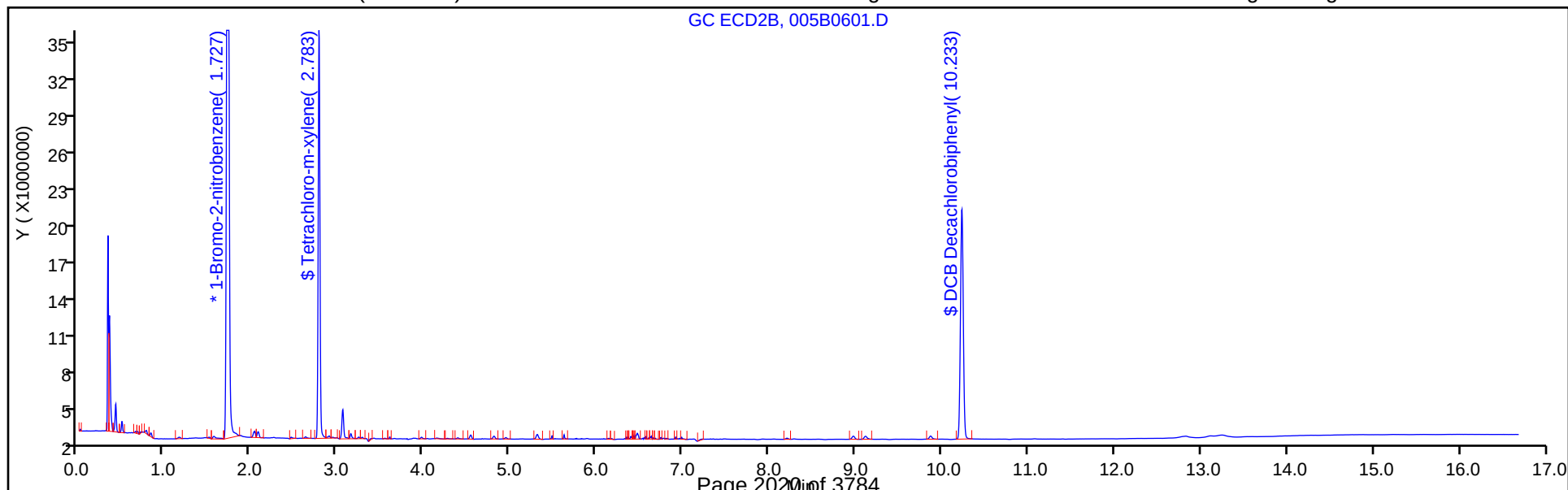
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\005B0601.D
 Lims ID: MB 280-457201/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 23-May-2019 15:14:20 ALS Bottle#: 5 Worklist Smp#: 5
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: MB 280-457201
 Operator ID: TEM Instrument ID: SGC_P3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 28-May-2019 10:06:04 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0328
 First Level Reviewer: mooret Date: 28-May-2019 10:06:04

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
\$ 14 Tetrachloro-m-xylene	20.0	16.9	84.63
\$ 15 DCB Decachlorobiphenyl	20.0	17.9	89.60

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
\$ 14 Tetrachloro-m-xylene	20.0	17.9	89.67
\$ 15 DCB Decachlorobiphenyl	20.0	17.4	87.22

FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCS 280-457201/3-A
 Matrix: Water Lab File ID: 006B0701.D
 Analysis Method: 8082A Date Collected: _____
 Extraction Method: 3510C Date Extracted: 05/06/2019 15:29
 Sample wt/vol: 1000 (mL) Date Analyzed: 05/23/2019 15:36
 Con. Extract Vol.: 10 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) GC Column: CLP2 ID: 0.32 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 459265 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
12674-11-2	PCB-1016	1.88		1.0	0.40	0.12
11096-82-5	PCB-1260	2.00		1.0	0.40	0.16

CAS NO.	SURROGATE	%REC	Q	LIMITS
877-09-8	Tetrachloro-m-xylene	85		25-120
2051-24-3	DCB Decachlorobiphenyl	90		30-136

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\006B0701.D
 Lims ID: LCS 280-457201/3-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 23-May-2019 15:36:12 ALS Bottle#: 6 Worklist Smp#: 6
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: LCS 280-457201
 Operator ID: TEM Instrument ID: SGC_P3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 28-May-2019 09:56:57 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0328

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
-----	--------------	------------------	------------------	----------	------------------	--------------------	-------

* 17 1-Bromo-2-nitrobenzene

1	1.810	1.810	0.000	113700587	100.0	100.0	
2	1.728	1.728	0.000	137747301	100.0	100.0	
RPD = 0.00							

\$ 14 Tetrachloro-m-xylene

1	2.767	2.770	-0.003	30354018	20.0	16.2	
2	2.784	2.784	0.000	44332853	20.0	16.9	
RPD = 4.63							

1 PCB-1016

1	3.167	3.167	0.000	5800865	200.0	164.6	
1	3.520	3.520	0.000	12729134	200.0	174.4	
1	3.997	3.997	0.000	26751628	200.0	175.5	
1	4.137	4.137	0.000	11509814	200.0	186.9	
1	4.593	4.593	0.000	11797646	200.0	179.2	
Average of Peak Amounts =						176.1	
2	3.684	3.684	0.000	18800194	200.0	181.1	
2	4.151	4.148	0.003	38887923	200.0	185.9	
2	4.294	4.294	0.000	17265948	200.0	190.3	
2	4.531	4.531	0.000	10105274	200.0	198.3	
2	4.824	4.824	0.000	13840877	200.0	186.5	
Average of Peak Amounts =						188.4	
RPD = 6.74							

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\006B0701.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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12 PCB-1260

1	6.087	6.087	0.000	15861237	200.0	184.4	
1	6.620	6.617	0.003	11231682	200.0	183.4	
1	7.313	7.313	0.000	16470657	200.0	186.9	
1	7.750	7.750	0.000	38526045	200.0	191.2	
1	8.137	8.137	0.000	19803206	200.0	197.7	

Average of Peak Amounts = 188.7

2	6.694	6.694	0.000	29658069	200.0	198.7	
2	7.161	7.161	0.000	39422063	200.0	185.6	
2	7.294	7.294	0.000	24128268	200.0	208.2	
2	8.061	8.058	0.003	55068769	200.0	204.9	
2	8.564	8.564	0.000	40748411	200.0	204.6	

Average of Peak Amounts = 200.4

RPD = 6.00

\$ 15 DCB Decachlorobiphenyl

1	9.723	9.720	0.003	30767429	20.0	18.6	
2	10.231	10.231	0.000	43933293	20.0	18.0	

RPD = 3.29

Reagents:

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 28-May-2019 09:57:19

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\006B0701.D

Injection Date: 23-May-2019 15:36:12

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: LCS 280-457201/3-A

Worklist Smp#: 6

Client ID:

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

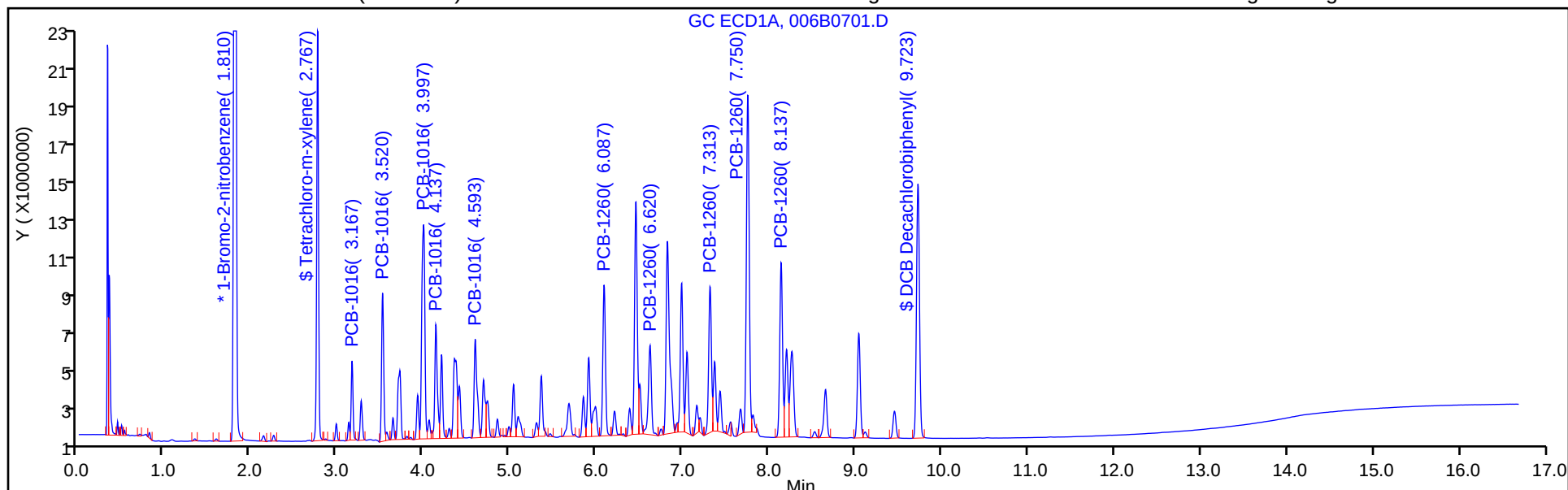
ALS Bottle#: 6

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

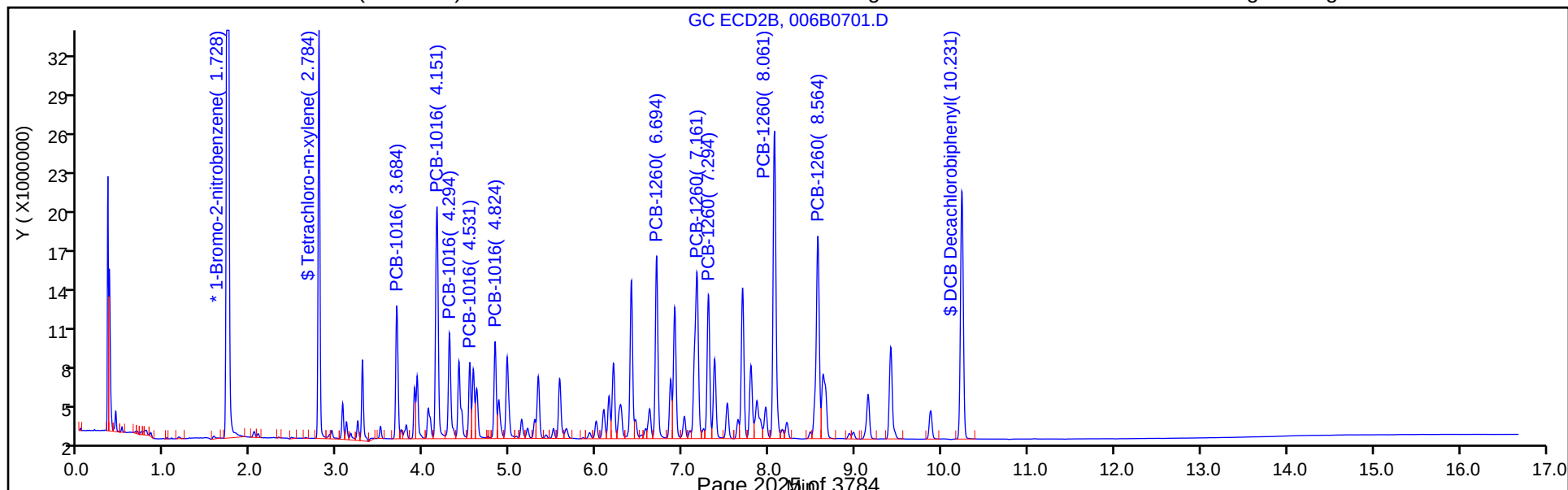
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\006B0701.D
 Lims ID: LCS 280-457201/3-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 23-May-2019 15:36:12 ALS Bottle#: 6 Worklist Smp#: 6
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: LCS 280-457201
 Operator ID: TEM Instrument ID: SGC_P3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 28-May-2019 09:56:57 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0328

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
\$ 14 Tetrachloro-m-xylene	20.0	16.2	80.82
\$ 15 DCB Decachlorobiphenyl	20.0	18.6	93.17

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
\$ 14 Tetrachloro-m-xylene	20.0	16.9	84.66
\$ 15 DCB Decachlorobiphenyl	20.0	18.0	90.15

Report Date: 28-May-2019 09:57:19

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\006B0701.D

Injection Date: 23-May-2019 15:36:12

Instrument ID: SGC_P3

Lims ID: LCS 280-457201/3-A

Client ID:

Operator ID: TEM

ALS Bottle#: 6

Worklist Smp#: 6

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: PCB_P3

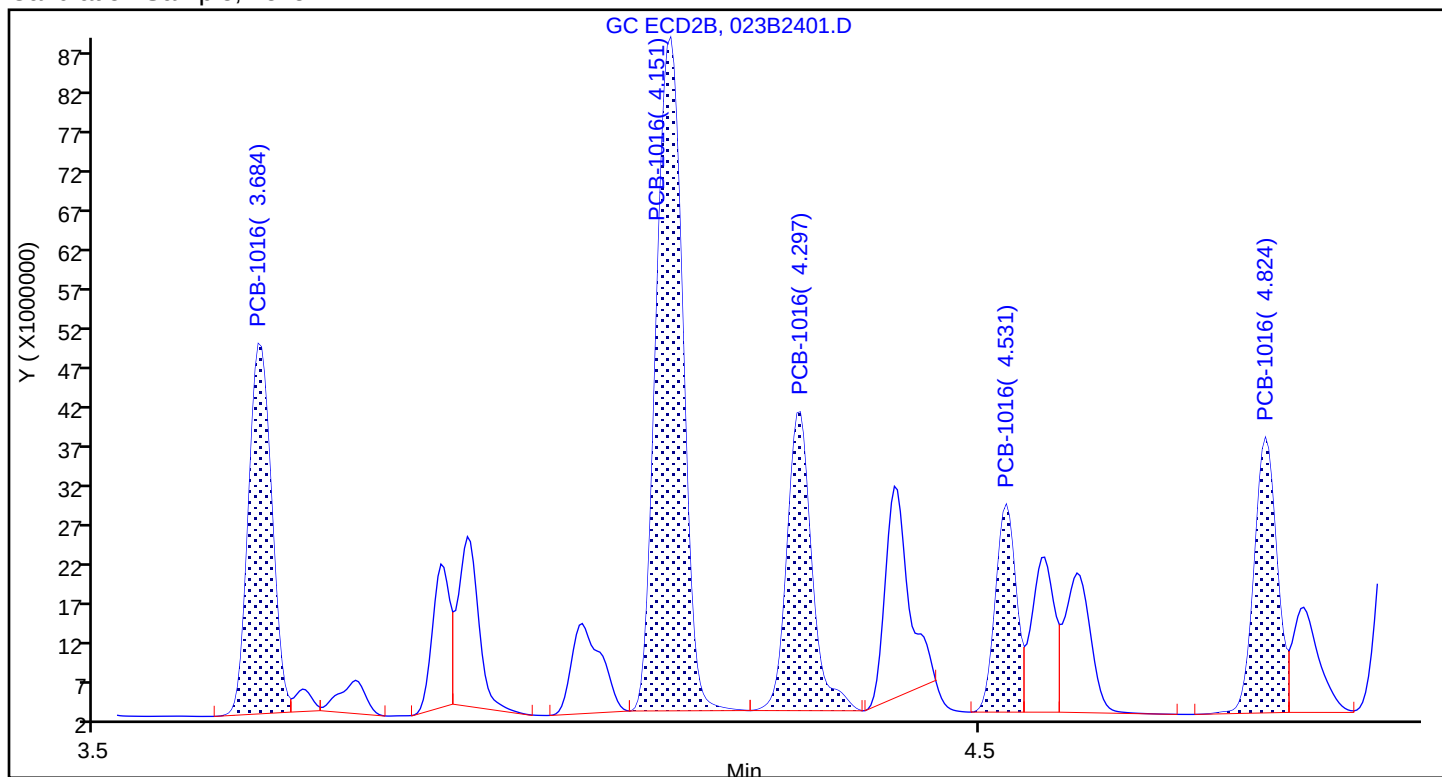
Limit Group: GCSV - 8082 - IS

Column: CLP2 Pesticides Column 2 (0.32 mm) Detector

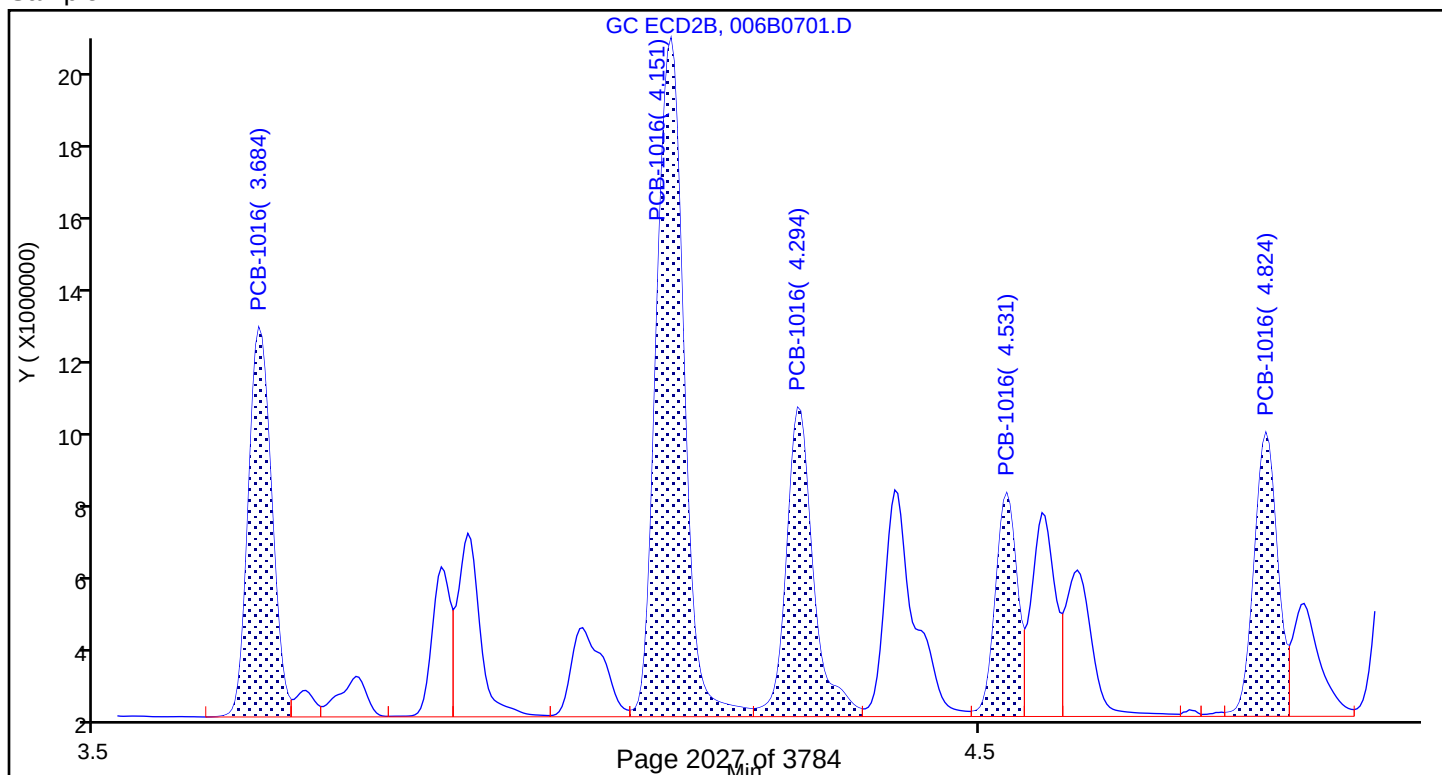
GC ECD2B

1 PCB-1016, CAS: 12674-11-2

Calibration Sample, Level: 7



Sample



Report Date: 28-May-2019 09:57:19

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\006B0701.D

Injection Date: 23-May-2019 15:36:12

Instrument ID: SGC_P3

Lims ID: LCS 280-457201/3-A

Client ID:

Operator ID: TEM

ALS Bottle#: 6

Worklist Smp#: 6

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: PCB_P3

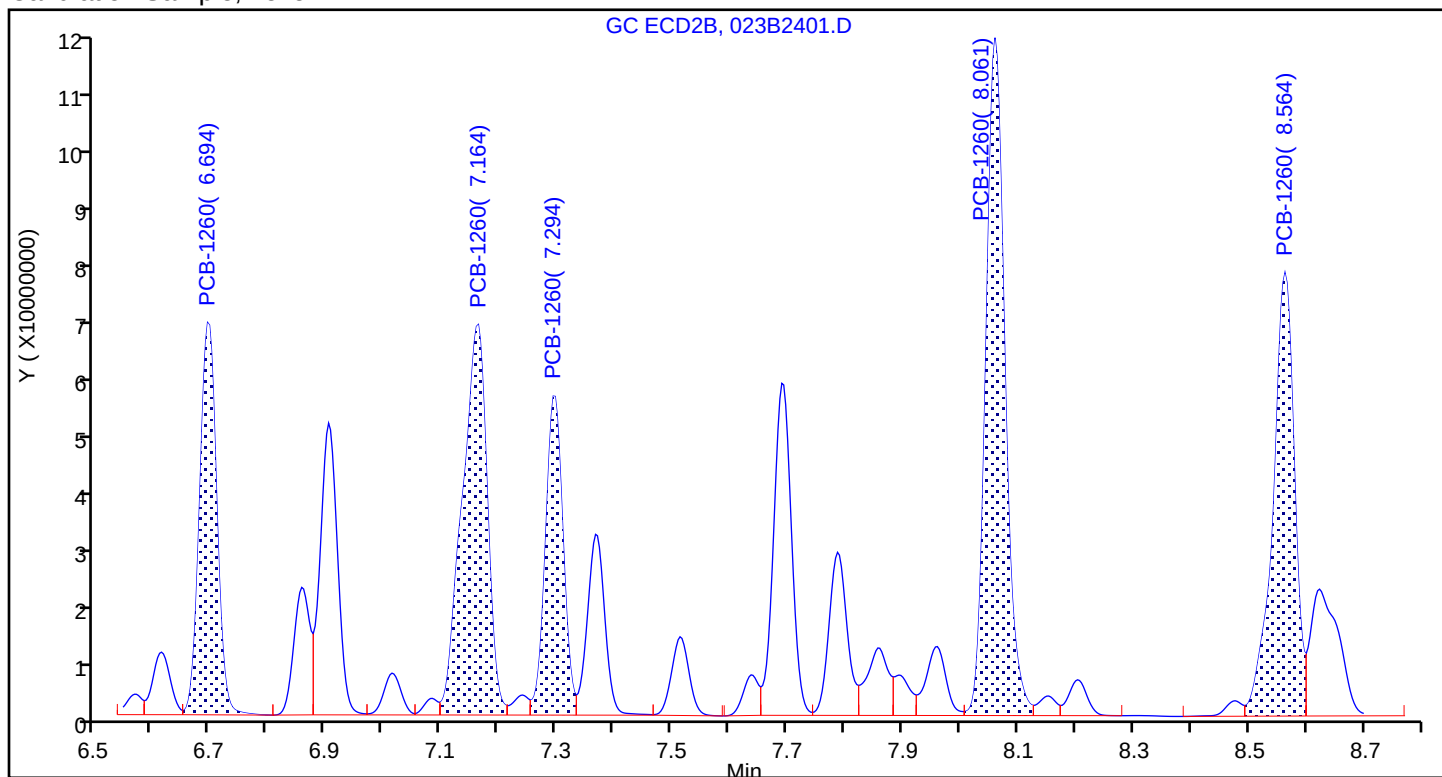
Limit Group: GCSV - 8082 - IS

Column: CLP2 Pesticides Column 2 (0.32 mm) Detector

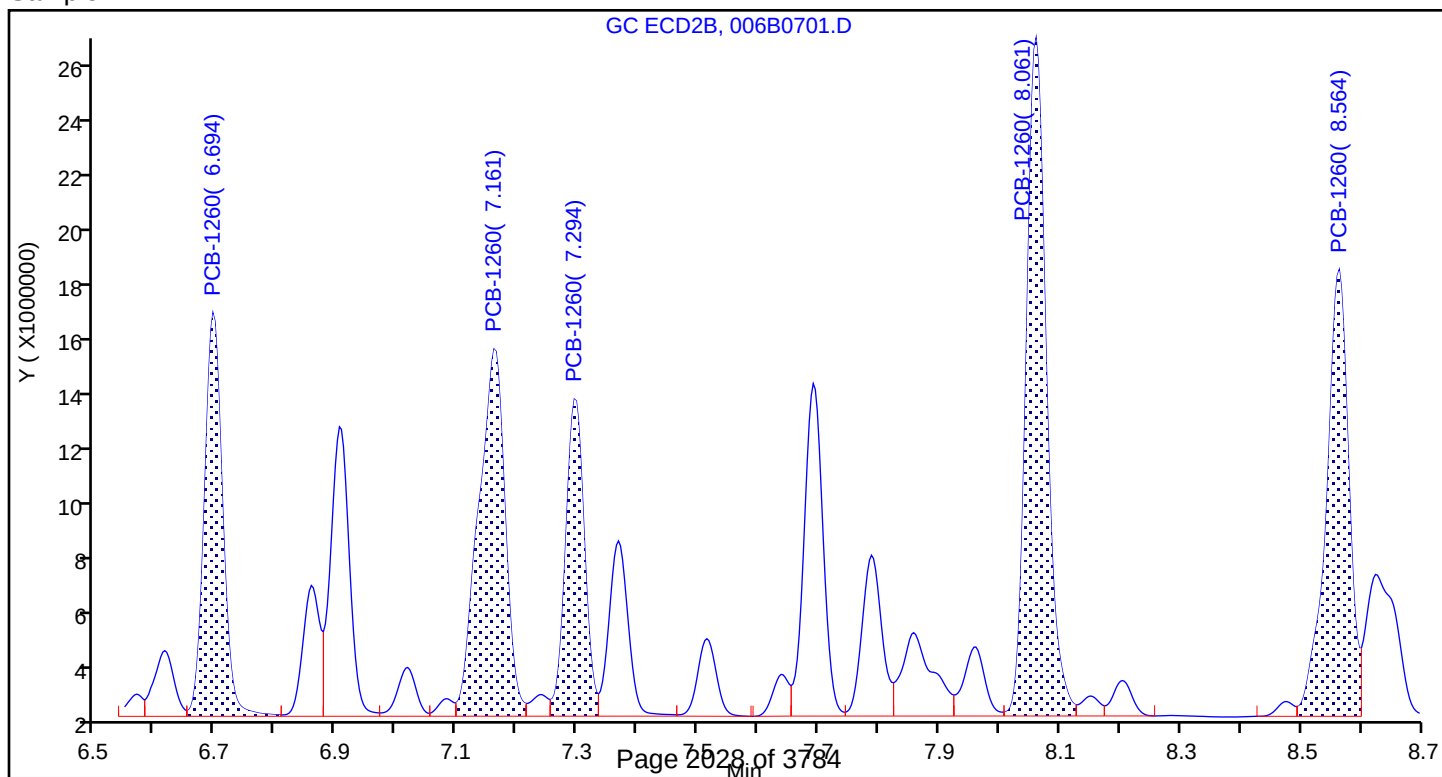
GC ECD2B

12 PCB-1260, CAS: 11096-82-5

Calibration Sample, Level: 7



Sample



FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: DET-003-190401-GWMS MS Lab Sample ID: 280-123221-4 MS
 Matrix: Water Lab File ID: 008B0901.D
 Analysis Method: 8082A Date Collected: 04/29/2019 10:53
 Extraction Method: 3510C Date Extracted: 05/06/2019 15:29
 Sample wt/vol: 912.3 (mL) Date Analyzed: 05/23/2019 16:19
 Con. Extract Vol.: 10 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) GC Column: CLP2 ID: 0.32 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 459265 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
12674-11-2	PCB-1016	2.31		1.1	0.44	0.14
11104-28-2	PCB-1221	0.27	U M	1.1	0.27	0.23
11141-16-5	PCB-1232	0.66	U M	1.1	0.66	0.18
53469-21-9	PCB-1242	1.1	U M	1.1	1.1	0.46
12672-29-6	PCB-1248	0.33	U M	1.1	0.33	0.10
11097-69-1	PCB-1254	0.27	U M	1.1	0.27	0.12
11096-82-5	PCB-1260	2.37		1.1	0.44	0.18

CAS NO.	SURROGATE	%REC	Q	LIMITS
877-09-8	Tetrachloro-m-xylene	92		25-120
2051-24-3	DCB Decachlorobiphenyl	87		30-136

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\008B0901.D
 Lims ID: 280-123221-C-4-B MS
 Client ID: DET-003-190401-GWMS
 Sample Type: MS
 Inject. Date: 23-May-2019 16:19:55 ALS Bottle#: 8 Worklist Smp#: 8
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-C-4-B
 Operator ID: TEM Instrument ID: SGC_P3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 28-May-2019 09:56:57 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0328

First Level Reviewer: mooret

Date: 28-May-2019 09:56:29

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.810	1.810	0.000	103779867	100.0	100.0	
2	1.728	1.728	0.000	126325218	100.0	100.0	
RPD = 0.00							

\$ 14 Tetrachloro-m-xylene

1	2.767	2.770	-0.003	30409031	20.0	17.8	
2	2.785	2.784	0.001	44167667	20.0	18.5	
RPD = 3.55							

3 PCB-1221

1		2.984				ND	
1		3.131					
1		3.168					
2		3.102					
2		3.232					
2		3.289					

1 PCB-1016

1	3.167	3.167	0.000	6317300	200.0	196.4	
1	3.520	3.520	0.000	13080030	200.0	196.3	
1	3.997	3.997	0.000	27459395	200.0	197.3	
1	4.137	4.137	0.000	11575363	200.0	206.0	
1	4.594	4.593	0.001	11974191	200.0	199.3	
Average of Peak Amounts =						199.1	
2	3.685	3.684	0.001	19357224	200.0	203.4	
2	4.151	4.148	0.003	39814848	200.0	207.5	
2	4.295	4.294	0.001	17676486	200.0	212.4	
2	4.531	4.531	0.000	10135096	200.0	216.9	
2	4.825	4.824	0.001	14255475	200.0	213.0	
Average of Peak Amounts =						210.6	
RPD = 5.65							

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\008B0901.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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7 PCB-1232

1	3.167					ND	U
1	3.520						
1	3.997						
1	4.140						
1	4.597						
2	3.288						
2	3.685						
2	4.151						
2	4.295						
2	4.531						

10 PCB-1242

1	3.521					ND	U
1	3.998						
1	4.595						
1	5.091						
1	5.118						
2	3.686						
2	4.149						
2	4.296						
2	4.826						
2	4.966						

4 PCB-1248

1	4.353					ND	U
1	4.593						
1	4.690						
1	5.356						
1	5.846						
2	4.148						
2	4.531						
2	4.824						
2	4.964						
2	6.144						

9 PCB-1254

1	5.358					ND	U
1	5.694						
1	5.848						
1	6.208						
1	6.824						
2	5.572						
2	5.995						
2	6.145						
2	6.695						
2	7.165						

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\008B0901.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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12 PCB-1260

1	6.087	6.087	0.000	15669068	200.0	199.5	
1	6.617	6.617	0.000	11084292	200.0	198.3	
1	7.314	7.313	0.001	15893151	200.0	198.0	
1	7.750	7.750	0.000	37567738	200.0	204.8	
1	8.137	8.137	0.000	19130608	200.0	209.7	

Average of Peak Amounts = 202.1

2	6.695	6.694	0.001	29673769	200.0	216.8	
2	7.161	7.161	0.000	39858391	200.0	204.6	
2	7.295	7.294	0.001	23829326	200.0	224.9	
2	8.058	8.058	0.000	53726286	200.0	218.5	
2	8.561	8.564	-0.003	39197919	200.0	215.1	

Average of Peak Amounts = 216.0

RPD = 6.67

5 PCB-1262

1	6.457						U
1	6.987						ND
1	7.317						
1	7.754						
1	8.140						
2	6.695						
2	7.295						
2	7.691						
2	8.061						
2	8.565						

13 PCB-1268

1	8.201						U
1	8.258						ND
1	8.528						
1	8.648						
1	9.455						
2	8.562						
2	8.622						
2	8.976						
2	9.116						
2	9.872						

\$ 15 DCB Decachlorobiphenyl

1	9.724	9.720	0.004	27119916	20.0	18.0	
2	10.231	10.231	0.000	38930304	20.0	17.4	

RPD = 3.28

S 8 Polychlorinated biphenyls, Total

1						401.1	
2						426.6	

RPD = 6.16

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\008B0901.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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2 PCB-5460

1		0.000					ND
1		12.739					
1		0.000					
1		13.802					
1		14.259					
2		0.000					
2		0.000					
2		0.000					
2		0.000					
2		0.000					

6 PCB-5432

1		7.063					ND
1		7.693					
1		8.203					
1		9.029					
1		9.459					
2		0.000					
2		0.000					
2		0.000					
2		0.000					
2		0.000					

19 1260 Res 1

1	8.137	8.137	0.000	19130608			NR
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16 1260 Res 2

1	8.200	8.197	0.004	9802003			NR
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18 1260 Res 3

1	8.260	8.260	0.000	11966780			NR
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11 PCB-5442

1		9.459					ND
1		9.923					
1		10.079					
1		10.289					
1		0.000					
2		0.000					
2		0.000					
2		0.000					
2		0.000					
2		0.000					

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Review Flags

U - Marked Undetected

Reagents:

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 28-May-2019 09:57:16

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\008B0901.D

Injection Date: 23-May-2019 16:19:55

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: 280-123221-C-4-B MS

Worklist Smp#: 8

Client ID: DET-003-190401-GWMS

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

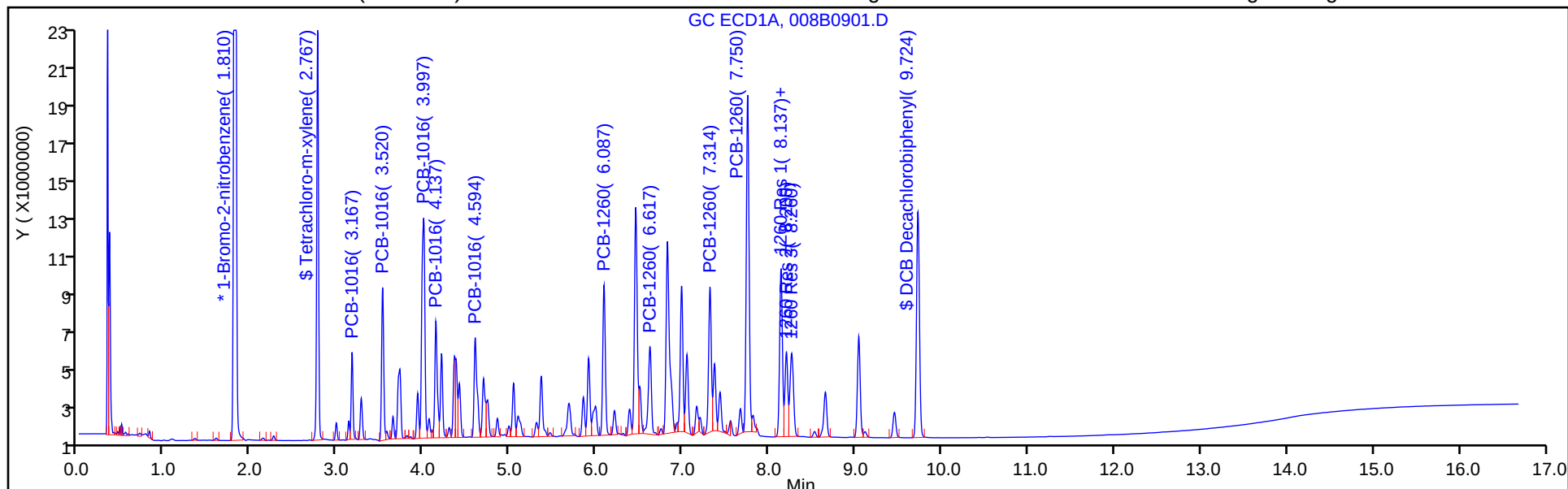
ALS Bottle#: 8

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

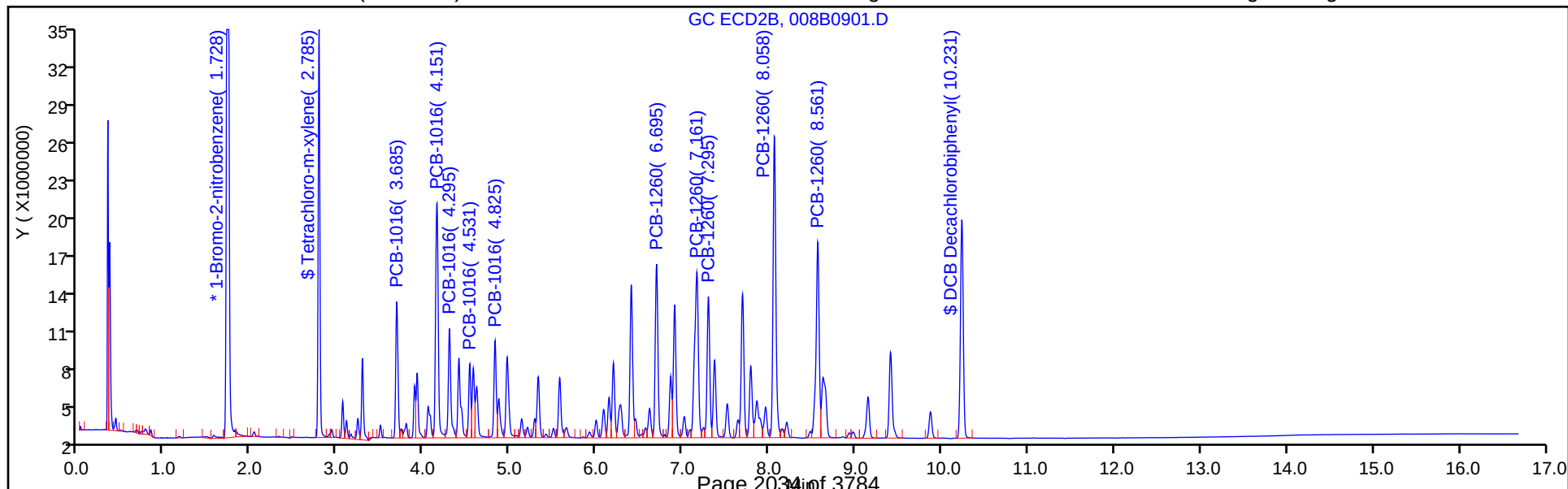
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\008B0901.D
 Lims ID: 280-123221-C-4-B MS
 Client ID: DET-003-190401-GWMS
 Sample Type: MS
 Inject. Date: 23-May-2019 16:19:55 ALS Bottle#: 8 Worklist Smp#: 8
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-C-4-B
 Operator ID: TEM Instrument ID: SGC_P3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 28-May-2019 09:56:57 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0328
 First Level Reviewer: mooret Date: 28-May-2019 09:56:29

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
\$ 14 Tetrachloro-m-xylene	20.0	17.8	89.03
\$ 15 DCB Decachlorobiphenyl	20.0	18.0	89.88

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
\$ 14 Tetrachloro-m-xylene	20.0	18.5	92.26
\$ 15 DCB Decachlorobiphenyl	20.0	17.4	86.97

Report Date: 28-May-2019 09:57:16

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\008B0901.D

Injection Date: 23-May-2019 16:19:55

Instrument ID: SGC_P3

Lims ID: 280-123221-C-4-B MS

Client ID: DET-003-190401-GWMS

Operator ID: TEM

ALS Bottle#: 8

Worklist Smp#: 8

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: PCB_P3

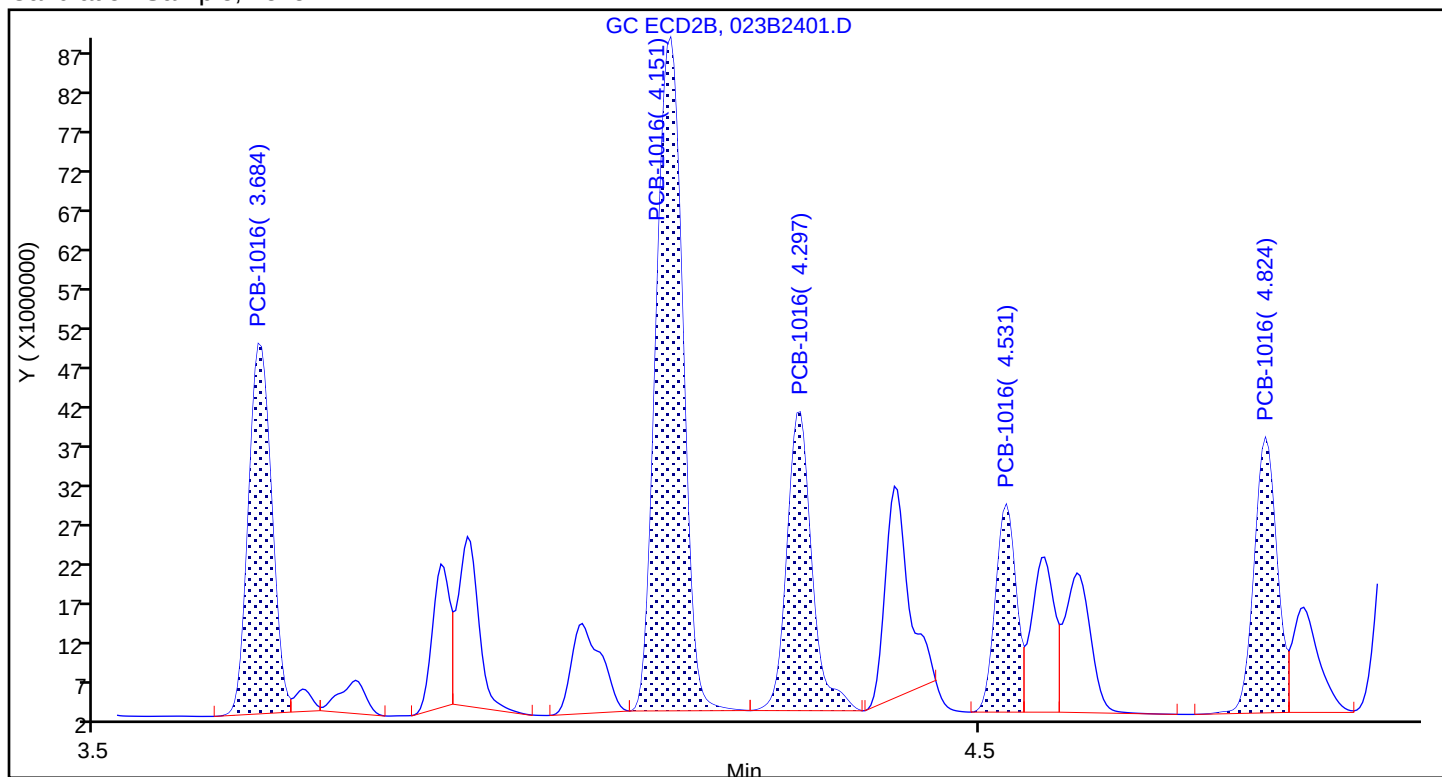
Limit Group: GCSV - 8082 - IS

Column: CLP2 Pesticides Column 2 (0.32 mm) Detector

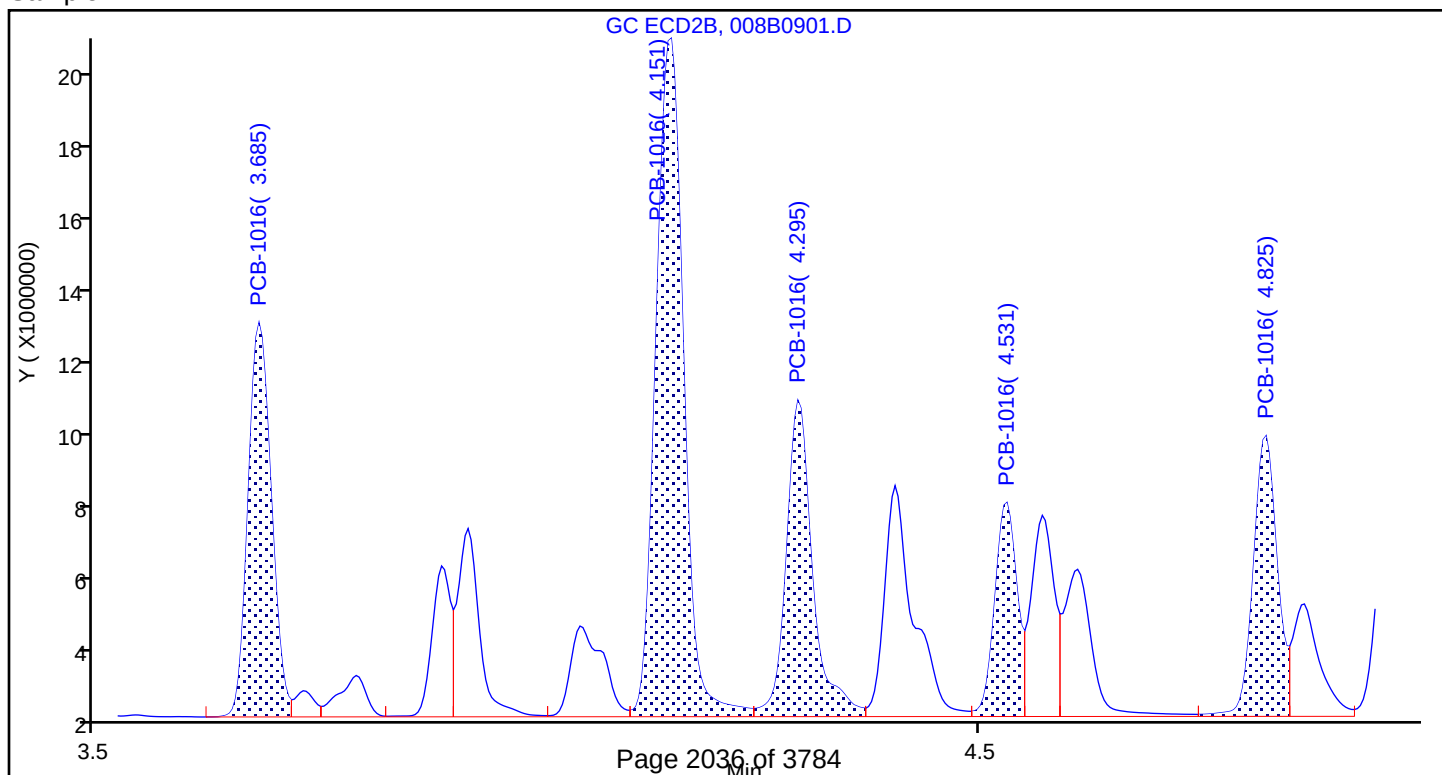
GC ECD2B

1 PCB-1016, CAS: 12674-11-2

Calibration Sample, Level: 7



Sample



Report Date: 28-May-2019 09:57:16

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\008B0901.D

Injection Date: 23-May-2019 16:19:55

Instrument ID: SGC_P3

Lims ID: 280-123221-C-4-B MS

Client ID: DET-003-190401-GWMS

Operator ID: TEM

ALS Bottle#: 8

Worklist Smp#: 8

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: PCB_P3

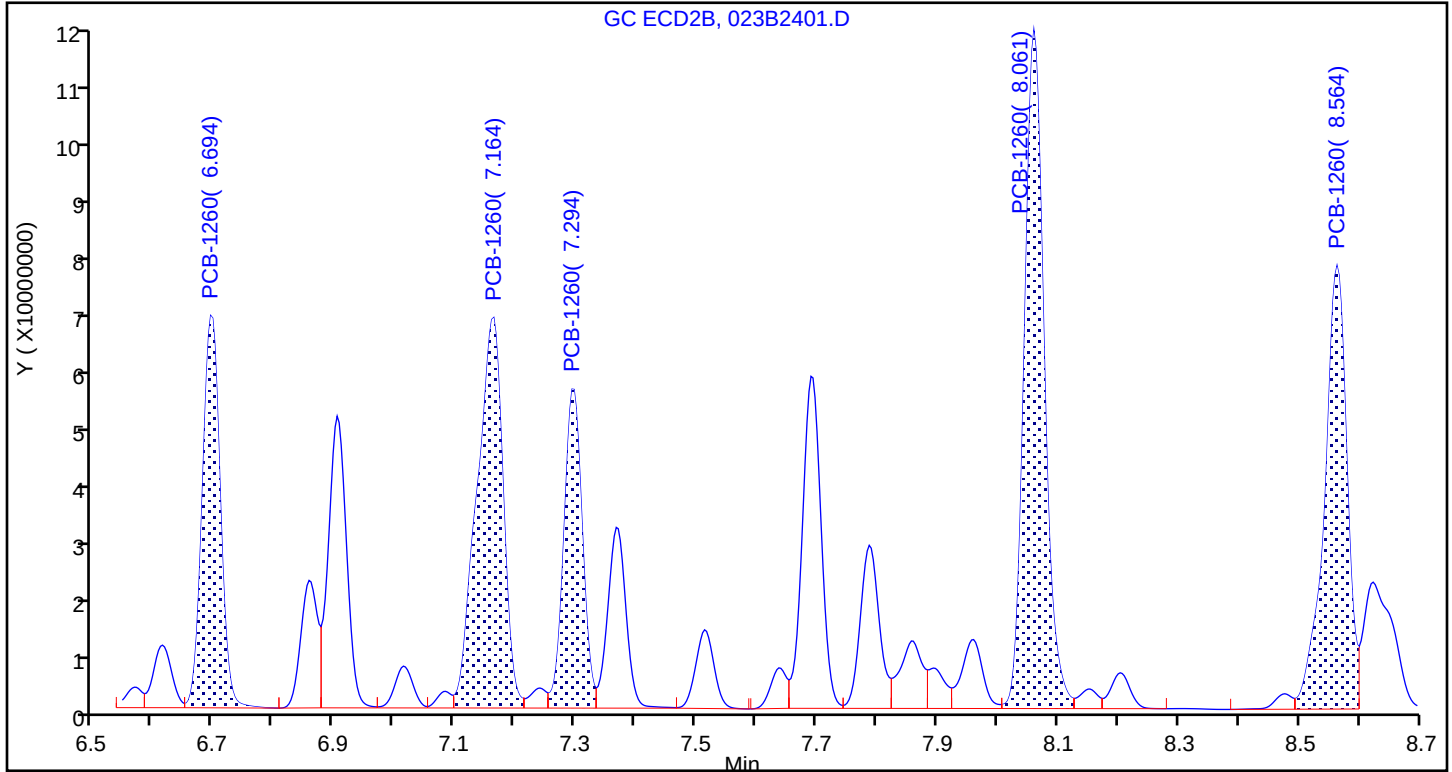
Limit Group: GCSV - 8082 - IS

Column: CLP2 Pesticides Column 2 (0.32 mm) Detector

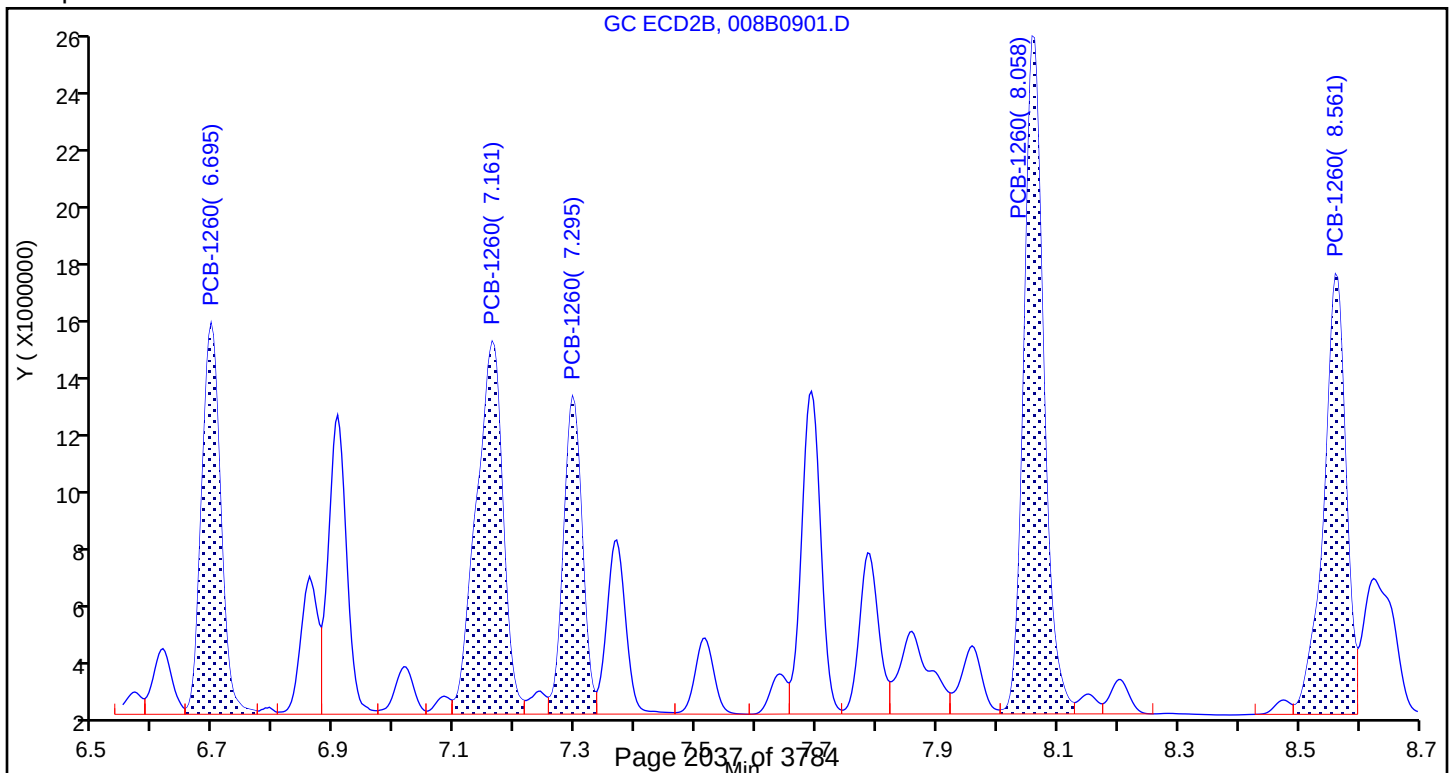
GC ECD2B

12 PCB-1260, CAS: 11096-82-5

Calibration Sample, Level: 7



Sample



FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: DET-003-190401-GWMSD MSD Lab Sample ID: 280-123221-4 MSD
 Matrix: Water Lab File ID: 009B1001.D
 Analysis Method: 8082A Date Collected: 04/29/2019 10:53
 Extraction Method: 3510C Date Extracted: 05/06/2019 15:29
 Sample wt/vol: 944.2 (mL) Date Analyzed: 05/23/2019 16:41
 Con. Extract Vol.: 10 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) GC Column: CLP2 ID: 0.32 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 459265 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
12674-11-2	PCB-1016	2.01		1.1	0.42	0.13
11104-28-2	PCB-1221	0.26	U M	1.1	0.26	0.23
11141-16-5	PCB-1232	0.64	U M	1.1	0.64	0.18
53469-21-9	PCB-1242	1.1	U M	1.1	1.1	0.44
12672-29-6	PCB-1248	0.32	U M	1.1	0.32	0.097
11097-69-1	PCB-1254	0.26	U M	1.1	0.26	0.12
11096-82-5	PCB-1260	2.01		1.1	0.42	0.17

CAS NO.	SURROGATE	%REC	Q	LIMITS
877-09-8	Tetrachloro-m-xylene	84		25-120
2051-24-3	DCB Decachlorobiphenyl	79		30-136

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\009B1001.D
 Lims ID: 280-123221-B-4-C MSD
 Client ID: DET-003-190401-GWMSD
 Sample Type: MSD
 Inject. Date: 23-May-2019 16:41:46 ALS Bottle#: 9 Worklist Smp#: 9
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-B-4-C
 Operator ID: TEM Instrument ID: SGC_P3
 Method: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\PCB_P3.m
 Limit Group: GCSV - 8082 - IS
 Last Update: 28-May-2019 09:56:57 Calib Date: 22-May-2019 01:20:05
 Integrator: Falcon
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
 Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
 Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
 Process Host: CTX0328

First Level Reviewer: mooret

Date: 28-May-2019 09:56:39

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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* 17 1-Bromo-2-nitrobenzene

1	1.811	1.810	0.001	113249936	100.0	100.0	
2	1.728	1.728	0.000	137017307	100.0	100.0	
RPD = 0.00							

\$ 14 Tetrachloro-m-xylene

1	2.767	2.770	-0.003	30158701	20.0	16.1	
2	2.785	2.784	0.001	43817321	20.0	16.8	
RPD = 4.23							

3 PCB-1221

1		2.984				ND	
1		3.131					
1		3.168					
2		3.102					
2		3.232					
2		3.289					

1 PCB-1016

1	3.167	3.167	0.000	6130822	200.0	174.7	
1	3.521	3.520	0.001	13099906	200.0	180.2	
1	3.997	3.997	0.000	27356141	200.0	180.2	
1	4.137	4.137	0.000	11621748	200.0	189.5	
1	4.594	4.593	0.001	11867893	200.0	181.0	
Average of Peak Amounts =						181.1	
2	3.685	3.684	0.001	19246878	200.0	186.4	
2	4.148	4.148	0.000	39371659	200.0	189.2	
2	4.295	4.294	0.001	17347738	200.0	192.2	
2	4.528	4.531	-0.003	10088236	200.0	199.0	
2	4.822	4.824	-0.002	13387794	200.0	180.5	
Average of Peak Amounts =						189.5	
RPD = 4.51							

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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7 PCB-1232

1	3.167					ND	U
1	3.520						
1	3.997						
1	4.140						
1	4.597						
2	3.288						
2	3.685						
2	4.151						
2	4.295						
2	4.531						

10 PCB-1242

1	3.521					ND	U
1	3.998						
1	4.595						
1	5.091						
1	5.118						
2	3.686						
2	4.149						
2	4.296						
2	4.826						
2	4.966						

4 PCB-1248

1	4.353					ND	U
1	4.593						
1	4.690						
1	5.356						
1	5.846						
2	4.148						
2	4.531						
2	4.824						
2	4.964						
2	6.144						

9 PCB-1254

1	5.358					ND	U
1	5.694						
1	5.848						
1	6.208						
1	6.824						
2	5.572						
2	5.995						
2	6.145						
2	6.695						
2	7.165						

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\009B1001.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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12 PCB-1260

1	6.087	6.087	0.000	15301264	200.0	178.6	
1	6.617	6.617	0.000	10833563	200.0	177.6	
1	7.314	7.313	0.001	15466053	200.0	175.8	
1	7.751	7.750	0.001	36513739	200.0	181.6	
1	8.137	8.137	0.000	18579456	200.0	185.9	

Average of Peak Amounts = 179.9

2	6.695	6.694	0.001	27734720	200.0	186.8	
2	7.162	7.161	0.001	37941365	200.0	179.6	
2	7.295	7.294	0.001	22576062	200.0	195.4	
2	8.058	8.058	0.000	52253844	200.0	195.0	
2	8.562	8.564	-0.002	38205234	200.0	192.3	

Average of Peak Amounts = 189.8

RPD = 5.36

5 PCB-1262

1	6.457						U
1	6.987						ND
1	7.317						
1	7.754						
1	8.140						
2	6.695						
2	7.295						
2	7.691						
2	8.061						
2	8.565						

13 PCB-1268

1	8.201						U
1	8.258						ND
1	8.528						
1	8.648						
1	9.455						
2	8.562						
2	8.622						
2	8.976						
2	9.116						
2	9.872						

\$ 15 DCB Decachlorobiphenyl

1	9.721	9.720	0.001	26865241	20.0	16.3	
2	10.232	10.231	0.001	38697176	20.0	15.9	

RPD = 2.43

S 8 Polychlorinated biphenyls, Total

1						361.0	
2						379.3	

RPD = 4.94

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\009B1001.D

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ml	OnCol Amt ng/ml	Flags
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2 PCB-5460

1		0.000				ND	
1		12.739					
1		0.000					
1		13.802					
1		14.259					
2		0.000					
2		0.000					
2		0.000					
2		0.000					
2		0.000					

6 PCB-5432

1		7.063				ND	
1		7.693					
1		8.203					
1		9.029					
1		9.459					
2		0.000					
2		0.000					
2		0.000					
2		0.000					
2		0.000					

19 1260 Res 1

1	8.137	8.137	0.001	18579456		NR	
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16 1260 Res 2

1	8.197	8.197	0.001	9371702		NR	
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18 1260 Res 3

1	8.257	8.260	-0.003	11438723		NR	
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11 PCB-5442

1		9.459				ND	
1		9.923					
1		10.079					
1		10.289					
1		0.000					
2		0.000					
2		0.000					
2		0.000					
2		0.000					
2		0.000					

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Review Flags

U - Marked Undetected

Reagents:

BNB IS_00013

Amount Added: 0.10

Units: mL

Run Reagent

Report Date: 28-May-2019 09:57:14

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\009B1001.D

Injection Date: 23-May-2019 16:41:46

Instrument ID: SGC_P3

Operator ID: TEM

Lims ID: 280-123221-B-4-C MSD

Worklist Smp#: 9

Client ID: DET-003-190401-GWMSD

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

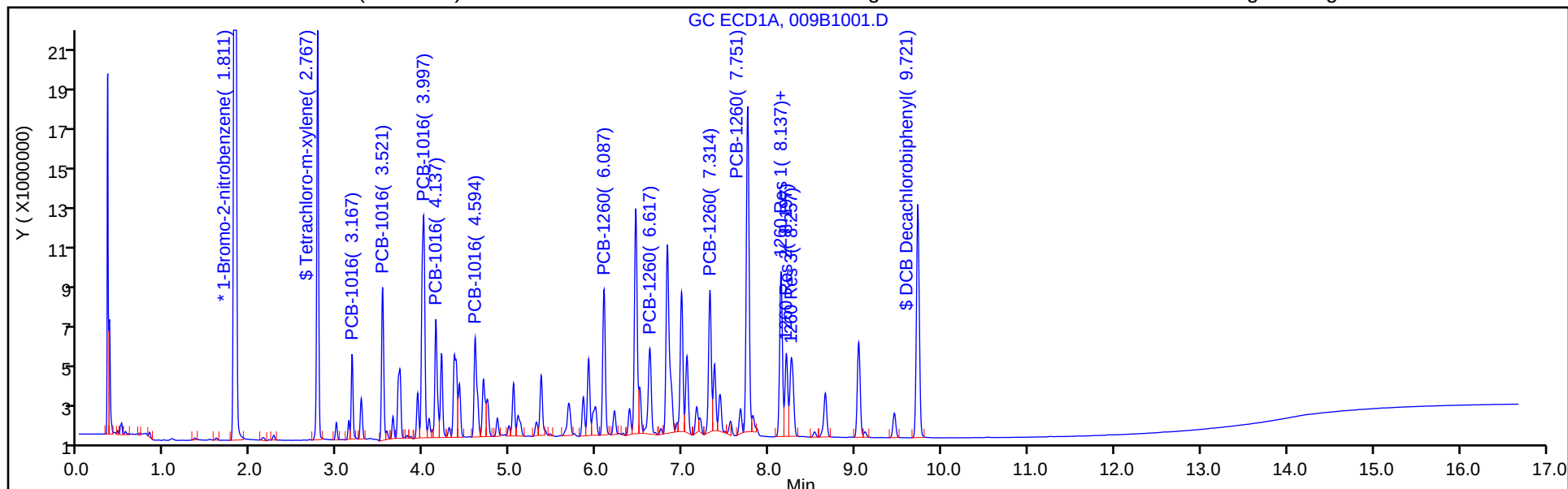
ALS Bottle#: 9

Method: PCB_P3

Limit Group: GCSV - 8082 - IS

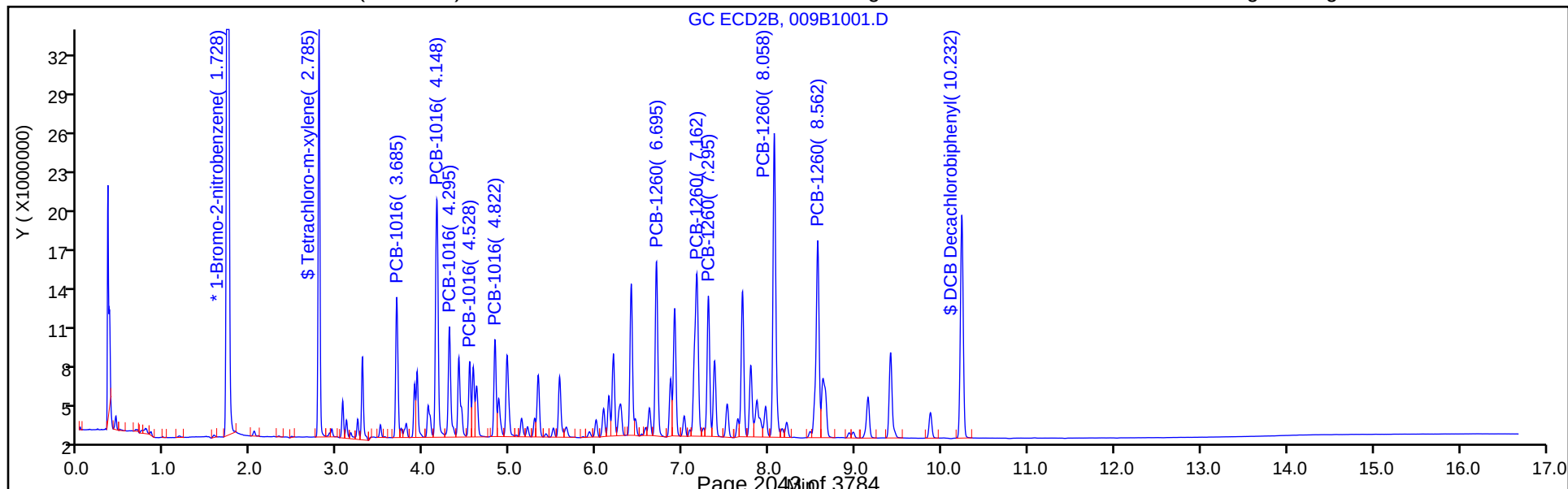
Column: CLP1 Pesticides Column 1 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Column: CLP2 Pesticides Column 2 (0.32 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\009B1001.D
Lims ID: 280-123221-B-4-C MSD
Client ID: DET-003-190401-GWMSD
Sample Type: MSD
Inject. Date: 23-May-2019 16:41:46 ALS Bottle#: 9 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-B-4-C
Operator ID: TEM Instrument ID: SGC_P3
Method: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\PCB_P3.m
Limit Group: GCSV - 8082 - IS
Last Update: 28-May-2019 09:56:57 Calib Date: 22-May-2019 01:20:05
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\SGC_P3\20190522-82152.b\037B3801.D
Column 1 : CLP1 Pesticides Column 1 (0.32 mm) Det: GC ECD1A
Column 2 : CLP2 Pesticides Column 2 (0.32 mm) Det: GC ECD2B
Process Host: CTX0328
First Level Reviewer: mooret Date: 28-May-2019 09:56:39

Surrogate Recovery, Detector: GC ECD1A

Compound	Amount Added	Amount Recovered	% Rec.
\$ 14 Tetrachloro-m-xylene	20.0	16.1	80.61
\$ 15 DCB Decachlorobiphenyl	20.0	16.3	81.31

Surrogate Recovery, Detector: GC ECD2B

Compound	Amount Added	Amount Recovered	% Rec.
\$ 14 Tetrachloro-m-xylene	20.0	16.8	84.10
\$ 15 DCB Decachlorobiphenyl	20.0	15.9	79.36

Report Date: 28-May-2019 09:57:14

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\009B1001.D

Injection Date: 23-May-2019 16:41:46

Instrument ID: SGC_P3

Lims ID: 280-123221-B-4-C MSD

Client ID: DET-003-190401-GWMSD

Operator ID: TEM

ALS Bottle#: 9

Worklist Smp#: 9

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: PCB_P3

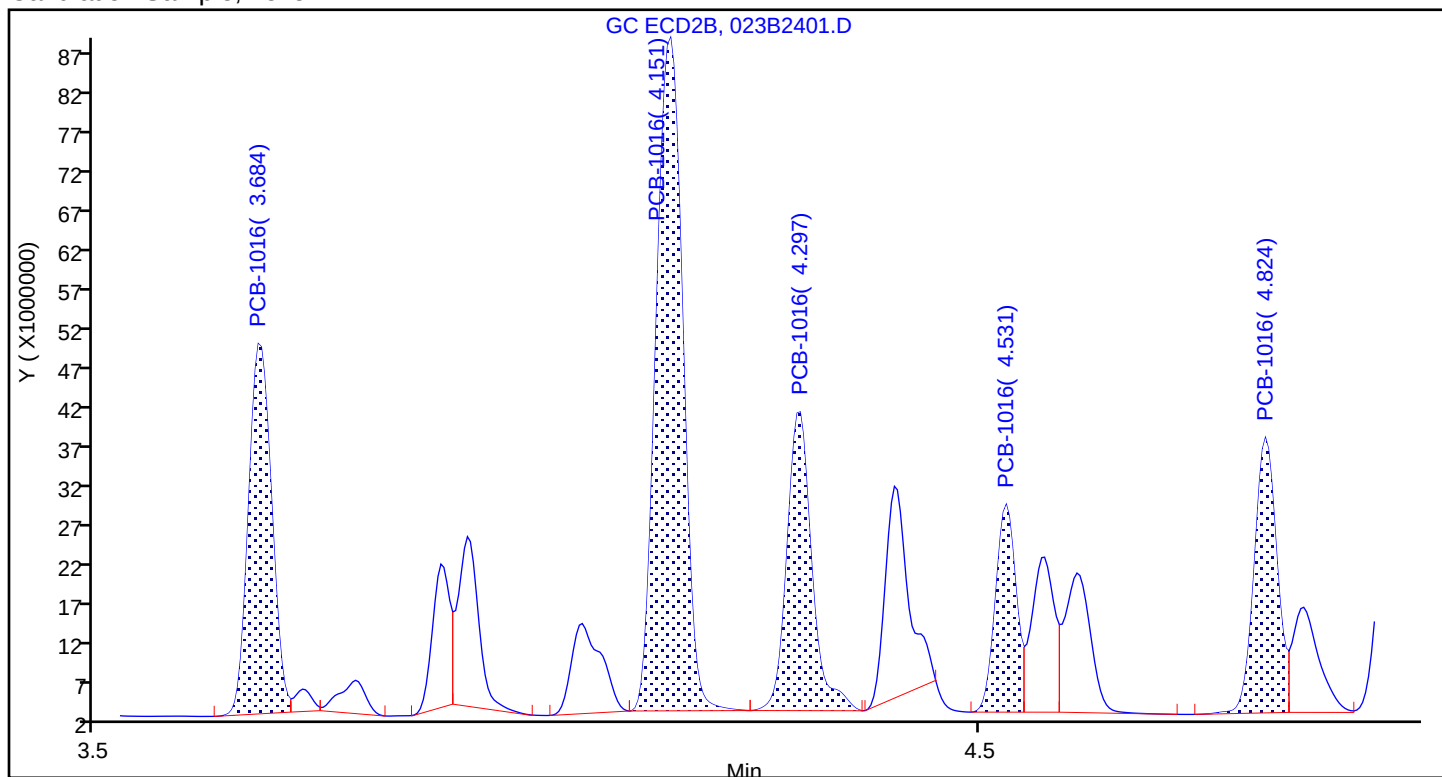
Limit Group: GCSV - 8082 - IS

Column: CLP2 Pesticides Column 2 (0.32 mm) Detector

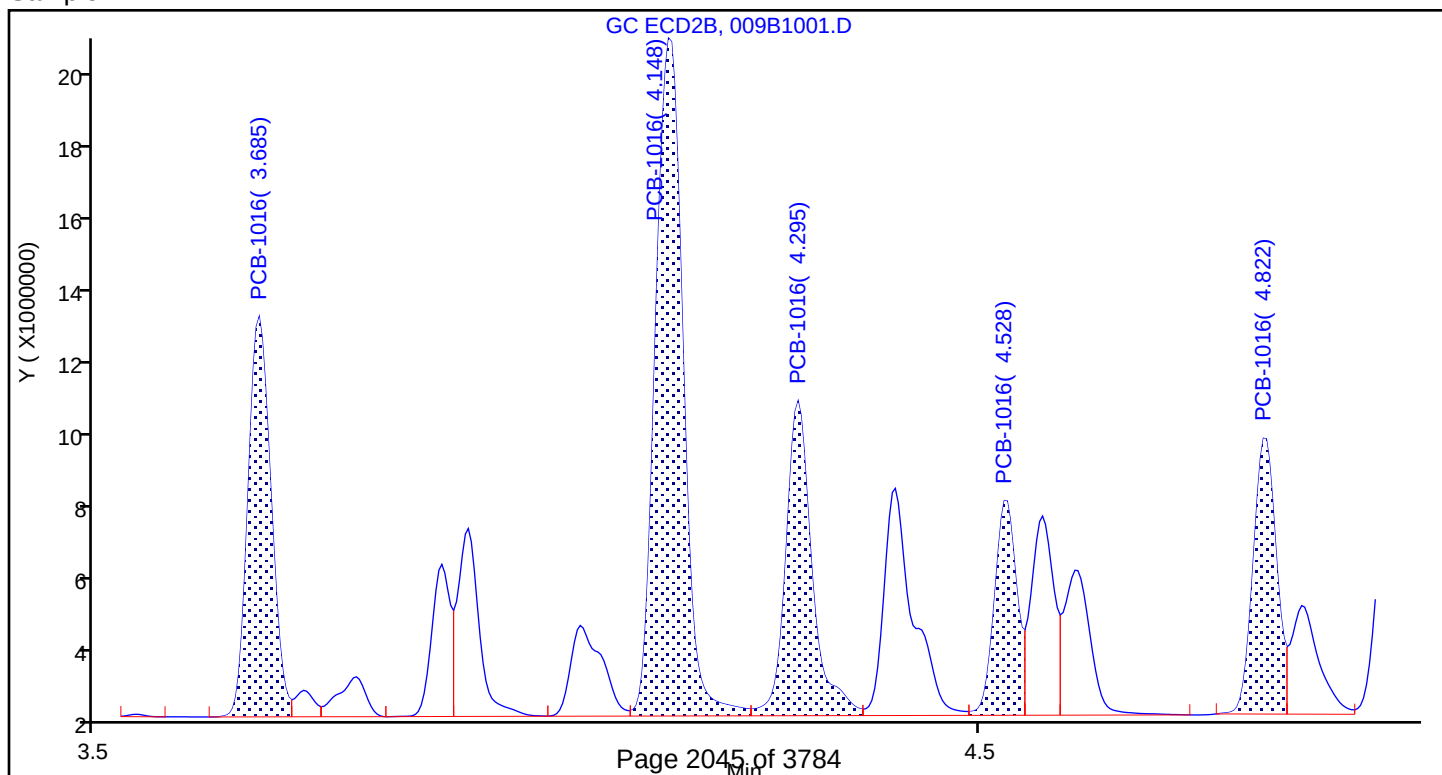
GC ECD2B

1 PCB-1016, CAS: 12674-11-2

Calibration Sample, Level: 7



Sample



Report Date: 28-May-2019 09:57:14

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\SGC_P3\20190523-82195.b\009B1001.D

Injection Date: 23-May-2019 16:41:46

Instrument ID: SGC_P3

Lims ID: 280-123221-B-4-C MSD

Client ID: DET-003-190401-GWMSD

Operator ID: TEM

ALS Bottle#: 9

Worklist Smp#: 9

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: PCB_P3

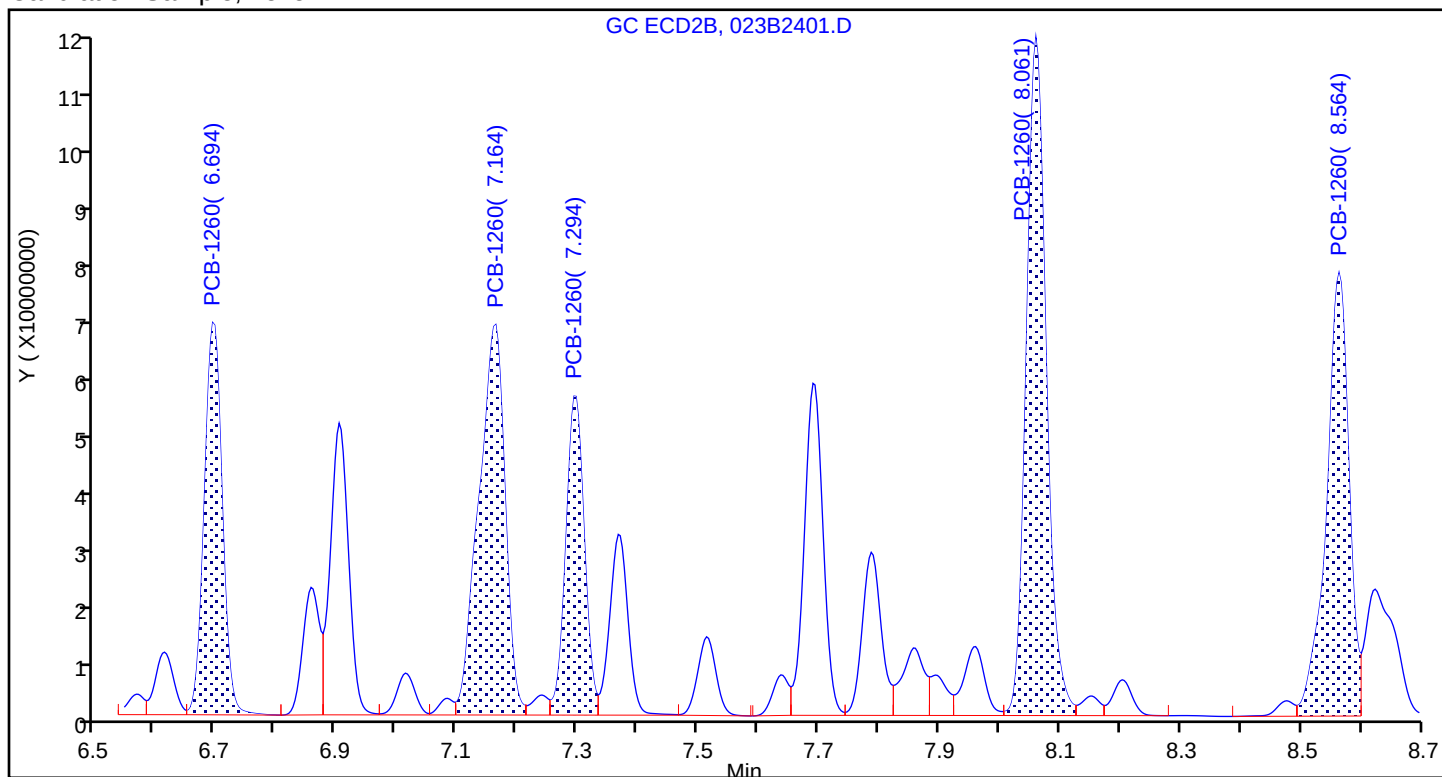
Limit Group: GCSV - 8082 - IS

Column: CLP2 Pesticides Column 2 (0.32 mm) Detector

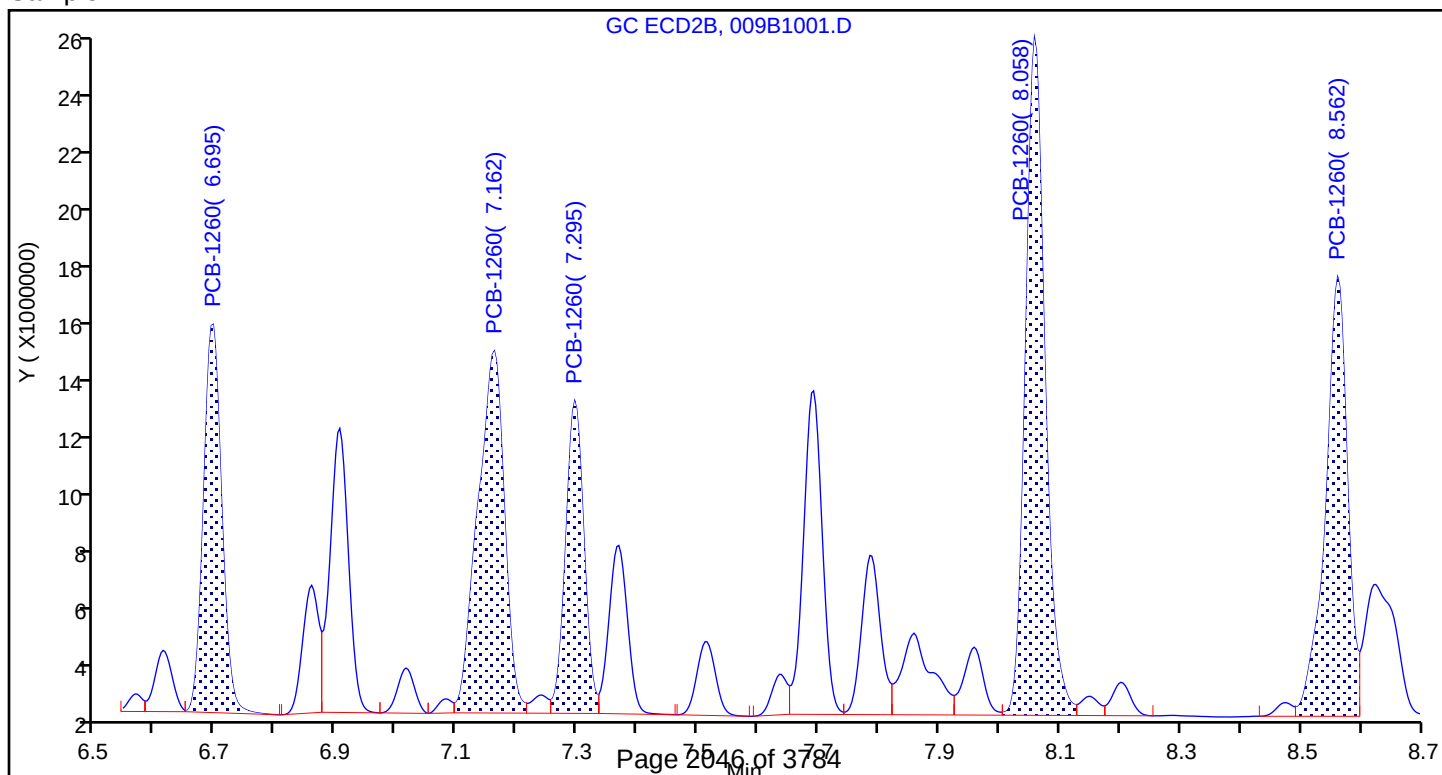
GC ECD2B

12 PCB-1260, CAS: 11096-82-5

Calibration Sample, Level: 7



Sample



PCBS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.:

Instrument ID: SGC_P3

Start Date: 05/21/2019 12:56

Analysis Batch Number: 459083

End Date: 05/22/2019 08:59

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
STD1 280-459083/3 IC		05/21/2019 12:56	1	003B0401.D	CLP1 0.32 (mm)
STD1 280-459083/3 IC		05/21/2019 12:56	1	003B0401.D	CLP2 0.32 (mm)
STD2 280-459083/4 IC		05/21/2019 13:18	1	004B0501.D	CLP1 0.32 (mm)
STD2 280-459083/4 IC		05/21/2019 13:18	1	004B0501.D	CLP2 0.32 (mm)
STD3 280-459083/5 IC		05/21/2019 13:39	1	005B0601.D	CLP1 0.32 (mm)
STD3 280-459083/5 IC		05/21/2019 13:39	1	005B0601.D	CLP2 0.32 (mm)
STD4 280-459083/6 IC		05/21/2019 14:01	1	006B0701.D	CLP1 0.32 (mm)
STD4 280-459083/6 IC		05/21/2019 14:01	1	006B0701.D	CLP2 0.32 (mm)
STD5 280-459083/7 IC		05/21/2019 14:23	1	007B0801.D	CLP1 0.32 (mm)
STD5 280-459083/7 IC		05/21/2019 14:23	1	007B0801.D	CLP2 0.32 (mm)
STD6 280-459083/8 IC		05/21/2019 14:45	1	008B0901.D	CLP1 0.32 (mm)
STD6 280-459083/8 IC		05/21/2019 14:45	1	008B0901.D	CLP2 0.32 (mm)
STD7 280-459083/9 IC		05/21/2019 15:07	1	009B1001.D	CLP1 0.32 (mm)
STD7 280-459083/9 IC		05/21/2019 15:07	1	009B1001.D	CLP2 0.32 (mm)
STD1 280-459083/10 IC		05/21/2019 15:29	1	010B1101.D	CLP1 0.32 (mm)
STD1 280-459083/10 IC		05/21/2019 15:29	1	010B1101.D	CLP2 0.32 (mm)
STD2 280-459083/11 IC		05/21/2019 15:51	1	011B1201.D	CLP1 0.32 (mm)
STD2 280-459083/11 IC		05/21/2019 15:51	1	011B1201.D	CLP2 0.32 (mm)
STD3 280-459083/12 IC		05/21/2019 16:12	1	012B1301.D	CLP1 0.32 (mm)
STD3 280-459083/12 IC		05/21/2019 16:12	1	012B1301.D	CLP2 0.32 (mm)
STD4 280-459083/13 IC		05/21/2019 16:34	1	013B1401.D	CLP1 0.32 (mm)
STD4 280-459083/13 IC		05/21/2019 16:34	1	013B1401.D	CLP2 0.32 (mm)
STD5 280-459083/14 IC		05/21/2019 16:56	1	014B1501.D	CLP1 0.32 (mm)
STD5 280-459083/14 IC		05/21/2019 16:56	1	014B1501.D	CLP2 0.32 (mm)
STD6 280-459083/15 IC		05/21/2019 17:18	1	015B1601.D	CLP1 0.32 (mm)
STD6 280-459083/15 IC		05/21/2019 17:18	1	015B1601.D	CLP2 0.32 (mm)
STD7 280-459083/16 IC		05/21/2019 17:40	1	016B1701.D	CLP1 0.32 (mm)
STD7 280-459083/16 IC		05/21/2019 17:40	1	016B1701.D	CLP2 0.32 (mm)
STD1 280-459083/17 IC		05/21/2019 18:02	1	017B1801.D	CLP1 0.32 (mm)
STD1 280-459083/17 IC		05/21/2019 18:02	1	017B1801.D	CLP2 0.32 (mm)
STD2 280-459083/18 IC		05/21/2019 18:24	1	018B1901.D	CLP1 0.32 (mm)
STD2 280-459083/18 IC		05/21/2019 18:24	1	018B1901.D	CLP2 0.32 (mm)
STD3 280-459083/19 IC		05/21/2019 18:46	1	019B2001.D	CLP1 0.32 (mm)
STD3 280-459083/19 IC		05/21/2019 18:46	1	019B2001.D	CLP2 0.32 (mm)
STD4 280-459083/20 IC		05/21/2019 19:07	1	020B2101.D	CLP1 0.32 (mm)
STD4 280-459083/20 IC		05/21/2019 19:07	1	020B2101.D	CLP2 0.32 (mm)

PCBS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.:

Instrument ID: SGC_P3

Start Date: 05/21/2019 12:56

Analysis Batch Number: 459083

End Date: 05/22/2019 08:59

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
STD5 280-459083/21 ICIS		05/21/2019 19:29	1	021B2201.D	CLP1 0.32 (mm)
STD5 280-459083/21 ICIS		05/21/2019 19:29	1	021B2201.D	CLP2 0.32 (mm)
STD6 280-459083/22 IC		05/21/2019 19:51	1	022B2301.D	CLP1 0.32 (mm)
STD6 280-459083/22 IC		05/21/2019 19:51	1	022B2301.D	CLP2 0.32 (mm)
STD7 280-459083/23 IC		05/21/2019 20:13	1	023B2401.D	CLP1 0.32 (mm)
STD7 280-459083/23 IC		05/21/2019 20:13	1	023B2401.D	CLP2 0.32 (mm)
STD1 280-459083/24 IC		05/21/2019 20:35	1	024B2501.D	CLP1 0.32 (mm)
STD1 280-459083/24 IC		05/21/2019 20:35	1	024B2501.D	CLP2 0.32 (mm)
STD2 280-459083/25 IC		05/21/2019 20:57	1	025B2601.D	CLP1 0.32 (mm)
STD2 280-459083/25 IC		05/21/2019 20:57	1	025B2601.D	CLP2 0.32 (mm)
STD3 280-459083/26 IC		05/21/2019 21:19	1	026B2701.D	CLP1 0.32 (mm)
STD3 280-459083/26 IC		05/21/2019 21:19	1	026B2701.D	CLP2 0.32 (mm)
STD4 280-459083/27 IC		05/21/2019 21:41	1	027B2801.D	CLP1 0.32 (mm)
STD4 280-459083/27 IC		05/21/2019 21:41	1	027B2801.D	CLP2 0.32 (mm)
STD5 280-459083/28 IC		05/21/2019 22:03	1	028B2901.D	CLP1 0.32 (mm)
STD5 280-459083/28 IC		05/21/2019 22:03	1	028B2901.D	CLP2 0.32 (mm)
STD6 280-459083/29 IC		05/21/2019 22:25	1	029B3001.D	CLP1 0.32 (mm)
STD6 280-459083/29 IC		05/21/2019 22:25	1	029B3001.D	CLP2 0.32 (mm)
STD7 280-459083/30 IC		05/21/2019 22:46	1	030B3101.D	CLP1 0.32 (mm)
STD7 280-459083/30 IC		05/21/2019 22:46	1	030B3101.D	CLP2 0.32 (mm)
STD1 280-459083/31 IC		05/21/2019 23:08	1	031B3201.D	CLP1 0.32 (mm)
STD1 280-459083/31 IC		05/21/2019 23:08	1	031B3201.D	CLP2 0.32 (mm)
STD2 280-459083/32 IC		05/21/2019 23:30	1	032B3301.D	CLP1 0.32 (mm)
STD2 280-459083/32 IC		05/21/2019 23:30	1	032B3301.D	CLP2 0.32 (mm)
STD3 280-459083/33 IC		05/21/2019 23:52	1	033B3401.D	CLP1 0.32 (mm)
STD3 280-459083/33 IC		05/21/2019 23:52	1	033B3401.D	CLP2 0.32 (mm)
STD4 280-459083/34 IC		05/22/2019 00:14	1	034B3501.D	CLP1 0.32 (mm)
STD4 280-459083/34 IC		05/22/2019 00:14	1	034B3501.D	CLP2 0.32 (mm)
STD5 280-459083/35 IC		05/22/2019 00:36	1	035B3601.D	CLP1 0.32 (mm)
STD5 280-459083/35 IC		05/22/2019 00:36	1	035B3601.D	CLP2 0.32 (mm)
STD6 280-459083/36 IC		05/22/2019 00:58	1	036B3701.D	CLP1 0.32 (mm)

PCBS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, DenverJob No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P3Start Date: 05/21/2019 12:56Analysis Batch Number: 459083End Date: 05/22/2019 08:59

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
STD6 280-459083/36 IC		05/22/2019 00:58	1	036B3701.D	CLP2 0.32 (mm)
STD7 280-459083/37 IC		05/22/2019 01:20	1	037B3801.D	CLP1 0.32 (mm)
STD7 280-459083/37 IC		05/22/2019 01:20	1	037B3801.D	CLP2 0.32 (mm)
ICV 280-459083/38		05/22/2019 01:41	1	038B3901.D	CLP1 0.32 (mm)
ICV 280-459083/38		05/22/2019 01:41	1	038B3901.D	CLP2 0.32 (mm)
ICV 280-459083/39		05/22/2019 02:03	1	039B4001.D	CLP1 0.32 (mm)
ICV 280-459083/39		05/22/2019 02:03	1	039B4001.D	CLP2 0.32 (mm)
ICV 280-459083/40		05/22/2019 02:25	1	040B4101.D	CLP1 0.32 (mm)
ICV 280-459083/40		05/22/2019 02:25	1	040B4101.D	CLP2 0.32 (mm)
ICV 280-459083/41		05/22/2019 02:47	1	041B4201.D	CLP1 0.32 (mm)
ICV 280-459083/41		05/22/2019 02:47	1	041B4201.D	CLP2 0.32 (mm)
ICV 280-459083/42		05/22/2019 03:09	1	042B4301.D	CLP1 0.32 (mm)
ICV 280-459083/42		05/22/2019 03:09	1	042B4301.D	CLP2 0.32 (mm)
ZZZZZ		05/22/2019 06:04	1		CLP1 0.32 (mm)
ZZZZZ		05/22/2019 06:04	1		CLP2 0.32 (mm)
ZZZZZ		05/22/2019 06:26	1		CLP1 0.32 (mm)
ZZZZZ		05/22/2019 06:26	1		CLP2 0.32 (mm)
ZZZZZ		05/22/2019 06:48	1		CLP1 0.32 (mm)
ZZZZZ		05/22/2019 06:48	1		CLP2 0.32 (mm)
ZZZZZ		05/22/2019 07:10	1		CLP1 0.32 (mm)
ZZZZZ		05/22/2019 07:10	1		CLP2 0.32 (mm)
CCV 280-459083/58		05/22/2019 07:32	1		CLP1 0.32 (mm)
CCV 280-459083/58		05/22/2019 07:32	1		CLP2 0.32 (mm)
ZZZZZ		05/22/2019 07:54	1		CLP1 0.32 (mm)
ZZZZZ		05/22/2019 07:54	1		CLP2 0.32 (mm)
ZZZZZ		05/22/2019 08:15	1		CLP1 0.32 (mm)
ZZZZZ		05/22/2019 08:15	1		CLP2 0.32 (mm)
ZZZZZ		05/22/2019 08:37	1		CLP1 0.32 (mm)
ZZZZZ		05/22/2019 08:37	1		CLP2 0.32 (mm)
ZZZZZ		05/22/2019 08:59	1		CLP1 0.32 (mm)
ZZZZZ		05/22/2019 08:59	1		CLP2 0.32 (mm)

PCBS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, DenverJob No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P3Start Date: 05/23/2019 14:30Analysis Batch Number: 459265End Date: 05/24/2019 00:20

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ICV 280-459265/3		05/23/2019 14:30	1	003B0401.D	CLP1 0.32 (mm)
ICV 280-459265/3		05/23/2019 14:30	1	003B0401.D	CLP2 0.32 (mm)
CCVIS 280-459265/4		05/23/2019 14:52	1	004B0501.D	CLP1 0.32 (mm)
CCVIS 280-459265/4		05/23/2019 14:52	1	004B0501.D	CLP2 0.32 (mm)
MB 280-457201/1-A		05/23/2019 15:14	1	005B0601.D	CLP1 0.32 (mm)
MB 280-457201/1-A		05/23/2019 15:14	1	005B0601.D	CLP2 0.32 (mm)
LCS 280-457201/3-A		05/23/2019 15:36	1	006B0701.D	CLP1 0.32 (mm)
LCS 280-457201/3-A		05/23/2019 15:36	1	006B0701.D	CLP2 0.32 (mm)
280-123221-4		05/23/2019 15:58	1	007B0801.D	CLP1 0.32 (mm)
280-123221-4		05/23/2019 15:58	1	007B0801.D	CLP2 0.32 (mm)
280-123221-4 MS		05/23/2019 16:19	1	008B0901.D	CLP1 0.32 (mm)
280-123221-4 MS		05/23/2019 16:19	1	008B0901.D	CLP2 0.32 (mm)
280-123221-4 MSD		05/23/2019 16:41	1	009B1001.D	CLP1 0.32 (mm)
280-123221-4 MSD		05/23/2019 16:41	1	009B1001.D	CLP2 0.32 (mm)
280-123221-5		05/23/2019 17:03	1	010B1101.D	CLP1 0.32 (mm)
280-123221-5		05/23/2019 17:03	1	010B1101.D	CLP2 0.32 (mm)
280-123221-7		05/23/2019 17:25	1	011B1201.D	CLP1 0.32 (mm)
280-123221-7		05/23/2019 17:25	1	011B1201.D	CLP2 0.32 (mm)
ZZZZZ		05/23/2019 17:47	1		CLP1 0.32 (mm)
ZZZZZ		05/23/2019 17:47	1		CLP2 0.32 (mm)
ZZZZZ		05/23/2019 18:09	1		CLP1 0.32 (mm)
ZZZZZ		05/23/2019 18:09	1		CLP2 0.32 (mm)
CCV 280-459265/17		05/23/2019 19:36	1	017B1801.D	CLP1 0.32 (mm)
CCV 280-459265/17		05/23/2019 19:36	1	017B1801.D	CLP2 0.32 (mm)
ZZZZZ		05/23/2019 19:58	1		CLP1 0.32 (mm)
ZZZZZ		05/23/2019 19:58	1		CLP2 0.32 (mm)
ZZZZZ		05/23/2019 20:20	1		CLP1 0.32 (mm)
ZZZZZ		05/23/2019 20:20	1		CLP2 0.32 (mm)
ZZZZZ		05/23/2019 20:42	1		CLP1 0.32 (mm)
ZZZZZ		05/23/2019 20:42	1		CLP2 0.32 (mm)
ZZZZZ		05/23/2019 21:04	1		CLP1 0.32 (mm)
ZZZZZ		05/23/2019 21:04	1		CLP2 0.32 (mm)
ZZZZZ		05/23/2019 21:25	1		CLP1 0.32 (mm)
ZZZZZ		05/23/2019 21:25	1		CLP2 0.32 (mm)
ZZZZZ		05/23/2019 21:47	1		CLP1 0.32 (mm)
ZZZZZ		05/23/2019 21:47	1		CLP2 0.32 (mm)
ZZZZZ		05/23/2019 22:09	1		CLP1 0.32 (mm)
ZZZZZ		05/23/2019 22:09	1		CLP2 0.32 (mm)
ZZZZZ		05/23/2019 22:31	1		CLP1 0.32 (mm)
ZZZZZ		05/23/2019 22:31	1		CLP2 0.32 (mm)
ZZZZZ		05/23/2019 22:53	1		CLP1 0.32 (mm)
ZZZZZ		05/23/2019 22:53	1		CLP2 0.32 (mm)
ZZZZZ		05/23/2019 23:15	1		CLP1 0.32 (mm)
ZZZZZ		05/23/2019 23:15	1		CLP2 0.32 (mm)
ZZZZZ		05/23/2019 23:37	1		CLP1 0.32 (mm)

PCBS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: SGC_P3 Start Date: 05/23/2019 14:30Analysis Batch Number: 459265 End Date: 05/24/2019 00:20

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		05/23/2019 23:37	1		CLP2 0.32 (mm)
ZZZZZ		05/23/2019 23:58	1		CLP1 0.32 (mm)
ZZZZZ		05/23/2019 23:58	1		CLP2 0.32 (mm)
CCV 280-459265/30		05/24/2019 00:20	1		CLP1 0.32 (mm)
CCV 280-459265/30		05/24/2019 00:20	1		CLP2 0.32 (mm)

PCBS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457201 Batch Start Date: 05/06/19 15:29 Batch Analyst: Exstrum, Adam JBatch Method: 3510C Batch End Date: 05/07/19 19:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	8081/82 Surr 00111
MB 280-457201/1		3510C, 8082A				1000 mL	10 mL	7 SU	1 mL
LCS 280-457201/3		3510C, 8082A				1000 mL	10 mL	7 SU	1 mL
280-123221-D-4	DET-003-190401-G W	3510C, 8082A	T	1439.8 g	512.0 g	927.8 mL	10 mL	7 SU	1 mL
280-123221-C-4 MS	DET-003-190401-G WMS	3510C, 8082A	T	1425.9 g	513.6 g	912.3 mL	10 mL	7 SU	1 mL
280-123221-B-4 MSD	DET-003-190401-G WMSD	3510C, 8082A	T	1457.5 g	513.3 g	944.2 mL	10 mL	7 SU	1 mL
280-123221-B-5	DET-003-190402-G W	3510C, 8082A	T	1412.7 g	511.5 g	901.2 mL	10 mL	7 SU	1 mL
280-123221-A-7	DET-004-190401-G W	3510C, 8082A	T	1506.6 g	510.2 g	996.4 mL	10 mL	7 SU	1 mL

Lab Sample ID	Client Sample ID	Method Chain	Basis	8082 LCS 00051	AnalysisComment				
MB 280-457201/1		3510C, 8082A							
LCS 280-457201/3		3510C, 8082A		1 mL	8082				
280-123221-D-4	DET-003-190401-G W	3510C, 8082A	T						
280-123221-C-4 MS	DET-003-190401-G WMS	3510C, 8082A	T	1 mL	8082				
280-123221-B-4 MSD	DET-003-190401-G WMSD	3510C, 8082A	T	1 mL	8082				
280-123221-B-5	DET-003-190402-G W	3510C, 8082A	T						
280-123221-A-7	DET-004-190401-G W	3510C, 8082A	T						

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

PCBS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457201 Batch Start Date: 05/06/19 15:29 Batch Analyst: Exstrum, Adam JBatch Method: 3510C Batch End Date: 05/07/19 19:30

Batch Notes	
Balance ID	24750399
Batch Comment	DV-OP-0006/0007; TROLL @ 10.00 mL
Analyst ID - Concentration	CR/MM
Concentration 1 Corrected Temperature	88/88 Degrees C
Equipment ID - Concentration 1	A/C
Exchange Solvent ID	Hexane_Cycl_00057
Analyst ID - Extraction	AE (trainer) / AG (trainee)
Method/Fraction	3510C/8081/8082/DOD5
Na2SO4 ID	0000218677_00004
NaCl ID	185572
Pipette/Syringe/Dispenser ID	1n2s
Prep Solvent ID	MeCl2_Cycl_00436
Prep Solvent Volume Used	180 mL
Analyst ID - Spike Analyst	AE
Analyst ID - Spike Witness Analyst	Reviewer: DC
Sufficient Volume for Batch QC	Yes
Concentration 1 Uncorrected Temperature	88/87 Degrees C
Reagent Water ID	S. ELGA

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

8330B_DOD5

Nitroaromatics and Nitramines (HPLC)

FORM II
HPLC/IC SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Matrix: Water

Level: Low

GC Column (1): UltraCarb5u ID: 4.6 (mm)

GC Column (2): Luna-phenyl 4.6 (mm)

Client Sample ID	Lab Sample ID	12DNB1 #	12DNB2 #
NTAmw-119-190401-G W	280-123221-2	94	
NTAmw-119-190401-G W RE	280-123221-2 RE	92	
NTAmw-119-190402-G W	280-123221-3	90	
NTAmw-119-190402-G W RE	280-123221-3 RE	88	
DET-003-190401-GW	280-123221-4	92	
DET-003-190401-GW RE	280-123221-4 RE	93	
DET-003-190402-GW	280-123221-5	88	
DET-003-190402-GW RE	280-123221-5 RE	96	
DET-004-190401-GW	280-123221-7	90	
DET-004-190401-GW RE	280-123221-7 RE	96	
FWGmw-007-190401-G W	280-123221-8	86	
FWGmw-007-190401-G W RE	280-123221-8 RE	92	
WBGmw-020-190401-G W	280-123221-9	86	
WBGmw-020-190401-G W RE	280-123221-9 RE	95	
WBGmw-006-190401-G W	280-123221-10		95
WBGmw-006-190401-G W	280-123221-10	99	
WBGmw-006-190401-G W RE	280-123221-10 RE		96
WBGmw-006-190401-G W RE	280-123221-10 RE	97	
WBGmw-021-190401-G W	280-123221-11	84	
WBGmw-021-190401-G W RE	280-123221-11 RE	94	
WBGmw-009-190401-G W	280-123221-12	93	
WBGmw-009-190401-G W RE	280-123221-12 RE	98	
FWGmw-016-190401-G W	280-123221-13	84	
FWGmw-016-190401-G W RE	280-123221-13 RE	77	Q
	MB 280-456980/1-A	89	

12DNB = 1,2-Dinitrobenzene

QC LIMITS
83-119

Column to be used to flag recovery values

FORM II 8330B

FORM II
HPLC/IC SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Matrix: Water

Level: Low

GC Column (1): UltraCarb5u ID: 4.6 (mm)

GC Column (2): Luna-phenyl 4.6 (mm)

Client Sample ID	Lab Sample ID	12DNB1 #	12DNB2 #
	MB 280-457741/1-A	99	
	MB 280-457818/1-A	95	
	LCS 280-456980/2-A	91	
	LCS 280-457741/2-A	96	
	LCS 280-457818/2-A	94	
	LCSD 280-457818/3-A	94	
NTAmw-119-190401-G WMS MS	280-123221-2 MS	90	
NTAmw-119-190401-G WMS MS RE	280-123221-2 MS RE	94	
DET-003-190401-GWM S MS	280-123221-4 MS	88	
DET-003-190401-GWM S MS RE	280-123221-4 MS RE	97	
NTAmw-119-190401-G WMSD MSD	280-123221-2 MSD	86	
NTAmw-119-190401-G WMSD MSD RE	280-123221-2 MSD RE	93	
DET-003-190401-GWM SD MSD	280-123221-4 MSD	85	
DET-003-190401-GWM SD MSD RE	280-123221-4 MSD RE	93	

12DNB = 1,2-Dinitrobenzene

QC LIMITS
83-119

Column to be used to flag recovery values

FORM II 8330B

FORM III
HPLC/IC LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 0509B036.D
 Lab ID: LCS 280-456980/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
1,3,5-Trinitrobenzene	2.00	2.16	108	73-125	
1,3-Dinitrobenzene	2.00	1.90	95	78-120	
2,4,6-Trinitrotoluene	2.00	1.72	86	71-123	
2,4-Dinitrotoluene	2.00	1.86	93	78-120	
2,6-Dinitrotoluene	2.00	1.87	93	77-127	
2-Amino-4,6-dinitrotoluene	2.00	1.76	88	79-120	
2-Nitrotoluene	2.00	1.37	68	70-127	Q
3-Nitrotoluene	2.00	1.51	75	73-125	
4-Amino-2,6-dinitrotoluene	2.00	1.68	84	76-125	
4-Nitrotoluene	2.00	1.57	78	71-127	
HMX	2.00	2.07	104	65-135	
Nitrobenzene	2.00	1.64	82	65-134	
Nitroglycerin	20.0	19.2	96	74-127	
PETN	20.0	18.4	92	73-127	
RDX	2.00	1.97	98	68-130	
Tetryl	2.00	1.80	90	64-128	

Column to be used to flag recovery and RPD values

FORM III
HPLC/IC LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 0514B057.D
 Lab ID: LCS 280-457741/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
1,3,5-Trinitrobenzene	2.00	2.10	105	73-125	
1,3-Dinitrobenzene	2.00	2.04	102	78-120	
2,4,6-Trinitrotoluene	2.00	1.85	92	71-123	
2,4-Dinitrotoluene	2.00	1.97	98	78-120	
2,6-Dinitrotoluene	2.00	1.95	97	77-127	
2-Amino-4,6-dinitrotoluene	2.00	1.87	93	79-120	
2-Nitrotoluene	2.00	1.72	86	70-127	
3-Nitrotoluene	2.00	1.74	87	73-125	
4-Amino-2,6-dinitrotoluene	2.00	1.74	87	76-125	
4-Nitrotoluene	2.00	1.75	87	71-127	
HMX	2.00	1.91	96	65-135	M
Nitrobenzene	2.00	1.89	95	65-134	
Nitroglycerin	20.0	20.2	101	74-127	
PETN	20.0	19.6	98	73-127	
RDX	2.00	2.03	101	68-130	
Tetryl	2.00	1.99	99	64-128	

Column to be used to flag recovery and RPD values

FORM III
HPLC/IC LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 0516B011.D
 Lab ID: LCS 280-457818/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
1,3,5-Trinitrobenzene	200	202	101	73-125	
1,3-Dinitrobenzene	200	192	96	78-120	
2,4,6-Trinitrotoluene	200	179	89	71-123	
2,4-Dinitrotoluene	200	187	94	78-120	
2,6-Dinitrotoluene	200	183	91	77-127	
2-Amino-4,6-dinitrotoluene	200	175	87	79-120	
2-Nitrotoluene	200	159	79	70-127	
3-Nitrotoluene	200	162	81	73-125	
4-Amino-2,6-dinitrotoluene	200	162	81	76-125	
4-Nitrotoluene	200	160	80	71-127	
HMX	200	181	90	65-135	M
Nitrobenzene	200	176	88	65-134	
Nitroglycerin	2000	1960	98	74-127	
PETN	2000	1960	98	73-127	
RDX	200	197	99	68-130	
Tetryl	200	199	100	64-128	

Column to be used to flag recovery and RPD values

FORM III
HPLC/IC LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 0516B012.D
 Lab ID: LCSD 280-457818/3-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
1,3,5-Trinitrobenzene	200	205	102	2	20	73-125	
1,3-Dinitrobenzene	200	194	97	1	20	78-120	
2,4,6-Trinitrotoluene	200	181	90	1	20	71-123	
2,4-Dinitrotoluene	200	188	94	0	20	78-120	
2,6-Dinitrotoluene	200	184	92	1	20	77-127	
2-Amino-4,6-dinitrotoluene	200	179	90	3	20	79-120	
2-Nitrotoluene	200	158	79	0	20	70-127	
3-Nitrotoluene	200	163	81	0	20	73-125	
4-Amino-2,6-dinitrotoluene	200	165	83	2	20	76-125	
4-Nitrotoluene	200	164	82	2	20	71-127	
HMX	200	186	93	3	20	65-135	M
Nitrobenzene	200	176	88	0	20	65-134	
Nitroglycerin	2000	1970	99	1	20	74-127	
PETN	2000	1970	99	0	20	73-127	
RDX	200	197	99	0	20	68-130	
Tetryl	200	201	100	1	20	64-128	

Column to be used to flag recovery and RPD values

FORM III
HPLC/IC MATRIX SPIKE RECOVERY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Matrix: Water Level: Low

Lab File ID: 0509B040.D

Lab ID: 280-123221-2 MS

Client ID: NTAmw-119-190401-GWMS MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
1,3,5-Trinitrobenzene	2.18	0.43 U	2.16	99	73-125	
1,3-Dinitrobenzene	2.18	0.22 U	1.96	90	78-120	
2,4,6-Trinitrotoluene	2.18	0.43 U	1.78	82	71-123	
2,4-Dinitrotoluene	2.18	0.22 U	1.86	85	78-120	
2,6-Dinitrotoluene	2.18	0.22 U	1.82	84	77-127	
2-Amino-4,6-dinitrotoluene	2.18	0.13 U	1.80	83	79-120	
2-Nitrotoluene	2.18	0.22 U	1.19	55	70-127	J1
3-Nitrotoluene	2.18	0.43 U	1.30	60	73-125	J1
4-Amino-2,6-dinitrotoluene	2.18	0.13 U	1.67	77	76-125	
4-Nitrotoluene	2.18	0.43 U	1.41	65	71-127	J1
HMX	2.18	0.22 U	1.95	90	65-135	M
Nitrobenzene	2.18	0.22 U	1.48	68	65-134	
Nitroglycerin	21.8	2.2 U	20.2	93	74-127	
PETN	21.8	4.3 U	18.9	87	73-127	
RDX	2.18	0.43 U	1.99	92	68-130	
Tetryl	2.18	0.22 U	1.93	89	64-128	

Column to be used to flag recovery and RPD values

FORM III
HPLC/IC MATRIX SPIKE RECOVERY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Matrix: Water Level: Low

Lab File ID: 0514B074.D

Lab ID: 280-123221-2 MS RE

Client ID: NTAmw-119-190401-GWMS MS RE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
1,3,5-Trinitrobenzene	2.16	0.43 U	2.18	101	73-125	H
1,3-Dinitrobenzene	2.16	0.22 U	2.09	97	78-120	H
2,4,6-Trinitrotoluene	2.16	0.43 U	1.95	90	71-123	H
2,4-Dinitrotoluene	2.16	0.22 U	1.97	91	78-120	H
2,6-Dinitrotoluene	2.16	0.22 U	1.93	89	77-127	H
2-Amino-4,6-dinitrotoluene	2.16	0.13 U	1.87	87	79-120	H
2-Nitrotoluene	2.16	0.22 U	1.63	75	70-127	H
3-Nitrotoluene	2.16	0.43 U	1.63	75	73-125	H
4-Amino-2,6-dinitrotoluene	2.16	0.13 U	1.69	79	76-125	H
4-Nitrotoluene	2.16	0.43 U	1.63	75	71-127	H
HMX	2.16	0.22 U	2.00	93	65-135	H M
Nitrobenzene	2.16	0.22 U	1.84	85	65-134	H M
Nitroglycerin	21.6	2.2 U	22.0	102	74-127	H
PETN	21.6	4.3 U	21.2	98	73-127	H
RDX	2.16	0.43 U	2.19	102	68-130	H
Tetryl	2.16	0.22 U	2.14	99	64-128	H

Column to be used to flag recovery and RPD values

FORM III
HPLC/IC MATRIX SPIKE RECOVERY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Matrix: Water Level: Low

Lab File ID: 0509B044.D

Lab ID: 280-123221-4 MS

Client ID: DET-003-190401-GWMS MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
1,3,5-Trinitrobenzene	2.04	0.45 U	2.06	101	73-125	
1,3-Dinitrobenzene	2.04	0.22 U	1.91	94	78-120	
2,4,6-Trinitrotoluene	2.04	0.45 U	1.70	83	71-123	
2,4-Dinitrotoluene	2.04	0.22 U	1.83	90	78-120	
2,6-Dinitrotoluene	2.04	0.22 U	1.79	88	77-127	
2-Amino-4,6-dinitrotoluene	2.04	0.13 U	1.78	87	79-120	
2-Nitrotoluene	2.04	0.22 U	1.37	67	70-127	J1
3-Nitrotoluene	2.04	0.45 U	1.45	71	73-125	J1
4-Amino-2,6-dinitrotoluene	2.04	0.13 U	1.68	82	76-125	
4-Nitrotoluene	2.04	0.45 U	1.52	74	71-127	
HMX	2.04	0.22 U	1.89	93	65-135	M
Nitrobenzene	2.04	0.22 U	1.65	81	65-134	
Nitroglycerin	20.4	2.2 U	19.0	93	74-127	
PETN	20.4	4.5 U	17.7	87	73-127	
RDX	2.04	0.45 U	2.02	99	68-130	
Tetryl	2.04	0.22 U	1.69	83	64-128	

Column to be used to flag recovery and RPD values

FORM III
HPLC/IC MATRIX SPIKE RECOVERY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 0514B078.D
 Lab ID: 280-123221-4 MS RE Client ID: DET-003-190401-GWMS MS RE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
1,3,5-Trinitrobenzene	2.11	0.44 U	2.21	105	73-125	H
1,3-Dinitrobenzene	2.11	0.22 U	2.17	103	78-120	H
2,4,6-Trinitrotoluene	2.11	0.44 U	1.96	93	71-123	H
2,4-Dinitrotoluene	2.11	0.22 U	2.05	97	78-120	H
2,6-Dinitrotoluene	2.11	0.22 U	2.03	96	77-127	H
2-Amino-4,6-dinitrotoluene	2.11	0.13 U	1.95	92	79-120	H
2-Nitrotoluene	2.11	0.22 U	1.78	84	70-127	H
3-Nitrotoluene	2.11	0.44 U	1.85	88	73-125	H
4-Amino-2,6-dinitrotoluene	2.11	0.13 U	1.80	85	76-125	H
4-Nitrotoluene	2.11	0.44 U	1.84	87	71-127	H
HMX	2.11	0.22 U	2.07	98	65-135	H M
Nitrobenzene	2.11	0.22 U	1.96	93	65-134	H
Nitroglycerin	21.1	2.2 U	21.9	103	74-127	H
PETN	21.1	4.4 U	21.2	100	73-127	H
RDX	2.11	0.44 U	2.27	108	68-130	H
Tetryl	2.11	0.22 U	2.23	105	64-128	H

Column to be used to flag recovery and RPD values

FORM III
HPLC/IC MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Matrix: Water Level: Low

Lab File ID: 0509B041.D

Lab ID: 280-123221-2 MSD

Client ID: NTAmw-119-190401-GWMSD MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
1,3,5-Trinitrobenzene	2.18	2.17	100	0	20	73-125	
1,3-Dinitrobenzene	2.18	2.06	95	5	20	78-120	
2,4,6-Trinitrotoluene	2.18	1.86	85	4	20	71-123	
2,4-Dinitrotoluene	2.18	1.95	90	5	20	78-120	
2,6-Dinitrotoluene	2.18	1.96	90	8	20	77-127	
2-Amino-4,6-dinitrotoluene	2.18	1.87	86	4	20	79-120	
2-Nitrotoluene	2.18	1.36	62	13	20	70-127	J1
3-Nitrotoluene	2.18	1.50	69	14	20	73-125	J1
4-Amino-2,6-dinitrotoluene	2.18	1.75	80	4	20	76-125	
4-Nitrotoluene	2.18	1.61	74	13	20	71-127	
HMX	2.18	2.02	93	4	20	65-135	M
Nitrobenzene	2.18	1.66	76	12	20	65-134	M
Nitroglycerin	21.8	21.0	96	4	20	74-127	
PETN	21.8	20.1	92	6	20	73-127	
RDX	2.18	2.17	100	9	20	68-130	
Tetryl	2.18	1.85	85	4	20	64-128	

Column to be used to flag recovery and RPD values

FORM III
HPLC/IC MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Matrix: Water Level: Low

Lab File ID: 0514B075.D

Lab ID: 280-123221-2 MSD RE

Client ID: NTAmw-119-190401-GWMSD MSD RE

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
1,3,5-Trinitrobenzene	2.15	2.18	101	0	20	73-125	H
1,3-Dinitrobenzene	2.15	2.12	99	1	20	78-120	H
2,4,6-Trinitrotoluene	2.15	1.93	90	1	20	71-123	H
2,4-Dinitrotoluene	2.15	2.01	94	2	20	78-120	H
2,6-Dinitrotoluene	2.15	1.99	93	3	20	77-127	H
2-Amino-4,6-dinitrotoluene	2.15	1.89	88	1	20	79-120	H
2-Nitrotoluene	2.15	1.75	82	7	20	70-127	H
3-Nitrotoluene	2.15	1.71	80	5	20	73-125	H
4-Amino-2,6-dinitrotoluene	2.15	1.80	84	6	20	76-125	H
4-Nitrotoluene	2.15	1.78	83	9	20	71-127	H
HMX	2.15	2.03	94	1	20	65-135	H M
Nitrobenzene	2.15	1.94	90	5	20	65-134	H M
Nitroglycerin	21.5	21.5	100	2	20	74-127	H
PETN	21.5	21.2	99	0	20	73-127	H
RDX	2.15	2.20	102	0	20	68-130	H
Tetryl	2.15	2.17	101	1	20	64-128	H M

Column to be used to flag recovery and RPD values

FORM III
HPLC/IC MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Matrix: Water Level: Low

Lab File ID: 0509B048.D

Lab ID: 280-123221-4 MSD

Client ID: DET-003-190401-GWMSD MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
1,3,5-Trinitrobenzene	2.18	2.14	98	4	20	73-125	
1,3-Dinitrobenzene	2.18	1.98	91	3	20	78-120	
2,4,6-Trinitrotoluene	2.18	1.78	82	5	20	71-123	
2,4-Dinitrotoluene	2.18	1.88	86	3	20	78-120	
2,6-Dinitrotoluene	2.18	1.90	87	6	20	77-127	
2-Amino-4,6-dinitrotoluene	2.18	1.82	84	2	20	79-120	
2-Nitrotoluene	2.18	1.51	69	9	20	70-127	J1
3-Nitrotoluene	2.18	1.56	72	7	20	73-125	J1
4-Amino-2,6-dinitrotoluene	2.18	1.72	79	3	20	76-125	
4-Nitrotoluene	2.18	1.64	75	8	20	71-127	
HMX	2.18	2.00	92	5	20	65-135	M
Nitrobenzene	2.18	1.76	81	6	20	65-134	
Nitroglycerin	21.8	20.1	92	6	20	74-127	
PETN	21.8	19.0	87	7	20	73-127	
RDX	2.18	2.09	96	3	20	68-130	
Tetryl	2.18	1.83	84	8	20	64-128	

Column to be used to flag recovery and RPD values

FORM III
HPLC/IC MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Matrix: Water Level: Low

Lab File ID: 0514B082.D

Lab ID: 280-123221-4 MSD RE

Client ID: DET-003-190401-GWMSD MSD RE

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
1,3,5-Trinitrobenzene	2.24	2.29	102	3	20	73-125	H
1,3-Dinitrobenzene	2.24	2.19	97	1	20	78-120	H
2,4,6-Trinitrotoluene	2.24	1.99	89	2	20	71-123	H
2,4-Dinitrotoluene	2.24	2.07	92	1	20	78-120	H
2,6-Dinitrotoluene	2.24	1.97	88	3	20	77-127	H
2-Amino-4,6-dinitrotoluene	2.24	2.01	89	3	20	79-120	H
2-Nitrotoluene	2.24	1.72	77	3	20	70-127	H
3-Nitrotoluene	2.24	1.70	76	9	20	73-125	H
4-Amino-2,6-dinitrotoluene	2.24	1.86	83	3	20	76-125	H
4-Nitrotoluene	2.24	1.72	77	7	20	71-127	H
HMX	2.24	2.13	95	3	20	65-135	H M
Nitrobenzene	2.24	1.92	86	2	20	65-134	H
Nitroglycerin	22.4	22.1	98	1	20	74-127	H
PETN	22.4	21.7	97	2	20	73-127	H
RDX	2.24	2.36	105	4	20	68-130	H
Tetryl	2.24	2.20	98	1	20	64-128	H

Column to be used to flag recovery and RPD values

FORM IV
HPLC/IC METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: MB 280-456980/1-A
 Matrix: Water Date Extracted: 05/04/2019 15:00
 Lab File ID: (1) 0509B035.D Lab File ID: (2) _____
 Date Analyzed: (1) 05/10/2019 03:52 Date Analyzed: (2) _____
 Instrument ID: (1) CHHPLC_X3 Instrument ID: (2) CHHPLC_G2_LUNA
 GC Column: (1) UltraCarb5uO ID: 4.6 (mm) GC Column: (2) Luna-phenylh ID: 4.6 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
	LCS 280-456980/2-A	05/10/2019 04:15	
NTAmw-119-190401-GW	280-123221-2	05/10/2019 05:26	
NTAmw-119-190401-GWMS MS	280-123221-2 MS	05/10/2019 05:50	
NTAmw-119-190401-GWMSD MSD	280-123221-2 MSD	05/10/2019 06:14	
NTAmw-119-190402-GW	280-123221-3	05/10/2019 06:38	
DET-003-190401-GW	280-123221-4	05/10/2019 07:02	
DET-003-190401-GWMS MS	280-123221-4 MS	05/10/2019 07:25	
DET-003-190401-GWMSD MSD	280-123221-4 MSD	05/10/2019 09:01	
DET-003-190402-GW	280-123221-5	05/10/2019 09:24	
DET-004-190401-GW	280-123221-7	05/10/2019 09:48	05/13/2019 23:00
FWGmw-007-190401-GW	280-123221-8	05/10/2019 10:12	
WBGmw-020-190401-GW	280-123221-9	05/10/2019 10:35	
WBGmw-006-190401-GW	280-123221-10	05/10/2019 10:59	05/13/2019 23:35
WBGmw-021-190401-GW	280-123221-11	05/10/2019 11:23	
WBGmw-009-190401-GW	280-123221-12	05/10/2019 11:47	05/14/2019 00:10
FWGmw-016-190401-GW	280-123221-13	05/10/2019 12:11	

FORM IV
HPLC/IC METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: MB 280-457741/1-A
 Matrix: Water Date Extracted: 05/10/2019 16:21
 Lab File ID: (1) 0514B056.D Lab File ID: (2) _____
 Date Analyzed: (1) 05/15/2019 11:12 Date Analyzed: (2) _____
 Instrument ID: (1) CHHPLC_X3 Instrument ID: (2) CHHPLC_G2_LUNA
 GC Column: (1) UltraCarb5uO ID: 4.6(mm) GC Column: (2) Luna-phenylh ID: 4.6(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
	LCS 280-457741/2-A	05/15/2019 11:36	
NTAmw-119-190401-GW RE	280-123221-2 RE	05/15/2019 17:56	
NTAmw-119-190401-GWMS MS RE	280-123221-2 MS RE	05/15/2019 18:20	
NTAmw-119-190401-GWMSD MSD RE	280-123221-2 MSD RE	05/15/2019 18:44	
NTAmw-119-190402-GW RE	280-123221-3 RE	05/15/2019 19:08	
DET-003-190401-GW RE	280-123221-4 RE	05/15/2019 19:32	
DET-003-190401-GWMS MS RE	280-123221-4 MS RE	05/15/2019 19:56	
DET-003-190401-GWMSD MSD RE	280-123221-4 MSD RE	05/15/2019 21:31	
DET-003-190402-GW RE	280-123221-5 RE	05/15/2019 21:54	
DET-004-190401-GW RE	280-123221-7 RE	05/15/2019 22:18	05/16/2019 17:57
FWGmw-007-190401-GW RE	280-123221-8 RE	05/15/2019 22:42	
WBGmw-020-190401-GW RE	280-123221-9 RE	05/15/2019 23:05	
WBGmw-006-190401-GW RE	280-123221-10 RE	05/15/2019 23:29	05/16/2019 18:32
WBGmw-021-190401-GW RE	280-123221-11 RE	05/15/2019 23:53	

FORM IV
HPLC/IC METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: MB 280-457818/1-A
 Matrix: Water Date Extracted: 05/11/2019 15:37
 Lab File ID: (1) 0516B010.D Lab File ID: (2) _____
 Date Analyzed: (1) 05/16/2019 15:48 Date Analyzed: (2) _____
 Instrument ID: (1) CHHPLC_X3 Instrument ID: (2) _____
 GC Column: (1) UltraCarb5uO ID: 4.6 (mm) GC Column: (2) _____ ID: _____

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
	LCS 280-457818/2-A	05/16/2019 16:11	
	LCSD 280-457818/3-A	05/16/2019 16:35	
WBGmw-009-190401-GW RE	280-123221-12 RE	05/17/2019 11:59	05/20/2019 15:51
FWGmw-016-190401-GW RE	280-123221-13 RE	05/17/2019 12:23	

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: DET-004-190401-GW Lab Sample ID: 280-123221-7
 Instrument ID (1): CHHPLC_X3 Instrument ID (2): CHHPLC_G2_LUNA
 Date Analyzed (1): 05/10/2019 09:48 Date Analyzed (2): 05/13/2019 23:00
 GC Column (1): UltraCarb5uOD ID: 4.6(mm) GC Column (2): Luna-phenylhe ID: 4.6(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
HMX	1		6.64	6.49	6.79	1.6		4.2
	2		7.17	7.04	7.34	1.6		
RDX	1		7.73	7.59	7.89	1.4		10.1
	2		9.25	9.13	9.43	1.6		

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: DET-004-190401-GW RE Lab Sample ID: 280-123221-7 RE
 Instrument ID (1): CHHPLC_X3 Instrument ID (2): CHHPLC_G2_LUNA
 Date Analyzed (1): 05/15/2019 22:18 Date Analyzed (2): 05/16/2019 17:57
 GC Column (1): UltraCarb5uOD ID: 4.6(mm) GC Column (2): Luna-phenylhe ID: 4.6(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
HMX	1		6.65	6.50	6.80	1.5		9.0
	2		7.23	7.09	7.39	1.6		
RDX	1		7.76	7.61	7.91	1.5		11.2
	2		9.32	9.18	9.48	1.7		

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: WBGmw-006-190401-GW Lab Sample ID: 280-123221-10
 Instrument ID (1): CHHPLC_X3 Instrument ID (2): CHHPLC_G2_LUNA
 Date Analyzed (1): 05/10/2019 10:59 Date Analyzed (2): 05/13/2019 23:35
 GC Column (1): UltraCarb5uOD ID: 4.6(mm) GC Column (2): Luna-phenylhe ID: 4.6(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
HMX	1		6.64	6.49	6.79	3.4		5.2
	2		7.16	7.04	7.34	3.6		
RDX	1		7.74	7.59	7.89	11		1.8
	2		9.24	9.13	9.43	11		

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: WBGmw-006-190401-GW RE Lab Sample ID: 280-123221-10 RE
 Instrument ID (1): CHHPLC_X3 Instrument ID (2): CHHPLC_G2_LUNA
 Date Analyzed (1): 05/15/2019 23:29 Date Analyzed (2): 05/16/2019 18:32
 GC Column (1): UltraCarb5uOD ID: 4.6(mm) GC Column (2): Luna-phenylhe ID: 4.6(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
HMX	1		6.65	6.50	6.80	3.4		9.2
	2		7.23	7.09	7.39	3.7		
RDX	1		7.77	7.61	7.91	11		9.4
	2		9.33	9.18	9.48	12		

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: WBGmw-009-190401-GW Lab Sample ID: 280-123221-12
 Instrument ID (1): CHHPLC_X3 Instrument ID (2): CHHPLC_G2_LUNA
 Date Analyzed (1): 05/10/2019 11:47 Date Analyzed (2): 05/14/2019 00:10
 GC Column (1): UltraCarb5uOD ID: 4.6(mm) GC Column (2): Luna-phenylhe ID: 4.6(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
HMX	1		6.64	6.49	6.79	0.67		2.5
	2		7.17	7.04	7.34	0.65		
RDX	1		7.73	7.59	7.89	1.6		3.8
	2		9.25	9.13	9.43	1.7		

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: WBGmw-009-190401-GW RE Lab Sample ID: 280-123221-12 RE
 Instrument ID (1): CHHPLC_X3 Instrument ID (2): CHHPLC_G2_LUNA
 Date Analyzed (1): 05/17/2019 11:59 Date Analyzed (2): 05/20/2019 15:51
 GC Column (1): UltraCarb5uOD ID: 4.6(mm) GC Column (2): Luna-phenylhe ID: 4.6(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
HMX	1		6.66	6.51	6.81	0.68		15.5
	2		7.16	7.03	7.33	0.79		
RDX	1		7.78	7.63	7.93	1.8		6.6
	2		9.24	9.11	9.41	1.9		

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>NTAmw-119-190401-GW</u>	Lab Sample ID: <u>280-123221-2</u>
Matrix: <u>Water</u>	Lab File ID: <u>0509B039.D</u>
Analysis Method: <u>8330B</u>	Date Collected: <u>04/30/2019 10:45</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>05/04/2019 15:00</u>
Sample wt/vol: <u>462.7 (mL)</u>	Date Analyzed: <u>05/10/2019 05:26</u>
Con. Extract Vol.: <u>5 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>100 (uL)</u>	GC Column: <u>UltraCarb5uODS</u> ID: <u>4.6 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>457634</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.43	U	1.1	0.43	0.22
99-65-0	1,3-Dinitrobenzene	0.22	U	0.43	0.22	0.096
118-96-7	2,4,6-Trinitrotoluene	0.43	U	0.43	0.43	0.17
121-14-2	2,4-Dinitrotoluene	0.22	U	0.43	0.22	0.091
606-20-2	2,6-Dinitrotoluene	0.22	U	0.22	0.22	0.070
35572-78-2	2-Amino-4,6-dinitrotoluene	0.13	U	0.22	0.13	0.055
88-72-2	2-Nitrotoluene	0.22	U J1 Q	0.43	0.22	0.092
99-08-1	3-Nitrotoluene	0.43	U J1	0.43	0.43	0.21
19406-51-0	4-Amino-2,6-dinitrotoluene	0.13	U	0.22	0.13	0.062
99-99-0	4-Nitrotoluene	0.43	U J1	1.1	0.43	0.22
2691-41-0	HMX	0.22	U	0.43	0.22	0.095
98-95-3	Nitrobenzene	0.22	U	0.43	0.22	0.098
55-63-0	Nitroglycerin	2.2	U	3.2	2.2	1.0
78-11-5	PETN	4.3	U	4.3	4.3	2.1
121-82-4	RDX	0.43	U	0.43	0.43	0.17
479-45-8	Tetryl	0.22	U	0.26	0.22	0.086

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	94		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B039.D
 Lims ID: 280-123221-A-2-A
 Client ID: NTAmw-119-190401-GW
 Sample Type: Client
 Inject. Date: 10-May-2019 05:26:53 ALS Bottle#: 39 Worklist Smp#: 39
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-A-2-A
 Misc. Info.: 280-0081739-039
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 10-May-2019 08:50:05 Calib Date: 30-Jan-2019 16:34:11
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 10-May-2019 08:41:26

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
1 2,6-diamino-4-nitrotoluene	1		6.501			ND	U
2 TNX	1		6.541			ND	
3 HMX	1		6.643			ND	
4 2,4-diamino-6-nitrotoluene	1		6.688			ND	
5 DNX	1		6.875			ND	
6 MNX	1		7.328			ND	
7 RDX	1		7.736			ND	
8 2,4,6-Trinitrophenol	1		8.090			ND	
\$ 9 1,2-Dinitrobenzene	1	8.709	8.710	-0.001	25245	0.1888	
10 1,3,5-Trinitrobenzene	1		8.870			ND	
11 1,3-Dinitrobenzene	1		9.523			ND	
12 Nitrobenzene	1		9.910			ND	
13 3,5-Dinitroaniline	1		10.134			ND	
14 Tetryl	1		10.230			ND	
15 Nitroglycerin	2		10.736			ND	
16 2,4,6-Trinitrotoluene	1		11.183			ND	
17 4-Amino-2,6-dinitrotoluene	1		11.343			ND	
18 2-Amino-4,6-dinitrotoluene	1		11.630			ND	
19 2,6-Dinitrotoluene	1		11.790			ND	
20 2,4-Dinitrotoluene	1		11.983			ND	
21 o-Nitrotoluene	1		12.823			ND	
22 p-Nitrotoluene	1		13.256			ND	
23 m-Nitrotoluene	1		13.856			ND	
24 PETN	2		14.963			ND	
25 Ammonium Picrate	1		0.000			ND	

QC Flag Legend

Review Flags

U - Marked Undetected

Report Date: 10-May-2019 08:50:11

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B039.D

Injection Date: 10-May-2019 05:26:53

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-A-2-A

Lab Sample ID: 280-123221-2

Worklist Smp#: 39

Client ID: NTAmw-119-190401-GW

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

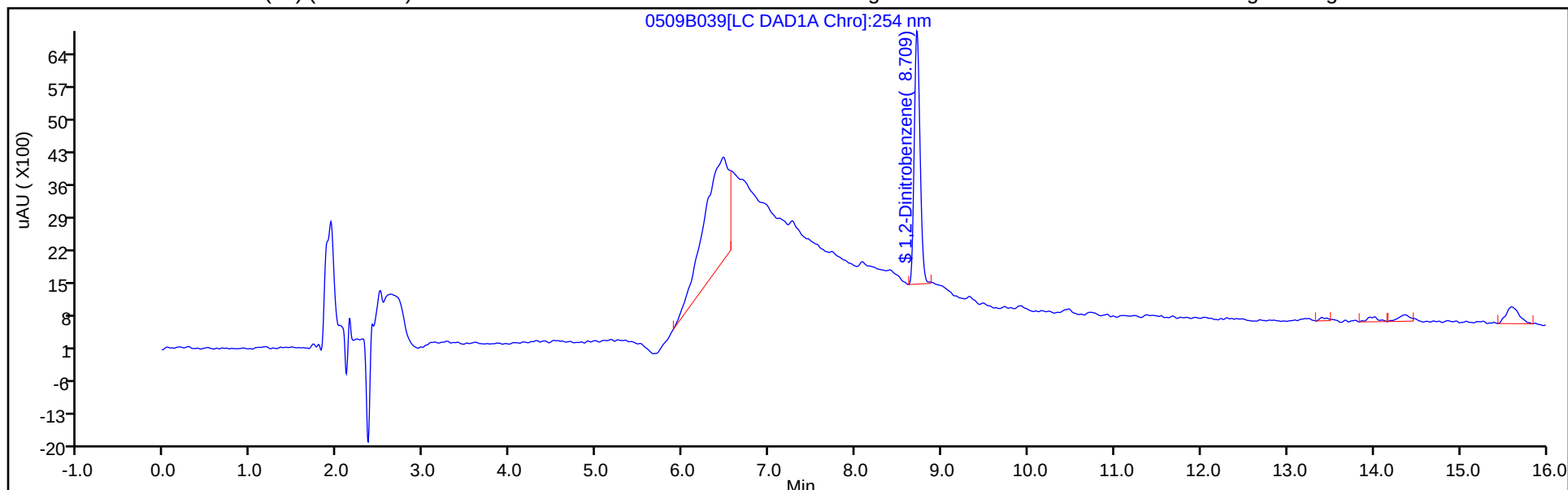
ALS Bottle#: 39

Method: 8330_X3

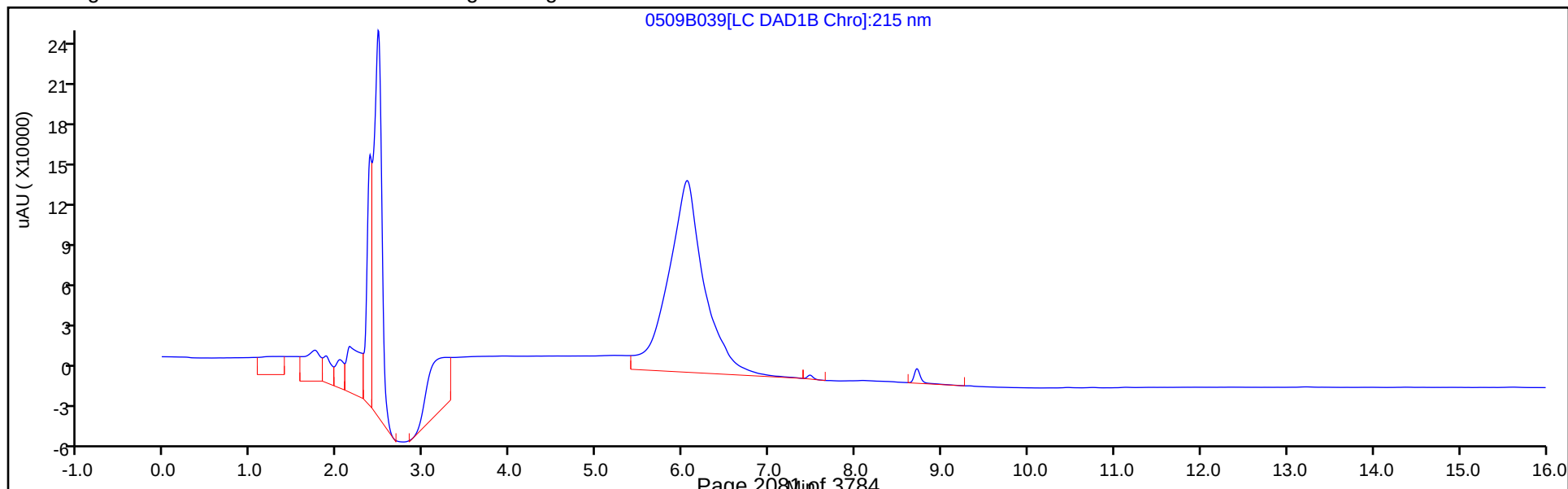
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B039.D
Lims ID: 280-123221-A-2-A
Client ID: NTAmw-119-190401-GW
Sample Type: Client
Inject. Date: 10-May-2019 05:26:53 ALS Bottle#: 39 Worklist Smp#: 39
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-A-2-A
Misc. Info.: 280-0081739-039
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 10-May-2019 08:50:05 Calib Date: 30-Jan-2019 16:34:11
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 10-May-2019 08:41:26

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1888	94.41

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>NTAmw-119-190401-GW RE</u>	Lab Sample ID: <u>280-123221-2 RE</u>
Matrix: <u>Water</u>	Lab File ID: <u>0514B073.D</u>
Analysis Method: <u>8330B</u>	Date Collected: <u>04/30/2019 10:45</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>05/10/2019 16:21</u>
Sample wt/vol: <u>461.4 (mL)</u>	Date Analyzed: <u>05/15/2019 17:56</u>
Con. Extract Vol.: <u>5 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>100 (uL)</u>	GC Column: <u>UltraCarb5uODS</u> ID: <u>4.6 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>458152</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.43	U H	1.1	0.43	0.22
99-65-0	1,3-Dinitrobenzene	0.22	U H	0.43	0.22	0.096
118-96-7	2,4,6-Trinitrotoluene	0.43	U H	0.43	0.43	0.17
121-14-2	2,4-Dinitrotoluene	0.22	U H	0.43	0.22	0.091
606-20-2	2,6-Dinitrotoluene	0.22	U H	0.22	0.22	0.070
35572-78-2	2-Amino-4,6-dinitrotoluene	0.13	U H	0.22	0.13	0.055
88-72-2	2-Nitrotoluene	0.22	U H	0.43	0.22	0.093
99-08-1	3-Nitrotoluene	0.43	U H	0.43	0.43	0.21
19406-51-0	4-Amino-2,6-dinitrotoluene	0.13	U H	0.22	0.13	0.063
99-99-0	4-Nitrotoluene	0.43	U H	1.1	0.43	0.22
2691-41-0	HMX	0.22	U H	0.43	0.22	0.095
98-95-3	Nitrobenzene	0.22	U H	0.43	0.22	0.099
55-63-0	Nitroglycerin	2.2	U H	3.3	2.2	1.0
78-11-5	PETN	4.3	U H	4.3	4.3	2.1
121-82-4	RDX	0.43	U H	0.43	0.43	0.17
479-45-8	Tetryl	0.22	U H	0.26	0.22	0.086

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	92		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B073.D
 Lims ID: 280-123221-B-2-A
 Client ID: NTAmw-119-190401-GW
 Sample Type: Client
 Inject. Date: 15-May-2019 17:56:53 ALS Bottle#: 73 Worklist Smp#: 73
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-B-2-A
 Misc. Info.: 280-0081869-073
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 16-May-2019 08:23:27 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 16-May-2019 08:18:01

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
1 2,6-diamino-4-nitrotoluene	1		6.509			ND	U
2 TNX	1		6.556			ND	
3 HMX	1		6.650			ND	
4 2,4-diamino-6-nitrotoluene	1		6.695			ND	
5 DNX	1		6.889			ND	
6 MNX	1		7.356			ND	
7 RDX	1		7.764			ND	
8 2,4,6-Trinitrophenol	1		8.130			ND	
\$ 9 1,2-Dinitrobenzene	1	8.742	8.744	-0.002	23899	0.1837	
10 1,3,5-Trinitrobenzene	1		8.904			ND	
11 1,3-Dinitrobenzene	1		9.564			ND	
12 Nitrobenzene	1		9.950			ND	
13 3,5-Dinitroaniline	1		10.209			ND	
14 Tetryl	1		10.284			ND	
15 Nitroglycerin	2		10.784			ND	
16 2,4,6-Trinitrotoluene	1		11.237			ND	
17 4-Amino-2,6-dinitrotoluene	1		11.430			ND	
18 2-Amino-4,6-dinitrotoluene	1		11.717			ND	
19 2,6-Dinitrotoluene	1		11.850			ND	
20 2,4-Dinitrotoluene	1		12.050			ND	
21 o-Nitrotoluene	1		12.890			ND	
22 p-Nitrotoluene	1		13.330			ND	
23 m-Nitrotoluene	1		13.930			ND	
24 PETN	2		15.024			ND	
25 Ammonium Picrate	1		0.000			ND	

QC Flag Legend

Review Flags

U - Marked Undetected

Report Date: 16-May-2019 08:23:33

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B073.D

Injection Date: 15-May-2019 17:56:53

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-B-2-A

Lab Sample ID: 280-123221-2

Worklist Smp#: 73

Client ID: NTAmw-119-190401-GW

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

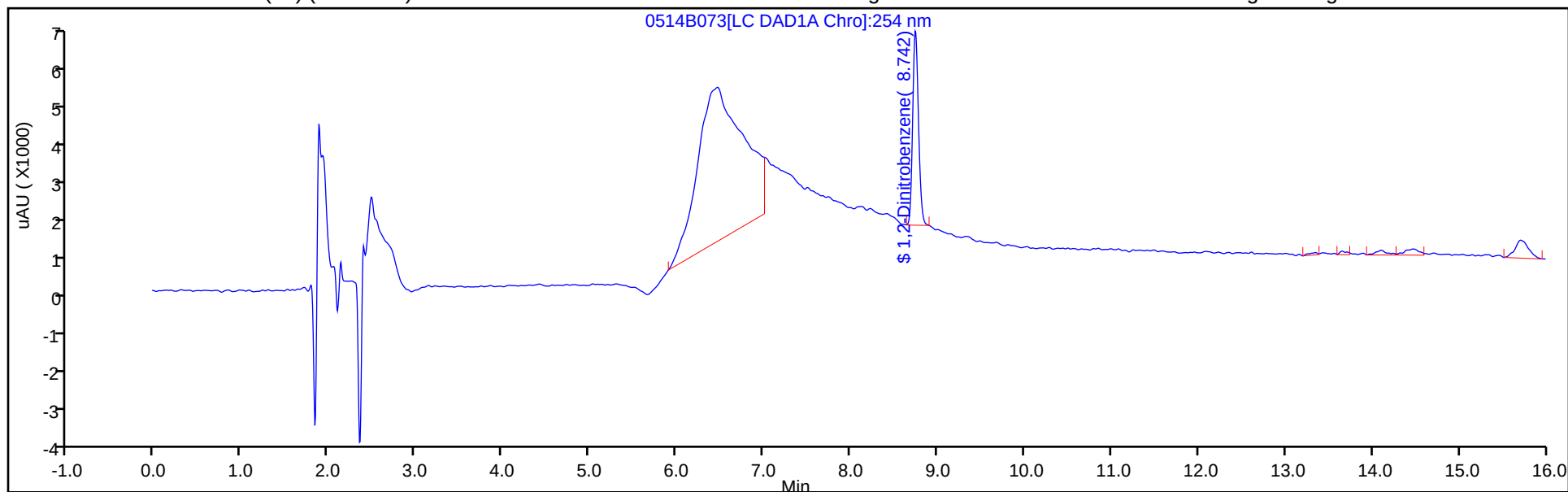
ALS Bottle#: 73

Method: 8330_X3

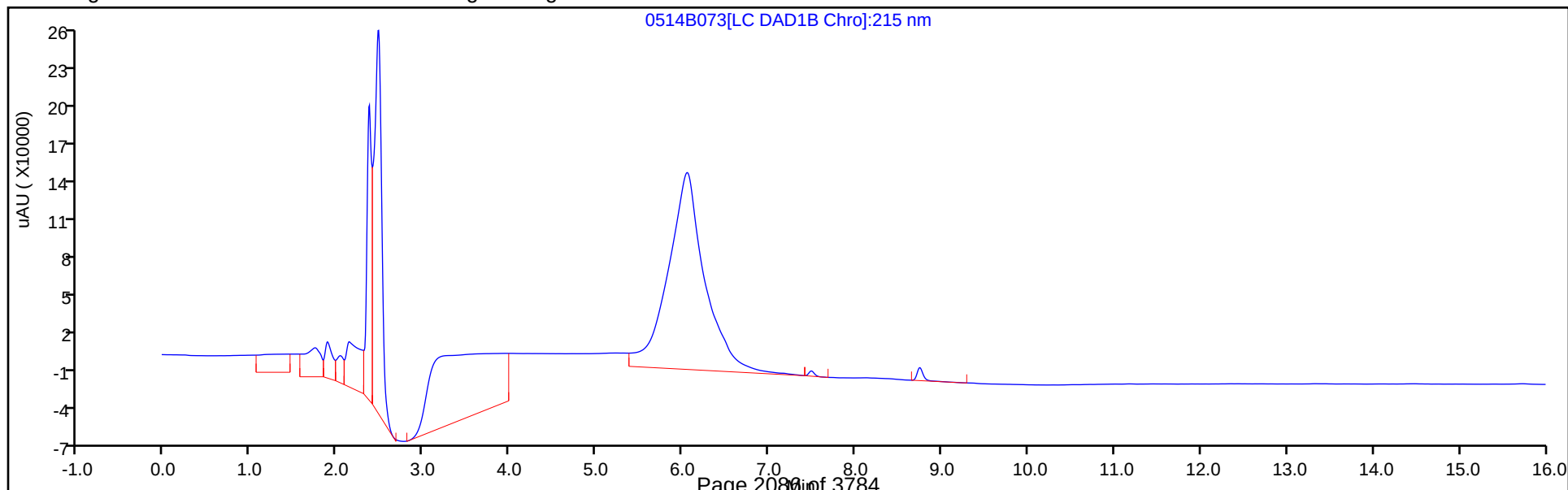
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B073.D
Lims ID: 280-123221-B-2-A
Client ID: NTAmw-119-190401-GW
Sample Type: Client
Inject. Date: 15-May-2019 17:56:53 ALS Bottle#: 73 Worklist Smp#: 73
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-B-2-A
Misc. Info.: 280-0081869-073
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 16-May-2019 08:23:27 Calib Date: 15-May-2019 01:42:24
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 16-May-2019 08:18:01

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1837	91.84

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>NTAmw-119-190402-GW</u>	Lab Sample ID: <u>280-123221-3</u>
Matrix: <u>Water</u>	Lab File ID: <u>0509B042.D</u>
Analysis Method: <u>8330B</u>	Date Collected: <u>04/30/2019 10:45</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>05/04/2019 15:00</u>
Sample wt/vol: <u>470.1 (mL)</u>	Date Analyzed: <u>05/10/2019 06:38</u>
Con. Extract Vol.: <u>5 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>100 (uL)</u>	GC Column: <u>UltraCarb5uODS</u> ID: <u>4.6 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>457634</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.43	U	1.1	0.43	0.21
99-65-0	1,3-Dinitrobenzene	0.21	U	0.43	0.21	0.094
118-96-7	2,4,6-Trinitrotoluene	0.43	U	0.43	0.43	0.17
121-14-2	2,4-Dinitrotoluene	0.21	U	0.43	0.21	0.089
606-20-2	2,6-Dinitrotoluene	0.21	U	0.21	0.21	0.069
35572-78-2	2-Amino-4,6-dinitrotoluene	0.13	U	0.21	0.13	0.054
88-72-2	2-Nitrotoluene	0.21	U Q	0.43	0.21	0.091
99-08-1	3-Nitrotoluene	0.43	U	0.43	0.43	0.21
19406-51-0	4-Amino-2,6-dinitrotoluene	0.13	U	0.21	0.13	0.061
99-99-0	4-Nitrotoluene	0.43	U	1.1	0.43	0.21
2691-41-0	HMX	0.21	U	0.43	0.21	0.093
98-95-3	Nitrobenzene	0.21	U	0.43	0.21	0.097
55-63-0	Nitroglycerin	2.1	U	3.2	2.1	0.98
78-11-5	PETN	4.3	U	4.3	4.3	2.1
121-82-4	RDX	0.43	U	0.43	0.43	0.17
479-45-8	Tetryl	0.21	U	0.26	0.21	0.084

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	90		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B042.D
 Lims ID: 280-123221-A-3-A
 Client ID: NTAmw-119-190402-GW
 Sample Type: Client
 Inject. Date: 10-May-2019 06:38:16 ALS Bottle#: 42 Worklist Smp#: 42
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-A-3-A
 Misc. Info.: 280-0081739-042
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 10-May-2019 08:50:05 Calib Date: 30-Jan-2019 16:34:11
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0316

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
3 HMX	1		6.643			ND	
7 RDX	1		7.736			ND	
\$ 9 1,2-Dinitrobenzene	1	8.717	8.710	0.007	24071	0.1800	
10 1,3,5-Trinitrobenzene	1		8.870			ND	
11 1,3-Dinitrobenzene	1		9.523			ND	
12 Nitrobenzene	1		9.910			ND	
14 Tetryl	1		10.230			ND	
15 Nitroglycerin	2		10.736			ND	
16 2,4,6-Trinitrotoluene	1		11.183			ND	
17 4-Amino-2,6-dinitrotoluene	1		11.343			ND	
18 2-Amino-4,6-dinitrotoluene	1		11.630			ND	
19 2,6-Dinitrotoluene	1		11.790			ND	
20 2,4-Dinitrotoluene	1		11.983			ND	
21 o-Nitrotoluene	1		12.823			ND	
22 p-Nitrotoluene	1		13.256			ND	
23 m-Nitrotoluene	1		13.856			ND	
24 PETN	2		14.963			ND	

Report Date: 10-May-2019 08:50:14

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B042.D

Injection Date: 10-May-2019 06:38:16

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-A-3-A

Lab Sample ID: 280-123221-3

Worklist Smp#: 42

Client ID: NTAmw-119-190402-GW

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

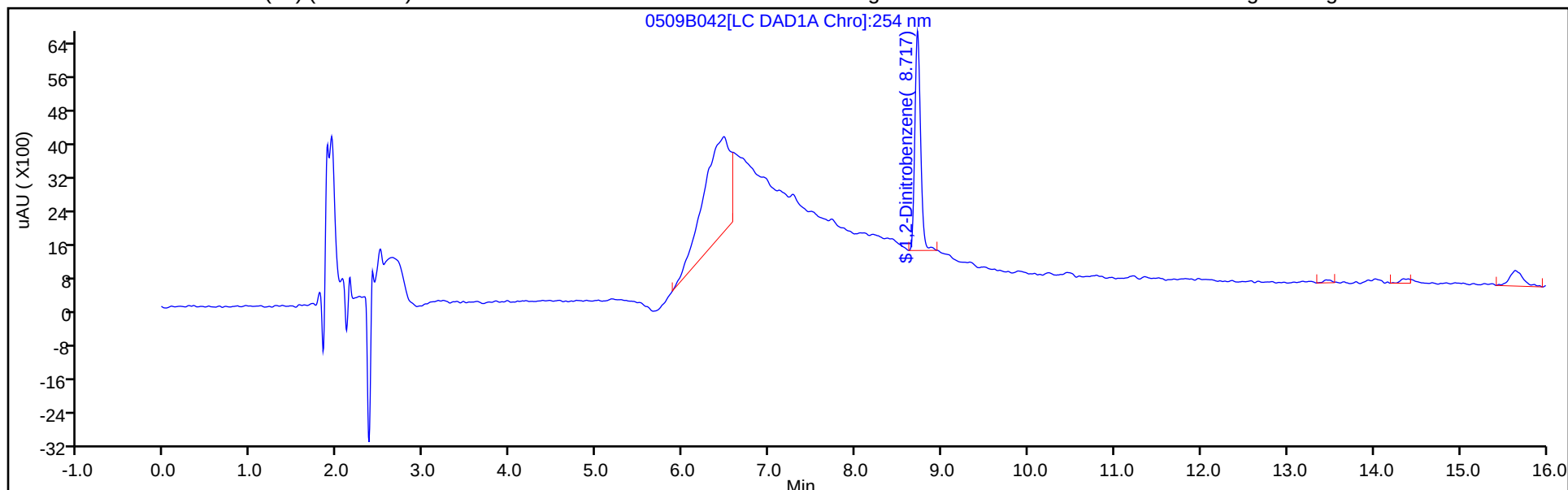
ALS Bottle#: 42

Method: 8330_X3

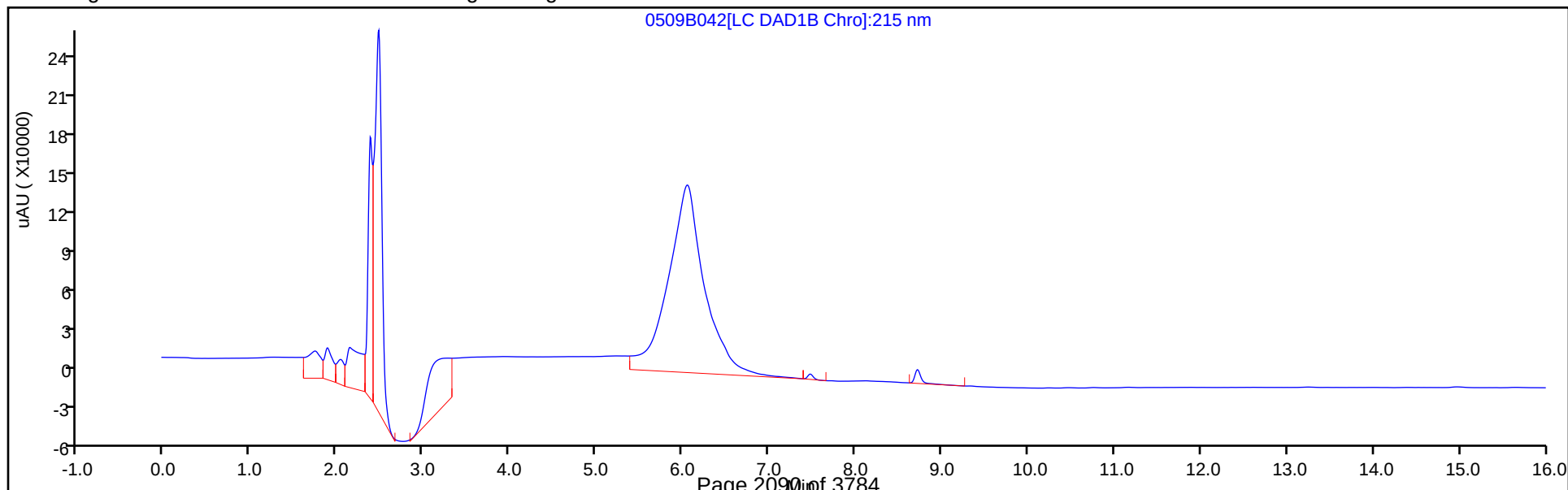
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B042.D
Lims ID: 280-123221-A-3-A
Client ID: NTAmw-119-190402-GW
Sample Type: Client
Inject. Date: 10-May-2019 06:38:16 ALS Bottle#: 42 Worklist Smp#: 42
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-A-3-A
Misc. Info.: 280-0081739-042
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 10-May-2019 08:50:05 Calib Date: 30-Jan-2019 16:34:11
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0316

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1800	90.02

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>NTAmw-119-190402-GW RE</u>	Lab Sample ID: <u>280-123221-3 RE</u>
Matrix: <u>Water</u>	Lab File ID: <u>0514B076.D</u>
Analysis Method: <u>8330B</u>	Date Collected: <u>04/30/2019 10:45</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>05/10/2019 16:21</u>
Sample wt/vol: <u>461.8 (mL)</u>	Date Analyzed: <u>05/15/2019 19:08</u>
Con. Extract Vol.: <u>5 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>100 (uL)</u>	GC Column: <u>UltraCarb5uODS</u> ID: <u>4.6 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>458152</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.43	U H	1.1	0.43	0.22
99-65-0	1,3-Dinitrobenzene	0.22	U H	0.43	0.22	0.096
118-96-7	2,4,6-Trinitrotoluene	0.43	U H	0.43	0.43	0.17
121-14-2	2,4-Dinitrotoluene	0.22	U H	0.43	0.22	0.091
606-20-2	2,6-Dinitrotoluene	0.22	U H	0.22	0.22	0.070
35572-78-2	2-Amino-4,6-dinitrotoluene	0.13	U H	0.22	0.13	0.055
88-72-2	2-Nitrotoluene	0.22	U H	0.43	0.22	0.093
99-08-1	3-Nitrotoluene	0.43	U H	0.43	0.43	0.21
19406-51-0	4-Amino-2,6-dinitrotoluene	0.13	U H	0.22	0.13	0.062
99-99-0	4-Nitrotoluene	0.43	U H	1.1	0.43	0.22
2691-41-0	HMX	0.22	U H	0.43	0.22	0.095
98-95-3	Nitrobenzene	0.22	U H	0.43	0.22	0.099
55-63-0	Nitroglycerin	2.2	U H	3.2	2.2	1.0
78-11-5	PETN	4.3	U H	4.3	4.3	2.1
121-82-4	RDX	0.43	U H	0.43	0.43	0.17
479-45-8	Tetryl	0.22	U H	0.26	0.22	0.086

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	88		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B076.D
 Lims ID: 280-123221-B-3-A
 Client ID: NTAmw-119-190402-GW
 Sample Type: Client
 Inject. Date: 15-May-2019 19:08:22 ALS Bottle#: 76 Worklist Smp#: 76
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-B-3-A
 Misc. Info.: 280-0081869-076
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 16-May-2019 08:23:27 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0325

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
3 HMX	1		6.650			ND	
7 RDX	1		7.764			ND	
\$ 9 1,2-Dinitrobenzene	1	8.747	8.744	0.003	22910	0.1761	
10 1,3,5-Trinitrobenzene	1		8.904			ND	
11 1,3-Dinitrobenzene	1		9.564			ND	
12 Nitrobenzene	1		9.950			ND	
14 Tetryl	1		10.284			ND	
15 Nitroglycerin	2		10.784			ND	
16 2,4,6-Trinitrotoluene	1		11.237			ND	
17 4-Amino-2,6-dinitrotoluene	1		11.430			ND	
18 2-Amino-4,6-dinitrotoluene	1		11.717			ND	
19 2,6-Dinitrotoluene	1		11.850			ND	
20 2,4-Dinitrotoluene	1		12.050			ND	
21 o-Nitrotoluene	1		12.890			ND	
22 p-Nitrotoluene	1		13.330			ND	
23 m-Nitrotoluene	1		13.930			ND	
24 PETN	2		15.024			ND	

Report Date: 16-May-2019 08:23:36

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B076.D

Injection Date: 15-May-2019 19:08:22

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-B-3-A

Lab Sample ID: 280-123221-3

Worklist Smp#: 76

Client ID: NTAmw-119-190402-GW

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

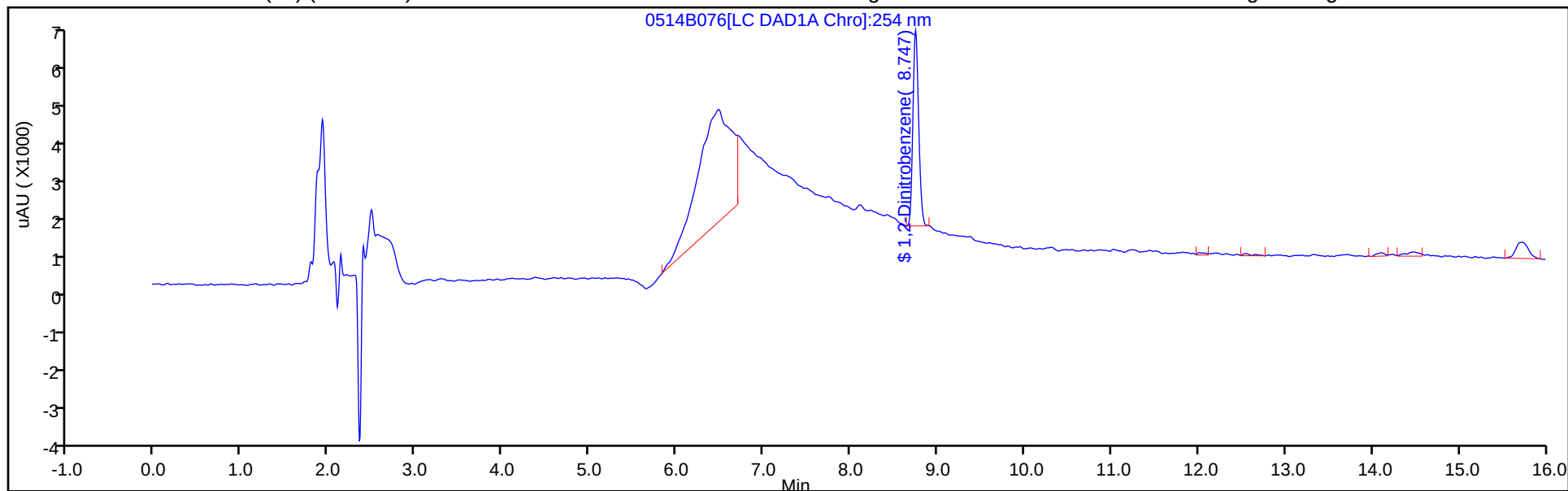
ALS Bottle#: 76

Method: 8330_X3

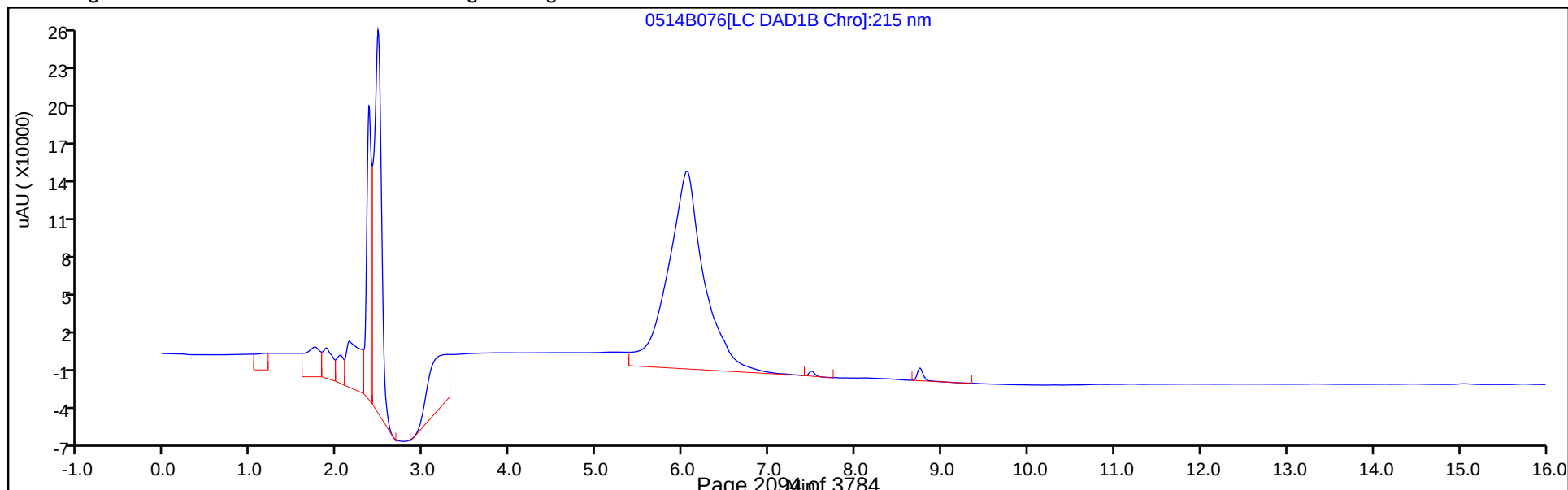
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B076.D
Lims ID: 280-123221-B-3-A
Client ID: NTAmw-119-190402-GW
Sample Type: Client
Inject. Date: 15-May-2019 19:08:22 ALS Bottle#: 76 Worklist Smp#: 76
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-B-3-A
Misc. Info.: 280-0081869-076
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 16-May-2019 08:23:27 Calib Date: 15-May-2019 01:42:24
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0325

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1761	88.04

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>DET-003-190401-GW</u>	Lab Sample ID: <u>280-123221-4</u>
Matrix: <u>Water</u>	Lab File ID: <u>0509B043.D</u>
Analysis Method: <u>8330B</u>	Date Collected: <u>04/29/2019 10:53</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>05/04/2019 15:00</u>
Sample wt/vol: <u>446.1 (mL)</u>	Date Analyzed: <u>05/10/2019 07:02</u>
Con. Extract Vol.: <u>5 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>100 (uL)</u>	GC Column: <u>UltraCarb5uODS</u> ID: <u>4.6 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>457634</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.45	U	1.1	0.45	0.22
99-65-0	1,3-Dinitrobenzene	0.22	U	0.45	0.22	0.099
118-96-7	2,4,6-Trinitrotoluene	0.45	U	0.45	0.45	0.18
121-14-2	2,4-Dinitrotoluene	0.22	U	0.45	0.22	0.094
606-20-2	2,6-Dinitrotoluene	0.22	U	0.22	0.22	0.072
35572-78-2	2-Amino-4,6-dinitrotoluene	0.13	U	0.22	0.13	0.057
88-72-2	2-Nitrotoluene	0.22	U Q J1	0.45	0.22	0.096
99-08-1	3-Nitrotoluene	0.45	U J1	0.45	0.45	0.22
19406-51-0	4-Amino-2,6-dinitrotoluene	0.13	U	0.22	0.13	0.065
99-99-0	4-Nitrotoluene	0.45	U	1.1	0.45	0.22
2691-41-0	HMX	0.22	U	0.45	0.22	0.098
98-95-3	Nitrobenzene	0.22	U	0.45	0.22	0.10
55-63-0	Nitroglycerin	2.2	U	3.4	2.2	1.0
78-11-5	PETN	4.5	U	4.5	4.5	2.2
121-82-4	RDX	0.45	U	0.45	0.45	0.18
479-45-8	Tetryl	0.22	U	0.27	0.22	0.089

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	92		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B043.D
 Lims ID: 280-123221-F-4-A
 Client ID: DET-003-190401-GW
 Sample Type: Client
 Inject. Date: 10-May-2019 07:02:01 ALS Bottle#: 43 Worklist Smp#: 43
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-F-4-A
 Misc. Info.: 280-0081739-043
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 10-May-2019 08:50:05 Calib Date: 30-Jan-2019 16:34:11
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 10-May-2019 08:42:35

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
1 2,6-diamino-4-nitrotoluene	1		6.501			ND	U
2 TNX	1		6.541			ND	
3 HMX	1		6.643			ND	
4 2,4-diamino-6-nitrotoluene	1		6.688			ND	
5 DNX	1		6.875			ND	
6 MNX	1		7.328			ND	
7 RDX	1		7.736			ND	
8 2,4,6-Trinitrophenol	1		8.090			ND	
\$ 9 1,2-Dinitrobenzene	1	8.718	8.710	0.008	24564	0.1837	
10 1,3,5-Trinitrobenzene	1		8.870			ND	
11 1,3-Dinitrobenzene	1		9.523			ND	
12 Nitrobenzene	1		9.910			ND	
13 3,5-Dinitroaniline	1		10.134			ND	
14 Tetryl	1		10.230			ND	
15 Nitroglycerin	2		10.736			ND	
16 2,4,6-Trinitrotoluene	1		11.183			ND	
17 4-Amino-2,6-dinitrotoluene	1		11.343			ND	
18 2-Amino-4,6-dinitrotoluene	1		11.630			ND	
19 2,6-Dinitrotoluene	1		11.790			ND	
20 2,4-Dinitrotoluene	1		11.983			ND	
21 o-Nitrotoluene	1		12.823			ND	
22 p-Nitrotoluene	1		13.256			ND	
23 m-Nitrotoluene	1		13.856			ND	
24 PETN	2		14.963			ND	
25 Ammonium Picrate	1		0.000			ND	

QC Flag Legend

Review Flags

U - Marked Undetected

Report Date: 10-May-2019 08:50:15

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B043.D

Injection Date: 10-May-2019 07:02:01

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-F-4-A

Lab Sample ID: 280-123221-4

Worklist Smp#: 43

Client ID: DET-003-190401-GW

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

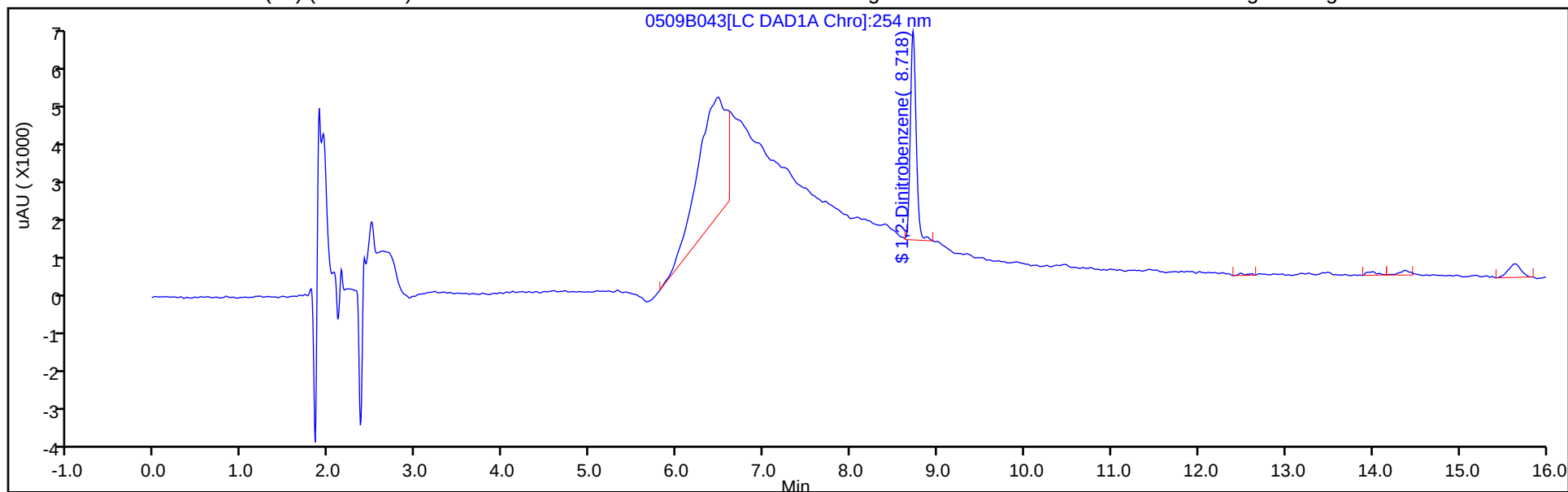
ALS Bottle#: 43

Method: 8330_X3

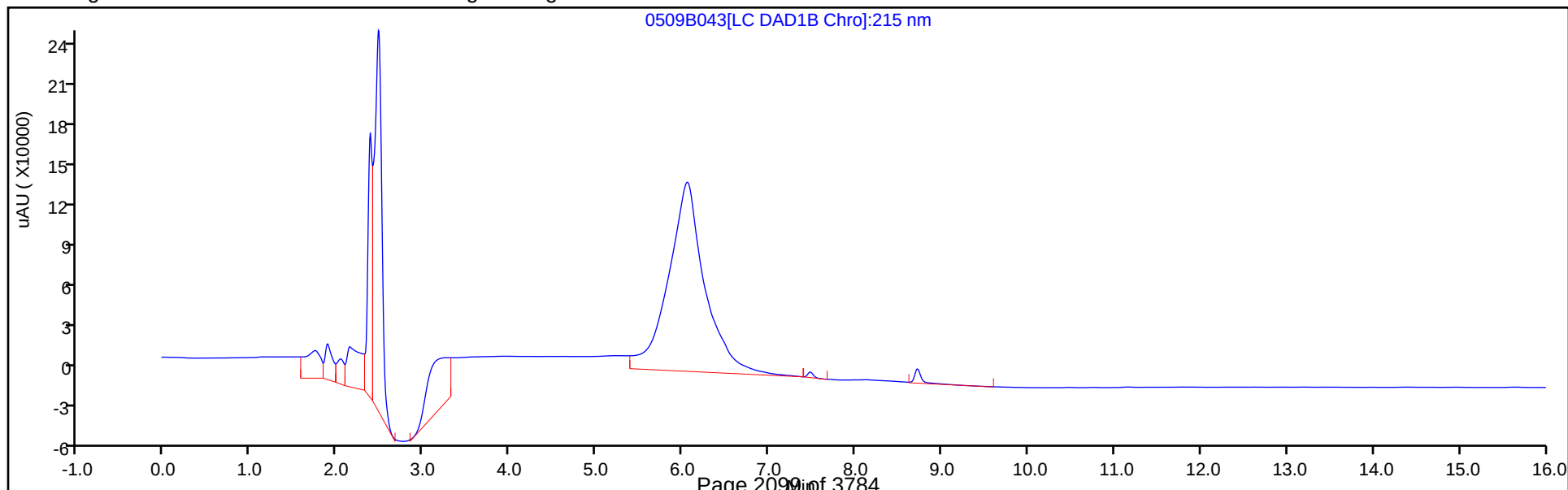
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B043.D
Lims ID: 280-123221-F-4-A
Client ID: DET-003-190401-GW
Sample Type: Client
Inject. Date: 10-May-2019 07:02:01 ALS Bottle#: 43 Worklist Smp#: 43
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-F-4-A
Misc. Info.: 280-0081739-043
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 10-May-2019 08:50:05 Calib Date: 30-Jan-2019 16:34:11
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 10-May-2019 08:42:35

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1837	91.87

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>DET-003-190401-GW RE</u>	Lab Sample ID: <u>280-123221-4 RE</u>
Matrix: <u>Water</u>	Lab File ID: <u>0514B077.D</u>
Analysis Method: <u>8330B</u>	Date Collected: <u>04/29/2019 10:53</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>05/10/2019 16:21</u>
Sample wt/vol: <u>453.4 (mL)</u>	Date Analyzed: <u>05/15/2019 19:32</u>
Con. Extract Vol.: <u>5 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>100 (uL)</u>	GC Column: <u>UltraCarb5uODS</u> ID: <u>4.6 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>458152</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.44	U H	1.1	0.44	0.22
99-65-0	1,3-Dinitrobenzene	0.22	U H	0.44	0.22	0.098
118-96-7	2,4,6-Trinitrotoluene	0.44	U H	0.44	0.44	0.18
121-14-2	2,4-Dinitrotoluene	0.22	U H	0.44	0.22	0.092
606-20-2	2,6-Dinitrotoluene	0.22	U H	0.22	0.22	0.071
35572-78-2	2-Amino-4,6-dinitrotoluene	0.13	U H	0.22	0.13	0.056
88-72-2	2-Nitrotoluene	0.22	U H	0.44	0.22	0.094
99-08-1	3-Nitrotoluene	0.44	U H	0.44	0.44	0.22
19406-51-0	4-Amino-2,6-dinitrotoluene	0.13	U H	0.22	0.13	0.064
99-99-0	4-Nitrotoluene	0.44	U H	1.1	0.44	0.22
2691-41-0	HMX	0.22	U H	0.44	0.22	0.097
98-95-3	Nitrobenzene	0.22	U H	0.44	0.22	0.10
55-63-0	Nitroglycerin	2.2	U H	3.3	2.2	1.0
78-11-5	PETN	4.4	U H	4.4	4.4	2.1
121-82-4	RDX	0.44	U H	0.44	0.44	0.17
479-45-8	Tetryl	0.22	U H	0.26	0.22	0.087

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	93		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B077.D
 Lims ID: 280-123221-E-4-B
 Client ID: DET-003-190401-GW
 Sample Type: Client
 Inject. Date: 15-May-2019 19:32:13 ALS Bottle#: 77 Worklist Smp#: 77
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-E-4-B
 Misc. Info.: 280-0081869-077
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 16-May-2019 08:23:27 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 16-May-2019 08:19:15

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
1 2,6-diamino-4-nitrotoluene	1		6.509			ND	U
2 TNX	1		6.556			ND	
3 HMX	1		6.650			ND	
4 2,4-diamino-6-nitrotoluene	1		6.695			ND	
5 DNX	1		6.889			ND	
6 MNX	1		7.356			ND	
7 RDX	1		7.764			ND	
8 2,4,6-Trinitrophenol	1		8.130			ND	
\$ 9 1,2-Dinitrobenzene	1	8.746	8.744	0.002	24283	0.1866	
10 1,3,5-Trinitrobenzene	1		8.904			ND	
11 1,3-Dinitrobenzene	1		9.564			ND	
12 Nitrobenzene	1		9.950			ND	
13 3,5-Dinitroaniline	1		10.209			ND	
14 Tetryl	1		10.284			ND	
15 Nitroglycerin	2		10.784			ND	
16 2,4,6-Trinitrotoluene	1		11.237			ND	
17 4-Amino-2,6-dinitrotoluene	1		11.430			ND	
18 2-Amino-4,6-dinitrotoluene	1		11.717			ND	
19 2,6-Dinitrotoluene	1		11.850			ND	
20 2,4-Dinitrotoluene	1		12.050			ND	
21 o-Nitrotoluene	1		12.890			ND	
22 p-Nitrotoluene	1		13.330			ND	
23 m-Nitrotoluene	1		13.930			ND	
24 PETN	2		15.024			ND	
25 Ammonium Picrate	1		0.000			ND	

QC Flag Legend

Review Flags

U - Marked Undetected

Report Date: 16-May-2019 08:23:37

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B077.D

Injection Date: 15-May-2019 19:32:13

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-E-4-B

Lab Sample ID: 280-123221-4

Worklist Smp#: 77

Client ID: DET-003-190401-GW

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

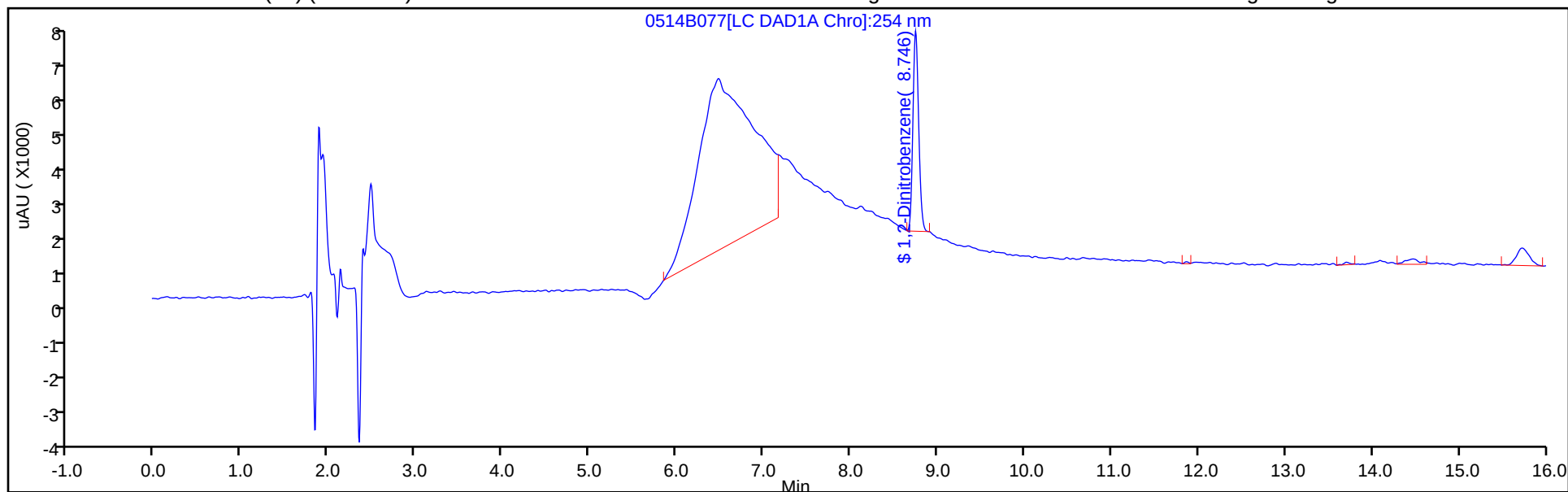
ALS Bottle#: 77

Method: 8330_X3

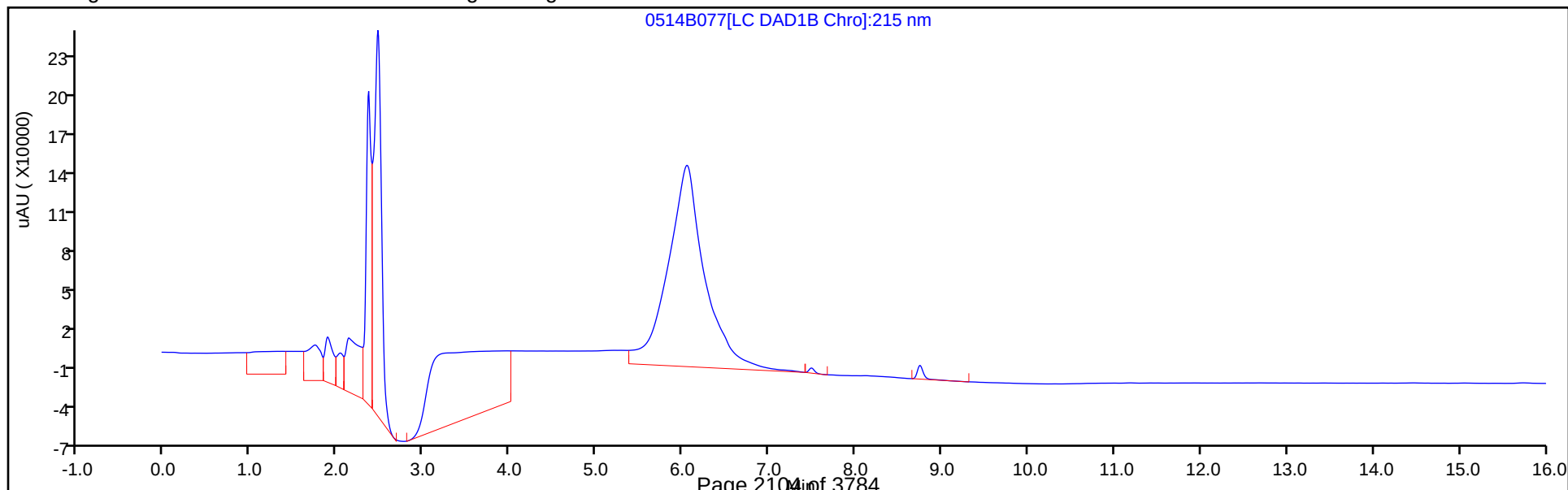
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B077.D
Lims ID: 280-123221-E-4-B
Client ID: DET-003-190401-GW
Sample Type: Client
Inject. Date: 15-May-2019 19:32:13 ALS Bottle#: 77 Worklist Smp#: 77
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-E-4-B
Misc. Info.: 280-0081869-077
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 16-May-2019 08:23:27 Calib Date: 15-May-2019 01:42:24
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 16-May-2019 08:19:15

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1866	93.32

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>DET-003-190402-GW</u>	Lab Sample ID: <u>280-123221-5</u>
Matrix: <u>Water</u>	Lab File ID: <u>0509B049.D</u>
Analysis Method: <u>8330B</u>	Date Collected: <u>04/29/2019 10:53</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>05/04/2019 15:00</u>
Sample wt/vol: <u>456.3(mL)</u>	Date Analyzed: <u>05/10/2019 09:24</u>
Con. Extract Vol.: <u>5(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>100(uL)</u>	GC Column: <u>UltraCarb5uODS</u> ID: <u>4.6(mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>457634</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.44	U	1.1	0.44	0.22
99-65-0	1,3-Dinitrobenzene	0.22	U	0.44	0.22	0.097
118-96-7	2,4,6-Trinitrotoluene	0.44	U	0.44	0.44	0.18
121-14-2	2,4-Dinitrotoluene	0.22	U	0.44	0.22	0.092
606-20-2	2,6-Dinitrotoluene	0.22	U	0.22	0.22	0.071
35572-78-2	2-Amino-4,6-dinitrotoluene	0.13	U	0.22	0.13	0.056
88-72-2	2-Nitrotoluene	0.22	U Q	0.44	0.22	0.094
99-08-1	3-Nitrotoluene	0.44	U	0.44	0.44	0.21
19406-51-0	4-Amino-2,6-dinitrotoluene	0.13	U	0.22	0.13	0.063
99-99-0	4-Nitrotoluene	0.44	U	1.1	0.44	0.22
2691-41-0	HMX	0.22	U	0.44	0.22	0.096
98-95-3	Nitrobenzene	0.22	U	0.44	0.22	0.10
55-63-0	Nitroglycerin	2.2	U	3.3	2.2	1.0
78-11-5	PETN	4.4	U	4.4	4.4	2.1
121-82-4	RDX	0.44	U	0.44	0.44	0.17
479-45-8	Tetryl	0.22	U	0.26	0.22	0.087

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	88		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B049.D
 Lims ID: 280-123221-C-5-A
 Client ID: DET-003-190402-GW
 Sample Type: Client
 Inject. Date: 10-May-2019 09:24:46 ALS Bottle#: 49 Worklist Smp#: 49
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-C-5-A
 Misc. Info.: 280-0081739-049
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 10-May-2019 17:39:31 Calib Date: 30-Jan-2019 16:34:11
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0316

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
3 HMX	1		6.643			ND	
7 RDX	1		7.736			ND	
\$ 9 1,2-Dinitrobenzene	1	8.723	8.710	0.013	23523	0.1759	
10 1,3,5-Trinitrobenzene	1		8.870			ND	
11 1,3-Dinitrobenzene	1		9.523			ND	
12 Nitrobenzene	1		9.910			ND	
14 Tetryl	1		10.230			ND	
15 Nitroglycerin	2		10.736			ND	
16 2,4,6-Trinitrotoluene	1		11.183			ND	
17 4-Amino-2,6-dinitrotoluene	1		11.343			ND	
18 2-Amino-4,6-dinitrotoluene	1		11.630			ND	
19 2,6-Dinitrotoluene	1		11.790			ND	
20 2,4-Dinitrotoluene	1		11.983			ND	
21 o-Nitrotoluene	1		12.823			ND	
22 p-Nitrotoluene	1		13.256			ND	
23 m-Nitrotoluene	1		13.856			ND	
24 PETN	2		14.963			ND	

Report Date: 10-May-2019 17:39:48

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B049.D

Injection Date: 10-May-2019 09:24:46

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-C-5-A

Lab Sample ID: 280-123221-5

Worklist Smp#: 49

Client ID: DET-003-190402-GW

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

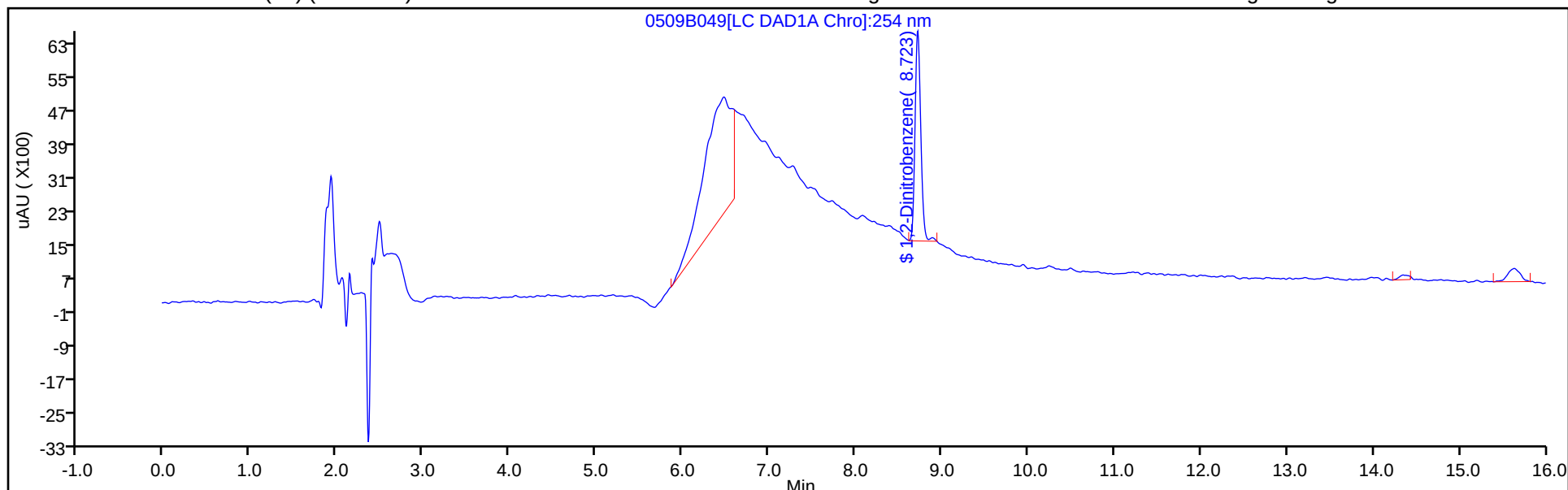
ALS Bottle#: 49

Method: 8330_X3

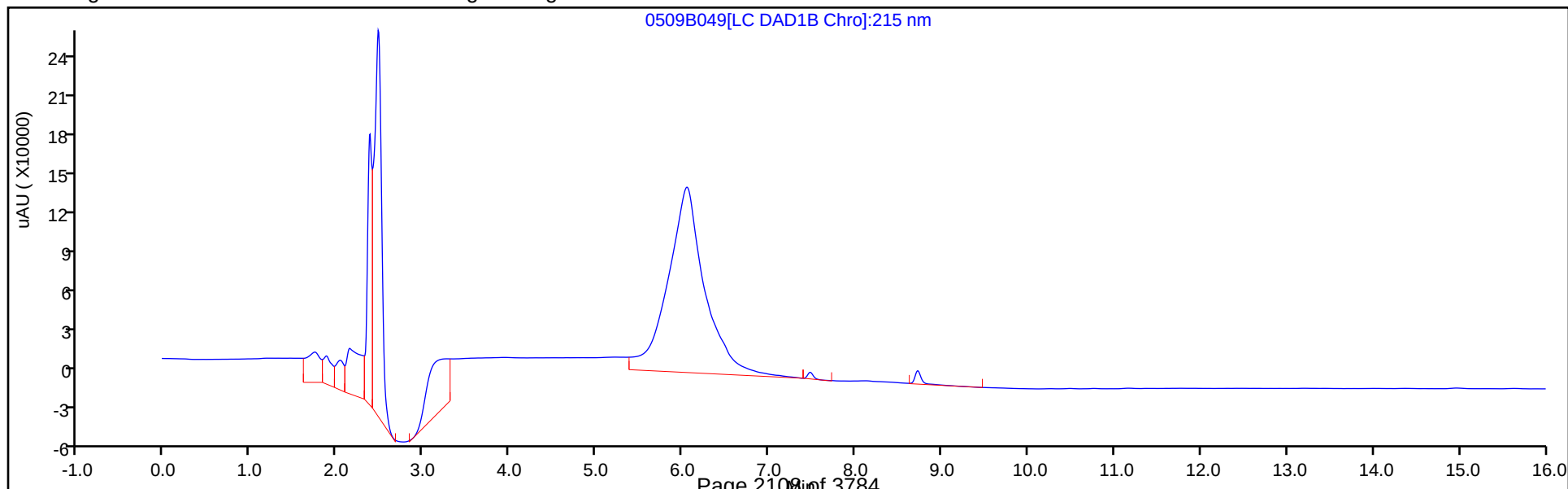
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B049.D
Lims ID: 280-123221-C-5-A
Client ID: DET-003-190402-GW
Sample Type: Client
Inject. Date: 10-May-2019 09:24:46 ALS Bottle#: 49 Worklist Smp#: 49
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-C-5-A
Misc. Info.: 280-0081739-049
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 10-May-2019 17:39:31 Calib Date: 30-Jan-2019 16:34:11
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0316

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1759	87.97

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>DET-003-190402-GW RE</u>	Lab Sample ID: <u>280-123221-5 RE</u>
Matrix: <u>Water</u>	Lab File ID: <u>0514B083.D</u>
Analysis Method: <u>8330B</u>	Date Collected: <u>04/29/2019 10:53</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>05/10/2019 16:21</u>
Sample wt/vol: <u>457.2 (mL)</u>	Date Analyzed: <u>05/15/2019 21:54</u>
Con. Extract Vol.: <u>5 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>100 (uL)</u>	GC Column: <u>UltraCarb5uODS</u> ID: <u>4.6 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>458152</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.44	U H	1.1	0.44	0.22
99-65-0	1,3-Dinitrobenzene	0.22	U H	0.44	0.22	0.097
118-96-7	2,4,6-Trinitrotoluene	0.44	U H	0.44	0.44	0.17
121-14-2	2,4-Dinitrotoluene	0.22	U H	0.44	0.22	0.092
606-20-2	2,6-Dinitrotoluene	0.22	U H	0.22	0.22	0.071
35572-78-2	2-Amino-4,6-dinitrotoluene	0.13	U H	0.22	0.13	0.055
88-72-2	2-Nitrotoluene	0.22	U H	0.44	0.22	0.094
99-08-1	3-Nitrotoluene	0.44	U H	0.44	0.44	0.21
19406-51-0	4-Amino-2,6-dinitrotoluene	0.13	U H	0.22	0.13	0.063
99-99-0	4-Nitrotoluene	0.44	U H	1.1	0.44	0.22
2691-41-0	HMX	0.22	U H	0.44	0.22	0.096
98-95-3	Nitrobenzene	0.22	U H	0.44	0.22	0.10
55-63-0	Nitroglycerin	2.2	U H	3.3	2.2	1.0
78-11-5	PETN	4.4	U H	4.4	4.4	2.1
121-82-4	RDX	0.44	U H	0.44	0.44	0.17
479-45-8	Tetryl	0.22	U H	0.26	0.22	0.087

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	96		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B083.D
 Lims ID: 280-123221-D-5-A
 Client ID: DET-003-190402-GW
 Sample Type: Client
 Inject. Date: 15-May-2019 21:54:47 ALS Bottle#: 83 Worklist Smp#: 83
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-D-5-A
 Misc. Info.: 280-0081869-083
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 16-May-2019 08:23:40 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0325

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
3 HMX	1		6.650			ND	
7 RDX	1		7.764			ND	
\$ 9 1,2-Dinitrobenzene	1	8.748	8.744	0.004	24894	0.1913	
10 1,3,5-Trinitrobenzene	1		8.904			ND	
11 1,3-Dinitrobenzene	1		9.564			ND	
12 Nitrobenzene	1		9.950			ND	
14 Tetryl	1		10.284			ND	
15 Nitroglycerin	2		10.784			ND	
16 2,4,6-Trinitrotoluene	1		11.237			ND	
17 4-Amino-2,6-dinitrotoluene	1		11.430			ND	
18 2-Amino-4,6-dinitrotoluene	1		11.717			ND	
19 2,6-Dinitrotoluene	1		11.850			ND	
20 2,4-Dinitrotoluene	1		12.050			ND	
21 o-Nitrotoluene	1		12.890			ND	
22 p-Nitrotoluene	1		13.330			ND	
23 m-Nitrotoluene	1		13.930			ND	
24 PETN	2		15.024			ND	

Report Date: 16-May-2019 08:23:43

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B083.D

Injection Date: 15-May-2019 21:54:47

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-D-5-A

Lab Sample ID: 280-123221-5

Worklist Smp#: 83

Client ID: DET-003-190402-GW

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

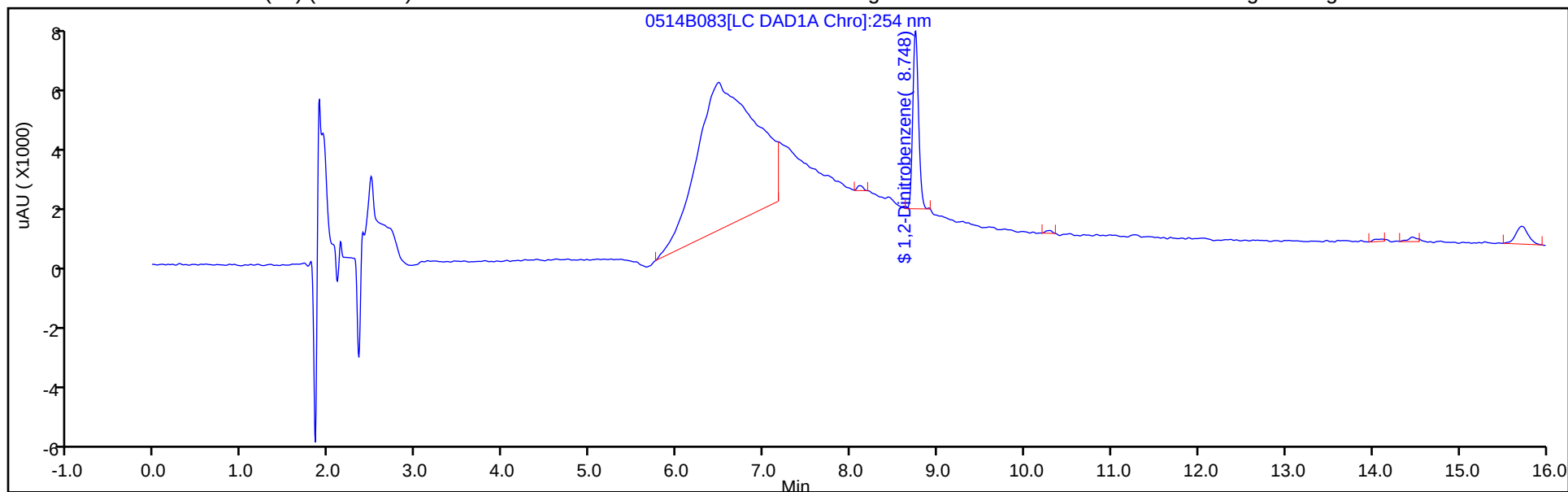
ALS Bottle#: 83

Method: 8330_X3

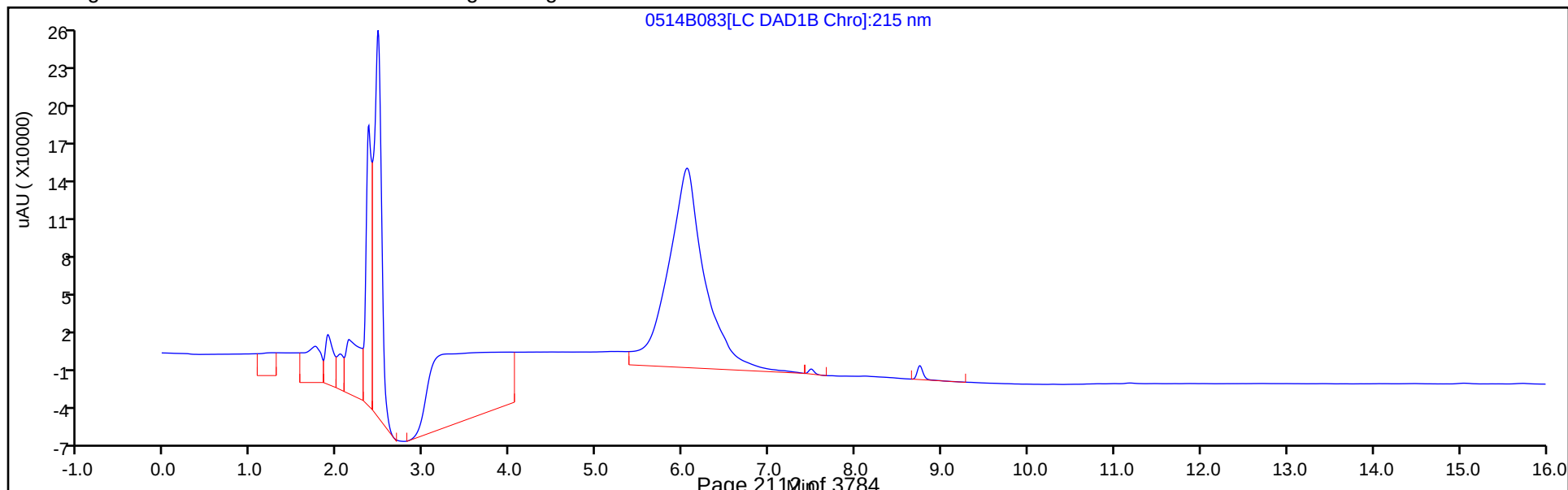
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B083.D
Lims ID: 280-123221-D-5-A
Client ID: DET-003-190402-GW
Sample Type: Client
Inject. Date: 15-May-2019 21:54:47 ALS Bottle#: 83 Worklist Smp#: 83
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-D-5-A
Misc. Info.: 280-0081869-083
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 16-May-2019 08:23:40 Calib Date: 15-May-2019 01:42:24
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0325

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1913	95.66

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>DET-004-190401-GW</u>	Lab Sample ID: <u>280-123221-7</u>
Matrix: <u>Water</u>	Lab File ID: <u>0509B050.D</u>
Analysis Method: <u>8330B</u>	Date Collected: <u>04/29/2019 10:04</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>05/04/2019 15:00</u>
Sample wt/vol: <u>484.4 (mL)</u>	Date Analyzed: <u>05/10/2019 09:48</u>
Con. Extract Vol.: <u>5 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>100 (uL)</u>	GC Column: <u>UltraCarb5uODS</u> ID: <u>4.6 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>457634</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.41	U	1.0	0.41	0.21
99-65-0	1,3-Dinitrobenzene	0.21	U	0.41	0.21	0.092
118-96-7	2,4,6-Trinitrotoluene	0.41	U	0.41	0.41	0.17
121-14-2	2,4-Dinitrotoluene	0.21	U	0.41	0.21	0.086
606-20-2	2,6-Dinitrotoluene	0.21	U	0.21	0.21	0.067
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	U	0.21	0.12	0.052
88-72-2	2-Nitrotoluene	0.21	U Q	0.41	0.21	0.088
99-08-1	3-Nitrotoluene	0.41	U	0.41	0.41	0.20
19406-51-0	4-Amino-2,6-dinitrotoluene	0.12	U	0.21	0.12	0.060
99-99-0	4-Nitrotoluene	0.41	U	1.0	0.41	0.21
2691-41-0	HMX	1.6	M	0.41	0.21	0.090
98-95-3	Nitrobenzene	0.21	U	0.41	0.21	0.094
55-63-0	Nitroglycerin	2.1	U	3.1	2.1	0.95
78-11-5	PETN	4.1	U	4.1	4.1	2.0
121-82-4	RDX	1.4	M	0.41	0.41	0.16
479-45-8	Tetryl	0.21	U	0.25	0.21	0.082

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	90		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B050.D
 Lims ID: 280-123221-E-7-A
 Client ID: DET-004-190401-GW
 Sample Type: Client
 Inject. Date: 10-May-2019 09:48:34 ALS Bottle#: 50 Worklist Smp#: 50
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-E-7-A
 Misc. Info.: 280-0081739-050
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 10-May-2019 17:39:31 Calib Date: 30-Jan-2019 16:34:11
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 10-May-2019 17:36:01

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
3 HMX	1	6.641	6.643	-0.002	13182	0.1518	M
7 RDX	1	7.734	7.736	-0.002	14740	0.1389	M
\$ 9 1,2-Dinitrobenzene	1	8.721	8.710	0.011	23963	0.1792	
10 1,3,5-Trinitrobenzene	1		8.870			ND	
11 1,3-Dinitrobenzene	1		9.523			ND	
12 Nitrobenzene	1		9.910			ND	
14 Tetryl	1		10.230			ND	
15 Nitroglycerin	2		10.736			ND	
16 2,4,6-Trinitrotoluene	1		11.183			ND	
17 4-Amino-2,6-dinitrotoluene	1		11.343			ND	
18 2-Amino-4,6-dinitrotoluene	1		11.630			ND	
19 2,6-Dinitrotoluene	1		11.790			ND	
20 2,4-Dinitrotoluene	1		11.983			ND	
21 o-Nitrotoluene	1		12.823			ND	
22 p-Nitrotoluene	1		13.256			ND	
23 m-Nitrotoluene	1		13.856			ND	
24 PETN	2		14.963			ND	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 10-May-2019 17:39:48

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B050.D

Injection Date: 10-May-2019 09:48:34

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-E-7-A

Lab Sample ID: 280-123221-7

Worklist Smp#: 50

Client ID: DET-004-190401-GW

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

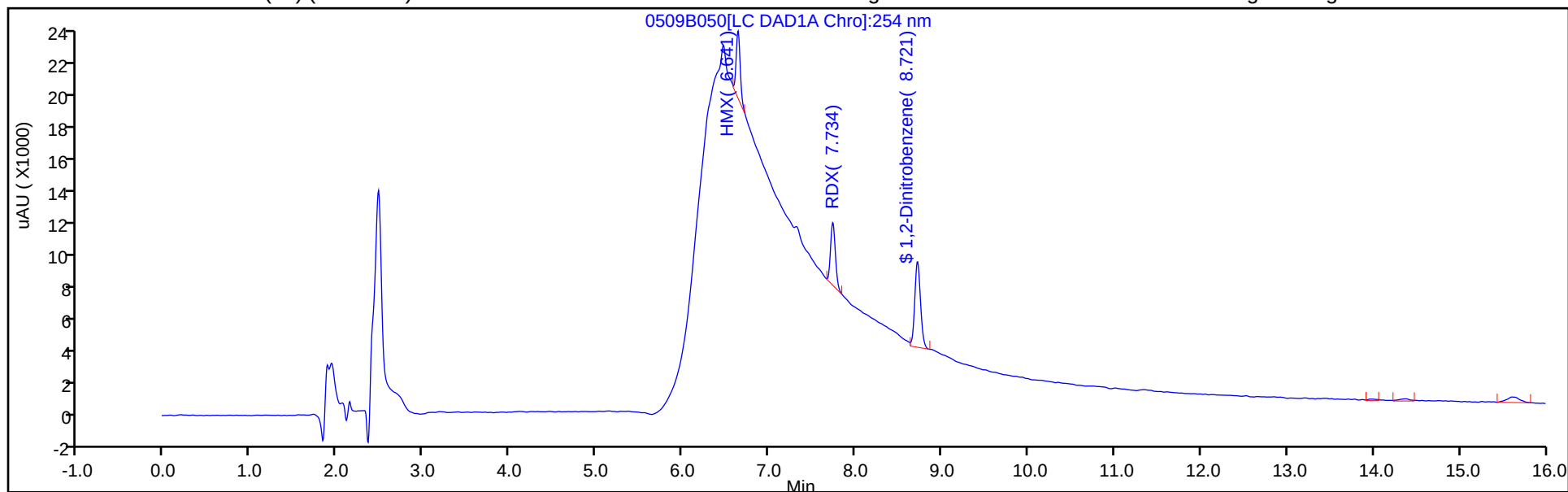
ALS Bottle#: 50

Method: 8330_X3

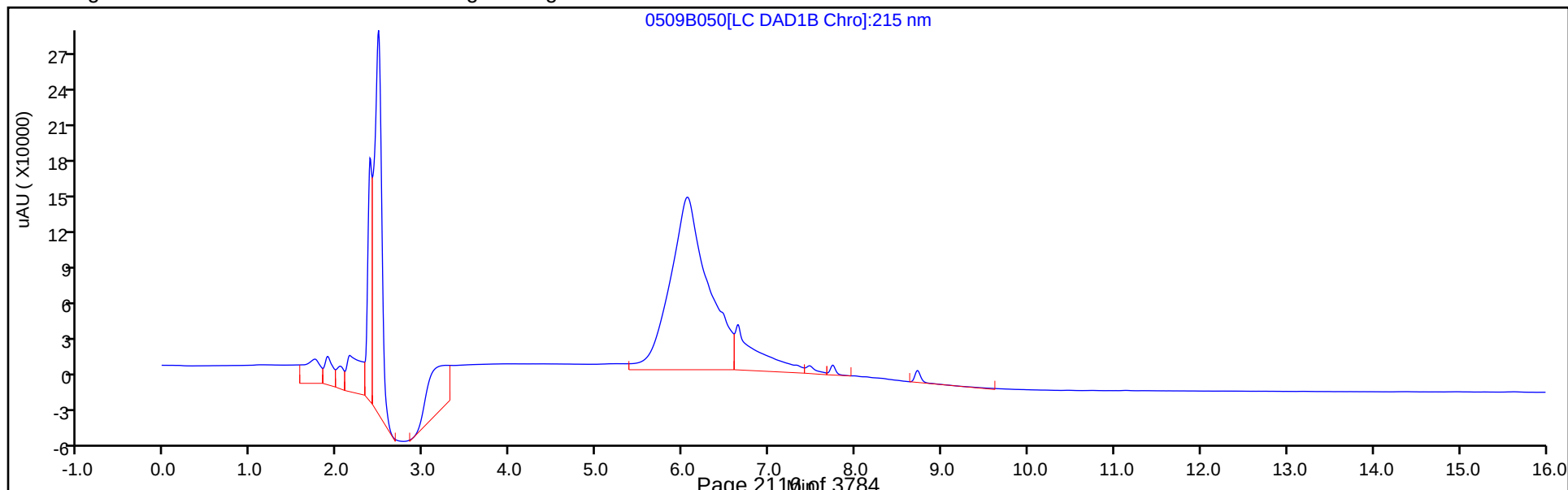
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B050.D
Lims ID: 280-123221-E-7-A
Client ID: DET-004-190401-GW
Sample Type: Client
Inject. Date: 10-May-2019 09:48:34 ALS Bottle#: 50 Worklist Smp#: 50
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-E-7-A
Misc. Info.: 280-0081739-050
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 10-May-2019 17:39:31 Calib Date: 30-Jan-2019 16:34:11
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 10-May-2019 17:36:01

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1792	89.62

Eurofins TestAmerica, Denver

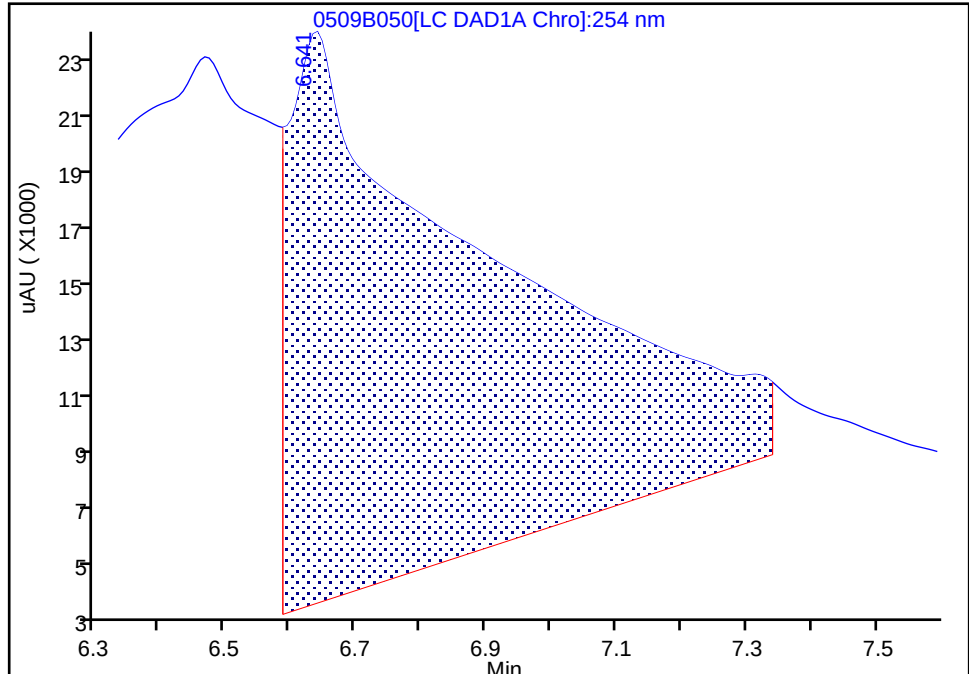
Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B050.D
Injection Date: 10-May-2019 09:48:34 Instrument ID: CHHPLC_X3
Lims ID: 280-123221-E-7-A Lab Sample ID: 280-123221-7
Client ID: DET-004-190401-GW
Operator ID: hkf ALS Bottle#: 50 Worklist Smp#: 50
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector LC DAD1B, 254 nm

3 HMX, CAS: 2691-41-0

Signal: 1

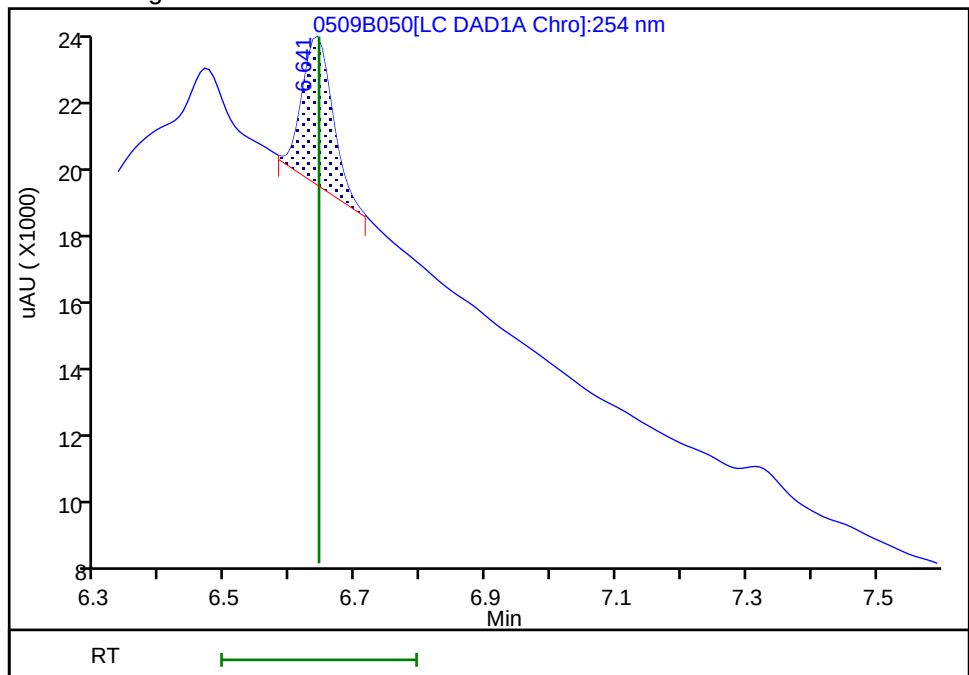
RT: 6.64
Area: 420713
Amount: 4.843217
Amount Units: ug/mL

Processing Integration Results



RT: 6.64
Area: 13182
Amount: 0.151750
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 10-May-2019 17:35:56
Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing
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Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B050.D

Injection Date: 10-May-2019 09:48:34

Instrument ID: CHHPLC_X3

Lims ID: 280-123221-E-7-A

Lab Sample ID: 280-123221-7

Client ID: DET-004-190401-GW

Operator ID: hkf

ALS Bottle#: 50 Worklist Smp#: 50

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

Method: 8330_X3

Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

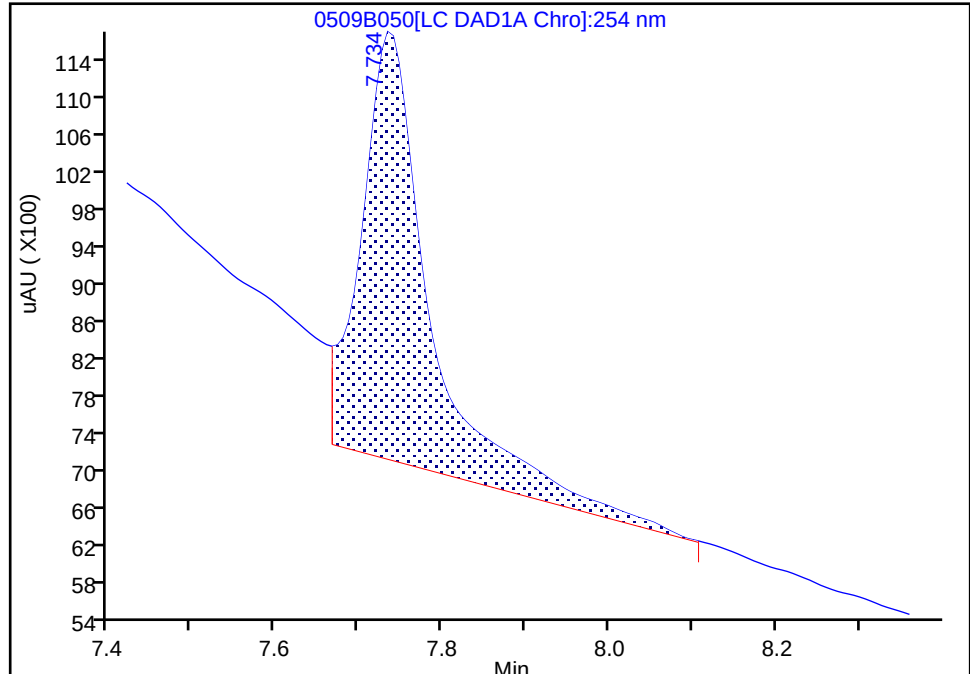
Detector: LC DAD1B, 254 nm

7 RDX, CAS: 121-82-4

Signal: 1

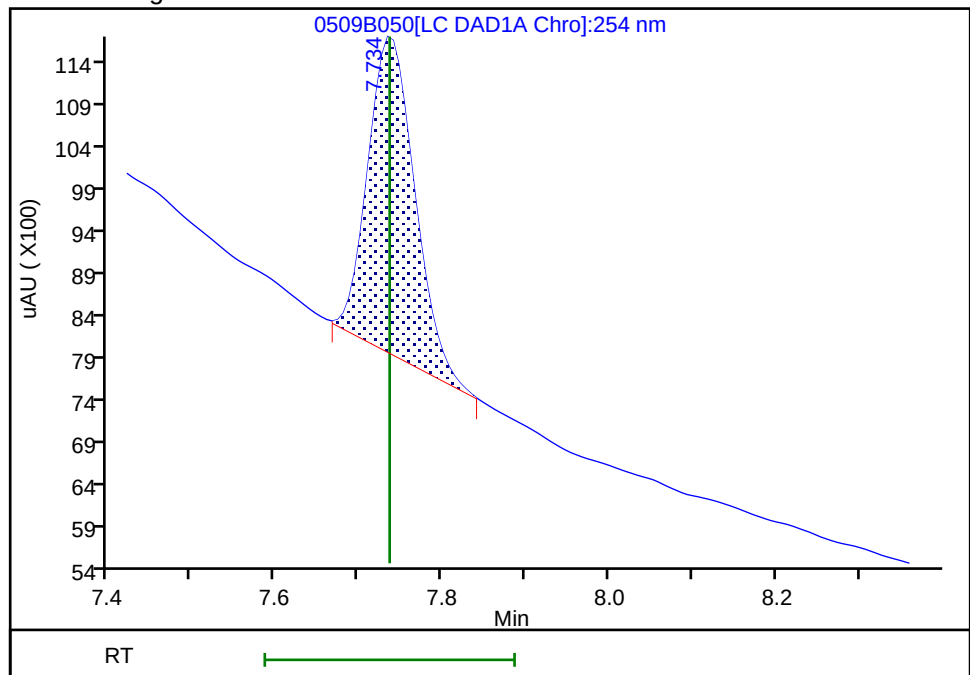
RT: 7.73
Area: 26237
Amount: 0.247282
Amount Units: ug/mL

Processing Integration Results



RT: 7.73
Area: 14740
Amount: 0.138923
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 10-May-2019 17:35:59

Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>DET-004-190401-GW RE</u>	Lab Sample ID: <u>280-123221-7 RE</u>
Matrix: <u>Water</u>	Lab File ID: <u>0514B084.D</u>
Analysis Method: <u>8330B</u>	Date Collected: <u>04/29/2019 10:04</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>05/10/2019 16:21</u>
Sample wt/vol: <u>482.6(mL)</u>	Date Analyzed: <u>05/15/2019 22:18</u>
Con. Extract Vol.: <u>5(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>100(uL)</u>	GC Column: <u>UltraCarb5uODS</u> ID: <u>4.6(mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>458152</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.41	U H	1.0	0.41	0.21
99-65-0	1,3-Dinitrobenzene	0.21	U H	0.41	0.21	0.092
118-96-7	2,4,6-Trinitrotoluene	0.41	U H	0.41	0.41	0.17
121-14-2	2,4-Dinitrotoluene	0.21	U H	0.41	0.21	0.087
606-20-2	2,6-Dinitrotoluene	0.21	U H	0.21	0.21	0.067
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	U H	0.21	0.12	0.053
88-72-2	2-Nitrotoluene	0.21	U H	0.41	0.21	0.089
99-08-1	3-Nitrotoluene	0.41	U H M	0.41	0.41	0.20
19406-51-0	4-Amino-2,6-dinitrotoluene	0.12	U H	0.21	0.12	0.060
99-99-0	4-Nitrotoluene	0.41	U H	1.0	0.41	0.21
2691-41-0	HMX	1.5	H M	0.41	0.21	0.091
98-95-3	Nitrobenzene	0.21	U H	0.41	0.21	0.094
55-63-0	Nitroglycerin	2.1	U H	3.1	2.1	0.95
78-11-5	PETN	4.1	U H	4.1	4.1	2.0
121-82-4	RDX	1.5	H M	0.41	0.41	0.16
479-45-8	Tetryl	0.21	U H	0.25	0.21	0.082

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	96		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B084.D
 Lims ID: 280-123221-F-7-A
 Client ID: DET-004-190401-GW
 Sample Type: Client
 Inject. Date: 15-May-2019 22:18:32 ALS Bottle#: 84 Worklist Smp#: 84
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-F-7-A
 Misc. Info.: 280-0081869-084
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 16-May-2019 08:23:40 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 16-May-2019 08:21:38

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
3 HMX	1	6.649	6.650	-0.001	12752	0.1429	M
7 RDX	1	7.762	7.764	-0.002	15536	0.1457	M
\$ 9 1,2-Dinitrobenzene	1	8.749	8.744	0.005	24881	0.1912	
10 1,3,5-Trinitrobenzene	1		8.904			ND	
11 1,3-Dinitrobenzene	1		9.564			ND	
12 Nitrobenzene	1		9.950			ND	
14 Tetryl	1		10.284			ND	
15 Nitroglycerin	2		10.784			ND	
16 2,4,6-Trinitrotoluene	1		11.237			ND	
17 4-Amino-2,6-dinitrotoluene	1		11.430			ND	
18 2-Amino-4,6-dinitrotoluene	1		11.717			ND	
19 2,6-Dinitrotoluene	1		11.850			ND	
20 2,4-Dinitrotoluene	1		12.050			ND	
21 o-Nitrotoluene	1		12.890			ND	
22 p-Nitrotoluene	1		13.330			ND	
23 m-Nitrotoluene	1		13.930			ND	U
24 PETN	2		15.024			ND	

QC Flag Legend

Review Flags

M - Manually Integrated

U - Marked Undetected

Report Date: 16-May-2019 08:23:44

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B084.D

Injection Date: 15-May-2019 22:18:32

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-F-7-A

Lab Sample ID: 280-123221-7

Worklist Smp#: 84

Client ID: DET-004-190401-GW

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

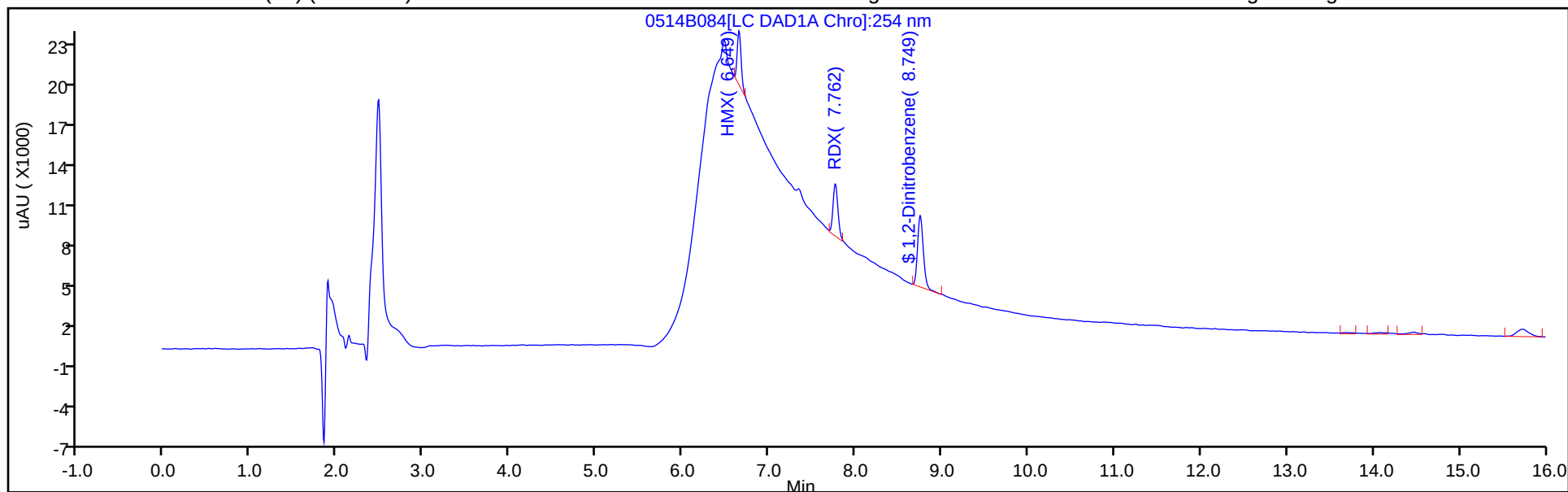
ALS Bottle#: 84

Method: 8330_X3

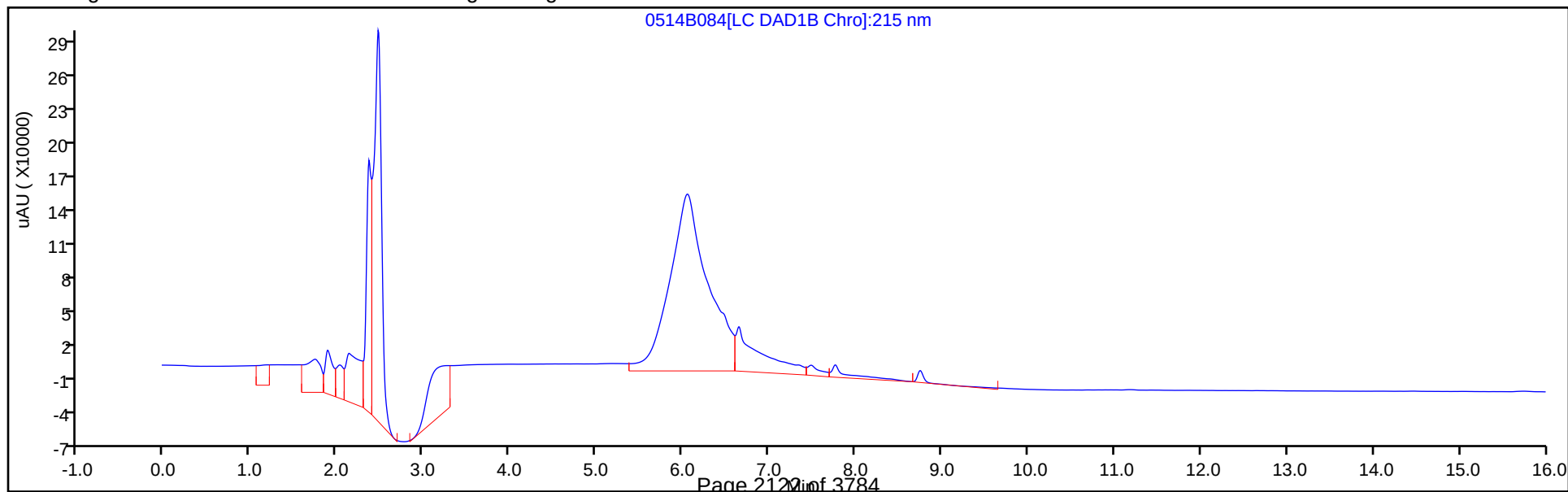
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B084.D
Lims ID: 280-123221-F-7-A
Client ID: DET-004-190401-GW
Sample Type: Client
Inject. Date: 15-May-2019 22:18:32 ALS Bottle#: 84 Worklist Smp#: 84
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-F-7-A
Misc. Info.: 280-0081869-084
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 16-May-2019 08:23:40 Calib Date: 15-May-2019 01:42:24
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 16-May-2019 08:21:38

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1912	95.61

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B084.D

Injection Date: 15-May-2019 22:18:32

Instrument ID: CHHPLC_X3

Lims ID: 280-123221-F-7-A

Lab Sample ID: 280-123221-7

Client ID: DET-004-190401-GW

Operator ID: hkf

ALS Bottle#: 84 Worklist Smp#: 84

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

Method: 8330_X3

Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

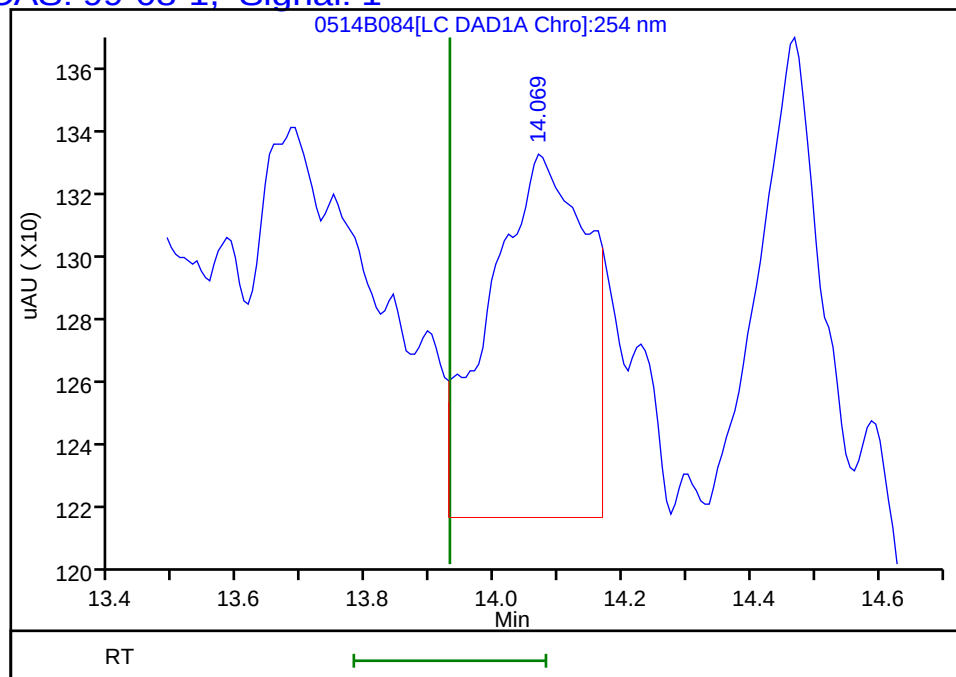
Detector LC DAD1B, 254 nm

23 m-Nitrotoluene, CAS: 99-08-1, Signal: 1

RT: 14.07

Response: 1139

Amount: 0.007680



Reviewer: fiedlerh, 16-May-2019 08:21:38

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

Eurofins TestAmerica, Denver

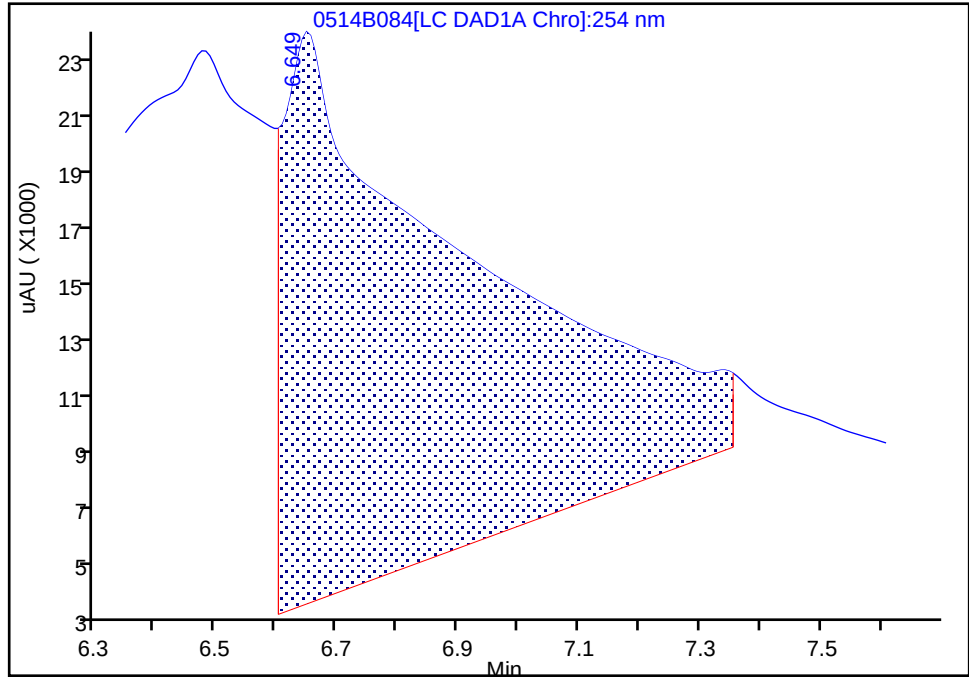
Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B084.D
Injection Date: 15-May-2019 22:18:32 Instrument ID: CHHPLC_X3
Lims ID: 280-123221-F-7-A Lab Sample ID: 280-123221-7
Client ID: DET-004-190401-GW
Operator ID: hkf ALS Bottle#: 84 Worklist Smp#: 84
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector LC DAD1B, 254 nm

3 HMX, CAS: 2691-41-0

Signal: 1

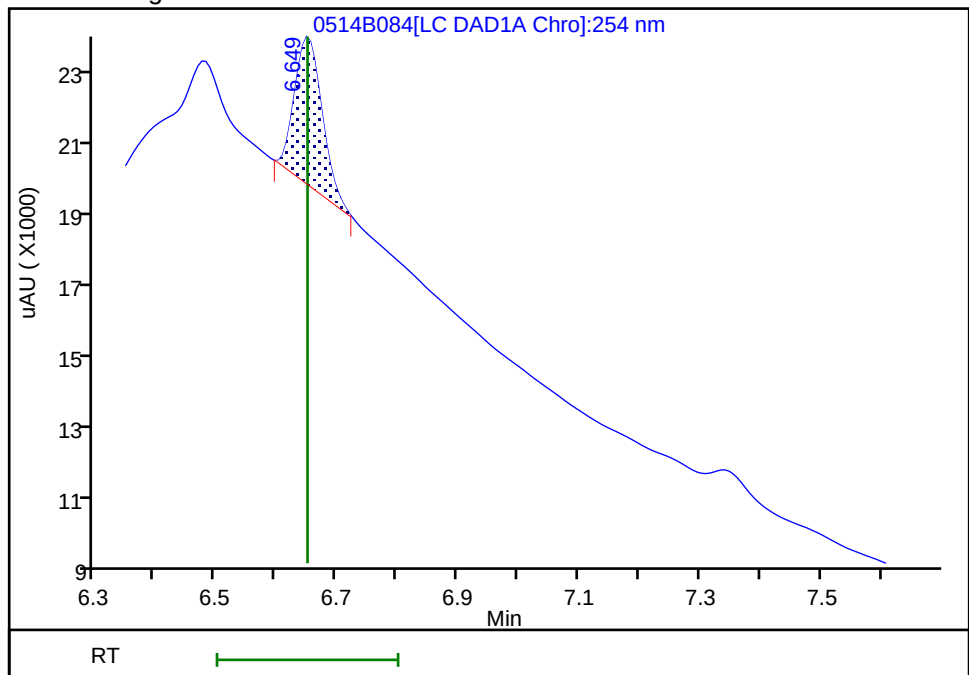
RT: 6.65
Area: 422798
Amount: 4.739561
Amount Units: ug/mL

Processing Integration Results



RT: 6.65
Area: 12752
Amount: 0.142950
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 16-May-2019 08:21:26
Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing
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Eurofins TestAmerica, Denver

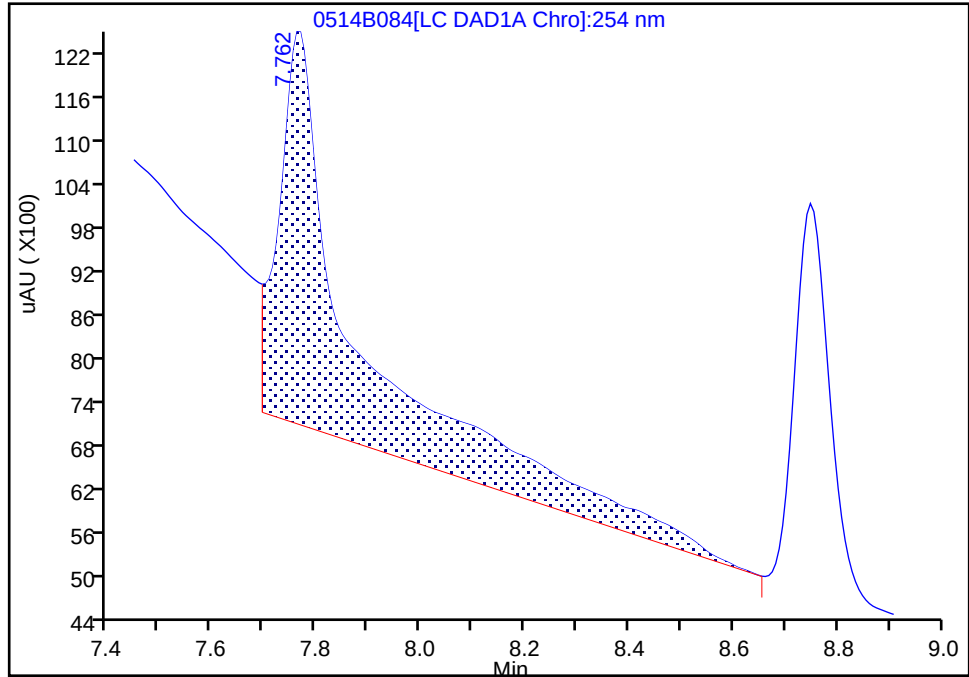
Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B084.D
Injection Date: 15-May-2019 22:18:32 Instrument ID: CHHPLC_X3
Lims ID: 280-123221-F-7-A Lab Sample ID: 280-123221-7
Client ID: DET-004-190401-GW
Operator ID: hkf ALS Bottle#: 84 Worklist Smp#: 84
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector LC DAD1B, 254 nm

7 RDX, CAS: 121-82-4

Signal: 1

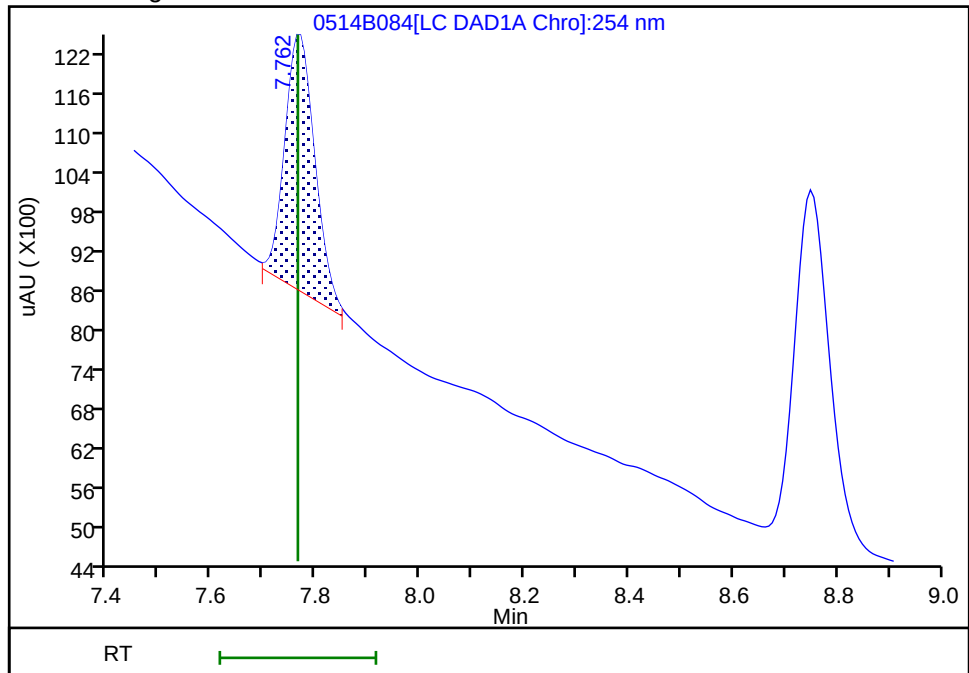
RT: 7.76
Area: 55424
Amount: 0.519733
Amount Units: ug/mL

Processing Integration Results



RT: 7.76
Area: 15536
Amount: 0.145687
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 16-May-2019 08:21:32
Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing
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FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>FWGmw-007-190401-GW</u>	Lab Sample ID: <u>280-123221-8</u>
Matrix: <u>Water</u>	Lab File ID: <u>0509B051.D</u>
Analysis Method: <u>8330B</u>	Date Collected: <u>04/30/2019 13:35</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>05/04/2019 15:00</u>
Sample wt/vol: <u>456.1 (mL)</u>	Date Analyzed: <u>05/10/2019 10:12</u>
Con. Extract Vol.: <u>5 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>100 (uL)</u>	GC Column: <u>UltraCarb5uODS</u> ID: <u>4.6 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>457634</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.44	U	1.1	0.44	0.22
99-65-0	1,3-Dinitrobenzene	0.22	U	0.44	0.22	0.097
118-96-7	2,4,6-Trinitrotoluene	0.44	U	0.44	0.44	0.18
121-14-2	2,4-Dinitrotoluene	0.22	U	0.44	0.22	0.092
606-20-2	2,6-Dinitrotoluene	0.22	U	0.22	0.22	0.071
35572-78-2	2-Amino-4,6-dinitrotoluene	0.13	U	0.22	0.13	0.056
88-72-2	2-Nitrotoluene	0.22	U Q	0.44	0.22	0.094
99-08-1	3-Nitrotoluene	0.44	U	0.44	0.44	0.21
19406-51-0	4-Amino-2,6-dinitrotoluene	0.13	U	0.22	0.13	0.063
99-99-0	4-Nitrotoluene	0.44	U	1.1	0.44	0.22
2691-41-0	HMX	0.22	U	0.44	0.22	0.096
98-95-3	Nitrobenzene	0.22	U	0.44	0.22	0.10
55-63-0	Nitroglycerin	2.2	U	3.3	2.2	1.0
78-11-5	PETN	4.4	U	4.4	4.4	2.1
121-82-4	RDX	0.44	U	0.44	0.44	0.17
479-45-8	Tetryl	0.22	U	0.26	0.22	0.087

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	86		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B051.D
 Lims ID: 280-123221-A-8-A
 Client ID: FWGmw-007-190401-GW
 Sample Type: Client
 Inject. Date: 10-May-2019 10:12:17 ALS Bottle#: 51 Worklist Smp#: 51
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-A-8-A
 Misc. Info.: 280-0081739-051
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 10-May-2019 17:39:31 Calib Date: 30-Jan-2019 16:34:11
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0316

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
3 HMX	1		6.643			ND	
7 RDX	1		7.736			ND	
\$ 9 1,2-Dinitrobenzene	1	8.711	8.710	0.001	23009	0.1721	
10 1,3,5-Trinitrobenzene	1		8.870			ND	
11 1,3-Dinitrobenzene	1		9.523			ND	
12 Nitrobenzene	1		9.910			ND	
14 Tetryl	1		10.230			ND	
15 Nitroglycerin	2		10.736			ND	
16 2,4,6-Trinitrotoluene	1		11.183			ND	
17 4-Amino-2,6-dinitrotoluene	1		11.343			ND	
18 2-Amino-4,6-dinitrotoluene	1		11.630			ND	
19 2,6-Dinitrotoluene	1		11.790			ND	
20 2,4-Dinitrotoluene	1		11.983			ND	
21 o-Nitrotoluene	1		12.823			ND	
22 p-Nitrotoluene	1		13.256			ND	
23 m-Nitrotoluene	1		13.856			ND	
24 PETN	2		14.963			ND	

Report Date: 10-May-2019 17:39:49

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B051.D

Injection Date: 10-May-2019 10:12:17

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-A-8-A

Lab Sample ID: 280-123221-8

Worklist Smp#: 51

Client ID: FWGmw-007-190401-GW

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

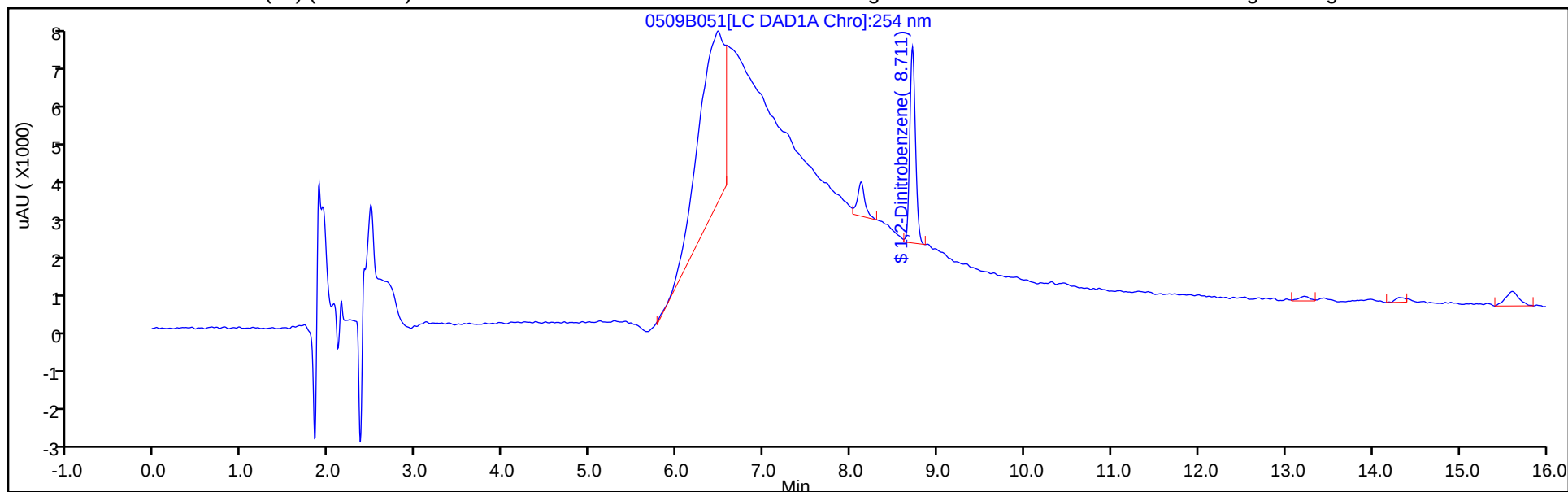
ALS Bottle#: 51

Method: 8330_X3

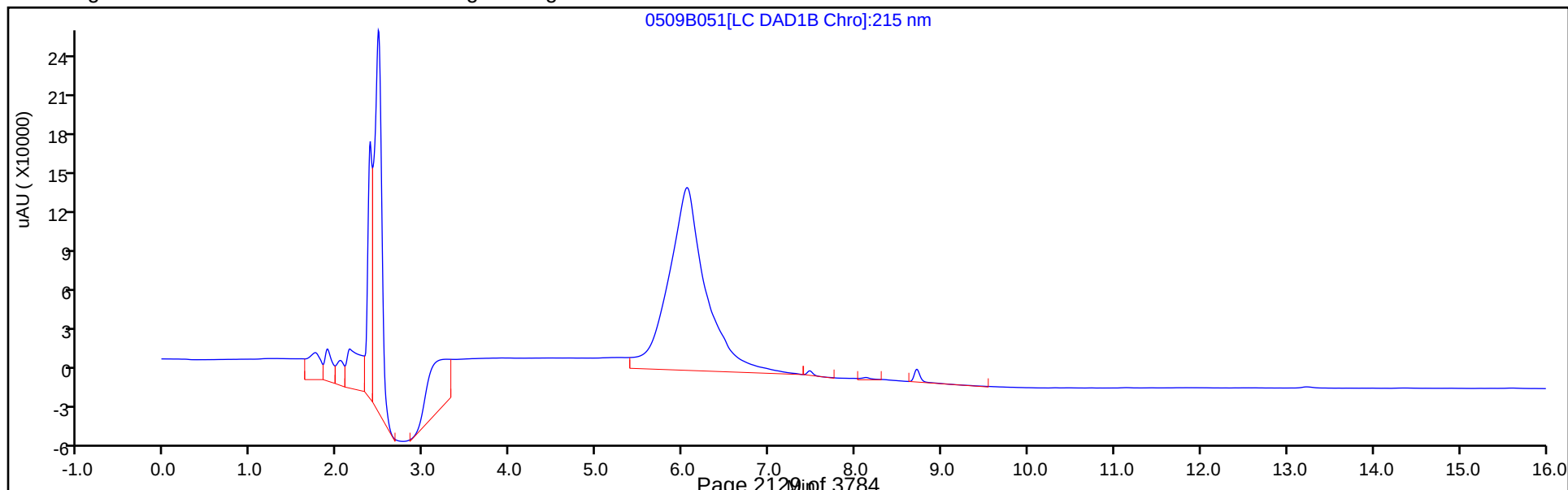
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B051.D
Lims ID: 280-123221-A-8-A
Client ID: FWGmw-007-190401-GW
Sample Type: Client
Inject. Date: 10-May-2019 10:12:17 ALS Bottle#: 51 Worklist Smp#: 51
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-A-8-A
Misc. Info.: 280-0081739-051
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 10-May-2019 17:39:31 Calib Date: 30-Jan-2019 16:34:11
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0316

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1721	86.05

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>FWGmw-007-190401-GW RE</u>	Lab Sample ID: <u>280-123221-8 RE</u>
Matrix: <u>Water</u>	Lab File ID: <u>0514B085.D</u>
Analysis Method: <u>8330B</u>	Date Collected: <u>04/30/2019 13:35</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>05/10/2019 16:21</u>
Sample wt/vol: <u>481.5 (mL)</u>	Date Analyzed: <u>05/15/2019 22:42</u>
Con. Extract Vol.: <u>5 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>100 (uL)</u>	GC Column: <u>UltraCarb5uODS</u> ID: <u>4.6 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>458152</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.42	U H	1.0	0.42	0.21
99-65-0	1,3-Dinitrobenzene	0.21	U H	0.42	0.21	0.092
118-96-7	2,4,6-Trinitrotoluene	0.42	U H	0.42	0.42	0.17
121-14-2	2,4-Dinitrotoluene	0.21	U H	0.42	0.21	0.087
606-20-2	2,6-Dinitrotoluene	0.21	U H	0.21	0.21	0.067
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	U H	0.21	0.12	0.053
88-72-2	2-Nitrotoluene	0.21	U H	0.42	0.21	0.089
99-08-1	3-Nitrotoluene	0.42	U H	0.42	0.42	0.20
19406-51-0	4-Amino-2,6-dinitrotoluene	0.12	U H	0.21	0.12	0.060
99-99-0	4-Nitrotoluene	0.42	U H	1.0	0.42	0.21
2691-41-0	HMX	0.21	U H	0.42	0.21	0.091
98-95-3	Nitrobenzene	0.21	U H	0.42	0.21	0.094
55-63-0	Nitroglycerin	2.1	U H	3.1	2.1	0.96
78-11-5	PETN	4.2	U H	4.2	4.2	2.0
121-82-4	RDX	0.42	U H	0.42	0.42	0.16
479-45-8	Tetryl	0.21	U H	0.25	0.21	0.082

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	92		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B085.D
 Lims ID: 280-123221-B-8-A
 Client ID: FWGmw-007-190401-GW
 Sample Type: Client
 Inject. Date: 15-May-2019 22:42:16 ALS Bottle#: 85 Worklist Smp#: 85
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-B-8-A
 Misc. Info.: 280-0081869-085
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 16-May-2019 08:23:40 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 16-May-2019 08:21:42

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
3 HMX	1		6.650			ND	
7 RDX	1		7.764			ND	
\$ 9 1,2-Dinitrobenzene	1	8.749	8.744	0.005	24027	0.1847	
10 1,3,5-Trinitrobenzene	1		8.904			ND	
11 1,3-Dinitrobenzene	1		9.564			ND	
12 Nitrobenzene	1		9.950			ND	
14 Tetryl	1		10.284			ND	
15 Nitroglycerin	2		10.784			ND	
16 2,4,6-Trinitrotoluene	1		11.237			ND	
17 4-Amino-2,6-dinitrotoluene	1		11.430			ND	
18 2-Amino-4,6-dinitrotoluene	1		11.717			ND	
19 2,6-Dinitrotoluene	1		11.850			ND	
20 2,4-Dinitrotoluene	1		12.050			ND	
21 o-Nitrotoluene	1		12.890			ND	
22 p-Nitrotoluene	1		13.330			ND	
23 m-Nitrotoluene	1		13.930			ND	
24 PETN	2		15.024			ND	

Report Date: 16-May-2019 08:23:45

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B085.D

Injection Date: 15-May-2019 22:42:16

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-B-8-A

Lab Sample ID: 280-123221-8

Worklist Smp#: 85

Client ID: FWGmw-007-190401-GW

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

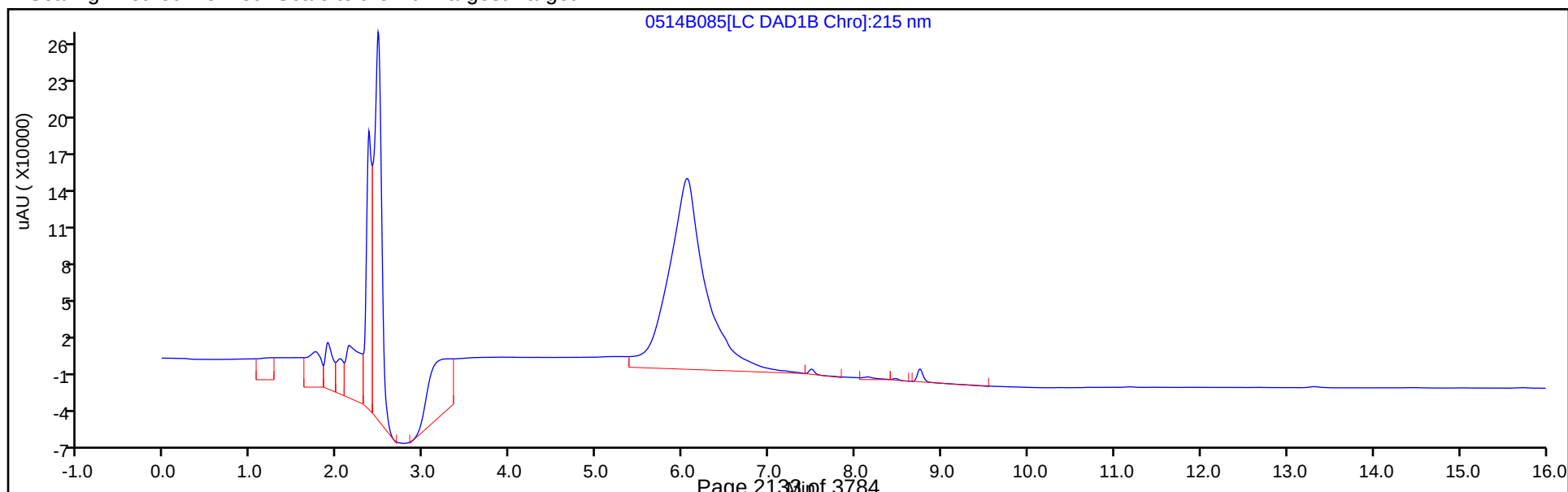
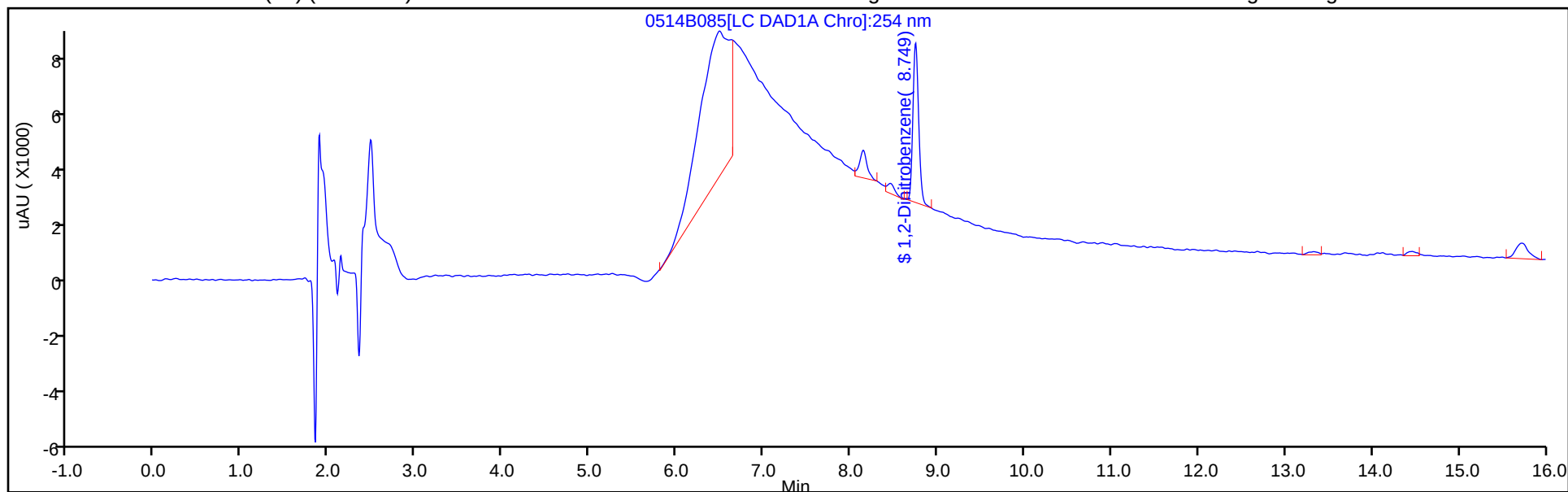
ALS Bottle#: 85

Method: 8330_X3

Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B085.D
Lims ID: 280-123221-B-8-A
Client ID: FWGmw-007-190401-GW
Sample Type: Client
Inject. Date: 15-May-2019 22:42:16 ALS Bottle#: 85 Worklist Smp#: 85
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-B-8-A
Misc. Info.: 280-0081869-085
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 16-May-2019 08:23:40 Calib Date: 15-May-2019 01:42:24
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 16-May-2019 08:21:42

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1847	92.33

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>WBGmw-020-190401-GW</u>	Lab Sample ID: <u>280-123221-9</u>
Matrix: <u>Water</u>	Lab File ID: <u>0509B052.D</u>
Analysis Method: <u>8330B</u>	Date Collected: <u>04/30/2019 11:50</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>05/04/2019 15:00</u>
Sample wt/vol: <u>518.7(mL)</u>	Date Analyzed: <u>05/10/2019 10:35</u>
Con. Extract Vol.: <u>5(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>100(uL)</u>	GC Column: <u>UltraCarb5uODS</u> ID: <u>4.6(mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>457634</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.39	U	0.96	0.39	0.19
99-65-0	1,3-Dinitrobenzene	0.19	U	0.39	0.19	0.086
118-96-7	2,4,6-Trinitrotoluene	0.39	U	0.39	0.39	0.15
121-14-2	2,4-Dinitrotoluene	0.19	U	0.39	0.19	0.081
606-20-2	2,6-Dinitrotoluene	0.19	U	0.19	0.19	0.062
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	U	0.19	0.12	0.049
88-72-2	2-Nitrotoluene	0.19	U Q	0.39	0.19	0.082
99-08-1	3-Nitrotoluene	0.39	U	0.39	0.39	0.19
19406-51-0	4-Amino-2,6-dinitrotoluene	0.12	U	0.19	0.12	0.056
99-99-0	4-Nitrotoluene	0.39	U	0.96	0.39	0.19
2691-41-0	HMX	0.19	U	0.39	0.19	0.084
98-95-3	Nitrobenzene	0.19	U	0.39	0.19	0.088
55-63-0	Nitroglycerin	1.9	U	2.9	1.9	0.89
78-11-5	PETN	3.9	U	3.9	3.9	1.9
121-82-4	RDX	0.39	U	0.39	0.39	0.15
479-45-8	Tetryl	0.19	U	0.23	0.19	0.076

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	86		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B052.D
 Lims ID: 280-123221-A-9-A
 Client ID: WBGmw-020-190401-GW
 Sample Type: Client
 Inject. Date: 10-May-2019 10:35:58 ALS Bottle#: 52 Worklist Smp#: 52
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-A-9-A
 Misc. Info.: 280-0081739-052
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 10-May-2019 17:39:31 Calib Date: 30-Jan-2019 16:34:11
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0316

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
3 HMX	1		6.643			ND	
7 RDX	1		7.736			ND	
\$ 9 1,2-Dinitrobenzene	1	8.717	8.710	0.007	23048	0.1724	
10 1,3,5-Trinitrobenzene	1		8.870			ND	
11 1,3-Dinitrobenzene	1		9.523			ND	
12 Nitrobenzene	1		9.910			ND	
14 Tetryl	1		10.230			ND	
15 Nitroglycerin	2		10.736			ND	
16 2,4,6-Trinitrotoluene	1		11.183			ND	
17 4-Amino-2,6-dinitrotoluene	1		11.343			ND	
18 2-Amino-4,6-dinitrotoluene	1		11.630			ND	
19 2,6-Dinitrotoluene	1		11.790			ND	
20 2,4-Dinitrotoluene	1		11.983			ND	
21 o-Nitrotoluene	1		12.823			ND	
22 p-Nitrotoluene	1		13.256			ND	
23 m-Nitrotoluene	1		13.856			ND	
24 PETN	2		14.963			ND	

Report Date: 10-May-2019 17:39:49

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B052.D

Injection Date: 10-May-2019 10:35:58

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-A-9-A

Lab Sample ID: 280-123221-9

Worklist Smp#: 52

Client ID: WBGmw-020-190401-GW

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

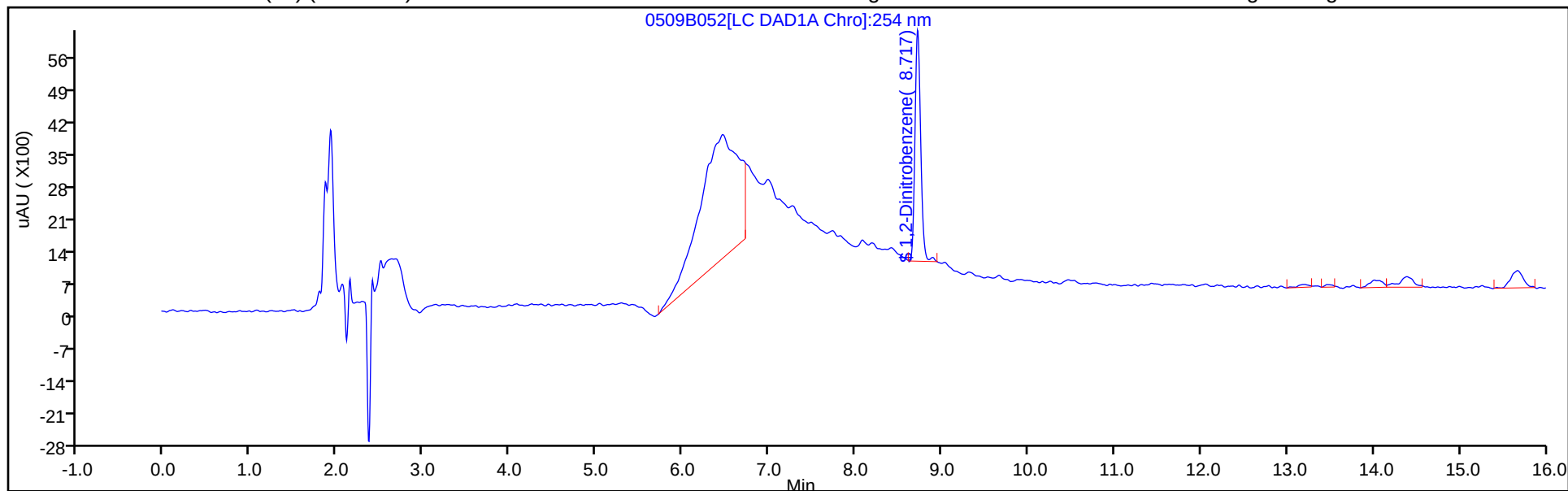
ALS Bottle#: 52

Method: 8330_X3

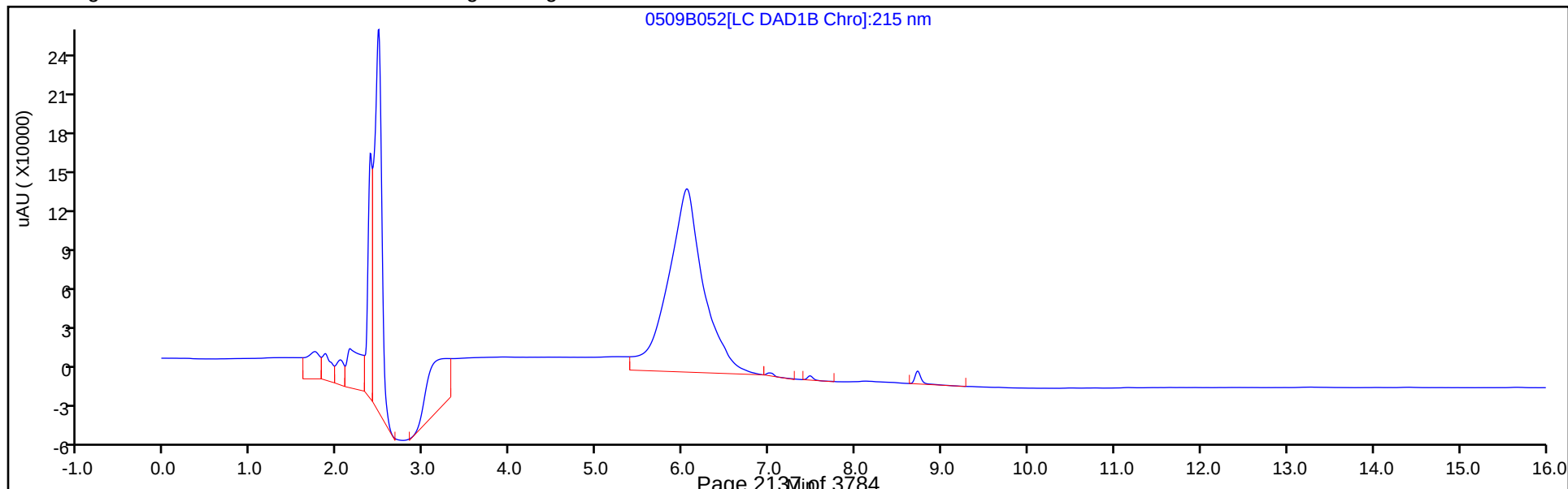
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B052.D
Lims ID: 280-123221-A-9-A
Client ID: WBGmw-020-190401-GW
Sample Type: Client
Inject. Date: 10-May-2019 10:35:58 ALS Bottle#: 52 Worklist Smp#: 52
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-A-9-A
Misc. Info.: 280-0081739-052
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 10-May-2019 17:39:31 Calib Date: 30-Jan-2019 16:34:11
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0316

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1724	86.20

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>WBGmw-020-190401-GW RE</u>	Lab Sample ID: <u>280-123221-9 RE</u>
Matrix: <u>Water</u>	Lab File ID: <u>0514B086.D</u>
Analysis Method: <u>8330B</u>	Date Collected: <u>04/30/2019 11:50</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>05/10/2019 16:21</u>
Sample wt/vol: <u>501.5 (mL)</u>	Date Analyzed: <u>05/15/2019 23:05</u>
Con. Extract Vol.: <u>5 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>100 (uL)</u>	GC Column: <u>UltraCarb5uODS</u> ID: <u>4.6 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>458152</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.40	U H	1.0	0.40	0.20
99-65-0	1,3-Dinitrobenzene	0.20	U H	0.40	0.20	0.088
118-96-7	2,4,6-Trinitrotoluene	0.40	U H	0.40	0.40	0.16
121-14-2	2,4-Dinitrotoluene	0.20	U H	0.40	0.20	0.084
606-20-2	2,6-Dinitrotoluene	0.20	U H	0.20	0.20	0.064
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	U H	0.20	0.12	0.051
88-72-2	2-Nitrotoluene	0.20	U H	0.40	0.20	0.085
99-08-1	3-Nitrotoluene	0.40	U H	0.40	0.40	0.19
19406-51-0	4-Amino-2,6-dinitrotoluene	0.12	U H	0.20	0.12	0.058
99-99-0	4-Nitrotoluene	0.40	U H	1.0	0.40	0.20
2691-41-0	HMX	0.20	U H	0.40	0.20	0.087
98-95-3	Nitrobenzene	0.20	U H	0.40	0.20	0.091
55-63-0	Nitroglycerin	2.0	U H	3.0	2.0	0.92
78-11-5	PETN	4.0	U H	4.0	4.0	1.9
121-82-4	RDX	0.40	U H	0.40	0.40	0.16
479-45-8	Tetryl	0.20	U H	0.24	0.20	0.079

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	95		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B086.D
 Lims ID: 280-123221-B-9-A
 Client ID: WBGmw-020-190401-GW
 Sample Type: Client
 Inject. Date: 15-May-2019 23:05:59 ALS Bottle#: 86 Worklist Smp#: 86
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-B-9-A
 Misc. Info.: 280-0081869-086
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 16-May-2019 08:23:40 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0325

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
3 HMX	1		6.650			ND	
7 RDX	1		7.764			ND	
\$ 9 1,2-Dinitrobenzene	1	8.750	8.744	0.006	24711	0.1899	
10 1,3,5-Trinitrobenzene	1		8.904			ND	
11 1,3-Dinitrobenzene	1		9.564			ND	
12 Nitrobenzene	1		9.950			ND	
14 Tetryl	1		10.284			ND	
15 Nitroglycerin	2		10.784			ND	
16 2,4,6-Trinitrotoluene	1		11.237			ND	
17 4-Amino-2,6-dinitrotoluene	1		11.430			ND	
18 2-Amino-4,6-dinitrotoluene	1		11.717			ND	
19 2,6-Dinitrotoluene	1		11.850			ND	
20 2,4-Dinitrotoluene	1		12.050			ND	
21 o-Nitrotoluene	1		12.890			ND	
22 p-Nitrotoluene	1		13.330			ND	
23 m-Nitrotoluene	1		13.930			ND	
24 PETN	2		15.024			ND	

Report Date: 16-May-2019 08:23:45

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B086.D

Injection Date: 15-May-2019 23:05:59

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-B-9-A

Lab Sample ID: 280-123221-9

Worklist Smp#: 86

Client ID: WBGmw-020-190401-GW

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

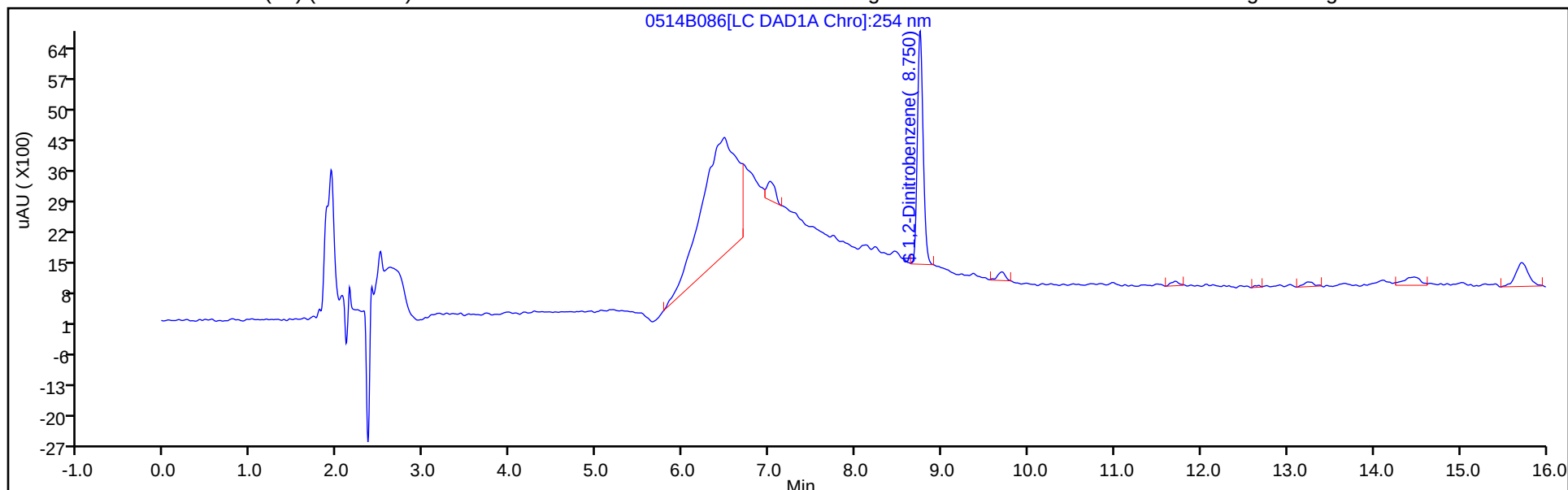
ALS Bottle#: 86

Method: 8330_X3

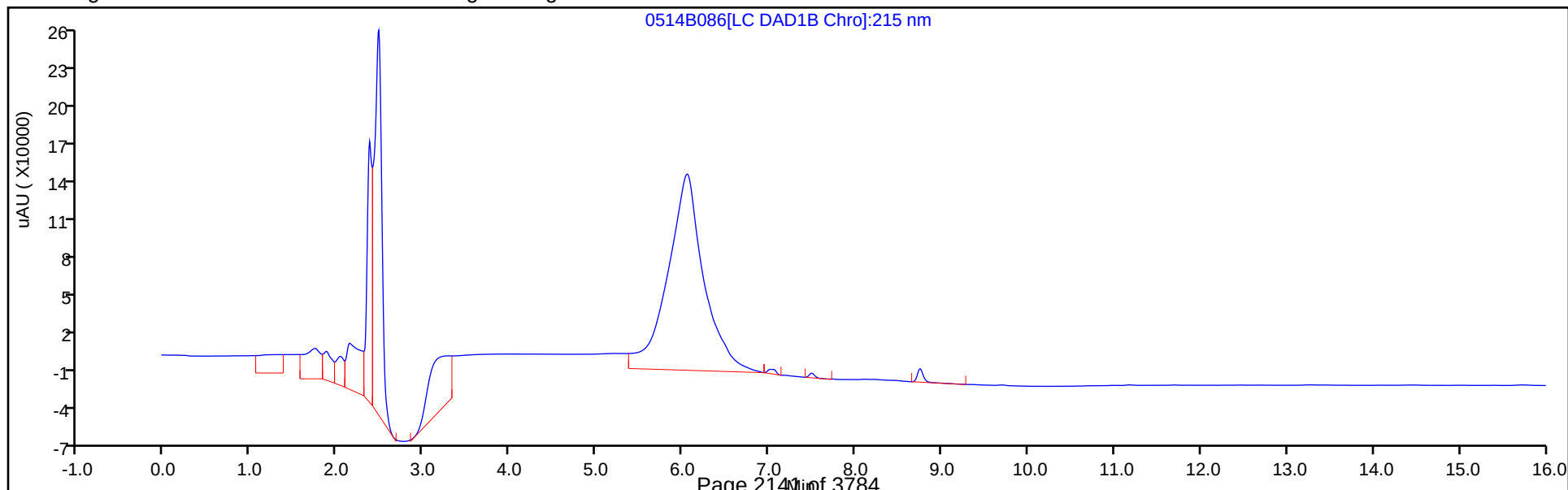
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B086.D
Lims ID: 280-123221-B-9-A
Client ID: WBGmw-020-190401-GW
Sample Type: Client
Inject. Date: 15-May-2019 23:05:59 ALS Bottle#: 86 Worklist Smp#: 86
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-B-9-A
Misc. Info.: 280-0081869-086
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 16-May-2019 08:23:40 Calib Date: 15-May-2019 01:42:24
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0325

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1899	94.96

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>WBGmw-006-190401-GW</u>	Lab Sample ID: <u>280-123221-10</u>
Matrix: <u>Water</u>	Lab File ID: <u>0509B053.D</u>
Analysis Method: <u>8330B</u>	Date Collected: <u>04/30/2019 09:10</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>05/04/2019 15:00</u>
Sample wt/vol: <u>509.6(mL)</u>	Date Analyzed: <u>05/10/2019 10:59</u>
Con. Extract Vol.: <u>5(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>100(uL)</u>	GC Column: <u>UltraCarb5uODS</u> ID: <u>4.6(mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>457634</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.39	U	0.98	0.39	0.20
118-96-7	2,4,6-Trinitrotoluene	0.39	U	0.39	0.39	0.16
121-14-2	2,4-Dinitrotoluene	0.20	U	0.39	0.20	0.082
606-20-2	2,6-Dinitrotoluene	0.20	U	0.20	0.20	0.063
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	U	0.20	0.12	0.050
88-72-2	2-Nitrotoluene	0.20	U Q	0.39	0.20	0.084
99-08-1	3-Nitrotoluene	0.39	U	0.39	0.39	0.19
19406-51-0	4-Amino-2,6-dinitrotoluene	0.12	U	0.20	0.12	0.057
99-99-0	4-Nitrotoluene	0.39	U	0.98	0.39	0.20
2691-41-0	HMX	3.4	M	0.39	0.20	0.086
98-95-3	Nitrobenzene	0.20	U	0.39	0.20	0.089
55-63-0	Nitroglycerin	2.0	U	2.9	2.0	0.90
78-11-5	PETN	3.9	U	3.9	3.9	1.9
121-82-4	RDX	11		0.39	0.39	0.16
479-45-8	Tetryl	0.20	U	0.24	0.20	0.078

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	99		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B053.D
 Lims ID: 280-123221-B-10-A
 Client ID: WBGmw-006-190401-GW
 Sample Type: Client
 Inject. Date: 10-May-2019 10:59:41 ALS Bottle#: 53 Worklist Smp#: 53
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-B-10-
 Misc. Info.: 280-0081739-053
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 10-May-2019 17:39:31 Calib Date: 30-Jan-2019 16:34:11
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 10-May-2019 17:36:26

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
3 HMX	1	6.643	6.643	0.000	30118	0.3467	M
7 RDX	1	7.736	7.736	0.000	117984	1.11	
\$ 9 1,2-Dinitrobenzene	1	8.710	8.710	0.000	26345	0.1971	
10 1,3,5-Trinitrobenzene	1		8.870			ND	
11 1,3-Dinitrobenzene	1	9.496	9.523	-0.027	5592	0.0185	
12 Nitrobenzene	1		9.910			ND	
14 Tetryl	1		10.230			ND	
15 Nitroglycerin	2		10.736			ND	
16 2,4,6-Trinitrotoluene	1		11.183			ND	
17 4-Amino-2,6-dinitrotoluene	1		11.343			ND	
18 2-Amino-4,6-dinitrotoluene	1		11.630			ND	
19 2,6-Dinitrotoluene	1		11.790			ND	
20 2,4-Dinitrotoluene	1		11.983			ND	
21 o-Nitrotoluene	1		12.823			ND	
22 p-Nitrotoluene	1	13.249	13.256	-0.007	2217	0.0187	
23 m-Nitrotoluene	1		13.856			ND	
24 PETN	2		14.963			ND	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 10-May-2019 17:39:50

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B053.D

Injection Date: 10-May-2019 10:59:41

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-B-10-A

Lab Sample ID: 280-123221-10

Worklist Smp#: 53

Client ID: WBGmw-006-190401-GW

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

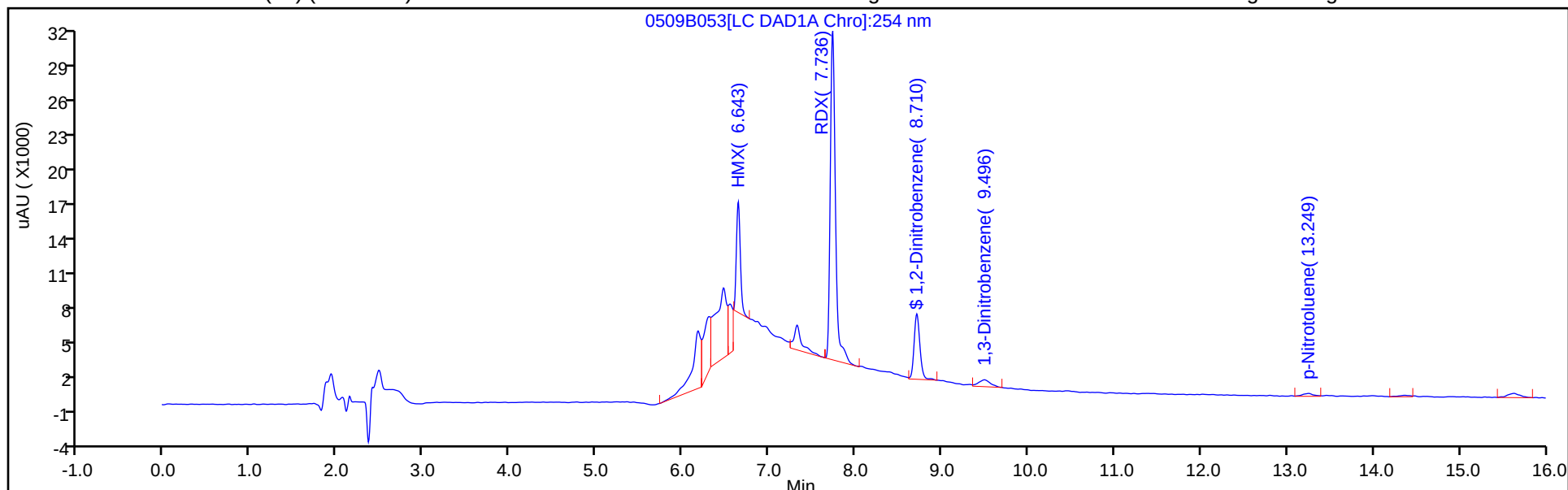
ALS Bottle#: 53

Method: 8330_X3

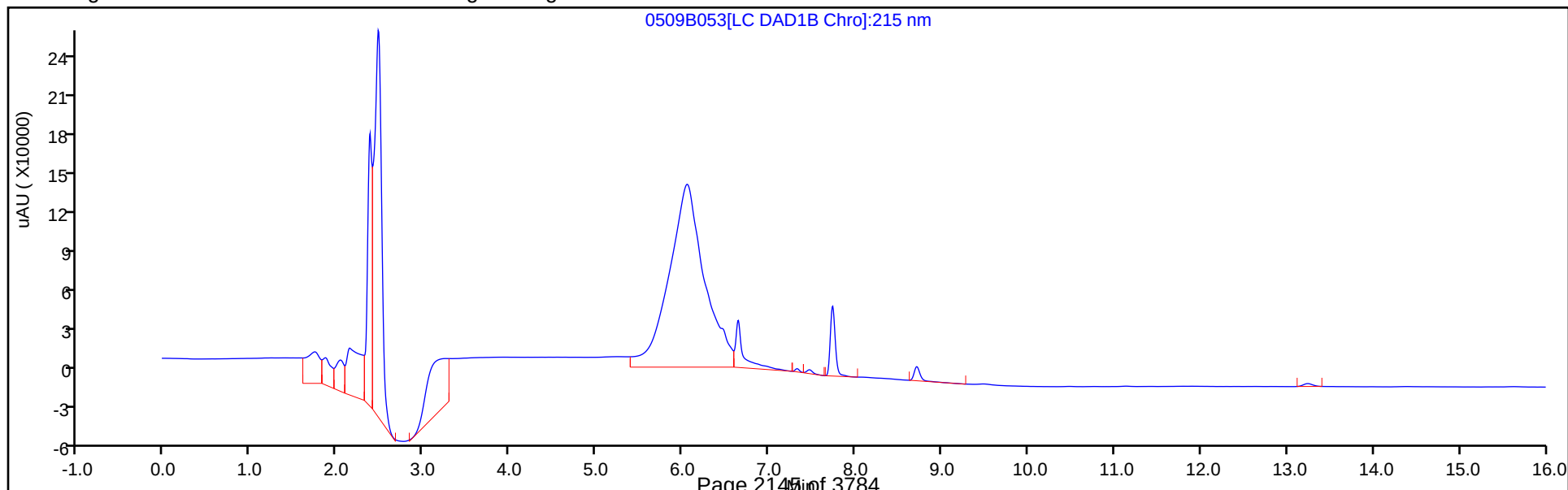
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B053.D
Lims ID: 280-123221-B-10-A
Client ID: WBGmw-006-190401-GW
Sample Type: Client
Inject. Date: 10-May-2019 10:59:41 ALS Bottle#: 53 Worklist Smp#: 53
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-B-10-
Misc. Info.: 280-0081739-053
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 10-May-2019 17:39:31 Calib Date: 30-Jan-2019 16:34:11
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 10-May-2019 17:36:26

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1971	98.53

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B053.D

Injection Date: 10-May-2019 10:59:41

Instrument ID: CHHPLC_X3

Lims ID: 280-123221-B-10-A

Lab Sample ID: 280-123221-10

Client ID: WBGmw-006-190401-GW

Operator ID: hkf

ALS Bottle#: 53

Worklist Smp#: 53

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

Method: 8330_X3

Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

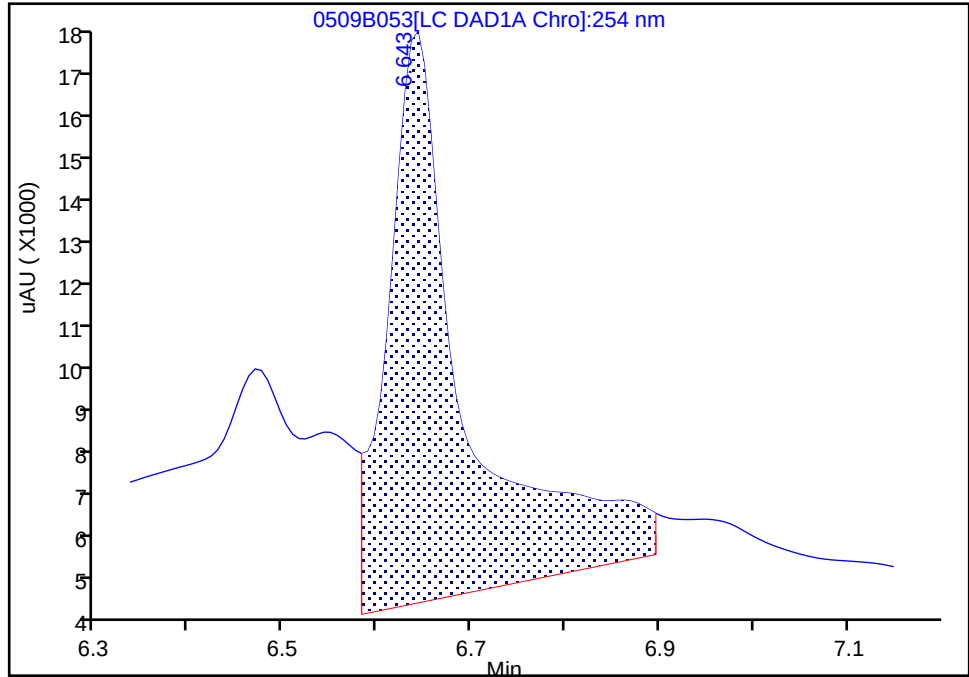
Detector: LC DAD1B, 254 nm

3 HMX, CAS: 2691-41-0

Signal: 1

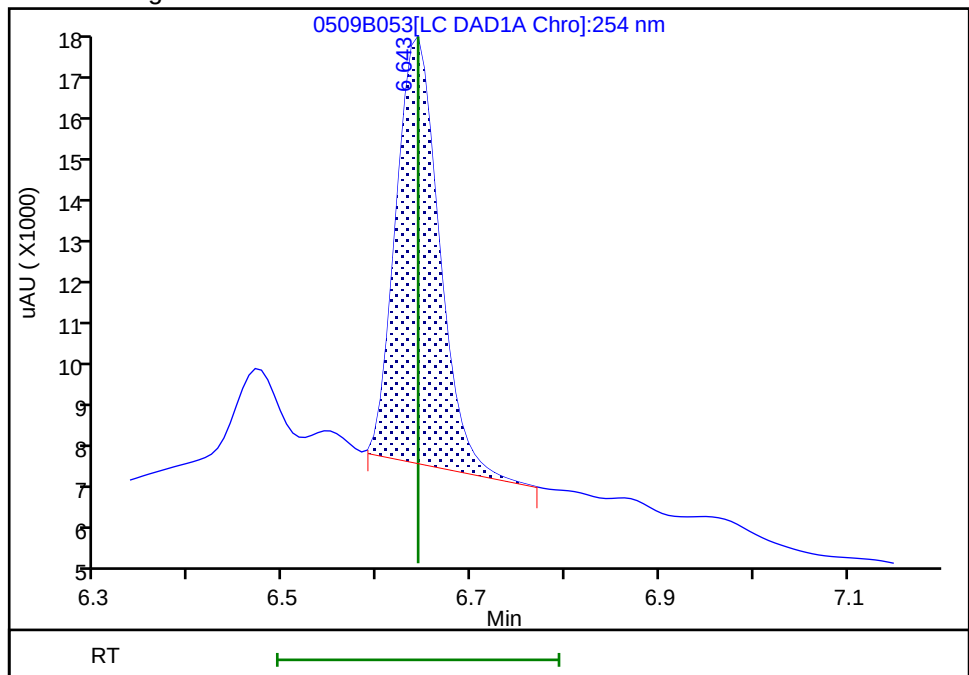
RT: 6.64
Area: 71721
Amount: 0.825647
Amount Units: ug/mL

Processing Integration Results



RT: 6.64
Area: 30118
Amount: 0.346716
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 10-May-2019 17:36:24

Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: WBGmw-006-190401-GW Lab Sample ID: 280-123221-10
 Matrix: Water Lab File ID: 05130014.D
 Analysis Method: 8330B Date Collected: 04/30/2019 09:10
 Extraction Method: 3535 Date Extracted: 05/04/2019 15:00
 Sample wt/vol: 509.6(mL) Date Analyzed: 05/13/2019 23:35
 Con. Extract Vol.: 5(mL) Dilution Factor: 1
 Injection Volume: 100(uL) GC Column: Luna-phenylhex ID: 4.6(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 457992 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-65-0	1,3-Dinitrobenzene	0.20	U	0.39	0.20	0.087

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	95		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190513-81828.b\05130014.D
 Lims ID: 280-123221-B-10-A
 Client ID: WBGmw-006-190401-GW
 Sample Type: Client
 Inject. Date: 13-May-2019 23:35:27 ALS Bottle#: 14 Worklist Smp#: 14
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-B-10-
 Misc. Info.: 280-0081828-014
 Operator ID: HKF Instrument ID: CHHPLC_G2_LUNA
 Method: \\chromna\Denver\ChromData\G2_LUNA\20190513-81828.b\G2_8330_Luna.m
 Limit Group: GCSV - 8330
 Last Update: 14-May-2019 15:58:10 Calib Date: 08-May-2019 00:28:23
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070023.D
 Column 1 : Luna-Phenyl hexyl (4.60 mm) Det: LC DAD1A, 254 nm
 Process Host: CTX0336

First Level Reviewer: fiedlerh

Date: 14-May-2019 10:11:36

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/ml	Flags
6 HMX	1	7.159	7.190	-0.031	62542	0.3653	
8 RDX	1	9.239	9.283	-0.044	227685	1.09	
9 Nitrobenzene	1		12.303			ND	
\$ 10 1,2-Dinitrobenzene	1	13.279	13.316	-0.037	52367	0.1891	
13 Nitroglycerin	2		15.836			ND	
12 1,3-Dinitrobenzene	1		15.850			ND	
14 o-Nitrotoluene	1		16.696			ND	
15 p-Nitrotoluene	1	17.019	17.023	-0.004	5379	0.0237	
16 4-Amino-2,6-dinitrotoluene	1		17.410			ND	
17 m-Nitrotoluene	1		17.943			ND	U
18 2-Amino-4,6-dinitrotoluene	1		18.416			ND	
19 1,3,5-Trinitrobenzene	1		19.183			ND	
20 2,6-Dinitrotoluene	1		20.043			ND	
21 2,4-Dinitrotoluene	1		20.583			ND	
22 Tetryl	1		23.910			ND	
23 2,4,6-Trinitrotoluene	1		24.916			ND	
24 PETN	2		25.310			ND	

QC Flag Legend

Review Flags

U - Marked Undetected

Report Date: 14-May-2019 15:58:17

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190513-81828.b\05130014.D

Injection Date: 13-May-2019 23:35:27

Instrument ID: CHHPLC_G2_LUNA

Operator ID: HKF

Lims ID: 280-123221-B-10-A

Lab Sample ID: 280-123221-10

Worklist Smp#: 14

Client ID: WBGmw-006-190401-GW

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

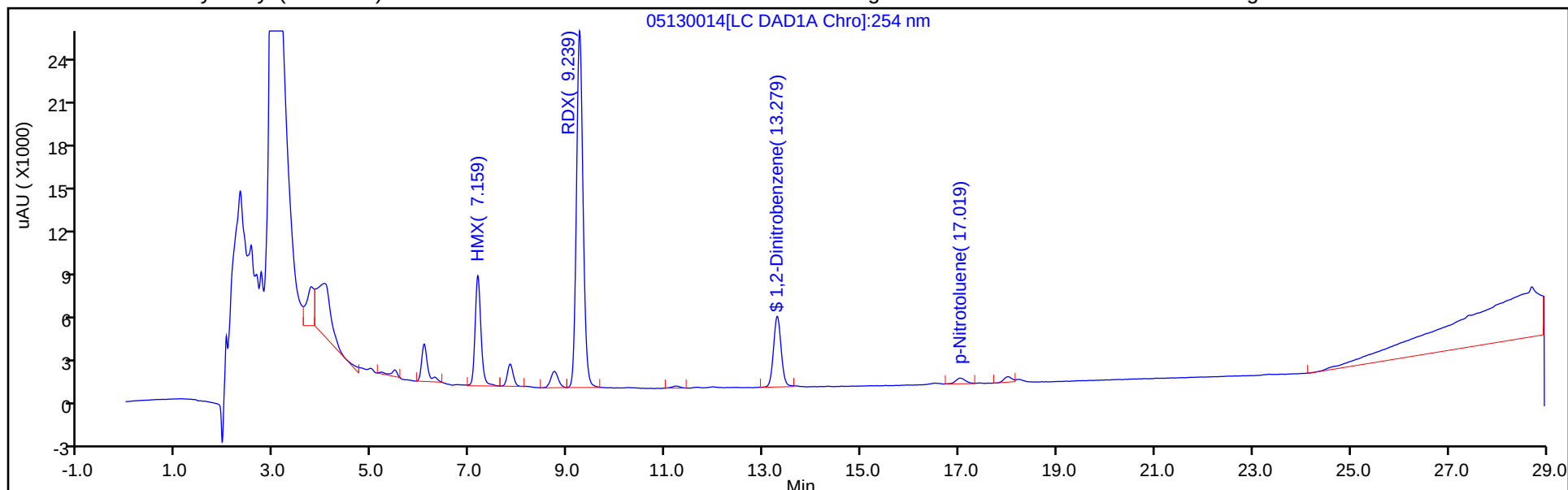
ALS Bottle#: 14

Method: G2_8330_Luna

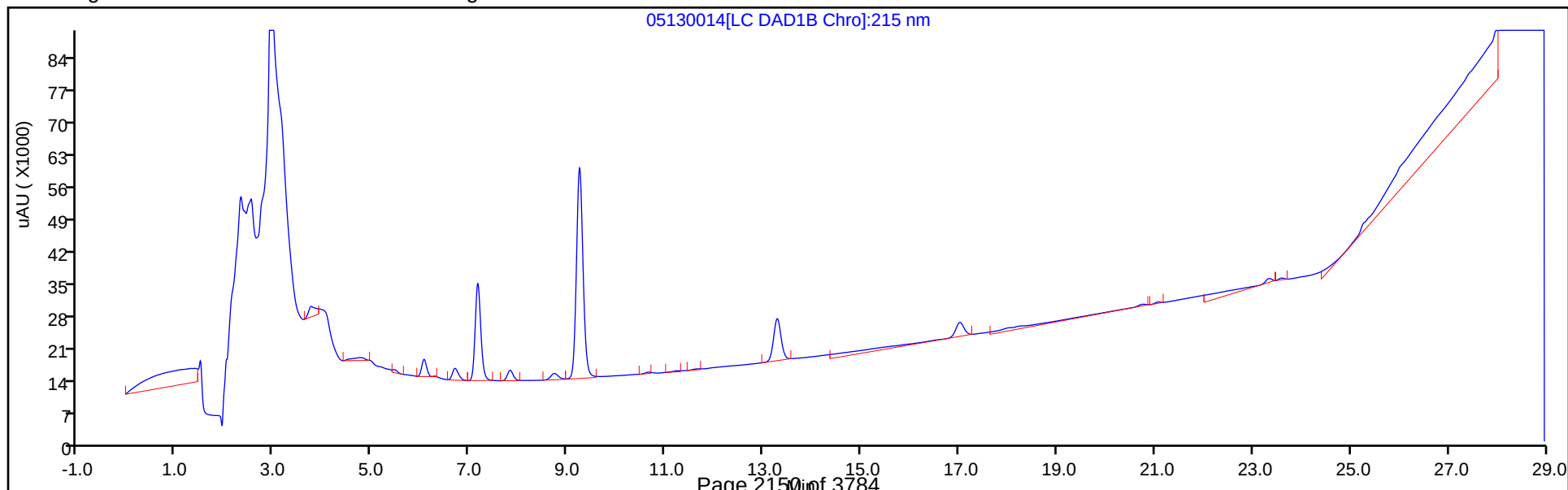
Limit Group: GCSV - 8330

Column: Luna-Phenyl hexyl (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190513-81828.b\05130014.D
Lims ID: 280-123221-B-10-A
Client ID: WBGmw-006-190401-GW
Sample Type: Client
Inject. Date: 13-May-2019 23:35:27 ALS Bottle#: 14 Worklist Smp#: 14
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-B-10-
Misc. Info.: 280-0081828-014
Operator ID: HKF Instrument ID: CHHPLC_G2_LUNA
Method: \\chromna\Denver\ChromData\G2_LUNA\20190513-81828.b\G2_8330_Luna.m
Limit Group: GCSV - 8330
Last Update: 14-May-2019 15:58:10 Calib Date: 08-May-2019 00:28:23
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070023.D
Column 1 : Luna-Phenyl hexyl (4.60 mm) Det: LC DAD1A, 254 nm
Process Host: CTX0336

First Level Reviewer: fiedlerh

Date: 14-May-2019 10:11:36

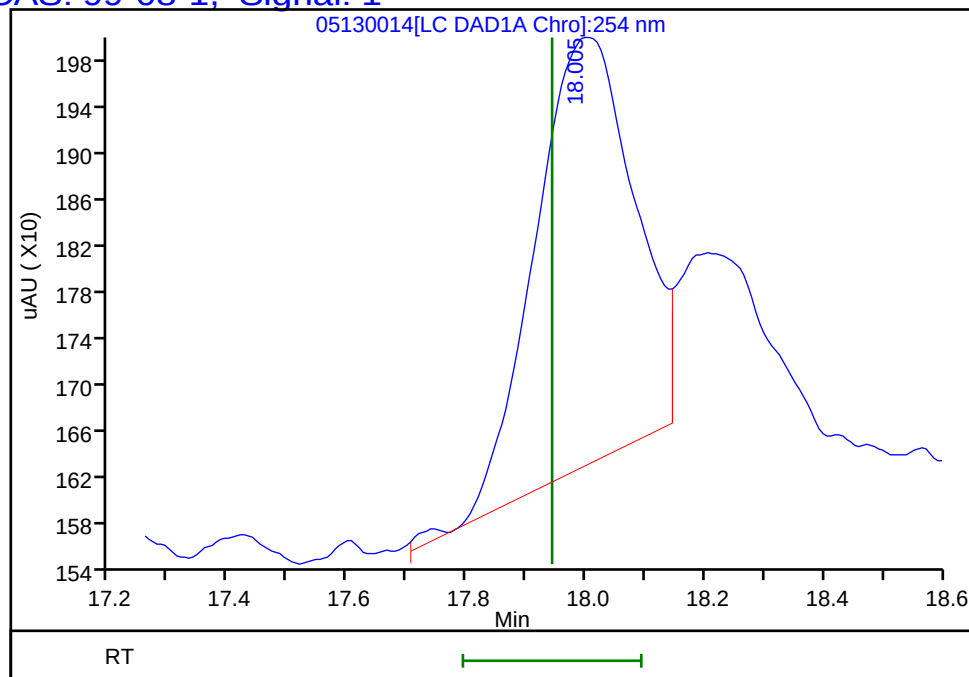
Compound	Amount Added	Amount Recovered	% Rec.
\$ 10 1,2-Dinitrobenzene	0.2000	0.1891	94.57

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190513-81828.b\05130014.D
Injection Date: 13-May-2019 23:35:27 Instrument ID: CHHPLC_G2_LUNA
Lims ID: 280-123221-B-10-A Lab Sample ID: 280-123221-10
Client ID: WBGmw-006-190401-GW
Operator ID: HKF ALS Bottle#: 14 Worklist Smp#: 14
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: G2_8330_Luna Limit Group: GCSV - 8330
Column: Luna-Phenyl hexyl (4.60 mm) Detector LC DAD1A, 254 nm

17 m-Nitrotoluene, CAS: 99-08-1, Signal: 1

RT: 18.01
Response: 4260
Amount: 0.014555



Reviewer: fiedlerh, 14-May-2019 10:11:36

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>WBGmw-006-190401-GW RE</u>	Lab Sample ID: <u>280-123221-10 RE</u>
Matrix: <u>Water</u>	Lab File ID: <u>0514B087.D</u>
Analysis Method: <u>8330B</u>	Date Collected: <u>04/30/2019 09:10</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>05/10/2019 16:21</u>
Sample wt/vol: <u>496.4 (mL)</u>	Date Analyzed: <u>05/15/2019 23:29</u>
Con. Extract Vol.: <u>5 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>100 (uL)</u>	GC Column: <u>UltraCarb5uODS</u> ID: <u>4.6 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>458152</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.40	U H	1.0	0.40	0.20
118-96-7	2,4,6-Trinitrotoluene	0.40	U H	0.40	0.40	0.16
121-14-2	2,4-Dinitrotoluene	0.20	U H	0.40	0.20	0.084
606-20-2	2,6-Dinitrotoluene	0.20	U H	0.20	0.20	0.065
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	U H	0.20	0.12	0.051
88-72-2	2-Nitrotoluene	0.20	U H	0.40	0.20	0.086
99-08-1	3-Nitrotoluene	0.40	U H	0.40	0.40	0.20
19406-51-0	4-Amino-2,6-dinitrotoluene	0.12	U H	0.20	0.12	0.058
99-99-0	4-Nitrotoluene	0.40	U H	1.0	0.40	0.20
2691-41-0	HMX	3.4	H M	0.40	0.20	0.088
98-95-3	Nitrobenzene	0.20	U H	0.40	0.20	0.092
55-63-0	Nitroglycerin	2.0	U H	3.0	2.0	0.93
78-11-5	PETN	4.0	U H	4.0	4.0	2.0
121-82-4	RDX	11	H	0.40	0.40	0.16
479-45-8	Tetryl	0.20	U H	0.24	0.20	0.080

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	97		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B087.D
 Lims ID: 280-123221-A-10-A
 Client ID: WBGmw-006-190401-GW
 Sample Type: Client
 Inject. Date: 15-May-2019 23:29:44 ALS Bottle#: 87 Worklist Smp#: 87
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-A-10-
 Misc. Info.: 280-0081869-087
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 16-May-2019 08:23:40 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 16-May-2019 08:22:20

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
3 HMX	1	6.650	6.650	0.000	29973	0.3360	M
7 RDX	1	7.770	7.764	0.006	111552	1.05	
\$ 9 1,2-Dinitrobenzene	1	8.750	8.744	0.006	25193	0.1936	
10 1,3,5-Trinitrobenzene	1		8.904			ND	
11 1,3-Dinitrobenzene	1	9.576	9.564	0.012	5666	0.0188	
12 Nitrobenzene	1		9.950			ND	
14 Tetryl	1		10.284			ND	
15 Nitroglycerin	2		10.784			ND	
16 2,4,6-Trinitrotoluene	1		11.237			ND	
17 4-Amino-2,6-dinitrotoluene	1		11.430			ND	
18 2-Amino-4,6-dinitrotoluene	1		11.717			ND	
19 2,6-Dinitrotoluene	1		11.850			ND	
20 2,4-Dinitrotoluene	1		12.050			ND	
21 o-Nitrotoluene	1		12.890			ND	
22 p-Nitrotoluene	1		13.330			ND	
23 m-Nitrotoluene	1		13.930			ND	
24 PETN	2		15.024			ND	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 16-May-2019 08:23:46

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B087.D

Injection Date: 15-May-2019 23:29:44

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-A-10-A

Lab Sample ID: 280-123221-10

Worklist Smp#: 87

Client ID: WBGmw-006-190401-GW

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

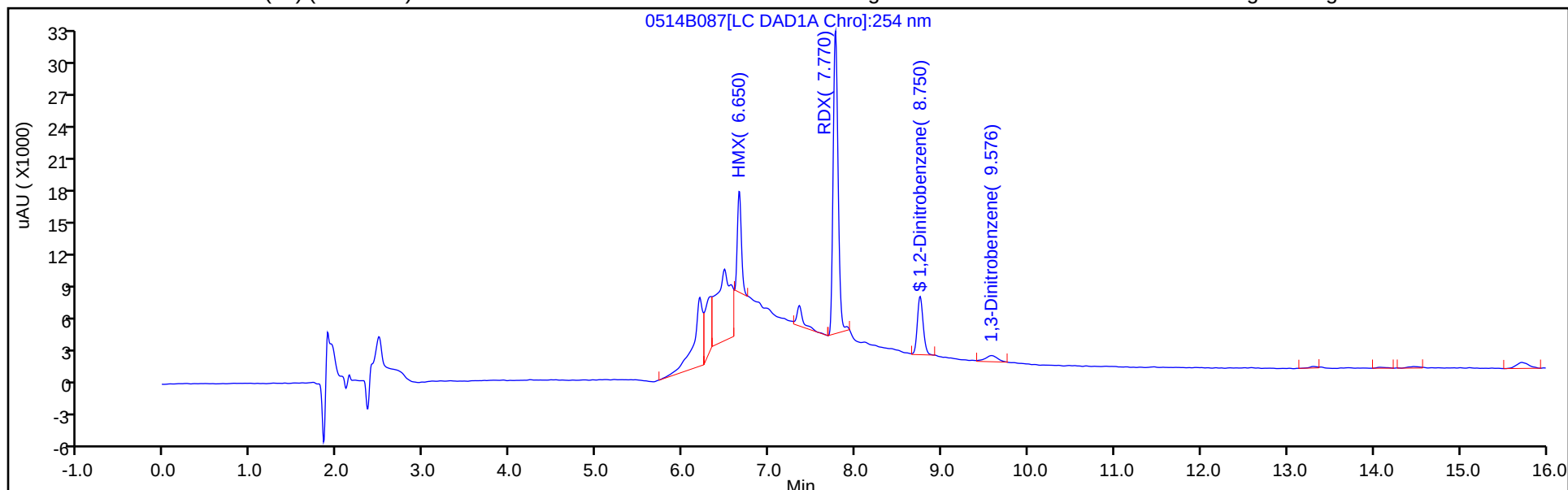
ALS Bottle#: 87

Method: 8330_X3

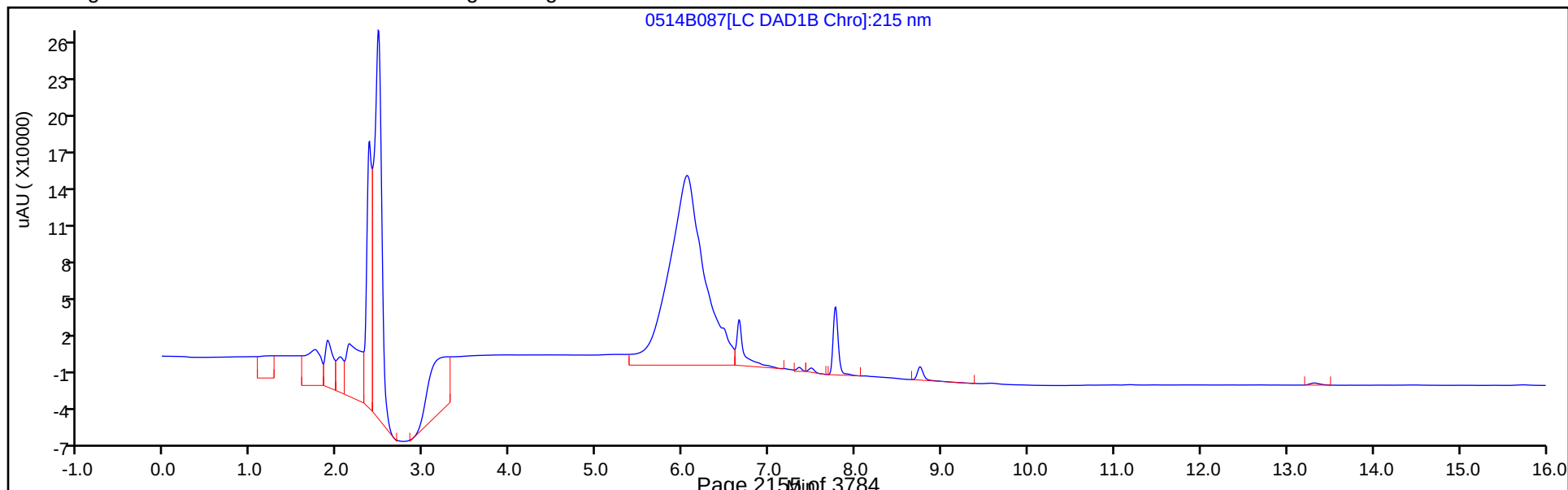
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B087.D
Lims ID: 280-123221-A-10-A
Client ID: WBGmw-006-190401-GW
Sample Type: Client
Inject. Date: 15-May-2019 23:29:44 ALS Bottle#: 87 Worklist Smp#: 87
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-A-10-
Misc. Info.: 280-0081869-087
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 16-May-2019 08:23:40 Calib Date: 15-May-2019 01:42:24
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 16-May-2019 08:22:20

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1936	96.81

Eurofins TestAmerica, Denver

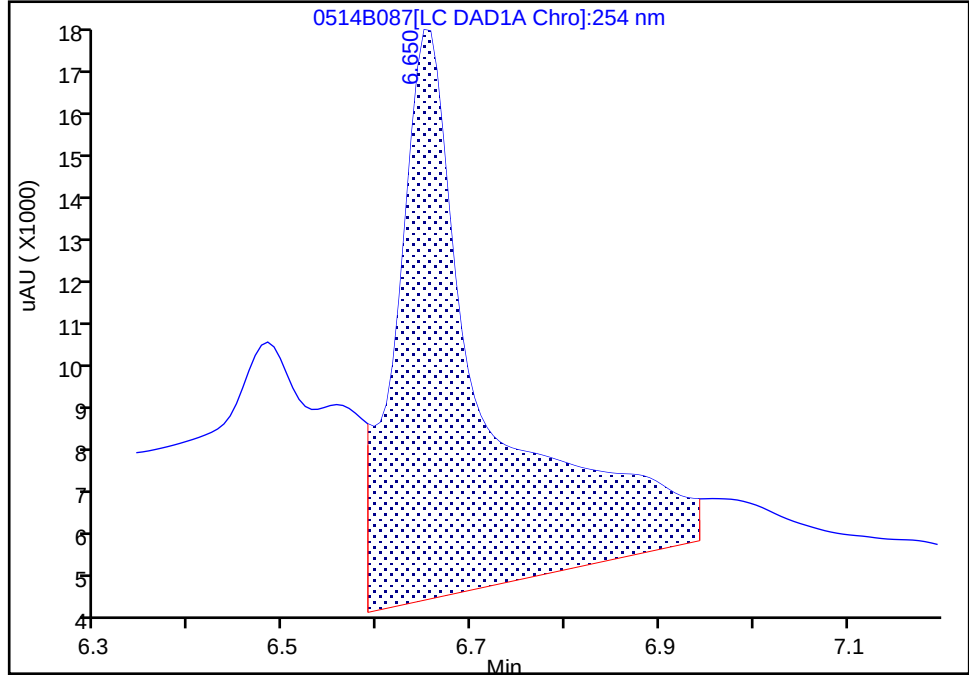
Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B087.D
Injection Date: 15-May-2019 23:29:44 Instrument ID: CHHPLC_X3
Lims ID: 280-123221-A-10-A Lab Sample ID: 280-123221-10
Client ID: WBGmw-006-190401-GW
Operator ID: hkf ALS Bottle#: 87 Worklist Smp#: 87
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector LC DAD1B, 254 nm

3 HMX, CAS: 2691-41-0

Signal: 1

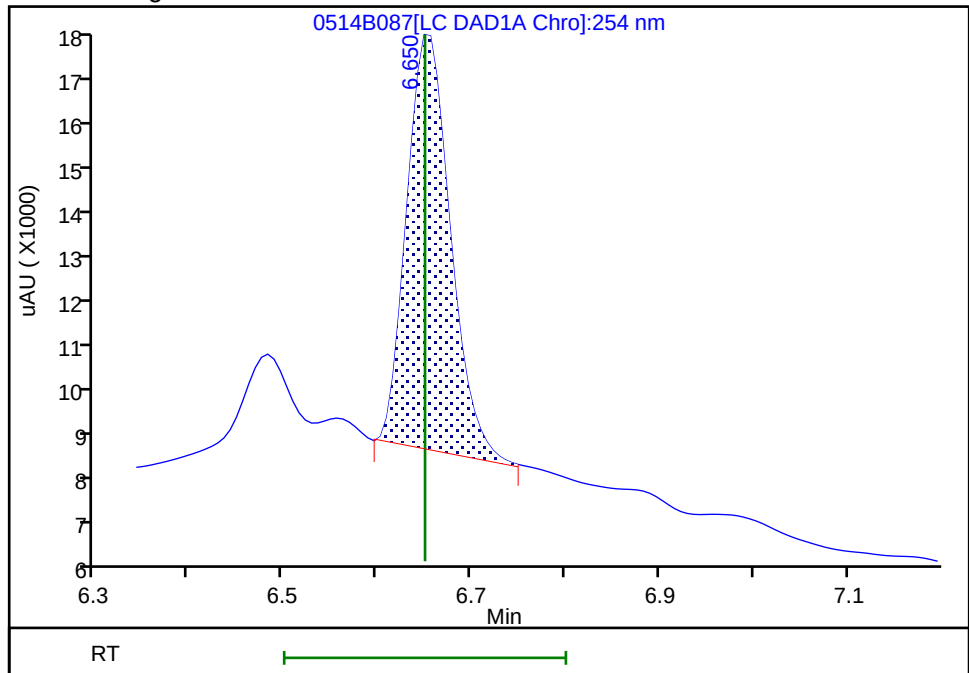
RT: 6.65
Area: 87899
Amount: 0.985347
Amount Units: ug/mL

Processing Integration Results



RT: 6.65
Area: 29973
Amount: 0.335997
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 16-May-2019 08:22:08
Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing
Page 2157 of 3784

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: WBGmw-006-190401-GW RE Lab Sample ID: 280-123221-10 RE
 Matrix: Water Lab File ID: 05160016.D
 Analysis Method: 8330B Date Collected: 04/30/2019 09:10
 Extraction Method: 3535 Date Extracted: 05/10/2019 16:21
 Sample wt/vol: 496.4 (mL) Date Analyzed: 05/16/2019 18:32
 Con. Extract Vol.: 5 (mL) Dilution Factor: 1
 Injection Volume: 100 (uL) GC Column: Luna-phenylhex ID: 4.6 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 458394 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-65-0	1,3-Dinitrobenzene	0.20	U H	0.40	0.20	0.089

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	96		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190516-81953.b\05160016.D
 Lims ID: 280-123221-A-10-A
 Client ID: WBGmw-006-190401-GW
 Sample Type: Client
 Inject. Date: 16-May-2019 18:32:08 ALS Bottle#: 16 Worklist Smp#: 16
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-A-10-
 Misc. Info.: 280-0081953-016
 Operator ID: HKF Instrument ID: CHHPLC_G2_LUNA
 Method: \\chromna\Denver\ChromData\G2_LUNA\20190516-81953.b\G2_8330_Luna.m
 Limit Group: GCSV - 8330
 Last Update: 17-May-2019 08:53:28 Calib Date: 08-May-2019 00:28:23
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070023.D
 Column 1 : Luna-Phenyl hexyl (4.60 mm) Det: LC DAD1A, 254 nm
 Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 17-May-2019 08:53:00

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/ml	Flags
6 HMX	1	7.227	7.238	-0.011	63067	0.3684	
8 RDX	1	9.326	9.331	-0.005	239476	1.15	
9 Nitrobenzene	1		12.357			ND	
\$ 10 1,2-Dinitrobenzene	1	13.393	13.391	0.002	53201	0.1922	
13 Nitroglycerin	2		15.911			ND	
12 1,3-Dinitrobenzene	1		15.917			ND	
14 o-Nitrotoluene	1		16.771			ND	
15 p-Nitrotoluene	1	17.140	17.097	0.043	5007	0.0221	
16 4-Amino-2,6-dinitrotoluene	1		17.497			ND	
17 m-Nitrotoluene	1		18.017			ND	MU
18 2-Amino-4,6-dinitrotoluene	1		18.504			ND	
19 1,3,5-Trinitrobenzene	1		19.257			ND	
20 2,6-Dinitrotoluene	1		20.131			ND	
21 2,4-Dinitrotoluene	1		20.671			ND	
22 Tetryl	1		24.004			ND	
23 2,4,6-Trinitrotoluene	1		24.984			ND	
24 PETN	2		25.364			ND	

QC Flag Legend

Review Flags

M - Manually Integrated

U - Marked Undetected

Report Date: 17-May-2019 08:53:37

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190516-81953.b\05160016.D

Injection Date: 16-May-2019 18:32:08

Instrument ID: CHHPLC_G2_LUNA

Operator ID: HKF

Lims ID: 280-123221-A-10-A

Lab Sample ID: 280-123221-10

Worklist Smp#: 16

Client ID: WBGmw-006-190401-GW

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

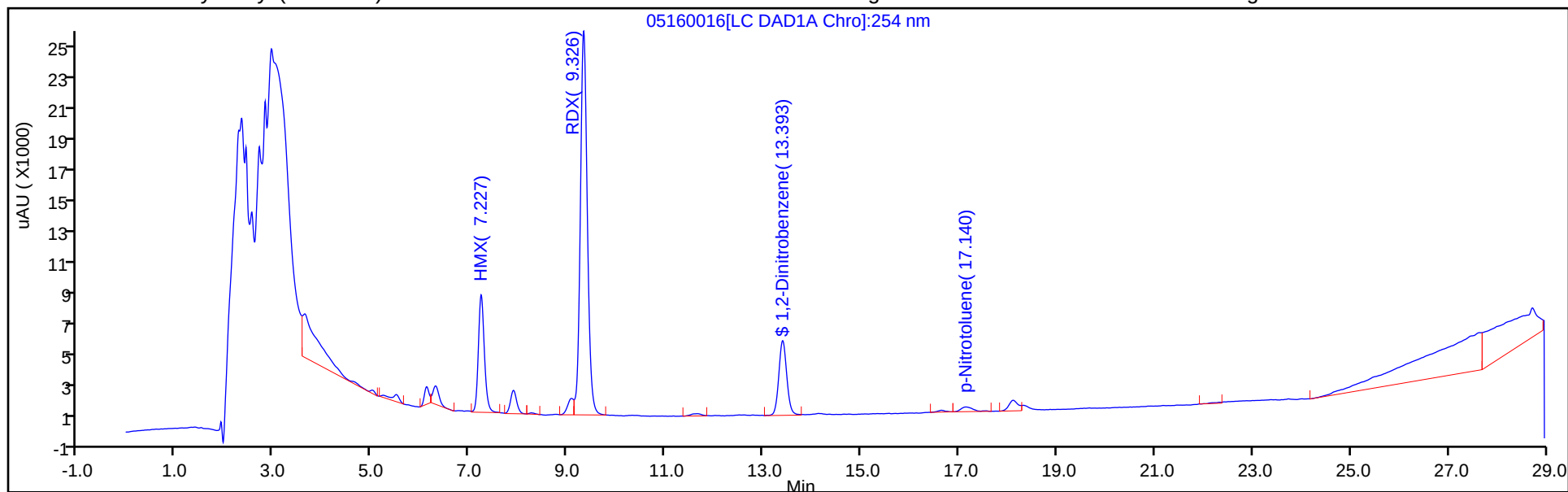
ALS Bottle#: 16

Method: G2_8330_Luna

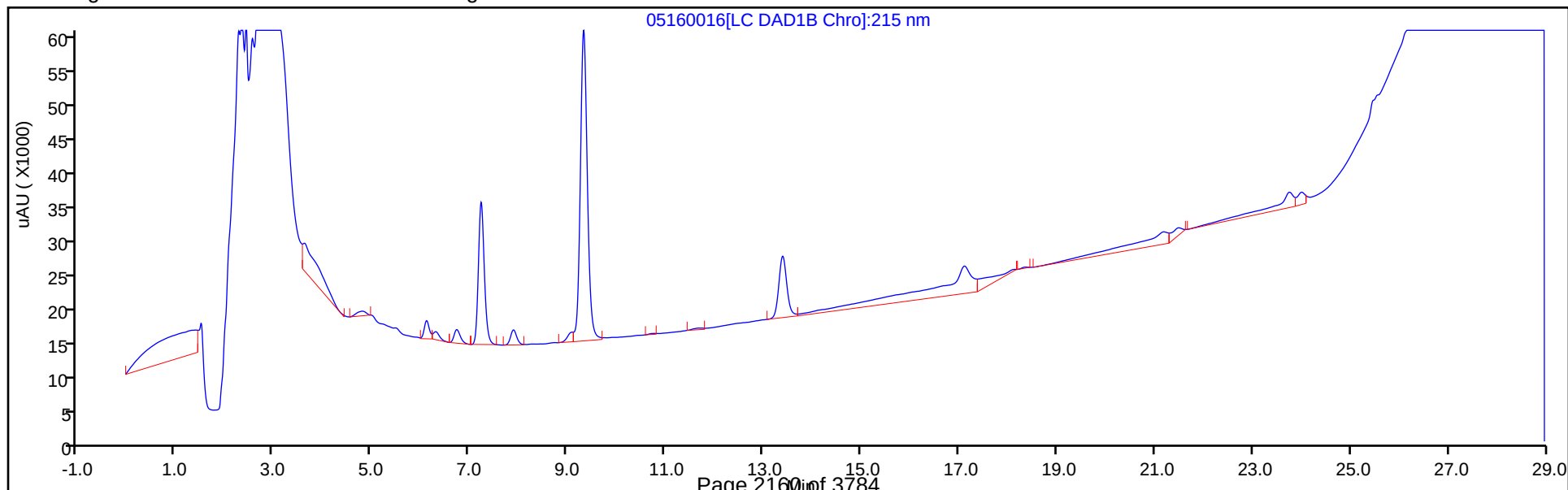
Limit Group: GCSV - 8330

Column: Luna-Phenyl hexyl (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190516-81953.b\05160016.D
Lims ID: 280-123221-A-10-A
Client ID: WBGmw-006-190401-GW
Sample Type: Client
Inject. Date: 16-May-2019 18:32:08 ALS Bottle#: 16 Worklist Smp#: 16
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-A-10-
Misc. Info.: 280-0081953-016
Operator ID: HKF Instrument ID: CHHPLC_G2_LUNA
Method: \\chromna\Denver\ChromData\G2_LUNA\20190516-81953.b\G2_8330_Luna.m
Limit Group: GCSV - 8330
Last Update: 17-May-2019 08:53:28 Calib Date: 08-May-2019 00:28:23
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070023.D
Column 1 : Luna-Phenyl hexyl (4.60 mm) Det: LC DAD1A, 254 nm
Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 17-May-2019 08:53:00

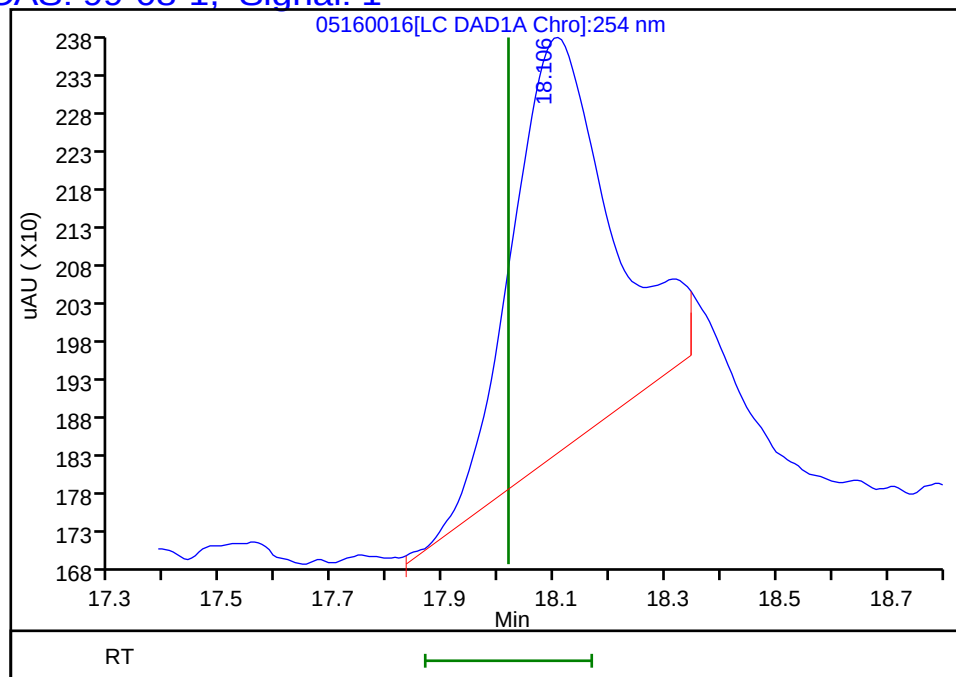
Compound	Amount Added	Amount Recovered	% Rec.
\$ 10 1,2-Dinitrobenzene	0.2000	0.1922	96.08

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190516-81953.b\05160016.D
Injection Date: 16-May-2019 18:32:08 Instrument ID: CHHPLC_G2_LUNA
Lims ID: 280-123221-A-10-A Lab Sample ID: 280-123221-10
Client ID: WBGmw-006-190401-GW
Operator ID: HKF ALS Bottle#: 16 Worklist Smp#: 16
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: G2_8330_Luna Limit Group: GCSV - 8330
Column: Luna-Phenyl hexyl (4.60 mm) Detector LC DAD1A, 254 nm

17 m-Nitrotoluene, CAS: 99-08-1, Signal: 1

RT: 18.11
Response: 6775
Amount: 0.023147



Reviewer: fiedlerh, 17-May-2019 08:53:00

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>WBGmw-021-190401-GW</u>	Lab Sample ID: <u>280-123221-11</u>
Matrix: <u>Water</u>	Lab File ID: <u>0509B054.D</u>
Analysis Method: <u>8330B</u>	Date Collected: <u>04/30/2019 09:45</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>05/04/2019 15:00</u>
Sample wt/vol: <u>453.6(mL)</u>	Date Analyzed: <u>05/10/2019 11:23</u>
Con. Extract Vol.: <u>5(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>100(uL)</u>	GC Column: <u>UltraCarb5uODS</u> ID: <u>4.6(mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>457634</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.44	U	1.1	0.44	0.22
99-65-0	1,3-Dinitrobenzene	0.22	U	0.44	0.22	0.098
118-96-7	2,4,6-Trinitrotoluene	0.44	U	0.44	0.44	0.18
121-14-2	2,4-Dinitrotoluene	0.22	U	0.44	0.22	0.092
606-20-2	2,6-Dinitrotoluene	0.22	U	0.22	0.22	0.071
35572-78-2	2-Amino-4,6-dinitrotoluene	0.13	U	0.22	0.13	0.056
88-72-2	2-Nitrotoluene	0.22	U Q	0.44	0.22	0.094
99-08-1	3-Nitrotoluene	0.44	U	0.44	0.44	0.21
19406-51-0	4-Amino-2,6-dinitrotoluene	0.13	U	0.22	0.13	0.064
99-99-0	4-Nitrotoluene	0.44	U	1.1	0.44	0.22
2691-41-0	HMX	0.22	U	0.44	0.22	0.097
98-95-3	Nitrobenzene	0.22	U	0.44	0.22	0.10
55-63-0	Nitroglycerin	2.2	U	3.3	2.2	1.0
78-11-5	PETN	4.4	U	4.4	4.4	2.1
121-82-4	RDX	0.44	U	0.44	0.44	0.17
479-45-8	Tetryl	0.22	U	0.26	0.22	0.087

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	84		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B054.D
 Lims ID: 280-123221-A-11-A
 Client ID: WBGmw-021-190401-GW
 Sample Type: Client
 Inject. Date: 10-May-2019 11:23:24 ALS Bottle#: 54 Worklist Smp#: 54
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-A-11-
 Misc. Info.: 280-0081739-054
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 10-May-2019 17:39:31 Calib Date: 30-Jan-2019 16:34:11
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0316

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
3 HMX	1		6.643			ND	
7 RDX	1		7.736			ND	
\$ 9 1,2-Dinitrobenzene	1	8.716	8.710	0.006	22479	0.1681	
10 1,3,5-Trinitrobenzene	1		8.870			ND	
11 1,3-Dinitrobenzene	1		9.523			ND	
12 Nitrobenzene	1		9.910			ND	
14 Tetryl	1		10.230			ND	
15 Nitroglycerin	2		10.736			ND	
16 2,4,6-Trinitrotoluene	1		11.183			ND	
17 4-Amino-2,6-dinitrotoluene	1		11.343			ND	
18 2-Amino-4,6-dinitrotoluene	1		11.630			ND	
19 2,6-Dinitrotoluene	1		11.790			ND	
20 2,4-Dinitrotoluene	1		11.983			ND	
21 o-Nitrotoluene	1		12.823			ND	
22 p-Nitrotoluene	1		13.256			ND	
23 m-Nitrotoluene	1		13.856			ND	
24 PETN	2		14.963			ND	

Report Date: 10-May-2019 17:39:50

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B054.D

Injection Date: 10-May-2019 11:23:24

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-A-11-A

Lab Sample ID: 280-123221-11

Worklist Smp#: 54

Client ID: WBGmw-021-190401-GW

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

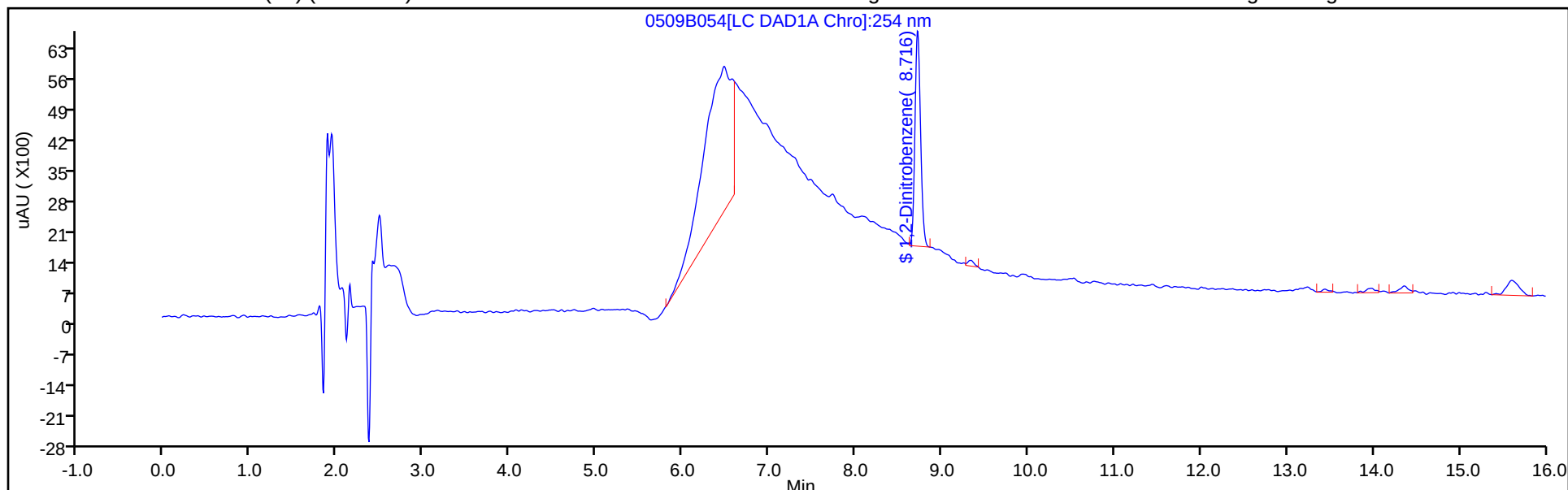
ALS Bottle#: 54

Method: 8330_X3

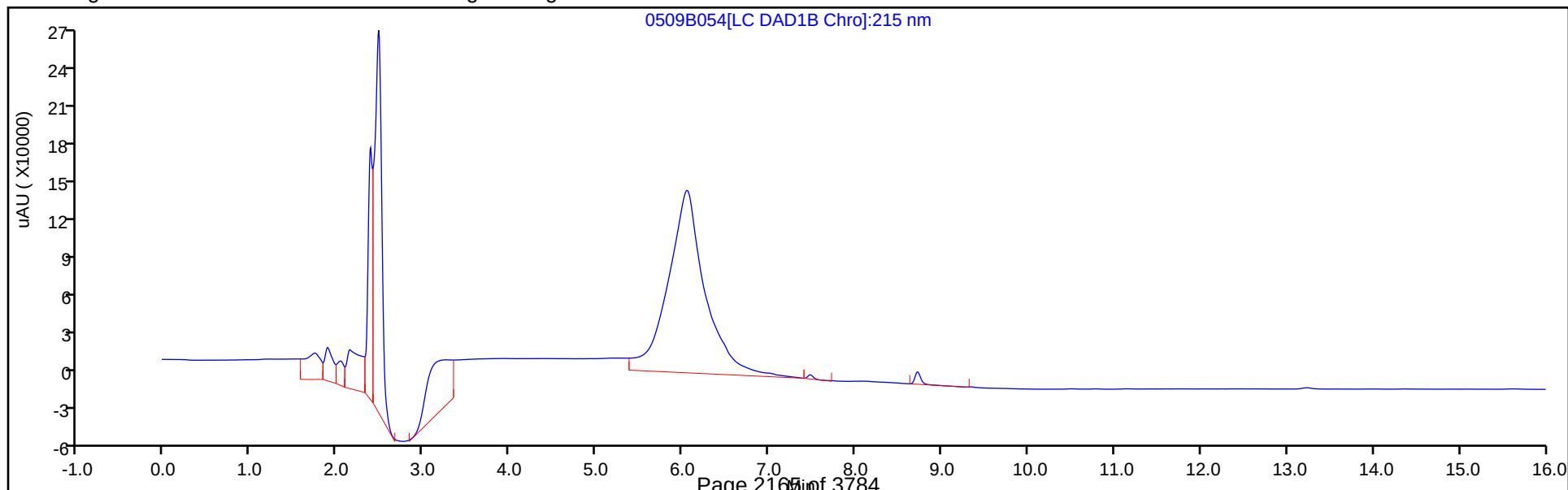
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B054.D
Lims ID: 280-123221-A-11-A
Client ID: WBGmw-021-190401-GW
Sample Type: Client
Inject. Date: 10-May-2019 11:23:24 ALS Bottle#: 54 Worklist Smp#: 54
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-A-11-
Misc. Info.: 280-0081739-054
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 10-May-2019 17:39:31 Calib Date: 30-Jan-2019 16:34:11
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0316

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1681	84.07

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>WBGmw-021-190401-GW RE</u>	Lab Sample ID: <u>280-123221-11 RE</u>
Matrix: <u>Water</u>	Lab File ID: <u>0514B088.D</u>
Analysis Method: <u>8330B</u>	Date Collected: <u>04/30/2019 09:45</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>05/10/2019 16:21</u>
Sample wt/vol: <u>418.9(mL)</u>	Date Analyzed: <u>05/15/2019 23:53</u>
Con. Extract Vol.: <u>5(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>100(uL)</u>	GC Column: <u>UltraCarb5uODS</u> ID: <u>4.6(mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>458152</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.48	U H	1.2	0.48	0.24
99-65-0	1,3-Dinitrobenzene	0.24	U H	0.48	0.24	0.11
118-96-7	2,4,6-Trinitrotoluene	0.48	U H	0.48	0.48	0.19
121-14-2	2,4-Dinitrotoluene	0.24	U H	0.48	0.24	0.10
606-20-2	2,6-Dinitrotoluene	0.24	U H	0.24	0.24	0.077
35572-78-2	2-Amino-4,6-dinitrotoluene	0.14	U H	0.24	0.14	0.061
88-72-2	2-Nitrotoluene	0.24	U H	0.48	0.24	0.10
99-08-1	3-Nitrotoluene	0.48	U H	0.48	0.48	0.23
19406-51-0	4-Amino-2,6-dinitrotoluene	0.14	U H	0.24	0.14	0.069
99-99-0	4-Nitrotoluene	0.48	U H	1.2	0.48	0.24
2691-41-0	HMX	0.24	U H	0.48	0.24	0.10
98-95-3	Nitrobenzene	0.24	U H	0.48	0.24	0.11
55-63-0	Nitroglycerin	2.4	U H	3.6	2.4	1.1
78-11-5	PETN	4.8	U H	4.8	4.8	2.3
121-82-4	RDX	0.48	U H	0.48	0.48	0.19
479-45-8	Tetryl	0.24	U H	0.29	0.24	0.095

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	94		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B088.D
 Lims ID: 280-123221-B-11-A
 Client ID: WBGmw-021-190401-GW
 Sample Type: Client
 Inject. Date: 15-May-2019 23:53:25 ALS Bottle#: 88 Worklist Smp#: 88
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-B-11-
 Misc. Info.: 280-0081869-088
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 16-May-2019 08:23:40 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 16-May-2019 08:22:31

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
3 HMX	1		6.650			ND	
7 RDX	1		7.764			ND	
\$ 9 1,2-Dinitrobenzene	1	8.748	8.744	0.004	24386	0.1874	
10 1,3,5-Trinitrobenzene	1		8.904			ND	
11 1,3-Dinitrobenzene	1		9.564			ND	
12 Nitrobenzene	1		9.950			ND	
14 Tetryl	1		10.284			ND	
15 Nitroglycerin	2		10.784			ND	
16 2,4,6-Trinitrotoluene	1		11.237			ND	
17 4-Amino-2,6-dinitrotoluene	1		11.430			ND	
18 2-Amino-4,6-dinitrotoluene	1		11.717			ND	
19 2,6-Dinitrotoluene	1		11.850			ND	
20 2,4-Dinitrotoluene	1		12.050			ND	
21 o-Nitrotoluene	1		12.890			ND	
22 p-Nitrotoluene	1		13.330			ND	
23 m-Nitrotoluene	1		13.930			ND	
24 PETN	2		15.024			ND	

Report Date: 16-May-2019 08:23:47

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B088.D

Injection Date: 15-May-2019 23:53:25

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-B-11-A

Lab Sample ID: 280-123221-11

Worklist Smp#: 88

Client ID: WBGmw-021-190401-GW

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

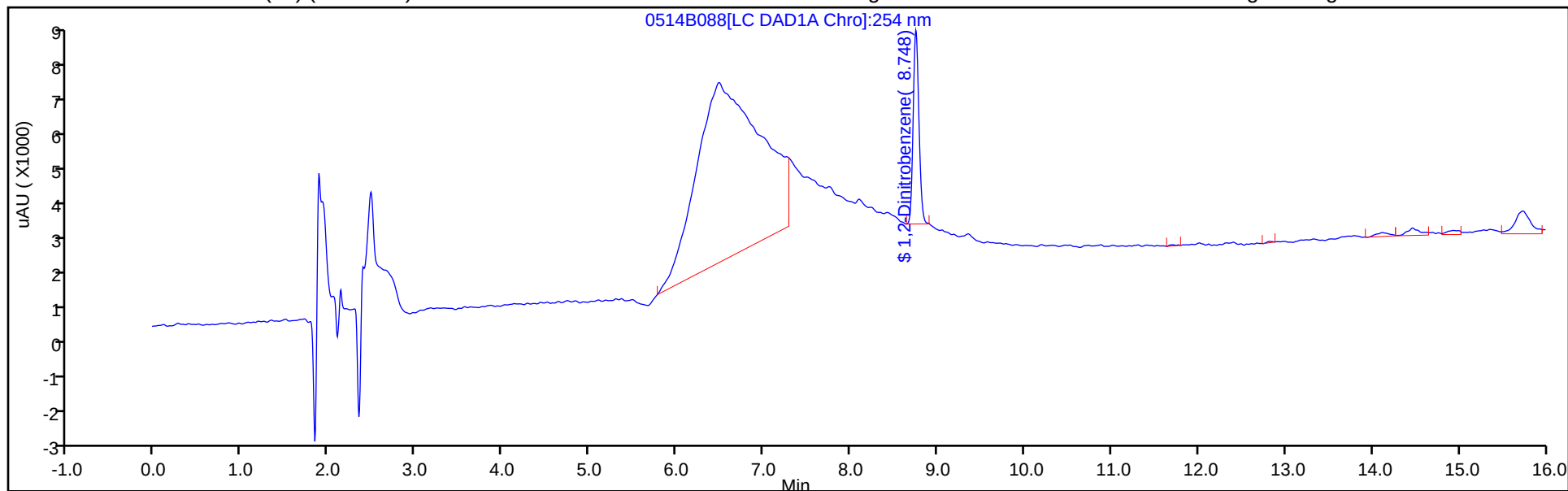
ALS Bottle#: 88

Method: 8330_X3

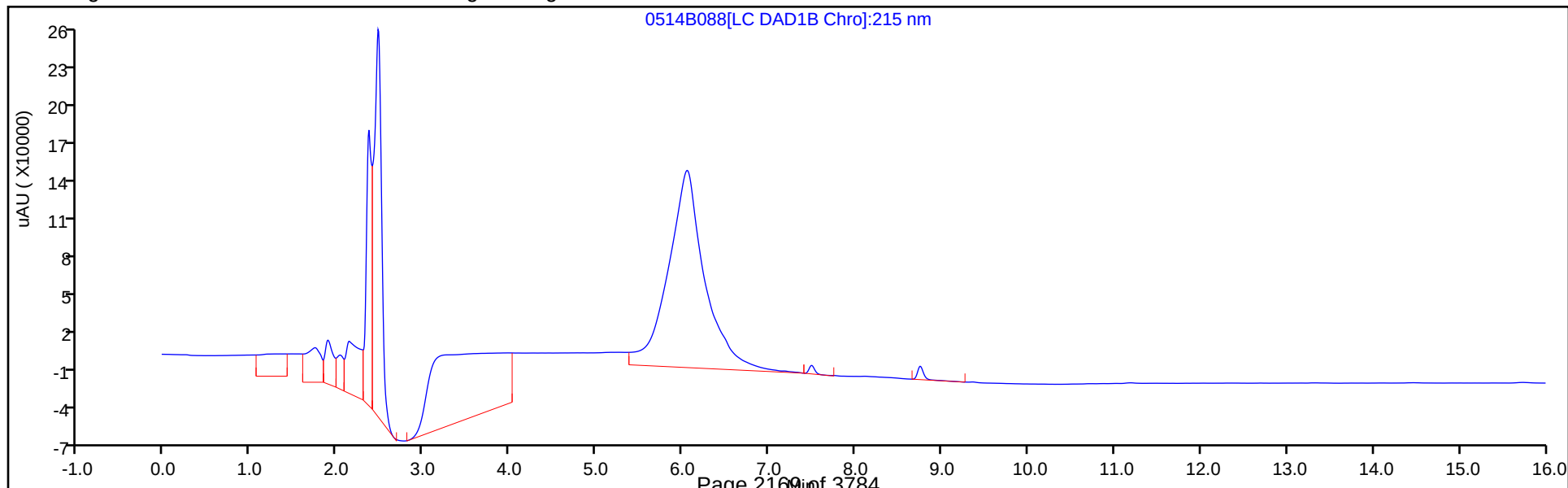
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B088.D
Lims ID: 280-123221-B-11-A
Client ID: WBGmw-021-190401-GW
Sample Type: Client
Inject. Date: 15-May-2019 23:53:25 ALS Bottle#: 88 Worklist Smp#: 88
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-B-11-
Misc. Info.: 280-0081869-088
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 16-May-2019 08:23:40 Calib Date: 15-May-2019 01:42:24
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 16-May-2019 08:22:31

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1874	93.71

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>WBGmw-009-190401-GW</u>	Lab Sample ID: <u>280-123221-12</u>
Matrix: <u>Water</u>	Lab File ID: <u>0509B055.D</u>
Analysis Method: <u>8330B</u>	Date Collected: <u>04/30/2019 10:53</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>05/04/2019 15:00</u>
Sample wt/vol: <u>479.9(mL)</u>	Date Analyzed: <u>05/10/2019 11:47</u>
Con. Extract Vol.: <u>5(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>100(uL)</u>	GC Column: <u>UltraCarb5uODS</u> ID: <u>4.6(mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>457634</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.42	U	1.0	0.42	0.21
99-65-0	1,3-Dinitrobenzene	0.21	U	0.42	0.21	0.092
118-96-7	2,4,6-Trinitrotoluene	0.42	U	0.42	0.42	0.17
121-14-2	2,4-Dinitrotoluene	0.21	U	0.42	0.21	0.087
606-20-2	2,6-Dinitrotoluene	0.21	U	0.21	0.21	0.067
35572-78-2	2-Amino-4,6-dinitrotoluene	0.13	U	0.21	0.13	0.053
88-72-2	2-Nitrotoluene	0.21	U Q	0.42	0.21	0.089
99-08-1	3-Nitrotoluene	0.42	U	0.42	0.42	0.20
19406-51-0	4-Amino-2,6-dinitrotoluene	0.13	U	0.21	0.13	0.060
99-99-0	4-Nitrotoluene	0.42	U	1.0	0.42	0.21
2691-41-0	HMX	0.67	M	0.42	0.21	0.091
98-95-3	Nitrobenzene	0.21	U	0.42	0.21	0.095
55-63-0	Nitroglycerin	2.1	U	3.1	2.1	0.96
78-11-5	PETN	4.2	U	4.2	4.2	2.0
121-82-4	RDX	1.6	M	0.42	0.42	0.16
479-45-8	Tetryl	0.21	U	0.25	0.21	0.083

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	93		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B055.D
 Lims ID: 280-123221-A-12-A
 Client ID: WBGmw-009-190401-GW
 Sample Type: Client
 Inject. Date: 10-May-2019 11:47:16 ALS Bottle#: 55 Worklist Smp#: 55
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-A-12-
 Misc. Info.: 280-0081739-055
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 10-May-2019 17:39:31 Calib Date: 30-Jan-2019 16:34:11
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 10-May-2019 17:36:44

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
3 HMX	1	6.640	6.643	-0.003	5593	0.0644	M
7 RDX	1	7.733	7.736	-0.003	16749	0.1579	M
\$ 9 1,2-Dinitrobenzene	1	8.706	8.710	-0.004	24915	0.1864	
10 1,3,5-Trinitrobenzene	1		8.870			ND	
11 1,3-Dinitrobenzene	1		9.523			ND	
12 Nitrobenzene	1		9.910			ND	
14 Tetryl	1		10.230			ND	
15 Nitroglycerin	2		10.736			ND	
16 2,4,6-Trinitrotoluene	1		11.183			ND	
17 4-Amino-2,6-dinitrotoluene	1		11.343			ND	
18 2-Amino-4,6-dinitrotoluene	1		11.630			ND	
19 2,6-Dinitrotoluene	1		11.790			ND	
20 2,4-Dinitrotoluene	1		11.983			ND	
21 o-Nitrotoluene	1		12.823			ND	
22 p-Nitrotoluene	1		13.256			ND	
23 m-Nitrotoluene	1		13.856			ND	
24 PETN	2		14.963			ND	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 10-May-2019 17:39:51

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B055.D

Injection Date: 10-May-2019 11:47:16

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-A-12-A

Lab Sample ID: 280-123221-12

Worklist Smp#: 55

Client ID: WBGmw-009-190401-GW

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

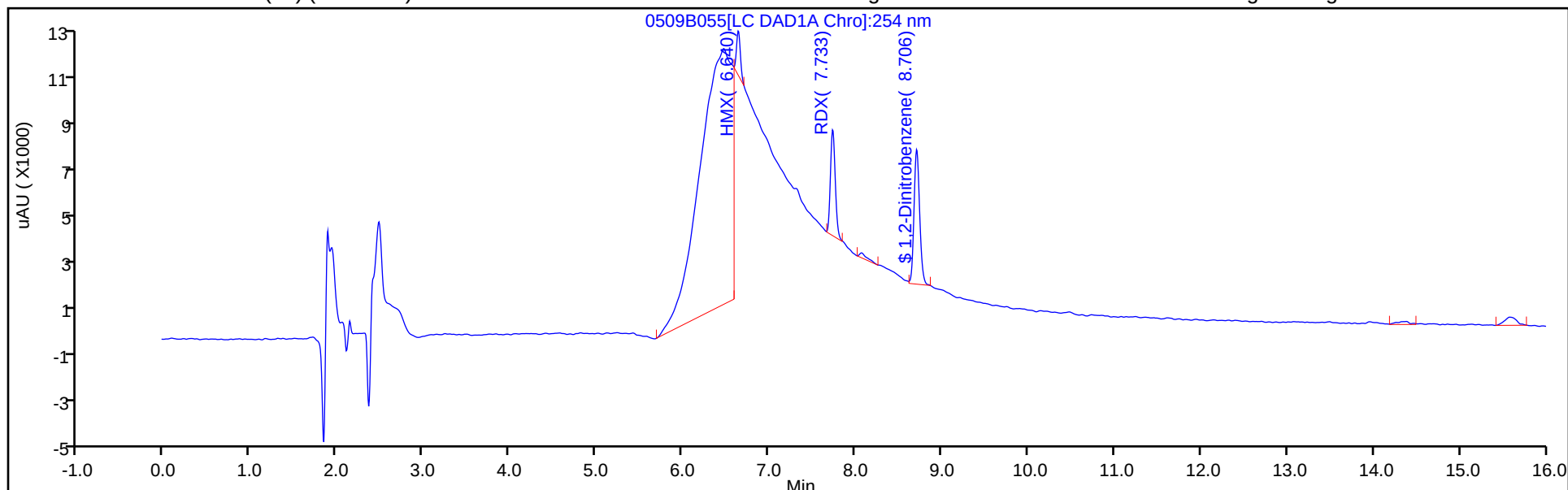
ALS Bottle#: 55

Method: 8330_X3

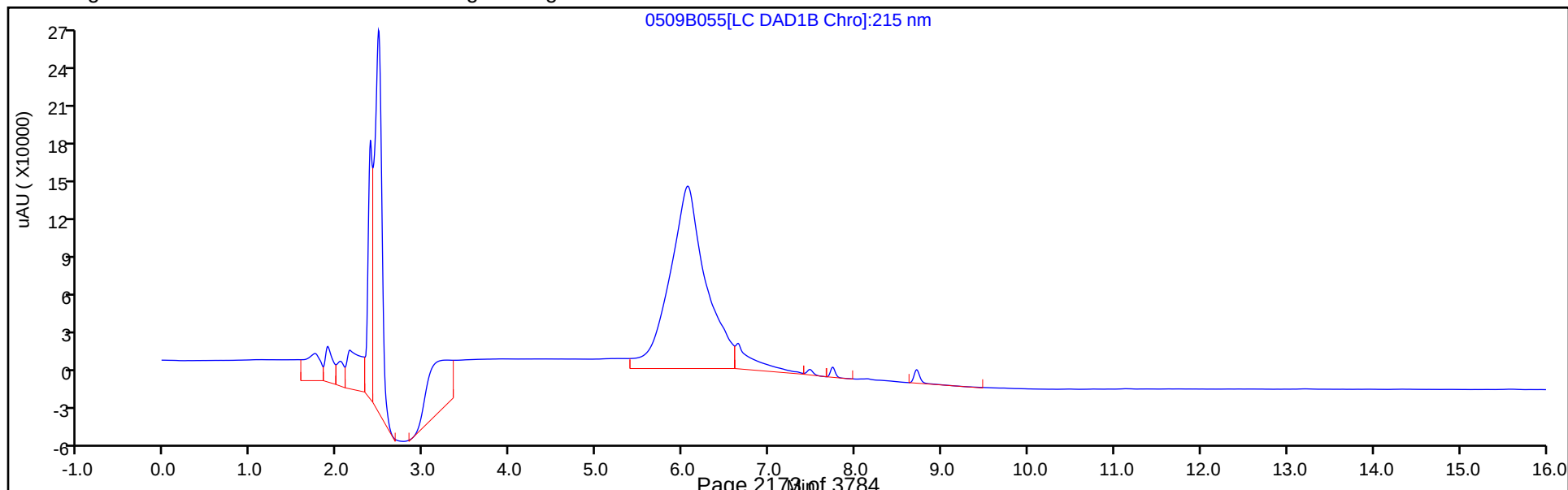
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B055.D
Lims ID: 280-123221-A-12-A
Client ID: WBGmw-009-190401-GW
Sample Type: Client
Inject. Date: 10-May-2019 11:47:16 ALS Bottle#: 55 Worklist Smp#: 55
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-A-12-
Misc. Info.: 280-0081739-055
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 10-May-2019 17:39:31 Calib Date: 30-Jan-2019 16:34:11
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 10-May-2019 17:36:44

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1864	93.18

Eurofins TestAmerica, Denver

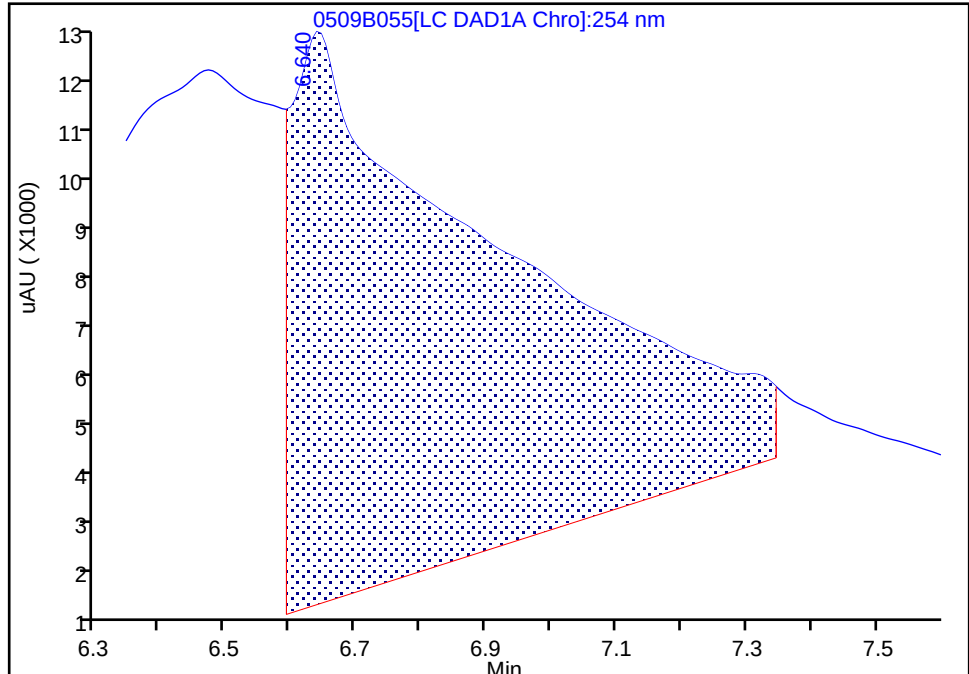
Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B055.D
Injection Date: 10-May-2019 11:47:16 Instrument ID: CHHPLC_X3
Lims ID: 280-123221-A-12-A Lab Sample ID: 280-123221-12
Client ID: WBGmw-009-190401-GW
Operator ID: hkf ALS Bottle#: 55 Worklist Smp#: 55
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector LC DAD1B, 254 nm

3 HMX, CAS: 2691-41-0

Signal: 1

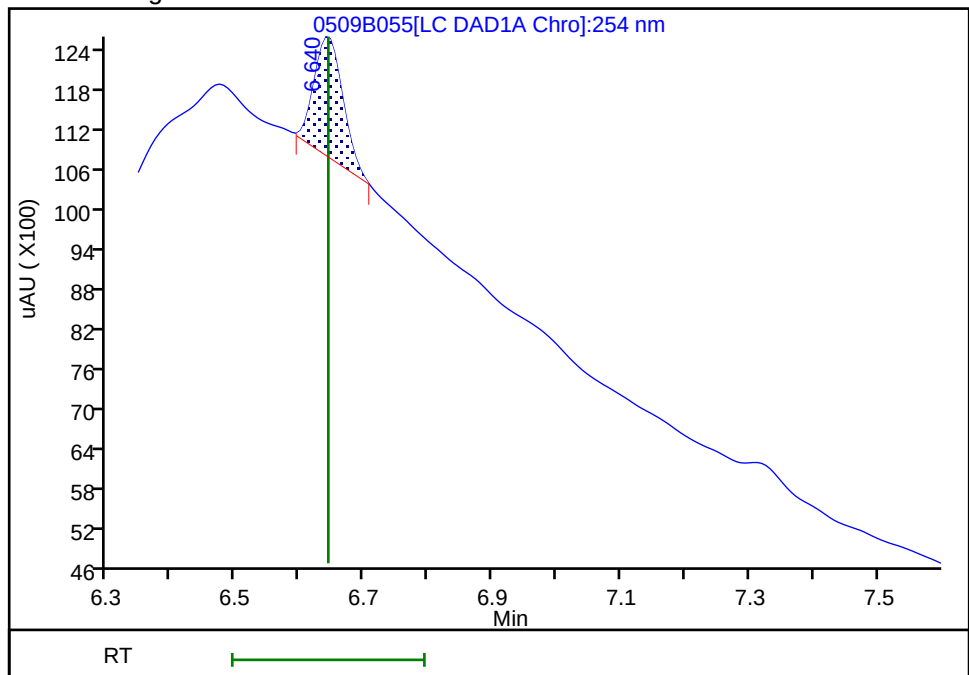
RT: 6.64
Area: 237522
Amount: 2.734336
Amount Units: ug/mL

Processing Integration Results



RT: 6.64
Area: 5593
Amount: 0.064386
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 10-May-2019 17:36:37
Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing
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Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B055.D

Injection Date: 10-May-2019 11:47:16

Instrument ID: CHHPLC_X3

Lims ID: 280-123221-A-12-A

Lab Sample ID: 280-123221-12

Client ID: WBGmw-009-190401-GW

Operator ID: hkf

ALS Bottle#:

55

Worklist Smp#: 55

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

Method: 8330_X3

Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

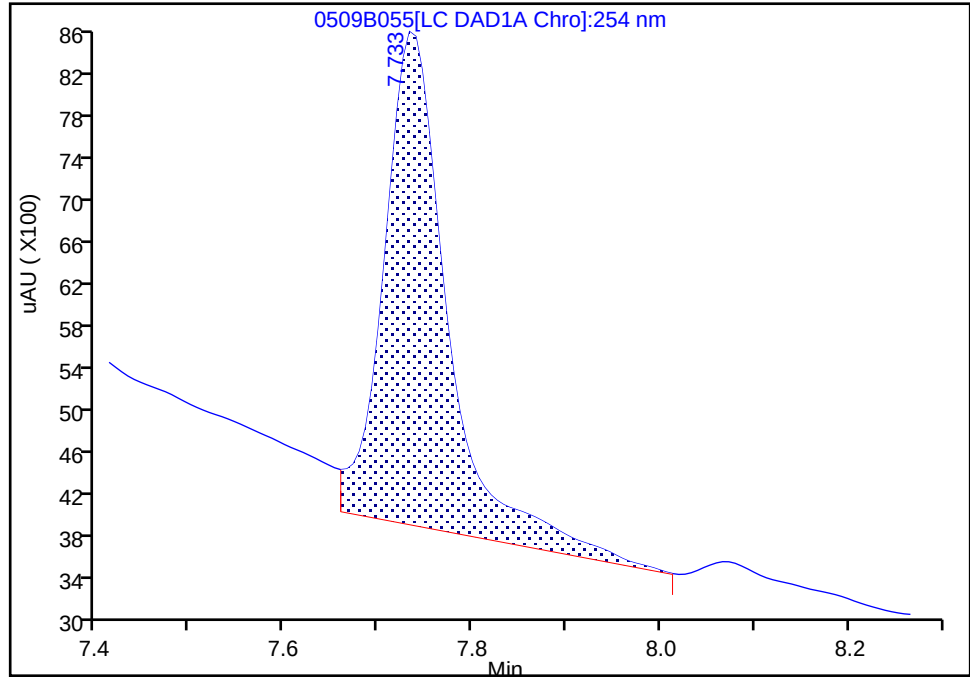
Detector: LC DAD1B, 254 nm

7 RDX, CAS: 121-82-4

Signal: 1

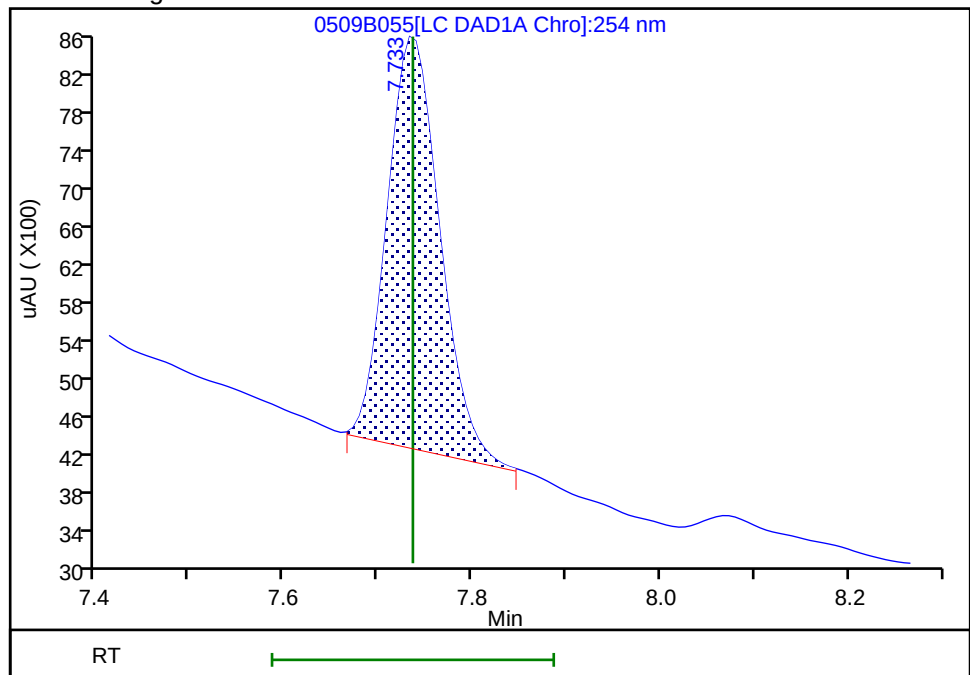
RT: 7.73
Area: 22053
Amount: 0.207848
Amount Units: ug/mL

Processing Integration Results



RT: 7.73
Area: 16749
Amount: 0.157858
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 10-May-2019 17:36:42

Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>WBGmw-009-190401-GW RE</u>	Lab Sample ID: <u>280-123221-12 RE</u>
Matrix: <u>Water</u>	Lab File ID: <u>05170011.D</u>
Analysis Method: <u>8330B</u>	Date Collected: <u>04/30/2019 10:53</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>05/11/2019 15:37</u>
Sample wt/vol: <u>489.6(mL)</u>	Date Analyzed: <u>05/17/2019 11:59</u>
Con. Extract Vol.: <u>5(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>100(uL)</u>	GC Column: <u>UltraCarb5uODS</u> ID: <u>4.6(mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>458533</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.41	U H	1.0	0.41	0.20
99-65-0	1,3-Dinitrobenzene	0.20	U H	0.41	0.20	0.091
118-96-7	2,4,6-Trinitrotoluene	0.41	U H	0.41	0.41	0.16
121-14-2	2,4-Dinitrotoluene	0.20	U H	0.41	0.20	0.086
606-20-2	2,6-Dinitrotoluene	0.20	U H	0.20	0.20	0.066
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	U H	0.20	0.12	0.052
88-72-2	2-Nitrotoluene	0.20	U H	0.41	0.20	0.087
99-08-1	3-Nitrotoluene	0.41	U H	0.41	0.41	0.20
19406-51-0	4-Amino-2,6-dinitrotoluene	0.12	U H	0.20	0.12	0.059
99-99-0	4-Nitrotoluene	0.41	U H	1.0	0.41	0.20
2691-41-0	HMX	0.68	H M	0.41	0.20	0.089
98-95-3	Nitrobenzene	0.20	U H	0.41	0.20	0.093
55-63-0	Nitroglycerin	2.0	U H	3.1	2.0	0.94
78-11-5	PETN	4.1	U H	4.1	4.1	2.0
121-82-4	RDX	1.8	H M	0.41	0.41	0.16
479-45-8	Tetryl	0.20	U H	0.25	0.20	0.081

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	98		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190517-81994.b\05170011.D
 Lims ID: 280-123221-B-12-A
 Client ID: WBGmw-009-190401-GW
 Sample Type: Client
 Inject. Date: 17-May-2019 11:59:28 ALS Bottle#: 11 Worklist Smp#: 11
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-B-12-
 Misc. Info.: 280-0081994-011
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190517-81994.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 20-May-2019 11:01:40 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0328

First Level Reviewer: fiedlerh

Date: 20-May-2019 10:04:54

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
3 HMX	1	6.657	6.656	0.001	5941	0.0666	M
7 RDX	1	7.777	7.776	0.001	18301	0.1716	M
\$ 9 1,2-Dinitrobenzene	1	8.764	8.763	0.001	25553	0.1964	
10 1,3,5-Trinitrobenzene	1		8.923			ND	
11 1,3-Dinitrobenzene	1		9.590			ND	
12 Nitrobenzene	1		9.983			ND	
14 Tetryl	1		10.316			ND	
15 Nitroglycerin	2		10.823			ND	
16 2,4,6-Trinitrotoluene	1		11.276			ND	
17 4-Amino-2,6-dinitrotoluene	1		11.470			ND	
18 2-Amino-4,6-dinitrotoluene	1		11.763			ND	
19 2,6-Dinitrotoluene	1		11.896			ND	
20 2,4-Dinitrotoluene	1		12.096			ND	
21 o-Nitrotoluene	1		12.943			ND	
22 p-Nitrotoluene	1		13.390			ND	
23 m-Nitrotoluene	1		13.990			ND	
24 PETN	2		15.096			ND	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 20-May-2019 11:01:44

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190517-81994.b\05170011.D

Injection Date: 17-May-2019 11:59:28

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-B-12-A

Lab Sample ID: 280-123221-12

Worklist Smp#: 11

Client ID: WBGmw-009-190401-GW

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

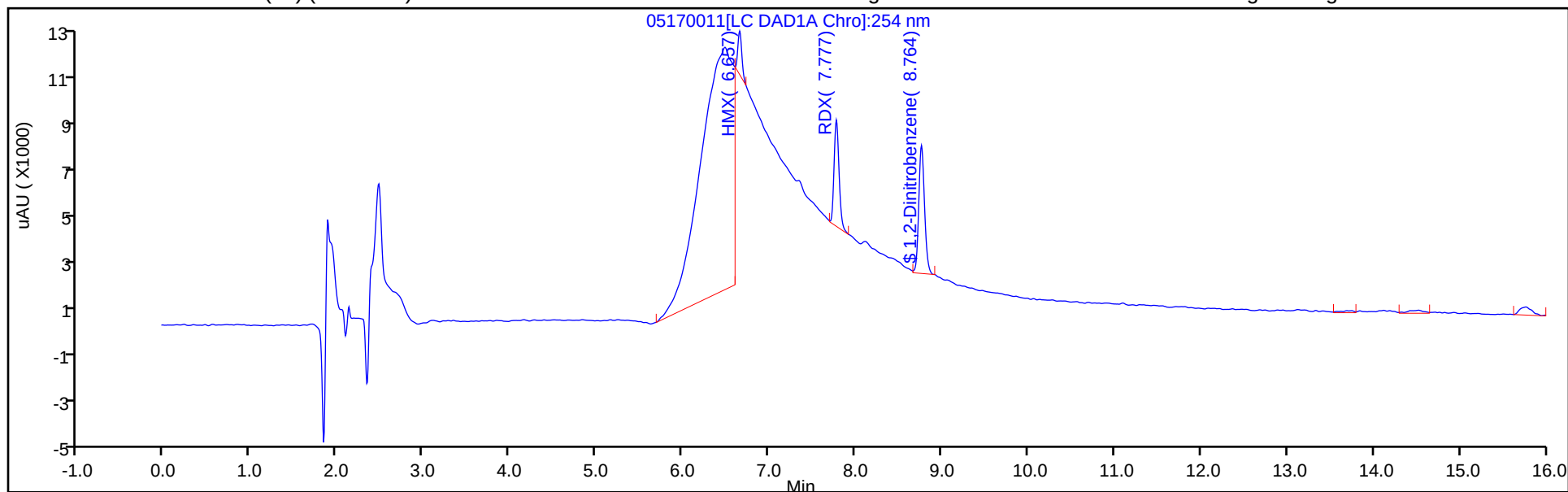
ALS Bottle#: 11

Method: 8330_X3

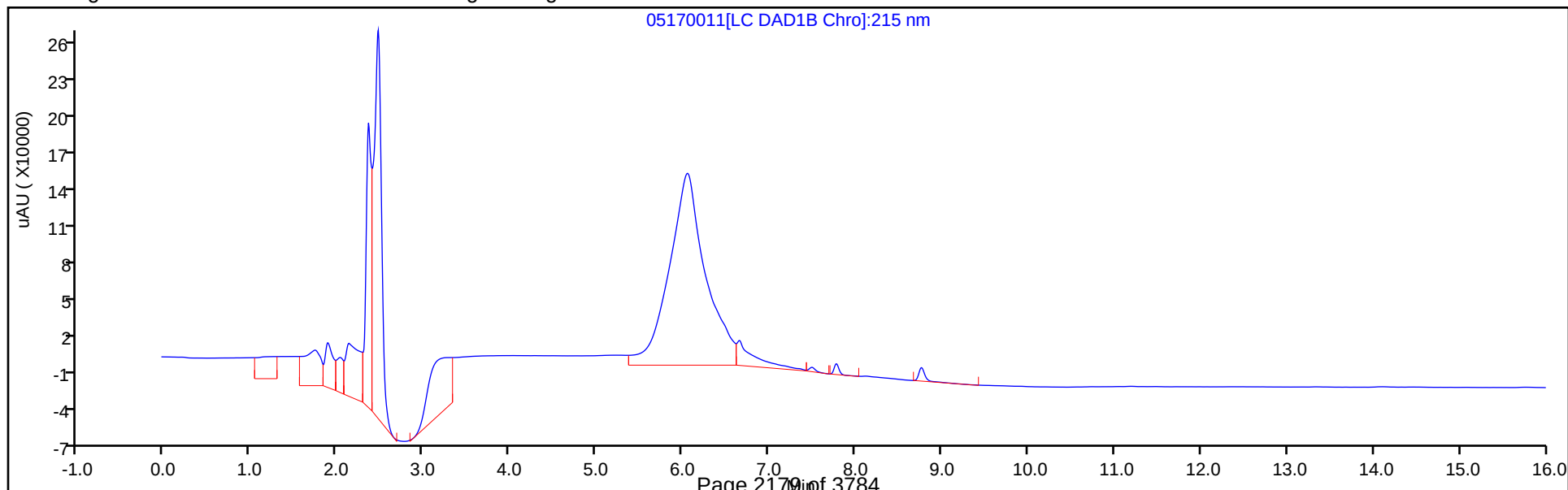
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190517-81994.b\05170011.D
Lims ID: 280-123221-B-12-A
Client ID: WBGmw-009-190401-GW
Sample Type: Client
Inject. Date: 17-May-2019 11:59:28 ALS Bottle#: 11 Worklist Smp#: 11
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-B-12-
Misc. Info.: 280-0081994-011
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190517-81994.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 20-May-2019 11:01:40 Calib Date: 15-May-2019 01:42:24
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0328

First Level Reviewer: fiedlerh

Date: 20-May-2019 10:04:54

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1964	98.20

Eurofins TestAmerica, Denver

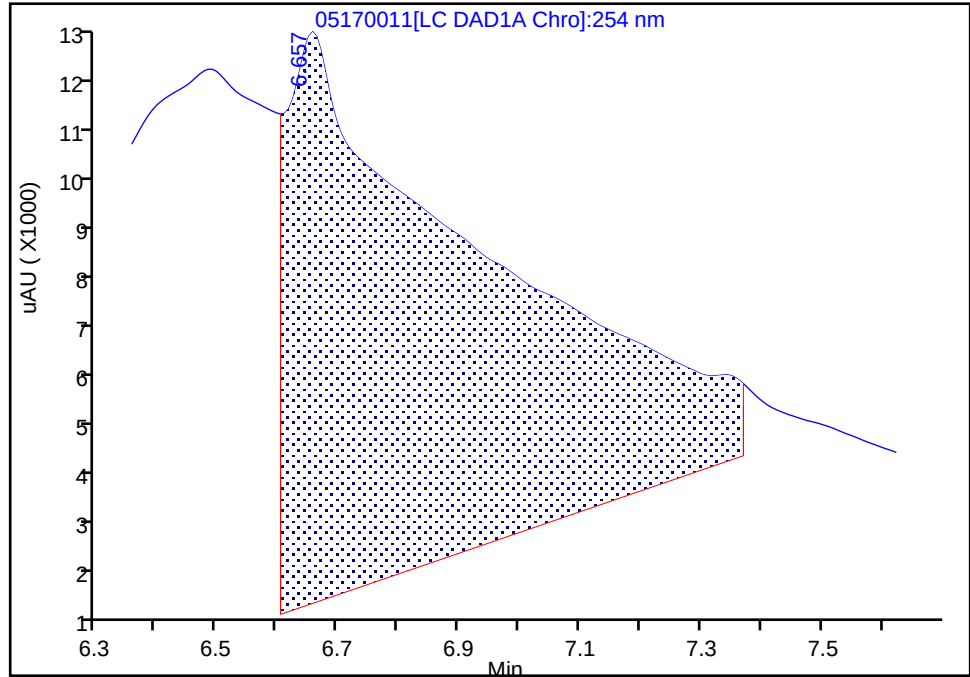
Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190517-81994.b\05170011.D
Injection Date: 17-May-2019 11:59:28 Instrument ID: CHHPLC_X3
Lims ID: 280-123221-B-12-A Lab Sample ID: 280-123221-12
Client ID: WBGmw-009-190401-GW
Operator ID: hkf ALS Bottle#: 11 Worklist Smp#: 11
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector LC DAD1B, 254 nm

3 HMX, CAS: 2691-41-0

Signal: 1

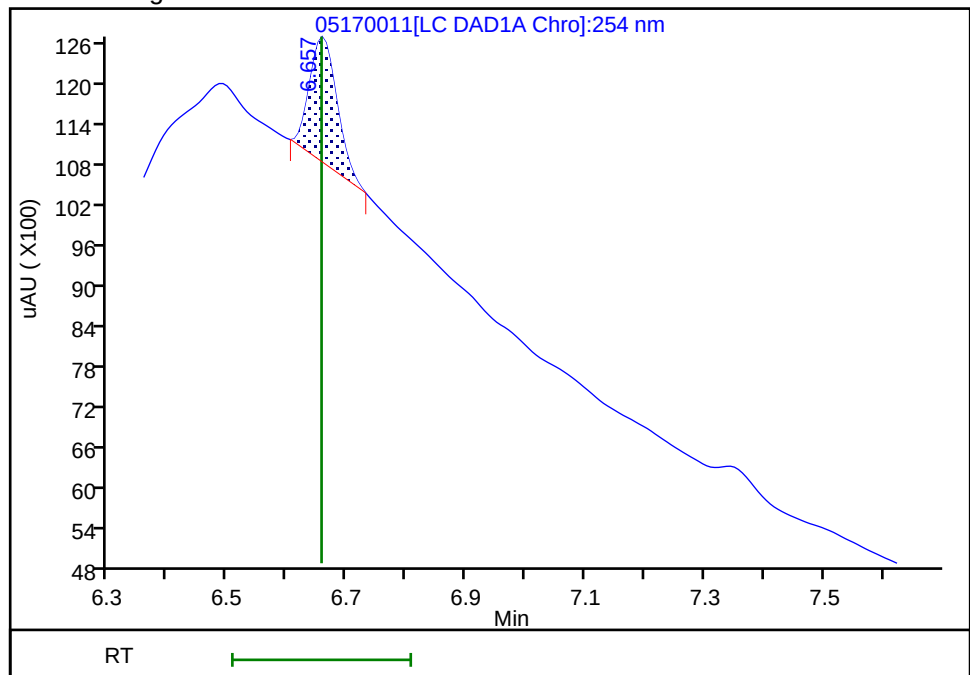
RT: 6.66
Area: 239374
Amount: 2.683380
Amount Units: ug/mL

Processing Integration Results



RT: 6.66
Area: 5941
Amount: 0.066599
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 20-May-2019 10:04:46
Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing
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Eurofins TestAmerica, Denver

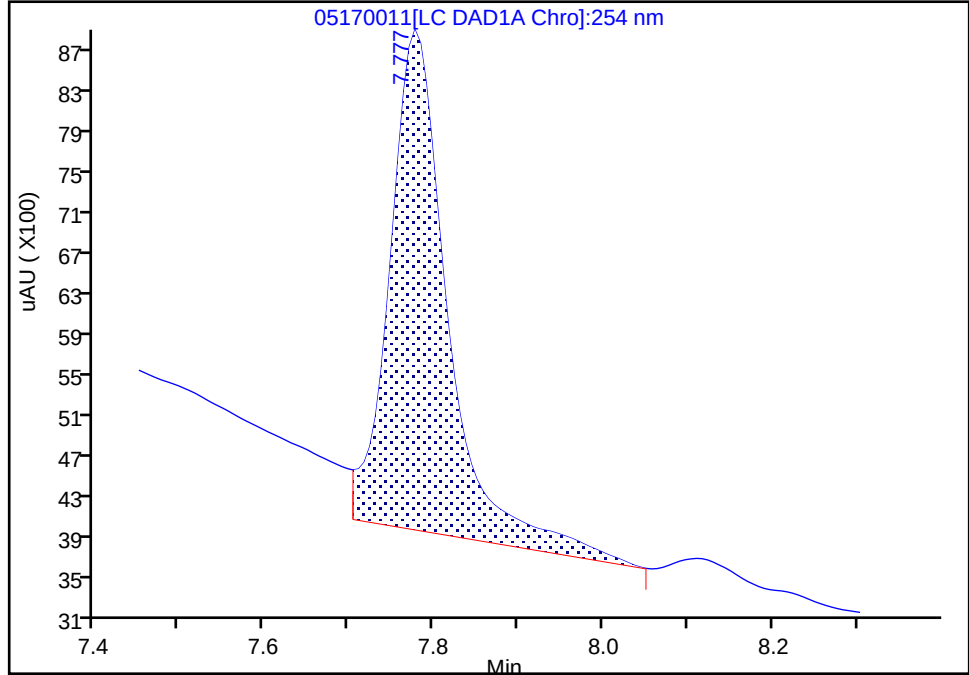
Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190517-81994.b\05170011.D
Injection Date: 17-May-2019 11:59:28 Instrument ID: CHHPLC_X3
Lims ID: 280-123221-B-12-A Lab Sample ID: 280-123221-12
Client ID: WBGmw-009-190401-GW
Operator ID: hkf ALS Bottle#: 11 Worklist Smp#: 11
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector: LC DAD1B, 254 nm

7 RDX, CAS: 121-82-4

Signal: 1

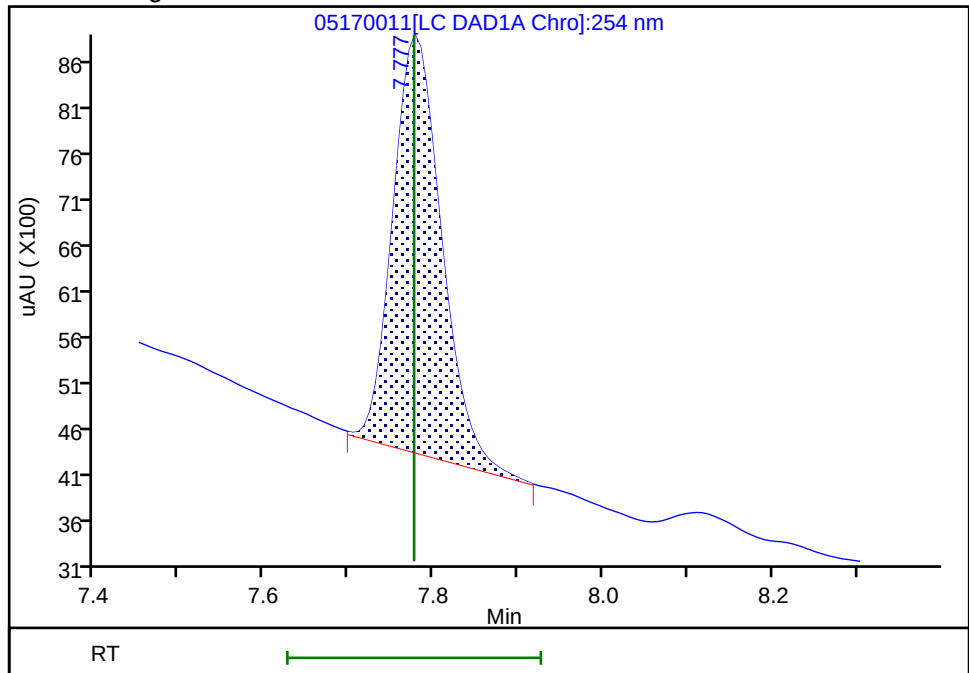
RT: 7.78
Area: 23489
Amount: 0.220266
Amount Units: ug/mL

Processing Integration Results



RT: 7.78
Area: 18301
Amount: 0.171616
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 20-May-2019 10:04:51
Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing
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FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>FWGmw-016-190401-GW</u>	Lab Sample ID: <u>280-123221-13</u>
Matrix: <u>Water</u>	Lab File ID: <u>0509B056.D</u>
Analysis Method: <u>8330B</u>	Date Collected: <u>04/29/2019 15:20</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>05/04/2019 15:00</u>
Sample wt/vol: <u>502.5 (mL)</u>	Date Analyzed: <u>05/10/2019 12:11</u>
Con. Extract Vol.: <u>5 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>100 (uL)</u>	GC Column: <u>UltraCarb5uODS</u> ID: <u>4.6 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>457634</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.40	U	1.0	0.40	0.20
99-65-0	1,3-Dinitrobenzene	0.20	U	0.40	0.20	0.088
118-96-7	2,4,6-Trinitrotoluene	0.40	U	0.40	0.40	0.16
121-14-2	2,4-Dinitrotoluene	0.20	U	0.40	0.20	0.083
606-20-2	2,6-Dinitrotoluene	0.20	U	0.20	0.20	0.064
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	U	0.20	0.12	0.050
88-72-2	2-Nitrotoluene	0.20	U Q	0.40	0.20	0.085
99-08-1	3-Nitrotoluene	0.40	U	0.40	0.40	0.19
19406-51-0	4-Amino-2,6-dinitrotoluene	0.12	U	0.20	0.12	0.057
99-99-0	4-Nitrotoluene	0.40	U	1.0	0.40	0.20
2691-41-0	HMX	0.20	U	0.40	0.20	0.087
98-95-3	Nitrobenzene	0.20	U	0.40	0.20	0.091
55-63-0	Nitroglycerin	2.0	U	3.0	2.0	0.92
78-11-5	PETN	4.0	U	4.0	4.0	1.9
121-82-4	RDX	0.40	U	0.40	0.40	0.16
479-45-8	Tetryl	0.20	U	0.24	0.20	0.079

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	84		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B056.D
 Lims ID: 280-123221-B-13-A
 Client ID: FWGmw-016-190401-GW
 Sample Type: Client
 Inject. Date: 10-May-2019 12:11:13 ALS Bottle#: 56 Worklist Smp#: 56
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-B-13-
 Misc. Info.: 280-0081739-056
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 10-May-2019 17:39:31 Calib Date: 30-Jan-2019 16:34:11
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0316

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
3 HMX	1		6.643			ND	
7 RDX	1		7.736			ND	
\$ 9 1,2-Dinitrobenzene	1	8.708	8.710	-0.002	22535	0.1686	
10 1,3,5-Trinitrobenzene	1		8.870			ND	
11 1,3-Dinitrobenzene	1		9.523			ND	
12 Nitrobenzene	1		9.910			ND	
14 Tetryl	1		10.230			ND	
15 Nitroglycerin	2		10.736			ND	
16 2,4,6-Trinitrotoluene	1		11.183			ND	
17 4-Amino-2,6-dinitrotoluene	1		11.343			ND	
18 2-Amino-4,6-dinitrotoluene	1		11.630			ND	
19 2,6-Dinitrotoluene	1		11.790			ND	
20 2,4-Dinitrotoluene	1		11.983			ND	
21 o-Nitrotoluene	1		12.823			ND	
22 p-Nitrotoluene	1		13.256			ND	
23 m-Nitrotoluene	1		13.856			ND	
24 PETN	2		14.963			ND	

Report Date: 10-May-2019 17:39:51

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B056.D

Injection Date: 10-May-2019 12:11:13

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-B-13-A

Lab Sample ID: 280-123221-13

Worklist Smp#: 56

Client ID: FWGmw-016-190401-GW

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

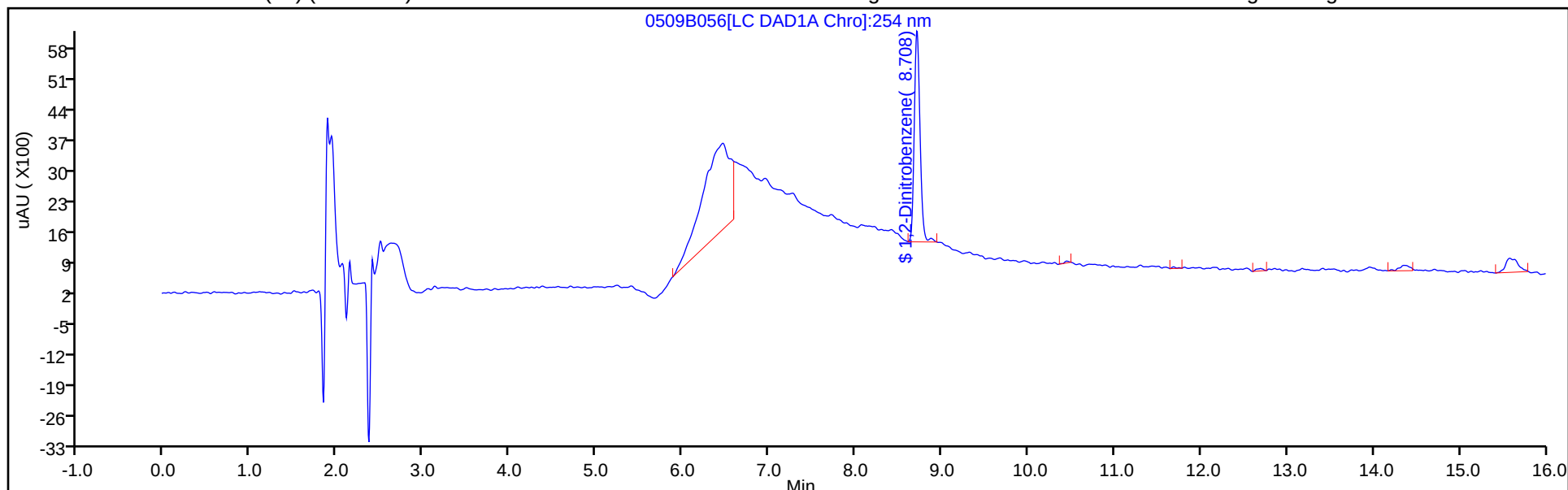
ALS Bottle#: 56

Method: 8330_X3

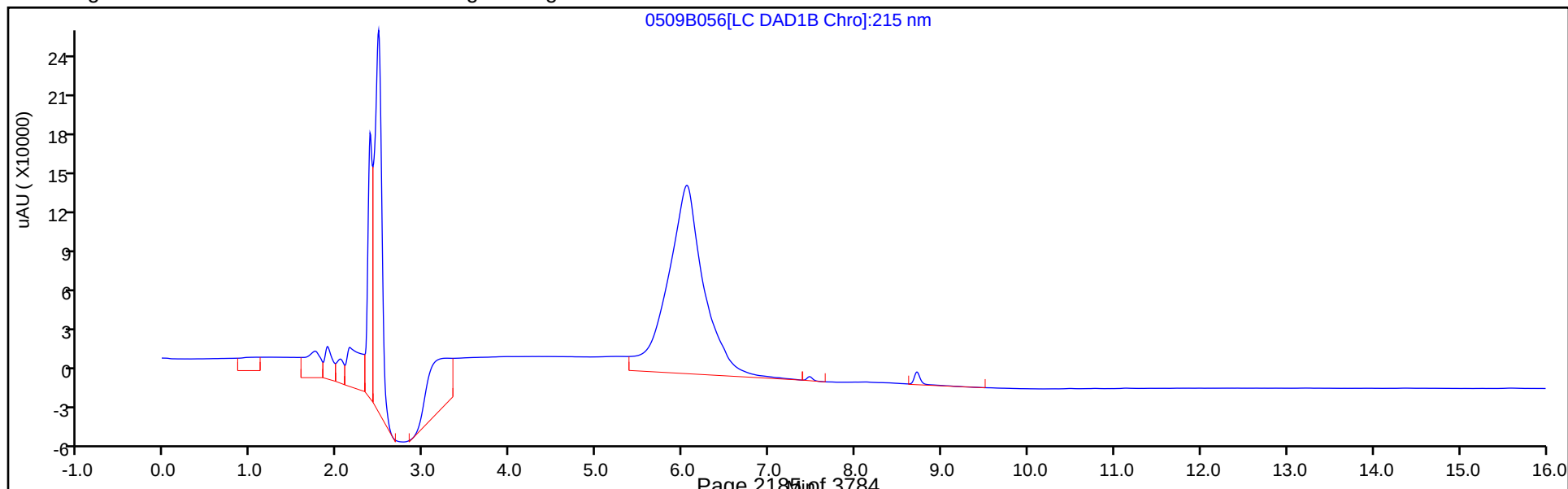
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B056.D
Lims ID: 280-123221-B-13-A
Client ID: FWGmw-016-190401-GW
Sample Type: Client
Inject. Date: 10-May-2019 12:11:13 ALS Bottle#: 56 Worklist Smp#: 56
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-B-13-
Misc. Info.: 280-0081739-056
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 10-May-2019 17:39:31 Calib Date: 30-Jan-2019 16:34:11
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0316

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1686	84.28

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>Eurofins TestAmerica, Denver</u>	Job No.: <u>280-123221-1</u>
SDG No.: _____	
Client Sample ID: <u>FWGmw-016-190401-GW RE</u>	Lab Sample ID: <u>280-123221-13 RE</u>
Matrix: <u>Water</u>	Lab File ID: <u>05170012.D</u>
Analysis Method: <u>8330B</u>	Date Collected: <u>04/29/2019 15:20</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>05/11/2019 15:37</u>
Sample wt/vol: <u>490.9 (mL)</u>	Date Analyzed: <u>05/17/2019 12:23</u>
Con. Extract Vol.: <u>5 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>100 (uL)</u>	GC Column: <u>UltraCarb5uODS</u> ID: <u>4.6 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>458533</u>	Units: <u>ug/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.41	U H Q	1.0	0.41	0.20
99-65-0	1,3-Dinitrobenzene	0.20	U H Q	0.41	0.20	0.090
118-96-7	2,4,6-Trinitrotoluene	0.41	U H Q	0.41	0.41	0.16
121-14-2	2,4-Dinitrotoluene	0.20	U H Q	0.41	0.20	0.085
606-20-2	2,6-Dinitrotoluene	0.20	U H Q	0.20	0.20	0.066
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	U H Q	0.20	0.12	0.052
88-72-2	2-Nitrotoluene	0.20	U H Q	0.41	0.20	0.087
99-08-1	3-Nitrotoluene	0.41	U H Q	0.41	0.41	0.20
19406-51-0	4-Amino-2,6-dinitrotoluene	0.12	U H Q	0.20	0.12	0.059
99-99-0	4-Nitrotoluene	0.41	U H Q	1.0	0.41	0.20
2691-41-0	HMX	0.20	U H Q	0.41	0.20	0.089
98-95-3	Nitrobenzene	0.20	U H Q	0.41	0.20	0.093
55-63-0	Nitroglycerin	2.0	U H Q	3.1	2.0	0.94
78-11-5	PETN	4.1	U H Q	4.1	4.1	2.0
121-82-4	RDX	0.41	U H Q	0.41	0.41	0.16
479-45-8	Tetryl	0.20	U H Q	0.24	0.20	0.081

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	77	Q	83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190517-81994.b\05170012.D
 Lims ID: 280-123221-A-13-A
 Client ID: FWGmw-016-190401-GW
 Sample Type: Client
 Inject. Date: 17-May-2019 12:23:10 ALS Bottle#: 12 Worklist Smp#: 12
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-A-13-
 Misc. Info.: 280-0081994-012
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190517-81994.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 20-May-2019 11:01:40 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0328

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
3 HMX	1		6.656			ND	
7 RDX	1		7.776			ND	
\$ 9 1,2-Dinitrobenzene	1	8.760	8.763	-0.003	20066	0.1542	
10 1,3,5-Trinitrobenzene	1		8.923			ND	
11 1,3-Dinitrobenzene	1		9.590			ND	
12 Nitrobenzene	1		9.983			ND	
14 Tetryl	1		10.316			ND	
15 Nitroglycerin	2		10.823			ND	
16 2,4,6-Trinitrotoluene	1		11.276			ND	
17 4-Amino-2,6-dinitrotoluene	1		11.470			ND	
18 2-Amino-4,6-dinitrotoluene	1		11.763			ND	
19 2,6-Dinitrotoluene	1		11.896			ND	
20 2,4-Dinitrotoluene	1		12.096			ND	
21 o-Nitrotoluene	1		12.943			ND	
22 p-Nitrotoluene	1		13.390			ND	
23 m-Nitrotoluene	1		13.990			ND	
24 PETN	2		15.096			ND	

Report Date: 20-May-2019 11:01:46

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190517-81994.b\05170012.D

Injection Date: 17-May-2019 12:23:10

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-A-13-A

Lab Sample ID: 280-123221-13

Worklist Smp#: 12

Client ID: FWGmw-016-190401-GW

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

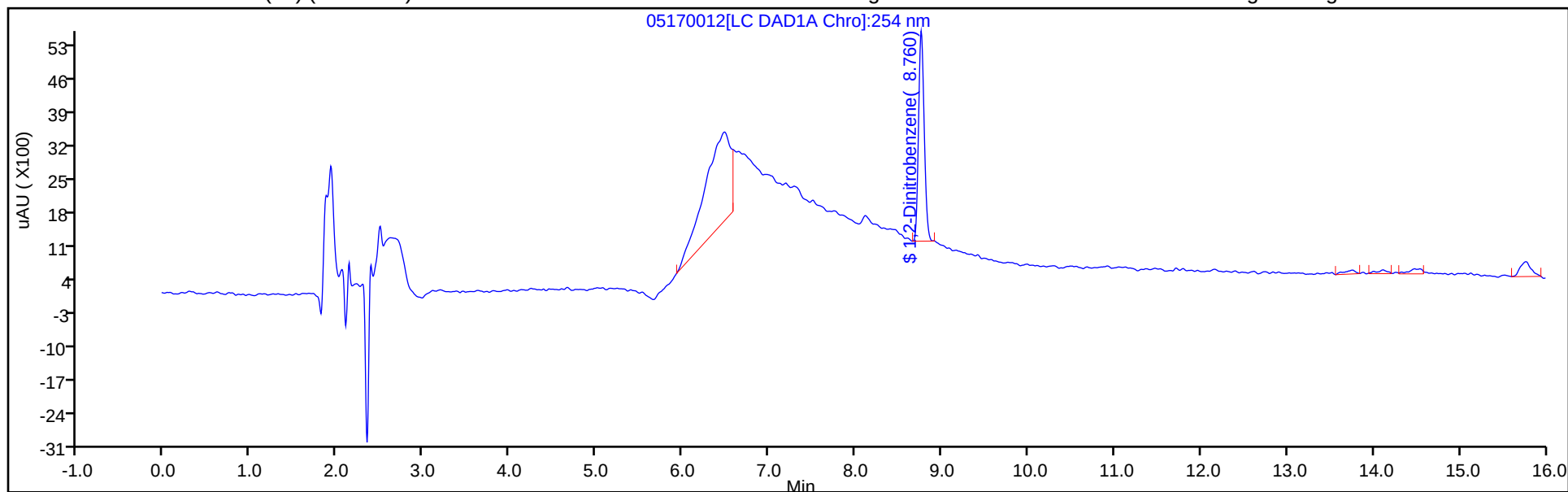
ALS Bottle#: 12

Method: 8330_X3

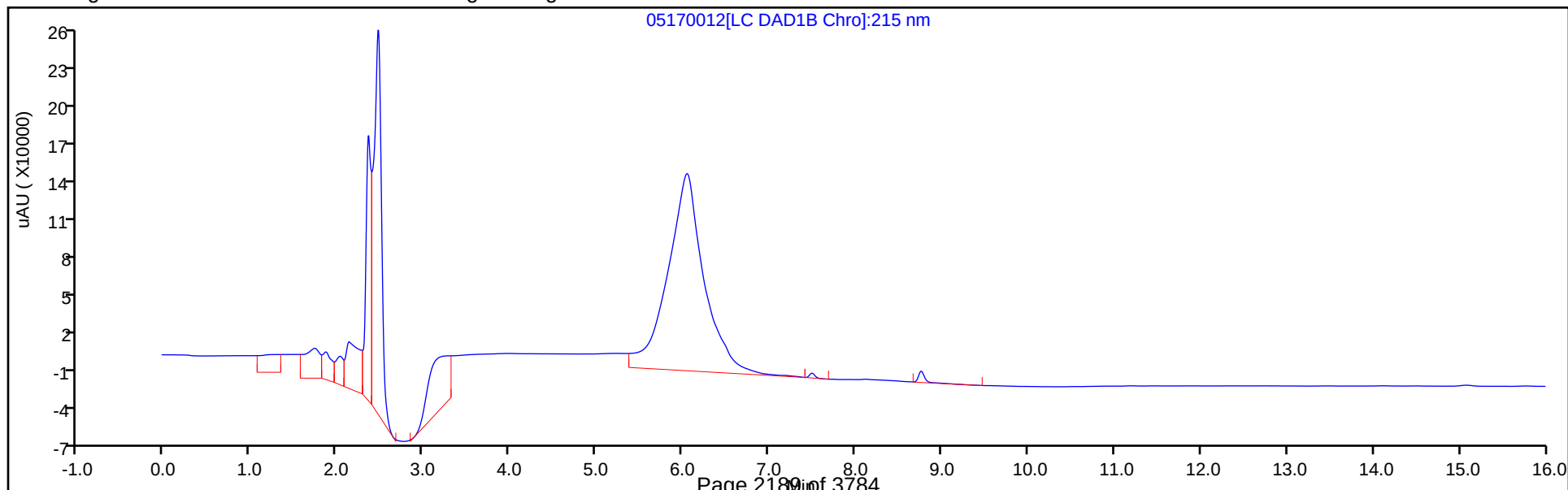
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190517-81994.b\05170012.D
Lims ID: 280-123221-A-13-A
Client ID: FWGmw-016-190401-GW
Sample Type: Client
Inject. Date: 17-May-2019 12:23:10 ALS Bottle#: 12 Worklist Smp#: 12
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-A-13-
Misc. Info.: 280-0081994-012
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190517-81994.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 20-May-2019 11:01:40 Calib Date: 15-May-2019 01:42:24
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0328

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1542	77.11

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 457315

SDG No.: _____

Instrument ID: CHHPLC_G2_LUNA GC Column: Luna-phenyl ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/07/2019 15:08 Calibration End Date: 05/07/2019 19:13 Calibration ID: 36292

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-457315/14	05070014.D
Level 2	IC 280-457315/13	05070013.D
Level 3	IC 280-457315/12	05070012.D
Level 4	IC 280-457315/11	05070011.D
Level 5	IC 280-457315/10	05070010.D
Level 6	IC 280-457315/9	05070009.D
Level 7	IC 280-457315/8	05070008.D
Level 8	IC 280-457315/7	05070007.D

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7	LVL 8			RT WINDOW	AVG RT
Picric acid	6.206	6.147	6.091	6.007	5.940	5.877	5.793	5.636			5.790 - 6.090	5.962
HMX	7.232	7.220	7.224	7.207	7.200	7.197	7.186	7.169			7.050 - 7.350	7.204
RDX	9.326	9.314	9.324	9.300	9.300	9.291	9.273	9.242			9.150 - 9.450	9.296
Nitrobenzene	12.332	12.334	12.344	12.320	12.326	12.324	12.293	12.269			12.176 - 12.476	12.318
3,5-Dinitroaniline	15.292	15.300	15.304	15.274	15.266	15.264	15.233	+++++			15.116 - 15.416	15.276
Nitroglycerin	15.892	15.900	15.904	15.880	15.873	15.877	15.853	15.822			15.723 - 16.023	15.875
1,3-Dinitrobenzene	15.899	15.907	15.911	15.887	15.880	15.884	15.860	15.822			15.730 - 16.030	15.881
2-Nitrotoluene	16.732	16.740	16.751	16.727	16.720	16.731	16.713	16.682			16.570 - 16.870	16.725
4-Nitrotoluene	17.066	17.067	17.078	17.054	17.053	17.057	17.040	17.002			16.903 - 17.203	17.052
4-Amino-2,6-dinitrotoluene	17.459	17.467	17.478	17.447	17.440	17.444	17.420	17.382			17.290 - 17.590	17.442
3-Nitrotoluene	17.979	17.980	17.991	17.967	17.966	17.977	17.960	17.922			17.816 - 18.116	17.968
2-Amino-4,6-dinitrotoluene	18.479	18.480	18.484	18.454	18.446	18.451	18.426	18.382			18.296 - 18.596	18.450
1,3,5-Trinitrobenzene	19.226	19.227	19.238	19.214	19.213	19.217	19.200	19.169			19.063 - 19.363	19.213
2,6-Dinitrotoluene	20.086	20.087	20.091	20.074	20.073	20.084	20.060	20.029			19.923 - 20.223	20.073
2,4-Dinitrotoluene	20.632	20.634	20.638	20.621	20.620	20.624	20.606	20.569			20.470 - 20.770	20.618
Tetryl	23.972	23.974	23.964	23.954	23.966	23.957	23.946	23.916			23.816 - 24.116	23.956
2,4,6-Trinitrotoluene	24.952	24.960	24.951	24.947	24.953	24.951	24.946	24.923			24.803 - 25.103	24.948
PETN	25.366	25.360	25.351	25.347	25.353	25.351	25.346	25.329			25.203 - 25.503	25.350
1,2-Dinitrobenzene	13.359	13.360	13.378	13.347	13.346	13.344	13.313	13.289			13.196 - 13.496	13.342

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 457315

SDG No.: _____

Instrument ID: CHHPLC_G2_LUNA GC Column: Luna-phenyl ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/07/2019 15:08 Calibration End Date: 05/07/2019 19:13 Calibration ID: 36292

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-457315/14	05070014.D
Level 2	IC 280-457315/13	05070013.D
Level 3	IC 280-457315/12	05070012.D
Level 4	IC 280-457315/11	05070011.D
Level 5	IC 280-457315/10	05070010.D
Level 6	IC 280-457315/9	05070009.D
Level 7	IC 280-457315/8	05070008.D
Level 8	IC 280-457315/7	05070007.D

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
Picric acid	143200 158295	152000 154761	148660 160018	147288 175135	Ave		154919.654				6.4		20.0			
HMx	186700 170538	170160 166396	163480 167514	162388 182412	Ave		171198.452				5.1		20.0			
RDX	208850 209973	214300 203474	204000 205258	199228 222468	Ave		208443.798				3.5		20.0			
Nitrobenzene	397355 410773	411317 399424	395868 400807	389110 438928	Ave		405447.961				3.8		20.0			
3,5-Dinitroaniline	489150 454780	482720 471806	467360 471598	477288 ++++	Lin1	381.446716	468682.886							1.0000		0.9900
Nitroglycerin	230695 182930	206262 178504	190583 179150	179764 195591	Ave		192934.972				9.4		20.0			
1,3-Dinitrobenzene	675275 635292	633007 617101	624346 620589	607960 670941	Ave		635563.995				3.9		20.0			
2-Nitrotoluene	258724 264803	258624 258557	258684 257667	254022 283836	Ave		261864.701				3.6		20.0			
4-Nitrotoluene	226594 230254	224761 224437	220080 225659	217853 243537	Ave		226646.674				3.5		20.0			
4-Amino-2,6-dinitrotoluene	299153 300965	294955 291538	293200 294109	285815 319270	Ave		297375.493				3.4		20.0			
3-Nitrotoluene	297012 294945	290857 287782	288088 288231	280554 314057	Ave		292690.570				3.4		20.0			
2-Amino-4,6-dinitrotoluene	466899 430032	425503 416844	419412 419959	407159 456077	Ave		430235.716				4.8		20.0			
1,3,5-Trinitrobenzene	509350 452540	454000 437647	455080 441599	432684 477467	Ave		457545.868				5.5		20.0			
2,6-Dinitrotoluene	331406 289240	293280 280508	287368 282894	276275 306747	Ave		293464.768				6.1		20.0			

Note: The M1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 457315
 SDG No.: _____
 Instrument ID: CHHPLC_G2_LUNA GC Column: Luna-phenyl ID: 4.6(mm) Heated Purge: (Y/N) N
 Calibration Start Date: 05/07/2019 15:08 Calibration End Date: 05/07/2019 19:13 Calibration ID: 36292

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
2,4-Dinitrotoluene	603892 566425	582874 550905	553952 555029	540878 601773	Ave		569466.073				4.2		20.0			
Tetryl	267700 327900	305600 320959	307270 324996	308636 352779	Ave		314479.971				7.7		20.0			
2,4,6-Trinitrotoluene	401444 417263	397052 400117	394731 407163	389534 450941	Ave		407280.633				4.8		20.0			
PETN	118365 133438	144766 129380	134056 128638	128655 141615	Ave		132364.136				6.2		20.0			
1,2-Dinitrobenzene	290800 275953	279400 269164	272150 270248	264504 292628	Ave		276855.798				3.7		20.0			

Note: The M1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 457315

SDG No.: _____

Instrument ID: CHHPLC_G2_LUNA GC Column: Luna-phenyl ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/07/2019 15:08 Calibration End Date: 05/07/2019 19:13 Calibration ID: 36292

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-457315/14	05070014.D
Level 2	IC 280-457315/13	05070013.D
Level 3	IC 280-457315/12	05070012.D
Level 4	IC 280-457315/11	05070011.D
Level 5	IC 280-457315/10	05070010.D
Level 6	IC 280-457315/9	05070009.D
Level 7	IC 280-457315/8	05070008.D
Level 8	IC 280-457315/7	05070007.D

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Picric acid	Ave	2864 108333	7600 160018	14866 437837	36822	63318	0.0200 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
HMX	Ave	3734 116477	8508 167514	16348 456031	40597	68215	0.0200 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
RDX	Ave	4177 142432	10715 205258	20400 556169	49807	83989	0.0200 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
Nitrobenzene	Ave	7963 280156	20607 401609	39666 1099515	97472	164638	0.0200 0.701	0.0501 1.00	0.100 2.51	0.251	0.401
3,5-Dinitroaniline	Lin1	9783 330264	24136 471598	46736 +++++	119322	181912	0.0200 0.700	0.0500 1.00	0.100 +++++	0.250	0.400
Nitroglycerin	Ave	46139 1249529	103131 1791502	190583 4889782	449411	731719	0.200 7.00	0.500 10.0	1.00 25.0	2.50	4.00
1,3-Dinitrobenzene	Ave	13519 432403	31682 621210	62497 1679031	152142	254371	0.0200 0.701	0.0501 1.00	0.100 2.50	0.250	0.400
2-Nitrotoluene	Ave	5190 181533	12970 258440	25946 711720	63696	106239	0.0201 0.702	0.0502 1.00	0.100 2.51	0.251	0.401
4-Nitrotoluene	Ave	4550 157734	11283 226562	22096 611277	54681	92470	0.0201 0.703	0.0502 1.00	0.100 2.51	0.251	0.402
4-Amino-2,6-dinitrotoluene	Ave	6001 204689	14792 294991	29408 800569	71668	120747	0.0201 0.702	0.0502 1.00	0.100 2.51	0.251	0.401
3-Nitrotoluene	Ave	5964 202253	14601 289384	28924 788282	70419	118450	0.0201 0.703	0.0502 1.00	0.100 2.51	0.251	0.402
2-Amino-4,6-dinitrotoluene	Ave	9366 292666	21339 421219	42067 1143614	102095	172529	0.0201 0.702	0.0502 1.00	0.100 2.51	0.251	0.401
1,3,5-Trinitrobenzene	Ave	10187 306353	22700 441599	45508 1193667	108171	181016	0.0200 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2,6-Dinitrotoluene	Ave	6648 196945	14708 283743	28823 769167	69276	116043	0.0201 0.702	0.0502 1.00	0.100 2.51	0.251	0.401
2,4-Dinitrotoluene	Ave	12102 386405	29202 556139	55506 1507441	135490	227023	0.0200 0.701	0.0501 1.00	0.100 2.51	0.251	0.401

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 457315

SDG No.: _____

Instrument ID: CHHPLC_G2_LUNA GC Column: Luna-phenyl ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/07/2019 15:08 Calibration End Date: 05/07/2019 19:13 Calibration ID: 36292

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Tetryl	Ave	5354 224671	15280 324996	30727 881948	77159	131160	0.0200 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2,4,6-Trinitrotoluene	Ave	8061 281202	19932 408792	39631 1131861	97773	167573	0.0201 0.703	0.0502 1.00	0.100 2.51	0.251	0.402
PETN	Ave	23673 905663	72383 1286384	134056 3540364	321638	533750	0.200 7.00	0.500 10.0	1.00 25.0	2.50	4.00
1,2-Dinitrobenzene	Ave	5816 188415	13970 270248	27215 731569	66126	110381	0.0200 0.700	0.0500 1.00	0.100 2.50	0.250	0.400

Curve Type Legend:

Ave = Average
Lin1 = Linear 1/conc

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070007.D
 Lims ID: IC FULL LV 8
 Client ID:
 Sample Type: IC Calib Level: 8
 Inject. Date: 07-May-2019 15:08:19 ALS Bottle#: 7 Worklist Smp#: 7
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: IC FULL LV 8
 Misc. Info.: 280-0081649-007
 Operator ID: HKF Instrument ID: CHHPLC_G2_LUNA
 Sublist: chrom-G2_8330_Luna*sub6
 Method: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\G2_8330_Luna.m
 Limit Group: GCSV - 8330
 Last Update: 09-May-2019 08:13:33 Calib Date: 08-May-2019 00:28:23
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070023.D
 Column 1 : Luna-Phenyl hexyl (4.60 mm) Det: LC DAD1A, 254 nm
 Process Host: CTX0337

First Level Reviewer: fiedlerh

Date: 08-May-2019 09:04:24

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 2,6-diamino-4-nitrotoluene	1	4.403	4.446	-0.043	676801	2.50	1.72	
2 2,4-diamino-6-nitrotoluene	1	4.996	4.993	0.003	406734	2.50	1.59	
5 2,4,6-Trinitrophenol	1	5.636	5.940	-0.304	437837	2.50	2.83	a
6 HMX	1	7.169	7.200	-0.031	456031	2.50	2.66	
8 RDX	1	9.242	9.300	-0.058	556169	2.50	2.67	
9 Nitrobenzene	1	12.269	12.326	-0.057	1099515	2.51	2.71	
\$ 10 1,2-Dinitrobenzene	1	13.289	13.346	-0.057	731569	2.50	2.64	
11 3,5-Dinitroaniline	1	15.196	15.266	-0.070	789313	2.50	1.68	
13 Nitroglycerin	2	15.822	15.873	-0.051	4889782	25.0	25.3	
12 1,3-Dinitrobenzene	1	15.822	15.880	-0.058	1679031	2.50	2.64	
14 o-Nitrotoluene	1	16.682	16.720	-0.038	711720	2.51	2.72	
15 p-Nitrotoluene	1	17.002	17.053	-0.051	611277	2.51	2.70	
16 4-Amino-2,6-dinitrotoluene	1	17.382	17.440	-0.058	800569	2.51	2.69	
17 m-Nitrotoluene	1	17.922	17.966	-0.044	788282	2.51	2.69	
18 2-Amino-4,6-dinitrotoluene	1	18.382	18.446	-0.064	1143614	2.51	2.66	
19 1,3,5-Trinitrobenzene	1	19.169	19.213	-0.044	1193667	2.50	2.61	
20 2,6-Dinitrotoluene	1	20.029	20.073	-0.044	769167	2.51	2.62	
21 2,4-Dinitrotoluene	1	20.569	20.620	-0.051	1507441	2.51	2.65	
22 Tetryl	1	23.916	23.966	-0.050	881948	2.50	2.80	
23 2,4,6-Trinitrotoluene	1	24.923	24.953	-0.030	1131861	2.51	2.78	
24 PETN	2	25.329	25.353	-0.024	3540364	25.0	26.7	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

8330IntermStk_00058

Amount Added: 125.00

Units: uL

8330_ADDs_00021

Amount Added: 125.00

Units: uL

Report Date: 09-May-2019 08:13:33

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070007.D

Injection Date: 07-May-2019 15:08:19

Instrument ID: CHHPLC_G2_LUNA

Operator ID: HKF

Lims ID: IC FULL LV 8

Worklist Smp#: 7

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

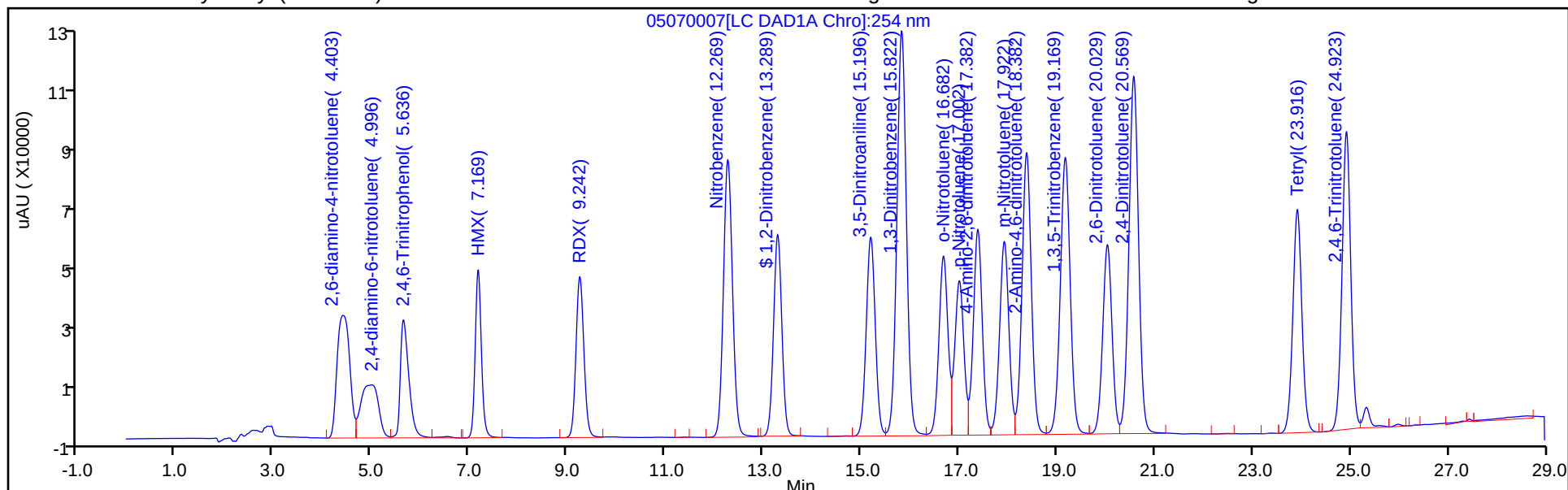
ALS Bottle#: 7

Method: G2_8330_Luna

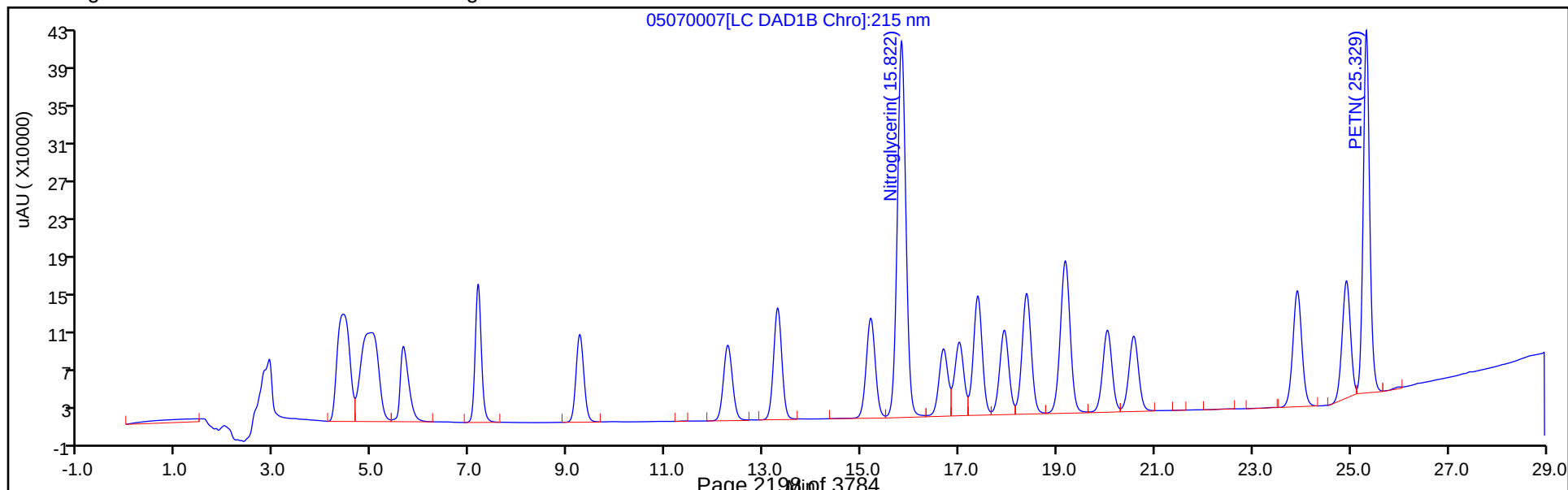
Limit Group: GCSV - 8330

Column: Luna-Phenyl hexyl (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Eurofins TestAmerica, Denver

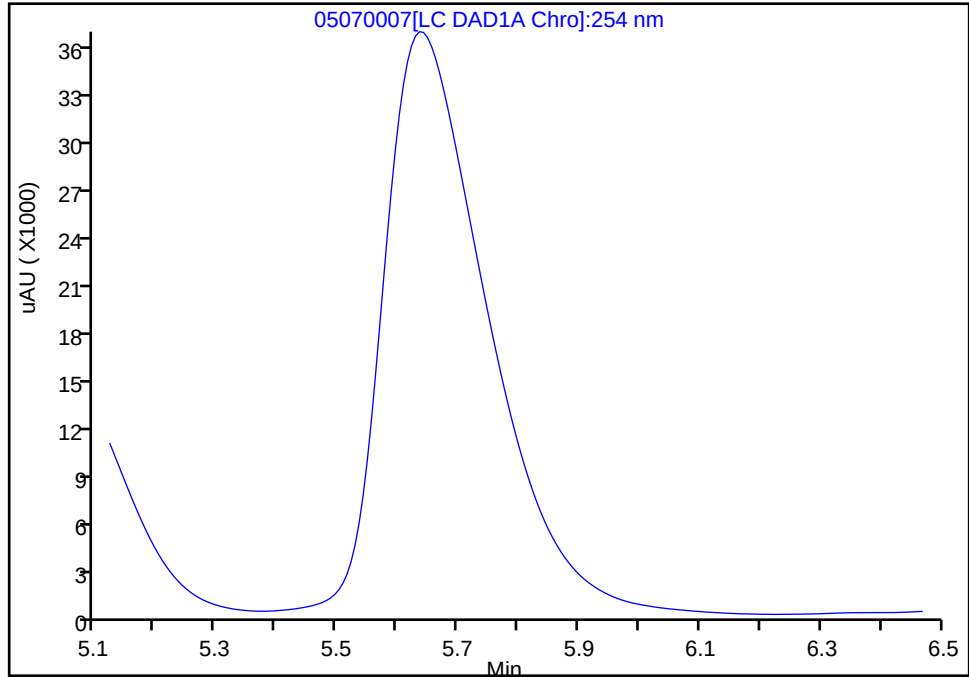
Data File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070007.D
Injection Date: 07-May-2019 15:08:19 Instrument ID: CHHPLC_G2_LUNA
Lims ID: IC FULL LV 8
Client ID:
Operator ID: HKF ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: G2_8330_Luna Limit Group: GCSV - 8330
Column: Luna-Phenyl hexyl (4.60 mm) Detector LC DAD1A, 254 nm

5 2,4,6-Trinitrophenol, CAS: 88-89-1

Signal: 1

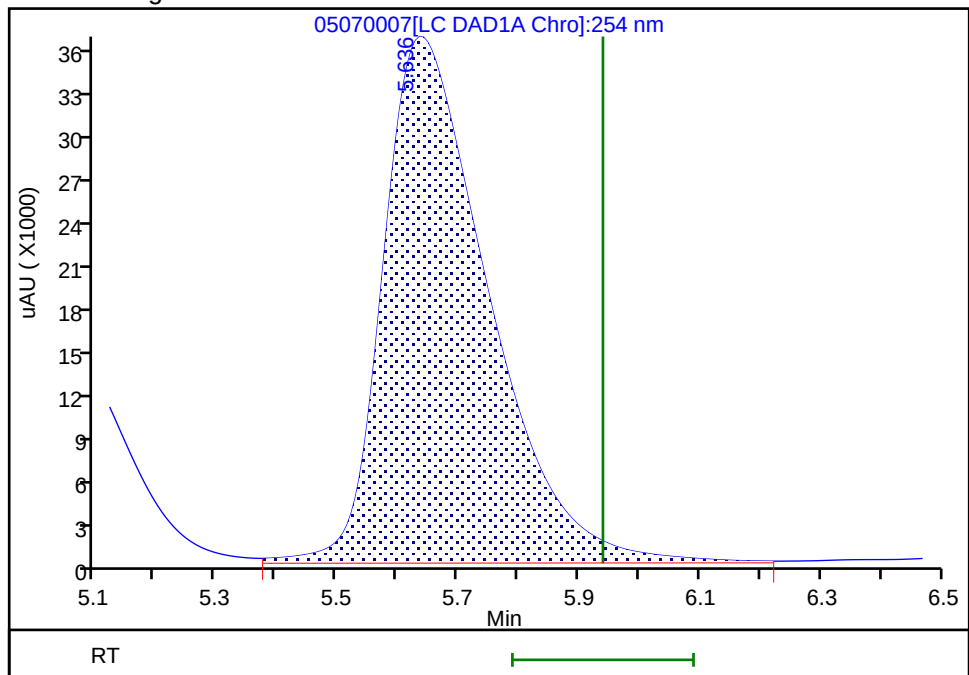
Not Detected
Expected RT: 5.94

Processing Integration Results



RT: 5.64
Area: 437837
Amount: 2.826220
Amount Units: ug/ml

Manual Integration Results



Reviewer: fiedlerh, 08-May-2019 09:04:18
Audit Action: Assigned Compound ID

Audit Reason:
Page 2199 of 3784

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070008.D
 Lims ID: IC FULL LV 7
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 07-May-2019 15:43:22 ALS Bottle#: 8 Worklist Smp#: 8
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: IC FULL LV 7
 Misc. Info.: 280-0081649-008
 Operator ID: HKF Instrument ID: CHHPLC_G2_LUNA
 Sublist: chrom-G2_8330_Luna*sub6
 Method: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\G2_8330_Luna.m
 Limit Group: GCSV - 8330
 Last Update: 09-May-2019 08:13:33 Calib Date: 08-May-2019 00:28:23
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070023.D
 Column 1 : Luna-Phenyl hexyl (4.60 mm) Det: LC DAD1A, 254 nm
 Process Host: CTX0337

First Level Reviewer: fiedlerh

Date: 08-May-2019 09:01:15

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 2,6-diamino-4-nitrotoluene	1	4.426	4.446	-0.020	403610	1.00	1.02	
2 2,4-diamino-6-nitrotoluene	1	4.953	4.993	-0.040	242342	1.00	0.9472	
5 2,4,6-Trinitrophenol	1	5.793	5.940	-0.147	160018	1.00	1.03	
6 HMX	1	7.186	7.200	-0.014	167514	1.00	0.9785	
8 RDX	1	9.273	9.300	-0.027	205258	1.00	0.9847	
9 Nitrobenzene	1	12.293	12.326	-0.033	401609	1.00	0.99	
\$ 10 1,2-Dinitrobenzene	1	13.313	13.346	-0.033	270248	1.00	0.9761	
11 3,5-Dinitroaniline	1	15.233	15.266	-0.033	471598	1.00	1.01	
13 Nitroglycerin	2	15.853	15.873	-0.020	1791502	10.0	9.29	
12 1,3-Dinitrobenzene	1	15.860	15.880	-0.020	621210	1.00	0.9774	
14 o-Nitrotoluene	1	16.713	16.720	-0.007	258440	1.00	0.9869	
15 p-Nitrotoluene	1	17.040	17.053	-0.013	226562	1.00	1.00	
16 4-Amino-2,6-dinitrotoluene	1	17.420	17.440	-0.020	294991	1.00	0.99	
17 m-Nitrotoluene	1	17.960	17.966	-0.006	289384	1.00	0.9887	
18 2-Amino-4,6-dinitrotoluene	1	18.426	18.446	-0.020	421219	1.00	0.9790	
19 1,3,5-Trinitrobenzene	1	19.200	19.213	-0.013	441599	1.00	0.9651	
20 2,6-Dinitrotoluene	1	20.060	20.073	-0.013	283743	1.00	0.9669	
21 2,4-Dinitrotoluene	1	20.606	20.620	-0.014	556139	1.00	0.9766	
22 Tetryl	1	23.946	23.966	-0.020	324996	1.00	1.03	
23 2,4,6-Trinitrotoluene	1	24.946	24.953	-0.007	408792	1.00	1.00	
24 PETN	2	25.346	25.353	-0.007	1286384	10.0	9.72	

Reagents:

8330IntermStk_00058

Amount Added: 50.00

Units: uL

8330_ADDs_00021

Amount Added: 50.00

Units: uL

Report Date: 09-May-2019 08:13:33

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070008.D

Injection Date: 07-May-2019 15:43:22

Instrument ID: CHHPLC_G2_LUNA

Operator ID: HKF

Lims ID: IC FULL LV 7

Worklist Smp#: 8

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

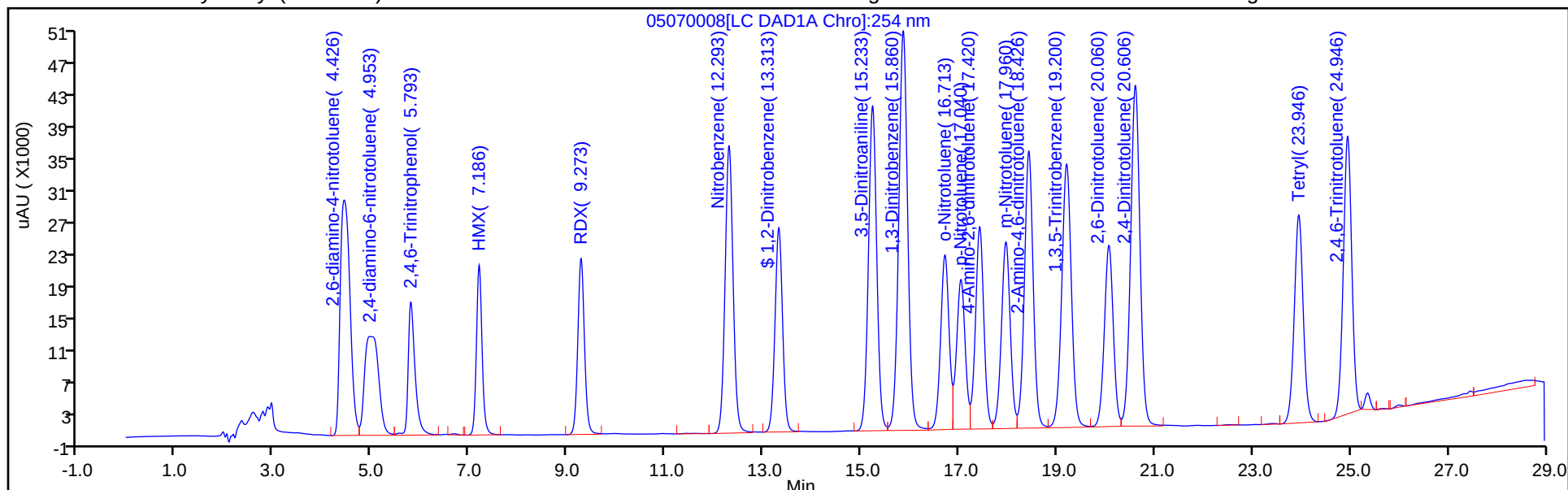
ALS Bottle#: 8

Method: G2_8330_Luna

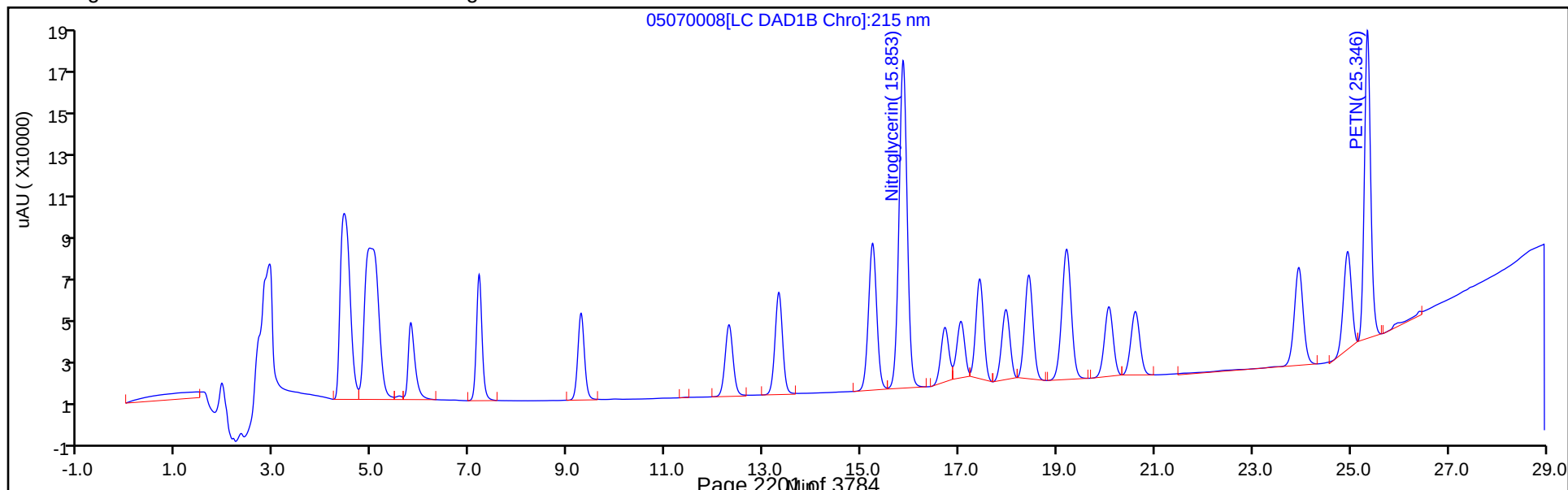
Limit Group: GCSV - 8330

Column: Luna-Phenyl hexyl (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070009.D
 Lims ID: IC FULL LV 6
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 07-May-2019 16:18:20 ALS Bottle#: 9 Worklist Smp#: 9
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: IC FULL LV 6
 Misc. Info.: 280-0081649-009
 Operator ID: HKF Instrument ID: CHHPLC_G2_LUNA
 Sublist: chrom-G2_8330_Luna*sub6
 Method: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\G2_8330_Luna.m
 Limit Group: GCSV - 8330
 Last Update: 09-May-2019 08:13:34 Calib Date: 08-May-2019 00:28:23
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070023.D
 Column 1 : Luna-Phenyl hexyl (4.60 mm) Det: LC DAD1A, 254 nm
 Process Host: CTX0337

First Level Reviewer: fiedlerh

Date: 08-May-2019 09:00:45

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 2,6-diamino-4-nitrotoluene	1	4.437	4.446	-0.009	282422	0.7000	0.7157	
2 2,4-diamino-6-nitrotoluene	1	5.004	4.993	0.011	170308	0.7000	0.6657	
5 2,4,6-Trinitrophenol	1	5.877	5.940	-0.063	108333	0.7000	0.6993	
6 HMX	1	7.197	7.200	-0.003	116477	0.7000	0.6804	
8 RDX	1	9.291	9.300	-0.009	142432	0.7000	0.6833	
9 Nitrobenzene	1	12.324	12.326	-0.002	280156	0.7014	0.6910	
\$ 10 1,2-Dinitrobenzene	1	13.344	13.346	-0.002	188415	0.7000	0.6806	
11 3,5-Dinitroaniline	1	15.264	15.266	-0.002	330264	0.7000	0.7039	
13 Nitroglycerin	2	15.877	15.873	0.004	1249529	7.00	6.48	
12 1,3-Dinitrobenzene	1	15.884	15.880	0.004	432403	0.7007	0.6803	
14 o-Nitrotoluene	1	16.731	16.720	0.011	181533	0.7021	0.6932	
15 p-Nitrotoluene	1	17.057	17.053	0.004	157734	0.7028	0.6959	
16 4-Amino-2,6-dinitrotoluene	1	17.444	17.440	0.004	204689	0.7021	0.6883	
17 m-Nitrotoluene	1	17.977	17.966	0.011	202253	0.7028	0.6910	
18 2-Amino-4,6-dinitrotoluene	1	18.451	18.446	0.005	292666	0.7021	0.6802	
19 1,3,5-Trinitrobenzene	1	19.217	19.213	0.004	306353	0.7000	0.6696	
20 2,6-Dinitrotoluene	1	20.084	20.073	0.011	196945	0.7021	0.6711	
21 2,4-Dinitrotoluene	1	20.624	20.620	0.004	386405	0.7014	0.6785	
22 Tetryl	1	23.957	23.966	-0.009	224671	0.7000	0.7144	
23 2,4,6-Trinitrotoluene	1	24.951	24.953	-0.002	281202	0.7028	0.6904	
24 PETN	2	25.351	25.353	-0.002	905663	7.00	6.84	

Reagents:

8330IntermStk_00058

Amount Added: 35.00

Units: uL

8330_ADDs_00021

Amount Added: 35.00

Units: uL

Report Date: 09-May-2019 08:13:34

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070009.D

Injection Date: 07-May-2019 16:18:20

Instrument ID: CHHPLC_G2_LUNA

Operator ID: HKF

Lims ID: IC FULL LV 6

Worklist Smp#: 9

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

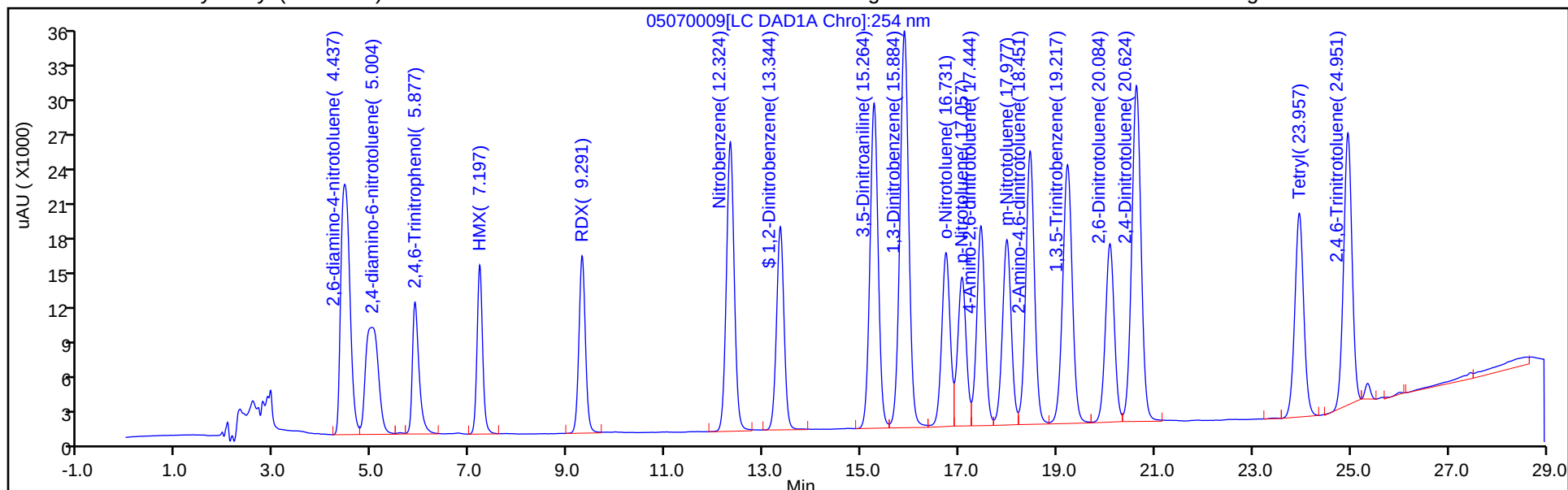
ALS Bottle#: 9

Method: G2_8330_Luna

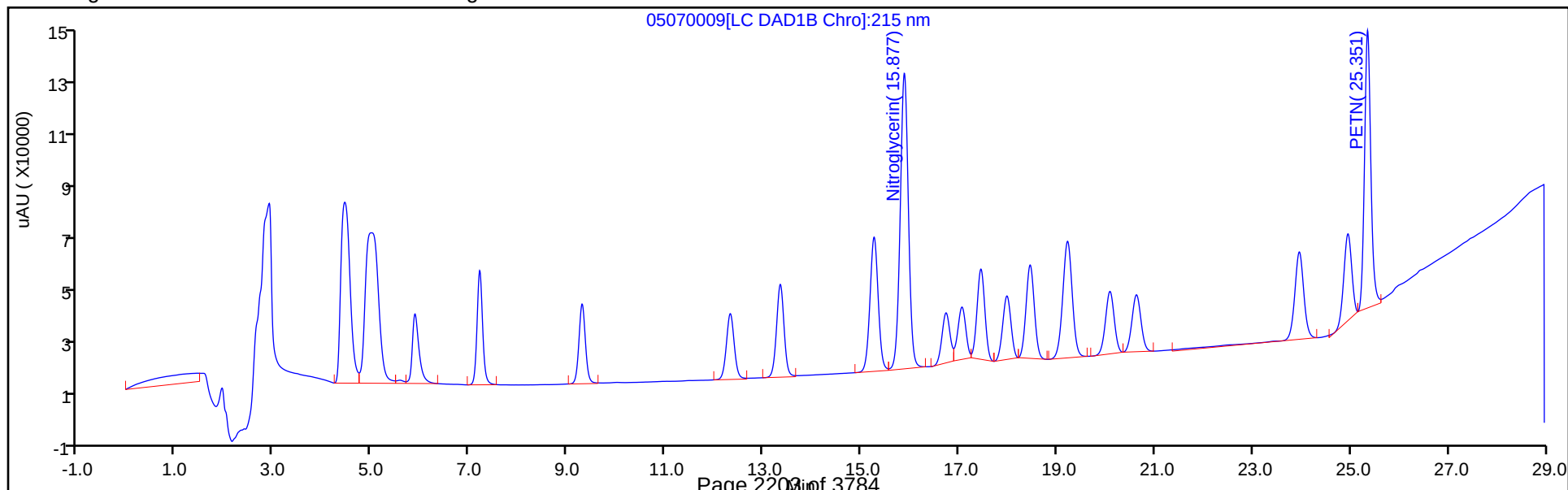
Limit Group: GCSV - 8330

Column: Luna-Phenyl hexyl (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070010.D
 Lims ID: IC FULL LV 5
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 07-May-2019 16:53:23 ALS Bottle#: 10 Worklist Smp#: 10
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: IC FULL LV 5
 Misc. Info.: 280-0081649-010
 Operator ID: HKF Instrument ID: CHHPLC_G2_LUNA
 Sublist: chrom-G2_8330_Luna*sub6
 Method: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\G2_8330_Luna.m
 Limit Group: GCSV - 8330
 Last Update: 09-May-2019 08:13:35 Calib Date: 08-May-2019 00:28:23
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070023.D
 Column 1 : Luna-Phenyl hexyl (4.60 mm) Det: LC DAD1A, 254 nm
 Process Host: CTX0337

First Level Reviewer: fiedlerh

Date: 08-May-2019 09:00:38

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 2,6-diamino-4-nitrotoluene	1	4.446	4.446	0.000	154442	0.4000	0.3914	
2 2,4-diamino-6-nitrotoluene	1	4.993	4.993	0.000	92869	0.4000	0.3630	
5 2,4,6-Trinitrophenol	1	5.940	5.940	0.000	63318	0.4000	0.4087	
6 HMX	1	7.200	7.200	0.000	68215	0.4000	0.3985	
8 RDX	1	9.300	9.300	0.000	83989	0.4000	0.4029	
9 Nitrobenzene	1	12.326	12.326	0.000	164638	0.4008	0.4061	
\$ 10 1,2-Dinitrobenzene	1	13.346	13.346	0.000	110381	0.4000	0.3987	
11 3,5-Dinitroaniline	1	15.266	15.266	0.000	181912	0.4000	0.3873	
13 Nitroglycerin	2	15.873	15.873	0.000	731719	4.00	3.79	
12 1,3-Dinitrobenzene	1	15.880	15.880	0.000	254371	0.4004	0.4002	
14 o-Nitrotoluene	1	16.720	16.720	0.000	106239	0.4012	0.4057	
15 p-Nitrotoluene	1	17.053	17.053	0.000	92470	0.4016	0.4080	
16 4-Amino-2,6-dinitrotoluene	1	17.440	17.440	0.000	120747	0.4012	0.4060	
17 m-Nitrotoluene	1	17.966	17.966	0.000	118450	0.4016	0.4047	
18 2-Amino-4,6-dinitrotoluene	1	18.446	18.446	0.000	172529	0.4012	0.4010	
19 1,3,5-Trinitrobenzene	1	19.213	19.213	0.000	181016	0.4000	0.3956	
20 2,6-Dinitrotoluene	1	20.073	20.073	0.000	116043	0.4012	0.3954	
21 2,4-Dinitrotoluene	1	20.620	20.620	0.000	227023	0.4008	0.3987	
22 Tetryl	1	23.966	23.966	0.000	131160	0.4000	0.4171	
23 2,4,6-Trinitrotoluene	1	24.953	24.953	0.000	167573	0.4016	0.4114	
24 PETN	2	25.353	25.353	0.000	533750	4.00	4.03	

Reagents:

8330IntermStk_00058

Amount Added: 20.00

Units: uL

8330_ADDs_00021

Amount Added: 20.00

Units: uL

Report Date: 09-May-2019 08:13:35

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070010.D

Injection Date: 07-May-2019 16:53:23

Instrument ID: CHHPLC_G2_LUNA

Operator ID: HKF

Lims ID: IC FULL LV 5

Worklist Smp#: 10

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

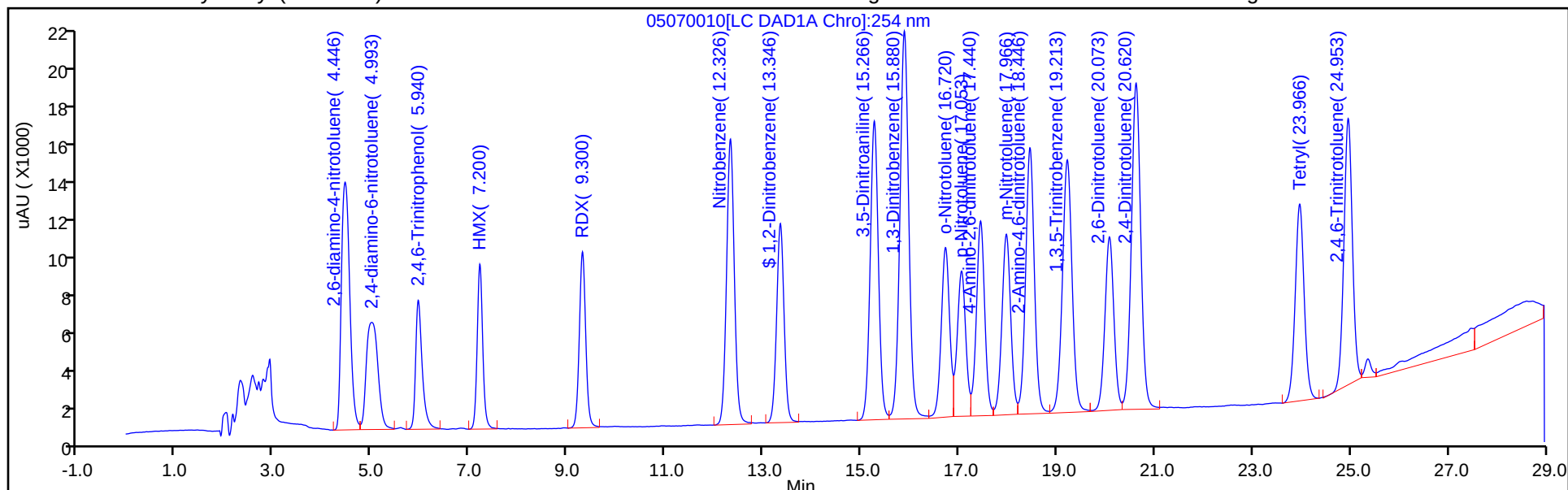
ALS Bottle#: 10

Method: G2_8330_Luna

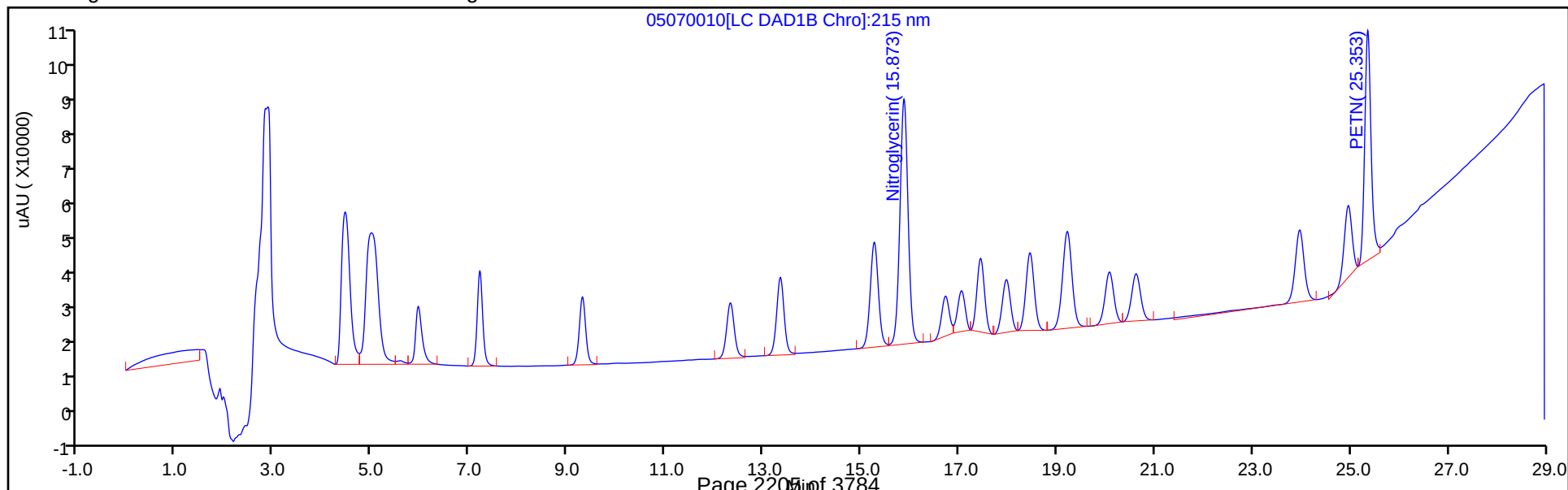
Limit Group: GCSV - 8330

Column: Luna-Phenyl hexyl (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070011.D
 Lims ID: IC FULL LV 4
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 07-May-2019 17:28:26 ALS Bottle#: 11 Worklist Smp#: 11
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: IC FULL LV 4
 Misc. Info.: 280-0081649-011
 Operator ID: HKF Instrument ID: CHHPLC_G2_LUNA
 Sublist: chrom-G2_8330_Luna*sub6
 Method: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\G2_8330_Luna.m
 Limit Group: GCSV - 8330
 Last Update: 09-May-2019 08:13:35 Calib Date: 08-May-2019 00:28:23
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070023.D
 Column 1 : Luna-Phenyl hexyl (4.60 mm) Det: LC DAD1A, 254 nm
 Process Host: CTX0337

First Level Reviewer: fiedlerh

Date: 08-May-2019 09:00:21

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 2,6-diamino-4-nitrotoluene	1	4.447	4.446	0.001	100901	0.2500	0.2557	
2 2,4-diamino-6-nitrotoluene	1	5.001	4.993	0.008	60668	0.2500	0.2371	
5 2,4,6-Trinitrophenol	1	6.007	5.940	0.067	36822	0.2500	0.2377	
6 HMX	1	7.207	7.200	0.007	40597	0.2500	0.2371	
8 RDX	1	9.300	9.300	0.000	49807	0.2500	0.2389	
9 Nitrobenzene	1	12.320	12.326	-0.006	97472	0.2505	0.2404	
\$ 10 1,2-Dinitrobenzene	1	13.347	13.346	0.001	66126	0.2500	0.2388	
11 3,5-Dinitroaniline	1	15.274	15.266	0.008	119322	0.2500	0.2538	
13 Nitroglycerin	2	15.880	15.873	0.007	449411	2.50	2.33	
12 1,3-Dinitrobenzene	1	15.887	15.880	0.007	152142	0.2503	0.2394	
14 o-Nitrotoluene	1	16.727	16.720	0.007	63696	0.2508	0.2432	
15 p-Nitrotoluene	1	17.054	17.053	0.001	54681	0.2510	0.2413	
16 4-Amino-2,6-dinitrotoluene	1	17.447	17.440	0.007	71668	0.2508	0.2410	
17 m-Nitrotoluene	1	17.967	17.966	0.001	70419	0.2510	0.2406	
18 2-Amino-4,6-dinitrotoluene	1	18.454	18.446	0.008	102095	0.2508	0.2373	
19 1,3,5-Trinitrobenzene	1	19.214	19.213	0.001	108171	0.2500	0.2364	
20 2,6-Dinitrotoluene	1	20.074	20.073	0.001	69276	0.2508	0.2361	
21 2,4-Dinitrotoluene	1	20.621	20.620	0.000	135490	0.2505	0.2379	
22 Tetryl	1	23.954	23.966	-0.012	77159	0.2500	0.2454	
23 2,4,6-Trinitrotoluene	1	24.947	24.953	-0.006	97773	0.2510	0.2401	
24 PETN	2	25.347	25.353	-0.006	321638	2.50	2.43	

Reagents:

8330IntermStk_00058

Amount Added: 12.50

Units: uL

8330_ADDs_00021

Amount Added: 12.50

Units: uL

Report Date: 09-May-2019 08:13:36

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070011.D

Injection Date: 07-May-2019 17:28:26

Instrument ID: CHHPLC_G2_LUNA

Operator ID: HKF

Lims ID: IC FULL LV 4

Worklist Smp#: 11

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

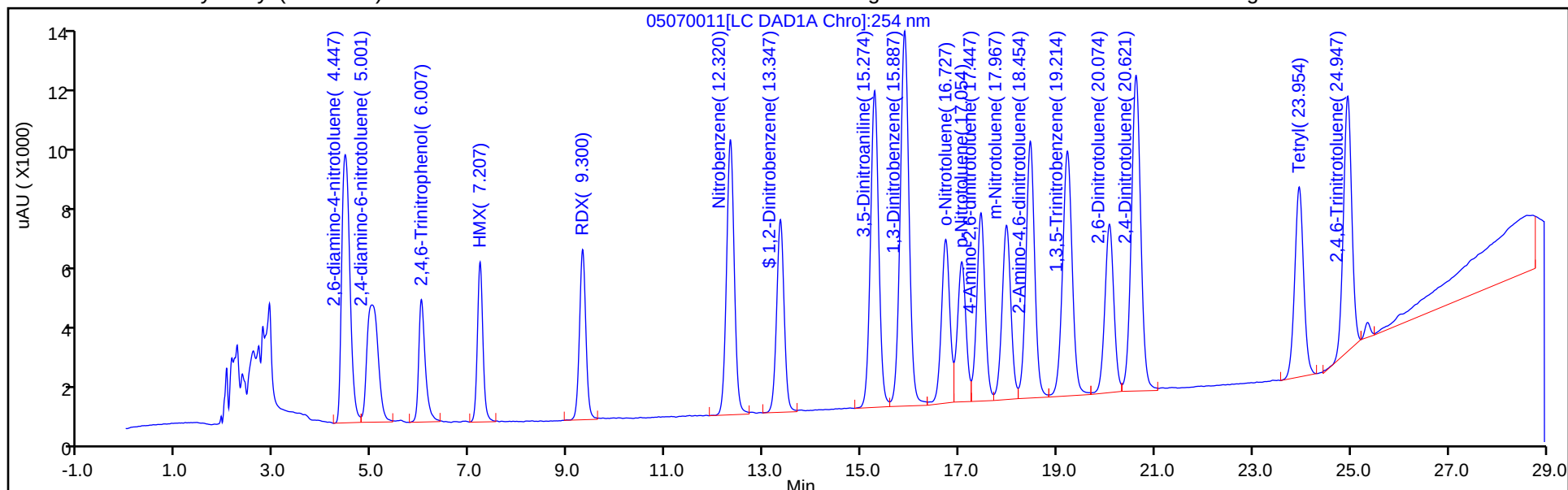
ALS Bottle#: 11

Method: G2_8330_Luna

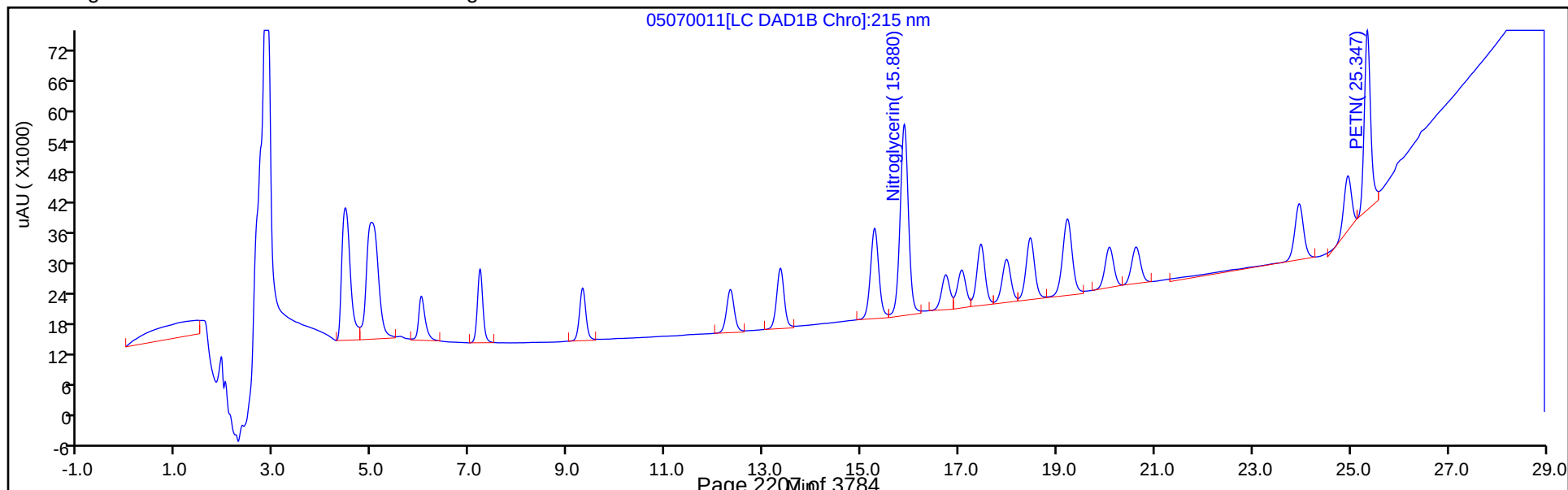
Limit Group: GCSV - 8330

Column: Luna-Phenyl hexyl (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070012.D
 Lims ID: IC FULL LV 3
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 07-May-2019 18:03:28 ALS Bottle#: 12 Worklist Smp#: 12
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: IC FULL LV 3
 Misc. Info.: 280-0081649-012
 Operator ID: HKF Instrument ID: CHHPLC_G2_LUNA
 Sublist: chrom-G2_8330_Luna*sub6
 Method: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\G2_8330_Luna.m
 Limit Group: GCSV - 8330
 Last Update: 09-May-2019 08:13:36 Calib Date: 08-May-2019 00:28:23
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070023.D
 Column 1 : Luna-Phenyl hexyl (4.60 mm) Det: LC DAD1A, 254 nm
 Process Host: CTX0337

First Level Reviewer: fiedlerh

Date: 08-May-2019 09:00:31

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 2,6-diamino-4-nitrotoluene	1	4.458	4.446	0.012	39527	0.1000	0.1002	
2 2,4-diamino-6-nitrotoluene	1	4.998	4.993	0.005	24748	0.1000	0.0967	
5 2,4,6-Trinitrophenol	1	6.091	5.940	0.151	14866	0.1000	0.0960	
6 HMX	1	7.224	7.200	0.024	16348	0.1000	0.0955	
8 RDX	1	9.324	9.300	0.024	20400	0.1000	0.0979	
9 Nitrobenzene	1	12.344	12.326	0.018	39666	0.1002	0.0978	
\$ 10 1,2-Dinitrobenzene	1	13.378	13.346	0.032	27215	0.1000	0.0983	
11 3,5-Dinitroaniline	1	15.304	15.266	0.038	46736	0.1000	0.0989	
13 Nitroglycerin	2	15.904	15.873	0.031	190583	1.00	0.9878	
12 1,3-Dinitrobenzene	1	15.911	15.880	0.031	62497	0.1001	0.0983	
14 o-Nitrotoluene	1	16.751	16.720	0.031	25946	0.1003	0.0991	
15 p-Nitrotoluene	1	17.078	17.053	0.025	22096	0.1004	0.0975	
16 4-Amino-2,6-dinitrotoluene	1	17.478	17.440	0.038	29408	0.1003	0.0989	
17 m-Nitrotoluene	1	17.991	17.966	0.025	28924	0.1004	0.0988	
18 2-Amino-4,6-dinitrotoluene	1	18.484	18.446	0.038	42067	0.1003	0.0978	
19 1,3,5-Trinitrobenzene	1	19.238	19.213	0.025	45508	0.1000	0.0995	
20 2,6-Dinitrotoluene	1	20.091	20.073	0.018	28823	0.1003	0.0982	
21 2,4-Dinitrotoluene	1	20.638	20.620	0.018	55506	0.1002	0.0975	
22 Tetryl	1	23.964	23.966	-0.002	30727	0.1000	0.0977	
23 2,4,6-Trinitrotoluene	1	24.951	24.953	-0.002	39631	0.1004	0.0973	
24 PETN	2	25.351	25.353	-0.002	134056	1.00	1.01	

Reagents:

8330IntermStk_00058

Amount Added: 5.00

Units: uL

8330_ADDs_00021

Amount Added: 5.00

Units: uL

Report Date: 09-May-2019 08:13:36

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070012.D

Injection Date: 07-May-2019 18:03:28

Instrument ID: CHHPLC_G2_LUNA

Operator ID: HKF

Lims ID: IC FULL LV 3

Worklist Smp#: 12

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

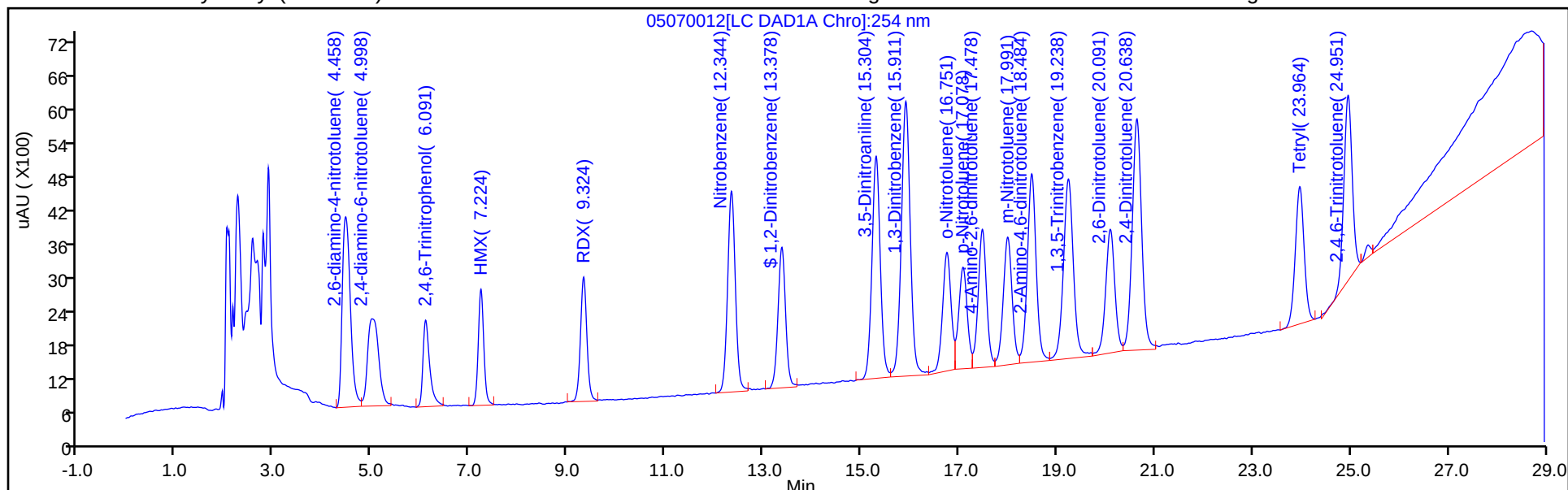
ALS Bottle#: 12

Method: G2_8330_Luna

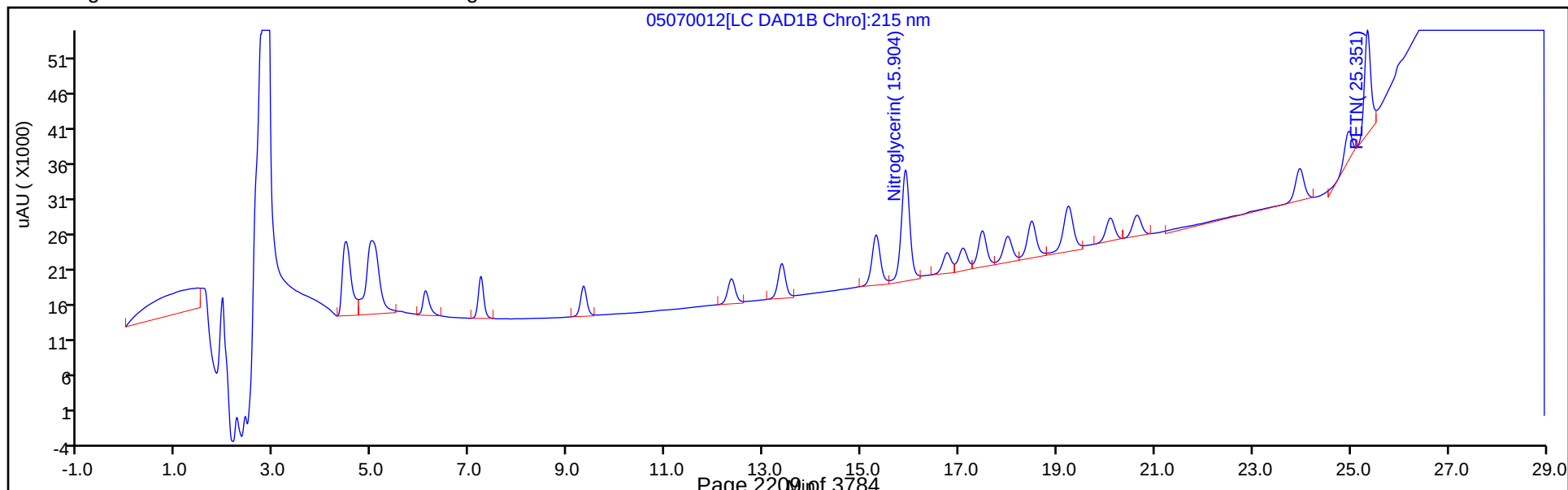
Limit Group: GCSV - 8330

Column: Luna-Phenyl hexyl (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070013.D
 Lims ID: IC FULL LV 2
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 07-May-2019 18:38:27 ALS Bottle#: 13 Worklist Smp#: 13
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: IC FULL LV 2
 Misc. Info.: 280-0081649-013
 Operator ID: HKF Instrument ID: CHHPLC_G2_LUNA
 Sublist: chrom-G2_8330_Luna*sub6
 Method: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\G2_8330_Luna.m
 Limit Group: GCSV - 8330
 Last Update: 09-May-2019 08:13:37 Calib Date: 08-May-2019 00:28:23
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070023.D
 Column 1 : Luna-Phenyl hexyl (4.60 mm) Det: LC DAD1A, 254 nm
 Process Host: CTX0337

First Level Reviewer: fiedlerh

Date: 08-May-2019 09:04:39

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 2,6-diamino-4-nitrotoluene	1	4.460	4.446	0.014	20307	0.0500	0.0515	
2 2,4-diamino-6-nitrotoluene	1	5.007	4.993	0.014	13871	0.0500	0.0542	
5 2,4,6-Trinitrophenol	1	6.147	5.940	0.207	7600	0.0500	0.0491	a
6 HMX	1	7.220	7.200	0.020	8508	0.0500	0.0497	
8 RDX	1	9.314	9.300	0.014	10715	0.0500	0.0514	
9 Nitrobenzene	1	12.334	12.326	0.008	20607	0.0501	0.0508	
\$ 10 1,2-Dinitrobenzene	1	13.360	13.346	0.014	13970	0.0500	0.0505	
11 3,5-Dinitroaniline	1	15.300	15.266	0.034	24136	0.0500	0.0507	
13 Nitroglycerin	2	15.900	15.873	0.027	103131	0.5000	0.5345	
12 1,3-Dinitrobenzene	1	15.907	15.880	0.027	31682	0.0501	0.0498	
14 o-Nitrotoluene	1	16.740	16.720	0.020	12970	0.0502	0.0495	
15 p-Nitrotoluene	1	17.067	17.053	0.014	11283	0.0502	0.0498	
16 4-Amino-2,6-dinitrotoluene	1	17.467	17.440	0.027	14792	0.0502	0.0497	
17 m-Nitrotoluene	1	17.980	17.966	0.014	14601	0.0502	0.0499	
18 2-Amino-4,6-dinitrotoluene	1	18.480	18.446	0.034	21339	0.0502	0.0496	
19 1,3,5-Trinitrobenzene	1	19.227	19.213	0.014	22700	0.0500	0.0496	
20 2,6-Dinitrotoluene	1	20.087	20.073	0.014	14708	0.0502	0.0501	
21 2,4-Dinitrotoluene	1	20.634	20.620	0.014	29202	0.0501	0.0513	
22 Tetryl	1	23.974	23.966	0.008	15280	0.0500	0.0486	
23 2,4,6-Trinitrotoluene	1	24.960	24.953	0.007	19932	0.0502	0.0489	
24 PETN	2	25.360	25.353	0.007	72383	0.5000	0.5468	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

8330IntermStk_00058

Amount Added: 2.50

Units: uL

8330_ADDs_00021

Amount Added: 2.50

Units: uL

Report Date: 09-May-2019 08:13:37

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070013.D

Injection Date: 07-May-2019 18:38:27

Instrument ID: CHHPLC_G2_LUNA

Operator ID: HKF

Lims ID: IC FULL LV 2

Worklist Smp#: 13

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

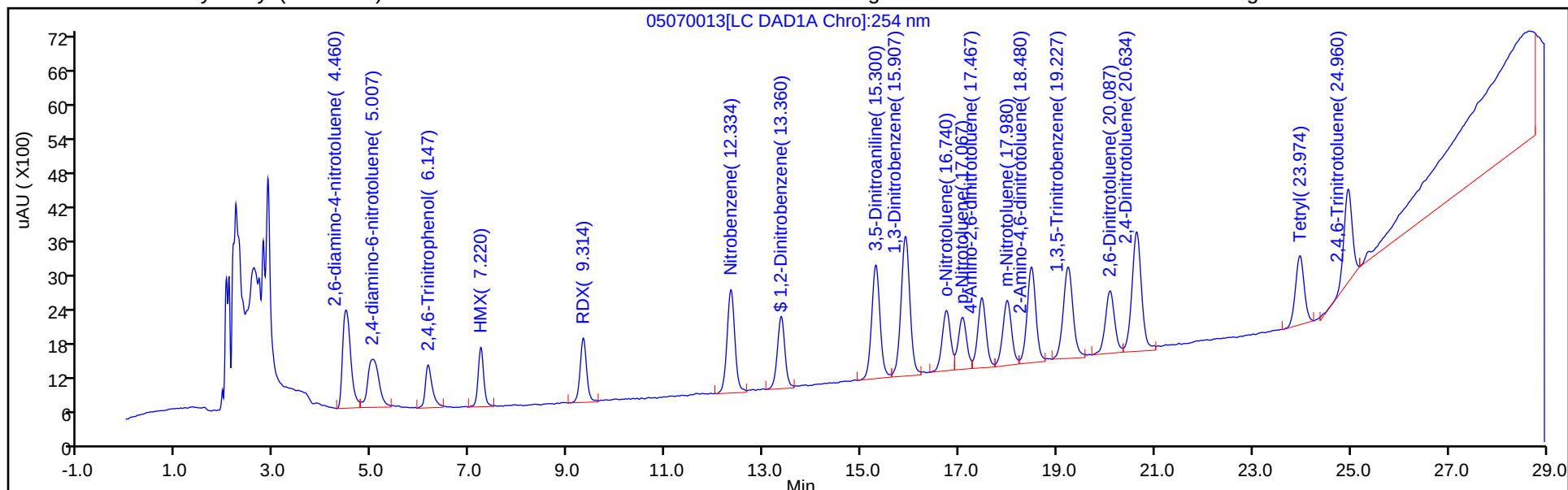
ALS Bottle#: 13

Method: G2_8330_Luna

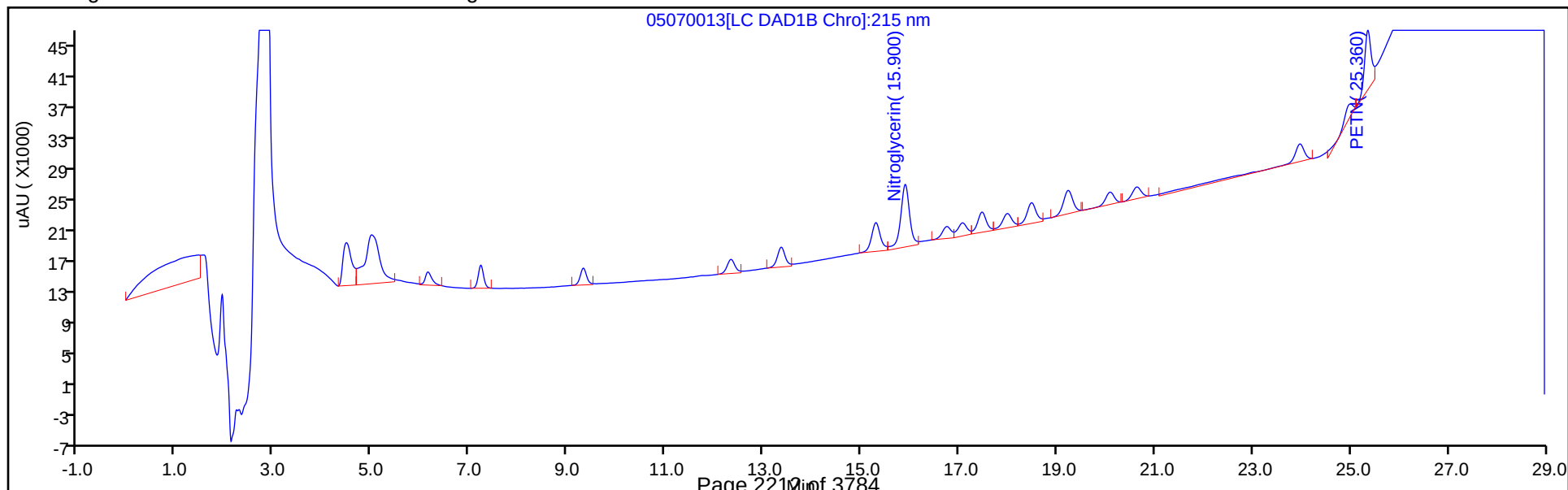
Limit Group: GCSV - 8330

Column: Luna-Phenyl hexyl (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Eurofins TestAmerica, Denver

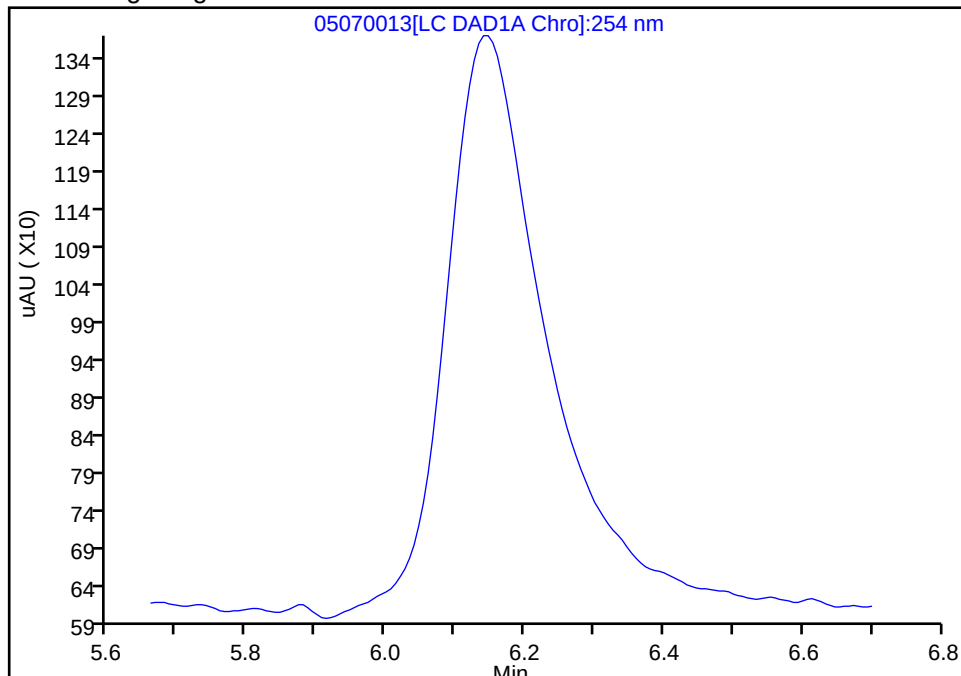
Data File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070013.D
Injection Date: 07-May-2019 18:38:27 Instrument ID: CHHPLC_G2_LUNA
Lims ID: IC FULL LV 2
Client ID:
Operator ID: HKF ALS Bottle#: 13 Worklist Smp#: 13
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: G2_8330_Luna Limit Group: GCSV - 8330
Column: Luna-Phenyl hexyl (4.60 mm) Detector LC DAD1A, 254 nm

5 2,4,6-Trinitrophenol, CAS: 88-89-1

Signal: 1

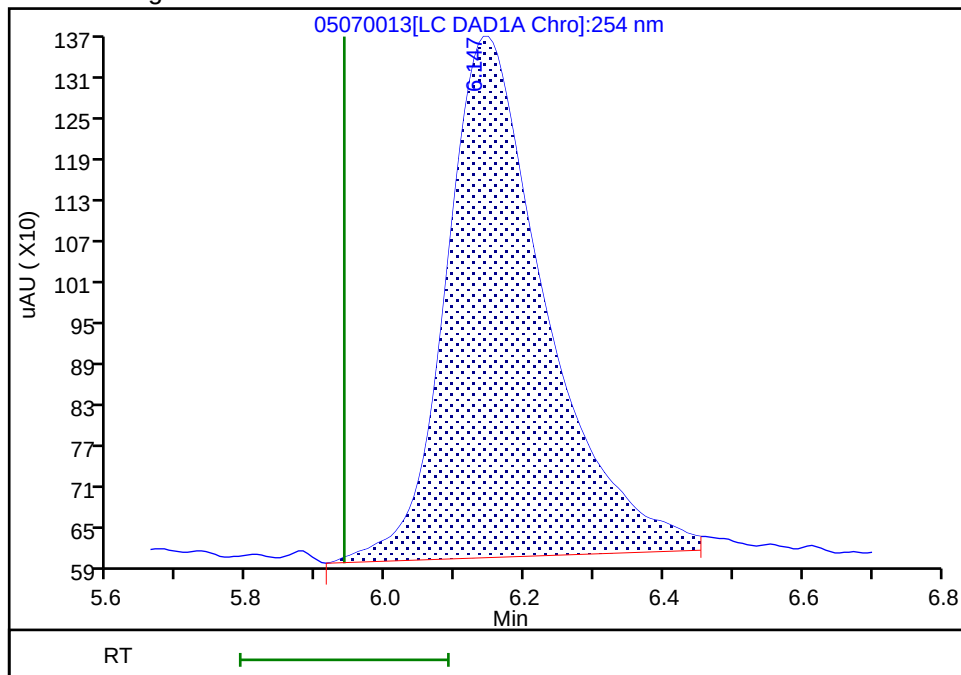
Not Detected
Expected RT: 5.94

Processing Integration Results



RT: 6.15
Area: 7600
Amount: 0.049058
Amount Units: ug/ml

Manual Integration Results



Reviewer: fiedlerh, 08-May-2019 09:04:38
Audit Action: Assigned Compound ID

Audit Reason:
Page 2213 of 3784

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070014.D
 Lims ID: IC FULL LV 1
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 07-May-2019 19:13:24 ALS Bottle#: 14 Worklist Smp#: 14
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: IC FULL LV 1
 Misc. Info.: 280-0081649-014
 Operator ID: HKF Instrument ID: CHHPLC_G2_LUNA
 Sublist: chrom-G2_8330_Luna*sub6
 Method: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\G2_8330_Luna.m
 Limit Group: GCSV - 8330
 Last Update: 09-May-2019 08:13:38 Calib Date: 08-May-2019 00:28:23
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070023.D
 Column 1 : Luna-Phenyl hexyl (4.60 mm) Det: LC DAD1A, 254 nm
 Process Host: CTX0337

First Level Reviewer: fiedlerh

Date: 08-May-2019 09:04:56

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 2,6-diamino-4-nitrotoluene	1	4.466	4.446	0.020	9763	0.0200	0.0247	
2 2,4-diamino-6-nitrotoluene	1	5.006	4.993	0.013	6110	0.0200	0.0239	
5 2,4,6-Trinitrophenol	1	6.206	5.940	0.266	2864	0.0200	0.0185	a
6 HMX	1	7.232	7.200	0.032	3734	0.0200	0.0218	
8 RDX	1	9.326	9.300	0.026	4177	0.0200	0.0200	
9 Nitrobenzene	1	12.332	12.326	0.006	7963	0.0200	0.0196	
\$ 10 1,2-Dinitrobenzene	1	13.359	13.346	0.013	5816	0.0200	0.0210	
11 3,5-Dinitroaniline	1	15.292	15.266	0.026	9783	0.0200	0.0201	
13 Nitroglycerin	2	15.892	15.873	0.019	46139	0.2000	0.2391	
12 1,3-Dinitrobenzene	1	15.899	15.880	0.019	13519	0.0200	0.0213	
14 o-Nitrotoluene	1	16.732	16.720	0.012	5190	0.0201	0.0198	
15 p-Nitrotoluene	1	17.066	17.053	0.013	4550	0.0201	0.0201	
16 4-Amino-2,6-dinitrotoluene	1	17.459	17.440	0.019	6001	0.0201	0.0202	
17 m-Nitrotoluene	1	17.979	17.966	0.013	5964	0.0201	0.0204	
18 2-Amino-4,6-dinitrotoluene	1	18.479	18.446	0.033	9366	0.0201	0.0218	
19 1,3,5-Trinitrobenzene	1	19.226	19.213	0.013	10187	0.0200	0.0223	
20 2,6-Dinitrotoluene	1	20.086	20.073	0.013	6648	0.0201	0.0227	
21 2,4-Dinitrotoluene	1	20.632	20.620	0.012	12102	0.0200	0.0213	
22 Tetryl	1	23.972	23.966	0.006	5354	0.0200	0.0170	
23 2,4,6-Trinitrotoluene	1	24.952	24.953	-0.001	8061	0.0201	0.0198	
24 PETN	2	25.366	25.353	0.013	23673	0.2000	0.1788	M

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

8330IntermStk_00058

Amount Added: 1.00

Units: uL

8330_ADDs_00021

Amount Added: 1.00

Units: uL

Report Date: 09-May-2019 08:13:38

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070014.D

Injection Date: 07-May-2019 19:13:24

Instrument ID: CHHPLC_G2_LUNA

Operator ID: HKF

Lims ID: IC FULL LV 1

Worklist Smp#: 14

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

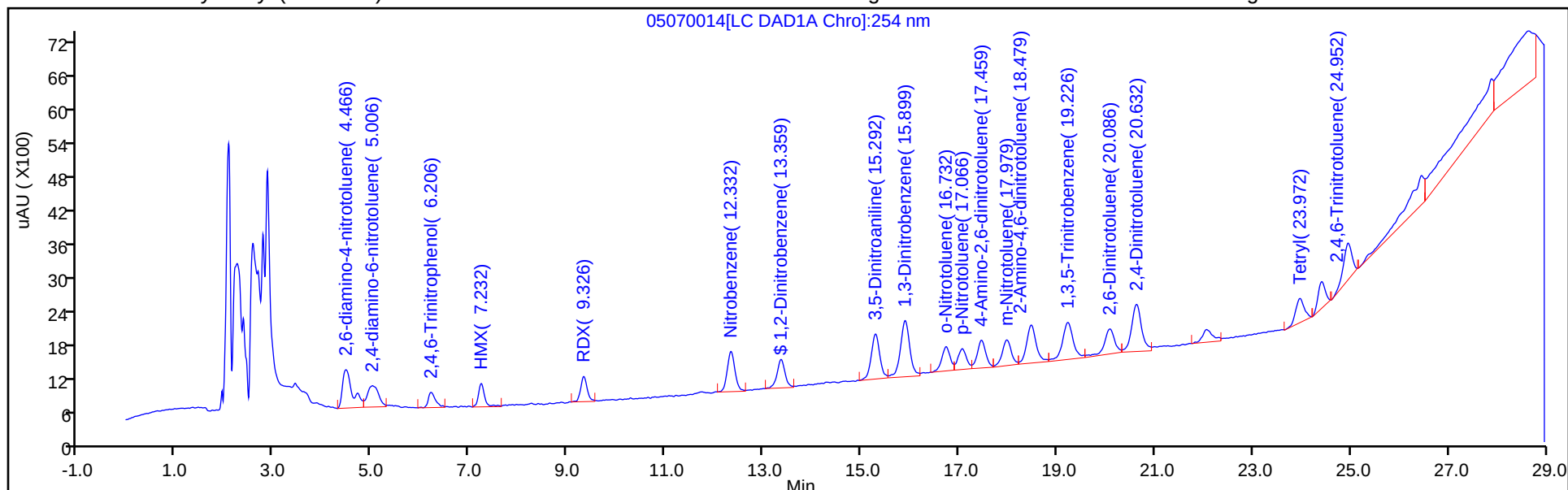
ALS Bottle#: 14

Method: G2_8330_Luna

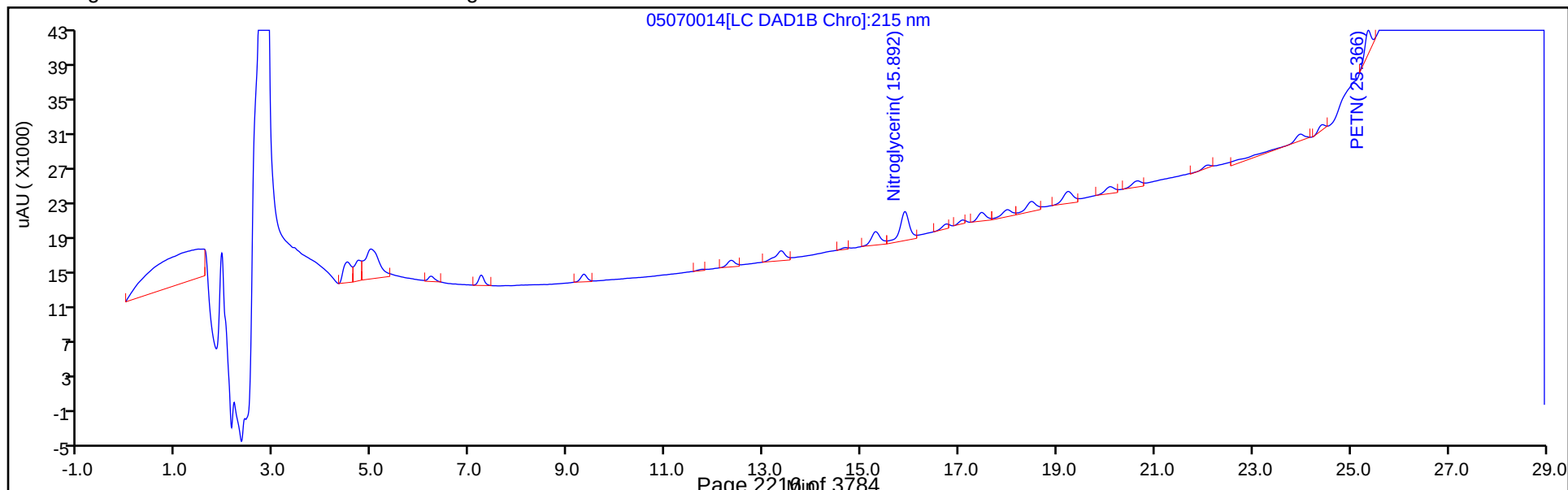
Limit Group: GCSV - 8330

Column: Luna-Phenyl hexyl (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Eurofins TestAmerica, Denver

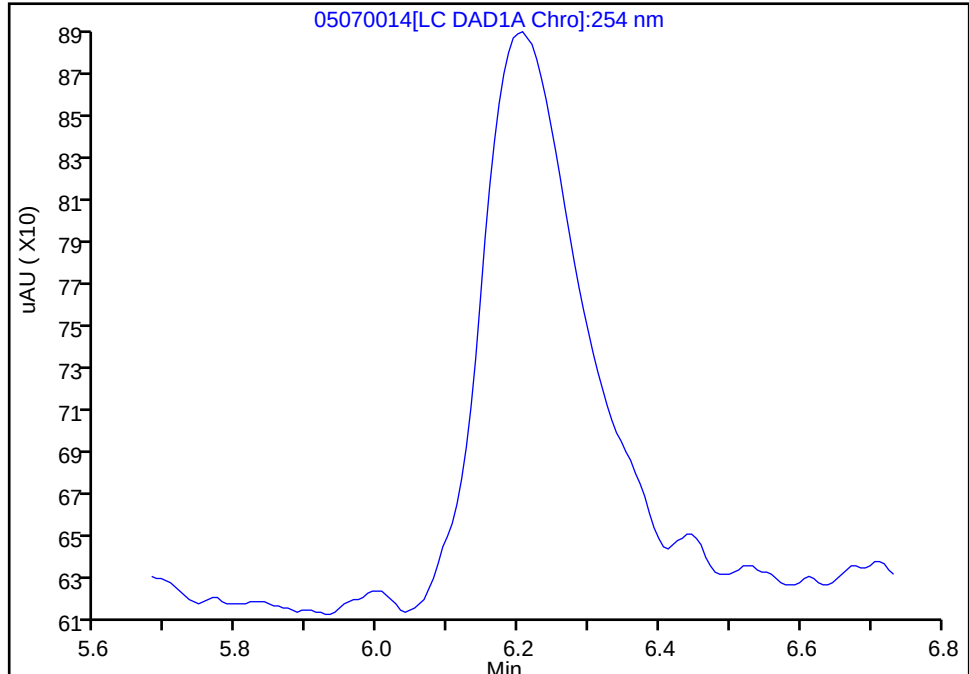
Data File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070014.D
Injection Date: 07-May-2019 19:13:24 Instrument ID: CHHPLC_G2_LUNA
Lims ID: IC FULL LV 1
Client ID:
Operator ID: HKF ALS Bottle#: 14 Worklist Smp#: 14
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: G2_8330_Luna Limit Group: GCSV - 8330
Column: Luna-Phenyl hexyl (4.60 mm) Detector LC DAD1A, 254 nm

5 2,4,6-Trinitrophenol, CAS: 88-89-1

Signal: 1

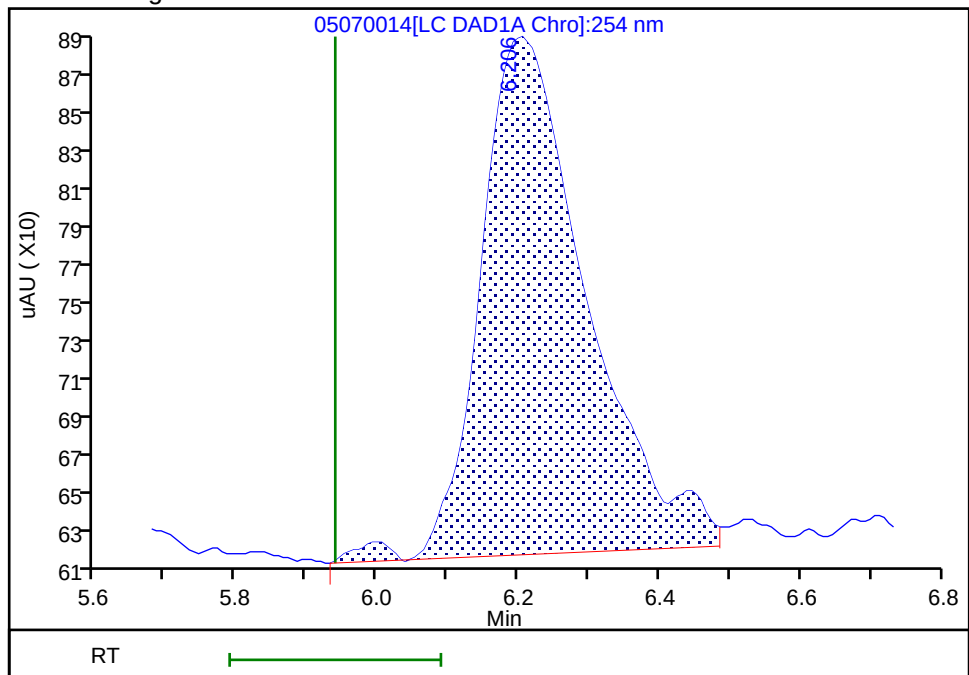
Not Detected
Expected RT: 5.94

Processing Integration Results



RT: 6.21
Area: 2864
Amount: 0.018487
Amount Units: ug/ml

Manual Integration Results



Reviewer: fiedlerh, 08-May-2019 09:04:54
Audit Action: Assigned Compound ID

Audit Reason:
Page 2217 of 3784

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070014.D

Injection Date: 07-May-2019 19:13:24

Instrument ID: CHHPLC_G2_LUNA

Lims ID: IC FULL LV 1

Client ID:

Operator ID: HKF

ALS Bottle#: 14

Worklist Smp#: 14

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

Method: G2_8330_Luna

Limit Group: GCSV - 8330

Column:

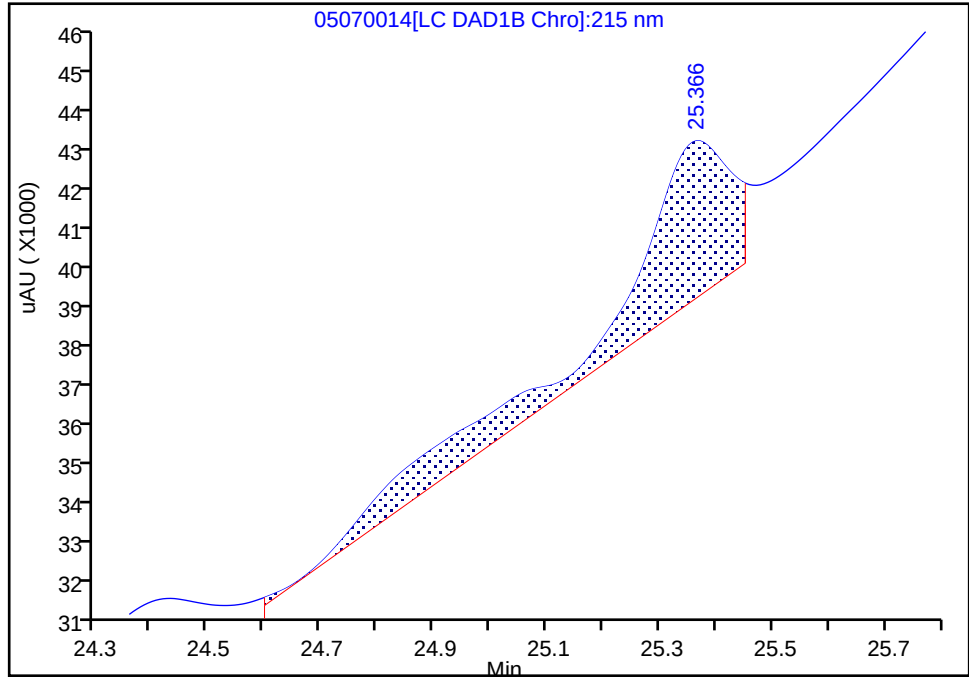
Detector LC DAD1B, 215 nm

24 PETN, CAS: 78-11-5

Signal: 1

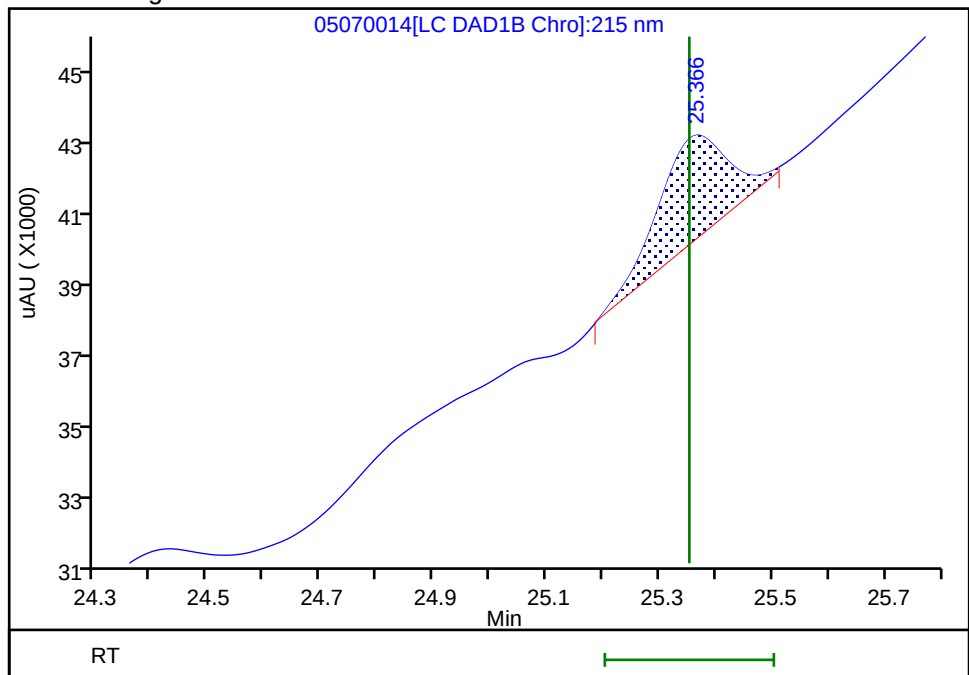
RT: 25.37
Area: 54813
Amount: 0.289335
Amount Units: ug/ml

Processing Integration Results



RT: 25.37
Area: 23673
Amount: 0.178848
Amount Units: ug/ml

Manual Integration Results



Reviewer: fiedlerh, 08-May-2019 09:10:18

Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 445350

SDG No.: _____

Instrument ID: CHHPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 01/24/2019 16:36 Calibration End Date: 01/24/2019 19:18 Calibration ID: 34986

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-445350/14	01240014.D
Level 2	IC 280-445350/13	01240013.D
Level 3	IC 280-445350/12	01240012.D
Level 4	IC 280-445350/11	01240011.D
Level 5	IC 280-445350/10	01240010.D
Level 6	IC 280-445350/9	01240009.D
Level 7	IC 280-445350/8	01240008.D
Level 8	IC 280-445350/7	01240007.D

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7	LVL 8			RT WINDOW	AVG RT
HMX	6.655	6.654	6.656	6.653	6.659	6.655	6.652	6.649			6.507 - 6.807	6.654
RDX	7.761	7.754	7.756	7.759	7.746	7.748	7.752	7.749			7.607 - 7.907	7.753
Picric acid	8.155	8.140	8.143	8.139	8.113	8.101	8.092	8.049			7.973 - 8.273	8.117
1,3,5-Trinitrobenzene	8.908	8.900	8.903	8.906	8.893	8.895	8.899	8.896			8.753 - 9.053	8.900
1,3-Dinitrobenzene	9.561	9.547	9.556	9.559	9.546	9.555	9.559	9.549			9.407 - 9.707	9.554
Nitrobenzene	9.954	9.933	9.949	9.953	9.939	9.941	9.945	9.936			9.793 - 10.093	9.944
Tetryl	10.268	10.240	10.269	10.266	10.253	10.261	10.265	10.262			10.113 - 10.413	10.261
Nitroglycerin	10.781	10.753	10.776	10.779	10.766	10.775	10.779	10.769			10.620 - 10.920	10.772
2,4,6-Trinitrotoluene	11.228	11.200	11.229	11.233	11.219	11.228	11.232	11.222			11.123 - 11.323	11.224
4-Amino-2,6-dinitrotoluene	11.401	11.353	11.396	11.399	11.386	11.395	11.399	11.382			11.290 - 11.490	11.389
2-Amino-4,6-dinitrotoluene	11.688	11.640	11.682	11.686	11.673	11.675	11.679	11.669			11.577 - 11.777	11.674
2,6-Dinitrotoluene	11.841	11.800	11.836	11.839	11.833	11.835	11.839	11.829			11.730 - 11.930	11.832
2,4-Dinitrotoluene	12.041	11.993	12.029	12.039	12.026	12.028	12.032	12.022			11.923 - 12.123	12.026
2-Nitrotoluene	12.834	12.833	12.889	12.886	12.873	12.875	12.879	12.869			12.720 - 13.020	12.867
4-Nitrotoluene	13.268	13.273	13.309	13.319	13.306	13.315	13.312	13.309			13.153 - 13.453	13.301
3-Nitrotoluene	13.934	13.873	13.916	13.919	13.906	13.915	13.912	13.902			13.747 - 14.047	13.910
PETN	15.014	14.973	15.009	15.026	15.006	15.021	15.019	15.016			14.847 - 15.147	15.011
1,2-Dinitrobenzene	8.748	8.734	8.743	8.746	8.726	8.735	8.739	8.736			8.593 - 8.893	8.738

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 445350

SDG No.: _____

Instrument ID: CHHPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 01/24/2019 16:36 Calibration End Date: 01/24/2019 19:18 Calibration ID: 34986

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-445350/14	01240014.D
Level 2	IC 280-445350/13	01240013.D
Level 3	IC 280-445350/12	01240012.D
Level 4	IC 280-445350/11	01240011.D
Level 5	IC 280-445350/10	01240010.D
Level 6	IC 280-445350/9	01240009.D
Level 7	IC 280-445350/8	01240008.D
Level 8	IC 280-445350/7	01240007.D

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
HMx	79600 86300	83400 85617	97840 85644	88896 87634	Ave		86866.4429				6.0		20.0			
RDX	105850 102703	102360 102423	120550 103445	106188 105295	Ave		106101.695				5.7		20.0			
Picric acid	94850 83885	82180 81367	90240 82004	87380 84292	Ave		85774.7179				5.5		20.0			
1,3,5-Trinitrobenzene	203800 223358	222640 226136	247570 225349	236152 232020	Ave		227127.977				5.5		20.0			
1,3-Dinitrobenzene	292957 292607	294785 295240	335425 293332	304412 303984	Ave		301592.747				4.8		20.0			
Nitrobenzene	173353 187592	194471 196233	215619 192928	200255 203590	Ave		195505.291				6.3		20.0			
Tetryl	189400 176228	178560 178510	197320 175918	182012 184060	Ave		182750.888				4.1		20.0			
Nitroglycerin	66550 66618	64456 67268	73417 66970	69082 67689	Ave		67756.2729				3.9		20.0			
2,4,6-Trinitrotoluene	251096 219734	220458 219525	245249 216251	224378 221892	Ave		227322.779				5.8		20.0			
4-Amino-2,6-dinitrotoluene	223679 155229	157488 152383	173440 155815	159733 159726	Ave		167186.416				14.2		20.0			
2-Amino-4,6-dinitrotoluene	210518 200292	197727 194524	221745 196440	206409 202865	Ave		203814.886				4.4		20.0			
2,6-Dinitrotoluene	178863 145254	147059 149000	164835 148042	151023 148532	Ave		154076.115				7.6		20.0			
2,4-Dinitrotoluene	339770 286415	291357 284328	323743 282182	297641 294919	Ave		300044.392				6.9		20.0			
2-Nitrotoluene	166600 125818	138903 128507	141336 124487	131494 129338	Ave		135810.301				10.1		20.0			

Note: The M1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 445350

SDG No.: _____

Instrument ID: CHHPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 01/24/2019 16:36 Calibration End Date: 01/24/2019 19:18 Calibration ID: 34986

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
4-Nitrotoluene	141982 108797	110040 110596	141205 107200	118215 111520	Ave		118694.481				12.2		20.0			
3-Nitrotoluene	192032 141327	147450 142072	159273 138391	149733 143937	Ave		151776.880				11.5		20.0			
PETN	80000 74025	74254 74658	79557 74550	76382 76319	Ave		76218.0496				3.1		20.0			
1,2-Dinitrobenzene	125700 131200	131440 131216	145750 132094	137232 134921	Ave		133694.064				4.4		20.0			

Note: The M1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 445350

SDG No.: _____

Instrument ID: CHHPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 01/24/2019 16:36 Calibration End Date: 01/24/2019 19:18 Calibration ID: 34986

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-445350/14	01240014.D
Level 2	IC 280-445350/13	01240013.D
Level 3	IC 280-445350/12	01240012.D
Level 4	IC 280-445350/11	01240011.D
Level 5	IC 280-445350/10	01240010.D
Level 6	IC 280-445350/9	01240009.D
Level 7	IC 280-445350/8	01240008.D
Level 8	IC 280-445350/7	01240007.D

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
HMX	Ave	1592 59932	4170 85644	9784 219086	22224	34520	0.0200 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
RDX	Ave	2117 71696	5118 103445	12055 263238	26547	41081	0.0200 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
Picric acid	Ave	1897 56957	4109 82004	9024 210729	21845	33554	0.0200 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
1,3,5-Trinitrobenzene	Ave	4076 158295	11132 225349	24757 580049	59038	89343	0.0200 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
1,3-Dinitrobenzene	Ave	5865 206875	14754 293625	33576 760720	76179	117160	0.0200 0.701	0.0501 1.00	0.100 2.50	0.250	0.400
Nitrobenzene	Ave	3474 137638	9743 193314	21605 509993	50164	75187	0.0200 0.701	0.0501 1.00	0.100 2.51	0.251	0.401
Tetryl	Ave	3788 124957	8928 175918	19732 460149	45503	70491	0.0200 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
Nitroglycerin	Ave	13310 470877	32228 669696	73417 1692236	172705	266472	0.200 7.00	0.500 10.0	1.00 25.0	2.50	4.00
2,4,6-Trinitrotoluene	Ave	5042 154282	11067 217116	24623 556948	56319	88245	0.0201 0.703	0.0502 1.00	0.100 2.51	0.251	0.402
4-Amino-2,6-dinitrotoluene	Ave	4487 106988	7898 156282	17396 400512	40053	62278	0.0201 0.702	0.0502 1.00	0.100 2.51	0.251	0.401
2-Amino-4,6-dinitrotoluene	Ave	4223 136575	9916 197029	22241 508685	51757	80357	0.0201 0.702	0.0502 1.00	0.100 2.51	0.251	0.401
2,6-Dinitrotoluene	Ave	3588 104613	7375 148486	16533 372444	37869	58276	0.0201 0.702	0.0502 1.00	0.100 2.51	0.251	0.401
2,4-Dinitrotoluene	Ave	6809 199428	14597 282746	32439 738773	74559	114795	0.0200 0.701	0.0501 1.00	0.100 2.51	0.251	0.401
2-Nitrotoluene	Ave	3342 90225	6966 124860	14176 324315	32972	50478	0.0201 0.702	0.0502 1.00	0.100 2.51	0.251	0.401
4-Nitrotoluene	Ave	2851 77727	5524 107629	14177 279915	29672	43693	0.0201 0.703	0.0502 1.00	0.100 2.51	0.251	0.402

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 445350

SDG No.: _____

Instrument ID: CHHPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 01/24/2019 16:36 Calibration End Date: 01/24/2019 19:18 Calibration ID: 34986

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
3-Nitrotoluene	Ave	3856 99848	7402 138945	15991 361281	37583	56757	0.0201 0.703	0.0502 1.00	0.100 2.51	0.251	0.402
PETN	Ave	16000 522605	37127 745498	79557 1907971	190956	296098	0.200 7.00	0.500 10.0	1.00 25.0	2.50	4.00
1,2-Dinitrobenzene	Ave	2514 91851	6572 132094	14575 337302	34308	52480	0.0200 0.700	0.0500 1.00	0.100 2.50	0.250	0.400

Curve Type Legend:

Ave = Average

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240007.D
 Lims ID: IC MAIN L8
 Client ID:
 Sample Type: IC Calib Level: 8
 Inject. Date: 24-Jan-2019 16:36:59 ALS Bottle#: 7 Worklist Smp#: 7
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: IC MAIN L8
 Misc. Info.: 280-0078351-007
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 25-Jan-2019 09:53:47 Calib Date: 24-Jan-2019 22:45:28
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240023.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0323

First Level Reviewer: fiedlerh

Date: 25-Jan-2019 09:49:24

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.649	6.657	-0.008	219086	2.50	2.52	
7 RDX	1	7.749	7.757	-0.008	263238	2.50	2.48	
8 2,4,6-Trinitrophenol	1	8.049	8.123	-0.074	210729	2.50	2.46	
\$ 9 1,2-Dinitrobenzene	1	8.736	8.743	-0.007	337302	2.50	2.52	
10 1,3,5-Trinitrobenzene	1	8.896	8.903	-0.007	580049	2.50	2.55	
11 1,3-Dinitrobenzene	1	9.549	9.557	-0.008	760720	2.50	2.52	
12 Nitrobenzene	1	9.936	9.943	-0.007	509993	2.51	2.61	
14 Tetryl	1	10.262	10.263	-0.001	460149	2.50	2.52	
15 Nitroglycerin	2	10.769	10.770	-0.001	1692236	25.0	25.0	
16 2,4,6-Trinitrotoluene	1	11.222	11.223	-0.001	556948	2.51	2.45	
17 4-Amino-2,6-dinitrotoluene	1	11.382	11.390	-0.008	400512	2.51	2.40	
18 2-Amino-4,6-dinitrotoluene	1	11.669	11.677	-0.008	508685	2.51	2.50	
19 2,6-Dinitrotoluene	1	11.829	11.830	-0.001	372444	2.51	2.42	
20 2,4-Dinitrotoluene	1	12.022	12.023	-0.001	738773	2.51	2.46	
21 o-Nitrotoluene	1	12.869	12.870	-0.001	324315	2.51	2.39	
22 p-Nitrotoluene	1	13.309	13.303	0.006	279915	2.51	2.36	
23 m-Nitrotoluene	1	13.902	13.897	0.005	361281	2.51	2.38	
24 PETN	2	15.016	14.997	0.019	1907971	25.0	25.0	

Reagents:

8330IntermStk_00057

Amount Added: 250.00

Units: uL

Report Date: 25-Jan-2019 09:53:48

Chrom Revision: 2.3 15-Jan-2019 08:51:34

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240007.D

Injection Date: 24-Jan-2019 16:36:59

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: IC MAIN L8

Worklist Smp#: 7

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

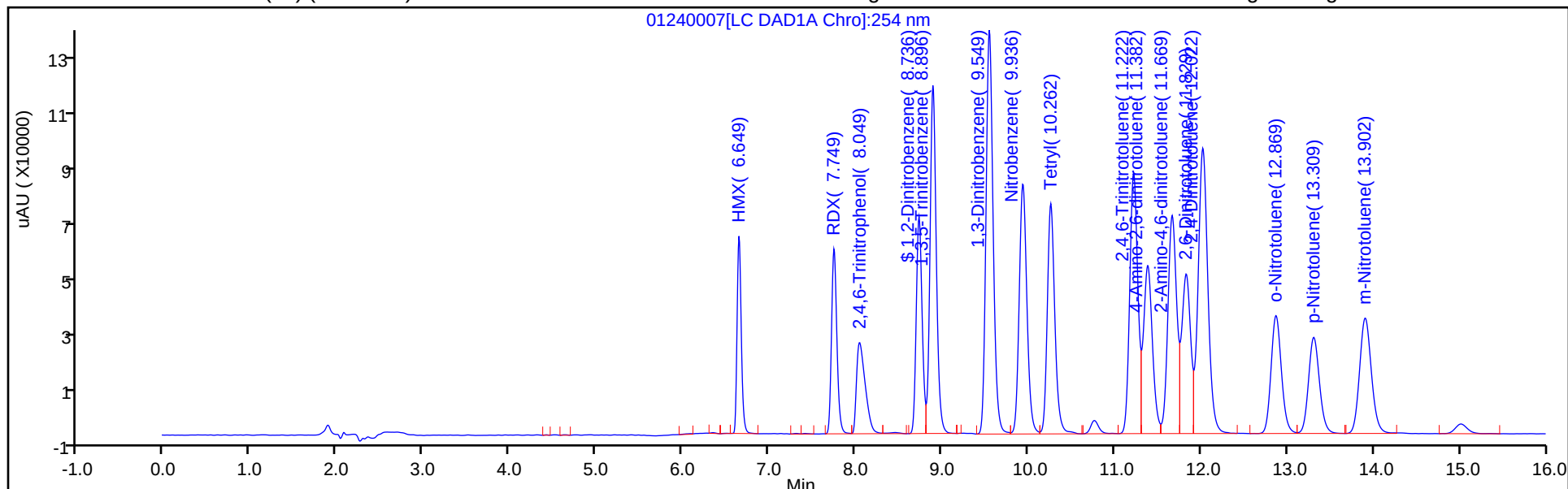
ALS Bottle#: 7

Method: 8330_X3

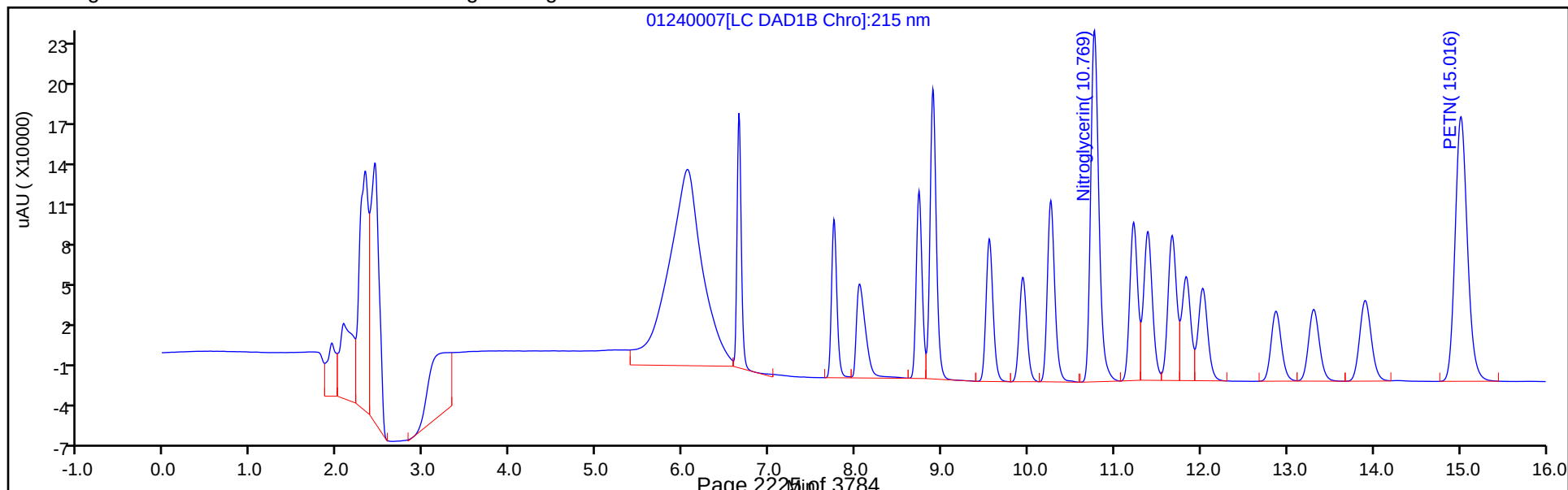
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240008.D
 Lims ID: IC MAIN L7
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 24-Jan-2019 17:00:03 ALS Bottle#: 8 Worklist Smp#: 8
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: IC MAIN L7
 Misc. Info.: 280-0078351-008
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 25-Jan-2019 09:53:49 Calib Date: 24-Jan-2019 22:45:28
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240023.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0323

First Level Reviewer: fiedlerh

Date: 25-Jan-2019 09:49:11

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.652	6.657	-0.005	85644	1.00	0.9859	
7 RDX	1	7.752	7.757	-0.005	103445	1.00	0.9750	
8 2,4,6-Trinitrophenol	1	8.092	8.123	-0.031	82004	1.00	0.9560	
\$ 9 1,2-Dinitrobenzene	1	8.739	8.743	-0.004	132094	1.00	0.9880	
10 1,3,5-Trinitrobenzene	1	8.899	8.903	-0.004	225349	1.00	0.99	
11 1,3-Dinitrobenzene	1	9.559	9.557	0.002	293625	1.00	0.9736	
12 Nitrobenzene	1	9.945	9.943	0.002	193314	1.00	0.9888	
14 Tetryl	1	10.265	10.263	0.002	175918	1.00	0.9626	
15 Nitroglycerin	2	10.779	10.770	0.009	669696	10.0	9.88	
16 2,4,6-Trinitrotoluene	1	11.232	11.223	0.009	217116	1.00	0.9551	
17 4-Amino-2,6-dinitrotoluene	1	11.399	11.390	0.009	156282	1.00	0.9348	
18 2-Amino-4,6-dinitrotoluene	1	11.679	11.677	0.002	197029	1.00	0.9667	
19 2,6-Dinitrotoluene	1	11.839	11.830	0.009	148486	1.00	0.9637	
20 2,4-Dinitrotoluene	1	12.032	12.023	0.009	282746	1.00	0.9423	
21 o-Nitrotoluene	1	12.879	12.870	0.009	124860	1.00	0.9194	
22 p-Nitrotoluene	1	13.312	13.303	0.009	107629	1.00	0.9068	
23 m-Nitrotoluene	1	13.912	13.897	0.015	138945	1.00	0.9155	
24 PETN	2	15.019	14.997	0.022	745498	10.0	9.78	

Reagents:

8330IntermStk_00057

Amount Added: 100.00

Units: uL

Report Date: 25-Jan-2019 09:53:49

Chrom Revision: 2.3 15-Jan-2019 08:51:34

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240008.D

Injection Date: 24-Jan-2019 17:00:03

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: IC MAIN L7

Worklist Smp#: 8

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

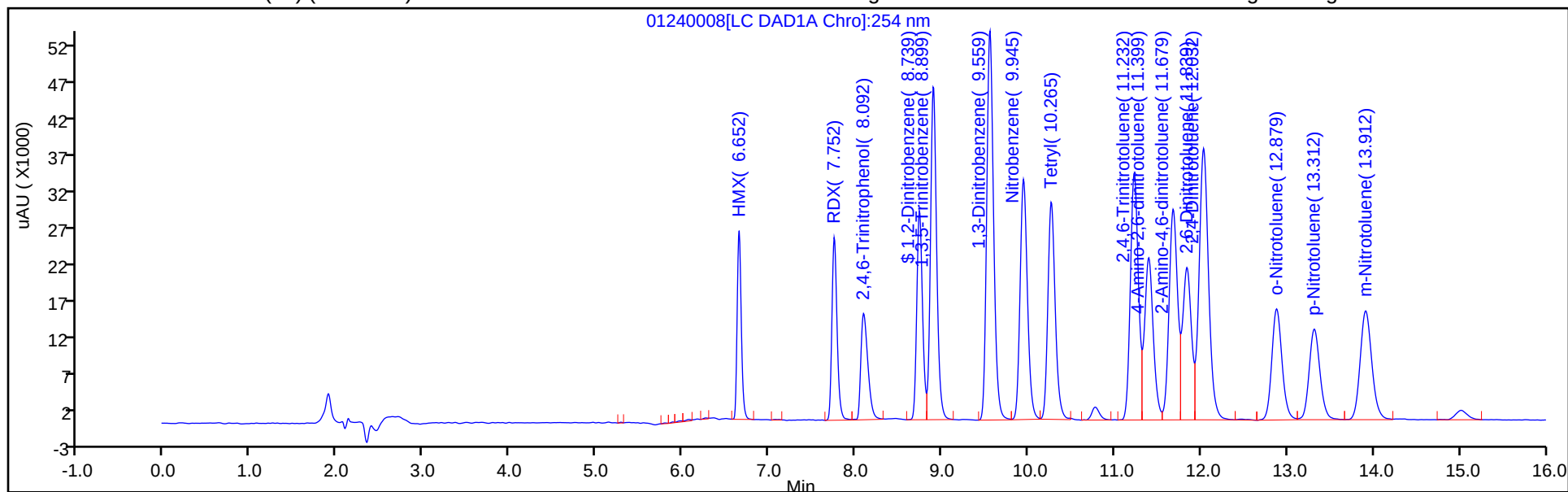
ALS Bottle#: 8

Method: 8330_X3

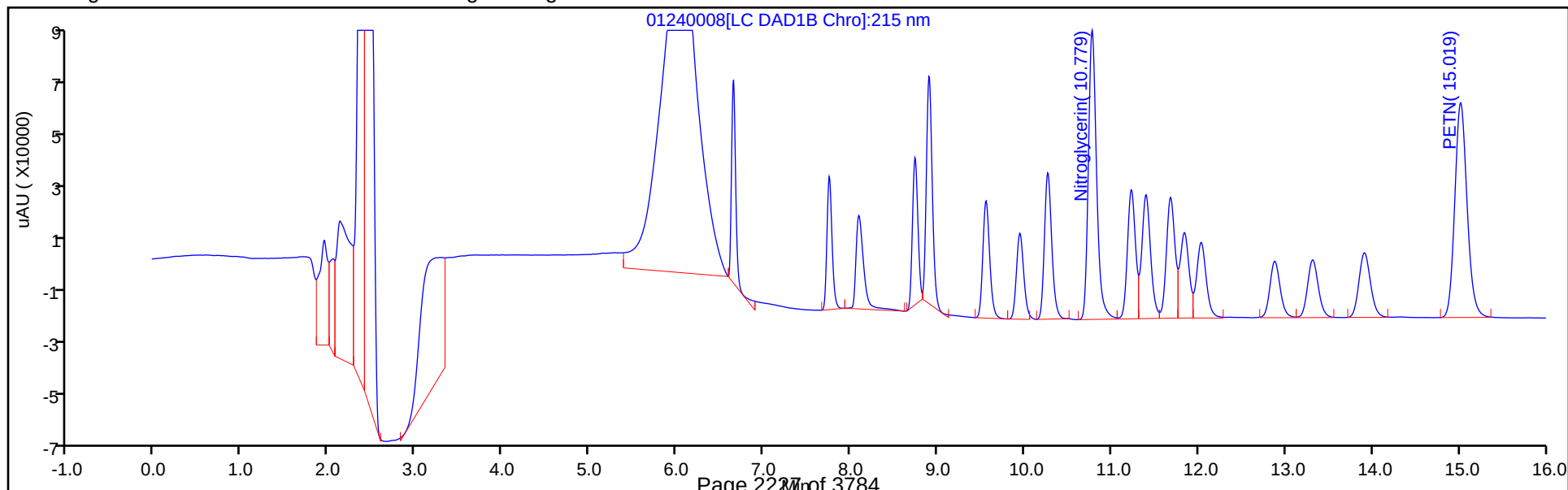
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240009.D
 Lims ID: IC MAIN L6
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 24-Jan-2019 17:23:05 ALS Bottle#: 9 Worklist Smp#: 9
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: IC MAIN L6
 Misc. Info.: 280-0078351-009
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 25-Jan-2019 09:53:50 Calib Date: 24-Jan-2019 22:45:28
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240023.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0323

First Level Reviewer: fiedlerh

Date: 25-Jan-2019 09:49:04

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.655	6.657	-0.002	59932	0.7000	0.6899	
7 RDX	1	7.748	7.757	-0.009	71696	0.7000	0.6757	
8 2,4,6-Trinitrophenol	1	8.101	8.123	-0.022	56957	0.7000	0.6640	
\$ 9 1,2-Dinitrobenzene	1	8.735	8.743	-0.008	91851	0.7000	0.6870	
10 1,3,5-Trinitrobenzene	1	8.895	8.903	-0.008	158295	0.7000	0.6969	
11 1,3-Dinitrobenzene	1	9.555	9.557	-0.002	206875	0.7007	0.6859	
12 Nitrobenzene	1	9.941	9.943	-0.002	137638	0.7014	0.7040	
14 Tetryl	1	10.261	10.263	-0.002	124957	0.7000	0.6838	
15 Nitroglycerin	2	10.775	10.770	0.005	470877	7.00	6.95	
16 2,4,6-Trinitrotoluene	1	11.228	11.223	0.005	154282	0.7028	0.6787	
17 4-Amino-2,6-dinitrotoluene	1	11.395	11.390	0.005	106988	0.7021	0.6399	
18 2-Amino-4,6-dinitrotoluene	1	11.675	11.677	-0.002	136575	0.7021	0.6701	
19 2,6-Dinitrotoluene	1	11.835	11.830	0.005	104613	0.7021	0.6790	
20 2,4-Dinitrotoluene	1	12.028	12.023	0.005	199428	0.7014	0.6647	
21 o-Nitrotoluene	1	12.875	12.870	0.005	90225	0.7021	0.6643	
22 p-Nitrotoluene	1	13.315	13.303	0.012	77727	0.7028	0.6548	
23 m-Nitrotoluene	1	13.915	13.897	0.018	99848	0.7028	0.6579	
24 PETN	2	15.021	14.997	0.024	522605	7.00	6.86	

Reagents:

8330IntermStk_00057

Amount Added: 70.00

Units: uL

Report Date: 25-Jan-2019 09:53:50

Chrom Revision: 2.3 15-Jan-2019 08:51:34

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240009.D

Injection Date: 24-Jan-2019 17:23:05

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: IC MAIN L6

Worklist Smp#: 9

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

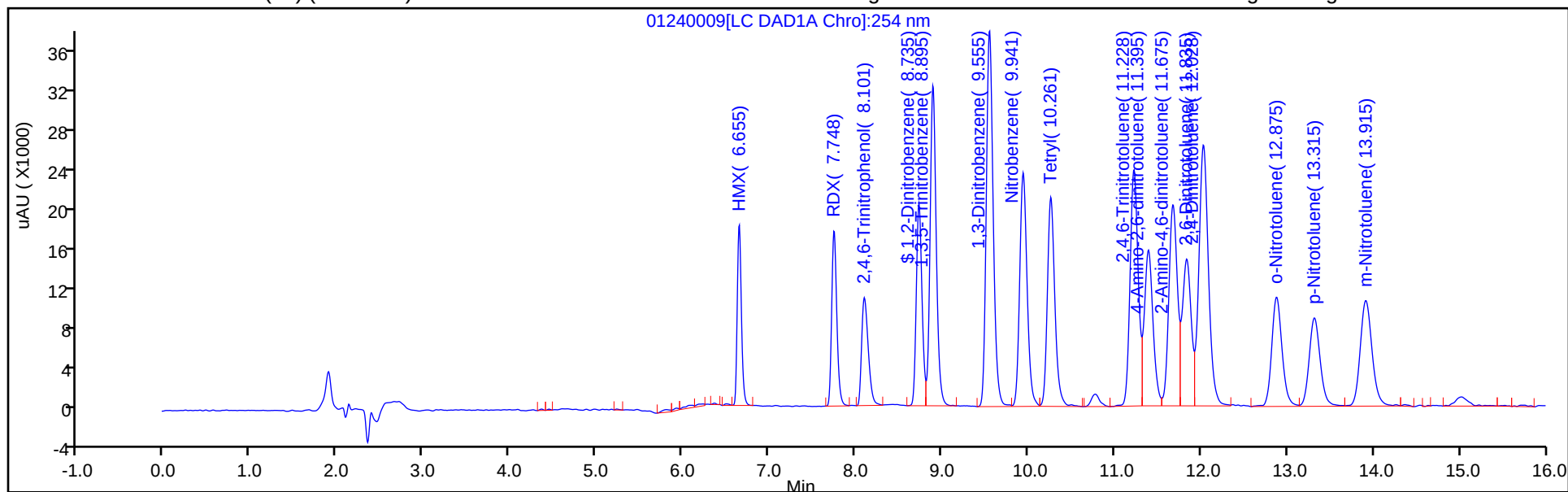
ALS Bottle#: 9

Method: 8330_X3

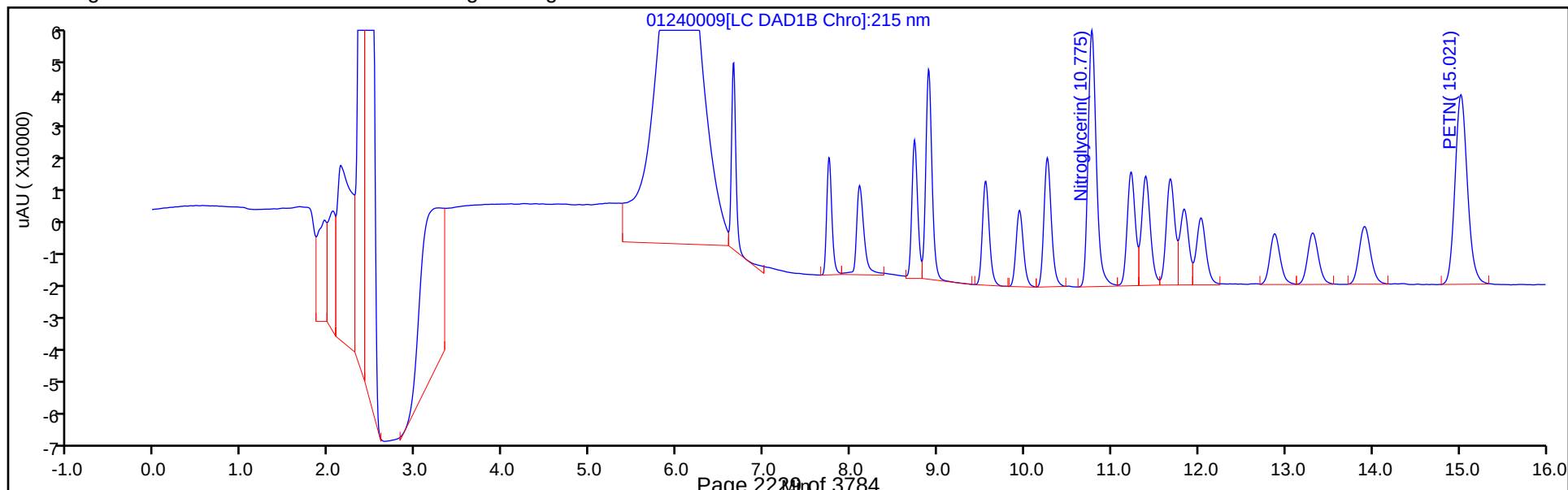
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240010.D
 Lims ID: IC MAIN L5
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 24-Jan-2019 17:46:12 ALS Bottle#: 10 Worklist Smp#: 10
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: IC MAIN L5
 Misc. Info.: 280-0078351-010
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 25-Jan-2019 09:53:51 Calib Date: 24-Jan-2019 22:45:28
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240023.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0323

First Level Reviewer: fiedlerh

Date: 25-Jan-2019 09:48:57

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.659	6.657	0.002	34520	0.4000	0.3974	
7 RDX	1	7.746	7.757	-0.011	41081	0.4000	0.3872	
8 2,4,6-Trinitrophenol	1	8.113	8.123	-0.010	33554	0.4000	0.3912	
\$ 9 1,2-Dinitrobenzene	1	8.726	8.743	-0.017	52480	0.4000	0.3925	
10 1,3,5-Trinitrobenzene	1	8.893	8.903	-0.010	89343	0.4000	0.3934	
11 1,3-Dinitrobenzene	1	9.546	9.557	-0.011	117160	0.4004	0.3885	
12 Nitrobenzene	1	9.939	9.943	-0.004	75187	0.4008	0.3846	
14 Tetryl	1	10.253	10.263	-0.010	70491	0.4000	0.3857	
15 Nitroglycerin	2	10.766	10.770	-0.004	266472	4.00	3.93	
16 2,4,6-Trinitrotoluene	1	11.219	11.223	-0.004	88245	0.4016	0.3882	
17 4-Amino-2,6-dinitrotoluene	1	11.386	11.390	-0.004	62278	0.4012	0.3725	
18 2-Amino-4,6-dinitrotoluene	1	11.673	11.677	-0.004	80357	0.4012	0.3943	
19 2,6-Dinitrotoluene	1	11.833	11.830	0.003	58276	0.4012	0.3782	
20 2,4-Dinitrotoluene	1	12.026	12.023	0.003	114795	0.4008	0.3826	
21 o-Nitrotoluene	1	12.873	12.870	0.003	50478	0.4012	0.3717	
22 p-Nitrotoluene	1	13.306	13.303	0.003	43693	0.4016	0.3681	
23 m-Nitrotoluene	1	13.906	13.897	0.009	56757	0.4016	0.3740	
24 PETN	2	15.006	14.997	0.009	296098	4.00	3.88	

Reagents:

8330IntermStk_00057

Amount Added: 40.00

Units: uL

Report Date: 25-Jan-2019 09:53:51

Chrom Revision: 2.3 15-Jan-2019 08:51:34

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240010.D

Injection Date: 24-Jan-2019 17:46:12

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: IC MAIN L5

Worklist Smp#: 10

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

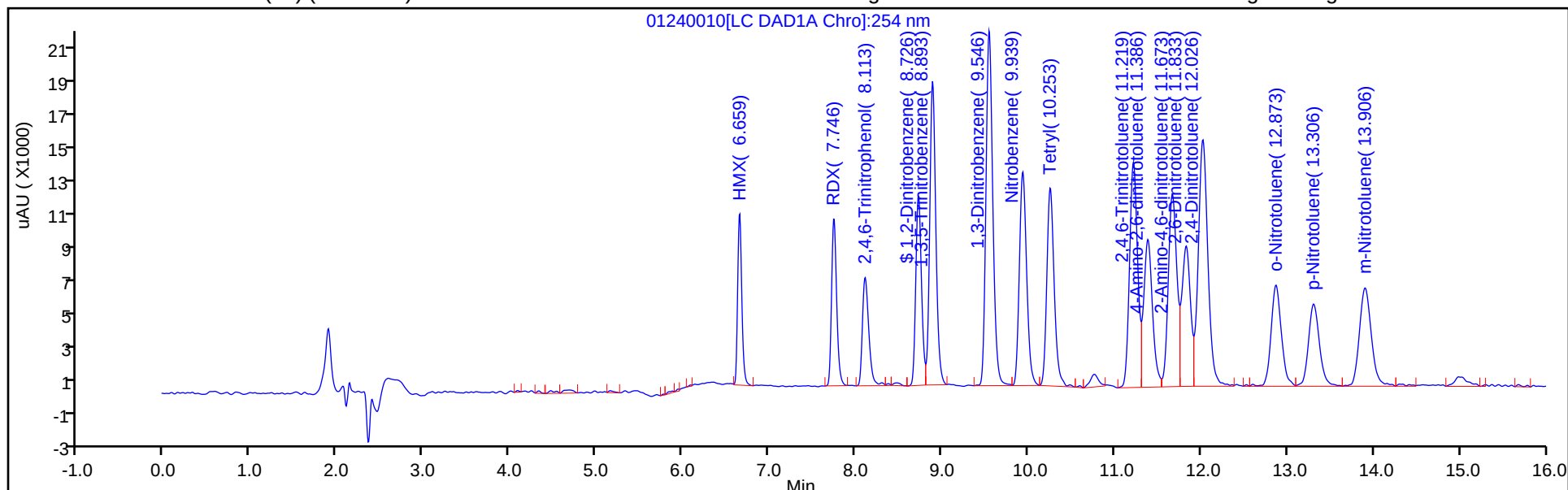
ALS Bottle#: 10

Method: 8330_X3

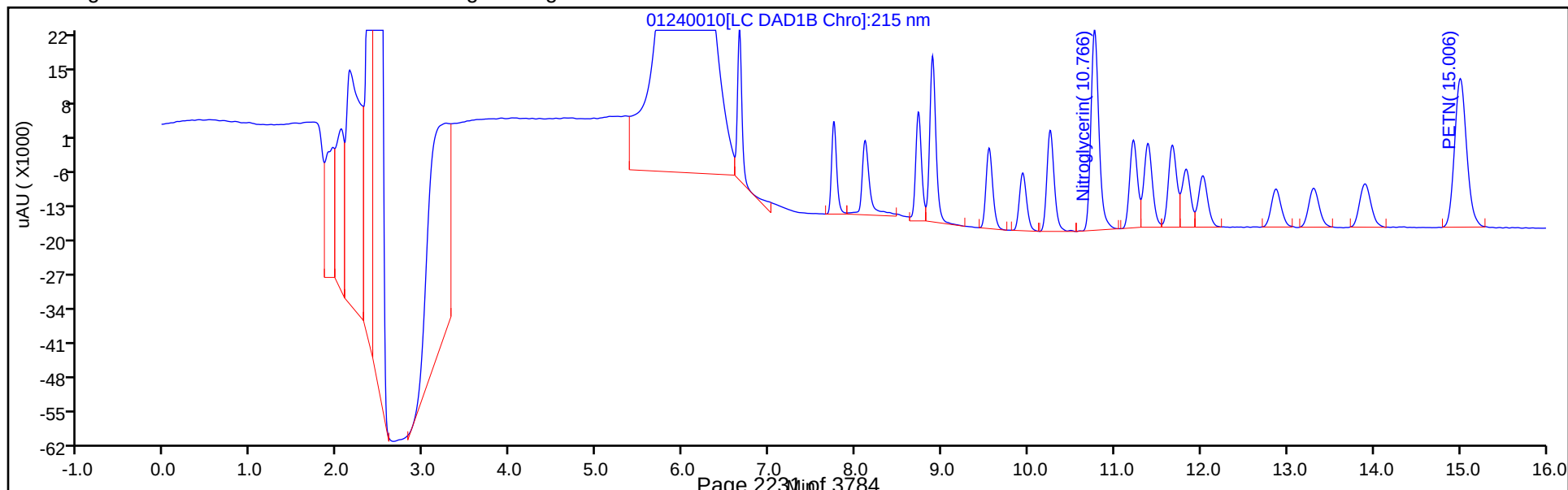
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240011.D
 Lims ID: IC MAIN L4
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 24-Jan-2019 18:09:12 ALS Bottle#: 11 Worklist Smp#: 11
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: IC MAIN L4
 Misc. Info.: 280-0078351-011
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 25-Jan-2019 09:53:51 Calib Date: 24-Jan-2019 22:45:28
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240023.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0323

First Level Reviewer: fiedlerh

Date: 25-Jan-2019 09:48:47

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.653	6.657	-0.004	22224	0.2500	0.2558	
7 RDX	1	7.759	7.757	0.002	26547	0.2500	0.2502	
8 2,4,6-Trinitrophenol	1	8.139	8.123	0.016	21845	0.2500	0.2547	
\$ 9 1,2-Dinitrobenzene	1	8.746	8.743	0.003	34308	0.2500	0.2566	
10 1,3,5-Trinitrobenzene	1	8.906	8.903	0.003	59038	0.2500	0.2599	
11 1,3-Dinitrobenzene	1	9.559	9.557	0.002	76179	0.2503	0.2526	
12 Nitrobenzene	1	9.953	9.943	0.010	50164	0.2505	0.2566	
14 Tetryl	1	10.266	10.263	0.003	45503	0.2500	0.2490	
15 Nitroglycerin	2	10.779	10.770	0.009	172705	2.50	2.55	
16 2,4,6-Trinitrotoluene	1	11.233	11.223	0.010	56319	0.2510	0.2477	
17 4-Amino-2,6-dinitrotoluene	1	11.399	11.390	0.009	40053	0.2508	0.2396	
18 2-Amino-4,6-dinitrotoluene	1	11.686	11.677	0.009	51757	0.2508	0.2539	
19 2,6-Dinitrotoluene	1	11.839	11.830	0.009	37869	0.2508	0.2458	
20 2,4-Dinitrotoluene	1	12.039	12.023	0.016	74559	0.2505	0.2485	
21 o-Nitrotoluene	1	12.886	12.870	0.016	32972	0.2508	0.2428	
22 p-Nitrotoluene	1	13.319	13.303	0.016	29672	0.2510	0.2500	
23 m-Nitrotoluene	1	13.919	13.897	0.022	37583	0.2510	0.2476	
24 PETN	2	15.026	14.997	0.029	190956	2.50	2.51	

Reagents:

8330IntermStk_00057

Amount Added: 25.00

Units: uL

Report Date: 25-Jan-2019 09:53:52

Chrom Revision: 2.3 15-Jan-2019 08:51:34

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240011.D

Injection Date: 24-Jan-2019 18:09:12

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: IC MAIN L4

Worklist Smp#: 11

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

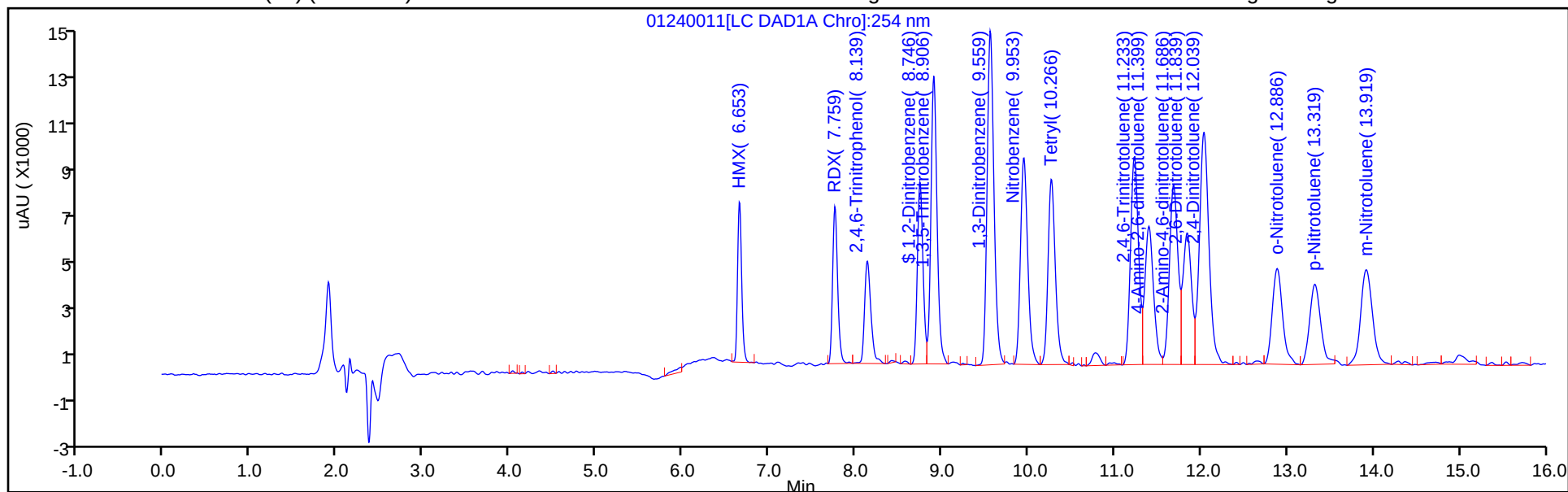
ALS Bottle#: 11

Method: 8330_X3

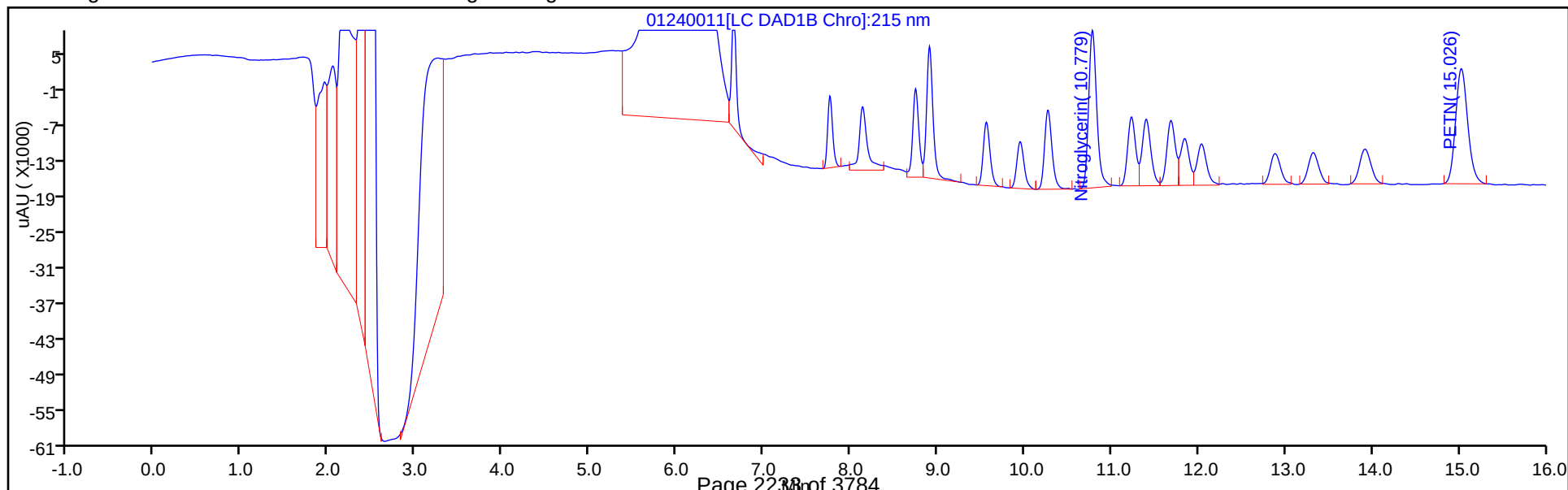
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240012.D
 Lims ID: IC MAIN L3
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 24-Jan-2019 18:32:12 ALS Bottle#: 12 Worklist Smp#: 12
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: IC MAIN L3
 Misc. Info.: 280-0078351-012
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 25-Jan-2019 09:53:52 Calib Date: 24-Jan-2019 22:45:28
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240023.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0323

First Level Reviewer: fiedlerh

Date: 25-Jan-2019 09:49:37

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.656	6.657	-0.001	9784	0.1000	0.1126	
7 RDX	1	7.756	7.757	-0.001	12055	0.1000	0.1136	
8 2,4,6-Trinitrophenol	1	8.143	8.123	0.020	9024	0.1000	0.1052	
\$ 9 1,2-Dinitrobenzene	1	8.743	8.743	0.000	14575	0.1000	0.1090	
10 1,3,5-Trinitrobenzene	1	8.903	8.903	0.000	24757	0.1000	0.1090	
11 1,3-Dinitrobenzene	1	9.556	9.557	-0.001	33576	0.1001	0.1113	
12 Nitrobenzene	1	9.949	9.943	0.006	21605	0.1002	0.1105	
14 Tetryl	1	10.269	10.263	0.006	19732	0.1000	0.1080	
15 Nitroglycerin	2	10.776	10.770	0.006	73417	1.00	1.08	
16 2,4,6-Trinitrotoluene	1	11.229	11.223	0.006	24623	0.1004	0.1083	
17 4-Amino-2,6-dinitrotoluene	1	11.396	11.390	0.006	17396	0.1003	0.1041	
18 2-Amino-4,6-dinitrotoluene	1	11.682	11.677	0.005	22241	0.1003	0.1091	
19 2,6-Dinitrotoluene	1	11.836	11.830	0.006	16533	0.1003	0.1073	
20 2,4-Dinitrotoluene	1	12.029	12.023	0.006	32439	0.1002	0.1081	
21 o-Nitrotoluene	1	12.889	12.870	0.019	14176	0.1003	0.1044	
22 p-Nitrotoluene	1	13.309	13.303	0.006	14177	0.1004	0.1194	
23 m-Nitrotoluene	1	13.916	13.897	0.019	15991	0.1004	0.1054	
24 PETN	2	15.009	14.997	0.012	79557	1.00	1.04	

Reagents:

8330IntermStk_00057

Amount Added: 10.00

Units: uL

Report Date: 25-Jan-2019 09:53:53

Chrom Revision: 2.3 15-Jan-2019 08:51:34

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240012.D

Injection Date: 24-Jan-2019 18:32:12

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: IC MAIN L3

Worklist Smp#: 12

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

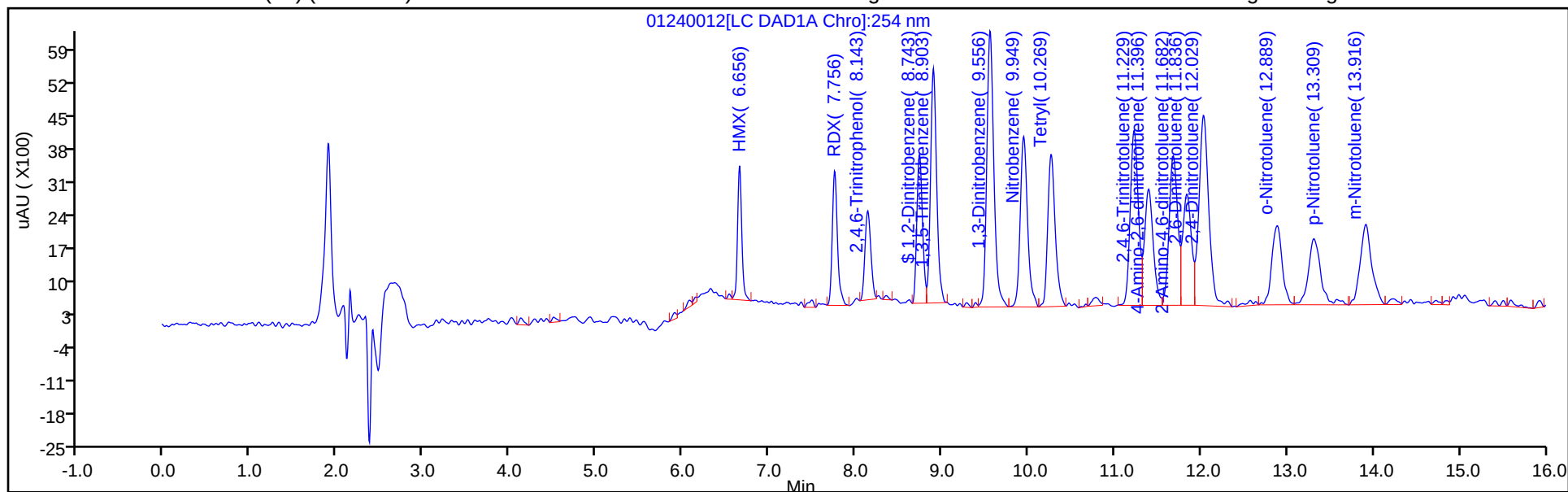
ALS Bottle#: 12

Method: 8330_X3

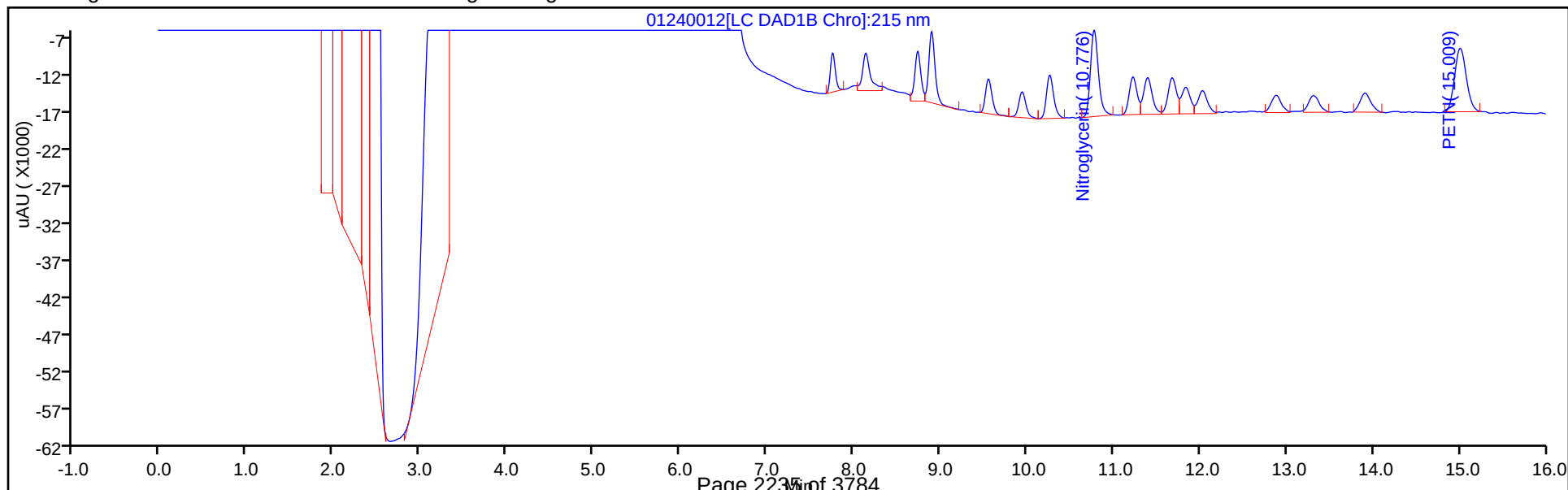
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240013.D
 Lims ID: IC MAIN L2
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 24-Jan-2019 18:55:09 ALS Bottle#: 13 Worklist Smp#: 13
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: IC MAIN L2
 Misc. Info.: 280-0078351-013
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 25-Jan-2019 09:53:53 Calib Date: 24-Jan-2019 22:45:28
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240023.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0323

First Level Reviewer: fiedlerh

Date: 25-Jan-2019 09:49:48

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.654	6.657	-0.003	4170	0.0500	0.0480	
7 RDX	1	7.754	7.757	-0.003	5118	0.0500	0.0482	
8 2,4,6-Trinitrophenol	1	8.140	8.123	0.017	4109	0.0500	0.0479	
\$ 9 1,2-Dinitrobenzene	1	8.734	8.743	-0.009	6572	0.0500	0.0492	
10 1,3,5-Trinitrobenzene	1	8.900	8.903	-0.003	11132	0.0500	0.0490	
11 1,3-Dinitrobenzene	1	9.547	9.557	-0.010	14754	0.0501	0.0489	
12 Nitrobenzene	1	9.933	9.943	-0.010	9743	0.0501	0.0498	
14 Tetryl	1	10.240	10.263	-0.023	8928	0.0500	0.0489	
15 Nitroglycerin	2	10.753	10.770	-0.017	32228	0.5000	0.4756	
16 2,4,6-Trinitrotoluene	1	11.200	11.223	-0.023	11067	0.0502	0.0487	
17 4-Amino-2,6-dinitrotoluene	1	11.353	11.390	-0.037	7898	0.0502	0.0472	
18 2-Amino-4,6-dinitrotoluene	1	11.640	11.677	-0.037	9916	0.0502	0.0487	
19 2,6-Dinitrotoluene	1	11.800	11.830	-0.030	7375	0.0502	0.0479	
20 2,4-Dinitrotoluene	1	11.993	12.023	-0.030	14597	0.0501	0.0486	
21 o-Nitrotoluene	1	12.833	12.870	-0.037	6966	0.0502	0.0513	
22 p-Nitrotoluene	1	13.273	13.303	-0.030	5524	0.0502	0.0465	
23 m-Nitrotoluene	1	13.873	13.897	-0.024	7402	0.0502	0.0488	
24 PETN	2	14.973	14.997	-0.024	37127	0.5000	0.4871	M

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

8330IntermStk_00057

Amount Added: 5.00

Units: uL

Report Date: 25-Jan-2019 09:53:53

Chrom Revision: 2.3 15-Jan-2019 08:51:34

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240013.D

Injection Date: 24-Jan-2019 18:55:09

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: IC MAIN L2

Worklist Smp#: 13

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

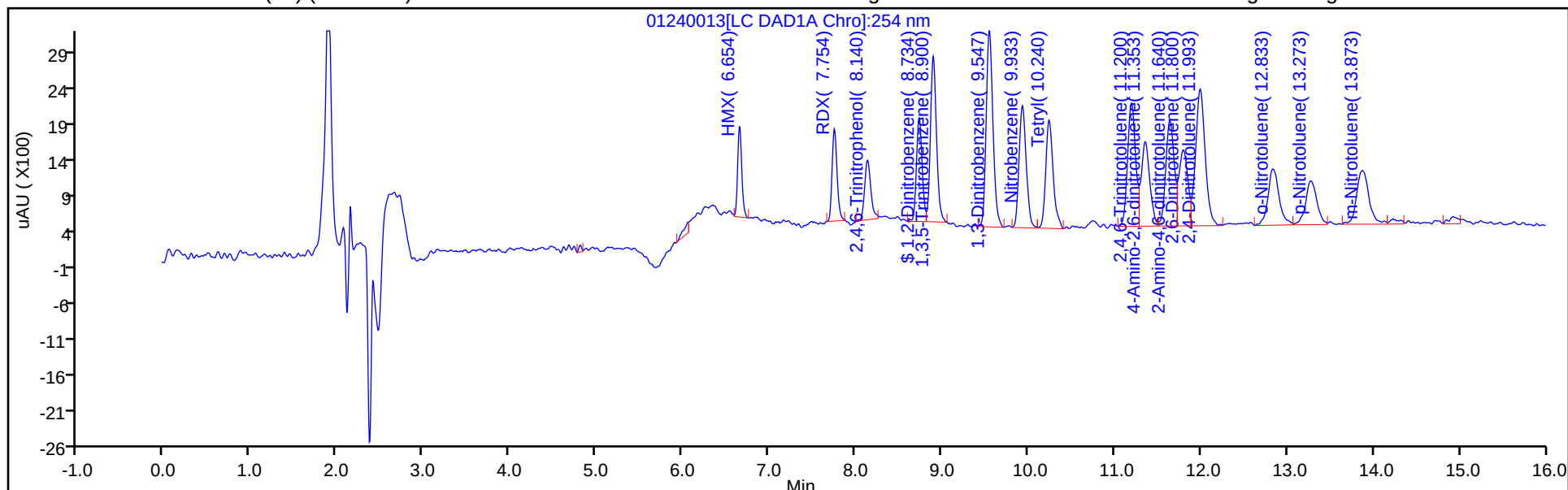
ALS Bottle#: 13

Method: 8330_X3

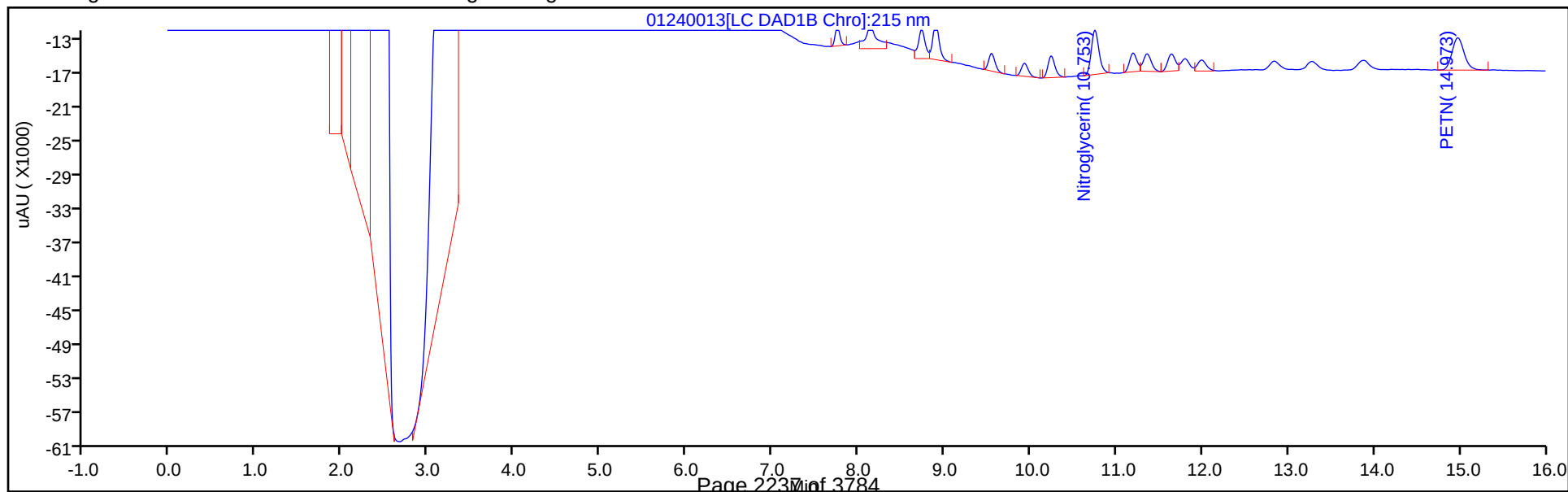
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver

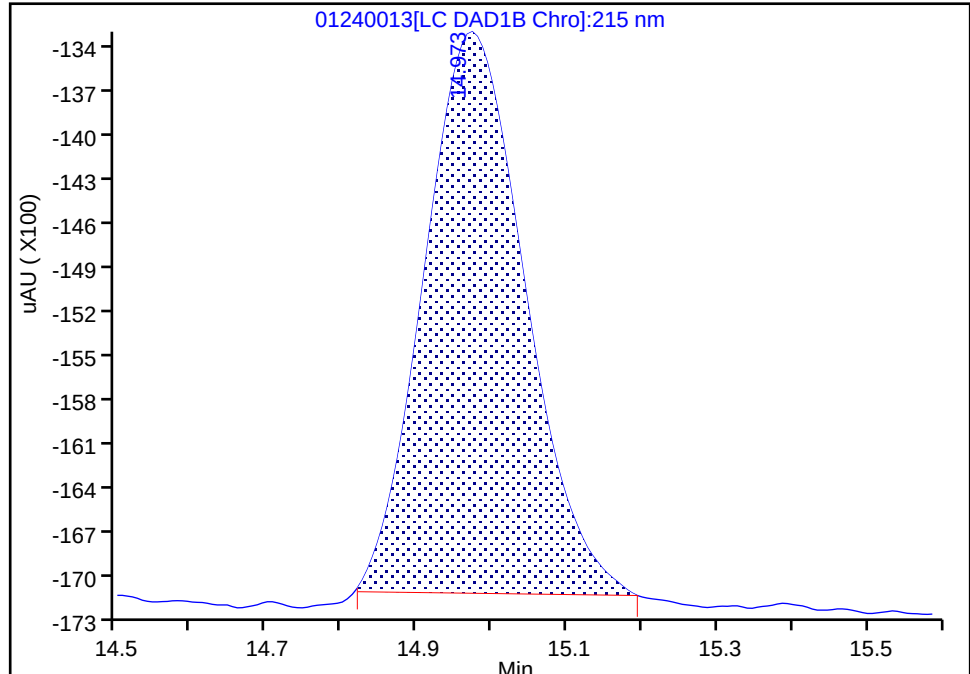
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Injection Date: 24-Jan-2019 18:55:09 Instrument ID: CHHPLC_X3
Lims ID: IC MAIN L2
Client ID:
Operator ID: hkf ALS Bottle#: 13 Worklist Smp#: 13
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: Detector LC DAD1C, 215 nm

24 PETN, CAS: 78-11-5

Signal: 1

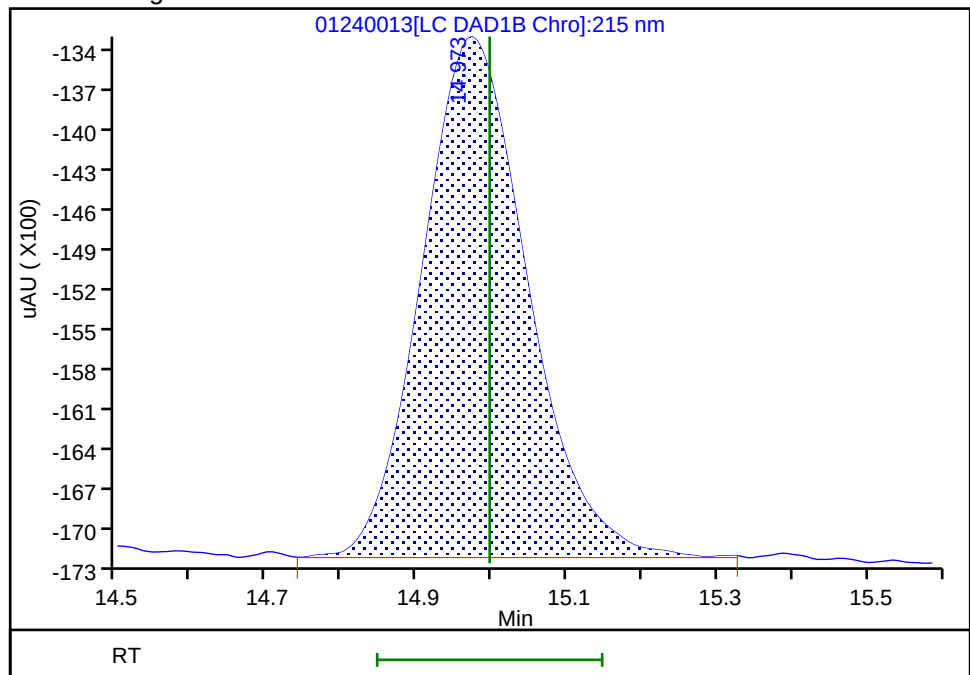
RT: 14.97
Area: 34574
Amount: 0.457450
Amount Units: ug/mL

Processing Integration Results



RT: 14.97
Area: 37127
Amount: 0.487116
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 25-Jan-2019 09:50:20
Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing
Page 2238 of 3784

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240014.D
 Lims ID: IC MAIN L1
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 24-Jan-2019 19:18:08 ALS Bottle#: 14 Worklist Smp#: 14
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: IC MAIN L1
 Misc. Info.: 280-0078351-014
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 25-Jan-2019 09:53:54 Calib Date: 24-Jan-2019 22:45:28
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240023.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0323

First Level Reviewer: fiedlerh

Date: 25-Jan-2019 09:50:08

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.655	6.657	-0.002	1592	0.0200	0.0183	
7 RDX	1	7.761	7.757	0.004	2117	0.0200	0.0200	
8 2,4,6-Trinitrophenol	1	8.155	8.123	0.032	1897	0.0200	0.0221	
\$ 9 1,2-Dinitrobenzene	1	8.748	8.743	0.005	2514	0.0200	0.0188	
10 1,3,5-Trinitrobenzene	1	8.908	8.903	0.005	4076	0.0200	0.0179	
11 1,3-Dinitrobenzene	1	9.561	9.557	0.004	5865	0.0200	0.0194	
12 Nitrobenzene	1	9.954	9.943	0.011	3474	0.0200	0.0178	
14 Tetryl	1	10.268	10.263	0.005	3788	0.0200	0.0207	
15 Nitroglycerin	2	10.781	10.770	0.011	13310	0.2000	0.1964	
16 2,4,6-Trinitrotoluene	1	11.228	11.223	0.005	5042	0.0201	0.0222	
17 4-Amino-2,6-dinitrotoluene	1	11.401	11.390	0.011	4487	0.0201	0.0268	
18 2-Amino-4,6-dinitrotoluene	1	11.688	11.677	0.011	4223	0.0201	0.0207	
19 2,6-Dinitrotoluene	1	11.841	11.830	0.011	3588	0.0201	0.0233	
20 2,4-Dinitrotoluene	1	12.041	12.023	0.018	6809	0.0200	0.0227	
21 o-Nitrotoluene	1	12.834	12.870	-0.036	3342	0.0201	0.0246	
22 p-Nitrotoluene	1	13.268	13.303	-0.035	2851	0.0201	0.0240	
23 m-Nitrotoluene	1	13.934	13.897	0.037	3856	0.0201	0.0254	
24 PETN	2	15.014	14.997	0.017	16000	0.2000	0.2099	M

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

8330IntermStk_00057

Amount Added: 2.00

Units: uL

Report Date: 25-Jan-2019 09:53:54

Chrom Revision: 2.3 15-Jan-2019 08:51:34

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240014.D

Injection Date: 24-Jan-2019 19:18:08

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: IC MAIN L1

Worklist Smp#: 14

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

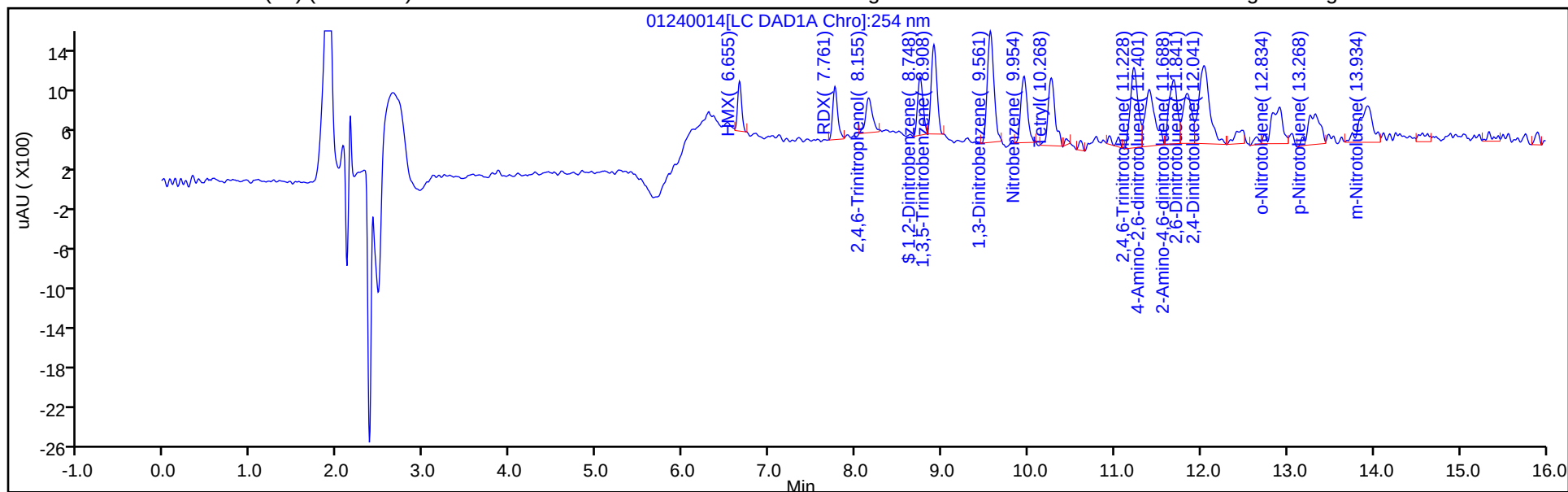
ALS Bottle#: 14

Method: 8330_X3

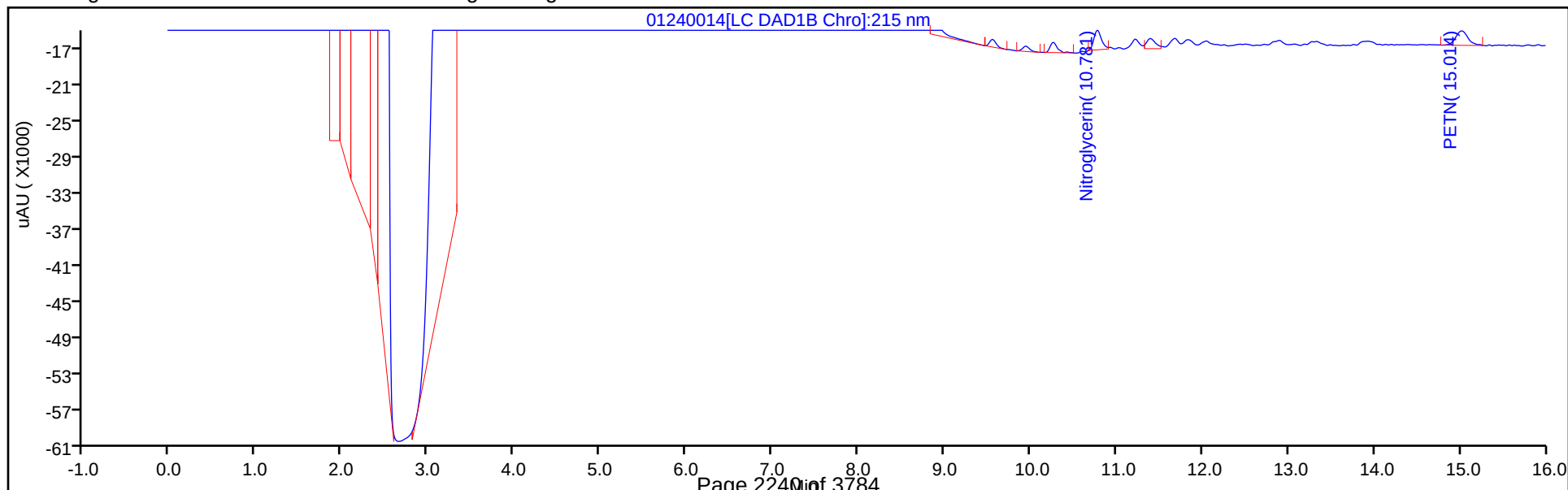
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver

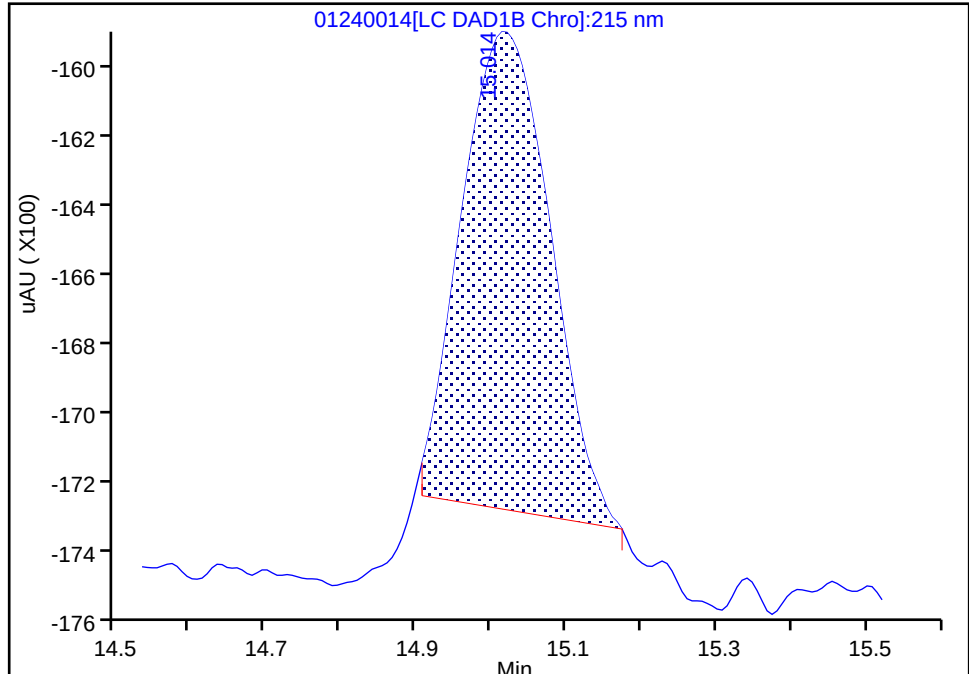
Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240014.D
Injection Date: 24-Jan-2019 19:18:08 Instrument ID: CHHPLC_X3
Lims ID: IC MAIN L1
Client ID:
Operator ID: hkf ALS Bottle#: 14 Worklist Smp#: 14
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: Detector LC DAD1C, 215 nm

24 PETN, CAS: 78-11-5

Signal: 1

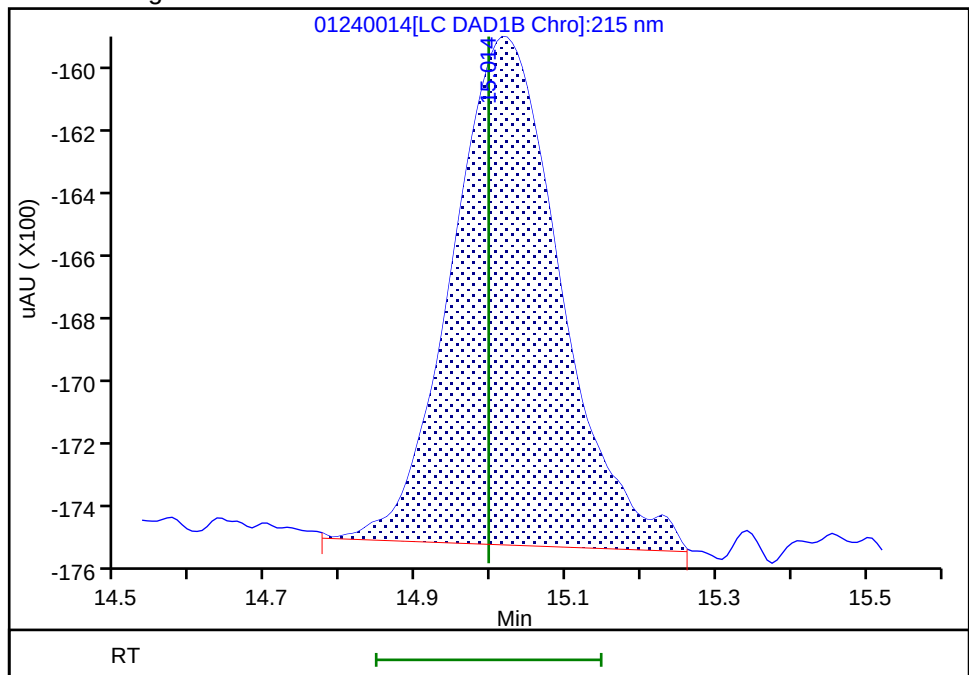
RT: 15.01
Area: 11094
Amount: 0.152992
Amount Units: ug/mL

Processing Integration Results



RT: 15.01
Area: 16000
Amount: 0.209924
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 25-Jan-2019 09:50:04
Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing
Page 2241 of 3784

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 458150

SDG No.: _____

Instrument ID: CHHPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/14/2019 15:49 Calibration End Date: 05/14/2019 18:35 Calibration ID: 36354

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-458150/14	0514B014.D
Level 2	IC 280-458150/13	0514B013.D
Level 3	IC 280-458150/12	0514B012.D
Level 4	IC 280-458150/11	0514B011.D
Level 5	IC 280-458150/10	0514B010.D
Level 6	IC 280-458150/9	0514B009.D
Level 7	IC 280-458150/8	0514B008.D
Level 8	IC 280-458150/7	0514B007.D

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7	LVL 8			RT WINDOW	AVG RT
HMX	6.657	6.655	6.656	6.661	6.658	6.653	6.654	6.654			6.500 - 6.800	6.656
RDX	7.763	7.768	7.769	7.774	7.771	7.767	7.767	7.761			7.614 - 7.914	7.768
Picric acid	8.157	8.155	8.149	8.147	8.138	8.120	8.107	8.054			7.980 - 8.280	8.128
1,3,5-Trinitrobenzene	8.910	8.908	8.909	8.914	8.911	8.907	8.901	8.901			8.754 - 9.054	8.908
1,3-Dinitrobenzene	9.576	9.568	9.569	9.581	9.577	9.567	9.567	9.567			9.414 - 9.714	9.572
Nitrobenzene	9.963	9.955	9.956	9.967	9.964	9.953	9.954	9.954			9.800 - 10.100	9.958
Tetryl	10.296	10.281	10.283	10.301	10.291	10.280	10.280	10.287			10.134 - 10.434	10.287
Nitroglycerin	10.803	10.788	10.789	10.807	10.797	10.780	10.780	10.781			10.634 - 10.934	10.791
2,4,6-Trinitrotoluene	11.256	11.241	11.243	11.261	11.251	11.240	11.240	11.241			11.137 - 11.337	11.247
4-Amino-2,6-dinitrotoluene	11.443	11.435	11.429	11.454	11.444	11.427	11.427	11.434			11.330 - 11.530	11.437
2-Amino-4,6-dinitrotoluene	11.736	11.721	11.723	11.747	11.737	11.720	11.720	11.721			11.617 - 11.817	11.728
2,6-Dinitrotoluene	11.870	11.848	11.856	11.874	11.864	11.853	11.854	11.854			11.750 - 11.950	11.859
2,4-Dinitrotoluene	12.070	12.055	12.056	12.081	12.064	12.047	12.054	12.054			11.950 - 12.150	12.060
2-Nitrotoluene	12.916	12.895	12.889	12.921	12.904	12.887	12.894	12.887			12.740 - 13.040	12.899
4-Nitrotoluene	13.330	13.341	13.329	13.361	13.344	13.327	13.334	13.327			13.180 - 13.480	13.337
3-Nitrotoluene	13.943	13.935	13.929	13.961	13.944	13.920	13.934	13.927			13.780 - 14.080	13.937
PETN	15.036	15.021	15.016	15.061	15.037	15.007	15.027	15.021			14.874 - 15.174	15.028
1,2-Dinitrobenzene	8.750	8.748	8.749	8.754	8.751	8.747	8.741	8.741			8.594 - 8.894	8.748

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 458150

SDG No.: _____

Instrument ID: CHHPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/14/2019 15:49 Calibration End Date: 05/14/2019 18:35 Calibration ID: 36354

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-458150/14	0514B014.D
Level 2	IC 280-458150/13	0514B013.D
Level 3	IC 280-458150/12	0514B012.D
Level 4	IC 280-458150/11	0514B011.D
Level 5	IC 280-458150/10	0514B010.D
Level 6	IC 280-458150/9	0514B009.D
Level 7	IC 280-458150/8	0514B008.D
Level 8	IC 280-458150/7	0514B007.D

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
HMX	101150 87813	91100 86537	85040 87520	89540 84950	Ave		89206.1554				5.9		20.0			
RDX	114450 106500	109200 104197	101900 106825	108632 101411	Ave		106639.418				4.0		20.0			
Picric acid	95550 81538	84360 80240	81330 83745	84012 79571	Ave		83793.1625				6.1		20.0			
1,3,5-Trinitrobenzene	225250 240935	213340 236247	217640 235773	241580 223445	Ave		229276.293				4.7		20.0			
1,3-Dinitrobenzene	300799 304296	297682 301636	297453 303625	309858 291245	Ave		300824.194				1.8		20.0			
Nitrobenzene	192515 195881	194032 195955	194052 202210	203876 196095	Ave		196826.951				2.1		20.0			
Tetryl	161150 171098	160480 167927	168380 175552	172804 166254	Ave		167955.580				3.2		20.0			
Nitroglycerin	76640 70756	66784 69235	68189 69251	73513 65450	Ave		69977.1309				5.2		20.0			
2,4,6-Trinitrotoluene	235508 224482	230199 219408	223247 219991	226602 209307	Ave		223592.967				3.5		20.0			
4-Amino-2,6-dinitrotoluene	171236 161304	170688 159365	161555 159595	164650 151045	Ave		162429.755				4.0		20.0			
2-Amino-4,6-dinitrotoluene	195763 202094	198385 199393	197338 198295	201212 187801	Ave		197535.173				2.2		20.0			
2,6-Dinitrotoluene	162512 156633	159182 153450	157737 154332	160160 148773	Ave		156597.345				2.8		20.0			
2,4-Dinitrotoluene	295559 298897	301437 296449	297056 297932	305066 286981	Ave		297422.109				1.8		20.0			
2-Nitrotoluene	144467 129100	131625 127144	134088 127658	133109 123603	Ave		131349.229				4.8		20.0			

Note: The M1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 458150

SDG No.: _____

Instrument ID: CHHPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/14/2019 15:49 Calibration End Date: 05/14/2019 18:35 Calibration ID: 36354

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
4-Nitrotoluene	115837 111566	120697 109078	113406 110796	113076 107275	Ave		112716.408				3.7		20.0			
3-Nitrotoluene	172958 144086	152131 142446	146673 138729	151183 138243	Ave		148306.351				7.6		20.0			
PETN	67805 76433	70610 75180	73478 75418	76547 70058	Ave		73191.2127				4.5		20.0			
1,2-Dinitrobenzene	121600 135710	122220 134553	124840 135315	137172 129475	Ave		130110.582				5.0		20.0			

Note: The M1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 458150

SDG No.: _____

Instrument ID: CHHPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/14/2019 15:49 Calibration End Date: 05/14/2019 18:35 Calibration ID: 36354

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-458150/14	0514B014.D
Level 2	IC 280-458150/13	0514B013.D
Level 3	IC 280-458150/12	0514B012.D
Level 4	IC 280-458150/11	0514B011.D
Level 5	IC 280-458150/10	0514B010.D
Level 6	IC 280-458150/9	0514B009.D
Level 7	IC 280-458150/8	0514B008.D
Level 8	IC 280-458150/7	0514B007.D

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
HMx	Ave	2023 60576	4555 87520	8504 212374	22385	35125	0.0200 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
RDX	Ave	2289 72938	5460 106825	10190 253528	27158	42600	0.0200 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
Picric acid	Ave	1911 56168	4218 83745	8133 198927	21003	32615	0.0200 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
1,3,5-Trinitrobenzene	Ave	4505 165373	10667 235773	21764 558613	60395	96374	0.0200 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
1,3-Dinitrobenzene	Ave	6022 211356	14899 303929	29775 728840	77542	121840	0.0200 0.701	0.0501 1.00	0.100 2.50	0.250	0.400
Nitrobenzene	Ave	3858 137443	9721 202614	19444 491218	51071	78509	0.0200 0.701	0.0501 1.00	0.100 2.51	0.251	0.401
Tetryl	Ave	3223 117549	8024 175552	16838 415635	43201	68439	0.0200 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
Nitroglycerin	Ave	15328 484644	33392 692505	68189 1636241	183782	283025	0.200 7.00	0.500 10.0	1.00 25.0	2.50	4.00
2,4,6-Trinitrotoluene	Ave	4729 154200	11556 220871	22414 525360	56877	90152	0.0201 0.703	0.0502 1.00	0.100 2.51	0.251	0.402
4-Amino-2,6-dinitrotoluene	Ave	3435 111890	8560 160074	16204 378745	41286	64715	0.0201 0.702	0.0502 1.00	0.100 2.51	0.251	0.401
2-Amino-4,6-dinitrotoluene	Ave	3927 139994	9949 198890	19793 470912	50454	81080	0.0201 0.702	0.0502 1.00	0.100 2.51	0.251	0.401
2,6-Dinitrotoluene	Ave	3260 107737	7983 154795	15821 373049	40160	62841	0.0201 0.702	0.0502 1.00	0.100 2.51	0.251	0.401
2,4-Dinitrotoluene	Ave	5923 207929	15102 298528	29765 718888	76419	119798	0.0200 0.701	0.0501 1.00	0.100 2.51	0.251	0.401
2-Nitrotoluene	Ave	2898 89268	6601 128041	13449 309935	33377	51795	0.0201 0.702	0.0502 1.00	0.100 2.51	0.251	0.401
4-Nitrotoluene	Ave	2326 76660	6059 111239	11386 269261	28382	44805	0.0201 0.703	0.0502 1.00	0.100 2.51	0.251	0.402

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1 Analy Batch No.: 458150

SDG No.: _____

Instrument ID: CHHPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/14/2019 15:49 Calibration End Date: 05/14/2019 18:35 Calibration ID: 36354

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
3-Nitrotoluene	Ave	3473 100111	7637 139284	14726 346991	37947	57865	0.0201 0.703	0.0502 1.00	0.100 2.51	0.251	0.402
PETN	Ave	13561 526257	35305 754182	73478 1751462	191368	305733	0.200 7.00	0.500 10.0	1.00 25.0	2.50	4.00
1,2-Dinitrobenzene	Ave	2432 94187	6111 135315	12484 323687	34293	54284	0.0200 0.700	0.0500 1.00	0.100 2.50	0.250	0.400

Curve Type Legend:

Ave = Average

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B007.D
 Lims ID: IC MAIN L8
 Client ID:
 Sample Type: IC Calib Level: 8
 Inject. Date: 14-May-2019 15:49:27 ALS Bottle#: 7 Worklist Smp#: 7
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: IC MAIN L8
 Misc. Info.: 280-0081869-007
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 15-May-2019 10:58:03 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0331

First Level Reviewer: fiedlerh

Date: 15-May-2019 10:09:00

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.654	6.650	0.004	212374	2.50	2.38	
7 RDX	1	7.761	7.764	-0.003	253528	2.50	2.38	
8 2,4,6-Trinitrophenol	1	8.054	8.130	-0.076	198927	2.50	2.37	
\$ 9 1,2-Dinitrobenzene	1	8.741	8.744	-0.003	323687	2.50	2.49	
10 1,3,5-Trinitrobenzene	1	8.901	8.904	-0.003	558613	2.50	2.44	
11 1,3-Dinitrobenzene	1	9.567	9.564	0.003	728840	2.50	2.42	
12 Nitrobenzene	1	9.954	9.950	0.004	491218	2.51	2.50	
14 Tetryl	1	10.287	10.284	0.003	415635	2.50	2.47	
15 Nitroglycerin	2	10.781	10.784	-0.003	1636241	25.0	23.4	
16 2,4,6-Trinitrotoluene	1	11.241	11.237	0.004	525360	2.51	2.35	M
17 4-Amino-2,6-dinitrotoluene	1	11.434	11.430	0.004	378745	2.51	2.33	
18 2-Amino-4,6-dinitrotoluene	1	11.721	11.717	0.004	470912	2.51	2.38	
19 2,6-Dinitrotoluene	1	11.854	11.850	0.004	373049	2.51	2.38	
20 2,4-Dinitrotoluene	1	12.054	12.050	0.004	718888	2.51	2.42	
21 o-Nitrotoluene	1	12.887	12.890	-0.003	309935	2.51	2.36	
22 p-Nitrotoluene	1	13.327	13.330	-0.003	269261	2.51	2.39	
23 m-Nitrotoluene	1	13.927	13.930	-0.003	346991	2.51	2.34	
24 PETN	2	15.021	15.024	-0.003	1751462	25.0	23.9	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

8330IntermStk_00058

Amount Added: 125.00

Units: uL

Report Date: 15-May-2019 10:58:03

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B007.D

Injection Date: 14-May-2019 15:49:27

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: IC MAIN L8

Worklist Smp#: 7

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

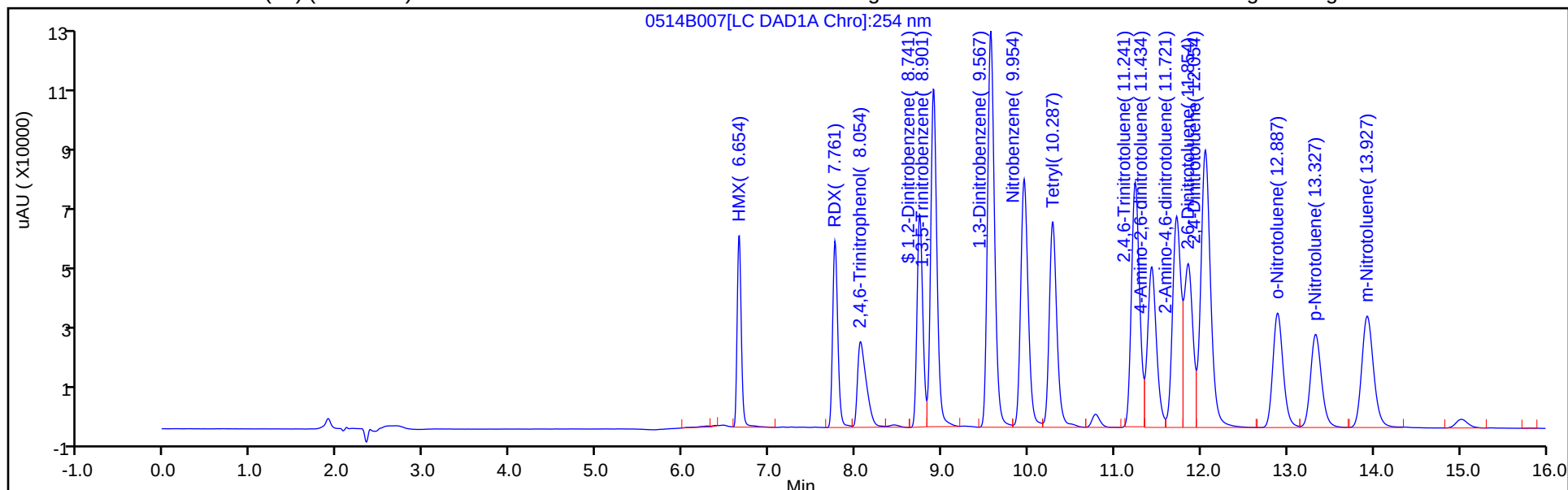
ALS Bottle#: 7

Method: 8330_X3

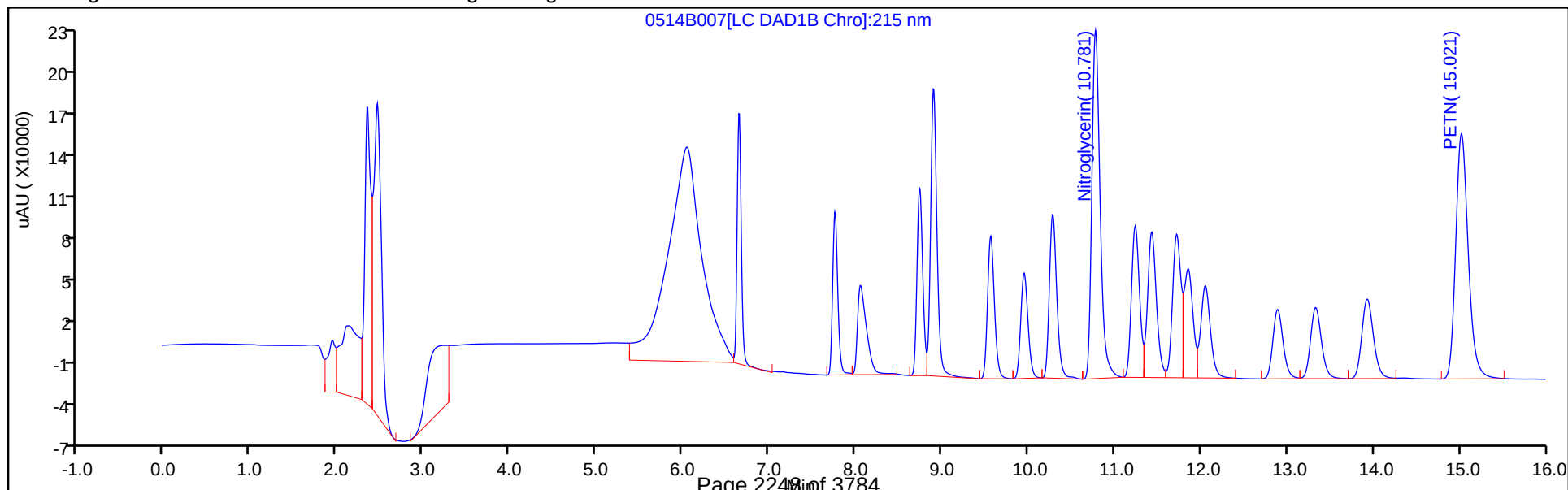
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B007.D

Injection Date: 14-May-2019 15:49:27

Instrument ID: CHHPLC_X3

Lims ID: IC MAIN L8

Client ID:

Operator ID: hkf

ALS Bottle#:

7

Worklist Smp#: 7

Injection Vol: 100.0 ul

Dil. Factor:

1.0000

Method: 8330_X3

Limit Group:

GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Detector

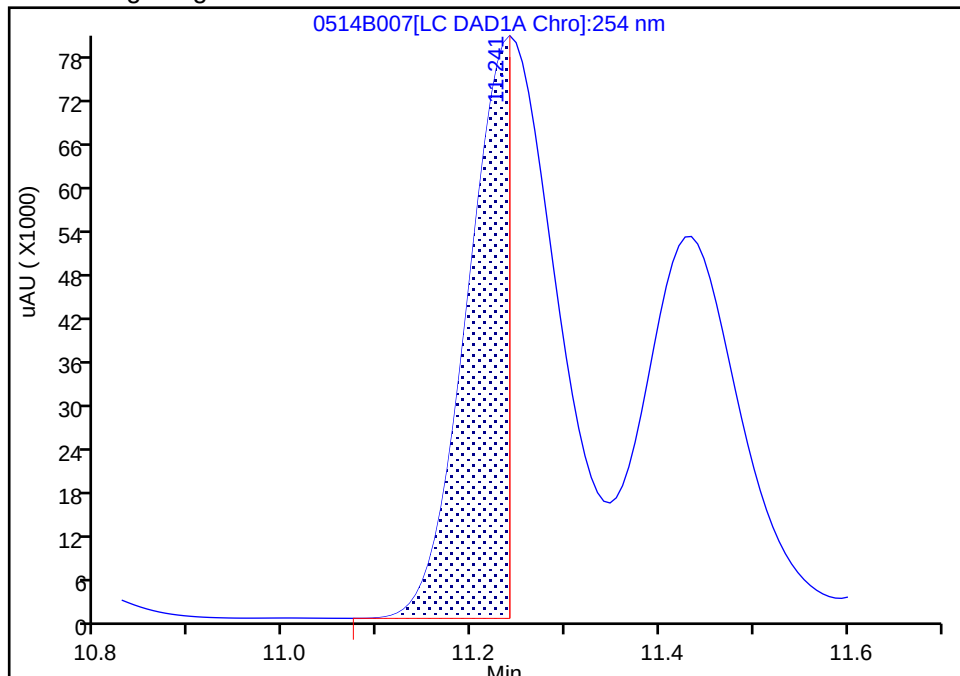
LC DAD1B, 254 nm

16 2,4,6-Trinitrotoluene, CAS: 118-96-7

Signal: 1

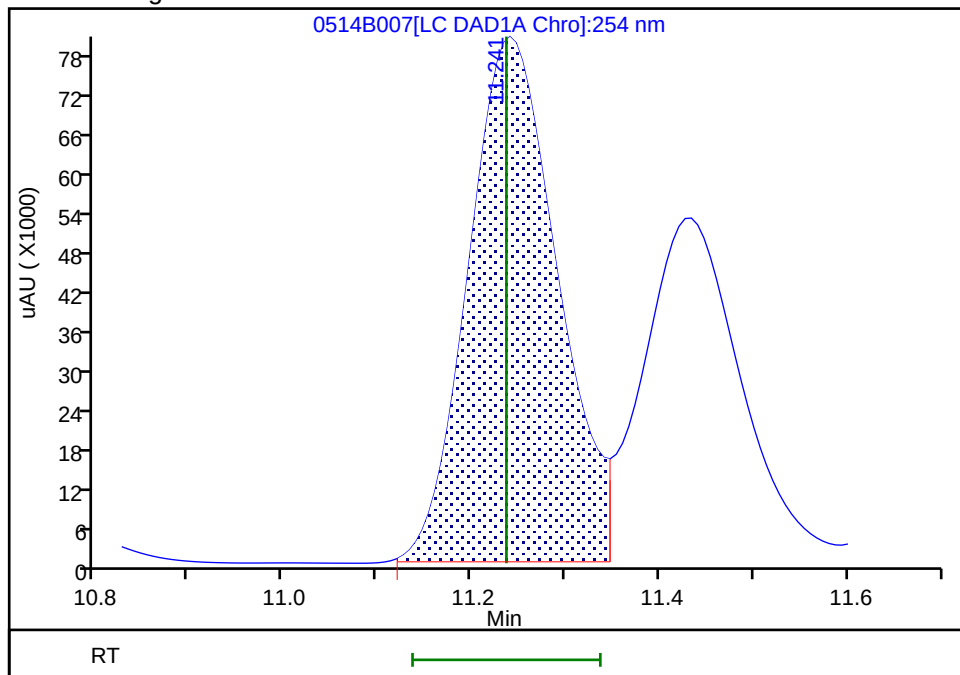
RT: 11.24
Area: 243340
Amount: 1.296794
Amount Units: ug/mL

Processing Integration Results



RT: 11.24
Area: 525360
Amount: 2.349627
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 15-May-2019 10:08:56

Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B008.D
 Lims ID: IC MAIN L7
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 14-May-2019 16:13:10 ALS Bottle#: 8 Worklist Smp#: 8
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: IC MAIN L7
 Misc. Info.: 280-0081869-008
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 15-May-2019 10:58:04 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0331

First Level Reviewer: fiedlerh

Date: 15-May-2019 10:09:26

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.654	6.650	0.004	87520	1.00	0.9811	
7 RDX	1	7.767	7.764	0.003	106825	1.00	1.00	
8 2,4,6-Trinitrophenol	1	8.107	8.130	-0.023	83745	1.00	1.00	
\$ 9 1,2-Dinitrobenzene	1	8.741	8.744	-0.003	135315	1.00	1.04	
10 1,3,5-Trinitrobenzene	1	8.901	8.904	-0.003	235773	1.00	1.03	
11 1,3-Dinitrobenzene	1	9.567	9.564	0.003	303929	1.00	1.01	
12 Nitrobenzene	1	9.954	9.950	0.004	202614	1.00	1.03	
14 Tetryl	1	10.280	10.284	-0.004	175552	1.00	1.05	
15 Nitroglycerin	2	10.780	10.784	-0.004	692505	10.0	9.90	
16 2,4,6-Trinitrotoluene	1	11.240	11.237	0.003	220871	1.00	0.9878	
17 4-Amino-2,6-dinitrotoluene	1	11.427	11.430	-0.003	160074	1.00	0.9855	
18 2-Amino-4,6-dinitrotoluene	1	11.720	11.717	0.003	198890	1.00	1.01	
19 2,6-Dinitrotoluene	1	11.854	11.850	0.004	154795	1.00	0.9885	
20 2,4-Dinitrotoluene	1	12.054	12.050	0.004	298528	1.00	1.00	
21 o-Nitrotoluene	1	12.894	12.890	0.004	128041	1.00	0.9748	
22 p-Nitrotoluene	1	13.334	13.330	0.004	111239	1.00	0.9869	
23 m-Nitrotoluene	1	13.934	13.930	0.004	139284	1.00	0.9392	M
24 PETN	2	15.027	15.024	0.003	754182	10.0	10.3	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

8330IntermStk_00058

Amount Added: 50.00

Units: uL

Report Date: 15-May-2019 10:58:05

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B008.D

Injection Date: 14-May-2019 16:13:10

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: IC MAIN L7

Worklist Smp#: 8

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

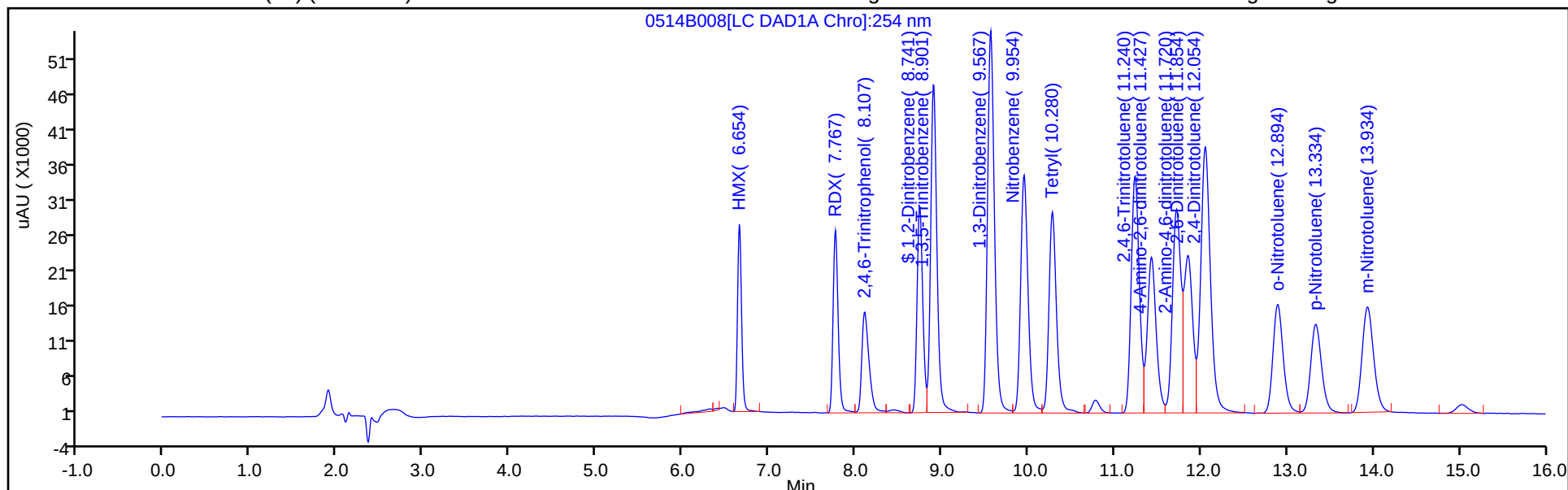
ALS Bottle#: 8

Method: 8330_X3

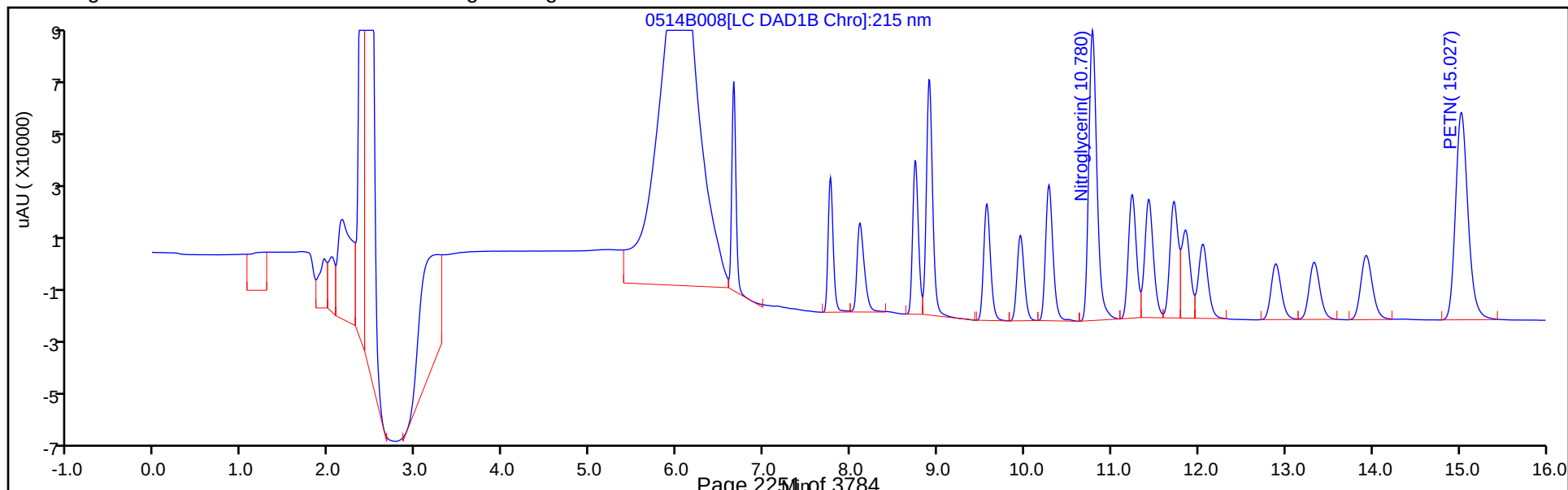
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B008.D

Injection Date: 14-May-2019 16:13:10

Instrument ID: CHHPLC_X3

Lims ID: IC MAIN L7

Client ID:

Operator ID: hkf

ALS Bottle#:

8

Worklist Smp#: 8

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

Method: 8330_X3

Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

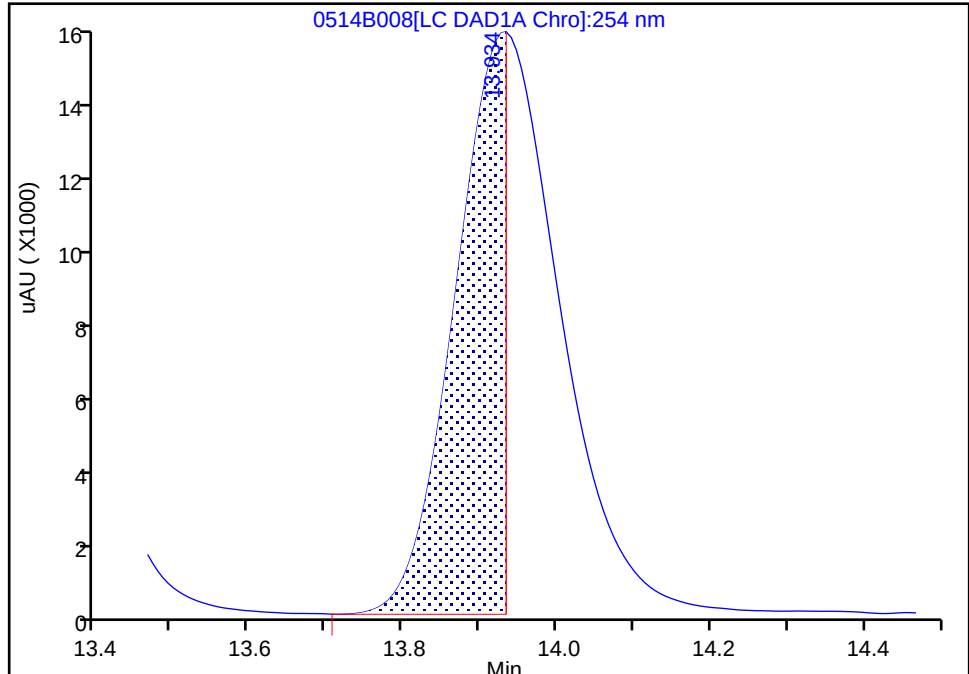
Detector: LC DAD1B, 254 nm

23 m-Nitrotoluene, CAS: 99-08-1

Signal: 1

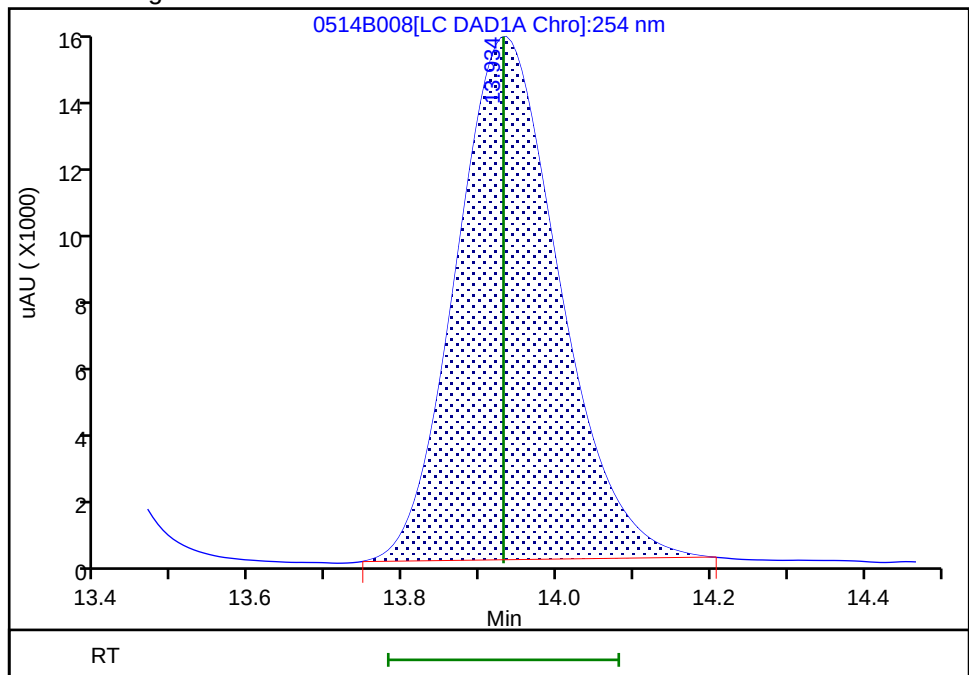
RT: 13.93
Area: 67128
Amount: 0.481816
Amount Units: ug/mL

Processing Integration Results



RT: 13.93
Area: 139284
Amount: 0.939164
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 15-May-2019 10:09:22

Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B009.D
 Lims ID: IC MAIN L6
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 14-May-2019 16:36:52 ALS Bottle#: 9 Worklist Smp#: 9
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: IC MAIN L6
 Misc. Info.: 280-0081869-009
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 15-May-2019 10:58:05 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0331

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.653	6.650	0.003	60576	0.7000	0.6791	
7 RDX	1	7.767	7.764	0.003	72938	0.7000	0.6840	
8 2,4,6-Trinitrophenol	1	8.120	8.130	-0.010	56168	0.7000	0.6703	
\$ 9 1,2-Dinitrobenzene	1	8.747	8.744	0.003	94187	0.7000	0.7239	
10 1,3,5-Trinitrobenzene	1	8.907	8.904	0.003	165373	0.7000	0.7213	
11 1,3-Dinitrobenzene	1	9.567	9.564	0.003	211356	0.7007	0.7026	
12 Nitrobenzene	1	9.953	9.950	0.003	137443	0.7014	0.6983	
14 Tetryl	1	10.280	10.284	-0.004	117549	0.7000	0.6999	
15 Nitroglycerin	2	10.780	10.784	-0.004	484644	7.00	6.93	
16 2,4,6-Trinitrotoluene	1	11.240	11.237	0.003	154200	0.7028	0.6896	
17 4-Amino-2,6-dinitrotoluene	1	11.427	11.430	-0.003	111890	0.7021	0.6889	
18 2-Amino-4,6-dinitrotoluene	1	11.720	11.717	0.003	139994	0.7021	0.7087	
19 2,6-Dinitrotoluene	1	11.853	11.850	0.003	107737	0.7021	0.6880	
20 2,4-Dinitrotoluene	1	12.047	12.050	-0.003	207929	0.7014	0.6991	
21 o-Nitrotoluene	1	12.887	12.890	-0.003	89268	0.7021	0.6796	
22 p-Nitrotoluene	1	13.327	13.330	-0.003	76660	0.7028	0.6801	
23 m-Nitrotoluene	1	13.920	13.930	-0.010	100111	0.7028	0.6750	
24 PETN	2	15.007	15.024	-0.017	526257	7.00	7.19	

Reagents:

8330IntermStk_00058

Amount Added: 35.00

Units: uL

Report Date: 15-May-2019 10:58:06

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B009.D

Injection Date: 14-May-2019 16:36:52

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: IC MAIN L6

Worklist Smp#: 9

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

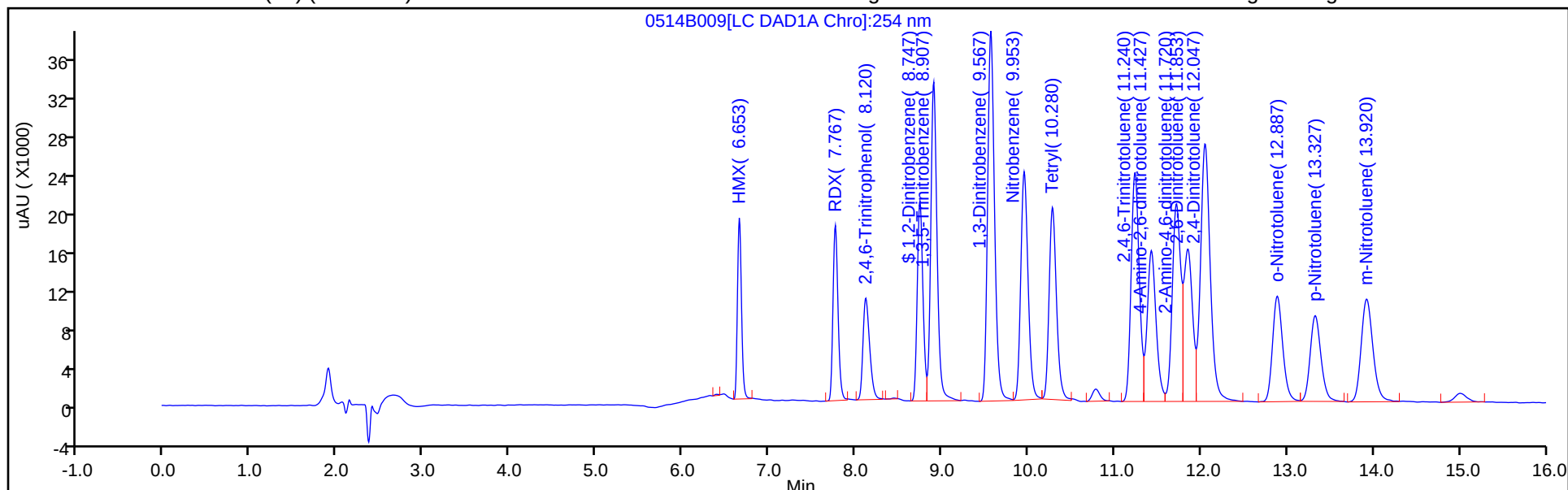
ALS Bottle#: 9

Method: 8330_X3

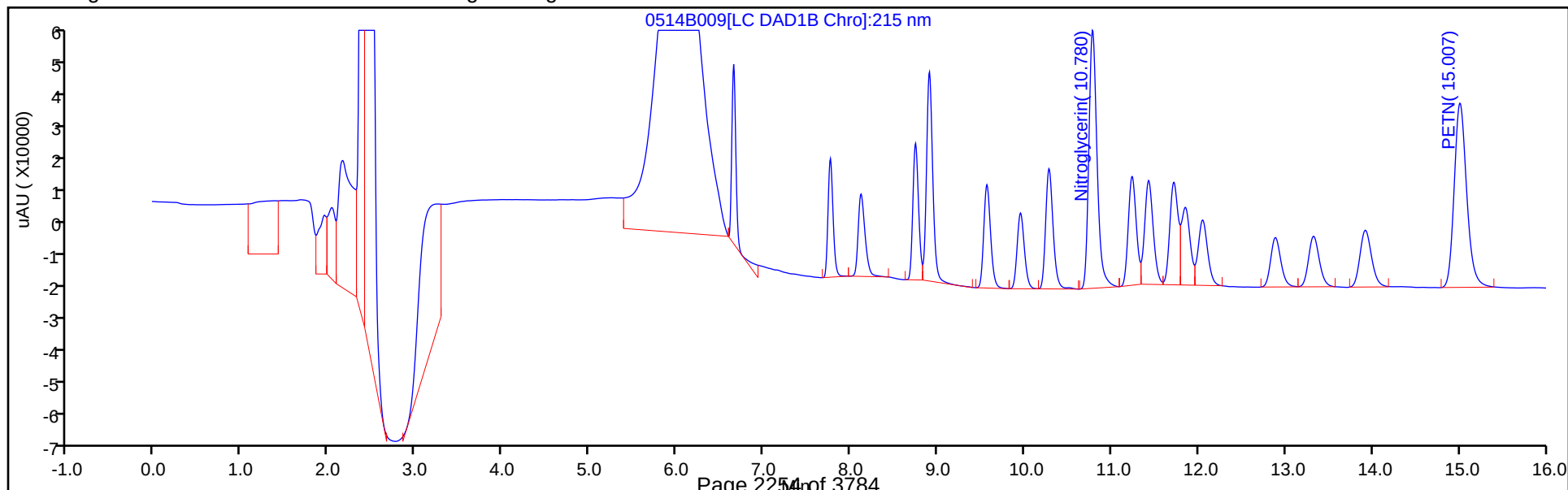
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B010.D
 Lims ID: IC MAIN L5
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 14-May-2019 17:00:38 ALS Bottle#: 10 Worklist Smp#: 10
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: IC MAIN L5
 Misc. Info.: 280-0081869-010
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 15-May-2019 10:58:07 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0331

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.658	6.650	0.008	35125	0.4000	0.3938	
7 RDX	1	7.771	7.764	0.007	42600	0.4000	0.3995	
8 2,4,6-Trinitrophenol	1	8.138	8.130	0.008	32615	0.4000	0.3892	
\$ 9 1,2-Dinitrobenzene	1	8.751	8.744	0.007	54284	0.4000	0.4172	
10 1,3,5-Trinitrobenzene	1	8.911	8.904	0.007	96374	0.4000	0.4203	
11 1,3-Dinitrobenzene	1	9.577	9.564	0.013	121840	0.4004	0.4050	
12 Nitrobenzene	1	9.964	9.950	0.014	78509	0.4008	0.3989	
14 Tetryl	1	10.291	10.284	0.007	68439	0.4000	0.4075	
15 Nitroglycerin	2	10.797	10.784	0.013	283025	4.00	4.04	
16 2,4,6-Trinitrotoluene	1	11.251	11.237	0.014	90152	0.4016	0.4032	
17 4-Amino-2,6-dinitrotoluene	1	11.444	11.430	0.014	64715	0.4012	0.3984	
18 2-Amino-4,6-dinitrotoluene	1	11.737	11.717	0.020	81080	0.4012	0.4105	
19 2,6-Dinitrotoluene	1	11.864	11.850	0.014	62841	0.4012	0.4013	
20 2,4-Dinitrotoluene	1	12.064	12.050	0.014	119798	0.4008	0.4028	
21 o-Nitrotoluene	1	12.904	12.890	0.014	51795	0.4012	0.3943	
22 p-Nitrotoluene	1	13.344	13.330	0.014	44805	0.4016	0.3975	
23 m-Nitrotoluene	1	13.944	13.930	0.014	57865	0.4016	0.3902	
24 PETN	2	15.037	15.024	0.013	305733	4.00	4.18	

Reagents:

8330IntermStk_00058

Amount Added: 20.00

Units: uL

Report Date: 15-May-2019 10:58:07

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B010.D

Injection Date: 14-May-2019 17:00:38

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: IC MAIN L5

Worklist Smp#: 10

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

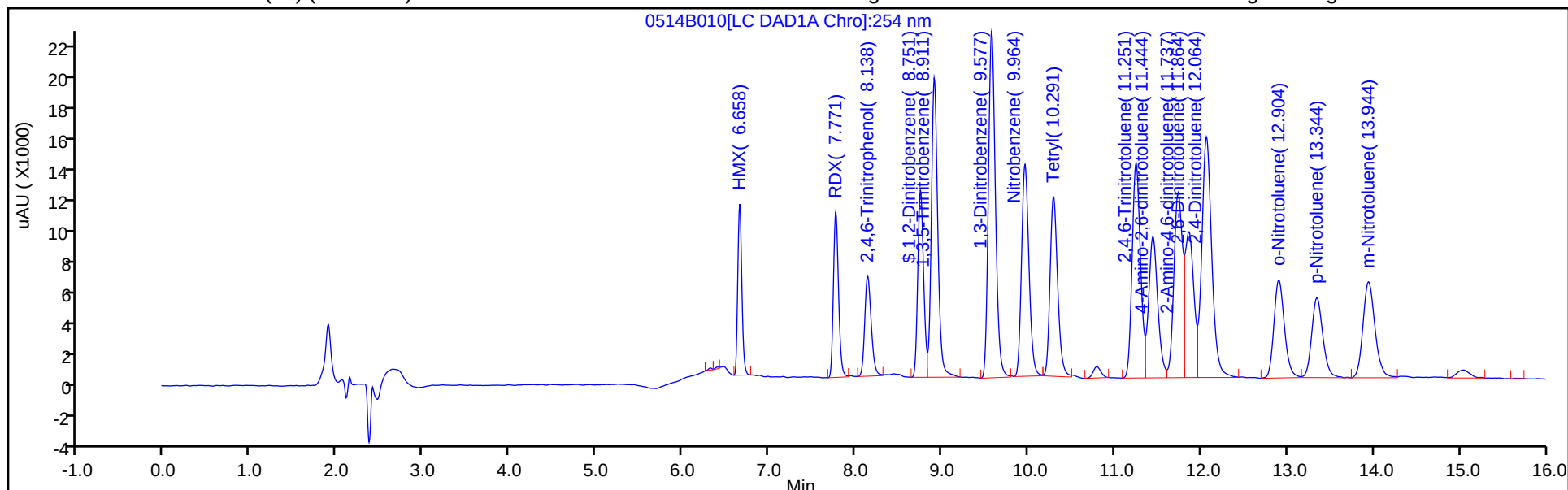
ALS Bottle#: 10

Method: 8330_X3

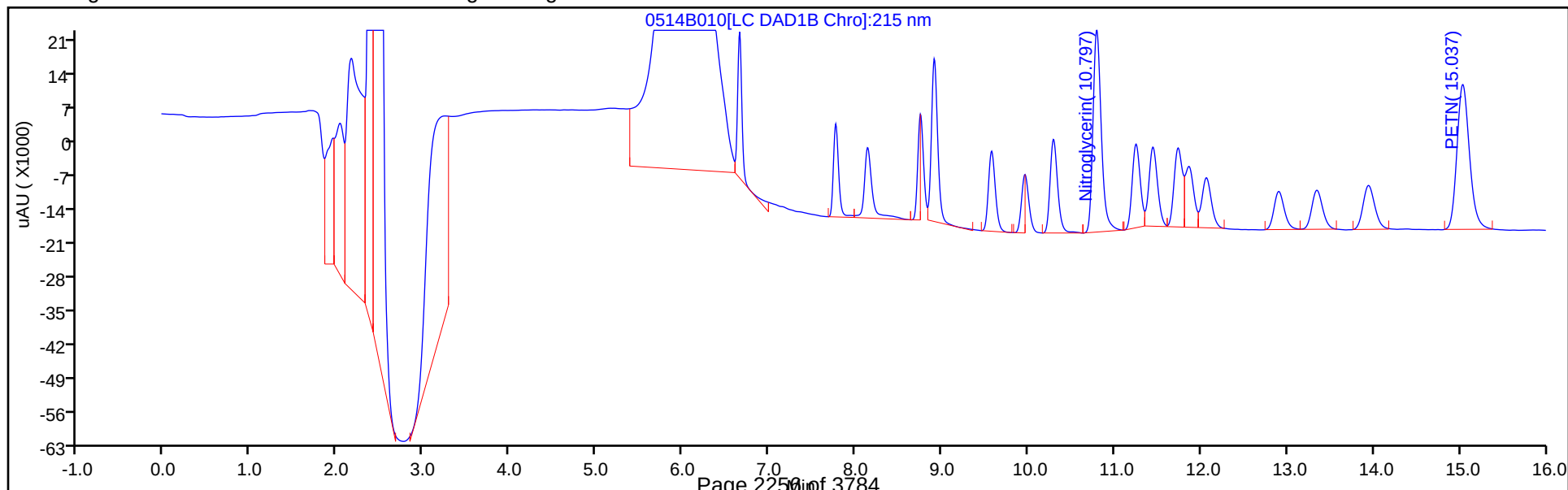
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B011.D
 Lims ID: IC MAIN L4
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 14-May-2019 17:24:22 ALS Bottle#: 11 Worklist Smp#: 11
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: IC MAIN L4
 Misc. Info.: 280-0081869-011
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 15-May-2019 10:58:08 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0331

First Level Reviewer: fiedlerh

Date: 15-May-2019 08:51:34

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.661	6.650	0.011	22385	0.2500	0.2509	
7 RDX	1	7.774	7.764	0.010	27158	0.2500	0.2547	
8 2,4,6-Trinitrophenol	1	8.147	8.130	0.017	21003	0.2500	0.2507	
\$ 9 1,2-Dinitrobenzene	1	8.754	8.744	0.010	34293	0.2500	0.2636	
10 1,3,5-Trinitrobenzene	1	8.914	8.904	0.010	60395	0.2500	0.2634	
11 1,3-Dinitrobenzene	1	9.581	9.564	0.017	77542	0.2503	0.2578	
12 Nitrobenzene	1	9.967	9.950	0.017	51071	0.2505	0.2595	
14 Tetryl	1	10.301	10.284	0.017	43201	0.2500	0.2572	
15 Nitroglycerin	2	10.807	10.784	0.023	183782	2.50	2.63	
16 2,4,6-Trinitrotoluene	1	11.261	11.237	0.024	56877	0.2510	0.2544	
17 4-Amino-2,6-dinitrotoluene	1	11.454	11.430	0.024	41286	0.2508	0.2542	
18 2-Amino-4,6-dinitrotoluene	1	11.747	11.717	0.030	50454	0.2508	0.2554	
19 2,6-Dinitrotoluene	1	11.874	11.850	0.024	40160	0.2508	0.2565	
20 2,4-Dinitrotoluene	1	12.081	12.050	0.031	76419	0.2505	0.2569	
21 o-Nitrotoluene	1	12.921	12.890	0.031	33377	0.2508	0.2541	
22 p-Nitrotoluene	1	13.361	13.330	0.031	28382	0.2510	0.2518	
23 m-Nitrotoluene	1	13.961	13.930	0.031	37947	0.2510	0.2559	
24 PETN	2	15.061	15.024	0.037	191368	2.50	2.61	

Reagents:

8330IntermStk_00058

Amount Added: 12.50

Units: uL

Report Date: 15-May-2019 10:58:08

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B011.D

Injection Date: 14-May-2019 17:24:22

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: IC MAIN L4

Worklist Smp#: 11

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

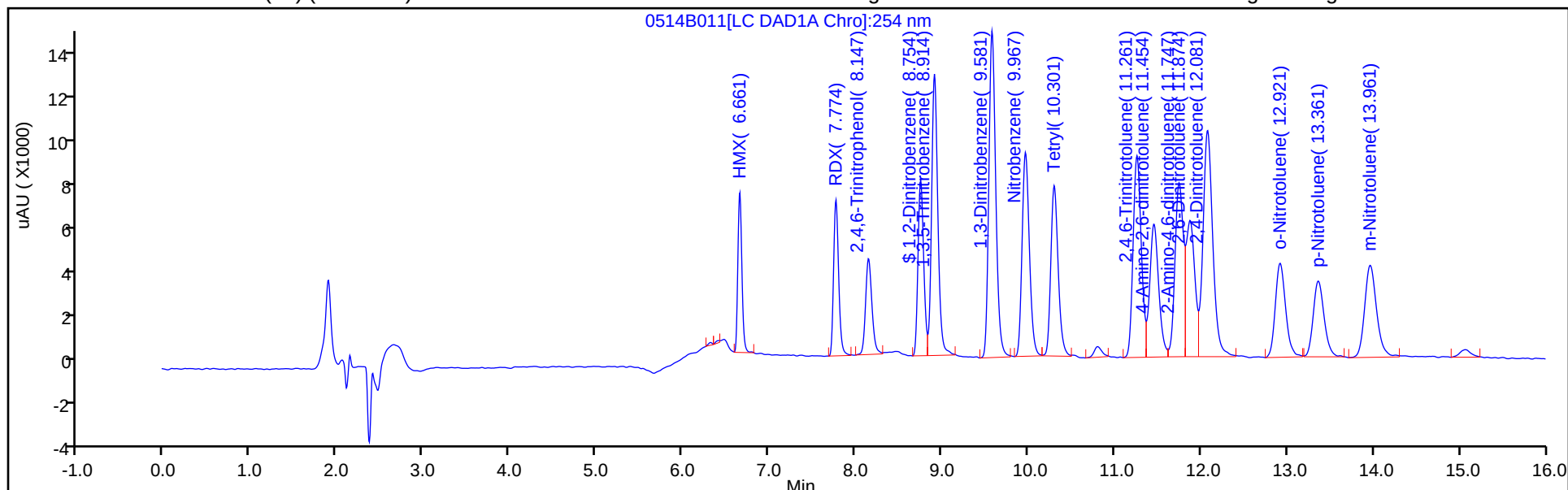
ALS Bottle#: 11

Method: 8330_X3

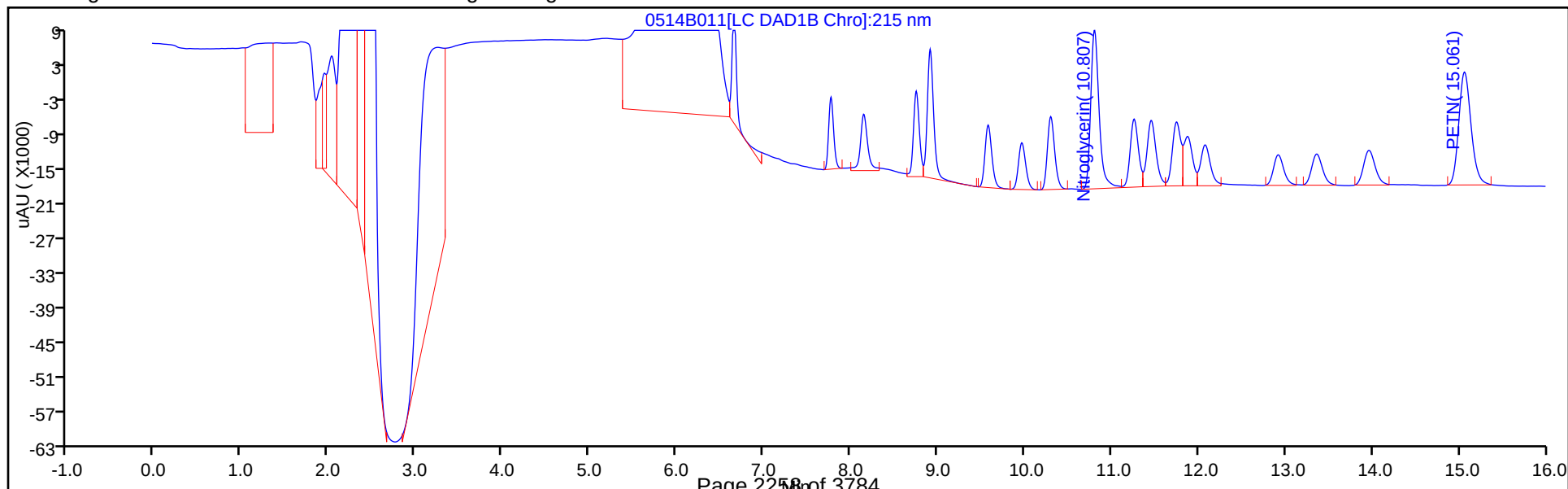
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B012.D
 Lims ID: IC MAIN L3
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 14-May-2019 17:48:04 ALS Bottle#: 12 Worklist Smp#: 12
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: IC MAIN L3
 Misc. Info.: 280-0081869-012
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 15-May-2019 10:58:09 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0331

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.656	6.650	0.006	8504	0.1000	0.0953	
7 RDX	1	7.769	7.764	0.005	10190	0.1000	0.0956	
8 2,4,6-Trinitrophenol	1	8.149	8.130	0.019	8133	0.1000	0.0971	
\$ 9 1,2-Dinitrobenzene	1	8.749	8.744	0.005	12484	0.1000	0.0959	
10 1,3,5-Trinitrobenzene	1	8.909	8.904	0.005	21764	0.1000	0.0949	
11 1,3-Dinitrobenzene	1	9.569	9.564	0.005	29775	0.1001	0.0990	
12 Nitrobenzene	1	9.956	9.950	0.006	19444	0.1002	0.0988	
14 Tetryl	1	10.283	10.284	-0.001	16838	0.1000	0.1003	
15 Nitroglycerin	2	10.789	10.784	0.005	68189	1.00	0.9744	
16 2,4,6-Trinitrotoluene	1	11.243	11.237	0.006	22414	0.1004	0.1002	
17 4-Amino-2,6-dinitrotoluene	1	11.429	11.430	-0.001	16204	0.1003	0.0998	
18 2-Amino-4,6-dinitrotoluene	1	11.723	11.717	0.006	19793	0.1003	0.1002	
19 2,6-Dinitrotoluene	1	11.856	11.850	0.006	15821	0.1003	0.1010	
20 2,4-Dinitrotoluene	1	12.056	12.050	0.006	29765	0.1002	0.1001	
21 o-Nitrotoluene	1	12.889	12.890	-0.001	13449	0.1003	0.1024	
22 p-Nitrotoluene	1	13.329	13.330	-0.001	11386	0.1004	0.1010	
23 m-Nitrotoluene	1	13.929	13.930	-0.001	14726	0.1004	0.0993	
24 PETN	2	15.016	15.024	-0.008	73478	1.00	1.00	

Reagents:

8330IntermStk_00058

Amount Added: 5.00

Units: uL

Report Date: 15-May-2019 10:58:09

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B012.D

Injection Date: 14-May-2019 17:48:04

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: IC MAIN L3

Worklist Smp#: 12

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

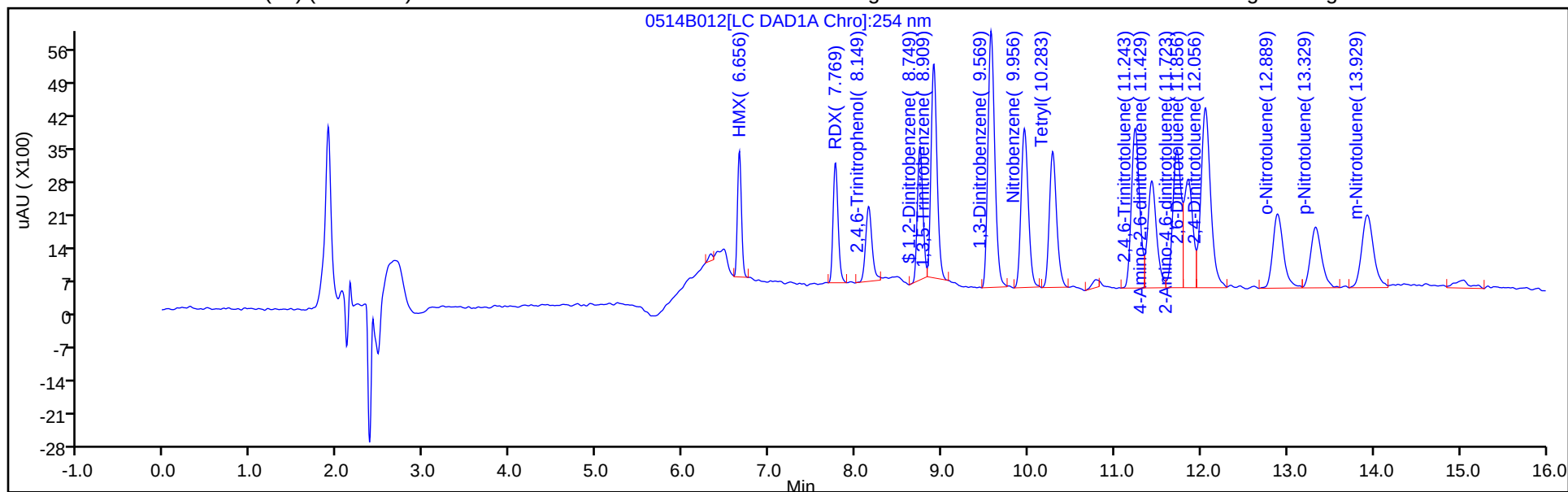
ALS Bottle#: 12

Method: 8330_X3

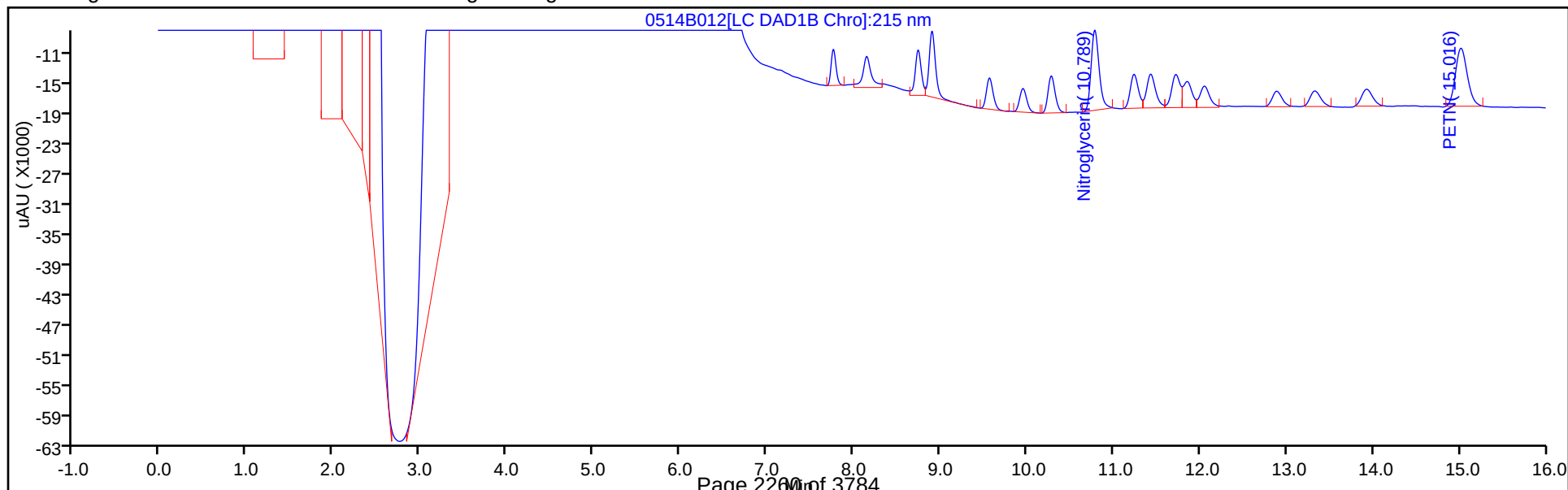
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B013.D
 Lims ID: IC MAIN L2
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 14-May-2019 18:11:46 ALS Bottle#: 13 Worklist Smp#: 13
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: IC MAIN L2
 Misc. Info.: 280-0081869-013
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 15-May-2019 10:58:10 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0331

First Level Reviewer: fiedlerh

Date: 15-May-2019 10:11:37

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.655	6.650	0.005	4555	0.0500	0.0511	
7 RDX	1	7.768	7.764	0.004	5460	0.0500	0.0512	
8 2,4,6-Trinitrophenol	1	8.155	8.130	0.025	4218	0.0500	0.0503	
\$ 9 1,2-Dinitrobenzene	1	8.748	8.744	0.004	6111	0.0500	0.0470	
10 1,3,5-Trinitrobenzene	1	8.908	8.904	0.004	10667	0.0500	0.0465	
11 1,3-Dinitrobenzene	1	9.568	9.564	0.004	14899	0.0501	0.0495	
12 Nitrobenzene	1	9.955	9.950	0.005	9721	0.0501	0.0494	
14 Tetryl	1	10.281	10.284	-0.003	8024	0.0500	0.0478	
15 Nitroglycerin	2	10.788	10.784	0.004	33392	0.5000	0.4772	
16 2,4,6-Trinitrotoluene	1	11.241	11.237	0.004	11556	0.0502	0.0517	
17 4-Amino-2,6-dinitrotoluene	1	11.435	11.430	0.005	8560	0.0502	0.0527	
18 2-Amino-4,6-dinitrotoluene	1	11.721	11.717	0.004	9949	0.0502	0.0504	M
19 2,6-Dinitrotoluene	1	11.848	11.850	-0.002	7983	0.0502	0.0510	M
20 2,4-Dinitrotoluene	1	12.055	12.050	0.005	15102	0.0501	0.0508	
21 o-Nitrotoluene	1	12.895	12.890	0.005	6601	0.0502	0.0503	
22 p-Nitrotoluene	1	13.341	13.330	0.011	6059	0.0502	0.0538	
23 m-Nitrotoluene	1	13.935	13.930	0.005	7637	0.0502	0.0515	
24 PETN	2	15.021	15.024	-0.003	35305	0.5000	0.4824	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

8330IntermStk_00058

Amount Added: 2.50

Units: uL

Report Date: 15-May-2019 10:58:10

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B013.D

Injection Date: 14-May-2019 18:11:46

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: IC MAIN L2

Worklist Smp#: 13

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

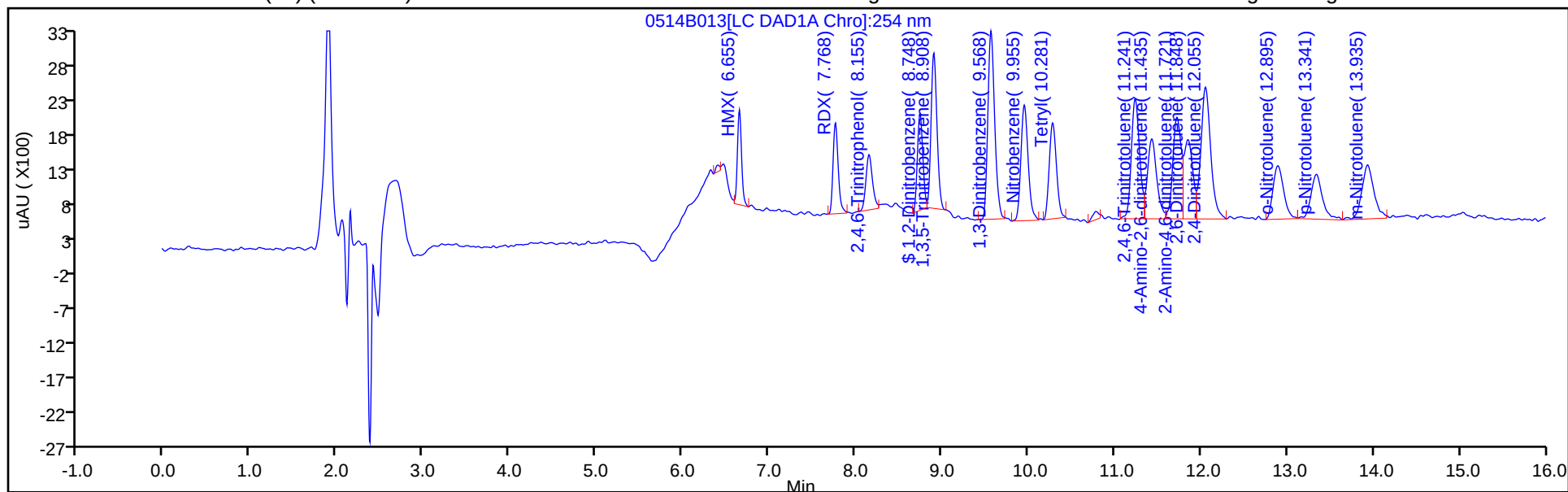
ALS Bottle#: 13

Method: 8330_X3

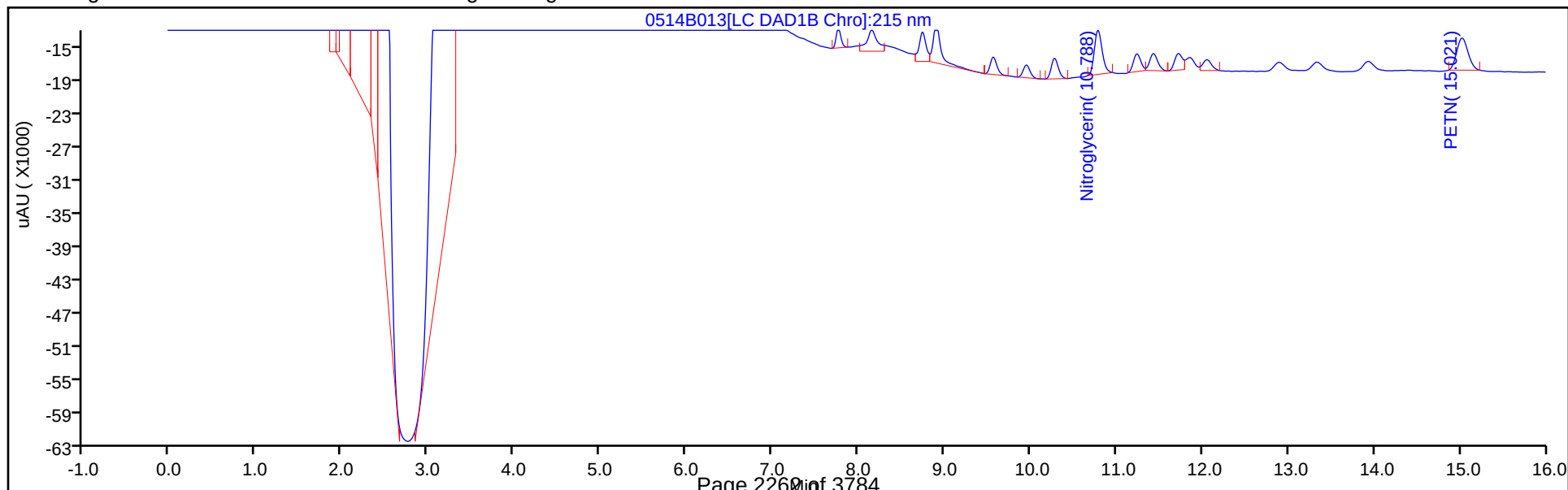
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B014.D
 Lims ID: IC MAIN L1
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 14-May-2019 18:35:34 ALS Bottle#: 14 Worklist Smp#: 14
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: IC MAIN L1
 Misc. Info.: 280-0081869-014
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 15-May-2019 10:58:11 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0331

First Level Reviewer: fiedlerh

Date: 15-May-2019 10:12:55

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.657	6.650	0.007	2023	0.0200	0.0227	
7 RDX	1	7.763	7.764	-0.001	2289	0.0200	0.0215	
8 2,4,6-Trinitrophenol	1	8.157	8.130	0.027	1911	0.0200	0.0228	
\$ 9 1,2-Dinitrobenzene	1	8.750	8.744	0.006	2432	0.0200	0.0187	
10 1,3,5-Trinitrobenzene	1	8.910	8.904	0.006	4505	0.0200	0.0196	
11 1,3-Dinitrobenzene	1	9.576	9.564	0.012	6022	0.0200	0.0200	
12 Nitrobenzene	1	9.963	9.950	0.013	3858	0.0200	0.0196	
14 Tetryl	1	10.296	10.284	0.012	3223	0.0200	0.0192	
15 Nitroglycerin	2	10.803	10.784	0.019	15328	0.2000	0.2190	
16 2,4,6-Trinitrotoluene	1	11.256	11.237	0.019	4729	0.0201	0.0212	
17 4-Amino-2,6-dinitrotoluene	1	11.443	11.430	0.013	3435	0.0201	0.0211	
18 2-Amino-4,6-dinitrotoluene	1	11.736	11.717	0.019	3927	0.0201	0.0199	M
19 2,6-Dinitrotoluene	1	11.870	11.850	0.020	3260	0.0201	0.0208	M
20 2,4-Dinitrotoluene	1	12.070	12.050	0.020	5923	0.0200	0.0199	
21 o-Nitrotoluene	1	12.916	12.890	0.026	2898	0.0201	0.0221	
22 p-Nitrotoluene	1	13.330	13.330	0.000	2326	0.0201	0.0206	
23 m-Nitrotoluene	1	13.943	13.930	0.013	3473	0.0201	0.0234	
24 PETN	2	15.036	15.024	0.012	13561	0.2000	0.1853	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

8330IntermStk_00058

Amount Added: 1.00

Units: uL

Report Date: 15-May-2019 10:58:11

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B014.D

Injection Date: 14-May-2019 18:35:34

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: IC MAIN L1

Worklist Smp#: 14

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

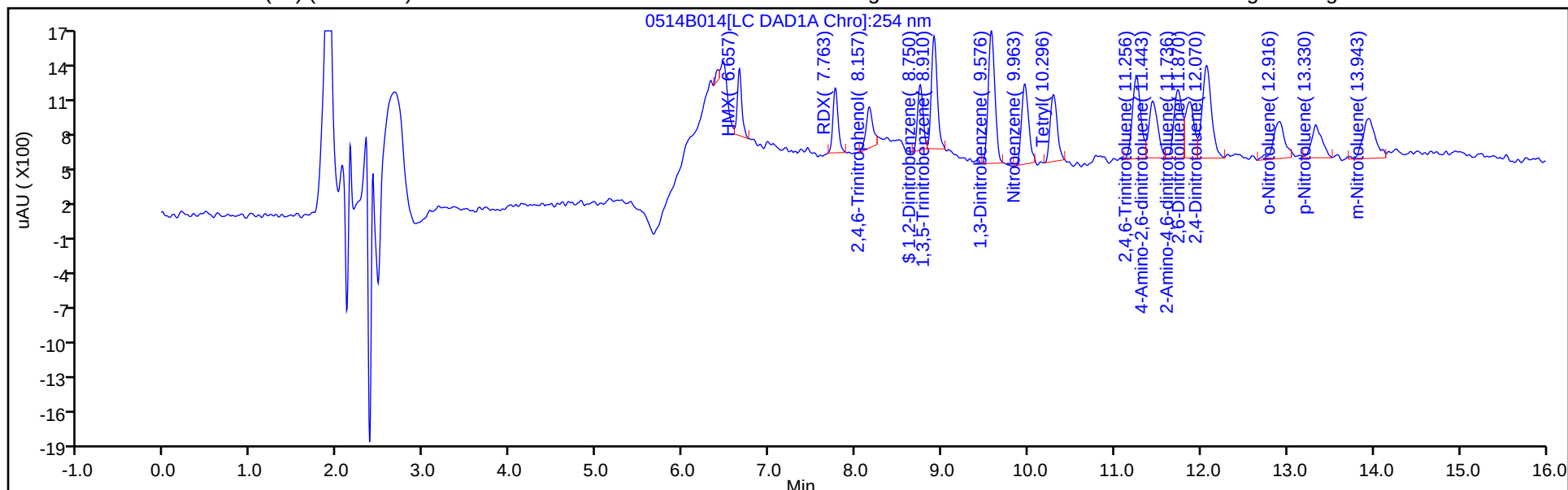
ALS Bottle#: 14

Method: 8330_X3

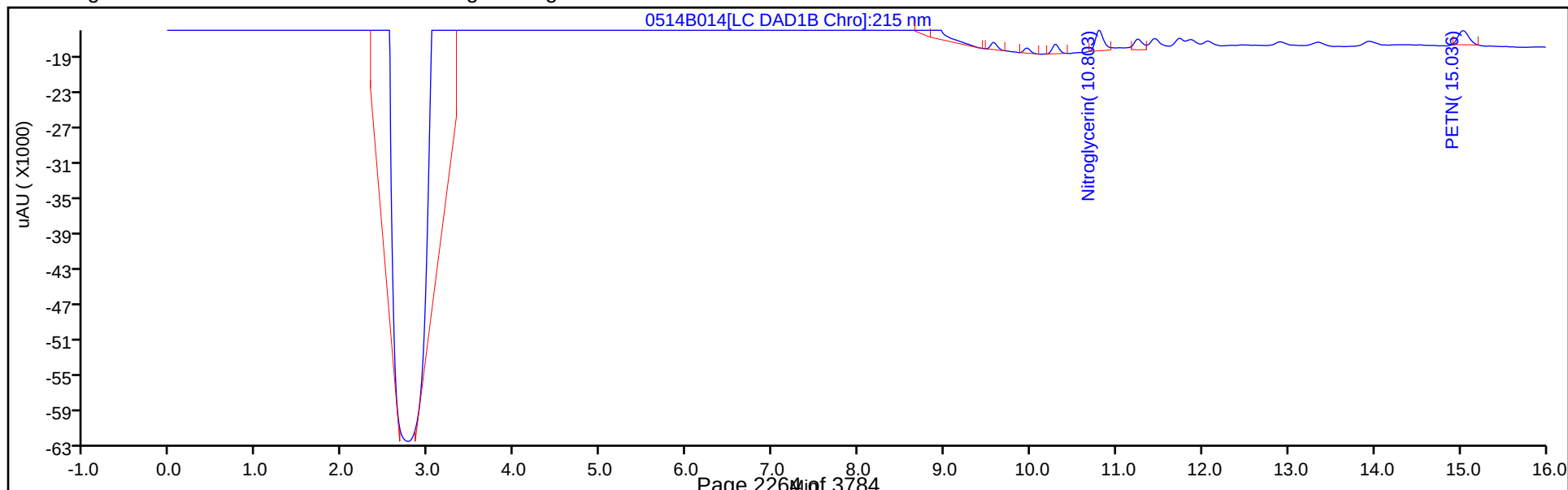
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B014.D

Injection Date: 14-May-2019 18:35:34

Instrument ID: CHHPLC_X3

Lims ID: IC MAIN L1

Client ID:

Operator ID: hkf

ALS Bottle#:

14

Worklist Smp#: 14

Injection Vol: 100.0 ul

Dil. Factor:

1.0000

Method: 8330_X3

Limit Group:

GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Detector

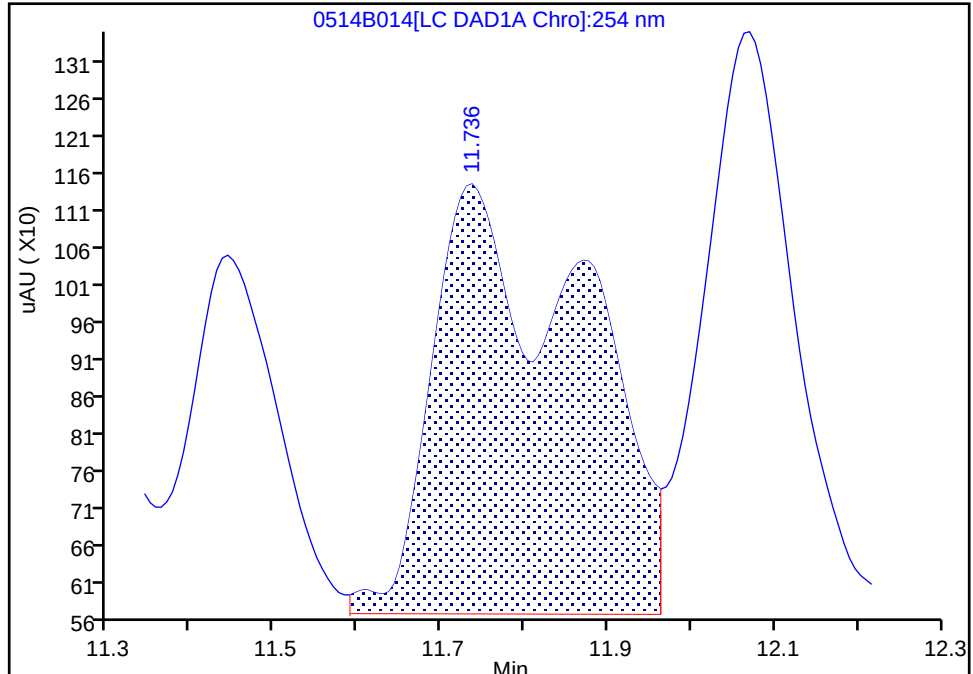
LC DAD1B, 254 nm

18 2-Amino-4,6-dinitrotoluene, CAS: 35572-78-2

Signal: 1

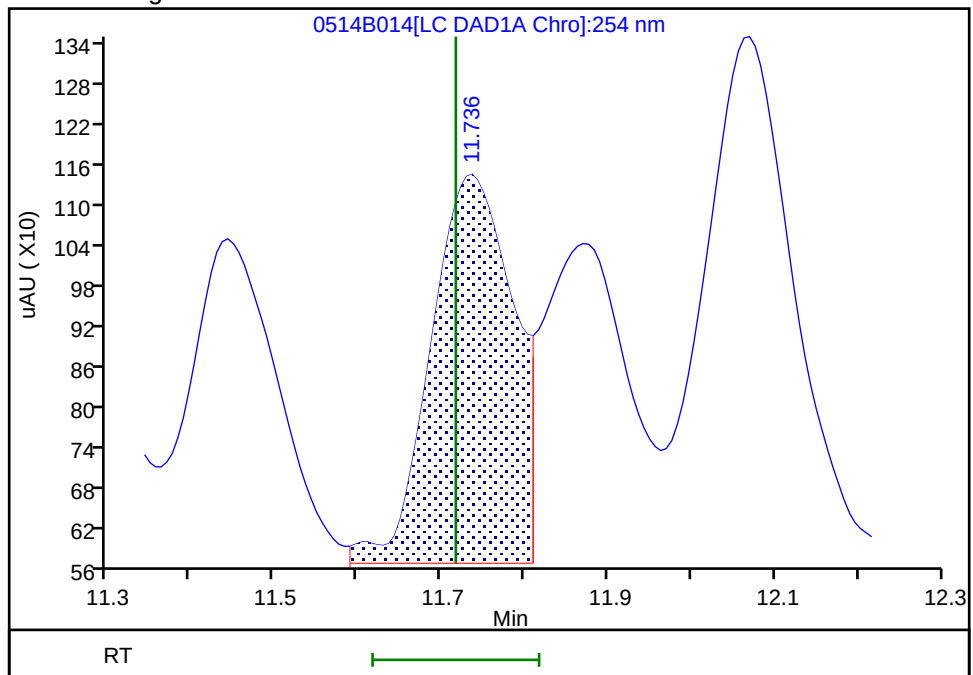
RT: 11.74
Area: 7194
Amount: 0.024800
Amount Units: ug/mL

Processing Integration Results



RT: 11.74
Area: 3927
Amount: 0.019880
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 15-May-2019 10:11:49

Audit Action: Split an Integrated Peak

Audit Reason: Baseline Smoothing

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-457315/15 Calibration Date: 05/07/2019 19:48
 Instrument ID: CHHPLC_G2_LUNA Calib Start Date: 05/07/2019 15:08
 GC Column: Luna-phenylhex ID: 4.60 (mm) Calib End Date: 05/07/2019 19:13
 Lab File ID: 05070015.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Picric acid	Ave	154920	167918		434	400	8.4	20.0
HMX	Ave	171198	162118		379	400	-5.3	20.0
RDX	Ave	208444	201700		387	400	-3.2	20.0
Nitrobenzene	Ave	405448	399908		395	400	-1.4	20.0
3,5-Dinitroaniline	Lin1		476108		406	400	1.4	20.0
1,3-Dinitrobenzene	Ave	635564	627893		395	400	-1.2	20.0
Nitroglycerin	Ave	192935	175353		3640	4000	-9.1	20.0
2-Nitrotoluene	Ave	261865	254708		389	400	-2.7	20.0
4-Nitrotoluene	Ave	226647	225693		398	400	-0.4	20.0
4-Amino-2,6-dinitrotoluene	Ave	297375	294185		396	400	-1.1	20.0
3-Nitrotoluene	Ave	292691	283468		387	400	-3.2	20.0
2-Amino-4,6-dinitrotoluene	Ave	430236	422210		393	400	-1.9	20.0
1,3,5-Trinitrobenzene	Ave	457546	454625		397	400	-0.6	20.0
2,6-Dinitrotoluene	Ave	293465	278643		380	400	-5.1	20.0
2,4-Dinitrotoluene	Ave	569466	552483		388	400	-3.0	20.0
Tetryl	Ave	314480	326443		415	400	3.8	20.0
2,4,6-Trinitrotoluene	Ave	407281	373723		367	400	-8.2	20.0
PETN	Ave	132364	127215		3840	4000	-3.9	20.0
1,2-Dinitrobenzene	Ave	276856	252750		365	400	-8.7	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-457315/15 Calibration Date: 05/07/2019 19:48
 Instrument ID: CHHPLC_G2_LUNA Calib Start Date: 05/07/2019 15:08
 GC Column: Luna-phenylhex ID: 4.60 (mm) Calib End Date: 05/07/2019 19:13
 Lab File ID: 05070015.D

Analyte	RT	RT WINDOW	
		FROM	TO
Picric acid	6.08	5.79	6.09
HMX	7.20	7.05	7.35
RDX	9.28	9.15	9.45
Nitrobenzene	12.30	12.18	12.48
3,5-Dinitroaniline	15.26	15.12	15.42
1,3-Dinitrobenzene	15.88	15.73	16.03
Nitroglycerin	15.88	15.72	16.02
2-Nitrotoluene	16.71	16.57	16.87
4-Nitrotoluene	17.04	16.90	17.20
4-Amino-2,6-dinitrotoluene	17.44	17.29	17.59
3-Nitrotoluene	17.96	17.82	18.12
2-Amino-4,6-dinitrotoluene	18.46	18.30	18.60
1,3,5-Trinitrobenzene	19.22	19.06	19.36
2,6-Dinitrotoluene	20.08	19.92	20.22
2,4-Dinitrotoluene	20.62	20.47	20.77
Tetryl	23.98	23.82	24.12
2,4,6-Trinitrotoluene	24.96	24.80	25.10
PETN	25.36	25.20	25.50
1,2-Dinitrobenzene	13.34	13.20	13.50

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070015.D
 Lims ID: ICV FULL 8330
 Client ID:
 Sample Type: ICV
 Inject. Date: 07-May-2019 19:48:22 ALS Bottle#: 15 Worklist Smp#: 15
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: ICV FULL 8330
 Misc. Info.: 280-0081649-015
 Operator ID: HKF Instrument ID: CHHPLC_G2_LUNA
 Sublist:
 Method: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\G2_8330_Luna.m
 Limit Group: GCSV - 8330
 Last Update: 08-May-2019 09:13:52 Calib Date: 07-May-2019 19:13:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070014.D
 Column 1 : Luna-Phenyl hexyl (4.60 mm) Det: LC DAD1A, 254 nm
 Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 08-May-2019 09:05:17

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 2,6-diamino-4-nitrotoluene	1	4.430	4.446	-0.016	161383	0.4000	0.4089	
2 2,4-diamino-6-nitrotoluene	1	5.030	4.993	0.037	94666	0.4000	0.3700	
5 2,4,6-Trinitrophenol	1	6.077	5.940	0.137	67167	0.4000	0.4336	
6 HMX	1	7.203	7.200	0.003	64847	0.4000	0.3788	
8 RDX	1	9.283	9.300	-0.017	80680	0.4000	0.3871	
9 Nitrobenzene	1	12.296	12.326	-0.030	159963	0.4000	0.3945	
\$ 10 1,2-Dinitrobenzene	1	13.336	13.346	-0.010	101100	0.4000	0.3652	
11 3,5-Dinitroaniline	1	15.263	15.266	-0.003	190443	0.4000	0.4055	
13 Nitroglycerin	2	15.883	15.873	0.010	701412	4.00	3.64	
12 1,3-Dinitrobenzene	1	15.876	15.880	-0.004	251157	0.4000	0.3952	
14 o-Nitrotoluene	1	16.710	16.720	-0.010	101883	0.4000	0.3891	
15 p-Nitrotoluene	1	17.043	17.053	-0.010	90277	0.4000	0.3983	
16 4-Amino-2,6-dinitrotoluene	1	17.443	17.440	0.003	117674	0.4000	0.3957	
17 m-Nitrotoluene	1	17.956	17.966	-0.010	113387	0.4000	0.3874	
18 2-Amino-4,6-dinitrotoluene	1	18.463	18.446	0.017	168884	0.4000	0.3925	
19 1,3,5-Trinitrobenzene	1	19.216	19.213	0.003	181850	0.4000	0.3974	
20 2,6-Dinitrotoluene	1	20.076	20.073	0.003	111457	0.4000	0.3798	
21 2,4-Dinitrotoluene	1	20.623	20.620	0.003	220993	0.4000	0.3881	
22 Tetryl	1	23.977	23.966	0.011	130577	0.4000	0.4152	
23 2,4,6-Trinitrotoluene	1	24.957	24.953	0.004	149489	0.4000	0.3670	
24 PETN	2	25.363	25.353	0.010	508858	4.00	3.84	

Reagents:

3,5-DNA LCS_00033	Amount Added: 40.00	Units: uL
8330Surrogate_00103	Amount Added: 40.00	Units: uL
8330DiaminLCS_00032	Amount Added: 40.00	Units: uL
8330 LCS_00084	Amount Added: 40.00	Units: uL

Report Date: 08-May-2019 09:13:54

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070015.D

Injection Date: 07-May-2019 19:48:22

Instrument ID: CHHPLC_G2_LUNA

Operator ID: HKF

Lims ID: ICV FULL 8330

Worklist Smp#: 15

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

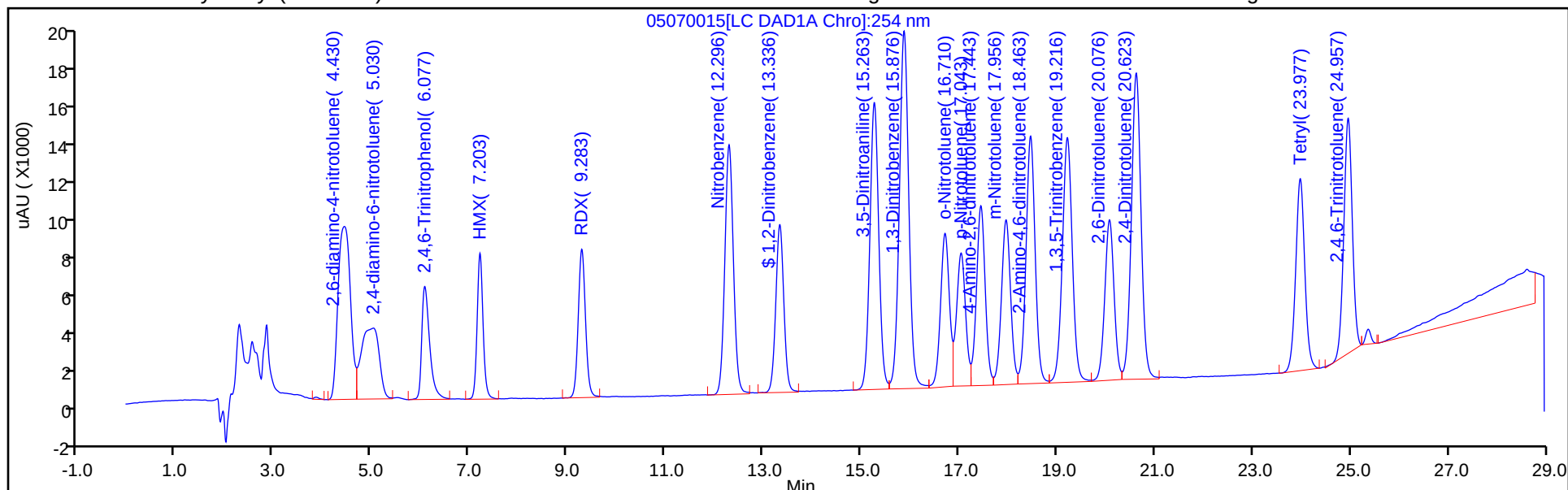
ALS Bottle#: 15

Method: G2_8330_Luna

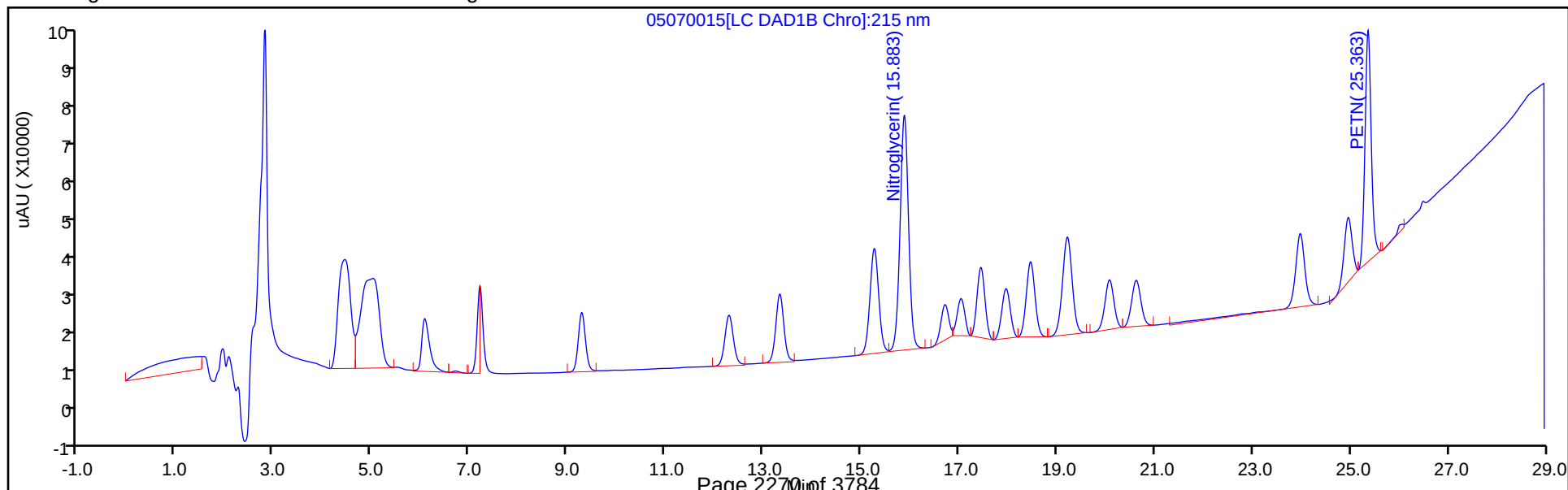
Limit Group: GCSV - 8330

Column: Luna-Phenyl hexyl (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-457992/7 Calibration Date: 05/13/2019 19:30
 Instrument ID: CHHPLC_G2_LUNA Calib Start Date: 05/07/2019 15:08
 GC Column: Luna-phenylhex ID: 4.60 (mm) Calib End Date: 05/07/2019 19:13
 Lab File ID: 05130007.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Picric acid	Ave	154920	213384		344	250	37.7*	20.0
HMX	Ave	171198	184768		270	250	7.9	20.0
RDX	Ave	208444	227688		273	250	9.2	20.0
Nitrobenzene	Ave	405448	432854		267	251	6.8	20.0
3,5-Dinitroaniline	Lin1		500744		266	250	6.5	20.0
Nitroglycerin	Ave	192935	206766		2680	2500	7.2	20.0
1,3-Dinitrobenzene	Ave	635564	686358		270	250	8.0	20.0
2-Nitrotoluene	Ave	261865	275059		263	251	5.0	20.0
4-Nitrotoluene	Ave	226647	243761		270	251	7.6	20.0
4-Amino-2,6-dinitrotoluene	Ave	297375	329878		278	251	10.9	20.0
3-Nitrotoluene	Ave	292691	311825		267	251	6.5	20.0
2-Amino-4,6-dinitrotoluene	Ave	430236	466034		272	251	8.3	20.0
1,3,5-Trinitrobenzene	Ave	457546	491664		269	250	7.5	20.0
2,6-Dinitrotoluene	Ave	293465	311601		266	251	6.2	20.0
2,4-Dinitrotoluene	Ave	569466	614850		270	251	8.0	20.0
Tetryl	Ave	314480	348964		277	250	11.0	20.0
2,4,6-Trinitrotoluene	Ave	407281	446669		275	251	9.7	20.0
PETN	Ave	132364	154193		2910	2500	16.5	20.0
1,2-Dinitrobenzene	Ave	276856	301380		272	250	8.9	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-457992/7 Calibration Date: 05/13/2019 19:30
 Instrument ID: CHHPLC_G2_LUNA Calib Start Date: 05/07/2019 15:08
 GC Column: Luna-phenylhex ID: 4.60 (mm) Calib End Date: 05/07/2019 19:13
 Lab File ID: 05130007.D

Analyte	RT	RT WINDOW	
		FROM	TO
Picric acid	5.22	5.07	5.37
HMX	7.19	7.04	7.34
RDX	9.28	9.13	9.43
Nitrobenzene	12.30	12.15	12.45
3,5-Dinitroaniline	15.24	15.09	15.39
Nitroglycerin	15.84	15.69	15.99
1,3-Dinitrobenzene	15.85	15.70	16.00
2-Nitrotoluene	16.70	16.55	16.85
4-Nitrotoluene	17.02	16.87	17.17
4-Amino-2,6-dinitrotoluene	17.41	17.26	17.56
3-Nitrotoluene	17.94	17.79	18.09
2-Amino-4,6-dinitrotoluene	18.42	18.27	18.57
1,3,5-Trinitrobenzene	19.18	19.03	19.33
2,6-Dinitrotoluene	20.04	19.89	20.19
2,4-Dinitrotoluene	20.58	20.43	20.73
Tetryl	23.91	23.76	24.06
2,4,6-Trinitrotoluene	24.92	24.77	25.07
PETN	25.31	25.16	25.46
1,2-Dinitrobenzene	13.32	13.17	13.47

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190513-81828.b\05130007.D
 Lims ID: CCV 8330
 Client ID:
 Sample Type: CCV
 Inject. Date: 13-May-2019 19:30:34 ALS Bottle#: 7 Worklist Smp#: 7
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: CCV 8330
 Misc. Info.: 280-0081828-007
 Operator ID: HKF Instrument ID: CHHPLC_G2_LUNA
 Sublist: chrom-G2_8330_Luna*sub6
 Method: \\chromna\Denver\ChromData\G2_LUNA\20190513-81828.b\G2_8330_Luna.m
 Limit Group: GCSV - 8330
 Last Update: 14-May-2019 15:58:09 Calib Date: 08-May-2019 00:28:23
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070023.D
 Column 1 : Luna-Phenyl hexyl (4.60 mm) Det: LC DAD1A, 254 nm
 Process Host: CTX0336

First Level Reviewer: fiedlerh

Date: 14-May-2019 09:28:06

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 2,6-diamino-4-nitrotoluene	1	4.470	4.470	0.000	102579	0.2500	0.2599	
2 2,4-diamino-6-nitrotoluene	1	5.056	5.056	0.000	49701	0.2500	0.1943	
5 2,4,6-Trinitrophenol	1	5.223	5.223	0.000	53346	0.2500	0.3443	
6 HMX	1	7.190	7.190	0.000	46192	0.2500	0.2698	
8 RDX	1	9.283	9.283	0.000	56922	0.2500	0.2731	
9 Nitrobenzene	1	12.303	12.303	0.000	108430	0.2505	0.2674	
\$ 10 1,2-Dinitrobenzene	1	13.316	13.316	0.000	75345	0.2500	0.2721	
11 3,5-Dinitroaniline	1	15.236	15.236	0.000	125186	0.2500	0.2663	
13 Nitroglycerin	2	15.836	15.836	0.000	516914	2.50	2.68	
12 1,3-Dinitrobenzene	1	15.850	15.850	0.000	171761	0.2503	0.2702	
14 o-Nitrotoluene	1	16.696	16.696	0.000	68971	0.2508	0.2634	
15 p-Nitrotoluene	1	17.023	17.023	0.000	61184	0.2510	0.2700	
16 4-Amino-2,6-dinitrotoluene	1	17.410	17.410	0.000	82717	0.2508	0.2782	
17 m-Nitrotoluene	1	17.943	17.943	0.000	78268	0.2510	0.2674	
18 2-Amino-4,6-dinitrotoluene	1	18.416	18.416	0.000	116858	0.2508	0.2716	
19 1,3,5-Trinitrobenzene	1	19.183	19.183	0.000	122916	0.2500	0.2686	
20 2,6-Dinitrotoluene	1	20.043	20.043	0.000	78134	0.2508	0.2662	
21 2,4-Dinitrotoluene	1	20.583	20.583	0.000	154020	0.2505	0.2705	
22 Tetryl	1	23.910	23.910	0.000	87241	0.2500	0.2774	
23 2,4,6-Trinitrotoluene	1	24.916	24.916	0.000	112114	0.2510	0.2753	
24 PETN	2	25.310	25.310	0.000	385482	2.50	2.91	

Reagents:

8330IntermStk_00058

Amount Added: 12.50

Units: uL

8330_ADDs_00022

Amount Added: 12.50

Units: uL

Report Date: 14-May-2019 15:58:09

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190513-81828.b\05130007.D

Injection Date: 13-May-2019 19:30:34

Instrument ID: CHHPLC_G2_LUNA

Operator ID: HKF

Lims ID: CCV 8330

Worklist Smp#: 7

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

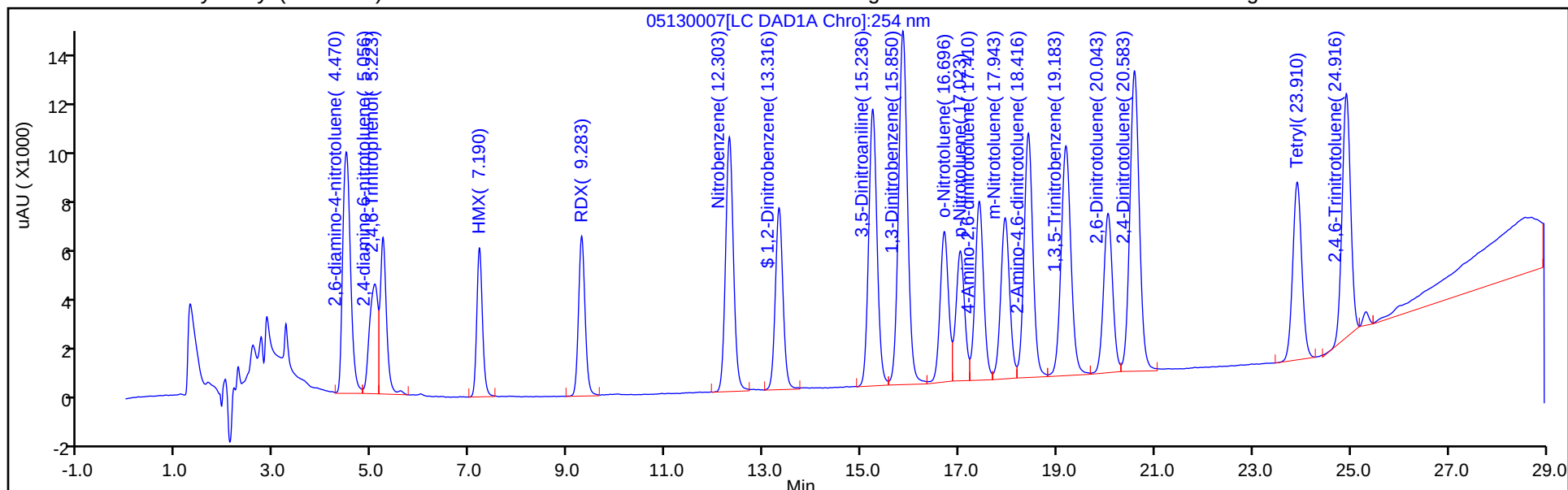
ALS Bottle#: 7

Method: G2_8330_Luna

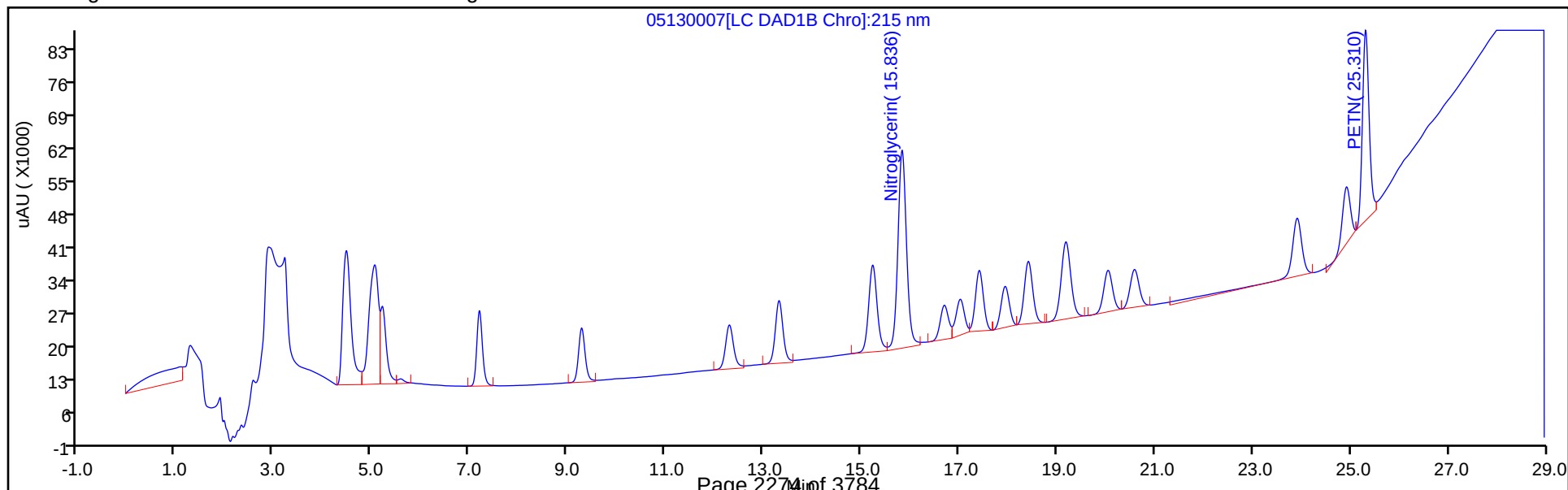
Limit Group: GCSV - 8330

Column: Luna-Phenyl hexyl (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-457992/19 Calibration Date: 05/14/2019 02:30
 Instrument ID: CHHPLC_G2_LUNA Calib Start Date: 05/07/2019 15:08
 GC Column: Luna-phenylhex ID: 4.60 (mm) Calib End Date: 05/07/2019 19:13
 Lab File ID: 05130019.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Picric acid	Ave	154920	403384		651	250	160.4*	20.0
HMX	Ave	171198	184800		270	250	7.9	20.0
RDX	Ave	208444	226700		272	250	8.8	20.0
Nitrobenzene	Ave	405448	423130		261	251	4.4	20.0
3,5-Dinitroaniline	Lin1		499812		266	250	6.3	20.0
Nitroglycerin	Ave	192935	197146		2550	2500	2.2	20.0
1,3-Dinitrobenzene	Ave	635564	687249		271	250	8.1	20.0
2-Nitrotoluene	Ave	261865	270536		259	251	3.3	20.0
4-Nitrotoluene	Ave	226647	239594		265	251	5.7	20.0
4-Amino-2,6-dinitrotoluene	Ave	297375	326110		275	251	9.7	20.0
3-Nitrotoluene	Ave	292691	303586		260	251	3.7	20.0
2-Amino-4,6-dinitrotoluene	Ave	430236	466433		272	251	8.4	20.0
1,3,5-Trinitrobenzene	Ave	457546	491448		269	250	7.4	20.0
2,6-Dinitrotoluene	Ave	293465	312016		267	251	6.3	20.0
2,4-Dinitrotoluene	Ave	569466	615086		271	251	8.0	20.0
Tetryl	Ave	314480	339256		270	250	7.9	20.0
2,4,6-Trinitrotoluene	Ave	407281	432590		267	251	6.2	20.0
PETN	Ave	132364	144028		2720	2500	8.8	20.0
1,2-Dinitrobenzene	Ave	276856	299080		270	250	8.0	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-457992/19 Calibration Date: 05/14/2019 02:30
 Instrument ID: CHHPLC_G2_LUNA Calib Start Date: 05/07/2019 15:08
 GC Column: Luna-phenylhex ID: 4.60 (mm) Calib End Date: 05/07/2019 19:13
 Lab File ID: 05130019.D

Analyte	RT	RT WINDOW	
		FROM	TO
Picric acid	4.96	5.07	5.37
HMX	7.17	7.04	7.34
RDX	9.24	9.13	9.43
Nitrobenzene	12.28	12.15	12.45
3,5-Dinitroaniline	15.18	15.09	15.39
Nitroglycerin	15.78	15.69	15.99
1,3-Dinitrobenzene	15.82	15.70	16.00
2-Nitrotoluene	16.66	16.55	16.85
4-Nitrotoluene	16.99	16.87	17.17
4-Amino-2,6-dinitrotoluene	17.36	17.26	17.56
3-Nitrotoluene	17.90	17.79	18.09
2-Amino-4,6-dinitrotoluene	18.35	18.27	18.57
1,3,5-Trinitrobenzene	19.14	19.03	19.33
2,6-Dinitrotoluene	20.00	19.89	20.19
2,4-Dinitrotoluene	20.54	20.43	20.73
Tetryl	23.86	23.76	24.06
2,4,6-Trinitrotoluene	24.88	24.77	25.07
PETN	25.26	25.16	25.46
1,2-Dinitrobenzene	13.28	13.17	13.47

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190513-81828.b\05130019.D
 Lims ID: CCV 8330
 Client ID:
 Sample Type: CCV
 Inject. Date: 14-May-2019 02:30:21 ALS Bottle#: 7 Worklist Smp#: 19
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: CCV 8330
 Misc. Info.: 280-0081828-019
 Operator ID: HKF Instrument ID: CHHPLC_G2_LUNA
 Sublist: chrom-G2_8330_Luna*sub6
 Method: \\chromna\Denver\ChromData\G2_LUNA\20190513-81828.b\G2_8330_Luna.m
 Limit Group: GCSV - 8330
 Last Update: 14-May-2019 15:58:22 Calib Date: 08-May-2019 00:28:23
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070023.D
 Column 1 : Luna-Phenyl hexyl (4.60 mm) Det: LC DAD1A, 254 nm
 Process Host: CTX0336

First Level Reviewer: fiedlerh

Date: 14-May-2019 10:14:51

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 2,6-diamino-4-nitrotoluene	1	4.470	4.470	0.000	100773	0.2500	0.2554	
2 2,4-diamino-6-nitrotoluene	1		5.056			0.2500	ND	a
5 2,4,6-Trinitrophenol	1	4.957	5.223	-0.266	100846	0.2500	0.6510	a
6 HMX	1	7.170	7.190	-0.020	46200	0.2500	0.2699	
8 RDX	1	9.244	9.283	-0.039	56675	0.2500	0.2719	
9 Nitrobenzene	1	12.277	12.303	-0.026	105994	0.2505	0.2614	
\$ 10 1,2-Dinitrobenzene	1	13.284	13.316	-0.032	74770	0.2500	0.2701	
11 3,5-Dinitroaniline	1	15.184	15.236	-0.052	124953	0.2500	0.2658	
13 Nitroglycerin	2	15.784	15.836	-0.052	492866	2.50	2.55	
12 1,3-Dinitrobenzene	1	15.817	15.850	-0.033	171984	0.2503	0.2706	
14 o-Nitrotoluene	1	16.664	16.696	-0.032	67837	0.2508	0.2591	
15 p-Nitrotoluene	1	16.990	17.023	-0.033	60138	0.2510	0.2653	
16 4-Amino-2,6-dinitrotoluene	1	17.357	17.410	-0.053	81772	0.2508	0.2750	
17 m-Nitrotoluene	1	17.904	17.943	-0.039	76200	0.2510	0.2603	
18 2-Amino-4,6-dinitrotoluene	1	18.350	18.416	-0.066	116958	0.2508	0.2718	
19 1,3,5-Trinitrobenzene	1	19.144	19.183	-0.039	122862	0.2500	0.2685	
20 2,6-Dinitrotoluene	1	20.004	20.043	-0.039	78238	0.2508	0.2666	
21 2,4-Dinitrotoluene	1	20.537	20.583	-0.046	154079	0.2505	0.2706	
22 Tetryl	1	23.857	23.910	-0.053	84814	0.2500	0.2697	
23 2,4,6-Trinitrotoluene	1	24.877	24.916	-0.039	108580	0.2510	0.2666	
24 PETN	2	25.257	25.310	-0.053	360071	2.50	2.72	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

8330IntermStk_00058

Amount Added: 12.50

Units: uL

8330_ADDs_00022

Amount Added: 12.50

Units: uL

Report Date: 14-May-2019 15:58:23

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190513-81828.b\05130019.D

Injection Date: 14-May-2019 02:30:21

Instrument ID: CHHPLC_G2_LUNA

Operator ID: HKF

Lims ID: CCV 8330

Worklist Smp#: 19

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

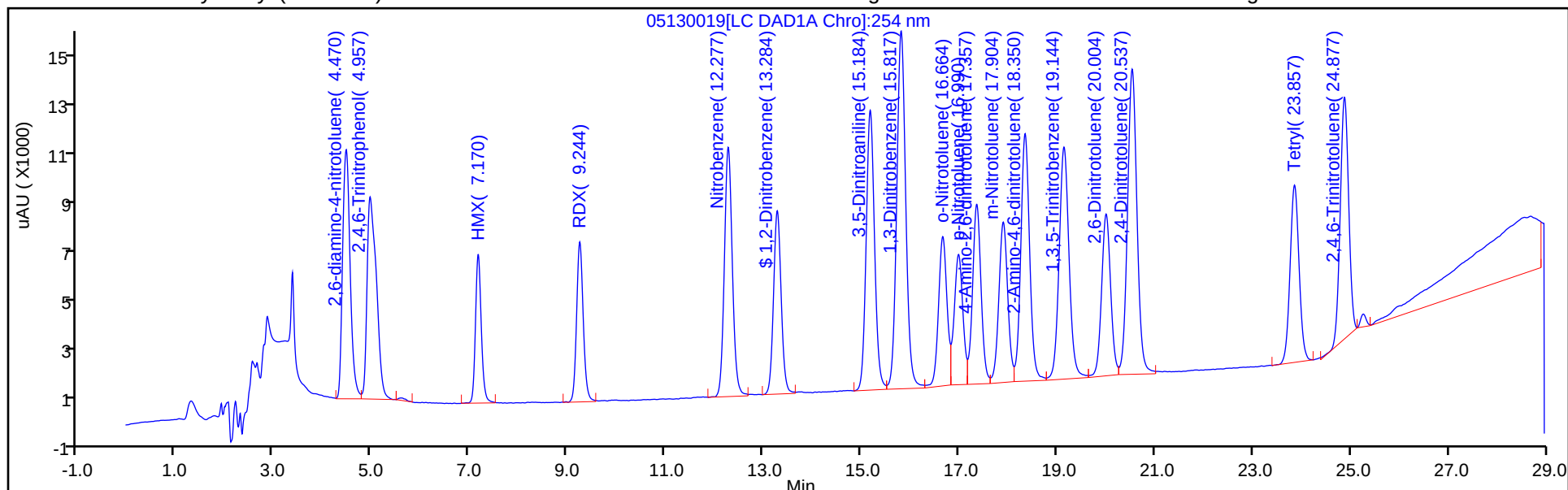
ALS Bottle#: 7

Method: G2_8330_Luna

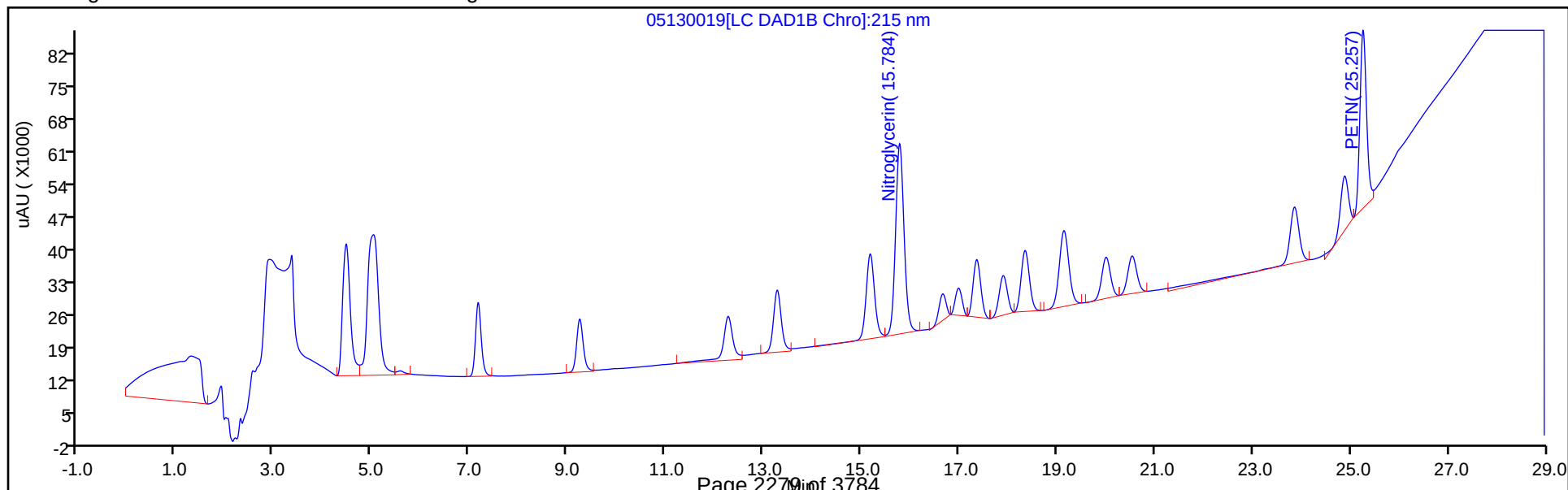
Limit Group: GCSV - 8330

Column: Luna-Phenyl hexyl (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Eurofins TestAmerica, Denver

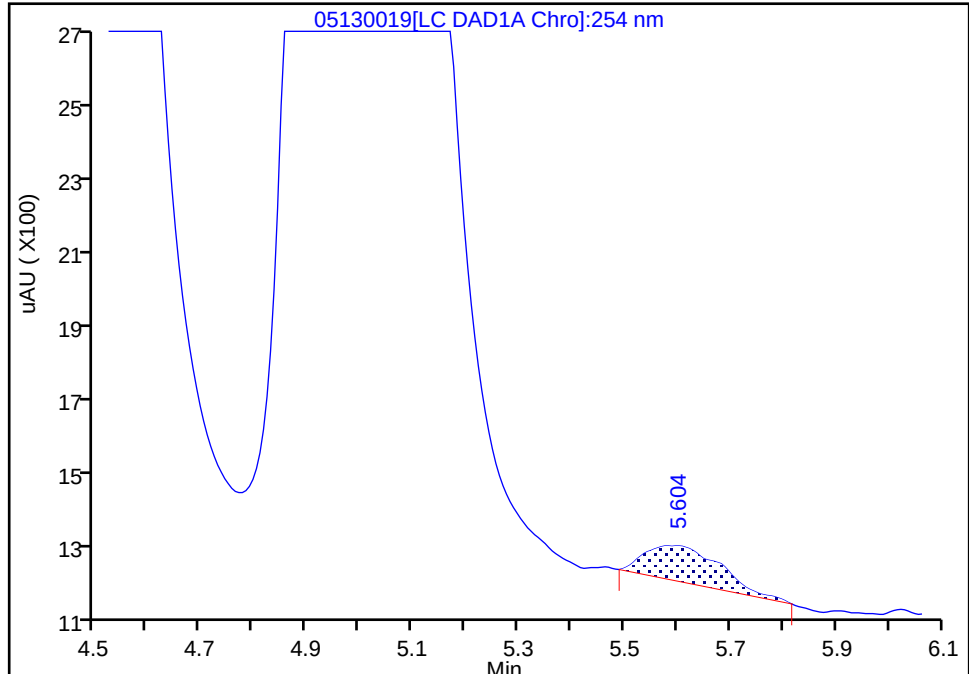
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Injection Date: 14-May-2019 02:30:21 Instrument ID: CHHPLC_G2_LUNA
Lims ID: CCV 8330
Client ID:
Operator ID: HKF ALS Bottle#: 7 Worklist Smp#: 19
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: G2_8330_Luna Limit Group: GCSV - 8330
Column: Luna-Phenyl hexyl (4.60 mm) Detector LC DAD1A, 254 nm

5 2,4,6-Trinitrophenol, CAS: 88-89-1

Signal: 1

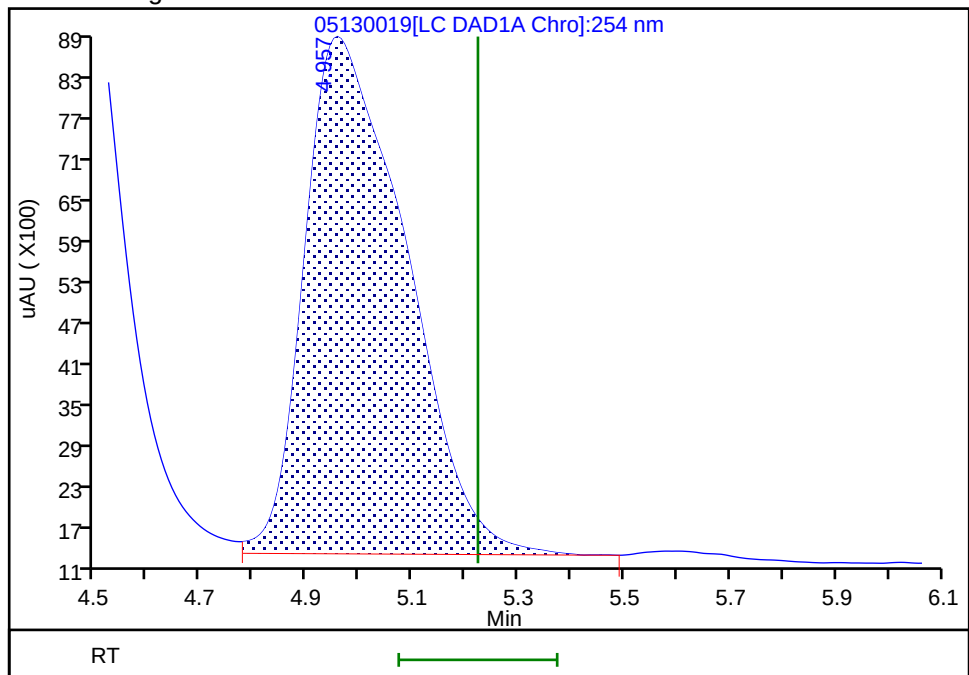
RT: 5.60
Area: 923
Amount: 0.005958
Amount Units: ug/ml

Processing Integration Results



RT: 4.96
Area: 100846
Amount: 0.650957
Amount Units: ug/ml

Manual Integration Results



Reviewer: fiedlerh, 14-May-2019 10:14:48

Audit Action: Assigned Compound ID

Audit Reason:

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458394/7 Calibration Date: 05/16/2019 13:17
 Instrument ID: CHHPLC_G2_LUNA Calib Start Date: 05/07/2019 15:08
 GC Column: Luna-phenylhex ID: 4.60 (mm) Calib End Date: 05/07/2019 19:13
 Lab File ID: 05160007.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Picric acid	Ave	154920	199904		323	250	29.0*	20.0
HMX	Ave	171198	164988		241	250	-3.6	20.0
RDX	Ave	208444	202788		243	250	-2.7	20.0
Nitrobenzene	Ave	405448	381325		236	251	-5.9	20.0
3,5-Dinitroaniline	Lin1		463376		246	250	-1.5	20.0
Nitroglycerin	Ave	192935	185728		2410	2500	-3.7	20.0
1,3-Dinitrobenzene	Ave	635564	611397		241	250	-3.8	20.0
2-Nitrotoluene	Ave	261865	241587		231	251	-7.7	20.0
4-Nitrotoluene	Ave	226647	214072		237	251	-5.5	20.0
4-Amino-2,6-dinitrotoluene	Ave	297375	289651		244	251	-2.6	20.0
3-Nitrotoluene	Ave	292691	273669		235	251	-6.5	20.0
2-Amino-4,6-dinitrotoluene	Ave	430236	412447		240	251	-4.1	20.0
1,3,5-Trinitrobenzene	Ave	457546	436268		238	250	-4.7	20.0
2,6-Dinitrotoluene	Ave	293465	276889		237	251	-5.6	20.0
2,4-Dinitrotoluene	Ave	569466	545840		240	251	-4.1	20.0
Tetryl	Ave	314480	302500		240	250	-3.8	20.0
2,4,6-Trinitrotoluene	Ave	407281	392247		242	251	-3.7	20.0
PETN	Ave	132364	130819		2470	2500	-1.2	20.0
1,2-Dinitrobenzene	Ave	276856	266192		240	250	-3.9	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458394/7 Calibration Date: 05/16/2019 13:17
 Instrument ID: CHHPLC_G2_LUNA Calib Start Date: 05/07/2019 15:08
 GC Column: Luna-phenylhex ID: 4.60 (mm) Calib End Date: 05/07/2019 19:13
 Lab File ID: 05160007.D

Analyte	RT	RT WINDOW	
		FROM	TO
Picric acid	5.24	5.09	5.39
HMX	7.24	7.09	7.39
RDX	9.33	9.18	9.48
Nitrobenzene	12.36	12.21	12.51
3,5-Dinitroaniline	15.31	15.16	15.46
Nitroglycerin	15.91	15.76	16.06
1,3-Dinitrobenzene	15.92	15.77	16.07
2-Nitrotoluene	16.77	16.62	16.92
4-Nitrotoluene	17.10	16.95	17.25
4-Amino-2,6-dinitrotoluene	17.50	17.35	17.65
3-Nitrotoluene	18.02	17.87	18.17
2-Amino-4,6-dinitrotoluene	18.50	18.35	18.65
1,3,5-Trinitrobenzene	19.26	19.11	19.41
2,6-Dinitrotoluene	20.13	19.98	20.28
2,4-Dinitrotoluene	20.67	20.52	20.82
Tetryl	24.00	23.85	24.15
2,4,6-Trinitrotoluene	24.98	24.83	25.13
PETN	25.36	25.21	25.51
1,2-Dinitrobenzene	13.39	13.24	13.54

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190516-81953.b\05160007.D
 Lims ID: CCV 8330
 Client ID:
 Sample Type: CCV
 Inject. Date: 16-May-2019 13:17:10 ALS Bottle#: 7 Worklist Smp#: 7
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: CCV 8330
 Misc. Info.: 280-0081953-007
 Operator ID: HKF Instrument ID: CHHPLC_G2_LUNA
 Sublist: chrom-G2_8330_Luna*sub6
 Method: \\chromna\Denver\ChromData\G2_LUNA\20190516-81953.b\G2_8330_Luna.m
 Limit Group: GCSV - 8330
 Last Update: 17-May-2019 08:53:28 Calib Date: 08-May-2019 00:28:23
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070023.D
 Column 1 : Luna-Phenyl hexyl (4.60 mm) Det: LC DAD1A, 254 nm
 Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 16-May-2019 15:49:22

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 2,6-diamino-4-nitrotoluene	1	4.491	4.491	0.000	95048	0.2500	0.2409	
2 2,4-diamino-6-nitrotoluene	1	5.098	5.098	0.000	46263	0.2500	0.1808	
5 2,4,6-Trinitrophenol	1	5.238	5.238	0.000	49976	0.2500	0.3226	
6 HMX	1	7.238	7.238	0.000	41247	0.2500	0.2409	
8 RDX	1	9.331	9.331	0.000	50697	0.2500	0.2432	
9 Nitrobenzene	1	12.357	12.357	0.000	95522	0.2505	0.2356	
\$ 10 1,2-Dinitrobenzene	1	13.391	13.391	0.000	66548	0.2500	0.2404	
11 3,5-Dinitroaniline	1	15.311	15.311	0.000	115844	0.2500	0.2464	
13 Nitroglycerin	2	15.911	15.911	0.000	464321	2.50	2.41	
12 1,3-Dinitrobenzene	1	15.917	15.917	0.000	153002	0.2503	0.2407	
14 o-Nitrotoluene	1	16.771	16.771	0.000	60578	0.2508	0.2313	
15 p-Nitrotoluene	1	17.097	17.097	0.000	53732	0.2510	0.2371	
16 4-Amino-2,6-dinitrotoluene	1	17.497	17.497	0.000	72630	0.2508	0.2442	
17 m-Nitrotoluene	1	18.017	18.017	0.000	68691	0.2510	0.2347	
18 2-Amino-4,6-dinitrotoluene	1	18.504	18.504	0.000	103421	0.2508	0.2404	
19 1,3,5-Trinitrobenzene	1	19.257	19.257	0.000	109067	0.2500	0.2384	
20 2,6-Dinitrotoluene	1	20.131	20.131	0.000	69430	0.2508	0.2366	
21 2,4-Dinitrotoluene	1	20.671	20.671	0.000	136733	0.2505	0.2401	
22 Tetryl	1	24.004	24.004	0.000	75625	0.2500	0.2405	
23 2,4,6-Trinitrotoluene	1	24.984	24.984	0.000	98454	0.2510	0.2417	
24 PETN	2	25.364	25.364	0.000	327047	2.50	2.47	

Reagents:

8330IntermStk_00058

Amount Added: 12.50

Units: uL

8330_ADDs_00022

Amount Added: 12.50

Units: uL

Report Date: 17-May-2019 08:53:28

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190516-81953.b\05160007.D

Injection Date: 16-May-2019 13:17:10

Instrument ID: CHHPLC_G2_LUNA

Operator ID: HKF

Lims ID: CCV 8330

Worklist Smp#: 7

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

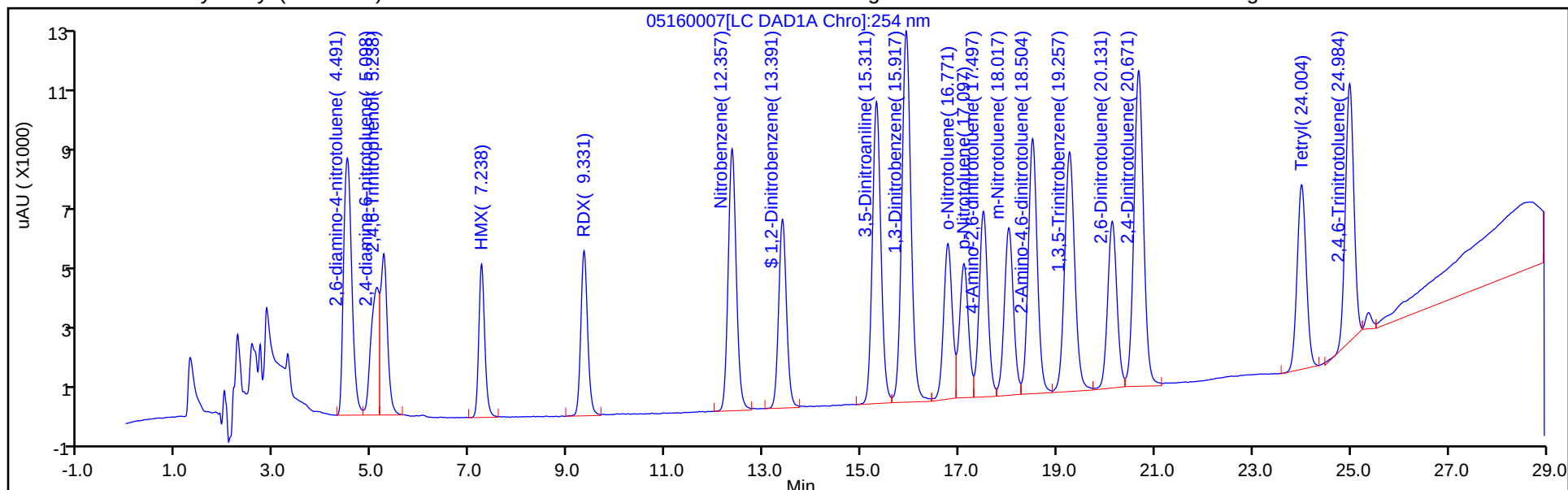
ALS Bottle#: 7

Method: G2_8330_Luna

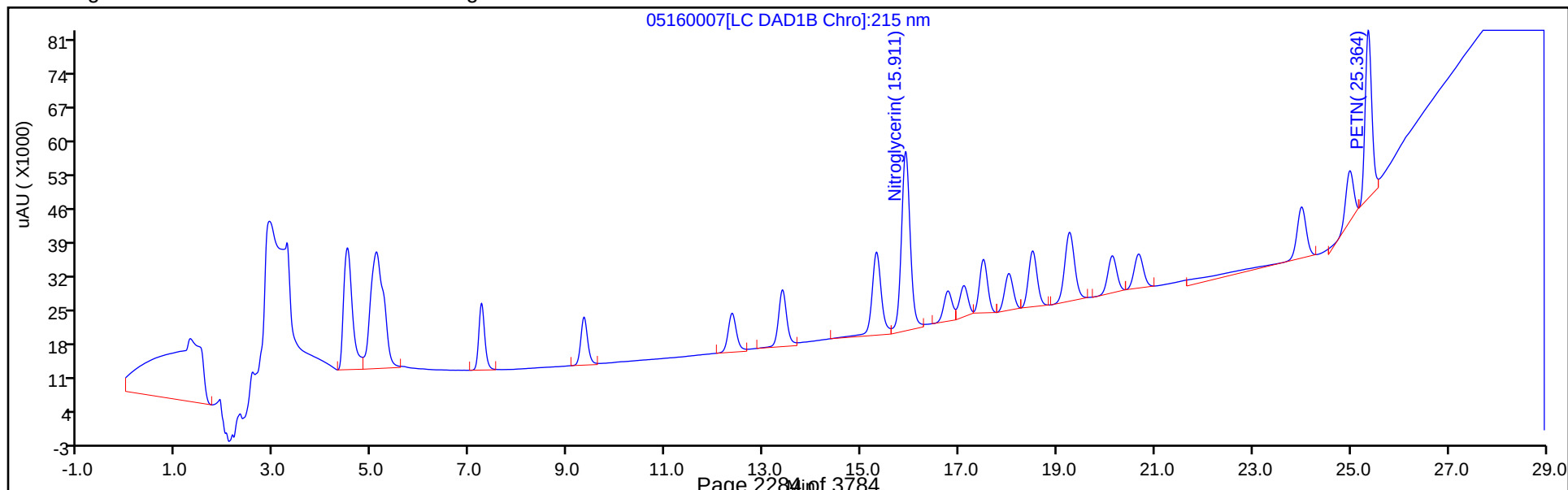
Limit Group: GCSV - 8330

Column: Luna-Phenyl hexyl (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458394/17 Calibration Date: 05/16/2019 19:07
 Instrument ID: CHHPLC_G2_LUNA Calib Start Date: 05/07/2019 15:08
 GC Column: Luna-phenylhex ID: 4.60 (mm) Calib End Date: 05/07/2019 19:13
 Lab File ID: 05160017.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Picric acid	Ave	154920	384028		620	250	147.9*	20.0
HMX	Ave	171198	164184		240	250	-4.1	20.0
RDX	Ave	208444	204964		246	250	-1.7	20.0
Nitrobenzene	Ave	405448	376603		233	251	-7.1	20.0
3,5-Dinitroaniline	Lin1		461480		245	250	-1.9	20.0
Nitroglycerin	Ave	192935	184146		2390	2500	-4.6	20.0
1,3-Dinitrobenzene	Ave	635564	609878		240	250	-4.0	20.0
2-Nitrotoluene	Ave	261865	235964		226	251	-9.9	20.0
4-Nitrotoluene	Ave	226647	211984		235	251	-6.5	20.0
4-Amino-2,6-dinitrotoluene	Ave	297375	288092		243	251	-3.1	20.0
3-Nitrotoluene	Ave	292691	269964		232	251	-7.8	20.0
2-Amino-4,6-dinitrotoluene	Ave	430236	410229		239	251	-4.7	20.0
1,3,5-Trinitrobenzene	Ave	457546	435036		238	250	-4.9	20.0
2,6-Dinitrotoluene	Ave	293465	274150		234	251	-6.6	20.0
2,4-Dinitrotoluene	Ave	569466	542890		239	251	-4.7	20.0
Tetryl	Ave	314480	297088		236	250	-5.5	20.0
2,4,6-Trinitrotoluene	Ave	407281	386558		238	251	-5.1	20.0
PETN	Ave	132364	128955		2440	2500	-2.6	20.0
1,2-Dinitrobenzene	Ave	276856	270860		245	250	-2.2	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458394/17 Calibration Date: 05/16/2019 19:07
 Instrument ID: CHHPLC_G2_LUNA Calib Start Date: 05/07/2019 15:08
 GC Column: Luna-phenylhex ID: 4.60 (mm) Calib End Date: 05/07/2019 19:13
 Lab File ID: 05160017.D

Analyte	RT	RT WINDOW	
		FROM	TO
Picric acid	5.18	5.09	5.39
HMX	7.23	7.09	7.39
RDX	9.33	9.18	9.48
Nitrobenzene	12.36	12.21	12.51
3,5-Dinitroaniline	15.32	15.16	15.46
Nitroglycerin	15.92	15.76	16.06
1,3-Dinitrobenzene	15.93	15.77	16.07
2-Nitrotoluene	16.78	16.62	16.92
4-Nitrotoluene	17.11	16.95	17.25
4-Amino-2,6-dinitrotoluene	17.51	17.35	17.65
3-Nitrotoluene	18.03	17.87	18.17
2-Amino-4,6-dinitrotoluene	18.51	18.35	18.65
1,3,5-Trinitrobenzene	19.27	19.11	19.41
2,6-Dinitrotoluene	20.14	19.98	20.28
2,4-Dinitrotoluene	20.68	20.52	20.82
Tetryl	24.02	23.85	24.15
2,4,6-Trinitrotoluene	25.00	24.83	25.13
PETN	25.38	25.21	25.51
1,2-Dinitrobenzene	13.40	13.24	13.54

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190516-81953.b\05160017.D
 Lims ID: CCV 8330
 Client ID:
 Sample Type: CCV
 Inject. Date: 16-May-2019 19:07:06 ALS Bottle#: 7 Worklist Smp#: 17
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: CCV 8330
 Misc. Info.: 280-0081953-017
 Operator ID: HKF Instrument ID: CHHPLC_G2_LUNA
 Sublist: chrom-G2_8330_Luna*sub6
 Method: \\chromna\Denver\ChromData\G2_LUNA\20190516-81953.b\G2_8330_Luna.m
 Limit Group: GCSV - 8330
 Last Update: 17-May-2019 08:53:37 Calib Date: 08-May-2019 00:28:23
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070023.D
 Column 1 : Luna-Phenyl hexyl (4.60 mm) Det: LC DAD1A, 254 nm
 Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 17-May-2019 08:53:23

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 2,6-diamino-4-nitrotoluene	1	4.504	4.491	0.013	94732	0.2500	0.2401	
2 2,4-diamino-6-nitrotoluene	1		5.098			0.2500	ND	a
5 2,4,6-Trinitrophenol	1	5.177	5.238	-0.061	96007	0.2500	0.6197	a
6 HMX	1	7.231	7.238	-0.007	41046	0.2500	0.2398	
8 RDX	1	9.331	9.331	0.000	51241	0.2500	0.2458	
9 Nitrobenzene	1	12.364	12.357	0.007	94339	0.2505	0.2327	
\$ 10 1,2-Dinitrobenzene	1	13.397	13.391	0.006	67715	0.2500	0.2446	
11 3,5-Dinitroaniline	1	15.317	15.311	0.006	115370	0.2500	0.2453	
13 Nitroglycerin	2	15.917	15.911	0.006	460366	2.50	2.39	
12 1,3-Dinitrobenzene	1	15.931	15.917	0.014	152622	0.2503	0.2401	
14 o-Nitrotoluene	1	16.784	16.771	0.013	59168	0.2508	0.2259	
15 p-Nitrotoluene	1	17.111	17.097	0.014	53208	0.2510	0.2348	
16 4-Amino-2,6-dinitrotoluene	1	17.511	17.497	0.014	72239	0.2508	0.2429	
17 m-Nitrotoluene	1	18.031	18.017	0.014	67761	0.2510	0.2315	
18 2-Amino-4,6-dinitrotoluene	1	18.511	18.504	0.007	102865	0.2508	0.2391	
19 1,3,5-Trinitrobenzene	1	19.271	19.257	0.014	108759	0.2500	0.2377	
20 2,6-Dinitrotoluene	1	20.144	20.131	0.013	68743	0.2508	0.2342	
21 2,4-Dinitrotoluene	1	20.684	20.671	0.013	135994	0.2505	0.2388	
22 Tetryl	1	24.017	24.004	0.013	74272	0.2500	0.2362	
23 2,4,6-Trinitrotoluene	1	25.004	24.984	0.020	97026	0.2510	0.2382	
24 PETN	2	25.384	25.364	0.020	322388	2.50	2.44	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

8330IntermStk_00058

Amount Added: 12.50

Units: uL

8330_ADDs_00022

Amount Added: 12.50

Units: uL

Report Date: 17-May-2019 08:53:38

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190516-81953.b\05160017.D

Injection Date: 16-May-2019 19:07:06

Instrument ID: CHHPLC_G2_LUNA

Operator ID: HKF

Lims ID: CCV 8330

Worklist Smp#: 17

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

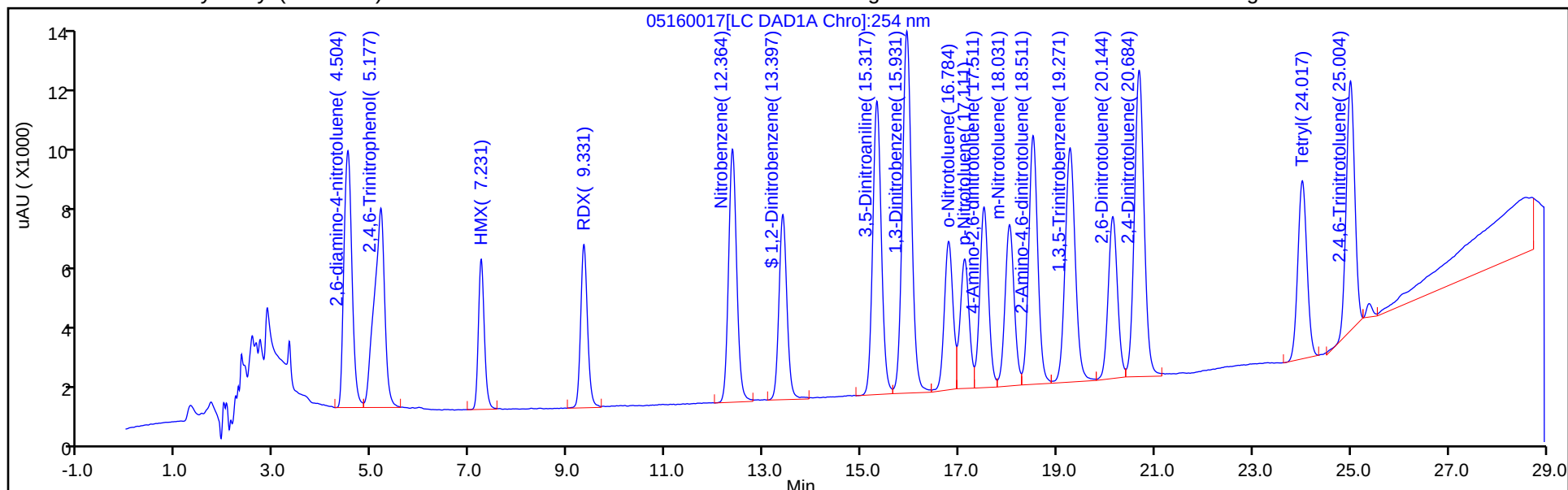
ALS Bottle#: 7

Method: G2_8330_Luna

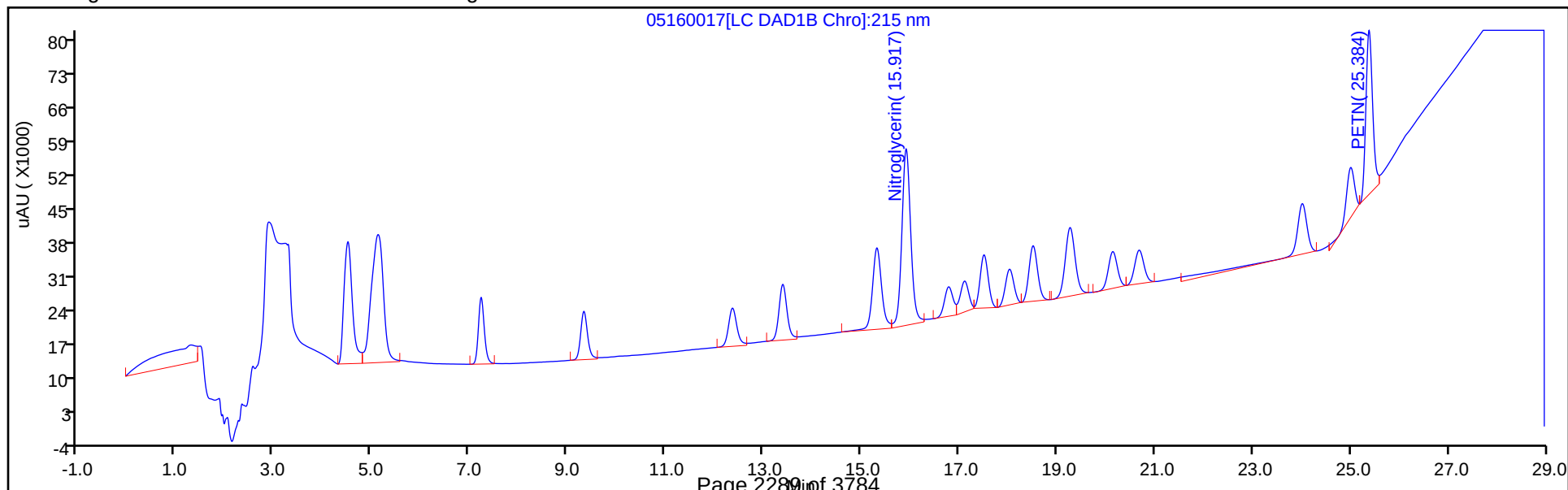
Limit Group: GCSV - 8330

Column: Luna-Phenyl hexyl (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Eurofins TestAmerica, Denver

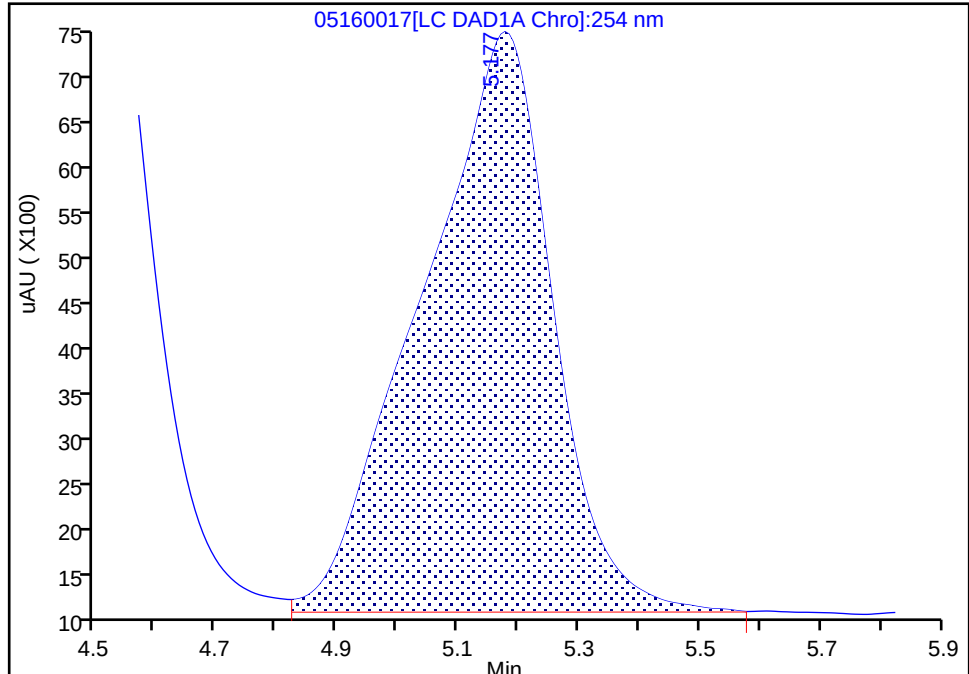
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Injection Date: 16-May-2019 19:07:06 Instrument ID: CHHPLC_G2_LUNA
Lims ID: CCV 8330
Client ID:
Operator ID: HKF ALS Bottle#: 7 Worklist Smp#: 17
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: G2_8330_Luna Limit Group: GCSV - 8330
Column: Luna-Phenyl hexyl (4.60 mm) Detector LC DAD1A, 254 nm

5 2,4,6-Trinitrophenol, CAS: 88-89-1

Signal: 1

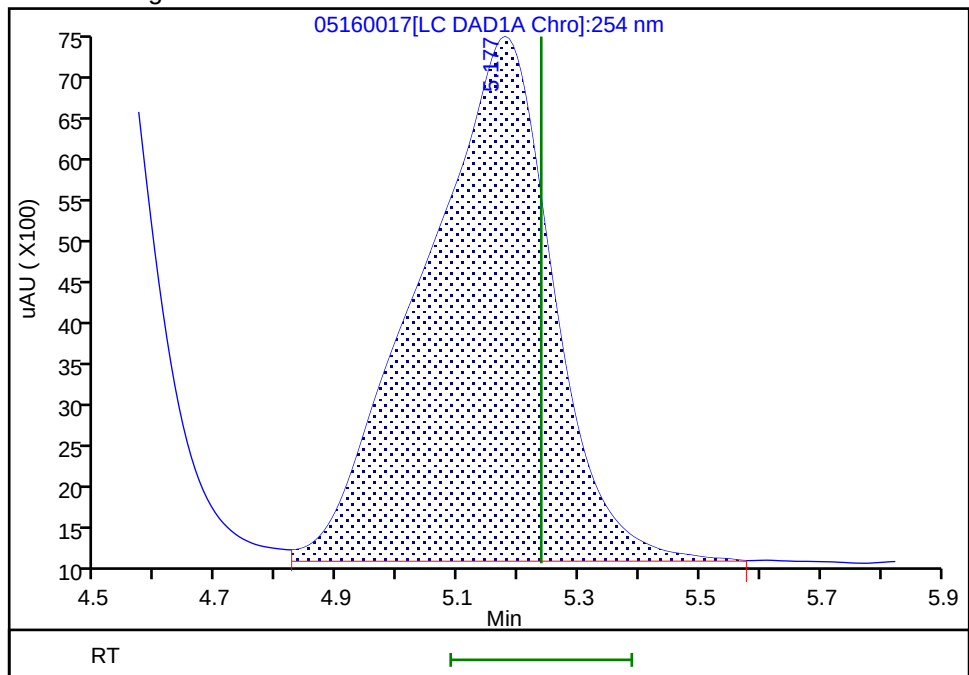
RT: 5.18
Area: 96007
Amount: 0.619721
Amount Units: ug/ml

Processing Integration Results



RT: 5.18
Area: 96007
Amount: 0.619721
Amount Units: ug/ml

Manual Integration Results



Reviewer: fiedlerh, 17-May-2019 08:53:11

Audit Action: Assigned Compound ID

Audit Reason:

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Lab Sample ID: CCV 280-458794/7 Calibration Date: 05/20/2019 14:41

Instrument ID: CHHPLC_G2_LUNA Calib Start Date: 05/07/2019 15:08

GC Column: Luna-phenylhex ID: 4.60 (mm) Calib End Date: 05/07/2019 19:13

Lab File ID: 05200007.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Picric acid	Ave	154920	166888		269	250	7.7	20.0
HMX	Ave	171198	176684		258	250	3.2	20.0
RDX	Ave	208444	217012		260	250	4.1	20.0
Nitrobenzene	Ave	405448	418236		258	251	3.2	20.0
3,5-Dinitroaniline	Lin1		494684		263	250	5.2	20.0
1,3-Dinitrobenzene	Ave	635564	655413		258	250	3.1	20.0
Nitroglycerin	Ave	192935	196100		2540	2500	1.6	20.0
2-Nitrotoluene	Ave	261865	263454		252	251	0.6	20.0
4-Nitrotoluene	Ave	226647	236773		262	251	4.5	20.0
4-Amino-2,6-dinitrotoluene	Ave	297375	313687		265	251	5.5	20.0
3-Nitrotoluene	Ave	292691	302323		259	251	3.3	20.0
2-Amino-4,6-dinitrotoluene	Ave	430236	443928		259	251	3.2	20.0
1,3,5-Trinitrobenzene	Ave	457546	470492		257	250	2.8	20.0
2,6-Dinitrotoluene	Ave	293465	295912		253	251	0.8	20.0
2,4-Dinitrotoluene	Ave	569466	585425		258	251	2.8	20.0
Tetryl	Ave	314480	335316		267	250	6.6	20.0
2,4,6-Trinitrotoluene	Ave	407281	428135		264	251	5.1	20.0
PETN	Ave	132364	146418		2770	2500	10.6	20.0
1,2-Dinitrobenzene	Ave	276856	285292		258	250	3.0	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458794/7 Calibration Date: 05/20/2019 14:41
 Instrument ID: CHHPLC_G2_LUNA Calib Start Date: 05/07/2019 15:08
 GC Column: Luna-phenylhex ID: 4.60 (mm) Calib End Date: 05/07/2019 19:13
 Lab File ID: 05200007.D

Analyte	RT	RT WINDOW	
		FROM	TO
Picric acid	5.68	5.53	5.83
HMX	7.18	7.03	7.33
RDX	9.26	9.11	9.41
Nitrobenzene	12.25	12.10	12.40
3,5-Dinitroaniline	15.19	15.04	15.34
1,3-Dinitrobenzene	15.79	15.64	15.94
Nitroglycerin	15.79	15.64	15.94
2-Nitrotoluene	16.62	16.47	16.77
4-Nitrotoluene	16.94	16.79	17.09
4-Amino-2,6-dinitrotoluene	17.34	17.19	17.49
3-Nitrotoluene	17.85	17.70	18.00
2-Amino-4,6-dinitrotoluene	18.35	18.20	18.50
1,3,5-Trinitrobenzene	19.09	18.94	19.24
2,6-Dinitrotoluene	19.94	19.79	20.09
2,4-Dinitrotoluene	20.49	20.34	20.64
Tetryl	23.82	23.67	23.97
2,4,6-Trinitrotoluene	24.81	24.66	24.96
PETN	25.26	25.11	25.41
1,2-Dinitrobenzene	13.27	13.12	13.42

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190520-82066.b\05200007.D
 Lims ID: CCV 8330
 Client ID:
 Sample Type: CCV
 Inject. Date: 20-May-2019 14:41:38 ALS Bottle#: 7 Worklist Smp#: 7
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: CCV 8330
 Misc. Info.: 280-0082066-007
 Operator ID: HKF Instrument ID: CHHPLC_G2_LUNA
 Sublist: chrom-G2_8330_Luna*sub6
 Method: \\chromna\Denver\ChromData\G2_LUNA\20190520-82066.b\G2_8330_Luna.m
 Limit Group: GCSV - 8330
 Last Update: 21-May-2019 10:39:31 Calib Date: 08-May-2019 00:28:23
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070023.D
 Column 1 : Luna-Phenyl hexyl (4.60 mm) Det: LC DAD1A, 254 nm
 Process Host: CTX0336

First Level Reviewer: fiedlerh

Date: 21-May-2019 08:47:55

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 2,6-diamino-4-nitrotoluene	1	4.449	4.449	0.000	103305	0.2500	0.2618	
2 2,4-diamino-6-nitrotoluene	1	5.022	5.022	0.000	62134	0.2500	0.2429	
5 2,4,6-Trinitrophenol	1	5.675	5.675	0.000	41722	0.2500	0.2693	
6 HMX	1	7.175	7.175	0.000	44171	0.2500	0.2580	
8 RDX	1	9.255	9.255	0.000	54253	0.2500	0.2603	
9 Nitrobenzene	1	12.249	12.249	0.000	104768	0.2505	0.2584	
\$ 10 1,2-Dinitrobenzene	1	13.269	13.269	0.000	71323	0.2500	0.2576	
11 3,5-Dinitroaniline	1	15.189	15.189	0.000	123671	0.2500	0.2631	
13 Nitroglycerin	2	15.789	15.789	0.000	490251	2.50	2.54	
12 1,3-Dinitrobenzene	1	15.789	15.789	0.000	164017	0.2503	0.2581	
14 o-Nitrotoluene	1	16.615	16.615	0.000	66061	0.2508	0.2523	
15 p-Nitrotoluene	1	16.942	16.942	0.000	59430	0.2510	0.2622	
16 4-Amino-2,6-dinitrotoluene	1	17.335	17.335	0.000	78657	0.2508	0.2645	
17 m-Nitrotoluene	1	17.849	17.849	0.000	75883	0.2510	0.2593	
18 2-Amino-4,6-dinitrotoluene	1	18.349	18.349	0.000	111315	0.2508	0.2587	
19 1,3,5-Trinitrobenzene	1	19.089	19.089	0.000	117623	0.2500	0.2571	
20 2,6-Dinitrotoluene	1	19.942	19.942	0.000	74200	0.2508	0.2528	
21 2,4-Dinitrotoluene	1	20.489	20.489	0.000	146649	0.2505	0.2575	
22 Tetryl	1	23.815	23.815	0.000	83829	0.2500	0.2666	
23 2,4,6-Trinitrotoluene	1	24.809	24.809	0.000	107462	0.2510	0.2639	
24 PETN	2	25.255	25.255	0.000	366044	2.50	2.77	

Reagents:

8330IntermStk_00058

Amount Added: 12.50

Units: uL

8330_ADDs_00022

Amount Added: 12.50

Units: uL

Report Date: 21-May-2019 10:39:31

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190520-82066.b\05200007.D

Injection Date: 20-May-2019 14:41:38

Instrument ID: CHHPLC_G2_LUNA

Operator ID: HKF

Lims ID: CCV 8330

Worklist Smp#: 7

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

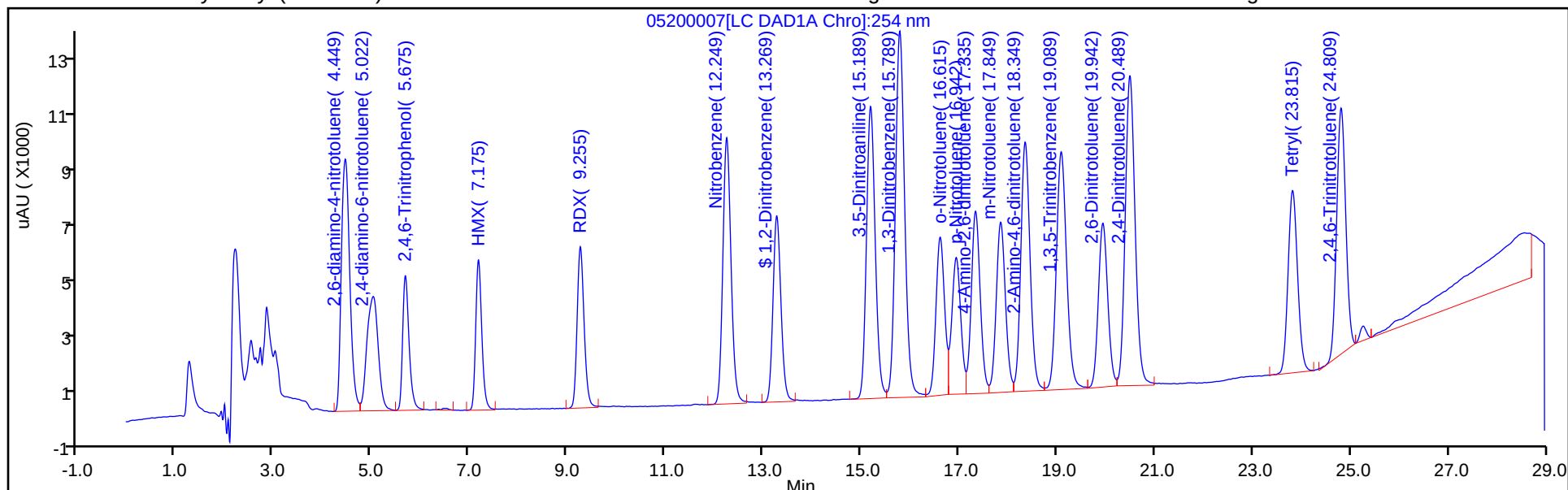
ALS Bottle#: 7

Method: G2_8330_Luna

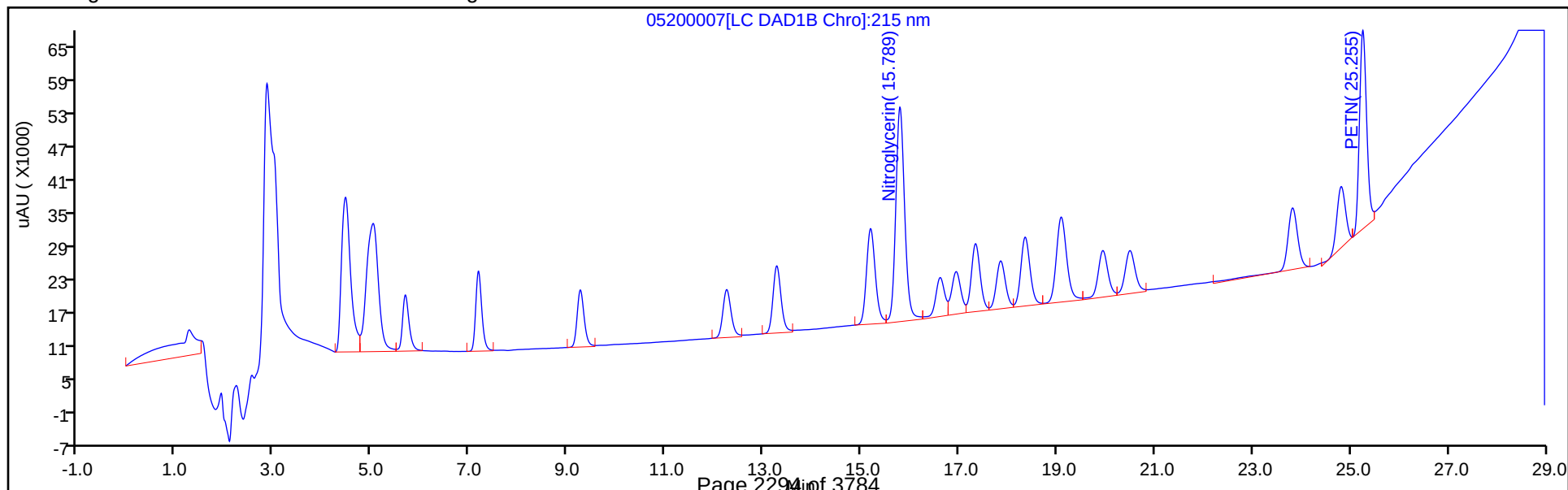
Limit Group: GCSV - 8330

Column: Luna-Phenyl hexyl (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458794/19 Calibration Date: 05/20/2019 21:41
 Instrument ID: CHHPLC_G2_LUNA Calib Start Date: 05/07/2019 15:08
 GC Column: Luna-phenylhex ID: 4.60 (mm) Calib End Date: 05/07/2019 19:13
 Lab File ID: 05200019.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Picric acid	Ave	154920	170388		275	250	10.0	20.0
HMX	Ave	171198	178044		260	250	4.0	20.0
RDX	Ave	208444	215452		258	250	3.4	20.0
Nitrobenzene	Ave	405448	413034		255	251	1.9	20.0
3,5-Dinitroaniline	Lin1		491584		261	250	4.6	20.0
Nitroglycerin	Ave	192935	188641		2440	2500	-2.2	20.0
1,3-Dinitrobenzene	Ave	635564	655233		258	250	3.1	20.0
2-Nitrotoluene	Ave	261865	259498		248	251	-0.9	20.0
4-Nitrotoluene	Ave	226647	232514		257	251	2.6	20.0
4-Amino-2,6-dinitrotoluene	Ave	297375	311151		262	251	4.6	20.0
3-Nitrotoluene	Ave	292691	295303		253	251	0.9	20.0
2-Amino-4,6-dinitrotoluene	Ave	430236	441763		257	251	2.7	20.0
1,3,5-Trinitrobenzene	Ave	457546	467908		256	250	2.3	20.0
2,6-Dinitrotoluene	Ave	293465	294720		252	251	0.4	20.0
2,4-Dinitrotoluene	Ave	569466	582683		256	251	2.3	20.0
Tetryl	Ave	314480	328236		261	250	4.4	20.0
2,4,6-Trinitrotoluene	Ave	407281	422598		260	251	3.8	20.0
PETN	Ave	132364	138021		2610	2500	4.3	20.0
1,2-Dinitrobenzene	Ave	276856	287924		260	250	4.0	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458794/19 Calibration Date: 05/20/2019 21:41
 Instrument ID: CHHPLC_G2_LUNA Calib Start Date: 05/07/2019 15:08
 GC Column: Luna-phenylhex ID: 4.60 (mm) Calib End Date: 05/07/2019 19:13
 Lab File ID: 05200019.D

Analyte	RT	RT WINDOW	
		FROM	TO
Picric acid	5.60	5.53	5.83
HMX	7.17	7.03	7.33
RDX	9.25	9.11	9.41
Nitrobenzene	12.24	12.10	12.40
3,5-Dinitroaniline	15.18	15.04	15.34
Nitroglycerin	15.78	15.64	15.94
1,3-Dinitrobenzene	15.78	15.64	15.94
2-Nitrotoluene	16.61	16.47	16.77
4-Nitrotoluene	16.94	16.79	17.09
4-Amino-2,6-dinitrotoluene	17.34	17.19	17.49
3-Nitrotoluene	17.86	17.70	18.00
2-Amino-4,6-dinitrotoluene	18.35	18.20	18.50
1,3,5-Trinitrobenzene	19.10	18.94	19.24
2,6-Dinitrotoluene	19.95	19.79	20.09
2,4-Dinitrotoluene	20.50	20.34	20.64
Tetryl	23.84	23.67	23.97
2,4,6-Trinitrotoluene	24.83	24.66	24.96
PETN	25.27	25.11	25.41
1,2-Dinitrobenzene	13.25	13.12	13.42

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190520-82066.b\05200019.D
 Lims ID: CCV 8330
 Client ID:
 Sample Type: CCV
 Inject. Date: 20-May-2019 21:41:26 ALS Bottle#: 7 Worklist Smp#: 19
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: CCV 8330
 Misc. Info.: 280-0082066-019
 Operator ID: HKF Instrument ID: CHHPLC_G2_LUNA
 Sublist: chrom-G2_8330_Luna*sub6
 Method: \\chromna\Denver\ChromData\G2_LUNA\20190520-82066.b\G2_8330_Luna.m
 Limit Group: GCSV - 8330
 Last Update: 21-May-2019 10:39:43 Calib Date: 08-May-2019 00:28:23
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\G2_LUNA\20190507-81649.b\05070023.D
 Column 1 : Luna-Phenyl hexyl (4.60 mm) Det: LC DAD1A, 254 nm
 Process Host: CTX0336

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 2,6-diamino-4-nitrotoluene	1	4.461	4.449	0.012	101548	0.2500	0.2573	
2 2,4-diamino-6-nitrotoluene	1	5.035	5.022	0.013	61924	0.2500	0.2420	
5 2,4,6-Trinitrophenol	1	5.595	5.675	-0.080	42597	0.2500	0.2750	
6 HMX	1	7.168	7.175	-0.007	44511	0.2500	0.2600	
8 RDX	1	9.248	9.255	-0.007	53863	0.2500	0.2584	
9 Nitrobenzene	1	12.235	12.249	-0.014	103465	0.2505	0.2552	
\$ 10 1,2-Dinitrobenzene	1	13.248	13.269	-0.021	71981	0.2500	0.2600	
11 3,5-Dinitroaniline	1	15.175	15.189	-0.014	122896	0.2500	0.2614	
13 Nitroglycerin	2	15.775	15.789	-0.014	471602	2.50	2.44	
12 1,3-Dinitrobenzene	1	15.781	15.789	-0.008	163972	0.2503	0.2580	
14 o-Nitrotoluene	1	16.608	16.615	-0.007	65069	0.2508	0.2485	
15 p-Nitrotoluene	1	16.941	16.942	-0.001	58361	0.2510	0.2575	
16 4-Amino-2,6-dinitrotoluene	1	17.335	17.335	0.000	78021	0.2508	0.2624	
17 m-Nitrotoluene	1	17.855	17.849	0.006	74121	0.2510	0.2532	
18 2-Amino-4,6-dinitrotoluene	1	18.348	18.349	-0.001	110772	0.2508	0.2575	
19 1,3,5-Trinitrobenzene	1	19.095	19.089	0.006	116977	0.2500	0.2557	
20 2,6-Dinitrotoluene	1	19.948	19.942	0.006	73901	0.2508	0.2518	
21 2,4-Dinitrotoluene	1	20.501	20.489	0.012	145962	0.2505	0.2563	
22 Tetryl	1	23.835	23.815	0.020	82059	0.2500	0.2609	
23 2,4,6-Trinitrotoluene	1	24.828	24.809	0.019	106072	0.2510	0.2604	
24 PETN	2	25.268	25.255	0.013	345053	2.50	2.61	

Reagents:

8330IntermStk_00058 Amount Added: 12.50 Units: uL
 8330_ADDs_00022 Amount Added: 12.50 Units: uL

Report Date: 21-May-2019 10:39:44

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\G2_LUNA\20190520-82066.b\05200019.D

Injection Date: 20-May-2019 21:41:26

Instrument ID: CHHPLC_G2_LUNA

Operator ID: HKF

Lims ID: CCV 8330

Worklist Smp#: 19

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

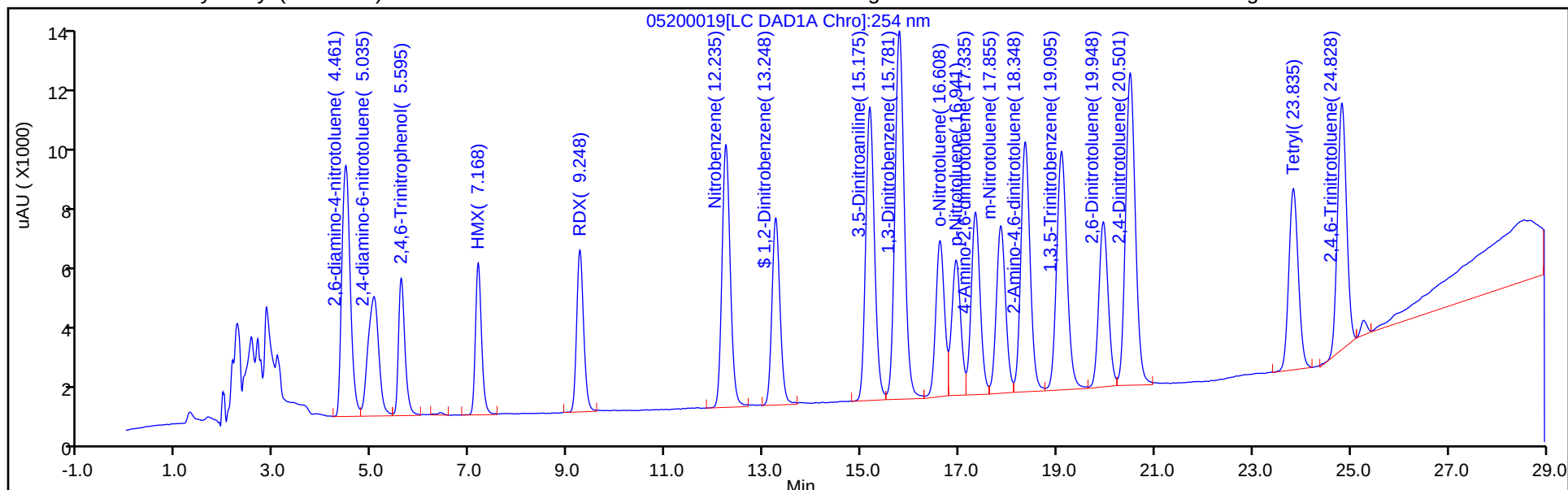
ALS Bottle#: 7

Method: G2_8330_Luna

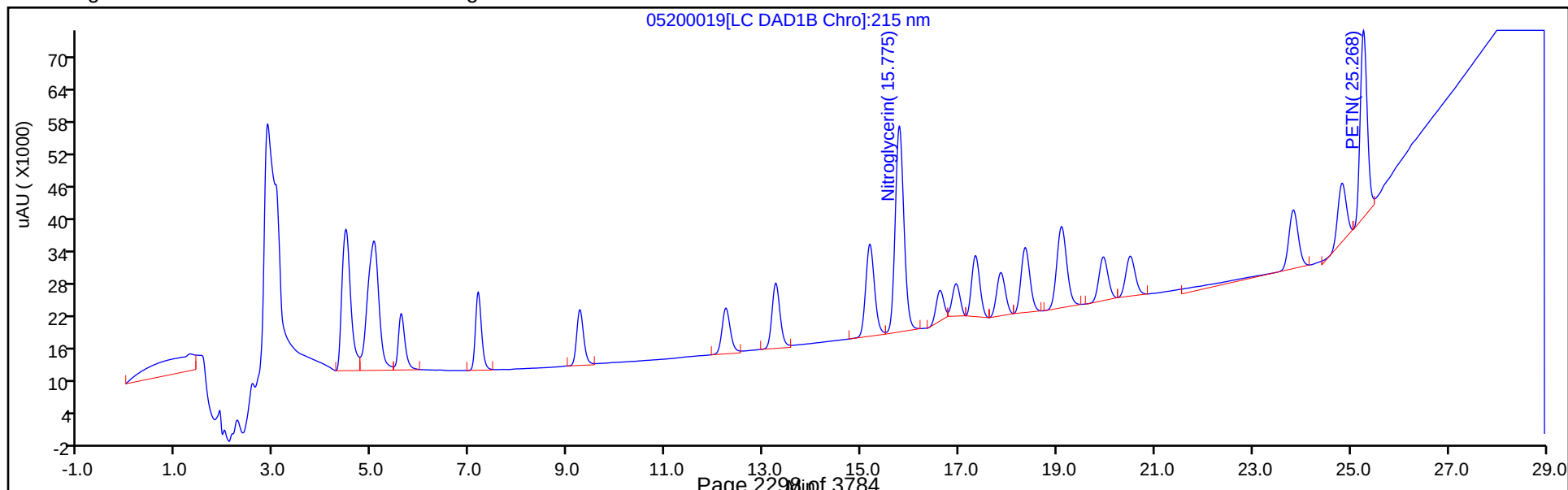
Limit Group: GCSV - 8330

Column: Luna-Phenyl hexyl (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-445350/15 Calibration Date: 01/24/2019 19:41
 Instrument ID: CHHPLC_X3 Calib Start Date: 01/24/2019 16:36
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 01/24/2019 19:18
 Lab File ID: 01240015.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Ave	86866	86320		397	400	-0.6	20.0
RDX	Ave	106102	108225		408	400	2.0	20.0
Picric acid	Ave	85775	89665		418	400	4.5	20.0
1,3,5-Trinitrobenzene	Ave	227128	241180		425	400	6.2	20.0
1,3-Dinitrobenzene	Ave	301593	311200		413	400	3.2	20.0
Nitrobenzene	Ave	195505	206613		423	400	5.7	20.0
Tetryl	Ave	182751	189205		414	400	3.5	20.0
Nitroglycerin	Ave	67756	69534		4100	4000	2.6	20.0
2,4,6-Trinitrotoluene	Ave	227323	208860		368	400	-8.1	20.0
4-Amino-2,6-dinitrotoluene	Ave	167186	163245		391	400	-2.4	20.0
2-Amino-4,6-dinitrotoluene	Ave	203815	205805		404	400	1.0	20.0
2,6-Dinitrotoluene	Ave	154076	163230		424	400	5.9	20.0
2,4-Dinitrotoluene	Ave	300044	296773		396	400	-1.1	20.0
2-Nitrotoluene	Ave	135810	146333		431	400	7.7	20.0
4-Nitrotoluene	Ave	118694	133973		451	400	12.9	20.0
3-Nitrotoluene	Ave	151777	163300		430	400	7.6	20.0
PETN	Ave	76218	74696		3920	4000	-2.0	20.0
1,2-Dinitrobenzene	Ave	133694	127625		382	400	-4.5	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-445350/15 Calibration Date: 01/24/2019 19:41
 Instrument ID: CHHPLC_X3 Calib Start Date: 01/24/2019 16:36
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 01/24/2019 19:18
 Lab File ID: 01240015.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.66	6.51	6.81
RDX	7.76	7.61	7.91
Picric acid	8.12	7.97	8.27
1,3,5-Trinitrobenzene	8.90	8.75	9.05
1,3-Dinitrobenzene	9.56	9.41	9.71
Nitrobenzene	9.94	9.79	10.09
Tetryl	10.26	10.11	10.41
Nitroglycerin	10.77	10.62	10.92
2,4,6-Trinitrotoluene	11.22	11.12	11.32
4-Amino-2,6-dinitrotoluene	11.39	11.29	11.49
2-Amino-4,6-dinitrotoluene	11.68	11.58	11.78
2,6-Dinitrotoluene	11.83	11.73	11.93
2,4-Dinitrotoluene	12.02	11.92	12.12
2-Nitrotoluene	12.87	12.72	13.02
4-Nitrotoluene	13.30	13.15	13.45
3-Nitrotoluene	13.90	13.75	14.05
PETN	15.00	14.85	15.15
1,2-Dinitrobenzene	8.74	8.59	8.89

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240015.D
 Lims ID: ICV MAIN
 Client ID:
 Sample Type: ICV
 Inject. Date: 24-Jan-2019 19:41:09 ALS Bottle#: 15 Worklist Smp#: 15
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: ICV MAIN
 Misc. Info.: 280-0078351-015
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist:
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 25-Jan-2019 09:53:55 Calib Date: 24-Jan-2019 19:18:08
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240014.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0323

First Level Reviewer: fiedlerh

Date: 25-Jan-2019 09:50:46

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.657	6.657	0.000	34528	0.4000	0.3975	
7 RDX	1	7.757	7.757	0.000	43290	0.4000	0.4080	
8 2,4,6-Trinitrophenol	1	8.123	8.123	0.000	35866	0.4000	0.4181	
\$ 9 1,2-Dinitrobenzene	1	8.743	8.743	0.000	51050	0.4000	0.3818	
10 1,3,5-Trinitrobenzene	1	8.903	8.903	0.000	96472	0.4000	0.4247	
11 1,3-Dinitrobenzene	1	9.557	9.557	0.000	124480	0.4000	0.4127	
12 Nitrobenzene	1	9.943	9.943	0.000	82645	0.4000	0.4227	
14 Tetryl	1	10.263	10.263	0.000	75682	0.4000	0.4141	
15 Nitroglycerin	2	10.770	10.770	0.000	278136	4.00	4.10	
16 2,4,6-Trinitrotoluene	1	11.223	11.223	0.000	83544	0.4000	0.3675	
17 4-Amino-2,6-dinitrotoluene	1	11.390	11.390	0.000	65298	0.4000	0.3906	
18 2-Amino-4,6-dinitrotoluene	1	11.677	11.677	0.000	82322	0.4000	0.4039	
19 2,6-Dinitrotoluene	1	11.830	11.830	0.000	65292	0.4000	0.4238	
20 2,4-Dinitrotoluene	1	12.023	12.023	0.000	118709	0.4000	0.3956	
21 o-Nitrotoluene	1	12.870	12.870	0.000	58533	0.4000	0.4310	
22 p-Nitrotoluene	1	13.303	13.303	0.000	53589	0.4000	0.4515	
23 m-Nitrotoluene	1	13.897	13.897	0.000	65320	0.4000	0.4304	
24 PETN	2	14.997	14.997	0.000	298784	4.00	3.92	

Reagents:

8330Surrogate_00102 Amount Added: 40.00 Units: uL
 8330 LCS_00086 Amount Added: 40.00 Units: uL

Report Date: 25-Jan-2019 09:53:55

Chrom Revision: 2.3 15-Jan-2019 08:51:34

TestAmerica Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190124-78351.b\01240015.D

Injection Date: 24-Jan-2019 19:41:09

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: ICV MAIN

Worklist Smp#: 15

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

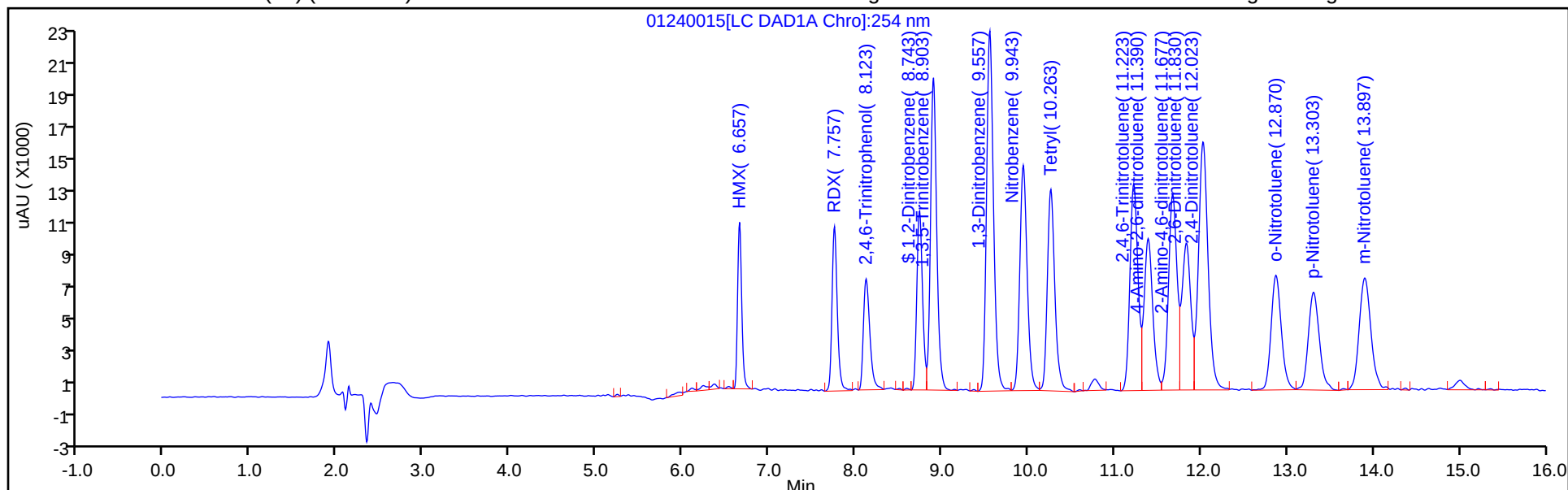
ALS Bottle#: 15

Method: 8330_X3

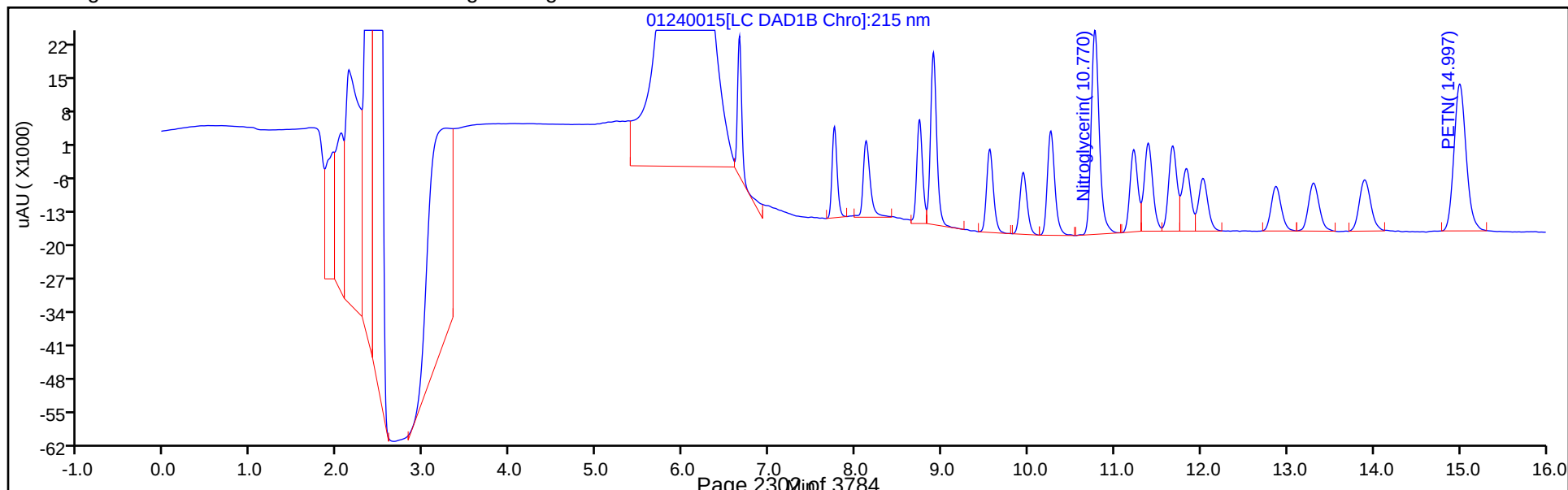
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-457634/32 Calibration Date: 05/10/2019 02:40
 Instrument ID: CHHPLC_X3 Calib Start Date: 01/24/2019 16:36
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 01/24/2019 19:18
 Lab File ID: 0509B032.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Ave	86866	82716		238	250	-4.8	20.0
RDX	Ave	106102	101240		239	250	-4.6	20.0
Picric acid	Ave	85775	76944		224	250	-10.3	20.0
1,3,5-Trinitrobenzene	Ave	227128	225176		248	250	-0.9	20.0
1,3-Dinitrobenzene	Ave	301593	292220		242	250	-3.1	20.0
Nitrobenzene	Ave	195505	188136		241	251	-3.8	20.0
Tetryl	Ave	182751	160348		219	250	-12.3	20.0
Nitroglycerin	Ave	67756	66834		2470	2500	-1.4	20.0
2,4,6-Trinitrotoluene	Ave	227323	210542		232	251	-7.4	20.0
4-Amino-2,6-dinitrotoluene	Ave	167186	152558		229	251	-8.7	20.0
2-Amino-4,6-dinitrotoluene	Ave	203815	193260		238	251	-5.2	20.0
2,6-Dinitrotoluene	Ave	154076	144574		235	251	-6.2	20.0
2,4-Dinitrotoluene	Ave	300044	285788		239	251	-4.8	20.0
2-Nitrotoluene	Ave	135810	121468		224	251	-10.6	20.0
4-Nitrotoluene	Ave	118694	105793		224	251	-10.9	20.0
3-Nitrotoluene	Ave	151777	136956		226	251	-9.8	20.0
PETN	Ave	76218	68104		2230	2500	-10.6	20.0
1,2-Dinitrobenzene	Ave	133694	128244		240	250	-4.1	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-457634/32 Calibration Date: 05/10/2019 02:40
 Instrument ID: CHHPLC_X3 Calib Start Date: 01/24/2019 16:36
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 01/24/2019 19:18
 Lab File ID: 0509B032.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.64	6.49	6.79
RDX	7.74	7.59	7.89
Picric acid	8.10	7.94	8.24
1,3,5-Trinitrobenzene	8.88	8.72	9.02
1,3-Dinitrobenzene	9.54	9.37	9.67
Nitrobenzene	9.93	9.76	10.06
Tetryl	10.25	10.08	10.38
Nitroglycerin	10.76	10.59	10.89
2,4,6-Trinitrotoluene	11.20	11.08	11.28
4-Amino-2,6-dinitrotoluene	11.37	11.24	11.44
2-Amino-4,6-dinitrotoluene	11.65	11.53	11.73
2,6-Dinitrotoluene	11.81	11.69	11.89
2,4-Dinitrotoluene	12.00	11.88	12.08
2-Nitrotoluene	12.84	12.67	12.97
4-Nitrotoluene	13.28	13.11	13.41
3-Nitrotoluene	13.87	13.71	14.01
PETN	14.97	14.81	15.11
1,2-Dinitrobenzene	8.72	8.56	8.86

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B032.D
 Lims ID: CCV INT
 Client ID:
 Sample Type: CCV
 Inject. Date: 10-May-2019 02:40:50 ALS Bottle#: 7 Worklist Smp#: 32
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: CCV INT
 Misc. Info.: 280-0081739-032
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 10-May-2019 08:50:02 Calib Date: 30-Jan-2019 16:34:11
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0316

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.643	6.643	0.000	20679	0.2500	0.2381	
7 RDX	1	7.743	7.736	0.007	25310	0.2500	0.2385	
8 2,4,6-Trinitrophenol	1	8.103	8.090	0.013	19236	0.2500	0.2243	
\$ 9 1,2-Dinitrobenzene	1	8.723	8.710	0.013	32061	0.2500	0.2398	
10 1,3,5-Trinitrobenzene	1	8.883	8.870	0.013	56294	0.2500	0.2479	
11 1,3-Dinitrobenzene	1	9.536	9.523	0.013	73128	0.2503	0.2425	
12 Nitrobenzene	1	9.929	9.910	0.019	47128	0.2505	0.2411	
14 Tetryl	1	10.249	10.230	0.019	40087	0.2500	0.2194	
15 Nitroglycerin	2	10.756	10.736	0.020	167084	2.50	2.47	
16 2,4,6-Trinitrotoluene	1	11.203	11.183	0.020	52846	0.2510	0.2325	
17 4-Amino-2,6-dinitrotoluene	1	11.369	11.343	0.026	38254	0.2508	0.2288	
18 2-Amino-4,6-dinitrotoluene	1	11.649	11.630	0.019	48460	0.2508	0.2378	
19 2,6-Dinitrotoluene	1	11.809	11.790	0.019	36252	0.2508	0.2353	
20 2,4-Dinitrotoluene	1	12.003	11.983	0.020	71590	0.2505	0.2386	
21 o-Nitrotoluene	1	12.843	12.823	0.020	30458	0.2508	0.2243	
22 p-Nitrotoluene	1	13.276	13.256	0.020	26554	0.2510	0.2237	
23 m-Nitrotoluene	1	13.869	13.856	0.013	34376	0.2510	0.2265	
24 PETN	2	14.969	14.963	0.006	170259	2.50	2.23	

Reagents:

8330IntermStk_00057

Amount Added: 25.00

Units: uL

Report Date: 10-May-2019 08:50:03

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B032.D

Injection Date: 10-May-2019 02:40:50

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: CCV INT

Worklist Smp#: 32

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

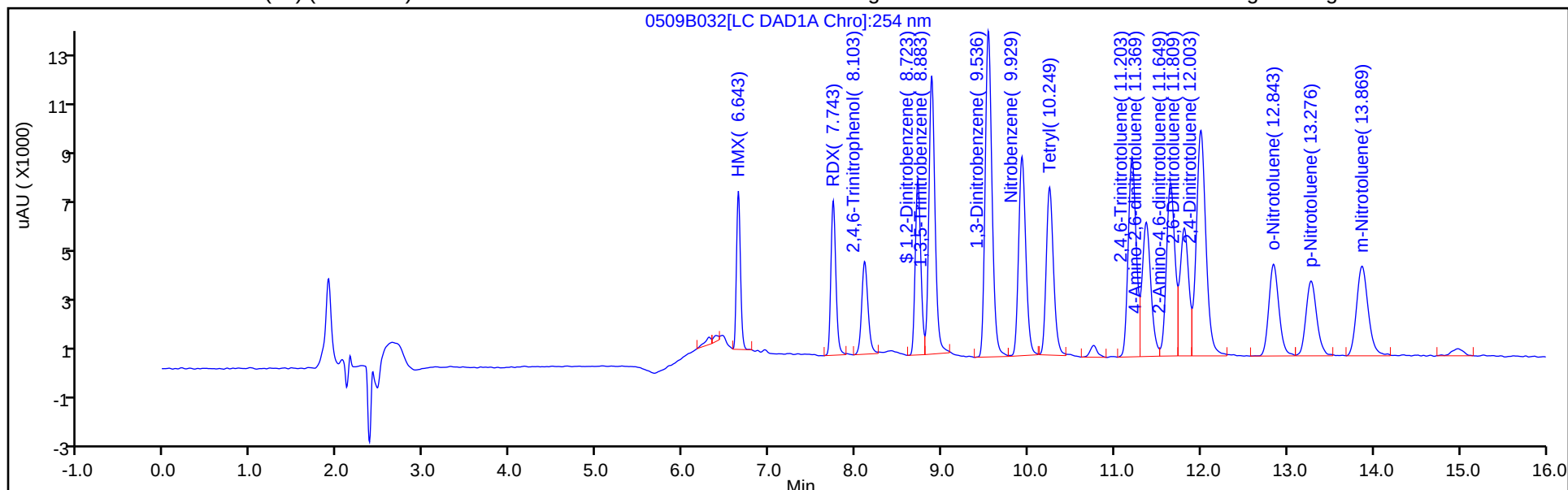
ALS Bottle#: 7

Method: 8330_X3

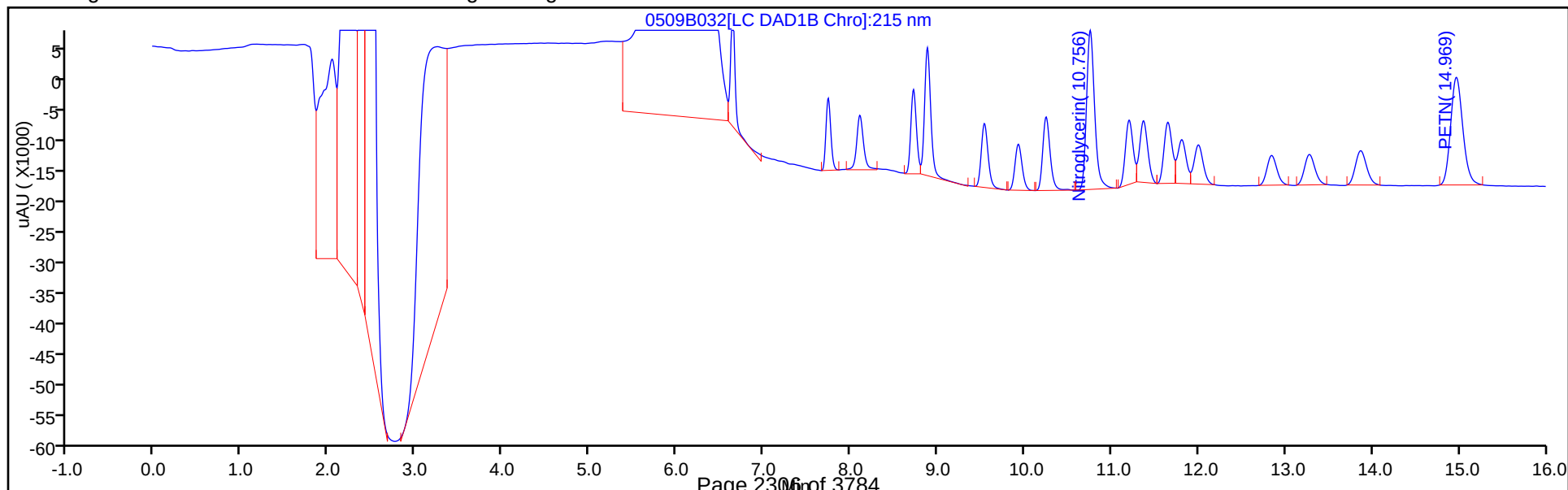
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-457634/45 Calibration Date: 05/10/2019 07:49
 Instrument ID: CHHPLC_X3 Calib Start Date: 01/24/2019 16:36
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 01/24/2019 19:18
 Lab File ID: 0509B045.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Ave	86866	82440		237	250	-5.1	20.0
RDX	Ave	106102	101672		240	250	-4.2	20.0
Picric acid	Ave	85775	75932		221	250	-11.5	20.0
1,3,5-Trinitrobenzene	Ave	227128	231384		255	250	1.9	20.0
1,3-Dinitrobenzene	Ave	301593	294841		245	250	-2.2	20.0
Nitrobenzene	Ave	195505	186914		239	251	-4.4	20.0
Tetryl	Ave	182751	162912		223	250	-10.9	20.0
Nitroglycerin	Ave	67756	66983		2470	2500	-1.1	20.0
2,4,6-Trinitrotoluene	Ave	227323	208717		230	251	-8.2	20.0
4-Amino-2,6-dinitrotoluene	Ave	167186	156056		234	251	-6.7	20.0
2-Amino-4,6-dinitrotoluene	Ave	203815	195948		241	251	-3.9	20.0
2,6-Dinitrotoluene	Ave	154076	144283		235	251	-6.4	20.0
2,4-Dinitrotoluene	Ave	300044	286208		239	251	-4.6	20.0
2-Nitrotoluene	Ave	135810	120790		223	251	-11.1	20.0
4-Nitrotoluene	Ave	118694	104821		222	251	-11.7	20.0
3-Nitrotoluene	Ave	151777	134817		223	251	-11.2	20.0
PETN	Ave	76218	70368		2310	2500	-7.7	20.0
1,2-Dinitrobenzene	Ave	133694	129148		241	250	-3.4	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-457634/45 Calibration Date: 05/10/2019 07:49
 Instrument ID: CHHPLC_X3 Calib Start Date: 01/24/2019 16:36
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 01/24/2019 19:18
 Lab File ID: 0509B045.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.65	6.49	6.79
RDX	7.75	7.59	7.89
Picric acid	8.11	7.94	8.24
1,3,5-Trinitrobenzene	8.89	8.72	9.02
1,3-Dinitrobenzene	9.54	9.37	9.67
Nitrobenzene	9.93	9.76	10.06
Tetryl	10.24	10.08	10.38
Nitroglycerin	10.75	10.59	10.89
2,4,6-Trinitrotoluene	11.19	11.08	11.28
4-Amino-2,6-dinitrotoluene	11.35	11.24	11.44
2-Amino-4,6-dinitrotoluene	11.63	11.53	11.73
2,6-Dinitrotoluene	11.79	11.69	11.89
2,4-Dinitrotoluene	11.99	11.88	12.08
2-Nitrotoluene	12.83	12.67	12.97
4-Nitrotoluene	13.27	13.11	13.41
3-Nitrotoluene	13.85	13.71	14.01
PETN	14.96	14.81	15.11
1,2-Dinitrobenzene	8.73	8.56	8.86

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B045.D
 Lims ID: CCV INT
 Client ID:
 Sample Type: CCV
 Inject. Date: 10-May-2019 07:49:48 ALS Bottle#: 7 Worklist Smp#: 45
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: CCV INT
 Misc. Info.: 280-0081739-045
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 10-May-2019 08:50:17 Calib Date: 30-Jan-2019 16:34:11
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0316

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.646	6.643	0.003	20610	0.2500	0.2373	
7 RDX	1	7.746	7.736	0.010	25418	0.2500	0.2396	
8 2,4,6-Trinitrophenol	1	8.113	8.090	0.023	18983	0.2500	0.2213	
\$ 9 1,2-Dinitrobenzene	1	8.726	8.710	0.016	32287	0.2500	0.2415	
10 1,3,5-Trinitrobenzene	1	8.886	8.870	0.016	57846	0.2500	0.2547	
11 1,3-Dinitrobenzene	1	9.539	9.523	0.016	73784	0.2503	0.2446	
12 Nitrobenzene	1	9.926	9.910	0.016	46822	0.2505	0.2395	
14 Tetryl	1	10.239	10.230	0.009	40728	0.2500	0.2229	
15 Nitroglycerin	2	10.746	10.736	0.010	167458	2.50	2.47	
16 2,4,6-Trinitrotoluene	1	11.192	11.183	0.009	52388	0.2510	0.2305	
17 4-Amino-2,6-dinitrotoluene	1	11.352	11.343	0.009	39131	0.2508	0.2341	
18 2-Amino-4,6-dinitrotoluene	1	11.632	11.630	0.002	49134	0.2508	0.2411	
19 2,6-Dinitrotoluene	1	11.792	11.790	0.002	36179	0.2508	0.2348	
20 2,4-Dinitrotoluene	1	11.986	11.983	0.003	71695	0.2505	0.2389	
21 o-Nitrotoluene	1	12.832	12.823	0.009	30288	0.2508	0.2230	
22 p-Nitrotoluene	1	13.266	13.256	0.010	26310	0.2510	0.2217	
23 m-Nitrotoluene	1	13.852	13.856	-0.004	33839	0.2510	0.2230	
24 PETN	2	14.959	14.963	-0.004	175921	2.50	2.31	

Reagents:

8330IntermStk_00057

Amount Added: 25.00

Units: uL

Report Date: 10-May-2019 08:50:17

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B045.D

Injection Date: 10-May-2019 07:49:48

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: CCV INT

Worklist Smp#: 45

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

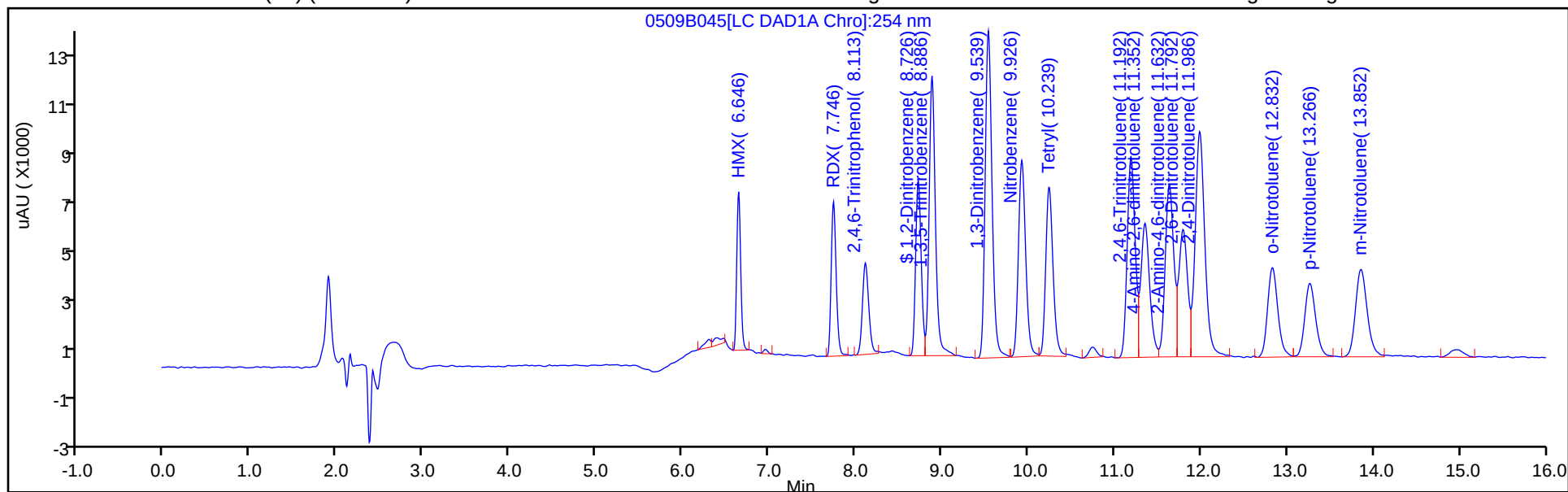
ALS Bottle#: 7

Method: 8330_X3

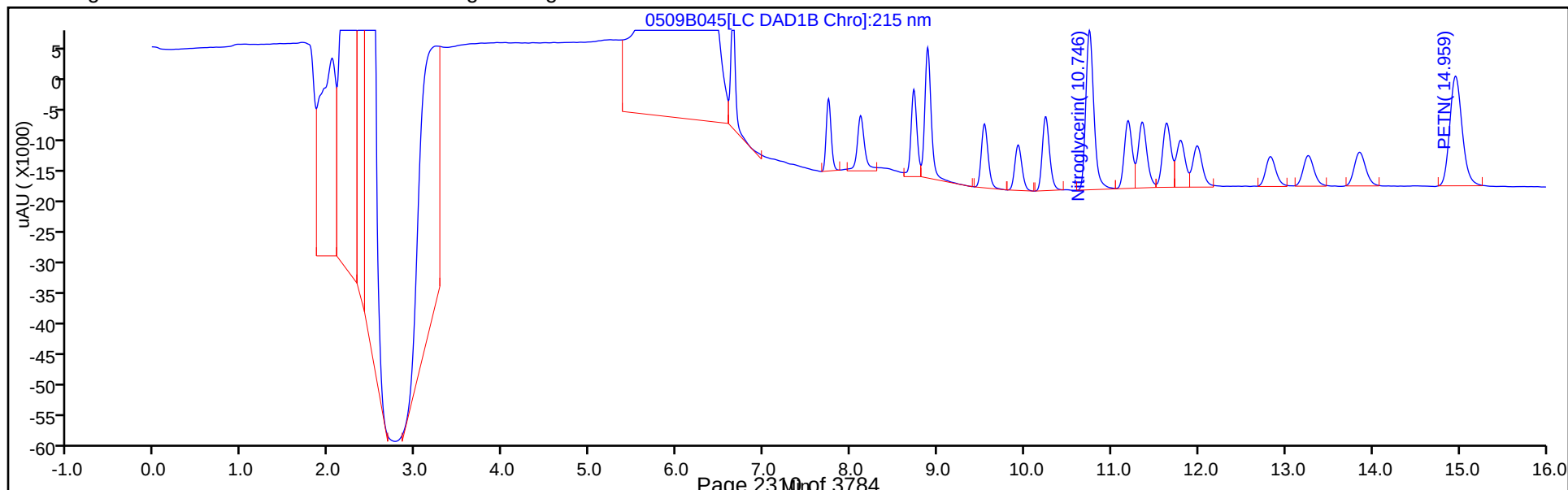
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-457634/58 Calibration Date: 05/10/2019 12:58
 Instrument ID: CHHPLC_X3 Calib Start Date: 01/24/2019 16:36
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 01/24/2019 19:18
 Lab File ID: 0509B058.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Ave	86866	81540		235	250	-6.1	20.0
RDX	Ave	106102	101684		240	250	-4.2	20.0
Picric acid	Ave	85775	76992		224	250	-10.2	20.0
1,3,5-Trinitrobenzene	Ave	227128	229688		253	250	1.1	20.0
1,3-Dinitrobenzene	Ave	301593	292424		243	250	-3.0	20.0
Nitrobenzene	Ave	195505	182455		234	251	-6.7	20.0
Tetryl	Ave	182751	162960		223	250	-10.8	20.0
Nitroglycerin	Ave	67756	66546		2460	2500	-1.8	20.0
2,4,6-Trinitrotoluene	Ave	227323	210036		232	251	-7.6	20.0
4-Amino-2,6-dinitrotoluene	Ave	167186	154752		232	251	-7.4	20.0
2-Amino-4,6-dinitrotoluene	Ave	203815	192016		236	251	-5.8	20.0
2,6-Dinitrotoluene	Ave	154076	148861		242	251	-3.4	20.0
2,4-Dinitrotoluene	Ave	300044	284527		238	251	-5.2	20.0
2-Nitrotoluene	Ave	135810	116526		215	251	-14.2	20.0
4-Nitrotoluene	Ave	118694	102677		217	251	-13.5	20.0
3-Nitrotoluene	Ave	151777	132968		220	251	-12.4	20.0
PETN	Ave	76218	68831		2260	2500	-9.7	20.0
1,2-Dinitrobenzene	Ave	133694	129504		242	250	-3.1	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-457634/58 Calibration Date: 05/10/2019 12:58
 Instrument ID: CHHPLC_X3 Calib Start Date: 01/24/2019 16:36
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 01/24/2019 19:18
 Lab File ID: 0509B058.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.64	6.49	6.79
RDX	7.74	7.59	7.89
Picric acid	8.10	7.94	8.24
1,3,5-Trinitrobenzene	8.88	8.72	9.02
1,3-Dinitrobenzene	9.53	9.37	9.67
Nitrobenzene	9.92	9.76	10.06
Tetryl	10.23	10.08	10.38
Nitroglycerin	10.74	10.59	10.89
2,4,6-Trinitrotoluene	11.19	11.08	11.28
4-Amino-2,6-dinitrotoluene	11.35	11.24	11.44
2-Amino-4,6-dinitrotoluene	11.63	11.53	11.73
2,6-Dinitrotoluene	11.79	11.69	11.89
2,4-Dinitrotoluene	11.99	11.88	12.08
2-Nitrotoluene	12.83	12.67	12.97
4-Nitrotoluene	13.26	13.11	13.41
3-Nitrotoluene	13.85	13.71	14.01
PETN	14.95	14.81	15.11
1,2-Dinitrobenzene	8.72	8.56	8.86

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B058.D
 Lims ID: CCV INT
 Client ID:
 Sample Type: CCV
 Inject. Date: 10-May-2019 12:58:46 ALS Bottle#: 7 Worklist Smp#: 58
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: CCV INT
 Misc. Info.: 280-0081739-058
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 10-May-2019 17:39:52 Calib Date: 30-Jan-2019 16:34:11
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0316

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.635	6.643	-0.008	20385	0.2500	0.2347	
7 RDX	1	7.735	7.736	-0.001	25421	0.2500	0.2396	
8 2,4,6-Trinitrophenol	1	8.101	8.090	0.011	19248	0.2500	0.2244	
\$ 9 1,2-Dinitrobenzene	1	8.715	8.710	0.005	32376	0.2500	0.2422	
10 1,3,5-Trinitrobenzene	1	8.875	8.870	0.005	57422	0.2500	0.2528	
11 1,3-Dinitrobenzene	1	9.528	9.523	0.005	73179	0.2503	0.2426	
12 Nitrobenzene	1	9.921	9.910	0.011	45705	0.2505	0.2338	
14 Tetryl	1	10.234	10.230	0.004	40740	0.2500	0.2229	
15 Nitroglycerin	2	10.741	10.736	0.005	166366	2.50	2.46	
16 2,4,6-Trinitrotoluene	1	11.188	11.183	0.005	52719	0.2510	0.2319	
17 4-Amino-2,6-dinitrotoluene	1	11.354	11.343	0.011	38804	0.2508	0.2321	
18 2-Amino-4,6-dinitrotoluene	1	11.634	11.630	0.004	48148	0.2508	0.2362	
19 2,6-Dinitrotoluene	1	11.794	11.790	0.004	37327	0.2508	0.2423	
20 2,4-Dinitrotoluene	1	11.988	11.983	0.005	71274	0.2505	0.2375	
21 o-Nitrotoluene	1	12.828	12.823	0.005	29219	0.2508	0.2151	
22 p-Nitrotoluene	1	13.261	13.256	0.005	25772	0.2510	0.2171	
23 m-Nitrotoluene	1	13.854	13.856	-0.002	33375	0.2510	0.2199	
24 PETN	2	14.954	14.963	-0.009	172078	2.50	2.26	

Reagents:

8330IntermStk_00057

Amount Added: 25.00

Units: uL

Report Date: 10-May-2019 17:39:53

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B058.D

Injection Date: 10-May-2019 12:58:46

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: CCV INT

Worklist Smp#: 58

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

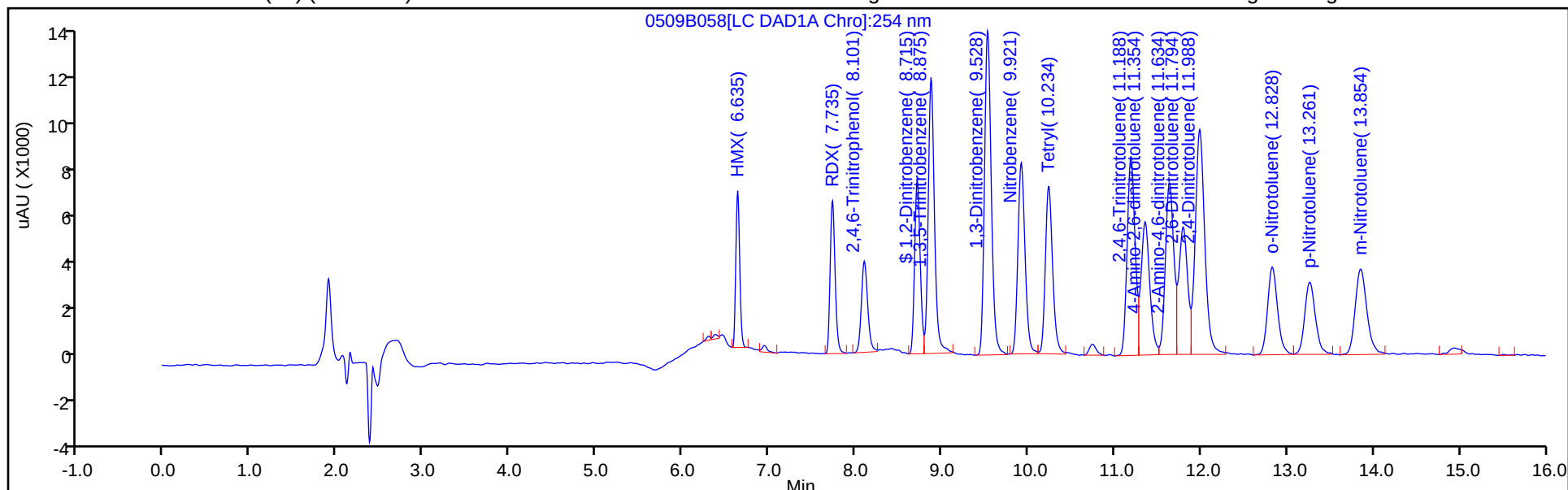
ALS Bottle#: 7

Method: 8330_X3

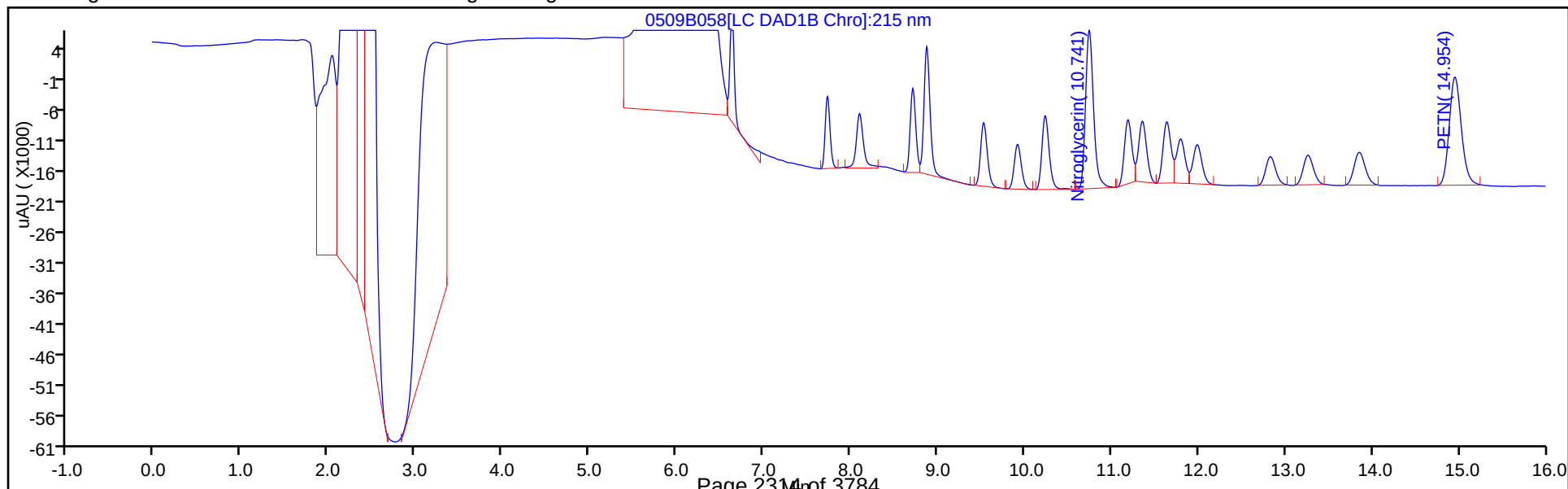
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-458150/15 Calibration Date: 05/14/2019 18:59
 Instrument ID: CHHPLC_X3 Calib Start Date: 05/14/2019 15:49
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 05/14/2019 18:35
 Lab File ID: 0514B015.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Ave	89206	82900		372	400	-7.1	20.0
RDX	Ave	106639	100395		377	400	-5.9	20.0
Picric acid	Ave	83793	85338		407	400	1.8	20.0
1,3,5-Trinitrobenzene	Ave	229276	235903		412	400	2.9	20.0
1,3-Dinitrobenzene	Ave	300824	300148		399	400	-0.2	20.0
Nitrobenzene	Ave	196827	189253		385	400	-3.8	20.0
Tetryl	Ave	167956	169570		404	400	1.0	20.0
Nitroglycerin	Ave	69977	65675		3750	4000	-6.1	20.0
2,4,6-Trinitrotoluene	Ave	223593	202438		362	400	-9.5	20.0
4-Amino-2,6-dinitrotoluene	Ave	162430	150340		370	400	-7.4	20.0
2-Amino-4,6-dinitrotoluene	Ave	197535	194685		394	400	-1.4	20.0
2,6-Dinitrotoluene	Ave	156597	144423		369	400	-7.8	20.0
2,4-Dinitrotoluene	Ave	297422	286083		385	400	-3.8	20.0
2-Nitrotoluene	Ave	131349	117393		357	400	-10.6	20.0
4-Nitrotoluene	Ave	112716	102238		363	400	-9.3	20.0
3-Nitrotoluene	Ave	148306	132263		357	400	-10.8	20.0
PETN	Ave	73191	73321		4010	4000	0.2	20.0
1,2-Dinitrobenzene	Ave	130111	125963		387	400	-3.2	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICV 280-458150/15 Calibration Date: 05/14/2019 18:59
 Instrument ID: CHHPLC_X3 Calib Start Date: 05/14/2019 15:49
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 05/14/2019 18:35
 Lab File ID: 0514B015.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.65	6.50	6.80
RDX	7.76	7.61	7.91
Picric acid	8.13	7.98	8.28
1,3,5-Trinitrobenzene	8.90	8.75	9.05
1,3-Dinitrobenzene	9.56	9.41	9.71
Nitrobenzene	9.95	9.80	10.10
Tetryl	10.28	10.13	10.43
Nitroglycerin	10.78	10.63	10.93
2,4,6-Trinitrotoluene	11.24	11.14	11.34
4-Amino-2,6-dinitrotoluene	11.43	11.33	11.53
2-Amino-4,6-dinitrotoluene	11.72	11.62	11.82
2,6-Dinitrotoluene	11.85	11.75	11.95
2,4-Dinitrotoluene	12.05	11.95	12.15
2-Nitrotoluene	12.89	12.74	13.04
4-Nitrotoluene	13.33	13.18	13.48
3-Nitrotoluene	13.93	13.78	14.08
PETN	15.02	14.87	15.17
1,2-Dinitrobenzene	8.74	8.59	8.89

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B015.D
 Lims ID: ICV MAIN
 Client ID:
 Sample Type: ICV
 Inject. Date: 14-May-2019 18:59:15 ALS Bottle#: 15 Worklist Smp#: 15
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: ICV MAIN
 Misc. Info.: 280-0081869-015
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist:
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 15-May-2019 10:58:12 Calib Date: 14-May-2019 18:35:34
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B014.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0331

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.650	6.650	0.000	33160	0.4000	0.3717	
7 RDX	1	7.764	7.764	0.000	40158	0.4000	0.3766	
8 2,4,6-Trinitrophenol	1	8.130	8.130	0.000	34135	0.4000	0.4074	
\$ 9 1,2-Dinitrobenzene	1	8.744	8.744	0.000	50385	0.4000	0.3872	
10 1,3,5-Trinitrobenzene	1	8.904	8.904	0.000	94361	0.4000	0.4116	
11 1,3-Dinitrobenzene	1	9.564	9.564	0.000	120059	0.4000	0.3991	
12 Nitrobenzene	1	9.950	9.950	0.000	75701	0.4000	0.3846	
14 Tetryl	1	10.284	10.284	0.000	67828	0.4000	0.4038	
15 Nitroglycerin	2	10.784	10.784	0.000	262700	4.00	3.75	
16 2,4,6-Trinitrotoluene	1	11.237	11.237	0.000	80975	0.4000	0.3622	
17 4-Amino-2,6-dinitrotoluene	1	11.430	11.430	0.000	60136	0.4000	0.3702	
18 2-Amino-4,6-dinitrotoluene	1	11.717	11.717	0.000	77874	0.4000	0.3942	
19 2,6-Dinitrotoluene	1	11.850	11.850	0.000	57769	0.4000	0.3689	
20 2,4-Dinitrotoluene	1	12.050	12.050	0.000	114433	0.4000	0.3847	
21 o-Nitrotoluene	1	12.890	12.890	0.000	46957	0.4000	0.3575	
22 p-Nitrotoluene	1	13.330	13.330	0.000	40895	0.4000	0.3628	
23 m-Nitrotoluene	1	13.930	13.930	0.000	52905	0.4000	0.3567	
24 PETN	2	15.024	15.024	0.000	293284	4.00	4.01	

Reagents:

8330Surrogate_00103

Amount Added: 40.00

Units: uL

8330 LCS_00089

Amount Added: 40.00

Units: uL

Report Date: 15-May-2019 10:58:12

Chrom Revision: 2.3 03-May-2019 15:52:00

Euofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B015.D

Injection Date: 14-May-2019 18:59:15

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: ICV MAIN

Worklist Smp#: 15

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

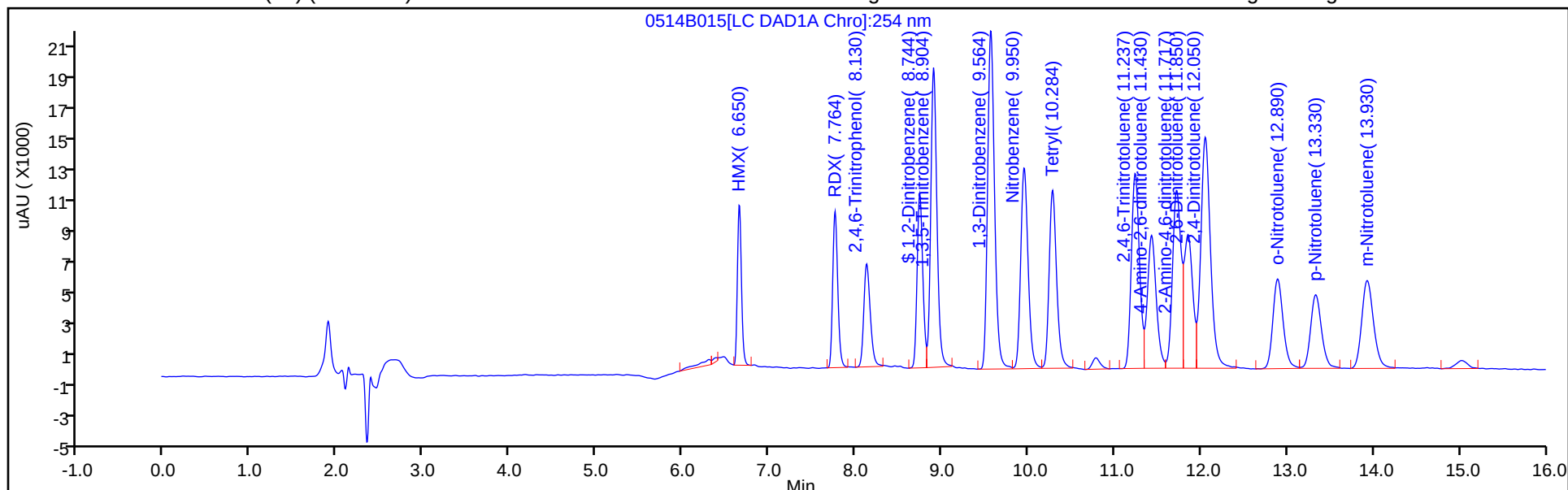
ALS Bottle#: 15

Method: 8330_X3

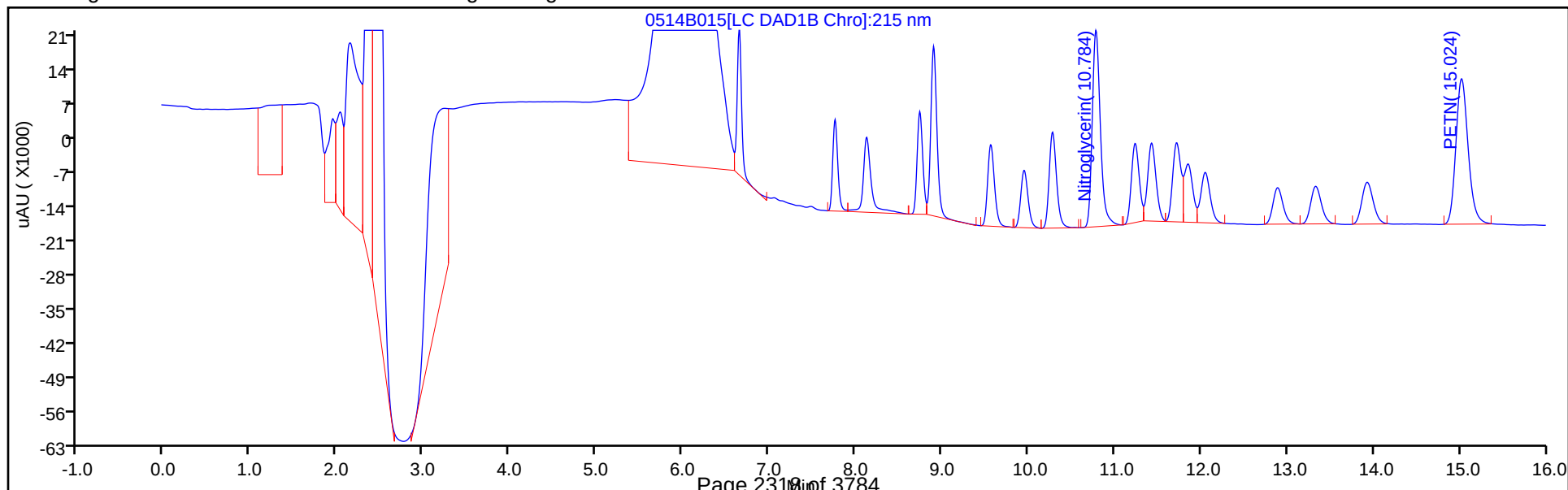
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458152/53 Calibration Date: 05/15/2019 10:01
 Instrument ID: CHHPLC_X3 Calib Start Date: 05/14/2019 15:49
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 05/14/2019 18:35
 Lab File ID: 0514B053.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Ave	89206	90492		254	250	1.4	20.0
RDX	Ave	106639	108516		254	250	1.8	20.0
Picric acid	Ave	83793	83548		249	250	-0.3	20.0
1,3,5-Trinitrobenzene	Ave	229276	244116		266	250	6.5	20.0
1,3-Dinitrobenzene	Ave	300824	312080		260	250	3.7	20.0
Nitrobenzene	Ave	196827	197940		252	251	0.6	20.0
Tetryl	Ave	167956	170648		254	250	1.6	20.0
Nitroglycerin	Ave	69977	73013		2610	2500	4.3	20.0
2,4,6-Trinitrotoluene	Ave	223593	224219		252	251	0.3	20.0
4-Amino-2,6-dinitrotoluene	Ave	162430	162453		251	251	0.0	20.0
2-Amino-4,6-dinitrotoluene	Ave	197535	200116		254	251	1.3	20.0
2,6-Dinitrotoluene	Ave	156597	158967		255	251	1.5	20.0
2,4-Dinitrotoluene	Ave	297422	305038		257	251	2.6	20.0
2-Nitrotoluene	Ave	131349	126548		242	251	-3.7	20.0
4-Nitrotoluene	Ave	112716	112390		250	251	-0.3	20.0
3-Nitrotoluene	Ave	148306	143574		243	251	-3.2	20.0
PETN	Ave	73191	73116		2500	2500	-0.1	20.0
1,2-Dinitrobenzene	Ave	130111	137492		264	250	5.7	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458152/53 Calibration Date: 05/15/2019 10:01
 Instrument ID: CHHPLC_X3 Calib Start Date: 05/14/2019 15:49
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 05/14/2019 18:35
 Lab File ID: 0514B053.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.66	6.50	6.80
RDX	7.76	7.61	7.91
Picric acid	8.14	7.98	8.28
1,3,5-Trinitrobenzene	8.90	8.75	9.05
1,3-Dinitrobenzene	9.57	9.41	9.71
Nitrobenzene	9.96	9.80	10.10
Tetryl	10.28	10.13	10.43
Nitroglycerin	10.78	10.63	10.93
2,4,6-Trinitrotoluene	11.24	11.14	11.34
4-Amino-2,6-dinitrotoluene	11.43	11.33	11.53
2-Amino-4,6-dinitrotoluene	11.72	11.62	11.82
2,6-Dinitrotoluene	11.85	11.75	11.95
2,4-Dinitrotoluene	12.06	11.95	12.15
2-Nitrotoluene	12.90	12.74	13.04
4-Nitrotoluene	13.34	13.18	13.48
3-Nitrotoluene	13.93	13.78	14.08
PETN	15.02	14.87	15.17
1,2-Dinitrobenzene	8.74	8.59	8.89

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B053.D
 Lims ID: CCV INT
 Client ID:
 Sample Type: CCV
 Inject. Date: 15-May-2019 10:01:17 ALS Bottle#: 11 Worklist Smp#: 53
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: CCV INT
 Misc. Info.: 280-0081869-053
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 15-May-2019 10:58:53 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0331

First Level Reviewer: fiedlerh

Date: 15-May-2019 10:54:26

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.656	6.650	0.006	22623	0.2500	0.2536	
7 RDX	1	7.762	7.764	-0.002	27129	0.2500	0.2544	
8 2,4,6-Trinitrophenol	1	8.142	8.130	0.012	20887	0.2500	0.2493	
\$ 9 1,2-Dinitrobenzene	1	8.742	8.744	-0.002	34373	0.2500	0.2642	
10 1,3,5-Trinitrobenzene	1	8.902	8.904	-0.002	61029	0.2500	0.2662	
11 1,3-Dinitrobenzene	1	9.569	9.564	0.005	78098	0.2503	0.2596	
12 Nitrobenzene	1	9.955	9.950	0.005	49584	0.2505	0.2519	
14 Tetryl	1	10.282	10.284	-0.002	42662	0.2500	0.2540	
15 Nitroglycerin	2	10.782	10.784	-0.002	182532	2.50	2.61	
16 2,4,6-Trinitrotoluene	1	11.235	11.237	-0.002	56279	0.2510	0.2517	
17 4-Amino-2,6-dinitrotoluene	1	11.429	11.430	-0.001	40735	0.2508	0.2508	
18 2-Amino-4,6-dinitrotoluene	1	11.722	11.717	0.005	50179	0.2508	0.2540	
19 2,6-Dinitrotoluene	1	11.849	11.850	-0.001	39861	0.2508	0.2545	
20 2,4-Dinitrotoluene	1	12.055	12.050	0.005	76412	0.2505	0.2569	
21 o-Nitrotoluene	1	12.895	12.890	0.005	31732	0.2508	0.2416	
22 p-Nitrotoluene	1	13.335	13.330	0.005	28210	0.2510	0.2503	
23 m-Nitrotoluene	1	13.929	13.930	-0.001	36037	0.2510	0.2430	
24 PETN	2	15.022	15.024	-0.002	182791	2.50	2.50	

Reagents:

8330IntermStk_00058

Amount Added: 12.50

Units: uL

Report Date: 15-May-2019 10:58:54

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B053.D

Injection Date: 15-May-2019 10:01:17

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: CCV INT

Worklist Smp#: 53

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

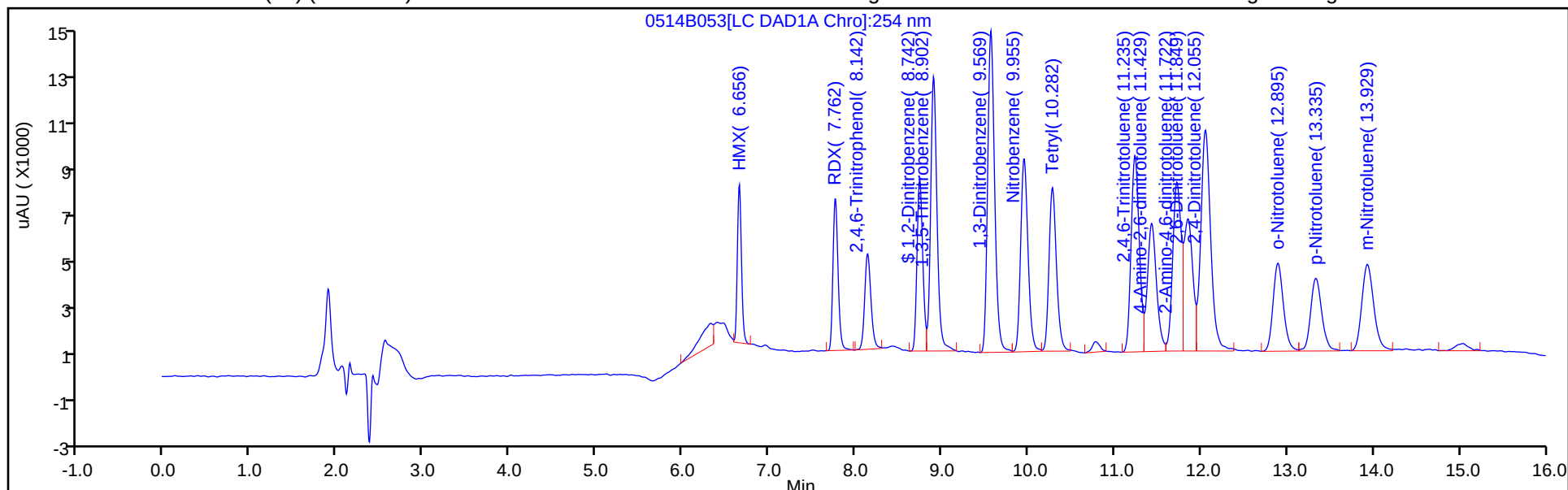
ALS Bottle#: 11

Method: 8330_X3

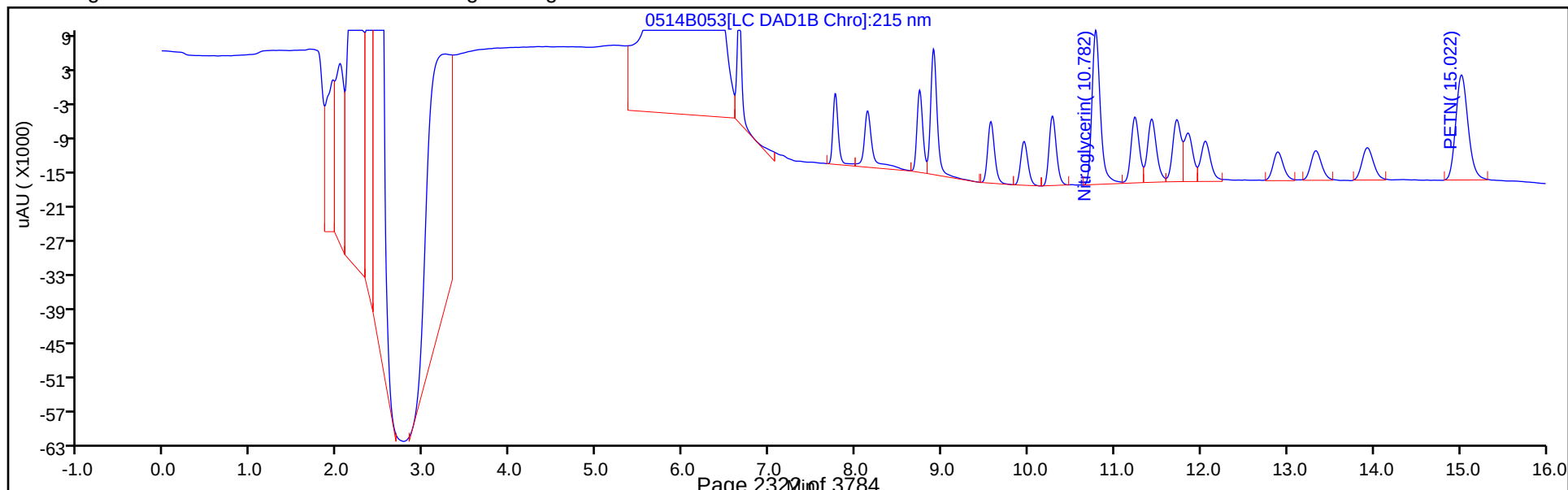
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458152/66 Calibration Date: 05/15/2019 15:10
 Instrument ID: CHHPLC_X3 Calib Start Date: 05/14/2019 15:49
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 05/14/2019 18:35
 Lab File ID: 0514B066.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Ave	89206	92968		261	250	4.2	20.0
RDX	Ave	106639	107856		253	250	1.1	20.0
Picric acid	Ave	83793	83368		249	250	-0.5	20.0
1,3,5-Trinitrobenzene	Ave	229276	237740		259	250	3.7	20.0
1,3-Dinitrobenzene	Ave	300824	313634		261	250	4.3	20.0
Nitrobenzene	Ave	196827	195756		249	251	-0.5	20.0
Tetryl	Ave	167956	171744		256	250	2.3	20.0
Nitroglycerin	Ave	69977	72154		2580	2500	3.1	20.0
2,4,6-Trinitrotoluene	Ave	223593	224785		252	251	0.5	20.0
4-Amino-2,6-dinitrotoluene	Ave	162430	164702		254	251	1.4	20.0
2-Amino-4,6-dinitrotoluene	Ave	197535	201200		255	251	1.9	20.0
2,6-Dinitrotoluene	Ave	156597	159641		256	251	1.9	20.0
2,4-Dinitrotoluene	Ave	297422	306483		258	251	3.0	20.0
2-Nitrotoluene	Ave	131349	124506		238	251	-5.2	20.0
4-Nitrotoluene	Ave	112716	108462		242	251	-3.8	20.0
3-Nitrotoluene	Ave	148306	139096		235	251	-6.2	20.0
PETN	Ave	73191	73868		2520	2500	0.9	20.0
1,2-Dinitrobenzene	Ave	130111	138544		266	250	6.5	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458152/66 Calibration Date: 05/15/2019 15:10
 Instrument ID: CHHPLC_X3 Calib Start Date: 05/14/2019 15:49
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 05/14/2019 18:35
 Lab File ID: 0514B066.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.65	6.50	6.80
RDX	7.76	7.61	7.91
Picric acid	8.14	7.98	8.28
1,3,5-Trinitrobenzene	8.90	8.75	9.05
1,3-Dinitrobenzene	9.57	9.41	9.71
Nitrobenzene	9.96	9.80	10.10
Tetryl	10.28	10.13	10.43
Nitroglycerin	10.78	10.63	10.93
2,4,6-Trinitrotoluene	11.24	11.14	11.34
4-Amino-2,6-dinitrotoluene	11.43	11.33	11.53
2-Amino-4,6-dinitrotoluene	11.72	11.62	11.82
2,6-Dinitrotoluene	11.85	11.75	11.95
2,4-Dinitrotoluene	12.05	11.95	12.15
2-Nitrotoluene	12.89	12.74	13.04
4-Nitrotoluene	13.33	13.18	13.48
3-Nitrotoluene	13.93	13.78	14.08
PETN	15.02	14.87	15.17
1,2-Dinitrobenzene	8.74	8.59	8.89

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B066.D
 Lims ID: CCV INT
 Client ID:
 Sample Type: CCV
 Inject. Date: 15-May-2019 15:10:20 ALS Bottle#: 11 Worklist Smp#: 66
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: CCV INT
 Misc. Info.: 280-0081869-066
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 16-May-2019 08:23:25 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 16-May-2019 08:14:23

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.648	6.650	-0.002	23242	0.2500	0.2605	
7 RDX	1	7.761	7.764	-0.003	26964	0.2500	0.2529	
8 2,4,6-Trinitrophenol	1	8.141	8.130	0.011	20842	0.2500	0.2487	
\$ 9 1,2-Dinitrobenzene	1	8.741	8.744	-0.003	34636	0.2500	0.2662	
10 1,3,5-Trinitrobenzene	1	8.901	8.904	-0.003	59435	0.2500	0.2592	
11 1,3-Dinitrobenzene	1	9.568	9.564	0.004	78487	0.2503	0.2609	
12 Nitrobenzene	1	9.955	9.950	0.005	49037	0.2505	0.2491	
14 Tetryl	1	10.281	10.284	-0.003	42936	0.2500	0.2556	
15 Nitroglycerin	2	10.781	10.784	-0.003	180385	2.50	2.58	
16 2,4,6-Trinitrotoluene	1	11.235	11.237	-0.002	56421	0.2510	0.2523	
17 4-Amino-2,6-dinitrotoluene	1	11.428	11.430	-0.002	41299	0.2508	0.2543	
18 2-Amino-4,6-dinitrotoluene	1	11.721	11.717	0.004	50451	0.2508	0.2554	
19 2,6-Dinitrotoluene	1	11.848	11.850	-0.002	40030	0.2508	0.2556	
20 2,4-Dinitrotoluene	1	12.048	12.050	-0.002	76774	0.2505	0.2581	
21 o-Nitrotoluene	1	12.888	12.890	-0.002	31220	0.2508	0.2377	
22 p-Nitrotoluene	1	13.328	13.330	-0.002	27224	0.2510	0.2415	
23 m-Nitrotoluene	1	13.928	13.930	-0.002	34913	0.2510	0.2354	
24 PETN	2	15.021	15.024	-0.003	184671	2.50	2.52	

Reagents:

8330IntermStk_00058

Amount Added: 12.50

Units: uL

Report Date: 16-May-2019 08:23:25

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B066.D

Injection Date: 15-May-2019 15:10:20

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: CCV INT

Worklist Smp#: 66

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

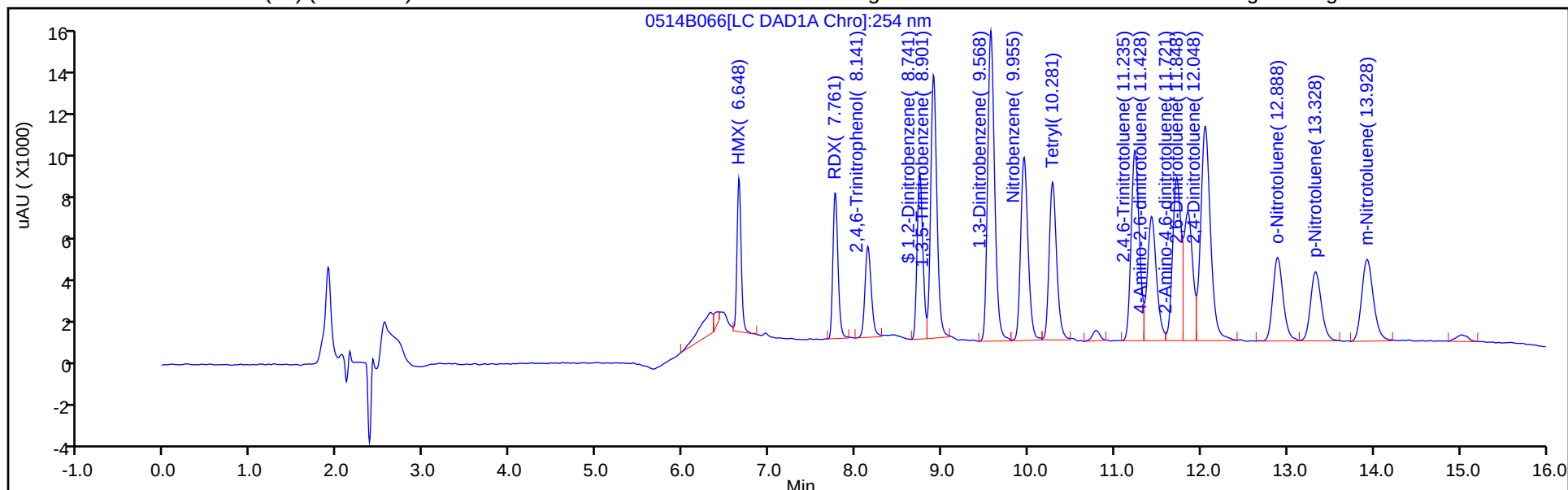
ALS Bottle#: 11

Method: 8330_X3

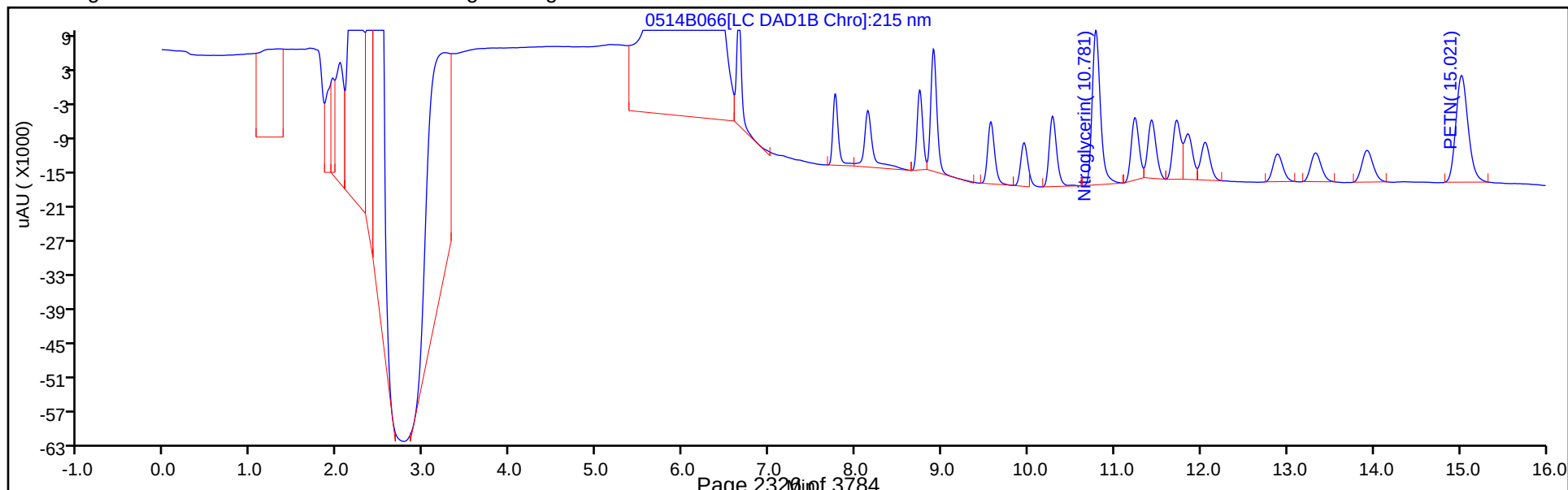
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458152/79 Calibration Date: 05/15/2019 20:19
 Instrument ID: CHHPLC_X3 Calib Start Date: 05/14/2019 15:49
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 05/14/2019 18:35
 Lab File ID: 0514B079.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Ave	89206	89732		251	250	0.6	20.0
RDX	Ave	106639	109504		257	250	2.7	20.0
Picric acid	Ave	83793	84360		252	250	0.7	20.0
1,3,5-Trinitrobenzene	Ave	229276	242240		264	250	5.7	20.0
1,3-Dinitrobenzene	Ave	300824	311369		259	250	3.5	20.0
Nitrobenzene	Ave	196827	190343		242	251	-3.3	20.0
Tetryl	Ave	167956	174744		260	250	4.0	20.0
Nitroglycerin	Ave	69977	72936		2610	2500	4.2	20.0
2,4,6-Trinitrotoluene	Ave	223593	226470		254	251	1.3	20.0
4-Amino-2,6-dinitrotoluene	Ave	162430	164722		254	251	1.4	20.0
2-Amino-4,6-dinitrotoluene	Ave	197535	203585		258	251	3.1	20.0
2,6-Dinitrotoluene	Ave	156597	154788		248	251	-1.2	20.0
2,4-Dinitrotoluene	Ave	297422	308930		260	251	3.9	20.0
2-Nitrotoluene	Ave	131349	132447		253	251	0.8	20.0
4-Nitrotoluene	Ave	112716	117713		262	251	4.4	20.0
3-Nitrotoluene	Ave	148306	150271		254	251	1.3	20.0
PETN	Ave	73191	74799		2550	2500	2.2	20.0
1,2-Dinitrobenzene	Ave	130111	138596		266	250	6.5	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458152/79 Calibration Date: 05/15/2019 20:19
 Instrument ID: CHHPLC_X3 Calib Start Date: 05/14/2019 15:49
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 05/14/2019 18:35
 Lab File ID: 0514B079.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.66	6.50	6.80
RDX	7.77	7.61	7.91
Picric acid	8.16	7.98	8.28
1,3,5-Trinitrobenzene	8.91	8.75	9.05
1,3-Dinitrobenzene	9.58	9.41	9.71
Nitrobenzene	9.96	9.80	10.10
Tetryl	10.29	10.13	10.43
Nitroglycerin	10.80	10.63	10.93
2,4,6-Trinitrotoluene	11.25	11.14	11.34
4-Amino-2,6-dinitrotoluene	11.44	11.33	11.53
2-Amino-4,6-dinitrotoluene	11.72	11.62	11.82
2,6-Dinitrotoluene	11.86	11.75	11.95
2,4-Dinitrotoluene	12.06	11.95	12.15
2-Nitrotoluene	12.91	12.74	13.04
4-Nitrotoluene	13.35	13.18	13.48
3-Nitrotoluene	13.94	13.78	14.08
PETN	15.06	14.87	15.17
1,2-Dinitrobenzene	8.75	8.59	8.89

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B079.D
 Lims ID: CCV INT
 Client ID:
 Sample Type: CCV
 Inject. Date: 15-May-2019 20:19:48 ALS Bottle#: 11 Worklist Smp#: 79
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: CCV INT
 Misc. Info.: 280-0081869-079
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 16-May-2019 08:23:38 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 16-May-2019 08:20:04

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.655	6.650	0.005	22433	0.2500	0.2515	
7 RDX	1	7.769	7.764	0.005	27376	0.2500	0.2567	
8 2,4,6-Trinitrophenol	1	8.155	8.130	0.025	21090	0.2500	0.2517	
\$ 9 1,2-Dinitrobenzene	1	8.749	8.744	0.005	34649	0.2500	0.2663	
10 1,3,5-Trinitrobenzene	1	8.909	8.904	0.005	60560	0.2500	0.2641	
11 1,3-Dinitrobenzene	1	9.575	9.564	0.011	77920	0.2503	0.2590	
12 Nitrobenzene	1	9.962	9.950	0.012	47681	0.2505	0.2422	
14 Tetryl	1	10.289	10.284	0.005	43686	0.2500	0.2601	
15 Nitroglycerin	2	10.795	10.784	0.011	182339	2.50	2.61	
16 2,4,6-Trinitrotoluene	1	11.249	11.237	0.012	56844	0.2510	0.2542	
17 4-Amino-2,6-dinitrotoluene	1	11.435	11.430	0.005	41304	0.2508	0.2543	
18 2-Amino-4,6-dinitrotoluene	1	11.722	11.717	0.005	51049	0.2508	0.2584	
19 2,6-Dinitrotoluene	1	11.862	11.850	0.012	38813	0.2508	0.2479	
20 2,4-Dinitrotoluene	1	12.062	12.050	0.012	77387	0.2505	0.2602	
21 o-Nitrotoluene	1	12.909	12.890	0.019	33211	0.2508	0.2528	
22 p-Nitrotoluene	1	13.349	13.330	0.019	29546	0.2510	0.2621	
23 m-Nitrotoluene	1	13.942	13.930	0.012	37718	0.2510	0.2543	
24 PETN	2	15.055	15.024	0.031	186997	2.50	2.55	

Reagents:

8330IntermStk_00058

Amount Added: 12.50

Units: uL

Report Date: 16-May-2019 08:23:39

Chrom Revision: 2.3 03-May-2019 15:52:00

Euofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B079.D

Injection Date: 15-May-2019 20:19:48

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: CCV INT

Worklist Smp#: 79

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

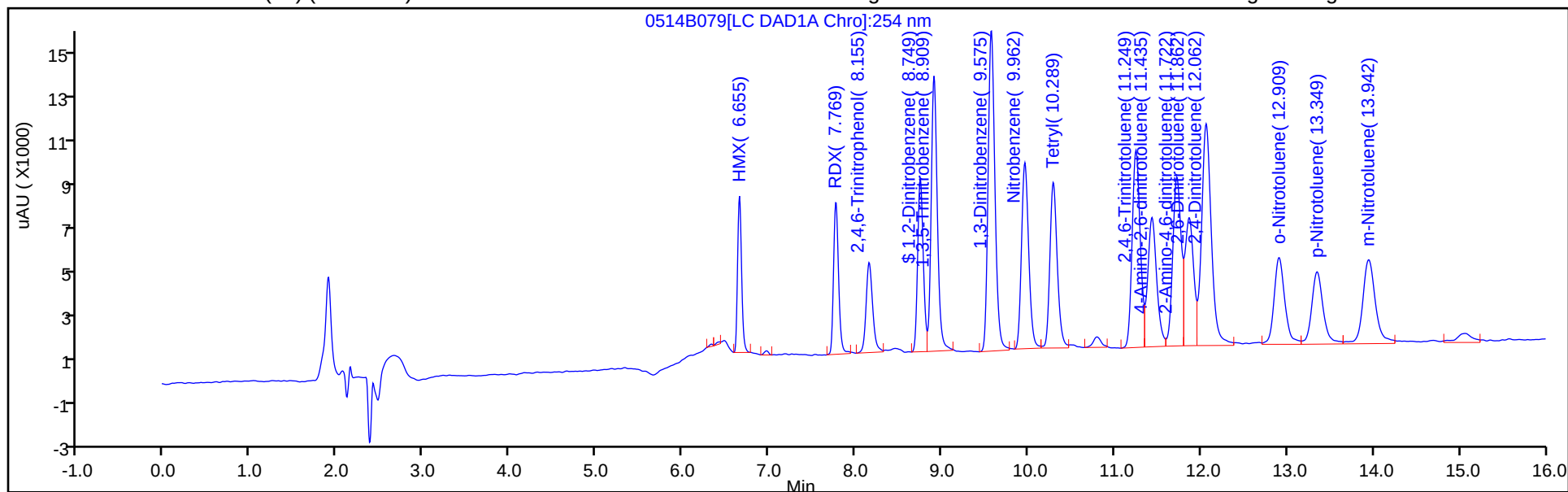
ALS Bottle#: 11

Method: 8330_X3

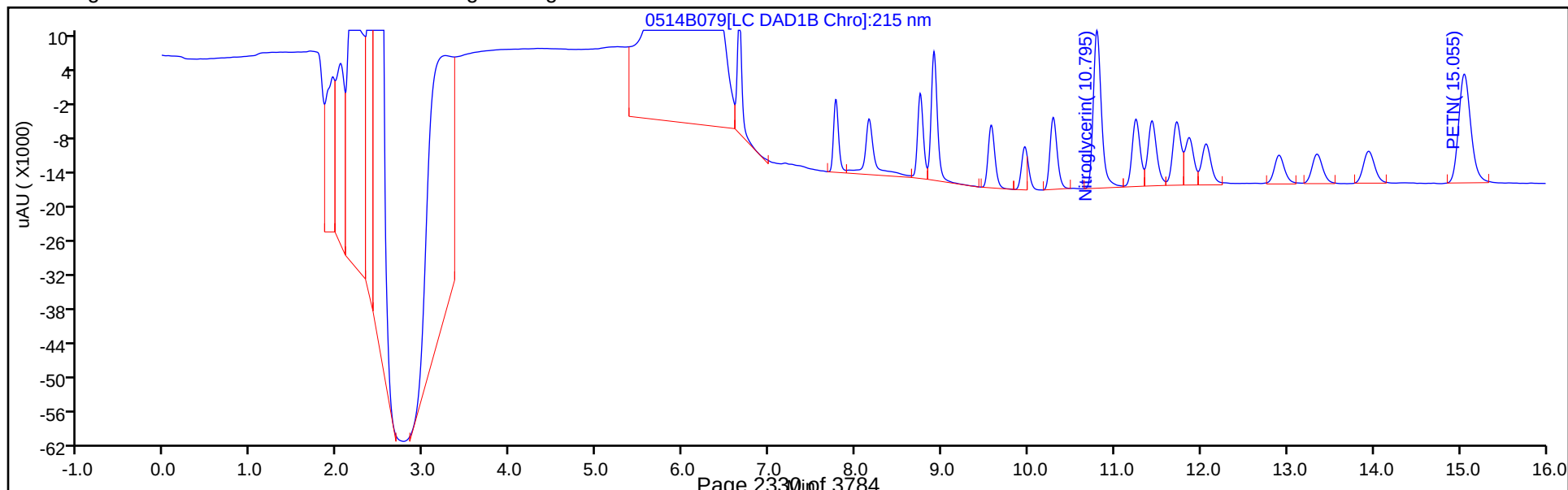
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458152/89 Calibration Date: 05/16/2019 00:17
 Instrument ID: CHHPLC_X3 Calib Start Date: 05/14/2019 15:49
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 05/14/2019 18:35
 Lab File ID: 0514B089.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Ave	89206	88920		249	250	-0.3	20.0
RDX	Ave	106639	108200		254	250	1.5	20.0
Picric acid	Ave	83793	89472		267	250	6.8	20.0
1,3,5-Trinitrobenzene	Ave	229276	244464		267	250	6.6	20.0
1,3-Dinitrobenzene	Ave	300824	317203		264	250	5.4	20.0
Nitrobenzene	Ave	196827	190168		242	251	-3.4	20.0
Tetryl	Ave	167956	174316		259	250	3.8	20.0
Nitroglycerin	Ave	69977	73010		2610	2500	4.3	20.0
2,4,6-Trinitrotoluene	Ave	223593	227785		256	251	1.9	20.0
4-Amino-2,6-dinitrotoluene	Ave	162430	161372		249	251	-0.7	20.0
2-Amino-4,6-dinitrotoluene	Ave	197535	200714		255	251	1.6	20.0
2,6-Dinitrotoluene	Ave	156597	163785		262	251	4.6	20.0
2,4-Dinitrotoluene	Ave	297422	319808		269	251	7.5	20.0
2-Nitrotoluene	Ave	131349	136502		261	251	3.9	20.0
4-Nitrotoluene	Ave	112716	118028		263	251	4.7	20.0
3-Nitrotoluene	Ave	148306	146239		248	251	-1.4	20.0
PETN	Ave	73191	74028		2530	2500	1.1	20.0
1,2-Dinitrobenzene	Ave	130111	139912		269	250	7.5	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458152/89 Calibration Date: 05/16/2019 00:17
 Instrument ID: CHHPLC_X3 Calib Start Date: 05/14/2019 15:49
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 05/14/2019 18:35
 Lab File ID: 0514B089.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.65	6.50	6.80
RDX	7.77	7.61	7.91
Picric acid	8.17	7.98	8.28
1,3,5-Trinitrobenzene	8.92	8.75	9.05
1,3-Dinitrobenzene	9.58	9.41	9.71
Nitrobenzene	9.97	9.80	10.10
Tetryl	10.31	10.13	10.43
Nitroglycerin	10.81	10.63	10.93
2,4,6-Trinitrotoluene	11.27	11.14	11.34
4-Amino-2,6-dinitrotoluene	11.45	11.33	11.53
2-Amino-4,6-dinitrotoluene	11.75	11.62	11.82
2,6-Dinitrotoluene	11.89	11.75	11.95
2,4-Dinitrotoluene	12.08	11.95	12.15
2-Nitrotoluene	12.93	12.74	13.04
4-Nitrotoluene	13.37	13.18	13.48
3-Nitrotoluene	13.97	13.78	14.08
PETN	15.08	14.87	15.17
1,2-Dinitrobenzene	8.76	8.59	8.89

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B089.D
 Lims ID: CCV INT
 Client ID:
 Sample Type: CCV
 Inject. Date: 16-May-2019 00:17:11 ALS Bottle#: 11 Worklist Smp#: 89
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: CCV INT
 Misc. Info.: 280-0081869-089
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 16-May-2019 08:23:47 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 16-May-2019 08:22:54

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.652	6.650	0.002	22230	0.2500	0.2492	
7 RDX	1	7.772	7.764	0.008	27050	0.2500	0.2537	
8 2,4,6-Trinitrophenol	1	8.165	8.130	0.035	22368	0.2500	0.2669	
\$ 9 1,2-Dinitrobenzene	1	8.759	8.744	0.015	34978	0.2500	0.2688	
10 1,3,5-Trinitrobenzene	1	8.919	8.904	0.015	61116	0.2500	0.2666	
11 1,3-Dinitrobenzene	1	9.578	9.564	0.014	79380	0.2503	0.2639	
12 Nitrobenzene	1	9.972	9.950	0.022	47637	0.2505	0.2420	
14 Tetryl	1	10.305	10.284	0.021	43579	0.2500	0.2595	
15 Nitroglycerin	2	10.812	10.784	0.028	182524	2.50	2.61	
16 2,4,6-Trinitrotoluene	1	11.265	11.237	0.028	57174	0.2510	0.2557	
17 4-Amino-2,6-dinitrotoluene	1	11.452	11.430	0.022	40464	0.2508	0.2491	
18 2-Amino-4,6-dinitrotoluene	1	11.745	11.717	0.028	50329	0.2508	0.2548	
19 2,6-Dinitrotoluene	1	11.885	11.850	0.035	41069	0.2508	0.2623	
20 2,4-Dinitrotoluene	1	12.078	12.050	0.028	80112	0.2505	0.2694	
21 o-Nitrotoluene	1	12.925	12.890	0.035	34228	0.2508	0.2606	
22 p-Nitrotoluene	1	13.365	13.330	0.035	29625	0.2510	0.2628	
23 m-Nitrotoluene	1	13.972	13.930	0.042	36706	0.2510	0.2475	
24 PETN	2	15.078	15.024	0.054	185071	2.50	2.53	

Reagents:

8330IntermStk_00058

Amount Added: 12.50

Units: uL

Report Date: 16-May-2019 08:23:48

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B089.D

Injection Date: 16-May-2019 00:17:11

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: CCV INT

Worklist Smp#: 89

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

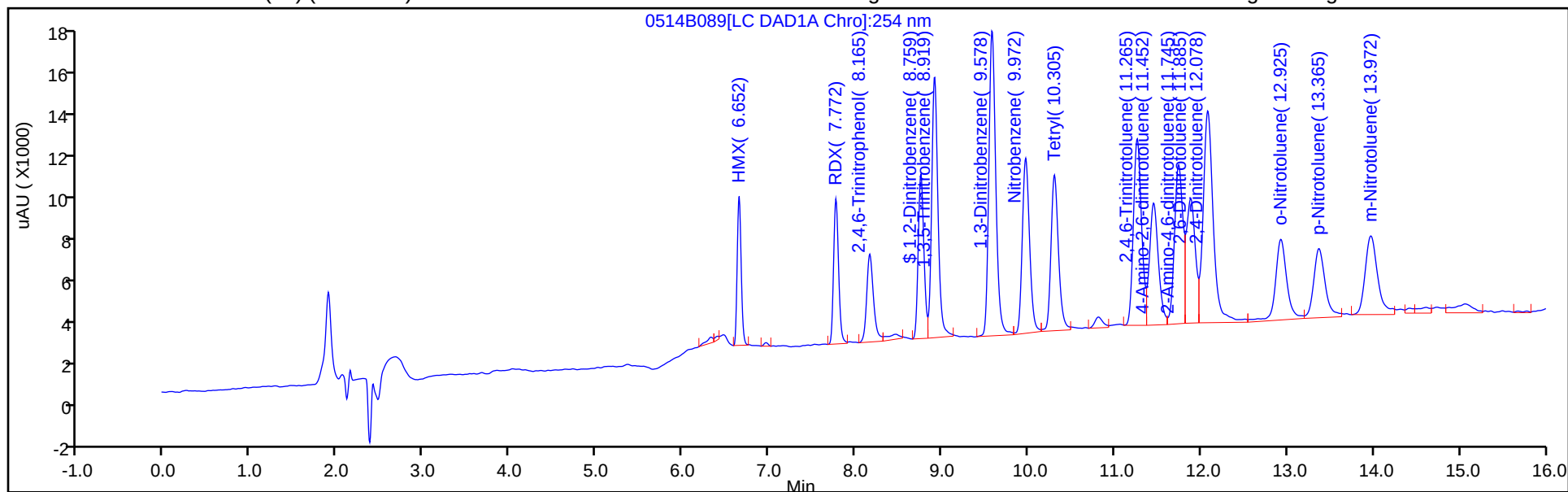
ALS Bottle#: 11

Method: 8330_X3

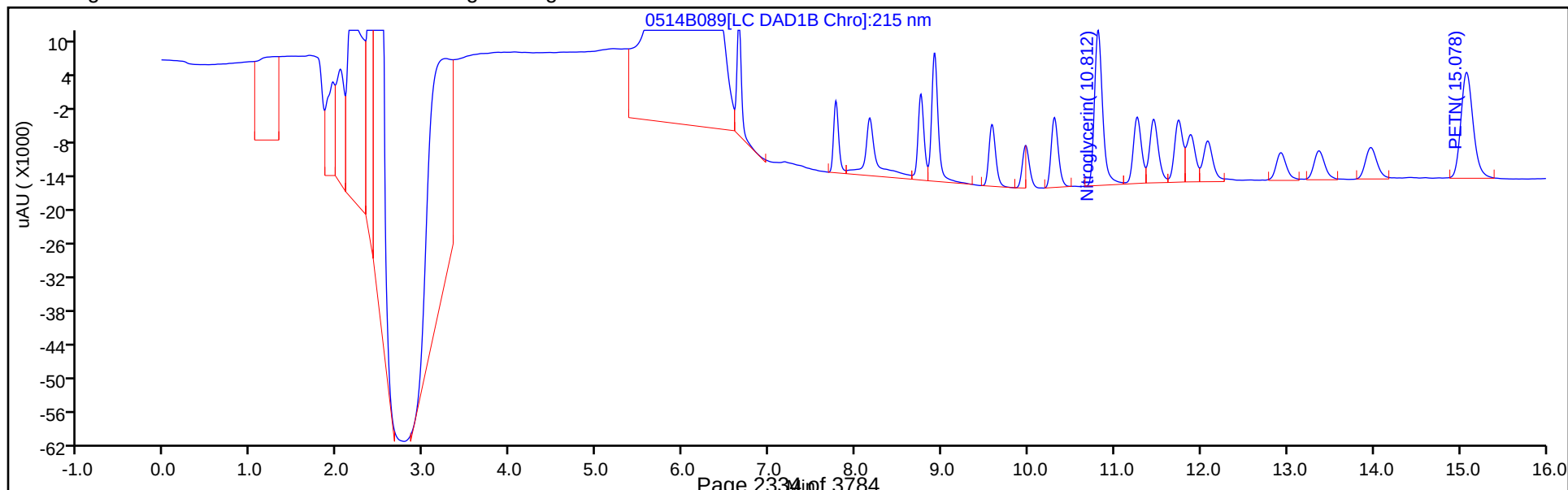
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458457/7 Calibration Date: 05/16/2019 14:36
 Instrument ID: CHHPLC_X3 Calib Start Date: 05/14/2019 15:49
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 05/14/2019 18:35
 Lab File ID: 0516B007.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Ave	89206	86440		242	250	-3.1	20.0
RDX	Ave	106639	104852		246	250	-1.7	20.0
Picric acid	Ave	83793	81636		244	250	-2.6	20.0
1,3,5-Trinitrobenzene	Ave	229276	234204		255	250	2.1	20.0
1,3-Dinitrobenzene	Ave	300824	303053		252	250	0.7	20.0
Nitrobenzene	Ave	196827	189301		241	251	-3.8	20.0
Tetryl	Ave	167956	168752		251	250	0.5	20.0
Nitroglycerin	Ave	69977	70704		2530	2500	1.0	20.0
2,4,6-Trinitrotoluene	Ave	223593	220849		248	251	-1.2	20.0
4-Amino-2,6-dinitrotoluene	Ave	162430	157192		243	251	-3.2	20.0
2-Amino-4,6-dinitrotoluene	Ave	197535	193910		246	251	-1.8	20.0
2,6-Dinitrotoluene	Ave	156597	156650		251	251	0.0	20.0
2,4-Dinitrotoluene	Ave	297422	297409		250	251	0.0	20.0
2-Nitrotoluene	Ave	131349	124810		238	251	-5.0	20.0
4-Nitrotoluene	Ave	112716	108442		241	251	-3.8	20.0
3-Nitrotoluene	Ave	148306	140984		239	251	-4.9	20.0
PETN	Ave	73191	72222		2470	2500	-1.3	20.0
1,2-Dinitrobenzene	Ave	130111	134000		257	250	3.0	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458457/7 Calibration Date: 05/16/2019 14:36
 Instrument ID: CHHPLC_X3 Calib Start Date: 05/14/2019 15:49
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 05/14/2019 18:35
 Lab File ID: 0516B007.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.66	6.51	6.81
RDX	7.78	7.63	7.93
Picric acid	8.18	8.03	8.33
1,3,5-Trinitrobenzene	8.93	8.78	9.08
1,3-Dinitrobenzene	9.60	9.45	9.75
Nitrobenzene	10.00	9.85	10.15
Tetryl	10.34	10.19	10.49
Nitroglycerin	10.84	10.69	10.99
2,4,6-Trinitrotoluene	11.30	11.20	11.40
4-Amino-2,6-dinitrotoluene	11.50	11.40	11.60
2-Amino-4,6-dinitrotoluene	11.80	11.70	11.90
2,6-Dinitrotoluene	11.92	11.82	12.02
2,4-Dinitrotoluene	12.12	12.02	12.22
2-Nitrotoluene	12.97	12.82	13.12
4-Nitrotoluene	13.42	13.27	13.57
3-Nitrotoluene	14.02	13.87	14.17
PETN	15.14	14.99	15.29
1,2-Dinitrobenzene	8.78	8.63	8.93

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190516-81970.b\0516B007.D
 Lims ID: CCV INT
 Client ID:
 Sample Type: CCV
 Inject. Date: 16-May-2019 14:36:29 ALS Bottle#: 7 Worklist Smp#: 7
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: CCV INT
 Misc. Info.: 280-0081970-007
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190516-81970.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 17-May-2019 08:21:17 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 16-May-2019 15:48:15

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.663	6.663	0.000	21610	0.2500	0.2422	
7 RDX	1	7.783	7.783	0.000	26213	0.2500	0.2458	
8 2,4,6-Trinitrophenol	1	8.177	8.177	0.000	20409	0.2500	0.2436	
\$ 9 1,2-Dinitrobenzene	1	8.777	8.777	0.000	33500	0.2500	0.2575	
10 1,3,5-Trinitrobenzene	1	8.930	8.930	0.000	58551	0.2500	0.2554	
11 1,3-Dinitrobenzene	1	9.603	9.603	0.000	75839	0.2503	0.2521	
12 Nitrobenzene	1	9.996	9.996	0.000	47420	0.2505	0.2409	
14 Tetryl	1	10.336	10.336	0.000	42188	0.2500	0.2512	
15 Nitroglycerin	2	10.836	10.836	0.000	176759	2.50	2.53	
16 2,4,6-Trinitrotoluene	1	11.296	11.296	0.000	55433	0.2510	0.2479	
17 4-Amino-2,6-dinitrotoluene	1	11.503	11.503	0.000	39416	0.2508	0.2427	
18 2-Amino-4,6-dinitrotoluene	1	11.796	11.796	0.000	48623	0.2508	0.2461	
19 2,6-Dinitrotoluene	1	11.916	11.916	0.000	39280	0.2508	0.2508	
20 2,4-Dinitrotoluene	1	12.123	12.123	0.000	74501	0.2505	0.2505	
21 o-Nitrotoluene	1	12.970	12.970	0.000	31296	0.2508	0.2383	
22 p-Nitrotoluene	1	13.416	13.416	0.000	27219	0.2510	0.2415	
23 m-Nitrotoluene	1	14.023	14.023	0.000	35387	0.2510	0.2386	
24 PETN	2	15.136	15.136	0.000	180554	2.50	2.47	

Reagents:

8330IntermStk_00058

Amount Added: 12.50

Units: uL

Report Date: 17-May-2019 08:21:17

Chrom Revision: 2.3 03-May-2019 15:52:00

Euofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190516-81970.b\0516B007.D

Injection Date: 16-May-2019 14:36:29

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: CCV INT

Worklist Smp#: 7

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

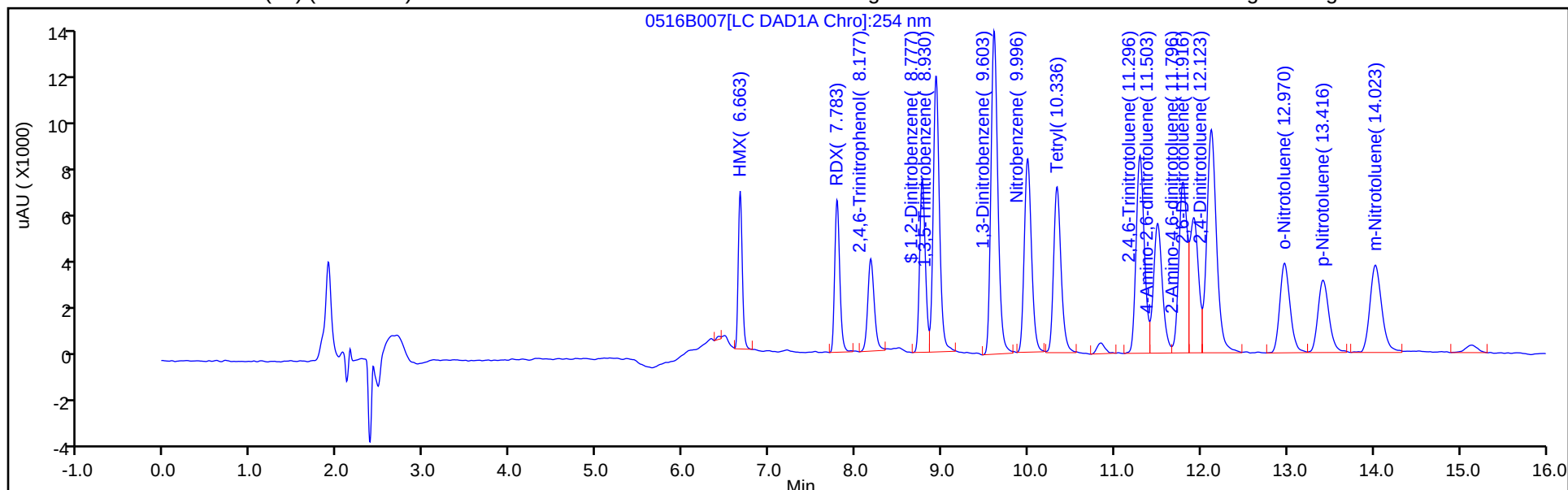
ALS Bottle#: 7

Method: 8330_X3

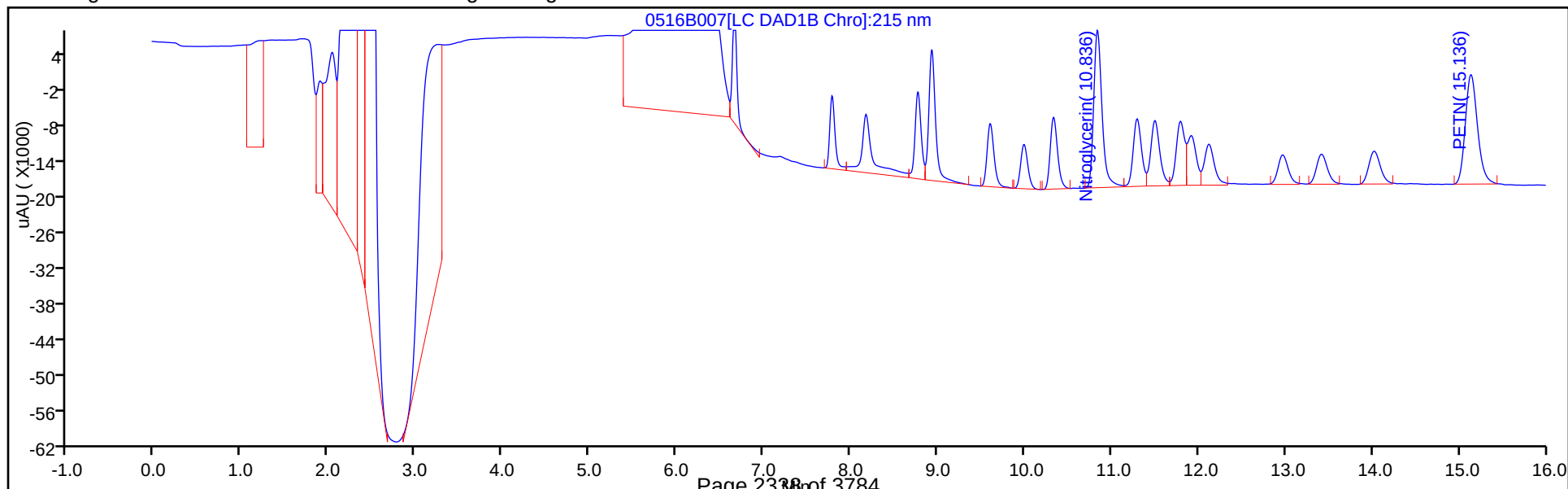
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458457/20 Calibration Date: 05/16/2019 19:45
 Instrument ID: CHHPLC_X3 Calib Start Date: 05/14/2019 15:49
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 05/14/2019 18:35
 Lab File ID: 0516B020.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Ave	89206	87524		245	250	-1.9	20.0
RDX	Ave	106639	103848		243	250	-2.6	20.0
Picric acid	Ave	83793	81568		243	250	-2.7	20.0
1,3,5-Trinitrobenzene	Ave	229276	233532		255	250	1.9	20.0
1,3-Dinitrobenzene	Ave	300824	301111		250	250	0.1	20.0
Nitrobenzene	Ave	196827	186822		238	251	-5.1	20.0
Tetryl	Ave	167956	164016		244	250	-2.3	20.0
Nitroglycerin	Ave	69977	70568		2520	2500	0.8	20.0
2,4,6-Trinitrotoluene	Ave	223593	216988		244	251	-3.0	20.0
4-Amino-2,6-dinitrotoluene	Ave	162430	157938		244	251	-2.8	20.0
2-Amino-4,6-dinitrotoluene	Ave	197535	192239		244	251	-2.7	20.0
2,6-Dinitrotoluene	Ave	156597	156762		251	251	0.1	20.0
2,4-Dinitrotoluene	Ave	297422	293800		247	251	-1.2	20.0
2-Nitrotoluene	Ave	131349	121149		231	251	-7.8	20.0
4-Nitrotoluene	Ave	112716	103044		229	251	-8.6	20.0
3-Nitrotoluene	Ave	148306	136442		231	251	-8.0	20.0
PETN	Ave	73191	70734		2420	2500	-3.4	20.0
1,2-Dinitrobenzene	Ave	130111	134400		258	250	3.3	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458457/20 Calibration Date: 05/16/2019 19:45
 Instrument ID: CHHPLC_X3 Calib Start Date: 05/14/2019 15:49
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 05/14/2019 18:35
 Lab File ID: 0516B020.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.66	6.51	6.81
RDX	7.78	7.63	7.93
Picric acid	8.17	8.03	8.33
1,3,5-Trinitrobenzene	8.93	8.78	9.08
1,3-Dinitrobenzene	9.59	9.45	9.75
Nitrobenzene	9.98	9.85	10.15
Tetryl	10.31	10.19	10.49
Nitroglycerin	10.82	10.69	10.99
2,4,6-Trinitrotoluene	11.27	11.20	11.40
4-Amino-2,6-dinitrotoluene	11.47	11.40	11.60
2-Amino-4,6-dinitrotoluene	11.76	11.70	11.90
2,6-Dinitrotoluene	11.89	11.82	12.02
2,4-Dinitrotoluene	12.09	12.02	12.22
2-Nitrotoluene	12.94	12.82	13.12
4-Nitrotoluene	13.39	13.27	13.57
3-Nitrotoluene	13.99	13.87	14.17
PETN	15.10	14.99	15.29
1,2-Dinitrobenzene	8.77	8.63	8.93

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190516-81970.b\0516B020.D
 Lims ID: CCV INT
 Client ID:
 Sample Type: CCV
 Inject. Date: 16-May-2019 19:45:19 ALS Bottle#: 7 Worklist Smp#: 20
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: CCV INT
 Misc. Info.: 280-0081970-020
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190516-81970.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 17-May-2019 08:21:30 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0316

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.660	6.663	-0.003	21881	0.2500	0.2453	
7 RDX	1	7.780	7.783	-0.003	25962	0.2500	0.2435	
8 2,4,6-Trinitrophenol	1	8.174	8.177	-0.003	20392	0.2500	0.2434	
\$ 9 1,2-Dinitrobenzene	1	8.767	8.777	-0.010	33600	0.2500	0.2582	
10 1,3,5-Trinitrobenzene	1	8.927	8.930	-0.003	58383	0.2500	0.2546	
11 1,3-Dinitrobenzene	1	9.593	9.603	-0.010	75353	0.2503	0.2505	
12 Nitrobenzene	1	9.980	9.996	-0.016	46799	0.2505	0.2378	
14 Tetryl	1	10.313	10.336	-0.023	41004	0.2500	0.2441	
15 Nitroglycerin	2	10.820	10.836	-0.016	176419	2.50	2.52	
16 2,4,6-Trinitrotoluene	1	11.273	11.296	-0.023	54464	0.2510	0.2436	
17 4-Amino-2,6-dinitrotoluene	1	11.467	11.503	-0.036	39603	0.2508	0.2438	
18 2-Amino-4,6-dinitrotoluene	1	11.760	11.796	-0.036	48204	0.2508	0.2440	
19 2,6-Dinitrotoluene	1	11.893	11.916	-0.023	39308	0.2508	0.2510	
20 2,4-Dinitrotoluene	1	12.093	12.123	-0.030	73597	0.2505	0.2474	
21 o-Nitrotoluene	1	12.940	12.970	-0.030	30378	0.2508	0.2313	
22 p-Nitrotoluene	1	13.387	13.416	-0.029	25864	0.2510	0.2295	
23 m-Nitrotoluene	1	13.987	14.023	-0.036	34247	0.2510	0.2309	
24 PETN	2	15.100	15.136	-0.036	176836	2.50	2.42	

Reagents:

8330IntermStk_00058

Amount Added: 12.50

Units: uL

Report Date: 17-May-2019 08:21:30

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190516-81970.b\0516B020.D

Injection Date: 16-May-2019 19:45:19

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: CCV INT

Worklist Smp#: 20

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

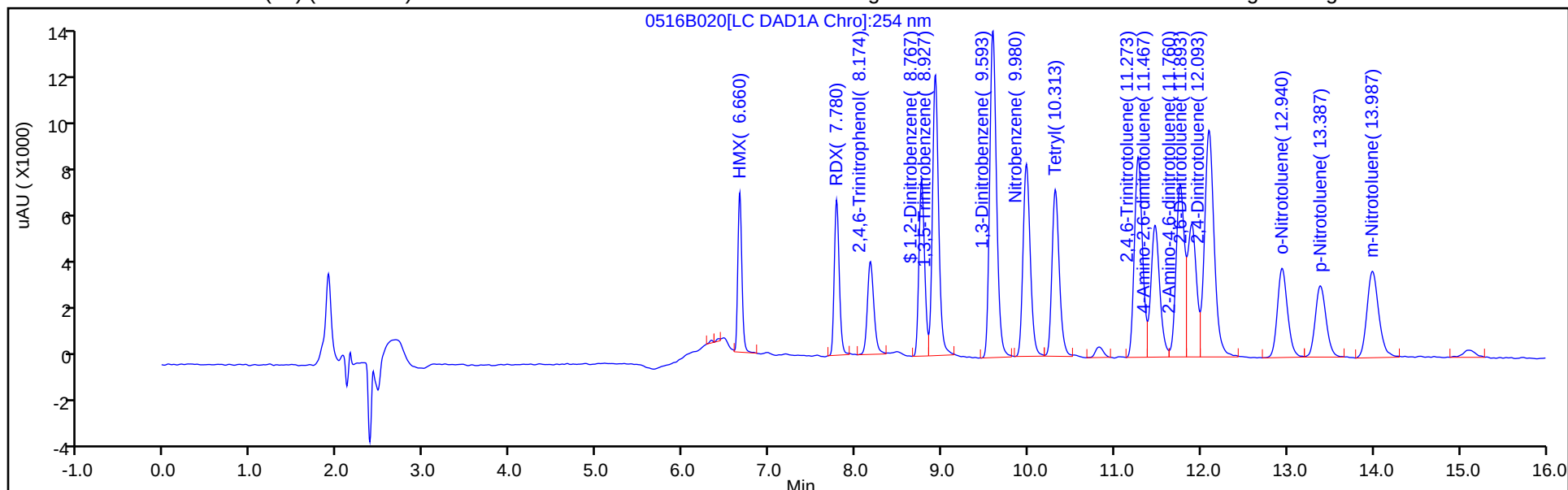
ALS Bottle#: 7

Method: 8330_X3

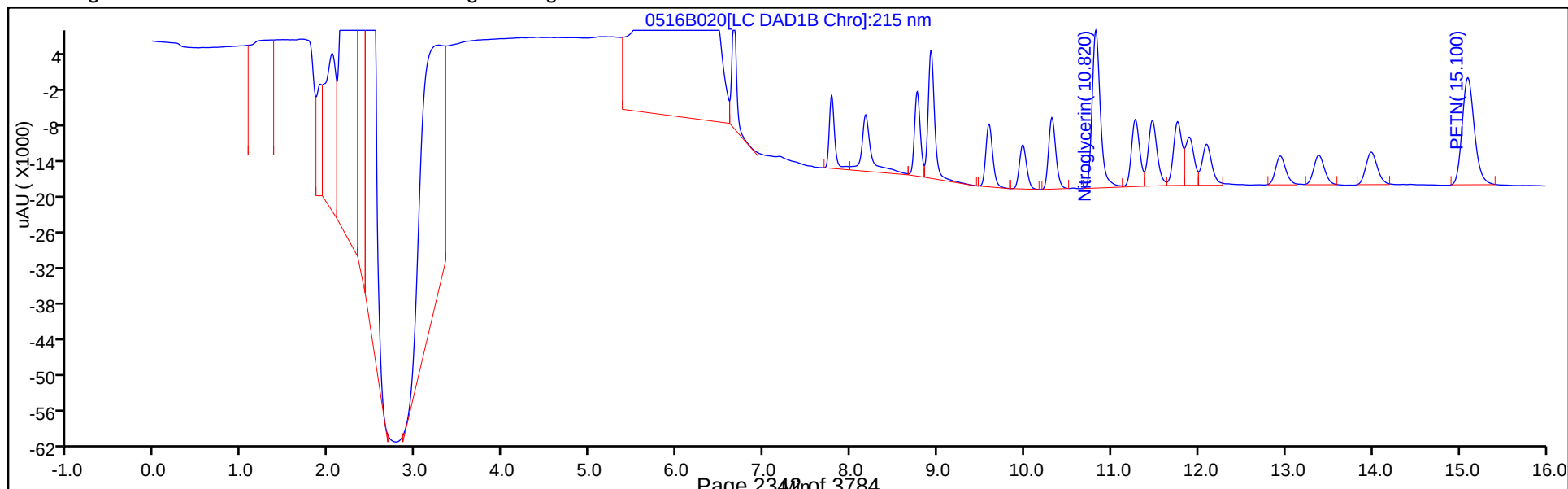
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458533/7 Calibration Date: 05/17/2019 10:24
 Instrument ID: CHHPLC_X3 Calib Start Date: 05/14/2019 15:49
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 05/14/2019 18:35
 Lab File ID: 05170007.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Ave	89206	88836		249	250	-0.4	20.0
RDX	Ave	106639	107500		252	250	0.8	20.0
Picric acid	Ave	83793	84488		252	250	0.8	20.0
1,3,5-Trinitrobenzene	Ave	229276	235880		257	250	2.9	20.0
1,3-Dinitrobenzene	Ave	300824	308288		256	250	2.5	20.0
Nitrobenzene	Ave	196827	196188		250	251	-0.3	20.0
Tetryl	Ave	167956	170332		254	250	1.4	20.0
Nitroglycerin	Ave	69977	72556		2590	2500	3.7	20.0
2,4,6-Trinitrotoluene	Ave	223593	224040		252	251	0.2	20.0
4-Amino-2,6-dinitrotoluene	Ave	162430	162090		250	251	-0.2	20.0
2-Amino-4,6-dinitrotoluene	Ave	197535	200602		255	251	1.6	20.0
2,6-Dinitrotoluene	Ave	156597	158357		254	251	1.1	20.0
2,4-Dinitrotoluene	Ave	297422	303341		255	251	2.0	20.0
2-Nitrotoluene	Ave	131349	127490		243	251	-2.9	20.0
4-Nitrotoluene	Ave	112716	108853		242	251	-3.4	20.0
3-Nitrotoluene	Ave	148306	142769		242	251	-3.7	20.0
PETN	Ave	73191	73955		2530	2500	1.0	20.0
1,2-Dinitrobenzene	Ave	130111	139192		267	250	7.0	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458533/7 Calibration Date: 05/17/2019 10:24
 Instrument ID: CHHPLC_X3 Calib Start Date: 05/14/2019 15:49
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 05/14/2019 18:35
 Lab File ID: 05170007.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.66	6.51	6.81
RDX	7.78	7.63	7.93
Picric acid	8.18	8.03	8.33
1,3,5-Trinitrobenzene	8.92	8.77	9.07
1,3-Dinitrobenzene	9.59	9.44	9.74
Nitrobenzene	9.98	9.83	10.13
Tetryl	10.32	10.17	10.47
Nitroglycerin	10.82	10.67	10.97
2,4,6-Trinitrotoluene	11.28	11.18	11.38
4-Amino-2,6-dinitrotoluene	11.47	11.37	11.57
2-Amino-4,6-dinitrotoluene	11.76	11.66	11.86
2,6-Dinitrotoluene	11.90	11.80	12.00
2,4-Dinitrotoluene	12.10	12.00	12.20
2-Nitrotoluene	12.94	12.79	13.09
4-Nitrotoluene	13.39	13.24	13.54
3-Nitrotoluene	13.99	13.84	14.14
PETN	15.10	14.95	15.25
1,2-Dinitrobenzene	8.76	8.61	8.91

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190517-81994.b\05170007.D
 Lims ID: CCV INT
 Client ID:
 Sample Type: CCV
 Inject. Date: 17-May-2019 10:24:27 ALS Bottle#: 7 Worklist Smp#: 7
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: CCV INT
 Misc. Info.: 280-0081994-007
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190517-81994.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 20-May-2019 11:01:32 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0328

First Level Reviewer: fiedlerh

Date: 17-May-2019 12:21:22

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.656	6.656	0.000	22209	0.2500	0.2490	
7 RDX	1	7.776	7.776	0.000	26875	0.2500	0.2520	
8 2,4,6-Trinitrophenol	1	8.183	8.183	0.000	21122	0.2500	0.2521	
\$ 9 1,2-Dinitrobenzene	1	8.763	8.763	0.000	34798	0.2500	0.2674	
10 1,3,5-Trinitrobenzene	1	8.923	8.923	0.000	58970	0.2500	0.2572	
11 1,3-Dinitrobenzene	1	9.590	9.590	0.000	77149	0.2503	0.2565	
12 Nitrobenzene	1	9.983	9.983	0.000	49145	0.2505	0.2497	
14 Tetryl	1	10.316	10.316	0.000	42583	0.2500	0.2535	
15 Nitroglycerin	2	10.823	10.823	0.000	181389	2.50	2.59	
16 2,4,6-Trinitrotoluene	1	11.276	11.276	0.000	56234	0.2510	0.2515	
17 4-Amino-2,6-dinitrotoluene	1	11.470	11.470	0.000	40644	0.2508	0.2502	
18 2-Amino-4,6-dinitrotoluene	1	11.763	11.763	0.000	50301	0.2508	0.2546	
19 2,6-Dinitrotoluene	1	11.896	11.896	0.000	39708	0.2508	0.2536	
20 2,4-Dinitrotoluene	1	12.096	12.096	0.000	75987	0.2505	0.2555	
21 o-Nitrotoluene	1	12.943	12.943	0.000	31968	0.2508	0.2434	
22 p-Nitrotoluene	1	13.390	13.390	0.000	27322	0.2510	0.2424	
23 m-Nitrotoluene	1	13.990	13.990	0.000	35835	0.2510	0.2416	
24 PETN	2	15.096	15.096	0.000	184887	2.50	2.53	

Reagents:

8330IntermStk_00058

Amount Added: 12.50

Units: uL

Report Date: 20-May-2019 11:01:34

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190517-81994.b\05170007.D

Injection Date: 17-May-2019 10:24:27

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: CCV INT

Worklist Smp#: 7

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

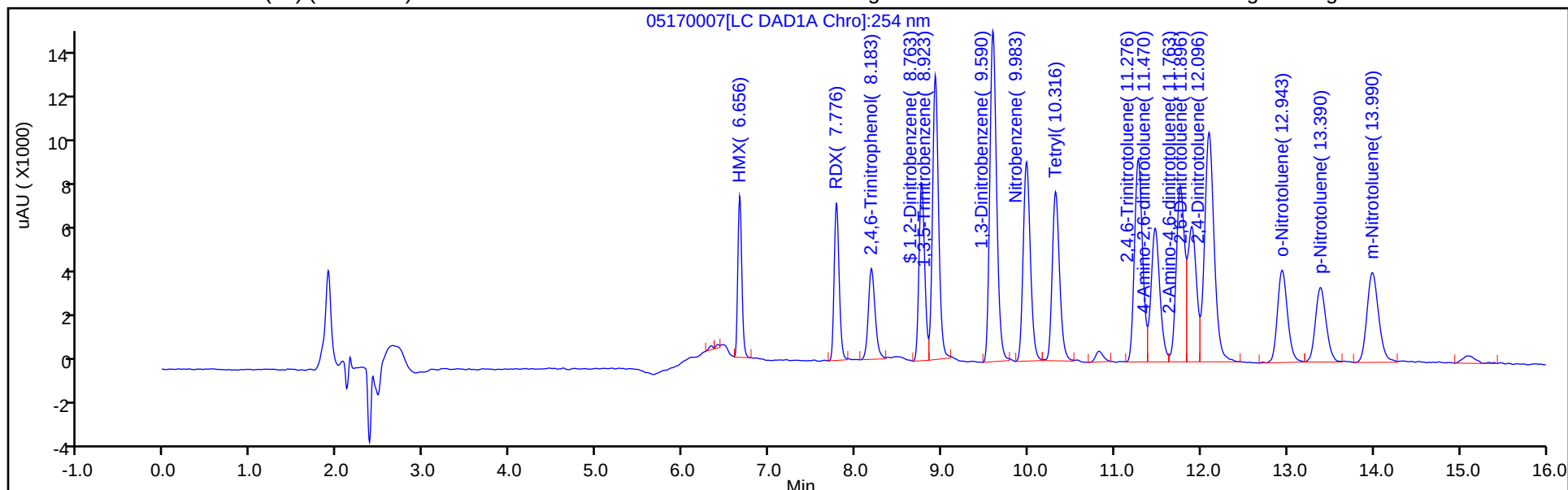
ALS Bottle#: 7

Method: 8330_X3

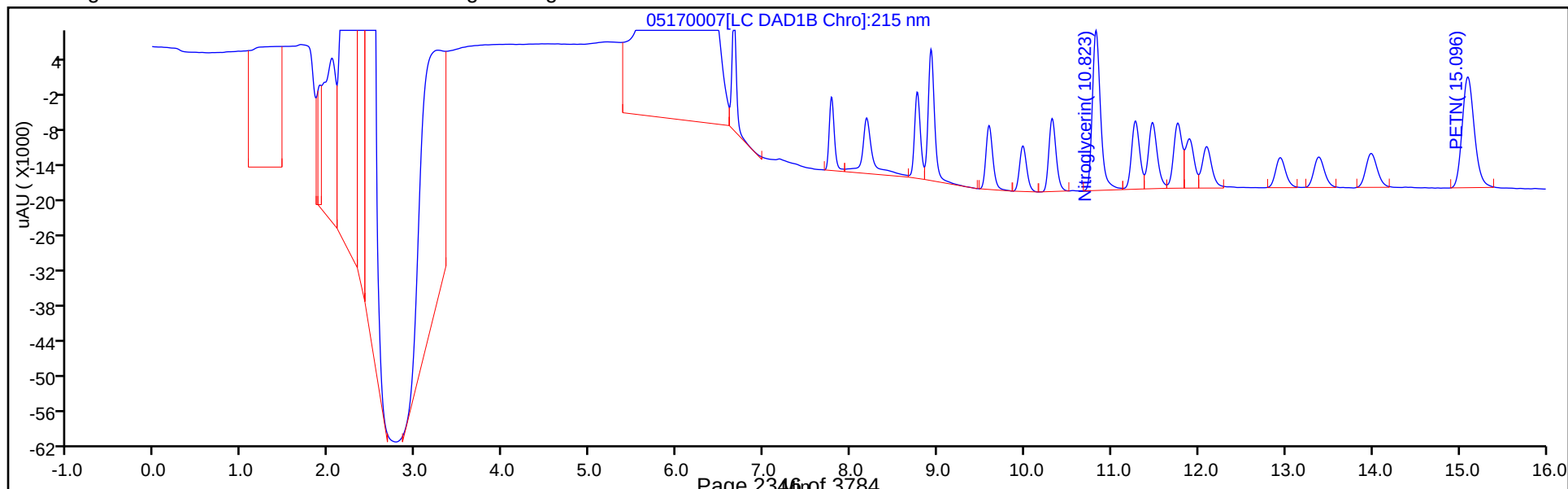
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458533/20 Calibration Date: 05/17/2019 15:33
 Instrument ID: CHHPLC_X3 Calib Start Date: 05/14/2019 15:49
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 05/14/2019 18:35
 Lab File ID: 05170020.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Ave	89206	88816		249	250	-0.4	20.0
RDX	Ave	106639	108372		254	250	1.6	20.0
Picric acid	Ave	83793	85956		256	250	2.6	20.0
1,3,5-Trinitrobenzene	Ave	229276	235816		257	250	2.9	20.0
1,3-Dinitrobenzene	Ave	300824	311596		259	250	3.6	20.0
Nitrobenzene	Ave	196827	194683		248	251	-1.1	20.0
Tetryl	Ave	167956	167156		249	250	-0.5	20.0
Nitroglycerin	Ave	69977	72637		2600	2500	3.8	20.0
2,4,6-Trinitrotoluene	Ave	223593	226494		254	251	1.3	20.0
4-Amino-2,6-dinitrotoluene	Ave	162430	164570		254	251	1.3	20.0
2-Amino-4,6-dinitrotoluene	Ave	197535	199549		253	251	1.0	20.0
2,6-Dinitrotoluene	Ave	156597	160080		256	251	2.2	20.0
2,4-Dinitrotoluene	Ave	297422	303461		256	251	2.0	20.0
2-Nitrotoluene	Ave	131349	125894		240	251	-4.2	20.0
4-Nitrotoluene	Ave	112716	109135		243	251	-3.2	20.0
3-Nitrotoluene	Ave	148306	142430		241	251	-4.0	20.0
PETN	Ave	73191	72510		2480	2500	-0.9	20.0
1,2-Dinitrobenzene	Ave	130111	138236		266	250	6.2	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: CCV 280-458533/20 Calibration Date: 05/17/2019 15:33
 Instrument ID: CHHPLC_X3 Calib Start Date: 05/14/2019 15:49
 GC Column: UltraCarb5uODS ID: 4.60 (mm) Calib End Date: 05/14/2019 18:35
 Lab File ID: 05170020.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.66	6.51	6.81
RDX	7.79	7.63	7.93
Picric acid	8.19	8.03	8.33
1,3,5-Trinitrobenzene	8.93	8.77	9.07
1,3-Dinitrobenzene	9.60	9.44	9.74
Nitrobenzene	9.99	9.83	10.13
Tetryl	10.33	10.17	10.47
Nitroglycerin	10.83	10.67	10.97
2,4,6-Trinitrotoluene	11.29	11.18	11.38
4-Amino-2,6-dinitrotoluene	11.49	11.37	11.57
2-Amino-4,6-dinitrotoluene	11.78	11.66	11.86
2,6-Dinitrotoluene	11.91	11.80	12.00
2,4-Dinitrotoluene	12.11	12.00	12.20
2-Nitrotoluene	12.96	12.79	13.09
4-Nitrotoluene	13.40	13.24	13.54
3-Nitrotoluene	14.01	13.84	14.14
PETN	15.12	14.95	15.25
1,2-Dinitrobenzene	8.78	8.61	8.91

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190517-81994.b\05170020.D
 Lims ID: CCV INT
 Client ID:
 Sample Type: CCV
 Inject. Date: 17-May-2019 15:33:04 ALS Bottle#: 7 Worklist Smp#: 20
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: CCV INT
 Misc. Info.: 280-0081994-020
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Sublist: chrom-8330_X3*sub9
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190517-81994.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 20-May-2019 11:01:59 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0328

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.661	6.656	0.005	22204	0.2500	0.2489	
7 RDX	1	7.787	7.776	0.011	27093	0.2500	0.2541	
8 2,4,6-Trinitrophenol	1	8.194	8.183	0.011	21489	0.2500	0.2565	
\$ 9 1,2-Dinitrobenzene	1	8.781	8.763	0.018	34559	0.2500	0.2656	
10 1,3,5-Trinitrobenzene	1	8.934	8.923	0.011	58954	0.2500	0.2571	
11 1,3-Dinitrobenzene	1	9.600	9.590	0.010	77977	0.2503	0.2592	
12 Nitrobenzene	1	9.994	9.983	0.011	48768	0.2505	0.2478	
14 Tetryl	1	10.334	10.316	0.018	41789	0.2500	0.2488	
15 Nitroglycerin	2	10.834	10.823	0.011	181592	2.50	2.60	
16 2,4,6-Trinitrotoluene	1	11.287	11.276	0.011	56850	0.2510	0.2543	
17 4-Amino-2,6-dinitrotoluene	1	11.494	11.470	0.024	41266	0.2508	0.2541	
18 2-Amino-4,6-dinitrotoluene	1	11.780	11.763	0.017	50037	0.2508	0.2533	
19 2,6-Dinitrotoluene	1	11.914	11.896	0.018	40140	0.2508	0.2563	
20 2,4-Dinitrotoluene	1	12.114	12.096	0.018	76017	0.2505	0.2556	
21 o-Nitrotoluene	1	12.960	12.943	0.017	31568	0.2508	0.2403	
22 p-Nitrotoluene	1	13.400	13.390	0.010	27393	0.2510	0.2430	
23 m-Nitrotoluene	1	14.007	13.990	0.017	35750	0.2510	0.2411	
24 PETN	2	15.120	15.096	0.024	181276	2.50	2.48	

Reagents:

8330IntermStk_00058

Amount Added: 12.50

Units: uL

Report Date: 20-May-2019 11:02:00

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190517-81994.b\05170020.D

Injection Date: 17-May-2019 15:33:04

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: CCV INT

Worklist Smp#: 20

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

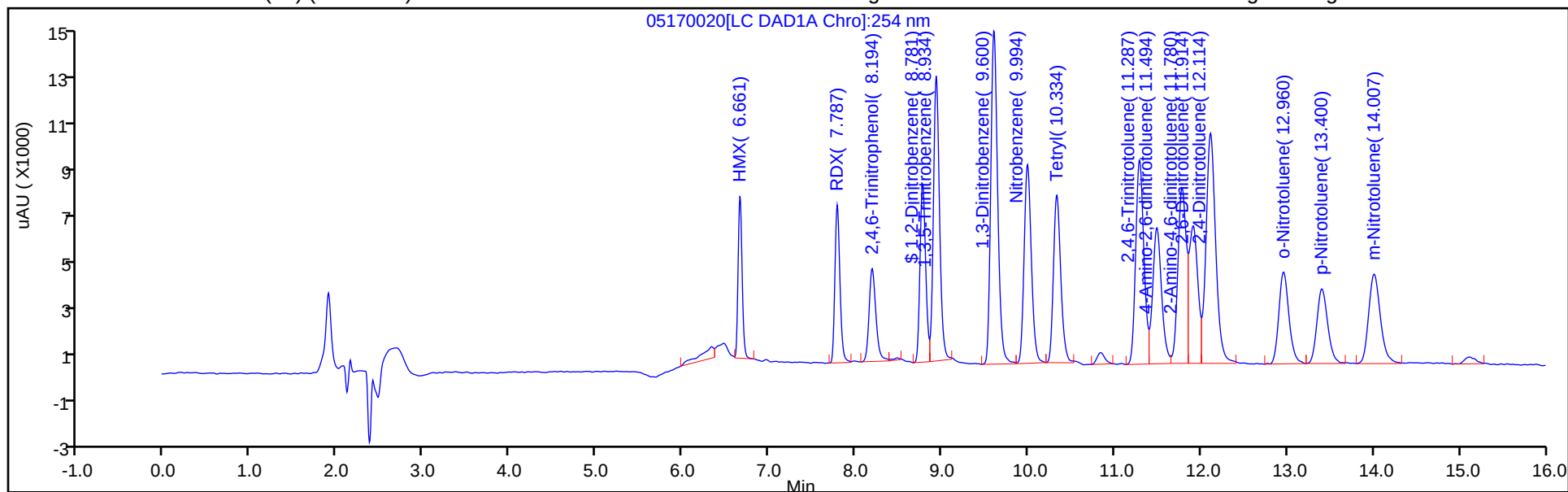
ALS Bottle#: 7

Method: 8330_X3

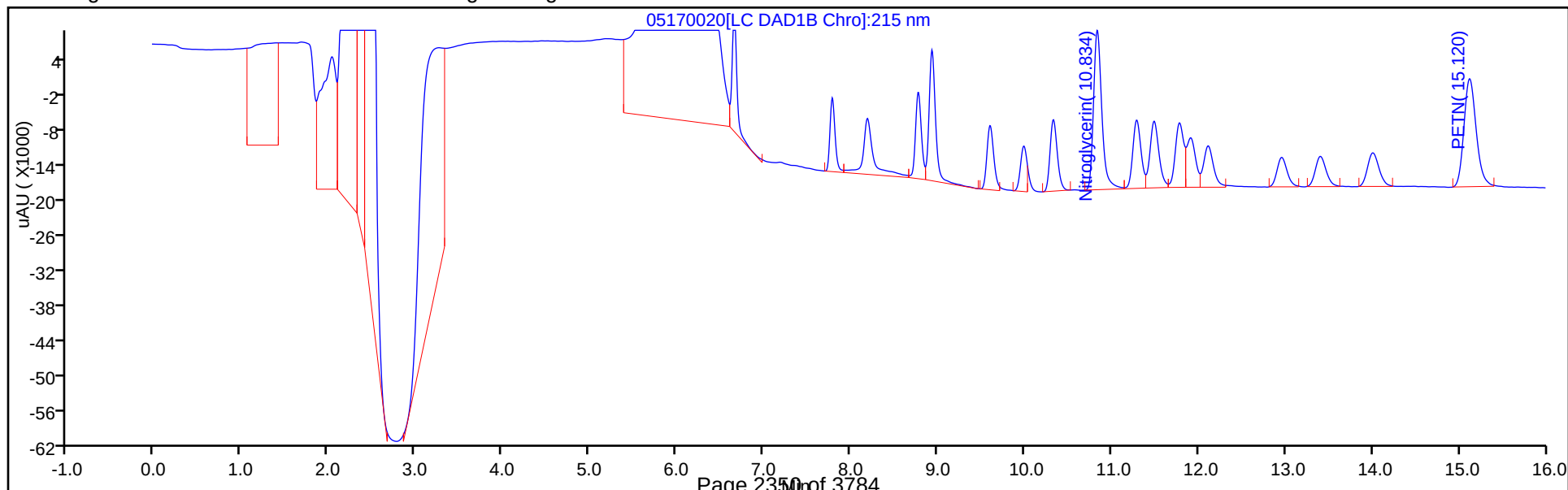
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 280-456980/1-A
 Matrix: Water Lab File ID: 0509B035.D
 Analysis Method: 8330B Date Collected: _____
 Extraction Method: 3535 Date Extracted: 05/04/2019 15:00
 Sample wt/vol: 500 (mL) Date Analyzed: 05/10/2019 03:52
 Con. Extract Vol.: 5 (mL) Dilution Factor: 1
 Injection Volume: 100 (uL) GC Column: UltraCarb5uODS ID: 4.6 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 457634 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.40	U M	1.0	0.40	0.20
99-65-0	1,3-Dinitrobenzene	0.20	U	0.40	0.20	0.089
118-96-7	2,4,6-Trinitrotoluene	0.40	U	0.40	0.40	0.16
121-14-2	2,4-Dinitrotoluene	0.20	U	0.40	0.20	0.084
606-20-2	2,6-Dinitrotoluene	0.20	U	0.20	0.20	0.065
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	U	0.20	0.12	0.051
88-72-2	2-Nitrotoluene	0.20	U	0.40	0.20	0.086
99-08-1	3-Nitrotoluene	0.40	U	0.40	0.40	0.20
19406-51-0	4-Amino-2,6-dinitrotoluene	0.12	U	0.20	0.12	0.058
99-99-0	4-Nitrotoluene	0.40	U	1.0	0.40	0.20
2691-41-0	HMX	0.20	U	0.40	0.20	0.088
98-95-3	Nitrobenzene	0.20	U	0.40	0.20	0.091
55-63-0	Nitroglycerin	2.0	U	3.0	2.0	0.92
78-11-5	PETN	4.0	U	4.0	4.0	1.9
121-82-4	RDX	0.40	U	0.40	0.40	0.16
479-45-8	Tetryl	0.20	U	0.24	0.20	0.079

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	89		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B035.D
 Lims ID: MB 280-456980/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 10-May-2019 03:52:00 ALS Bottle#: 35 Worklist Smp#: 35
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: MB 280-456980/1-
 Misc. Info.: 280-0081739-035
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 10-May-2019 08:50:05 Calib Date: 30-Jan-2019 16:34:11
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 10-May-2019 08:41:15

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
1 2,6-diamino-4-nitrotoluene	1		6.501				ND	U
2 TNX	1		6.541				ND	
3 HMX	1		6.643				ND	
4 2,4-diamino-6-nitrotoluene	1		6.688				ND	
5 DNX	1		6.875				ND	
6 MNX	1		7.328				ND	
7 RDX	1		7.736				ND	
8 2,4,6-Trinitrophenol	1		8.090				ND	
\$ 9 1,2-Dinitrobenzene	1	8.721	8.710	0.011	23817	0.2000	0.1781	U
10 1,3,5-Trinitrobenzene	1		8.870				ND	
11 1,3-Dinitrobenzene	1		9.523				ND	
12 Nitrobenzene	1		9.910				ND	
13 3,5-Dinitroaniline	1		10.134				ND	
14 Tetryl	1		10.230				ND	
15 Nitroglycerin	2		10.736				ND	
16 2,4,6-Trinitrotoluene	1		11.183				ND	
17 4-Amino-2,6-dinitrotoluene	1		11.343				ND	
18 2-Amino-4,6-dinitrotoluene	1		11.630				ND	
19 2,6-Dinitrotoluene	1		11.790				ND	
20 2,4-Dinitrotoluene	1		11.983				ND	
21 o-Nitrotoluene	1		12.823				ND	
22 p-Nitrotoluene	1		13.256				ND	
23 m-Nitrotoluene	1		13.856				ND	
24 PETN	2		14.963				ND	
25 Ammonium Picrate	1		0.000				ND	

QC Flag Legend

Review Flags

U - Marked Undetected

Report Date: 10-May-2019 08:50:07

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B035.D

Injection Date: 10-May-2019 03:52:00

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: MB 280-456980/1-A

Worklist Smp#: 35

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

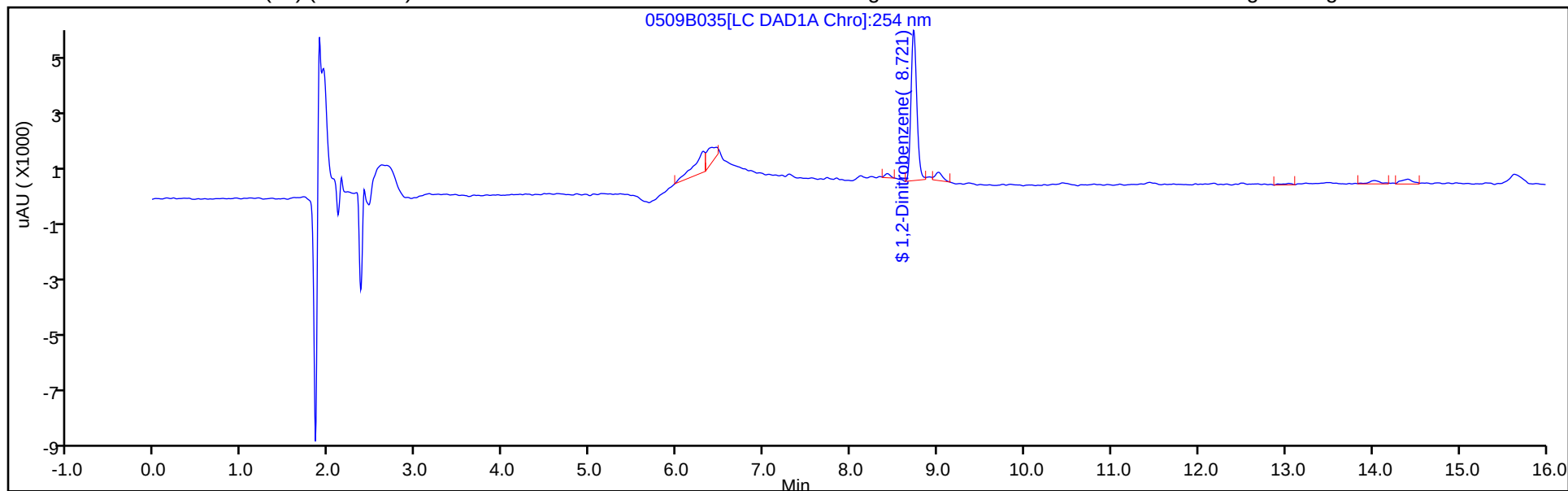
ALS Bottle#: 35

Method: 8330_X3

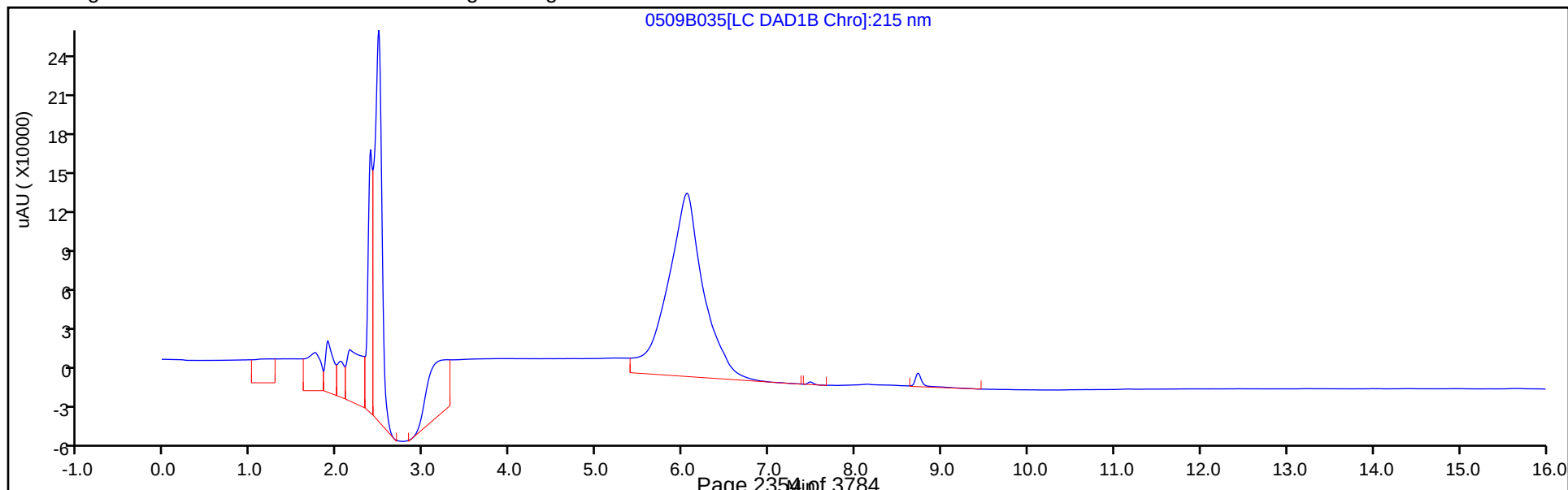
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B035.D
Lims ID: MB 280-456980/1-A
Client ID:
Sample Type: MB
Inject. Date: 10-May-2019 03:52:00 ALS Bottle#: 35 Worklist Smp#: 35
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: MB 280-456980/1-
Misc. Info.: 280-0081739-035
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 10-May-2019 08:50:05 Calib Date: 30-Jan-2019 16:34:11
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 10-May-2019 08:41:15

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1781	89.07

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B035.D

Injection Date: 10-May-2019 03:52:00

Instrument ID: CHHPLC_X3

Lims ID: MB 280-456980/1-A

Client ID:

Operator ID: hkf

ALS Bottle#:

35

Worklist Smp#:

35

Injection Vol: 100.0 ul

Dil. Factor:

1.0000

Method: 8330_X3

Limit Group:

GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Detector

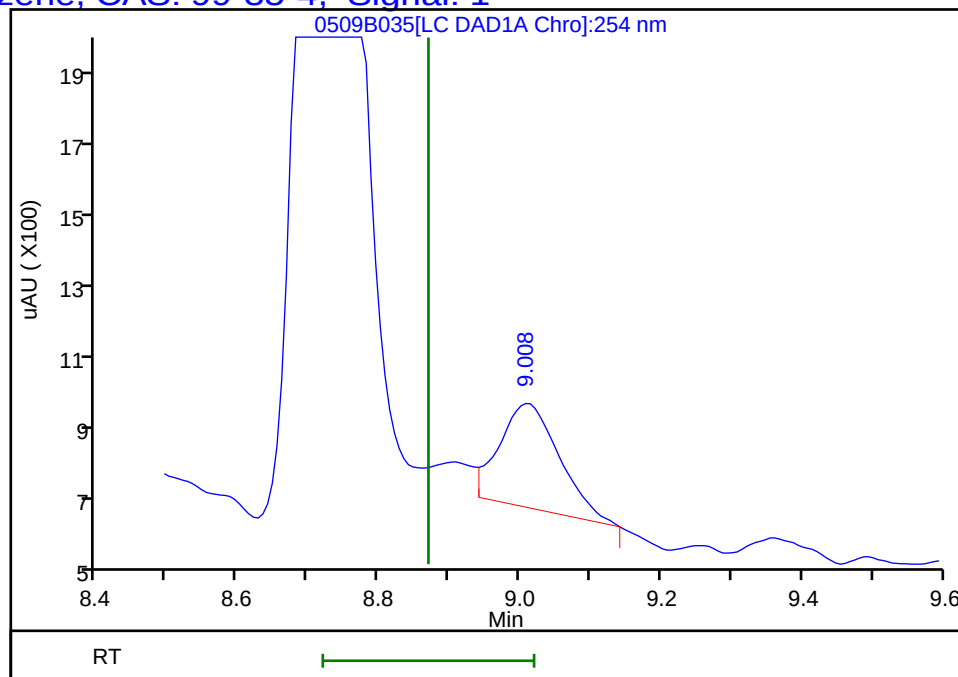
LC DAD1B, 254 nm

10 1,3,5-Trinitrobenzene, CAS: 99-35-4, Signal: 1

RT: 9.01

Response: 1657

Amount: 0.007295



Reviewer: fiedlerh, 10-May-2019 08:41:15

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: MB 280-457741/1-A

Matrix: Water Lab File ID: 0514B056.D

Analysis Method: 8330B Date Collected: _____

Extraction Method: 3535 Date Extracted: 05/10/2019 16:21

Sample wt/vol: 500 (mL) Date Analyzed: 05/15/2019 11:12

Con. Extract Vol.: 5 (mL) Dilution Factor: 1

Injection Volume: 100 (uL) GC Column: UltraCarb5uODS ID: 4.6 (mm)

% Moisture: _____ GPC Cleanup: (Y/N) N

Analysis Batch No.: 458152 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.40	U	1.0	0.40	0.20
99-65-0	1,3-Dinitrobenzene	0.20	U	0.40	0.20	0.089
118-96-7	2,4,6-Trinitrotoluene	0.40	U	0.40	0.40	0.16
121-14-2	2,4-Dinitrotoluene	0.20	U	0.40	0.20	0.084
606-20-2	2,6-Dinitrotoluene	0.20	U	0.20	0.20	0.065
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	U	0.20	0.12	0.051
88-72-2	2-Nitrotoluene	0.20	U	0.40	0.20	0.086
99-08-1	3-Nitrotoluene	0.40	U	0.40	0.40	0.20
19406-51-0	4-Amino-2,6-dinitrotoluene	0.12	U	0.20	0.12	0.058
99-99-0	4-Nitrotoluene	0.40	U	1.0	0.40	0.20
2691-41-0	HMX	0.20	U	0.40	0.20	0.088
98-95-3	Nitrobenzene	0.20	U	0.40	0.20	0.091
55-63-0	Nitroglycerin	2.0	U	3.0	2.0	0.92
78-11-5	PETN	4.0	U	4.0	4.0	1.9
121-82-4	RDX	0.40	U	0.40	0.40	0.16
479-45-8	Tetryl	0.20	U	0.24	0.20	0.079

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	99		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B056.D
 Lims ID: MB 280-457741/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 15-May-2019 11:12:33 ALS Bottle#: 56 Worklist Smp#: 56
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: MB 280-457741/1-
 Misc. Info.: 280-0081869-056
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 16-May-2019 08:22:54 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 15-May-2019 12:35:42

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
1 2,6-diamino-4-nitrotoluene	1		6.509				ND	U
2 TNX	1		6.556				ND	
3 HMX	1		6.650				ND	
4 2,4-diamino-6-nitrotoluene	1		6.695				ND	
5 DNX	1		6.889				ND	
6 MNX	1		7.356				ND	
7 RDX	1		7.764				ND	
8 2,4,6-Trinitrophenol	1		8.130				ND	
\$ 9 1,2-Dinitrobenzene	1	8.743	8.744	-0.001	25672	0.2000	0.1973	
10 1,3,5-Trinitrobenzene	1		8.904				ND	
11 1,3-Dinitrobenzene	1		9.564				ND	
12 Nitrobenzene	1		9.950				ND	
13 3,5-Dinitroaniline	1		10.209				ND	
14 Tetryl	1		10.284				ND	
15 Nitroglycerin	2		10.784				ND	
16 2,4,6-Trinitrotoluene	1		11.237				ND	
17 4-Amino-2,6-dinitrotoluene	1		11.430				ND	
18 2-Amino-4,6-dinitrotoluene	1		11.717				ND	
19 2,6-Dinitrotoluene	1		11.850				ND	
20 2,4-Dinitrotoluene	1		12.050				ND	
21 o-Nitrotoluene	1		12.890				ND	
22 p-Nitrotoluene	1		13.330				ND	
23 m-Nitrotoluene	1		13.930				ND	
24 PETN	2		15.024				ND	
25 Ammonium Picrate	1		0.000				ND	

QC Flag Legend

Review Flags

U - Marked Undetected

Report Date: 16-May-2019 08:23:14

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B056.D

Injection Date: 15-May-2019 11:12:33

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: MB 280-457741/1-A

Worklist Smp#: 56

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

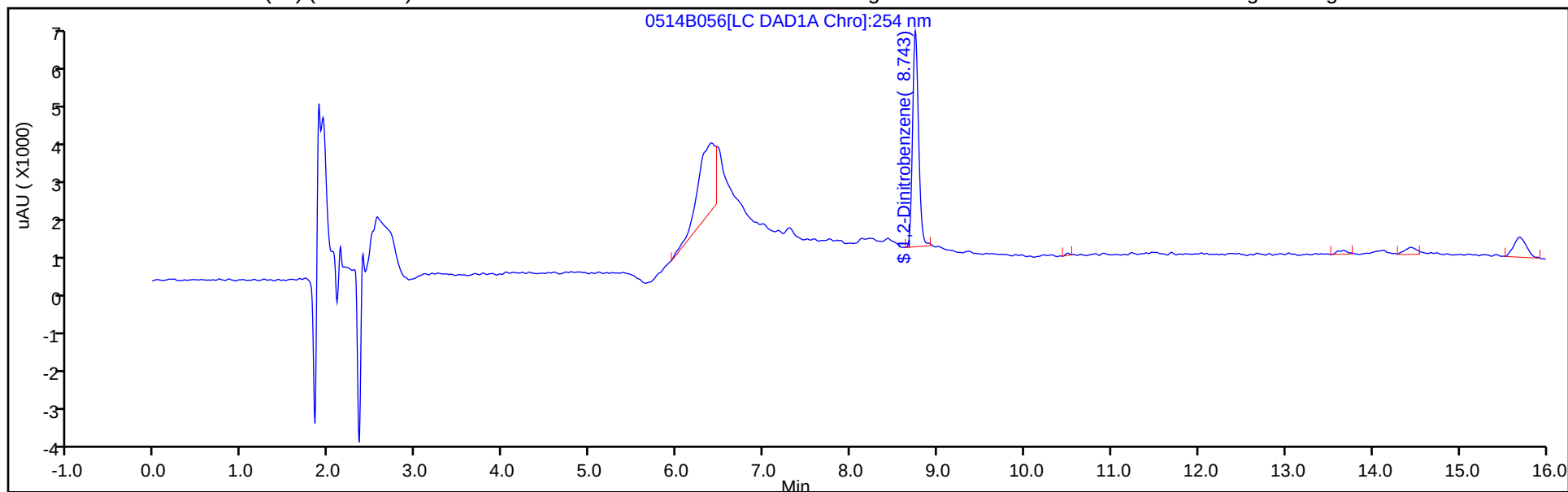
ALS Bottle#: 56

Method: 8330_X3

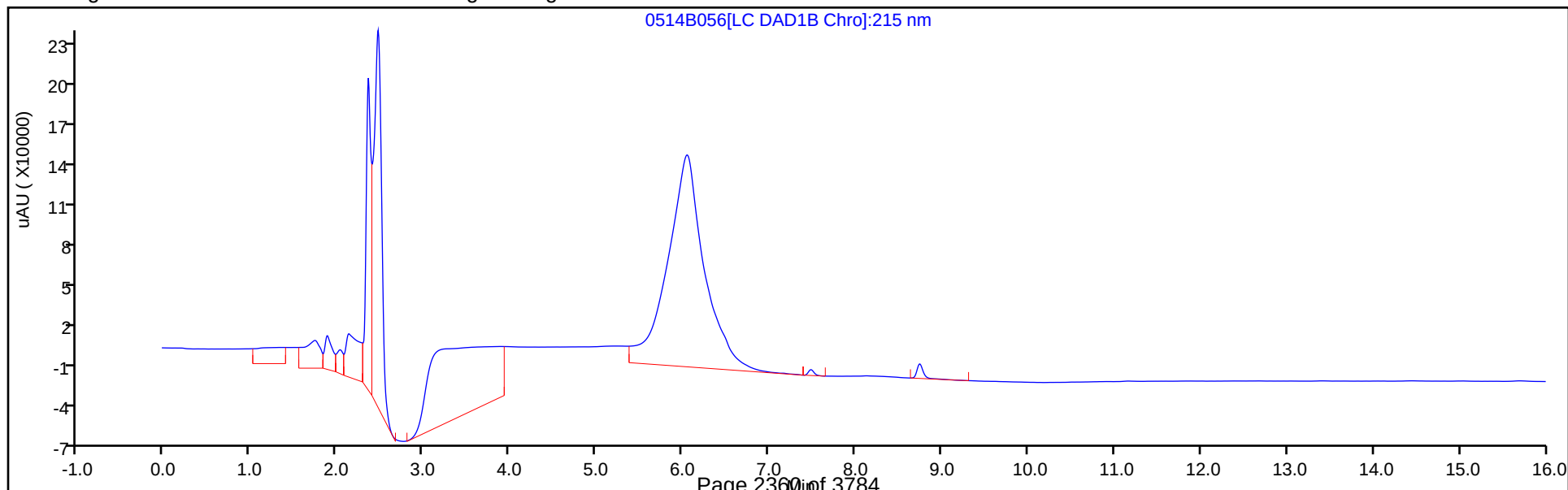
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B056.D
Lims ID: MB 280-457741/1-A
Client ID:
Sample Type: MB
Inject. Date: 15-May-2019 11:12:33 ALS Bottle#: 56 Worklist Smp#: 56
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: MB 280-457741/1-
Misc. Info.: 280-0081869-056
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 16-May-2019 08:22:54 Calib Date: 15-May-2019 01:42:24
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 15-May-2019 12:35:42

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1973	98.65

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 280-457818/1-A
 Matrix: Water Lab File ID: 0516B010.D
 Analysis Method: 8330B Date Collected: _____
 Extraction Method: 3535 Date Extracted: 05/11/2019 15:37
 Sample wt/vol: 5 (mL) Date Analyzed: 05/16/2019 15:48
 Con. Extract Vol.: 5 (mL) Dilution Factor: 1
 Injection Volume: 100 (uL) GC Column: UltraCarb5uODS ID: 4.6 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 458457 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	40	U	100	40	20
99-65-0	1,3-Dinitrobenzene	20	U	40	20	8.9
118-96-7	2,4,6-Trinitrotoluene	40	U	40	40	16
121-14-2	2,4-Dinitrotoluene	20	U	40	20	8.4
606-20-2	2,6-Dinitrotoluene	20	U	20	20	6.5
35572-78-2	2-Amino-4,6-dinitrotoluene	12	U	20	12	5.1
88-72-2	2-Nitrotoluene	20	U	40	20	8.6
99-08-1	3-Nitrotoluene	40	U M	40	40	20
19406-51-0	4-Amino-2,6-dinitrotoluene	12	U	20	12	5.8
99-99-0	4-Nitrotoluene	40	U	100	40	20
2691-41-0	HMX	20	U	40	20	8.8
98-95-3	Nitrobenzene	20	U	40	20	9.1
55-63-0	Nitroglycerin	200	U	300	200	92
78-11-5	PETN	400	U	400	400	190
121-82-4	RDX	40	U	40	40	16
479-45-8	Tetryl	20	U	24	20	7.9

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	95		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190516-81970.b\0516B010.D
 Lims ID: MB 280-457818/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 16-May-2019 15:48:01 ALS Bottle#: 10 Worklist Smp#: 10
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: MB 280-457818/1-
 Misc. Info.: 280-0081970-010
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190516-81970.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 17-May-2019 08:21:19 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 17-May-2019 08:09:57

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
1 2,6-diamino-4-nitrotoluene	1		6.511				ND	
2 TNX	1		6.567				ND	
3 HMX	1		6.663				ND	
4 2,4-diamino-6-nitrotoluene	1		6.705				ND	
5 DNX	1		6.900				ND	
6 MNX	1		7.367				ND	
7 RDX	1		7.783				ND	
8 2,4,6-Trinitrophenol	1	8.134	8.177	-0.043	1741		0.0208	M
\$ 9 1,2-Dinitrobenzene	1	8.767	8.777	-0.010	24773	0.2000	0.1904	
10 1,3,5-Trinitrobenzene	1		8.930				ND	
11 1,3-Dinitrobenzene	1		9.603				ND	
12 Nitrobenzene	1		9.996				ND	
13 3,5-Dinitroaniline	1		10.258				ND	
14 Tetryl	1		10.336				ND	
15 Nitroglycerin	2		10.836				ND	
16 2,4,6-Trinitrotoluene	1		11.296				ND	
17 4-Amino-2,6-dinitrotoluene	1		11.503				ND	
18 2-Amino-4,6-dinitrotoluene	1		11.796				ND	
19 2,6-Dinitrotoluene	1		11.916				ND	
20 2,4-Dinitrotoluene	1		12.123				ND	
21 o-Nitrotoluene	1		12.970				ND	
22 p-Nitrotoluene	1		13.416				ND	
23 m-Nitrotoluene	1		14.023				ND	U
24 PETN	2		15.136				ND	
25 Ammonium Picrate	1		0.000				ND	

QC Flag Legend

Review Flags

M - Manually Integrated

U - Marked Undetected

Report Date: 17-May-2019 08:21:21

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190516-81970.b\0516B010.D

Injection Date: 16-May-2019 15:48:01

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: MB 280-457818/1-A

Worklist Smp#: 10

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

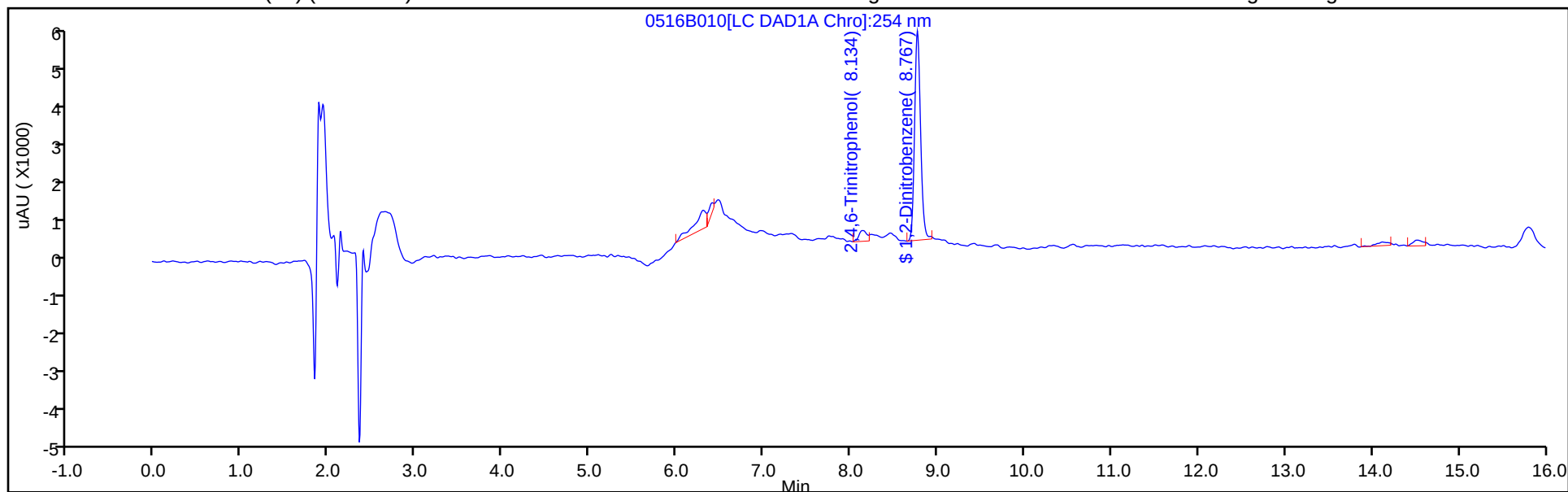
ALS Bottle#: 10

Method: 8330_X3

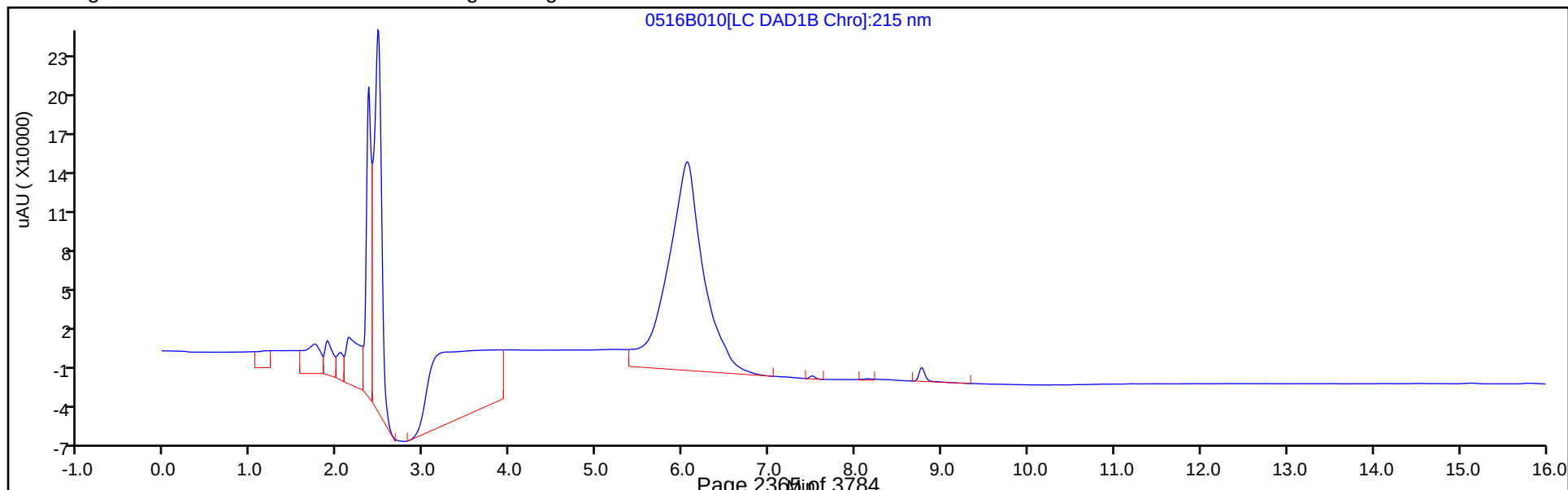
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190516-81970.b\0516B010.D
Lims ID: MB 280-457818/1-A
Client ID:
Sample Type: MB
Inject. Date: 16-May-2019 15:48:01 ALS Bottle#: 10 Worklist Smp#: 10
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: MB 280-457818/1-
Misc. Info.: 280-0081970-010
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190516-81970.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 17-May-2019 08:21:19 Calib Date: 15-May-2019 01:42:24
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 17-May-2019 08:09:57

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1904	95.20

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190516-81970.b\0516B010.D

Injection Date: 16-May-2019 15:48:01

Instrument ID: CHHPLC_X3

Lims ID: MB 280-457818/1-A

Client ID:

Operator ID: hkf

ALS Bottle#: 10

Worklist Smp#: 10

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

Method: 8330_X3

Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

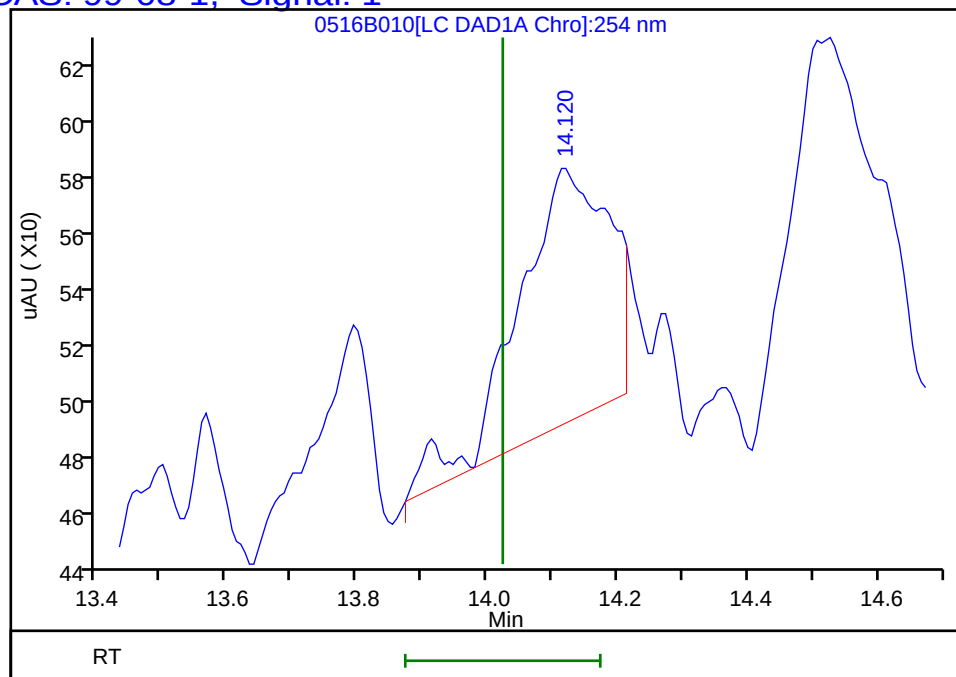
Detector: LC DAD1B, 254 nm

23 m-Nitrotoluene, CAS: 99-08-1, Signal: 1

RT: 14.12

Response: 870

Amount: 0.005866



Reviewer: fiedlerh, 17-May-2019 08:09:57

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCS 280-456980/2-A
 Matrix: Water Lab File ID: 0509B036.D
 Analysis Method: 8330B Date Collected: _____
 Extraction Method: 3535 Date Extracted: 05/04/2019 15:00
 Sample wt/vol: 500 (mL) Date Analyzed: 05/10/2019 04:15
 Con. Extract Vol.: 5 (mL) Dilution Factor: 1
 Injection Volume: 100 (uL) GC Column: UltraCarb5uODS ID: 4.6 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 457634 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	2.16		1.0	0.40	0.20
99-65-0	1,3-Dinitrobenzene	1.90		0.40	0.20	0.089
118-96-7	2,4,6-Trinitrotoluene	1.72		0.40	0.40	0.16
121-14-2	2,4-Dinitrotoluene	1.86		0.40	0.20	0.084
606-20-2	2,6-Dinitrotoluene	1.87		0.20	0.20	0.065
35572-78-2	2-Amino-4,6-dinitrotoluene	1.76		0.20	0.12	0.051
88-72-2	2-Nitrotoluene	1.37	Q	0.40	0.20	0.086
99-08-1	3-Nitrotoluene	1.51		0.40	0.40	0.20
19406-51-0	4-Amino-2,6-dinitrotoluene	1.68		0.20	0.12	0.058
99-99-0	4-Nitrotoluene	1.57		1.0	0.40	0.20
2691-41-0	HMX	2.07		0.40	0.20	0.088
98-95-3	Nitrobenzene	1.64		0.40	0.20	0.091
55-63-0	Nitroglycerin	19.2		3.0	2.0	0.92
78-11-5	PETN	18.4		4.0	4.0	1.9
121-82-4	RDX	1.97		0.40	0.40	0.16
479-45-8	Tetryl	1.80		0.24	0.20	0.079

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	91		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B036.D
 Lims ID: LCS 280-456980/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 10-May-2019 04:15:47 ALS Bottle#: 36 Worklist Smp#: 36
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: LCS 280-456980/2
 Misc. Info.: 280-0081739-036
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 10-May-2019 08:50:05 Calib Date: 30-Jan-2019 16:34:11
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0316

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.647	6.643	0.004	18003	0.2000	0.2072	
7 RDX	1	7.740	7.736	0.004	20889	0.2000	0.1969	
8 2,4,6-Trinitrophenol	1	8.094	8.090	0.004	16587	0.2000	0.1934	
\$ 9 1,2-Dinitrobenzene	1	8.720	8.710	0.010	24210	0.2000	0.1811	
10 1,3,5-Trinitrobenzene	1	8.880	8.870	0.010	48970	0.2000	0.2156	
11 1,3-Dinitrobenzene	1	9.534	9.523	0.011	57315	0.2000	0.1900	
12 Nitrobenzene	1	9.927	9.910	0.017	32108	0.2000	0.1642	
14 Tetryl	1	10.247	10.230	0.017	32825	0.2000	0.1796	
15 Nitroglycerin	2	10.754	10.736	0.018	130289	2.00	1.92	
16 2,4,6-Trinitrotoluene	1	11.200	11.183	0.017	39058	0.2000	0.1718	
17 4-Amino-2,6-dinitrotoluene	1	11.360	11.343	0.017	28092	0.2000	0.1680	
18 2-Amino-4,6-dinitrotoluene	1	11.647	11.630	0.017	35951	0.2000	0.1764	
19 2,6-Dinitrotoluene	1	11.800	11.790	0.010	28789	0.2000	0.1868	
20 2,4-Dinitrotoluene	1	11.994	11.983	0.011	55813	0.2000	0.1860	
21 o-Nitrotoluene	1	12.840	12.823	0.017	18600	0.2000	0.1370	
22 p-Nitrotoluene	1	13.274	13.256	0.018	18597	0.2000	0.1567	
23 m-Nitrotoluene	1	13.860	13.856	0.004	22886	0.2000	0.1508	
24 PETN	2	14.967	14.963	0.004	140047	2.00	1.84	

Report Date: 10-May-2019 08:50:08

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B036.D

Injection Date: 10-May-2019 04:15:47

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: LCS 280-456980/2-A

Worklist Smp#: 36

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

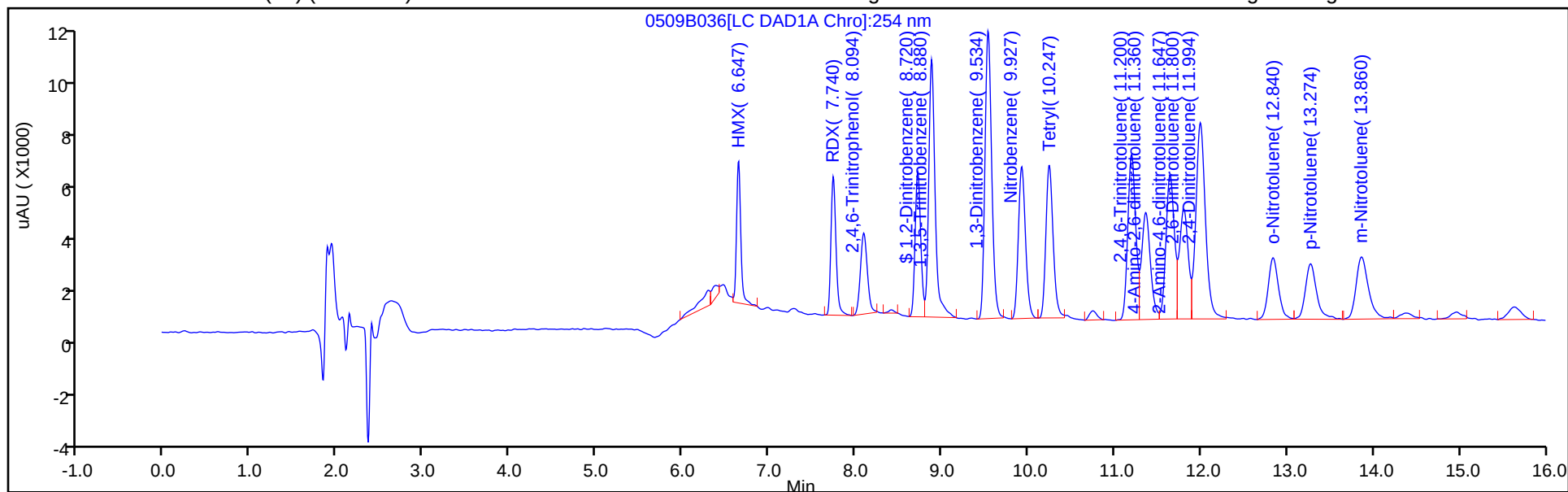
ALS Bottle#: 36

Method: 8330_X3

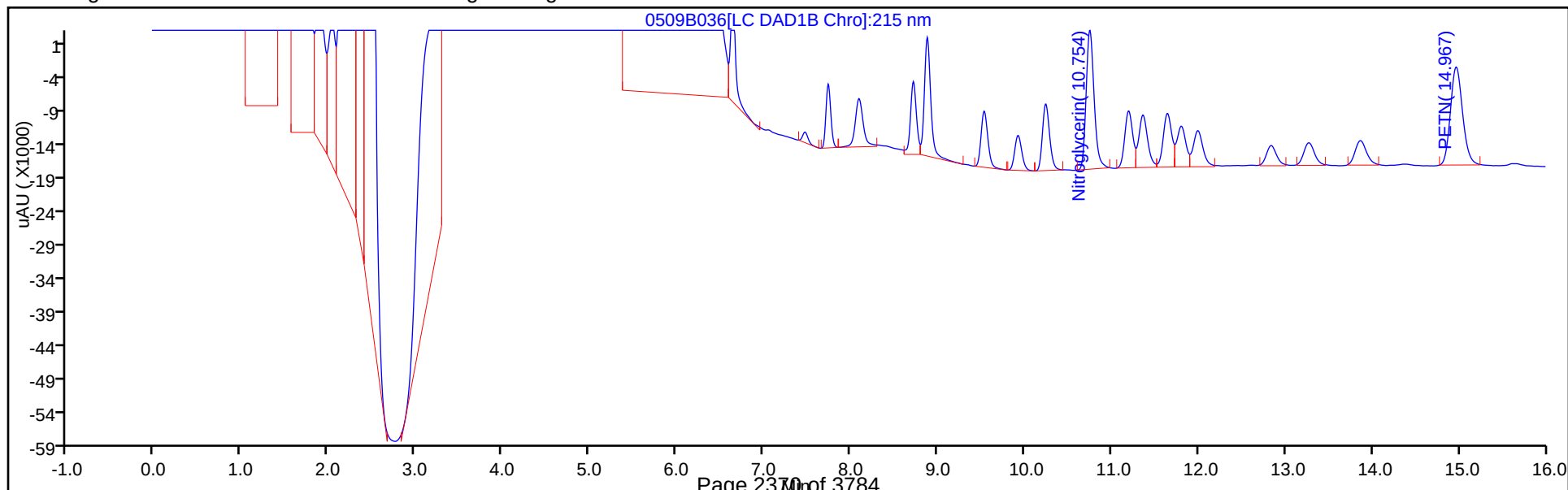
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B036.D
Lims ID: LCS 280-456980/2-A
Client ID:
Sample Type: LCS
Inject. Date: 10-May-2019 04:15:47 ALS Bottle#: 36 Worklist Smp#: 36
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: LCS 280-456980/2
Misc. Info.: 280-0081739-036
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 10-May-2019 08:50:05 Calib Date: 30-Jan-2019 16:34:11
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0316

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1811	90.54

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: LCS 280-457741/2-A

Matrix: Water Lab File ID: 0514B057.D

Analysis Method: 8330B Date Collected: _____

Extraction Method: 3535 Date Extracted: 05/10/2019 16:21

Sample wt/vol: 500 (mL) Date Analyzed: 05/15/2019 11:36

Con. Extract Vol.: 5 (mL) Dilution Factor: 1

Injection Volume: 100 (uL) GC Column: UltraCarb5uODS ID: 4.6 (mm)

% Moisture: _____ GPC Cleanup: (Y/N) N

Analysis Batch No.: 458152 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	2.10		1.0	0.40	0.20
99-65-0	1,3-Dinitrobenzene	2.04		0.40	0.20	0.089
118-96-7	2,4,6-Trinitrotoluene	1.85		0.40	0.40	0.16
121-14-2	2,4-Dinitrotoluene	1.97		0.40	0.20	0.084
606-20-2	2,6-Dinitrotoluene	1.95		0.20	0.20	0.065
35572-78-2	2-Amino-4,6-dinitrotoluene	1.87		0.20	0.12	0.051
88-72-2	2-Nitrotoluene	1.72		0.40	0.20	0.086
99-08-1	3-Nitrotoluene	1.74		0.40	0.40	0.20
19406-51-0	4-Amino-2,6-dinitrotoluene	1.74		0.20	0.12	0.058
99-99-0	4-Nitrotoluene	1.75		1.0	0.40	0.20
2691-41-0	HMX	1.91	M	0.40	0.20	0.088
98-95-3	Nitrobenzene	1.89		0.40	0.20	0.091
55-63-0	Nitroglycerin	20.2		3.0	2.0	0.92
78-11-5	PETN	19.6		4.0	4.0	1.9
121-82-4	RDX	2.03		0.40	0.40	0.16
479-45-8	Tetryl	1.99		0.24	0.20	0.079

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	96		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B057.D
 Lims ID: LCS 280-457741/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 15-May-2019 11:36:25 ALS Bottle#: 57 Worklist Smp#: 57
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: LCS 280-457741/2
 Misc. Info.: 280-0081869-057
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 16-May-2019 08:22:54 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 15-May-2019 12:35:57

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.648	6.650	-0.002	17067	0.2000	0.1913	M
7 RDX	1	7.761	7.764	-0.003	21621	0.2000	0.2027	
8 2,4,6-Trinitrophenol	1	8.128	8.130	-0.002	18083	0.2000	0.2158	
\$ 9 1,2-Dinitrobenzene	1	8.741	8.744	-0.003	25079	0.2000	0.1928	
10 1,3,5-Trinitrobenzene	1	8.901	8.904	-0.003	48255	0.2000	0.2105	
11 1,3-Dinitrobenzene	1	9.567	9.564	0.003	61438	0.2000	0.2042	
12 Nitrobenzene	1	9.954	9.950	0.004	37249	0.2000	0.1892	
14 Tetryl	1	10.281	10.284	-0.003	33353	0.2000	0.1986	
15 Nitroglycerin	2	10.787	10.784	0.003	141565	2.00	2.02	
16 2,4,6-Trinitrotoluene	1	11.241	11.237	0.004	41264	0.2000	0.1845	
17 4-Amino-2,6-dinitrotoluene	1	11.434	11.430	0.004	28313	0.2000	0.1743	
18 2-Amino-4,6-dinitrotoluene	1	11.721	11.717	0.004	36843	0.2000	0.1865	
19 2,6-Dinitrotoluene	1	11.854	11.850	0.004	30467	0.2000	0.1946	
20 2,4-Dinitrotoluene	1	12.054	12.050	0.004	58532	0.2000	0.1968	
21 o-Nitrotoluene	1	12.894	12.890	0.004	22591	0.2000	0.1720	
22 p-Nitrotoluene	1	13.334	13.330	0.004	19698	0.2000	0.1748	
23 m-Nitrotoluene	1	13.934	13.930	0.004	25746	0.2000	0.1736	
24 PETN	2	15.021	15.024	-0.003	143663	2.00	1.96	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 16-May-2019 08:23:15

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B057.D

Injection Date: 15-May-2019 11:36:25

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: LCS 280-457741/2-A

Worklist Smp#: 57

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

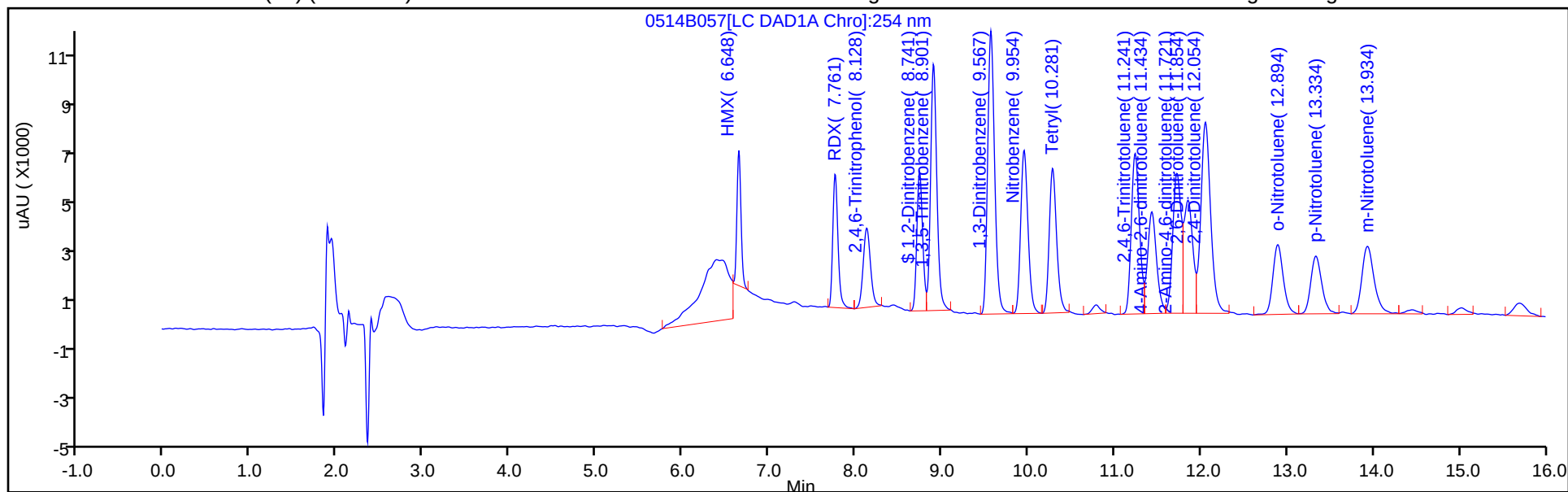
ALS Bottle#: 57

Method: 8330_X3

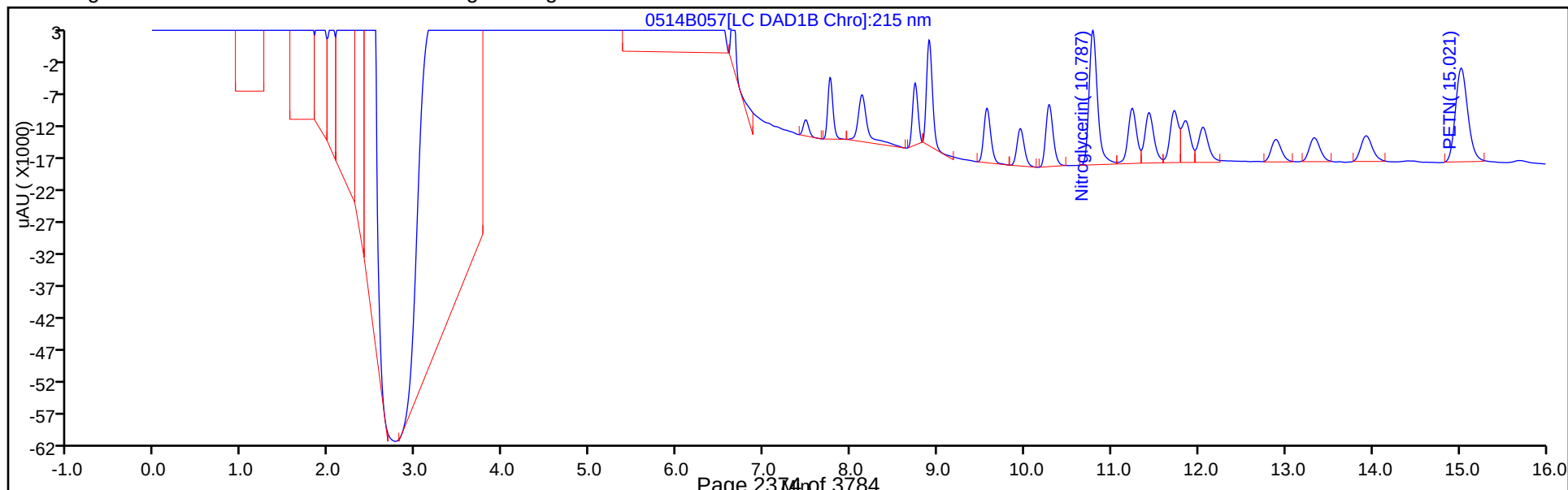
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B057.D
Lims ID: LCS 280-457741/2-A
Client ID:
Sample Type: LCS
Inject. Date: 15-May-2019 11:36:25 ALS Bottle#: 57 Worklist Smp#: 57
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: LCS 280-457741/2
Misc. Info.: 280-0081869-057
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 16-May-2019 08:22:54 Calib Date: 15-May-2019 01:42:24
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 15-May-2019 12:35:57

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1928	96.38

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B057.D

Injection Date: 15-May-2019 11:36:25

Instrument ID: CHHPLC_X3

Lims ID: LCS 280-457741/2-A

Client ID:

Operator ID: hkf

ALS Bottle#:

57

Worklist Smp#: 57

Injection Vol: 100.0 ul

Dil. Factor:

1.0000

Method: 8330_X3

Limit Group:

GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Detector

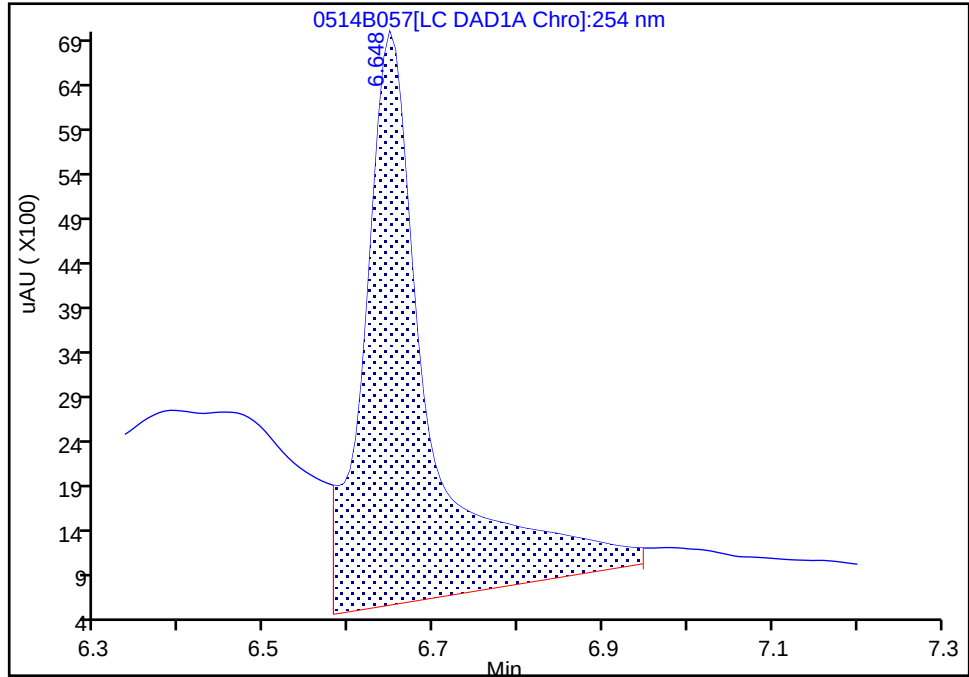
LC DAD1B, 254 nm

3 HMX, CAS: 2691-41-0

Signal: 1

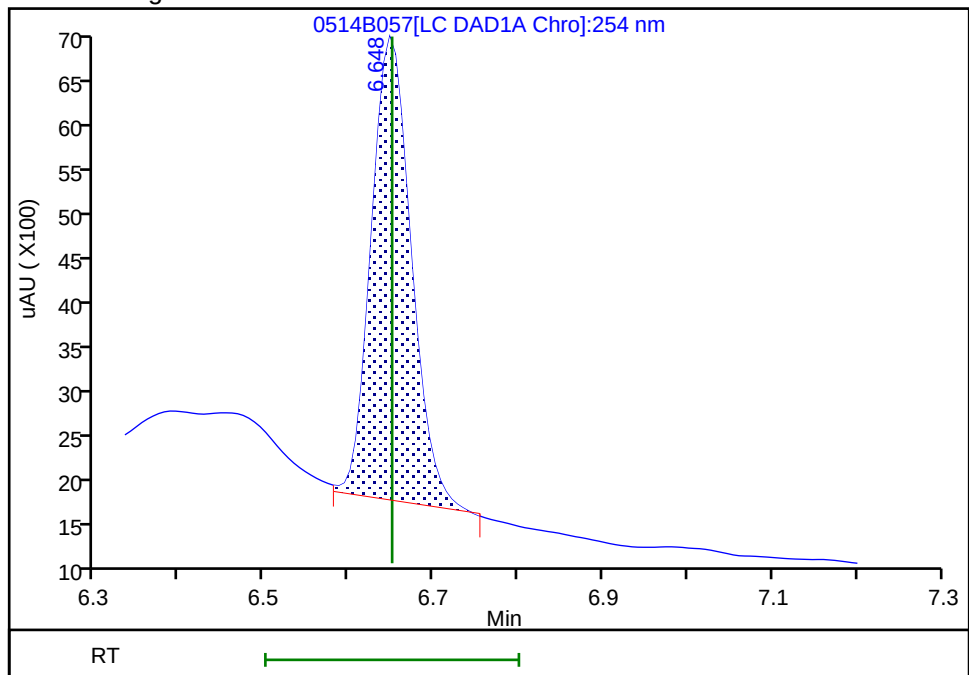
RT: 6.65
Area: 34037
Amount: 0.381554
Amount Units: ug/mL

Processing Integration Results



RT: 6.65
Area: 17067
Amount: 0.191321
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 15-May-2019 12:35:56

Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCS 280-457818/2-A
 Matrix: Water Lab File ID: 0516B011.D
 Analysis Method: 8330B Date Collected: _____
 Extraction Method: 3535 Date Extracted: 05/11/2019 15:37
 Sample wt/vol: 5 (mL) Date Analyzed: 05/16/2019 16:11
 Con. Extract Vol.: 5 (mL) Dilution Factor: 1
 Injection Volume: 100 (uL) GC Column: UltraCarb5uODS ID: 4.6 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 458457 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	202		100	40	20
99-65-0	1,3-Dinitrobenzene	192		40	20	8.9
118-96-7	2,4,6-Trinitrotoluene	179		40	40	16
121-14-2	2,4-Dinitrotoluene	187		40	20	8.4
606-20-2	2,6-Dinitrotoluene	183		20	20	6.5
35572-78-2	2-Amino-4,6-dinitrotoluene	175		20	12	5.1
88-72-2	2-Nitrotoluene	159		40	20	8.6
99-08-1	3-Nitrotoluene	162		40	40	20
19406-51-0	4-Amino-2,6-dinitrotoluene	162		20	12	5.8
99-99-0	4-Nitrotoluene	160		100	40	20
2691-41-0	HMX	181	M	40	20	8.8
98-95-3	Nitrobenzene	176		40	20	9.1
55-63-0	Nitroglycerin	1960		300	200	92
78-11-5	PETN	1960		400	400	190
121-82-4	RDX	197		40	40	16
479-45-8	Tetryl	199		24	20	7.9

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	94		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190516-81970.b\0516B011.D
 Lims ID: LCS 280-457818/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 16-May-2019 16:11:47 ALS Bottle#: 11 Worklist Smp#: 11
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: LCS 280-457818/2
 Misc. Info.: 280-0081970-011
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190516-81970.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 20-May-2019 11:22:35 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0328

First Level Reviewer: fiedlerh

Date: 20-May-2019 11:22:26

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.657	6.663	-0.006	16126	0.2000	0.1808	M
7 RDX	1	7.777	7.783	-0.006	21059	0.2000	0.1975	
8 2,4,6-Trinitrophenol	1	8.151	8.177	-0.026	17916	0.2000	0.2138	
\$ 9 1,2-Dinitrobenzene	1	8.764	8.777	-0.013	24521	0.2000	0.1885	
10 1,3,5-Trinitrobenzene	1	8.924	8.930	-0.006	46212	0.2000	0.2016	
11 1,3-Dinitrobenzene	1	9.591	9.603	-0.012	57717	0.2000	0.1919	
12 Nitrobenzene	1	9.984	9.996	-0.012	34712	0.2000	0.1764	
14 Tetryl	1	10.317	10.336	-0.019	33476	0.2000	0.1993	
15 Nitroglycerin	2	10.824	10.836	-0.012	137102	2.00	1.96	
16 2,4,6-Trinitrotoluene	1	11.277	11.296	-0.019	39982	0.2000	0.1788	
17 4-Amino-2,6-dinitrotoluene	1	11.477	11.503	-0.026	26312	0.2000	0.1620	
18 2-Amino-4,6-dinitrotoluene	1	11.771	11.796	-0.025	34503	0.2000	0.1747	
19 2,6-Dinitrotoluene	1	11.904	11.916	-0.012	28628	0.2000	0.1828	
20 2,4-Dinitrotoluene	1	12.104	12.123	-0.019	55679	0.2000	0.1872	
21 o-Nitrotoluene	1	12.951	12.970	-0.019	20819	0.2000	0.1585	
22 p-Nitrotoluene	1	13.391	13.416	-0.025	18090	0.2000	0.1605	
23 m-Nitrotoluene	1	13.997	14.023	-0.026	24038	0.2000	0.1621	
24 PETN	2	15.111	15.136	-0.025	143626	2.00	1.96	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 20-May-2019 11:22:46

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190516-81970.b\0516B011.D

Injection Date: 16-May-2019 16:11:47

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: LCS 280-457818/2-A

Worklist Smp#: 11

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

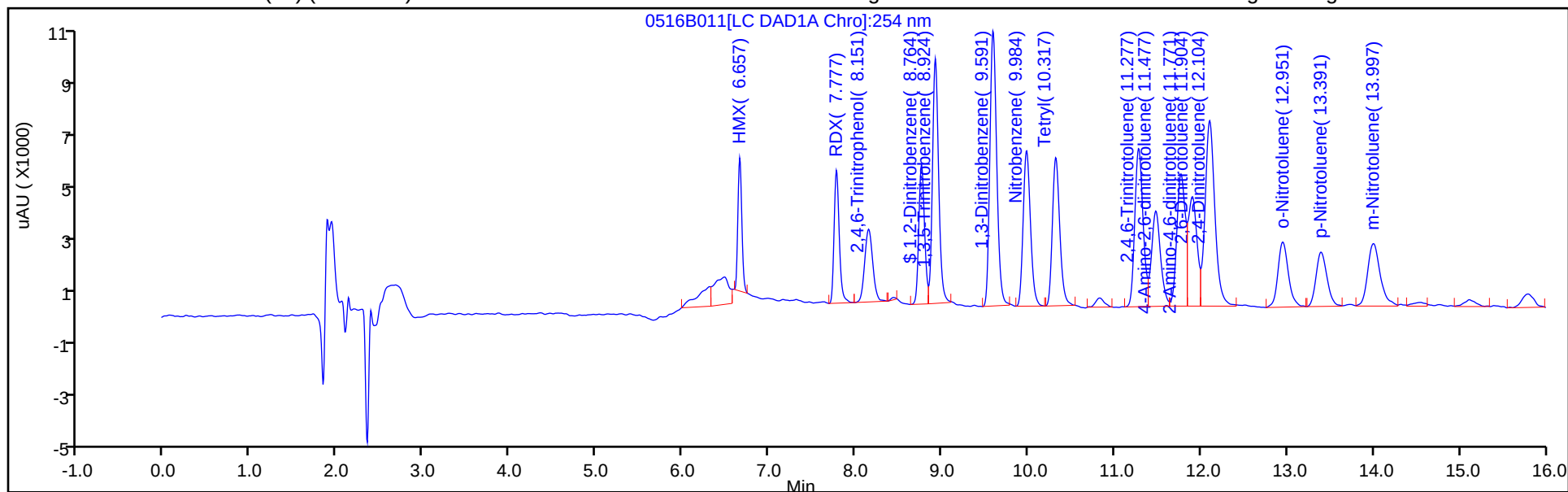
ALS Bottle#: 11

Method: 8330_X3

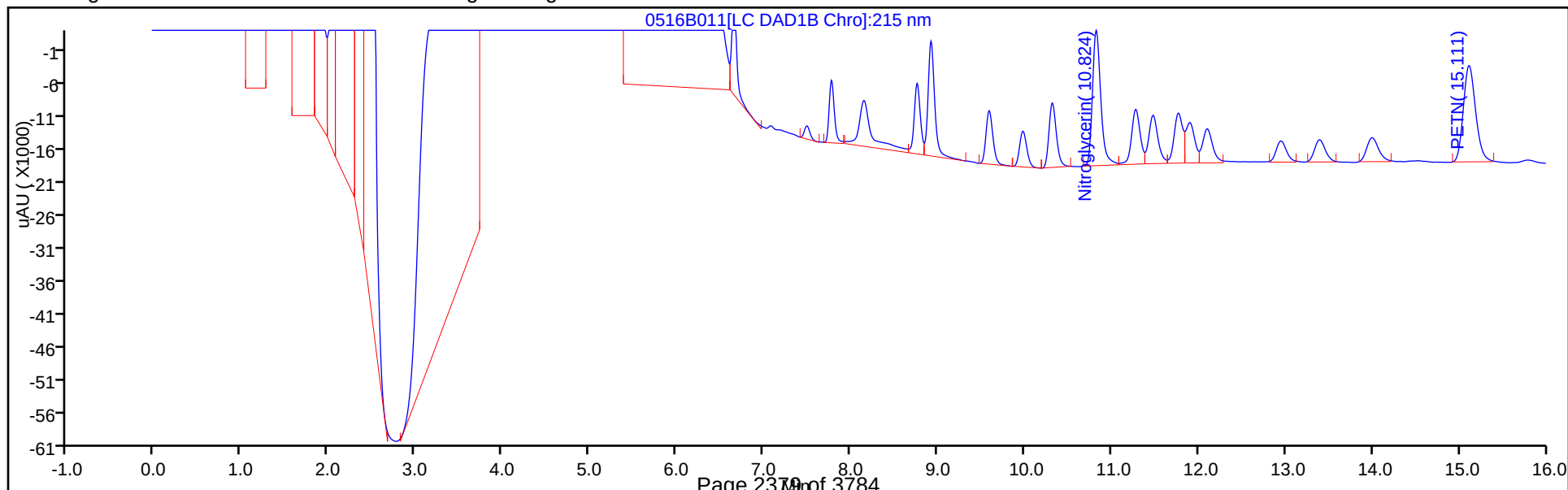
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190516-81970.b\0516B011.D
Lims ID: LCS 280-457818/2-A
Client ID:
Sample Type: LCS
Inject. Date: 16-May-2019 16:11:47 ALS Bottle#: 11 Worklist Smp#: 11
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: LCS 280-457818/2
Misc. Info.: 280-0081970-011
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190516-81970.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 20-May-2019 11:22:35 Calib Date: 15-May-2019 01:42:24
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0328

First Level Reviewer: fiedlerh

Date: 20-May-2019 11:22:26

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1885	94.23

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190516-81970.b\0516B011.D

Injection Date: 16-May-2019 16:11:47

Instrument ID: CHHPLC_X3

Lims ID: LCS 280-457818/2-A

Client ID:

Operator ID: hkf

ALS Bottle#:

11

Worklist Smp#: 11

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

Method: 8330_X3

Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Detector

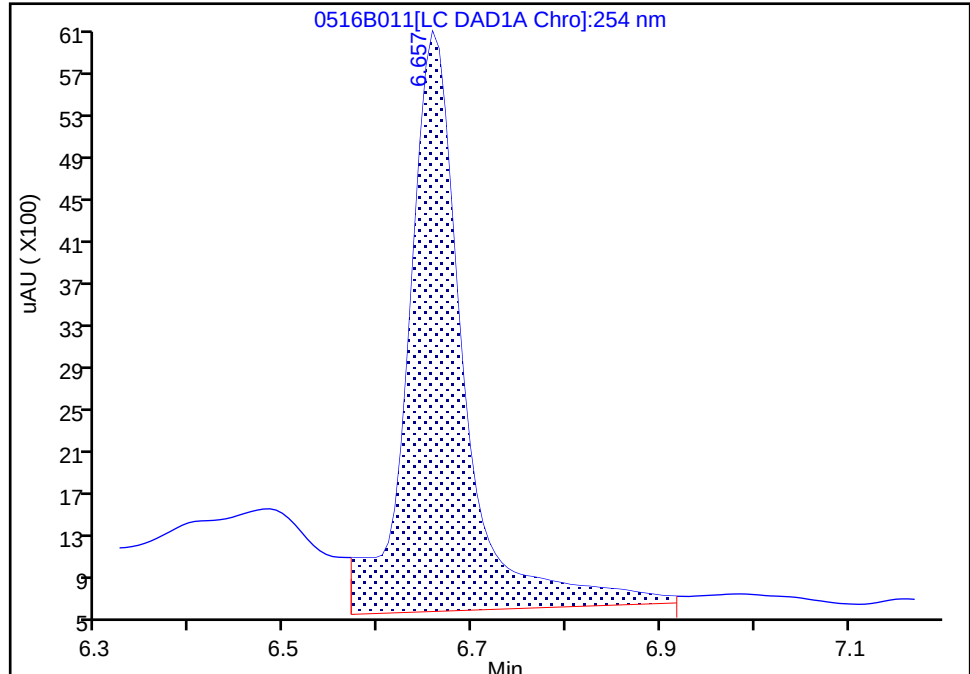
LC DAD1B, 254 nm

3 HMX, CAS: 2691-41-0

Signal: 1

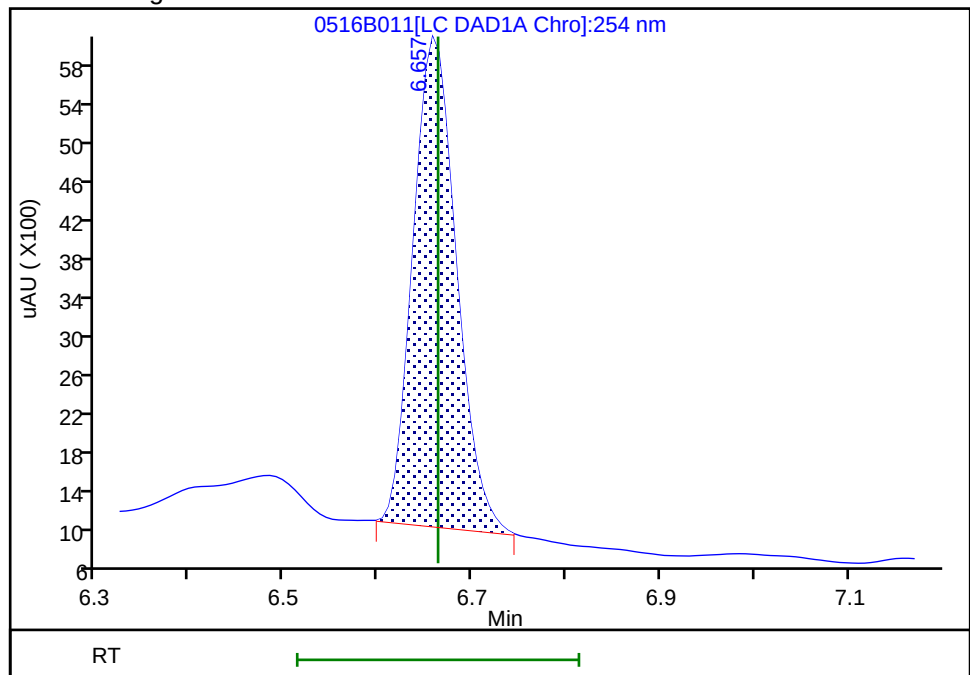
RT: 6.66
Area: 22604
Amount: 0.253391
Amount Units: ug/mL

Processing Integration Results



RT: 6.66
Area: 16126
Amount: 0.180772
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 20-May-2019 11:22:25

Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Client Sample ID: _____ Lab Sample ID: LCSD 280-457818/3-A

Matrix: Water Lab File ID: 0516B012.D

Analysis Method: 8330B Date Collected: _____

Extraction Method: 3535 Date Extracted: 05/11/2019 15:37

Sample wt/vol: 5 (mL) Date Analyzed: 05/16/2019 16:35

Con. Extract Vol.: 5 (mL) Dilution Factor: 1

Injection Volume: 100 (uL) GC Column: UltraCarb5uODS ID: 4.6 (mm)

% Moisture: _____ GPC Cleanup: (Y/N) N

Analysis Batch No.: 458457 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	205		100	40	20
99-65-0	1,3-Dinitrobenzene	194		40	20	8.9
118-96-7	2,4,6-Trinitrotoluene	181		40	40	16
121-14-2	2,4-Dinitrotoluene	188		40	20	8.4
606-20-2	2,6-Dinitrotoluene	184		20	20	6.5
35572-78-2	2-Amino-4,6-dinitrotoluene	179		20	12	5.1
88-72-2	2-Nitrotoluene	158		40	20	8.6
99-08-1	3-Nitrotoluene	163		40	40	20
19406-51-0	4-Amino-2,6-dinitrotoluene	165		20	12	5.8
99-99-0	4-Nitrotoluene	164		100	40	20
2691-41-0	HMX	186	M	40	20	8.8
98-95-3	Nitrobenzene	176		40	20	9.1
55-63-0	Nitroglycerin	1970		300	200	92
78-11-5	PETN	1970		400	400	190
121-82-4	RDX	197		40	40	16
479-45-8	Tetryl	201		24	20	7.9

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	94		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190516-81970.b\0516B012.D
 Lims ID: LCSD 280-457818/3-A
 Client ID:
 Sample Type: LCSD
 Inject. Date: 16-May-2019 16:35:32 ALS Bottle#: 12 Worklist Smp#: 12
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: LCSD 280-457818/
 Misc. Info.: 280-0081970-012
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190516-81970.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 20-May-2019 11:22:35 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0328

First Level Reviewer: fiedlerh

Date: 20-May-2019 11:22:35

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
3 HMX	1	6.660	6.663	-0.003	16633	0.2000	0.1865	M
7 RDX	1	7.780	7.783	-0.003	21018	0.2000	0.1971	
8 2,4,6-Trinitrophenol	1	8.153	8.177	-0.024	18345	0.2000	0.2189	
\$ 9 1,2-Dinitrobenzene	1	8.767	8.777	-0.010	24495	0.2000	0.1883	
10 1,3,5-Trinitrobenzene	1	8.927	8.930	-0.003	46982	0.2000	0.2049	
11 1,3-Dinitrobenzene	1	9.593	9.603	-0.010	58261	0.2000	0.1937	
12 Nitrobenzene	1	9.987	9.996	-0.009	34544	0.2000	0.1755	
14 Tetryl	1	10.320	10.336	-0.016	33745	0.2000	0.2009	
15 Nitroglycerin	2	10.827	10.836	-0.009	137910	2.00	1.97	
16 2,4,6-Trinitrotoluene	1	11.280	11.296	-0.016	40448	0.2000	0.1809	
17 4-Amino-2,6-dinitrotoluene	1	11.480	11.503	-0.023	26803	0.2000	0.1650	
18 2-Amino-4,6-dinitrotoluene	1	11.773	11.796	-0.023	35426	0.2000	0.1793	
19 2,6-Dinitrotoluene	1	11.907	11.916	-0.009	28843	0.2000	0.1842	
20 2,4-Dinitrotoluene	1	12.107	12.123	-0.016	55947	0.2000	0.1881	
21 o-Nitrotoluene	1	12.953	12.970	-0.017	20760	0.2000	0.1581	
22 p-Nitrotoluene	1	13.393	13.416	-0.023	18494	0.2000	0.1641	
23 m-Nitrotoluene	1	14.000	14.023	-0.023	24152	0.2000	0.1629	
24 PETN	2	15.113	15.136	-0.023	144335	2.00	1.97	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 20-May-2019 11:22:47

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190516-81970.b\0516B012.D

Injection Date: 16-May-2019 16:35:32

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: LCSD 280-457818/3-A

Worklist Smp#: 12

Client ID:

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

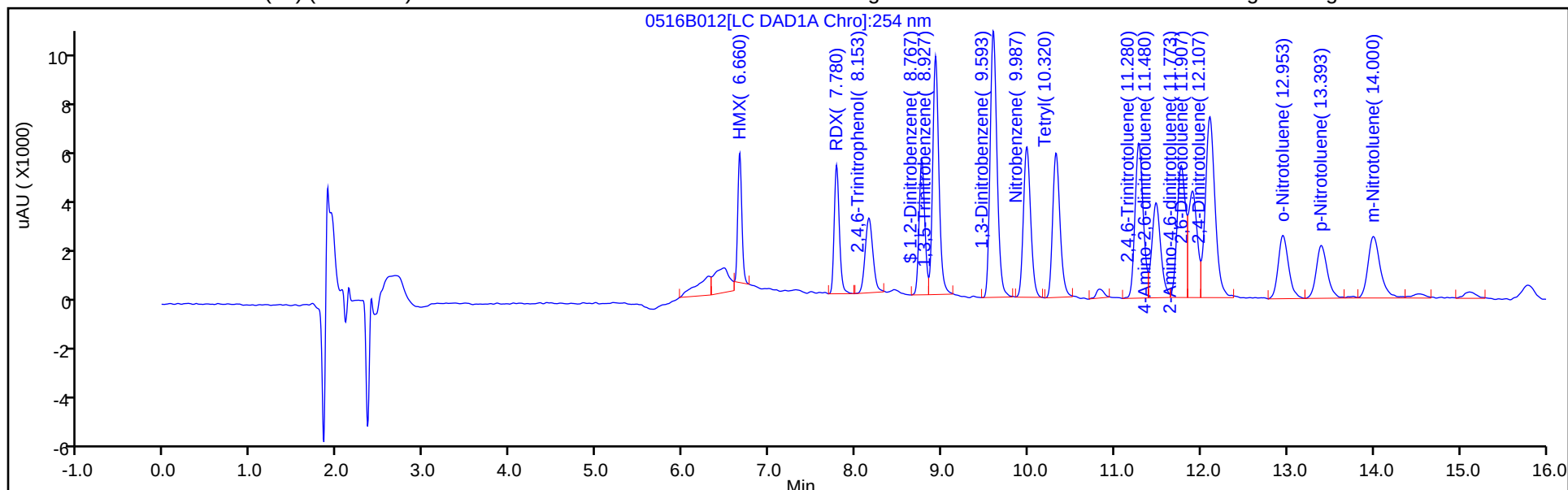
ALS Bottle#: 12

Method: 8330_X3

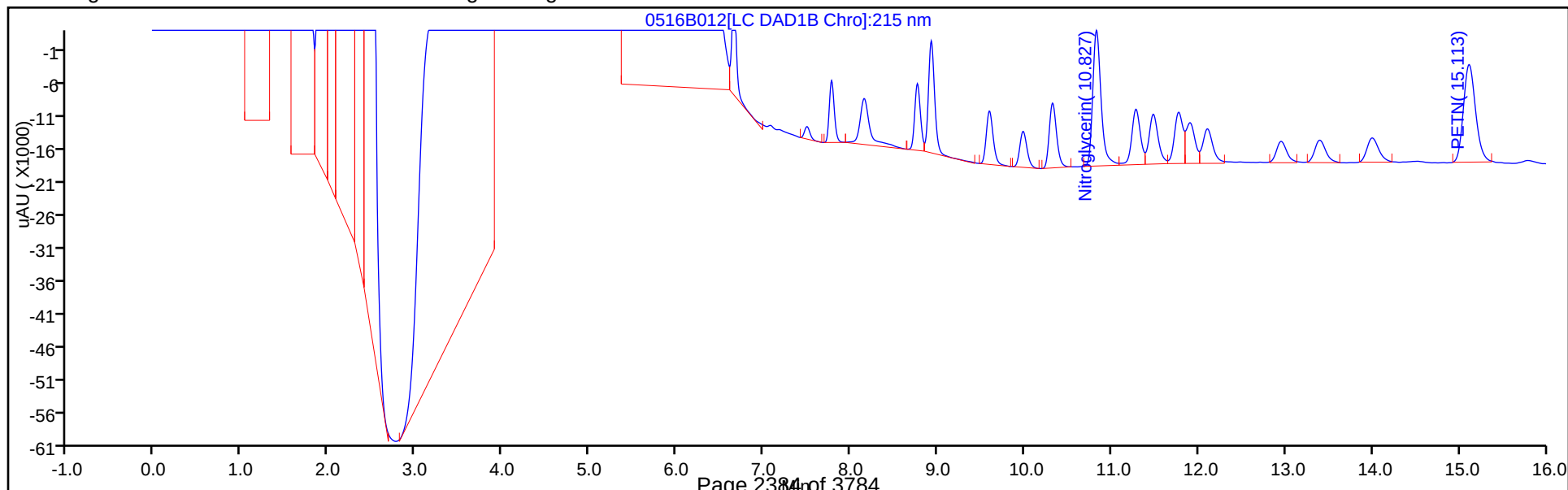
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190516-81970.b\0516B012.D
Lims ID: LCSD 280-457818/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 16-May-2019 16:35:32 ALS Bottle#: 12 Worklist Smp#: 12
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: LCSD 280-457818/
Misc. Info.: 280-0081970-012
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190516-81970.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 20-May-2019 11:22:35 Calib Date: 15-May-2019 01:42:24
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0328

First Level Reviewer: fiedlerh

Date: 20-May-2019 11:22:35

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1883	94.13

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190516-81970.b\0516B012.D

Injection Date: 16-May-2019 16:35:32

Instrument ID: CHHPLC_X3

Lims ID: LCSD 280-457818/3-A

Client ID:

Operator ID: hkf

ALS Bottle#:

12

Worklist Smp#: 12

Injection Vol: 100.0 ul

Dil. Factor:

1.0000

Method: 8330_X3

Limit Group:

GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Detector

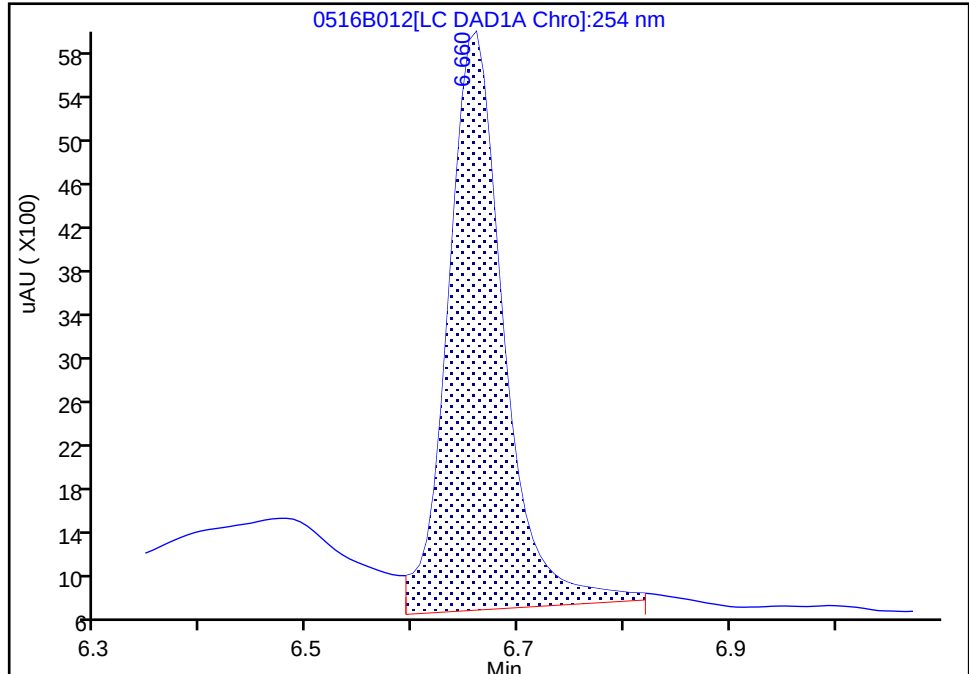
LC DAD1B, 254 nm

3 HMX, CAS: 2691-41-0

Signal: 1

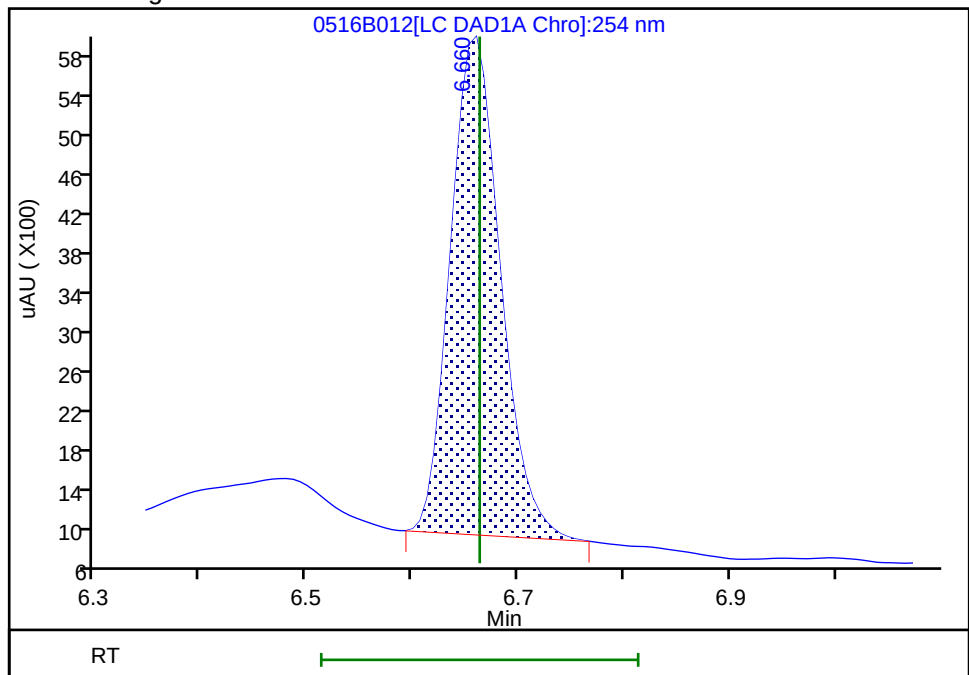
RT: 6.66
Area: 19550
Amount: 0.219155
Amount Units: ug/mL

Processing Integration Results



RT: 6.66
Area: 16633
Amount: 0.186456
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 20-May-2019 11:22:34

Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: NTAmw-119-190401-GWMS MS Lab Sample ID: 280-123221-2 MS
 Matrix: Water Lab File ID: 0509B040.D
 Analysis Method: 8330B Date Collected: 04/30/2019 10:45
 Extraction Method: 3535 Date Extracted: 05/04/2019 15:00
 Sample wt/vol: 459.7(mL) Date Analyzed: 05/10/2019 05:50
 Con. Extract Vol.: 5(mL) Dilution Factor: 1
 Injection Volume: 100(uL) GC Column: UltraCarb5uODS ID: 4.6(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 457634 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	2.16		1.1	0.44	0.22
99-65-0	1,3-Dinitrobenzene	1.96		0.44	0.22	0.096
118-96-7	2,4,6-Trinitrotoluene	1.78		0.44	0.44	0.17
121-14-2	2,4-Dinitrotoluene	1.86		0.44	0.22	0.091
606-20-2	2,6-Dinitrotoluene	1.82		0.22	0.22	0.070
35572-78-2	2-Amino-4,6-dinitrotoluene	1.80		0.22	0.13	0.055
88-72-2	2-Nitrotoluene	1.19	J1	0.44	0.22	0.093
99-08-1	3-Nitrotoluene	1.30	J1	0.44	0.44	0.21
19406-51-0	4-Amino-2,6-dinitrotoluene	1.67		0.22	0.13	0.063
99-99-0	4-Nitrotoluene	1.41	J1	1.1	0.44	0.22
2691-41-0	HMX	1.95	M	0.44	0.22	0.095
98-95-3	Nitrobenzene	1.48		0.44	0.22	0.099
55-63-0	Nitroglycerin	20.2		3.3	2.2	1.0
78-11-5	PETN	18.9		4.4	4.4	2.1
121-82-4	RDX	1.99		0.44	0.44	0.17
479-45-8	Tetryl	1.93		0.26	0.22	0.086

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	90		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B040.D
 Lims ID: 280-123221-A-2-B MS
 Client ID: NTAmw-119-190401-GWMS
 Sample Type: MS
 Inject. Date: 10-May-2019 05:50:42 ALS Bottle#: 40 Worklist Smp#: 40
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-A-2-B
 Misc. Info.: 280-0081739-040
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 10-May-2019 08:50:05 Calib Date: 30-Jan-2019 16:34:11
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 10-May-2019 08:41:53

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
1 2,6-diamino-4-nitrotoluene	1		6.501				ND	U
2 TNX	1		6.541				ND	U
3 HMX	1	6.645	6.643	0.002	15596	0.2000	0.1795	M
4 2,4-diamino-6-nitrotoluene	1		6.688				ND	
5 DNX	1		6.875				ND	
6 MNX	1		7.328				ND	
7 RDX	1	7.738	7.736	0.002	19431	0.2000	0.1831	
8 2,4,6-Trinitrophenol	1	8.085	8.090	-0.005	15927	0.2000	0.1857	
\$ 9 1,2-Dinitrobenzene	1	8.711	8.710	0.001	24198	0.2000	0.1810	
10 1,3,5-Trinitrobenzene	1	8.871	8.870	0.001	45131	0.2000	0.1987	
11 1,3-Dinitrobenzene	1	9.525	9.523	0.002	54368	0.2000	0.1803	
12 Nitrobenzene	1	9.911	9.910	0.001	26517	0.2000	0.1356	
13 3,5-Dinitroaniline	1		10.134				ND	
14 Tetryl	1	10.225	10.230	-0.005	32457	0.2000	0.1776	
15 Nitroglycerin	2	10.731	10.736	-0.005	126060	2.00	1.86	
16 2,4,6-Trinitrotoluene	1	11.178	11.183	-0.005	37183	0.2000	0.1636	
17 4-Amino-2,6-dinitrotoluene	1	11.338	11.343	-0.005	25740	0.2000	0.1540	
18 2-Amino-4,6-dinitrotoluene	1	11.625	11.630	-0.005	33696	0.2000	0.1653	
19 2,6-Dinitrotoluene	1	11.785	11.790	-0.005	25782	0.2000	0.1673	
20 2,4-Dinitrotoluene	1	11.978	11.983	-0.005	51266	0.2000	0.1709	
21 o-Nitrotoluene	1	12.818	12.823	-0.005	14808	0.2000	0.1090	
22 p-Nitrotoluene	1	13.251	13.256	-0.005	15423	0.2000	0.1299	
23 m-Nitrotoluene	1	13.838	13.856	-0.018	18086	0.2000	0.1192	
24 PETN	2	14.938	14.963	-0.025	132318	2.00	1.74	
25 Ammonium Picrate	1		0.000				ND	

QC Flag Legend

Review Flags

M - Manually Integrated

U - Marked Undetected

Report Date: 10-May-2019 08:50:12

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B040.D

Injection Date: 10-May-2019 05:50:42

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-A-2-B MS

Worklist Smp#: 40

Client ID: NTAmw-119-190401-GWMS

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

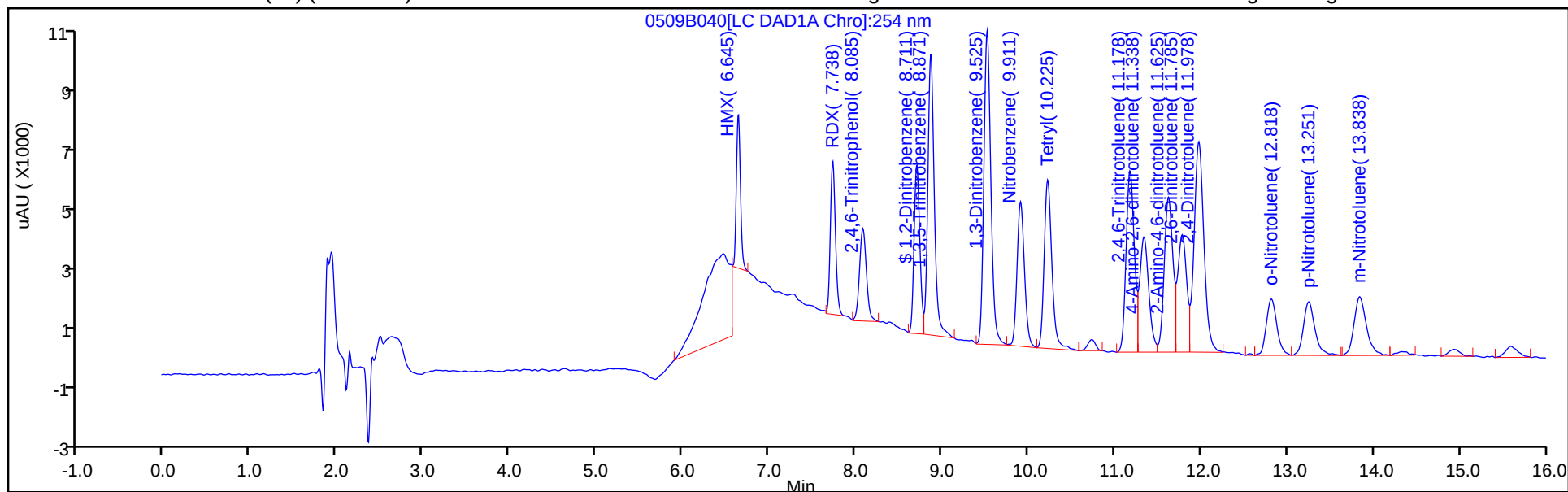
ALS Bottle#: 40

Method: 8330_X3

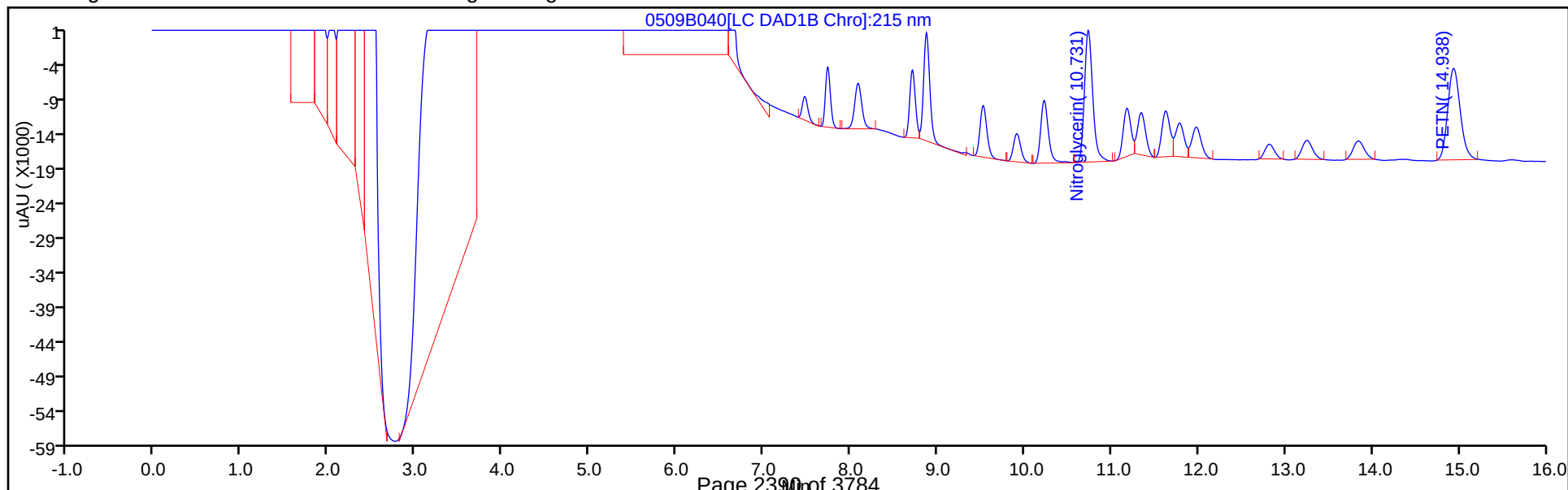
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B040.D
Lims ID: 280-123221-A-2-B MS
Client ID: NTAmw-119-190401-GWMS
Sample Type: MS
Inject. Date: 10-May-2019 05:50:42 ALS Bottle#: 40 Worklist Smp#: 40
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-A-2-B
Misc. Info.: 280-0081739-040
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 10-May-2019 08:50:05 Calib Date: 30-Jan-2019 16:34:11
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 10-May-2019 08:41:53

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1810	90.50

Eurofins TestAmerica, Denver

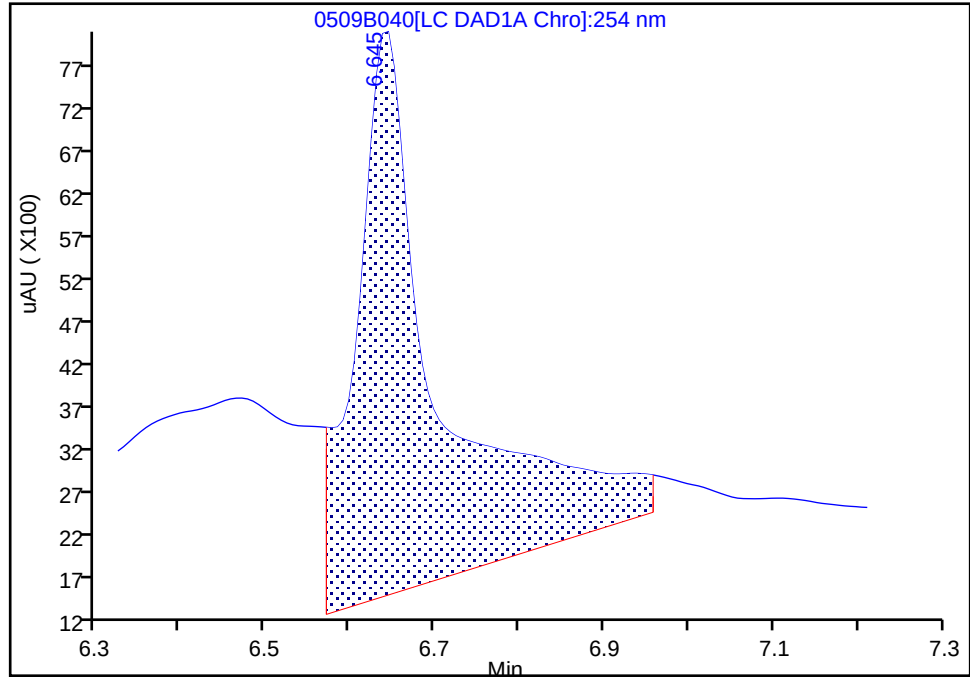
Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B040.D
Injection Date: 10-May-2019 05:50:42 Instrument ID: CHHPLC_X3
Lims ID: 280-123221-A-2-B MS
Client ID: NTAmw-119-190401-GWMS
Operator ID: hkf ALS Bottle#: 40 Worklist Smp#: 40
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector LC DAD1B, 254 nm

3 HMX, CAS: 2691-41-0

Signal: 1

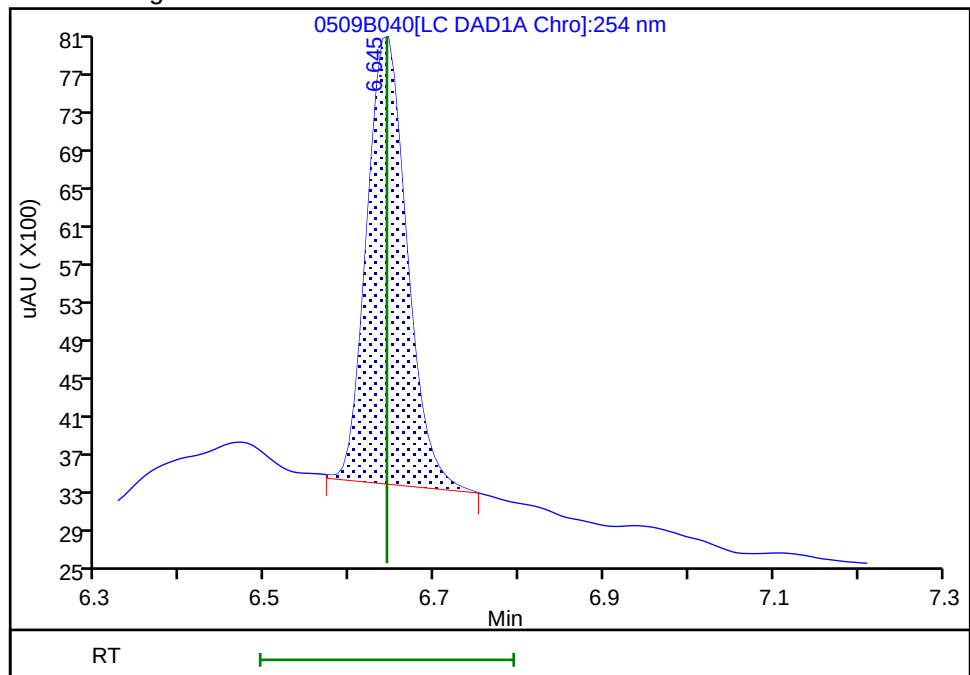
RT: 6.64
Area: 45904
Amount: 0.528443
Amount Units: ug/mL

Processing Integration Results



RT: 6.64
Area: 15596
Amount: 0.179540
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 10-May-2019 08:41:42
Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing
Page 2392 of 3784

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Client Sample ID: NTAmw-119-190401-GWMS MS RE Lab Sample ID: 280-123221-2 MS RE

Matrix: Water Lab File ID: 0514B074.D

Analysis Method: 8330B Date Collected: 04/30/2019 10:45

Extraction Method: 3535 Date Extracted: 05/10/2019 16:21

Sample wt/vol: 463.4 (mL) Date Analyzed: 05/15/2019 18:20

Con. Extract Vol.: 5 (mL) Dilution Factor: 1

Injection Volume: 100 (uL) GC Column: UltraCarb5uODS ID: 4.6 (mm)

% Moisture: _____ GPC Cleanup: (Y/N) N

Analysis Batch No.: 458152 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	2.18	H	1.1	0.43	0.22
99-65-0	1,3-Dinitrobenzene	2.09	H	0.43	0.22	0.096
118-96-7	2,4,6-Trinitrotoluene	1.95	H	0.43	0.43	0.17
121-14-2	2,4-Dinitrotoluene	1.97	H	0.43	0.22	0.090
606-20-2	2,6-Dinitrotoluene	1.93	H	0.22	0.22	0.070
35572-78-2	2-Amino-4,6-dinitrotoluene	1.87	H	0.22	0.13	0.055
88-72-2	2-Nitrotoluene	1.63	H	0.43	0.22	0.092
99-08-1	3-Nitrotoluene	1.63	H	0.43	0.43	0.21
19406-51-0	4-Amino-2,6-dinitrotoluene	1.69	H	0.22	0.13	0.062
99-99-0	4-Nitrotoluene	1.63	H	1.1	0.43	0.22
2691-41-0	HMX	2.00	H M	0.43	0.22	0.095
98-95-3	Nitrobenzene	1.84	H M	0.43	0.22	0.098
55-63-0	Nitroglycerin	22.0	H	3.2	2.2	0.99
78-11-5	PETN	21.2	H	4.3	4.3	2.1
121-82-4	RDX	2.19	H	0.43	0.43	0.17
479-45-8	Tetryl	2.14	H	0.26	0.22	0.086

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	94		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B074.D
 Lims ID: 280-123221-B-2-B MS
 Client ID: NTAmw-119-190401-GWMS
 Sample Type: MS
 Inject. Date: 15-May-2019 18:20:52 ALS Bottle#: 74 Worklist Smp#: 74
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-B-2-B
 Misc. Info.: 280-0081869-074
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 16-May-2019 08:23:27 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 16-May-2019 08:18:33

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
1 2,6-diamino-4-nitrotoluene	1		6.509				ND	U
2 TNX	1		6.556				ND	
3 HMX	1	6.648	6.650	-0.002	16530	0.2000	0.1853	M
4 2,4-diamino-6-nitrotoluene	1		6.695				ND	
5 DNX	1		6.889				ND	
6 MNX	1		7.356				ND	
7 RDX	1	7.762	7.764	-0.002	21678	0.2000	0.2033	
8 2,4,6-Trinitrophenol	1	8.128	8.130	-0.002	16959	0.2000	0.2024	
\$ 9 1,2-Dinitrobenzene	1	8.742	8.744	-0.002	24418	0.2000	0.1877	
10 1,3,5-Trinitrobenzene	1	8.902	8.904	-0.002	46341	0.2000	0.2021	
11 1,3-Dinitrobenzene	1	9.568	9.564	0.004	58380	0.2000	0.1941	
12 Nitrobenzene	1	9.955	9.950	0.005	33551	0.2000	0.1705	M
13 3,5-Dinitroaniline	1		10.209				ND	
14 Tetryl	1	10.282	10.284	-0.002	33309	0.2000	0.1983	
15 Nitroglycerin	2	10.795	10.784	0.011	142708	2.00	2.04	
16 2,4,6-Trinitrotoluene	1	11.242	11.237	0.005	40327	0.2000	0.1804	
17 4-Amino-2,6-dinitrotoluene	1	11.428	11.430	-0.002	25506	0.2000	0.1570	
18 2-Amino-4,6-dinitrotoluene	1	11.715	11.717	-0.002	34240	0.2000	0.1733	
19 2,6-Dinitrotoluene	1	11.855	11.850	0.005	28030	0.2000	0.1790	
20 2,4-Dinitrotoluene	1	12.055	12.050	0.005	54239	0.2000	0.1824	
21 o-Nitrotoluene	1	12.902	12.890	0.012	19819	0.2000	0.1509	
22 p-Nitrotoluene	1	13.342	13.330	0.012	17011	0.2000	0.1509	
23 m-Nitrotoluene	1	13.942	13.930	0.012	22347	0.2000	0.1507	
24 PETN	2	15.048	15.024	0.024	143836	2.00	1.97	
25 Ammonium Picrate	1		0.000				ND	

QC Flag Legend

Review Flags

M - Manually Integrated

U - Marked Undetected

Report Date: 16-May-2019 08:23:34

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B074.D

Injection Date: 15-May-2019 18:20:52

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-B-2-B MS

Worklist Smp#: 74

Client ID: NTAmw-119-190401-GWMS

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

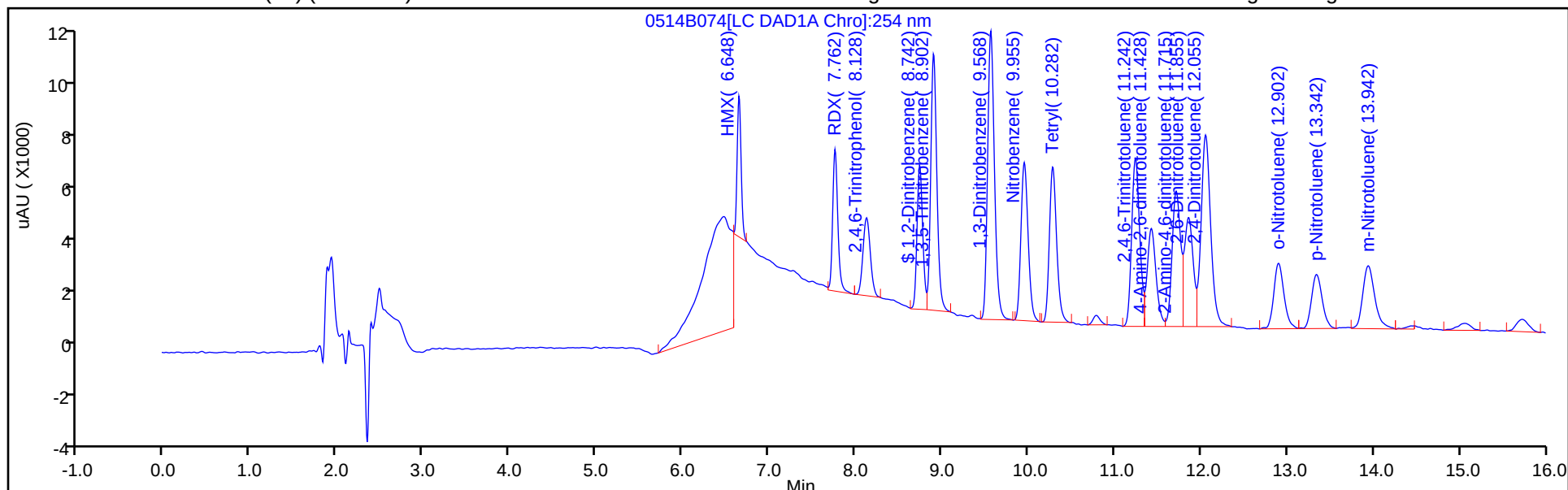
ALS Bottle#: 74

Method: 8330_X3

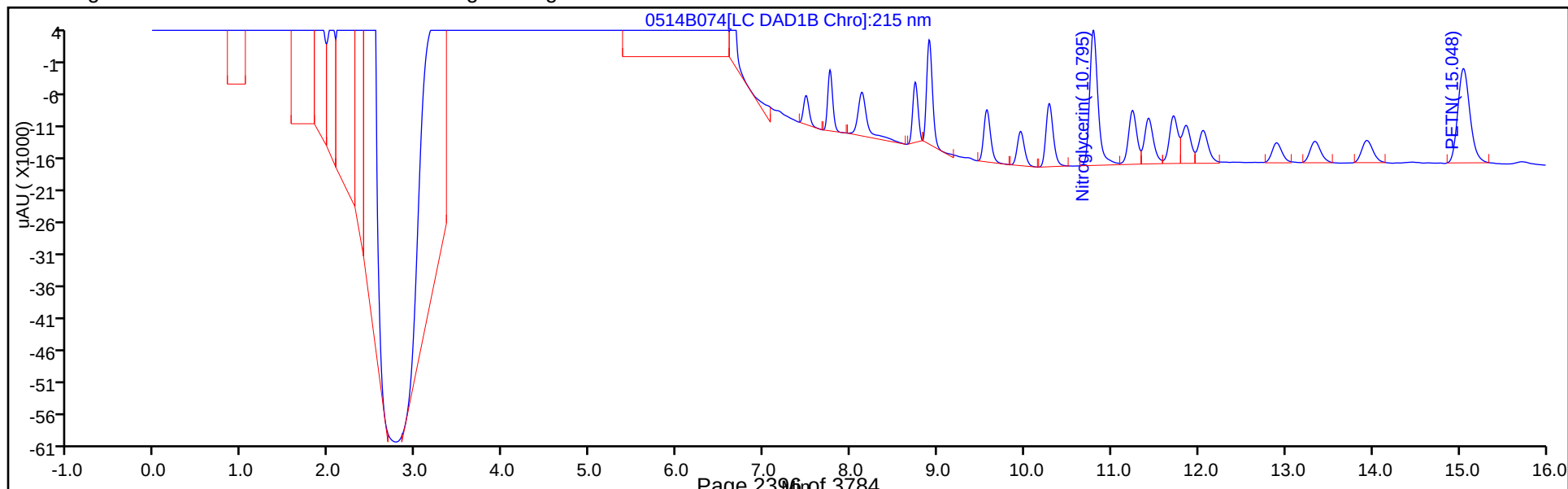
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B074.D
Lims ID: 280-123221-B-2-B MS
Client ID: NTAmw-119-190401-GWMS
Sample Type: MS
Inject. Date: 15-May-2019 18:20:52 ALS Bottle#: 74 Worklist Smp#: 74
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-B-2-B
Misc. Info.: 280-0081869-074
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 16-May-2019 08:23:27 Calib Date: 15-May-2019 01:42:24
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 16-May-2019 08:18:33

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1877	93.84

Eurofins TestAmerica, Denver

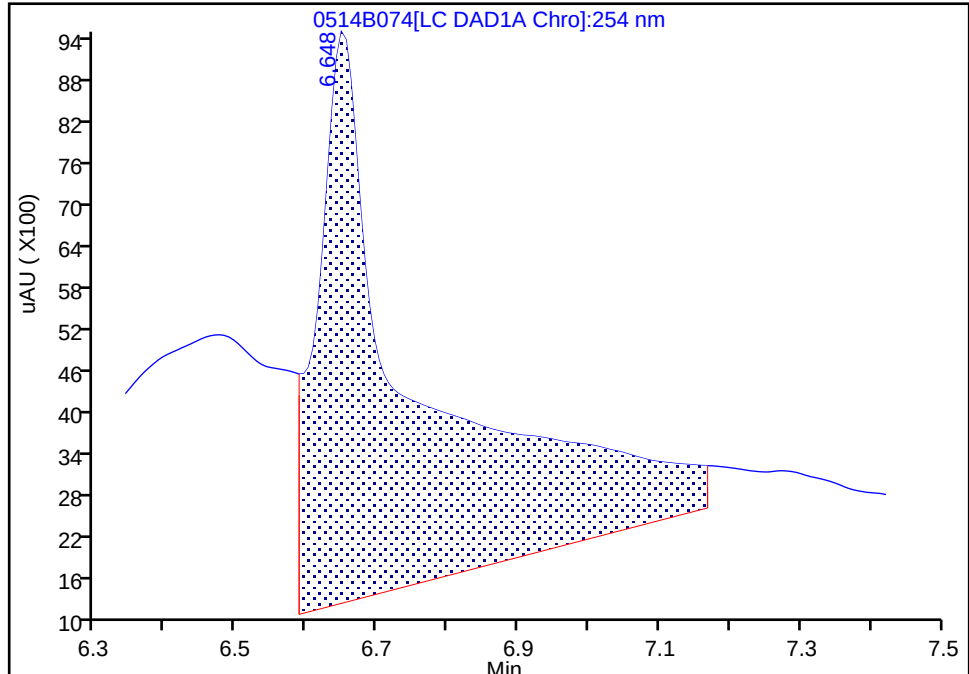
Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B074.D
Injection Date: 15-May-2019 18:20:52 Instrument ID: CHHPLC_X3
Lims ID: 280-123221-B-2-B MS
Client ID: NTAmw-119-190401-GWMS
Operator ID: hkf ALS Bottle#: 74 Worklist Smp#: 74
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector: LC DAD1B, 254 nm

3 HMX, CAS: 2691-41-0

Signal: 1

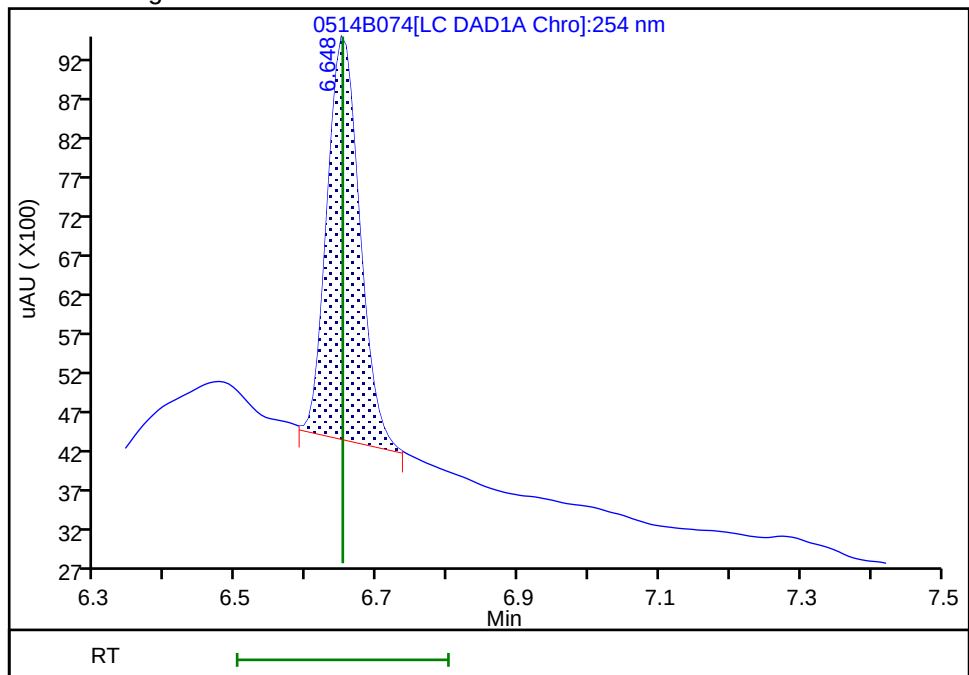
RT: 6.65
Area: 85021
Amount: 0.953084
Amount Units: ug/mL

Processing Integration Results



RT: 6.65
Area: 16530
Amount: 0.185301
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 16-May-2019 08:18:15
Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing
Page 2398 of 3784

Eurofins TestAmerica, Denver

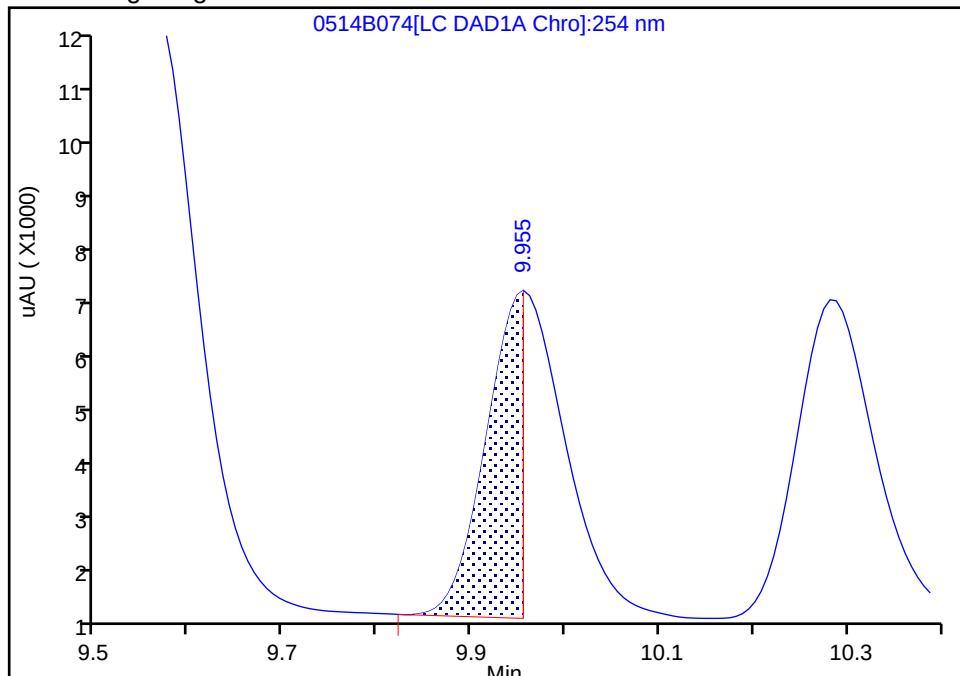
Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B074.D
Injection Date: 15-May-2019 18:20:52 Instrument ID: CHHPLC_X3
Lims ID: 280-123221-B-2-B MS
Client ID: NTAmw-119-190401-GWMS
Operator ID: hkf ALS Bottle#: 74 Worklist Smp#: 74
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector: LC DAD1B, 254 nm

12 Nitrobenzene, CAS: 98-95-3

Signal: 1

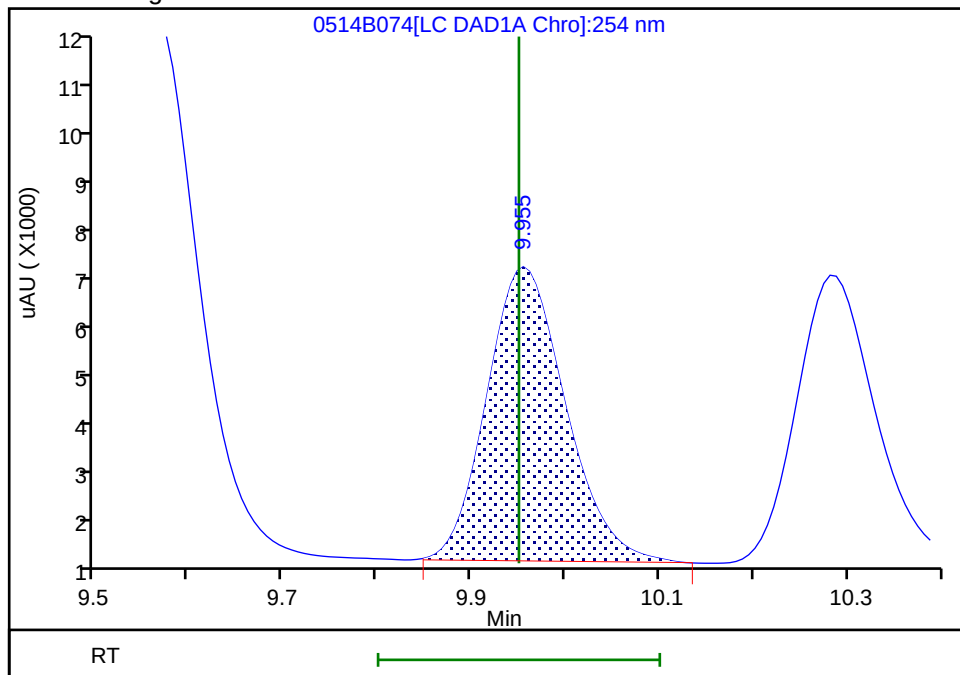
RT: 9.95
Area: 15533
Amount: 0.078917
Amount Units: ug/mL

Processing Integration Results



RT: 9.95
Area: 33551
Amount: 0.170459
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 16-May-2019 08:18:29
Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing
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FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Client Sample ID: DET-003-190401-GWMS MS Lab Sample ID: 280-123221-4 MS

Matrix: Water Lab File ID: 0509B044.D

Analysis Method: 8330B Date Collected: 04/29/2019 10:53

Extraction Method: 3535 Date Extracted: 05/04/2019 15:00

Sample wt/vol: 490.8 (mL) Date Analyzed: 05/10/2019 07:25

Con. Extract Vol.: 5 (mL) Dilution Factor: 1

Injection Volume: 100 (uL) GC Column: UltraCarb5uODS ID: 4.6 (mm)

% Moisture: _____ GPC Cleanup: (Y/N) N

Analysis Batch No.: 457634 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	2.06		1.0	0.41	0.20
99-65-0	1,3-Dinitrobenzene	1.91		0.41	0.20	0.090
118-96-7	2,4,6-Trinitrotoluene	1.70		0.41	0.41	0.16
121-14-2	2,4-Dinitrotoluene	1.83		0.41	0.20	0.085
606-20-2	2,6-Dinitrotoluene	1.79		0.20	0.20	0.066
35572-78-2	2-Amino-4,6-dinitrotoluene	1.78		0.20	0.12	0.052
88-72-2	2-Nitrotoluene	1.37	J1	0.41	0.20	0.087
99-08-1	3-Nitrotoluene	1.45	J1	0.41	0.41	0.20
19406-51-0	4-Amino-2,6-dinitrotoluene	1.68		0.20	0.12	0.059
99-99-0	4-Nitrotoluene	1.52		1.0	0.41	0.20
2691-41-0	HMX	1.89	M	0.41	0.20	0.089
98-95-3	Nitrobenzene	1.65		0.41	0.20	0.093
55-63-0	Nitroglycerin	19.0		3.1	2.0	0.94
78-11-5	PETN	17.7		4.1	4.1	2.0
121-82-4	RDX	2.02		0.41	0.41	0.16
479-45-8	Tetryl	1.69		0.24	0.20	0.081

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	88		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B044.D
 Lims ID: 280-123221-F-4-B MS
 Client ID: DET-003-190401-GWMS
 Sample Type: MS
 Inject. Date: 10-May-2019 07:25:49 ALS Bottle#: 44 Worklist Smp#: 44
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-F-4-B
 Misc. Info.: 280-0081739-044
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 10-May-2019 08:50:05 Calib Date: 30-Jan-2019 16:34:11
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 10-May-2019 08:42:46

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
1 2,6-diamino-4-nitrotoluene	1		6.501				ND	U
2 TNX	1		6.541				ND	
3 HMX	1	6.637	6.643	-0.006	16105	0.2000	0.1854	M
4 2,4-diamino-6-nitrotoluene	1		6.688				ND	
5 DNX	1		6.875				ND	
6 MNX	1		7.328				ND	
7 RDX	1	7.737	7.736	0.001	21050	0.2000	0.1984	
8 2,4,6-Trinitrophenol	1	8.083	8.090	-0.007	16214	0.2000	0.1890	
\$ 9 1,2-Dinitrobenzene	1	8.717	8.710	0.007	23587	0.2000	0.1764	
10 1,3,5-Trinitrobenzene	1	8.877	8.870	0.007	45866	0.2000	0.2019	
11 1,3-Dinitrobenzene	1	9.530	9.523	0.007	56652	0.2000	0.1878	
12 Nitrobenzene	1	9.917	9.910	0.007	31737	0.2000	0.1623	
13 3,5-Dinitroaniline	1		10.134				ND	
14 Tetryl	1	10.237	10.230	0.007	30261	0.2000	0.1656	
15 Nitroglycerin	2	10.743	10.736	0.007	126237	2.00	1.86	
16 2,4,6-Trinitrotoluene	1	11.190	11.183	0.007	37901	0.2000	0.1667	
17 4-Amino-2,6-dinitrotoluene	1	11.357	11.343	0.014	27499	0.2000	0.1645	
18 2-Amino-4,6-dinitrotoluene	1	11.637	11.630	0.007	35627	0.2000	0.1748	
19 2,6-Dinitrotoluene	1	11.797	11.790	0.007	27124	0.2000	0.1760	
20 2,4-Dinitrotoluene	1	11.990	11.983	0.007	53878	0.2000	0.1796	
21 o-Nitrotoluene	1	12.830	12.823	0.007	18327	0.2000	0.1349	
22 p-Nitrotoluene	1	13.263	13.256	0.007	17674	0.2000	0.1489	
23 m-Nitrotoluene	1	13.857	13.856	0.001	21653	0.2000	0.1427	
24 PETN	2	14.963	14.963	0.000	132543	2.00	1.74	
25 Ammonium Picrate	1		0.000				ND	

QC Flag Legend

Review Flags

M - Manually Integrated

U - Marked Undetected

Report Date: 10-May-2019 08:50:16

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B044.D

Injection Date: 10-May-2019 07:25:49

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-F-4-B MS

Worklist Smp#: 44

Client ID: DET-003-190401-GWMS

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

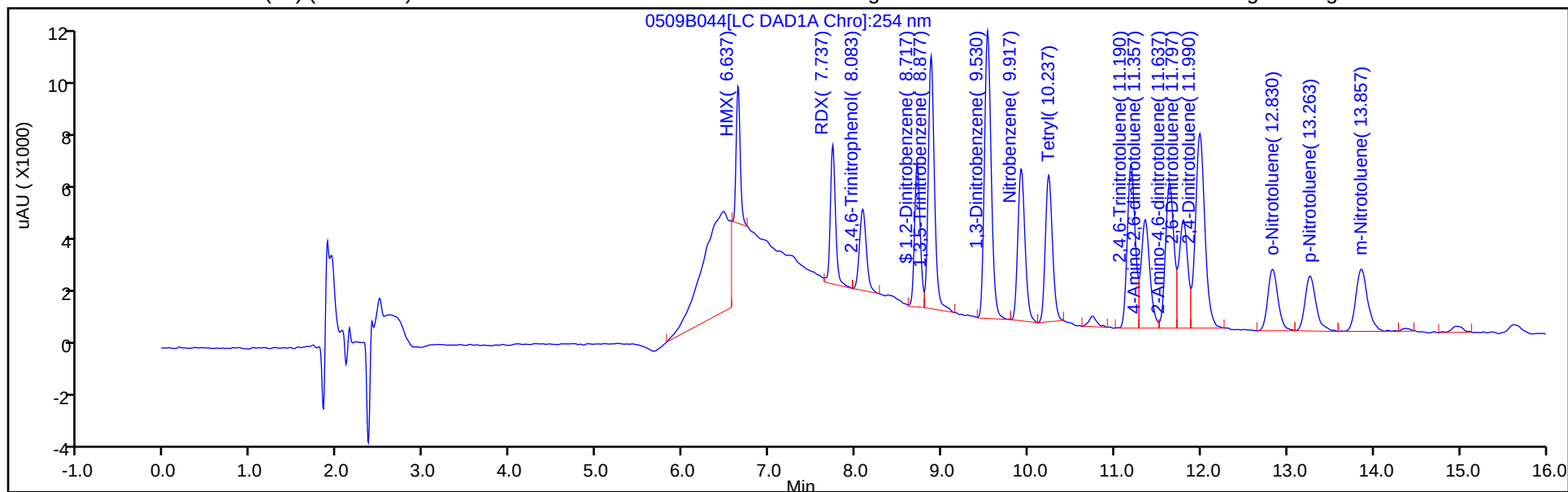
ALS Bottle#: 44

Method: 8330_X3

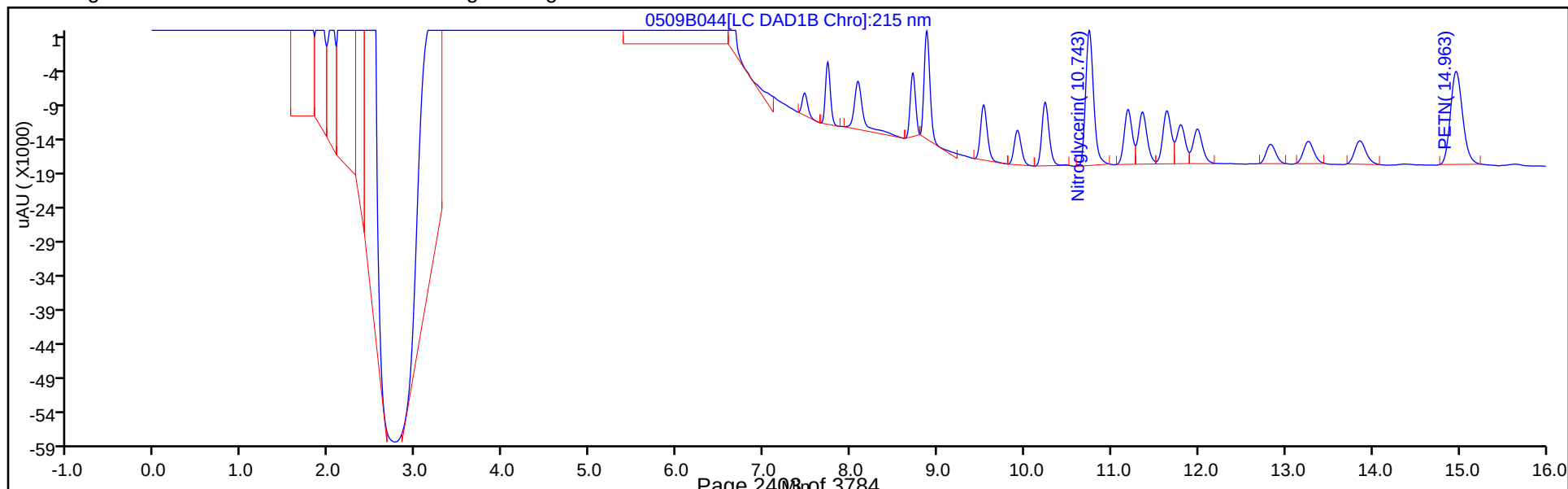
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B044.D
Lims ID: 280-123221-F-4-B MS
Client ID: DET-003-190401-GWMS
Sample Type: MS
Inject. Date: 10-May-2019 07:25:49 ALS Bottle#: 44 Worklist Smp#: 44
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-F-4-B
Misc. Info.: 280-0081739-044
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 10-May-2019 08:50:05 Calib Date: 30-Jan-2019 16:34:11
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 10-May-2019 08:42:46

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1764	88.21

Eurofins TestAmerica, Denver

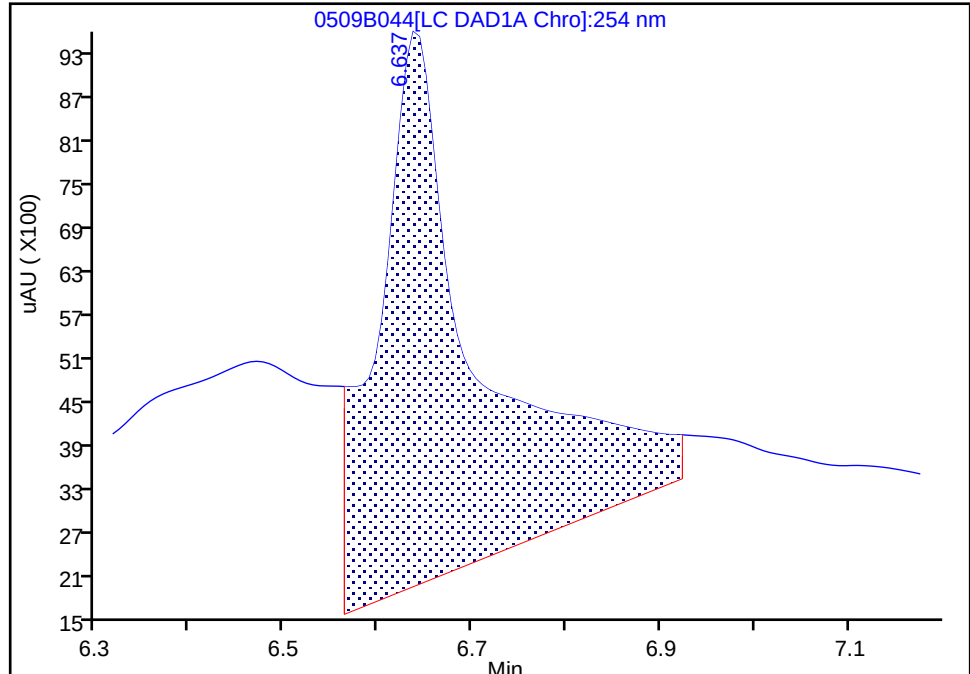
Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B044.D
Injection Date: 10-May-2019 07:25:49 Instrument ID: CHHPLC_X3
Lims ID: 280-123221-F-4-B MS
Client ID: DET-003-190401-GWMS
Operator ID: hkf ALS Bottle#: 44 Worklist Smp#: 44
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector LC DAD1B, 254 nm

3 HMX, CAS: 2691-41-0

Signal: 1

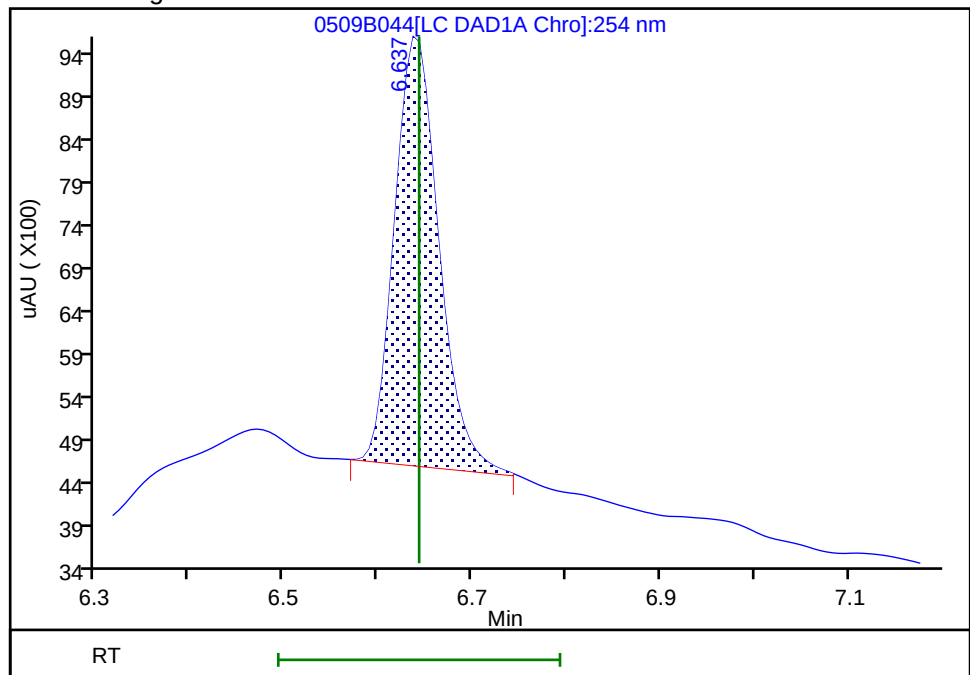
RT: 6.64
Area: 57245
Amount: 0.659000
Amount Units: ug/mL

Processing Integration Results



RT: 6.64
Area: 16105
Amount: 0.185400
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 10-May-2019 08:42:45
Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing
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FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Client Sample ID: DET-003-190401-GWMS MS RE Lab Sample ID: 280-123221-4 MS RE

Matrix: Water Lab File ID: 0514B078.D

Analysis Method: 8330B Date Collected: 04/29/2019 10:53

Extraction Method: 3535 Date Extracted: 05/10/2019 16:21

Sample wt/vol: 472.9(mL) Date Analyzed: 05/15/2019 19:56

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 100(uL) GC Column: UltraCarb5uODS ID: 4.6(mm)

% Moisture: _____ GPC Cleanup: (Y/N) N

Analysis Batch No.: 458152 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	2.21	H	1.1	0.42	0.21
99-65-0	1,3-Dinitrobenzene	2.17	H	0.42	0.21	0.094
118-96-7	2,4,6-Trinitrotoluene	1.96	H	0.42	0.42	0.17
121-14-2	2,4-Dinitrotoluene	2.05	H	0.42	0.21	0.089
606-20-2	2,6-Dinitrotoluene	2.03	H	0.21	0.21	0.068
35572-78-2	2-Amino-4,6-dinitrotoluene	1.95	H	0.21	0.13	0.054
88-72-2	2-Nitrotoluene	1.78	H	0.42	0.21	0.090
99-08-1	3-Nitrotoluene	1.85	H	0.42	0.42	0.21
19406-51-0	4-Amino-2,6-dinitrotoluene	1.80	H	0.21	0.13	0.061
99-99-0	4-Nitrotoluene	1.84	H	1.1	0.42	0.21
2691-41-0	HMX	2.07	H M	0.42	0.21	0.093
98-95-3	Nitrobenzene	1.96	H	0.42	0.21	0.096
55-63-0	Nitroglycerin	21.9	H	3.2	2.1	0.97
78-11-5	PETN	21.2	H	4.2	4.2	2.1
121-82-4	RDX	2.27	H	0.42	0.42	0.17
479-45-8	Tetryl	2.23	H	0.25	0.21	0.084

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	97		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B078.D
 Lims ID: 280-123221-E-4-C MS
 Client ID: DET-003-190401-GWMS
 Sample Type: MS
 Inject. Date: 15-May-2019 19:56:01 ALS Bottle#: 78 Worklist Smp#: 78
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-E-4-C
 Misc. Info.: 280-0081869-078
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 16-May-2019 08:23:27 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 16-May-2019 08:19:35

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
1 2,6-diamino-4-nitrotoluene	1		6.509				ND	M
2 TNX	1		6.556				ND	
3 HMX	1	6.649	6.650	-0.001	17424	0.2000	0.1953	M
4 2,4-diamino-6-nitrotoluene	1		6.695				ND	
5 DNX	1		6.889				ND	
6 MNX	1		7.356				ND	
7 RDX	1	7.763	7.764	-0.001	22945	0.2000	0.2152	
8 2,4,6-Trinitrophenol	1	8.129	8.130	-0.001	17866	0.2000	0.2132	
\$ 9 1,2-Dinitrobenzene	1	8.749	8.744	0.005	25313	0.2000	0.1945	
10 1,3,5-Trinitrobenzene	1	8.909	8.904	0.005	47929	0.2000	0.2090	
11 1,3-Dinitrobenzene	1	9.569	9.564	0.005	61767	0.2000	0.2053	
12 Nitrobenzene	1	9.956	9.950	0.006	36509	0.2000	0.1855	
13 3,5-Dinitroaniline	1		10.209				ND	
14 Tetryl	1	10.289	10.284	0.005	35387	0.2000	0.2107	
15 Nitroglycerin	2	10.796	10.784	0.012	144730	2.00	2.07	
16 2,4,6-Trinitrotoluene	1	11.242	11.237	0.005	41378	0.2000	0.1851	
17 4-Amino-2,6-dinitrotoluene	1	11.429	11.430	-0.001	27674	0.2000	0.1704	
18 2-Amino-4,6-dinitrotoluene	1	11.716	11.717	-0.001	36342	0.2000	0.1840	
19 2,6-Dinitrotoluene	1	11.862	11.850	0.012	30006	0.2000	0.1916	
20 2,4-Dinitrotoluene	1	12.056	12.050	0.006	57774	0.2000	0.1942	
21 o-Nitrotoluene	1	12.902	12.890	0.012	22055	0.2000	0.1679	
22 p-Nitrotoluene	1	13.342	13.330	0.012	19643	0.2000	0.1743	
23 m-Nitrotoluene	1	13.942	13.930	0.012	26007	0.2000	0.1754	
24 PETN	2	15.049	15.024	0.025	147015	2.00	2.01	
25 Ammonium Picrate	1		0.000				ND	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 16-May-2019 08:23:38

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B078.D

Injection Date: 15-May-2019 19:56:01

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-E-4-C MS

Worklist Smp#: 78

Client ID: DET-003-190401-GWMS

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

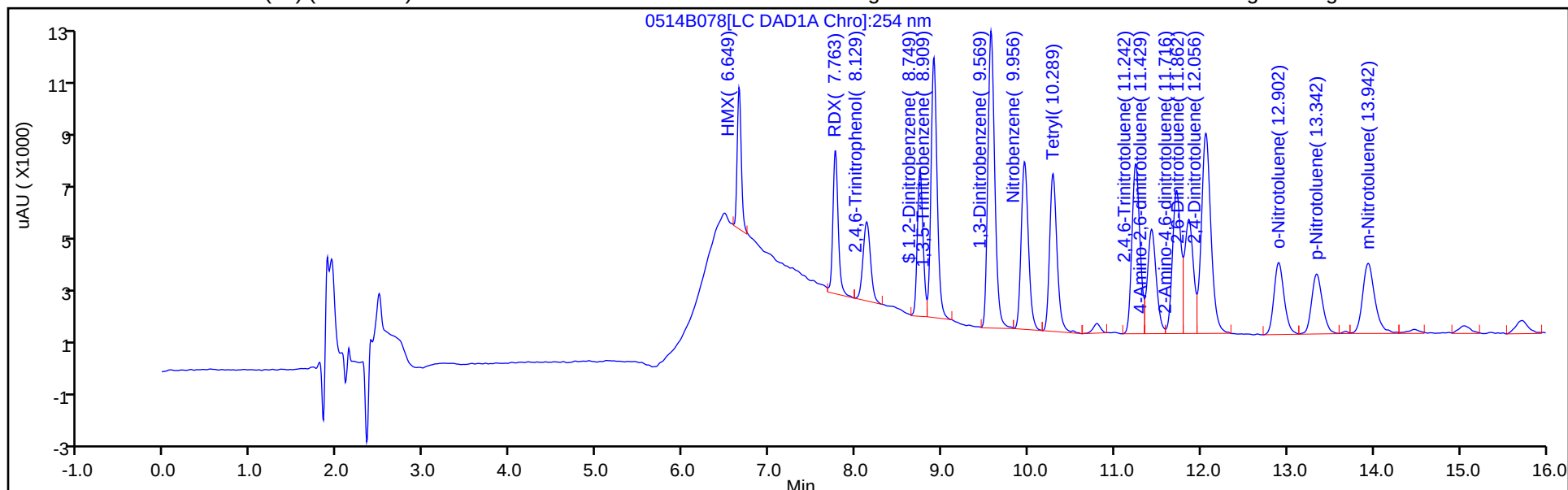
ALS Bottle#: 78

Method: 8330_X3

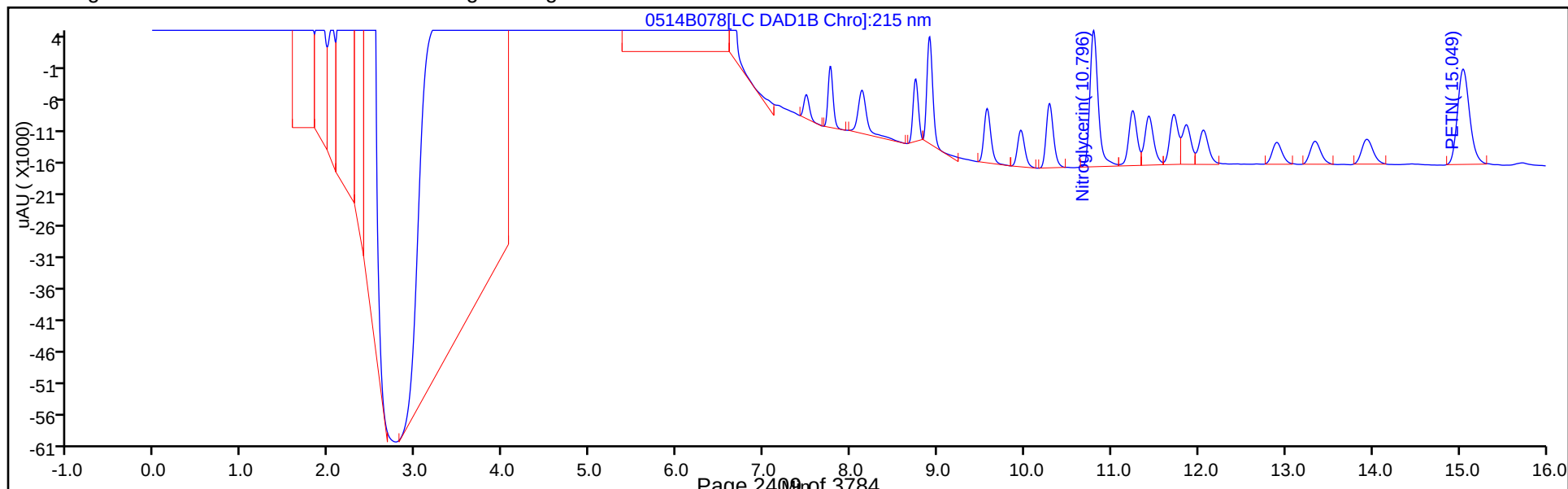
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B078.D
Lims ID: 280-123221-E-4-C MS
Client ID: DET-003-190401-GWMS
Sample Type: MS
Inject. Date: 15-May-2019 19:56:01 ALS Bottle#: 78 Worklist Smp#: 78
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-E-4-C
Misc. Info.: 280-0081869-078
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 16-May-2019 08:23:27 Calib Date: 15-May-2019 01:42:24
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 16-May-2019 08:19:35

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1945	97.27

Eurofins TestAmerica, Denver

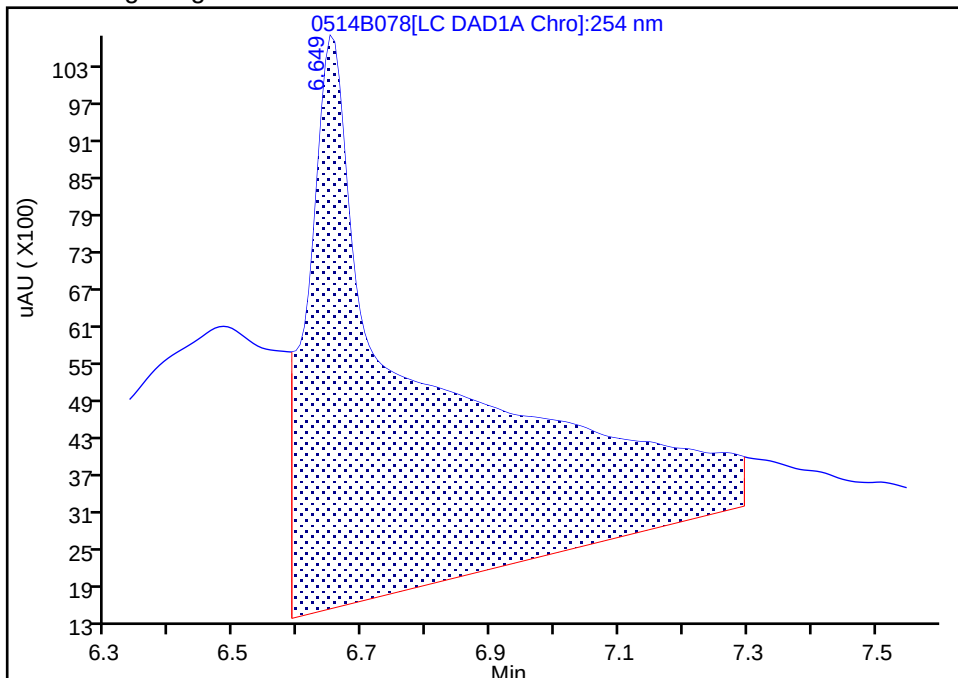
Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B078.D
Injection Date: 15-May-2019 19:56:01 Instrument ID: CHHPLC_X3
Lims ID: 280-123221-E-4-C MS
Client ID: DET-003-190401-GWMS
Operator ID: hkf ALS Bottle#: 78 Worklist Smp#: 78
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector LC DAD1B, 254 nm

3 HMX, CAS: 2691-41-0

Signal: 1

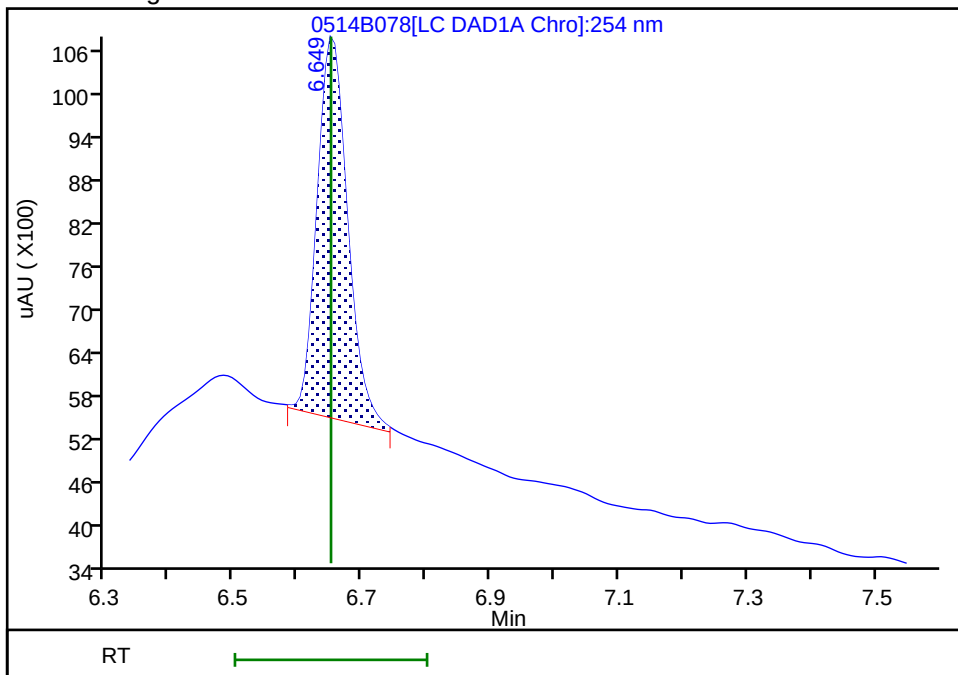
RT: 6.65
Area: 121907
Amount: 1.366576
Amount Units: ug/mL

Processing Integration Results



RT: 6.65
Area: 17424
Amount: 0.195323
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 16-May-2019 08:19:34

Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Client Sample ID: NTAmw-119-190401-GWMSD Lab Sample ID: 280-123221-2 MSD

Matrix: Water Lab File ID: 0509B041.D

Analysis Method: 8330B Date Collected: 04/30/2019 10:45

Extraction Method: 3535 Date Extracted: 05/04/2019 15:00

Sample wt/vol: 459(mL) Date Analyzed: 05/10/2019 06:14

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 100(uL) GC Column: UltraCarb5uODS ID: 4.6(mm)

% Moisture: _____ GPC Cleanup: (Y/N) N

Analysis Batch No.: 457634 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	2.17		1.1	0.44	0.22
99-65-0	1,3-Dinitrobenzene	2.06		0.44	0.22	0.097
118-96-7	2,4,6-Trinitrotoluene	1.86		0.44	0.44	0.17
121-14-2	2,4-Dinitrotoluene	1.95		0.44	0.22	0.091
606-20-2	2,6-Dinitrotoluene	1.96		0.22	0.22	0.070
35572-78-2	2-Amino-4,6-dinitrotoluene	1.87		0.22	0.13	0.055
88-72-2	2-Nitrotoluene	1.36	J1	0.44	0.22	0.093
99-08-1	3-Nitrotoluene	1.50	J1	0.44	0.44	0.21
19406-51-0	4-Amino-2,6-dinitrotoluene	1.75		0.22	0.13	0.063
99-99-0	4-Nitrotoluene	1.61		1.1	0.44	0.22
2691-41-0	HMX	2.02	M	0.44	0.22	0.095
98-95-3	Nitrobenzene	1.66	M	0.44	0.22	0.099
55-63-0	Nitroglycerin	21.0		3.3	2.2	1.0
78-11-5	PETN	20.1		4.4	4.4	2.1
121-82-4	RDX	2.17		0.44	0.44	0.17
479-45-8	Tetryl	1.85		0.26	0.22	0.086

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	86		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B041.D
 Lims ID: 280-123221-A-2-C MSD
 Client ID: NTAmw-119-190401-GWMSD
 Sample Type: MSD
 Inject. Date: 10-May-2019 06:14:33 ALS Bottle#: 41 Worklist Smp#: 41
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-A-2-C
 Misc. Info.: 280-0081739-041
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 10-May-2019 08:50:05 Calib Date: 30-Jan-2019 16:34:11
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 10-May-2019 08:42:24

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
1 2,6-diamino-4-nitrotoluene	1		6.501				ND	U
2 TNX	1		6.541				ND	
3 HMX	1	6.645	6.643	0.002	16135	0.2000	0.1857	M
4 2,4-diamino-6-nitrotoluene	1		6.688				ND	
5 DNX	1		6.875				ND	
6 MNX	1	7.291	7.328	-0.037	806		0.005689	M
7 RDX	1	7.751	7.736	0.015	21137	0.2000	0.1992	
8 2,4,6-Trinitrophenol	1	8.105	8.090	0.015	16740	0.2000	0.1952	
\$ 9 1,2-Dinitrobenzene	1	8.731	8.710	0.021	22950	0.2000	0.1717	
10 1,3,5-Trinitrobenzene	1	8.891	8.870	0.021	45246	0.2000	0.1992	
11 1,3-Dinitrobenzene	1	9.545	9.523	0.022	57021	0.2000	0.1891	
12 Nitrobenzene	1	9.931	9.910	0.021	29881	0.2000	0.1528	M
13 3,5-Dinitroaniline	1		10.134				ND	
14 Tetryl	1	10.251	10.230	0.021	31048	0.2000	0.1699	
15 Nitroglycerin	2	10.758	10.736	0.022	130530	2.00	1.93	
16 2,4,6-Trinitrotoluene	1	11.205	11.183	0.022	38746	0.2000	0.1704	
17 4-Amino-2,6-dinitrotoluene	1	11.365	11.343	0.022	26806	0.2000	0.1603	
18 2-Amino-4,6-dinitrotoluene	1	11.645	11.630	0.015	34956	0.2000	0.1715	
19 2,6-Dinitrotoluene	1	11.805	11.790	0.015	27793	0.2000	0.1804	
20 2,4-Dinitrotoluene	1	11.998	11.983	0.015	53808	0.2000	0.1793	
21 o-Nitrotoluene	1	12.838	12.823	0.015	16909	0.2000	0.1245	
22 p-Nitrotoluene	1	13.271	13.256	0.015	17593	0.2000	0.1482	
23 m-Nitrotoluene	1	13.865	13.856	0.009	20864	0.2000	0.1375	
24 PETN	2	14.971	14.963	0.008	140433	2.00	1.84	
25 Ammonium Picrate	1		0.000				ND	

QC Flag Legend

Review Flags

M - Manually Integrated

U - Marked Undetected

Report Date: 10-May-2019 08:50:13

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B041.D

Injection Date: 10-May-2019 06:14:33

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-A-2-C MSD

Worklist Smp#: 41

Client ID: NTAmw-119-190401-GWMSD

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

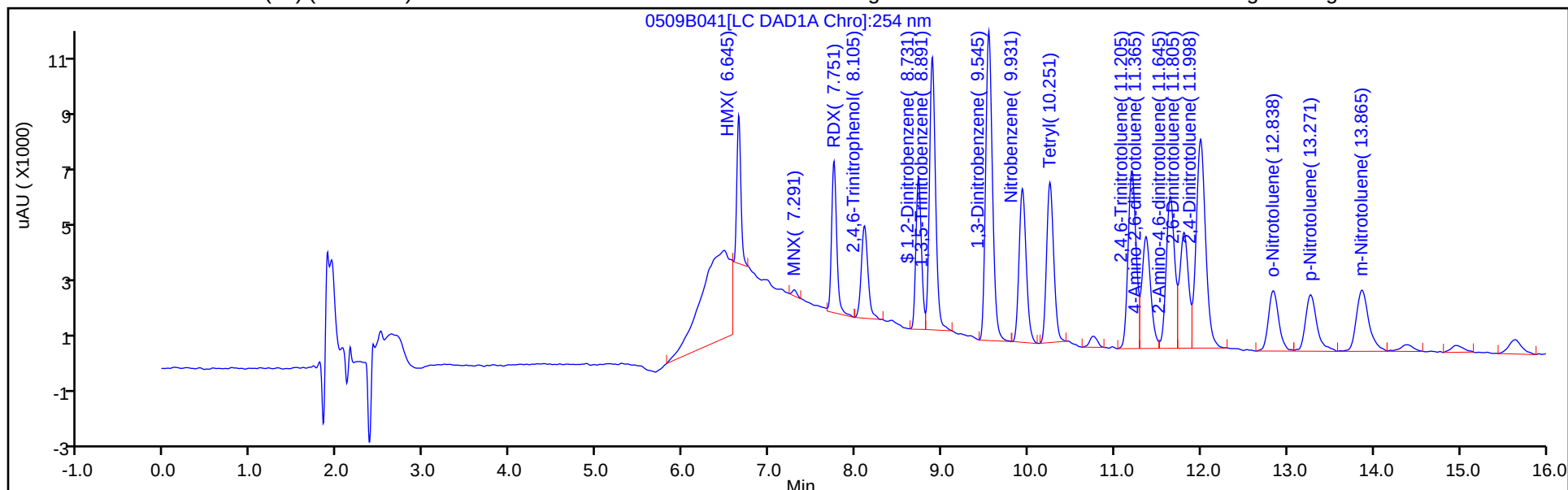
ALS Bottle#: 41

Method: 8330_X3

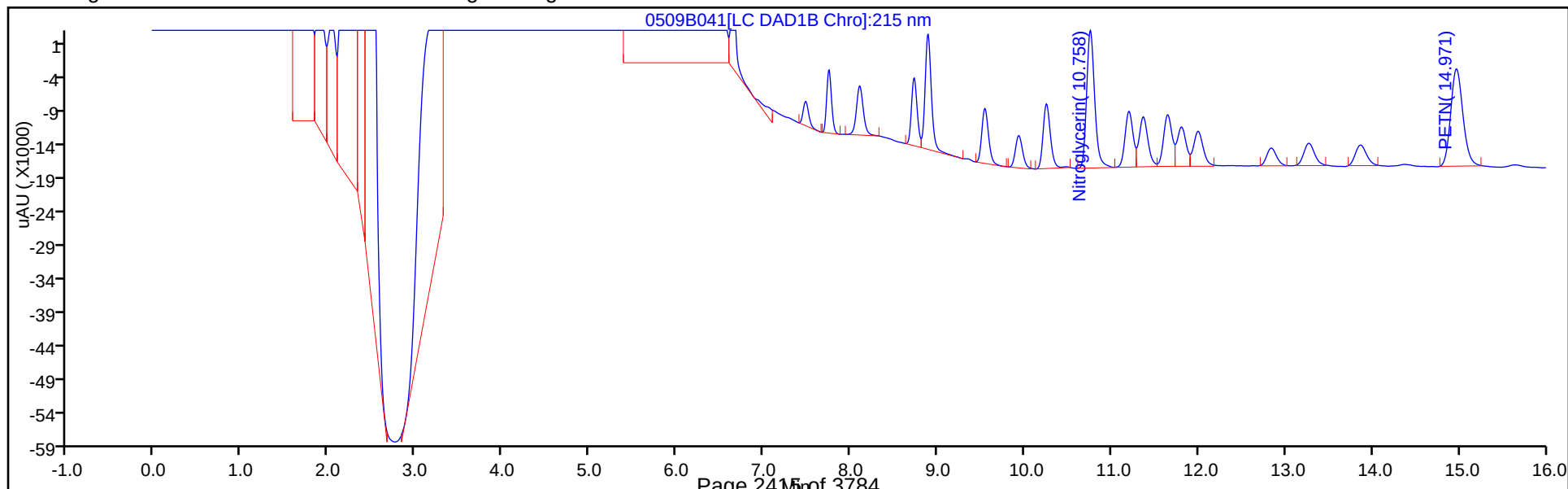
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B041.D
Lims ID: 280-123221-A-2-C MSD
Client ID: NTAmw-119-190401-GWMSD
Sample Type: MSD
Inject. Date: 10-May-2019 06:14:33 ALS Bottle#: 41 Worklist Smp#: 41
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-A-2-C
Misc. Info.: 280-0081739-041
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 10-May-2019 08:50:05 Calib Date: 30-Jan-2019 16:34:11
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 10-May-2019 08:42:24

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1717	85.83

Eurofins TestAmerica, Denver

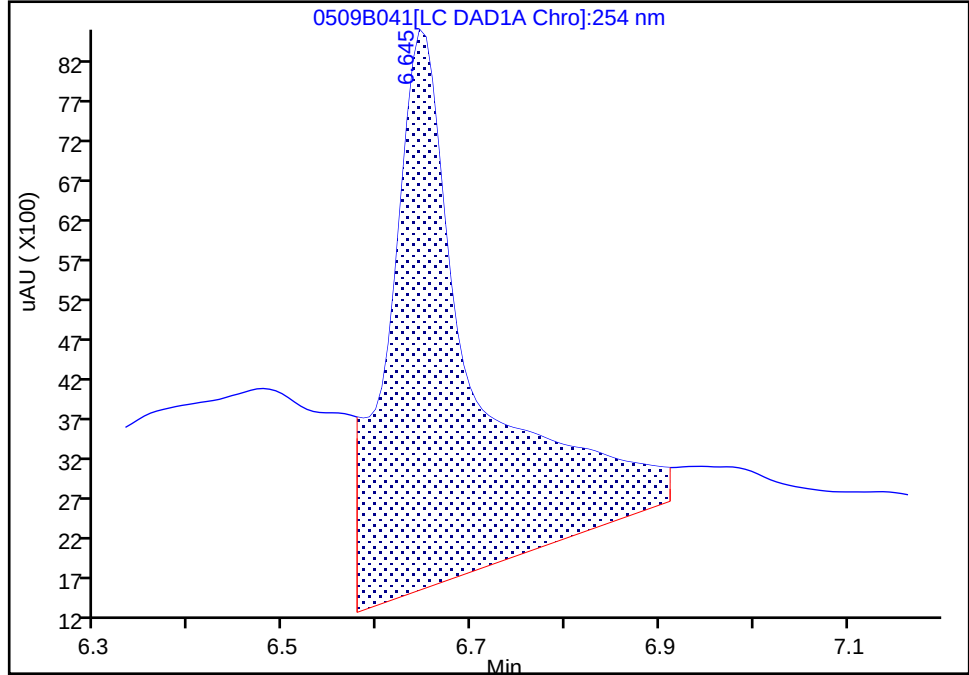
Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B041.D
Injection Date: 10-May-2019 06:14:33 Instrument ID: CHHPLC_X3
Lims ID: 280-123221-A-2-C MSD
Client ID: NTAmw-119-190401-GWMSD
Operator ID: hkf ALS Bottle#: 41 Worklist Smp#: 41
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector LC DAD1B, 254 nm

3 HMX, CAS: 2691-41-0

Signal: 1

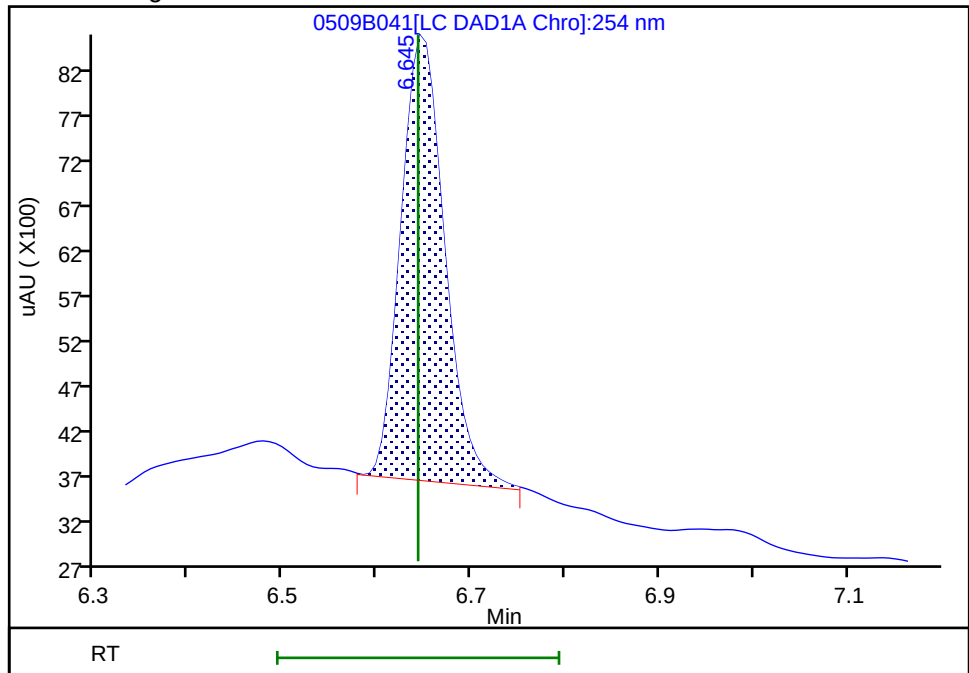
RT: 6.64
Area: 46238
Amount: 0.532288
Amount Units: ug/mL

Processing Integration Results



RT: 6.64
Area: 16135
Amount: 0.185745
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 10-May-2019 08:42:07

Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing

Eurofins TestAmerica, Denver

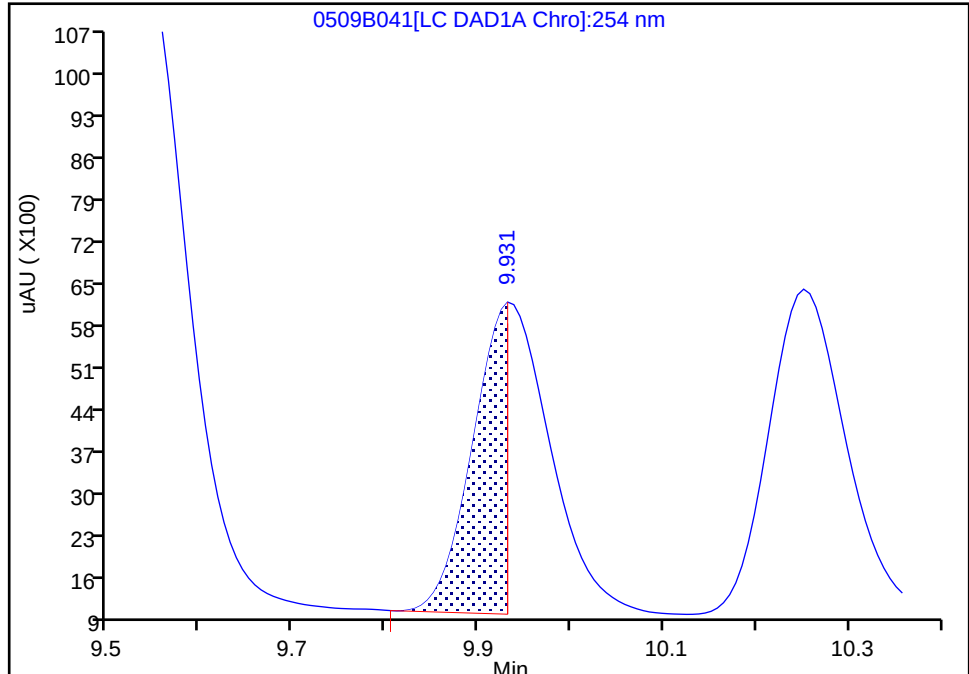
Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B041.D
Injection Date: 10-May-2019 06:14:33 Instrument ID: CHHPLC_X3
Lims ID: 280-123221-A-2-C MSD
Client ID: NTAmw-119-190401-GWMSD
Operator ID: hkf ALS Bottle#: 41 Worklist Smp#: 41
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector: LC DAD1B, 254 nm

12 Nitrobenzene, CAS: 98-95-3

Signal: 1

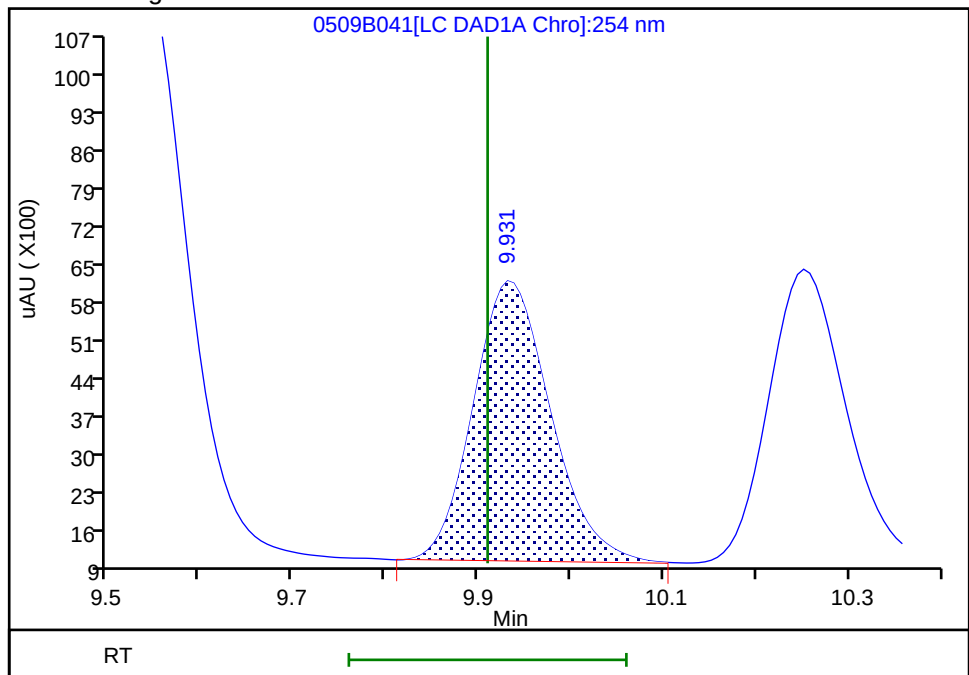
RT: 9.93
Area: 13274
Amount: 0.067896
Amount Units: ug/mL

Processing Integration Results



RT: 9.93
Area: 29881
Amount: 0.152840
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 10-May-2019 08:42:23
Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing
Page 2418 of 3784

Lab Name: Eurofins TestAmerica, Denver	Job No.: 280-123221-1
SDG No.:	
Client Sample ID: NTAmw-119-190401-GWMSD MSD RE	Lab Sample ID: 280-123221-2 MSD RE
Matrix: Water	Lab File ID: 0514B075.D
Analysis Method: 8330B	Date Collected: 04/30/2019 10:45
Extraction Method: 3535	Date Extracted: 05/10/2019 16:21
Sample wt/vol: 465.7(mL)	Date Analyzed: 05/15/2019 18:44
Con. Extract Vol.: 5(mL)	Dilution Factor: 1
Injection Volume: 100 (uL)	GC Column: UltraCarb5uODS ID: 4.6 (mm)
% Moisture:	GPC Cleanup: (Y/N) N
Analysis Batch No.: 458152	Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	2.18	H	1.1	0.43	0.21
99-65-0	1,3-Dinitrobenzene	2.12	H	0.43	0.21	0.095
118-96-7	2,4,6-Trinitrotoluene	1.93	H	0.43	0.43	0.17
121-14-2	2,4-Dinitrotoluene	2.01	H	0.43	0.21	0.090
606-20-2	2,6-Dinitrotoluene	1.99	H	0.21	0.21	0.069
35572-78-2	2-Amino-4,6-dinitrotoluene	1.89	H	0.21	0.13	0.054
88-72-2	2-Nitrotoluene	1.75	H	0.43	0.21	0.092
99-08-1	3-Nitrotoluene	1.71	H	0.43	0.43	0.21
19406-51-0	4-Amino-2,6-dinitrotoluene	1.80	H	0.21	0.13	0.062
99-99-0	4-Nitrotoluene	1.78	H	1.1	0.43	0.21
2691-41-0	HMX	2.03	H M	0.43	0.21	0.094
98-95-3	Nitrobenzene	1.94	H M	0.43	0.21	0.098
55-63-0	Nitroglycerin	21.5	H	3.2	2.1	0.99
78-11-5	PETN	21.2	H	4.3	4.3	2.1
121-82-4	RDX	2.20	H	0.43	0.43	0.17
479-45-8	Tetryl	2.17	H M	0.26	0.21	0.085

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	93		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B075.D
 Lims ID: 280-123221-B-2-C MSD
 Client ID: NTAmw-119-190401-GWMSD
 Sample Type: MSD
 Inject. Date: 15-May-2019 18:44:37 ALS Bottle#: 75 Worklist Smp#: 75
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-B-2-C
 Misc. Info.: 280-0081869-075
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 16-May-2019 08:23:27 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 16-May-2019 08:19:06

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
1 2,6-diamino-4-nitrotoluene	1		6.509				ND	M
2 TNX	1		6.556				ND	
3 HMX	1	6.651	6.650	0.001	16833	0.2000	0.1887	M
4 2,4-diamino-6-nitrotoluene	1		6.695				ND	
5 DNX	1		6.889				ND	
6 MNX	1		7.356				ND	
7 RDX	1	7.764	7.764	0.000	21850	0.2000	0.2049	
8 2,4,6-Trinitrophenol	1	8.131	8.130	0.001	17746	0.2000	0.2118	
\$ 9 1,2-Dinitrobenzene	1	8.744	8.744	0.000	24307	0.2000	0.1868	
10 1,3,5-Trinitrobenzene	1	8.904	8.904	0.000	46502	0.2000	0.2028	
11 1,3-Dinitrobenzene	1	9.571	9.564	0.007	59513	0.2000	0.1978	
12 Nitrobenzene	1	9.957	9.950	0.007	35564	0.2000	0.1807	M
13 3,5-Dinitroaniline	1		10.209				ND	
14 Tetryl	1	10.284	10.284	0.000	33965	0.2000	0.2022	M
15 Nitroglycerin	2	10.797	10.784	0.013	139891	2.00	2.00	
16 2,4,6-Trinitrotoluene	1	11.244	11.237	0.007	40211	0.2000	0.1798	
17 4-Amino-2,6-dinitrotoluene	1	11.431	11.430	0.001	27186	0.2000	0.1674	
18 2-Amino-4,6-dinitrotoluene	1	11.717	11.717	0.000	34772	0.2000	0.1760	
19 2,6-Dinitrotoluene	1	11.857	11.850	0.007	29066	0.2000	0.1856	
20 2,4-Dinitrotoluene	1	12.057	12.050	0.007	55696	0.2000	0.1873	
21 o-Nitrotoluene	1	12.904	12.890	0.014	21464	0.2000	0.1634	
22 p-Nitrotoluene	1	13.337	13.330	0.007	18722	0.2000	0.1661	
23 m-Nitrotoluene	1	13.937	13.930	0.007	23683	0.2000	0.1597	
24 PETN	2	15.044	15.024	0.020	144620	2.00	1.98	
25 Ammonium Picrate	1		0.000				ND	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 16-May-2019 08:23:35

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B075.D

Injection Date: 15-May-2019 18:44:37

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-B-2-C MSD

Worklist Smp#: 75

Client ID: NTAmw-119-190401-GWMSD

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

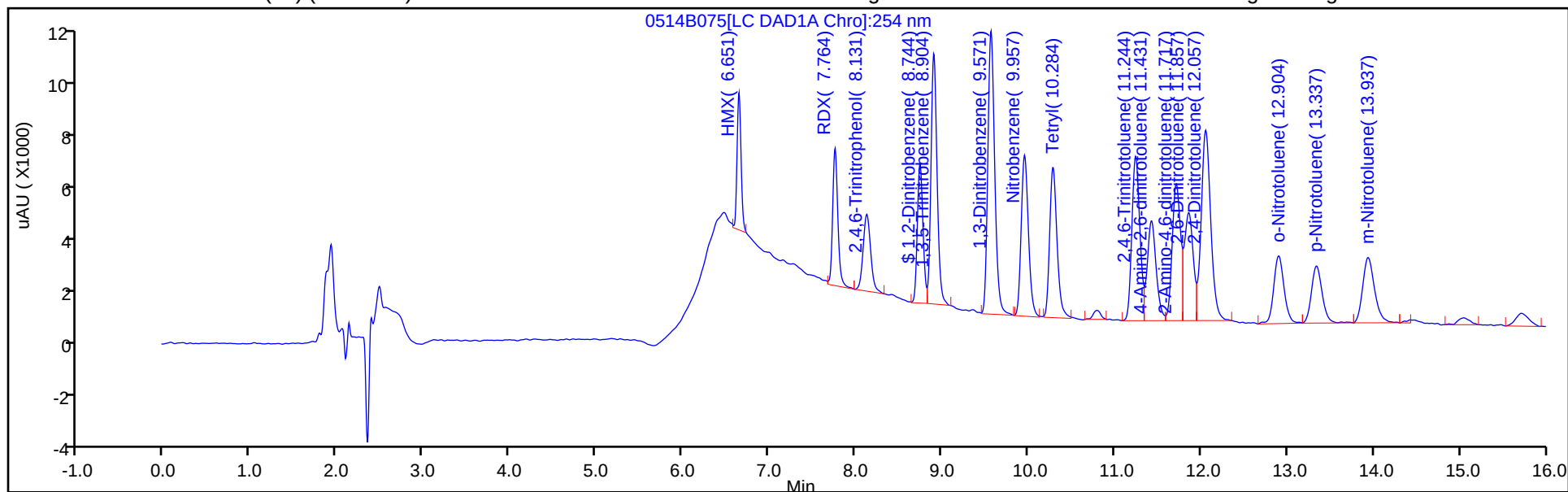
ALS Bottle#: 75

Method: 8330_X3

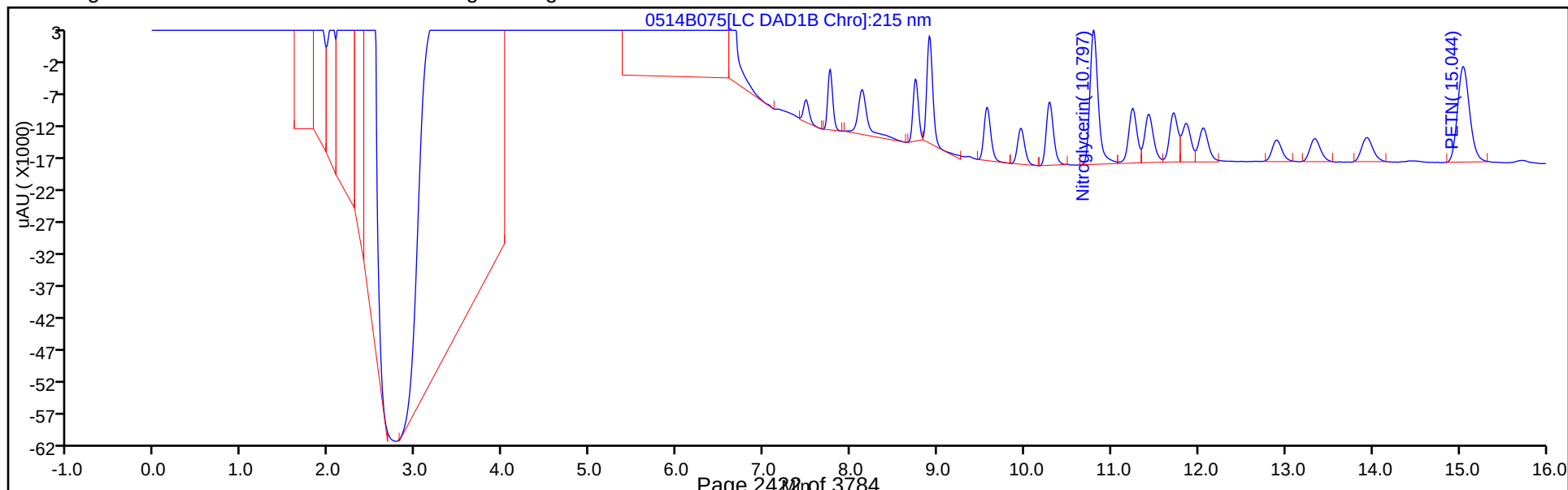
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B075.D
Lims ID: 280-123221-B-2-C MSD
Client ID: NTAmw-119-190401-GWMSD
Sample Type: MSD
Inject. Date: 15-May-2019 18:44:37 ALS Bottle#: 75 Worklist Smp#: 75
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-B-2-C
Misc. Info.: 280-0081869-075
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 16-May-2019 08:23:27 Calib Date: 15-May-2019 01:42:24
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 16-May-2019 08:19:06

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1868	93.41

Eurofins TestAmerica, Denver

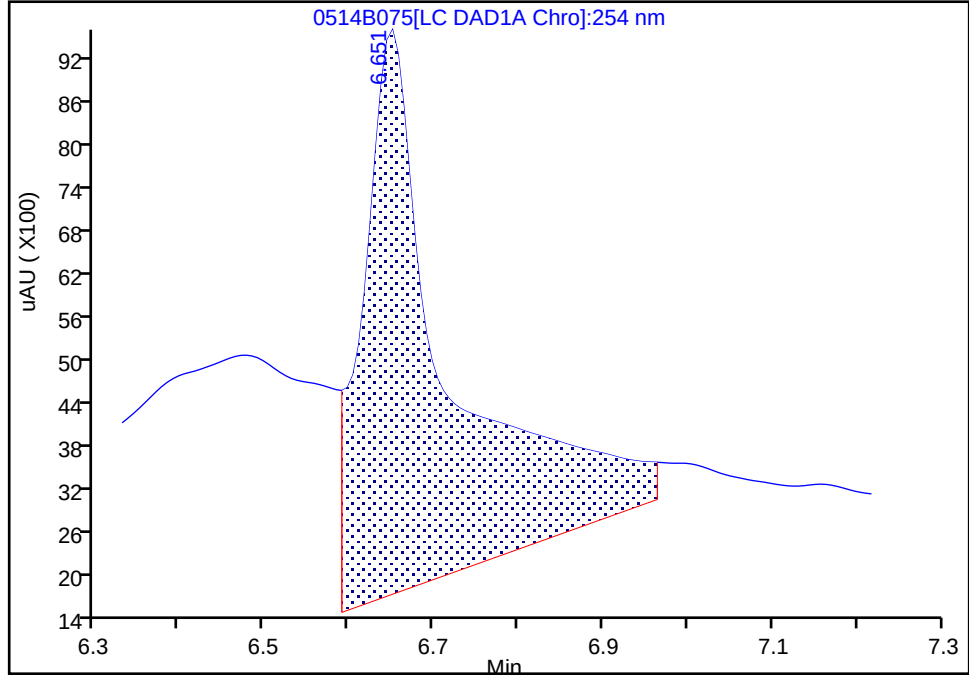
Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B075.D
Injection Date: 15-May-2019 18:44:37 Instrument ID: CHHPLC_X3
Lims ID: 280-123221-B-2-C MSD
Client ID: NTAmw-119-190401-GWMSD
Operator ID: hkf ALS Bottle#: 75 Worklist Smp#: 75
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector LC DAD1B, 254 nm

3 HMX, CAS: 2691-41-0

Signal: 1

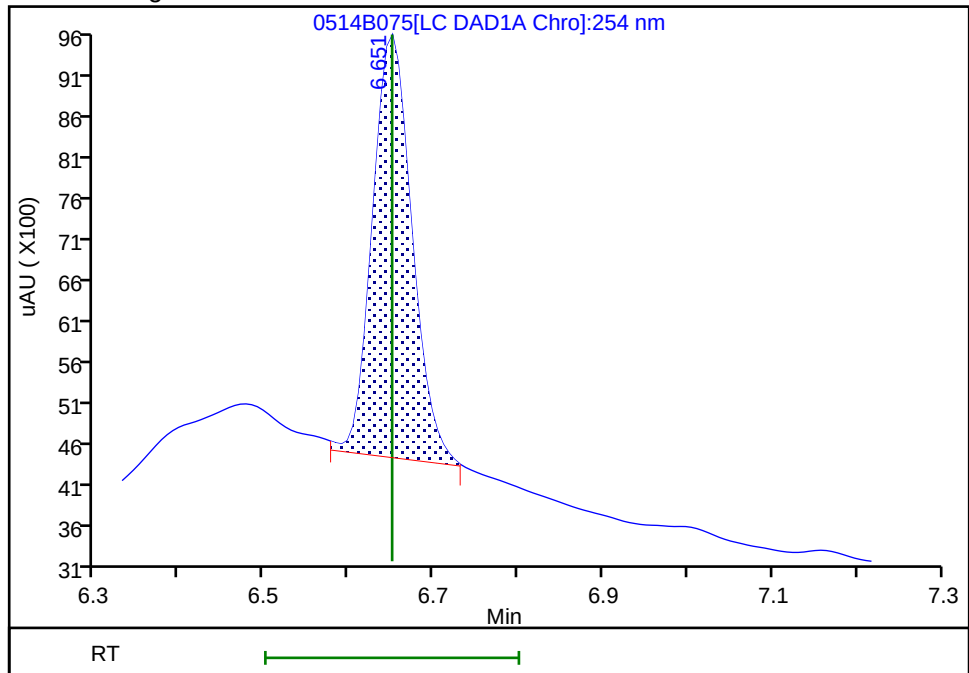
RT: 6.65
Area: 57119
Amount: 0.640303
Amount Units: ug/mL

Processing Integration Results



RT: 6.65
Area: 16833
Amount: 0.188698
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 16-May-2019 08:18:46
Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing
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Eurofins TestAmerica, Denver

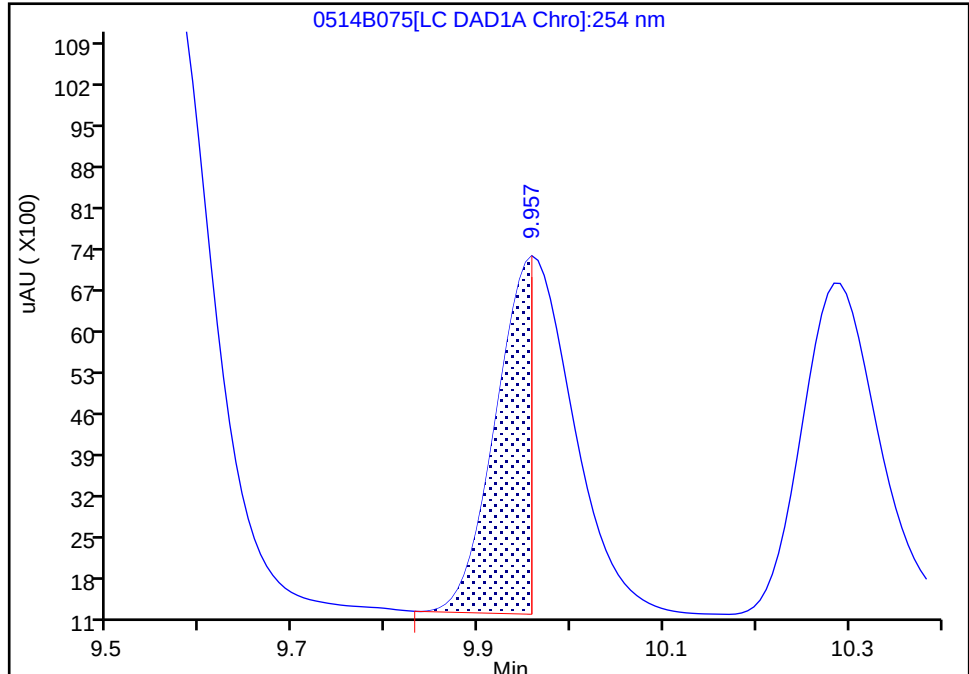
Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B075.D
Injection Date: 15-May-2019 18:44:37 Instrument ID: CHHPLC_X3
Lims ID: 280-123221-B-2-C MSD
Client ID: NTAmw-119-190401-GWMSD
Operator ID: hkf ALS Bottle#: 75 Worklist Smp#: 75
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector: LC DAD1B, 254 nm

12 Nitrobenzene, CAS: 98-95-3

Signal: 1

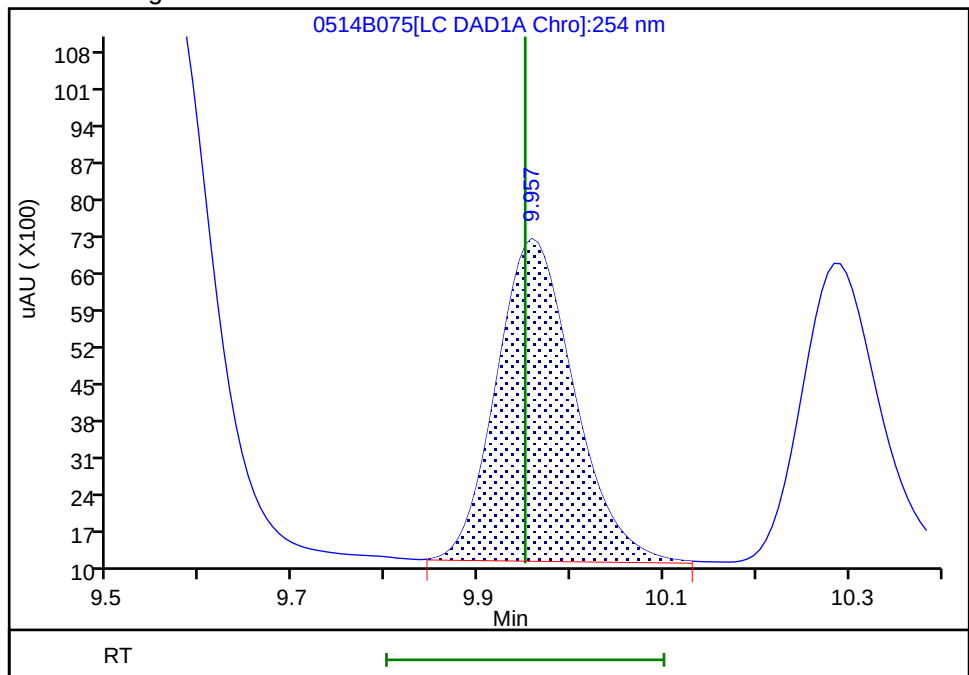
RT: 9.96
Area: 16019
Amount: 0.081386
Amount Units: ug/mL

Processing Integration Results



RT: 9.96
Area: 35564
Amount: 0.180687
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 16-May-2019 08:18:59
Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing
Page 2425 of 3784

Eurofins TestAmerica, Denver

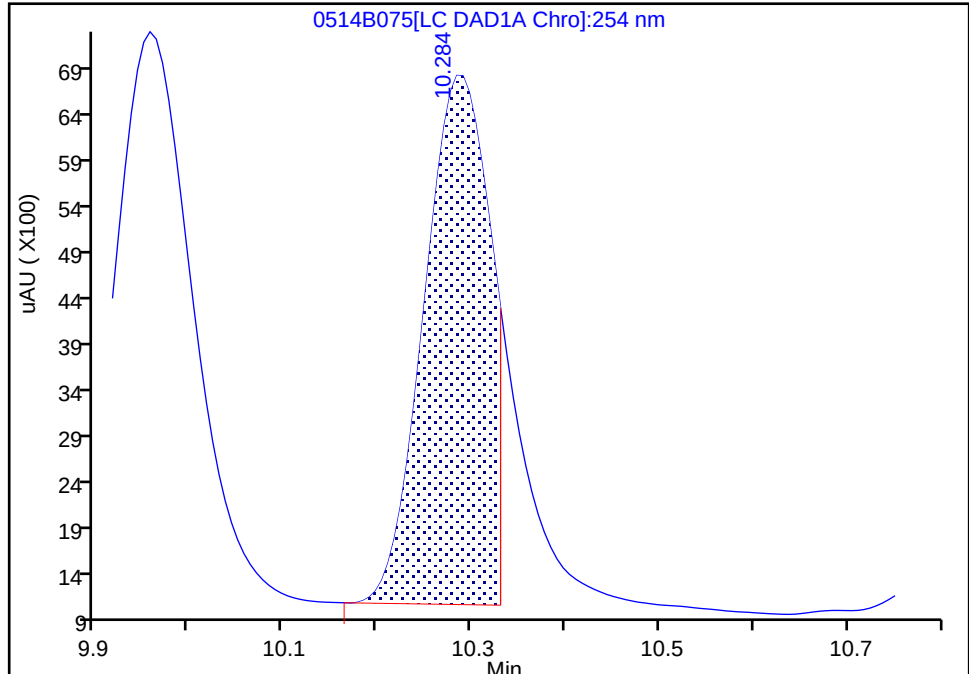
Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B075.D
Injection Date: 15-May-2019 18:44:37 Instrument ID: CHHPLC_X3
Lims ID: 280-123221-B-2-C MSD
Client ID: NTAmw-119-190401-GWMSD
Operator ID: hkf ALS Bottle#: 75 Worklist Smp#: 75
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector LC DAD1B, 254 nm

14 Tetryl, CAS: 479-45-8

Signal: 1

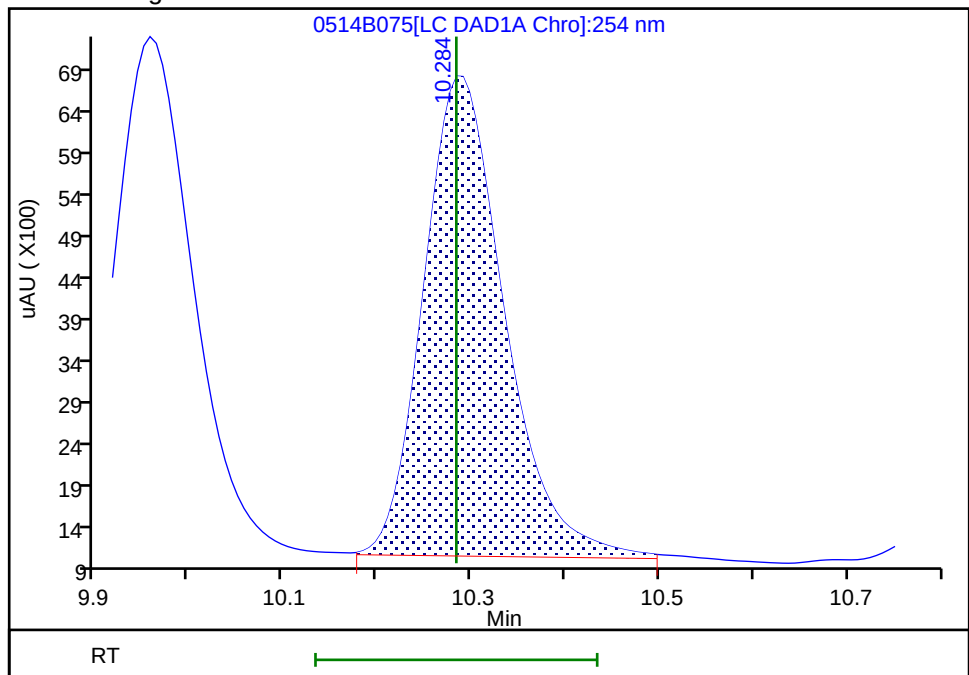
RT: 10.28
Area: 27029
Amount: 0.160929
Amount Units: ug/mL

Processing Integration Results



RT: 10.28
Area: 33965
Amount: 0.202226
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 16-May-2019 08:19:03
Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Client Sample ID: DET-003-190401-GWMSD MSD Lab Sample ID: 280-123221-4 MSD
 Matrix: Water Lab File ID: 0509B048.D
 Analysis Method: 8330B Date Collected: 04/29/2019 10:53
 Extraction Method: 3535 Date Extracted: 05/04/2019 15:00
 Sample wt/vol: 459.7(mL) Date Analyzed: 05/10/2019 09:01
 Con. Extract Vol.: 5(mL) Dilution Factor: 1
 Injection Volume: 100(uL) GC Column: UltraCarb5uODS ID: 4.6(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 457634 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	2.14		1.1	0.44	0.22
99-65-0	1,3-Dinitrobenzene	1.98		0.44	0.22	0.096
118-96-7	2,4,6-Trinitrotoluene	1.78		0.44	0.44	0.17
121-14-2	2,4-Dinitrotoluene	1.88		0.44	0.22	0.091
606-20-2	2,6-Dinitrotoluene	1.90		0.22	0.22	0.070
35572-78-2	2-Amino-4,6-dinitrotoluene	1.82		0.22	0.13	0.055
88-72-2	2-Nitrotoluene	1.51	J1	0.44	0.22	0.093
99-08-1	3-Nitrotoluene	1.56	J1	0.44	0.44	0.21
19406-51-0	4-Amino-2,6-dinitrotoluene	1.72		0.22	0.13	0.063
99-99-0	4-Nitrotoluene	1.64		1.1	0.44	0.22
2691-41-0	HMX	2.00	M	0.44	0.22	0.095
98-95-3	Nitrobenzene	1.76		0.44	0.22	0.099
55-63-0	Nitroglycerin	20.1		3.3	2.2	1.0
78-11-5	PETN	19.0		4.4	4.4	2.1
121-82-4	RDX	2.09		0.44	0.44	0.17
479-45-8	Tetryl	1.83		0.26	0.22	0.086

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	85		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B048.D
 Lims ID: 280-123221-E-4-A MSD
 Client ID: DET-003-190401-GWMSD
 Sample Type: MSD
 Inject. Date: 10-May-2019 09:01:01 ALS Bottle#: 48 Worklist Smp#: 48
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-E-4-A
 Misc. Info.: 280-0081739-048
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 10-May-2019 17:39:31 Calib Date: 30-Jan-2019 16:34:11
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 10-May-2019 17:35:44

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
1 2,6-diamino-4-nitrotoluene	1	6.466	6.501	-0.035	93328		0.4217	
2 TNX	1		6.541				ND	
3 HMX	1	6.640	6.643	-0.003	15934	0.2000	0.1834	M
4 2,4-diamino-6-nitrotoluene	1		6.688				ND	
5 DNX	1		6.875				ND	
6 MNX	1		7.328				ND	
7 RDX	1	7.733	7.736	-0.003	20390	0.2000	0.1922	
8 2,4,6-Trinitrophenol	1	8.080	8.090	-0.010	15275	0.2000	0.1781	
\$ 9 1,2-Dinitrobenzene	1	8.720	8.710	0.010	22743	0.2000	0.1701	
10 1,3,5-Trinitrobenzene	1	8.880	8.870	0.010	44710	0.2000	0.1968	
11 1,3-Dinitrobenzene	1	9.533	9.523	0.010	54887	0.2000	0.1820	
12 Nitrobenzene	1	9.920	9.910	0.010	31681	0.2000	0.1620	
13 3,5-Dinitroaniline	1		10.134				ND	
14 Tetryl	1	10.240	10.230	0.010	30687	0.2000	0.1679	
15 Nitroglycerin	2	10.746	10.736	0.010	125316	2.00	1.85	
16 2,4,6-Trinitrotoluene	1	11.193	11.183	0.010	37269	0.2000	0.1639	
17 4-Amino-2,6-dinitrotoluene	1	11.360	11.343	0.017	26487	0.2000	0.1584	
18 2-Amino-4,6-dinitrotoluene	1	11.640	11.630	0.010	34104	0.2000	0.1673	
19 2,6-Dinitrotoluene	1	11.800	11.790	0.010	26859	0.2000	0.1743	
20 2,4-Dinitrotoluene	1	11.993	11.983	0.010	51829	0.2000	0.1727	
21 o-Nitrotoluene	1	12.840	12.823	0.017	18858	0.2000	0.1389	
22 p-Nitrotoluene	1	13.273	13.256	0.017	17890	0.2000	0.1507	
23 m-Nitrotoluene	1	13.866	13.856	0.010	21814	0.2000	0.1437	
24 PETN	2	14.973	14.963	0.010	133016	2.00	1.75	
25 Ammonium Picrate	1		0.000				ND	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 10-May-2019 17:39:47

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurolins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B048.D

Injection Date: 10-May-2019 09:01:01

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-E-4-A MSD

Worklist Smp#: 48

Client ID: DET-003-190401-GWMSD

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

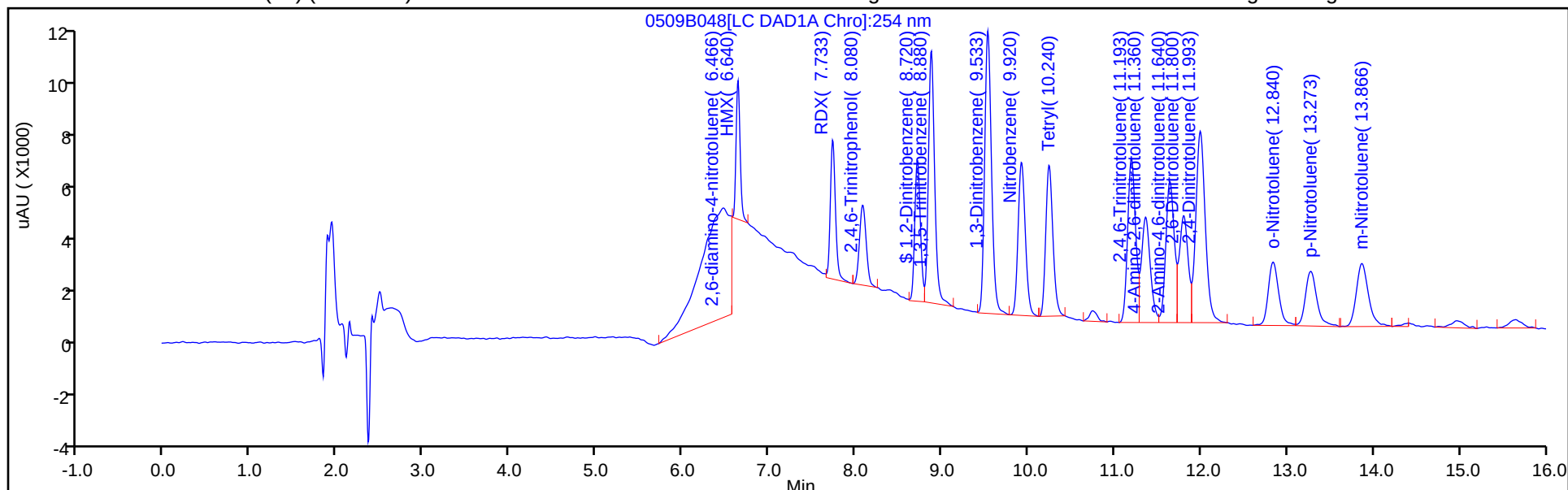
ALS Bottle#: 48

Method: 8330_X3

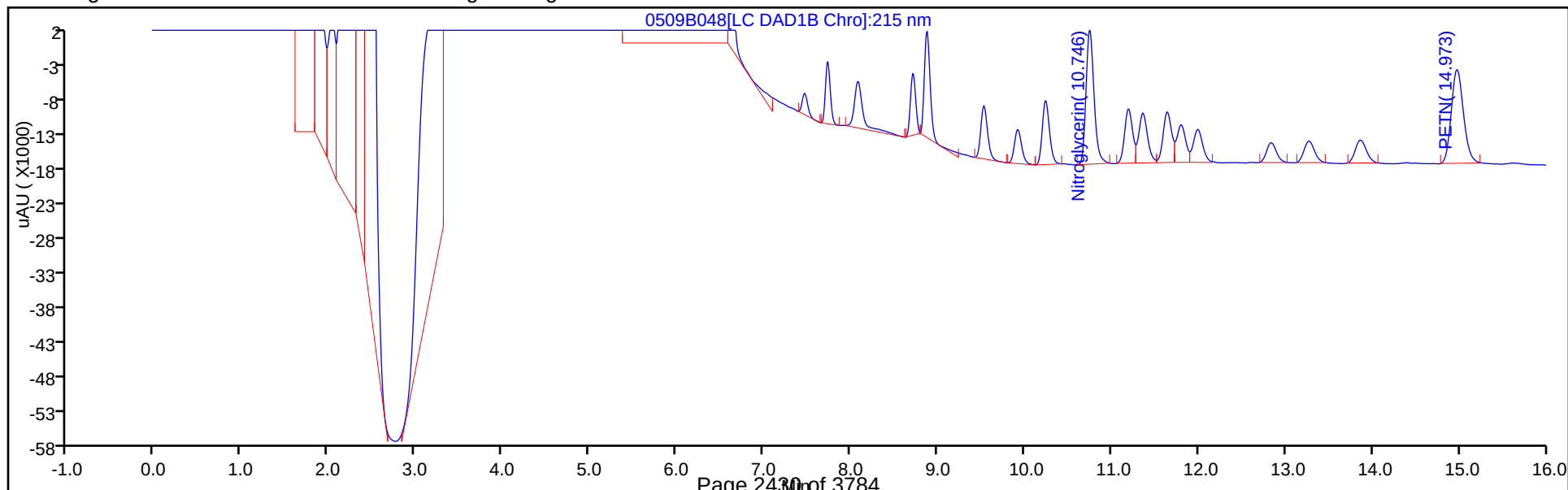
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B048.D
Lims ID: 280-123221-E-4-A MSD
Client ID: DET-003-190401-GWMSD
Sample Type: MSD
Inject. Date: 10-May-2019 09:01:01 ALS Bottle#: 48 Worklist Smp#: 48
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-E-4-A
Misc. Info.: 280-0081739-048
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 10-May-2019 17:39:31 Calib Date: 30-Jan-2019 16:34:11
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190130-78526.b\01300014.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0316

First Level Reviewer: fiedlerh

Date: 10-May-2019 17:35:44

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1701	85.06

Eurofins TestAmerica, Denver

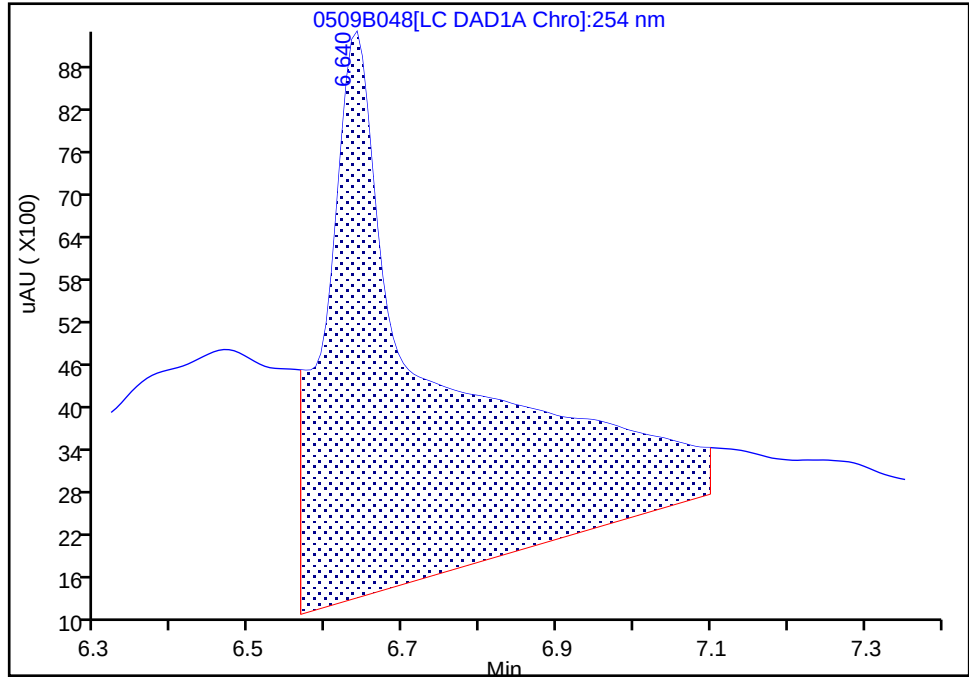
Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190509-81739.b\0509B048.D
Injection Date: 10-May-2019 09:01:01 Instrument ID: CHHPLC_X3
Lims ID: 280-123221-E-4-A MSD
Client ID: DET-003-190401-GWMSD
Operator ID: hkf ALS Bottle#: 48 Worklist Smp#: 48
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector LC DAD1B, 254 nm

3 HMX, CAS: 2691-41-0

Signal: 1

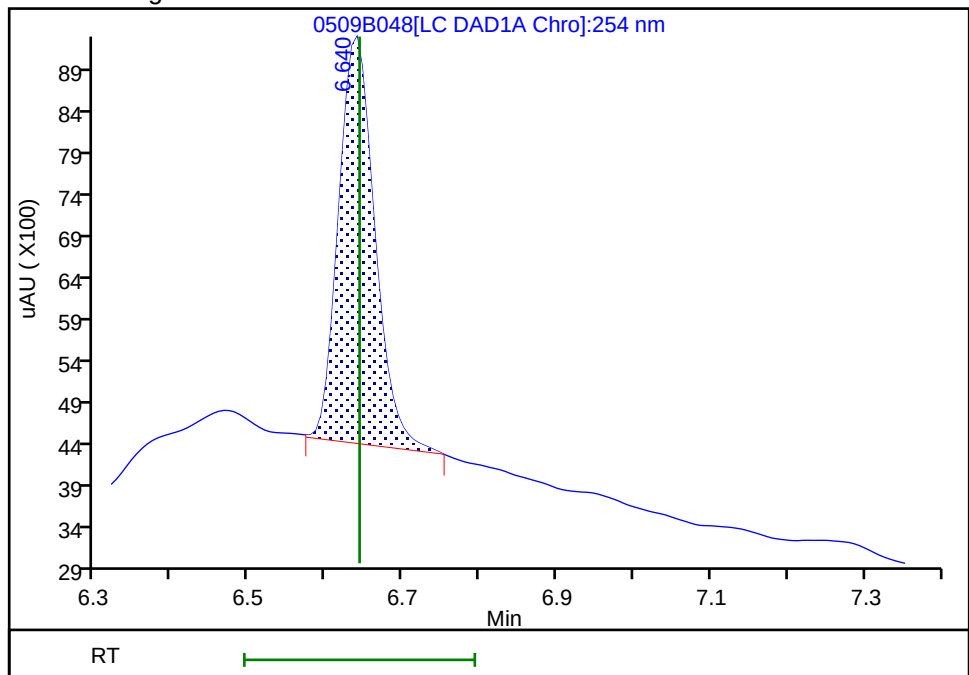
RT: 6.64
Area: 83320
Amount: 0.959174
Amount Units: ug/mL

Processing Integration Results



RT: 6.64
Area: 15934
Amount: 0.183431
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 10-May-2019 17:35:42
Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing
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FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Client Sample ID: DET-003-190401-GWMSD MSD RE Lab Sample ID: 280-123221-4 MSD RE

Matrix: Water Lab File ID: 0514B082.D

Analysis Method: 8330B Date Collected: 04/29/2019 10:53

Extraction Method: 3535 Date Extracted: 05/10/2019 16:21

Sample wt/vol: 445.5 (mL) Date Analyzed: 05/15/2019 21:31

Con. Extract Vol.: 5 (mL) Dilution Factor: 1

Injection Volume: 100 (uL) GC Column: UltraCarb5uODS ID: 4.6 (mm)

% Moisture: _____ GPC Cleanup: (Y/N) N

Analysis Batch No.: 458152 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	2.29	H	1.1	0.45	0.22
99-65-0	1,3-Dinitrobenzene	2.19	H	0.45	0.22	0.10
118-96-7	2,4,6-Trinitrotoluene	1.99	H	0.45	0.45	0.18
121-14-2	2,4-Dinitrotoluene	2.07	H	0.45	0.22	0.094
606-20-2	2,6-Dinitrotoluene	1.97	H	0.22	0.22	0.072
35572-78-2	2-Amino-4,6-dinitrotoluene	2.01	H	0.22	0.13	0.057
88-72-2	2-Nitrotoluene	1.72	H	0.45	0.22	0.096
99-08-1	3-Nitrotoluene	1.70	H	0.45	0.45	0.22
19406-51-0	4-Amino-2,6-dinitrotoluene	1.86	H	0.22	0.13	0.065
99-99-0	4-Nitrotoluene	1.72	H	1.1	0.45	0.22
2691-41-0	HMX	2.13	H M	0.45	0.22	0.098
98-95-3	Nitrobenzene	1.92	H	0.45	0.22	0.10
55-63-0	Nitroglycerin	22.1	H	3.4	2.2	1.0
78-11-5	PETN	21.7	H	4.5	4.5	2.2
121-82-4	RDX	2.36	H	0.45	0.45	0.18
479-45-8	Tetryl	2.20	H	0.27	0.22	0.089

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	93		83-119

Eurofins TestAmerica, Denver
Target Compound Quantitation Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B082.D
 Lims ID: 280-123221-F-4-C MSD
 Client ID: DET-003-190401-GWMSD
 Sample Type: MSD
 Inject. Date: 15-May-2019 21:31:04 ALS Bottle#: 82 Worklist Smp#: 82
 Injection Vol: 100.0 ul Dil. Factor: 1.0000
 Sample Info: 280-123221-F-4-C
 Misc. Info.: 280-0081869-082
 Operator ID: hkf Instrument ID: CHHPLC_X3
 Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
 Limit Group: GCSV - 8330
 Last Update: 16-May-2019 08:23:40 Calib Date: 15-May-2019 01:42:24
 Integrator: Falcon
 Quant Method: External Standard Quant By: Initial Calibration
 Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
 Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
 Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 16-May-2019 08:21:01

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
1 2,6-diamino-4-nitrotoluene	1		6.509				ND	M
2 TNX	1		6.556				ND	
3 HMX	1	6.652	6.650	0.002	16930	0.2000	0.1898	M
4 2,4-diamino-6-nitrotoluene	1		6.695				ND	
5 DNX	1		6.889				ND	
6 MNX	1		7.356				ND	
7 RDX	1	7.765	7.764	0.001	22468	0.2000	0.2107	
8 2,4,6-Trinitrophenol	1	8.132	8.130	0.002	17221	0.2000	0.2055	
\$ 9 1,2-Dinitrobenzene	1	8.745	8.744	0.001	24192	0.2000	0.1859	
10 1,3,5-Trinitrobenzene	1	8.905	8.904	0.001	46718	0.2000	0.2038	
11 1,3-Dinitrobenzene	1	9.565	9.564	0.001	58644	0.2000	0.1949	
12 Nitrobenzene	1	9.958	9.950	0.008	33745	0.2000	0.1714	
13 3,5-Dinitroaniline	1		10.209				ND	
14 Tetryl	1	10.285	10.284	0.001	32889	0.2000	0.1958	
15 Nitroglycerin	2	10.792	10.784	0.008	137745	2.00	1.97	
16 2,4,6-Trinitrotoluene	1	11.245	11.237	0.008	39625	0.2000	0.1772	
17 4-Amino-2,6-dinitrotoluene	1	11.432	11.430	0.002	26871	0.2000	0.1654	
18 2-Amino-4,6-dinitrotoluene	1	11.718	11.717	0.001	35333	0.2000	0.1789	
19 2,6-Dinitrotoluene	1	11.858	11.850	0.008	27455	0.2000	0.1753	
20 2,4-Dinitrotoluene	1	12.058	12.050	0.008	54805	0.2000	0.1843	
21 o-Nitrotoluene	1	12.905	12.890	0.015	20143	0.2000	0.1534	
22 p-Nitrotoluene	1	13.338	13.330	0.008	17255	0.2000	0.1531	
23 m-Nitrotoluene	1	13.938	13.930	0.008	22474	0.2000	0.1515	
24 PETN	2	15.052	15.024	0.028	141718	2.00	1.94	
25 Ammonium Picrate	1		0.000				ND	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 16-May-2019 08:23:42

Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Denver

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B082.D

Injection Date: 15-May-2019 21:31:04

Instrument ID: CHHPLC_X3

Operator ID: hkf

Lims ID: 280-123221-F-4-C MSD

Worklist Smp#: 82

Client ID: DET-003-190401-GWMSD

Injection Vol: 100.0 ul

Dil. Factor: 1.0000

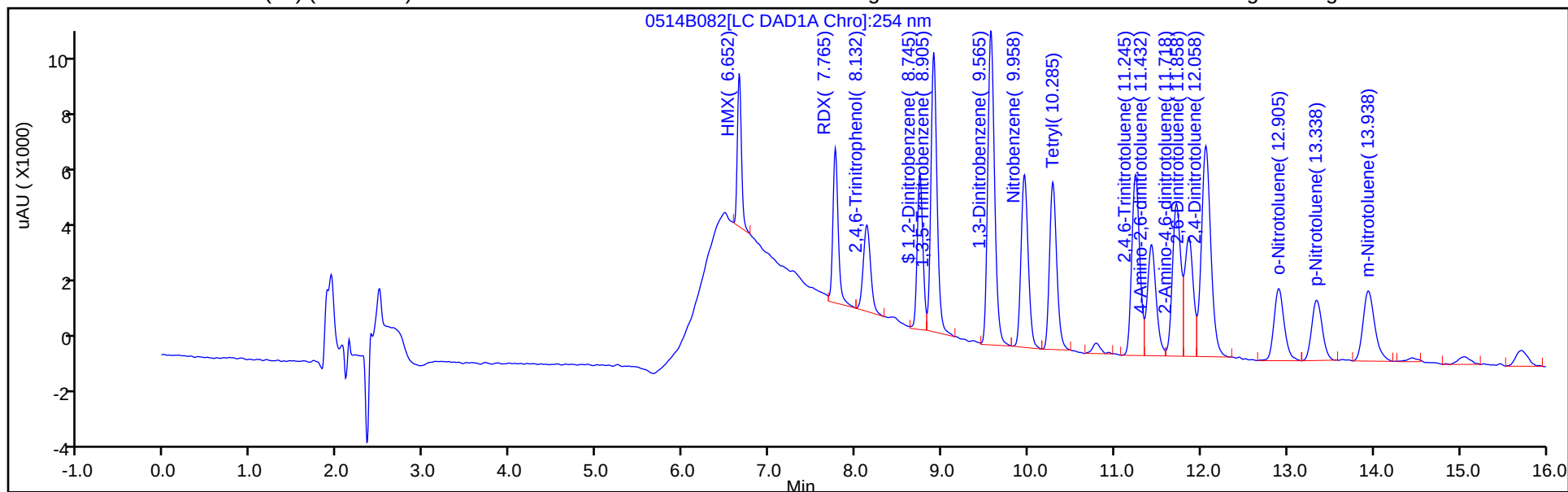
ALS Bottle#: 82

Method: 8330_X3

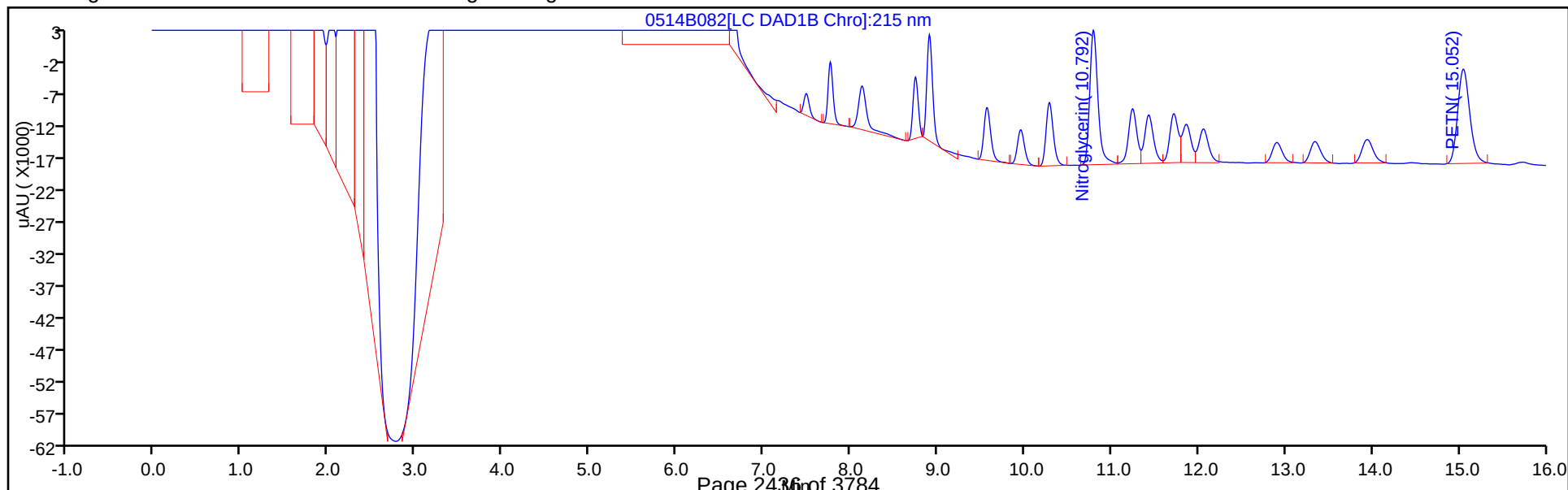
Limit Group: GCSV - 8330

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Eurofins TestAmerica, Denver
Recovery Report

Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B082.D
Lims ID: 280-123221-F-4-C MSD
Client ID: DET-003-190401-GWMSD
Sample Type: MSD
Inject. Date: 15-May-2019 21:31:04 ALS Bottle#: 82 Worklist Smp#: 82
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-123221-F-4-C
Misc. Info.: 280-0081869-082
Operator ID: hkf Instrument ID: CHHPLC_X3
Method: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 16-May-2019 08:23:40 Calib Date: 15-May-2019 01:42:24
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B032.D
Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: CTX0325

First Level Reviewer: fiedlerh

Date: 16-May-2019 08:21:01

Compound	Amount Added	Amount Recovered	% Rec.
\$ 9 1,2-Dinitrobenzene	0.2000	0.1859	92.97

Eurofins TestAmerica, Denver

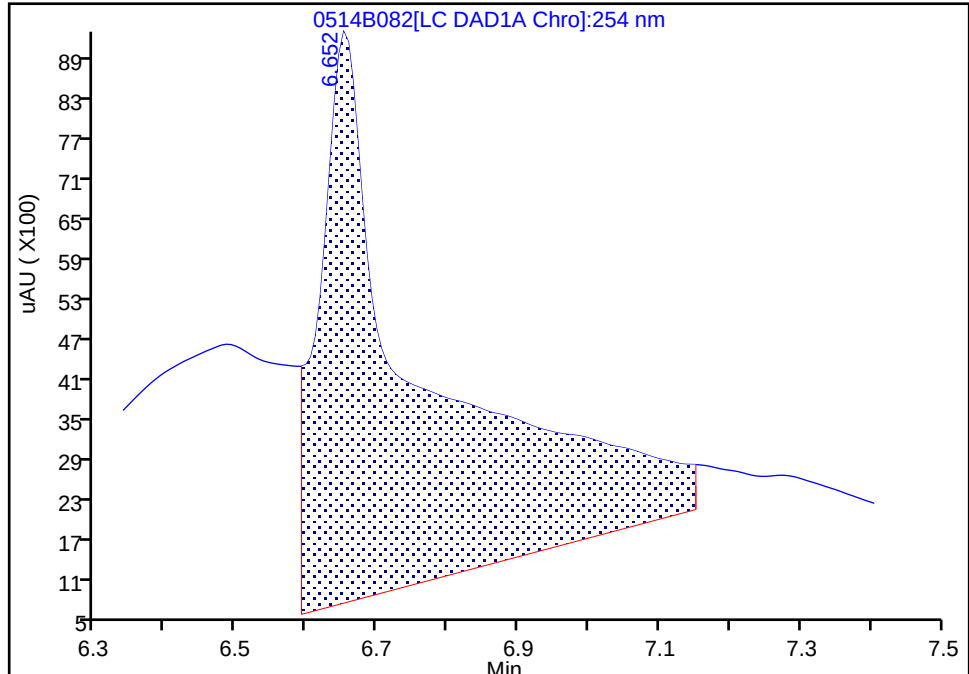
Data File: \\chromna\Denver\ChromData\CHHPLC_X\20190514-81869.b\0514B082.D
Injection Date: 15-May-2019 21:31:04 Instrument ID: CHHPLC_X3
Lims ID: 280-123221-F-4-C MSD
Client ID: DET-003-190401-GWMSD
Operator ID: hkf ALS Bottle#: 82 Worklist Smp#: 82
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector LC DAD1B, 254 nm

3 HMX, CAS: 2691-41-0

Signal: 1

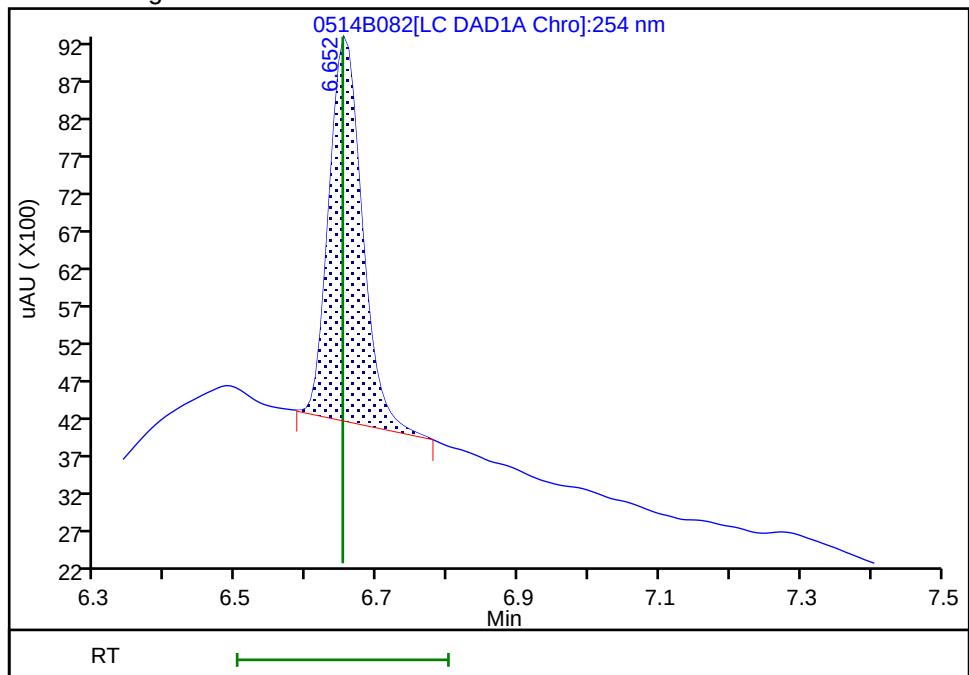
RT: 6.65
Area: 91112
Amount: 1.021364
Amount Units: ug/mL

Processing Integration Results



RT: 6.65
Area: 16930
Amount: 0.189785
Amount Units: ug/mL

Manual Integration Results



Reviewer: fiedlerh, 16-May-2019 08:20:59
Audit Action: Manually Integrated

Audit Reason: Baseline Smoothing
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HPLC/IC ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, DenverJob No.: 280-123221-1

SDG No.: _____

Instrument ID: CHHPLC_X3Start Date: 01/24/2019 16:36Analysis Batch Number: 445350End Date: 01/24/2019 23:08

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 280-445350/7		01/24/2019 16:36	1	01240007.D	UltraCarb5uODS 4.6 (mm)
IC 280-445350/8		01/24/2019 17:00	1	01240008.D	UltraCarb5uODS 4.6 (mm)
IC 280-445350/9		01/24/2019 17:23	1	01240009.D	UltraCarb5uODS 4.6 (mm)
IC 280-445350/10		01/24/2019 17:46	1	01240010.D	UltraCarb5uODS 4.6 (mm)
IC 280-445350/11		01/24/2019 18:09	1	01240011.D	UltraCarb5uODS 4.6 (mm)
IC 280-445350/12		01/24/2019 18:32	1	01240012.D	UltraCarb5uODS 4.6 (mm)
IC 280-445350/13		01/24/2019 18:55	1	01240013.D	UltraCarb5uODS 4.6 (mm)
IC 280-445350/14		01/24/2019 19:18	1	01240014.D	UltraCarb5uODS 4.6 (mm)
ICV 280-445350/15		01/24/2019 19:41	1	01240015.D	UltraCarb5uODS 4.6 (mm)
IC 280-445350/16		01/24/2019 20:04	1		UltraCarb5uODS 4.6 (mm)
IC 280-445350/17		01/24/2019 20:27	1		UltraCarb5uODS 4.6 (mm)
IC 280-445350/18		01/24/2019 20:50	1		UltraCarb5uODS 4.6 (mm)
IC 280-445350/19		01/24/2019 21:13	1		UltraCarb5uODS 4.6 (mm)
IC 280-445350/20		01/24/2019 21:36	1		UltraCarb5uODS 4.6 (mm)
IC 280-445350/21		01/24/2019 21:59	1		UltraCarb5uODS 4.6 (mm)
IC 280-445350/22		01/24/2019 22:22	1		UltraCarb5uODS 4.6 (mm)
IC 280-445350/23		01/24/2019 22:45	1		UltraCarb5uODS 4.6 (mm)
ICV 280-445350/24		01/24/2019 23:08	1		UltraCarb5uODS 4.6 (mm)

HPLC/IC ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, DenverJob No.: 280-123221-1

SDG No.: _____

Instrument ID: CHHPLC_G2_LUNAStart Date: 05/07/2019 15:08Analysis Batch Number: 457315End Date: 05/08/2019 01:03

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 280-457315/7		05/07/2019 15:08	1	05070007.D	Luna-phenylhex 4.6 (mm)
IC 280-457315/8		05/07/2019 15:43	1	05070008.D	Luna-phenylhex 4.6 (mm)
IC 280-457315/9		05/07/2019 16:18	1	05070009.D	Luna-phenylhex 4.6 (mm)
IC 280-457315/10		05/07/2019 16:53	1	05070010.D	Luna-phenylhex 4.6 (mm)
IC 280-457315/11		05/07/2019 17:28	1	05070011.D	Luna-phenylhex 4.6 (mm)
IC 280-457315/12		05/07/2019 18:03	1	05070012.D	Luna-phenylhex 4.6 (mm)
IC 280-457315/13		05/07/2019 18:38	1	05070013.D	Luna-phenylhex 4.6 (mm)
IC 280-457315/14		05/07/2019 19:13	1	05070014.D	Luna-phenylhex 4.6 (mm)
ICV 280-457315/15		05/07/2019 19:48	1	05070015.D	Luna-phenylhex 4.6 (mm)
IC 280-457315/16		05/07/2019 20:23	1		Luna-phenylhex 4.6 (mm)
IC 280-457315/17		05/07/2019 20:58	1		Luna-phenylhex 4.6 (mm)
IC 280-457315/18		05/07/2019 21:33	1		Luna-phenylhex 4.6 (mm)
IC 280-457315/19		05/07/2019 22:08	1		Luna-phenylhex 4.6 (mm)
IC 280-457315/20		05/07/2019 22:43	1		Luna-phenylhex 4.6 (mm)
IC 280-457315/21		05/07/2019 23:18	1		Luna-phenylhex 4.6 (mm)
IC 280-457315/22		05/07/2019 23:53	1		Luna-phenylhex 4.6 (mm)
IC 280-457315/23		05/08/2019 00:28	1		Luna-phenylhex 4.6 (mm)
ICV 280-457315/24		05/08/2019 01:03	1		Luna-phenylhex 4.6 (mm)

HPLC/IC ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.:

Instrument ID: CHHPLC_X3

Start Date: 05/10/2019 02:40

Analysis Batch Number: 457634

End Date: 05/10/2019 16:09

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 280-457634/32		05/10/2019 02:40	1	0509B032.D	UltraCarb5uODS 4.6 (mm)
CCV 280-457634/33		05/10/2019 03:04	1		UltraCarb5uODS 4.6 (mm)
CCV 280-457634/34		05/10/2019 03:28	1		UltraCarb5uODS 4.6 (mm)
MB 280-456980/1-A		05/10/2019 03:52	1	0509B035.D	UltraCarb5uODS 4.6 (mm)
LCS 280-456980/2-A		05/10/2019 04:15	1	0509B036.D	UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/10/2019 04:39	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/10/2019 05:03	1		UltraCarb5uODS 4.6 (mm)
280-123221-2		05/10/2019 05:26	1	0509B039.D	UltraCarb5uODS 4.6 (mm)
280-123221-2 MS		05/10/2019 05:50	1	0509B040.D	UltraCarb5uODS 4.6 (mm)
280-123221-2 MSD		05/10/2019 06:14	1	0509B041.D	UltraCarb5uODS 4.6 (mm)
280-123221-3		05/10/2019 06:38	1	0509B042.D	UltraCarb5uODS 4.6 (mm)
280-123221-4		05/10/2019 07:02	1	0509B043.D	UltraCarb5uODS 4.6 (mm)
280-123221-4 MS		05/10/2019 07:25	1	0509B044.D	UltraCarb5uODS 4.6 (mm)
CCV 280-457634/45		05/10/2019 07:49	1	0509B045.D	UltraCarb5uODS 4.6 (mm)
CCV 280-457634/46		05/10/2019 08:13	1		UltraCarb5uODS 4.6 (mm)
CCV 280-457634/47		05/10/2019 08:37	1		UltraCarb5uODS 4.6 (mm)
280-123221-4 MSD		05/10/2019 09:01	1	0509B048.D	UltraCarb5uODS 4.6 (mm)
280-123221-5		05/10/2019 09:24	1	0509B049.D	UltraCarb5uODS 4.6 (mm)
280-123221-7		05/10/2019 09:48	1	0509B050.D	UltraCarb5uODS 4.6 (mm)
280-123221-8		05/10/2019 10:12	1	0509B051.D	UltraCarb5uODS 4.6 (mm)
280-123221-9		05/10/2019 10:35	1	0509B052.D	UltraCarb5uODS 4.6 (mm)
280-123221-10		05/10/2019 10:59	1	0509B053.D	UltraCarb5uODS 4.6 (mm)
280-123221-11		05/10/2019 11:23	1	0509B054.D	UltraCarb5uODS 4.6 (mm)
280-123221-12		05/10/2019 11:47	1	0509B055.D	UltraCarb5uODS 4.6 (mm)
280-123221-13		05/10/2019 12:11	1	0509B056.D	UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/10/2019 12:35	1		UltraCarb5uODS 4.6 (mm)
CCV 280-457634/58		05/10/2019 12:58	1	0509B058.D	UltraCarb5uODS 4.6 (mm)
CCV 280-457634/59		05/10/2019 13:22	1		UltraCarb5uODS 4.6 (mm)
CCV 280-457634/60		05/10/2019 13:46	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/10/2019 14:10	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/10/2019 14:34	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/10/2019 14:57	1		UltraCarb5uODS 4.6 (mm)
CCV 280-457634/64		05/10/2019 15:21	1		UltraCarb5uODS 4.6 (mm)
CCV 280-457634/65		05/10/2019 15:45	1		UltraCarb5uODS 4.6 (mm)
CCV 280-457634/66		05/10/2019 16:09	1		UltraCarb5uODS 4.6 (mm)

HPLC/IC ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, DenverJob No.: 280-123221-1

SDG No.: _____

Instrument ID: CHHPLC_G2_LUNAStart Date: 05/13/2019 19:30Analysis Batch Number: 457992End Date: 05/14/2019 14:10

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 280-457992/7		05/13/2019 19:30	1	05130007.D	Luna-phenylhex 4.6 (mm)
CCV 280-457992/8		05/13/2019 20:05	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/13/2019 20:40	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/13/2019 21:15	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/13/2019 21:50	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/13/2019 22:25	1		Luna-phenylhex 4.6 (mm)
280-123221-7		05/13/2019 23:00	1	05130013.D	Luna-phenylhex 4.6 (mm)
280-123221-10		05/13/2019 23:35	1	05130014.D	Luna-phenylhex 4.6 (mm)
280-123221-12		05/14/2019 00:10	1	05130015.D	Luna-phenylhex 4.6 (mm)
ZZZZZ		05/14/2019 00:45	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/14/2019 01:20	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/14/2019 01:55	1		Luna-phenylhex 4.6 (mm)
CCV 280-457992/19		05/14/2019 02:30	1	05130019.D	Luna-phenylhex 4.6 (mm)
CCV 280-457992/20		05/14/2019 03:05	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/14/2019 03:40	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/14/2019 04:15	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/14/2019 04:50	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/14/2019 05:25	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/14/2019 06:00	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/14/2019 06:35	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/14/2019 07:10	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/14/2019 07:45	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/14/2019 08:20	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/14/2019 08:55	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/14/2019 09:30	1		Luna-phenylhex 4.6 (mm)
CCV 280-457992/32		05/14/2019 10:05	1		Luna-phenylhex 4.6 (mm)
CCV 280-457992/33		05/14/2019 10:40	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/14/2019 11:15	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/14/2019 11:50	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/14/2019 12:25	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/14/2019 13:00	1		Luna-phenylhex 4.6 (mm)
CCV 280-457992/38		05/14/2019 13:35	1		Luna-phenylhex 4.6 (mm)
CCV 280-457992/39		05/14/2019 14:10	1		Luna-phenylhex 4.6 (mm)

HPLC/IC ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, DenverJob No.: 280-123221-1

SDG No.: _____

Instrument ID: CHHPLC_X3Start Date: 05/14/2019 15:49Analysis Batch Number: 458150End Date: 05/15/2019 02:06

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 280-458150/7		05/14/2019 15:49	1	0514B007.D	UltraCarb5uODS 4.6 (mm)
IC 280-458150/8		05/14/2019 16:13	1	0514B008.D	UltraCarb5uODS 4.6 (mm)
IC 280-458150/9		05/14/2019 16:36	1	0514B009.D	UltraCarb5uODS 4.6 (mm)
IC 280-458150/10		05/14/2019 17:00	1	0514B010.D	UltraCarb5uODS 4.6 (mm)
IC 280-458150/11		05/14/2019 17:24	1	0514B011.D	UltraCarb5uODS 4.6 (mm)
IC 280-458150/12		05/14/2019 17:48	1	0514B012.D	UltraCarb5uODS 4.6 (mm)
IC 280-458150/13		05/14/2019 18:11	1	0514B013.D	UltraCarb5uODS 4.6 (mm)
IC 280-458150/14		05/14/2019 18:35	1	0514B014.D	UltraCarb5uODS 4.6 (mm)
ICV 280-458150/15		05/14/2019 18:59	1	0514B015.D	UltraCarb5uODS 4.6 (mm)
IC 280-458150/16		05/14/2019 19:22	1		UltraCarb5uODS 4.6 (mm)
IC 280-458150/17		05/14/2019 19:46	1		UltraCarb5uODS 4.6 (mm)
IC 280-458150/18		05/14/2019 20:10	1		UltraCarb5uODS 4.6 (mm)
IC 280-458150/19		05/14/2019 20:34	1		UltraCarb5uODS 4.6 (mm)
IC 280-458150/20		05/14/2019 20:57	1		UltraCarb5uODS 4.6 (mm)
IC 280-458150/21		05/14/2019 21:21	1		UltraCarb5uODS 4.6 (mm)
IC 280-458150/22		05/14/2019 21:45	1		UltraCarb5uODS 4.6 (mm)
IC 280-458150/23		05/14/2019 22:09	1		UltraCarb5uODS 4.6 (mm)
ICV 280-458150/24		05/14/2019 22:32	1		UltraCarb5uODS 4.6 (mm)
IC 280-458150/25		05/14/2019 22:56	1		UltraCarb5uODS 4.6 (mm)
IC 280-458150/26		05/14/2019 23:20	1		UltraCarb5uODS 4.6 (mm)
IC 280-458150/27		05/14/2019 23:43	1		UltraCarb5uODS 4.6 (mm)
IC 280-458150/28		05/15/2019 00:07	1		UltraCarb5uODS 4.6 (mm)
IC 280-458150/29		05/15/2019 00:31	1		UltraCarb5uODS 4.6 (mm)
IC 280-458150/30		05/15/2019 00:54	1		UltraCarb5uODS 4.6 (mm)
IC 280-458150/31		05/15/2019 01:18	1		UltraCarb5uODS 4.6 (mm)
IC 280-458150/32		05/15/2019 01:42	1		UltraCarb5uODS 4.6 (mm)
ICV 280-458150/33		05/15/2019 02:06	1		UltraCarb5uODS 4.6 (mm)

HPLC/IC ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.:

Instrument ID: CHHPLC_X3

Start Date: 05/15/2019 10:01

Analysis Batch Number: 458152

End Date: 05/16/2019 01:04

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 280-458152/53		05/15/2019 10:01	1	0514B053.D	UltraCarb5uODS 4.6 (mm)
CCV 280-458152/54		05/15/2019 10:25	1		UltraCarb5uODS 4.6 (mm)
CCV 280-458152/55		05/15/2019 10:48	1		UltraCarb5uODS 4.6 (mm)
MB 280-457741/1-A		05/15/2019 11:12	1	0514B056.D	UltraCarb5uODS 4.6 (mm)
LCS 280-457741/2-A		05/15/2019 11:36	1	0514B057.D	UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/15/2019 12:00	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/15/2019 12:23	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/15/2019 12:47	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/15/2019 13:11	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/15/2019 13:35	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/15/2019 13:59	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/15/2019 14:22	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/15/2019 14:46	1		UltraCarb5uODS 4.6 (mm)
CCV 280-458152/66		05/15/2019 15:10	1	0514B066.D	UltraCarb5uODS 4.6 (mm)
CCV 280-458152/67		05/15/2019 15:34	1		UltraCarb5uODS 4.6 (mm)
CCV 280-458152/68		05/15/2019 15:57	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/15/2019 16:21	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/15/2019 16:45	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/15/2019 17:09	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/15/2019 17:33	1		UltraCarb5uODS 4.6 (mm)
280-123221-2 RE		05/15/2019 17:56	1	0514B073.D	UltraCarb5uODS 4.6 (mm)
280-123221-2 MS RE		05/15/2019 18:20	1	0514B074.D	UltraCarb5uODS 4.6 (mm)
280-123221-2 MSD RE		05/15/2019 18:44	1	0514B075.D	UltraCarb5uODS 4.6 (mm)
280-123221-3 RE		05/15/2019 19:08	1	0514B076.D	UltraCarb5uODS 4.6 (mm)
280-123221-4 RE		05/15/2019 19:32	1	0514B077.D	UltraCarb5uODS 4.6 (mm)
280-123221-4 MS RE		05/15/2019 19:56	1	0514B078.D	UltraCarb5uODS 4.6 (mm)
CCV 280-458152/79		05/15/2019 20:19	1	0514B079.D	UltraCarb5uODS 4.6 (mm)
CCV 280-458152/80		05/15/2019 20:43	1		UltraCarb5uODS 4.6 (mm)
CCV 280-458152/81		05/15/2019 21:07	1		UltraCarb5uODS 4.6 (mm)
280-123221-4 MSD RE		05/15/2019 21:31	1	0514B082.D	UltraCarb5uODS 4.6 (mm)
280-123221-5 RE		05/15/2019 21:54	1	0514B083.D	UltraCarb5uODS 4.6 (mm)
280-123221-7 RE		05/15/2019 22:18	1	0514B084.D	UltraCarb5uODS 4.6 (mm)
280-123221-8 RE		05/15/2019 22:42	1	0514B085.D	UltraCarb5uODS 4.6 (mm)
280-123221-9 RE		05/15/2019 23:05	1	0514B086.D	UltraCarb5uODS 4.6 (mm)
280-123221-10 RE		05/15/2019 23:29	1	0514B087.D	UltraCarb5uODS 4.6 (mm)
280-123221-11 RE		05/15/2019 23:53	1	0514B088.D	UltraCarb5uODS 4.6 (mm)
CCV 280-458152/89		05/16/2019 00:17	1	0514B089.D	UltraCarb5uODS 4.6 (mm)
CCV 280-458152/90		05/16/2019 00:40	1		UltraCarb5uODS 4.6 (mm)
CCV 280-458152/91		05/16/2019 01:04	1		UltraCarb5uODS 4.6 (mm)

HPLC/IC ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, DenverJob No.: 280-123221-1

SDG No.: _____

Instrument ID: CHHPLC_G2_LUNAStart Date: 05/16/2019 13:17Analysis Batch Number: 458394End Date: 05/16/2019 19:07

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 280-458394/7		05/16/2019 13:17	1	05160007.D	Luna-phenylhex 4.6 (mm)
ZZZZZ		05/16/2019 13:52	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/16/2019 14:27	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/16/2019 15:02	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/16/2019 15:37	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/16/2019 16:12	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/16/2019 16:47	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/16/2019 17:22	1		Luna-phenylhex 4.6 (mm)
280-123221-7 RE		05/16/2019 17:57	1	05160015.D	Luna-phenylhex 4.6 (mm)
280-123221-10 RE		05/16/2019 18:32	1	05160016.D	Luna-phenylhex 4.6 (mm)
CCV 280-458394/17		05/16/2019 19:07	1	05160017.D	Luna-phenylhex 4.6 (mm)

HPLC/IC ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, DenverJob No.: 280-123221-1

SDG No.: _____

Instrument ID: CHHPLC_X3Start Date: 05/16/2019 14:36Analysis Batch Number: 458457End Date: 05/16/2019 20:33

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 280-458457/7		05/16/2019 14:36	1	0516B007.D	UltraCarb5uODS 4.6 (mm)
CCV 280-458457/8		05/16/2019 15:00	1		UltraCarb5uODS 4.6 (mm)
CCV 280-458457/9		05/16/2019 15:24	1		UltraCarb5uODS 4.6 (mm)
MB 280-457818/1-A		05/16/2019 15:48	1	0516B010.D	UltraCarb5uODS 4.6 (mm)
LCS 280-457818/2-A		05/16/2019 16:11	1	0516B011.D	UltraCarb5uODS 4.6 (mm)
LCSD 280-457818/3-A		05/16/2019 16:35	1	0516B012.D	UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/16/2019 16:59	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/16/2019 17:22	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/16/2019 17:46	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/16/2019 18:10	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/16/2019 18:34	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/16/2019 18:57	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/16/2019 19:21	1		UltraCarb5uODS 4.6 (mm)
CCV 280-458457/20		05/16/2019 19:45	1	0516B020.D	UltraCarb5uODS 4.6 (mm)
CCV 280-458457/21		05/16/2019 20:09	1		UltraCarb5uODS 4.6 (mm)
CCV 280-458457/22		05/16/2019 20:33	1		UltraCarb5uODS 4.6 (mm)

HPLC/IC ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, DenverJob No.: 280-123221-1

SDG No.: _____

Instrument ID: CHHPLC_X3Start Date: 05/17/2019 10:24Analysis Batch Number: 458533End Date: 05/17/2019 20:17

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 280-458533/7		05/17/2019 10:24	1	05170007.D	UltraCarb5uODS 4.6 (mm)
CCV 280-458533/8		05/17/2019 10:48	1		UltraCarb5uODS 4.6 (mm)
CCV 280-458533/9		05/17/2019 11:11	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/17/2019 11:35	1		UltraCarb5uODS 4.6 (mm)
280-123221-12 RE		05/17/2019 11:59	1	05170011.D	UltraCarb5uODS 4.6 (mm)
280-123221-13 RE		05/17/2019 12:23	1	05170012.D	UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/17/2019 12:47	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/17/2019 13:10	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/17/2019 13:34	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/17/2019 13:58	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/17/2019 14:21	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/17/2019 14:45	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/17/2019 15:09	1		UltraCarb5uODS 4.6 (mm)
CCV 280-458533/20		05/17/2019 15:33	1	05170020.D	UltraCarb5uODS 4.6 (mm)
CCV 280-458533/21		05/17/2019 15:56	1		UltraCarb5uODS 4.6 (mm)
CCV 280-458533/22		05/17/2019 16:20	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/17/2019 16:44	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/17/2019 17:08	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/17/2019 17:31	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/17/2019 17:55	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/17/2019 18:19	1		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/17/2019 18:42	100		UltraCarb5uODS 4.6 (mm)
ZZZZZ		05/17/2019 19:06	100		UltraCarb5uODS 4.6 (mm)
CCV 280-458533/30		05/17/2019 19:30	1		UltraCarb5uODS 4.6 (mm)
CCV 280-458533/31		05/17/2019 19:54	1		UltraCarb5uODS 4.6 (mm)
CCV 280-458533/32		05/17/2019 20:17	1		UltraCarb5uODS 4.6 (mm)

HPLC/IC ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, DenverJob No.: 280-123221-1

SDG No.: _____

Instrument ID: CHHPLC_G2_LUNAStart Date: 05/20/2019 14:41Analysis Batch Number: 458794End Date: 05/21/2019 00:36

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 280-458794/7		05/20/2019 14:41	1	05200007.D	Luna-phenylhex 4.6 (mm)
CCV 280-458794/8		05/20/2019 15:16	1		Luna-phenylhex 4.6 (mm)
280-123221-12 RE		05/20/2019 15:51	1	05200009.D	Luna-phenylhex 4.6 (mm)
ZZZZZ		05/20/2019 16:26	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/20/2019 17:01	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/20/2019 17:36	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/20/2019 18:11	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/20/2019 18:46	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/20/2019 19:21	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/20/2019 19:56	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/20/2019 20:31	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/20/2019 21:06	1		Luna-phenylhex 4.6 (mm)
CCV 280-458794/19		05/20/2019 21:41	1	05200019.D	Luna-phenylhex 4.6 (mm)
CCV 280-458794/20		05/20/2019 22:16	1		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/20/2019 22:51	100		Luna-phenylhex 4.6 (mm)
ZZZZZ		05/20/2019 23:26	100		Luna-phenylhex 4.6 (mm)
CCV 280-458794/23		05/21/2019 00:01	1		Luna-phenylhex 4.6 (mm)
CCV 280-458794/24		05/21/2019 00:36	1		Luna-phenylhex 4.6 (mm)

HPLC/IC BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 456980 Batch Start Date: 05/04/19 15:00 Batch Analyst: Anders, Kayla SBatch Method: 3535 Batch End Date: 05/04/19 17:39

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	8330 LCS 00088	8330Surrogate 00103
MB 280-456980/1		3535, 8330B				500 mL	5 mL		0.1 mL
LCS 280-456980/2		3535, 8330B				500 mL	5 mL	0.1 mL	0.1 mL
280-123221-A-2	NTAmw-119-190401-GW	3535, 8330B	T	748.0 g	285.3 g	462.7 mL	5 mL		0.1 mL
280-123221-A-2 MS	NTAmw-119-190401-GWMS	3535, 8330B	T	745.7 g	286.0 g	459.7 mL	5 mL	0.1 mL	0.1 mL
280-123221-A-2 MSD	NTAmw-119-190401-GWMSD	3535, 8330B	T	744.8 g	285.8 g	459 mL	5 mL	0.1 mL	0.1 mL
280-123221-A-3	NTAmw-119-190402-GW	3535, 8330B	T	756.0 g	285.9 g	470.1 mL	5 mL		0.1 mL
280-123221-F-4	DET-003-190401-GW	3535, 8330B	T	732.4 g	286.3 g	446.1 mL	5 mL		0.1 mL
280-123221-F-4 MS	DET-003-190401-GWMS	3535, 8330B	T	775.5 g	284.7 g	490.8 mL	5 mL	0.1 mL	0.1 mL
280-123221-E-4 MSD	DET-003-190401-GWMSD	3535, 8330B	T	745.1 g	285.4 g	459.7 mL	5 mL	0.1 mL	0.1 mL
280-123221-C-5	DET-003-190402-GW	3535, 8330B	T	742.0 g	285.7 g	456.3 mL	5 mL		0.1 mL
280-123221-E-7	DET-004-190401-GW	3535, 8330B	T	770.4 g	286.0 g	484.4 mL	5 mL		0.1 mL
280-123221-A-8	FWGmw-007-190401-GW	3535, 8330B	T	742.1 g	286.0 g	456.1 mL	5 mL		0.1 mL
280-123221-A-9	WBGmw-020-190401-GW	3535, 8330B	T	806.6 g	287.9 g	518.7 mL	5 mL		0.1 mL
280-123221-B-10	WBGmw-006-190401-GW	3535, 8330B	T	796.8 g	287.2 g	509.6 mL	5 mL		0.1 mL
280-123221-A-11	WBGmw-021-190401-GW	3535, 8330B	T	742.3 g	288.7 g	453.6 mL	5 mL		0.1 mL
280-123221-A-12	WBGmw-009-190401-GW	3535, 8330B	T	768.1 g	288.2 g	479.9 mL	5 mL		0.1 mL
280-123221-B-13	FWGmw-016-190401-GW	3535, 8330B	T	786.9 g	284.4 g	502.5 mL	5 mL		0.1 mL

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

HPLC/IC BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 456980 Batch Start Date: 05/04/19 15:00 Batch Analyst: Anders, Kayla SBatch Method: 3535 Batch End Date: 05/04/19 17:39

Batch Notes	
Acid ID	.1%AAinACN_00127
Acid Name	.1%AAinACN
Balance ID	24350888
First End time	05/04/2019 17:04
Pipette/Syringe/Dispenser ID	Jiji, Soot
Rinse Solvent Lot	Acetonitrile_00027/30
Rinse Solvent Name	Acetonitrile
Solvent Lot #	CaCl2_Sol_00064
Solvent Name	Calcium Chloride
SPE Cartridge Lot ID	004938274A
SPE Cartridge Type	Porapak RDX Cartridges
Analyst ID - Spike Analyst	KA
Analyst ID - Spike Witness Analyst	Reviewer:VV
First Start time	05/04/2019 15:15

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

HPLC/IC BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457741 Batch Start Date: 05/10/19 16:21 Batch Analyst: Anders, Kayla SBatch Method: 3535 Batch End Date: 05/10/19 19:20

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	8330 LCS 00088	8330Surrogate 00103
MB 280-457741/1		3535, 8330B				500 mL	5 mL		0.1 mL
LCS 280-457741/2		3535, 8330B				500 mL	5 mL	0.1 mL	0.1 mL
280-123221-B-2	NTAmw-119-190401-GW	3535, 8330B	T	746.4 g	285.0 g	461.4 mL	5 mL		0.1 mL
280-123221-B-2 MS	NTAmw-119-190401-GWMS	3535, 8330B	T	750.1 g	286.7 g	463.4 mL	5 mL	0.1 mL	0.1 mL
280-123221-B-2 MSD	NTAmw-119-190401-GWMSD	3535, 8330B	T	752.8 g	287.1 g	465.7 mL	5 mL	0.1 mL	0.1 mL
280-123221-B-3	NTAmw-119-190402-GW	3535, 8330B	T	747.7 g	285.9 g	461.8 mL	5 mL		0.1 mL
280-123221-E-4	DET-003-190401-GW	3535, 8330B	T	738.6 g	285.2 g	453.4 mL	5 mL		0.1 mL
280-123221-E-4 MS	DET-003-190401-GWMS	3535, 8330B	T	759.4 g	286.5 g	472.9 mL	5 mL	0.1 mL	0.1 mL
280-123221-F-4 MSD	DET-003-190401-GWMSD	3535, 8330B	T	732.2 g	286.7 g	445.5 mL	5 mL	0.1 mL	0.1 mL
280-123221-D-5	DET-003-190402-GW	3535, 8330B	T	743.2 g	286.0 g	457.2 mL	5 mL		0.1 mL
280-123221-F-7	DET-004-190401-GW	3535, 8330B	T	767.1 g	284.5 g	482.6 mL	5 mL		0.1 mL
280-123221-B-8	FWGmw-007-190401-GW	3535, 8330B	T	770.4 g	288.9 g	481.5 mL	5 mL		0.1 mL
280-123221-B-9	WBGmw-020-190401-GW	3535, 8330B	T	789.8 g	288.3 g	501.5 mL	5 mL		0.1 mL
280-123221-A-10	WBGmw-006-190401-GW	3535, 8330B	T	783.9 g	287.5 g	496.4 mL	5 mL		0.1 mL
280-123221-B-11	WBGmw-021-190401-GW	3535, 8330B	T	705.4 g	286.5 g	418.9 mL	5 mL		0.1 mL

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

HPLC/IC BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457741 Batch Start Date: 05/10/19 16:21 Batch Analyst: Anders, Kayla SBatch Method: 3535 Batch End Date: 05/10/19 19:20

Batch Notes	
Acid ID	.1%AAinACN_00127
Acid Name	.1%AAinACN
Balance ID	24350888
First End time	05/10/2019 18:54
Pipette/Syringe/Dispenser ID	Jiji, Soot
Rinse Solvent Lot	Acetonitrile_00030/31
Rinse Solvent Name	Acetonitrile
Solvent Lot #	CaCl2_Sol_00064
Solvent Name	Calcium Chloride
SPE Cartridge Lot ID	004938274A
SPE Cartridge Type	Porapak DRX Cartridges
Analyst ID - Spike Analyst	KA
Analyst ID - Spike Witness Analyst	Reviewer:DC
First Start time	05/10/2019 16:39

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

HPLC/IC BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457818 Batch Start Date: 05/11/19 15:37 Batch Analyst: Anders, Kayla SBatch Method: 3535 Batch End Date: 05/14/19 18:47

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	8330 LCS 00088	8330Surrogate 00103
MB 280-457818/1		3535, 8330B				5 mL	5 mL		0.1 mL
LCS 280-457818/2		3535, 8330B				5 mL	5 mL	0.1 mL	0.1 mL
LCSD 280-457818/3		3535, 8330B				5 mL	5 mL	0.1 mL	0.1 mL
280-123221-B-12	WBGmw-009-190401 -GW	3535, 8330B	T	777.6 g	288.0 g	489.6 mL	5 mL		0.1 mL
280-123221-A-13	FWGmw-016-190401 -GW	3535, 8330B	T	778.4 g	287.5 g	490.9 mL	5 mL		0.1 mL

Batch Notes	
Acid ID	.1%AAinACN_00127
Acid Name	.1%AAinACN
Balance ID	24350888
Batch Comment	DV-OP-0017
First End time	05/11/2019 18:15
Pipette/Syringe/Dispenser ID	Jiji, Soot
Rinse Solvent Lot	Acetonitrile_00030/31
Rinse Solvent Name	Acetonitrile
Solvent Lot #	CaCl2_Sol_00064
Solvent Name	Calcium Chloride
SPE Cartridge Lot ID	004938274A
SPE Cartridge Type	Porapak DRX Cartridges
Analyst ID - Spike Analyst	KA
Analyst ID - Spike Witness Analyst	Reviewer:VV
First Start time	05/11/2019 16:06

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS

COVER PAGE
METALS

Lab Name: Eurofins TestAmerica, Denver

Job Number: 280-123221-1

SDG No.:

Project: Leidos RFP# 001088 - Ravenna AAP-66

Client Sample ID	Lab Sample ID
NTAmw-119-190401-GW	280-123221-2
DET-003-190401-GW	280-123221-4
DET-003-190402-GW	280-123221-5
DET-004-190401-GW	280-123221-7
FWGmw-007-190401-GW	280-123221-8
WBGmw-020-190401-GW	280-123221-9
WBGmw-006-190401-GW	280-123221-10
WBGmw-021-190401-GW	280-123221-11
WBGmw-009-190401-GW	280-123221-12
FWGmw-016-190401-GW	280-123221-13

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: NTAmw-119-190401-GW

Lab Sample ID: 280-123221-2

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG ID.:

Matrix: Water

Date Sampled: 04/30/2019 10:45

Reporting Basis: WET

Date Received: 05/01/2019 09:15

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Aluminum	32	300	70	18	ug/L	J		1	6010C
Calcium	85000	1000	160	78	ug/L			1	6010C
Iron	970	100	85	22	ug/L			1	6010C
Magnesium	21000	500	60	26	ug/L			1	6010C
Potassium	1400	3000	940	240	ug/L	J		1	6010C
Sodium	6400	5000	160	54	ug/L		Q	1	6010C
Antimony	1.0	6.0	1.0	0.40	ug/L	U		1	6020A
Arsenic	6.0	5.0	1.0	0.33	ug/L			1	6020A
Barium	83	3.0	0.95	0.29	ug/L			1	6020A
Beryllium	0.30	1.0	0.30	0.080	ug/L	U		1	6020A
Cadmium	1.0	1.0	1.0	0.27	ug/L	U		1	6020A
Chromium	1.8	10	1.8	0.50	ug/L	U		1	6020A
Cobalt	0.20	1.0	0.20	0.054	ug/L	U	Q	1	6020A
Copper	1.8	2.0	1.8	0.56	ug/L	U		1	6020A
Lead	0.70	3.0	0.70	0.18	ug/L	U		1	6020A
Manganese	330	3.5	0.95	0.31	ug/L			1	6020A
Nickel	1.0	3.0	1.0	0.30	ug/L	U		1	6020A
Selenium	1.0	5.0	1.0	0.37	ug/L	U		1	6020A
Silver	0.10	5.0	0.10	0.033	ug/L	U		1	6020A
Thallium	0.20	1.0	0.20	0.089	ug/L	U		1	6020A
Vanadium	3.0	6.0	3.0	1.2	ug/L	U		1	6020A
Zinc	8.0	20	8.0	2.0	ug/L	U		1	6020A
Mercury	0.080	0.20	0.080	0.027	ug/L	U		1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: DET-003-190401-GW

Lab Sample ID: 280-123221-4

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG ID.:

Matrix: Water

Date Sampled: 04/29/2019 10:53

Reporting Basis: WET

Date Received: 05/01/2019 09:15

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Aluminum	70	300	70	18	ug/L	U		1	6010C
Calcium	90000	1000	160	78	ug/L			1	6010C
Iron	1900	100	85	22	ug/L			1	6010C
Magnesium	33000	500	60	26	ug/L			1	6010C
Potassium	1900	3000	940	240	ug/L	J		1	6010C
Sodium	12000	5000	160	54	ug/L		Q	1	6010C
Antimony	1.0	6.0	1.0	0.40	ug/L	U		1	6020A
Arsenic	9.2	5.0	1.0	0.33	ug/L			1	6020A
Barium	43	3.0	0.95	0.29	ug/L			1	6020A
Beryllium	0.30	1.0	0.30	0.080	ug/L	U		1	6020A
Cadmium	1.0	1.0	1.0	0.27	ug/L	U		1	6020A
Chromium	1.8	10	1.8	0.50	ug/L	U		1	6020A
Cobalt	0.29	1.0	0.20	0.054	ug/L	J	Q	1	6020A
Copper	1.8	2.0	1.8	0.56	ug/L	U		1	6020A
Lead	0.70	3.0	0.70	0.18	ug/L	U		1	6020A
Manganese	240	3.5	0.95	0.31	ug/L			1	6020A
Nickel	1.0	3.0	1.0	0.30	ug/L	U		1	6020A
Selenium	1.0	5.0	1.0	0.37	ug/L	U		1	6020A
Silver	0.10	5.0	0.10	0.033	ug/L	U		1	6020A
Thallium	0.20	1.0	0.20	0.089	ug/L	U		1	6020A
Vanadium	3.0	6.0	3.0	1.2	ug/L	U		1	6020A
Zinc	8.0	20	8.0	2.0	ug/L	U		1	6020A
Mercury	0.080	0.20	0.080	0.027	ug/L	U		1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: DET-003-190402-GW

Lab Sample ID: 280-123221-5

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG ID.:

Matrix: Water

Date Sampled: 04/29/2019 10:53

Reporting Basis: WET

Date Received: 05/01/2019 09:15

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Aluminum	70	300	70	18	ug/L	U		1	6010C
Calcium	91000	1000	160	78	ug/L			1	6010C
Iron	1900	100	85	22	ug/L			1	6010C
Magnesium	33000	500	60	26	ug/L			1	6010C
Potassium	1900	3000	940	240	ug/L	J		1	6010C
Sodium	12000	5000	160	54	ug/L		Q	1	6010C
Antimony	1.0	6.0	1.0	0.40	ug/L	U		1	6020A
Arsenic	9.3	5.0	1.0	0.33	ug/L			1	6020A
Barium	42	3.0	0.95	0.29	ug/L			1	6020A
Beryllium	0.30	1.0	0.30	0.080	ug/L	U		1	6020A
Cadmium	1.0	1.0	1.0	0.27	ug/L	U		1	6020A
Chromium	1.8	10	1.8	0.50	ug/L	U		1	6020A
Cobalt	0.24	1.0	0.20	0.054	ug/L	J	Q	1	6020A
Copper	1.8	2.0	1.8	0.56	ug/L	U		1	6020A
Lead	0.70	3.0	0.70	0.18	ug/L	U		1	6020A
Manganese	240	3.5	0.95	0.31	ug/L			1	6020A
Nickel	1.0	3.0	1.0	0.30	ug/L	U		1	6020A
Selenium	1.0	5.0	1.0	0.37	ug/L	U		1	6020A
Silver	0.10	5.0	0.10	0.033	ug/L	U		1	6020A
Thallium	0.20	1.0	0.20	0.089	ug/L	U		1	6020A
Vanadium	3.0	6.0	3.0	1.2	ug/L	U		1	6020A
Zinc	8.0	20	8.0	2.0	ug/L	U		1	6020A
Mercury	0.080	0.20	0.080	0.027	ug/L	U		1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: DET-004-190401-GW

Lab Sample ID: 280-123221-7

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG ID.:

Matrix: Water

Date Sampled: 04/29/2019 10:04

Reporting Basis: WET

Date Received: 05/01/2019 09:15

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Aluminum	70	300	70	18	ug/L	U		1	6010C
Calcium	120000	1000	160	78	ug/L			1	6010C
Iron	85	100	85	22	ug/L	U		1	6010C
Magnesium	24000	500	60	26	ug/L			1	6010C
Potassium	1200	3000	940	240	ug/L	J		1	6010C
Sodium	2200	5000	160	54	ug/L	J	Q	1	6010C
Antimony	1.0	6.0	1.0	0.40	ug/L	U		1	6020A
Arsenic	1.0	5.0	1.0	0.33	ug/L	U		1	6020A
Barium	58	3.0	0.95	0.29	ug/L			1	6020A
Beryllium	0.30	1.0	0.30	0.080	ug/L	U		1	6020A
Cadmium	1.0	1.0	1.0	0.27	ug/L	U		1	6020A
Chromium	0.55	10	1.8	0.50	ug/L	J		1	6020A
Cobalt	0.20	1.0	0.20	0.054	ug/L	U	Q	1	6020A
Copper	1.5	2.0	1.8	0.56	ug/L	J		1	6020A
Lead	0.70	3.0	0.70	0.18	ug/L	U		1	6020A
Manganese	0.63	3.5	0.95	0.31	ug/L	J		1	6020A
Nickel	1.0	3.0	1.0	0.30	ug/L	U		1	6020A
Selenium	1.0	5.0	1.0	0.37	ug/L	U		1	6020A
Silver	0.10	5.0	0.10	0.033	ug/L	U		1	6020A
Thallium	0.20	1.0	0.20	0.089	ug/L	U		1	6020A
Vanadium	3.0	6.0	3.0	1.2	ug/L	U		1	6020A
Zinc	14	20	8.0	2.0	ug/L	J		1	6020A
Mercury	0.080	0.20	0.080	0.027	ug/L	U		1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: FWGmw-007-190401-GW

Lab Sample ID: 280-123221-8

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG ID.:

Matrix: Water

Date Sampled: 04/30/2019 13:35

Reporting Basis: WET

Date Received: 05/01/2019 09:15

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Aluminum	32	300	70	18	ug/L	J		1	6010C
Calcium	130000	1000	160	78	ug/L			1	6010C
Iron	160	100	85	22	ug/L			1	6010C
Magnesium	66000	500	60	26	ug/L			1	6010C
Potassium	2500	3000	940	240	ug/L	J		1	6010C
Sodium	11000	5000	160	54	ug/L			1	6010C
Antimony	1.0	6.0	1.0	0.40	ug/L	U		1	6020A
Arsenic	1.0	5.0	1.0	0.33	ug/L	U		1	6020A
Barium	20	3.0	0.95	0.29	ug/L			1	6020A
Beryllium	0.30	1.0	0.30	0.080	ug/L	U		1	6020A
Cadmium	1.0	1.0	1.0	0.27	ug/L	U		1	6020A
Chromium	0.51	10	1.8	0.50	ug/L	J		1	6020A
Cobalt	0.42	1.0	0.20	0.054	ug/L	J	Q	1	6020A
Copper	1.8	2.0	1.8	0.56	ug/L	U		1	6020A
Lead	0.22	3.0	0.70	0.18	ug/L	J		1	6020A
Manganese	130	3.5	0.95	0.31	ug/L			1	6020A
Nickel	1.2	3.0	1.0	0.30	ug/L	J		1	6020A
Selenium	1.0	5.0	1.0	0.37	ug/L	U		1	6020A
Silver	0.10	5.0	0.10	0.033	ug/L	U		1	6020A
Thallium	0.20	1.0	0.20	0.089	ug/L	U		1	6020A
Vanadium	3.0	6.0	3.0	1.2	ug/L	U		1	6020A
Zinc	2.7	20	8.0	2.0	ug/L	J		1	6020A
Mercury	0.080	0.20	0.080	0.027	ug/L	U		1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: WBGmw-020-190401-GW

Lab Sample ID: 280-123221-9

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG ID.:

Matrix: Water

Date Sampled: 04/30/2019 11:50

Reporting Basis: WET

Date Received: 05/01/2019 09:15

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Aluminum	70	300	70	18	ug/L	U		1	6010C
Calcium	31000	1000	160	78	ug/L			1	6010C
Iron	3400	100	85	22	ug/L			1	6010C
Magnesium	10000	500	60	26	ug/L			1	6010C
Potassium	800	3000	940	240	ug/L	J		1	6010C
Sodium	3900	5000	160	54	ug/L	J	Q	1	6010C
Antimony	1.0	6.0	1.0	0.40	ug/L	U		1	6020A
Arsenic	1.2	5.0	1.0	0.33	ug/L	J		1	6020A
Barium	15	3.0	0.95	0.29	ug/L			1	6020A
Beryllium	0.082	1.0	0.30	0.080	ug/L	J		1	6020A
Cadmium	1.0	1.0	1.0	0.27	ug/L	U		1	6020A
Chromium	1.8	10	1.8	0.50	ug/L	U		1	6020A
Cobalt	0.38	1.0	0.20	0.054	ug/L	J	Q	1	6020A
Copper	1.8	2.0	1.8	0.56	ug/L	U		1	6020A
Lead	0.70	3.0	0.70	0.18	ug/L	U		1	6020A
Manganese	220	3.5	0.95	0.31	ug/L			1	6020A
Nickel	2.2	3.0	1.0	0.30	ug/L	J		1	6020A
Selenium	1.0	5.0	1.0	0.37	ug/L	U		1	6020A
Silver	0.10	5.0	0.10	0.033	ug/L	U		1	6020A
Thallium	0.20	1.0	0.20	0.089	ug/L	U		1	6020A
Vanadium	3.0	6.0	3.0	1.2	ug/L	U		1	6020A
Zinc	8.0	20	8.0	2.0	ug/L	U		1	6020A
Mercury	0.080	0.20	0.080	0.027	ug/L	U		1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: WBGmw-006-190401-GW

Lab Sample ID: 280-123221-10

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG ID.:

Matrix: Water

Date Sampled: 04/30/2019 09:10

Reporting Basis: WET

Date Received: 05/01/2019 09:15

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Aluminum	19	300	70	18	ug/L	J		1	6010C
Calcium	79000	1000	160	78	ug/L			1	6010C
Iron	46	100	85	22	ug/L	J		1	6010C
Magnesium	26000	500	60	26	ug/L			1	6010C
Potassium	860	3000	940	240	ug/L	J		1	6010C
Sodium	5500	5000	160	54	ug/L		Q	1	6010C
Antimony	1.0	6.0	1.0	0.40	ug/L	U		1	6020A
Arsenic	1.0	5.0	1.0	0.33	ug/L	U		1	6020A
Barium	21	3.0	0.95	0.29	ug/L			1	6020A
Beryllium	0.30	1.0	0.30	0.080	ug/L	U		1	6020A
Cadmium	1.0	1.0	1.0	0.27	ug/L	U		1	6020A
Chromium	1.8	10	1.8	0.50	ug/L	U		1	6020A
Cobalt	0.29	1.0	0.20	0.054	ug/L	J	Q	1	6020A
Copper	1.8	2.0	1.8	0.56	ug/L	U		1	6020A
Lead	0.70	3.0	0.70	0.18	ug/L	U		1	6020A
Manganese	99	3.5	0.95	0.31	ug/L			1	6020A
Nickel	0.33	3.0	1.0	0.30	ug/L	J		1	6020A
Selenium	1.0	5.0	1.0	0.37	ug/L	U		1	6020A
Silver	0.10	5.0	0.10	0.033	ug/L	U		1	6020A
Thallium	0.20	1.0	0.20	0.089	ug/L	U		1	6020A
Vanadium	3.0	6.0	3.0	1.2	ug/L	U		1	6020A
Zinc	8.0	20	8.0	2.0	ug/L	U		1	6020A
Mercury	0.080	0.20	0.080	0.027	ug/L	U		1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: WBGmw-021-190401-GW

Lab Sample ID: 280-123221-11

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG ID.:

Matrix: Water

Date Sampled: 04/30/2019 09:45

Reporting Basis: WET

Date Received: 05/01/2019 09:15

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Aluminum	70	300	70	18	ug/L	U		1	6010C
Calcium	77000	1000	160	78	ug/L			1	6010C
Iron	820	100	85	22	ug/L			1	6010C
Magnesium	19000	500	60	26	ug/L			1	6010C
Potassium	1400	3000	940	240	ug/L	J		1	6010C
Sodium	4800	5000	160	54	ug/L	J	Q	1	6010C
Antimony	1.0	6.0	1.0	0.40	ug/L	U		1	6020A
Arsenic	6.8	5.0	1.0	0.33	ug/L			1	6020A
Barium	62	3.0	0.95	0.29	ug/L			1	6020A
Beryllium	0.30	1.0	0.30	0.080	ug/L	U		1	6020A
Cadmium	1.0	1.0	1.0	0.27	ug/L	U		1	6020A
Chromium	1.8	10	1.8	0.50	ug/L	U		1	6020A
Cobalt	0.15	1.0	0.20	0.054	ug/L	J	Q	1	6020A
Copper	1.8	2.0	1.8	0.56	ug/L	U		1	6020A
Lead	0.70	3.0	0.70	0.18	ug/L	U		1	6020A
Manganese	370	3.5	0.95	0.31	ug/L			1	6020A
Nickel	0.36	3.0	1.0	0.30	ug/L	J		1	6020A
Selenium	1.0	5.0	1.0	0.37	ug/L	U		1	6020A
Silver	0.10	5.0	0.10	0.033	ug/L	U		1	6020A
Thallium	0.20	1.0	0.20	0.089	ug/L	U		1	6020A
Vanadium	3.0	6.0	3.0	1.2	ug/L	U	Q	1	6020A
Zinc	8.0	20	8.0	2.0	ug/L	U		1	6020A
Mercury	0.080	0.20	0.080	0.027	ug/L	U		1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: WBGmw-009-190401-GW

Lab Sample ID: 280-123221-12

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG ID.:

Matrix: Water

Date Sampled: 04/30/2019 10:53

Reporting Basis: WET

Date Received: 05/01/2019 09:15

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Aluminum	19	300	70	18	ug/L	J		1	6010C
Calcium	49000	1000	160	78	ug/L			1	6010C
Iron	58	100	85	22	ug/L	J		1	6010C
Magnesium	12000	500	60	26	ug/L			1	6010C
Potassium	610	3000	940	240	ug/L	J		1	6010C
Sodium	3300	5000	160	54	ug/L	J	Q	1	6010C
Antimony	1.0	6.0	1.0	0.40	ug/L	U		1	6020A
Arsenic	1.0	5.0	1.0	0.33	ug/L	U		1	6020A
Barium	30	3.0	0.95	0.29	ug/L			1	6020A
Beryllium	0.30	1.0	0.30	0.080	ug/L	U		1	6020A
Cadmium	1.0	1.0	1.0	0.27	ug/L	U		1	6020A
Chromium	1.8	10	1.8	0.50	ug/L	U		1	6020A
Cobalt	0.62	1.0	0.20	0.054	ug/L	J	Q	1	6020A
Copper	1.8	2.0	1.8	0.56	ug/L	U		1	6020A
Lead	0.70	3.0	0.70	0.18	ug/L	U		1	6020A
Manganese	180	3.5	0.95	0.31	ug/L			1	6020A
Nickel	2.7	3.0	1.0	0.30	ug/L	J		1	6020A
Selenium	1.0	5.0	1.0	0.37	ug/L	U		1	6020A
Silver	0.10	5.0	0.10	0.033	ug/L	U		1	6020A
Thallium	0.20	1.0	0.20	0.089	ug/L	U		1	6020A
Vanadium	3.0	6.0	3.0	1.2	ug/L	U	Q	1	6020A
Zinc	8.0	20	8.0	2.0	ug/L	U		1	6020A
Mercury	0.080	0.20	0.080	0.027	ug/L	U		1	7470A

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: FWGmw-016-190401-GW

Lab Sample ID: 280-123221-13

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG ID.:

Matrix: Water

Date Sampled: 04/29/2019 15:20

Reporting Basis: WET

Date Received: 05/01/2019 09:15

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Aluminum	70	300	70	18	ug/L	U		1	6010C
Calcium	110000	1000	160	78	ug/L			1	6010C
Iron	630	100	85	22	ug/L			1	6010C
Magnesium	28000	500	60	26	ug/L			1	6010C
Potassium	2400	3000	940	240	ug/L	J		1	6010C
Sodium	11000	5000	160	54	ug/L		Q	1	6010C
Antimony	1.0	6.0	1.0	0.40	ug/L	U		1	6020A
Arsenic	4.5	5.0	1.0	0.33	ug/L	J		1	6020A
Barium	59	3.0	0.95	0.29	ug/L			1	6020A
Beryllium	0.30	1.0	0.30	0.080	ug/L	U		1	6020A
Cadmium	1.0	1.0	1.0	0.27	ug/L	U		1	6020A
Chromium	1.8	10	1.8	0.50	ug/L	U		1	6020A
Cobalt	0.20	1.0	0.20	0.054	ug/L	U	Q	1	6020A
Copper	1.8	2.0	1.8	0.56	ug/L	U		1	6020A
Lead	0.70	3.0	0.70	0.18	ug/L	U		1	6020A
Manganese	220	3.5	0.95	0.31	ug/L			1	6020A
Nickel	1.0	3.0	1.0	0.30	ug/L	U		1	6020A
Selenium	1.0	5.0	1.0	0.37	ug/L	U		1	6020A
Silver	0.10	5.0	0.10	0.033	ug/L	U		1	6020A
Thallium	0.20	1.0	0.20	0.089	ug/L	U		1	6020A
Vanadium	3.0	6.0	3.0	1.2	ug/L	U	Q	1	6020A
Zinc	8.0	20	8.0	2.0	ug/L	U		1	6020A
Mercury	0.080	0.20	0.080	0.027	ug/L	U		1	7470A

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

ICV Source: ICP ICVH_00931 Concentration Units: ug/L

CCV Source: ICP CCVH_00637

Analyte	ICVH 280-458049/6 05/13/2019 07:44				ICVH 280-458049/7 05/13/2019 07:47				CCVH 280-458049/25 05/13/2019 12:21			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
<i>Aluminum</i>	41100		40000	103	41100		40000	103	51400		50000	103
<i>Iron</i>	81600		80000	102	81700		80000	102	51900		50000	104
<i>Sodium</i>	41200		40000	103	41800		40000	104	260000		250000	104

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

ICV Source: ICP ICVH_00931 Concentration Units: ug/L

CCV Source: ICP CCVH_00637

Analyte	CCVH 280-458049/37 05/13/2019 12:51				CCVH 280-458049/51 05/13/2019 13:26				CCVH 280-458049/64 05/13/2019 13:59			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
<i>Aluminum</i>	50800		50000	102	50600		50000	101	50400		50000	101
<i>Iron</i>	51800		50000	104	51400		50000	103	51700		50000	103
<i>Sodium</i>	258000		250000	103	257000		250000	103	257000		250000	103

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

ICV Source: ICP ICV_00813 Concentration Units: ug/L

CCV Source: ICP CCV_00376

Analyte	ICV 280-458049/8 05/13/2019 07:50				ICV 280-458049/9 05/13/2019 07:52				CCV 280-458049/26 05/13/2019 12:23			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Calcium	2480		2500	99	2480		2500	99	5230		5000	105
Magnesium	9840		10000	98	9810		10000	98	20500		20000	103
Potassium	24700		25000	99	24800		25000	99	52500		50000	105
<i>Aluminum</i>	254	J	250	102	255	J	250	102				
<i>Iron</i>	1240		1250	99	1240		1250	99	2630		2500	105
<i>Sodium</i>	12300		12500	98	12600		12500	101				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

ICV Source: ICP ICV_00813 Concentration Units: ug/L

CCV Source: ICP CCV_00376

Analyte	CCV 280-458049/38 05/13/2019 12:53				CCV 280-458049/52 05/13/2019 13:29				CCV 280-458049/65 05/13/2019 14:02			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Calcium	5180		5000	104	5010		5000	100	5210		5000	104
Magnesium	20300		20000	102	19400		20000	97	20100		20000	101
Potassium	52200		50000	104	50300		50000	101	52200		50000	104
<i>Aluminum</i>					538		500	108				
<i>Iron</i>	2570		2500	103	2470		2500	99	2540		2500	102
<i>Sodium</i>					5490		5000	110				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

ICV Source: ICP LLCCV_02540 Concentration Units: ug/L

CCV Source: ICP LLCCV_02540

Analyte	ICVL 280-458049/11 05/13/2019 08:00				ICVL 280-458049/12 05/13/2019 08:03				CCVL 280-458049/28 05/13/2019 12:29			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Calcium	199	J	200	99	199	J	200	99	217	J	200	109
Magnesium	195	J	200	97	193	J	200	97	200	J	200	100
Potassium	2890	J	3000	96	2880	J	3000	96	3160		3000	105
<i>Aluminum</i>	101	J	100	101	101	J	100	101	116	J	100	116
<i>Iron</i>	102		100	102	98.7	J	100	99				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

ICV Source: ICP LLCCV_02540 Concentration Units: ug/L

CCV Source: ICP LLCCV_02540

Analyte	CCVL 280-458049/40 05/13/2019 12:58				CCVL 280-458049/54 05/13/2019 13:33				CCVL 280-458049/67 05/13/2019 14:06			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Calcium	218	J	200	109	214	J	200	107	213	J	200	107
Magnesium	204	J	200	102	196	J	200	98	196	J	200	98
Potassium	3100		3000	103	3050		3000	102	3170		3000	106
<i>Aluminum</i>	113	J	100	113	110	J	100	110	112	J	100	112
<i>Iron</i>	123		100	123	115		100	115	108		100	108

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

ICV Source: ICP ICVH_00932 Concentration Units: ug/L

CCV Source: ICP CCVH_00639

Analyte	ICVH 280-458211/7 05/14/2019 09:22				CCVH 280-458211/20 05/14/2019 10:01				CCVH 280-458211/33 05/14/2019 11:58			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	40300		40000	101	48700		50000	97	47000		50000	94
Iron	79300		80000	99	47900		50000	96	45400		50000	91
Sodium	39900		40000	100	246000		250000	98	240000		250000	96

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

ICV Source: ICP ICVH_00932 Concentration Units: ug/L

CCV Source: ICP CCVH_00639

Analyte	CCVH 280-458211/47 05/14/2019 12:34											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	47300		50000	95								
Iron	46400		50000	93								
Sodium	241000		250000	96								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

ICV Source: ICP ICV_00814 Concentration Units: ug/L

CCV Source: ICP CCV_00377

Analyte	ICV 280-458211/8 05/14/2019 09:25				ICV 280-458211/9 05/14/2019 09:27				CCV 280-458211/21 05/14/2019 10:04			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	254	J	250	101	253	J	250	101	540		500	108
Iron	1260		1250	101	1260		1250	101	2550		2500	102
Sodium	11900		12500	95	12900		12500	103	5310		5000	106
<i>Calcium</i>	2480		2500	99	2460		2500	98	4870		5000	97
<i>Magnesium</i>	10100		10000	101	10100		10000	101	20500		20000	102
<i>Potassium</i>	24900		25000	100	24800		25000	99	49400		50000	99

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

ICV Source: ICP ICV_00814 Concentration Units: ug/L

CCV Source: ICP CCV_00377

Analyte	CCV 280-458211/34 05/14/2019 12:01				CCV 280-458211/48 05/14/2019 12:36							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	517		500	103	513		500	103				
Iron	2440		2500	98	2440		2500	98				
Sodium	5230		5000	105	5190		5000	104				
<i>Calcium</i>	4690		5000	94	4640		5000	93				
<i>Magnesium</i>	20300		20000	101	20400		20000	102				
<i>Potassium</i>	47900		50000	96	47800		50000	96				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

ICV Source: ICP LLCCV_02541 Concentration Units: ug/L

CCV Source: ICP LLCCV_02541

Analyte	ICVL 280-458211/10 05/14/2019 09:30				CCVL 280-458211/23 05/14/2019 10:09				CCVL 280-458211/36 05/14/2019 12:06			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	99.4	J	100	99	98.7	J	100	99	94.5	J	100	94
Iron	116		100	116	104		100	104	101		100	101
Sodium	1100	J	1000	110	996	J	1000	100	1020	J	1000	102
<i>Calcium</i>	199	J	200	99	189	J	200	94	188	J	200	94
<i>Magnesium</i>	204	J	200	102	202	J	200	101	208	J	200	104
<i>Potassium</i>	2970	J	3000	99	2830	J	3000	94	2720	J	3000	91

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

ICV Source: ICP LLCCV_02541 Concentration Units: ug/L

CCV Source: ICP LLCCV_02541

Analyte	CCVL 280-458211/50 05/14/2019 12:42											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Aluminum	92.8	J	100	93								
Iron	97.6	J	100	98								
Sodium	1030	J	1000	103								
<i>Calcium</i>	176	J	200	88								
<i>Magnesium</i>	192	J	200	96								
<i>Potassium</i>	2790	J	3000	93								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

ICV Source: ms 77 icv_02039 Concentration Units: ug/L

CCV Source: ms 77 ccv_02043

Analyte	ICV 280-458135/7 05/13/2019 12:40				CCV 280-458135/28 05/14/2019 08:00				CCV 280-458135/34 05/14/2019 08:21			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Antimony	40.6		40.0	102	48.3		50.0	97	47.9		50.0	96
Arsenic	41.4		40.0	104	49.6		50.0	99	50.1		50.0	100
Barium	40.4		40.0	101	48.6		50.0	97	48.0		50.0	96
Beryllium	40.5		40.0	101	49.4		50.0	99	48.0		50.0	96
Cadmium	40.1		40.0	100	50.0		50.0	100	48.9		50.0	98
Chromium	40.7		40.0	102	48.6		50.0	97	49.5		50.0	99
Cobalt	40.7		40.0	102	49.7		50.0	99	49.4		50.0	99
Copper	40.9		40.0	102	49.2		50.0	98	49.4		50.0	99
Manganese	41.7		40.0	104	49.7		50.0	99	49.6		50.0	99
Nickel	40.3		40.0	101	50.6		50.0	101	49.6		50.0	99
Selenium	41.4		40.0	103	50.4		50.0	101	49.2		50.0	98
Silver	39.5		40.0	99	49.8		50.0	100	48.2		50.0	96
Thallium	37.4		40.0	94	46.5		50.0	93	49.6		50.0	99
Vanadium	41.3		40.0	103	48.1		50.0	96	48.5		50.0	97
Zinc	40.0		40.0	100	48.6		50.0	97	48.6		50.0	97
<i>Lead</i>	38.0		40.0	95	46.8		50.0	94	49.1		50.0	98

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

ICV Source: ms 77 icv_02039 Concentration Units: ug/L

CCV Source: ms 77 ccv_02043

Analyte	CCV 280-458135/47 05/14/2019 09:07				CCV 280-458135/58 05/14/2019 09:46				CCV 280-458135/64 05/14/2019 10:07			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Antimony	48.6		50.0	97	47.9		50.0	96	47.4		50.0	95
Arsenic	48.9		50.0	98	49.1		50.0	98	49.8		50.0	100
Barium	49.1		50.0	98	47.0		50.0	94	47.8		50.0	96
Beryllium	48.9		50.0	98	48.8		50.0	98	50.4		50.0	101
Cadmium	49.6		50.0	99	48.9		50.0	98	48.3		50.0	97
Chromium	48.3		50.0	97	48.0		50.0	96	48.5		50.0	97
Cobalt	48.2		50.0	96	48.7		50.0	97	47.9		50.0	96
Copper	48.5		50.0	97	48.5		50.0	97	48.1		50.0	96
Manganese	49.7		50.0	99	49.3		50.0	99	49.3		50.0	99
Nickel	48.6		50.0	97	48.7		50.0	97	49.1		50.0	98
Selenium	49.3		50.0	99	47.8		50.0	96	49.3		50.0	99
Silver	48.5		50.0	97	48.3		50.0	97	47.3		50.0	95
Thallium	50.6		50.0	101	47.8		50.0	96	46.5		50.0	93
Vanadium	47.2		50.0	94	47.4		50.0	95	47.0		50.0	94
Zinc	47.2		50.0	94	47.2		50.0	94	47.7		50.0	95
<i>Lead</i>												

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

ICV Source: MS 77 LLCCV_01846 Concentration Units: ug/L

CCV Source: MS 77 LLCCV_01846

Analyte	ICVL 280-458135/9 05/13/2019 12:49				CCVL 280-458135/30 05/14/2019 08:07				CCVL 280-458135/36 05/14/2019 08:28			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Antimony	2.06	J	2.00	103	1.91	J	2.00	95	1.76	J	2.00	88
Arsenic	4.71	J	5.00	94	4.81	J	5.00	96	4.56	J	5.00	91
Barium	0.962	J	1.00	96	0.872	J	1.00	87	0.991	J	1.00	99
Beryllium	0.910	J	1.00	91	0.925	J	1.00	93	1.08		1.00	108
Cadmium	1.04		1.00	104	0.937	J	1.00	94	0.932	J	1.00	93
Chromium	2.00	J	2.00	100	2.00	J	2.00	100	1.95	J	2.00	98
Cobalt	1.10		1.00	110	1.09		1.00	109	0.927	J	1.00	93
Copper	1.94	J	2.00	97	2.13		2.00	106	1.93	J	2.00	96
Manganese	0.996	J	1.00	100	1.10	J	1.00	110	1.09	J	1.00	109
Nickel	1.47	J	1.50	98	1.56	J	1.50	104	1.53	J	1.50	102
Selenium	5.19		5.00	104	4.85	J	5.00	97	4.50	J	5.00	90
Silver	5.00		5.00	100	4.78	J	5.00	96	4.66	J	5.00	93
Thallium	0.900	J	1.00	90	0.930	J	1.00	93	0.949	J	1.00	95
Vanadium	5.35	J	5.00	107	4.51	J	5.00	90	4.63	J	5.00	93
Zinc	9.72	J	10.0	97	10.7	J	10.0	107	9.85	J	10.0	98
<i>Lead</i>	0.953	J	1.00	95	0.915	J	1.00	92	1.01	J	1.00	101

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

ICV Source: MS 77 LLCCV_01846 Concentration Units: ug/L

CCV Source: MS 77 LLCCV_01846

Analyte	CCVL 280-458135/49 05/14/2019 09:14				CCVL 280-458135/60 05/14/2019 09:53				CCVL 280-458135/66 05/14/2019 10:14			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Antimony	1.86	J	2.00	93	1.85	J	2.00	93	1.86	J	2.00	93
Arsenic	4.64	J	5.00	93	4.63	J	5.00	93	4.53	J	5.00	91
Barium	1.13	J	1.00	113	0.902	J	1.00	90	0.901	J	1.00	90
Beryllium	1.04		1.00	104	0.970	J	1.00	97	0.957	J	1.00	96
Cadmium	0.906	J	1.00	91	1.11		1.00	111	0.967	J	1.00	97
Chromium	1.84	J	2.00	92	1.73	J	2.00	86	1.78	J	2.00	89
Cobalt	0.959	J	1.00	96	0.963	J	1.00	96	0.856	J	1.00	86
Copper	2.04		2.00	102	1.97	J	2.00	98	2.02		2.00	101
Manganese	1.03	J	1.00	103	1.01	J	1.00	101	1.04	J	1.00	104
Nickel	1.53	J	1.50	102	1.43	J	1.50	95	1.38	J	1.50	92
Selenium	4.84	J	5.00	97	4.69	J	5.00	94	4.64	J	5.00	93
Silver	4.94	J	5.00	99	4.71	J	5.00	94	4.54	J	5.00	91
Thallium	0.862	J	1.00	86	0.926	J	1.00	93	0.852	J	1.00	85
Vanadium	4.41	J	5.00	88	4.52	J	5.00	90	4.31	J	5.00	86
Zinc	9.90	J	10.0	99	10.3	J	10.0	103	9.53	J	10.0	95
<i>Lead</i>	0.819	J	1.00	82	0.785	J	1.00	79	0.833	J	1.00	83

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

ICV Source: ms 77 icv_02040 Concentration Units: ug/L

CCV Source: ms 77 ccv_02044

Analyte	ICV 280-458262/9 05/14/2019 14:15				CCV 280-458262/32 05/14/2019 15:40				CCV 280-458262/45 05/14/2019 16:27			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Antimony	39.5		40.0	99	51.6		50.0	103	52.1		50.0	104
Arsenic	41.0		40.0	102	51.2		50.0	102	52.0		50.0	104
Barium	40.1		40.0	100	51.9		50.0	104	53.3		50.0	107
Beryllium	40.0		40.0	100	47.8		50.0	96	48.1		50.0	96
Cadmium	39.4		40.0	98	50.4		50.0	101	51.9		50.0	104
Chromium	40.8		40.0	102	51.5		50.0	103	50.9		50.0	102
Cobalt	39.2		40.0	98	49.4		50.0	99	49.9		50.0	100
Copper	40.9		40.0	102	51.2		50.0	102	51.9		50.0	104
Lead	38.4		40.0	96	46.9		50.0	94	49.3		50.0	99
Manganese	40.6		40.0	101	52.3		50.0	105	50.9		50.0	102
Nickel	40.3		40.0	101	50.6		50.0	101	51.7		50.0	103
Selenium	40.7		40.0	102	48.4		50.0	97	51.5		50.0	103
Silver	38.9		40.0	97	50.3		50.0	101	51.0		50.0	102
Thallium	37.8		40.0	95	46.0		50.0	92	48.9		50.0	98
Vanadium	39.2		40.0	98	54.0		50.0	108	52.4		50.0	105
Zinc	40.8		40.0	102	51.2		50.0	102	52.7		50.0	105

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

ICV Source: ms 77 icv_02040 Concentration Units: ug/L

CCV Source: ms 77 ccv_02044

Analyte	CCV 280-458262/56 05/14/2019 17:07				CCV 280-458262/67 05/14/2019 17:45							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Antimony	50.6		50.0	101	49.5		50.0	99				
Arsenic	51.2		50.0	102	51.1		50.0	102				
Barium	52.1		50.0	104	51.7		50.0	103				
Beryllium	47.1		50.0	94	47.9		50.0	96				
Cadmium	50.2		50.0	100	50.8		50.0	102				
Chromium	49.4		50.0	99	49.0		50.0	98				
Cobalt	48.9		50.0	98	48.8		50.0	98				
Copper	51.1		50.0	102	50.4		50.0	101				
Lead	49.6		50.0	99	48.3		50.0	97				
Manganese	50.8		50.0	102	52.2		50.0	104				
Nickel	50.5		50.0	101	50.9		50.0	102				
Selenium	49.8		50.0	100	52.0		50.0	104				
Silver	49.8		50.0	100	49.2		50.0	98				
Thallium	49.4		50.0	99	48.4		50.0	97				
Vanadium	50.3		50.0	101	50.9		50.0	102				
Zinc	49.6		50.0	99	50.3		50.0	101				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

ICV Source: MS 77 LLCCV_01847

Concentration Units: ug/L

CCV Source: MS 77 LLCCV_01847

Analyte	ICVL 280-458262/11 05/14/2019 14:25				CCVL 280-458262/34 05/14/2019 15:48				CCVL 280-458262/47 05/14/2019 16:34			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Antimony	1.88	J	2.00	94	2.02	J	2.00	101	1.91	J	2.00	95
Arsenic	4.71	J	5.00	94	4.70	J	5.00	94	4.74	J	5.00	95
Barium	1.08	J	1.00	108	0.891	J	1.00	89	0.976	J	1.00	98
Beryllium	0.969	J	1.00	97	0.896	J	1.00	90	0.951	J	1.00	95
Cadmium	1.03		1.00	103	1.04		1.00	104	1.16		1.00	116
Chromium	2.05	J	2.00	103	2.05	J	2.00	103	2.03	J	2.00	101
Cobalt	0.977	J	1.00	98	0.915	J	1.00	92	0.947	J	1.00	95
Copper	2.07		2.00	103	1.86	J	2.00	93	1.99	J	2.00	100
Lead	0.842	J	1.00	84	0.930	J	1.00	93	1.02	J	1.00	102
Manganese	0.967	J	1.00	97	1.01	J	1.00	101	1.06	J	1.00	106
Nickel	1.54	J	1.50	103	1.49	J	1.50	99	1.58	J	1.50	106
Selenium	4.71	J	5.00	94	4.95	J	5.00	99	4.90	J	5.00	98
Silver	4.84	J	5.00	97	4.97	J	5.00	99	4.91	J	5.00	98
Thallium	0.856	J	1.00	86	0.876	J	1.00	88	0.880	J	1.00	88
Vanadium	5.36	J	5.00	107					6.25		5.00	125
Zinc	9.44	J	10.0	94	9.59	J	10.0	96	9.58	J	10.0	96

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

ICV Source: MS 77 LLCCV_01847 Concentration Units: ug/L

CCV Source: MS 77 LLCCV_01847

Analyte	CCVL 280-458262/58 05/14/2019 17:14				CCVL 280-458262/69 05/14/2019 17:52							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Antimony	1.91	J	2.00	96	1.87	J	2.00	94				
Arsenic	4.84	J	5.00	97	4.74	J	5.00	95				
Barium	1.08	J	1.00	108	1.01	J	1.00	101				
Beryllium	0.904	J	1.00	90	0.977	J	1.00	98				
Cadmium	0.936	J	1.00	94	1.05		1.00	105				
Chromium	2.02	J	2.00	101	2.00	J	2.00	100				
Cobalt	1.00		1.00	100	0.942	J	1.00	94				
Copper	2.06		2.00	103	1.95	J	2.00	97				
Lead	0.942	J	1.00	94	0.897	J	1.00	90				
Manganese	1.13	J	1.00	113	0.992	J	1.00	99				
Nickel	1.52	J	1.50	101	1.59	J	1.50	106				
Selenium	4.73	J	5.00	95	4.95	J	5.00	99				
Silver	4.92	J	5.00	98	4.78	J	5.00	96				
Thallium	0.886	J	1.00	89	0.895	J	1.00	90				
Vanadium	6.60		5.00	132	6.56		5.00	131				
Zinc	9.79	J	10.0	98	9.28	J	10.0	93				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

ICV Source: Hg Biwk ICV_00273 Concentration Units: ug/L

CCV Source: Hg Daily Spk_02406

Analyte	ICV 280-457940/9-A 05/13/2019 16:33				CCV 280-457940/12-A 05/13/2019 20:45				CCV 280-457940/12-A 05/13/2019 21:12			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	3.94		4.00	99	5.01		5.00	100	5.00		5.00	100

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

ICV Source: Hg Biwk ICV_00273 Concentration Units: ug/L

CCV Source: Hg Daily Spk_02406

Analyte	CCV 280-457940/12-A 05/13/2019 21:39				CCV 280-457940/12-A 05/13/2019 22:03							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	4.98		5.00	100	4.97		5.00	99				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Method: 6010C Instrument ID: MT_025
 Lab Sample ID: CRI 280-458049/17 Concentration Units: ug/L
 CRQL Check Standard Source: ICP LLCCV_02540

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Aluminum	100	104	J	104	80-120
Calcium	200	205	J	103	80-120
Iron	100	98.6	J	99	80-120
Magnesium	200	191	J	96	80-120
Potassium	3000	2940	J	98	80-120
Sodium	1000	1020	J	102	80-120

Lab Sample ID: CRI 280-458211/15 Concentration Units: ug/L
 CRQL Check Standard Source: ICP LLCCV_02541

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Aluminum	100	101	J	101	80-120
Calcium	200	191	J	96	80-120
Iron	100	97.7	J	98	80-120
Magnesium	200	202	J	101	80-120
Potassium	3000	2930	J	98	80-120
Sodium	1000	1040	J	104	80-120

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Method: 6020A Instrument ID: MT_078
 Lab Sample ID: CRI 280-458135/10 Concentration Units: ug/L
 CRQL Check Standard Source: ms 77 RL_01925

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Antimony	1.00	1.05	J	105	80-120
Arsenic	1.00	1.06	J	106	80-120
Beryllium	1.00	1.14		114	80-120
Cadmium	1.00	0.958	J	96	80-120
Chromium	1.00	1.06	J	106	80-120
Cobalt	1.00	1.05		105	80-120
Lead	1.00	1.07	J	107	80-120
Selenium	1.00	1.01	J	101	80-120
Silver	1.00	1.03	J	103	80-120
Thallium	1.00	0.928	J	93	80-120
Vanadium	1.00	3.0	U	101	80-120

Lab Sample ID: CRI 280-458135/11 Concentration Units: ug/L
 CRQL Check Standard Source: ms 78 alt RL_00488

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Barium	1.00	0.979	J	98	80-120
Copper	2.00	2.10		105	80-120
Manganese	1.00	1.20	J	120	80-120
Nickel	2.00	2.09	J	104	80-120
Zinc	10.0	8.92	J	89	80-120

Lab Sample ID: CRI 280-458262/12 Concentration Units: ug/L
 CRQL Check Standard Source: ms 77 RL_01926

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Antimony	1.00	1.07	J	107	80-120
Arsenic	1.00	0.898	J	90	80-120
Barium	1.00	0.950	J	95	80-120
Beryllium	1.00	1.11		111	80-120
Cadmium	1.00	1.06		106	80-120
Chromium	1.00	1.06	J	106	80-120

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Method: 6020A Instrument ID: MT_078
 Lab Sample ID: CRI 280-458262/12 Concentration Units: ug/L
 CRQL Check Standard Source: ms 77 RL_01926

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Cobalt	1.00	0.960	J	96	80-120
Copper	1.00	1.02	J	102	80-120
Lead	1.00	0.851	J	85	80-120
Manganese	1.00	0.990	J	99	80-120
Nickel	1.00	1.17	J	117	80-120
Selenium	1.00	1.00	J	100	80-120
Silver	1.00	0.993	J	99	80-120
Thallium	1.00	0.899	J	90	80-120

Lab Sample ID: CRI 280-458262/13 Concentration Units: ug/L
 CRQL Check Standard Source: ms 78 alt CRI_00010

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Vanadium	5.00	4.55	J	91	80-120
Zinc	10.0	8.32	J	83	80-120

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Concentration Units: ug/L

Analyte	RL	ICB 280-458049/15 05/13/2019 08:14		CCB 280-458049/27 05/13/2019 12:26		CCB 280-458049/39 05/13/2019 12:55		CCB 280-458049/53 05/13/2019 13:31	
		Found	C	Found	C	Found	C	Found	C
Calcium	1000	160	U	160	U	160	U	160	U
Magnesium	500	60	U	60	U	60	U	60	U
Potassium	3000	940	U	940	U	940	U	940	U
<i>Aluminum</i>	300	70	U	70	U	70	U	70	U
<i>Iron</i>	100	85	U	85	U	85	U	40.9	J
<i>Sodium</i>	5000	160	U			408	J	391	J

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Concentration Units: ug/L

Analyte	RL	CCB 280-458049/66 05/13/2019 14:04							
		Found	C	Found	C	Found	C	Found	C
Calcium	1000	160	U						
Magnesium	500	60	U						
Potassium	3000	940	U						
<i>Aluminum</i>	300	70	U						
<i>Iron</i>	100								
<i>Sodium</i>	5000	367	J						

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Concentration Units: ug/L

Analyte	RL	ICB 280-458211/14 05/14/2019 09:41		CCB 280-458211/22 05/14/2019 10:06		CCB 280-458211/35 05/14/2019 12:03		CCB 280-458211/49 05/14/2019 12:39	
		Found	C	Found	C	Found	C	Found	C
Aluminum	300	70	U	70	U	70	U	70	U
Iron	100	85	U	85	U	85	U	85	U
Sodium	5000	69.3	J	160	U	97.7	J	83.9	J
<i>Calcium</i>	1000	160	U	160	U	160	U	160	U
<i>Magnesium</i>	500	60	U	60	U	60	U	60	U
<i>Potassium</i>	3000	940	U	940	U	940	U	940	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Concentration Units: ug/L

Analyte	RL	ICB 280-458135/8 05/13/2019 12:46		CCB 280-458135/29 05/14/2019 08:04		CCB 280-458135/35 05/14/2019 08:25		CCB 280-458135/48 05/14/2019 09:11	
		Found	C	Found	C	Found	C	Found	C
Antimony	6.0	0.748	J	1.0	U	1.0	U	1.0	U
Arsenic	5.0	1.0	U	1.0	U	1.0	U	1.0	U
Barium	3.0	0.95	U	0.95	U	0.95	U	0.95	U
Beryllium	1.0	0.30	U	0.30	U	0.30	U	0.30	U
Cadmium	1.0	1.0	U	1.0	U	1.0	U	1.0	U
Chromium	10	1.8	U	1.8	U	1.8	U	1.8	U
Cobalt	1.0	0.20	U	0.20	U	0.20	U	0.20	U
Copper	2.0	1.8	U	1.8	U	1.8	U	1.8	U
Manganese	3.5	0.95	U	0.95	U	0.95	U	0.95	U
Nickel	3.0	1.0	U	1.0	U	1.0	U	1.0	U
Selenium	5.0	1.0	U	1.0	U	1.0	U	1.0	U
Silver	5.0	0.10	U	0.0450	J	0.0350	J	0.0620	J
Thallium	1.0	0.20	U	0.20	U	0.20	U	0.20	U
Vanadium	6.0	3.0	U	3.0	U	3.0	U	3.0	U
Zinc	20	8.0	U	8.0	U	8.0	U	8.0	U
<i>Lead</i>	3.0	0.70	U	0.70	U	0.70	U	0.70	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Concentration Units: ug/L

Analyte	RL	CCB 280-458135/59 05/14/2019 09:50		CCB 280-458135/65 05/14/2019 10:11					
		Found	C	Found	C	Found	C	Found	C
Antimony	6.0	1.0	U	1.0	U				
Arsenic	5.0	1.0	U	1.0	U				
Barium	3.0	0.95	U	0.95	U				
Beryllium	1.0	0.30	U	0.30	U				
Cadmium	1.0	1.0	U	1.0	U				
Chromium	10	1.8	U	1.8	U				
Cobalt	1.0	0.20	U	0.20	U				
Copper	2.0	1.8	U	1.8	U				
Manganese	3.5	0.95	U	0.95	U				
Nickel	3.0	1.0	U	1.0	U				
Selenium	5.0	1.0	U	1.0	U				
Silver	5.0	0.0600	J	0.0470	J				
Thallium	1.0	0.20	U	0.20	U				
Vanadium	6.0	3.0	U	3.0	U				
Zinc	20	8.0	U	8.0	U				
<i>Lead</i>	3.0	0.70	U	0.70	U				

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Concentration Units: ug/L

Analyte	RL	ICB 280-458262/10 05/14/2019 14:18		CCB 280-458262/33 05/14/2019 15:44		CCB 280-458262/46 05/14/2019 16:31		CCB 280-458262/57 05/14/2019 17:10	
		Found	C	Found	C	Found	C	Found	C
Antimony	6.0	1.0	U	1.0	U	1.0	U	1.0	U
Arsenic	5.0	1.0	U	1.0	U	1.0	U	1.0	U
Barium	3.0	0.95	U	0.95	U	0.95	U	0.95	U
Beryllium	1.0	0.30	U	0.30	U	0.127	J	0.30	U
Cadmium	1.0	1.0	U	1.0	U	1.0	U	1.0	U
Chromium	10	1.8	U	1.8	U	1.8	U	1.8	U
Cobalt	1.0	0.20	U	0.20	U	0.20	U	0.20	U
Copper	2.0	1.8	U	1.8	U	1.8	U	1.8	U
Lead	3.0	0.70	U	0.70	U	0.70	U	0.70	U
Manganese	3.5	0.95	U	0.95	U	0.95	U	0.95	U
Nickel	3.0	1.0	U	1.0	U	1.0	U	1.0	U
Selenium	5.0	1.0	U	1.0	U	1.0	U	1.0	U
Silver	5.0	0.10	U	0.10	U	0.0480	J	0.0390	J
Thallium	1.0	0.20	U	0.20	U	0.20	U	0.20	U
Vanadium	6.0	3.0	U	3.0	U	3.0	U	3.0	U
Zinc	20	8.0	U	8.0	U	8.0	U	8.0	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Concentration Units: ug/L

Analyte	RL	CCB 280-458262/68 05/14/2019 17:49							
		Found	C	Found	C	Found	C	Found	C
Antimony	6.0	1.0	U						
Arsenic	5.0	1.0	U						
Barium	3.0	0.95	U						
Beryllium	1.0	0.30	U						
Cadmium	1.0	1.0	U						
Chromium	10	1.8	U						
Cobalt	1.0	0.0770	J						
Copper	2.0	1.8	U						
Lead	3.0	0.70	U						
Manganese	3.5	0.95	U						
Nickel	3.0	1.0	U						
Selenium	5.0	1.0	U						
Silver	5.0	0.0480	J						
Thallium	1.0	0.20	U						
Vanadium	6.0	3.0	U						
Zinc	20	8.0	U						

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Concentration Units: ug/L

Analyte	RL	ICB 280-457940/10-A 05/13/2019 16:35		CCB 280-457940/13-A 05/13/2019 20:48		CCB 280-457940/13-A 05/13/2019 21:14		CCB 280-457940/13-A 05/13/2019 21:41	
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	0.080	U	0.080	U	0.080	U	0.080	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Concentration Units: ug/L

Analyte	RL	CCB 280-457940/13-A 05/13/2019 22:06							
		Found	C	Found	C	Found	C	Found	C
Mercury	0.20	0.080	U						

Italicized analytes were not requested for this sequence.

3-IN
METHOD BLANK
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Concentration Units: ug/L Lab Sample ID: MB 280-457070/1-A

Instrument Code: MT_025 Batch No.: 458049

CAS No.	Analyte	Concentration	C	Q	Method
7440-70-2	Calcium	160	U		6010C_DOD5
7439-95-4	Magnesium	60	U		6010C_DOD5
7440-09-7	Potassium	940	U		6010C_DOD5

3-IN
METHOD BLANK
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Concentration Units: ug/L Lab Sample ID: MB 280-457070/1-A

Instrument Code: MT_025 Batch No.: 458211

CAS No.	Analyte	Concentration	C	Q	Method
7429-90-5	Aluminum	70	U		6010C_DOD5
7439-89-6	Iron	85	U		6010C_DOD5
7440-23-5	Sodium	160	U	Q	6010C_DOD5

3-IN
METHOD BLANK
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Concentration Units: ug/L Lab Sample ID: MB 280-457081/1-A

Instrument Code: MT_078 Batch No.: 458135

CAS No.	Analyte	Concentration	C	Q	Method
7440-36-0	Antimony	1.0	U		6020A_DOD5
7440-38-2	Arsenic	1.0	U		6020A_DOD5
7440-39-3	Barium	0.95	U		6020A_DOD5
7440-41-7	Beryllium	0.30	U		6020A_DOD5
7440-43-9	Cadmium	1.0	U		6020A_DOD5
7440-47-3	Chromium	1.8	U		6020A_DOD5
7440-48-4	Cobalt	0.20	U	Q	6020A_DOD5
7440-50-8	Copper	1.8	U		6020A_DOD5
7439-96-5	Manganese	0.95	U		6020A_DOD5
7440-02-0	Nickel	1.0	U		6020A_DOD5
7782-49-2	Selenium	1.0	U		6020A_DOD5
7440-22-4	Silver	0.10	U		6020A_DOD5
7440-28-0	Thallium	0.20	U		6020A_DOD5
7440-62-2	Vanadium	3.0	U		6020A_DOD5
7440-66-6	Zinc	8.0	U		6020A_DOD5

3-IN
METHOD BLANK
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Concentration Units: ug/L Lab Sample ID: MB 280-457081/1-A

Instrument Code: MT_078 Batch No.: 458262

CAS No.	Analyte	Concentration	C	Q	Method
7439-92-1	Lead	0.70	U		6020A_DOD5

3-IN
METHOD BLANK
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Concentration Units: ug/L Lab Sample ID: MB 280-457916/1-A

Instrument Code: MT_033 Batch No.: 458130

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	0.080	U		7470A_DOD5

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Lab Sample ID: ICSA 280-458049/18

Instrument ID: MT_025

Lab File ID: 25A051319a.asc

ICS Source: ICP ICSA_00185

Concentration Units: ug/L

Analyte	True	Found	Percent Recovery
	Solution A	Solution A	
Calcium	500000	466560	93
Magnesium	500000	516080	103
Potassium		-24.3	
<i>Aluminum</i>	<i>500000</i>	<i>528720</i>	<i>106</i>
<i>Antimony</i>		<i>-3.27</i>	
<i>Arsenic</i>		<i>-8.22</i>	
<i>Beryllium</i>		<i>0.450</i>	
<i>Boron</i>		<i>7.19</i>	
<i>Cadmium</i>		<i>1.03</i>	
<i>Cobalt</i>		<i>0.750</i>	
<i>Copper</i>		<i>3.41</i>	
<i>Iron</i>	<i>200000</i>	<i>190310</i>	<i>95</i>
<i>Lead</i>		<i>-1.85</i>	
<i>Lithium</i>		<i>-5.51</i>	
<i>Manganese</i>		<i>1.68</i>	
<i>Molybdenum</i>		<i>0.230</i>	
<i>Nickel</i>		<i>3.19</i>	
<i>Phosphorus</i>		<i>5.88</i>	
<i>Selenium</i>		<i>3.12</i>	
<i>Silicon</i>		<i>55.0</i>	
<i>Silver</i>		<i>1.38</i>	
<i>SiO2</i>		<i>118</i>	
<i>Thallium</i>		<i>0.140</i>	
<i>Tin</i>		<i>-3.46</i>	
<i>Titanium</i>		<i>2.60</i>	
<i>Vanadium</i>		<i>1.55</i>	

Calculations are performed before rounding to avoid round-off errors in calculated results.

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Lab Sample ID: ICSAB 280-458049/19

Instrument ID: MT_025

Lab File ID: 25A051319a.asc

ICS Source: ICP ICSAB_00211

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Calcium	500000	463590	93
Magnesium	500000	508040	102
Potassium	10000	10714	107
<i>Aluminum</i>	<i>500000</i>	<i>533740</i>	<i>107</i>
<i>Antimony</i>	<i>1000</i>	<i>940</i>	<i>94</i>
<i>Arsenic</i>	<i>1000</i>	<i>994</i>	<i>99</i>
<i>Barium</i>	<i>1000</i>	<i>964</i>	<i>96</i>
<i>Beryllium</i>	<i>500</i>	<i>477</i>	<i>95</i>
<i>Boron</i>	<i>10000</i>	<i>9482</i>	<i>95</i>
<i>Cadmium</i>	<i>1000</i>	<i>997</i>	<i>100</i>
<i>Chromium</i>	<i>1000</i>	<i>932</i>	<i>93</i>
<i>Cobalt</i>	<i>1000</i>	<i>898</i>	<i>90</i>
<i>Copper</i>	<i>1000</i>	<i>1043</i>	<i>104</i>
<i>Iron</i>	<i>200000</i>	<i>191290</i>	<i>96</i>
<i>Lead</i>	<i>1000</i>	<i>899</i>	<i>90</i>
<i>Lithium</i>	<i>1000</i>	<i>1041</i>	<i>104</i>
<i>Manganese</i>	<i>1000</i>	<i>986</i>	<i>99</i>
<i>Molybdenum</i>	<i>1000</i>	<i>937</i>	<i>94</i>
<i>Nickel</i>	<i>1000</i>	<i>891</i>	<i>89</i>
<i>Phosphorus</i>	<i>10000</i>	<i>9710</i>	<i>97</i>
<i>Selenium</i>	<i>1000</i>	<i>1027</i>	<i>103</i>
<i>Silicon</i>	<i>10000</i>	<i>9681</i>	<i>97</i>
<i>Silver</i>	<i>1000</i>	<i>1092</i>	<i>109</i>
<i>SiO2</i>	<i>21400</i>	<i>20717</i>	<i>97</i>
<i>Sodium</i>	<i>10000</i>	<i>10804</i>	<i>108</i>
<i>Strontium</i>	<i>1000</i>	<i>994</i>	<i>99</i>
<i>Thallium</i>	<i>1000</i>	<i>925</i>	<i>93</i>
<i>Tin</i>	<i>1000</i>	<i>978</i>	<i>98</i>
<i>Titanium</i>	<i>1000</i>	<i>1013</i>	<i>101</i>
<i>Vanadium</i>	<i>1000</i>	<i>1005</i>	<i>100</i>
<i>Zinc</i>	<i>1000</i>	<i>962</i>	<i>96</i>

Calculations are performed before rounding to avoid round-off errors in calculated results.

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Lab Sample ID: ICSA 280-458211/17

Instrument ID: MT_025

Lab File ID: 25A051419a.asc

ICS Source: ICP ICSA_00185

Concentration Units: ug/L

Analyte	True	Found	Percent Recovery
	Solution A	Solution A	
Aluminum	500000	499790	100
Iron	200000	182990	91
Sodium		307	
<i>Arsenic</i>		-7.85	
<i>Boron</i>		6.19	
<i>Cadmium</i>		0.870	
<i>Calcium</i>	500000	462560	93
<i>Cobalt</i>		0.340	
<i>Copper</i>		1.46	
<i>Lead</i>		-2.10	
<i>Lithium</i>		-8.24	
<i>Magnesium</i>	500000	525800	105
<i>Manganese</i>		1.20	
<i>Molybdenum</i>		1.98	
<i>Nickel</i>		-2.27	
<i>Phosphorus</i>		13.2	
<i>Potassium</i>		-128	
<i>Selenium</i>		3.35	
<i>Silicon</i>		-22.9	
<i>Silver</i>		0.800	
<i>SiO2</i>		-49.1	
<i>Thallium</i>		4.27	
<i>Tin</i>		0.670	
<i>Titanium</i>		2.82	
<i>Vanadium</i>		1.18	
<i>Zinc</i>		-5.94	

Calculations are performed before rounding to avoid round-off errors in calculated results.

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Lab Sample ID: ICSAB 280-458211/18

Instrument ID: MT_025

Lab File ID: 25A051419a.asc

ICS Source: ICP ICSAB_00211

Concentration Units: ug/L

Analyte	True	Found	Percent Recovery
	Solution AB	Solution AB	
Aluminum	500000	508890	102
Iron	200000	185480	93
Sodium	10000	11195	112
<i>Antimony</i>	<i>1000</i>	<i>885</i>	<i>89</i>
<i>Arsenic</i>	<i>1000</i>	<i>979</i>	<i>98</i>
<i>Barium</i>	<i>1000</i>	<i>958</i>	<i>96</i>
<i>Beryllium</i>	<i>500</i>	<i>474</i>	<i>95</i>
<i>Boron</i>	<i>10000</i>	<i>9524</i>	<i>95</i>
<i>Cadmium</i>	<i>1000</i>	<i>991</i>	<i>99</i>
<i>Calcium</i>	<i>500000</i>	<i>468170</i>	<i>94</i>
<i>Chromium</i>	<i>1000</i>	<i>922</i>	<i>92</i>
<i>Cobalt</i>	<i>1000</i>	<i>904</i>	<i>90</i>
<i>Copper</i>	<i>1000</i>	<i>1058</i>	<i>106</i>
<i>Lead</i>	<i>1000</i>	<i>912</i>	<i>91</i>
<i>Lithium</i>	<i>1000</i>	<i>1012</i>	<i>101</i>
<i>Magnesium</i>	<i>500000</i>	<i>531480</i>	<i>106</i>
<i>Manganese</i>	<i>1000</i>	<i>1004</i>	<i>100</i>
<i>Molybdenum</i>	<i>1000</i>	<i>953</i>	<i>95</i>
<i>Nickel</i>	<i>1000</i>	<i>902</i>	<i>90</i>
<i>Phosphorus</i>	<i>10000</i>	<i>9663</i>	<i>97</i>
<i>Potassium</i>	<i>10000</i>	<i>10633</i>	<i>106</i>
<i>Selenium</i>	<i>1000</i>	<i>1008</i>	<i>101</i>
<i>Silicon</i>	<i>10000</i>	<i>9695</i>	<i>97</i>
<i>Silver</i>	<i>1000</i>	<i>1131</i>	<i>113</i>
<i>SiO2</i>	<i>21400</i>	<i>20748</i>	<i>97</i>
<i>Strontium</i>	<i>1000</i>	<i>970</i>	<i>97</i>
<i>Thallium</i>	<i>1000</i>	<i>951</i>	<i>95</i>
<i>Tin</i>	<i>1000</i>	<i>999</i>	<i>100</i>
<i>Titanium</i>	<i>1000</i>	<i>1026</i>	<i>103</i>
<i>Vanadium</i>	<i>1000</i>	<i>1029</i>	<i>103</i>
<i>Zinc</i>	<i>1000</i>	<i>974</i>	<i>97</i>

Calculations are performed before rounding to avoid round-off errors in calculated results.

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICSA 280-458135/13 Instrument ID: MT_078
 Lab File ID: 033ICSA.d ICS Source: ms 77 icsa_00418
 Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Antimony		0.188	
Arsenic		0.0970	
Barium		0.723	
Beryllium		-0.0030	
Cadmium		0.715	
Chromium		1.40	
Copper		0.240	
Manganese		0.628	
Nickel		0.222	
Selenium		0.0660	
Silver		0.0400	
Thallium		0.0040	
Vanadium		0.405	
Zinc		0.865	
<i>Lead</i>		<i>0.255</i>	
<i>Molybdenum</i>	<i>2000</i>	<i>2067</i>	<i>103</i>

Calculations are performed before rounding to avoid round-off errors in calculated results.

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Lab Sample ID: ICSAB 280-458135/14

Instrument ID: MT_078

Lab File ID: 034ICSB.d

ICS Source: ms 77 icsab_00418

Concentration Units: ug/L

Analyte	True	Found	Percent Recovery
	Solution AB	Solution AB	
Antimony	100	109	109
Arsenic	100	103	103
Barium	100	103	103
Beryllium	100	94.7	95
Cadmium	100	102	102
Chromium	100	96.5	97
Cobalt	100	95.0	95
Copper	100	94.2	94
Manganese	100	101	101
Nickel	100	95.9	96
Selenium	100	106	106
Silver	100	100	100
Thallium	100	91.7	92
Vanadium	100	101	101
Zinc	100	95.6	96
<i>Lead</i>	<i>100</i>	<i>92.1</i>	<i>92</i>
<i>Molybdenum</i>	<i>2100</i>	<i>2145</i>	<i>102</i>

Calculations are performed before rounding to avoid round-off errors in calculated results.

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Lab Sample ID: ICSA 280-458135/31 Instrument ID: MT_078
 Lab File ID: 145ICSA.d ICS Source: ms 77 icsa_00418
 Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Antimony		0.148	
Arsenic		0.123	
Barium		0.814	
Beryllium		0.0180	
Cadmium		0.719	
Chromium		1.32	
Cobalt		0.257	
Copper		0.302	
Manganese		0.538	
Nickel		0.229	
Selenium		0.111	
Silver		0.0490	
Thallium		0.0120	
Vanadium		-0.157	
Zinc		0.785	
<i>Lead</i>		<i>0.279</i>	
<i>Molybdenum</i>	<i>2000</i>	<i>1989</i>	<i>99</i>

Calculations are performed before rounding to avoid round-off errors in calculated results.

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Lab Sample ID: ICSAB 280-458135/32

Instrument ID: MT_078

Lab File ID: 146ICSB.d

ICS Source: ms 77 icsab_00418

Concentration Units: ug/L

Analyte	True	Found	
	Solution AB	Solution AB	Percent Recovery
Antimony	100	103	103
Arsenic	100	102	102
Barium	100	98.5	98
Beryllium	100	92.5	93
Cadmium	100	96.8	97
Chromium	100	97.8	98
Cobalt	100	95.4	95
Copper	100	91.8	92
Manganese	100	99.6	100
Nickel	100	93.1	93
Selenium	100	95.4	95
Silver	100	96.1	96
Thallium	100	93.9	94
Vanadium	100	98.4	98
Zinc	100	95.4	95
<i>Lead</i>	<i>100</i>	<i>91.7</i>	<i>92</i>
<i>Molybdenum</i>	<i>2100</i>	<i>2023</i>	<i>96</i>

Calculations are performed before rounding to avoid round-off errors in calculated results.

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Lab Sample ID: ICSA 280-458262/15

Instrument ID: MT_078

Lab File ID: 015ICSA.d

ICS Source: ms 77 icsa_00418

Concentration Units: ug/L

Analyte	True Solution A	Found	
		Solution A	Percent Recovery
Antimony		0.0720	
Arsenic		0.0360	
Barium		0.761	
Beryllium		-0.0090	
Cadmium		0.762	
Chromium		1.39	
Cobalt		0.218	
Copper		0.587	
Lead		0.218	
Manganese		0.507	
Nickel		0.271	
Selenium		-0.0120	
Silver		0.0410	
Thallium		-0.0110	
Vanadium		1.06	
Zinc		-0.344	
<i>Molybdenum</i>	<i>2000</i>	<i>2140</i>	<i>107</i>

Calculations are performed before rounding to avoid round-off errors in calculated results.

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Lab Sample ID: ICSAB 280-458262/16

Instrument ID: MT_078

Lab File ID: 016ICSB.d

ICS Source: ms 77 icsab_00418

Concentration Units: ug/L

Analyte	True	Found	Percent Recovery
	Solution AB	Solution AB	
Antimony	100	107	107
Arsenic	100	106	106
Barium	100	107	107
Beryllium	100	97.9	98
Cadmium	100	104	104
Chromium	100	102	102
Cobalt	100	98.2	98
Copper	100	97.7	98
Lead	100	86.9	87
Manganese	100	105	105
Nickel	100	99.9	100
Selenium	100	101	101
Silver	100	101	101
Thallium	100	94.2	94
Vanadium	100	103	103
Zinc	100	95.6	96
<i>Molybdenum</i>	<i>2100</i>	<i>2288</i>	<i>109</i>

Calculations are performed before rounding to avoid round-off errors in calculated results.

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Lab Sample ID: ICSA 280-458262/79

Instrument ID: MT_078

Lab File ID: 079ICSA.d

ICS Source: ms 77 icsa_00418

Concentration Units: ug/L

Analyte	True Solution A	Found	
		Solution A	Percent Recovery
Antimony		0.119	
Arsenic		0.0810	
Barium		0.934	
Beryllium		0.0380	
Cadmium		0.736	
Chromium		1.39	
Cobalt		0.276	
Copper		0.569	
Lead		0.290	
Manganese		0.538	
Nickel		0.206	
Selenium		0.146	
Silver		0.0600	
Thallium		0.0040	
Vanadium		-0.165	
Zinc		-0.402	
<i>Molybdenum</i>	<i>2000</i>	<i>2075</i>	<i>104</i>

Calculations are performed before rounding to avoid round-off errors in calculated results.

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Lab Sample ID: ICSAB 280-458262/80

Instrument ID: MT_078

Lab File ID: 080ICSB.d

ICS Source: ms 77 icsab_00418

Concentration Units: ug/L

Analyte	True	Found	
	Solution AB	Solution AB	Percent Recovery
Antimony	100	110	110
Arsenic	100	103	103
Barium	100	108	108
Beryllium	100	101	101
Cadmium	100	98.9	99
Chromium	100	96.8	97
Cobalt	100	97.9	98
Copper	100	91.9	92
Lead	100	94.3	94
Manganese	100	102	102
Nickel	100	93.3	93
Selenium	100	104	104
Silver	100	98.1	98
Thallium	100	98.1	98
Vanadium	100	99.1	99
Zinc	100	94.7	95
<i>Molybdenum</i>	<i>2100</i>	<i>2208</i>	<i>105</i>

Calculations are performed before rounding to avoid round-off errors in calculated results.

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 280-457070/2-A

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

Sample Matrix: Water

LCS Source: PREP SPK 2_00003

Analyte	Water (ug/L)							
	True	Found	C	%R	Limits		Q	Method
Calcium	50000	50600		101	87	113		6010C
Magnesium	50000	49900		100	85	113		6010C
Potassium	50000	52100		104	86	114		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7D-IN
LAB CONTROL SAMPLE DUPLICATE
METALS

Lab ID: LCSD 280-457070/3-A

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

Sample Matrix: Water

LCS Source: PREP SPK 2_00003

Analyte	(SDR) C		Spike Added	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Calcium	51400		50000	103	87-113	2	20		6010C
Magnesium	50500		50000	101	85-113	1	20		6010C
Potassium	52800		50000	106	86-114	1	20		6010C

SDR = Spike Duplicate Results

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIID - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 280-457070/2-A

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

Sample Matrix: Water

LCS Source: PREP SPK 2_00003

Analyte	Water (ug/L)							
	True	Found	C	%R	Limits		Q	Method
Aluminum	10000	9780		98	86	115		6010C
Iron	10000	9500		95	87	115		6010C
Sodium	50000	48700		97	87	115	Q	6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7D-IN
LAB CONTROL SAMPLE DUPLICATE
METALS

Lab ID: LCSD 280-457070/3-A

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

Sample Matrix: Water

LCS Source: PREP SPK 2_00003

Analyte	(SDR) C		Spike Added	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Aluminum	9980		10000	100	86-115	2	20		6010C
Iron	9850		10000	98	87-115	4	20		6010C
Sodium	49800		50000	100	87-115	2	20	Q	6010C

SDR = Spike Duplicate Results

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIID - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 280-457081/2-A

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

Sample Matrix: Water

LCS Source: MS spike 2_00080

Analyte	Water (ug/L)							
	True	Found	C	%R	Limits		Q	Method
Antimony	40.0	38.2		96	85	117		6020A
Arsenic	40.0	35.7		89	84	116		6020A
Barium	40.0	39.5		99	86	114		6020A
Beryllium	40.0	38.8		97	83	121		6020A
Cadmium	40.0	38.6		97	87	115		6020A
Chromium	40.0	39.1		98	85	116		6020A
Cobalt	40.0	38.7		97	86	115	Q	6020A
Copper	40.0	37.6		94	85	118		6020A
Manganese	40.0	39.1		98	87	115		6020A
Nickel	40.0	39.0		98	85	117		6020A
Selenium	40.0	36.4		91	80	120		6020A
Silver	40.0	39.0		97	85	116		6020A
Thallium	40.0	39.5		99	82	116		6020A
Vanadium	40.0	35.8		90	86	115		6020A
Zinc	40.0	36.7		92	83	119		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7D-IN
LAB CONTROL SAMPLE DUPLICATE
METALS

Lab ID: LCSD 280-457081/3-A

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

Sample Matrix: Water

LCS Source: MS spike 2_00080

Analyte	(SDR) C	Spike Added	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Antimony	37.7	40.0	94	85-117	1	20		6020A
Arsenic	35.9	40.0	90	84-116	1	20		6020A
Barium	37.7	40.0	94	86-114	5	20		6020A
Beryllium	37.6	40.0	94	83-121	3	20		6020A
Cadmium	37.9	40.0	95	87-115	2	20		6020A
Chromium	38.4	40.0	96	85-116	2	20		6020A
Cobalt	38.9	40.0	97	86-115	0	20	Q	6020A
Copper	38.8	40.0	97	85-118	3	20		6020A
Manganese	39.2	40.0	98	87-115	0	20		6020A
Nickel	39.5	40.0	99	85-117	1	20		6020A
Selenium	35.1	40.0	88	80-120	4	20		6020A
Silver	38.0	40.0	95	85-116	3	20		6020A
Thallium	37.7	40.0	94	82-116	5	20		6020A
Vanadium	36.0	40.0	90	86-115	0	20		6020A
Zinc	37.3	40.0	93	83-119	2	20		6020A

SDR = Spike Duplicate Results

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIID - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 280-457081/2-A

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

Sample Matrix: Water

LCS Source: MS CALSTD-1_00136

Analyte	Water (ug/L)							
	True	Found	C	%R	Limits		Q	Method
Lead	40.0	39.0		97	88	115		6020A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7D-IN
LAB CONTROL SAMPLE DUPLICATE
METALS

Lab ID: LCSD 280-457081/3-A

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

Sample Matrix: Water

LCS Source: MS CALSTD-1_00136

Analyte	(SDR) C		Spike Added	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Lead	38.8		40.0	97	88-115	0	20		6020A

SDR = Spike Duplicate Results

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIID - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 280-457916/2-A

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

Sample Matrix: Water

LCS Source: Hg Daily Spk_02406

Analyte	Water (ug/L)							
	True	Found	C	%R	Limits		Q	Method
Mercury	5.00	4.40		88	82	119		7470A

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7D-IN
LAB CONTROL SAMPLE DUPLICATE
METALS

Lab ID: LCSD 280-457916/3-A

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

Sample Matrix: Water

LCS Source: Hg Daily Spk_02406

Analyte	(SDR) C		Spike Added	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Mercury	4.80		5.00	96	82-119	9	20		7470A

SDR = Spike Duplicate Results

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIID - IN

9-IN
DETECTION LIMITS
METALS

Lab Name: Eurofins TestAmerica, Denver

Job Number: 280-123221-1

SDG Number: _____

Matrix: Water

Instrument ID: MT_025

Method: 6010C

DL Date: 02/03/2019 00:00

Prep Method: 3010A

Analyte	Wavelength/ Mass	LOQ (ug/L)	DL (ug/L)
Aluminum	167	300	18
Calcium	317.9	1000	77.8
Iron	259.9	100	22
Magnesium	279	500	26.4
Potassium	766.4	3000	237
Sodium	589.5	5000	54.3

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: Eurofins TestAmerica, Denver

Job Number: 280-123221-1

SDG Number: _____

Matrix: Water

Instrument ID: MT_025

Method: 6010C

XMDL Date: 02/03/2019 00:00

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Aluminum		300	18
Calcium		1000	77.8
Iron		100	22
Magnesium		500	26.4
Potassium		3000	237
Sodium		5000	54.3

9-IN
DETECTION LIMITS
METALS

Lab Name: Eurofins TestAmerica, Denver

Job Number: 280-123221-1

SDG Number: _____

Matrix: Water

Instrument ID: MT_078

Method: 6020A

DL Date: 02/03/2019 00:00

Prep Method: 3020A

Analyte	Wavelength/ Mass	LOQ (ug/L)	DL (ug/L)
Antimony	121	6	0.4
Arsenic	75	5	0.33
Barium	137	3	0.29
Beryllium	9	1	0.08
Cadmium	111	1	0.265
Chromium	52	10	0.5
Cobalt	59	1	0.054
Copper	63	2	0.56
Lead	208	3	0.18
Manganese	55	3.5	0.31
Nickel	60	3	0.3
Selenium	78	5	0.373
Silver	107	5	0.033
Thallium	205	1	0.089
Vanadium	51	6	1.24
Zinc	66	20	2

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: Eurofins TestAmerica, Denver

Job Number: 280-123221-1

SDG Number: _____

Matrix: Water

Instrument ID: MT_078

Method: 6020A

XMDL Date: 02/03/2019 00:00

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Antimony		6	0.4
Arsenic		5	0.33
Barium		3	0.29
Beryllium		1	0.08
Cadmium		1	0.265
Chromium		10	0.5
Cobalt		1	0.054
Copper		2	0.56
Lead		3	0.18
Manganese		3.5	0.31
Nickel		3	0.3
Selenium		5	0.373
Silver		5	0.033
Thallium		1	0.089
Vanadium		6	1.24
Zinc		20	2

9-IN
DETECTION LIMITS
METALS

Lab Name: Eurofins TestAmerica, Denver

Job Number: 280-123221-1

SDG Number: _____

Matrix: Water

Instrument ID: MT_033

Method: 7470A

DL Date: 08/09/2015 00:00

Prep Method: 7470A

Analyte	Wavelength/ Mass	LOQ (ug/L)	DL (ug/L)
Mercury	253.7	0.2	0.027

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: Eurofins TestAmerica, Denver

Job Number: 280-123221-1

SDG Number: _____

Matrix: Water

Instrument ID: MT_033

Method: 7470A

XMDL Date: 02/16/2014 00:00

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Mercury		0.2	0.027

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Denver Job Number: 280-123221-1

SDG No.: _____

ICP-AES Instrument ID: MT_025 Date: 12/17/2018

Analyte	Wave Length	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	K
Aluminum	167.079													0.000386	
Aluminum	309.271														
Antimony	206.833		0.000026									0.009556		0.000031	
Arsenic	189.042		-0.000033						0.000012			0.000165		-0.000017	
Barium	455.403														
Beryllium	313.042														
Bismuth	223.061		-0.000012			-0.000360						0.001346		0.000249	
Boron	208.959														
Cadmium	228.802			0.004373		-0.000173					-0.000030				
Calcium	317.933										-0.000132				
Chromium	205.552						-0.000889								
Cobalt	228.616					0.000052						0.000001		0.000000	
Copper	324.754														
Iron	259.940														
Iron	271.441										0.076500				
Lead	220.353		-0.000070					-0.000040	0.000001		-0.000688		0.000299		
Lithium	670.784								0.000017						
Magnesium	279.079													0.000221	
Manganese	257.610													0.000013	
Molybdenum	202.030														
Nickel	231.604						-0.000094		-0.000007		-0.000384			0.000000	
Phosphorus	178.284														
Potassium	766.490														
Selenium	196.090								-0.000016					0.000017	
Silicon	288.158											-0.013955			
Silver	328.068														
Sodium	589.592														
Sodium	818.326														
Strontium	407.771								0						
Sulfur	182.034		-0.000035						0.000017						

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Denver Job Number: 280-123221-1

SDG No.: _____

ICP-AES Instrument ID: MT_025 Date: 12/17/2018

Analyte	Wave Length	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	K
Thallium	190.856								0.000002		0.001718	0.000274		-0.000032	
Thorium	283.730									-0.000364		-0.000133		0.000830	
Tin	189.989														
Titanium	334.904								0.000005			0.000255			
Uranium	370.152				0.002111				-0.000078			-0.009097		-0.000481	
Vanadium	292.402														
Zinc	206.200		0.000014					-0.000075				-0.000208		0.000023	
Zirconium	339.198													-0.000029	

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Denver Job Number: 280-123221-1

SDG No.: _____

ICP-AES Instrument ID: MT_025 Date: 12/17/2018

Analyte	Wave Length	Li	Mg	Mn	Mo	Na	Ni	Pb	S	Sb	Se	Si	SiO2	Sn	Sr
Aluminum	309.271		0.001655												
Aluminum	167.079														
Antimony	206.833						-0.000005							0.000093	
Arsenic	189.042				0.000666							-0.000151	-0.000151		
Barium	455.403														
Beryllium	313.042														
Bismuth	223.061														
Boron	208.959				0.040000										
Cadmium	228.802														
Calcium	317.933														
Chromium	205.552														
Cobalt	228.616			-0.000001	-0.001646		0.000125								
Copper	324.754				0.001137										
Iron	259.940														
Iron	271.441		0.000330												
Lead	220.353				-0.000710		0.000027					0.000363	0.000063		
Lithium	670.784														
Magnesium	279.079			-0.004762											
Manganese	257.610														
Molybdenum	202.030														
Nickel	231.604				0.000080										
Phosphorus	178.284				-0.001297										
Potassium	766.490														
Selenium	196.090			0.000890											
Silicon	288.158				-0.001696										
Silver	328.068			0.000114	-0.000029										
Sodium	818.326														
Sodium	589.592														
Strontium	407.771														
Sulfur	182.034			0.001895	-0.010027										

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Denver Job Number: 280-123221-1

SDG No.: _____

ICP-AES Instrument ID: MT_025 Date: 12/17/2018

Analyte	Wave Length	Li	Mg	Mn	Mo	Na	Ni	Pb	S	Sb	Se	Si	SiO2	Sn	Sr
Thallium	190.856			0.000471											
Thorium	283.730		-0.0000017 3		0.000298		0.000116								
Tin	189.989														
Titanium	334.904		0.000001		0.000993										
Uranium	370.152														
Vanadium	292.402			-0.000132	-0.015713										
Zinc	206.200				0.000123										
Zirconium	339.198				0.000270										

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Denver Job Number: 280-123221-1

SDG No.: _____

ICP-AES Instrument ID: MT_025 Date: 12/17/2018

Analyte	Wave Length	Th	Ti	Tl	U	V	Zn	Zr							
Aluminum	167.079														
Aluminum	309.271														
Antimony	206.833		0.000161		-0.001976	0.000070		-0.000720							
Arsenic	189.042														
Barium	455.403							0.000631							
Beryllium	313.042		0		0.000024	0.000719									
Bismuth	223.061		-0.003027		-0.003000										
Boron	208.959														
Cadmium	228.802				-0.000172										
Calcium	317.933	-0.000543													
Chromium	205.552														
Cobalt	228.616		0.002396		0.000180										
Copper	324.754	0.004049	-0.000473		-0.000966	-0.000078		-0.004427							
Iron	259.940														
Iron	271.441					-0.209000		-0.033							
Lead	220.353		-0.000058		0.001102			-0.000169							
Lithium	670.784														
Magnesium	279.079		0.000196		0.001378										
Manganese	257.610	-0.000521			0.000099										
Molybdenum	202.030				-0.000094										
Nickel	231.604														
Phosphorus	178.284				0.000030										
Potassium	766.490														
Selenium	196.090	-0.000057			-0.000761										
Silicon	288.158														
Silver	328.068	0.000110			0.001056			0.004012							
Sodium	589.592														
Sodium	818.326														
Strontium	407.771														
Sulfur	182.034	0.000409				-0.001026									

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Denver Job Number: 280-123221-1

SDG No.: _____

ICP-AES Instrument ID: MT_025 Date: 12/17/2018

Analyte	Wave Length	Th	Ti	Tl	U	V	Zn	Zr							
Thallium	190.856	-0.000005			0.000038	0.000848									
Thorium	283.730				0.020818			0.017935							
Tin	189.989	-0.000081	-0.000188		0.000171										
Titanium	334.904	0.007261			-0.000638										
Uranium	370.152	-0.003546	0.005713			0.003176		-0.002785							
Vanadium	292.402	0.001304	0.000377		-0.000269										
Zinc	206.200														
Zirconium	339.198	0.042435			-0.000206										

11-IN
LINEAR RANGES
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No: 280-123221-1

SDG No.: _____

Instrument ID: MT_025

Date: 04/09/2019 07:06

Analyte	Integ. Time (Sec.)	Concentration (mg/L)	Method
Aluminum		900	6010C
Calcium		900	6010C
Iron		450	6010C
Magnesium		1350	6010C
Potassium		450	6010C
Sodium		9000	6010C

11-IN
LINEAR RANGES
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No: 280-123221-1

SDG No.: _____

Instrument ID: MT_078

Date: 04/09/2019 07:08

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Antimony			6020A
Arsenic			6020A
Barium			6020A
Beryllium			6020A
Cadmium			6020A
Chromium			6020A
Cobalt			6020A
Copper			6020A
Lead			6020A
Manganese			6020A
Nickel			6020A
Selenium			6020A
Silver			6020A
Thallium			6020A
Vanadium			6020A
Zinc			6020A

12-IN
PREPARATION LOG
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Prep Method: 3010A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 280-457070/1-A	05/09/2019 17:15	457070		50	50
LCS 280-457070/2-A	05/09/2019 17:15	457070		50	50
LCSD 280-457070/3-A	05/09/2019 17:15	457070		50	50
280-123221-2	05/09/2019 17:15	457070		50	50
280-123221-4	05/09/2019 17:15	457070		50	50
280-123221-5	05/09/2019 17:15	457070		50	50
280-123221-7	05/09/2019 17:15	457070		50	50
280-123221-8	05/09/2019 17:15	457070		50	50
280-123221-9	05/09/2019 17:15	457070		50	50
280-123221-10	05/09/2019 17:15	457070		50	50
280-123221-11	05/09/2019 17:15	457070		50	50
280-123221-12	05/09/2019 17:15	457070		50	50
280-123221-13	05/09/2019 17:15	457070		50	50

12-IN
PREPARATION LOG
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Prep Method: 3020A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 280-457081/1-A	05/09/2019 17:15	457081		50	50
LCS 280-457081/2-A	05/09/2019 17:15	457081		50	50
LCSD 280-457081/3-A	05/09/2019 17:15	457081		50	50
280-123221-2	05/09/2019 17:15	457081		50	50
280-123221-4	05/09/2019 17:15	457081		50	50
280-123221-5	05/09/2019 17:15	457081		50	50
280-123221-7	05/09/2019 17:15	457081		50	50
280-123221-8	05/09/2019 17:15	457081		50	50
280-123221-9	05/09/2019 17:15	457081		50	50
280-123221-10	05/09/2019 17:15	457081		50	50
280-123221-11	05/09/2019 17:15	457081		50	50
280-123221-12	05/09/2019 17:15	457081		50	50
280-123221-13	05/09/2019 17:15	457081		50	50

12-IN
PREPARATION LOG
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Prep Method: 7470A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 280-457916/1-A	05/13/2019 12:45	457916		30	50
LCS 280-457916/2-A	05/13/2019 12:45	457916		30	50
LCSD 280-457916/3-A	05/13/2019 12:45	457916		30	50
280-123221-2	05/13/2019 12:45	457916		30	50
280-123221-4	05/13/2019 12:45	457916		30	50
280-123221-5	05/13/2019 12:45	457916		30	50
280-123221-7	05/13/2019 12:45	457916		30	50
280-123221-8	05/13/2019 12:45	457916		30	50
280-123221-9	05/13/2019 12:45	457916		30	50
280-123221-10	05/13/2019 12:45	457916		30	50
280-123221-11	05/13/2019 12:45	457916		30	50
280-123221-12	05/13/2019 12:45	457916		30	50
280-123221-13	05/13/2019 12:45	457916		30	50

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Instrument ID: MT_025

Analysis Method: 6010C

Start Date: 05/13/2019 07:32

End Date: 05/13/2019 15:36

Lab Sample Id	D/F	Type	Time	Analytes																			
				C	K	M																	
ICIS 280-458049/1	1		07:32	X	X	X																	
IC 280-458049/2			07:34	X	X	X																	
IC 280-458049/3			07:37	X	X	X																	
ZZZZZZ			07:39																				
ZZZZZZ			07:42																				
ICVH 280-458049/6	1		07:44	X	X	X																	
ICVH 280-458049/7	1		07:47	X	X	X																	
ICV 280-458049/8	1		07:50	X	X	X																	
ICV 280-458049/9	1		07:52	X	X	X																	
ZZZZZZ			07:55																				
ICVL 280-458049/11	1		08:00	X	X	X																	
ICVL 280-458049/12	1		08:03	X	X	X																	
ZZZZZZ			08:09																				
CCV 280-458049/14			08:12																				
ICB 280-458049/15	1		08:14	X	X	X																	
ZZZZZZ			08:17																				
CRI 280-458049/17	1		08:23	X	X	X																	
ICSA 280-458049/18	1		08:30	X	X	X																	
ICSAB 280-458049/19	1		08:33	X	X	X																	
LRA 280-458049/20			08:36																				
CCVH 280-458049/21			08:39																				
CCV 280-458049/22			08:41																				
CCB 280-458049/23			08:43																				
CCVL 280-458049/24			08:46																				
CCVH 280-458049/25	1		12:21	X	X	X																	
CCV 280-458049/26	1		12:23	X	X	X																	
CCB 280-458049/27	1		12:26	X	X	X																	
CCVL 280-458049/28	1		12:29	X	X	X																	
MB 280-457070/1-A	1	T	12:31	X	X	X																	
LCS 280-457070/2-A	1	T	12:34	X	X	X																	
LCSD 280-457070/3-A	1	T	12:36	X	X	X																	
ZZZZZZ			12:39																				
ZZZZZZ			12:41																				
ZZZZZZ			12:44																				
ZZZZZZ			12:46																				
ZZZZZZ			12:48																				
CCVH 280-458049/37	1		12:51	X	X	X																	
CCV 280-458049/38	1		12:53	X	X	X																	
CCB 280-458049/39	1		12:55	X	X	X																	
CCVL 280-458049/40	1		12:58	X	X	X																	
ZZZZZZ			13:01																				
280-123221-2	1	T	13:03	X	X	X																	

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Instrument ID: MT_025

Analysis Method: 6010C

Start Date: 05/13/2019 07:32

End Date: 05/13/2019 15:36

Lab Sample Id	D/F	T y p e	Time	Analytes																									
				C a	K	M g																							
280-123221-4		1 T	13:06	X	X	X																							
280-123221-5		1 T	13:08	X	X	X																							
280-123221-7		1 T	13:11	X	X	X																							
280-123221-8		1 T	13:13	X	X	X																							
280-123221-9		1 T	13:16	X	X	X																							
280-123221-10		1 T	13:18	X	X	X																							
280-123221-11		1 T	13:21	X	X	X																							
280-123221-12		1 T	13:24	X	X	X																							
CCVH 280-458049/51		1	13:26	X	X	X																							
CCV 280-458049/52		1	13:29	X	X	X																							
CCB 280-458049/53		1	13:31	X	X	X																							
CCVL 280-458049/54		1	13:33	X	X	X																							
280-123221-13		1 T	13:37	X	X	X																							
ZZZZZZ			13:39																										
ZZZZZZ			13:42																										
ZZZZZZ			13:44																										
ZZZZZZ			13:47																										
ZZZZZZ			13:49																										
ZZZZZZ			13:51																										
ZZZZZZ			13:54																										
ZZZZZZ			13:56																										
CCVH 280-458049/64		1	13:59	X	X	X																							
CCV 280-458049/65		1	14:02	X	X	X																							
CCB 280-458049/66		1	14:04	X	X	X																							
CCVL 280-458049/67		1	14:06	X	X	X																							
ZZZZZZ			14:09																										
ZZZZZZ			14:12																										
ZZZZZZ			14:14																										
ZZZZZZ			14:16																										
ZZZZZZ			14:19																										
ZZZZZZ			14:21																										
ZZZZZZ			14:24																										
ZZZZZZ			14:26																										
ZZZZZZ			14:29																										
ZZZZZZ			14:31																										
CCVH 280-458049/78			14:33																										
CCV 280-458049/79			14:36																										
CCB 280-458049/80			14:38																										
CCVL 280-458049/81			14:41																										
ZZZZZZ			14:43																										
ZZZZZZ			14:46																										
ZZZZZZ			14:48																										

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: MT_025 Analysis Method: 6010C

Start Date: 05/13/2019 07:32 End Date: 05/13/2019 15:36

Lab Sample Id	D/F	T Y P e	Time	Analytes																									
				C a	K	M g																							
ZZZZZZ			14:50																										
ZZZZZZ			14:53																										
ZZZZZZ			14:56																										
ZZZZZZ			14:58																										
ZZZZZZ			15:00																										
CCVH 280-458049/90			15:03																										
CCV 280-458049/91			15:06																										
CCB 280-458049/92			15:08																										
CCVL 280-458049/93			15:11																										
ZZZZZZ			15:13																										
ZZZZZZ			15:16																										
ZZZZZZ			15:18																										
ZZZZZZ			15:21																										
ZZZZZZ			15:23																										
ZZZZZZ			15:26																										
CCVH 280-458049/100			15:28																										
CCV 280-458049/101			15:31																										
CCB 280-458049/102			15:33																										
CCVL 280-458049/103			15:36																										

Prep Types: _____
T = Total/NA

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: MT_025 Analysis Method: 6010C

Start Date: 05/13/2019 07:32 End Date: 05/13/2019 07:52

Lab Sample Id	D/F	T y p e	Time	Analytes																										
				N a																										
ICIS 280-458432/1			07:32	X																										
IC 280-458432/2			07:34	X																										
IC 280-458432/3			07:37	X																										
ZZZZZZ			07:39																											
ZZZZZZ			07:42																											
ICVH 280-458432/6			07:44																											
ICVH 280-458432/7			07:47																											
ICV 280-458432/8	1		07:50	X																										
ICV 280-458432/9	1		07:52	X																										

Prep Types: _____
=

End Date: 05/14/2019 16:47

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Instrument ID: MT_025

Analysis Method: 6010C

Start Date: 05/14/2019 09:07

End Date: 05/14/2019 16:47

Lab Sample Id	D/F	T y p e	Time	Analytes																									
				A l	F e	N a																							
280-123221-10	1	T	12:24	X	X	X																							
280-123221-11	1	T	12:26	X	X	X																							
280-123221-12	1	T	12:29	X	X	X																							
280-123221-13	1	T	12:31	X	X	X																							
CCVH 280-458211/47	1		12:34	X	X	X																							
CCV 280-458211/48	1		12:36	X	X	X																							
CCB 280-458211/49	1		12:39	X	X	X																							
CCVL 280-458211/50	1		12:42	X	X	X																							
ZZZZZZ			12:53																										
ZZZZZZ			12:56																										
ZZZZZZ			12:58																										
ZZZZZZ			13:01																										
ZZZZZZ			13:03																										
ZZZZZZ			13:05																										
ZZZZZZ			13:08																										
ZZZZZZ			13:11																										
CCVH 280-458211/59			13:13																										
CCV 280-458211/60			13:16																										
CCB 280-458211/61			13:19																										
CCVL 280-458211/62			13:22																										
ZZZZZZ			13:24																										
ZZZZZZ			13:27																										
ZZZZZZ			13:29																										
ZZZZZZ			13:31																										
ZZZZZZ			13:34																										
CCVH 280-458211/68			13:36																										
CCV 280-458211/69			13:39																										
CCB 280-458211/70			13:41																										
CCVL 280-458211/71			13:44																										
ZZZZZZ			13:46																										
ZZZZZZ			13:49																										
ZZZZZZ			13:51																										
ZZZZZZ			13:54																										
ZZZZZZ			13:56																										
ZZZZZZ			13:59																										
ZZZZZZ			14:01																										
ZZZZZZ			14:04																										
ZZZZZZ			14:06																										
ZZZZZZ			14:09																										
CCVH 280-458211/82			14:11																										
CCV 280-458211/83			14:14																										
CCB 280-458211/84			14:16																										

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Instrument ID: MT_025

Analysis Method: 6010C

Start Date: 05/14/2019 09:07

End Date: 05/14/2019 16:47

Lab Sample Id	D/F	Type	Time	Analytes																									
				A	F	N																							
CCVL 280-458211/85			14:19																										
ZZZZZZ			14:22																										
ZZZZZZ			14:24																										
ZZZZZZ			14:27																										
ZZZZZZ			14:29																										
ZZZZZZ			14:31																										
ZZZZZZ			14:34																										
ZZZZZZ			14:36																										
ZZZZZZ			14:39																										
ZZZZZZ			14:41																										
CCVH 280-458211/95			14:44																										
CCV 280-458211/96			14:46																										
CCB 280-458211/97			14:49																										
CCVL 280-458211/98			14:51																										
ZZZZZZ			14:54																										
ZZZZZZ			14:57																										
ZZZZZZ			14:59																										
ZZZZZZ			15:01																										
ZZZZZZ			15:04																										
ZZZZZZ			15:06																										
ZZZZZZ			15:09																										
ZZZZZZ			15:11																										
CCVH 280-458211/107			15:13																										
CCV 280-458211/108			15:16																										
CCB 280-458211/109			15:18																										
CCVL 280-458211/110			15:21																										
ZZZZZZ			15:23																										
ZZZZZZ			15:26																										
ZZZZZZ			15:28																										
ZZZZZZ			15:31																										
CCVH 280-458211/115			15:34																										
CCV 280-458211/116			15:36																										
CCB 280-458211/117			15:38																										
CCVL 280-458211/118			15:41																										
ZZZZZZ			15:44																										
ZZZZZZ			15:46																										
ZZZZZZ			15:48																										
ZZZZZZ			15:51																										
ZZZZZZ			15:54																										
ZZZZZZ			15:56																										
ZZZZZZ			15:59																										
ZZZZZZ			16:01																										

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: MT_025 Analysis Method: 6010C

Start Date: 05/14/2019 09:07 End Date: 05/14/2019 16:47

Lab Sample Id	D/F	T Y P e	Time	Analytes																									
				A l	F e	N a																							
ZZZZZZ			16:04																										
ZZZZZZ			16:06																										
CCVH 280-458211/129			16:09																										
CCV 280-458211/130			16:12																										
CCB 280-458211/131			16:14																										
CCVL 280-458211/132			16:17																										
ZZZZZZ			16:19																										
ZZZZZZ			16:22																										
ZZZZZZ			16:24																										
ZZZZZZ			16:27																										
ZZZZZZ			16:29																										
ZZZZZZ			16:32																										
ZZZZZZ			16:34																										
ZZZZZZ			16:37																										
CCVH 280-458211/141			16:39																										
CCV 280-458211/142			16:42																										
CCB 280-458211/143			16:44																										
CCVL 280-458211/144			16:47																										

Prep Types: _____
T = Total/NA

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: MT_025 Analysis Method: 6010C

Start Date: 05/14/2019 09:07 End Date: 05/14/2019 09:27

Lab Sample Id	D/F	T y p e	Time	Analytes																									
				N a																									
ICIS 280-458433/1			09:07	X																									
IC 280-458433/2			09:10	X																									
IC 280-458433/3			09:12	X																									
ZZZZZZ			09:15																										
ZZZZZZ			09:17																										
ICVH 280-458433/6			09:19																										
ICVH 280-458433/7			09:22																										
ICV 280-458433/8			09:25																										
ICV 280-458433/9	1		09:27	X																									

Prep Types: _____
=

Lab Name: Eurofins TestAmerica, Denver	Job No.: 280-123221-1
SDG No.:	
Instrument ID: MT_078	Analysis Method: 6020A
Start Date: 05/13/2019 12:19	End Date: 05/14/2019 12:12

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13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.:

Instrument ID: MT_078

Analysis Method: 6020A

Start Date: 05/13/2019 12:19

End Date: 05/14/2019 12:12

Lab Sample Id	D/F	Type	Time	Analytes																					
				A	A	B	B	C	C	C	C	M	N	S	S	T	V	Z							
ZZZZZZ			08:53																						
ZZZZZZ			08:57																						
ZZZZZZ			09:00																						
ZZZZZZ			09:04																						
CCV 280-458135/47	1		09:07	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
CCB 280-458135/48	1		09:11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
CCVL 280-458135/49	1		09:14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
ZZZZZZ			09:18																						
ZZZZZZ			09:21																						
ZZZZZZ			09:25																						
ZZZZZZ			09:29																						
280-123221-2	1	T	09:32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
280-123221-4	1	T	09:36	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
280-123221-5	1	T	09:39	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
280-123221-7	1	T	09:43	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
CCV 280-458135/58	1		09:46	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
CCB 280-458135/59	1		09:50	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
CCVL 280-458135/60	1		09:53	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
280-123221-8	1	T	09:57	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
280-123221-9	1	T	10:00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
280-123221-10	1	T	10:04	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
CCV 280-458135/64	1		10:07	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
CCB 280-458135/65	1		10:11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
CCVL 280-458135/66	1		10:14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
RINSE 280-458135/67			10:18																						
RINSE 280-458135/68			10:22																						
ICIS 280-458135/69			10:25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
IC 280-458135/70			10:29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							
CCV 280-458135/71			10:32																						
CCB 280-458135/72			10:36																						
ZZZZZZ			10:39																						
ZZZZZZ			10:43																						
ZZZZZZ			10:46																						
ZZZZZZ			10:50																						
ZZZZZZ			10:54																						
ZZZZZZ			10:57																						
ZZZZZZ			11:01																						
ZZZZZZ			11:04																						
CCV 280-458135/81			11:08																						
CCB 280-458135/82			11:11																						
ZZZZZZ			11:15																						
ZZZZZZ			11:18																						

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: MT_078 Analysis Method: 6020A

Start Date: 05/13/2019 12:19 End Date: 05/14/2019 12:12

Lab Sample Id	D/F	Type	Time	Analytes																									
				A	A	B	B	C	C	C	C	M	N	S	S	T	V	Z											
ZZZZZZ			11:22																										
ZZZZZZ			11:26																										
ZZZZZZ			11:29																										
ZZZZZZ			11:33																										
CCV 280-458135/89			11:36																										
CCB 280-458135/90			11:40																										
ZZZZZZ			11:44																										
ZZZZZZ			11:47																										
ZZZZZZ			11:51																										
ZZZZZZ			11:54																										
ZZZZZZ			11:58																										
CCV 280-458135/96			12:01																										
CCB 280-458135/97			12:12																										

Prep Types: _____
T = Total/NA

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.:

Instrument ID: MT_078

Analysis Method: 6020A

Start Date: 05/14/2019 13:47

End Date: 05/15/2019 09:46

Lab Sample Id	D/F	Type	Time	Analytes																					
				A	A	B	B	C	C	C	C	M	N	P	S	S	T	V	Z						
RINSE 280-458262/1			13:47																						
RINSE 280-458262/2			13:50																						
RINSE 280-458262/3			13:54																						
RINSE 280-458262/4			13:57																						
RINSE 280-458262/5			14:01																						
RINSE 280-458262/6			14:04																						
ICIS 280-458262/7			14:08	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
IC 280-458262/8	1		14:11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
ICV 280-458262/9	1		14:15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
ICB 280-458262/10	1		14:18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
ICVL 280-458262/11	1		14:25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
CRI 280-458262/12	1		14:29	X	X	X	X	X	X	X	X	X	X	X	X	X	X								
CRI 280-458262/13	1		14:34															X	X						
ZZZZZZ			14:37																						
ICSA 280-458262/15	1		14:41	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
ICSAB 280-458262/16	1		14:44	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
RINSE 280-458262/17			14:48																						
LRA 280-458262/18			14:51																						
RINSE 280-458262/19			14:55																						
RINSE 280-458262/20			14:58																						
CCV 280-458262/21			15:02																						
CCB 280-458262/22			15:05																						
CCVL 280-458262/23			15:09																						
ZZZZZZ			15:12																						
ZZZZZZ			15:16																						
ZZZZZZ			15:19																						
ZZZZZZ			15:23																						
ZZZZZZ			15:26																						
ZZZZZZ			15:30																						
ZZZZZZ			15:33																						
ZZZZZZ			15:37																						
CCV 280-458262/32	1		15:40	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
CCB 280-458262/33	1		15:44	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
CCVL 280-458262/34	1		15:48	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
MB 280-457081/1-A	1	T	15:52												X										
LCS 280-457081/2-A	1	T	15:55												X										
LCSD 280-457081/3-A	1	T	15:59												X										
ZZZZZZ			16:02																						
ZZZZZZ			16:06																						
ZZZZZZ			16:09																						
ZZZZZZ			16:13																						
ZZZZZZ			16:17																						

Lab Name: Eurofins TestAmerica, Denver	Job No.: 280-123221-1
SDG No.:	
Instrument ID: MT_078	Analysis Method: 6020A
Start Date: 05/14/2019 13:47	End Date: 05/15/2019 09:46

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13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Instrument ID: MT_078

Analysis Method: 6020A

Start Date: 05/14/2019 13:47

End Date: 05/15/2019 09:46

Lab Sample Id	D/F	Type	Time	Analytes																							
				A	A	B	B	C	C	C	C	M	N	P	S	S	T	V	Z								
ZZZZZZ			19:04																								
ZZZZZZ			19:08																								
ZZZZZZ			19:11																								
ZZZZZZ			19:15																								
ZZZZZZ			19:18																								
ZZZZZZ			19:22																								
ZZZZZZ			19:25																								
CCV 280-458262/92			19:29																								
CCB 280-458262/93			19:32																								
CCVL 280-458262/94			19:36																								
ZZZZZZ			19:39																								
ZZZZZZ			19:43																								
ZZZZZZ			19:46																								
ZZZZZZ			19:50																								
ZZZZZZ			19:53																								
ZZZZZZ			19:57																								
ZZZZZZ			20:00																								
ZZZZZZ			20:04																								
ZZZZZZ			20:07																								
CCV 280-458262/104			20:11																								
CCB 280-458262/105			20:14																								
CCVL 280-458262/106			20:18																								
ZZZZZZ			20:21																								
ZZZZZZ			20:25																								
ZZZZZZ			20:29																								
ZZZZZZ			20:32																								
ZZZZZZ			20:36																								
ZZZZZZ			20:39																								
ZZZZZZ			20:43																								
ZZZZZZ			20:46																								
ZZZZZZ			20:50																								
ZZZZZZ			20:53																								
CCV 280-458262/117			20:57																								
CCB 280-458262/118			21:00																								
ZZZZZZ			21:04																								
ZZZZZZ			21:07																								
CCV 280-458262/121			21:11																								
CCB 280-458262/122			21:14																								
ZZZZZZ			21:18																								
ZZZZZZ			21:22																								
ZZZZZZ			21:25																								
CCV 280-458262/126			07:44																								

Lab Name: Eurofins TestAmerica, Denver	Job No.: 280-123221-1
SDG No.:	
Instrument ID: MT_078	Analysis Method: 6020A
Start Date: 05/14/2019 13:47	End Date: 05/15/2019 09:46

[illegible]

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Instrument ID: MT_033

Analysis Method: 7470A

Start Date: 05/13/2019 16:14

End Date: 05/14/2019 12:01

Lab Sample Id	D/F	T y p e	Time	Analytes																									
				H g																									
IC 280-457940/1-A			16:14	X																									
IC 280-457940/2-A			16:16	X																									
IC 280-457940/3-A			16:18	X																									
IC 280-457940/4-A			16:20	X																									
IC 280-457940/5-A			16:22	X																									
IC 280-457940/6-A			16:25	X																									
IC 280-457940/7-A			16:27	X																									
IC 280-457940/8-A			16:29	X																									
ICV 280-457940/9-A	1		16:33	X																									
ICB 280-457940/10-A	1		16:35	X																									
CRA 280-457940/11-A			16:37																										
CCV 280-457940/12-A			16:39																										
CCB 280-457940/13-A			16:41																										
ZZZZZZ			16:44																										
ZZZZZZ			16:46																										
ZZZZZZ			16:48																										
ZZZZZZ			16:50																										
ZZZZZZ			16:53																										
ZZZZZZ			16:57																										
ZZZZZZ			16:59																										
ZZZZZZ			17:01																										
ZZZZZZ			17:04																										
ZZZZZZ			17:07																										
CCV 280-457940/12-A			17:09																										
CCB 280-457940/13-A			17:11																										
ZZZZZZ			17:13																										
ZZZZZZ			17:15																										
ZZZZZZ			17:18																										
ZZZZZZ			17:20																										
ZZZZZZ			17:22																										
ZZZZZZ			17:24																										
ZZZZZZ			17:27																										
ZZZZZZ			17:29																										
ZZZZZZ			17:31																										
CCV 280-457940/12-A			17:33																										
CCB 280-457940/13-A			17:35																										
ZZZZZZ			17:38																										
ZZZZZZ			17:40																										
ZZZZZZ			17:42																										
ZZZZZZ			17:44																										
ZZZZZZ			17:47																										
ZZZZZZ			17:49																										

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Instrument ID: MT_033

Analysis Method: 7470A

Start Date: 05/13/2019 16:14

End Date: 05/14/2019 12:01

Lab Sample Id	D/F	T y p e	Time	Analytes																									
				H g																									
ZZZZZZ			17:51																										
ZZZZZZ			17:53																										
ZZZZZZ			17:55																										
ZZZZZZ			17:58																										
CCV 280-457940/12-A			18:00																										
CCB 280-457940/13-A			18:02																										
ZZZZZZ			18:04																										
ZZZZZZ			18:07																										
ZZZZZZ			18:09																										
ZZZZZZ			18:11																										
ZZZZZZ			18:13																										
ZZZZZZ			18:15																										
ZZZZZZ			18:18																										
ZZZZZZ			18:20																										
ZZZZZZ			18:22																										
ZZZZZZ			18:26																										
CCV 280-457940/12-A			18:28																										
CCB 280-457940/13-A			18:31																										
ZZZZZZ			18:33																										
ZZZZZZ			18:35																										
ZZZZZZ			18:37																										
ZZZZZZ			18:39																										
ZZZZZZ			18:42																										
CCV 280-457940/12-A			18:44																										
CCB 280-457940/13-A			18:46																										
ZZZZZZ			18:48																										
ZZZZZZ			18:51																										
ZZZZZZ			18:53																										
ZZZZZZ			18:55																										
ZZZZZZ			18:57																										
ZZZZZZ			18:59																										
CCV 280-457940/12-A			19:02																										
CCB 280-457940/13-A			19:04																										
ZZZZZZ			19:06																										
ZZZZZZ			19:08																										
ZZZZZZ			19:11																										
ZZZZZZ			19:13																										
ZZZZZZ			19:15																										
ZZZZZZ			19:17																										
ZZZZZZ			19:19																										
ZZZZZZ			19:22																										
ZZZZZZ			19:24																										

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Instrument ID: MT_033

Analysis Method: 7470A

Start Date: 05/13/2019 16:14

End Date: 05/14/2019 12:01

Lab Sample Id	D/F	T y p e	Time	Analytes																									
				H g																									
CCV 280-457940/12-A			19:26																										
CCB 280-457940/13-A			19:28																										
ZZZZZZ			19:31																										
ZZZZZZ			19:33																										
ZZZZZZ			19:35																										
ZZZZZZ			19:37																										
ZZZZZZ			19:39																										
ZZZZZZ			19:42																										
ZZZZZZ			19:44																										
ZZZZZZ			19:46																										
ZZZZZZ			19:48																										
ZZZZZZ			19:52																										
CCV 280-457940/12-A			19:54																										
CCB 280-457940/13-A			19:56																										
ZZZZZZ			19:58																										
ZZZZZZ			20:01																										
ZZZZZZ			20:03																										
ZZZZZZ			20:05																										
ZZZZZZ			20:07																										
ZZZZZZ			20:10																										
ZZZZZZ			20:12																										
ZZZZZZ			20:14																										
ZZZZZZ			20:16																										
CCV 280-457940/12-A			20:19																										
CCB 280-457940/13-A			20:21																										
ZZZZZZ			20:23																										
ZZZZZZ			20:25																										
ZZZZZZ			20:27																										
ZZZZZZ			20:30																										
ZZZZZZ			20:32																										
ZZZZZZ			20:34																										
ZZZZZZ			20:36																										
ZZZZZZ			20:39																										
ZZZZZZ			20:41																										
ZZZZZZ			20:43																										
CCV 280-457940/12-A	1		20:45	X																									
CCB 280-457940/13-A	1		20:48	X																									
ZZZZZZ			20:50																										
ZZZZZZ			20:52																										
ZZZZZZ			20:54																										
ZZZZZZ			20:56																										
ZZZZZZ			20:59																										

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Instrument ID: MT_033

Analysis Method: 7470A

Start Date: 05/13/2019 16:14

End Date: 05/14/2019 12:01

Lab Sample Id	D/F	T y p e	Time	Analytes																									
				H g																									
MB 280-457916/1-A	1	T	21:01	X																									
LCS 280-457916/2-A	1	T	21:03	X																									
LCSD 280-457916/3-A	1	T	21:05	X																									
ZZZZZZ			21:08																										
ZZZZZZ			21:10																										
CCV 280-457940/12-A	1		21:12	X																									
CCB 280-457940/13-A	1		21:14	X																									
ZZZZZZ			21:17																										
ZZZZZZ			21:19																										
ZZZZZZ			21:21																										
ZZZZZZ			21:23																										
ZZZZZZ			21:25																										
ZZZZZZ			21:28																										
ZZZZZZ			21:30																										
ZZZZZZ			21:32																										
ZZZZZZ			21:34																										
280-123221-2	1	T	21:37	X																									
CCV 280-457940/12-A	1		21:39	X																									
CCB 280-457940/13-A	1		21:41	X																									
280-123221-4	1	T	21:43	X																									
280-123221-5	1	T	21:46	X																									
280-123221-7	1	T	21:48	X																									
280-123221-8	1	T	21:50	X																									
280-123221-9	1	T	21:52	X																									
280-123221-10	1	T	21:54	X																									
280-123221-11	1	T	21:57	X																									
280-123221-12	1	T	21:59	X																									
280-123221-13	1	T	22:01	X																									
CCV 280-457940/12-A	1		22:03	X																									
CCB 280-457940/13-A	1		22:06	X																									
ZZZZZZ			22:08																										
ZZZZZZ			22:10																										
ZZZZZZ			22:12																										
ZZZZZZ			22:15																										
ZZZZZZ			22:17																										
ZZZZZZ			22:19																										
ZZZZZZ			22:21																										
ZZZZZZ			22:24																										
ZZZZZZ			22:26																										
ZZZZZZ			22:28																										
CCV 280-457940/12-A			22:30																										
CCB 280-457940/13-A			22:32																										

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Instrument ID: MT_033

Analysis Method: 7470A

Start Date: 05/13/2019 16:14

End Date: 05/14/2019 12:01

Lab Sample Id	D/F	T y p e	Time	Analytes																									
				H g																									
ZZZZZZ			22:35																										
ZZZZZZ			22:37																										
ZZZZZZ			22:39																										
ZZZZZZ			22:41																										
ZZZZZZ			22:44																										
ZZZZZZ			22:46																										
ZZZZZZ			22:48																										
ZZZZZZ			22:50																										
ZZZZZZ			22:53																										
ZZZZZZ			22:55																										
CCV 280-457940/12-A			22:57																										
CCB 280-457940/13-A			22:59																										
ZZZZZZ			23:02																										
ZZZZZZ			23:04																										
ZZZZZZ			23:06																										
ZZZZZZ			23:08																										
ZZZZZZ			23:11																										
ZZZZZZ			23:13																										
ZZZZZZ			23:15																										
ZZZZZZ			23:17																										
ZZZZZZ			23:20																										
ZZZZZZ			23:22																										
CCV 280-457940/12-A			23:24																										
CCB 280-457940/13-A			23:26																										
ZZZZZZ			23:29																										
ZZZZZZ			23:31																										
ZZZZZZ			23:33																										
ZZZZZZ			23:35																										
ZZZZZZ			23:38																										
ZZZZZZ			23:40																										
CCV 280-457940/12-A			23:42																										
CCB 280-457940/13-A			23:44																										
ZZZZZZ			23:47																										
ZZZZZZ			23:49																										
ZZZZZZ			23:51																										
ZZZZZZ			23:53																										
ZZZZZZ			23:56																										
CCV 280-457940/12-A			23:58																										
CCB 280-457940/13-A			00:00																										
CCV 280-457940/12-A			07:49																										
CCB 280-457940/13-A			07:51																										
ZZZZZZ			07:53																										

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Instrument ID: MT_033

Analysis Method: 7470A

Start Date: 05/13/2019 16:14

End Date: 05/14/2019 12:01

Lab Sample Id	D/F	T y p e	Time	Analytes																									
				H g																									
ZZZZZZ			07:55																										
ZZZZZZ			07:57																										
ZZZZZZ			08:00																										
ZZZZZZ			08:02																										
ZZZZZZ			08:04																										
ZZZZZZ			08:06																										
ZZZZZZ			08:09																										
ZZZZZZ			08:11																										
ZZZZZZ			08:13																										
CCV 280-457940/12-A			08:15																										
CCB 280-457940/13-A			08:17																										
ZZZZZZ			08:20																										
ZZZZZZ			08:22																										
ZZZZZZ			08:24																										
ZZZZZZ			08:26																										
ZZZZZZ			08:29																										
ZZZZZZ			08:31																										
ZZZZZZ			08:33																										
ZZZZZZ			08:35																										
ZZZZZZ			08:37																										
ZZZZZZ			08:40																										
CCV 280-457940/12-A			08:42																										
CCB 280-457940/13-A			08:44																										
ZZZZZZ			08:46																										
ZZZZZZ			08:49																										
ZZZZZZ			08:51																										
ZZZZZZ			08:53																										
ZZZZZZ			08:55																										
ZZZZZZ			08:57																										
ZZZZZZ			09:00																										
ZZZZZZ			09:02																										
ZZZZZZ			09:04																										
ZZZZZZ			09:06																										
CCV 280-457940/12-A			09:09																										
CCB 280-457940/13-A			09:11																										
ZZZZZZ			09:13																										
ZZZZZZ			09:15																										
ZZZZZZ			09:17																										
ZZZZZZ			09:20																										
ZZZZZZ			09:22																										
ZZZZZZ			09:24																										
ZZZZZZ			09:26																										

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Instrument ID: MT_033 Analysis Method: 7470A

Start Date: 05/13/2019 16:14 End Date: 05/14/2019 12:01

Lab Sample Id	D/F	T y p e	Time	Analytes																									
				Hg																									
ZZZZZZ			09:29																										
ZZZZZZ			09:31																										
ZZZZZZ			09:33																										
CCV 280-457940/12-A			09:35																										
CCB 280-457940/13-A			09:37																										
ZZZZZZ			09:40																										
ZZZZZZ			09:42																										
ZZZZZZ			09:44																										
ZZZZZZ			09:46																										
ZZZZZZ			09:49																										
ZZZZZZ			09:51																										
ZZZZZZ			09:53																										
ZZZZZZ			09:55																										
ZZZZZZ			09:58																										
ZZZZZZ			10:00																										
CCV 280-457940/12-A			10:02																										
CCB 280-457940/13-A			10:04																										
ZZZZZZ			10:06																										
ZZZZZZ			10:09																										
ZZZZZZ			10:11																										
ZZZZZZ			10:13																										
ZZZZZZ			10:15																										
ZZZZZZ			10:18																										
ZZZZZZ			10:20																										
ZZZZZZ			10:22																										
ZZZZZZ			10:24																										
ZZZZZZ			10:26																										
CCV 280-457940/12-A			10:29																										
CCB 280-457940/13-A			10:31																										
ZZZZZZ			11:56																										
CCV 280-457940/12-A			11:58																										
CCB 280-457940/13-A			12:01																										

Prep Types: _____
T = Total/NA

15-IN
ICP INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

ICP Instrument ID: MT_025

Start Date: 05/13/2019 End Date: 05/13/2019

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Y 224.306	Q	Element Y 360.073	Q	Element Y 377.433	Q	Element	Q	Element	Q
ICIS 280-458049/1	07:32										
ICVH 280-458049/6	07:44	102		101		102					
ICVH 280-458049/7	07:47	102		102		103					
ICV 280-458049/8	07:50	102		100		103					
ICV 280-458049/9	07:52	100		100		101					
ICVL 280-458049/11	08:00	104		104		105					
ICVL 280-458049/12	08:03	104		103		104					
ICB 280-458049/15	08:14	100		101		102					
CRI 280-458049/17	08:23	100		98		99					
ICSA 280-458049/18	08:30	90		86		97					
ICSAB 280-458049/19	08:33	91		86		96					
CCVH 280-458049/25	12:21	95		94		94					
CCV 280-458049/26	12:23	96		96		95					
CCB 280-458049/27	12:26	96		95		92					
CCVL 280-458049/28	12:29	97		97		96					
MB 280-457070/1-A	12:31	99		99		96					
LCS 280-457070/2-A	12:34	98		96		97					
LCSD 280-457070/3-A	12:36	98		97		97					
CCVH 280-458049/37	12:51	97		96		95					
CCV 280-458049/38	12:53	98		99		97					
CCB 280-458049/39	12:55	102		101		98					
CCVL 280-458049/40	12:58	99		98		96					
280-123221-2	13:03	97		97		96					
280-123221-4	13:06	97		97		96					
280-123221-5	13:08	98		99		97					
280-123221-7	13:11	97		98		98					
280-123221-8	13:13	95		96		96					
280-123221-9	13:16	100		101		99					
280-123221-10	13:18	96		96		96					
280-123221-11	13:21	96		96		94					
280-123221-12	13:24	98		98		96					
CCVH 280-458049/51	13:26	96		94		93					
CCV 280-458049/52	13:29	100		99		97					
CCB 280-458049/53	13:31	101		102		99					
CCVL 280-458049/54	13:33	102		102		99					
280-123221-13	13:37	96		97		95					
CCVH 280-458049/64	13:59	96		96		95					
CCV 280-458049/65	14:02	98		98		95					
CCB 280-458049/66	14:04	99		99		96					
CCVL 280-458049/67	14:06	100		100		95					

15-IN
ICP INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

ICP Instrument ID: MT_025 Start Date: 05/13/2019 End Date: 05/13/2019

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Y		Element Y		Element Y		Element		Element	
		224.306	Q	360.073	Q	377.433	Q		Q		Q
ICV 280-458432/8	07:50	102		100		103					
ICV 280-458432/9	07:52	100		100		101					

15-IN
ICP INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

ICP Instrument ID: MT_025

Start Date: 05/14/2019 End Date: 05/14/2019

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Y 224.306	Q	Element Y 360.073	Q	Element Y 377.433	Q	Element	Q	Element	Q
ICIS 280-458211/1	09:07										
ICVH 280-458211/7	09:22	101		99		102					
ICV 280-458211/8	09:25	102		99		102					
ICV 280-458211/9	09:27	102		100		104					
ICVL 280-458211/10	09:30	103		101		103					
ICB 280-458211/14	09:41	99		101		104					
CRI 280-458211/15	09:43	101		99		101					
ICSA 280-458211/17	09:54	95		90		106					
ICSAB 280-458211/18	09:57	95		88		103					
CCVH 280-458211/20	10:01	99		97		103					
CCV 280-458211/21	10:04	102		100		104					
CCB 280-458211/22	10:06	104		102		105					
CCVL 280-458211/23	10:09	102		101		107					
MB 280-457070/1-A	11:36	103		101		103					
LCS 280-457070/2-A	11:39	102		99		104					
LCSD 280-457070/3-A	11:41	104		99		104					
CCVH 280-458211/33	11:58	104		98		104					
CCV 280-458211/34	12:01	106		102		108					
CCB 280-458211/35	12:03	106		103		107					
CCVL 280-458211/36	12:06	107		103		108					
280-123221-2	12:08	103		100		107					
280-123221-4	12:11	103		100		106					
280-123221-5	12:14	104		98		105					
280-123221-7	12:16	105		100		108					
280-123221-8	12:19	104		99		106					
280-123221-9	12:21	108		103		109					
280-123221-10	12:24	106		102		108					
280-123221-11	12:26	105		100		108					
280-123221-12	12:29	103		99		108					
280-123221-13	12:31	102		97		103					
CCVH 280-458211/47	12:34	103		97		103					
CCV 280-458211/48	12:36	106		101		106					
CCB 280-458211/49	12:39	107		102		106					
CCVL 280-458211/50	12:42	108		103		107					

15-IN
ICP INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

ICP Instrument ID: MT_025 Start Date: 05/14/2019 End Date: 05/14/2019

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Y 224.306	Q	Element Y 360.073	Q	Element Y 377.433	Q	Element	Q	Element	Q
ICV 280-458433/9	09:27	102		100		104					

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

ICP-MS Instrument ID: MT_078

Start Date: 05/13/2019 End Date: 05/14/2019

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6	Q	Element Sc/1	Q	Element Sc/2	Q	Element Ge/1	Q	Element Ge/2	Q
ICV 280-458135/7	12:40	100		101		100		101		98	
ICB 280-458135/8	12:46	99		101		99		99		98	
ICVL 280-458135/9	12:49	101		99		100		99		98	
CRI 280-458135/10	12:58	100		100		100		101		98	
CRI 280-458135/11	13:06	101		99		99		98		101	
ICSA 280-458135/13	13:14	95		93		94		94		94	
ICSAB 280-458135/14	13:17	91		94		96		93		95	
IC 280-458135/27	07:57	101		100		98		101		102	
CCV 280-458135/28	08:00	100		98		96		102		101	
CCB 280-458135/29	08:04	100		101		99		101		99	
CCVL 280-458135/30	08:07	101		101		100		98		98	
ICSA 280-458135/31	08:11	95		96		99		96		98	
ICSAB 280-458135/32	08:14	99		100		102		101		100	
CCV 280-458135/34	08:21	102		101		105		100		102	
CCB 280-458135/35	08:25	101		101		101		100		103	
CCVL 280-458135/36	08:28	101		100		100		100		103	
MB 280-457081/1-A	08:32	96		97		100		96		102	
LCS 280-457081/2-A	08:36	94		98		98		97		101	
LCSD 280-457081/3-A	08:39	94		98		97		98		101	
CCV 280-458135/47	09:07	97		98		98		97		102	
CCB 280-458135/48	09:11	97		99		99		99		102	
CCVL 280-458135/49	09:14	97		98		98		98		100	
280-123221-2	09:32	90		98		100		95		103	
280-123221-4	09:36	90		97		100		96		101	
280-123221-5	09:39	89		97		100		94		101	
280-123221-7	09:43	91		99		100		95		101	
CCV 280-458135/58	09:46	98		100		100		102		103	
CCB 280-458135/59	09:50	98		102		101		101		102	
CCVL 280-458135/60	09:53	99		98		100		98		102	
280-123221-8	09:57	90		97		99		96		98	
280-123221-9	10:00	90		96		98		96		100	
280-123221-10	10:04	90		99		102		97		101	
CCV 280-458135/64	10:07	96		100		103		100		103	
CCB 280-458135/65	10:11	98		100		101		99		102	
CCVL 280-458135/66	10:14	97		98		100		98		103	

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

ICP-MS Instrument ID: MT_078

Start Date: 05/13/2019 End Date: 05/14/2019

Lab Sample ID	Time	Internal Standards %RI For:									
		Element In	Q	Element Ho-165	Q	Element	Q	Element	Q	Element	Q
ICV 280-458135/7	12:40	99		101							
ICB 280-458135/8	12:46	99		103							
ICVL 280-458135/9	12:49	99		102							
CRI 280-458135/10	12:58	100		99							
CRI 280-458135/11	13:06	97		105							
ICSA 280-458135/13	13:14	92		100							
ICSAB 280-458135/14	13:17	93		99							
IC 280-458135/27	07:57	100		102							
CCV 280-458135/28	08:00	100		103							
CCB 280-458135/29	08:04	102		102							
CCVL 280-458135/30	08:07	101		104							
ICSA 280-458135/31	08:11	96		103							
ICSAB 280-458135/32	08:14	100		106							
CCV 280-458135/34	08:21	105		106							
CCB 280-458135/35	08:25	102		104							
CCVL 280-458135/36	08:28	104		105							
MB 280-457081/1-A	08:32	103		106							
LCS 280-457081/2-A	08:36	101		103							
LCSD 280-457081/3-A	08:39	102		102							
CCV 280-458135/47	09:07	101		99							
CCB 280-458135/48	09:11	100		102							
CCVL 280-458135/49	09:14	99		101							
280-123221-2	09:32	100		101							
280-123221-4	09:36	99		102							
280-123221-5	09:39	101		101							
280-123221-7	09:43	99		101							
CCV 280-458135/58	09:46	101		103							
CCB 280-458135/59	09:50	104		103							
CCVL 280-458135/60	09:53	102		106							
280-123221-8	09:57	99		103							
280-123221-9	10:00	101		104							
280-123221-10	10:04	103		104							
CCV 280-458135/64	10:07	103		107							
CCB 280-458135/65	10:11	101		105							
CCVL 280-458135/66	10:14	103		105							

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

ICP-MS Instrument ID: MT_078

Start Date: 05/14/2019 End Date: 05/14/2019

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Li-6	Q	Element Sc/1	Q	Element Sc/2	Q	Element Ge/1	Q	Element Ge/2	Q
IC 280-458262/8	14:11	102		100		96		99		102	
ICV 280-458262/9	14:15	104		101		96		100		101	
ICB 280-458262/10	14:18	103		97		97		94		102	
ICVL 280-458262/11	14:25	102		99		99		99		100	
CRI 280-458262/12	14:29	103		99		98		100		100	
CRI 280-458262/13	14:34	104		103		101		103		103	
ICSA 280-458262/15	14:41	94		93		97		92		96	
ICSAB 280-458262/16	14:44	95		93		96		92		95	
CCV 280-458262/32	15:40	107		99		97		97		98	
CCB 280-458262/33	15:44	103		99		100		96		100	
CCVL 280-458262/34	15:48	103		96		96		93		99	
MB 280-457081/1-A	15:52	99		100		98		95		99	
LCS 280-457081/2-A	15:55	101		98		98		95		99	
LCSD 280-457081/3-A	15:59	102		99		99		94		100	
CCV 280-458262/45	16:27	101		95		91		91		93	
CCB 280-458262/46	16:31	100		97		95		94		94	
CCVL 280-458262/47	16:34	101		93		91		91		94	
280-123221-2	16:52	97		94		94		92		95	
280-123221-4	16:56	93		93		91		89		93	
280-123221-5	17:00	96		93		89		89		95	
280-123221-7	17:03	95		93		95		89		98	
CCV 280-458262/56	17:07	100		95		92		90		96	
CCB 280-458262/57	17:10	96		94		94		90		98	
CCVL 280-458262/58	17:14	96		95		92		91		92	
280-123221-8	17:17	91		92		92		86		93	
280-123221-9	17:21	94		94		92		89		94	
280-123221-10	17:24	94		92		91		91		97	
280-123221-11	17:28	92		95		94		90		97	
280-123221-12	17:31	93		95		94		91		97	
280-123221-13	17:35	92		94		93		90		96	
CCV 280-458262/67	17:45	96		91		89		88		94	
CCB 280-458262/68	17:49	95		94		92		90		95	
CCVL 280-458262/69	17:52	94		90		92		87		94	
ICSA 280-458262/79	18:43	90		97		99		94		96	
ICSAB 280-458262/80	18:47	86		94		98		92		95	

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

ICP-MS Instrument ID: MT_078

Start Date: 05/14/2019 End Date: 05/14/2019

Lab Sample ID	Time	Internal Standards %RI For:									
		Element In	Q	Element Ho-165	Q	Element	Q	Element	Q	Element	Q
IC 280-458262/8	14:11	102		101							
ICV 280-458262/9	14:15	105		102							
ICB 280-458262/10	14:18	103		104							
ICVL 280-458262/11	14:25	104		102							
CRI 280-458262/12	14:29	101		101							
CRI 280-458262/13	14:34	101		103							
ICSA 280-458262/15	14:41	94		100							
ICSAB 280-458262/16	14:44	94		98							
CCV 280-458262/32	15:40	100		101							
CCB 280-458262/33	15:44	103		100							
CCVL 280-458262/34	15:48	98		100							
MB 280-457081/1-A	15:52	101		101							
LCS 280-457081/2-A	15:55	101		99							
LCSD 280-457081/3-A	15:59	102		101							
CCV 280-458262/45	16:27	97		98							
CCB 280-458262/46	16:31	100		101							
CCVL 280-458262/47	16:34	99		99							
280-123221-2	16:52	100		102							
280-123221-4	16:56	99		101							
280-123221-5	17:00	101		103							
280-123221-7	17:03	100		103							
CCV 280-458262/56	17:07	99		100							
CCB 280-458262/57	17:10	102		100							
CCVL 280-458262/58	17:14	100		103							
280-123221-8	17:17	95		100							
280-123221-9	17:21	101		100							
280-123221-10	17:24	101		99							
280-123221-11	17:28	99		102							
280-123221-12	17:31	100		106							
280-123221-13	17:35	102		103							
CCV 280-458262/67	17:45	99		101							
CCB 280-458262/68	17:49	99		99							
CCVL 280-458262/69	17:52	99		103							
ICSA 280-458262/79	18:43	92		98							
ICSAB 280-458262/80	18:47	94		97							

METALS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457070 Batch Start Date: 05/09/19 17:15 Batch Analyst: Lodl, Dagmara A

Batch Method: 3010A Batch End Date: 05/09/19 22:55

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	PREP SPK 1 00007	PREP SPK 2 00003	PREP SPK 3 00003
MB 280-457070/1		3010A, 6010C			50 mL	50 mL			
LCS 280-457070/2		3010A, 6010C			50 mL	50 mL	0.5 mL	0.5 mL	0.5 mL
LCSD 280-457070/3		3010A, 6010C			50 mL	50 mL	0.5 mL	0.5 mL	0.5 mL
280-123221-E-2	NTAmw-119-190401 -GW	3010A, 6010C	T	<2 SU	50 mL	50 mL			
280-123221-J-4	DET-003-190401-G W	3010A, 6010C	T	<2 SU	50 mL	50 mL			
280-123221-F-5	DET-003-190402-G W	3010A, 6010C	T	<2 SU	50 mL	50 mL			
280-123221-J-7	DET-004-190401-G W	3010A, 6010C	T	<2 SU	50 mL	50 mL			
280-123221-C-8	FWGmw-007-190401 -GW	3010A, 6010C	T	<2 SU	50 mL	50 mL			
280-123221-C-9	WBGmw-020-190401 -GW	3010A, 6010C	T	<2 SU	50 mL	50 mL			
280-123221-C-10	WBGmw-006-190401 -GW	3010A, 6010C	T	<2 SU	50 mL	50 mL			
280-123221-C-11	WBGmw-021-190401 -GW	3010A, 6010C	T	<2 SU	50 mL	50 mL			
280-123221-C-12	WBGmw-009-190401 -GW	3010A, 6010C	T	<2 SU	50 mL	50 mL			
280-123221-C-13	FWGmw-016-190401 -GW	3010A, 6010C	T	<2 SU	50 mL	50 mL			

Lab Sample ID	Client Sample ID	Method Chain	Basis	PREP SPK 4 00004	PREP SPK 4B 00001	PREP SPK 5 00002			
MB 280-457070/1		3010A, 6010C							
LCS 280-457070/2		3010A, 6010C		0.5 mL	0.5 mL	0.5 mL			
LCSD 280-457070/3		3010A, 6010C		0.5 mL	0.5 mL	0.5 mL			
280-123221-E-2	NTAmw-119-190401 -GW	3010A, 6010C	T						
280-123221-J-4	DET-003-190401-G W	3010A, 6010C	T						
280-123221-F-5	DET-003-190402-G W	3010A, 6010C	T						
280-123221-J-7	DET-004-190401-G W	3010A, 6010C	T						

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

6010C

METALS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457070 Batch Start Date: 05/09/19 17:15 Batch Analyst: Lodl, Dagmara ABatch Method: 3010A Batch End Date: 05/09/19 22:55

Lab Sample ID	Client Sample ID	Method Chain	Basis	PREP SPK 4 00004	PREP SPK 4B 00001	PREP SPK 5 00002			
280-123221-C-8	FWGmw-007-190401 -GW	3010A, 6010C	T						
280-123221-C-9	WBGmw-020-190401 -GW	3010A, 6010C	T						
280-123221-C-10	WBGmw-006-190401 -GW	3010A, 6010C	T						
280-123221-C-11	WBGmw-021-190401 -GW	3010A, 6010C	T						
280-123221-C-12	WBGmw-009-190401 -GW	3010A, 6010C	T						
280-123221-C-13	FWGmw-016-190401 -GW	3010A, 6010C	T						

Batch Notes	
Temperature - Corrected - End	94 Degrees C
Temperature - Corrected - Start	93 Degrees C
Digestion End Time	05/09/2019 22:55
Digestion Start Time	05/09/2019 17:15
Digestion Unit ID	11
Hydrochloric Acid ID	0000217157-05/03
Nitric Acid ID	0000216908-05/03
Pipette/Syringe/Dispenser ID	MET-116
Thermometer ID	MT-2050
Digestion Tube/Cup ID	1812117
Temperature - Uncorrected - End	94 Degrees C
Temperature - Uncorrected - Start	93 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

6010C

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METALS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457081 Batch Start Date: 05/09/19 17:15 Batch Analyst: Lodl, Dagmara ABatch Method: 3020A Batch End Date: 05/09/19 23:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	MS CALSTD-1 00136	MS spike 2 00080	
MB 280-457081/1		3020A, 6020A			50 mL	50 mL			
LCS 280-457081/2		3020A, 6020A			50 mL	50 mL	0.1 mL	0.1 mL	
LCSD 280-457081/3		3020A, 6020A			50 mL	50 mL	0.1 mL	0.1 mL	
280-123221-E-2	NTAmw-119-190401 -GW	3020A, 6020A	T	<2	50 mL	50 mL			
280-123221-J-4	DET-003-190401-G W	3020A, 6020A	T	<2	50 mL	50 mL			
280-123221-F-5	DET-003-190402-G W	3020A, 6020A	T	<2	50 mL	50 mL			
280-123221-J-7	DET-004-190401-G W	3020A, 6020A	T	<2	50 mL	50 mL			
280-123221-C-8	FWGmw-007-190401 -GW	3020A, 6020A	T	<2	50 mL	50 mL			
280-123221-C-9	WBGmw-020-190401 -GW	3020A, 6020A	T	<2	50 mL	50 mL			
280-123221-C-10	WBGmw-006-190401 -GW	3020A, 6020A	T	<2	50 mL	50 mL			
280-123221-C-11	WBGmw-021-190401 -GW	3020A, 6020A	T	<2	50 mL	50 mL			
280-123221-C-12	WBGmw-009-190401 -GW	3020A, 6020A	T	<2	50 mL	50 mL			
280-123221-C-13	FWGmw-016-190401 -GW	3020A, 6020A	T	<2	50 mL	50 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

6020A

Page 1 of 2

METALS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457081 Batch Start Date: 05/09/19 17:15 Batch Analyst: Lodl, Dagmara ABatch Method: 3020A Batch End Date: 05/09/19 23:00

Batch Notes	
Temperature - Corrected - End	94 Degrees C
Temperature - Corrected - Start	94 Degrees C
Digestion End Time	2300
Digestion Start Time	17:15
Digestion Unit ID	04
Lot # of Nitric Acid	0000216908-05/03
Pipette/Syringe/Dispenser ID	MET-88
Thermometer ID	QA-46
Digestion Tube/Cup ID	1812117
Temperature - Uncorrected - End	94 Degrees C
Temperature - Uncorrected - Start	95 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457916 Batch Start Date: 05/13/19 12:45 Batch Analyst: Lackey, Cara MBatch Method: 7470A Batch End Date: 05/13/19 14:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	Hg Daily Spk 02406		
MB 280-457916/1		7470A, 7470A		<2 SU	30 mL	50 mL			
LCS 280-457916/2		7470A, 7470A		<2 SU	30 mL	50 mL	1.5 mL		
LCSD 280-457916/3		7470A, 7470A		<2 SU	30 mL	50 mL	1.5 mL		
280-123221-E-2	NTAmw-119-190401 -GW	7470A, 7470A	T	<2 SU	30 mL	50 mL			
280-123221-J-4	DET-003-190401-G W	7470A, 7470A	T	<2 SU	30 mL	50 mL			
280-123221-F-5	DET-003-190402-G W	7470A, 7470A	T	<2 SU	30 mL	50 mL			
280-123221-J-7	DET-004-190401-G W	7470A, 7470A	T	<2 SU	30 mL	50 mL			
280-123221-C-8	FWGmw-007-190401 -GW	7470A, 7470A	T	<2 SU	30 mL	50 mL			
280-123221-C-9	WBGmw-020-190401 -GW	7470A, 7470A	T	<2 SU	30 mL	50 mL			
280-123221-C-10	WBGmw-006-190401 -GW	7470A, 7470A	T	<2 SU	30 mL	50 mL			
280-123221-C-11	WBGmw-021-190401 -GW	7470A, 7470A	T	<2 SU	30 mL	50 mL			
280-123221-C-12	WBGmw-009-190401 -GW	7470A, 7470A	T	<2 SU	30 mL	50 mL			
280-123221-C-13	FWGmw-016-190401 -GW	7470A, 7470A	T	<2 SU	30 mL	50 mL			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

7470A

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METALS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457916 Batch Start Date: 05/13/19 12:45 Batch Analyst: Lackey, Cara MBatch Method: 7470A Batch End Date: 05/13/19 14:45

Batch Notes	
Batch Comment	DV-MT-0017, a4
Temperature - Corrected - End	94 Degrees C
Temperature - Corrected - Start	95 Degrees C
Digestion End Time	1445
Digestion Start Time	1245
Digestion Unit ID	14
Sulfuric Acid ID	211749-04/18/20
Nitric Acid ID	216908-04/10/20
Hydroxylamine ID	183734-05/13/20
Potassium Persulfate ID	182397-05/13/20
Potassium Permanganate ID	211877-05/13/20
Pipette/Syringe/Dispenser ID	MET-114
Thermometer ID	QA-16
Digestion Tube/Cup ID	1808349
Temperature - Uncorrected - End	93 Degrees C
Temperature - Uncorrected - Start	94 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457940 Batch Start Date: 05/13/19 12:45 Batch Analyst: Lackey, Cara MBatch Method: 245.1 Batch End Date: 05/13/19 14:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	Hg Biwk ICV 00273	Hg Daily Spk 02406	
ICV 280-457940/9		245.1, 7470A		<2	30 mL	50 mL	0.3 mL		
ICB 280-457940/10		245.1, 7470A		<2	30 mL	50 mL			
CCV 280-457940/12		245.1, 7470A		<2	30 mL	50 mL		1.5 mL	
CCB 280-457940/13		245.1, 7470A		<2	30 mL	50 mL			

Batch Notes	
Batch Comment	dv-mt-0015, D5
Temperature - Corrected - End	95 Degrees C
Temperature - Corrected - Start	95 Degrees C
Digestion End Time	05/13/2019 14:45
Digestion Start Time	05/13/2019 12:45
Digestion Unit ID	12
Sulfuric Acid Lot Number	211749-04/18/20
Nitric Acid ID	216908-04/10/20
Hydroxylamine ID	183734-05/13/20
Potassium Persulfate ID	182397-05/13/20
Potassium Permanganate ID	11877-05/13/20
Pipette/Syringe/Dispenser ID	met-114
Thermometer ID	908002329
Digestion Tube/Cup ID	1808349
Temperature - Uncorrected - End	95 Degrees C
Temperature - Uncorrected - Start	95 Degrees C

Basis	Basis Description

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Sample Name: ICIS Acquired: 5/13/2019 7:32:09 Type: Cal
Method: 6500_025(v4) Mode: IR Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00142	.00275	-.01171	-.00042	.00110	-.01262	-.00350	-.00337	.01002	.00131	.00050	-.00048
Stddev	.00008	.00011	.00044	.00006	.00003	.00470	.00151	.00008	.00104	.00012	.00030	.00026
%RSD	5.3029	4.1287	3.7751	13.674	2.8678	37.208	43.176	2.4658	10.402	9.1818	59.227	53.955

#1	-.00137	.00267	-.01202	-.00046	.00112	-.00930	-.00457	-.00331	.01075	.00123	.00029	-.00030
#2	-.00147	.00283	-.01140	-.00038	.00108	-.01594	-.00243	-.00343	.00928	.00140	.00071	-.00067

Elem	Cu3247	Fe2599	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Na8183	Ni2316	P_1782
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00861	.00072	.00066	.00573	.00974	.00017	-.00002	.00069	.00050	-.02113	-.00089	.00060
Stddev	.00004	.00015	.00012	.00033	.00140	.00001	.00009	.00031	.00426	.00129	.00049	.00009
%RSD	.44317	21.242	18.811	5.7272	14.384	8.4328	483.56	44.604	850.09	6.0991	54.654	14.686

#1	.00858	.00083	.00074	.00550	.00875	.00018	.00005	.00047	-.00251	-.02204	-.00124	.00054
#2	.00864	.00061	.00057	.00596	.01073	.00016	-.00008	.00091	.00351	-.02022	-.00055	.00066

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00040	.00032	.00110	.00016	.00044	.00044	.00035	.00058	-.00069	-.00044	.00015	-.00290
Stddev	.00009	.00009	.00004	.00003	.00097	.00097	.00004	.00070	.00003	.00003	.00015	.00018
%RSD	22.101	26.730	3.5036	18.883	221.55	221.55	10.396	119.98	4.8965	6.8068	99.931	6.2013

#1	-.00034	.00026	.00112	.00018	-.00025	-.00025	.00033	.00108	-.00072	-.00042	.00004	-.00278
#2	-.00046	.00038	.00107	.00014	.00112	.00112	.00038	.00009	-.00067	-.00046	.00026	-.00303

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00005	.00002	-.00333
Stddev	.00011	.00000	.00065
%RSD	225.79	2.9993	19.518

#1	-.00003	.00002	-.00378
#2	.00013	.00002	-.00287

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4424.3	51967.	4095.7
Stddev	27.3	170.	30.1
%RSD	.61648	.32632	.73517

#1	4405.0	52087.	4074.4
#2	4443.5	51847.	4116.9

Sample Name: ICAL1 Acquired: 5/13/2019 7:34:47 Type: Cal
Method: 6500_025(v4) Mode: IR Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599	K_7664
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.23116	.17911	.07076	.26158	4.8801	5.7176	1.6551	1.6886	.94151	.88725	.24604	.67129	3.2222
Stddev	.00006	.00046	.00021	.00064	.0000	.0106	.0024	.0026	.00080	.00463	.00031	.00137	.0024
%RSD	.02596	.25718	.30202	.24452	.00049	.18589	.14355	.15289	.08539	.52167	.12624	.20463	.07496
#1	.23112	.17944	.07091	.26204	4.8801	5.7101	1.6534	1.6904	.94208	.89052	.24582	.67032	3.2205
#2	.23120	.17878	.07061	.26113	4.8801	5.7252	1.6568	1.6868	.94094	.88398	.24626	.67226	3.2240
Elem	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	Sb2068	Se1960	Si2881	SiO2	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1.7383	1.1252	1.4992	.48296	1.4590	.81843	.11296	.48382	.17556	.08524	.23637	.23637	.21223
Stddev	.0059	.0009	.0007	.00056	.0014	.00358	.00015	.00096	.00050	.00031	.00245	.00245	.00085
%RSD	.33750	.07628	.04953	.11635	.09881	.43731	.13543	.19911	.28698	.36594	1.0355	1.0355	.39946
#1	1.7341	1.1246	1.4987	.48336	1.4580	.82096	.11285	.48450	.17591	.08546	.23464	.23464	.21283
#2	1.7424	1.1258	1.4998	.48256	1.4600	.81590	.11306	.48313	.17520	.08502	.23811	.23811	.21163
Elem	Sr4077	Ti3349	Tl1908	V_2924	Zn2062	Zr3391							
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S							
Avg	9.0103	.36067	.18428	.23943	.03625	.30897							
Stddev	.0194	.00039	.00015	.00008	.00009	.00135							
%RSD	.21511	.10908	.08046	.03323	.24936	.43804							
#1	8.9965	.36039	.18439	.23938	.03619	.30801							
#2	9.0240	.36095	.18418	.23949	.03632	.30992							
Int. Std.	Y_2243	Y_3600	Y_3774										
Units	Cts/S	Cts/S	Cts/S										
Avg	4402.7	50946.	4103.2										
Stddev	12.4	67.	6.3										
%RSD	.28262	.13204	.15374										
#1	4393.9	50898.	4107.7										
#2	4411.5	50993.	4098.8										

Sample Name: ICAL2 Acquired: 5/13/2019 7:37:08 Type: Cal
Method: 6500_025(v4) Mode: IR Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Al3092	Bi2230	Fe2714	Na8183	S_1820	Th2837	U_3701
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3.1708	.22565	.61630	2.0306	.27232	.61966	.12815
Stddev	.0144	.00238	.00400	.0084	.00238	.00002	.00043
%RSD	.45388	1.0529	.64926	.41469	.87350	.00242	.33888
#1	3.1606	.22733	.61347	2.0247	.27400	.61964	.12846
#2	3.1810	.22397	.61913	2.0366	.27064	.61967	.12785
Int. Std.	Y_2243	Y_3600	Y_3774				
Units	Cts/S	Cts/S	Cts/S				
Avg	4348.4	50836.	4128.4				
Stddev	16.1	384.	17.3				
%RSD	.36919	.75551	.41847				
#1	4359.7	50564.	4140.6				
#2	4337.0	51108.	4116.1				

Sample Name: S1-5690580 Acquired: 5/13/2019 7:39:43 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98897	1.0021	1.9769	.99059	.99422	.99312	-.00122	9.9810	.99139	.99324	.99319	.99291	4.9846
Stddev	.00012	.0070	.0038	.00094	.00091	.00215	.00165	.0072	.00217	.00185	.00164	.00116	.0185
%RSD	.01172	.70051	.19407	.09471	.09120	.21669	135.45	.07193	.21929	.18675	.16491	.11676	.37114

#1	.98905	1.0071	1.9796	.99125	.99487	.99464	-.00005	9.9860	.99293	.99455	.99435	.99373	4.9977
#2	.98888	.99716	1.9741	.98992	.99358	.99160	-.00238	9.9759	.98985	.99193	.99203	.99209	4.9716

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	99.626	1.9857	39.807	.99439	.99381	10.216	9.9881	.99214	1.9808	1.9839	-.00931	1.9718	1.9758
Stddev	.048	.0017	.009	.00140	.00316	.008	.7544	.00081	.0037	.0020	.00121	.0001	.0022
%RSD	.04806	.08298	.02310	.14089	.31775	.07759	7.5533	.08209	.18887	.09879	12.982	.00363	.10858

#1	99.660	1.9869	39.800	.99340	.99605	10.210	9.4546	.99272	1.9835	1.9853	-.00846	1.9718	1.9743
#2	99.592	1.9846	39.813	.99538	.99158	10.221	10.522	.99156	1.9782	1.9825	-.01017	1.9717	1.9774

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
Value													
Range													

Elem	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.8174	21.009	1.9782	.99390	.00042	.99284	1.9766	.00650	.99754	1.0011	.98847
Stddev	.0160	.034	.0026	.00066	.00332	.00211	.0050	.02666	.00087	.0016	.00649
%RSD	.16306	.16306	.13322	.06664	787.87	.21208	.25558	410.05	.08769	.16207	.65637

#1	9.8288	21.034	1.9801	.99437	-.00193	.99135	1.9801	.02535	.99693	.99993	.99306
#2	9.8061	20.985	1.9764	.99343	.00277	.99433	1.9730	-.01235	.99816	1.0022	.98388

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value											
Range											

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4422.6	51182.	4145.5
Stddev	4.4	270.	5.3
%RSD	.09981	.52657	.12863

#1	4425.7	51373.	4141.7
#2	4419.4	50992.	4149.3

Sample Name: S2-5690582 Acquired: 5/13/2019 7:42:03 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00580	99.414	.00113	.00730	.00464	.00253	1.9691	.03645	.00192	.00494	.00256	.03184	99.928
Stddev	.00009	.016	.00565	.00072	.00004	.00003	.0048	.00035	.00006	.00036	.00022	.00038	.312
%RSD	1.5189	.01595	502.39	9.8465	.93778	1.3439	.24230	.95170	3.0975	7.3055	8.7105	1.1857	.31263

#1	.00573	99.402	.00512	.00679	.00461	.00255	1.9724	.03669	.00187	.00520	.00240	.03211	100.15
#2	.00586	99.425	-.00287	.00781	.00467	.00250	1.9657	.03620	.00196	.00469	.00271	.03158	99.707

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.58173	.00642	.00827	.00758	.00221	497.57	.00820	.00759	.00884	9.9708	.01235	-.00178	.03766
Stddev	.06479	.00081	.00335	.00007	.00033	1.08	.00026	.00115	.00101	.0212	.00197	.00650	.00812
%RSD	11.137	12.649	40.464	.95367	14.809	.21670	3.2267	15.151	11.401	.21275	15.949	365.22	21.561

#1	.53592	.00700	.01063	.00763	.00198	498.33	.00839	.00841	.00813	9.9858	.01375	.00282	.04341
#2	.62754	.00585	.00590	.00753	.00244	496.81	.00802	.00678	.00956	9.9558	.01096	-.00638	.03192

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08060	.00481	.00362	9.8615	-.02002	.00276	20.021	.01123	.00608	.15085
Stddev	.01738	.00233	.00016	.0252	.00028	.00116	.038	.00060	.00007	.00510
%RSD	21.561	48.469	4.2896	.25585	1.4233	42.109	.18965	5.3266	1.2011	3.3827

#1	.09289	.00646	.00351	9.8793	-.01982	.00194	20.048	.01165	.00613	.14724
#2	.06831	.00316	.00373	9.8436	-.02022	.00358	19.994	.01080	.00603	.15445

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4381.6	50103.	4094.1
Stddev	17.8	83.	3.9
%RSD	.40724	.16610	.09513

#1	4369.0	50162.	4091.4
#2	4394.2	50045.	4096.9

Sample Name: ICVH-5699387 Acquired: 5/13/2019 7:44:39 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00145	41.109	-.00238	.00086	.00031	.00021	.51328	.00399	-.00027	-.00058	.00071	.00913
Stddev	.00056	.301	.00123	.00092	.00032	.00007	.00268	.00017	.00003	.00023	.00014	.00072
%RSD	38.911	.73165	51.736	106.80	103.12	34.403	.52202	4.3324	10.119	39.144	20.102	7.8459
#1	.00105	40.896	-.00151	.00150	.00008	.00016	.51517	.00411	-.00025	-.00042	.00081	.00863
#2	.00185	41.322	-.00325	.00021	.00053	.00026	.51138	.00387	-.00029	-.00074	.00061	.00964
Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												
Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	81.645	.07787	.00085	-.02173	.00060	-.00100	41.229	.00041	-.00466	.00179	W 3.7295	.00146
Stddev	.192	.10531	.00271	.00637	.00017	.00015	.190	.00055	.00092	.00110	.0141	.00265
%RSD	.23494	135.23	319.34	29.296	28.431	14.988	.46080	134.40	19.698	61.496	.37868	182.23
#1	81.510	.00341	.00276	-.02623	.00048	-.00090	41.363	.00002	-.00401	.00101	3.7394	-.00042
#2	81.781	.15234	-.00107	-.01723	.00072	-.00111	41.095	.00079	-.00531	.00257	3.7195	.00333
Check ?	Chk Pass	None	None	None	None	None	Chk Pass	None	None	None	Chk Warn	None
Value											4.0000	
Range											-5.4900%	
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00465	-.00301	-.00643	-.00141	.00010	3.0047	-.00743	-.00025	5.2360	.00362	-.00212	.04082
Stddev	.00357	.01490	.03190	.00014	.00012	.0133	.00012	.00110	.0069	.00078	.00017	.00132
%RSD	76.667	495.96	495.96	9.8069	124.56	.44337	1.5729	439.87	.13183	21.533	7.8626	3.2427
#1	-.00717	.00753	.01612	-.00131	.00001	2.9953	-.00735	.00053	5.2408	.00307	-.00224	.03988
#2	-.00213	-.01354	-.02898	-.00150	.00018	3.0141	-.00752	-.00103	5.2311	.00417	-.00200	.04175
Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4514.2	52270.	4172.6									
Stddev	5.4	160.	6.1									
%RSD	.11854	.30604	.14559									
#1	4510.4	52383.	4176.9									
#2	4517.9	52157.	4168.3									

Sample Name: ICVH-5699387 Acquired: 5/13/2019 7:47:56 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	41.116	-.00365	.00024	.00068	-.00011	.52137	.00268	-.00020	-.00034	.00056	.00873
Stddev	.00006	.044	.00357	.00142	.00014	.00004	.00294	.00052	.00010	.00032	.00019	.00058
%RSD	17.987	.10643	97.850	594.68	21.020	31.874	.56306	19.303	49.852	94.839	34.377	6.6688
#1	.00030	41.146	-.00618	-.00076	.00078	-.00009	.52345	.00231	-.00027	-.00011	.00043	.00832
#2	.00038	41.085	-.00113	.00124	.00058	-.00013	.51930	.00305	-.00013	-.00057	.00070	.00914
Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												
Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	81.714	-.04983	-.00045	-.02769	.00057	-.00111	41.782	.00073	-.00525	.00021	3.7854	.00231
Stddev	.280	.02162	.00086	.00848	.00005	.00017	.066	.00033	.00154	.00018	.0152	.00070
%RSD	.34264	43.390	189.74	30.630	9.1643	15.127	.15763	45.901	29.350	85.169	.40270	30.186
#1	81.516	-.06512	.00015	-.02170	.00060	-.00123	41.735	.00097	-.00416	.00008	3.7962	.00182
#2	81.912	-.03454	-.00106	-.03369	.00053	-.00099	41.828	.00049	-.00634	.00034	3.7746	.00280
Check ?	Chk Pass	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None
Value												
Range												
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00125	.03766	.08058	-.00179	.00017	3.0174	-.00744	-.00285	W 5.3038	.00309	-.00212	.04514
Stddev	.00503	.01346	.02881	.00012	.00007	.0017	.00009	.00215	.0006	.00019	.00015	.00202
%RSD	402.29	35.755	35.755	6.6386	38.069	.05688	1.1802	75.373	.01157	6.0499	6.9306	4.4745
#1	.00481	.02814	.06021	-.00188	.00013	3.0162	-.00738	-.00437	5.3042	.00295	-.00222	.04371
#2	-.00231	.04718	.10096	-.00171	.00022	3.0186	-.00751	-.00133	5.3034	.00322	-.00202	.04657
Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Warn	None	None	None
Value									5.0000			
Range									5.4900%			
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4530.4	52863.	4227.0									
Stddev	1.4	233.	15.2									
%RSD	.03130	.44120	.35968									
#1	4529.4	53028.	4237.7									
#2	4531.4	52698.	4216.2									

Sample Name: ICV-5699388 Acquired: 5/13/2019 7:50:28 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.25106	.25438	.23726	.24368	.24543	.24702	.52156	2.4782	.24528	.24706	.24646	.24689	1.2401
Stddev	.00007	.00183	.00108	.00045	.00120	.00070	.00147	.0069	.00081	.00118	.00081	.00071	.0071
%RSD	.02824	.72032	.45571	.18475	.48691	.28400	.28111	.27739	.32892	.47704	.32875	.28863	.56994

#1	.25101	.25567	.23649	.24336	.24627	.24751	.52259	2.4734	.24585	.24790	.24704	.24638	1.2451
#2	.25111	.25308	.23802	.24400	.24458	.24652	.52052	2.4831	.24471	.24623	.24589	.24739	1.2351

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.740	.24417	9.8411	.24968	.24423	12.290	.24779	2.0089	.24391	-.00278	.23748	.24394	2.4043
Stddev	.064	.00428	.0169	.00028	.00012	.038	.00030	.0079	.00063	.00446	.00225	.00145	.0141
%RSD	.25959	1.7515	.17189	.11064	.04879	.30888	.12234	.39216	.25662	160.26	.94670	.59579	.58509

#1	24.785	.24719	9.8531	.24988	.24432	12.317	.24801	2.0144	.24347	.00037	.23907	.24497	2.4142
#2	24.694	.24115	9.8292	.24949	.24415	12.263	.24758	2.0033	.24436	-.00593	.23589	.24291	2.3943

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.1452	.24394	.24589	.00411	.24642	.25036	.02213	.24646	.24796	.24020
Stddev	.0301	.00116	.00080	.00117	.00065	.00028	.02523	.00082	.00105	.00140
%RSD	.58509	.47636	.32716	28.451	.26437	.11021	114.01	.33331	.42239	.58473

#1	5.1664	.24476	.24646	.00494	.24688	.25056	.00429	.24704	.24870	.24119
#2	5.1239	.24312	.24532	.00329	.24596	.25017	.03997	.24588	.24721	.23921

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4495.5	52226.	4218.9
Stddev	1.2	365.	5.2
%RSD	.02697	.69943	.12304

#1	4496.4	51968.	4222.6
#2	4494.7	52485.	4215.2

Sample Name: ICV-5699388 Acquired: 5/13/2019 7:52:54 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.25072	.25452	.24142	.24494	.24694	.24677	.52088	2.4835	.24618	.24800	.24722	.24528	1.2397
Stddev	.00115	.00163	.00106	.00268	.00099	.00153	.00533	.0055	.00072	.00089	.00104	.00016	.0100
%RSD	.45789	.64019	.43870	1.0958	.39931	.61842	1.0232	.22284	.29262	.35813	.41897	.06696	.80334

#1	.24990	.25567	.24217	.24684	.24624	.24569	.52465	2.4874	.24669	.24863	.24795	.24539	1.2327
#2	.25153	.25337	.24068	.24304	.24764	.24785	.51711	2.4796	.24567	.24737	.24649	.24516	1.2467

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.808	.24539	9.8099	.24929	.24622	12.644	.24923	2.0158	.24642	-.00703	.23850	.24152	2.4461
Stddev	.084	.00334	.0053	.00004	.00190	.305	.00208	.0141	.00012	.00014	.00421	.00370	.0436
%RSD	.33859	1.3616	.05429	.01784	.77171	2.4106	.83573	.70213	.04754	2.0001	1.7665	1.5319	1.7815

#1	24.749	.24303	9.8062	.24932	.24756	12.428	.25071	2.0258	.24634	-.00693	.24148	.23891	2.4153
#2	24.867	.24776	9.8137	.24926	.24488	12.859	.24776	2.0058	.24650	-.00713	.23552	.24414	2.4769

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.2347	.24423	.24705	.00053	.24554	.24962	.00642	.24671	.24844	.24206
Stddev	.0933	.00106	.00233	.00052	.00061	.00107	.00578	.00118	.00120	.00209
%RSD	1.7815	.43473	.94276	99.371	.24777	.42963	89.995	.47746	.48103	.86198

#1	5.1687	.24498	.24541	.00016	.24511	.25038	.01051	.24588	.24759	.24059
#2	5.3006	.24348	.24870	.00090	.24597	.24886	.00234	.24755	.24928	.24354

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4429.0	51788.	4140.8
Stddev	4.8	117.	27.7
%RSD	.10924	.22569	.66864

#1	4432.4	51871.	4160.4
#2	4425.6	51706.	4121.2

Sample Name: xICVL-5699390 Acquired: 5/13/2019 7:55:42 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00965	.10158	F .00806	.09628	.00963	.00109	.11345	.20332	.00473	.01009	.01001	.01523
Stddev	.00024	.00042	.00565	.00007	.00009	.00007	.00408	.00255	.00010	.00013	.00003	.00093
%RSD	2.4776	.41684	70.147	.07492	.88660	6.2841	3.5926	1.2558	2.0962	1.2841	.29119	6.1321

#1	.00948	.10128	.00406	.09623	.00969	.00114	.11057	.20152	.00480	.01018	.01003	.01589
#2	.00982	.10188	.01205	.09633	.00957	.00104	.11633	.20513	.00466	.01000	.00999	.01457

Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.01500									
Range			-30.000%									

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09962	2.9100	.01924	.19457	.01018	.01935	1.0445	.04083	2.8343	.00815	.09405	.01655
Stddev	.00210	.0392	.00302	.00133	.00009	.00006	.0097	.00010	.0024	.00073	.00198	.00300
%RSD	2.1112	1.3471	15.680	.68563	.91997	.29877	.93061	.24709	.08486	8.9851	2.1104	18.129

#1	.10110	2.9377	.01710	.19551	.01012	.01939	1.0376	.04076	2.8360	.00763	.09545	.01867
#2	.09813	2.8823	.02137	.19363	.01025	.01931	1.0514	.04090	2.8326	.00867	.09264	.01443

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01921	.52853	1.1310	.09926	.00993	.01451	.00925	.01405	F .09851	.00958	.02059	.01373
Stddev	.00444	.02550	.0546	.00019	.00007	.00165	.00068	.00046	.03016	.00040	.00061	.00291
%RSD	23.107	4.8249	4.8249	.19403	.75350	11.362	7.3613	3.2432	30.614	4.1917	2.9865	21.158

#1	.02235	.51049	1.0925	.09940	.00999	.01335	.00876	.01437	.11983	.00987	.02015	.01579
#2	.01607	.54656	1.1696	.09913	.00988	.01568	.00973	.01373	.07718	.00930	.02102	.01168

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value									.06000			
Range									30.000%			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4562.2	53543.	4213.6
Stddev	6.2	66.	32.6
%RSD	.13549	.12411	.77406

#1	4566.6	53590.	4190.5
#2	4557.8	53496.	4236.6

Sample Name: ICVL-5699390 Acquired: 5/13/2019 8:00:51 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00949	.10087	.01414	.09639	.00985	.00120	.10967	.19868	.00488	.01005	.01004	.01569
Stddev	.00055	.00058	.00144	.00004	.00062	.00003	.00163	.00099	.00011	.00011	.00002	.00029
%RSD	5.7897	.57488	10.197	.03752	6.3296	2.4181	1.4866	.49683	2.3309	1.1094	.16692	1.8573

#1	.00988	.10046	.01312	.09636	.00941	.00118	.11082	.19798	.00496	.01013	.01002	.01548
#2	.00910	.10128	.01516	.09641	.01029	.00122	.10852	.19938	.00480	.00997	.01005	.01590

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10239	2.8918	.01542	.19474	.01018	.01948	1.0149	.04098	2.8485	.00790	.09451	.01408
Stddev	.00300	.0175	.00349	.00235	.00005	.00007	.0123	.00006	.0058	.00017	.00577	.00231
%RSD	2.9344	.60543	22.648	1.2085	.51575	.34788	1.2156	.14160	.20261	2.1010	6.1004	16.376

#1	.10451	2.9042	.01789	.19308	.01014	.01953	1.0062	.04094	2.8526	.00778	.09858	.01245
#2	.10026	2.8794	.01295	.19640	.01022	.01943	1.0236	.04102	2.8445	.00801	.09043	.01571

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02329	.50737	1.0858	.09900	.00994	.01522	.00923	.01246	F .10771	.00977	.02186	F .01002
Stddev	.00375	.01252	.0268	.00061	.00007	.00121	.00005	.00052	.00759	.00029	.00033	.00258
%RSD	16.102	2.4683	2.4683	.61370	.71049	7.9472	.51119	4.1558	7.0481	2.9333	1.5157	25.699

#1	.02064	.51622	1.1047	.09857	.00989	.01436	.00920	.01209	.10234	.00997	.02163	.00820
#2	.02594	.49851	1.0668	.09943	.00999	.01607	.00927	.01282	.11307	.00957	.02209	.01184

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail
Value									.06000			.01500
Range									30.000%			-30.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4602.9	53935.	4291.4
Stddev	13.9	2.	10.3
%RSD	.30160	.00386	.24095

#1	4612.7	53936.	4284.1
#2	4593.1	53933.	4298.7

Sample Name: ICVL-5699390 Acquired: 5/13/2019 8:03:29 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00964	.10103	.01461	.09624	.00996	.00106	.11341	.19872	.00515	.01030	.00998	.01557
Stddev	.00030	.00100	.00134	.00154	.00005	.00006	.00583	.00401	.00008	.00023	.00002	.00012
%RSD	3.1384	.98716	9.1683	1.5987	.51935	5.3673	5.1363	2.0175	1.5415	2.2478	.16704	.79826

#1	.00985	.10173	.01556	.09733	.00993	.00102	.11753	.19588	.00510	.01013	.00999	.01548
#2	.00942	.10032	.01366	.09515	.01000	.00110	.10929	.20155	.00521	.01046	.00997	.01566

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09869	2.8833	.01849	.19339	.01022	.01913	1.0213	.04120	2.8567	.00830	.09554	.01480
Stddev	.00055	.0124	.00099	.00142	.00001	.00001	.0143	.00012	.0037	.00090	.00740	.00122
%RSD	.55336	.42827	5.3758	.73490	.13333	.06590	1.4028	.29522	.12776	10.864	7.7429	8.2566

#1	.09830	2.8921	.01779	.19440	.01022	.01914	1.0112	.04129	2.8593	.00893	.10077	.01566
#2	.09908	2.8746	.01919	.19239	.01021	.01912	1.0314	.04112	2.8541	.00766	.09031	.01393

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02079	.51587	1.1040	.09897	.00999	.01362	.00925	.01167	F .09930	.00933	.02194	F .00671
Stddev	.00263	.04074	.0872	.00099	.00001	.00008	.00072	.00002	.01946	.00025	.00008	.00075
%RSD	12.633	7.8977	7.8977	1.0030	.12094	.62280	7.7838	.17036	19.602	2.7013	.36142	11.165

#1	.01893	.48706	1.0423	.09967	.00998	.01368	.00976	.01166	.11306	.00915	.02188	.00724
#2	.02264	.54468	1.1656	.09827	.01000	.01356	.00874	.01169	.08553	.00951	.02199	.00618

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail
Value									.06000			.01500
Range									30.000%			-30.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4581.8	53715.	4277.1
Stddev	3.3	202.	10.6
%RSD	.07174	.37644	.24713

#1	4579.5	53572.	4284.5
#2	4584.2	53858.	4269.6

Sample Name: xCCVH-5690583 Acquired: 5/13/2019 8:09:48 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .00926	F 37.416	k -.00046	k .00275	k .00123	k .00098	k 1.0052	k .01577	k .00012	k .00351	k .00146	k .02287
Stddev	.00823	18.828	.00429	.00130	.00136	.00024	.0129	.01053	.00116	.00163	.00003	.00782
%RSD	88.860	50.320	935.68	47.377	111.10	24.295	1.2793	66.762	988.48	46.351	1.8741	34.183

#1	k .01507	24.103	k -.00349	k .00367	k .00026	k .00081	k .99612	k .00833	k -.00070	k .00466	k .00144	k .02839
#2	.00344	50.729	.00258	.00183	.00219	.00115	1.0143	.02322	.00094	.00236	.00148	.01734

Check ?	None	Chk Fail	None	None	None	None	Chk Pass	None	None	None	None	None
Value		50.000										
Range		-10.490%										

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	kF 36.713	.04546	-0.00298	k .01210	k .00331	k .00005	F 184.63	k .00435	k .00273	k .00692	k 5.0394	k -.00475
Stddev	18.180	.06372	.00033	.01863	.00050	.00065	91.71	.00010	.00134	.00629	.0105	.01126
%RSD	49.518	140.16	11.098	153.91	15.104	1336.1	49.671	2.3791	49.108	90.908	.20830	236.91

#1	k 23.858	.00041	-.00321	k .02528	k .00296	k -.00041	119.78	k .00442	k .00178	k .01138	k 5.0320	k -.01272
#2	49.568	.09051	-.00274	-.00107	.00366	.00051	249.47	.00428	.00368	.00247	5.0468	.00321

Check ?	Chk Fail	None	None	None	None	None	Chk Fail	None	None	None	Chk Pass	None
Value	50.000						250.00					
Range	-10.490%						-10.490%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .00002	k .02266	k .04849	k .00207	.00125	k 5.1489	k .00319	k -.00277	k 10.431	k .00729	k .00376	k .10100
Stddev	.00412	.02501	.05353	.00195	.00074	.1641	.02130	.00250	.076	.00362	.00062	.03941
%RSD	16656.	110.39	110.39	94.325	58.569	3.1873	667.52	90.108	.72743	49.715	16.518	39.017

#1	k -.00289	k .04034	k .08634	k .00345	.00074	k 5.2649	k .01825	k -.00454	k 10.378	k .00985	k .00420	k .12887
#2	.00294	.00497	.01064	.00069	.00177	5.0328	-.01187	-.00101	10.485	.00472	.00332	.07314

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4356.4	49907.	4068.2
Stddev	62.9	433.	56.4
%RSD	1.4431	.86663	1.3863

#1	4311.9	50213.	4028.3
#2	4400.8	49602.	4108.1

Sample Name: CCV-5690581 Acquired: 5/13/2019 8:12:02 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49447	.52131	.97900	.49240	.49263	.49446	.00125	4.9157	.49347	.49904	.49463	.49718	2.4817
Stddev	.00152	.00703	.00015	.00071	.00089	.00080	.00086	.0171	.00244	.00318	.00300	.00103	.0065
%RSD	.30703	1.3488	.01501	.14480	.18081	.16090	68.753	.34821	.49373	.63747	.60640	.20713	.26250

#1	.49554	.52628	.97889	.49290	.49200	.49389	.00186	4.9036	.49520	.50129	.49675	.49646	2.4863
#2	.49339	.51633	.97910	.49190	.49326	.49502	.00064	4.9278	.49175	.49679	.49251	.49791	2.4771

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	49.111	.99727	19.757	.50084	.49425	5.1241	.49906	.97072	.99428	.00239	.98026	.98451	4.8578
Stddev	.105	.00358	.016	.00043	.00385	.0006	.00291	.00294	.00490	.00696	.00470	.00065	.0578
%RSD	.21427	.35889	.08063	.08498	.77803	.01175	.58331	.30280	.49306	291.76	.47943	.06616	1.1897

#1	49.037	.99474	19.745	.50114	.49697	5.1245	.50111	.97280	.99775	-.00254	.98358	.98497	4.8986
#2	49.186	.99980	19.768	.50054	.49153	5.1237	.49700	.96864	.99082	.00731	.97693	.98405	4.8169

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.396	.98335	.49919	.00379	.50040	.99895	-.00667	.49950	.49932	.48289
Stddev	.124	.00738	.00058	.00132	.00070	.00418	.03478	.00173	.00019	.00425
%RSD	1.1897	.75053	.11669	34.865	.14061	.41834	521.06	.34709	.03894	.88088

#1	10.483	.98857	.49877	.00285	.50090	1.0019	.01792	.50073	.49946	.48589
#2	10.308	.97813	.49960	.00472	.49990	.99599	-.03127	.49828	.49918	.47988

Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4430.8	51316.	4191.7
Stddev	16.9	28.	11.1
%RSD	.38232	.05414	.26524

#1	4418.8	51336.	4199.6
#2	4442.7	51297.	4183.9

Sample Name: ICB Acquired: 5/13/2019 8:14:24 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	-.00197	-.00293	-.00009	-.00002	.00021	.00145	.00005	.00001	-.00027	.00005	.00051	.00430
Stddev	.00010	.00059	.00122	.00017	.00035	.00006	.00223	.00135	.00029	.00020	.00026	.00103	.00118
%RSD	26.252	29.752	41.786	187.45	2205.7	27.810	153.33	2932.8	2813.4	76.732	575.70	201.41	27.389

#1	.00047	-.00239	-.00207	-.00021	-.00027	.00017	.00303	.00100	-.00019	-.00012	-.00014	.00124	.00347
#2	.00033	-.00156	-.00380	.00003	.00023	.00026	-.00012	-.00091	.00021	-.00041	.00023	-.00022	.00513

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit													
Low Limit													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.03850	-.00108	-.00445	-.00003	.00035	.04061	.00012	-.00598	-.00207	-.00222	-.00120	.00536	.04602
Stddev	.02689	.00149	.00012	.00000	.00035	.01850	.00019	.00084	.00012	.00334	.00288	.00275	.00008
%RSD	69.847	137.96	2.6865	3.7090	101.35	45.562	159.20	13.971	5.6614	150.86	239.77	51.252	.17870

#1	-.05752	-.00003	-.00437	-.00003	.00010	.02753	.00026	-.00539	-.00199	.00015	.00084	.00342	.04608
#2	-.01949	-.00214	-.00454	-.00003	.00060	.05369	-.00002	-.00657	-.00215	-.00458	-.00324	.00730	.04597

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit													
Low Limit													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09849	-.00144	.00004	-.00052	-.00035	-.00427	.05542	.00021	-.00036	.00147
Stddev	.00018	.00063	.00009	.00434	.00016	.00104	.04162	.00014	.00003	.00036
%RSD	.17870	43.524	253.24	835.85	46.017	24.438	75.097	63.213	7.0032	24.776

#1	.09861	-.00189	-.00003	-.00359	-.00024	-.00501	.08485	.00031	-.00034	.00173
#2	.09837	-.00100	.00010	.00255	-.00047	-.00353	.02599	.00012	-.00038	.00121

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4444.2	52254.	4162.3
Stddev	23.8	72.	29.7
%RSD	.53467	.13781	.71407

#1	4461.0	52305.	4141.2
#2	4427.4	52204.	4183.3

Sample Name: xCRI-5699390 Acquired: 5/13/2019 8:17:05 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00906	W .13589	W .01006	.09532	.00999	.00102	.10696	W .25797	.00498	.01010	.01003	.01500
Stddev	.00011	.00191	.00279	.00058	.00028	.00005	.00632	.00859	.00001	.00023	.00046	.00087
%RSD	1.1952	1.4047	27.688	.60809	2.8450	4.6634	5.9115	3.3312	.27356	2.3211	4.6171	5.7876
#1	.00898	.13724	.00809	.09573	.01019	.00099	.11143	.26404	.00497	.01026	.01036	.01439
#2	.00913	.13454	.01203	.09491	.00979	.00105	.10249	.25189	.00499	.00993	.00970	.01562
Check ?	Chk Pass	Chk Warn	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.10000	.01500					.20000				
Range		20.490%	-20.490%					20.490%				
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W .12207	2.9049	W .01542	.22645	.01045	.01908	1.0320	.04046	2.8060	W .00652	.09155	W .01425
Stddev	.00912	.0694	.00315	.00322	.00002	.00038	.0031	.00097	.0320	.00066	.00576	.00004
%RSD	7.4686	2.3893	20.426	1.4218	.17050	2.0116	.30004	2.4059	1.1402	10.075	6.2879	.30544
#1	.11562	2.8558	.01764	.22417	.01043	.01936	1.0342	.04115	2.8286	.00605	.08748	.01428
#2	.12851	2.9540	.01319	.22873	.01046	.01881	1.0298	.03977	2.7834	.00698	.09563	.01422
Check ?	Chk Warn	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Warn
Value	.10000		.02000							.00900		.02000
Range	20.490%		-20.490%							-20.490%		-20.490%
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02133	.52528	1.1241	.09774	.01001	.01464	.00937	W .01143	F .09225	.00972	F .03400	W .01167
Stddev	.00015	.00984	.0210	.00110	.00007	.00302	.00045	.00149	.00585	.00029	.00026	.00027
%RSD	.70543	1.8730	1.8730	1.1223	.65027	20.655	4.8360	13.070	6.3406	2.9663	.76502	2.3565
#1	.02123	.53223	1.1390	.09851	.01006	.01250	.00969	.01037	.09638	.00952	.03418	.01147
#2	.02144	.51832	1.1092	.09696	.00997	.01678	.00905	.01249	.08811	.00992	.03381	.01186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Fail	Chk Pass	Chk Fail	Chk Warn
Value								.01500	.06000		.02000	.01500
Range								-20.490%	50.000%		50.000%	-20.490%
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4409.2	52149.	4131.0									
Stddev	27.0	179.	12.8									
%RSD	.61240	.34244	.30967									
#1	4390.1	52275.	4122.0									
#2	4428.3	52023.	4140.1									

Sample Name: CRI-5699390 Acquired: 5/13/2019 8:23:11 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00895	.10385	.01235	.09711	.00999	.00102	.11200	.20525	.00502	.01050	.00995	.01619
Stddev	.00000	.00042	.00391	.00134	.00036	.00007	.00243	.00216	.00011	.00044	.00008	.00033
%RSD	.00916	.40594	31.633	1.3840	3.5571	7.0424	2.1695	1.0500	2.2295	4.2185	.82192	2.0554
#1	.00895	.10355	.01512	.09806	.01024	.00097	.11372	.20372	.00494	.01019	.00990	.01643
#2	.00895	.10414	.00959	.09615	.00974	.00107	.11028	.20677	.00509	.01082	.01001	.01596
Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09857	2.9358	.01935	.19108	.01034	.01930	1.0236	.04133	2.8724	.00950	.09587	W .01002
Stddev	.00134	.1230	.00021	.00070	.00004	.00003	.0040	.00037	.0047	.00014	.00275	.00118
%RSD	1.3558	4.1883	1.1100	.36586	.40622	.14428	.39311	.89825	.16439	1.4270	2.8645	11.796
#1	.09762	3.0227	.01920	.19158	.01031	.01932	1.0264	.04107	2.8691	.00959	.09781	.01086
#2	.09951	2.8488	.01950	.19059	.01037	.01928	1.0207	.04159	2.8758	.00940	.09393	.00918
Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn .02000 -20.490%
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02291	.48956	1.0477	.09878	.01013	.01259	.00866	W .01138	.06500	.00922	.02219	.01340
Stddev	.00540	.00915	.0196	.00161	.00018	.00269	.00068	.00041	.05293	.00048	.00065	.00090
%RSD	23.584	1.8683	1.8683	1.6286	1.7548	21.391	7.8795	3.6470	81.426	5.2384	2.9157	6.7066
#1	.02673	.48309	1.0338	.09764	.01000	.01068	.00817	.01167	.10242	.00956	.02173	.01277
#2	.01909	.49603	1.0615	.09992	.01026	.01449	.00914	.01108	.02757	.00888	.02264	.01404
Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn .01500 -20.490%	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4417.0	50796.	4071.1									
Stddev	8.7	227.	36.5									
%RSD	.19804	.44630	.89623									
#1	4423.2	50956.	4096.9									
#2	4410.8	50636.	4045.3									

Sample Name: ICSA-5681701 Acquired: 5/13/2019 8:30:51 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00138	528.72	-.00822	.00719	W .00259	.00045	-.00298	466.56	.00103	.00075	W .00435	.00341
Stddev	.00087	1.35	.00196	.00031	.00024	.00005	.00356	2.53	.00037	.00003	.00007	.00011
%RSD	62.636	.25573	23.830	4.2884	9.4314	12.125	119.45	.54218	35.752	3.8737	1.5986	3.2805
#1	.00077	527.76	-.00961	.00740	.00242	.00049	-.00550	464.78	.00077	.00077	.00440	.00333
#2	.00200	529.68	-.00684	.00697	.00277	.00041	-.00046	468.35	.00129	.00073	.00430	.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit					.00200						.00260	
Low Limit					-.00200						-.00260	
Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	190.31	-.02428	-.00551	516.08	W .00168	.00023	.24187	.00319	.00588	-.00185	-.12745	-.00327
Stddev	.51	.08993	.00109	5.61	.00005	.00050	.00941	.00023	.00141	.00093	.00698	.00277
%RSD	.26769	370.46	19.787	1.0874	3.2077	217.98	3.8918	7.3300	23.899	50.264	5.4787	84.913
#1	189.95	-.08787	-.00474	520.05	.00164	-.00012	.23522	.00302	.00489	-.00120	-.13239	-.00131
#2	190.67	.03931	-.00628	512.12	.00171	.00058	.24853	.00335	.00688	-.00251	-.12251	-.00523
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					.00100							
Low Limit					-.00100							
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	.05500	.11770	-.00346	W .00899	.00076	W .00260	.00014	-.09361	.00155	W .01859	-.00174
Stddev	.00485	.00534	.01142	.00076	.00002	.00408	.00093	.00202	.04337	.00007	.00054	.00157
%RSD	155.57	9.7049	9.7049	21.949	.17615	540.74	35.665	1464.7	46.333	4.2875	2.9225	90.351
#1	.00655	.05878	.12578	-.00400	.00898	-.00213	.00194	.00157	-.12427	.00150	.01897	-.00063
#2	-.00031	.05123	.10962	-.00292	.00901	.00364	.00326	-.00129	-.06294	.00159	.01821	-.00284
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Warn	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit					.00120		.00230				.01500	
Low Limit					-.00120		-.00230				-.01500	
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3998.8	44472.	3984.8									
Stddev	17.2	99.	10.5									
%RSD	.43091	.22353	.26347									
#1	4011.0	44401.	3992.2									
#2	3986.6	44542.	3977.4									

Sample Name: ICSAB-5676207 Acquired: 5/13/2019 8:33:55 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0924	533.74	.99411	9.4819	.96372	.47704	1.0195	463.59	.99652	.89814	.93228	1.0429	191.29
Stddev	.0025	2.36	.00319	.0141	.00401	.00178	.0054	2.72	.00330	.00263	.00365	.0009	1.17
%RSD	.22639	.44220	.32127	.14875	.41570	.37251	.52639	.58594	.33122	.29249	.39159	.08232	.61411

#1	1.0906	532.07	.99637	9.4918	.96089	.47579	1.0233	461.67	.99885	.89999	.93486	1.0423	190.46
#2	1.0941	535.41	.99186	9.4719	.96656	.47830	1.0158	465.51	.99418	.89628	.92969	1.0435	192.12

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.714	1.0407	508.04	.98608	.93672	10.804	.89091	9.7097	.89906	10.163	.94046	1.0267	9.6807
Stddev	.123	.0034	6.87	.00064	.00374	.191	.00290	.0394	.00521	.017	.00275	.0003	.0610
%RSD	1.1475	.33026	1.3526	.06475	.39979	1.7683	.32553	.40530	.57973	.17018	.29274	.03149	.63015

#1	10.627	1.0382	503.18	.98563	.93936	10.939	.89296	9.7376	.90275	10.176	.93852	1.0265	9.6376
#2	10.801	1.0431	512.90	.98653	.93407	10.669	.88886	9.6819	.89538	10.151	.94241	1.0269	9.7239

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.717	.97794	.99389	2.0571	1.0128	.92545	-.05885	1.0049	.96157	.95390
Stddev	.131	.00734	.00491	.0011	.0003	.00429	.01011	.0035	.00052	.00632
%RSD	.63015	.75048	.49380	.05182	.02586	.46322	17.171	.34752	.05444	.66210

#1	20.624	.98313	.99042	2.0563	1.0126	.92848	-.06600	1.0074	.96194	.94944
#2	20.809	.97275	.99736	2.0578	1.0130	.92242	-.05171	1.0024	.96120	.95837

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4020.5	44622.	3931.5
Stddev	.4	29.	19.0
%RSD	.01027	.06571	.48407

#1	4020.8	44602.	3944.9
#2	4020.3	44643.	3918.0

Sample Name: LRA-5681702 Acquired: 5/13/2019 8:36:23 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoadesc Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0011	.41265	9.7562	9.7300	11.973	-0.00435	-0.00950	.06565	2.0356	4.9795	9.8715	10.504	507.57
Stddev	.00062	.08511	.0517	.0437	.000	.00013	.00516	.01253	.0118	.0326	.0707	.059	1.02
%RSD	537.91	20.625	.53018	.44954	.00408	3.0084	54.259	19.086	.57730	.65358	.71603	.56246	.20140

#1	.00032	.47283	9.7928	9.7610	11.974	-.00426	-.01315	.07451	2.0439	5.0025	9.9215	10.546	508.29
#2	-.00055	.35247	9.7196	9.6991	11.973	-.00444	-.00586	.05679	2.0273	4.9565	9.8215	10.463	506.84

Check ?	None	None	Chk Pass	Chk Pass	Chk Pass	None	None	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.26577	-0.00140	-0.05712	10.004	4.8763	.01188	9.9977	-0.00359	10.053	-0.06374	.03746	4.9036	47.409
Stddev	.00592	.00181	.01175	.142	.0388	.03016	.0700	.00079	.057	.00057	.00199	.0257	.077
%RSD	2.2274	129.79	20.578	1.4165	.79648	253.90	.70001	22.111	.56652	.89805	5.3116	.52455	.16324

#1	-.26159	-.00011	-.04881	9.9034	4.9038	.03320	10.047	-.00303	10.093	-.06334	.03887	4.9218	47.354
#2	-.26996	-.00268	-.06544	10.104	4.8489	-.00945	9.9482	-.00415	10.013	-.06415	.03606	4.8855	47.463

Check ?	None	None	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	101.45	-0.00363	10.218	.00335	10.155	4.9145	.12435	10.142	9.9526	.00156
Stddev	.17	.00127	.125	.00190	.029	.0382	.05619	.017	.0236	.00003
%RSD	.16324	34.904	1.2261	56.719	.28410	.77802	45.189	.16838	.23713	1.8315

#1	101.34	-.00453	10.129	.00200	10.175	4.9415	.16409	10.154	9.9693	.00154
#2	101.57	-.00273	10.306	.00469	10.134	4.8875	.08462	10.130	9.9359	.00158

Check ?	None	None	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4310.8	49413.	4052.0
Stddev	2.8	188.	16.8
%RSD	.06482	.38023	.41346

#1	4308.8	49546.	4063.8
#2	4312.7	49281.	4040.1

Sample Name: CCVH-5690583 Acquired: 5/13/2019 8:39:01 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoadesc Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00326	50.527	-.00625	.03123	.00342	.00139	1.0030	.02038	.00100	.00280	.00223	.01964	49.670
Stddev	.00079	.220	.00383	.00239	.00015	.00018	.0091	.00827	.00015	.00057	.00030	.00045	.139
%RSD	24.323	.43544	61.236	7.6555	4.5259	12.869	.90255	40.596	15.299	20.525	13.201	2.2951	.28056

#1	.00382	50.371	-.00896	.03293	.00353	.00126	1.0094	.02623	.00089	.00239	.00203	.01996	49.572
#2	.00270	50.682	-.00355	.02954	.00331	.00151	.99656	.01453	.00111	.00320	.00244	.01932	49.769

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.13595	.00544	.01026	.00493	.00791	250.38	.00513	.00166	.00362	4.9814	.01045	.00098	.10222
Stddev	.03106	.00025	.01121	.00025	.00145	.61	.00027	.00221	.00087	.0347	.00191	.00039	.04991
%RSD	22.847	4.6019	109.29	5.1498	18.290	.24439	5.2837	133.33	23.998	.69702	18.302	40.106	48.824

#1	.11399	.00526	.00233	.00475	.00689	249.94	.00494	.00322	.00301	5.0059	.01180	.00126	.13751
#2	.15791	.00562	.01819	.00511	.00894	250.81	.00532	.00009	.00424	4.9568	.00910	.00070	.06693

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21875	.00101	.00299	5.0123	-.00964	.00119	10.507	.00674	.00389	.07414
Stddev	.10680	.00005	.00041	.0057	.00060	.00044	.013	.00103	.00020	.00231
%RSD	48.824	5.2530	13.572	.11330	6.2276	36.477	.12687	15.225	5.2178	3.1120

#1	.29427	.00097	.00328	5.0083	-.00921	.00150	10.497	.00601	.00403	.07578
#2	.14323	.00104	.00270	5.0163	-.01006	.00089	10.516	.00746	.00375	.07251

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4261.5	49281.	4026.8
Stddev	12.9	37.	6.5
%RSD	.30253	.07451	.16200

#1	4252.4	49255.	4031.4
#2	4270.6	49307.	4022.2

Sample Name: CCV-5690581 Acquired: 5/13/2019 8:41:33 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoadesc Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50188	.54266	.98853	.51599	.49407	.49924	-.00118	4.9610	.49883	.50391	.49891	.49826	2.5254
Stddev	.00244	.00434	.00507	.00038	.00229	.00134	.00091	.0065	.00126	.00248	.00116	.00011	.0201
%RSD	.48560	.79989	.51321	.07378	.46279	.26824	77.531	.12997	.25325	.49257	.23151	.02116	.79682

#1	.50016	.54573	.99211	.51626	.49569	.50018	-.00182	4.9655	.49972	.50566	.49973	.49818	2.5397
#2	.50361	.53959	.98494	.51572	.49245	.49829	-.00053	4.9564	.49794	.50215	.49809	.49833	2.5112

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	49.803	1.0041	19.916	.50593	.49643	5.0699	.50175	.98835	1.0011	-.00479	1.0022	.99632	4.9773
Stddev	.132	.0036	.022	.00112	.00282	.0258	.00142	.00060	.0038	.00475	.0039	.00435	.0283
%RSD	.26414	.35356	.11078	.22101	.56739	.50869	.28349	.06076	.37921	99.131	.38447	.43668	.56843

#1	49.896	1.0066	19.900	.50514	.49842	5.0517	.50276	.98793	1.0038	-.00815	.99952	.99939	4.9973
#2	49.710	1.0016	19.931	.50672	.49443	5.0882	.50075	.98878	.99846	-.00143	1.0050	.99324	4.9573

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.651	.98912	.50525	.00033	.50560	.99896	-.01062	.49976	.50815	.48611
Stddev	.061	.00542	.00012	.00310	.00104	.00074	.03890	.00109	.00186	.00125
%RSD	.56843	.54828	.02336	952.41	.20545	.07395	366.35	.21791	.36652	.25753

#1	10.694	.99295	.50533	-.00187	.50487	.99844	.01689	.50053	.50683	.48522
#2	10.609	.98528	.50517	.00252	.50634	.99948	-.03813	.49899	.50947	.48699

Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4366.0	50469.	4092.6
Stddev	3.7	139.	9.6
%RSD	.08587	.27541	.23388

#1	4363.3	50567.	4099.4
#2	4368.6	50371.	4085.8

Sample Name: CCB Acquired: 5/13/2019 8:43:56 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00020	.00098	.00176	.01245	.00017	.00010	.00331	.00029	.00034	.00012	.00030	.00072	.00624
Stddev	.00104	.00060	.00856	.00008	.00025	.00006	.00362	.00096	.00022	.00004	.00048	.00058	.00256
%RSD	516.32	60.931	485.07	.64412	144.59	58.499	109.22	335.83	63.865	31.304	156.80	80.595	41.005

#1	.00054	.00056	.00782	.01251	.00035	.00006	.00075	.00096	.00050	.00009	-.00003	.00031	.00443
#2	-.00094	.00140	-.00429	.01239	-.00000	.00014	.00587	-.00039	.00019	.00014	.00064	.00112	.00805

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit													
Low Limit													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.09239	-0.00223	-0.00459	.00012	.00066	.00211	-0.00014	-0.00612	-0.00019	-0.00508	-0.00265	.00268	.00903
Stddev	.04021	.00101	.00696	.00004	.00015	.01815	.00010	.00264	.00039	.00025	.00416	.00297	.02085
%RSD	43.522	45.304	151.75	29.217	22.555	859.14	72.077	43.182	200.32	4.9191	157.14	110.96	230.95

#1	-.06396	-.00295	-.00951	.00015	.00076	.01494	-.00007	-.00799	-.00047	-.00526	-.00559	.00058	.02377
#2	-.12082	-.00152	.00034	.00010	.00055	-.01072	-.00021	-.00425	.00008	-.00490	.00029	.00478	-.00571

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit													
Low Limit													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01932	-0.00193	-0.00018	.00090	-0.00031	-0.00115	.02265	-0.00022	-0.00004	-0.00057
Stddev	.04461	.00034	.00016	.00091	.00046	.00218	.03533	.00119	.00016	.00152
%RSD	230.95	17.841	84.822	100.35	146.33	188.78	155.96	548.98	362.69	267.69

#1	.05086	-.00169	-.00030	.00155	.00001	-.00269	-.00233	.00062	-.00016	.00051
#2	-.01223	-.00217	-.00007	.00026	-.00064	.00039	.04764	-.00106	.00007	-.00164

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4430.2	51657.	4135.6
Stddev	14.1	319.	3.3
%RSD	.31756	.61729	.08056

#1	4440.1	51883.	4137.9
#2	4420.2	51432.	4133.2

Sample Name: CCVL-5699390 Acquired: 5/13/2019 8:46:34 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00942	.11854	.01455	.10672	.00994	.00103	.10810	.22669	.00515	.01030	.00970	.01688
Stddev	.00092	.00044	.00023	.00201	.00010	.00008	.00126	.01074	.00005	.00012	.00010	.00013
%RSD	9.7889	.37175	1.5832	1.8791	1.0175	7.9125	1.1630	4.7372	.98244	1.2034	1.0383	.79510

#1	.01008	.11885	.01439	.10813	.00987	.00109	.10721	.23428	.00519	.01039	.00977	.01698
#2	.00877	.11823	.01472	.10530	.01001	.00097	.10899	.21910	.00512	.01022	.00963	.01679

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.11560	2.9311	.01951	.20412	.01051	.01934	.98365	.04078	2.8403	.00830	.09454	.01513
Stddev	.00447	.0397	.00063	.00560	.00003	.00008	.00070	.00028	.0136	.00066	.00344	.00281
%RSD	3.8659	1.3542	3.2097	2.7413	.30996	.43796	.07108	.67884	.47835	7.9305	3.6431	18.573

#1	.11876	2.9592	.01907	.20017	.01049	.01928	.98415	.04098	2.8499	.00783	.09697	.01712
#2	.11244	2.9031	.01996	.20808	.01054	.01940	.98316	.04059	2.8307	.00876	.09210	.01315

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01954	.50664	1.0842	.09707	.01022	.01506	.00875	.01257	.05428	.00946	F .02634	.01108
Stddev	.00640	.02743	.0587	.00161	.00007	.00150	.00021	.00055	.02786	.00011	.00033	.00088
%RSD	32.756	5.4140	5.4140	1.6558	.67724	9.9899	2.3915	4.3865	51.315	1.1810	1.2361	7.9253

#1	.01502	.48724	1.0427	.09821	.01017	.01613	.00890	.01218	.03459	.00938	.02611	.01170
#2	.02407	.52603	1.1257	.09593	.01027	.01400	.00860	.01296	.07398	.00954	.02657	.01046

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value											.02000	
Range											30.000%	

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4501.9	52259.	4202.5
Stddev	8.7	182.	4.1
%RSD	.19346	.34773	.09716

#1	4508.0	52388.	4205.4
#2	4495.7	52131.	4199.6

Sample Name: CCVH-5690583 Acquired: 5/13/2019 11:39:26 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00362	50.008	-.00161	.00347	.00184	.00135	1.0255	.14139	.00095	.00274	.00158	.01656	50.193
Stddev	.00047	.286	.00068	.00065	.00035	.00021	.0152	.00445	.00015	.00016	.00015	.00013	.127
%RSD	12.995	.57289	42.298	18.658	18.957	15.510	1.4834	3.1480	16.317	5.9954	9.3222	.76939	.25305

#1	.00329	49.805	-.00210	.00301	.00209	.00120	1.0147	.14453	.00084	.00263	.00148	.01647	50.103
#2	.00395	50.210	-.00113	.00393	.00160	.00149	1.0362	.13824	.00106	.00286	.00169	.01665	50.283

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.24785	.00179	.01317	.00413	-.00013	252.16	.00423	.00297	.00362	5.0166	.00007	-.00204	.05345
Stddev	.07542	.00227	.00353	.00001	.00006	.17	.00037	.00024	.00093	.1017	.00020	.00169	.00306
%RSD	30.431	126.60	26.788	.21092	45.702	.06889	8.8455	8.1650	25.607	2.0280	299.76	82.626	5.7264

#1	.19452	.00019	.01068	.00414	-.00017	252.04	.00396	.00314	.00296	4.9447	.00021	-.00085	.05562
#2	.30118	.00339	.01567	.00412	-.00009	252.28	.00449	.00280	.00428	5.0886	-.00008	-.00324	.05129

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.11439	.00066	.00194	4.9880	-.01052	.00022	10.245	.00519	.00387	.07364
Stddev	.00655	.00047	.00008	.0088	.00010	.00022	.054	.00003	.00007	.00473
%RSD	5.7264	71.739	4.1091	.17674	.90948	103.59	.52576	.65223	1.6977	6.4173

#1	.11902	.00033	.00189	4.9818	-.01059	.00006	10.207	.00521	.00382	.07030
#2	.10975	.00100	.00200	4.9942	-.01046	.00038	10.284	.00517	.00391	.07698

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4250.8	49175.	3918.1
Stddev	37.0	80.	22.3
%RSD	.87050	.16337	.56995

#1	4277.0	49231.	3933.9
#2	4224.7	49118.	3902.3

Sample Name: CCV-5690581 Acquired: 5/13/2019 11:41:58 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoadesc Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52032	F .57406	1.0208	.51559	.51927	.51673	-.00204	5.1997	.51934	.52366	.52508	.51715
Stddev	.00107	.00173	.0095	.00171	.00122	.00094	.00140	.0008	.00166	.00155	.00234	.00116
%RSD	.20651	.30207	.93270	.33156	.23502	.18126	68.712	.01527	.31943	.29554	.44517	.22341

#1	.51956	.57528	1.0275	.51680	.51840	.51606	-.00105	5.1992	.52051	.52475	.52673	.51797
#2	.52108	.57283	1.0140	.51438	.52013	.51739	-.00303	5.2003	.51816	.52257	.52342	.51633

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.6132	52.478	1.0480	20.635	.52093	.52442	F 6.0757	.52477	1.0375	1.0455	-.00208	1.0291
Stddev	.0063	.094	.0016	.027	.00029	.00244	.0481	.00177	.0091	.0044	.00261	.0077
%RSD	.24208	.17875	.15269	.13183	.05494	.46546	.79179	.33716	.87519	.42015	125.44	.74561

#1	2.6087	52.412	1.0469	20.615	.52113	.52615	6.0417	.52602	1.0439	1.0486	-.00024	1.0345
#2	2.6177	52.544	1.0491	20.654	.52073	.52270	6.1097	.52352	1.0311	1.0424	-.00393	1.0236

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0298	5.1680	11.060	1.0398	.51973	.00393	.51781	1.0518	-.01229	.51722	.52332	.50937
Stddev	.0029	.0109	.023	.0060	.00097	.00066	.00017	.0027	.02097	.00139	.00124	.00560
%RSD	.28619	.21160	.21160	.57331	.18597	16.822	.03209	.25551	170.62	.26947	.23730	1.1000

#1	1.0319	5.1758	11.076	1.0440	.51904	.00440	.51770	1.0537	-.02712	.51623	.52245	.50541
#2	1.0278	5.1603	11.043	1.0355	.52041	.00346	.51793	1.0499	.00254	.51821	.52420	.51333

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4270.8	49398.	3887.4
Stddev	5.6	74.	21.1
%RSD	.13041	.14982	.54333

#1	4266.9	49346.	3902.3
#2	4274.8	49451.	3872.4

Sample Name: CCB Acquired: 5/13/2019 11:44:35 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00052	-.00220	-.00103	-.00074	-.00030	.00007	-.00001	.00546	.00012	-.00004	.00005	.00067
Stddev	.00055	.00056	.00125	.00089	.00045	.00004	.00117	.00117	.00030	.00006	.00036	.00042
%RSD	104.77	25.384	121.18	121.18	150.18	52.753	15344.	21.360	255.73	166.10	700.04	62.172

#1	-.00091	-.00181	-.00192	-.00011	-.00061	.00010	.00082	.00464	.00033	.00001	-.00020	.00097
#2	-.00014	-.00260	-.00015	-.00137	.00002	.00004	-.00083	.00629	-.00009	-.00008	.00030	.00038

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.12235	-.00035	-.00409	-.00006	-.00022	F .68724	.00028	-.00660	-.00083	.00174	-.00117
Stddev	.00280	.01499	.00216	.00123	.00004	.00010	.00202	.00005	.00130	.00094	.00511	.00156
%RSD	523.80	12.253	612.09	30.019	62.508	44.379	.29372	17.413	19.656	112.37	293.40	132.61

#1	.00251	.11175	.00118	-.00322	-.00003	-.00015	.68867	.00031	-.00751	-.00017	.00535	-.00007
#2	-.00144	.13295	-.00188	-.00495	-.00009	-.00029	.68582	.00024	-.00568	-.00150	-.00187	-.00228

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							.50000					
Low Limit							-.50000					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00341	-.00229	-.00490	-.00152	-.00001	.00170	-.00057	-.00264	-.02944	-.00024	.00069	-.00140
Stddev	.00517	.01173	.02510	.00010	.00001	.00111	.00020	.00215	.00468	.00046	.00009	.00077
%RSD	151.46	512.17	512.17	6.8067	104.14	65.124	35.459	81.539	15.904	192.96	12.665	54.537

#1	.00706	.00600	.01285	-.00144	-.00000	.00092	-.00071	-.00112	-.03275	-.00056	.00063	-.00086
#2	-.00024	-.01058	-.02265	-.00159	-.00001	.00248	-.00042	-.00416	-.02613	.00009	.00075	-.00195

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4282.6	49743.	3839.7
Stddev	6.4	218.	8.3
%RSD	.15047	.43772	.21613

#1	4278.1	49589.	3845.6
#2	4287.2	49897.	3833.8

Sample Name: CCVL-5699390 Acquired: 5/13/2019 11:47:13 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01002	.11375	.01471	.10006	.01025	.00111	.10991	.21337	.00523	.01050	.01037	.01760
Stddev	.00044	.00231	.00052	.00159	.00011	.00011	.00250	.00332	.00032	.00048	.00047	.00018
%RSD	4.3753	2.0342	3.5590	1.5873	1.1027	9.8915	2.2750	1.5547	6.0682	4.6108	4.5071	1.0103

#1	.01033	.11538	.01508	.10119	.01033	.00103	.10814	.21102	.00546	.01084	.01070	.01748
#2	.00971	.11211	.01434	.09894	.01017	.00119	.11167	.21571	.00501	.01016	.01004	.01773

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .13141	3.1627	.01993	.20341	.01095	.02006	F 1.6729	.04188	2.9707	.00760	.09630	.01973
Stddev	.00271	.0632	.00097	.00041	.00002	.00079	.0223	.00158	.0424	.00041	.00916	.00313
%RSD	2.0589	1.9981	4.8919	.20345	.18075	3.9486	1.3339	3.7811	1.4263	5.3943	9.5082	15.851

#1	.13332	3.2074	.01924	.20312	.01093	.02062	1.6887	.04300	3.0007	.00731	.10277	.01752
#2	.12950	3.1180	.02062	.20370	.01096	.01950	1.6571	.04076	2.9408	.00789	.08983	.02195

Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.10000						1.0000					
Range	30.000%						30.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02203	.56187	1.2024	.10129	.01032	.01513	.00974	.01308	F .03807	.00937	.02187	.01230
Stddev	.00221	.02525	.0540	.00232	.00005	.00012	.00026	.00035	.00202	.00007	.00067	.00195
%RSD	10.026	4.4945	4.4945	2.2869	.47254	.77596	2.7026	2.6766	5.2950	.73922	3.0526	15.893

#1	.02047	.54402	1.1642	.10292	.01028	.01505	.00955	.01283	.03949	.00942	.02234	.01368
#2	.02359	.57973	1.2406	.09965	.01035	.01521	.00992	.01333	.03664	.00932	.02140	.01092

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value									.06000			
Range									-30.000%			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4353.0	50439.	3889.4
Stddev	18.1	184.	14.9
%RSD	.41627	.36456	.38321

#1	4340.2	50309.	3878.9
#2	4365.8	50569.	3900.0

Sample Name: r Acquired: 5/13/2019 11:55:24 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	-.00217	-.00307	-.00064	-.00030	.00013	.00147	-.00420	.00027
Stddev	.00077	.00060	.00179	.00030	.00021	.00009	.00063	.00254	.00005
%RSD	102.60	27.683	58.450	47.437	70.580	69.779	43.035	60.488	17.098

#1	.00021	-.00174	-.00434	-.00043	-.00015	.00020	.00191	-.00240	.00030
#2	.00129	-.00259	-.00180	-.00086	-.00045	.00007	.00102	-.00600	.00024

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00002	.00126	-.00020	.03175	-.00220	-.00516	-.00006	-.00026
Stddev	.00012	.00065	.00021	.00213	.02403	.00009	.00444	.00001	.00003
%RSD	94.791	2641.4	16.434	1043.8	75.678	4.0247	85.932	19.002	9.9104

#1	.00004	-.00043	.00140	.00130	.01476	-.00214	-.00830	-.00006	-.00028
#2	.00022	.00048	.00111	-.00171	.04874	-.00226	-.00203	-.00005	-.00024

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.58807	-.00028	-.00515	-.00169	-.00009	-.00391	.00233	.02428	.05196
Stddev	.01701	.00065	.00270	.00244	.00218	.00517	.00298	.04270	.09137
%RSD	2.8922	228.64	52.328	144.55	2372.2	132.12	127.94	175.86	175.86

#1	.60010	-.00074	-.00325	.00004	-.00163	-.00026	.00022	-.00591	-.01265
#2	.57605	.00017	-.00706	-.00341	.00145	-.00757	.00444	.05447	.11656

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00289	-.00005	.00271	-.00075	-.00106	-.04695	-.00100	-.00042	-.00192
Stddev	.00001	.00013	.00077	.00013	.00038	.00513	.00069	.00004	.00017
%RSD	.43561	282.22	28.385	17.804	35.683	10.928	68.945	9.9337	8.8267

#1	-.00288	-.00014	.00326	-.00066	-.00079	-.04332	-.00149	-.00044	-.00204
#2	-.00290	.00005	.00217	-.00085	-.00133	-.05057	-.00051	-.00039	-.00180

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4205.5	47851.	3836.2
Stddev	23.2	1227.	10.4
%RSD	.55137	2.5642	.27231

#1	4189.1	48719.	3843.6
#2	4221.9	46983.	3828.8

Sample Name: r Acquired: 5/13/2019 11:58:01 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00006	-0.00273	-0.00168	-0.00135	-0.00040	.00030	.00069	-0.00127	.00014
Stddev	.00048	.00054	.00292	.00065	.00009	.00023	.00010	.00227	.00015
%RSD	765.42	19.919	173.92	48.653	22.947	76.475	15.045	178.41	105.06

#1	.00027	-.00312	.00039	-.00181	-.00033	.00014	.00061	.00033	.00004
#2	-.00040	-.00235	-.00374	-.00088	-.00046	.00046	.00076	-.00288	.00025

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00020	.00030	.00054	.00332	.09095	-0.00077	-0.00953	-0.00008	-0.00019
Stddev	.00009	.00009	.00058	.00433	.07180	.00208	.00130	.00002	.00008
%RSD	47.014	31.714	106.31	130.45	78.942	272.05	13.653	23.245	43.070

#1	-.00027	.00023	.00095	.00638	.04018	.00071	-.00861	-.00007	-.00013
#2	-.00013	.00036	.00014	.00026	.14172	-.00224	-.01046	-.00010	-.00025

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54956	-0.00030	-0.00544	-0.00111	-0.00155	-0.00305	.00326	.01869	.03999
Stddev	.03292	.00001	.00471	.00104	.00483	.00198	.00338	.00788	.01686
%RSD	5.9905	4.8038	86.641	93.817	310.94	64.832	103.79	42.172	42.172

#1	.57283	-.00029	-.00877	-.00037	.00186	-.00165	.00087	.02426	.05192
#2	.52628	-.00031	-.00211	-.00185	-.00497	-.00445	.00565	.01311	.02807

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00205	-0.00024	.00066	-0.00010	-0.00131	.00401	.00007	-0.00026	-0.00202
Stddev	.00101	.00012	.00093	.00001	.00089	.00324	.00002	.00018	.00299
%RSD	49.345	48.518	140.32	5.8862	68.310	80.731	27.366	69.976	148.07

#1	-.00134	-.00032	.00131	-.00009	-.00068	.00172	.00008	-.00013	-.00414
#2	-.00277	-.00016	.00001	-.00010	-.00194	.00631	.00006	-.00039	.00009

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4396.3	51225.	3951.8
Stddev	1.2	73.	7.9
%RSD	.02834	.14205	.19971

#1	4395.4	51173.	3946.2
#2	4397.2	51276.	3957.4

Sample Name: r Acquired: 5/13/2019 12:00:37 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	-.00293	-.00593	-.00088	-.00063	.00012	.00375	-.00505	.00000
Stddev	.00140	.00018	.00294	.00027	.00030	.00011	.00059	.00664	.00005
%RSD	314.40	6.1759	49.592	31.197	47.302	92.723	15.639	131.47	1441.3

#1	-.00054	-.00280	-.00385	-.00068	-.00042	.00019	.00416	-.00974	.00004
#2	.00144	-.00306	-.00800	-.00107	-.00084	.00004	.00333	-.00036	-.00003

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	-.00015	.00048	-.00209	.07535	-.00069	-.01155	-.00005	-.00071
Stddev	.00008	.00010	.00121	.00043	.02087	.00060	.00898	.00005	.00031
%RSD	32.828	68.455	252.55	20.613	27.705	87.552	77.731	97.772	43.843

#1	-.00031	-.00008	-.00038	-.00179	.09011	-.00026	-.01790	-.00002	-.00093
#2	-.00019	-.00023	.00134	-.00240	.06059	-.00111	-.00520	-.00009	-.00049

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.57506	-.00010	-.00353	-.00158	-.00093	-.00414	.00265	.00519	.01111
Stddev	.00871	.00006	.00085	.00011	.00284	.00085	.00126	.00701	.01500
%RSD	1.5144	57.789	24.015	7.0977	304.33	20.450	47.632	135.02	135.02

#1	.56891	-.00006	-.00293	-.00166	-.00294	-.00474	.00176	.00024	.00050
#2	.58122	-.00015	-.00413	-.00150	.00108	-.00354	.00354	.01015	.02172

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00283	.00008	-.00041	-.00075	-.00239	.03652	-.00067	.00002	-.00035
Stddev	.00050	.00012	.00095	.00022	.00287	.03883	.00008	.00026	.00207
%RSD	17.578	154.90	232.31	29.534	120.01	106.32	11.964	1434.6	597.73

#1	-.00318	-.00001	-.00108	-.00059	-.00443	.06398	-.00073	.00020	-.00181
#2	-.00248	.00016	.00026	-.00091	-.00036	.00907	-.00062	-.00017	.00112

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4265.1	50267.	3883.0
Stddev	15.6	330.	8.6
%RSD	.36580	.65629	.22100

#1	4276.1	50501.	3877.0
#2	4254.1	50034.	3889.1

Sample Name: r Acquired: 5/13/2019 12:03:12 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	-.00269	-.00678	-.00159	-.00012	-.00003	-.00102	.00129	.00002
Stddev	.00119	.00042	.00317	.00056	.00040	.00000	.00039	.00002	.00031
%RSD	140.99	15.642	46.755	34.849	345.09	9.4704	38.232	1.7340	1601.8

#1	.00000	-.00299	-.00454	-.00120	.00017	-.00003	-.00130	.00127	.00024
#2	.00168	-.00239	-.00902	-.00199	-.00040	-.00004	-.00075	.00130	-.00020

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	-.00004	.00046	.00167	.09364	-.00150	-.00490	-.00002	-.00050
Stddev	.00066	.00040	.00089	.00096	.04339	.00011	.00157	.00006	.00071
%RSD	486.00	1070.9	192.90	57.607	46.340	7.0049	32.003	302.89	141.08

#1	-.00060	.00024	.00109	.00099	.12433	-.00143	-.00601	-.00006	-.00100
#2	.00033	-.00032	-.00017	.00234	.06296	-.00158	-.00379	.00002	-.00000

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53597	-.00004	-.00541	-.00108	.00270	-.00313	.00141	.02187	.04681
Stddev	.00641	.00015	.00507	.00011	.00094	.00403	.00222	.00529	.01133
%RSD	1.1961	334.90	93.685	10.060	34.931	128.97	157.16	24.200	24.200

#1	.53143	-.00015	-.00183	-.00116	.00203	-.00028	.00298	.02561	.05481
#2	.54050	.00006	-.00900	-.00101	.00337	-.00598	-.00016	.01813	.03880

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00238	-.00016	-.00010	-.00040	-.00240	-.02014	.00011	-.00040	-.00160
Stddev	.00079	.00012	.00213	.00008	.00116	.02986	.00053	.00020	.00039
%RSD	33.024	72.846	2232.4	21.210	48.384	148.26	458.18	49.520	24.353

#1	-.00182	-.00008	.00141	-.00034	-.00322	.00097	-.00026	-.00054	-.00132
#2	-.00293	-.00025	-.00160	-.00046	-.00158	-.04126	.00049	-.00026	-.00187

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4285.8	50217.	3934.5
Stddev	19.9	547.	13.6
%RSD	.46473	1.0902	.34614

#1	4271.7	50604.	3924.9
#2	4299.8	49829.	3944.1

Sample Name: r Acquired: 5/13/2019 12:05:48 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	-.00282	.00264	-.00079	-.00021	.00016	-.00076	-.00237	-.00005
Stddev	.00107	.00036	.00642	.00001	.00020	.00004	.00502	.00283	.00011
%RSD	273.54	12.680	243.05	1.8219	97.916	28.434	661.52	119.36	198.96

#1	-.00036	-.00256	-.00190	-.00080	-.00035	.00012	-.00431	-.00037	-.00013
#2	.00114	-.00307	.00718	-.00078	-.00006	.00019	.00279	-.00438	.00002

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	-.00005	-.00022	-.00097	.01946	.00138	-.00553	-.00002	-.00045
Stddev	.00006	.00004	.00097	.00244	.03926	.00371	.00137	.00007	.00040
%RSD	18.638	79.903	450.20	250.39	201.72	268.82	24.862	387.94	89.248

#1	-.00029	-.00008	.00047	-.00270	-.00830	-.00124	-.00650	.00003	-.00074
#2	-.00037	-.00002	-.00090	.00075	.04722	.00401	-.00455	-.00007	-.00017

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52534	-.00017	-.00612	-.00119	.00062	.00058	.00289	.04969	.10633
Stddev	.03358	.00019	.00325	.00146	.00132	.00108	.00642	.00920	.01970
%RSD	6.3917	109.56	53.190	122.80	213.55	186.67	222.03	18.525	18.525

#1	.54908	-.00004	-.00382	-.00222	-.00032	-.00018	-.00165	.04318	.09240
#2	.50160	-.00030	-.00842	-.00016	.00155	.00134	.00743	.05620	.12026

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00299	.00004	-.00022	-.00041	-.00294	.00243	-.00087	-.00025	-.00210
Stddev	.00155	.00008	.00124	.00007	.00142	.01769	.00077	.00023	.00343
%RSD	51.638	184.83	563.93	17.119	48.191	727.51	88.613	93.688	163.75

#1	-.00190	-.00001	.00066	-.00046	-.00194	-.01007	-.00142	-.00041	-.00452
#2	-.00409	.00009	-.00110	-.00036	-.00394	.01494	-.00033	-.00008	.00033

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4377.0	51420.	3976.7
Stddev	2.5	496.	7.1
%RSD	.05617	.96465	.17979

#1	4378.7	51069.	3971.6
#2	4375.2	51770.	3981.8

Sample Name: r Acquired: 5/13/2019 12:08:24 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00001	-0.00306	-0.00477	-0.00105	-0.00089	.00014	.00031	-0.00414	-0.00024
Stddev	.00087	.00035	.00014	.00024	.00006	.00004	.00143	.00593	.00021
%RSD	7490.3	11.439	2.8526	22.786	6.9701	28.323	463.49	143.14	87.641

#1	.00060	-.00281	-.00486	-.00088	-.00084	.00011	-.00070	-.00834	-.00009
#2	-.00063	-.00331	-.00467	-.00122	-.00093	.00017	.00132	.00005	-.00040

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00015	.00096	.00164	.02821	-0.00191	-0.00107	-0.00003	-0.00028
Stddev	.00010	.00034	.00024	.00426	.02923	.00015	.00152	.00009	.00003
%RSD	65.389	231.66	24.837	260.70	103.61	8.0793	141.82	256.94	9.4957

#1	.00008	-.00009	.00079	.00465	.04888	-.00180	-.00214	-.00009	-.00030
#2	.00022	.00039	.00113	-.00138	.00754	-.00202	.00000	.00003	-.00026

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54588	-0.00004	-0.00490	-0.00182	-0.00089	-0.00572	-0.00085	.02011	.04303
Stddev	.02336	.00010	.00258	.00244	.00022	.00368	.00456	.01138	.02436
%RSD	4.2799	255.34	52.599	134.08	24.432	64.411	536.51	56.624	56.624

#1	.56241	-.00011	-.00672	-.00354	-.00105	-.00832	-.00408	.01206	.02580
#2	.52936	.00003	-.00308	-.00009	-.00074	-.00311	.00238	.02816	.06025

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00240	.00003	.00137	-0.00076	-0.00506	-0.03720	-0.00019	-0.00041	.00145
Stddev	.00026	.00005	.00011	.00002	.00056	.02349	.00100	.00012	.00169
%RSD	10.777	140.98	7.8073	2.9627	11.106	63.146	529.79	29.674	116.94

#1	-.00221	.00000	.00145	-.00078	-.00546	-.02059	-.00090	-.00049	.00025
#2	-.00258	.00006	.00129	-.00074	-.00466	-.05380	.00052	-.00032	.00264

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4302.5	49885.	4020.1
Stddev	1.5	316.	22.5
%RSD	.03440	.63370	.55905

#1	4303.6	49661.	4036.0
#2	4301.5	50108.	4004.2

Sample Name: r Acquired: 5/13/2019 12:11:00 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	-.00335	-.00126	-.00114	-.00031	.00015	.00196	-.00044	-.00020
Stddev	.00063	.00040	.00031	.00023	.00003	.00001	.00063	.00292	.00013
%RSD	301.76	11.875	24.244	20.565	10.664	8.1795	31.978	659.40	62.406

#1	.00066	-.00363	-.00148	-.00131	-.00029	.00014	.00240	-.00251	-.00011
#2	-.00024	-.00306	-.00105	-.00098	-.00034	.00016	.00152	.00162	-.00030

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00003	-.00004	-.00130	-.01474	-.00205	-.00633	-.00006	-.00076
Stddev	.00013	.00031	.00018	.00015	.08232	.00132	.00043	.00005	.00003
%RSD	725.21	930.58	508.54	11.132	558.59	64.600	6.7468	97.851	3.9259

#1	.00007	-.00019	.00009	-.00141	.04347	-.00111	-.00663	-.00009	-.00078
#2	-.00011	.00026	-.00016	-.00120	-.07295	-.00298	-.00602	-.00002	-.00074

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51637	.00007	-.00691	-.00185	-.00483	.00098	.00219	.03661	.07835
Stddev	.02173	.00011	.00456	.00010	.00609	.00119	.00250	.00941	.02014
%RSD	4.2076	147.65	65.997	5.1398	126.20	120.64	114.07	25.711	25.711

#1	.53174	-.00000	-.01014	-.00179	-.00913	.00014	.00396	.04327	.09259
#2	.50101	.00015	-.00369	-.00192	-.00052	.00182	.00042	.02995	.06410

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00200	-.00004	.00140	-.00071	-.00453	-.00664	.00001	-.00054	-.00146
Stddev	.00015	.00012	.00153	.00020	.00074	.06677	.00076	.00000	.00137
%RSD	7.3397	317.39	109.44	27.824	16.355	1005.9	5131.3	.00329	93.669

#1	-.00190	-.00012	.00248	-.00084	-.00506	-.05385	-.00052	-.00054	-.00243
#2	-.00210	.00005	.00032	-.00057	-.00401	.04057	.00055	-.00054	-.00049

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4425.0	51389.	3987.0
Stddev	17.8	41.	19.6
%RSD	.40161	.08046	.49210

#1	4437.6	51418.	3973.1
#2	4412.4	51360.	4000.8

Sample Name: r Acquired: 5/13/2019 12:13:35 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	-.00191	-.00761	-.00184	.00007	.00020	-.00296	-.00795	.00018
Stddev	.00064	.00059	.00393	.00029	.00039	.00021	.00088	.00208	.00009
%RSD	178.43	31.053	51.654	15.702	561.32	102.56	29.661	26.134	50.430

#1	.00081	-.00233	-.01039	-.00204	-.00021	.00006	-.00358	-.00648	.00012
#2	-.00009	-.00149	-.00483	-.00164	.00035	.00035	-.00234	-.00942	.00024

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00007	-.00024	-.00575	.02864	-.00376	-.00430	.00003	-.00067
Stddev	.00003	.00012	.00182	.00157	.03889	.00024	.00207	.00000	.00031
%RSD	55.673	169.39	749.50	27.308	135.79	6.3628	48.033	6.6100	47.272

#1	.00009	-.00001	.00105	-.00464	.05614	-.00393	-.00284	.00003	-.00044
#2	.00004	.00016	-.00153	-.00686	.00114	-.00359	-.00577	.00003	-.00089

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53581	-.00013	-.00730	-.00226	-.00053	-.00332	.00293	.03987	.08532
Stddev	.00983	.00005	.00099	.00076	.00191	.00249	.00507	.01499	.03208
%RSD	1.8340	37.062	13.621	33.594	361.01	75.127	173.09	37.600	37.600

#1	.54276	-.00010	-.00660	-.00280	-.00188	-.00508	-.00066	.02927	.06264
#2	.52886	-.00017	-.00801	-.00172	.00082	-.00156	.00652	.05047	.10801

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00193	.00016	-.00048	-.00089	-.00327	-.00572	.00011	-.00056	.00071
Stddev	.00173	.00001	.00115	.00044	.00283	.00665	.00075	.00039	.00034
%RSD	89.472	5.9512	240.86	49.203	86.314	116.39	677.35	69.367	48.022

#1	-.00071	.00015	.00034	-.00120	-.00128	-.01042	.00064	-.00028	.00095
#2	-.00315	.00016	-.00129	-.00058	-.00527	-.00101	-.00042	-.00083	.00047

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4302.2	50311.	3876.1
Stddev	7.5	23.	29.8
%RSD	.17349	.04609	.76781

#1	4307.5	50327.	3855.1
#2	4296.9	50295.	3897.1

Sample Name: r Acquired: 5/13/2019 12:16:11 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	-.00274	-.00429	-.00188	.00031	-.00005	.00307	.00245	.00008
Stddev	.00042	.00001	.00037	.00029	.00002	.00013	.00080	.00005	.00014
%RSD	164.89	.44809	8.5817	15.619	7.2258	265.21	26.195	2.0504	179.88

#1	-.00004	-.00273	-.00403	-.00209	.00033	-.00014	.00250	.00241	.00017
#2	.00055	-.00275	-.00456	-.00168	.00030	.00004	.00364	.00248	-.00002

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	-.00020	.00028	-.00154	.06457	-.00180	-.00980	-.00003	-.00066
Stddev	.00026	.00019	.00071	.00138	.02118	.00196	.00056	.00005	.00065
%RSD	147.11	95.000	256.81	89.415	32.794	108.66	5.6763	167.36	98.906

#1	.00001	-.00034	-.00023	-.00251	.04960	-.00319	-.01020	.00001	-.00020
#2	-.00036	-.00007	.00078	-.00057	.07955	-.00042	-.00941	-.00006	-.00112

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49021	-.00032	-.00701	-.00239	-.00684	-.00164	.00256	.02995	.06409
Stddev	.00215	.00027	.00129	.00081	.00128	.00061	.00057	.00569	.01217
%RSD	.43791	83.784	18.362	33.729	18.723	37.025	22.381	18.982	18.982

#1	.49173	-.00013	-.00610	-.00182	-.00775	-.00207	.00216	.03397	.07270
#2	.48869	-.00051	-.00792	-.00296	-.00593	-.00121	.00297	.02593	.05549

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00177	-.00006	.00047	-.00037	-.00426	.01908	-.00024	.00003	-.00145
Stddev	.00064	.00005	.00065	.00006	.00050	.03640	.00027	.00040	.00064
%RSD	36.342	89.730	138.38	16.000	11.631	190.76	110.93	1177.1	44.218

#1	-.00131	-.00002	.00092	-.00033	-.00461	-.00666	-.00005	-.00025	-.00190
#2	-.00222	-.00010	.00001	-.00042	-.00391	.04482	-.00043	.00032	-.00100

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4424.1	51576.	4005.2
Stddev	25.9	428.	.5
%RSD	.58485	.83015	.01346

#1	4442.4	51879.	4004.9
#2	4405.8	51274.	4005.6

Sample Name: r Acquired: 5/13/2019 12:18:47 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00014	-0.00251	-0.00185	-0.00042	-0.00061	-0.00003	.00116	-0.00058	-0.00008
Stddev	.00020	.00008	.00278	.00060	.00006	.00006	.00160	.00009	.00015
%RSD	143.10	3.0081	150.88	142.89	10.602	206.52	137.77	16.302	180.89

#1	-0.00029	-0.00257	-0.00381	.00000	-0.00056	.00001	.00003	-0.00051	-0.00019
#2	.00000	-0.00246	.00012	-0.00084	-0.00066	-0.00007	.00229	-0.00064	.00002

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00029	-0.00014	.00087	-0.00262	.05102	-0.00046	-0.00511	.00001	-0.00009
Stddev	.00007	.00012	.00040	.00095	.06648	.00239	.00535	.00001	.00042
%RSD	25.160	85.908	46.104	36.127	130.30	516.27	104.79	82.007	473.49

#1	-0.00034	-0.00023	.00115	-0.00195	.00401	-0.00215	-0.00132	.00000	-0.00038
#2	-0.00024	-0.00006	.00059	-0.00330	.09803	.00123	-0.00889	.00002	.00021

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51205	-0.00026	-0.00694	-0.00064	-0.00039	-0.00198	.00169	.01961	.04197
Stddev	.01257	.00037	.00014	.00091	.00174	.00095	.00495	.00335	.00718
%RSD	2.4539	138.78	1.9762	143.36	450.83	48.083	292.91	17.103	17.103

#1	.50317	-0.00052	-0.00704	-0.00128	-0.00162	-0.00130	-0.00181	.01724	.03689
#2	.52094	-0.00000	-0.00685	.00001	.00085	-0.00265	.00519	.02198	.04705

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00268	-0.00004	.00147	-0.00081	-0.00380	-0.01357	-0.00075	-0.00015	-0.00068
Stddev	.00126	.00004	.00225	.00067	.00121	.05041	.00005	.00014	.00088
%RSD	47.062	110.80	152.82	83.742	31.801	371.57	7.2194	94.064	130.58

#1	-0.00357	-0.00007	.00307	-0.00033	-0.00465	-0.04922	-0.00079	-0.00005	-0.00005
#2	-0.00179	-0.00001	-0.00012	-0.00128	-0.00294	.02208	-0.00071	-0.00025	-0.00130

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4308.4	50335.	3889.5
Stddev	8.2	187.	6.8
%RSD	.18984	.37159	.17473

#1	4314.1	50467.	3894.3
#2	4302.6	50202.	3884.7

Sample Name: CCVH-5690583 Acquired: 5/13/2019 12:21:25 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00360	51.434	-.00329	.00203	.00210	.00139	1.0182	.08577	.00075	.00249	.00174	.01604	51.881
Stddev	.00033	.077	.00574	.00036	.00038	.00010	.0052	.00302	.00021	.00021	.00016	.00038	.416
%RSD	9.0353	.15040	174.43	17.757	17.969	6.9059	.51350	3.5258	28.212	8.5688	9.1930	2.3502	.80179

#1	.00337	51.379	-.00735	.00228	.00237	.00146	1.0219	.08363	.00089	.00264	.00163	.01577	51.587
#2	.00383	51.488	.00077	.00177	.00184	.00132	1.0145	.08791	.00060	.00234	.00186	.01631	52.175

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18941	.00248	.01464	.00422	.00005	259.74	.00430	-.00082	.00463	4.9594	.00219	-.00057	.02817
Stddev	.01104	.00123	.00269	.00003	.00015	.39	.00050	.00337	.00112	.0125	.00359	.00400	.00027
%RSD	5.8289	49.615	18.379	.69952	292.08	.15032	11.556	413.81	24.210	.25214	163.89	703.65	.95803

#1	.18160	.00335	.01654	.00420	-.00005	260.01	.00465	.00157	.00384	4.9683	-.00035	-.00340	.02798
#2	.19721	.00161	.01274	.00424	.00015	259.46	.00395	-.00320	.00542	4.9506	.00473	.00226	.02836

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.06029	.00093	.00220	5.0944	-.00978	.00065	10.465	.00536	.00471	.07459
Stddev	.00058	.00106	.00003	.0052	.00034	.00044	.059	.00048	.00040	.00003
%RSD	.95803	114.10	1.4170	.10180	3.5243	67.144	.56716	9.0236	8.5681	.03423

#1	.05988	.00018	.00218	5.0980	-.00954	.00034	10.423	.00502	.00443	.07457
#2	.06070	.00168	.00222	5.0907	-.01003	.00096	10.507	.00570	.00500	.07461

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4187.6	48606.	3831.8
Stddev	7.5	25.	5.1
%RSD	.18010	.05150	.13249

#1	4192.9	48623.	3828.2
#2	4182.2	48588.	3835.4

Sample Name: CCV-5690581 Acquired: 5/13/2019 12:23:57 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51810	F .58900	1.0150	.51043	.52303	.51277	-.00077	5.2310	.51842	.52381	.52881	.51317
Stddev	.00154	.00100	.0001	.00070	.00008	.00132	.00006	.0004	.00012	.00108	.00062	.00014
%RSD	.29686	.16939	.01158	.13766	.01486	.25818	7.8769	.00834	.02391	.20618	.11800	.02719

#1	.51919	.58971	1.0151	.51092	.52309	.51183	-.00073	5.2307	.51850	.52457	.52925	.51307
#2	.51702	.58830	1.0149	.50993	.52298	.51370	-.00081	5.2313	.51833	.52305	.52837	.51327

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.6271	52.521	1.0433	20.534	.51405	.52482	F 5.9810	.52495	1.0402	1.0443	.00328	1.0155
Stddev	.0107	.208	.0062	.021	.00037	.00120	.0042	.00118	.0031	.0008	.00410	.0006
%RSD	.40615	.39581	.59758	.10379	.07248	.22935	.06954	.22566	.29721	.07857	124.82	.06361

#1	2.6196	52.668	1.0389	20.519	.51378	.52396	5.9781	.52579	1.0424	1.0448	.00618	1.0151
#2	2.6347	52.374	1.0477	20.549	.51431	.52567	5.9839	.52411	1.0380	1.0437	.00039	1.0160

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0212	5.1164	10.949	1.0460	.51517	.00270	.51050	1.0593	.01331	.51119	.51696	.51799
Stddev	.0002	.0045	.010	.0025	.00132	.00050	.00050	.0027	.00677	.00122	.00211	.00436
%RSD	.01929	.08883	.08883	.24031	.25579	18.463	.09870	.25384	50.836	.23807	.40752	.84147

#1	1.0213	5.1132	10.942	1.0478	.51424	.00305	.51014	1.0612	.01810	.51033	.51547	.51491
#2	1.0210	5.1197	10.956	1.0442	.51610	.00234	.51085	1.0574	.00853	.51205	.51845	.52107

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4228.2	49688.	3876.3
Stddev	24.1	93.	5.7
%RSD	.57077	.18625	.14813

#1	4245.3	49753.	3880.4
#2	4211.2	49623.	3872.2

Sample Name: CCB Acquired: 5/13/2019 12:26:40 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	-.00223	.00091	-.00042	-.00046	.00006	.00147	-.00083	-.00000	-.00026	-.00005	.00125
Stddev	.00093	.00060	.00172	.00026	.00026	.00001	.00205	.00097	.00003	.00018	.00023	.00012
%RSD	123.60	26.991	188.72	61.507	56.946	16.904	139.55	117.02	8545.8	70.170	470.50	9.4425

#1	.00141	-.00265	-.00031	-.00061	-.00065	.00007	.00291	-.00014	-.00003	-.00013	-.00021	.00133
#2	.00010	-.00180	.00213	-.00024	-.00028	.00005	.00002	-.00151	.00002	-.00039	.00011	.00117

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00118	.14412	-.00312	-.00125	-.00000	.00012	F .50235	-.00025	-.00496	-.00222	-.00138	-.00218
Stddev	.00116	.05163	.00242	.00637	.00011	.00001	.00798	.00005	.00039	.00065	.00090	.00117
%RSD	98.436	35.822	77.637	507.98	4869.2	4.7341	1.5889	21.594	7.8625	29.414	65.054	53.704

#1	.00200	.18063	-.00483	-.00576	.00007	.00012	.50799	-.00029	-.00468	-.00176	-.00075	-.00301
#2	.00036	.10762	-.00141	.00325	-.00008	.00013	.49671	-.00021	-.00524	-.00268	-.00202	-.00135

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							.50000					
Low Limit							-.50000					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00509	.00910	.01948	-.00196	-.00003	-.00002	-.00050	-.00352	-.00240	.00020	-.00016	-.00121
Stddev	.00081	.00599	.01281	.00098	.00010	.00081	.00061	.00026	.00022	.00054	.00007	.00117
%RSD	15.999	65.755	65.755	49.991	315.31	3928.0	122.88	7.3442	8.9652	264.76	41.791	96.652

#1	.00451	.01334	.02854	-.00127	.00004	.00055	-.00007	-.00371	-.00256	-.00018	-.00011	-.00204
#2	.00567	.00487	.01042	-.00266	-.00010	-.00060	-.00093	-.00334	-.00225	.00059	-.00021	-.00038

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4255.5	49548.	3784.7
Stddev	8.3	193.	30.8
%RSD	.19541	.38868	.81448

#1	4261.4	49412.	3762.9
#2	4249.7	49684.	3806.5

Sample Name: CCVL-5699390 Acquired: 5/13/2019 12:29:18 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00983	.11576	.01353	.09835	.01040	.00093	.11066	.21745	.00536	.01052	.01057	.01648
Stddev	.00022	.00047	.00337	.00040	.00005	.00007	.00508	.00319	.00019	.00008	.00007	.00059
%RSD	2.2578	.40726	24.923	.40988	.44315	7.5632	4.5914	1.4670	3.4939	.77317	.65420	3.5646

#1	.00968	.11610	.01115	.09807	.01036	.00098	.11425	.21520	.00522	.01057	.01062	.01607
#2	.00999	.11543	.01592	.09864	.01043	.00088	.10706	.21971	.00549	.01046	.01052	.01690

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .14258	3.1620	.01887	.20013	.01076	.02010	F 1.5032	.04272	2.9815	.00858	.08937	.01764
Stddev	.00147	.0558	.00198	.00303	.00002	.00018	.0080	.00023	.0055	.00015	.00153	.00132
%RSD	1.0334	1.7649	10.478	1.5120	.15304	.88351	.53574	.53716	.18374	1.7952	1.7121	7.4832

#1	.14362	3.1225	.02027	.19799	.01077	.02023	1.4975	.04256	2.9854	.00847	.09045	.01858
#2	.14154	3.2015	.01748	.20227	.01074	.01998	1.5089	.04289	2.9776	.00868	.08829	.01671

Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.10000						1.0000					
Range	30.000%						30.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01958	.53720	1.1496	.10142	.01022	.01547	.00966	.01260	F .07912	.01017	.02306	.01187
Stddev	.00145	.00391	.0084	.00182	.00011	.00098	.00042	.00016	.00693	.00031	.00068	.00087
%RSD	7.4085	.72750	.72750	1.7950	1.0893	6.3096	4.3236	1.2307	8.7556	3.0026	2.9356	7.3259

#1	.01856	.53997	1.1555	.10271	.01015	.01616	.00936	.01271	.08402	.00995	.02258	.01248
#2	.02061	.53444	1.1437	.10013	.01030	.01478	.00995	.01249	.07422	.01039	.02354	.01125

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value									.06000			
Range									30.000%			

Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4284.5	50359.	3923.3									
Stddev	15.3	73.	.5									
%RSD	.35785	.14417	.01171									

#1	4295.4	50308.	3923.6									
#2	4273.7	50411.	3922.9									

Sample Name: MB 280-457070/1-A Acquired: 5/13/2019 12:31:54 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/9 Custom ID2: Custom ID3:
Comment: 457070 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00030	.00003	W -0.00861	-0.00093	.00014	.00007	.00190	-0.00329	-0.00013
Stddev	.00078	.00048	.00053	.00003	.00077	.00007	.00023	.00286	.00018
%RSD	257.54	1782.6	6.1479	2.8695	564.92	98.996	12.175	87.060	137.29
#1	.00025	-.00031	-.00898	-.00091	.00068	.00012	.00174	-.00531	-.00026
#2	-.00085	.00036	-.00824	-.00094	-.00041	.00002	.00207	-.00126	-.00000
Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			.00750						
Low Limit			-.00750						

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00005	.00040	.00417	.07595	.00231	-0.00213	.00013	-0.00003
Stddev	.00046	.00010	.00036	.00075	.03586	.00167	.00135	.00003	.00009
%RSD	7038.5	208.28	88.461	18.067	47.218	72.323	63.185	25.999	306.19
#1	.00033	-.00002	.00066	.00364	.10131	.00113	-.00308	.00015	.00004
#2	-.00032	.00012	.00015	.00470	.05059	.00348	-.00118	.00010	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.43130	-0.0054	-0.00559	-0.00266	.00408	-0.00207	.00090	.03271	.06999
Stddev	.01884	.00013	.00031	.00003	.00523	.00038	.00125	.04520	.09672
%RSD	4.3688	24.481	5.5022	1.2031	128.31	18.408	138.10	138.18	138.18
#1	.44463	-.00063	-.00538	-.00264	.00778	-.00180	.00002	.00075	.00160
#2	.41798	-.00045	-.00581	-.00268	.00038	-.00233	.00178	.06467	.13838
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00197	-0.00017	.00077	.00006	-0.00309	-0.01487	.00017	.00072	-0.00163
Stddev	.00039	.00001	.00011	.00012	.00057	.00725	.00001	.00092	.00082
%RSD	19.960	6.4948	14.249	187.93	18.612	48.760	5.8815	127.43	50.208
#1	-.00225	-.00016	.00085	.00014	-.00268	-.02000	.00018	.00007	-.00105
#2	-.00170	-.00018	.00069	-.00002	-.00349	-.00975	.00016	.00137	-.00221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4398.5	51361.	3916.9
Stddev	3.7	193.	24.3
%RSD	.08517	.37523	.62093
#1	4395.9	51225.	3934.1
#2	4401.2	51497.	3899.7

Sample Name: LCS 280-457070/2-A Acquired: 5/13/2019 12:34:29 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05426	10.444	2.0230	1.0045	2.0743	W 1.0192	W 2.0912	50.646	1.0186
Stddev	.00001	.051	.0110	.0027	.0033	.0006	.0041	.064	.0045
%RSD	.01169	.48374	.54363	.26401	.15869	.05527	.19712	.12554	.44421

#1	.05427	10.408	2.0308	1.0063	2.0766	1.0188	2.0942	50.691	1.0218
#2	.05426	10.479	2.0152	1.0026	2.0720	1.0196	2.0883	50.601	1.0154

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Warn	Chk Pass	Chk Pass
High Limit						1.0000	2.0000		
Low Limit						-.00200	-.20000		

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99348	1.0229	1.0072	10.103	52.086	1.0325	49.945	1.0181	1.0383
Stddev	.00494	.0034	.0035	.012	.106	.0022	.058	.0015	.0059
%RSD	.49763	.33714	.34721	.11609	.20280	.21268	.11605	.15237	.56369

#1	.99697	1.0254	1.0097	10.111	52.161	1.0341	49.904	1.0170	1.0425
#2	.98998	1.0205	1.0047	10.095	52.011	1.0310	49.986	1.0192	1.0342

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	52.448	.99482	W 20.975	1.0041	9.7647	1.0197	2.0133	2.1013	4.4968
Stddev	.534	.00595	.092	.0039	.0543	.0120	.0107	.0260	.0556
%RSD	1.0186	.59774	.44072	.38676	.55596	1.1720	.52915	1.2372	1.2372

#1	52.070	.99903	21.041	1.0068	9.8030	1.0281	2.0209	2.0829	4.4575
#2	52.826	.99062	20.910	1.0013	9.7263	1.0112	2.0058	2.1197	4.5362

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.0405	1.0211	1.0302	1.0302	2.0162	2.1841	1.0297	.50852	.53226
Stddev	.0097	.0002	.0009	.0022	.0139	.0210	.0004	.00063	.00142
%RSD	.47477	.01676	.09165	.21782	.68773	.96366	.04301	.12452	.26695

#1	2.0473	1.0213	1.0295	1.0286	2.0260	2.1990	1.0294	.50897	.53125
#2	2.0336	1.0210	1.0309	1.0318	2.0064	2.1692	1.0301	.50807	.53326

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000								
Low Limit	-.20000								

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4324.8	49901.	3989.8
Stddev	.5	191.	2.6
%RSD	.01127	.38252	.06555

#1	4325.2	50036.	3988.0
#2	4324.5	49766.	3991.7

Sample Name: LCSD 280-457070/3-A Acquired: 5/13/2019 12:36:46 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05402	10.566	2.0265	1.0039	2.0826	W 1.0192	W 2.0831	51.418	1.0181
Stddev	.00003	.168	.0147	.0078	.0030	.0028	.0177	.040	.0055
%RSD	.05105	1.5857	.72439	.77554	.14434	.27112	.85163	.07749	.54213

#1	.05404	10.447	2.0369	1.0094	2.0805	1.0172	2.0956	51.390	1.0220
#2	.05400	10.684	2.0161	.99839	2.0847	1.0211	2.0705	51.447	1.0142

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Warn	Chk Pass	Chk Pass
High Limit						1.0000	2.0000		
Low Limit						-.00200	-.20000		

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99576	1.0257	1.0085	10.296	52.801	1.0368	50.509	1.0173	1.0426
Stddev	.00514	.0070	.0015	.009	.025	.0021	.090	.0005	.0038
%RSD	.51653	.68402	.15215	.08878	.04779	.19924	.17885	.04735	.36343

#1	.99940	1.0307	1.0096	10.289	52.784	1.0383	50.573	1.0177	1.0453
#2	.99212	1.0208	1.0074	10.302	52.819	1.0354	50.445	1.0170	1.0400

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	53.419	.99547	W 20.873	1.0030	9.6781	1.0249	2.0101	2.0795	4.4502
Stddev	.260	.00428	.139	.0041	.0868	.0074	.0137	.0268	.0573
%RSD	.48640	.43022	.66548	.40674	.89724	.71856	.68313	1.2888	1.2888

#1	53.603	.99850	20.972	1.0059	9.7395	1.0301	2.0198	2.0606	4.4096
#2	53.236	.99244	20.775	1.0001	9.6167	1.0197	2.0004	2.0985	4.4907

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.0396	1.0239	1.0302	1.0303	2.0157	2.1728	1.0305	.50735	.52967
Stddev	.0136	.0032	.0020	.0027	.0052	.0479	.0006	.00248	.00046
%RSD	.66660	.30841	.19792	.25741	.25526	2.2052	.05432	.48963	.08743

#1	2.0492	1.0216	1.0287	1.0321	2.0193	2.2067	1.0309	.50911	.52934
#2	2.0300	1.0261	1.0316	1.0284	2.0121	2.1389	1.0301	.50560	.53000

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000								
Low Limit	-.20000								

Int. Std.	Y_2243	Y_3600	Y_3774						
Line	224.306 {450}	360.073 { 94}	377.433 { 89}						
Units	Cts/S	Cts/S	Cts/S						
Avg	4344.7	50235.	3983.5						
Stddev	.7	176.	9.5						
%RSD	.01646	.35086	.23850						

#1	4345.2	50360.	3976.8						
#2	4344.2	50110.	3990.2						

Sample Name: 280-123205-A-5-A Acquired: 5/13/2019 12:39:02 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.05681	-.00035	.06412	.04732	.00009	-.00320	90.806	.00024
Stddev	.00146	.00079	.00444	.00036	.00097	.00014	.00320	.284	.00003
%RSD	582.27	1.3994	1281.1	.55468	2.0440	160.31	99.998	.31288	12.128

#1	.00128	.05737	-.00348	.06437	.04663	-.00001	-.00546	90.605	.00026
#2	-.00078	.05625	.00279	.06386	.04800	.00019	-.00094	91.007	.00022

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.01891	.00188	.23678	.48674	-.00538	28.872	.00402	.00416
Stddev	.00019	.00011	.00057	.00069	.00044	.00095	.025	.00016	.00034
%RSD	103.83	.58484	30.638	.28952	.09139	17.567	.08730	3.8748	8.1963

#1	-.00032	.01898	.00228	.23630	.48643	-.00605	28.854	.00413	.00392
#2	-.00005	.01883	.00147	.23727	.48706	-.00471	28.890	.00391	.00440

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	32.739	.00444	.00272	-.00137	20.021	-.00164	.00329	5.9118	12.651
Stddev	.377	.00017	.00224	.00096	.255	.00040	.00295	.0049	.010
%RSD	1.1524	3.8365	82.265	70.406	1.2745	24.432	89.612	.08258	.08258

#1	33.006	.00432	.00114	-.00205	20.202	-.00192	.00120	5.9084	12.644
#2	32.472	.00456	.00431	-.00069	19.841	-.00135	.00537	5.9153	12.659

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00204	.16817	.00051	.00109	-.00305	.01751	.00011	.00098	-.00225
Stddev	.00039	.00006	.00110	.00062	.00325	.02491	.00089	.00027	.00005
%RSD	18.881	.03377	217.44	56.544	106.43	142.30	806.78	27.944	2.1285

#1	-.00231	.16821	-.00027	.00153	-.00076	-.00011	.00074	.00078	-.00228
#2	-.00177	.16813	.00129	.00066	-.00535	.03512	-.00052	.00117	-.00222

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4426.5	51152.	4022.6
Stddev	11.8	142.	27.4
%RSD	.26594	.27747	.68237

#1	4434.8	51253.	4042.0
#2	4418.1	51052.	4003.2

Sample Name: 123205-A-5-A SD@5 Acquired: 5/13/2019 12:41:36 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.01143	-.00002	.01401	.00911	.00010	-.00210	18.230	.00003
Stddev	.00011	.00015	.00677	.00053	.00050	.00009	.00159	.199	.00005
%RSD	68.759	1.3363	32115.	3.7658	5.4616	95.006	75.643	1.0913	176.54

#1	.00008	.01132	-.00481	.01438	.00876	.00003	-.00322	18.089	-.00001
#2	.00024	.01154	.00476	.01364	.00946	.00016	-.00097	18.370	.00007

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00408	.00030	.08989	.09719	-.00254	6.0827	.00139	.00070
Stddev	.00019	.00017	.00028	.00864	.06114	.00014	.0580	.00009	.00036
%RSD	1158.2	4.2436	91.976	9.6123	62.901	5.5603	.95270	6.1621	51.001

#1	-.00011	.00421	.00050	.09601	.14042	-.00264	6.0417	.00133	.00045
#2	.00015	.00396	.00011	.08378	.05396	-.00244	6.1237	.00145	.00096

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.7206	.00112	-.00269	-.00112	4.2986	-.00319	-.00009	1.2025	2.5734
Stddev	.1351	.00018	.00007	.00063	.0730	.00066	.00341	.0191	.0408
%RSD	2.0101	15.991	2.4258	56.407	1.6978	20.766	3602.3	1.5845	1.5845

#1	6.6250	.00099	-.00265	-.00157	4.2470	-.00366	.00232	1.1890	2.5445
#2	6.8161	.00125	-.00274	-.00068	4.3502	-.00272	-.00251	1.2160	2.6022

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00300	.03318	.00349	-.00054	-.00306	.00597	-.00010	.00004	-.00451
Stddev	.00019	.00055	.00239	.00029	.00147	.04160	.00012	.00007	.00159
%RSD	6.3350	1.6633	68.641	53.743	48.078	696.87	112.89	200.82	35.364

#1	-.00313	.03279	.00179	-.00034	-.00410	.03538	-.00002	-.00001	-.00338
#2	-.00286	.03357	.00518	-.00075	-.00202	-.02344	-.00019	.00009	-.00563

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4429.5	52307.	4045.3
Stddev	12.3	151.	5.9
%RSD	.27747	.28870	.14500

#1	4420.8	52200.	4041.2
#2	4438.2	52414.	4049.5

Sample Name: 280-123205-A-5-B MS Acquired: 5/13/2019 12:44:08 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05460	10.631	2.0170	1.0524	2.0912	W 1.0035	W 2.0328	141.74	1.0067
Stddev	.00043	.024	.0017	.0018	.0021	.0035	.0016	.06	.0024
%RSD	.77936	.22470	.08645	.16683	.09790	.34467	.07829	.04370	.23397

#1	.05430	10.614	2.0182	1.0537	2.0927	1.0011	2.0317	141.70	1.0084
#2	.05490	10.648	2.0158	1.0512	2.0898	1.0060	2.0340	141.78	1.0051

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Warn	Chk Pass	Chk Pass
High Limit						1.0000	2.0000		
Low Limit						-.00200	-.20000		

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96650	1.0250	1.0031	10.243	53.193	1.0232	79.770	.99879	1.0308
Stddev	.00421	.0046	.0110	.046	.009	.0047	.944	.01183	.0057
%RSD	.43542	.44595	1.0914	.44545	.01731	.46152	1.1829	1.1845	.54933

#1	.96947	1.0282	.99538	10.210	53.199	1.0266	79.103	.99043	1.0348
#2	.96352	1.0217	1.0109	10.275	53.186	1.0199	80.437	1.0072	1.0267

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	85.656	.96969	W 20.937	.97627	30.102	1.0163	1.9836	8.0473	17.221
Stddev	.842	.00393	.044	.00065	.051	.0021	.0077	.0553	.118
%RSD	.98281	.40540	.21002	.06637	.16966	.20447	.39055	.68659	.68659

#1	86.251	.97247	20.968	.97673	30.138	1.0177	1.9891	8.0863	17.305
#2	85.060	.96691	20.906	.97581	30.066	1.0148	1.9781	8.0082	17.138

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.0074	1.1669	1.0139	1.0164	1.9506	2.1139	1.0228	.49380	.51714
Stddev	.0133	.0017	.0087	.0116	.0041	.0063	.0115	.00650	.00206
%RSD	.66369	.14478	.85723	1.1363	.20807	.29872	1.1234	1.3171	.39828

#1	2.0168	1.1657	1.0077	1.0082	1.9535	2.1184	1.0147	.48920	.51569
#2	1.9979	1.1681	1.0200	1.0245	1.9478	2.1094	1.0309	.49840	.51860

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000								
Low Limit	-.20000								

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4227.3	48897.	3957.1
Stddev	6.1	471.	36.1
%RSD	.14461	.96247	.91218

#1	4223.0	49230.	3982.6
#2	4231.6	48565.	3931.6

Sample Name: 280-123205-A-5-C MSD Acquired: 5/13/2019 12:46:24 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05436	10.071	1.9895	1.0497	2.0649	.99195	W 2.0346	138.42	.99566
Stddev	.00114	.017	.0181	.0052	.0015	.00284	.0110	.09	.00581
%RSD	2.1051	.17044	.90724	.49680	.07276	.28595	.53883	.06701	.58381

#1	.05355	10.083	2.0023	1.0534	2.0639	.98995	2.0423	138.35	.99977
#2	.05517	10.058	1.9768	1.0460	2.0660	.99396	2.0268	138.48	.99155

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass
High Limit							2.0000		
Low Limit							-.20000		

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95027	1.0083	.98204	9.8294	51.255	1.0177	76.323	.97518	1.0164
Stddev	.00680	.0060	.00237	.0393	.067	.0012	.224	.00222	.0109
%RSD	.71514	.59274	.24160	.39997	.13014	.11326	.29347	.22779	1.0711

#1	.95507	1.0126	.98036	9.8016	51.208	1.0185	76.481	.97675	1.0241
#2	.94546	1.0041	.98371	9.8572	51.303	1.0169	76.164	.97361	1.0087

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	82.661	.95414	W 20.656	.96311	29.661	.99663	1.9543	8.0087	17.139
Stddev	.284	.00467	.151	.00790	.191	.00591	.0112	.0483	.103
%RSD	.34331	.48911	.73123	.82048	.64557	.59260	.57050	.60332	.60332

#1	82.862	.95744	20.763	.96870	29.797	1.0008	1.9622	8.0429	17.212
#2	82.461	.95084	20.550	.95753	29.526	.99246	1.9464	7.9746	17.066

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.9772	1.1528	.99786	.99309	1.9371	2.0256	.99700	.48591	.51874
Stddev	.0113	.0036	.00435	.00224	.0121	.0413	.00049	.00148	.00380
%RSD	.57096	.31426	.43640	.22580	.62287	2.0367	.04953	.30471	.73182

#1	1.9852	1.1503	1.0009	.99467	1.9456	1.9964	.99734	.48695	.51606
#2	1.9692	1.1554	.99478	.99150	1.9286	2.0548	.99665	.48486	.52142

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4225.4	49308.	3896.4
Stddev	1.3	313.	25.1
%RSD	.03095	.63443	.64302

#1	4224.4	49087.	3878.7
#2	4226.3	49529.	3914.1

Sample Name: 280-123205-A-5-A PDS Acquired: 5/13/2019 12:48:39 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05381	1.1494	.20453	.17086	.15159	.05099	-.00075	110.87	.05204
Stddev	.00041	.0097	.00270	.00257	.00031	.00059	.00056	.08	.00047
%RSD	.76775	.84734	1.3196	1.5027	.20388	1.1564	74.255	.07419	.89461

#1	.05411	1.1563	.20644	.17267	.15137	.05141	-.00115	110.93	.05236
#2	.05352	1.1426	.20262	.16904	.15181	.05057	-.00036	110.81	.05171

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04933	.07028	.05339	1.2591	21.722	.10478	48.829	.05460	.05906
Stddev	.00024	.00055	.00073	.0055	.014	.00319	.125	.00002	.00034
%RSD	.48672	.78693	1.3645	.43809	.06553	3.0472	.25686	.04027	.56873

#1	.04950	.07067	.05390	1.2630	21.712	.10253	48.740	.05458	.05930
#2	.04916	.06989	.05287	1.2552	21.732	.10704	48.918	.05461	.05882

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	53.181	.05422	2.1266	.09821	20.050	.10517	.20263	11.140	23.839
Stddev	.320	.00045	.0307	.00287	.160	.00598	.00337	.045	.096
%RSD	.60129	.82643	1.4448	2.9272	.79717	5.6862	1.6644	.40416	.40416

#1	52.955	.05453	2.1483	.10024	20.163	.10940	.20024	11.108	23.771
#2	53.407	.05390	2.1049	.09618	19.937	.10095	.20501	11.172	23.907

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10431	.21825	.20846	.05419	.20062	.49335	.05141	.20458	.05925
Stddev	.00183	.00018	.00161	.00025	.00020	.01669	.00088	.00146	.00326
%RSD	1.7572	.08364	.77406	.46024	.09729	3.3834	1.7059	.71181	5.5084

#1	.10561	.21838	.20960	.05401	.20076	.48155	.05079	.20561	.06156
#2	.10302	.21812	.20732	.05437	.20048	.50516	.05203	.20355	.05694

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4226.7	48963.	3854.9
Stddev	4.5	12.	.6
%RSD	.10600	.02390	.01463

#1	4229.8	48971.	3855.3
#2	4223.5	48954.	3854.5

Sample Name: CCVH-5690583 Acquired: 5/13/2019 12:51:05 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00358	50.812	-.00508	.00552	.00222	.00131	.99663	.02459	.00103	.00256	.00117	.01545	51.788
Stddev	.00009	.187	.00264	.00043	.00019	.00021	.01486	.00125	.00008	.00004	.00005	.00134	.070
%RSD	2.3955	.36745	52.011	7.8604	8.3910	16.186	1.4908	5.0674	7.7339	1.5652	4.3996	8.6592	.13551

#1	.00364	50.680	-.00695	.00521	.00209	.00145	1.0071	.02547	.00097	.00259	.00121	.01640	51.838
#2	.00352	50.944	-.00321	.00583	.00235	.00116	.98612	.02371	.00109	.00253	.00114	.01451	51.739

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.27776	.00364	.00538	.00381	.00064	258.05	.00369	.00436	.00426	4.8726	.00052	.00406	.03256
Stddev	.04331	.00059	.00187	.00006	.00006	.33	.00022	.00035	.00138	.0444	.00350	.00226	.01993
%RSD	15.593	16.105	34.773	1.5431	9.6921	.12758	5.9359	7.9853	32.304	.91198	672.62	55.710	61.210

#1	.24714	.00406	.00406	.00377	.00059	258.28	.00384	.00412	.00524	4.9040	.00300	.00246	.01847
#2	.30839	.00323	.00671	.00385	.00068	257.82	.00353	.00461	.00329	4.8412	-.00196	.00567	.04666

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.06969	.00067	.00186	4.9939	-.00977	-.00067	10.241	.00515	.00321	.07683
Stddev	.04265	.00015	.00010	.0113	.00024	.00085	.024	.00038	.00020	.00041
%RSD	61.210	22.126	5.3294	.22672	2.4441	127.06	.23097	7.2927	6.1183	.52716

#1	.03952	.00056	.00193	5.0019	-.00960	-.00007	10.258	.00542	.00307	.07712
#2	.09985	.00077	.00179	4.9859	-.00994	-.00127	10.224	.00489	.00335	.07654

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4299.2	49832.	3892.0
Stddev	9.1	163.	12.0
%RSD	.21149	.32643	.30905

#1	4305.6	49717.	3883.5
#2	4292.8	49947.	3900.5

Sample Name: CCV-5690581 Acquired: 5/13/2019 12:53:33 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51322	F .56592	.99695	.50666	.51888	.50642	-.00469	5.1775	.50781	.51361	.51879	.51165
Stddev	.00076	.00639	.01190	.00429	.00025	.00080	.00289	.0045	.00399	.00458	.00492	.00225
%RSD	.14718	1.1289	1.1933	.84673	.04748	.15860	61.652	.08684	.78491	.89181	.94906	.43981

#1	.51268	.57043	1.0054	.50969	.51905	.50699	-.00674	5.1807	.51063	.51684	.52227	.51324
#2	.51375	.56140	.98854	.50362	.51870	.50585	-.00265	5.1743	.50499	.51037	.51530	.51006

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.5730	52.175	1.0318	20.321	.50856	.52264	F 5.7802	.51492	1.0211	1.0254	.01154	1.0024
Stddev	.0096	.060	.0075	.054	.00083	.00512	.0222	.00447	.0102	.0061	.00559	.0099
%RSD	.37188	.11456	.72241	.26449	.16409	.97976	.38374	.86904	1.0021	.59307	48.434	.98638

#1	2.5797	52.217	1.0370	20.359	.50915	.52626	5.7959	.51808	1.0283	1.0297	.00759	1.0094
#2	2.5662	52.132	1.0265	20.283	.50797	.51902	5.7645	.51176	1.0139	1.0211	.01549	.99540

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99900	5.0539	10.815	1.0242	.50933	.00020	.50484	1.0385	.05778	.50654	.50809	.51388
Stddev	.00924	.0112	.024	.0096	.00024	.00240	.00190	.0083	.00274	.00342	.00056	.00026
%RSD	.92502	.22159	.22159	.93607	.04669	1181.6	.37659	.79685	4.7419	.67566	.10953	.04977

#1	1.0055	5.0618	10.832	1.0309	.50917	-.00149	.50618	1.0444	.05971	.50896	.50848	.51370
#2	.99246	5.0459	10.798	1.0174	.50950	.00190	.50349	1.0327	.05584	.50412	.50769	.51406

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4350.3	51368.	3984.7
Stddev	7.9	62.	29.8
%RSD	.18064	.12115	.74699

#1	4355.8	51324.	3963.6
#2	4344.7	51412.	4005.7

Sample Name: CCB Acquired: 5/13/2019 12:55:55 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoades Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	-.00208	-.00161	.00158	-.00039	.00008	.00287	-.00065	-.00013	.00012	.00015	-.00108
Stddev	.00042	.00036	.00238	.00036	.00027	.00007	.00096	.00044	.00002	.00008	.00026	.00016
%RSD	135.50	17.136	148.33	22.872	68.577	79.213	33.508	67.411	19.834	68.441	177.28	14.890
#1	.00001	-.00183	-.00329	.00133	-.00020	.00004	.00355	-.00096	-.00014	.00006	.00034	-.00096
#2	.00061	-.00233	.00008	.00184	-.00057	.00013	.00219	-.00034	-.00011	.00018	-.00004	-.00119

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00232	.05092	-.00141	-.00573	.00004	.00049	W .40753	.00013	-.00549	-.00303	-.00234	-.00078
Stddev	.00062	.01690	.00460	.00555	.00004	.00002	.01418	.00004	.00190	.00093	.00094	.00151
%RSD	26.791	33.195	325.53	96.750	101.80	3.4307	3.4804	33.499	34.605	30.578	40.051	192.96
#1	.00188	.03897	-.00466	-.00181	.00006	.00048	.39751	.00016	-.00415	-.00237	-.00168	-.00186
#2	.00276	.06287	.00184	-.00965	.00001	.00050	.41756	.00010	-.00684	-.00368	-.00300	.00029

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							.35000					
Low Limit							-.35000					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00441	.03012	.06447	-.00178	-.00012	.00179	-.00003	-.00314	.03464	-.00039	-.00029	-.00160
Stddev	.00479	.02763	.05913	.00027	.00012	.00237	.00015	.00079	.02006	.00023	.00034	.00160
%RSD	108.48	91.717	91.717	15.070	96.206	131.91	427.30	25.145	57.901	58.593	116.74	100.07
#1	.00103	.04966	.10627	-.00197	-.00004	.00347	.00007	-.00258	.04882	-.00055	-.00005	-.00047
#2	.00779	.01059	.02266	-.00159	-.00020	.00012	-.00014	-.00370	.02046	-.00023	-.00054	-.00273

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4506.9	52628.	4007.3
Stddev	6.9	272.	7.7
%RSD	.15226	.51590	.19132
#1	4502.0	52820.	4001.9
#2	4511.8	52436.	4012.7

Sample Name: CCVL-5699390 Acquired: 5/13/2019 12:58:30 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01029	.11304	.01373	.09893	.01013	.00095	.10671	.21835	.00508	.01012	.01017	.01531
Stddev	.00038	.00008	.00179	.00054	.00007	.00005	.00277	.00831	.00014	.00007	.00015	.00053
%RSD	3.6852	.07434	13.024	.54842	.69150	4.9285	2.5966	3.8072	2.7551	.68303	1.4877	3.4882

#1	.01055	.11310	.01499	.09855	.01008	.00098	.10867	.22422	.00518	.01017	.01027	.01569
#2	.01002	.11298	.01246	.09932	.01018	.00092	.10475	.21247	.00498	.01007	.01006	.01494

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.12326	3.1047	.01781	.20423	.01063	.01984	F 1.4083	.04188	2.9361	.00694	.09485	.01427
Stddev	.00099	.0426	.00021	.00084	.00004	.00016	.0341	.00042	.0413	.00104	.00386	.00423
%RSD	.80639	1.3733	1.1929	.40943	.36597	.80580	2.4239	1.0079	1.4057	15.019	4.0719	29.657

#1	.12397	3.1348	.01796	.20482	.01066	.01973	1.3842	.04218	2.9653	.00621	.09212	.01726
#2	.12256	3.0745	.01766	.20364	.01060	.01996	1.4325	.04158	2.9069	.00768	.09758	.01128

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							1.0000					
Range							30.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02080	.54978	1.1765	.10110	.01025	.01572	.00924	.01296	F .08415	.01000	.02238	F .00993
Stddev	.00162	.00821	.0176	.00119	.00010	.00189	.00028	.00253	.00660	.00041	.00011	.00142
%RSD	7.7955	1.4929	1.4929	1.1791	.95331	11.995	2.9772	19.507	7.8424	4.1008	.50144	14.283

#1	.01965	.55558	1.1889	.10194	.01019	.01705	.00944	.01475	.08882	.01029	.02230	.01094
#2	.02195	.54397	1.1641	.10026	.01032	.01439	.00905	.01117	.07948	.00971	.02246	.00893

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail
Value									.06000			.01500
Range									30.000%			-30.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4381.5	50914.	3931.9
Stddev	12.2	186.	4.1
%RSD	.27899	.36590	.10497

#1	4372.8	51046.	3928.9
#2	4390.1	50782.	3934.8

Sample Name: 280-123205-A-13-A Acquired: 5/13/2019 13:01:08 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.04676	-.00390	.03686	.03069	.00016	.00001	36.008	.00019
Stddev	.00006	.00050	.00091	.00015	.00032	.00019	.00217	.110	.00024
%RSD	18.429	1.0601	23.392	.39754	1.0498	116.33	14581.	.30541	120.90

#1	.00030	.04711	-.00455	.03675	.03092	.00029	.00155	36.086	.00003
#2	.00039	.04641	-.00326	.03696	.03046	.00003	-.00152	35.930	.00036

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00729	.00122	.21851	2.3922	.08719	27.728	.09136	.00109
Stddev	.00025	.00025	.00075	.00085	.0095	.00010	.041	.00004	.00012
%RSD	237.30	3.4028	61.472	.38818	.39543	.11874	.14853	.04309	10.657

#1	.00007	.00711	.00069	.21791	2.3855	.08727	27.757	.09133	.00117
#2	-.00028	.00746	.00175	.21911	2.3989	.08712	27.699	.09139	.00100

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	58.737	.00969	.01350	-.00495	26.295	-.00178	.00474	16.789	35.928
Stddev	.241	.00007	.00042	.00059	.197	.00411	.00399	.029	.061
%RSD	.41048	.68549	3.1024	11.876	.75090	230.86	84.175	.17078	.17078

#1	58.907	.00964	.01380	-.00537	26.434	.00113	.00756	16.809	35.971
#2	58.566	.00973	.01321	-.00454	26.155	-.00469	.00192	16.769	35.885

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00240	.24107	.00329	.00027	-.00314	-.01296	-.00012	.00270	-.00007
Stddev	.00099	.00091	.00109	.00042	.00103	.00708	.00006	.00028	.00486
%RSD	41.158	.37818	33.200	159.64	32.890	54.647	47.817	10.336	6805.7

#1	-.00310	.24171	.00406	.00056	-.00241	-.01796	-.00008	.00250	.00336
#2	-.00170	.24042	.00252	-.00003	-.00387	-.00795	-.00016	.00290	-.00351

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4383.5	51539.	4026.7
Stddev	4.8	111.	42.4
%RSD	.10891	.21555	1.0536

#1	4380.1	51618.	3996.7
#2	4386.8	51460.	4056.7

Sample Name: 280-123221-E-2-A Acquired: 5/13/2019 13:03:39 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.03669	.00801	.02190	.09122	.00005	-.00307	84.783	.00028
Stddev	.00036	.00012	.00404	.00042	.00006	.00012	.00071	.147	.00006
%RSD	126.49	.34040	50.458	1.8967	.06279	232.82	23.178	.17310	22.345

#1	.00054	.03678	.01086	.02160	.09118	.00013	-.00357	84.679	.00032
#2	.00003	.03661	.00515	.02219	.09126	-.00003	-.00257	84.886	.00023

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00021	.00041	1.0360	1.4124	.01055	21.483	.35099	.00077
Stddev	.00001	.00036	.00041	.0007	.0091	.00221	.027	.00010	.00040
%RSD	11.369	168.59	99.228	.06933	.64163	20.981	.12545	.02825	51.831

#1	-.00004	-.00004	.00070	1.0355	1.4060	.01211	21.502	.35106	.00049
#2	-.00005	.00046	.00012	1.0365	1.4188	.00898	21.464	.35092	.00105

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.1835	-.00055	.00334	-.00322	18.996	-.00446	.00263	8.6339	18.477
Stddev	.0175	.00002	.00153	.00198	.090	.00118	.00353	.0179	.038
%RSD	.24328	4.1691	45.878	61.568	.47469	26.514	134.04	.20773	.20773

#1	7.1711	-.00053	.00226	-.00182	19.060	-.00362	.00513	8.6466	18.504
#2	7.1959	-.00056	.00443	-.00462	18.932	-.00530	.00014	8.6212	18.449

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00221	.13986	.00158	.00017	-.00162	-.00790	-.00061	.00010	-.00365
Stddev	.00007	.00075	.00152	.00007	.00390	.02053	.00029	.00026	.00195
%RSD	2.9467	.53740	96.385	39.512	240.22	259.74	48.741	254.85	53.434

#1	-.00216	.13933	.00265	.00012	.00113	-.02242	-.00081	.00028	-.00227
#2	-.00226	.14039	.00050	.00021	-.00438	.00661	-.00040	-.00008	-.00503

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4302.8	50452.	3938.0
Stddev	10.2	383.	14.5
%RSD	.23811	.75825	.36826

#1	4295.5	50723.	3927.8
#2	4310.0	50182.	3948.3

Sample Name: 280-123221-J-4-A Acquired: 5/13/2019 13:06:11 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	.00072	.00896	.02609	.04628	.00009	-.00244	89.620	.00064
Stddev	.00034	.00049	.00047	.00068	.00038	.00011	.00198	.015	.00027
%RSD	41.162	68.261	5.2574	2.5996	.82749	114.05	80.938	.01644	42.463

#1	.00108	.00106	.00930	.02657	.04601	.00002	-.00384	89.609	.00083
#2	.00059	.00037	.00863	.02561	.04655	.00017	-.00104	89.630	.00045

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.00113	-.00055	1.9858	1.8913	.02021	32.530	.25420	.00035
Stddev	.00035	.00024	.00033	.0016	.0024	.00092	.102	.00100	.00031
%RSD	1142.4	21.129	60.340	.07988	.12887	4.5704	.31225	.39213	87.571

#1	-.00028	.00130	-.00078	1.9847	1.8896	.01955	32.459	.25349	.00013
#2	.00022	.00096	-.00031	1.9869	1.8931	.02086	32.602	.25490	.00057

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.684	-.00039	.00170	-.00248	31.325	-.00295	-.00062	7.7158	16.512
Stddev	.145	.00038	.00029	.00029	.358	.00264	.00030	.0215	.046
%RSD	1.2453	95.821	16.998	11.739	1.1426	89.481	47.570	.27870	.27870

#1	11.787	-.00013	.00150	-.00269	31.578	-.00108	-.00083	7.7310	16.544
#2	11.581	-.00066	.00191	-.00227	31.071	-.00482	-.00041	7.7006	16.479

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00251	.14547	.00113	-.00050	-.00468	.00282	-.00027	.00144	-.00212
Stddev	.00122	.00003	.00456	.00001	.00070	.08339	.00019	.00000	.00224
%RSD	48.764	.01876	402.89	2.7782	14.984	2959.0	70.207	.16669	105.28

#1	-.00164	.14546	-.00209	-.00049	-.00518	.06178	-.00013	.00144	-.00371
#2	-.00337	.14549	.00436	-.00051	-.00419	-.05615	-.00040	.00145	-.00054

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4291.8	50531.	3939.8
Stddev	14.1	341.	2.1
%RSD	.32752	.67399	.05252

#1	4281.8	50772.	3938.3
#2	4301.7	50290.	3941.3

Sample Name: 280-123221-F-5-A Acquired: 5/13/2019 13:08:43 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00278	.00922	.02740	.04729	.00010	.00039	90.713	.00029
Stddev	.00013	.00293	.00234	.00025	.00026	.00000	.00138	.439	.00019
%RSD	14.791	105.12	25.363	.92048	.55876	1.2937	350.41	.48359	65.661

#1	.00077	.00071	.00757	.02758	.04710	.00010	.00137	90.403	.00043
#2	.00095	.00485	.01088	.02723	.04747	.00010	-.00058	91.024	.00016

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00048	.00052	2.0126	1.8544	.01936	32.937	.25630	.00029
Stddev	.00009	.00024	.00052	.0080	.0545	.00083	.061	.00046	.00029
%RSD	77.398	50.152	101.35	.39985	2.9402	4.2831	.18543	.18034	100.13

#1	.00005	.00064	.00015	2.0069	1.8159	.01877	32.981	.25663	.00009
#2	.00018	.00031	.00089	2.0183	1.8930	.01994	32.894	.25598	.00050

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.075	-.00033	.00236	-.00175	31.778	-.00029	-.00131	7.8694	16.841
Stddev	.027	.00015	.00219	.00030	.131	.00635	.00099	.0641	.137
%RSD	.22710	46.859	92.726	17.301	.41183	2226.3	75.302	.81506	.81506

#1	12.055	-.00022	.00081	-.00197	31.870	.00421	-.00061	7.8241	16.744
#2	12.094	-.00043	.00390	-.00154	31.685	-.00478	-.00201	7.9148	16.938

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00267	.14715	-.00170	.00008	-.00483	.03969	-.00047	.00203	.00139
Stddev	.00206	.00060	.00011	.00013	.00044	.03313	.00024	.00008	.00108
%RSD	77.306	.40647	6.5463	157.27	9.0796	83.474	51.932	3.8674	77.565

#1	-.00413	.14673	-.00178	-.00001	-.00514	.06312	-.00030	.00197	.00063
#2	-.00121	.14758	-.00163	.00017	-.00452	.01626	-.00064	.00208	.00216

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4355.8	51267.	3977.1
Stddev	4.8	345.	5.2
%RSD	.10992	.67231	.13149

#1	4359.2	51023.	3980.8
#2	4352.4	51510.	3973.4

Sample Name: 280-123221-J-7-A Acquired: 5/13/2019 13:11:15 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	-.00035	-.00406	.05487	.06042	.00018	-.00198	123.18	.00014
Stddev	.00032	.00024	.00037	.00003	.00073	.00002	.00060	.30	.00030
%RSD	57.880	67.226	9.0855	.04841	1.2114	11.315	30.404	.24387	219.25

#1	.00078	-.00019	-.00432	.05485	.06094	.00017	-.00155	123.40	.00035
#2	.00033	-.00052	-.00380	.05489	.05991	.00019	-.00240	122.97	-.00008

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	.00053	.00133	.02163	1.2078	-.00071	23.809	.00061	-.00041
Stddev	.00060	.00008	.00026	.00064	.0185	.00093	.044	.00002	.00042
%RSD	237.15	14.500	19.416	2.9671	1.5281	131.35	.18282	2.8587	101.39

#1	.00017	.00059	.00151	.02208	1.1947	-.00005	23.840	.00060	-.00070
#2	-.00067	.00048	.00115	.02117	1.2208	-.00137	23.778	.00063	-.00012

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.4975	.00005	-.00093	-.00165	12.339	-.00292	.00086	5.2491	11.233
Stddev	.0224	.00048	.00151	.00048	.113	.00005	.00101	.0513	.110
%RSD	.89788	941.86	161.95	28.854	.91886	1.7198	118.08	.97665	.97665

#1	2.5133	-.00029	-.00200	-.00199	12.419	-.00295	.00157	5.2854	11.311
#2	2.4816	.00039	.00014	-.00132	12.259	-.00288	.00014	5.2129	11.156

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00225	.25744	.00134	.00004	-.00500	-.03101	-.00030	.01428	.00142
Stddev	.00059	.00123	.00084	.00009	.00241	.00683	.00001	.00009	.00009
%RSD	26.010	.47771	62.624	224.28	48.200	22.016	2.4181	.65037	6.2901

#1	-.00267	.25831	.00075	.00011	-.00670	-.02618	-.00030	.01421	.00135
#2	-.00184	.25657	.00193	-.00002	-.00330	-.03584	-.00029	.01434	.00148

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4311.4	50864.	4002.9
Stddev	4.0	37.	2.9
%RSD	.09309	.07293	.07368

#1	4308.6	50838.	4000.8
#2	4314.3	50890.	4005.0

Sample Name: 280-123221-C-8-A Acquired: 5/13/2019 13:13:51 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.03773	-.00466	.06685	.02236	.00010	-.00112	131.86	.00052
Stddev	.00078	.00026	.00204	.00071	.00024	.00017	.00251	.34	.00009
%RSD	88.846	.69606	43.849	1.0590	1.0881	175.54	222.87	.25715	17.397

#1	.00143	.03755	-.00321	.06635	.02253	.00021	.00065	131.62	.00046
#2	.00033	.03792	-.00610	.06735	.02219	-.00002	-.00290	132.10	.00059

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00050	.00054	.18349	2.4888	.03553	65.994	.13330	-.00031
Stddev	.00004	.00020	.00068	.00241	.0401	.00505	.144	.00018	.00072
%RSD	27.370	39.074	125.82	1.3112	1.6129	14.220	.21750	.13732	227.90

#1	.00016	.00036	.00006	.18179	2.5172	.03195	65.893	.13317	.00019
#2	.00011	.00064	.00103	.18519	2.4604	.03910	66.096	.13343	-.00082

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.374	.00104	-.00653	-.00207	91.839	-.00179	-.00110	5.5866	11.955
Stddev	.205	.00079	.00362	.00017	.442	.00107	.00366	.0357	.076
%RSD	1.8039	75.619	55.412	8.2141	.48130	59.838	332.12	.63861	.63861

#1	11.228	.00049	-.00397	-.00219	92.152	-.00104	.00148	5.6119	12.009
#2	11.519	.00160	-.00909	-.00195	91.527	-.00255	-.00369	5.5614	11.901

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00162	.24189	.00101	.00050	-.00332	-.01589	-.00043	.00310	.00029
Stddev	.00100	.00092	.00180	.00046	.00014	.06571	.00035	.00046	.00055
%RSD	61.927	.38098	178.12	92.976	4.1289	413.60	81.463	14.995	187.85

#1	-.00232	.24124	.00229	.00017	-.00342	.03057	-.00018	.00343	-.00010
#2	-.00091	.24254	-.00026	.00083	-.00323	-.06235	-.00068	.00277	.00068

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4208.2	49866.	3915.6
Stddev	6.0	290.	1.8
%RSD	.14338	.58255	.04659

#1	4212.4	50071.	3914.3
#2	4203.9	49660.	3916.9

Sample Name: 280-123221-C-9-A Acquired: 5/13/2019 13:16:23 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.01708	-.00007	.00776	.01632	-.00002	.00130	30.586	.00015
Stddev	.00073	.00002	.00025	.00041	.00018	.00009	.00184	.050	.00009
%RSD	488.62	.11930	352.37	5.2394	1.0858	512.11	141.55	.16225	58.942
#1	.00066	.01710	.00011	.00804	.01620	.00004	.00260	30.551	.00022
#2	-.00037	.01707	-.00025	.00747	.01645	-.00008	-.00000	30.621	.00009

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
High Limit
Low Limit

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.00005	.00051	3.5430	.79583	.00402	10.231	.22930	-.00068
Stddev	.00033	.00026	.00019	.0127	.03567	.00089	.024	.00050	.00021
%RSD	226.04	576.81	36.621	.35794	4.4819	22.121	.23587	.21918	30.662
#1	-.00037	.00023	.00065	3.5341	.82105	.00465	10.249	.22965	-.00082
#2	.00009	-.00014	.00038	3.5520	.77060	.00339	10.214	.22894	-.00053

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
High Limit
Low Limit

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.3601	.00223	.06609	-.00252	8.2304	-.00544	.00728	7.7413	16.566
Stddev	.0042	.00022	.00053	.00027	.0007	.00065	.00044	.0051	.011
%RSD	.09526	9.7563	.80221	10.744	.00832	11.995	6.0606	.06546	.06546
#1	4.3572	.00238	.06571	-.00271	8.2299	-.00590	.00696	7.7448	16.574
#2	4.3630	.00208	.06646	-.00233	8.2308	-.00498	.00759	7.7377	16.559

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
High Limit
Low Limit

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00281	.03942	.00325	-.00025	-.00282	-.00714	-.00036	.00074	.00155
Stddev	.00054	.00007	.00005	.00025	.00065	.00397	.00003	.00005	.00123
%RSD	19.302	.18270	1.5691	98.031	23.095	55.543	8.5169	6.2747	79.349
#1	-.00243	.03947	.00321	-.00008	-.00236	-.00434	-.00038	.00077	.00242
#2	-.00320	.03937	.00328	-.00043	-.00328	-.00994	-.00033	.00071	.00068

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
High Limit
Low Limit

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4439.2	52418.	4056.0
Stddev	4.0	57.	5.3
%RSD	.08908	.10893	.13141
#1	4442.0	52377.	4059.8
#2	4436.4	52458.	4052.3

Sample Name: 280-123221-C-10-A Acquired: 5/13/2019 13:18:55 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.02300	.00134	.06749	.02273	.00010	-.00408	79.372	.00029
Stddev	.00084	.00024	.00218	.00088	.00065	.00011	.00056	.045	.00027
%RSD	137.79	1.0561	162.77	1.3038	2.8586	111.65	13.794	.05613	95.221

#1	.00120	.02283	.00288	.06811	.02319	.00018	-.00448	79.341	.00009
#2	.00002	.02318	-.00020	.06687	.02227	.00002	-.00368	79.404	.00048

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00022	.00057	.05551	.85659	.01805	26.152	.10405	.00083
Stddev	.00008	.00004	.00034	.00125	.09876	.00007	.099	.00037	.00025
%RSD	29.914	19.535	59.599	2.2583	11.530	.37347	.37687	.35329	29.546

#1	.00033	.00025	.00081	.05640	.78675	.01800	26.222	.10431	.00066
#2	.00022	.00019	.00033	.05462	.92642	.01810	26.083	.10379	.00100

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.2745	-.00020	-.00376	-.00189	8.7923	-.00174	-.00002	6.6312	14.191
Stddev	.0086	.00081	.00273	.00026	.0520	.00401	.00320	.0416	.089
%RSD	.13773	410.14	72.625	13.850	.59123	229.64	16658.	.62753	.62753

#1	6.2684	-.00077	-.00569	-.00171	8.8290	.00109	-.00228	6.6018	14.128
#2	6.2806	.00038	-.00183	-.00208	8.7555	-.00458	.00224	6.6607	14.254

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00271	.11978	.00072	-.00011	-.00240	-.01246	-.00093	.00059	-.00039
Stddev	.00069	.00024	.00189	.00010	.00064	.01735	.00033	.00047	.00002
%RSD	25.273	.20149	263.88	87.816	26.679	139.24	35.609	78.455	5.3132

#1	-.00319	.11960	.00206	-.00004	-.00285	-.00019	-.00117	.00092	-.00037
#2	-.00223	.11995	-.00062	-.00018	-.00195	-.02473	-.00070	.00026	-.00040

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4253.1	50120.	3911.9
Stddev	9.7	42.	3.4
%RSD	.22766	.08388	.08703

#1	4260.0	50150.	3909.5
#2	4246.3	50090.	3914.4

Sample Name: 280-123221-C-11-A Acquired: 5/13/2019 13:21:27 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00784	.00627	.03478	.05951	.00011	-.00213	76.701	.00024
Stddev	.00030	.00021	.00235	.00120	.00046	.00004	.00215	.005	.00022
%RSD	57.830	2.7307	37.544	3.4622	.77733	33.721	101.05	.00702	90.084

#1	.00072	.00799	.00460	.03563	.05984	.00008	-.00365	76.705	.00009
#2	.00030	.00769	.00793	.03392	.05919	.00014	-.00061	76.697	.00040

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.00031	.00053	.87662	1.3794	.01026	19.112	.37989	-.00051
Stddev	.00002	.00003	.00006	.00177	.0482	.00085	.000	.00034	.00053
%RSD	7.5870	11.196	10.762	.20244	3.4963	8.2821	.00079	.08832	103.99

#1	-.00021	.00029	.00049	.87537	1.4135	.01086	19.112	.37965	-.00013
#2	-.00023	.00033	.00057	.87788	1.3453	.00966	19.112	.38012	-.00088

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.4354	-.00025	.02247	-.00338	12.574	-.00334	-.00169	7.4002	15.836
Stddev	.0276	.00020	.00131	.00085	.117	.00202	.00565	.0944	.202
%RSD	.50694	81.428	5.8513	25.199	.93409	60.512	334.75	1.2758	1.2758

#1	5.4159	-.00010	.02340	-.00278	12.657	-.00191	-.00569	7.4669	15.979
#2	5.4548	-.00039	.02154	-.00399	12.491	-.00477	.00231	7.3334	15.693

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00249	.14769	.00070	-.00005	-.00222	-.04425	-.00002	.00107	-.00071
Stddev	.00090	.00020	.00273	.00034	.00088	.06206	.00061	.00030	.00373
%RSD	36.165	.13740	390.45	706.41	39.684	140.27	3445.4	27.715	524.92

#1	-.00185	.14784	.00263	-.00029	-.00285	-.08813	-.00045	.00128	-.00335
#2	-.00313	.14755	-.00123	.00019	-.00160	-.00036	.00041	.00086	.00193

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4252.5	49653.	3865.1
Stddev	.6	24.	13.9
%RSD	.01327	.04765	.35858

#1	4252.1	49670.	3855.3
#2	4252.9	49637.	3874.9

Sample Name: 280-123221-C-12-A Acquired: 5/13/2019 13:24:00 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00169	.02191	.00003	.01724	.02808	.00011	.00003	48.701	.00023
Stddev	.00006	.00109	.00164	.00044	.00038	.00004	.00513	.091	.00012
%RSD	3.2726	4.9531	4812.0	2.5728	1.3537	34.471	15014.	.18682	50.043

#1	.00173	.02268	-.00113	.01755	.02835	.00014	.00366	48.765	.00031
#2	.00165	.02114	.00120	.01693	.02781	.00008	-.00360	48.636	.00015

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00001	.00060	.04898	.61456	.01301	11.698	.17225	-.00011
Stddev	.00012	.00028	.00068	.00495	.09494	.00162	.019	.00046	.00013
%RSD	30.305	1998.7	113.23	10.106	15.448	12.470	.15859	.26671	118.87

#1	.00032	.00021	.00012	.04548	.54743	.01416	11.711	.17258	-.00002
#2	.00050	-.00019	.00108	.05248	.68169	.01187	11.685	.17193	-.00020

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.8149	.00205	.00354	-.00404	5.5162	-.00562	.00092	7.2947	15.611
Stddev	.0038	.00016	.00331	.00092	.0471	.00335	.00163	.0417	.089
%RSD	.09847	7.7887	93.326	22.689	.85302	59.520	176.14	.57213	.57213

#1	3.8176	.00216	.00121	-.00469	5.5495	-.00799	.00208	7.2652	15.547
#2	3.8123	.00194	.00588	-.00339	5.4830	-.00326	-.00023	7.3242	15.674

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00254	.13032	.00198	-.00021	-.00491	-.01922	-.00068	.00136	-.00167
Stddev	.00053	.00030	.00098	.00017	.00070	.02746	.00056	.00005	.00180
%RSD	20.997	.23077	49.607	78.422	14.211	142.85	83.152	3.5706	107.76

#1	-.00216	.13011	.00128	-.00033	-.00442	-.03864	-.00107	.00133	-.00295
#2	-.00292	.13054	.00267	-.00010	-.00540	.00019	-.00028	.00140	-.00040

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4337.3	51027.	3926.0
Stddev	18.4	178.	45.4
%RSD	.42312	.34943	1.1553

#1	4350.2	50901.	3893.9
#2	4324.3	51153.	3958.1

Sample Name: CCVH-5690583 Acquired: 5/13/2019 13:26:33 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00238	50.551	-.00588	.00255	.00191	.00131	.99554	.02831	.00084	.00264	.00149	.01488	51.395
Stddev	.00092	.318	.00063	.00078	.00027	.00003	.00809	.00279	.00024	.00005	.00021	.00108	.163
%RSD	38.856	.62994	10.664	30.436	14.237	2.4068	.81268	9.8562	29.075	1.7924	14.227	7.2684	.31659

#1	.00173	50.326	-.00543	.00310	.00172	.00128	1.0013	.03028	.00101	.00261	.00164	.01564	51.510
#2	.00303	50.777	-.00632	.00200	.00210	.00133	.98982	.02634	.00067	.00268	.00134	.01411	51.279

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.24492	.00345	.00838	.00392	.00008	257.16	.00383	.00159	.00273	4.8306	.00275	.00067	.02383
Stddev	.01176	.00195	.00500	.00005	.00013	.11	.00049	.00222	.00032	.0240	.00124	.00294	.00084
%RSD	4.8007	56.689	59.752	1.3614	158.79	.04367	12.660	140.17	11.792	.49675	45.074	438.95	3.5168

#1	.23660	.00483	.00484	.00396	-.00001	257.08	.00417	.00001	.00251	4.8475	.00187	.00275	.02324
#2	.25323	.00206	.01191	.00388	.00017	257.24	.00349	.00316	.00296	4.8136	.00363	-.00141	.02442

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05100	.00101	.00179	4.9672	-.00976	-.00095	10.314	.00519	.00306	.07646
Stddev	.00179	.00009	.00014	.0018	.00030	.00216	.069	.00069	.00049	.00436
%RSD	3.5168	8.6851	7.9718	.03581	3.0642	227.44	.67290	13.287	16.146	5.7024

#1	.04973	.00095	.00189	4.9685	-.00997	-.00248	10.363	.00567	.00341	.07954
#2	.05226	.00108	.00169	4.9660	-.00955	.00058	10.265	.00470	.00271	.07338

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4251.7	49105.	3821.7
Stddev	28.4	317.	6.0
%RSD	.66798	.64590	.15753

#1	4231.6	48880.	3826.0
#2	4271.8	49329.	3817.5

Sample Name: CCV-5690581 Acquired: 5/13/2019 13:29:02 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoadesc Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49186	.53813	.95464	.48161	.50234	.48606	-.00111	5.0107	.48595	.49134	.49767	.49098	2.4731
Stddev	.00029	.00847	.00986	.00492	.00219	.00232	.00244	.0274	.00484	.00564	.00581	.00055	.0114
%RSD	.05906	1.5731	1.0327	1.0210	.43560	.47804	220.41	.54684	.99597	1.1485	1.1672	.11136	.45966

#1	.49166	.54412	.96161	.48508	.50079	.48441	-.00283	4.9913	.48937	.49533	.50177	.49059	2.4651
#2	.49207	.53215	.94766	.47813	.50388	.48770	.00062	5.0301	.48253	.48735	.49356	.49136	2.4812

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	50.325	.99279	19.438	.48478	.49338	5.4896	.49296	.97871	.98580	-.00697	.95935	.94603	4.8894
Stddev	.251	.00787	.003	.00047	.00681	.0158	.00505	.01172	.00700	.00198	.00724	.00615	.0089
%RSD	.49955	.79302	.01356	.09665	1.3799	.28747	1.0235	1.1979	.70989	28.405	.75489	.65033	.18268

#1	50.147	.98722	19.440	.48444	.49820	5.4785	.49653	.98700	.99074	-.00557	.96448	.95038	4.8831
#2	50.503	.99836	19.436	.48511	.48857	5.5008	.48940	.97042	.98085	-.00837	.95423	.94168	4.8957

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.463	.98226	.48776	.00027	.48046	1.0013	-.00746	.48348	.48651	.49516
Stddev	.019	.01074	.00121	.00098	.00040	.0111	.00906	.00064	.00231	.00549
%RSD	.18268	1.0939	.24763	364.10	.08415	1.1063	121.50	.13211	.47390	1.1091

#1	10.450	.98985	.48690	.00096	.48018	1.0091	-.01387	.48393	.48488	.49128
#2	10.477	.97466	.48861	-.00043	.48075	.99346	-.00105	.48303	.48814	.49904

Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4426.2	51482.	3980.1
Stddev	11.6	180.	17.1
%RSD	.26247	.34871	.43025

#1	4418.0	51609.	3992.2
#2	4434.4	51355.	3968.0

Sample Name: CCB Acquired: 5/13/2019 13:31:24 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoades Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	-.00145	.00544	-.00070	-.00021	.00031	-.00206	.02390	-.00000	.00007	.00012	-.00088
Stddev	.00088	.00048	.00626	.00149	.00029	.00007	.00132	.00687	.00014	.00047	.00007	.00053
%RSD	329.00	32.892	115.07	212.74	140.76	21.312	64.056	28.748	9026.9	684.60	58.681	60.441
#1	-.00036	-.00111	.00986	-.00176	-.00000	.00036	-.00300	.02876	.00010	.00040	.00007	-.00050
#2	.00089	-.00178	.00101	.00035	-.00041	.00027	-.00113	.01904	-.00010	-.00026	.00017	-.00126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04086	.02811	-.00339	.00020	.00025	.00044	W .39124	-.00026	-.00534	-.00120	.00150	-.00143
Stddev	.00190	.07283	.00276	.00386	.00008	.00032	.01959	.00017	.00141	.00051	.00085	.00237
%RSD	4.6548	259.13	81.435	1937.3	29.923	73.125	5.0065	65.921	26.473	42.287	56.796	164.89
#1	.03952	-.02339	-.00144	.00293	.00031	.00021	.40509	-.00014	-.00634	-.00156	.00090	.00024
#2	.04221	.07960	-.00534	-.00253	.00020	.00067	.37739	-.00038	-.00434	-.00084	.00210	-.00311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							.35000					
Low Limit							-.35000					
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00367	.03500	.07489	-.00199	-.00002	.00281	-.00051	-.00263	.01098	-.00004	-.00050	.00097
Stddev	.00002	.03545	.07587	.00002	.00010	.00214	.00020	.00015	.04242	.00039	.00019	.00079
%RSD	.41415	101.31	101.31	.89626	509.50	76.341	38.947	5.7127	386.16	896.29	38.175	81.760
#1	.00368	.06006	.12854	-.00200	-.00009	.00433	-.00037	-.00253	-.01901	.00023	-.00037	.00041
#2	.00366	.00993	.02124	-.00198	.00005	.00129	-.00065	-.00274	.04098	-.00032	-.00064	.00153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4463.4	53167.	4045.6									
Stddev	16.7	44.	45.3									
%RSD	.37419	.08296	1.1187									
#1	4475.2	53136.	4077.6									
#2	4451.6	53198.	4013.6									

Sample Name: CCVL-5699390 Acquired: 5/13/2019 13:33:58 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00980	.11036	F .01042	.09486	.00975	.00101	.10587	.21371	.00497	.00985	.01028	.01472
Stddev	.00092	.00209	.00472	.00046	.00003	.00015	.00068	.00365	.00019	.00008	.00047	.00160
%RSD	9.3498	1.8903	45.264	.48438	.27441	14.740	.63996	1.7066	3.8032	.79492	4.5705	10.863

#1	.01045	.11183	.01376	.09518	.00977	.00090	.10635	.21113	.00484	.00991	.01062	.01585
#2	.00915	.10888	.00709	.09453	.00973	.00111	.10539	.21629	.00511	.00979	.00995	.01359

Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.01500									
Range			-30.000%									

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.11490	3.0529	.01894	.19597	.01015	.01912	F 1.3496	.04032	2.8444	.00731	.09073	F .01394
Stddev	.00084	.0553	.00148	.00139	.00010	.00025	.0177	.00059	.0365	.00162	.00312	.00110
%RSD	.73461	1.8116	7.8033	.70957	1.0171	1.3151	1.3142	1.4601	1.2847	22.100	3.4406	7.9013

#1	.11430	3.0920	.01789	.19695	.01023	.01929	1.3621	.04073	2.8702	.00845	.09294	.01316
#2	.11549	3.0138	.01998	.19498	.01008	.01894	1.3371	.03990	2.8185	.00617	.08852	.01472

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value							1.0000					.02000
Range							30.000%					-30.000%

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01959	.53441	1.1436	.09807	.01008	.01741	.00908	.01121	.06109	.00960	.02016	.01140
Stddev	.00088	.03852	.0824	.00158	.00013	.00114	.00019	.00207	.01157	.00043	.00036	.00019
%RSD	4.5023	7.2079	7.2079	1.6092	1.3078	6.5651	2.1157	18.456	18.947	4.4515	1.7749	1.6762

#1	.02021	.50717	1.0853	.09919	.01017	.01660	.00921	.01267	.06927	.00990	.02042	.01153
#2	.01897	.56164	1.2019	.09696	.00999	.01822	.00894	.00975	.05290	.00930	.01991	.01126

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4491.3	52957.	4036.8
Stddev	11.1	47.	10.7
%RSD	.24719	.08901	.26523

#1	4483.5	52991.	4029.2
#2	4499.2	52924.	4044.4

Sample Name: 280-123221-C-13-A Acquired: 5/13/2019 13:37:11 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	.00077	.00392	.07037	.05619	.00022	-.00163	106.20	.00036
Stddev	.00008	.00128	.00314	.00151	.00034	.00004	.00119	.01	.00010
%RSD	6.4714	166.57	80.137	2.1434	.59974	19.926	73.390	.01397	29.031

#1	.00128	-.00014	.00170	.06930	.05595	.00019	-.00247	106.19	.00043
#2	.00117	.00167	.00614	.07143	.05643	.00025	-.00078	106.21	.00028

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00007	.00002	.68720	2.3808	.01511	27.895	.20817	.00045
Stddev	.00014	.00008	.00001	.00775	.0831	.00131	.063	.00068	.00003
%RSD	71.866	122.02	30.085	1.1283	3.4918	8.6945	.22729	.32478	5.8401

#1	-.00010	.00012	.00003	.68172	2.3220	.01418	27.940	.20865	.00043
#2	-.00030	.00001	.00002	.69268	2.4396	.01604	27.850	.20769	.00047

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.723	-.00036	.01128	-.00173	34.411	-.00338	.00257	7.3089	15.641
Stddev	.414	.00002	.00079	.00117	.075	.00279	.00464	.0115	.025
%RSD	3.5296	5.6910	7.0286	67.830	.21907	82.518	180.59	.15749	.15749

#1	11.430	-.00035	.01184	-.00256	34.464	-.00141	.00585	7.3008	15.624
#2	12.015	-.00038	.01072	-.00090	34.357	-.00535	-.00071	7.3171	15.659

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00197	.27682	.00064	-.00059	-.00490	-.01750	-.00037	.00036	-.00279
Stddev	.00112	.00055	.00016	.00008	.00063	.01961	.00009	.00042	.00136
%RSD	56.707	.19846	25.360	13.524	12.756	112.01	23.145	114.78	48.752

#1	-.00276	.27643	.00052	-.00053	-.00534	-.03137	-.00043	.00066	-.00375
#2	-.00118	.27720	.00075	-.00065	-.00446	-.00364	-.00031	.00007	-.00183

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4258.0	50609.	3891.3
Stddev	10.1	400.	3.3
%RSD	.23641	.79111	.08360

#1	4265.1	50326.	3889.0
#2	4250.8	50892.	3893.6

Sample Name: 280-123261-B-6-A Acquired: 5/13/2019 13:39:43 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00092	.56601	.00643	.04565	.02603	.00010	-.00374	99.017	.00044
Stddev	.00061	.01084	.00329	.00046	.00019	.00013	.00180	.144	.00010
%RSD	66.595	1.9154	51.100	1.0030	.72918	122.88	48.102	.14575	23.782

#1	.00049	.57368	.00875	.04597	.02617	.00019	-.00247	99.119	.00051
#2	.00135	.55835	.00411	.04532	.02590	.00001	-.00502	98.915	.00036

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.00092	.00044	1.8435	2.5658	.04289	52.264	.15639	.00069
Stddev	.00005	.00011	.00009	.0009	.0511	.00064	.019	.00021	.00004
%RSD	7.4431	11.776	20.101	.04895	1.9900	1.4811	.03642	.13140	6.2143

#1	.00064	.00084	.00038	1.8441	2.5297	.04334	52.278	.15654	.00066
#2	.00058	.00100	.00051	1.8428	2.6019	.04244	52.251	.15625	.00072

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.325	.00061	.00998	-.00233	45.803	-.00264	.00523	8.0032	17.127
Stddev	.674	.00048	.00034	.00089	.352	.00262	.00066	.0104	.022
%RSD	2.8914	79.594	3.4197	38.349	.76849	99.386	12.597	.13019	.13019

#1	23.802	.00095	.01022	-.00170	46.051	-.00449	.00570	7.9958	17.111
#2	22.848	.00027	.00974	-.00296	45.554	-.00078	.00477	8.0105	17.143

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00120	.30263	.00263	.00489	-.00283	-.03225	.00053	.01070	-.00236
Stddev	.00078	.00106	.00124	.00080	.00096	.00148	.00019	.00084	.00195
%RSD	65.341	.34885	47.258	16.267	33.910	4.5981	36.492	7.8732	82.586

#1	-.00065	.30188	.00350	.00546	-.00351	-.03120	.00066	.01011	-.00098
#2	-.00175	.30338	.00175	.00433	-.00215	-.03330	.00039	.01130	-.00374

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4207.9	49105.	3792.4
Stddev	33.7	32.	32.2
%RSD	.80067	.06585	.84866

#1	4184.0	49128.	3815.2
#2	4231.7	49082.	3769.7

Sample Name: 280-123261-B-8-A Acquired: 5/13/2019 13:42:14 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.00807	-.00243	.01574	.02100	.00033	-.00519	38.495	.00026
Stddev	.00074	.00034	.00154	.00047	.00005	.00006	.00283	.055	.00015
%RSD	63.710	4.1910	63.315	2.9562	.24377	18.390	54.557	.14188	59.150

#1	.00064	.00831	-.00134	.01607	.02096	.00037	-.00318	38.457	.00036
#2	.00168	.00783	-.00352	.01541	.02103	.00029	-.00719	38.534	.00015

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00586	.00028	.00051	9.0099	1.1289	.00425	12.209	.43325	-.00074
Stddev	.00006	.00002	.00024	.0361	.0639	.00186	.043	.00006	.00034
%RSD	1.0840	7.8089	48.176	.40088	5.6643	43.791	.35483	.01447	45.725

#1	.00590	.00030	.00068	8.9844	1.0837	.00294	12.239	.43320	-.00050
#2	.00581	.00027	.00033	9.0354	1.1741	.00557	12.178	.43329	-.00098

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.9823	.00803	.03777	-.00207	12.092	.00149	-.00095	4.2580	9.1121
Stddev	.0124	.00002	.00208	.00033	.133	.00276	.00695	.0112	.0240
%RSD	.20709	.21522	5.5159	16.016	1.0973	185.34	732.64	.26348	.26348

#1	5.9735	.00805	.03924	-.00184	12.186	.00345	.00397	4.2500	9.0951
#2	5.9911	.00802	.03630	-.00231	11.998	-.00046	-.00587	4.2659	9.1290

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00144	.06584	.00054	-.00028	-.00343	-.00094	-.00001	.05045	-.00241
Stddev	.00043	.00018	.00035	.00045	.00038	.04163	.00043	.00010	.00198
%RSD	29.657	.27503	64.185	163.02	11.121	4449.7	3953.9	.19641	82.175

#1	-.00114	.06571	.00079	.00004	-.00370	.02850	-.00031	.05038	-.00101
#2	-.00174	.06597	.00030	-.00060	-.00316	-.03037	.00029	.05052	-.00381

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4379.8	51294.	3934.9
Stddev	23.9	71.	11.8
%RSD	.54626	.13863	.30063

#1	4362.9	51344.	3943.3
#2	4396.8	51244.	3926.6

Sample Name: MB 280-457367/1-A Acquired: 5/13/2019 13:44:46 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/10 Custom ID2: Custom ID3:
Comment: 457367 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00246	.00015	-.00113	.00022	.00007	-.00213	.02284	-.00002
Stddev	.00022	.00007	.00377	.00017	.00017	.00005	.00020	.00958	.00005
%RSD	84.339	2.8841	2492.6	14.756	75.218	78.810	9.3333	41.935	224.11

#1	.00011	.00251	.00281	-.00125	.00034	.00003	-.00227	.02961	.00001
#2	.00042	.00241	-.00251	-.00101	.00010	.00011	-.00199	.01607	-.00006

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.00063	.00014	W .05773	.03586	-.00339	-.00181	.00046	-.00028
Stddev	.00018	.00032	.00030	.00347	.01709	.00394	.00809	.00008	.00006
%RSD	64.745	50.392	209.53	6.0103	47.672	116.05	445.59	16.604	20.792

#1	-.00015	.00085	-.00007	.05528	.02377	-.00618	-.00753	.00051	-.00024
#2	-.00040	.00040	.00035	.06019	.04795	-.00061	.00390	.00040	-.00032

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit				.05000					
Low Limit				-.05000					

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.34919	-.00007	-.00428	-.00291	.00865	-.00234	.00115	.02973	.06363
Stddev	.00354	.00041	.00169	.00230	.00126	.00104	.00047	.01901	.04069
%RSD	1.0133	612.55	39.498	78.876	14.525	44.559	41.035	63.949	63.949

#1	.34669	-.00036	-.00308	-.00453	.00776	-.00308	.00082	.01629	.03486
#2	.35169	.00023	-.00548	-.00129	.00954	-.00160	.00149	.04318	.09240

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00277	.00018	.00011	-.00032	-.00264	-.00068	-.00069	.00090	-.00178
Stddev	.00189	.00006	.00204	.00017	.00053	.09588	.00065	.00044	.00365
%RSD	68.092	33.722	1905.5	51.460	20.103	14019.	93.332	48.522	205.21

#1	-.00144	.00014	.00155	-.00044	-.00302	-.06848	-.00115	.00121	.00080
#2	-.00411	.00022	-.00134	-.00020	-.00227	.06711	-.00024	.00059	-.00436

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4351.9	51189.	3886.8
Stddev	18.4	49.	20.5
%RSD	.42211	.09500	.52819

#1	4364.9	51154.	3901.4
#2	4338.9	51223.	3872.3

Sample Name: LCS 280-457367/2-A Acquired: 5/13/2019 13:47:20 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457367 6010C Q5

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05441	10.387	2.0056	.92555	2.0870	W 1.0089	1.9143	50.963	1.0132
Stddev	.00146	.048	.0059	.00358	.0106	.0016	.0129	.313	.0070
%RSD	2.6789	.45993	.29524	.38719	.50561	.15791	.67537	.61347	.69328

#1	.05544	10.421	2.0097	.92809	2.0945	1.0101	1.9234	51.184	1.0181
#2	.05338	10.353	2.0014	.92302	2.0795	1.0078	1.9052	50.742	1.0082

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass
High Limit						1.0000			
Low Limit						-.00200			

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99074	1.0257	1.0108	10.119	52.312	1.0292	49.669	1.0061	1.0401
Stddev	.00652	.0085	.0026	.035	.236	.0051	.179	.0000	.0078
%RSD	.65772	.83108	.25950	.34262	.45064	.49366	.35999	.00115	.75283

#1	.99535	1.0317	1.0127	10.144	52.479	1.0328	49.795	1.0061	1.0456
#2	.98614	1.0197	1.0090	10.095	52.146	1.0256	49.542	1.0061	1.0346

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	52.527	.98931	W 20.608	1.0007	9.3445	1.0115	1.9626	2.1178	4.5322
Stddev	.143	.00576	.115	.0028	.0511	.0012	.0180	.0139	.0298
%RSD	.27317	.58227	.55740	.28249	.54726	.11961	.91509	.65779	.65779

#1	52.629	.99338	20.689	1.0027	9.3806	1.0106	1.9753	2.1080	4.5111
#2	52.426	.98523	20.527	.99867	9.3083	1.0123	1.9499	2.1277	4.5532

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.0436	1.0103	.94616	1.0159	2.0270	2.0782	1.0242	.46780	.49198
Stddev	.0126	.0021	.00193	.0012	.0123	.0140	.0021	.00035	.00331
%RSD	.61614	.21075	.20356	.11513	.60440	.67300	.20463	.07404	.67255

#1	2.0525	1.0118	.94752	1.0151	2.0357	2.0683	1.0257	.46805	.49432
#2	2.0347	1.0088	.94480	1.0167	2.0183	2.0881	1.0228	.46756	.48964

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000								
Low Limit	-.20000								

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4254.3	49438.	3865.5
Stddev	5.6	31.	10.1
%RSD	.13087	.06221	.26108

#1	4258.2	49416.	3858.3
#2	4250.4	49460.	3872.6

Sample Name: LCSD 280-457367/3-A Acquired: 5/13/2019 13:49:36 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457367 6010C Q5

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05320	10.084	1.9376	.96750	2.0171	.97297	1.9960	49.653	.98257
Stddev	.00021	.042	.0115	.00530	.0004	.00044	.0148	.005	.00682
%RSD	.38646	.41424	.59177	.54823	.01924	.04499	.74123	.01022	.69445

#1	.05334	10.114	1.9457	.97125	2.0168	.97267	2.0065	49.649	.98739
#2	.05305	10.055	1.9295	.96375	2.0174	.97328	1.9855	49.657	.97774

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95819	.99456	.97376	9.8062	51.012	.99318	48.206	.96631	1.0126
Stddev	.00621	.00716	.00309	.0114	.150	.00076	.118	.00223	.0078
%RSD	.64806	.72030	.31694	.11614	.29341	.07637	.24411	.23120	.76609

#1	.96258	.99963	.97594	9.7981	50.907	.99264	48.289	.96789	1.0181
#2	.95380	.98950	.97158	9.8142	51.118	.99371	48.123	.96473	1.0071

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	51.283	.95894	W 20.190	.97417	9.1921	.98327	1.9036	2.0617	4.4121
Stddev	.158	.00517	.122	.00475	.0704	.00923	.0098	.0401	.0859
%RSD	.30799	.53950	.60224	.48774	.76564	.93832	.51533	1.9464	1.9464

#1	51.395	.96260	20.276	.97753	9.2419	.98980	1.9106	2.0334	4.3514
#2	51.171	.95528	20.104	.97081	9.1424	.97675	1.8967	2.0901	4.4728

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.9864	.97204	.97739	.97495	1.9723	2.0508	.98482	.48034	.51051
Stddev	.0098	.00123	.00323	.00206	.0099	.0121	.00292	.00125	.00114
%RSD	.49490	.12627	.33066	.21091	.50256	.58767	.29604	.26024	.22390

#1	1.9933	.97117	.97968	.97640	1.9794	2.0593	.98688	.48122	.50970
#2	1.9794	.97291	.97511	.97349	1.9653	2.0423	.98276	.47946	.51132

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4259.9	50380.	3872.8
Stddev	3.5	177.	18.1
%RSD	.08232	.35167	.46805

#1	4257.5	50255.	3860.0
#2	4262.4	50506.	3885.6

Sample Name: 280-123356-A-4-A Acquired: 5/13/2019 13:51:52 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457367 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	.00784	.00051	.03115	.04725	.00012	-.00326	31.993	.00093
Stddev	.00020	.00042	.00277	.00087	.00024	.00010	.00116	.115	.00014
%RSD	30.254	5.3888	542.88	2.7880	.51452	87.886	35.573	.36077	14.716

#1	.00051	.00754	.00247	.03177	.04707	.00019	-.00408	32.074	.00103
#2	.00079	.00814	-.00145	.03054	.04742	.00005	-.00244	31.911	.00084

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00394	.47452	.01703	3.4349	2.5670	.06605	21.950	.14299	.00492
Stddev	.00020	.00521	.00026	.0127	.0177	.00338	.013	.00000	.00035
%RSD	5.0956	1.0985	1.5290	.37006	.69069	5.1109	.06003	.00150	7.1913

#1	.00380	.47821	.01722	3.4439	2.5796	.06843	21.940	.14300	.00467
#2	.00408	.47084	.01685	3.4259	2.5545	.06366	21.959	.14299	.00517

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	68.980	.28512	.00015	-.00382	39.204	.00149	.01226	20.364	43.579
Stddev	.604	.00205	.00234	.00037	.321	.00082	.00446	.010	.021
%RSD	.87548	.71922	1570.9	9.7091	.81847	54.715	36.338	.04923	.04923

#1	68.553	.28657	.00180	-.00355	39.431	.00092	.00911	20.357	43.564
#2	69.407	.28367	-.00151	-.00408	38.977	.00207	.01541	20.371	43.594

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00167	.28608	-.00092	.00010	-.00284	-.01361	.00120	.00680	.00002
Stddev	.00048	.00013	.00041	.00009	.00222	.01065	.00094	.00054	.00350
%RSD	28.957	.04584	44.961	88.008	78.004	78.307	78.139	7.9495	19657.

#1	-.00202	.28599	-.00063	.00016	-.00441	-.00607	.00054	.00719	-.00245
#2	-.00133	.28617	-.00121	.00004	-.00128	-.02114	.00186	.00642	.00249

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4249.0	49741.	3831.9
Stddev	10.4	11.	5.4
%RSD	.24506	.02215	.14087

#1	4241.6	49733.	3835.7
#2	4256.3	49748.	3828.1

Sample Name: 280-123356-A-14-A Acquired: 5/13/2019 13:54:22 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457367 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.02573	.00053	.04123	.03284	.00003	-.00265	32.787	.00040
Stddev	.00004	.00036	.00073	.00090	.00003	.00001	.00331	.027	.00029
%RSD	3.8465	1.4067	136.15	2.1712	.10264	48.194	124.73	.08210	73.154

#1	.00105	.02599	.00105	.04186	.03287	.00004	-.00031	32.768	.00061
#2	.00110	.02548	.00002	.04060	.03282	.00002	-.00499	32.806	.00019

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00045	.00377	.00026	.11951	2.3067	.06671	20.057	.00568	.00080
Stddev	.00013	.00002	.00017	.00254	.1056	.00388	.128	.00001	.00016
%RSD	29.504	.53083	67.477	2.1236	4.5767	5.8179	.64051	.19790	20.472

#1	-.00036	.00378	.00038	.12130	2.2320	.06945	20.148	.00568	.00069
#2	-.00055	.00376	.00014	.11771	2.3813	.06396	19.966	.00569	.00092

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	55.276	.00542	.00873	-.00421	40.060	-.00319	.00294	22.344	47.816
Stddev	.031	.00043	.00091	.00098	.062	.00257	.00257	.029	.062
%RSD	.05530	7.9486	10.393	23.154	.15534	80.461	87.401	.12893	.12893

#1	55.254	.00572	.00808	-.00352	40.104	-.00501	.00112	22.324	47.773
#2	55.297	.00511	.00937	-.00490	40.016	-.00138	.00476	22.364	47.860

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00250	.17722	.00185	.00005	-.00321	-.03131	-.00051	.00620	-.00148
Stddev	.00089	.00128	.00334	.00046	.00059	.03328	.00055	.00015	.00135
%RSD	35.659	.72455	180.53	903.14	18.333	106.29	108.08	2.4749	91.466

#1	-.00313	.17631	.00421	-.00027	-.00280	-.05484	-.00090	.00609	-.00243
#2	-.00187	.17813	-.00051	.00038	-.00363	-.00778	-.00012	.00631	-.00052

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4361.7	50157.	3846.4
Stddev	60.0	276.	19.3
%RSD	1.3758	.54968	.50200

#1	4319.3	49962.	3860.1
#2	4404.1	50352.	3832.8

Sample Name: 280-123356-A-22-A Acquired: 5/13/2019 13:56:55 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457367 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	.00121	-.00558	.00047	-.00047	.00009	-.00257	.01226	.00021
Stddev	.00015	.00017	.00152	.00071	.00010	.00005	.00182	.00370	.00004
%RSD	15.769	14.356	27.186	149.46	21.952	55.873	70.812	30.199	20.657

#1	.00086	.00109	-.00666	.00097	-.00054	.00012	-.00385	.01487	.00018
#2	.00108	.00134	-.00451	-.00003	-.00040	.00005	-.00128	.00964	.00024

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00034	-.00013	.28994	.02806	-.00129	-.00099	.00181	-.00043
Stddev	.00018	.00014	.00069	.00265	.08261	.00060	.00135	.00009	.00018
%RSD	101.55	42.039	548.79	.91272	294.39	46.440	137.22	4.8490	41.983

#1	-.00005	.00024	-.00062	.29181	.08647	-.00086	-.00194	.00175	-.00055
#2	-.00030	.00044	.00036	.28807	-.03035	-.00171	-.00003	.00187	-.00030

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39653	.00038	-.00664	-.00187	.00803	-.00253	.00818	.04476	.09578
Stddev	.00317	.00013	.00325	.00163	.00557	.00095	.00050	.03356	.07182
%RSD	.80012	33.343	48.970	87.131	69.395	37.571	6.0966	74.987	74.987

#1	.39877	.00046	-.00894	-.00072	.00409	-.00186	.00853	.06849	.14657
#2	.39429	.00029	-.00434	-.00302	.01197	-.00321	.00783	.02103	.04499

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00185	.00001	.00215	-.00067	-.00220	.00614	-.00028	.00054	-.00031
Stddev	.00004	.00009	.00012	.00009	.00025	.03436	.00134	.00024	.00166
%RSD	2.1325	1204.9	5.5532	13.902	11.169	559.68	478.73	43.819	536.55

#1	-.00187	-.00005	.00224	-.00061	-.00202	-.01815	-.00123	.00037	-.00148
#2	-.00182	.00007	.00207	-.00074	-.00237	.03043	.00067	.00070	.00086

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4427.9	51197.	3858.0
Stddev	2.1	380.	17.3
%RSD	.04810	.74233	.44865

#1	4429.4	51465.	3870.2
#2	4426.4	50928.	3845.7

Sample Name: CCVH-5690583 Acquired: 5/13/2019 13:59:31 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00301	50.424	-.00254	.00328	.00242	.00113	.99238	.06089	.00101	.00245	.00164	.01313	51.725
Stddev	.00024	.001	.00200	.00046	.00005	.00002	.01758	.00009	.00044	.00016	.00010	.00053	.165
%RSD	8.0930	.00228	78.814	14.037	2.0275	1.8435	1.7713	.15345	43.328	6.6721	6.3417	4.0252	.31821

#1	.00283	50.425	-.00112	.00360	.00246	.00115	1.0048	.06083	.00070	.00256	.00171	.01276	51.609
#2	.00318	50.423	-.00395	.00295	.00239	.00112	.97995	.06096	.00132	.00233	.00157	.01351	51.842

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.28566	.00225	.00741	.00468	.00027	257.01	.00425	.00023	.00140	4.7688	.00204	.00171	.03059
Stddev	.04591	.00139	.00018	.00010	.00002	1.24	.00068	.00318	.00149	.0318	.00098	.00138	.00839
%RSD	16.072	61.784	2.3690	2.0477	8.2548	.48368	15.925	1398.0	106.65	.66729	48.371	80.742	27.436

#1	.31813	.00127	.00729	.00475	.00029	256.13	.00473	-.00202	.00034	4.7913	.00273	.00268	.02465
#2	.25320	.00324	.00754	.00461	.00025	257.88	.00378	.00247	.00246	4.7463	.00134	.00073	.03652

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.06546	-.00026	.00179	4.9531	-.00909	.00251	10.215	.00578	.00346	.07462
Stddev	.01796	.00003	.00005	.0013	.00047	.00021	.017	.00059	.00024	.00082
%RSD	27.436	9.5367	3.0340	.02535	5.1901	8.3212	.16823	10.182	6.9341	1.0922

#1	.05276	-.00028	.00182	4.9522	-.00875	.00236	10.203	.00537	.00329	.07520
#2	.07816	-.00025	.00175	4.9540	-.00942	.00265	10.228	.00620	.00363	.07405

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4237.4	49887.	3892.6
Stddev	5.4	254.	2.4
%RSD	.12849	.50864	.06039

#1	4233.6	50066.	3894.2
#2	4241.3	49707.	3890.9

Sample Name: CCV-5690581 Acquired: 5/13/2019 14:02:00 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50604	F .56033	.98417	.49671	.52409	.49968	.00009	5.2081	.50072	.50995	.51702	.50578
Stddev	.00036	.00888	.00825	.00292	.00269	.00063	.00203	.0136	.00488	.00524	.00575	.00263
%RSD	.07130	1.5851	.83851	.58688	.51257	.12581	2314.9	.26150	.97403	1.0268	1.1113	.51907

#1	.50579	.56661	.99000	.49877	.52599	.50012	-.00135	5.2177	.50417	.51366	.52108	.50393
#2	.50630	.55405	.97833	.49465	.52219	.49923	.00152	5.1984	.49727	.50625	.51296	.50764

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.5392	52.205	1.0178	20.133	.50084	.51540	F 5.6566	.51111	1.0077	1.0178	-.00300	.98276
Stddev	.0008	.174	.0067	.040	.00017	.00493	.0253	.00559	.0119	.0078	.00137	.00725
%RSD	.03163	.33422	.65876	.20014	.03315	.95564	.44787	1.0943	1.1827	.76574	45.612	.73762

#1	2.5397	52.328	1.0131	20.162	.50073	.51889	5.6745	.51506	1.0161	1.0233	-.00203	.98788
#2	2.5386	52.082	1.0225	20.105	.50096	.51192	5.6387	.50715	.99926	1.0123	-.00396	.97763

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97378	5.0556	10.819	1.0216	.50226	.00117	.49581	1.0369	-.00493	.50439	.50051	.51534
Stddev	.00700	.0593	.127	.0114	.00076	.00184	.00010	.0099	.01822	.00134	.00156	.00061
%RSD	.71911	1.1734	1.1734	1.1164	.15067	156.53	.02039	.95515	369.85	.26517	.31124	.11847

#1	.97874	5.0976	10.909	1.0297	.50280	-.00013	.49588	1.0439	.00796	.50345	.50161	.51577
#2	.96883	5.0137	10.729	1.0135	.50173	.00247	.49574	1.0299	-.01781	.50534	.49941	.51491

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4337.6	50979.	3891.5
Stddev	3.1	47.	9.2
%RSD	.07131	.09241	.23685

#1	4335.4	51013.	3885.0
#2	4339.8	50946.	3898.0

Sample Name: CCB Acquired: 5/13/2019 14:04:22 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00136	-.00229	-.00145	-.00032	-.00007	.00006	.00163	.00214	.00005	-.00002	-.00005	-.00143
Stddev	.00023	.00014	.00253	.00059	.00053	.00012	.00030	.00354	.00030	.00046	.00016	.00039
%RSD	17.068	6.1312	174.88	183.69	763.39	209.24	18.097	165.69	612.85	2190.7	305.03	27.244
#1	.00153	-.00219	.00034	.00010	-.00045	.00014	.00184	-.00037	-.00016	.00030	-.00016	-.00171
#2	.00120	-.00239	-.00323	-.00074	.00031	-.00003	.00142	.00464	.00026	-.00034	.00006	-.00116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .12445	.04145	.00071	-.01023	.00032	.00055	W .36658	.00028	-.00606	-.00142	-.00218	-.00321
Stddev	.00016	.07133	.00021	.00028	.00002	.00025	.00895	.00085	.00311	.00035	.00341	.00007
%RSD	.13190	172.08	29.061	2.7043	5.3209	46.186	2.4403	300.99	51.404	24.987	156.39	2.0345
#1	.12433	-.00899	.00057	-.01003	.00033	.00037	.36025	-.00032	-.00826	-.00117	-.00459	-.00326
#2	.12456	.09189	.00086	-.01042	.00031	.00072	.37290	.00088	-.00386	-.00167	.00023	-.00317
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.10000						.35000					
Low Limit	-.10000						-.35000					
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.03335	.07137	-.00154	-.00012	.00334	-.00059	-.00279	-.02032	-.00025	-.00007	-.00062
Stddev	.00190	.01985	.04248	.00035	.00003	.00194	.00010	.00162	.05309	.00051	.00012	.00031
%RSD	409.34	59.519	59.519	22.391	21.479	58.206	16.889	58.289	261.29	201.12	164.33	51.055
#1	-.00088	.04738	.10140	-.00179	-.00010	.00472	-.00066	-.00393	-.05786	-.00061	.00001	-.00039
#2	.00181	.01931	.04133	-.00130	-.00014	.00197	-.00052	-.00164	.01722	.00011	-.00016	-.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4366.4	51313.	3917.6									
Stddev	11.6	131.	20.8									
%RSD	.26631	.25526	.53127									
#1	4374.6	51220.	3932.3									
#2	4358.2	51406.	3902.9									

Sample Name: CCVL-5699390 Acquired: 5/13/2019 14:06:57 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01066	.11191	.01546	.09715	.01030	.00108	.10788	.21305	.00509	.00991	.01040	.01427
Stddev	.00042	.00273	.00077	.00160	.00022	.00025	.00197	.00288	.00028	.00001	.00006	.00014
%RSD	3.9504	2.4419	4.9541	1.6497	2.1395	23.026	1.8284	1.3518	5.4122	.13756	.53437	1.0068

#1	.01096	.11384	.01492	.09828	.01045	.00090	.10927	.21509	.00529	.00992	.01036	.01417
#2	.01036	.10997	.01600	.09602	.01014	.00125	.10649	.21101	.00490	.00990	.01044	.01437

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10842	3.1735	.02005	.19617	.01021	.01999	F 1.3585	.04127	2.9286	.00804	.09294	.01669
Stddev	.00546	.0469	.00129	.00616	.00004	.00060	.0239	.00028	.0335	.00011	.00149	.00177
%RSD	5.0316	1.4795	6.4214	3.1398	.36023	3.0188	1.7602	.67788	1.1451	1.3061	1.5994	10.595

#1	.10456	3.1403	.02096	.20053	.01024	.02042	1.3416	.04147	2.9523	.00812	.09399	.01794
#2	.11228	3.2067	.01914	.19182	.01018	.01956	1.3754	.04108	2.9049	.00797	.09189	.01544

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							1.0000					
Range							30.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02166	.54360	1.1633	.10136	.01020	.01727	.00911	.01379	F .04119	.00970	.02110	F .01011
Stddev	.00348	.02263	.0484	.00016	.00014	.00086	.00037	.00206	.01425	.00046	.00007	.00061
%RSD	16.049	4.1628	4.1628	.15695	1.3524	4.9644	4.0589	14.953	34.581	4.7732	.31191	5.9902

#1	.01920	.52760	1.1291	.10148	.01011	.01788	.00937	.01233	.03112	.00938	.02106	.00969
#2	.02412	.55960	1.1975	.10125	.01030	.01666	.00885	.01525	.05127	.01003	.02115	.01054

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail
Value									.06000			.01500
Range									-30.000%			-30.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4416.1	51790.	3878.5
Stddev	2.3	198.	13.7
%RSD	.05249	.38276	.35194

#1	4414.5	51650.	3888.1
#2	4417.8	51930.	3868.8

Sample Name: 280-123356-A-31-A Acquired: 5/13/2019 14:09:30 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457367 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00139	.03736	.00163	.05334	.02266	-.00007	-.00559	46.385	.00078
Stddev	.00030	.00108	.00184	.00137	.00027	.00007	.00069	.135	.00005
%RSD	21.310	2.8987	113.19	2.5688	1.1939	110.06	12.310	.29088	6.2264

#1	.00160	.03812	.00293	.05431	.02247	-.00001	-.00608	46.480	.00074
#2	.00118	.03659	.00032	.05237	.02285	-.00012	-.00510	46.289	.00081

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00202	.00074	-.00017	.14556	2.5884	.05629	36.741	.02147	-.00018
Stddev	.00015	.00024	.00084	.00218	.0275	.00165	.102	.00003	.00019
%RSD	7.2580	32.968	490.02	1.4976	1.0617	2.9264	.27837	.14543	107.68

#1	.00213	.00057	-.00076	.14402	2.5690	.05745	36.813	.02149	-.00004
#2	.00192	.00091	.00042	.14710	2.6079	.05513	36.668	.02145	-.00031

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	58.908	.00698	.00439	-.00509	70.975	-.00340	-.00015	18.460	39.504
Stddev	.249	.00008	.00121	.00177	.289	.00246	.00102	.037	.079
%RSD	.42283	1.1457	27.552	34.840	.40652	72.403	698.40	.20010	.20010

#1	59.084	.00692	.00354	-.00634	71.179	-.00514	-.00086	18.434	39.449
#2	58.732	.00703	.00525	-.00384	70.771	-.00166	.00057	18.486	39.560

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00097	.27199	.00005	.00043	-.00187	.01567	-.00040	.00757	-.00252
Stddev	.00073	.00027	.00106	.00043	.00118	.05891	.00022	.00037	.00055
%RSD	74.437	.10085	1989.1	100.32	63.106	376.00	55.836	4.9188	22.008

#1	-.00149	.27218	.00080	.00012	-.00103	.05732	-.00056	.00783	-.00291
#2	-.00046	.27180	-.00069	.00073	-.00270	-.02599	-.00024	.00731	-.00213

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4360.9	51433.	3968.0
Stddev	4.2	73.	46.2
%RSD	.09728	.14287	1.1653

#1	4357.9	51381.	3935.3
#2	4363.9	51485.	4000.7

Sample Name: 123356-A-31-A SD@5 Acquired: 5/13/2019 14:12:02 Type: Unk

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoadesc Prep Date: Custom ID2: Custom ID3:

Comment: 457367 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.00591	-.00162	.01000	.00406	.00012	.00008	8.3035	.00019
Stddev	.00069	.00010	.00360	.00097	.00029	.00007	.00460	.0646	.00022
%RSD	84.665	1.6505	222.86	9.6916	7.1715	59.671	5422.0	.77859	118.74

#1	.00130	.00598	.00093	.00932	.00427	.00007	-.00316	8.2578	.00035
#2	.00033	.00585	-.00417	.01069	.00385	.00017	.00333	8.3492	.00003

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00039	-.00172	.03550	.42402	.00790	6.8196	.00409	-.00037
Stddev	.00010	.00018	.00054	.00152	.04401	.00019	.0950	.00014	.00025
%RSD	75.179	45.664	31.179	4.2747	10.380	2.3629	1.3926	3.5225	67.519

#1	.00021	.00052	-.00134	.03443	.45514	.00777	6.7525	.00399	-.00054
#2	.00006	.00027	-.00210	.03657	.39290	.00803	6.8868	.00419	-.00019

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 10.292	.00080	-.00110	-.00199	13.926	-.00251	.00547	3.2325	6.9176
Stddev	.358	.00001	.00186	.00002	.364	.00156	.00020	.0085	.0181
%RSD	3.4800	1.5864	168.73	1.0108	2.6162	61.918	3.6808	.26204	.26204

#1	10.038	.00079	-.00242	-.00201	13.669	-.00361	.00533	3.2265	6.9047
#2	10.545	.00081	.00021	-.00198	14.184	-.00141	.00561	3.2385	6.9304

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00								
Low Limit	11.000								

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00221	.04866	.00241	-.00062	-.00294	.00504	.00001	.00150	-.00259
Stddev	.00009	.00065	.00026	.00031	.00042	.03496	.00012	.00056	.00078
%RSD	4.1692	1.3315	10.968	50.469	14.150	693.72	1565.5	37.494	30.187

#1	-.00228	.04820	.00260	-.00084	-.00323	.02976	-.00008	.00110	-.00314
#2	-.00215	.04912	.00222	-.00040	-.00264	-.01968	.00009	.00190	-.00204

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4423.7	52066.	3939.0
Stddev	7.4	37.	10.9
%RSD	.16695	.07100	.27755

#1	4428.9	52092.	3931.2
#2	4418.5	52040.	3946.7

Sample Name: 123356-A-31-B MS Acquired: 5/13/2019 14:14:35 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457367 6010C Q5

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05575	10.588	2.0778	1.0379	2.1773	W 1.0374	W 2.0023	100.12	1.0429
Stddev	.00108	.118	.0235	.0051	.0018	.0007	.0166	.00	.0048
%RSD	1.9428	1.1152	1.1308	.49333	.08346	.07053	.83016	.00307	.46376

#1	.05652	10.672	2.0944	1.0415	2.1760	1.0368	2.0140	100.12	1.0463
#2	.05499	10.505	2.0612	1.0343	2.1785	1.0379	1.9905	100.12	1.0395

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Warn	Chk Pass	Chk Pass
High Limit						1.0000	2.0000		
Low Limit						-.00200	-.20000		

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0099	1.0556	1.0397	10.382	56.502	1.1203	89.125	1.0469	1.0739
Stddev	.0069	.0065	.0002	.017	.120	.0003	.212	.0017	.0042
%RSD	.68150	.61250	.01989	.16742	.21166	.02354	.23763	.16030	.39291

#1	1.0148	1.0602	1.0396	10.370	56.417	1.1204	89.275	1.0481	1.0769
#2	1.0051	1.0511	1.0399	10.395	56.587	1.1201	88.975	1.0457	1.0709

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	114.16	1.0137	W 21.404	1.0140	84.451	1.0471	2.0248	21.430	45.861
Stddev	.11	.0069	.121	.0023	.559	.0109	.0217	.036	.077
%RSD	.09977	.67818	.56635	.22785	.66225	1.0383	1.0701	.16819	.16819

#1	114.08	1.0186	21.490	1.0157	84.847	1.0548	2.0401	21.405	45.807
#2	114.24	1.0089	21.318	1.0124	84.056	1.0394	2.0095	21.456	45.916

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.1142	1.3197	.99718	1.0425	2.0265	2.1112	1.0538	.49469	.51831
Stddev	.0126	.0011	.00152	.0031	.0111	.0632	.0006	.00036	.00100
%RSD	.59746	.08485	.15271	.29725	.54696	2.9931	.05950	.07375	.19214

#1	2.1231	1.3189	.99826	1.0447	2.0343	2.0666	1.0542	.49495	.51761
#2	2.1053	1.3205	.99610	1.0403	2.0186	2.1559	1.0533	.49444	.51901

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000								
Low Limit	-.20000								

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4258.5	49605.	3904.0
Stddev	6.5	178.	35.4
%RSD	.15370	.35956	.90590

#1	4263.2	49479.	3879.0
#2	4253.9	49731.	3929.1

Sample Name: 123356-A-31-C MSD Acquired: 5/13/2019 14:16:51 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457367 6010C Q5

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05461	10.374	2.0184	1.0269	2.1086	W 1.0016	1.9801	97.365	1.0121
Stddev	.00002	.123	.0139	.0046	.0027	.0001	.0024	.078	.0039
%RSD	.04202	1.1887	.68800	.45169	.12751	.01109	.11974	.08001	.38471

#1	.05460	10.287	2.0282	1.0302	2.1105	1.0017	1.9785	97.310	1.0149
#2	.05463	10.461	2.0086	1.0237	2.1067	1.0015	1.9818	97.420	1.0094

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass
High Limit						1.0000			
Low Limit						-.00200			

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98106	1.0241	1.0001	10.163	55.495	1.0835	86.550	1.0099	1.0435
Stddev	.00461	.0063	.0011	.019	.059	.0002	.096	.0009	.0046
%RSD	.47010	.61186	.10570	.18612	.10702	.02124	.11117	.08936	.44489

#1	.98432	1.0285	1.0009	10.150	55.537	1.0833	86.618	1.0092	1.0468
#2	.97780	1.0196	.99939	10.176	55.453	1.0837	86.482	1.0105	1.0402

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	111.27	.98506	W 20.054	.98243	81.297	1.0160	1.9651	20.777	44.462
Stddev	.43	.00507	.070	.00714	.035	.0022	.0033	.045	.096
%RSD	.38556	.51460	.35025	.72718	.04244	.21273	.16839	.21561	.21561

#1	110.97	.98864	20.103	.98748	81.273	1.0175	1.9674	20.745	44.395
#2	111.57	.98147	20.004	.97738	81.322	1.0145	1.9628	20.809	44.530

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.0516	1.2756	.97654	1.0048	1.9691	2.0038	1.0160	.48435	.51479
Stddev	.0112	.0004	.00271	.0009	.0116	.0174	.0010	.00114	.00783
%RSD	.54797	.02809	.27704	.09290	.58792	.86732	.09606	.23631	1.5214

#1	2.0596	1.2754	.97846	1.0041	1.9773	2.0161	1.0153	.48354	.50925
#2	2.0437	1.2759	.97463	1.0054	1.9609	1.9915	1.0167	.48516	.52033

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000								
Low Limit	-.20000								

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4285.7	49928.	3904.2
Stddev	32.2	167.	17.0
%RSD	.75124	.33398	.43500

#1	4263.0	50045.	3892.2
#2	4308.5	49810.	3916.2

Sample Name: 123356-A-31-A PDS Acquired: 5/13/2019 14:19:06 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457367 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05376	1.1198	.20070	.16045	.12746	.05061	-.00351	65.527	.05220
Stddev	.00027	.0034	.00238	.00028	.00052	.00020	.00205	.018	.00074
%RSD	.49985	.30718	1.1837	.17360	.40651	.38905	58.240	.02724	1.4131

#1	.05395	1.1222	.19902	.16065	.12710	.05075	-.00496	65.539	.05272
#2	.05357	1.1174	.20238	.16025	.12783	.05047	-.00207	65.514	.05167

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05202	.05249	.05250	1.1944	23.801	.15558	56.074	.07158	.05652
Stddev	.00005	.00009	.00029	.0098	.056	.00357	.001	.00004	.00024
%RSD	.09977	.17086	.55597	.81815	.23588	2.2918	.00192	.05849	.42684

#1	.05205	.05243	.05271	1.2013	23.841	.15810	56.074	.07161	.05635
#2	.05198	.05256	.05230	1.1875	23.761	.15305	56.073	.07155	.05669

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	78.180	.05723	2.1325	.09625	69.603	.10307	.19765	23.213	49.675
Stddev	.082	.00014	.0144	.00022	.290	.00121	.00036	.160	.342
%RSD	.10474	.25106	.67527	.22969	.41617	1.1727	.18187	.68915	.68915

#1	78.238	.05713	2.1426	.09609	69.808	.10222	.19740	23.326	49.917
#2	78.122	.05733	2.1223	.09640	69.399	.10393	.19791	23.099	49.433

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10761	.31532	.21272	.05314	.20330	.51532	.05062	.21139	.05677
Stddev	.00125	.00053	.00151	.00012	.00173	.04203	.00112	.00050	.00541
%RSD	1.1610	.16820	.70886	.22612	.85129	8.1568	2.2117	.23416	9.5242

#1	.10849	.31569	.21165	.05323	.20208	.54504	.04983	.21174	.06059
#2	.10672	.31494	.21378	.05306	.20452	.48559	.05141	.21104	.05295

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4293.9	50972.	3915.6
Stddev	51.6	126.	6.8
%RSD	1.2010	.24778	.17492

#1	4330.4	51061.	3910.8
#2	4257.4	50882.	3920.5

Sample Name: 280-123373-A-2-A Acquired: 5/13/2019 14:21:32 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457367 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00105	.06900	.08297	.03546	.03941	.00019	-.00309	76.859	.00081
Stddev	.00134	.00077	.00209	.00028	.00024	.00004	.00014	.063	.00009
%RSD	127.04	1.1149	2.5170	.80036	.61178	19.226	4.6068	.08135	11.582

#1	.00011	.06954	.08444	.03566	.03958	.00021	-.00298	76.903	.00075
#2	.00200	.06846	.08149	.03526	.03924	.00016	-.00319	76.815	.00088

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00357	.00049	.00087	12.038	1.9162	.01616	54.082	1.3302	.02812
Stddev	.00015	.00043	.00069	.017	.0499	.00071	.024	.0011	.00033
%RSD	4.0872	89.086	79.305	.13884	2.6053	4.4187	.04490	.08475	1.1770

#1	.00368	.00018	.00038	12.050	1.8809	.01565	54.099	1.3310	.02835
#2	.00347	.00079	.00135	12.027	1.9515	.01666	54.065	1.3294	.02788

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	94.391	.06190	.36008	-.00250	7.9251	-.00194	-.00098	10.546	22.568
Stddev	.653	.00059	.01049	.00003	.0880	.00316	.00458	.008	.017
%RSD	.69143	.95166	2.9140	1.2390	1.1098	163.05	468.66	.07394	.07394

#1	93.930	.06232	.36750	-.00247	7.9873	.00030	-.00422	10.540	22.556
#2	94.853	.06149	.35266	-.00252	7.8629	-.00418	.00226	10.551	22.580

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00144	.30060	.00292	.00055	-.00361	.00133	.00050	.00330	-.00188
Stddev	.00000	.00014	.00167	.00010	.00027	.04500	.00064	.00094	.00071
%RSD	.23748	.04673	57.200	17.649	7.5066	3391.2	127.43	28.509	37.722

#1	-.00144	.30070	.00174	.00049	-.00342	.03314	.00095	.00263	-.00238
#2	-.00144	.30050	.00410	.00062	-.00381	-.03049	.00005	.00396	-.00138

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4322.8	50545.	3938.9
Stddev	30.9	9.	8.1
%RSD	.71513	.01827	.20448

#1	4300.9	50551.	3933.2
#2	4344.6	50538.	3944.6

Sample Name: 280-123373-A-10-A Acquired: 5/13/2019 14:24:03 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457367 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.08297	.07751	.03396	.03851	-.00004	-.00405	75.363	.00048
Stddev	.00054	.00125	.00268	.00021	.00047	.00009	.00216	.197	.00005
%RSD	3616.3	1.5046	3.4615	.62844	1.2298	214.78	53.326	.26115	10.152

#1	.00040	.08385	.07561	.03411	.03817	.00002	-.00558	75.224	.00051
#2	-.00037	.08209	.07941	.03381	.03884	-.00011	-.00253	75.503	.00044

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00351	.00053	.00095	11.863	1.8527	.01932	52.977	1.2938	.02725
Stddev	.00059	.00011	.00042	.032	.0622	.00181	.049	.0001	.00028
%RSD	16.728	21.275	43.973	.27069	3.3550	9.3452	.09160	.00656	1.0321

#1	.00393	.00045	.00124	11.840	1.8967	.01804	53.011	1.2937	.02745
#2	.00310	.00062	.00065	11.886	1.8088	.02059	52.942	1.2938	.02706

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	91.587	.06049	.35979	-.00474	7.6960	-.00368	.00050	10.345	22.138
Stddev	.095	.00073	.00517	.00019	.0732	.00256	.00122	.039	.083
%RSD	.10413	1.2125	1.4362	4.0678	.95136	69.609	242.98	.37706	.37706

#1	91.655	.06101	.36344	-.00460	7.7477	-.00187	.00136	10.317	22.079
#2	91.520	.05997	.35614	-.00488	7.6442	-.00550	-.00036	10.373	22.197

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00113	.29392	-.00086	.00004	-.00383	.03437	-.00007	.00135	.00072
Stddev	.00046	.00077	.00003	.00011	.00017	.00822	.00003	.00031	.00195
%RSD	40.912	.26094	3.0400	315.39	4.5373	23.906	50.992	23.065	272.67

#1	-.00146	.29337	-.00084	.00012	-.00371	.02856	-.00009	.00113	-.00066
#2	-.00081	.29446	-.00088	-.00004	-.00396	.04019	-.00004	.00158	.00210

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4296.6	50597.	3948.1
Stddev	12.0	15.	4.7
%RSD	.27966	.02988	.11799

#1	4305.1	50586.	3951.4
#2	4288.1	50607.	3944.8

Sample Name: 123373-A-17-A Acquired: 5/13/2019 14:26:33 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457367 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00139	.00792	-.00516	.01365	.06923	.00010	-.00350	49.182	-.00004
Stddev	.00033	.00039	.00874	.00078	.00057	.00005	.00150	.086	.00009
%RSD	23.747	4.9648	169.52	5.7058	.81956	51.577	42.943	.17417	228.67

#1	.00116	.00820	.00103	.01420	.06964	.00006	-.00457	49.242	-.00011
#2	.00163	.00764	-.01134	.01310	.06883	.00013	-.00244	49.121	.00003

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00046	.00239	.00034	.03758	1.8334	.02610	21.738	.00076	.00054
Stddev	.00005	.00029	.00000	.00092	.0585	.00295	.008	.00002	.00032
%RSD	10.692	12.115	1.1156	2.4544	3.1889	11.309	.03813	2.8219	59.498

#1	-.00043	.00260	.00035	.03823	1.8747	.02402	21.732	.00075	.00077
#2	-.00050	.00219	.00034	.03693	1.7921	.02819	21.743	.00078	.00031

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	77.120	.00212	.00202	-.00223	45.336	-.00254	.00202	13.437	28.755
Stddev	.678	.00027	.00051	.00066	.560	.00302	.00005	.018	.039
%RSD	.87886	12.744	25.136	29.472	1.2346	118.79	2.2979	.13390	.13390

#1	76.641	.00231	.00238	-.00269	45.732	-.00041	.00199	13.449	28.782
#2	77.600	.00193	.00166	-.00176	44.941	-.00468	.00205	13.424	28.727

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00226	.15145	.00204	-.00021	-.00321	-.02666	-.00044	.00272	-.00092
Stddev	.00121	.00043	.00000	.00026	.00086	.04129	.00034	.00034	.00230
%RSD	53.595	.28721	.20986	124.88	26.742	154.87	76.296	12.626	249.98

#1	-.00312	.15176	.00203	-.00039	-.00382	.00254	-.00020	.00248	.00070
#2	-.00141	.15115	.00204	-.00002	-.00261	-.05586	-.00068	.00297	-.00254

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4334.0	51420.	3964.9
Stddev	34.2	160.	4.5
%RSD	.78920	.31027	.11313

#1	4358.2	51533.	3968.1
#2	4309.9	51307.	3961.7

Sample Name: 123373-A-17-B MS Acquired: 5/13/2019 14:29:06 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457367 6010C Q5

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05500	10.190	2.0399	1.0159	2.1751	W 1.0124	W 2.0297	99.413	1.0234
Stddev	.00005	.003	.0234	.0031	.0047	.0015	.0108	.089	.0046
%RSD	.09833	.03416	1.1474	.30482	.21807	.14664	.53151	.08953	.44920

#1	.05496	10.193	2.0564	1.0181	2.1718	1.0113	2.0374	99.350	1.0266
#2	.05503	10.188	2.0233	1.0137	2.1785	1.0134	2.0221	99.476	1.0201

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Warn	Chk Pass	Chk Pass
High Limit						1.0000	2.0000		
Low Limit						-.00200	-.20000		

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98879	1.0379	1.0207	9.9438	54.010	1.0641	70.587	.99634	1.0526
Stddev	.00367	.0063	.0007	.0236	.108	.0027	.192	.00182	.0052
%RSD	.37088	.61165	.06960	.23777	.20058	.25239	.27227	.18231	.49547

#1	.99138	1.0423	1.0212	9.9271	53.933	1.0622	70.723	.99762	1.0563
#2	.98620	1.0334	1.0202	9.9605	54.086	1.0660	70.451	.99505	1.0489

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	127.68	.99030	W 21.138	.99497	55.267	1.0131	1.9794	15.683	33.563
Stddev	.16	.00382	.085	.00269	.184	.0026	.0008	.025	.053
%RSD	.12614	.38605	.40253	.27014	.33346	.25475	.04042	.15780	.15780

#1	127.79	.99300	21.198	.99687	55.397	1.0149	1.9800	15.666	33.525
#2	127.56	.98760	21.078	.99306	55.137	1.0113	1.9789	15.701	33.600

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.0656	1.1614	1.0069	1.0132	1.9921	2.1076	1.0256	.49531	.53066
Stddev	.0136	.0019	.0003	.0028	.0091	.0248	.0043	.00137	.00408
%RSD	.66002	.16124	.02607	.27487	.45479	1.1743	.42255	.27710	.76845

#1	2.0752	1.1601	1.0071	1.0152	1.9985	2.1251	1.0287	.49628	.52778
#2	2.0559	1.1627	1.0068	1.0113	1.9857	2.0901	1.0226	.49434	.53354

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000								
Low Limit	-.20000								

Int. Std.	Y_2243	Y_3600	Y_3774						
Line	224.306 {450}	360.073 { 94}	377.433 { 89}						
Units	Cts/S	Cts/S	Cts/S						
Avg	4195.1	49341.	3877.0						
Stddev	1.8	102.	5.7						
%RSD	.04231	.20641	.14762						

#1	4193.8	49413.	3881.0						
#2	4196.3	49269.	3872.9						

Sample Name: 123373-A-17-C MSD Acquired: 5/13/2019 14:31:21 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457367 6010C Q5

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05429	10.330	2.0296	1.0269	2.1684	W 1.0103	W 2.0480	100.70	1.0228
Stddev	.00040	.032	.0204	.0029	.0068	.0037	.0199	.29	.0062
%RSD	.73169	.31407	1.0074	.27872	.31557	.36981	.97292	.29226	.60801

#1	.05457	10.307	2.0440	1.0289	2.1635	1.0077	2.0621	100.50	1.0272
#2	.05401	10.353	2.0151	1.0248	2.1732	1.0129	2.0339	100.91	1.0184

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Warn	Chk Pass	Chk Pass
High Limit						1.0000	2.0000		
Low Limit						-.00200	-.20000		

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98943	1.0382	1.0189	10.064	54.766	1.0609	71.569	.99598	1.0543
Stddev	.00482	.0062	.0030	.034	.280	.0064	.200	.00197	.0070
%RSD	.48760	.60152	.29522	.34136	.51043	.60681	.27953	.19829	.66474

#1	.99284	1.0426	1.0211	10.040	54.568	1.0563	71.710	.99738	1.0592
#2	.98602	1.0338	1.0168	10.088	54.964	1.0654	71.427	.99458	1.0493

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	129.41	.98949	19.517	.99614	55.032	1.0267	1.9879	15.832	33.880
Stddev	.38	.00660	.131	.00839	.263	.0033	.0123	.045	.097
%RSD	.29067	.66696	.67178	.84237	.47845	.32384	.61873	.28554	.28554

#1	129.68	.99416	19.610	1.0021	55.218	1.0290	1.9966	15.800	33.812
#2	129.15	.98482	19.424	.99021	54.846	1.0243	1.9792	15.864	33.949

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.0677	1.1587	1.0185	1.0123	1.9999	1.9125	1.0227	.49961	.53703
Stddev	.0144	.0030	.0050	.0026	.0148	.0117	.0035	.00118	.00182
%RSD	.69812	.25933	.49338	.25773	.73856	.61389	.34659	.23703	.33817

#1	2.0779	1.1566	1.0221	1.0142	2.0103	1.9042	1.0252	.50044	.53575
#2	2.0575	1.1609	1.0150	1.0105	1.9895	1.9208	1.0202	.49877	.53832

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000								
Low Limit	-.20000								

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4243.0	50108.	3935.5
Stddev	16.1	135.	1.8
%RSD	.37848	.26875	.04542

#1	4254.4	50013.	3936.8
#2	4231.7	50204.	3934.3

Sample Name: CCVH-5690583 Acquired: 5/13/2019 14:33:37 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00270	50.500	-.00382	.00533	.00288	.00136	.98571	.02459	.00068	.00281	.00183	.01310	51.909
Stddev	.00101	.017	.00321	.00045	.00021	.00006	.02043	.00283	.00014	.00010	.00025	.00007	.042
%RSD	37.518	.03338	83.891	8.3639	7.4519	4.3782	2.0725	11.509	20.141	3.4578	13.777	.50458	.08033

#1	.00342	50.512	-.00609	.00565	.00273	.00141	1.0002	.02659	.00078	.00288	.00165	.01315	51.939
#2	.00199	50.488	-.00156	.00502	.00303	.00132	.97127	.02259	.00059	.00274	.00201	.01306	51.880

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.32808	.00170	.00653	.00381	.00152	258.22	.00425	.00753	.00418	4.7388	.00406	.00378	.01737
Stddev	.03186	.00117	.00128	.00006	.00086	.48	.00001	.00142	.00034	.0935	.00437	.00132	.01588
%RSD	9.7112	69.235	19.673	1.4995	56.846	.18632	.18369	18.824	8.1877	1.9720	107.53	34.915	91.420

#1	.30556	.00253	.00562	.00385	.00091	257.88	.00425	.00652	.00443	4.8049	.00097	.00471	.02860
#2	.35061	.00087	.00743	.00377	.00212	258.56	.00424	.00853	.00394	4.6727	.00715	.00285	.00614

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03718	.00117	.00203	4.9581	-.00819	-.00114	10.231	.00519	.00224	.07546
Stddev	.03399	.00000	.00019	.0177	.00032	.00053	.103	.00040	.00061	.00020
%RSD	91.420	.07719	9.1508	.35649	3.8885	46.053	1.0084	7.6272	26.986	.26307

#1	.06121	.00117	.00216	4.9706	-.00841	-.00151	10.304	.00547	.00182	.07532
#2	.01315	.00117	.00190	4.9456	-.00796	-.00077	10.158	.00491	.00267	.07560

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4289.6	49642.	3830.0
Stddev	19.6	177.	21.0
%RSD	.45627	.35652	.54796

#1	4275.7	49517.	3815.1
#2	4303.4	49767.	3844.8

Sample Name: CCV-5690581 Acquired: 5/13/2019 14:36:06 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50577	F .56138	.98282	.49795	.51871	.49607	-.00071	5.1722	.50134	.50941	.51750	.50349
Stddev	.00111	.00568	.00624	.00218	.00103	.00082	.00069	.0146	.00280	.00346	.00431	.00074
%RSD	.22042	1.0119	.63462	.43732	.19857	.16630	97.324	.28193	.55752	.67893	.83354	.14673

#1	.50498	.56540	.98723	.49949	.51943	.49549	-.00119	5.1825	.50331	.51186	.52055	.50402
#2	.50656	.55737	.97841	.49641	.51798	.49666	-.00022	5.1619	.49936	.50696	.51445	.50297

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.5383	51.702	1.0104	20.102	.49743	.51402	F 5.7429	.50994	1.0113	1.0178	-.00023	.98842
Stddev	.0032	.021	.0026	.011	.00016	.00398	.0462	.00333	.0068	.0078	.00324	.00519
%RSD	.12742	.04117	.25629	.05629	.03228	.77397	.80440	.65336	.67659	.76745	1433.2	.52480

#1	2.5361	51.717	1.0123	20.094	.49731	.51683	5.7756	.51230	1.0161	1.0233	-.00252	.99209
#2	2.5406	51.687	1.0086	20.110	.49754	.51121	5.7102	.50759	1.0064	1.0123	.00207	.98475

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97492	5.0028	10.706	1.0252	.49718	.00266	.49176	1.0409	.01297	.50026	.49923	.50879
Stddev	.01064	.0432	.092	.0050	.00020	.00061	.00088	.0042	.03416	.00050	.00185	.00519
%RSD	1.0917	.86253	.86253	.49185	.04083	23.022	.17946	.40478	263.36	.10094	.37014	1.0196

#1	.98245	5.0333	10.771	1.0288	.49732	.00309	.49114	1.0439	-.01119	.50062	.49792	.50512
#2	.96740	4.9722	10.641	1.0216	.49704	.00223	.49239	1.0380	.03713	.49990	.50053	.51246

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4315.3	50695.	3850.6
Stddev	14.3	7.	17.3
%RSD	.33148	.01337	.44952

#1	4325.4	50690.	3838.4
#2	4305.2	50700.	3862.8

Sample Name: CCB Acquired: 5/13/2019 14:38:27 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoadesc Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00111	-.00224	.00115	.00004	-.00016	-.00011	.00386	-.00391	.00012	.00019	.00023	-.00105
Stddev	.00078	.00013	.00315	.00030	.00066	.00010	.00006	.00520	.00003	.00017	.00001	.00037
%RSD	70.593	6.0189	273.52	830.35	415.18	93.005	1.6440	132.99	23.030	90.421	4.4273	35.081

#1	.00166	-.00214	.00338	-.00018	-.00063	-.00004	.00390	-.00023	.00010	.00007	.00023	-.00130
#2	.00055	-.00233	-.00108	.00025	.00031	-.00018	.00381	-.00759	.00014	.00031	.00024	-.00079

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00266	.12356	-.00051	-.00200	.00004	.00054	W .43630	-.00020	-.00519	-.00101	-.00291	-.00214
Stddev	.00282	.04728	.00154	.00045	.00001	.00005	.02865	.00036	.00208	.00335	.00162	.00040
%RSD	106.10	38.263	303.91	22.276	32.172	8.4721	6.5654	173.64	40.118	330.89	55.833	18.834

#1	.00465	.15698	-.00160	-.00232	.00005	.00051	.45656	-.00046	-.00667	.00135	-.00406	-.00243
#2	.00066	.09013	.00058	-.00169	.00003	.00058	.41605	.00005	-.00372	-.00338	-.00176	-.00186

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							.35000					
Low Limit							-.35000					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	.05194	.11116	-.00153	.00015	.00184	-.00047	-.00361	-.01283	.00034	.00030	-.00091
Stddev	.00442	.03655	.07822	.00056	.00011	.00018	.00016	.00052	.01791	.00023	.00004	.00134
%RSD	559.81	70.366	70.366	36.284	73.930	10.031	34.672	14.398	139.58	69.027	13.691	147.35

#1	-.00234	.02610	.05585	-.00114	.00023	.00197	-.00059	-.00324	-.00017	.00017	.00027	.00004
#2	.00392	.07779	.16646	-.00193	.00007	.00171	-.00036	-.00398	-.02549	.00050	.00032	-.00186

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4364.8	51886.	3800.8
Stddev	22.0	185.	10.1
%RSD	.50502	.35713	.26461
#1	4380.3	52017.	3793.6
#2	4349.2	51755.	3807.9

Sample Name: CCVL-5699390 Acquired: 5/13/2019 14:41:03 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01072	.12253	.01075	.09749	.01016	.00094	.10529	.23938	.00507	.01008	.01065	.01346
Stddev	.00045	.00126	.00019	.00188	.00034	.00009	.00084	.00635	.00013	.00028	.00008	.00070
%RSD	4.1814	1.0272	1.8007	1.9254	3.3389	9.4997	.79405	2.6532	2.5739	2.7585	.76255	5.1642

#1	.01104	.12342	.01089	.09882	.01039	.00100	.10588	.24387	.00516	.00988	.01060	.01297
#2	.01041	.12164	.01062	.09616	.00992	.00087	.10469	.23489	.00498	.01028	.01071	.01395

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.11239	3.1317	.02012	.20659	.01039	.01934	F 1.4134	.04180	2.9018	.00692	.08735	.01708
Stddev	.00134	.0441	.00368	.00526	.00004	.00029	.0242	.00032	.0336	.00129	.00310	.00065
%RSD	1.1920	1.4090	18.303	2.5475	.40757	1.5037	1.7135	.77189	1.1589	18.612	3.5514	3.7929

#1	.11334	3.1005	.01751	.21031	.01036	.01955	1.4305	.04203	2.9256	.00784	.08954	.01754
#2	.11145	3.1629	.02272	.20287	.01042	.01913	1.3963	.04158	2.8781	.00601	.08516	.01662

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							1.0000					
Range							30.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02040	.55301	1.1834	.10082	.01004	.01703	.00913	.01238	.04640	.00916	.02574	F .00949
Stddev	.00200	.01280	.0274	.00140	.00017	.00249	.00044	.00191	.00047	.00036	.00075	.00147
%RSD	9.8119	2.3145	2.3145	1.3914	1.6497	14.630	4.8034	15.420	1.0117	3.9016	2.9086	15.465

#1	.02181	.54396	1.1641	.10181	.00993	.01880	.00944	.01373	.04673	.00941	.02627	.01053
#2	.01898	.56206	1.2028	.09983	.01016	.01527	.00882	.01103	.04606	.00891	.02521	.00845

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value												.01500
Range												-30.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4410.7	51445.	3881.8
Stddev	1.6	22.	3.6
%RSD	.03567	.04214	.09255

#1	4411.8	51430.	3879.3
#2	4409.5	51460.	3884.4

Sample Name: MB 280-457366/1-A Acquired: 5/13/2019 14:43:36 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/9 Custom ID2: Custom ID3:
Comment: 457366 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	-.00070	.00231	.00049	-.00040	-.00010	-.00297	-.00201	-.00014
Stddev	.00009	.00010	.00209	.00043	.00081	.00009	.00151	.00650	.00004
%RSD	9.4594	14.052	90.452	87.626	204.72	92.525	50.802	324.28	26.686

#1	.00106	-.00077	.00379	.00080	-.00097	-.00016	-.00191	.00259	-.00011
#2	.00093	-.00063	.00083	.00019	.00018	-.00003	-.00404	-.00660	-.00016

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00012	-.00056	.00297	.02886	.00031	-.00557	.00009	-.00006
Stddev	.00018	.00020	.00022	.00225	.06527	.00326	.00014	.00001	.00001
%RSD	284.97	162.43	40.160	75.808	226.14	1050.1	2.5709	9.7243	15.378

#1	-.00019	.00026	-.00040	.00457	-.01729	.00262	-.00567	.00009	-.00006
#2	.00006	-.00002	-.00072	.00138	.07502	-.00200	-.00547	.00010	-.00005

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38890	-.00021	-.00559	-.00239	.00159	-.00140	.00306	.05451	.11666
Stddev	.01358	.00056	.00041	.00064	.00167	.00373	.00361	.00973	.02083
%RSD	3.4924	263.20	7.3067	26.880	104.56	267.29	117.85	17.855	17.855

#1	.37930	.00018	-.00588	-.00194	.00277	.00124	.00051	.04763	.10193
#2	.39851	-.00060	-.00530	-.00285	.00042	-.00404	.00562	.06140	.13139

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00227	.00014	.00164	-.00049	-.00288	-.01250	.00001	.00026	.00123
Stddev	.00052	.00013	.00075	.00021	.00320	.00704	.00016	.00004	.00306
%RSD	22.822	96.017	45.653	42.323	111.07	56.326	1213.0	17.472	248.31

#1	-.00191	.00024	.00111	-.00034	-.00514	-.01748	.00013	.00029	-.00093
#2	-.00264	.00005	.00217	-.00063	-.00062	-.00752	-.00010	.00023	.00340

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4411.3	52017.	3919.6
Stddev	4.9	193.	2.3
%RSD	.11195	.37137	.05986

#1	4414.8	52154.	3917.9
#2	4407.8	51880.	3921.3

Sample Name: LCS 280-457366/2-A Acquired: 5/13/2019 14:46:12 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00216	9.5135	1.8482	.92682	1.9191	.92221	1.9363	47.390	.94345
Stddev	.00136	.0176	.0192	.00463	.0043	.00243	.0113	.038	.00577
%RSD	62.924	.18547	1.0400	.50002	.22592	.26325	.58334	.08019	.61205

#1	.00120	9.5260	1.8618	.93010	1.9161	.92049	1.9443	47.363	.94753
#2	.00312	9.5011	1.8346	.92354	1.9222	.92392	1.9283	47.417	.93937

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.90585	.94002	.92756	9.2902	48.755	.94670	45.840	.91346	.95958
Stddev	.00431	.00539	.00013	.0284	.005	.00135	.085	.00180	.00510
%RSD	.47573	.57344	.01409	.30589	.00956	.14297	.18574	.19718	.53158

#1	.90889	.94383	.92765	9.2702	48.759	.94574	45.900	.91473	.96319
#2	.90280	.93621	.92747	9.3103	48.752	.94766	45.779	.91218	.95598

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	48.841	.90571	19.308	.93385	8.8829	.00160	1.8261	1.9784	4.2337
Stddev	.093	.00670	.106	.00485	.0202	.00045	.0080	.0135	.0288
%RSD	.18957	.73971	.54819	.51988	.22784	27.872	.43801	.67973	.67973

#1	48.776	.91045	19.383	.93728	8.8972	.00128	1.8318	1.9689	4.2133
#2	48.907	.90097	19.233	.93042	8.8685	.00191	1.8205	1.9879	4.2540

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8913	.91909	.91516	.92025	1.9153	1.9184	.93401	.45376	.48955
Stddev	.0165	.00299	.00127	.00329	.0220	.0517	.00097	.00162	.00523
%RSD	.87294	.32491	.13912	.35771	1.1459	2.6942	.10341	.35783	1.0677

#1	1.9029	.91698	.91606	.92258	1.9309	1.9550	.93470	.45491	.48585
#2	1.8796	.92120	.91426	.91792	1.8998	1.8819	.93333	.45261	.49324

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4337.8	50815.	3929.7
Stddev	.3	216.	8.7
%RSD	.00608	.42494	.22255

#1	4338.0	50663.	3935.9
#2	4337.6	50968.	3923.5

Sample Name: LCSD 280-457366/3-A Acquired: 5/13/2019 14:48:29 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00286	10.093	1.9461	.96470	2.0461	.98410	1.9712	50.565	.98360
Stddev	.00041	.091	.0163	.00816	.0019	.00036	.0308	.100	.01133
%RSD	14.317	.90109	.83493	.84630	.09389	.03668	1.5604	.19702	1.1522

#1	.00257	10.029	1.9576	.97047	2.0447	.98384	1.9929	50.635	.99161
#2	.00315	10.157	1.9346	.95893	2.0474	.98435	1.9494	50.494	.97558

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96454	1.0030	.98741	9.9460	51.767	.99999	49.092	.97853	1.0181
Stddev	.01072	.0109	.00410	.0087	.090	.00193	.069	.00212	.0107
%RSD	1.1109	1.0885	.41512	.08762	.17377	.19345	.14154	.21676	1.0560

#1	.97211	1.0107	.99031	9.9398	51.704	1.0014	49.141	.98003	1.0258
#2	.95696	.99524	.98451	9.9521	51.831	.99863	49.043	.97703	1.0105

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	51.428	.96475	W 20.318	.97649	9.1011	.00068	1.9021	2.0279	4.3396
Stddev	.205	.01064	.224	.00713	.0914	.00278	.0330	.0032	.0069
%RSD	.39826	1.1026	1.1025	.73054	1.0039	411.63	1.7331	.16003	.16003

#1	51.283	.97227	20.476	.98154	9.1657	.00265	1.9254	2.0256	4.3347
#2	51.572	.95722	20.159	.97145	9.0365	-.00129	1.8788	2.0302	4.3445

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.9999	.98207	.98347	.98682	1.9676	2.0121	.99618	.48619	.51863
Stddev	.0246	.00109	.00497	.00137	.0253	.0532	.00453	.00051	.00064
%RSD	1.2284	.11137	.50569	.13871	1.2848	2.6455	.45451	.10500	.12394

#1	2.0172	.98130	.98698	.98779	1.9855	2.0497	.99938	.48583	.51909
#2	1.9825	.98285	.97995	.98586	1.9497	1.9744	.99298	.48655	.51818

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4277.1	50375.	3937.5
Stddev	20.0	137.	.8
%RSD	.46686	.27152	.02009

#1	4291.2	50472.	3938.1
#2	4262.9	50279.	3937.0

Sample Name: 280-123330-B-6-A Acquired: 5/13/2019 14:50:45 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00170	.00052	-.01067	.08292	.26237	.00032	-.00396	F 1088.9	.00027
Stddev	.00053	.00048	.00366	.00192	.00096	.00022	.00532	8.4	.00012
%RSD	30.873	93.307	34.271	2.3185	.36439	67.831	134.39	.77142	46.514

#1	.00133	.00018	-.01325	.08428	.26305	.00047	-.00020	1094.9	.00018
#2	.00208	.00086	-.00808	.08156	.26169	.00017	-.00773	1083.0	.00035

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit								1000.0	
Low Limit								-40000	

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01038	-.00003	.00027	.01722	57.806	.50821	321.35	2.4485	.00137
Stddev	.00004	.00001	.00110	.00177	.117	.00601	3.80	.0046	.00004
%RSD	.34726	41.597	404.03	10.251	.20199	1.1825	1.1839	.18834	3.1339

#1	.01035	-.00002	-.00051	.01847	57.889	.51246	318.66	2.4517	.00134
#2	.01041	-.00003	.00105	.01598	57.723	.50396	324.04	2.4452	.00140

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	40.794	.02041	-.00064	-.00433	60.790	-.00161	.00675	5.0383	10.782
Stddev	.267	.00008	.00366	.00038	.932	.00017	.00073	.0187	.040
%RSD	.65482	.38932	572.83	8.8279	1.5323	10.451	10.754	.37163	.37163

#1	40.605	.02046	-.00323	-.00406	61.449	-.00172	.00727	5.0251	10.754
#2	40.983	.02035	.00195	-.00460	60.132	-.00149	.00624	5.0516	10.810

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00377	2.7012	.00077	.00109	-.00390	-.11482	-.00054	.00694	.00240
Stddev	.00123	.0035	.00032	.00089	.00174	.00743	.00044	.00030	.00304
%RSD	32.467	.13001	42.003	81.953	44.548	6.4725	81.481	4.3400	126.60

#1	-.00464	2.6988	.00100	.00172	-.00267	-.10957	-.00023	.00672	.00025
#2	-.00291	2.7037	.00054	.00046	-.00513	-.12008	-.00085	.00715	.00455

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3827.5	44829.	3600.8
Stddev	5.4	24.	15.1
%RSD	.14177	.05395	.42049

#1	3831.3	44846.	3590.1
#2	3823.7	44812.	3611.5

Sample Name: 123330-B-6-A SD@5 Acquired: 5/13/2019 14:53:28 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	-.00191	-.00367	.01756	.05094	.00010	-.00638	223.49	.00015
Stddev	.00075	.00030	.00315	.00155	.00006	.00000	.00306	.06	.00020
%RSD	93.987	15.759	85.762	8.8173	.10900	.02776	47.965	.02693	135.35

#1	.00133	-.00170	-.00589	.01866	.05090	.00010	-.00854	223.53	.00029
#2	.00027	-.00213	-.00144	.01647	.05098	.00010	-.00421	223.45	.00001

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00227	-.00016	-.00045	.00717	10.984	.09726	62.984	.48924	-.00043
Stddev	.00029	.00026	.00060	.00103	.063	.00018	.006	.00084	.00003
%RSD	12.607	164.49	133.27	14.398	.57580	.18117	.00954	.17103	7.1610

#1	.00207	.00003	-.00087	.00644	10.939	.09714	62.989	.48865	-.00045
#2	.00248	-.00034	-.00003	.00790	11.028	.09739	62.980	.48983	-.00041

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.6335	.00343	-.00438	-.00180	11.688	.00012	.00453	1.0179	2.1783
Stddev	.0015	.00015	.00323	.00135	.038	.00065	.00074	.0461	.0986
%RSD	.01741	4.4776	73.727	74.992	.32646	529.60	16.275	4.5250	4.5250

#1	8.6345	.00353	-.00667	-.00275	11.715	-.00034	.00401	1.0504	2.2480
#2	8.6324	.00332	-.00210	-.00084	11.661	.00059	.00505	.98531	2.1086

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00273	.52905	.00066	-.00030	-.00234	-.00296	-.00014	.00315	-.00139
Stddev	.00064	.00068	.00226	.00018	.00087	.03801	.00081	.00102	.00138
%RSD	23.345	.12777	340.13	59.739	37.067	1285.4	575.57	32.522	99.643

#1	-.00228	.52953	.00226	-.00043	-.00295	-.02983	.00043	.00242	-.00236
#2	-.00318	.52857	-.00093	-.00017	-.00172	.02392	-.00071	.00387	-.00041

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4164.1	48823.	3742.1
Stddev	24.0	117.	61.6
%RSD	.57692	.24020	1.6454

#1	4147.1	48906.	3698.6
#2	4181.0	48740.	3785.7

Sample Name: 280-123330-B-6-B MS Acquired: 5/13/2019 14:56:00 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00208	9.6894	1.8974	.98954	2.1454	.89080	1.9458	F 1058.1	.96977
Stddev	.00010	.1567	.0157	.00681	.0015	.00218	.0212	2.8	.00959
%RSD	5.0284	1.6177	.82613	.68802	.06977	.24431	1.0888	.26900	.98935

#1	.00201	9.8003	1.9084	.99435	2.1443	.89234	1.9608	1060.1	.97656
#2	.00216	9.5786	1.8863	.98472	2.1464	.88926	1.9308	1056.1	.96299

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit								1000.0	
Low Limit								-40000	

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.86284	.90988	.93909	8.8546	W 104.63	1.4511	340.65	3.1449	.94470
Stddev	.00753	.00875	.00426	.0078	.21	.0050	2.07	.0140	.01032
%RSD	.87286	.96189	.45346	.08844	.20231	.34578	.60696	.44435	1.0923

#1	.86816	.91607	.94210	8.8602	104.78	1.4547	342.11	3.1547	.95200
#2	.85751	.90369	.93608	8.8491	104.48	1.4476	339.19	3.1350	.93741

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					100.00				
Low Limit					-6.0000				

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	88.830	.86673	W 20.184	.86882	67.295	.00086	1.8806	6.6938	14.325
Stddev	.654	.00686	.134	.00670	.469	.00408	.0197	.0291	.062
%RSD	.73599	.79168	.66172	.77083	.69735	476.27	1.0456	.43423	.43423

#1	89.292	.87159	20.278	.87356	67.627	.00374	1.8945	6.6732	14.281
#2	88.368	.86188	20.089	.86409	66.963	-.00203	1.8667	6.7143	14.369

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.7872	3.4252	.90688	.91378	1.7168	1.9221	.92798	.43337	.47485
Stddev	.0143	.0101	.00327	.00648	.0162	.0314	.00405	.00138	.00146
%RSD	.79838	.29460	.36022	.70961	.94098	1.6357	.43609	.31931	.30801

#1	1.7973	3.4324	.90919	.91837	1.7283	1.8998	.93085	.43435	.47589
#2	1.7771	3.4181	.90457	.90920	1.7054	1.9443	.92512	.43240	.47382

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3877.6	45583.	3735.7
Stddev	7.3	157.	26.2
%RSD	.18925	.34410	.70161

#1	3872.4	45472.	3717.2
#2	3882.8	45693.	3754.2

Sample Name: 280-123330-B-6-C MSD Acquired: 5/13/2019 14:58:28 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 {74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00254	10.092	1.9702	1.0230	2.2392	.93097	W 2.0078	F 1098.6	1.0010
Stddev	.00117	.102	.0242	.0112	.0020	.00034	.0128	.1	.0102
%RSD	45.956	1.0069	1.2263	1.0910	.08972	.03602	.63902	.00627	1.0209

#1	.00171	10.020	1.9873	1.0309	2.2406	.93120	2.0169	1098.5	1.0082
#2	.00337	10.164	1.9532	1.0151	2.2378	.93073	1.9987	1098.6	.99377

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Fail	Chk Pass
High Limit							2.0000	1000.0	
Low Limit							-2.0000	-40000	

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 {44}	670.784 {50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.89421	.94791	.97968	9.3088	W 109.32	1.5223	353.40	3.2712	.98069
Stddev	.00948	.01031	.00125	.0085	.09	.0043	1.69	.0022	.01263
%RSD	1.0601	1.0873	.12765	.09159	.08262	.28332	.47738	.06841	1.2879

#1	.90091	.95520	.97879	9.3027	109.39	1.5192	354.59	3.2697	.98963
#2	.88751	.94062	.98056	9.3148	109.26	1.5253	352.21	3.2728	.97176

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					100.00				
Low Limit					-6.0000				

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 {41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	91.632	.89935	W 20.876	.89500	69.182	.00087	1.9400	6.8798	14.723
Stddev	.094	.00623	.251	.01108	.566	.00293	.0213	.0016	.003
%RSD	.10226	.69304	1.2012	1.2379	.81813	336.53	1.0974	.02261	.02261

#1	91.566	.90375	21.053	.90284	69.582	.00294	1.9551	6.8787	14.721
#2	91.698	.89494	20.699	.88717	68.781	-.00120	1.9250	6.8809	14.725

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 {83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 {91}	292.402 {115}	206.200 {163}	339.198 {99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8541	3.5726	.94769	.95232	1.7629	1.9343	.96404	.44850	.50267
Stddev	.0185	.0077	.00226	.00028	.0200	.0250	.00439	.00096	.00157
%RSD	.99714	.21478	.23821	.02907	1.1333	1.2948	.45513	.21307	.31219

#1	1.8672	3.5671	.94928	.95251	1.7770	1.9521	.96093	.44782	.50378
#2	1.8410	3.5780	.94609	.95212	1.7488	1.9166	.96714	.44917	.50156

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 {94}	377.433 {89}
Units	Cts/S	Cts/S	Cts/S
Avg	3928.9	46064.	3753.3
Stddev	6.4	69.	8.6
%RSD	.16233	.15033	.22896

#1	3924.4	46015.	3747.2
#2	3933.4	46113.	3759.4

Sample Name: 280-123330-B-6-A PDS Acquired: 5/13/2019 15:00:57 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05639	1.0005	.19179	.18288	.34652	.04813	- .00569	F 1023.7	.05227
Stddev	.00053	.0120	.00055	.00163	.00114	.00015	.00286	7.3	.00082
%RSD	.94671	1.2038	.28588	.89323	.32835	.30919	50.287	.71026	1.5704

#1	.05601	1.0090	.19218	.18404	.34732	.04823	-.00367	1028.8	.05285
#2	.05677	.99194	.19140	.18173	.34571	.04802	-.00771	1018.5	.05169

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit								1000.0	
Low Limit								-40000	

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05590	.04960	.05357	1.0048	75.647	.57023	312.52	2.2963	.05447
Stddev	.00078	.00096	.00013	.0037	.444	.00161	2.59	.0022	.00090
%RSD	1.3990	1.9361	.24464	.36506	.58687	.28150	.82834	.09738	1.6498

#1	.05646	.05028	.05347	1.0074	75.961	.57136	314.35	2.2979	.05510
#2	.05535	.04892	.05366	1.0022	75.333	.56909	310.69	2.2948	.05383

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	60.018	.06579	2.1267	.08824	57.858	.09984	.20384	10.039	21.483
Stddev	.537	.00168	.0210	.00156	.600	.00290	.00259	.071	.153
%RSD	.89445	2.5584	.98857	1.7670	1.0369	2.9060	1.2695	.71186	.71186

#1	60.398	.06698	2.1416	.08714	58.282	.09779	.20567	10.089	21.591
#2	59.639	.06460	2.1118	.08934	57.434	.10189	.20201	9.9882	21.375

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09888	2.5432	.20286	.05254	.17927	.50545	.04933	.19496	.05929
Stddev	.00140	.0107	.00300	.00028	.00313	.07431	.00058	.00055	.00156
%RSD	1.4199	.42021	1.4777	.52994	1.7462	14.702	1.1825	.28463	2.6279

#1	.09988	2.5507	.20074	.05274	.18149	.55799	.04974	.19456	.06039
#2	.09789	2.5356	.20498	.05235	.17706	.45290	.04892	.19535	.05819

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3974.1	47106.	3856.6
Stddev	11.7	164.	35.6
%RSD	.29497	.34896	.92213

#1	3965.9	47222.	3831.4
#2	3982.4	46990.	3881.7

Sample Name: CCVH-5690583 Acquired: 5/13/2019 15:03:35 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00226	50.531	-.00424	.00485	.00258	.00126	1.0021	.10037	.00066	.00270	.00123	.01269	51.804
Stddev	.00035	.087	.00389	.00146	.00008	.00000	.0087	.01169	.00006	.00016	.00003	.00113	.073
%RSD	15.510	.17142	91.683	30.104	3.1946	.28817	.87140	11.650	8.5807	5.8166	2.4550	8.9333	.14185

#1	.00251	50.593	-.00699	.00588	.00264	.00125	1.0083	.10864	.00062	.00282	.00125	.01349	51.856
#2	.00202	50.470	-.00149	.00382	.00252	.00126	.99594	.09210	.00070	.00259	.00120	.01189	51.752

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.46778	.00089	.02766	.00402	.00034	258.79	.00398	.00000	.00237	4.8254	.00112	.00275	.03487
Stddev	.10891	.00403	.00497	.00003	.00019	.59	.00045	.00210	.00132	.0468	.00169	.00580	.01088
%RSD	23.283	454.47	17.968	.84893	53.877	.22793	11.187	85882.	55.512	.96995	150.06	210.70	31.188

#1	.39077	-.00197	.02415	.00404	.00021	259.20	.00429	-.00149	.00144	4.8585	-.00007	.00685	.02718
#2	.54480	.00374	.03118	.00399	.00048	258.37	.00366	.00149	.00330	4.7923	.00232	-.00135	.04256

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.07462	.00074	.00198	4.9510	-.00881	.00053	10.125	.00523	.00267	.07272
Stddev	.02327	.00214	.00008	.0065	.00039	.00168	.026	.00030	.00011	.00259
%RSD	31.188	289.36	3.7991	.13025	4.4497	317.68	.25500	5.7709	3.9404	3.5670

#1	.05817	.00225	.00203	4.9556	-.00909	.00172	10.107	.00502	.00275	.07089
#2	.09108	-.00077	.00193	4.9464	-.00853	-.00066	10.143	.00544	.00260	.07456

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4314.3	50212.	3915.5
Stddev	9.3	7.	15.5
%RSD	.21471	.01322	.39574

#1	4307.8	50216.	3904.6
#2	4320.9	50207.	3926.5

Sample Name: CCV-5690581 Acquired: 5/13/2019 15:06:05 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50606	F .56402	.98265	.50075	.52184	.49989	.00153	5.2082	.50345	.51101	.51834	.50712
Stddev	.00193	.00703	.00855	.00537	.00053	.00180	.00016	.0050	.00517	.00462	.00508	.00366
%RSD	.38062	1.2465	.86979	1.0715	.10098	.36076	10.210	.09626	1.0277	.90462	.97956	.72183

#1	.50469	.56899	.98869	.50455	.52221	.50116	.00164	5.2117	.50711	.51428	.52193	.50453
#2	.50742	.55905	.97661	.49696	.52147	.49861	.00142	5.2046	.49979	.50774	.51475	.50971

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.5516	52.163	1.0179	20.048	.49923	.51589	F 6.0285	.51123	1.0191	1.0182	.00026	.99112
Stddev	.0090	.054	.0008	.035	.00069	.00620	.0502	.00557	.0106	.0089	.00250	.00706
%RSD	.35407	.10337	.07535	.17426	.13866	1.2015	.83187	1.0901	1.0368	.87037	944.90	.71195

#1	2.5580	52.125	1.0173	20.023	.49874	.52027	6.0640	.51517	1.0265	1.0244	-.00150	.99611
#2	2.5452	52.201	1.0184	20.073	.49972	.51151	5.9931	.50729	1.0116	1.0119	.00203	.98613

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97621	5.0227	10.749	1.0241	.50061	.00117	.49409	1.0451	-.01645	.50206	.49777	.51087
Stddev	.00862	.0379	.081	.0133	.00043	.00019	.00128	.0068	.01289	.00026	.00132	.00149
%RSD	.88275	.75513	.75513	1.2997	.08506	15.929	.25837	.65377	78.345	.05233	.26475	.29081

#1	.98230	4.9959	10.691	1.0336	.50091	.00104	.49319	1.0499	-.00734	.50188	.49684	.51192
#2	.97012	5.0496	10.806	1.0147	.50031	.00130	.49499	1.0403	-.02557	.50225	.49871	.50982

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4389.0	51262.	3901.4
Stddev	1.4	75.	8.4
%RSD	.03143	.14692	.21640

#1	4388.1	51208.	3895.4
#2	4390.0	51315.	3907.4

Sample Name: CCB Acquired: 5/13/2019 15:08:27 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00309	.00008	.00562	.00382	W .00258	W .00248	-.00203	.04073	W .00244	.00248	.00258	.00152
Stddev	.00048	.00033	.00237	.00041	.00035	.00010	.00008	.00586	.00011	.00006	.00017	.00102
%RSD	15.466	433.77	42.170	10.617	13.599	3.8918	4.1057	14.384	4.3081	2.2406	6.4721	67.340
#1	.00276	-.00016	.00729	.00353	.00234	.00241	-.00197	.03659	.00237	.00252	.00246	.00224
#2	.00343	.00031	.00394	.00411	.00283	.00255	-.00209	.04487	.00252	.00244	.00270	.00079
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Warn	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass
High Limit	.00200				.00200	.00120			.00180			
Low Limit	-.01000				-.00200	-.00120			-.00180			
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01132	.37094	.00054	F .10548	W .00263	.00318	F .59344	.00275	-.00147	.00298	-.00343	.00199
Stddev	.00103	.00736	.00231	.00695	.00002	.00013	.00968	.00029	.00237	.00056	.00029	.00043
%RSD	9.0569	1.9843	424.16	6.5880	.75181	4.0799	1.6310	10.682	161.18	18.746	8.5016	21.534
#1	.01060	.37615	.00218	.10057	.00261	.00327	.58660	.00254	-.00315	.00337	-.00364	.00229
#2	.01205	.36574	-.00109	.11040	.00264	.00308	.60029	.00296	.00021	.00258	-.00323	.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit				.10000	.00100		.50000					
Low Limit				-.20000	-.01000		-.50000					
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00372	.05076	.10862	.00308	W .00244	.00092	.00183	.00460	-.00856	.00206	.00200	-.00023
Stddev	.00190	.00886	.01895	.00149	.00007	.00000	.00014	.00152	.06514	.00024	.00007	.00330
%RSD	51.049	17.446	17.446	48.280	2.8961	.19389	7.4470	33.038	761.06	11.479	3.3066	1448.4
#1	.00238	.05702	.12202	.00203	.00249	.00092	.00173	.00568	.03750	.00222	.00195	.00210
#2	.00507	.04450	.09522	.00413	.00239	.00092	.00192	.00353	-.05462	.00189	.00204	-.00256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					.00120							
Low Limit					-.00120							
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4467.8	52723.	3951.5									
Stddev	10.4	392.	25.6									
%RSD	.23241	.74279	.64859									
#1	4460.5	52446.	3969.7									
#2	4475.2	53000.	3933.4									

Sample Name: CCVL-5699390 Acquired: 5/13/2019 15:11:02 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01021	.10934	.01261	.09752	.01023	.00105	.10690	.22592	.00489	.01019	.01026	.01399
Stddev	.00102	.00243	.00463	.00152	.00020	.00009	.00440	.00867	.00008	.00011	.00007	.00006
%RSD	10.009	2.2213	36.681	1.5614	1.9236	8.4609	4.1175	3.8386	1.5385	1.0349	.64254	.46318

#1	.00949	.11106	.00934	.09860	.01036	.00098	.11002	.21978	.00484	.01026	.01030	.01403
#2	.01094	.10762	.01588	.09645	.01009	.00111	.10379	.23205	.00495	.01011	.01021	.01394

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.11622	3.1029	.01956	.20056	.01030	.01958	F 1.5238	.04115	2.9125	.00702	.09033	.01645
Stddev	.00161	.0486	.00394	.00472	.00004	.00047	.0160	.00086	.0499	.00009	.00109	.00015
%RSD	1.3850	1.5677	20.134	2.3546	.42807	2.3984	1.0511	2.0789	1.7131	1.2978	1.2054	.92473

#1	.11736	3.0685	.02235	.19722	.01027	.01991	1.5351	.04175	2.9477	.00696	.08956	.01656
#2	.11508	3.1373	.01678	.20390	.01033	.01925	1.5125	.04054	2.8772	.00708	.09110	.01635

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							1.0000					
Range							30.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02099	.53566	1.1463	.10146	.00997	.01656	.00903	.01345	F .08722	.00988	.02038	.01141
Stddev	.00203	.00195	.0042	.00342	.00022	.00002	.00003	.00006	.03040	.00048	.00077	.00055
%RSD	9.6558	.36479	.36479	3.3722	2.1622	.09388	.33297	.43239	34.858	4.8870	3.7842	4.8626

#1	.01956	.53427	1.1433	.10388	.00982	.01655	.00900	.01350	.06572	.00953	.01984	.01101
#2	.02242	.53704	1.1493	.09904	.01013	.01657	.00905	.01341	.10871	.01022	.02093	.01180

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value									.06000			
Range									30.000%			

Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4490.6	53276.	4028.1									
Stddev	10.5	367.	23.2									
%RSD	.23342	.68805	.57648									

#1	4483.2	53535.	4044.5									
#2	4498.0	53017.	4011.7									

Sample Name: 280-123330-B-1-A Acquired: 5/13/2019 15:13:36 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00149	1.6021	.01847	.03745	.03138	.00021	-.00281	66.324	.00048
Stddev	.00021	.0144	.00197	.00097	.00001	.00014	.00077	.011	.00016
%RSD	13.945	.89764	10.677	2.5951	.03142	67.479	27.495	.01621	33.848

#1	.00134	1.6123	.01987	.03814	.03138	.00031	-.00226	66.331	.00036
#2	.00164	1.5920	.01708	.03677	.03139	.00011	-.00336	66.316	.00059

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00127	.00276	.00214	3.7957	2.3056	.04172	40.391	.09634	.00205
Stddev	.00024	.00003	.00177	.0017	.0023	.00101	.010	.00020	.00025
%RSD	18.900	1.0480	82.775	.04356	.09861	2.4247	.02439	.21060	11.958

#1	.00144	.00274	.00089	3.7946	2.3040	.04243	40.398	.09648	.00188
#2	.00110	.00278	.00339	3.7969	2.3072	.04100	40.384	.09620	.00223

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.572	.00286	.03739	-.00076	20.847	.00076	.00127	9.1817	19.649
Stddev	.001	.00011	.00140	.00096	.195	.00148	.00086	.0131	.028
%RSD	.00385	3.9139	3.7511	126.39	.93656	194.56	68.033	.14309	.14309

#1	26.571	.00294	.03838	-.00008	20.985	.00181	.00066	9.1725	19.629
#2	26.572	.00278	.03640	-.00144	20.709	-.00029	.00188	9.1910	19.669

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00082	.23604	.00068	.01331	-.00191	-.04188	.00167	.01289	-.00330
Stddev	.00033	.00027	.00133	.00003	.00533	.05201	.00082	.00027	.00158
%RSD	40.746	.11609	196.43	.21295	279.62	124.17	49.178	2.0947	47.781

#1	-.00059	.23584	-.00026	.01329	.00186	-.00511	.00225	.01308	-.00442
#2	-.00106	.23623	.00162	.01333	-.00568	-.07865	.00109	.01270	-.00219

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4407.5	52137.	3964.1
Stddev	14.5	312.	17.4
%RSD	.32907	.59807	.43854

#1	4417.8	52358.	3951.8
#2	4397.3	51917.	3976.4

Sample Name: 280-123330-A-2-A Acquired: 5/13/2019 15:16:06 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00173	.00591	.00018	.01492	.00784	.00013	-.00154	58.875	.00006
Stddev	.00210	.00077	.00221	.00069	.00001	.00013	.00015	.039	.00017
%RSD	121.25	12.963	1205.5	4.6342	.15493	99.974	9.4254	.06665	309.74

#1	.00025	.00537	.00175	.01541	.00785	.00022	-.00144	58.847	-.00007
#2	.00322	.00646	-.00138	.01444	.00784	.00004	-.00164	58.902	.00018

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.00022	.00197	.02497	.62839	.00177	13.765	.53513	-.00041
Stddev	.00023	.00030	.00171	.00162	.04764	.00024	.674	.00145	.00002
%RSD	144.15	134.17	86.696	6.4787	7.5807	13.637	4.8968	.27028	5.1931

#1	-.00032	.00001	.00076	.02382	.59471	.00160	13.288	.53410	-.00042
#2	.00000	.00044	.00318	.02611	.66208	.00194	14.241	.53615	-.00039

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.5693	.00056	.01897	-.00332	5.7591	-.00596	.00237	4.8691	10.420
Stddev	.0018	.00008	.00312	.00064	.0500	.00247	.00358	.0087	.019
%RSD	.05136	15.253	16.473	19.204	.86868	41.397	151.35	.17943	.17943

#1	3.5706	.00050	.01676	-.00377	5.7945	-.00770	.00490	4.8753	10.433
#2	3.5680	.00062	.02118	-.00286	5.7237	-.00421	-.00017	4.8629	10.407

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00272	.08301	.00794	.00090	-.00569	-.00159	.00146	.00312	-.00275
Stddev	.00057	.00035	.00750	.00269	.00078	.02821	.00188	.00114	.00020
%RSD	21.120	.41822	94.399	297.59	13.742	1772.8	128.93	36.643	7.1740

#1	-.00312	.08276	.00264	-.00100	-.00624	.01836	.00013	.00231	-.00261
#2	-.00231	.08325	.01324	.00280	-.00513	-.02154	.00279	.00393	-.00289

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4390.5	51848.	3948.6
Stddev	28.5	200.	3.9
%RSD	.64990	.38508	.09781

#1	4410.7	51706.	3945.9
#2	4370.3	51989.	3951.3

Sample Name: 280-123330-D-7-A Acquired: 5/13/2019 15:18:39 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.03796	.00704	.06678	.02388	.00018	-.00148	144.85	.00064
Stddev	.00027	.00048	.00163	.00052	.00020	.00017	.00504	.11	.00009
%RSD	47.801	1.2530	23.100	.78147	.84514	93.383	340.29	.07488	14.940

#1	.00074	.03829	.00819	.06642	.02374	.00030	.00208	144.92	.00070
#2	.00037	.03762	.00589	.06715	.02402	.00006	-.00504	144.77	.00057

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00125	.00024	.00187	.75303	3.4285	.06146	67.338	.09821	.00216
Stddev	.00004	.00002	.00003	.00103	.0074	.00428	.006	.00008	.00005
%RSD	3.0502	7.9300	1.7228	.13647	.21481	6.9663	.00921	.07905	2.1189

#1	.00122	.00025	.00184	.75376	3.4232	.06449	67.333	.09827	.00213
#2	.00127	.00022	.00189	.75230	3.4337	.05844	67.342	.09816	.00219

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.998	.00173	.00254	-.00324	63.093	-.00272	.00005	8.9884	19.235
Stddev	.240	.00005	.00373	.00135	.513	.00313	.00063	.0045	.010
%RSD	.99861	2.6354	146.44	41.598	.81373	115.37	1267.0	.04987	.04987

#1	23.828	.00169	-.00009	-.00228	63.456	-.00493	.00049	8.9852	19.228
#2	24.167	.00176	.00518	-.00419	62.730	-.00050	-.00039	8.9916	19.242

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00355	.30853	.00132	.00035	-.00356	-.05344	-.00090	.01118	.00059
Stddev	.00098	.00074	.00175	.00000	.00105	.02895	.00061	.00018	.00005
%RSD	27.578	.23980	131.89	.59674	29.587	54.179	68.015	1.6071	8.0732

#1	-.00424	.30801	.00256	.00035	-.00282	-.07391	-.00047	.01130	.00056
#2	-.00286	.30905	.00009	.00035	-.00430	-.03297	-.00134	.01105	.00063

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4214.8	50091.	3893.2
Stddev	10.6	62.	43.4
%RSD	.25193	.12374	1.1139

#1	4222.3	50135.	3862.5
#2	4207.3	50047.	3923.9

Sample Name: 280-123330-C-8-A Acquired: 5/13/2019 15:21:11 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.10984	.00027	.02175	.01560	.00012	-.00218	27.591	.00005
Stddev	.00037	.00170	.00332	.00006	.00010	.00015	.00061	.117	.00016
%RSD	31.881	1.5506	1213.9	.27072	.62908	118.63	27.990	.42512	348.03

#1	.00091	.11104	-.00207	.02180	.01567	.00023	-.00261	27.508	-.00007
#2	.00144	.10863	.00262	.02171	.01553	.00002	-.00175	27.674	.00016

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00370	.00091	-.00061	2.5067	.78670	.01324	12.390	.52224	-.00059
Stddev	.00031	.00007	.00079	.0098	.04798	.00002	.029	.00075	.00037
%RSD	8.3253	7.9773	128.97	.39256	6.0983	.17035	.23439	.14295	62.497

#1	.00392	.00086	-.00117	2.4998	.75277	.01326	12.370	.52171	-.00085
#2	.00348	.00096	-.00005	2.5137	.82062	.01323	12.411	.52277	-.00033

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.6391	.00257	.00133	-.00287	14.480	-.00081	.00374	6.1510	13.163
Stddev	.0406	.00041	.00145	.00076	.104	.00260	.00539	.0083	.018
%RSD	.53178	15.764	108.85	26.561	.72165	320.18	144.22	.13551	.13551

#1	7.6104	.00286	.00236	-.00233	14.553	-.00265	-.00007	6.1451	13.151
#2	7.6679	.00229	.00031	-.00341	14.406	.00103	.00754	6.1569	13.176

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00222	.05769	.00223	.00084	-.00401	-.02036	.00040	.00732	-.00023
Stddev	.00013	.00040	.00254	.00035	.00068	.03719	.00015	.00039	.00143
%RSD	5.9457	.69051	113.79	41.190	17.004	182.64	38.753	5.3596	623.50

#1	-.00212	.05740	.00402	.00060	-.00449	.00593	.00029	.00760	-.00124
#2	-.00231	.05797	.00044	.00109	-.00352	-.04666	.00050	.00704	.00078

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4267.3	50315.	3861.8
Stddev	44.9	513.	56.1
%RSD	1.0524	1.0204	1.4536

#1	4235.5	50678.	3901.5
#2	4299.0	49952.	3822.1

Sample Name: 280-123330-C-9-A Acquired: 5/13/2019 15:23:43 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00110	.09693	.00035	.02262	.01548	-.00008	-.00282	78.903	.00007
Stddev	.00019	.00076	.00247	.00068	.00001	.00006	.00013	.291	.00005
%RSD	17.582	.77954	708.41	2.9868	.06192	78.181	4.6610	.36886	77.219

#1	.00124	.09747	.00210	.02310	.01547	-.00012	-.00291	79.108	.00003
#2	.00096	.09640	-.00140	.02215	.01549	-.00004	-.00272	78.697	.00011

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00063	.00031	.21899	.90228	.00578	19.215	.03290	.00028
Stddev	.00004	.00018	.00001	.00201	.03925	.00338	.006	.00021	.00017
%RSD	195.50	28.442	1.6614	.91734	4.3496	58.498	.03378	.62734	62.640

#1	-.00005	.00050	.00031	.22041	.93003	.00339	19.210	.03305	.00015
#2	.00001	.00076	.00031	.21757	.87453	.00818	19.220	.03276	.00040

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.5116	.00062	-.00060	-.00334	22.808	.00024	.00182	4.2651	9.1272
Stddev	.0376	.00027	.00043	.00003	.189	.00249	.00409	.0045	.0095
%RSD	.39515	43.771	71.305	.84809	.83080	1052.0	225.36	.10454	.10454

#1	9.5381	.00043	-.00091	-.00336	22.942	-.00152	.00471	4.2682	9.1340
#2	9.4850	.00081	-.00030	-.00332	22.674	.00199	-.00108	4.2619	9.1205

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00219	.16913	.00135	.00081	-.00164	-.03441	-.00050	.00149	-.00478
Stddev	.00123	.00066	.00003	.00002	.00049	.02004	.00018	.00039	.00185
%RSD	56.219	.38790	2.2224	2.7832	29.734	58.246	36.780	26.311	38.693

#1	-.00132	.16959	.00133	.00079	-.00199	-.02024	-.00063	.00176	-.00347
#2	-.00306	.16866	.00137	.00082	-.00130	-.04858	-.00037	.00121	-.00608

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4179.1	49818.	3829.2
Stddev	3.0	46.	2.7
%RSD	.07092	.09174	.07181

#1	4181.1	49850.	3831.1
#2	4177.0	49786.	3827.3

Sample Name: 280-123330-A-10-A Acquired: 5/13/2019 15:26:16 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00199	.01874	-.00828	.10133	.05380	.00001	-.00412	151.08	.00008
Stddev	.00040	.00006	.00746	.00120	.00030	.00012	.00168	.12	.00014
%RSD	19.906	.33889	90.120	1.1884	.55327	895.51	40.895	.07647	175.57

#1	.00227	.01878	-.00300	.10219	.05359	.00010	-.00531	151.00	-.00002
#2	.00171	.01869	-.01355	.10048	.05401	-.00007	-.00293	151.17	.00018

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00081	.02595	.08069	2.9088	.01730	58.158	.71707	.00162
Stddev	.00023	.00027	.00081	.00125	.0970	.00212	.054	.00118	.00017
%RSD	115.87	33.059	3.1289	1.5471	3.3356	12.282	.09358	.16502	10.776

#1	-.00004	.00100	.02538	.08157	2.9774	.01580	58.119	.71623	.00175
#2	-.00036	.00062	.02652	.07981	2.8402	.01880	58.196	.71790	.00150

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.752	.00984	.00666	.00610	117.60	-.00116	.00547	5.7388	12.281
Stddev	.261	.00031	.00251	.00207	.94	.00314	.00158	.0144	.031
%RSD	2.2188	3.1266	37.723	34.025	.80257	270.77	28.839	.25083	.25083

#1	11.936	.00962	.00489	.00757	118.27	-.00338	.00658	5.7490	12.303
#2	11.567	.01005	.00844	.00463	116.94	.00106	.00435	5.7286	12.259

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00176	.49779	.00012	-.00022	-.00260	-.00919	-.00056	.39350	-.00335
Stddev	.00064	.00104	.00248	.00002	.00140	.02584	.00007	.00014	.00021
%RSD	36.107	.20832	1983.5	9.0363	53.928	281.11	11.989	.03491	6.2463

#1	-.00131	.49705	.00188	-.00023	-.00161	.00908	-.00061	.39340	-.00350
#2	-.00221	.49852	-.00163	-.00020	-.00359	-.02746	-.00052	.39360	-.00320

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4116.5	48444.	3775.8
Stddev	42.2	230.	34.5
%RSD	1.0257	.47515	.91415

#1	4146.4	48607.	3751.4
#2	4086.6	48281.	3800.2

Sample Name: CCVH-5690583 Acquired: 5/13/2019 15:28:48 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00342	51.195	.00000	.00296	.00266	.00139	.99133	.03880	.00097	.00238	.00119	.01313	52.146
Stddev	.00079	.098	.00574	.00009	.00009	.00003	.00380	.00781	.00008	.00013	.00059	.00125	.105
%RSD	22.995	.19154	160550.	2.9690	3.2421	2.0627	.38320	20.140	7.8863	5.5428	49.888	9.5028	.20221

#1	.00286	51.126	-.00405	.00290	.00260	.00137	.99401	.04433	.00092	.00229	.00161	.01402	52.221
#2	.00397	51.265	.00406	.00302	.00272	.00141	.98864	.03327	.00103	.00247	.00077	.01225	52.071

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.24029	-.00049	.01624	.00380	-.00003	261.14	.00441	.00060	.00302	4.7780	.00272	.00477	.03297
Stddev	.01789	.00043	.00656	.00007	.00024	2.04	.00039	.00156	.00139	.0355	.00031	.00189	.01506
%RSD	7.4468	87.555	40.380	1.7223	722.02	.77964	8.8658	257.46	45.818	.74198	11.340	39.648	45.661

#1	.22763	-.00019	.02087	.00385	.00013	259.70	.00414	.00170	.00400	4.8031	.00250	.00343	.04362
#2	.25294	-.00079	.01160	.00376	-.00020	262.58	.00469	-.00050	.00204	4.7529	.00294	.00611	.02233

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.07057	.00181	.00187	5.0026	-.00924	.00036	10.258	.00595	.00312	.07634
Stddev	.03222	.00254	.00008	.0166	.00044	.00150	.012	.00034	.00011	.00403
%RSD	45.661	140.16	4.2199	.33115	4.7296	411.99	.11991	5.7241	3.5932	5.2763

#1	.09335	.00361	.00182	5.0143	-.00955	-.00070	10.249	.00571	.00304	.07349
#2	.04778	.00002	.00193	4.9909	-.00893	.00142	10.267	.00620	.00320	.07919

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4189.5	48508.	3734.9
Stddev	7.8	41.	4.5
%RSD	.18591	.08441	.11923

#1	4184.0	48479.	3731.8
#2	4195.0	48537.	3738.1

Sample Name: CCV-5690581 Acquired: 5/13/2019 15:31:18 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50962	F .57286	.98647	.50058	.52789	.50346	-.00209	5.2782	.50487	.51377	.52230	.51049
Stddev	.00035	.00474	.02215	.00391	.00049	.00264	.00079	.0312	.00587	.00570	.00576	.00206
%RSD	.06951	.82708	2.2456	.78033	.09269	.52499	37.638	.59013	1.1634	1.1103	1.1037	.40350

#1	.50937	.57622	1.0021	.50334	.52754	.50159	-.00265	5.2562	.50902	.51781	.52637	.51195
#2	.50987	.56951	.97081	.49782	.52824	.50533	-.00153	5.3002	.50071	.50974	.51822	.50903

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.5690	52.643	1.0356	20.335	.50514	.51887	F 5.8156	.51385	1.0202	1.0248	.00428	.99104
Stddev	.0053	.127	.0017	.025	.00156	.00568	.0162	.00578	.0128	.0108	.00152	.01718
%RSD	.20443	.24155	.16163	.12282	.30831	1.0945	.27813	1.1249	1.2513	1.0539	35.589	1.7337

#1	2.5653	52.733	1.0344	20.353	.50625	.52289	5.8271	.51794	1.0292	1.0325	.00536	1.0032
#2	2.5727	52.553	1.0367	20.318	.50404	.51485	5.8042	.50976	1.0112	1.0172	.00320	.97889

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97625	5.0852	10.882	1.0304	.50735	.00232	.49978	1.0428	-.02155	.50911	.50529	.51615
Stddev	.01512	.0105	.022	.0091	.00164	.00028	.00188	.0102	.07154	.00170	.00050	.00202
%RSD	1.5489	.20636	.20636	.88066	.32418	12.175	.37643	.97692	331.96	.33320	.09992	.39191

#1	.98694	5.0927	10.898	1.0368	.50618	.00212	.50111	1.0500	.02904	.51031	.50493	.51758
#2	.96555	5.0778	10.867	1.0240	.50851	.00252	.49845	1.0356	-.07214	.50791	.50565	.51472

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4311.3	50583.	3831.3
Stddev	16.7	142.	10.2
%RSD	.38798	.28025	.26612

#1	4323.1	50683.	3824.1
#2	4299.5	50483.	3838.5

Sample Name: CCB Acquired: 5/13/2019 15:33:40 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00201	-.00207	-.00636	-.00024	.00047	.00019	-.00141	.00511	-.00013	-.00024	-.00010	-.00254
Stddev	.00019	.00098	.00144	.00016	.00023	.00003	.00158	.00089	.00028	.00016	.00008	.00146
%RSD	9.2738	47.290	22.651	67.724	49.196	13.710	111.79	17.342	208.84	65.101	81.187	57.489
#1	.00214	-.00276	-.00534	-.00012	.00030	.00021	-.00030	.00574	.00006	-.00013	-.00016	-.00151
#2	.00188	-.00138	-.00738	-.00035	.00063	.00017	-.00253	.00449	-.00033	-.00035	-.00004	-.00357
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.00200											
Low Limit	-.01000											
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00556	.05846	-.00255	-.00567	-.00002	.00046	W .41912	.00005	-.00449	-.00203	.00474	.00024
Stddev	.00069	.05828	.00091	.00618	.00006	.00051	.00190	.00024	.00090	.00045	.00257	.00047
%RSD	12.335	99.703	35.839	108.98	337.85	110.35	.45236	480.92	20.069	22.291	54.320	198.34
#1	.00605	.09967	-.00190	-.01005	-.00006	.00010	.41778	.00022	-.00513	-.00235	.00292	.00057
#2	.00508	.01724	-.00319	-.00130	.00003	.00082	.42046	-.00012	-.00385	-.00171	.00656	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							.35000					
Low Limit							-.35000					
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00077	.00055	.00118	-.00250	-.00005	.00291	-.00063	-.00262	-.06354	-.00030	.00004	-.00175
Stddev	.00089	.00456	.00975	.00128	.00018	.00000	.00060	.00147	.04032	.00020	.00072	.00569
%RSD	115.32	828.75	828.75	51.212	388.37	.04104	94.785	55.998	63.449	67.418	1630.0	324.36
#1	-.00141	.00377	.00807	-.00160	.00008	.00291	-.00021	-.00366	-.03503	-.00016	-.00046	.00227
#2	-.00014	-.00267	-.00572	-.00341	-.00018	.00291	-.00106	-.00159	-.09205	-.00045	.00055	-.00577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4269.8	50576.	3731.7									
Stddev	40.0	2.	6.9									
%RSD	.93567	.00410	.18449									
#1	4298.1	50578.	3736.5									
#2	4241.6	50575.	3726.8									

Sample Name: CCVL-5699390 Acquired: 5/13/2019 15:36:15 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01054	.11152	F .01029	.09625	.01047	.00106	.10338	.21505	.00479	.01025	.01033	.01424
Stddev	.00019	.00162	.00122	.00126	.00061	.00020	.00103	.00390	.00003	.00012	.00030	.00106
%RSD	1.8414	1.4482	11.876	1.3067	5.8258	18.996	1.0004	1.8134	.68797	1.1760	2.8634	7.4131

#1	.01067	.11267	.01115	.09714	.01004	.00092	.10411	.21781	.00477	.01033	.01012	.01349
#2	.01040	.11038	.00943	.09536	.01090	.00121	.10265	.21229	.00482	.01016	.01054	.01499

Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.01500									
Range			-30.000%									

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10897	3.2294	.01954	.20207	.01022	.01984	F 1.4058	.04110	2.8961	.00779	.08658	.01926
Stddev	.00389	.0908	.00487	.00500	.00011	.00087	.0083	.00130	.0497	.00029	.00509	.00207
%RSD	3.5697	2.8125	24.943	2.4762	1.0356	4.3714	.58814	3.1651	1.7163	3.7655	5.8769	10.728

#1	.10622	3.1652	.02299	.19853	.01029	.02045	1.3999	.04202	2.9313	.00758	.08298	.02072
#2	.11172	3.2937	.01610	.20561	.01014	.01923	1.4116	.04018	2.8610	.00800	.09018	.01780

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							1.0000					
Range							30.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01708	.54871	1.1742	.10019	.01020	.01723	.00886	.01273	F .01168	.00975	.02030	F .01037
Stddev	.00105	.01396	.0299	.00123	.00014	.00134	.00005	.00026	.06087	.00054	.00020	.00142
%RSD	6.1367	2.5445	2.5445	1.2293	1.3992	7.7666	.60790	2.0063	521.22	5.4895	.98704	13.721

#1	.01634	.53884	1.1531	.10106	.01010	.01818	.00882	.01255	-.03136	.00938	.02016	.01138
#2	.01782	.55858	1.1954	.09932	.01030	.01628	.00889	.01291	.05472	.01013	.02044	.00937

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail
Value									.06000			.01500
Range									-30.000%			-30.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4218.1	49601.	3696.9
Stddev	.8	83.	16.3
%RSD	.01843	.16658	.43986

#1	4218.6	49542.	3708.4
#2	4217.5	49659.	3685.4

Sample Name: MB 280-457065/1-A Acquired: 5/13/2019 15:38:48 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/9 Custom ID2: Custom ID3:
Comment: 457065 200.7

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	-.00022	-.00453	.00015	-.00026	.00004	-.00175	.00721	-.00009
Stddev	.00054	.00099	.00168	.00001	.00019	.00005	.00050	.00264	.00010
%RSD	68.868	450.14	37.166	4.1336	72.941	134.63	28.884	36.692	120.74

#1	.00040	.00048	-.00572	.00016	-.00013	.00008	-.00139	.00907	-.00001
#2	.00117	-.00092	-.00334	.00015	-.00040	.00000	-.00210	.00534	-.00016

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	-.00004	-.00220	.00335	.08585	-.00171	-.00483	.00003	-.00009
Stddev	.00009	.00014	.00010	.00151	.07744	.00122	.00249	.00011	.00017
%RSD	23.543	349.14	4.6469	45.119	90.206	71.190	51.569	370.21	194.88

#1	-.00031	.00006	-.00227	.00228	.14061	-.00085	-.00659	.00011	-.00021
#2	-.00043	-.00014	-.00213	.00442	.03109	-.00257	-.00307	-.00005	.00003

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.33449	.00006	-.00394	-.00038	-.00078	-.00220	.00655	.04894	.10472
Stddev	.01096	.00018	.00179	.00122	.00109	.00161	.00234	.02096	.04486
%RSD	3.2774	278.64	45.386	317.50	140.16	73.266	35.767	42.836	42.836

#1	.32673	.00019	-.00268	.00048	-.00001	-.00106	.00490	.06376	.13645
#2	.34224	-.00006	-.00520	-.00125	-.00155	-.00334	.00821	.03411	.07300

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00146	-.00003	.00377	-.00100	-.00446	-.02226	-.00038	-.00013	.00040
Stddev	.00017	.00006	.00010	.00005	.00172	.02133	.00011	.00103	.00344
%RSD	11.646	182.27	2.7140	4.6267	38.540	95.797	28.319	770.88	870.41

#1	-.00134	.00001	.00370	-.00103	-.00325	-.03734	-.00030	.00060	-.00204
#2	-.00158	-.00007	.00384	-.00097	-.00568	-.00718	-.00045	-.00087	.00283

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4318.4	51041.	3763.2
Stddev	16.3	52.	18.9
%RSD	.37797	.10171	.50246

#1	4329.9	51078.	3749.8
#2	4306.8	51005.	3776.5

Sample Name: LCS 280-457065/2-A Acquired: 5/13/2019 15:41:23 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457065 200.7

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05314	10.196	1.9976	.98568	2.0919	.99684	W 2.0091	50.448	1.0063
Stddev	.00001	.073	.0277	.00531	.0023	.00198	.0111	.037	.0054
%RSD	.02673	.72021	1.3864	.53883	.10875	.19847	.55318	.07387	.54045

#1	.05315	10.144	2.0172	.98943	2.0903	.99544	2.0170	50.421	1.0101
#2	.05313	10.248	1.9781	.98192	2.0936	.99824	2.0013	50.474	1.0024

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass
High Limit							2.0000		
Low Limit							-.20000		

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98688	1.0272	1.0054	9.8712	51.721	1.0178	49.229	.99675	1.0404
Stddev	.00473	.0073	.0015	.0658	.081	.0072	.132	.00143	.0071
%RSD	.47975	.70821	.15261	.66684	.15753	.71095	.26809	.14307	.68182

#1	.99023	1.0324	1.0065	9.8247	51.663	1.0127	49.322	.99775	1.0454
#2	.98353	1.0221	1.0044	9.9178	51.778	1.0229	49.136	.99574	1.0354

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	51.773	.98565	W 20.810	.99752	9.2582	.99792	1.9364	2.0681	4.4258
Stddev	.370	.00576	.132	.00315	.0510	.00946	.0104	.0019	.0041
%RSD	.71386	.58411	.63305	.31566	.55132	.94846	.53749	.09194	.09194

#1	52.034	.98973	20.903	.99529	9.2943	1.0046	1.9438	2.0695	4.4287
#2	51.512	.98158	20.717	.99974	9.2221	.99123	1.9291	2.0668	4.4230

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.0415	.99850	1.0022	1.0035	2.0229	2.0516	1.0193	.49640	.52265
Stddev	.0085	.00417	.0003	.0003	.0137	.0685	.0013	.00176	.00628
%RSD	.41528	.41787	.02651	.03296	.67818	3.3404	.12278	.35378	1.2020

#1	2.0475	.99555	1.0024	1.0037	2.0326	2.0031	1.0202	.49765	.51821
#2	2.0355	1.0015	1.0020	1.0033	2.0132	2.1000	1.0185	.49516	.52710

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000								
Low Limit	-.20000								

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4251.7	49201.	3807.5
Stddev	6.7	295.	13.8
%RSD	.15743	.59976	.36274

#1	4256.5	48992.	3817.3
#2	4247.0	49410.	3797.7

Sample Name: 280-123152-D-1-A Acquired: 5/13/2019 15:43:40 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457065 200.7

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00152	.15450	.02737	W 17.253	.45048	.00014	-.00574	253.58	.00053
Stddev	.00074	.00228	.00652	.177	.00168	.00003	.00343	.86	.00019
%RSD	48.468	1.4749	23.835	1.0253	.37276	24.605	59.736	.33865	35.069

#1	.00100	.15612	.02276	17.378	.45166	.00016	-.00332	254.19	.00067
#2	.00204	.15289	.03199	17.128	.44929	.00011	-.00817	252.98	.00040

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit				10.000					
Low Limit				-20000					

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01079	.03695	.00442	18.013	W 218.59	.10668	245.48	.34251	.00681
Stddev	.00028	.00040	.00021	.045	.30	.00127	1.50	.00091	.00022
%RSD	2.6269	1.0838	4.8261	.24835	.13953	1.1934	.61161	.26638	3.2167

#1	.01059	.03723	.00457	18.045	218.80	.10578	246.54	.34316	.00665
#2	.01099	.03667	.00427	17.982	218.37	.10758	244.42	.34187	.00696

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					100.00				
Low Limit					-6.0000				

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 1515.2	.07324	3.0910	-.00078	F 340.36	-.00130	.00265	19.603	41.951
Stddev	2.5	.00121	.0371	.00037	3.67	.00087	.00403	.018	.038
%RSD	.16701	1.6485	1.1986	47.334	1.0793	67.251	152.09	.09109	.09109

#1	1517.0	.07409	3.1172	-.00104	342.95	-.00192	.00551	19.591	41.924
#2	1513.4	.07238	3.0648	-.00052	337.76	-.00068	-.00020	19.616	41.978

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				200.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00238	1.3076	-.00005	.07278	-.00201	F -.13297	.03814	.09904	.02141
Stddev	.00173	.0039	.00220	.00047	.00151	.06661	.00055	.00112	.00423
%RSD	72.793	.30114	4021.3	.64130	75.084	50.090	1.4497	1.1292	19.737

#1	.00115	1.3103	-.00161	.07311	-.00308	-.08588	.03775	.09983	.02439
#2	.00360	1.3048	.00150	.07245	-.00094	-.18007	.03853	.09824	.01842

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3854.2	43835.	3648.7
Stddev	5.2	15.	8.1
%RSD	.13441	.03396	.22284

#1	3850.6	43845.	3643.0
#2	3857.9	43824.	3654.5

Sample Name: 280-123213-F-1-C Acquired: 5/13/2019 15:46:16 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457065 200.7

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00204	.51604	.20026	W 34.279	.52144	.00023	-.00340	67.113	.00098
Stddev	.00061	.00712	.00625	.255	.00079	.00004	.00333	.115	.00023
%RSD	30.079	1.3789	3.1214	.74264	.15079	17.712	97.846	.17193	23.503

#1	.00247	.52107	.20468	34.459	.52199	.00025	-.00575	67.194	.00114
#2	.00161	.51101	.19584	34.099	.52088	.00020	-.00105	67.031	.00082

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit				10.000					
Low Limit				-.20000					

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.06410	.19485	.12031	7.6293	F 948.85	.68815	88.723	1.0242	.01257
Stddev	.00065	.00228	.00137	.0308	.20	.00181	.009	.0001	.00021
%RSD	1.0092	1.1707	1.1399	.40367	.02158	.26260	.00974	.01465	1.6852

#1	.06456	.19646	.12128	7.6511	949.00	.68942	88.717	1.0243	.01272
#2	.06364	.19323	.11934	7.6076	948.71	.68687	88.729	1.0241	.01242

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					500.00				
Low Limit					-6.0000				

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2552.6	.33507	9.5840	.01449	27.994	.01493	.00645	20.174	43.172
Stddev	1.5	.00219	.0805	.00028	.309	.00186	.00339	.006	.013
%RSD	.05813	.65319	.84026	1.8990	1.1047	12.453	52.524	.02928	.02928

#1	2553.6	.33661	9.6410	.01430	28.212	.01362	.00405	20.170	43.163
#2	2551.5	.33352	9.5271	.01469	27.775	.01625	.00884	20.178	43.181

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00								
Low Limit	11.000								

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03090	.67536	.00105	.05871	-.00233	-.09907	.07129	.21371	.08594
Stddev	.00041	.00030	.00143	.00032	.00208	.03962	.00051	.00156	.00098
%RSD	1.3297	.04420	136.48	.54087	89.326	39.994	.71815	.73062	1.1362

#1	.03119	.67557	.00206	.05894	-.00380	-.12709	.07093	.21261	.08663
#2	.03061	.67515	.00004	.05849	-.00086	-.07106	.07165	.21482	.08524

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3801.7	43082.	3663.3
Stddev	12.2	54.	2.1
%RSD	.31988	.12453	.05771

#1	3810.3	43044.	3661.8
#2	3793.1	43120.	3664.8

Sample Name: 280-123255-A-1-A Acquired: 5/13/2019 15:48:49 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457065 200.7

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	.67094	-.00031	.17277	.04968	.00012	-.00078	55.092	.00003
Stddev	.00021	.00920	.00128	.00740	.00028	.00002	.00125	.132	.00002
%RSD	19.631	1.3714	405.51	4.2858	.56724	16.734	160.77	.24007	84.980

#1	.00090	.67745	.00059	.17800	.04988	.00013	-.00166	55.186	.00001
#2	.00119	.66444	-.00122	.16753	.04948	.00011	.00011	54.999	.00004

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	.00123	.00069	.35797	3.8618	.00880	2.6925	.01696	.00255
Stddev	.00023	.00008	.00025	.00630	.2135	.00586	.0008	.00009	.00041
%RSD	35.882	6.8253	36.151	1.7593	5.5296	66.606	.02791	.55832	15.941

#1	.00082	.00129	.00052	.35351	4.0128	.00466	2.6919	.01703	.00226
#2	.00049	.00117	.00087	.36242	3.7108	.01295	2.6930	.01689	.00284

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	33.670	.00101	.03311	-.00113	37.089	-.00499	.00449	4.9119	10.511
Stddev	.365	.00041	.00055	.00152	.400	.00229	.00223	.0666	.143
%RSD	1.0843	40.725	1.6595	134.83	1.0789	45.940	49.522	1.3561	1.3561

#1	33.412	.00072	.03272	-.00005	37.372	-.00337	.00292	4.9590	10.612
#2	33.928	.00130	.03349	-.00220	36.806	-.00662	.00607	4.8648	10.411

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00199	.53989	.00386	.00922	-.00495	.00810	.00376	.00204	.00034
Stddev	.00097	.00069	.00011	.00016	.00094	.00940	.00056	.00021	.00057
%RSD	48.841	.12831	2.9500	1.7877	19.031	116.02	14.768	10.139	167.98

#1	-.00268	.54038	.00378	.00933	-.00562	.01474	.00416	.00189	.00074
#2	-.00131	.53940	.00394	.00910	-.00429	.00145	.00337	.00218	-.00006

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4476.2	52811.	4051.0
Stddev	6.5	42.	35.2
%RSD	.14567	.07997	.86992

#1	4471.6	52781.	4026.0
#2	4480.8	52841.	4075.9

Sample Name: 280-123255-A-2-A Acquired: 5/13/2019 15:51:20 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457065 200.7

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	10.859	.01508	.21803	.27246	.00055	-.00357	185.99	.00005
Stddev	.00079	.036	.00311	.00342	.00015	.00001	.00436	.08	.00006
%RSD	85.876	.33491	20.635	1.5673	.05432	1.4820	122.35	.04486	123.03

#1	.00149	10.834	.01728	.22045	.27235	.00055	-.00665	186.05	.00008
#2	.00036	10.885	.01288	.21562	.27256	.00056	-.00048	185.93	.00001

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00202	.01039	.00441	6.2445	6.7821	.00750	8.1043	.31317	-.00066
Stddev	.00016	.00008	.00028	.0023	.0955	.00179	.0247	.00062	.00022
%RSD	7.9723	.77742	6.4162	.03639	1.4075	23.817	.30517	.19667	32.792

#1	.00214	.01045	.00461	6.2429	6.7146	.00624	8.0868	.31273	-.00081
#2	.00191	.01034	.00421	6.2461	6.8496	.00877	8.1218	.31360	-.00051

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	41.217	.00654	.17541	-.00234	43.380	-.00449	-.00188	29.550	63.238
Stddev	.721	.00040	.00284	.00225	.370	.00340	.00140	.027	.058
%RSD	1.7481	6.1591	1.6215	95.853	.85289	75.669	74.420	.09232	.09232

#1	40.707	.00682	.17742	-.00075	43.641	-.00690	-.00287	29.570	63.279
#2	41.726	.00625	.17340	-.00393	43.118	-.00209	-.00089	29.531	63.196

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00184	.83935	.00499	.05267	-.00480	-.01569	.02301	.02937	.00562
Stddev	.00044	.00078	.00153	.00026	.00175	.00726	.00069	.00027	.00079
%RSD	23.926	.09291	30.644	.48630	36.530	46.271	2.9925	.92581	14.069

#1	-.00215	.83880	.00391	.05249	-.00604	-.01055	.02252	.02918	.00506
#2	-.00153	.83990	.00607	.05285	-.00356	-.02082	.02350	.02957	.00618

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4422.8	51575.	3999.9
Stddev	15.0	44.	25.5
%RSD	.34013	.08536	.63834

#1	4433.4	51544.	3981.8
#2	4412.2	51606.	4017.9

Sample Name: 280-123255-A-3-A Acquired: 5/13/2019 15:53:50 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457065 200.7

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	3.4834	.00354	.06058	.03843	.00021	-.00339	25.518	.00006
Stddev	.00014	.0417	.00238	.00113	.00014	.00012	.00060	.024	.00025
%RSD	21.689	1.1969	67.247	1.8570	.36702	55.903	17.784	.09244	414.40

#1	.00074	3.5129	.00522	.06138	.03833	.00029	-.00381	25.535	.00023
#2	.00055	3.4540	.00186	.05979	.03853	.00013	-.00296	25.502	-.00011

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.00365	.00347	1.7893	3.8437	-.00056	1.8604	.02782	.00004
Stddev	.00041	.00013	.00014	.0035	.0611	.00271	.0001	.00002	.00018
%RSD	1234.5	3.6933	4.0441	.19324	1.5903	484.35	.00406	.06763	414.97

#1	.00025	.00355	.00337	1.7868	3.8869	-.00247	1.8605	.02781	.00017
#2	-.00032	.00374	.00356	1.7917	3.8005	.00136	1.8604	.02783	-.00008

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.3126	.00166	.24714	-.00161	2.5599	-.00633	.00275	9.7455	20.855
Stddev	.0052	.00060	.00666	.00287	.0282	.00135	.00228	.0191	.041
%RSD	.11985	36.324	2.6951	178.84	1.1013	21.383	82.932	.19570	.19570

#1	4.3162	.00209	.25185	.00043	2.5798	-.00537	.00114	9.7590	20.884
#2	4.3089	.00124	.24243	-.00364	2.5400	-.00729	.00437	9.7320	20.827

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00158	.05560	.00151	.01506	-.00208	.00259	.01048	.05033	.00108
Stddev	.00073	.00023	.00059	.00022	.00305	.00842	.00063	.00022	.00047
%RSD	46.066	.40915	38.974	1.4413	147.01	325.11	5.9630	.43365	43.158

#1	-.00106	.05544	.00109	.01522	.00008	.00854	.01004	.05018	.00141
#2	-.00209	.05576	.00193	.01491	-.00423	-.00336	.01092	.05048	.00075

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4523.7	52932.	4048.6
Stddev	8.9	2.	9.8
%RSD	.19652	.00365	.24155

#1	4530.0	52930.	4055.5
#2	4517.4	52933.	4041.6

Sample Name: CCVH-5690583 Acquired: 5/13/2019 15:56:21 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00232	50.373	-.00348	.02959	.00247	.00124	.98574	.03734	.00092	.00263	.00153	.01190	51.736
Stddev	.00061	.015	.00076	.00096	.00015	.00008	.00928	.00194	.00011	.00002	.00004	.00146	.272
%RSD	26.456	.02931	21.895	3.2364	5.8813	6.3635	.94100	5.1933	11.553	.89335	2.3790	12.244	.52568

#1	.00188	50.383	-.00402	.03026	.00237	.00130	.99230	.03597	.00085	.00262	.00155	.01087	51.928
#2	.00275	50.362	-.00294	.02891	.00257	.00119	.97918	.03871	.00100	.00265	.00150	.01293	51.544

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.64319	.00225	.00847	.00368	.00025	258.56	.00396	.00102	.00274	4.7170	.00225	-.00009	.06832
Stddev	.03107	.00213	.00077	.00005	.00042	.82	.00010	.00089	.00118	.0456	.00135	.00275	.02368
%RSD	4.8303	94.617	9.1105	1.4380	166.30	.31760	2.4131	86.693	43.103	.96597	59.960	3209.9	34.661

#1	.62122	.00074	.00793	.00371	.00055	259.14	.00390	.00040	.00191	4.7493	.00320	-.00203	.08506
#2	.66515	.00375	.00902	.00364	-.00004	257.98	.00403	.00165	.00358	4.6848	.00130	.00186	.05157

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.14620	.00082	.00193	4.9161	-.00885	.00079	10.032	.00501	.00368	.07528
Stddev	.05067	.00025	.00013	.0023	.00017	.00008	.027	.00048	.00002	.00341
%RSD	34.661	30.918	6.9058	.04592	1.8925	10.481	.26437	9.5281	.41021	4.5308

#1	.18203	.00064	.00184	4.9145	-.00873	.00073	10.051	.00467	.00369	.07769
#2	.11036	.00100	.00203	4.9177	-.00897	.00085	10.013	.00535	.00367	.07287

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4285.6	50515.	3848.5
Stddev	5.7	376.	.1
%RSD	.13266	.74472	.00378

#1	4289.6	50781.	3848.4
#2	4281.6	50249.	3848.6

Sample Name: CCV-5690581 Acquired: 5/13/2019 15:58:51 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51009	F .56649	.99055	.52485	.52755	.49987	-.00357	5.2692	.50667	.51532	.52457	.51000
Stddev	.00094	.00825	.01386	.00103	.00180	.00041	.00275	.0060	.00426	.00434	.00579	.00074
%RSD	.18514	1.4555	1.3988	.19580	.34118	.08269	77.177	.11321	.84166	.84154	1.1035	.14554

#1	.50942	.57232	1.0004	.52557	.52882	.49958	-.00552	5.2734	.50968	.51838	.52866	.51053
#2	.51076	.56066	.98076	.52412	.52628	.50016	-.00162	5.2649	.50365	.51225	.52048	.50948

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.5706	52.754	1.0200	20.344	.50286	.52065	F 6.1303	.51497	1.0232	1.0284	.00647	.99716
Stddev	.0112	.019	.0006	.038	.00137	.00602	.0090	.00511	.0150	.0102	.00053	.01149
%RSD	.43525	.03666	.05370	.18546	.27329	1.1561	.14722	.99154	1.4638	.99182	8.1644	1.1521

#1	2.5627	52.768	1.0204	20.371	.50383	.52490	6.1240	.51858	1.0338	1.0356	.00609	1.0053
#2	2.5785	52.740	1.0196	20.317	.50189	.51639	6.1367	.51136	1.0126	1.0212	.00684	.98904

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97708	5.1077	10.931	1.0346	.50280	-.00004	.49758	1.0494	-.01514	.50646	.50612	.51975
Stddev	.00667	.0609	.130	.0107	.00029	.00029	.00081	.0129	.01165	.00064	.00107	.00124
%RSD	.68243	1.1918	1.1918	1.0339	.05740	647.29	.16321	1.2245	76.956	.12633	.21166	.23949

#1	.98179	5.0647	10.838	1.0421	.50260	-.00025	.49815	1.0585	-.02338	.50691	.50687	.51887
#2	.97236	5.1508	11.023	1.0270	.50301	.00016	.49700	1.0403	-.00690	.50601	.50536	.52063

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4369.0	50969.	3838.1
Stddev	17.9	93.	6.5
%RSD	.41015	.18339	.16982

#1	4356.4	50903.	3833.5
#2	4381.7	51035.	3842.7

Sample Name: CCB Acquired: 5/13/2019 16:01:13 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoadesc Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00184	-.00126	-.00256	W .01811	-.00019	.00012	.00096	.00924	-.00011	-.00040	-.00007	-.00192
Stddev	.00137	.00003	.00046	.00129	.00035	.00017	.00045	.00359	.00012	.00057	.00020	.00040
%RSD	74.386	2.6916	18.151	7.1067	185.18	139.59	46.532	38.844	111.90	142.02	285.39	20.626
#1	.00087	-.00124	-.00288	.01902	.00006	.00000	.00128	.01178	-.00019	.00000	-.00022	-.00219
#2	.00281	-.00129	-.00223	.01720	-.00044	.00024	.00065	.00670	-.00002	-.00081	.00007	-.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit				.01500								
Low Limit				-.01500								
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00118	.19759	-.00187	.00371	.00009	.00035	F .72904	-.00003	-.00526	-.00044	.00495	-.00100
Stddev	.00238	.10028	.00146	.00598	.00015	.00015	.00505	.00001	.00145	.00143	.00338	.00094
%RSD	200.99	50.749	78.297	161.10	171.67	43.186	.69256	32.193	27.477	326.59	68.172	94.673
#1	-.00287	.26850	-.00290	-.00052	-.00002	.00024	.73261	-.00003	-.00629	.00057	.00257	-.00033
#2	.00050	.12668	-.00083	.00794	.00020	.00046	.72547	-.00002	-.00424	-.00145	.00734	-.00166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							.50000					
Low Limit							-.50000					
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W .00768	.07231	W .15475	-.00144	.00015	.00195	-.00032	-.00263	.00586	-.00020	-.00042	-.00080
Stddev	.00702	.01409	.03015	.00094	.00003	.00048	.00005	.00048	.02327	.00014	.00043	.00187
%RSD	91.362	19.483	19.483	65.274	16.590	24.665	14.408	18.218	397.33	68.519	103.28	234.17
#1	.00272	.06235	.13343	-.00210	.00014	.00161	-.00028	-.00229	.02231	-.00030	-.00072	-.00212
#2	.01265	.08228	.17607	-.00077	.00017	.00229	-.00035	-.00296	-.01060	-.00010	-.00011	.00052
Check ?	Chk Warn	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.00750		.13000									
Low Limit	-.01500		-.13000									
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4368.9	51241.	3874.6									
Stddev	21.0	96.	.4									
%RSD	.48095	.18688	.00992									
#1	4383.8	51173.	3874.9									
#2	4354.1	51309.	3874.3									

Sample Name: CCVL-5699390 Acquired: 5/13/2019 16:03:48 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01050	.11326	.01223	.11122	.01050	.00103	.10264	.21814	.00499	.01031	.01016	.01359
Stddev	.00040	.00309	.00114	.00226	.00049	.00003	.00282	.00451	.00000	.00021	.00006	.00006
%RSD	3.7714	2.7267	9.3438	2.0313	4.6238	2.6045	2.7516	2.0655	.04832	2.0102	.56068	.45258

#1	.01078	.11544	.01142	.11282	.01084	.00101	.10464	.21495	.00499	.01046	.01012	.01355
#2	.01022	.11107	.01303	.10963	.01015	.00104	.10065	.22132	.00499	.01017	.01020	.01363

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.11875	3.3157	.01769	.20154	.01030	.02001	F 1.7126	.04177	2.9364	.00763	.09048	.01572
Stddev	.00152	.0485	.00011	.00846	.00005	.00003	.0054	.00030	.0358	.00098	.00249	.00205
%RSD	1.2764	1.4616	.62228	4.1969	.46541	.15209	.31369	.70779	1.2180	12.780	2.7567	13.027

#1	.11768	3.2814	.01762	.20752	.01033	.02003	1.7164	.04198	2.9617	.00694	.08871	.01717
#2	.11982	3.3499	.01777	.19556	.01026	.01999	1.7088	.04157	2.9111	.00832	.09224	.01427

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							1.0000					
Range							30.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02058	.57350	1.2273	.10163	.01013	.01473	.00958	.01334	.07774	.00937	.02088	.01145
Stddev	.00182	.02912	.0623	.00222	.00015	.00274	.00033	.00030	.00376	.00104	.00012	.00175
%RSD	8.8261	5.0777	5.0777	2.1814	1.4531	18.629	3.4492	2.2360	4.8386	11.054	.57857	15.251

#1	.02186	.55291	1.1832	.10319	.01024	.01667	.00935	.01356	.07508	.01010	.02096	.01021
#2	.01930	.59409	1.2713	.10006	.01003	.01279	.00982	.01313	.08040	.00864	.02079	.01268

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4361.5	51139.	3813.1
Stddev	2.4	25.	20.7
%RSD	.05468	.04863	.54235

#1	4363.1	51122.	3827.7
#2	4359.8	51157.	3798.5

Sample Name: 280-123256-B-1-A Acquired: 5/13/2019 16:06:20 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457065 200.7

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00201	.24137	-.00702	.61766	.02939	.00004	-.00393	W 544.96	.00032
Stddev	.00033	.00520	.00031	.00865	.00051	.00011	.00084	23.11	.00001
%RSD	16.645	2.1547	4.4772	1.4004	1.7466	293.17	21.248	4.2414	3.9017

#1	.00178	.24505	-.00680	.62378	.02975	-.00004	-.00334	561.30	.00032
#2	.00225	.23770	-.00724	.61155	.02903	.00012	-.00452	528.62	.00031

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit								500.00	
Low Limit								-40000	

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.00257	.01250	.25059	3.6457	.08898	116.88	.21335	.00470
Stddev	.00036	.00010	.00053	.00912	.0436	.00149	.61	.00122	.00025
%RSD	65.226	3.8766	4.2354	3.6402	1.1969	1.6690	.52173	.57372	5.3159

#1	.00030	.00264	.01287	.25704	3.6149	.09003	117.31	.21422	.00488
#2	.00080	.00250	.01212	.24414	3.6766	.08793	116.45	.21249	.00453

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	68.793	.00903	.00729	-.00443	F 461.41	-.00173	.00251	8.5966	18.397
Stddev	.966	.00020	.00053	.00142	8.80	.00364	.00367	.1479	.317
%RSD	1.4040	2.1831	7.2415	32.046	1.9064	211.15	146.17	1.7209	1.7209

#1	69.476	.00917	.00767	-.00343	467.63	-.00430	.00511	8.7012	18.621
#2	68.110	.00889	.00692	-.00543	455.19	.00085	-.00008	8.4920	18.173

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00329	W 10.716	.00213	.00174	-.00503	F -.12519	-.00138	.16626	-.00096
Stddev	.00042	.369	.00089	.00023	.00087	.01086	.00010	.00107	.00216
%RSD	12.901	3.4435	41.825	12.931	17.221	8.6742	7.2433	.64112	223.52

#1	-.00299	10.977	.00150	.00158	-.00565	-.13287	-.00131	.16701	.00056
#2	-.00359	10.455	.00275	.00190	-.00442	-.11751	-.00145	.16551	-.00249

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit		10.000				20.000			
Low Limit		-.02000				-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3874.1	45130.	3473.6
Stddev	20.4	349.	12.2
%RSD	.52607	.77436	.35021

#1	3888.5	44883.	3465.0
#2	3859.7	45377.	3482.2

Sample Name: 123256-B-1-A SD@5 Acquired: 5/13/2019 16:09:02 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457065 200.7

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00174	.04410	-.00107	.12724	.00467	-.00000	.00027	91.359	.00029
Stddev	.00005	.00104	.00632	.00202	.00034	.00003	.00054	.984	.00027
%RSD	3.0357	2.3680	589.55	1.5868	7.3009	1062.2	202.37	1.0768	93.061

#1	.00177	.04336	-.00554	.12581	.00443	-.00003	-.00011	90.664	.00048
#2	.00170	.04484	.00340	.12867	.00491	.00002	.00065	92.055	.00010

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.00062	.00011	.06327	.81659	.01398	20.462	.03814	.00053
Stddev	.00004	.00022	.00128	.00105	.03352	.00112	.121	.00019	.00004
%RSD	17.731	35.730	1207.6	1.6534	4.1049	7.9891	.59071	.50086	6.7204

#1	.00025	.00078	.00101	.06253	.79289	.01477	20.377	.03801	.00051
#2	.00019	.00046	-.00080	.06401	.84029	.01319	20.547	.03828	.00056

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.336	.00042	-.00092	-.00195	85.645	-.00282	-.00432	1.4517	3.1067
Stddev	.017	.00048	.00066	.00048	1.735	.00088	.00243	.0383	.0820
%RSD	.15247	113.07	71.565	24.832	2.0253	31.247	56.376	2.6386	2.6386

#1	11.348	.00009	-.00138	-.00160	84.418	-.00345	-.00604	1.4246	3.0487
#2	11.323	.00076	-.00045	-.00229	86.871	-.00220	-.00260	1.4788	3.1646

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00182	1.7844	.00401	-.00050	-.00287	-.08644	-.00071	.03020	-.00319
Stddev	.00091	.0219	.00319	.00021	.00281	.01517	.00068	.00044	.00169
%RSD	49.753	1.2249	79.715	42.502	97.997	17.554	95.436	1.4447	53.070

#1	-.00246	1.7690	.00175	-.00065	-.00485	-.07571	-.00023	.02989	-.00199
#2	-.00118	1.7999	.00627	-.00035	-.00088	-.09717	-.00119	.03051	-.00439

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4035.2	47280.	3602.3
Stddev	3.8	237.	16.0
%RSD	.09454	.50204	.44441

#1	4037.9	47112.	3613.6
#2	4032.5	47448.	3591.0

Sample Name: 280-123256-B-1-B MS Acquired: 5/13/2019 16:11:35 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457065 200.7

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05613	10.818	2.0389	1.6132	2.1563	.98860	W 2.0440	W 584.21	1.0250
Stddev	.00108	.006	.0009	.0024	.0005	.00230	.0183	3.58	.0018
%RSD	1.9195	.05829	.04313	.14640	.02336	.23273	.89647	.61324	.17524
#1	.05537	10.822	2.0383	1.6149	2.1560	.99023	2.0570	586.74	1.0263
#2	.05690	10.813	2.0395	1.6115	2.1567	.98698	2.0310	581.67	1.0238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Warn	Chk Pass
High Limit							2.0000	500.00	
Low Limit							-2.0000	-40000	
Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95101	1.0228	1.0412	10.287	59.103	1.1552	164.51	1.1888	1.0428
Stddev	.00098	.0018	.0003	.002	.169	.0019	.27	.0005	.0025
%RSD	.10306	.17308	.02940	.01905	.28605	.16749	.16141	.04096	.23836
#1	.95171	1.0241	1.0414	10.286	58.984	1.1538	164.70	1.1884	1.0446
#2	.95032	1.0216	1.0410	10.289	59.223	1.1566	164.32	1.1891	1.0411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									
Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	122.00	.95585	W 21.626	.95578	F 480.31	1.0201	1.9945	10.717	22.933
Stddev	.88	.00037	.068	.00322	1.80	.0053	.0018	.001	.003
%RSD	.71809	.03885	.31225	.33742	.37427	.51438	.09220	.01327	.01327
#1	122.62	.95611	21.674	.95806	481.58	1.0164	1.9958	10.716	22.931
#2	121.38	.95559	21.579	.95350	479.04	1.0238	1.9932	10.718	22.935
Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000		200.00				
Low Limit			-6.0000		-20000				
Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.0100	W 11.519	.99850	1.0020	1.8869	2.0016	1.0272	.64220	.52979
Stddev	.0015	.300	.00449	.0002	.0033	.0323	.0001	.00031	.00589
%RSD	.07659	2.6048	.44936	.01676	.17652	1.6164	.00628	.04767	1.1122
#1	2.0089	11.731	.99532	1.0018	1.8893	2.0245	1.0273	.64241	.52563
#2	2.0111	11.307	1.0017	1.0021	1.8845	1.9788	1.0272	.64198	.53396
Check ?	Chk Warn	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000	10.000							
Low Limit	-2.0000	-.02000							
Int. Std.	Y_2243	Y_3600	Y_3774						
Line	224.306 {450}	360.073 { 94}	377.433 { 89}						
Units	Cts/S	Cts/S	Cts/S						
Avg	3906.8	45073.	3500.9						
Stddev	59.0	329.	19.4						
%RSD	1.5107	.72930	.55518						
#1	3948.6	45305.	3487.1						
#2	3865.1	44841.	3514.6						

Sample Name: 280-123256-B-1-C MSD Acquired: 5/13/2019 16:14:02 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457065 200.7

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05751	11.224	2.1001	1.6545	2.2108	W 1.0122	W 2.0823	W 591.74	1.0579
Stddev	.00125	.185	.0512	.0369	.0296	.0125	.0563	4.94	.0270
%RSD	2.1786	1.6473	2.4401	2.2290	1.3368	1.2310	2.7032	.83414	2.5519

#1	.05840	11.093	2.1363	1.6806	2.1899	1.0034	2.1221	588.25	1.0769
#2	.05662	11.354	2.0638	1.6284	2.2317	1.0210	2.0425	595.23	1.0388

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Warn	Chk Warn	Chk Pass
High Limit						1.0000	2.0000	500.00	
Low Limit						-.00200	-.20000	-.40000	

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97964	1.0556	1.0720	10.553	60.606	1.1837	168.29	1.2252	1.0759
Stddev	.02547	.0278	.0022	.146	.918	.0125	1.33	.0061	.0291
%RSD	2.5995	2.6290	.20036	1.3875	1.5140	1.0550	.78747	.49543	2.7041

#1	.99764	1.0752	1.0735	10.450	59.957	1.1749	169.23	1.2295	1.0965
#2	.96163	1.0360	1.0705	10.657	61.255	1.1925	167.36	1.2209	1.0553

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	124.00	.98450	W 22.267	.98739	F 484.19	1.0502	2.0535	10.913	23.354
Stddev	1.54	.02547	.624	.02371	12.64	.0242	.0437	.123	.264
%RSD	1.2418	2.5872	2.8038	2.4012	2.6095	2.3033	2.1300	1.1315	1.1315

#1	122.91	1.0025	22.708	1.0042	493.13	1.0673	2.0845	10.826	23.167
#2	125.09	.96649	21.825	.97063	475.26	1.0331	2.0226	11.000	23.541

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000		200.00				
Low Limit			-6.0000		-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.0781	W 11.692	1.0235	1.0352	1.9594	2.0844	1.0572	.65713	.54254
Stddev	.0560	.149	.0081	.0048	.0508	.0152	.0017	.00665	.00886
%RSD	2.6938	1.2752	.78829	.46741	2.5907	.72867	.16418	1.0126	1.6338

#1	2.1177	11.587	1.0293	1.0387	1.9953	2.0737	1.0584	.66183	.53628
#2	2.0385	11.798	1.0178	1.0318	1.9235	2.0951	1.0559	.65242	.54881

Check ?	Chk Warn	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000	10.000							
Low Limit	-.20000	-.02000							

Int. Std.	Y_2243	Y_3600	Y_3774						
Line	224.306 {450}	360.073 { 94}	377.433 { 89}						
Units	Cts/S	Cts/S	Cts/S						
Avg	3633.5	43246.	3403.5						
Stddev	39.0	475.	33.6						
%RSD	1.0743	1.0988	.98765						

#1	3605.9	43582.	3427.2						
#2	3661.1	42910.	3379.7						

Sample Name: 280-123286-C-1-D Acquired: 5/13/2019 16:16:29 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457065 200.7

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	7.1408	-.00441	.03591	.08499	.00035	-.00583	19.108	.00029
Stddev	.00019	.0184	.00022	.00153	.00022	.00032	.00323	.105	.00011
%RSD	19.130	.25774	5.0664	4.2553	.25689	90.194	55.357	.54707	38.824

#1	.00113	7.1278	-.00425	.03699	.08514	.00058	-.00811	19.182	.00021
#2	.00086	7.1538	-.00457	.03483	.08483	.00013	-.00355	19.034	.00038

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00535	.00758	.01077	5.6042	6.4998	.01843	4.1723	.09724	.00251
Stddev	.00030	.00015	.00034	.0018	.0244	.00518	.0110	.00027	.00032
%RSD	5.5342	1.9984	3.1370	.03264	.37475	28.100	.26420	.27297	12.593

#1	.00556	.00769	.01053	5.6055	6.4826	.02209	4.1645	.09743	.00229
#2	.00514	.00748	.01100	5.6029	6.5170	.01477	4.1801	.09706	.00273

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	85.503	.00580	.42080	.00166	4.2482	.00010	.00444	19.375	41.462
Stddev	.084	.00058	.00364	.00155	.0659	.00126	.00428	.166	.354
%RSD	.09876	10.044	.86523	93.251	1.5506	1290.0	96.486	.85462	.85462

#1	85.443	.00621	.42337	.00276	4.2948	.00099	.00746	19.492	41.713
#2	85.562	.00539	.41822	.00057	4.2017	-.00079	.00141	19.258	41.212

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00213	.06494	.00622	.15151	-.00243	-.03140	.02253	.06777	.00424
Stddev	.00064	.00072	.00003	.00080	.00032	.03017	.00100	.00074	.00301
%RSD	29.794	1.1063	.46982	.52750	13.337	96.077	4.4236	1.0857	70.955

#1	-.00169	.06545	.00620	.15208	-.00266	-.05274	.02182	.06829	.00636
#2	-.00258	.06443	.00624	.15095	-.00220	-.01007	.02323	.06725	.00211

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4213.2	48281.	3627.7
Stddev	32.2	142.	26.5
%RSD	.76496	.29400	.72966

#1	4190.4	48181.	3609.0
#2	4236.0	48381.	3646.4

Sample Name: 280-123319-B-1-A Acquired: 5/13/2019 16:18:58 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457065 200.7

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00282	.11791	-.00409	.31692	.12757	.00004	-.00477	372.32	.00030
Stddev	.00123	.00111	.00479	.00364	.00031	.00006	.00117	.50	.00001
%RSD	43.580	.94171	117.24	1.1498	.24370	142.43	24.644	.13455	4.0783

#1	.00195	.11870	-.00070	.31949	.12735	.00008	-.00560	372.67	.00031
#2	.00369	.11713	-.00748	.31434	.12779	-.00000	-.00394	371.96	.00029

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00381	.01169	.17127	17.722	.11109	38.878	.06530	.02351
Stddev	.00015	.00015	.00040	.00167	.033	.00209	.219	.00025	.00030
%RSD	1338.3	3.9758	3.4460	.97573	.18477	1.8797	.56318	.37657	1.2593

#1	-.00010	.00371	.01140	.17245	17.698	.11257	39.033	.06547	.02372
#2	.00012	.00392	.01197	.17009	17.745	.10962	38.724	.06512	.02330

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 712.62	.00831	.04999	-.00417	W 194.54	.00141	.00107	4.5158	9.6639
Stddev	.05	.00043	.00126	.00127	1.86	.00380	.00104	.0288	.0617
%RSD	.00646	5.2158	2.5169	30.450	.95521	269.39	97.255	.63861	.63861

#1	712.58	.00862	.05088	-.00507	195.85	-.00128	.00180	4.5362	9.7075
#2	712.65	.00800	.04910	-.00327	193.22	.00410	.00033	4.4954	9.6202

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				180.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00259	2.2991	.00235	.00246	-.00549	F -.16045	.00284	.00819	-.00319
Stddev	.00032	.0050	.00011	.00081	.00068	.01052	.00016	.00015	.00057
%RSD	12.286	.21857	4.7566	32.937	12.331	6.5566	5.4765	1.7925	17.742

#1	-.00281	2.3026	.00227	.00304	-.00597	-.16789	.00295	.00829	-.00279
#2	-.00236	2.2955	.00243	.00189	-.00501	-.15301	.00273	.00808	-.00359

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3748.9	43931.	3481.7
Stddev	12.0	97.	21.4
%RSD	.31944	.22012	.61355

#1	3740.4	43862.	3496.8
#2	3757.3	43999.	3466.6

Sample Name: MB 280-456954/1-A Acquired: 5/13/2019 16:21:35 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/6 Custom ID2: Custom ID3:
Comment: 456954 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00157	.00639	-.00379	.01051	-.00073	.00015	-.00040	.02911	.00022
Stddev	.00161	.00261	.00152	.00067	.00023	.00009	.00110	.00745	.00003
%RSD	102.46	40.818	40.073	6.3482	31.754	58.093	277.03	25.609	13.961

#1	.00043	.00824	-.00271	.01098	-.00057	.00022	.00038	.03438	.00025
#2	.00271	.00455	-.00486	.01004	-.00090	.00009	-.00118	.02384	.00020

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00004	-.00178	.02545	.34274	.00269	.00099	.00069	-.00023
Stddev	.00011	.00009	.00010	.00112	.00983	.00083	.00136	.00007	.00060
%RSD	44.399	202.35	5.4624	4.4078	2.8676	30.798	138.23	10.807	267.68

#1	-.00017	-.00002	-.00171	.02466	.33579	.00327	.00195	.00074	.00020
#2	-.00032	.00010	-.00184	.02624	.34969	.00210	.00002	.00063	-.00065

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.4037	.00014	-.00273	-.00183	F .16912	-.00049	.00429	.04326	.09257
Stddev	.0935	.00030	.00208	.00134	.06867	.00403	.00343	.01313	.02810
%RSD	6.6643	214.21	76.053	73.250	40.601	830.96	80.073	30.358	30.358

#1	1.4699	.00035	-.00126	-.00088	.21768	-.00334	.00186	.05255	.11245
#2	1.3376	-.00007	-.00420	-.00278	.12057	.00237	.00671	.03397	.07270

Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None
High Limit	1.0000				.10000				
Low Limit	-1.0000				-.10000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00125	.00025	.00310	-.00049	.00142	-.02301	.00001	.00162	-.00084
Stddev	.00087	.00013	.00167	.00040	.00319	.05921	.00041	.00020	.00596
%RSD	69.365	52.831	53.809	81.738	225.44	257.31	7818.6	12.213	711.96

#1	-.00186	.00016	.00192	-.00021	-.00084	.01886	-.00029	.00148	-.00505
#2	-.00064	.00034	.00428	-.00078	.00367	-.06488	.00030	.00176	.00338

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4181.5	49653.	3624.8
Stddev	50.3	311.	39.1
%RSD	1.2035	.62569	1.0780

#1	4217.1	49873.	3597.2
#2	4145.9	49433.	3652.5

Sample Name: LCS 280-456954/2-A Acquired: 5/13/2019 16:24:11 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456954 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00230	10.193	1.9550	.98229	2.0597	.98233	W 2.0013	51.026	.99364
Stddev	.00105	.062	.0138	.00442	.0033	.00264	.0199	.141	.00713
%RSD	45.658	.61099	.70447	.45006	.15811	.26859	.99632	.27604	.71713

#1	.00156	10.149	1.9648	.98542	2.0574	.98046	2.0154	50.926	.99868
#2	.00305	10.237	1.9453	.97916	2.0620	.98419	1.9872	51.125	.98860

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass
High Limit							2.0000		
Low Limit							-.20000		

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96690	1.0111	.99330	9.9986	52.664	1.0113	49.776	.98069	1.0229
Stddev	.00608	.0061	.00384	.0160	.205	.0049	.031	.00066	.0073
%RSD	.62892	.60650	.38654	.16040	.38901	.48105	.06327	.06718	.71073

#1	.97120	1.0155	.99059	9.9873	52.519	1.0078	49.798	.98115	1.0281
#2	.96260	1.0068	.99602	10.010	52.809	1.0147	49.754	.98022	1.0178

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	52.190	.96772	W 20.567	.98183	9.1329	.00357	1.9119	2.0767	4.4441
Stddev	.359	.00690	.157	.00091	.0658	.00050	.0187	.0147	.0314
%RSD	.68838	.71347	.76091	.09220	.72019	14.083	.97657	.70747	.70747

#1	52.444	.97260	20.678	.98247	9.1794	.00322	1.9251	2.0663	4.4219
#2	51.936	.96284	20.457	.98119	9.0864	.00393	1.8987	2.0871	4.4664

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.0196	.98289	.99192	.98729	1.9952	1.9995	1.0004	.49064	.52494
Stddev	.0112	.00196	.00099	.00071	.0202	.0246	.0015	.00049	.00549
%RSD	.55626	.19914	.09931	.07150	1.0123	1.2300	.14635	.09997	1.0462

#1	2.0275	.98151	.99122	.98779	2.0095	1.9821	1.0014	.49098	.52882
#2	2.0117	.98427	.99261	.98679	1.9809	2.0169	.99935	.49029	.52105

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000								
Low Limit	-.20000								

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4131.9	48275.	3691.1
Stddev	7.3	42.	24.1
%RSD	.17708	.08625	.65264

#1	4137.0	48245.	3708.2
#2	4126.7	48304.	3674.1

Sample Name: LCSD 280-456954/3-A Acquired: 5/13/2019 16:26:29 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456954 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00276	10.288	1.9546	.98002	2.0772	.98784	1.9925	51.205	.99579
Stddev	.00027	.011	.0151	.00747	.0134	.00569	.0174	.325	.00731
%RSD	9.8791	.10404	.77396	.76218	.64280	.57578	.87467	.63405	.73421

#1	.00257	10.295	1.9653	.98530	2.0866	.99186	2.0049	51.435	1.0010
#2	.00296	10.280	1.9439	.97474	2.0677	.98382	1.9802	50.976	.99062

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96937	1.0133	.99821	10.012	52.905	1.0191	49.807	.98687	1.0281
Stddev	.00794	.0094	.00041	.080	.444	.0027	.016	.00149	.0086
%RSD	.81897	.92583	.04142	.80239	.84016	.26210	.03113	.15109	.83333

#1	.97498	1.0199	.99792	10.069	53.220	1.0210	49.796	.98582	1.0342
#2	.96375	1.0066	.99851	9.9554	52.591	1.0172	49.818	.98793	1.0220

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	51.802	.97137	W 20.567	.98401	9.1295	.00554	1.9278	2.0973	4.4882
Stddev	.523	.00690	.151	.00629	.0451	.00136	.0096	.0360	.0770
%RSD	1.0088	.71025	.73371	.63896	.49429	24.480	.49795	1.7164	1.7164

#1	52.171	.97625	20.674	.98845	9.1614	.00650	1.9346	2.1227	4.5427
#2	51.432	.96649	20.460	.97956	9.0976	.00458	1.9211	2.0718	4.4337

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.0241	.98919	.99461	.99159	1.9986	2.0041	1.0061	.49609	.52695
Stddev	.0167	.00727	.00204	.00177	.0186	.0118	.0014	.00146	.00637
%RSD	.82701	.73538	.20519	.17849	.93043	.58982	.13820	.29382	1.2096

#1	2.0359	.99434	.99317	.99034	2.0118	2.0125	1.0052	.49506	.53145
#2	2.0123	.98405	.99605	.99284	1.9855	1.9958	1.0071	.49713	.52244

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000								
Low Limit	-.20000								

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4169.8	48175.	3653.7
Stddev	16.1	207.	41.6
%RSD	.38533	.43067	1.1383

#1	4158.5	48322.	3624.3
#2	4181.2	48028.	3683.1

Sample Name: CCVH-5690583 Acquired: 5/13/2019 16:28:46 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00374	50.162	-.00443	.01147	.00195	.00129	.98211	.05005	.00114	.00254	.00158	.01326	51.722
Stddev	.00070	.164	.00594	.00017	.00046	.00020	.01173	.00450	.00019	.00034	.00007	.00053	.051
%RSD	18.640	.32630	134.31	1.4629	23.546	15.656	1.1939	8.9833	16.854	13.591	4.4114	3.9890	.09869

#1	.00325	50.278	-.00022	.01159	.00163	.00143	.99040	.05323	.00100	.00229	.00163	.01288	51.686
#2	.00424	50.046	-.00863	.01135	.00228	.00115	.97382	.04687	.00128	.00278	.00153	.01363	51.758

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53844	.00330	.00602	.00430	.00191	257.69	.00427	.00308	.00434	4.6853	.00676	.00606	.03837
Stddev	.06009	.00138	.00341	.00004	.00061	.01	.00086	.00157	.00080	.0256	.00232	.01029	.01993
%RSD	11.159	41.991	56.568	.90171	31.798	.00456	20.182	50.937	18.360	.54670	34.331	169.97	51.953

#1	.58093	.00232	.00843	.00427	.00148	257.69	.00488	.00197	.00377	4.7035	.00512	-.00122	.02427
#2	.49596	.00427	.00361	.00433	.00234	257.70	.00366	.00419	.00490	4.6672	.00840	.01334	.05246

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08211	.00142	.00222	4.9071	-.00822	.00157	9.9524	.00499	.00683	.07406
Stddev	.04266	.00046	.00000	.0094	.00043	.00153	.0563	.00014	.00107	.00553
%RSD	51.953	32.570	.16232	.19067	5.2620	97.809	.56578	2.7477	15.609	7.4612

#1	.05195	.00175	.00223	4.9005	-.00852	.00048	9.9126	.00489	.00759	.07797
#2	.11227	.00110	.00222	4.9137	-.00791	.00265	9.9922	.00508	.00608	.07016

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4109.4	47746.	3616.6
Stddev	.8	198.	11.7
%RSD	.01905	.41376	.32360

#1	4108.9	47885.	3624.9
#2	4110.0	47606.	3608.3

Sample Name: CCV-5690581 Acquired: 5/13/2019 16:31:15 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51350	F .57579	.98717	.51003	.52913	.50498	-.00098	5.3052	.50858	.51477	.52481	.51536
Stddev	.00151	.00470	.00508	.00306	.00099	.00097	.00213	.0033	.00396	.00487	.00495	.00037
%RSD	.29387	.81546	.51411	.60038	.18629	.19263	217.11	.06194	.77824	.94633	.94325	.07200

#1	.51457	.57911	.99076	.51219	.52843	.50429	-.00249	5.3029	.51138	.51821	.52831	.51563
#2	.51244	.57247	.98358	.50786	.52983	.50567	.00053	5.3075	.50578	.51132	.52131	.51510

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.5960	53.286	1.0400	20.581	.50755	.52045	F 6.0204	.51561	1.0272	1.0309	.00828	1.0001
Stddev	.0001	.143	.0027	.056	.00159	.00383	.0121	.00595	.0113	.0083	.00155	.0067
%RSD	.00476	.26808	.26212	.27172	.31241	.73646	.20120	1.1530	1.0983	.80140	18.692	.66572

#1	2.5961	53.185	1.0381	20.620	.50867	.52316	6.0290	.51982	1.0351	1.0367	.00719	1.0048
#2	2.5960	53.387	1.0420	20.541	.50643	.51774	6.0118	.51141	1.0192	1.0251	.00938	.99540

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98054	5.1269	10.971	1.0363	.50670	.00281	.50022	1.0572	-.04940	.51081	.50989	.52024
Stddev	.00143	.0496	.106	.0106	.00092	.00387	.00228	.0099	.01494	.00274	.00081	.00710
%RSD	.14618	.96699	.96699	1.0262	.18242	138.08	.45674	.93276	30.241	.53571	.15827	1.3657

#1	.98155	5.0918	10.896	1.0438	.50605	.00007	.50184	1.0641	-.03883	.51274	.50932	.52527
#2	.97952	5.1619	11.046	1.0288	.50736	.00554	.49860	1.0502	-.05996	.50887	.51046	.51522

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4161.3	48417.	3597.1
Stddev	8.1	203.	.9
%RSD	.19525	.41872	.02580

#1	4167.1	48560.	3596.5
#2	4155.6	48273.	3597.8

Sample Name: CCB Acquired: 5/13/2019 16:33:37 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00154	.00002	-.00647	.00599	-.00035	.00018	-.00340	.00209	-.00003	-.00003	-.00025	-.00137
Stddev	.00018	.00019	.00337	.00027	.00028	.00007	.00238	.00530	.00008	.00014	.00010	.00009
%RSD	11.763	880.98	52.036	4.5417	80.633	36.950	70.056	253.27	278.51	564.31	40.278	6.4310
#1	.00141	.00015	-.00885	.00580	-.00055	.00013	-.00508	-.00166	.00003	-.00012	-.00032	-.00143
#2	.00167	-.00011	-.00409	.00618	-.00015	.00022	-.00171	.00584	-.00008	.00007	-.00018	-.00131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00344	.17782	.00048	-.00690	.00007	.00065	F .58035	.00013	-.00555	-.00088	.00693	-.00152
Stddev	.00285	.03894	.00301	.00315	.00000	.00004	.00887	.00011	.00183	.00138	.00132	.00072
%RSD	82.684	21.900	620.78	45.584	5.8495	6.5767	1.5282	87.400	33.019	157.40	18.992	47.459
#1	.00143	.20535	-.00164	-.00468	.00007	.00069	.58662	.00021	-.00425	-.00185	.00600	-.00203
#2	.00545	.15028	.00261	-.00913	.00008	.00062	.57408	.00005	-.00684	.00010	.00786	-.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							.50000					
Low Limit							-.50000					
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.06634	W .14198	-.00138	.00011	.00364	-.00072	-.00257	-.02556	.00025	.00118	-.00061
Stddev	.00136	.01318	.02820	.00055	.00021	.00110	.00011	.00000	.03003	.00041	.00035	.00019
%RSD	302.31	19.860	19.860	40.194	196.05	30.243	14.903	.13415	117.50	163.71	29.579	30.586
#1	.00142	.07566	.16192	-.00177	.00026	.00442	-.00065	-.00258	-.04679	.00055	.00093	-.00047
#2	-.00051	.05703	.12204	-.00099	-.00004	.00286	-.00080	-.00257	-.00432	-.00004	.00143	-.00074
Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			.13000									
Low Limit			-.13000									
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4255.4	49767.	3664.0									
Stddev	19.8	21.	33.3									
%RSD	.46511	.04193	.90994									
#1	4241.4	49782.	3687.6									
#2	4269.4	49752.	3640.4									

Sample Name: CCVL-5699390 Acquired: 5/13/2019 16:36:13 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01123	.11577	.01350	.10282	.01052	.00100	.10242	.21050	.00517	.01063	.01029	.01484
Stddev	.00063	.00238	.00110	.00016	.00034	.00020	.00322	.00383	.00001	.00041	.00044	.00093
%RSD	5.5758	2.0556	8.1665	.15909	3.2753	20.299	3.1455	1.8182	.28674	3.8347	4.2697	6.2623

#1	.01168	.11745	.01427	.10270	.01027	.00114	.10014	.21320	.00518	.01092	.01060	.01418
#2	.01079	.11409	.01272	.10293	.01076	.00085	.10470	.20779	.00515	.01034	.00998	.01550

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .23998	3.3148	.01798	.20143	.01090	.02012	F 1.5422	.04167	2.9533	.00962	.10091	.01849
Stddev	.00199	.1089	.00669	.00088	.00001	.00048	.0070	.00072	.0279	.00048	.00991	.00104
%RSD	.82887	3.2842	37.183	.43768	.11578	2.3992	.45272	1.7192	.94437	4.9840	9.8193	5.6325

#1	.24138	3.3917	.02271	.20081	.01091	.02046	1.5471	.04217	2.9730	.00996	.10792	.01922
#2	.23857	3.2378	.01325	.20205	.01089	.01978	1.5372	.04116	2.9335	.00928	.09390	.01775

Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.10000						1.0000					
Range	30.000%						30.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02037	.53313	1.1409	.10372	.01026	.01614	.00892	.01237	.04917	.00986	.02102	F .00906
Stddev	.00234	.01124	.0240	.00017	.00003	.00130	.00039	.00019	.00061	.00045	.00006	.00040
%RSD	11.497	2.1077	2.1077	.16371	.29489	8.0658	4.3414	1.5051	1.2316	4.5951	.29525	4.4195

#1	.02203	.54108	1.1579	.10384	.01029	.01707	.00864	.01224	.04875	.01018	.02106	.00935
#2	.01872	.52519	1.1239	.10360	.01024	.01522	.00919	.01251	.04960	.00954	.02098	.00878

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value												.01500
Range												-30.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4281.0	50170.	3717.6
Stddev	10.9	122.	5.1
%RSD	.25520	.24319	.13753

#1	4273.3	50257.	3721.2
#2	4288.7	50084.	3713.9

Sample Name: 280-123216-B-1-A Acquired: 5/13/2019 16:38:45 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456954 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.02816	-.00066	.25539	.24948	.00005	-.00320	72.047	.00035
Stddev	.00056	.00007	.00729	.00342	.00060	.00005	.00350	.126	.00021
%RSD	61.208	.24918	1108.3	1.3375	.24206	97.008	109.15	.17487	59.276

#1	.00051	.02811	-.00581	.25780	.24905	.00002	-.00568	71.958	.00050
#2	.00130	.02821	.00450	.25297	.24991	.00008	-.00073	72.136	.00020

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	.00527	.00013	.04535	2.3477	.03309	46.714	.00125	.00598
Stddev	.00000	.00016	.00119	.00182	.0299	.00435	.033	.00013	.00010
%RSD	.26817	2.9995	927.80	4.0058	1.2729	13.159	.07135	10.188	1.6957

#1	-.00054	.00516	-.00071	.04406	2.3265	.03616	46.737	.00134	.00605
#2	-.00054	.00538	.00097	.04663	2.3688	.03001	46.690	.00116	.00590

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	261.22	.01238	.00118	-.00391	20.044	-.00222	-.00173	10.630	22.749
Stddev	1.33	.00051	.00161	.00041	.128	.00377	.00327	.054	.115
%RSD	.50781	4.1510	136.22	10.574	.63703	169.73	188.85	.50538	.50538

#1	260.28	.01202	.00004	-.00421	20.134	.00044	-.00405	10.592	22.667
#2	262.16	.01274	.00232	-.00362	19.954	-.00489	.00058	10.668	22.830

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00158	.83957	-.00010	-.00035	-.00118	-.01566	.00208	.00582	-.00086
Stddev	.00117	.00241	.00015	.00034	.00104	.02775	.00037	.00050	.00043
%RSD	74.224	.28763	146.14	97.664	88.041	177.20	17.601	8.5990	49.579

#1	-.00075	.83786	.00000	-.00059	-.00192	.00396	.00233	.00618	-.00116
#2	-.00241	.84127	-.00021	-.00011	-.00045	-.03528	.00182	.00547	-.00056

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4068.8	47575.	3659.3
Stddev	10.6	194.	15.6
%RSD	.25962	.40776	.42543

#1	4076.2	47437.	3648.3
#2	4061.3	47712.	3670.3

Sample Name: 280-123216-B-2-A Acquired: 5/13/2019 16:41:17 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456954 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00141	.03988	-.00327	.25871	.25656	.00000	-.00371	73.575	.00014
Stddev	.00038	.00021	.00719	.00335	.00045	.00030	.00408	.084	.00012
%RSD	26.609	.52288	220.13	1.2960	.17449	10154.	109.96	.11455	85.840

#1	.00115	.03974	.00182	.26109	.25687	-.00021	-.00083	73.516	.00023
#2	.00168	.04003	-.00835	.25634	.25624	.00021	-.00660	73.635	.00006

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.00578	.00060	.03789	2.4608	.03854	47.680	.00161	.00606
Stddev	.00026	.00020	.00053	.00076	.0573	.00009	.166	.00014	.00059
%RSD	97.554	3.4442	88.181	2.0004	2.3284	.22430	.34761	8.6710	9.7175

#1	-.00008	.00592	.00023	.03736	2.4203	.03860	47.563	.00171	.00564
#2	-.00045	.00564	.00098	.03843	2.5013	.03848	47.797	.00151	.00648

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	267.97	.01287	.02585	-.00220	19.890	-.00149	.00108	10.895	23.316
Stddev	.70	.00021	.00303	.00050	.170	.00065	.00180	.027	.057
%RSD	.26246	1.6323	11.705	22.626	.85321	43.452	166.36	.24647	.24647

#1	267.47	.01302	.02799	-.00255	20.010	-.00103	.00236	10.914	23.356
#2	268.47	.01272	.02371	-.00185	19.770	-.00195	-.00019	10.876	23.275

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00322	.86006	.00066	.00004	-.00279	-.09075	.00174	.00487	-.00270
Stddev	.00105	.00117	.00044	.00007	.00011	.00677	.00015	.00130	.00203
%RSD	32.582	.13553	66.783	200.01	3.7590	7.4587	8.5389	26.598	75.167

#1	-.00396	.86089	.00097	-.00002	-.00272	-.09553	.00164	.00396	-.00414
#2	-.00248	.85924	.00035	.00009	-.00287	-.08596	.00185	.00579	-.00127

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4072.9	47442.	3649.0
Stddev	4.0	100.	19.0
%RSD	.09934	.21141	.52073

#1	4075.8	47513.	3635.6
#2	4070.0	47371.	3662.5

Sample Name: 280-123216-B-3-A Acquired: 5/13/2019 16:43:48 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456954 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00193	.01710	.00243	.06677	.07686	.00022	-.00143	32.907	.00011
Stddev	.00085	.00002	.00599	.00168	.00005	.00008	.00044	.053	.00001
%RSD	43.857	.13508	246.17	2.5178	.06593	37.573	30.890	.15991	9.8052

#1	.00133	.01708	.00667	.06796	.07683	.00016	-.00175	32.944	.00010
#2	.00253	.01712	-.00180	.06558	.07690	.00028	-.00112	32.870	.00012

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.01804	.00105	.04048	4.6548	.01156	2.5918	.00158	.00644
Stddev	.00031	.00012	.00176	.00145	.0070	.00067	.0085	.00003	.00026
%RSD	397.30	.66766	167.06	3.5776	.15072	5.7689	.32792	2.1617	4.0837

#1	.00014	.01795	.00229	.04150	4.6598	.01203	2.5978	.00160	.00663
#2	-.00030	.01812	-.00019	.03945	4.6499	.01109	2.5858	.00155	.00625

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	67.705	.00099	.01570	-.00294	7.1663	-.00112	.00348	3.8212	8.1773
Stddev	.563	.00058	.00066	.00108	.0312	.00156	.00128	.0352	.0752
%RSD	.83153	58.455	4.2136	36.589	.43462	139.25	36.591	.92023	.92023

#1	68.103	.00058	.01524	-.00370	7.1883	-.00002	.00258	3.8460	8.2305
#2	67.307	.00139	.01617	-.00218	7.1442	-.00222	.00439	3.7963	8.1241

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00149	.23532	.00219	-.00005	-.00254	-.08384	.00098	.00448	-.00231
Stddev	.00080	.00032	.00222	.00021	.00049	.00339	.00005	.00037	.00301
%RSD	53.938	.13681	101.37	444.07	19.338	4.0460	5.2588	8.3563	130.41

#1	-.00206	.23555	.00377	.00010	-.00219	-.08144	.00102	.00475	-.00444
#2	-.00092	.23509	.00062	-.00020	-.00288	-.08624	.00095	.00422	-.00018

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4169.6	49005.	3680.6
Stddev	14.1	103.	7.1
%RSD	.33710	.21021	.19229

#1	4179.5	49078.	3685.6
#2	4159.6	48932.	3675.6

Sample Name: 280-123216-B-4-A Acquired: 5/13/2019 16:46:22 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456954 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	.02559	-.00164	.06716	.07498	.00004	-.00138	32.740	.00007
Stddev	.00063	.00012	.00501	.00000	.00065	.00004	.00071	.161	.00009
%RSD	61.835	.46152	305.10	.00203	.86215	97.637	51.303	.49026	139.27

#1	.00058	.02551	.00190	.06716	.07452	.00007	-.00188	32.626	.00013
#2	.00147	.02567	-.00519	.06716	.07544	.00001	-.00088	32.853	.00000

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.01789	.00150	.02705	4.4495	.01148	2.5558	.00121	.00659
Stddev	.00007	.00027	.00052	.00302	.0606	.00659	.0014	.00004	.00001
%RSD	71.787	1.5284	34.388	11.178	1.3613	57.448	.05414	3.4995	.19924

#1	.00014	.01769	.00187	.02491	4.4924	.01614	2.5548	.00124	.00658
#2	.00005	.01808	.00114	.02919	4.4067	.00681	2.5568	.00118	.00660

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	65.986	.00087	.02002	-.00224	7.9178	-.00013	.00364	3.7444	8.0131
Stddev	.507	.00020	.00127	.00057	.0797	.00075	.00372	.0220	.0470
%RSD	.76870	23.562	6.3302	25.620	1.0065	589.49	102.36	.58640	.58640

#1	65.628	.00101	.02092	-.00265	7.9742	-.00065	.00627	3.7289	7.9798
#2	66.345	.00072	.01912	-.00184	7.8615	.00040	.00100	3.7599	8.0463

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00200	.23112	.00446	-.00016	-.00454	-.10376	.00095	.01521	-.00568
Stddev	.00086	.00059	.00439	.00029	.00082	.01673	.00021	.00004	.00232
%RSD	42.868	.25420	98.478	181.37	17.992	16.122	22.315	.28531	40.896

#1	.00260	.23070	.00136	-.00036	-.00396	-.09193	.00080	.01518	-.00732
#2	.00139	.23154	.00757	.00004	-.00512	-.11559	.00110	.01524	-.00404

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4139.2	48333.	3636.8
Stddev	14.0	76.	43.0
%RSD	.33872	.15623	1.1817

#1	4149.1	48387.	3606.4
#2	4129.2	48280.	3667.2

Sample Name: 280-123216-B-5-A Acquired: 5/13/2019 16:48:54 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456954 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00232	.05436	-.00541	.23160	.27846	.00005	-.00304	97.428	.00050
Stddev	.00110	.00329	.00174	.00172	.00175	.00015	.00147	.352	.00016
%RSD	47.258	6.0465	32.271	.74249	.62725	284.06	48.396	.36109	31.477

#1	.00155	.05668	-.00664	.23282	.27969	.00016	-.00408	97.677	.00061
#2	.00310	.05203	-.00417	.23039	.27722	-.00005	-.00200	97.179	.00039

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00021	.00027	.06663	2.2700	.03992	52.550	.02406	.00138
Stddev	.00019	.00044	.00062	.00498	.0169	.00122	.072	.00011	.00032
%RSD	211.37	213.74	232.07	7.4734	.74432	3.0562	.13773	.46811	23.050

#1	.00022	-.00011	.00071	.06311	2.2819	.03906	52.499	.02414	.00160
#2	-.00004	.00052	-.00017	.07015	2.2580	.04079	52.602	.02398	.00115

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	290.05	-.00016	.00266	-.00360	7.1085	-.00343	-.00334	11.289	24.159
Stddev	.14	.00012	.00166	.00021	.0553	.00082	.00200	.056	.121
%RSD	.04716	70.696	62.524	5.8771	.77807	23.986	60.045	.50016	.50016

#1	290.15	-.00025	.00383	-.00375	7.1476	-.00284	-.00192	11.329	24.245
#2	289.95	-.00008	.00148	-.00345	7.0694	-.00401	-.00475	11.249	24.074

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00224	.96760	.00135	.00003	-.00198	-.08618	.00409	.00391	-.00264
Stddev	.00079	.00033	.00128	.00028	.00314	.07446	.00042	.00045	.00157
%RSD	35.370	.03453	94.760	854.80	158.28	86.394	10.160	11.505	59.513

#1	-.00168	.96784	.00045	-.00017	-.00420	-.03353	.00379	.00423	-.00153
#2	-.00280	.96737	.00226	.00023	.00024	-.13883	.00438	.00359	-.00375

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4020.6	47041.	3659.4
Stddev	5.2	198.	11.5
%RSD	.12975	.42084	.31470

#1	4016.9	47181.	3651.3
#2	4024.3	46901.	3667.6

Sample Name: 123216-B-5-A SD@5 Acquired: 5/13/2019 16:51:26 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456954 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00186	.00941	.00018	.04812	.05681	.00009	-.00077	19.905	-.00026
Stddev	.00078	.00062	.00408	.00026	.00110	.00003	.00197	.071	.00048
%RSD	41.872	6.5473	2311.4	.54895	1.9436	34.835	255.46	.35729	186.97

#1	.00241	.00898	-.00271	.04830	.05759	.00007	.00062	19.955	.00008
#2	.00131	.00985	.00306	.04793	.05603	.00011	-.00217	19.854	-.00060

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	-.00001	-.00164	.03763	.60042	.00685	10.725	.00491	-.00006
Stddev	.00030	.00020	.00056	.00230	.02138	.00314	.012	.00005	.00030
%RSD	100.12	1340.6	34.151	6.1047	3.5601	45.883	.10968	.92319	500.33

#1	-.00009	-.00016	-.00204	.03926	.58530	.00907	10.717	.00488	-.00028
#2	-.00051	.00013	-.00124	.03601	.61553	.00463	10.733	.00495	.00015

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	58.512	-.00021	-.00294	-.00064	1.3855	-.00193	.00531	2.2892	4.8989
Stddev	.279	.00034	.00276	.00120	.0121	.00398	.00729	.0398	.0853
%RSD	.47720	165.55	93.891	187.10	.87698	206.62	137.29	1.7404	1.7404

#1	58.315	-.00045	-.00490	.00021	1.3941	-.00474	.00016	2.3174	4.9591
#2	58.710	.00003	-.00099	-.00149	1.3770	.00089	.01047	2.2610	4.8386

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00185	.19669	.00214	-.00032	-.00185	-.03313	.00034	.00218	-.00293
Stddev	.00045	.00014	.00016	.00003	.00059	.01464	.00006	.00041	.00126
%RSD	24.218	.07284	7.5638	8.2804	32.089	44.194	16.373	18.695	42.879

#1	-.00217	.19659	.00225	-.00030	-.00143	-.04348	.00038	.00247	-.00204
#2	-.00154	.19679	.00202	-.00034	-.00227	-.02277	.00030	.00189	-.00382

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4140.8	48829.	3653.6
Stddev	1.2	127.	39.6
%RSD	.02925	.26085	1.0852

#1	4141.6	48919.	3625.6
#2	4139.9	48739.	3681.6

Sample Name: 280-123216-B-5-B MS Acquired: 5/13/2019 16:54:03 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456954 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00320	10.525	2.0044	1.1893	2.3555	.98978	1.9793	147.97	1.0116
Stddev	.00028	.043	.0079	.0036	.0038	.00042	.0072	.02	.0040
%RSD	8.7202	.41306	.39523	.29999	.16003	.04254	.36457	.01537	.39636

#1	.00300	10.495	2.0100	1.1918	2.3529	.98948	1.9844	147.99	1.0144
#2	.00340	10.556	1.9988	1.1868	2.3582	.99007	1.9742	147.96	1.0088

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96882	1.0222	.99445	10.042	57.434	1.0590	103.12	1.0043	1.0385
Stddev	.00338	.0042	.00076	.018	.014	.0006	.23	.0023	.0067
%RSD	.34898	.41522	.07653	.17442	.02418	.05247	.22766	.22634	.64663

#1	.97121	1.0252	.99498	10.055	57.444	1.0594	102.95	1.0027	1.0433
#2	.96643	1.0192	.99391	10.030	57.424	1.0586	103.29	1.0059	1.0338

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	339.85	.96283	W 21.232	.97003	16.478	-.00106	1.9395	13.474	28.834
Stddev	.72	.00237	.083	.00080	.033	.00122	.0046	.047	.101
%RSD	.21208	.24576	.38941	.08243	.19981	115.06	.23698	.34927	.34927

#1	339.34	.96450	21.291	.97060	16.501	-.00193	1.9428	13.507	28.905
#2	340.36	.96116	21.174	.96947	16.455	-.00020	1.9363	13.441	28.763

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.0319	1.9558	.99524	.99731	1.9222	1.9774	1.0247	.50225	.52567
Stddev	.0111	.0015	.00454	.00345	.0086	.0361	.0003	.00037	.00078
%RSD	.54611	.07609	.45570	.34628	.44828	1.8241	.03065	.07413	.14746

#1	2.0397	1.9547	.99203	.99487	1.9283	2.0029	1.0245	.50199	.52512
#2	2.0240	1.9568	.99844	.99975	1.9161	1.9519	1.0249	.50252	.52622

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000								
Low Limit	-.20000								

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4024.9	46806.	3623.9
Stddev	7.7	281.	3.5
%RSD	.19076	.59995	.09768

#1	4030.3	47005.	3626.4
#2	4019.5	46608.	3621.4

Sample Name: 280-123216-B-5-C MSD Acquired: 5/13/2019 16:56:22 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456954 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00237	10.672	2.0421	1.2318	2.4044	W 1.0135	W 2.0098	151.88	1.0260
Stddev	.00004	.109	.0182	.0024	.0001	.0024	.0073	.09	.0038
%RSD	1.7983	1.0179	.88937	.19595	.00486	.23646	.36265	.06023	.36764

#1	.00240	10.749	2.0550	1.2335	2.4043	1.0152	2.0149	151.95	1.0287
#2	.00234	10.595	2.0293	1.2301	2.4044	1.0118	2.0046	151.82	1.0234

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Warn	Chk Pass	Chk Pass
High Limit						1.0000	2.0000		
Low Limit						-.00200	-.20000		

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98193	1.0363	1.0254	10.222	57.850	1.0874	105.70	1.0239	1.0589
Stddev	.00377	.0061	.0014	.001	.053	.0011	.07	.0015	.0072
%RSD	.38357	.59147	.13755	.01453	.09207	.10356	.06379	.14400	.67617

#1	.98460	1.0407	1.0264	10.221	57.888	1.0882	105.65	1.0229	1.0639
#2	.97927	1.0320	1.0244	10.223	57.812	1.0866	105.75	1.0250	1.0538

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	351.81	.97518	W 21.637	.98318	16.892	.00228	1.9758	13.903	29.752
Stddev	.69	.00542	.110	.00374	.067	.00202	.0092	.011	.024
%RSD	.19721	.55612	.50635	.38089	.39881	88.336	.46329	.08007	.08007

#1	352.30	.97901	21.714	.98582	16.940	.00086	1.9822	13.911	29.769
#2	351.32	.97134	21.559	.98053	16.845	.00371	1.9693	13.895	29.735

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.0611	2.0155	1.0221	1.0212	1.9419	2.0129	1.0450	.50390	.53908
Stddev	.0130	.0019	.0009	.0007	.0025	.0170	.0027	.00052	.00574
%RSD	.62960	.09256	.09084	.06480	.12839	.84726	.26093	.10279	1.0653

#1	2.0703	2.0169	1.0214	1.0208	1.9436	2.0009	1.0431	.50354	.54314
#2	2.0519	2.0142	1.0227	1.0217	1.9401	2.0250	1.0470	.50427	.53502

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000								
Low Limit	-.20000								

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3954.4	45920.	3580.0
Stddev	10.3	236.	4.6
%RSD	.25951	.51367	.12972

#1	3961.6	46087.	3576.7
#2	3947.1	45753.	3583.3

Sample Name: 280-123216-B-6-A Acquired: 5/13/2019 16:58:38 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456954 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00131	.04572	.00093	.23445	.28173	.00018	-.00389	98.717	.00019
Stddev	.00045	.00097	.00639	.00298	.00062	.00007	.00090	.126	.00015
%RSD	34.030	2.1319	690.26	1.2713	.22067	36.958	23.064	.12714	78.334

#1	.00163	.04641	.00544	.23656	.28129	.00014	-.00326	98.628	.00029
#2	.00100	.04504	-.00359	.23234	.28217	.00023	-.00453	98.806	.00008

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00010	.00029	.29827	2.4731	.04503	53.045	.02408	.00307
Stddev	.00028	.00026	.00116	.00226	.0331	.00082	.001	.00009	.00092
%RSD	4193.4	259.39	397.86	.75743	1.3364	1.8276	.00225	.35623	29.777

#1	-.00019	-.00009	.00111	.29667	2.4497	.04561	53.044	.02402	.00243
#2	.00020	.00029	-.00053	.29987	2.4965	.04445	53.045	.02414	.00372

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	294.33	.00034	.00702	-.00451	7.0853	.00156	-.00161	11.456	24.517
Stddev	.17	.00047	.00213	.00270	.1092	.00191	.00544	.031	.067
%RSD	.05848	141.03	30.273	59.985	1.5416	122.65	337.17	.27301	.27301

#1	294.45	.00067	.00853	-.00260	7.1625	.00021	-.00546	11.478	24.564
#2	294.21	.00000	.00552	-.00642	7.0080	.00290	.00223	11.434	24.469

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00146	.98050	.00166	-.00015	-.00335	F -.15107	.00282	.00252	-.00105
Stddev	.00130	.00283	.00303	.00033	.00125	.02695	.00003	.00020	.00047
%RSD	89.086	.28848	182.16	221.66	37.435	17.840	1.1387	8.0353	45.071

#1	-.00238	.97850	.00380	-.00039	-.00246	-.17013	.00280	.00238	-.00139
#2	-.00054	.98251	-.00048	.00009	-.00424	-.13201	.00284	.00267	-.00072

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3974.6	46724.	3557.3
Stddev	12.3	107.	7.1
%RSD	.30930	.23000	.20082

#1	3983.3	46800.	3562.3
#2	3965.9	46648.	3552.2

Sample Name: CCVH-5690583 Acquired: 5/13/2019 17:01:11 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00299	49.940	-.00626	.00715	.00136	.00134	.97824	.02700	.00098	.00278	.00158	.01218	51.197
Stddev	.00029	.121	.00085	.00141	.00015	.00010	.00881	.00187	.00022	.00010	.00010	.00107	.052
%RSD	9.6852	.24318	13.642	19.747	10.876	7.1932	.90026	6.9069	22.365	3.6560	6.1751	8.8085	.10130

#1	.00279	49.854	-.00565	.00815	.00146	.00141	.98447	.02832	.00082	.00285	.00151	.01294	51.160
#2	.00320	50.026	-.00686	.00615	.00125	.00127	.97202	.02569	.00113	.00270	.00165	.01142	51.233

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47221	.00377	.01427	.00392	.00068	257.41	.00438	.00187	.00475	4.6657	.00182	.00591	.04417
Stddev	.04186	.00198	.00048	.00001	.00012	.64	.00042	.00255	.00260	.0074	.00206	.00058	.00148
%RSD	8.8645	52.495	3.3355	.20114	17.261	.24933	9.7031	136.56	54.809	.15947	113.18	9.8384	3.3560

#1	.44261	.00516	.01394	.00391	.00060	257.86	.00408	.00367	.00291	4.6710	.00327	.00550	.04312
#2	.50180	.00237	.01461	.00392	.00076	256.96	.00468	.00006	.00659	4.6604	.00036	.00632	.04522

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09453	.00170	.00197	4.9206	-.00863	.00104	9.9718	.00516	.00388	.06709
Stddev	.00317	.00097	.00025	.0014	.00046	.00322	.0064	.00054	.00021	.00389
%RSD	3.3560	57.239	12.558	.02914	5.3459	309.98	.06413	10.547	5.3760	5.7984

#1	.09228	.00239	.00179	4.9196	-.00896	.00331	9.9673	.00477	.00373	.06984
#2	.09677	.00101	.00214	4.9216	-.00831	-.00124	9.9764	.00554	.00403	.06434

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4025.8	46826.	3553.6
Stddev	29.8	240.	7.6
%RSD	.73990	.51282	.21426

#1	4046.8	46657.	3548.2
#2	4004.7	46996.	3559.0

Sample Name: CCV-5690581 Acquired: 5/13/2019 17:03:40 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51681	F .62541	.99311	.50053	.53320	.50361	-.00250	5.3238	.51154	.52073	.53109	.51620
Stddev	.00208	.00386	.00373	.00389	.00137	.00163	.00234	.0223	.00457	.00634	.00574	.00225
%RSD	.40185	.61648	.37602	.77656	.25753	.32393	93.558	.41933	.89430	1.2185	1.0802	.43652

#1	.51828	.62814	.99575	.50328	.53223	.50246	-.00085	5.3396	.51477	.52521	.53514	.51779
#2	.51534	.62269	.99047	.49778	.53417	.50476	-.00416	5.3080	.50830	.51624	.52703	.51460

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.6465	53.820	1.0402	20.826	.51252	.52819	F 6.5275	.52160	1.0391	1.0434	.00354	.98004
Stddev	.0009	.121	.0021	.056	.00185	.00632	.0376	.00636	.0066	.0105	.00217	.00713
%RSD	.03485	.22483	.20056	.26841	.36097	1.1959	.57618	1.2200	.64026	1.0093	61.295	.72751

#1	2.6459	53.735	1.0417	20.866	.51383	.53266	6.5541	.52610	1.0438	1.0508	.00201	.98508
#2	2.6472	53.906	1.0387	20.787	.51121	.52372	6.5009	.51710	1.0344	1.0359	.00508	.97500

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97987	5.1545	11.031	1.0518	.50887	.00731	.50778	1.0721	-.03033	.51620	.51747	.52433
Stddev	.00616	.0098	.021	.0131	.00055	.00193	.00259	.0052	.04351	.00435	.00162	.00167
%RSD	.62857	.19102	.19102	1.2478	.10811	26.470	.50953	.48053	143.47	.84181	.31347	.31922

#1	.98422	5.1614	11.045	1.0611	.50848	.00868	.50961	1.0757	-.06110	.51927	.51862	.52551
#2	.97551	5.1475	11.016	1.0425	.50926	.00594	.50595	1.0684	.00044	.51312	.51632	.52315

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4085.2	47315.	3504.5
Stddev	30.7	168.	10.4
%RSD	.75161	.35489	.29675

#1	4063.5	47196.	3511.9
#2	4106.9	47434.	3497.1

Sample Name: CCB Acquired: 5/13/2019 17:06:02 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	-.00154	-.00139	.00265	-.00031	.00004	-.00213	-.00532	.00004	-.00004	.00029	-.00216
Stddev	.00044	.00059	.00272	.00048	.00017	.00003	.00299	.00338	.00007	.00042	.00004	.00167
%RSD	39.192	38.155	196.12	18.157	54.379	70.855	140.70	63.595	169.61	1006.1	14.310	77.450

#1	.00143	-.00112	-.00331	.00299	-.00019	.00005	-.00424	-.00293	.00009	.00025	.00026	-.00334
#2	.00081	-.00195	.00054	.00231	-.00043	.00002	-.00001	-.00771	-.00001	-.00034	.00032	-.00097

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00197	.21129	-.00173	-.00675	.00003	.00056	F .71528	-.00008	-.00486	-.00323	-.00252	.00354
Stddev	.00035	.08058	.00322	.00016	.00004	.00007	.01010	.00060	.00027	.00012	.00226	.00093
%RSD	17.803	38.138	186.52	2.3786	144.30	11.940	1.4119	775.96	5.6422	3.5826	89.745	26.176

#1	.00172	.26827	-.00400	-.00663	-.00000	.00060	.70814	-.00050	-.00467	-.00331	-.00092	.00420
#2	.00221	.15431	.00055	-.00686	.00006	.00051	.72242	.00035	-.00506	-.00315	-.00412	.00289

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							.50000					
Low Limit							-.50000					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00599	.02572	.05504	-.00211	.00012	.00220	-.00048	-.00258	-.08107	-.00050	-.00026	-.00214
Stddev	.00320	.01744	.03732	.00045	.00013	.00122	.00001	.00016	.01592	.00013	.00037	.00119
%RSD	53.464	67.812	67.812	21.428	109.93	55.660	1.6158	6.1321	19.640	25.172	144.54	55.427

#1	.00372	.03805	.08143	-.00179	.00003	.00306	-.00048	-.00269	-.06981	-.00041	-.00052	-.00298
#2	.00825	.01339	.02865	-.00242	.00021	.00133	-.00047	-.00247	-.09233	-.00059	.00001	-.00130

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4111.9	48008.	3537.2
Stddev	10.4	112.	.4
%RSD	.25350	.23361	.01074

#1	4119.3	48088.	3537.5
#2	4104.6	47929.	3536.9

Sample Name: CCVL-5699390 Acquired: 5/13/2019 17:08:37 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01152	.11944	F .00939	.10072	.00966	.00101	.10274	.21763	.00491	.01021	.01072	.01444
Stddev	.00065	.00111	.00350	.00040	.00038	.00007	.00663	.00353	.00031	.00056	.00014	.00080
%RSD	5.6765	.93318	37.305	.39493	3.9123	6.5799	6.4540	1.6200	6.3245	5.5197	1.3097	5.5420

#1	.01106	.12023	.00691	.10044	.00992	.00096	.10743	.22012	.00513	.00981	.01062	.01387
#2	.01199	.11865	.01186	.10100	.00939	.00105	.09805	.21513	.00469	.01060	.01082	.01500

Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.01500									
Range			-30.000%									

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10889	3.3486	.01811	.19535	.01042	.02051	F 1.6580	.04158	2.9407	.00836	.08825	.01632
Stddev	.00276	.0762	.00167	.00049	.00003	.00010	.0086	.00022	.0168	.00062	.00086	.00171
%RSD	2.5312	2.2750	9.2002	.24916	.33464	.50471	.52080	.51799	.57080	7.4584	.97929	10.467

#1	.10694	3.2948	.01693	.19501	.01039	.02059	1.6641	.04173	2.9525	.00880	.08764	.01511
#2	.11084	3.4025	.01929	.19569	.01044	.02044	1.6519	.04142	2.9288	.00792	.08886	.01752

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							1.0000					
Range							30.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02048	.53887	1.1532	.10370	.01028	.01867	.00859	.01247	F .01242	.00985	.02136	.01264
Stddev	.00621	.01890	.0405	.00100	.00007	.00062	.00008	.00151	.00850	.00023	.00121	.00328
%RSD	30.342	3.5075	3.5075	.96908	.64324	3.3238	.89050	12.121	68.461	2.3325	5.6475	25.964

#1	.02487	.55224	1.1818	.10441	.01032	.01911	.00853	.01140	.00641	.01002	.02051	.01032
#2	.01608	.52551	1.1246	.10299	.01023	.01823	.00864	.01354	.01843	.00969	.02221	.01497

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value									.06000			
Range									-30.000%			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4147.5	48353.	3539.6
Stddev	9.0	270.	9.7
%RSD	.21811	.55773	.27365

#1	4153.9	48544.	3546.4
#2	4141.1	48163.	3532.7

Sample Name: MB 280-457389/1-A Acquired: 5/13/2019 17:11:10 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/9 Custom ID2: Custom ID3:
Comment: 457389 6010B (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00173	.00156	-.00185	.00268	.00002	-.00007	-.00423	.01366	-.00017
Stddev	.00017	.00005	.00100	.00014	.00026	.00020	.00120	.00308	.00046
%RSD	9.8401	3.4656	54.022	5.3927	1170.9	299.24	28.404	22.579	271.15

#1	.00185	.00160	-.00255	.00258	.00021	.00008	-.00338	.01584	.00016
#2	.00161	.00152	-.00114	.00278	-.00016	-.00021	-.00508	.01148	-.00050

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	-.00008	-.00150	.00554	.11726	-.00090	-.00702	.00008	-.00034
Stddev	.00027	.00020	.00050	.00432	.01141	.00521	.00078	.00000	.00018
%RSD	68.022	252.07	33.078	78.113	9.7315	576.40	11.086	4.2316	52.021

#1	-.00021	.00006	-.00185	.00248	.12533	-.00459	-.00647	.00008	-.00022
#2	-.00059	-.00022	-.00115	.00859	.10919	.00278	-.00757	.00008	-.00047

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W .64573	-.00010	-.00425	-.00258	.00976	.00167	.00223	.04439	.09500
Stddev	.00836	.00037	.00098	.00154	.00125	.00025	.00317	.01030	.02205
%RSD	1.2953	349.19	23.118	59.630	12.818	15.206	141.79	23.213	23.213

#1	.63982	.00015	-.00355	-.00149	.00887	.00185	.00447	.05168	.11059
#2	.65165	-.00036	-.00494	-.00367	.01064	.00149	-.00001	.03711	.07941

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit	.50000								
Low Limit	-.50000								

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00163	.00029	.00216	-.00065	-.00267	W -.05794	-.00058	.00039	-.00338
Stddev	.00018	.00021	.00132	.00041	.00064	.03082	.00033	.00007	.00647
%RSD	10.838	74.005	61.322	63.449	23.883	53.198	56.797	18.562	191.53

#1	-.00175	.00014	.00122	-.00036	-.00312	-.07974	-.00035	.00044	.00120
#2	-.00150	.00044	.00309	-.00094	-.00222	-.03615	-.00081	.00034	-.00795

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass
High Limit						.05000			
Low Limit						-.05000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4144.5	48955.	3573.7
Stddev	13.6	40.	10.5
%RSD	.32907	.08248	.29503

#1	4154.2	48926.	3566.3
#2	4134.9	48984.	3581.2

Sample Name: LCS 280-457389/2-A Acquired: 5/13/2019 17:13:45 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457389 6010B (Fe)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00274	9.0964	1.7710	.89870	1.8517	.87293	1.8732	45.610	.90739
Stddev	.00056	.0548	.0099	.00508	.0029	.00289	.0083	.124	.00746
%RSD	20.480	.60234	.55737	.56542	.15840	.33096	.44052	.27137	.82202

#1	.00313	9.0576	1.7780	.90229	1.8497	.87089	1.8790	45.523	.91267
#2	.00234	9.1351	1.7640	.89510	1.8538	.87497	1.8674	45.698	.90212

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.86188	.89180	.88291	8.8731	48.038	.92480	44.386	.87876	.91629
Stddev	.00750	.00744	.00202	.0262	.092	.00346	.091	.00222	.00915
%RSD	.86977	.83408	.22875	.29495	.19253	.37393	.20578	.25270	.99892

#1	.86718	.89706	.88148	8.8546	47.973	.92235	44.322	.87719	.92277
#2	.85657	.88654	.88434	8.8916	48.104	.92724	44.451	.88033	.90982

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	47.007	.86052	18.543	.90169	8.4669	.00121	1.7498	1.9003	4.0665
Stddev	.689	.00843	.142	.00585	.0659	.00174	.0036	.0322	.0689
%RSD	1.4649	.97917	.76750	.64852	.77859	143.77	.20772	1.6942	1.6942

#1	47.494	.86648	18.643	.90583	8.5136	.00244	1.7523	1.8775	4.0178
#2	46.520	.85456	18.442	.89756	8.4203	-.00002	1.7472	1.9230	4.1153

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8116	.87967	.88278	.88246	1.8767	1.7509	.90209	.44535	.46614
Stddev	.0239	.00178	.00064	.00293	.0148	.0429	.00050	.00039	.00388
%RSD	1.3183	.20279	.07287	.33170	.78737	2.4488	.05515	.08751	.83310

#1	1.8284	.87841	.88232	.88039	1.8872	1.7812	.90244	.44508	.46889
#2	1.7947	.88093	.88323	.88453	1.8663	1.7205	.90174	.44563	.46339

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4017.2	46400.	3526.5
Stddev	1.7	6.	15.1
%RSD	.04116	.01374	.42683

#1	4018.3	46395.	3515.9
#2	4016.0	46404.	3537.2

Sample Name: 280-123355-F-1-A Acquired: 5/13/2019 17:16:02 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457389 6010B (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00198	.00047	-.00289	.08666	.15097	.00004	-.00440	161.57	.00012
Stddev	.00117	.00082	.00436	.00151	.00023	.00002	.00005	.54	.00008
%RSD	59.252	173.35	150.80	1.7385	.15281	44.581	1.0879	.33313	71.388

#1	.00281	.00106	.00019	.08772	.15080	.00003	-.00444	161.19	.00018
#2	.00115	-.00011	-.00597	.08559	.15113	.00006	-.00437	161.95	.00006

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00289	.00030	-.00041	1.1476	4.6576	.00886	25.428	.91034	.00353
Stddev	.00000	.00046	.00018	.0060	.0173	.00308	.036	.00005	.00033
%RSD	.16797	155.50	43.245	.51831	.37058	34.739	.14088	.00515	9.3321

#1	.00290	.00062	-.00053	1.1434	4.6454	.00668	25.453	.91037	.00329
#2	.00289	-.00003	-.00028	1.1518	4.6698	.01104	25.403	.91030	.00376

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.383	.00206	.03203	-.00279	23.382	-.00152	.00517	10.348	22.146
Stddev	.441	.00049	.00295	.00134	.186	.00742	.00284	.008	.017
%RSD	2.1624	23.983	9.2226	47.986	.79468	487.43	54.869	.07734	.07734

#1	20.695	.00171	.02994	-.00374	23.513	-.00677	.00717	10.354	22.158
#2	20.071	.00241	.03412	-.00184	23.250	.00373	.00316	10.343	22.134

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00103	.33337	.00111	.00016	-.00277	.83303	.00002	.00262	-.00402
Stddev	.00025	.00015	.00203	.00046	.00033	.02672	.00016	.00017	.00184
%RSD	24.467	.04587	182.32	295.27	11.978	3.2070	982.59	6.5272	45.872

#1	-.00121	.33327	.00255	.00048	-.00300	.81414	.00013	.00274	-.00532
#2	-.00085	.33348	-.00032	-.00017	-.00253	.85192	-.00010	.00250	-.00272

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3933.4	46442.	3484.5
Stddev	6.1	192.	16.4
%RSD	.15632	.41421	.46949

#1	3929.0	46578.	3496.1
#2	3937.7	46306.	3473.0

Sample Name: 123355-F-1-A SD@5 Acquired: 5/13/2019 17:18:34 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457389 6010B (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00224	.00117	-.00169	.02013	.02958	-.00008	-.00423	32.226	-.00011
Stddev	.00050	.00026	.00114	.00148	.00029	.00003	.00176	.384	.00016
%RSD	22.507	22.392	67.563	7.3663	.97726	41.146	41.764	1.1919	139.39

#1	.00188	.00098	-.00088	.01908	.02979	-.00010	-.00547	31.954	-.00000
#2	.00259	.00135	-.00250	.02118	.02938	-.00006	-.00298	32.497	-.00023

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	-.00006	-.00097	.27346	.89500	.00072	5.3646	.19120	.00030
Stddev	.00010	.00019	.00015	.00928	.03286	.00003	.0773	.00279	.00053
%RSD	18.715	319.24	15.353	3.3918	3.6715	4.7169	1.4417	1.4578	177.11

#1	.00062	-.00020	-.00087	.26690	.91823	.00075	5.3099	.18923	.00067
#2	.00047	.00008	-.00108	.28002	.87176	.00070	5.4192	.19317	-.00007

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.5542	.00027	.00370	-.00193	4.9350	-.00191	.00070	2.0137	4.3094
Stddev	.0385	.00001	.00214	.00023	.1226	.00557	.00234	.0054	.0115
%RSD	.84478	4.0007	57.728	11.970	2.4839	291.87	335.51	.26609	.26609

#1	4.5270	.00028	.00219	-.00209	4.8484	-.00585	-.00096	2.0100	4.3013
#2	4.5814	.00027	.00521	-.00176	5.0217	.00203	.00236	2.0175	4.3175

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00243	.06669	.00284	-.00101	-.00311	.12672	-.00013	.00147	-.00302
Stddev	.00069	.00030	.00002	.00026	.00472	.04264	.00024	.00046	.00215
%RSD	28.466	.45516	.75762	25.427	151.82	33.650	181.99	31.582	71.087

#1	-.00194	.06647	.00286	-.00119	.00023	.09657	-.00030	.00114	-.00150
#2	-.00291	.06690	.00282	-.00083	-.00644	.15688	.00004	.00180	-.00454

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4038.8	47483.	3510.0
Stddev	2.8	364.	13.3
%RSD	.06934	.76760	.37967

#1	4040.8	47740.	3500.6
#2	4036.8	47225.	3519.5

Sample Name: 280-123355-F-1-B MS Acquired: 5/13/2019 17:21:07 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457389 6010B (Fe)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00286	9.4506	1.8379	1.0058	2.0383	.90323	1.8934	204.73	.93514
Stddev	.00067	.0510	.0016	.0064	.0094	.00395	.0201	.82	.00597
%RSD	23.292	.53989	.08710	.63797	.46186	.43726	1.0597	.40071	.63833

#1	.00333	9.4146	1.8391	1.0103	2.0449	.90602	1.9076	205.31	.93936
#2	.00238	9.4867	1.8368	1.0013	2.0316	.90044	1.8792	204.15	.93092

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.87639	.91963	.91365	10.196	54.296	.96175	70.439	1.7955	.94827
Stddev	.00594	.00650	.00205	.052	.137	.00154	.104	.0001	.00913
%RSD	.67729	.70730	.22395	.50572	.25293	.16059	.14770	.00515	.96275

#1	.88059	.92423	.91509	10.232	54.393	.96284	70.513	1.7954	.95472
#2	.87219	.91503	.91220	10.159	54.199	.96066	70.366	1.7956	.94181

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	68.549	.87545	19.343	.91098	32.088	.00546	1.8028	12.296	26.313
Stddev	.371	.00498	.110	.00738	.092	.00180	.0119	.051	.109
%RSD	.54117	.56869	.57017	.80987	.28608	32.975	.65848	.41237	.41237

#1	68.811	.87897	19.421	.91620	32.153	.00673	1.8112	12.332	26.390
#2	68.286	.87193	19.265	.90577	32.023	.00419	1.7944	12.260	26.236

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8620	1.2332	.91276	.91734	1.8607	2.7222	.93497	.45257	.47472
Stddev	.0176	.0041	.00026	.00034	.0078	.0267	.00066	.00119	.00355
%RSD	.94466	.33131	.02865	.03685	.42190	.98151	.07090	.26327	.74677

#1	1.8744	1.2361	.91258	.91758	1.8663	2.7033	.93450	.45341	.47723
#2	1.8495	1.2303	.91295	.91710	1.8552	2.7411	.93544	.45173	.47221

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3833.6	44569.	3393.4
Stddev	.8	142.	3.5
%RSD	.02157	.31920	.10197

#1	3833.0	44670.	3390.9
#2	3834.2	44469.	3395.8

Sample Name: 280-123355-F-1-C MSD Acquired: 5/13/2019 17:23:25 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457389 6010B (Fe)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00423	9.6650	1.8778	1.0213	2.0801	.92274	1.9137	209.10	.95143
Stddev	.00013	.0550	.0025	.0057	.0065	.00222	.0102	.46	.00442
%RSD	3.1500	.56906	.13361	.55764	.31264	.24039	.53234	.21816	.46448

#1	.00413	9.7039	1.8795	1.0253	2.0847	.92431	1.9209	209.43	.95455
#2	.00432	9.6261	1.8760	1.0173	2.0755	.92118	1.9065	208.78	.94830

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.89824	.94363	.92581	10.417	55.207	.98455	71.609	1.8302	.97239
Stddev	.00328	.00481	.00024	.011	.011	.00426	.038	.0010	.00773
%RSD	.36470	.50941	.02608	.10961	.01966	.43319	.05312	.05402	.79464

#1	.90056	.94703	.92598	10.425	55.214	.98154	71.582	1.8295	.97786
#2	.89593	.94024	.92564	10.409	55.199	.98757	71.636	1.8309	.96693

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	69.623	.89657	19.761	.92413	32.453	.00248	1.8292	12.529	26.811
Stddev	.155	.00522	.104	.00383	.060	.00092	.0002	.066	.141
%RSD	.22270	.58249	.52535	.41431	.18524	37.295	.01064	.52635	.52635

#1	69.733	.90026	19.834	.92684	32.496	.00313	1.8291	12.575	26.911
#2	69.513	.89288	19.688	.92143	32.411	.00183	1.8293	12.482	26.711

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8996	1.2595	.92247	.93412	1.8763	2.7720	.95152	.46143	.48715
Stddev	.0152	.0025	.00065	.00020	.0079	.0046	.00070	.00008	.00272
%RSD	.80170	.19787	.06992	.02182	.42039	.16619	.07389	.01815	.55791

#1	1.9103	1.2613	.92201	.93426	1.8819	2.7753	.95102	.46137	.48907
#2	1.8888	1.2578	.92293	.93397	1.8707	2.7688	.95201	.46149	.48523

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3886.5	44824.	3407.0
Stddev	4.9	110.	10.1
%RSD	.12558	.24572	.29499

#1	3883.1	44747.	3399.9
#2	3890.0	44902.	3414.1

Sample Name: CCVH-5690583 Acquired: 5/13/2019 17:25:42 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00439	50.860	.00176	.00695	.00184	.00149	.98950	.04858	.00071	.00293	.00103	.01330	52.063
Stddev	.00054	.031	.00054	.00142	.00083	.00000	.01584	.00502	.00019	.00000	.00020	.00017	.136
%RSD	12.283	.06028	30.745	20.476	45.172	.08322	1.6011	10.326	27.416	.14189	19.731	1.2846	.26027

#1	.00401	50.838	.00214	.00595	.00125	.00149	1.0007	.05213	.00085	.00293	.00089	.01318	51.967
#2	.00477	50.882	.00138	.00796	.00243	.00149	.97829	.04503	.00057	.00292	.00117	.01342	52.158

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.34024	.00236	.01337	.00410	.00211	260.98	.00463	.00270	.00362	4.7307	.00346	.00124	.05379
Stddev	.02025	.00019	.00346	.00005	.00010	.11	.00059	.00041	.00030	.0354	.00290	.00401	.02551
%RSD	5.9527	8.1897	25.893	1.1100	4.5649	.04343	12.841	15.022	8.4363	.74896	83.711	322.34	47.422

#1	.35456	.00250	.01581	.00407	.00218	261.06	.00505	.00299	.00340	4.7558	.00551	-.00159	.07182
#2	.32591	.00223	.01092	.00413	.00204	260.90	.00421	.00241	.00383	4.7057	.00141	.00408	.03575

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.11510	.00111	.00211	4.9958	-.00856	.00088	10.154	.00570	.00368	.07243
Stddev	.05458	.00026	.00015	.0009	.00031	.00087	.013	.00017	.00002	.00073
%RSD	47.422	23.456	7.3086	.01796	3.6185	98.683	.12718	2.9883	.48807	1.0024

#1	.15370	.00092	.00222	4.9952	-.00834	.00149	10.164	.00558	.00370	.07294
#2	.07651	.00129	.00200	4.9965	-.00878	.00026	10.145	.00582	.00367	.07191

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3924.4	45921.	3446.4
Stddev	5.9	116.	4.8
%RSD	.15069	.25260	.14063

#1	3928.6	45839.	3442.9
#2	3920.3	46003.	3449.8

Sample Name: CCV-5690581 Acquired: 5/13/2019 17:28:12 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51599	F .62059	.98789	.49746	.52821	.50187	-.00591	5.2766	.50790	.51478	.52290	.51024
Stddev	.00030	.00723	.00109	.00096	.00055	.00062	.00279	.0275	.00311	.00413	.00514	.00289
%RSD	.05905	1.1643	.11023	.19322	.10451	.12440	47.232	.52155	.61137	.80146	.98354	.56559

#1	.51578	.62570	.98867	.49814	.52860	.50231	-.00789	5.2961	.51009	.51769	.52653	.51228
#2	.51621	.61548	.98712	.49679	.52782	.50142	-.00394	5.2572	.50570	.51186	.51926	.50820

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.5951	53.495	1.0440	20.656	.50873	.52095	F 6.0751	.51654	1.0257	1.0300	-.00396	.97297
Stddev	.0002	.060	.0030	.006	.00005	.00712	.0510	.00435	.0041	.0082	.00190	.01103
%RSD	.00862	.11132	.28743	.02746	.01057	1.3677	.83865	.84206	.40118	.79570	48.038	1.1332

#1	2.5950	53.537	1.0419	20.652	.50877	.52599	6.1111	.51962	1.0287	1.0358	-.00530	.98077
#2	2.5953	53.453	1.0462	20.660	.50870	.51591	6.0391	.51347	1.0228	1.0242	-.00261	.96518

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97709	5.0923	10.897	1.0380	.50850	.00610	.50413	1.0530	-.11582	.51152	.51292	.51772
Stddev	.00413	.0020	.004	.0110	.00012	.00114	.00024	.0005	.02842	.00198	.00208	.00255
%RSD	.42240	.03989	.03989	1.0613	.02338	18.621	.04769	.04436	24.537	.38771	.40549	.49281

#1	.98001	5.0908	10.894	1.0458	.50858	.00690	.50396	1.0533	-.13592	.51292	.51145	.51953
#2	.97417	5.0937	10.901	1.0302	.50842	.00530	.50430	1.0527	-.09573	.51012	.51439	.51592

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4064.9	47139.	3461.8
Stddev	10.3	133.	5.2
%RSD	.25300	.28284	.15056

#1	4057.6	47045.	3465.5
#2	4072.1	47233.	3458.1

Sample Name: CCB Acquired: 5/13/2019 17:30:36 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoades Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00160	-.00097	-.00424	.00247	-.00030	.00005	-.00126	-.00568	.00002	.00027	.00018	-.00085
Stddev	.00008	.00013	.00124	.00042	.00018	.00012	.00034	.00861	.00001	.00058	.00010	.00029
%RSD	5.1304	13.041	29.258	17.018	61.814	263.02	27.117	151.51	23.893	218.14	52.835	33.948
#1	.00155	-.00105	-.00512	.00217	-.00043	.00013	-.00102	-.01177	.00002	-.00014	.00011	-.00105
#2	.00166	-.00088	-.00336	.00277	-.00017	-.00004	-.00150	.00041	.00003	.00068	.00025	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01131	.15982	.00094	-.00772	.00004	.00056	W .47449	-.00059	-.00615	-.00258	.00071	.00003
Stddev	.00646	.00972	.00020	.00379	.00000	.00044	.00157	.00023	.00003	.00085	.00396	.00324
%RSD	57.075	6.0808	21.747	49.121	10.852	78.691	.33103	39.448	.50660	33.142	558.54	11540.
#1	.00675	.16669	.00080	-.01040	.00004	.00025	.47560	-.00043	-.00618	-.00197	-.00209	.00232
#2	.01588	.15294	.00108	-.00504	.00004	.00087	.47338	-.00076	-.00613	-.00318	.00351	-.00226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							.35000					
Low Limit							-.35000					
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00278	.02144	.04589	-.00040	.00012	.00329	-.00075	-.00223	-.07010	-.00016	-.00009	-.00159
Stddev	.00373	.02827	.06050	.00031	.00001	.00097	.00013	.00210	.00031	.00067	.00022	.00063
%RSD	134.07	131.86	131.86	76.737	9.5692	29.586	16.836	94.201	.44735	422.88	257.51	39.783
#1	.00014	.04143	.08867	-.00018	.00012	.00398	-.00066	-.00372	-.07032	-.00063	.00007	-.00204
#2	.00542	.00145	.00310	-.00062	.00013	.00260	-.00084	-.00075	-.06988	.00032	-.00024	-.00114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4073.1	47565.	3479.0									
Stddev	.8	39.	18.5									
%RSD	.01945	.08215	.53232									
#1	4072.6	47593.	3492.1									
#2	4073.7	47538.	3465.9									

Sample Name: CCVL-5699390 Acquired: 5/13/2019 17:33:11 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01091	.11916	.01101	.09793	.01013	.00089	.10482	.21627	.00474	.01025	.01056	.01374
Stddev	.00063	.00114	.00232	.00003	.00003	.00013	.00453	.00353	.00012	.00052	.00026	.00041
%RSD	5.8097	.96044	21.070	.03574	.28582	14.635	4.3219	1.6322	2.5352	5.0290	2.4904	3.0080
#1	.01046	.11997	.01265	.09795	.01011	.00099	.10802	.21877	.00466	.01061	.01074	.01344
#2	.01136	.11835	.00937	.09790	.01015	.00080	.10161	.21377	.00483	.00988	.01037	.01403
Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.11123	3.2858	.01827	.19914	.01029	.02000	F 1.4601	.04099	2.9048	.00742	.08366	.02146
Stddev	.00016	.0292	.00280	.00621	.00011	.00012	.0030	.00022	.0291	.00113	.00751	.00053
%RSD	.14531	.88771	15.308	3.1165	1.1092	.58257	.20597	.52527	1.0004	15.213	8.9715	2.4620
#1	.11112	3.3064	.01629	.19475	.01037	.01991	1.4622	.04084	2.9254	.00662	.08897	.02184
#2	.11135	3.2652	.02024	.20352	.01021	.02008	1.4580	.04114	2.8843	.00822	.07836	.02109
Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail 1.0000 30.000%	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02049	.54200	1.1599	.10078	.01003	.01606	.00896	.01316	F -.01280	.00987	.02142	.01175
Stddev	.00791	.03724	.0797	.00185	.00003	.00087	.00013	.00169	.04516	.00047	.00009	.00025
%RSD	38.597	6.8707	6.8707	1.8329	.27348	5.4251	1.4492	12.867	352.91	4.7569	.42867	2.1170
#1	.02608	.51567	1.1035	.10209	.01001	.01544	.00905	.01436	-.04473	.00954	.02149	.01193
#2	.01489	.56833	1.2162	.09948	.01005	.01668	.00887	.01196	.01914	.01021	.02136	.01158
Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail .06000 -30.000%	Chk Pass	Chk Pass	Chk Pass
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4127.8	48032.	3486.9									
Stddev	9.0	20.	13.5									
%RSD	.21844	.04190	.38804									
#1	4134.2	48018.	3477.3									
#2	4121.5	48046.	3496.5									

Sample Name: 280-123355-B-2-A Acquired: 5/13/2019 17:35:44 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457389 6010B (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00322	.12956	-.00361	.11385	.08621	-.00009	-.00339	158.15	.00015
Stddev	.00050	.00016	.00391	.00093	.00094	.00003	.00514	.19	.00022
%RSD	15.635	.12639	108.09	.81336	1.0854	37.629	151.92	.11803	149.19

#1	.00358	.12967	-.00638	.11450	.08555	-.00007	-.00702	158.28	-.00001
#2	.00287	.12944	-.00085	.11319	.08687	-.00012	.00025	158.02	.00031

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00059	.00060	.02676	4.9753	.00170	27.678	.24687	.00103
Stddev	.00056	.00048	.00011	.00225	.0039	.00008	.015	.00003	.00031
%RSD	142.59	82.232	18.695	8.4081	.07908	4.5508	.05257	.01054	30.566

#1	-.00078	.00025	.00052	.02517	4.9725	.00175	27.689	.24685	.00081
#2	.00000	.00093	.00068	.02836	4.9780	.00164	27.668	.24689	.00125

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.222	.00212	.05722	-.00312	25.659	.00005	.00004	8.2759	17.710
Stddev	.450	.00021	.00045	.00007	.251	.00094	.00349	.0222	.048
%RSD	2.6144	9.7107	.78434	2.1861	.97757	1815.3	9019.6	.26886	.26886

#1	16.904	.00197	.05690	-.00307	25.837	-.00061	-.00243	8.2601	17.677
#2	17.541	.00226	.05754	-.00317	25.482	.00072	.00250	8.2916	17.744

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00143	.40403	-.00077	-.00039	-.00302	2.2092	.00027	.00593	-.00275
Stddev	.00101	.00007	.00247	.00026	.00052	.0175	.00081	.00060	.00275
%RSD	70.885	.01624	319.58	68.249	17.293	.79403	299.97	10.091	99.980

#1	-.00215	.40399	.00097	-.00057	-.00265	2.2216	-.00030	.00636	-.00081
#2	-.00071	.40408	-.00252	-.00020	-.00339	2.1968	.00084	.00551	-.00470

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3960.5	46505.	3513.9
Stddev	9.1	116.	24.2
%RSD	.23024	.25046	.68810

#1	3954.0	46422.	3496.8
#2	3966.9	46587.	3531.0

Sample Name: 280-123355-B-3-A Acquired: 5/13/2019 17:38:16 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457389 6010B (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00138	.16141	.01247	.13155	.56809	.00005	-.00554	161.55	.00014
Stddev	.00015	.00292	.00471	.00178	.00024	.00002	.00207	.27	.00013
%RSD	10.553	1.8118	37.768	1.3535	.04179	37.390	37.363	.16597	94.277

#1	.00148	.16348	.00914	.13281	.56825	.00007	-.00700	161.36	.00005
#2	.00128	.15935	.01580	.13029	.56792	.00004	-.00408	161.74	.00023

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.00014	.00010	29.644	3.1665	-.00266	29.646	3.7966	-.00040
Stddev	.00012	.00012	.00101	.023	.1152	.00185	.016	.0052	.00013
%RSD	20.150	89.317	1031.4	.07836	3.6373	69.762	.05403	.13678	33.050

#1	.00065	.00022	-.00061	29.628	3.2479	-.00397	29.635	3.7929	-.00030
#2	.00049	.00005	.00081	29.661	3.0850	-.00135	29.658	3.8002	-.00049

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.831	.00052	1.5071	-.00348	5.8556	.00002	-.00217	13.239	28.331
Stddev	.222	.00016	.0177	.00318	.0368	.00224	.00529	.010	.021
%RSD	1.3162	30.131	1.1743	91.215	.62846	10153.	243.92	.07370	.07370

#1	16.674	.00063	1.5196	-.00573	5.8816	-.00156	-.00591	13.232	28.316
#2	16.987	.00041	1.4946	-.00124	5.8296	.00161	.00157	13.246	28.346

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00221	.36205	.00216	-.00079	-.00335	-.09858	.00027	.00604	-.00231
Stddev	.00073	.00004	.00156	.00101	.00256	.00680	.00026	.00041	.00335
%RSD	33.142	.01005	72.181	128.80	76.514	6.9017	94.213	6.8093	145.08

#1	-.00169	.36203	.00327	-.00150	-.00516	-.10339	.00009	.00575	.00006
#2	-.00273	.36208	.00106	-.00007	-.00154	-.09377	.00046	.00633	-.00467

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3988.2	46667.	3505.9
Stddev	4.4	134.	16.1
%RSD	.11116	.28748	.45820

#1	3985.0	46762.	3494.6
#2	3991.3	46572.	3517.3

Sample Name: 280-123355-B-4-A Acquired: 5/13/2019 17:40:47 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457389 6010B (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00206	.00213	-.00326	.13364	.16173	.00006	-.00639	129.04	.00016
Stddev	.00031	.00078	.00004	.00096	.00069	.00016	.00030	.68	.00020
%RSD	15.074	36.620	1.2050	.71929	.42700	275.26	4.6203	.53079	130.72

#1	.00228	.00268	-.00324	.13432	.16124	-.00005	-.00618	128.56	.00001
#2	.00184	.00158	-.00329	.13296	.16222	.00017	-.00660	129.53	.00030

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00067	-.00080	2.8652	4.4747	.01239	34.127	.17330	.00092
Stddev	.00017	.00039	.00054	.0074	.0156	.00141	.047	.00020	.00014
%RSD	35.392	58.434	67.294	.25721	.34763	11.413	.13690	.11414	14.798

#1	.00036	.00039	-.00118	2.8600	4.4637	.01339	34.094	.17344	.00083
#2	.00061	.00094	-.00042	2.8705	4.4857	.01139	34.160	.17316	.00102

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.587	.00195	.01799	-.00293	15.341	-.00166	-.00297	9.0159	19.294
Stddev	.207	.00029	.00248	.00138	.205	.00123	.00216	.0305	.065
%RSD	1.4185	14.808	13.774	47.185	1.3339	74.343	72.827	.33781	.33781

#1	14.441	.00215	.01624	-.00391	15.486	-.00253	-.00144	8.9943	19.248
#2	14.733	.00174	.01974	-.00195	15.196	-.00079	-.00450	9.0374	19.340

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00174	.43056	.00209	-.00010	-.00274	.16668	-.00029	.00474	-.00059
Stddev	.00021	.00263	.00082	.00003	.00315	.06477	.00081	.00038	.00066
%RSD	12.137	.61054	39.096	28.324	114.75	38.857	283.52	7.9486	111.73

#1	-.00189	.42870	.00267	-.00012	-.00497	.21248	.00029	.00447	-.00106
#2	-.00159	.43242	.00151	-.00008	-.00052	.12089	-.00086	.00500	-.00012

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3955.8	46482.	3452.4
Stddev	13.4	162.	29.6
%RSD	.33941	.34902	.85689

#1	3965.3	46597.	3473.3
#2	3946.3	46367.	3431.4

Sample Name: 280-123355-B-5-A Acquired: 5/13/2019 17:43:18 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457389 6010B (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00266	-.00155	-.00541	.09620	.12909	-.00001	-.00961	194.56	.00033
Stddev	.00042	.00086	.00030	.00096	.00073	.00028	.00153	.60	.00027
%RSD	15.871	55.345	5.5589	1.0023	.56810	3572.5	15.951	.31088	81.505

#1	.00296	-.00216	-.00520	.09688	.12961	.00019	-.01070	194.99	.00052
#2	.00236	-.00094	-.00562	.09552	.12858	-.00020	-.00853	194.13	.00014

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00042	.00048	.00087	.05514	1.3297	.02103	41.311	.11826	.00041
Stddev	.00004	.00034	.00118	.00446	.1144	.00216	.067	.00057	.00039
%RSD	9.6728	70.661	134.86	8.0968	8.6068	10.277	.16176	.47826	93.883

#1	-.00045	.00024	.00004	.05830	1.2487	.01950	41.359	.11786	.00069
#2	-.00039	.00071	.00170	.05198	1.4106	.02256	41.264	.11866	.00014

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.434	.00176	.02593	-.00352	39.600	.00208	-.00109	10.216	21.861
Stddev	.343	.00016	.00101	.00058	.121	.00295	.00274	.021	.044
%RSD	2.0880	8.8366	3.9113	16.378	.30591	141.34	251.80	.20290	.20290

#1	16.677	.00165	.02665	-.00311	39.686	.00417	-.00303	10.201	21.830
#2	16.192	.00187	.02522	-.00393	39.514	.00000	.00085	10.230	21.893

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00198	.53992	.00046	-.00024	-.00382	1.2040	-.00079	.00223	.00017
Stddev	.00122	.00111	.00123	.00026	.00259	.0224	.00028	.00005	.00044
%RSD	61.495	.20528	266.40	108.29	67.787	1.8579	35.410	2.0881	268.08

#1	-.00285	.54070	.00133	-.00042	-.00199	1.2199	-.00059	.00226	-.00015
#2	-.00112	.53913	-.00041	-.00006	-.00565	1.1882	-.00099	.00219	.00048

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3845.5	45205.	3463.7
Stddev	19.7	135.	40.9
%RSD	.51183	.29879	1.1804

#1	3831.6	45300.	3492.6
#2	3859.5	45109.	3434.8

Sample Name: 280-123355-B-6-A Acquired: 5/13/2019 17:45:50 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457389 6010B (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00229	-.00030	-.00287	.12528	.08366	-.00018	-.00681	144.88	.00016
Stddev	.00030	.00002	.00166	.00129	.00084	.00009	.00555	.10	.00015
%RSD	13.221	5.9660	57.883	1.0262	1.0043	50.430	81.464	.06778	92.768

#1	.00207	-.00031	-.00405	.12619	.08307	-.00024	-.00289	144.81	.00026
#2	.00250	-.00028	-.00170	.12437	.08425	-.00011	-.01074	144.95	.00005

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.00038	-.00024	.10539	3.0546	.01099	35.415	.03799	.00057
Stddev	.00004	.00022	.00004	.00290	.0642	.00147	.055	.00000	.00072
%RSD	5.8685	57.150	17.562	2.7551	2.1024	13.353	.15419	.01297	126.88

#1	.00073	.00022	-.00021	.10744	3.0092	.01202	35.376	.03799	.00108
#2	.00079	.00053	-.00027	.10334	3.1000	.00995	35.454	.03798	.00006

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.143	.04414	.02069	-.00397	17.313	-.00114	.00096	10.655	22.802
Stddev	.343	.00010	.00198	.00058	.128	.00127	.00310	.045	.097
%RSD	1.3653	.21535	9.5654	14.735	.73690	111.01	323.73	.42409	.42409

#1	24.900	.04420	.02209	-.00355	17.403	-.00204	-.00124	10.623	22.733
#2	25.385	.04407	.01929	-.00438	17.223	-.00025	.00315	10.687	22.870

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00373	.38395	.00343	-.00070	-.00380	.04820	-.00084	.00139	-.00444
Stddev	.00081	.00083	.00125	.00028	.00198	.02112	.00044	.00047	.00261
%RSD	21.854	.21498	36.497	40.064	52.239	43.813	52.411	33.616	58.723

#1	-.00431	.38337	.00431	-.00050	-.00239	.03327	-.00053	.00173	-.00260
#2	-.00315	.38454	.00254	-.00090	-.00520	.06313	-.00115	.00106	-.00628

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3883.7	45584.	3442.9
Stddev	8.9	34.	1.7
%RSD	.22998	.07485	.05020

#1	3890.1	45560.	3444.1
#2	3877.4	45608.	3441.7

Sample Name: 280-123355-B-7-A Acquired: 5/13/2019 17:48:21 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457389 6010B (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00231	-.00011	-.00683	.09047	.11816	.00009	-.00656	138.38	.00016
Stddev	.00037	.00030	.00075	.00016	.00027	.00001	.00155	.13	.00004
%RSD	16.103	276.76	11.039	.17786	.23183	10.811	23.549	.09219	23.046

#1	.00257	-.00033	-.00630	.09058	.11835	.00008	-.00765	138.47	.00014
#2	.00205	.00011	-.00736	.09035	.11797	.00010	-.00547	138.29	.00019

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.00025	-.00088	.03202	1.4227	.01318	23.233	.00535	.00064
Stddev	.00018	.00000	.00018	.00544	.0626	.00109	.036	.00005	.00024
%RSD	59.991	1.4365	20.228	16.999	4.3986	8.3040	.15410	.98884	37.288

#1	-.00017	.00025	-.00076	.03587	1.3784	.01396	23.259	.00531	.00081
#2	-.00042	.00024	-.00101	.02817	1.4669	.01241	23.208	.00539	.00047

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.3565	.00107	.04976	-.00257	24.519	-.00134	.00152	10.732	22.966
Stddev	.0032	.00033	.00008	.00030	.049	.00060	.00187	.027	.058
%RSD	.03431	30.648	.15509	11.868	.19817	44.754	123.08	.25169	.25169

#1	9.3588	.00130	.04970	-.00279	24.554	-.00177	.00284	10.713	22.925
#2	9.3542	.00083	.04981	-.00235	24.485	-.00092	.00020	10.751	23.007

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00220	.36681	.00198	-.00050	-.00336	.03380	.00046	.00135	-.00168
Stddev	.00084	.00041	.00045	.00054	.00049	.04059	.00015	.00031	.00136
%RSD	38.361	.11052	22.833	109.01	14.458	120.10	33.289	22.780	80.764

#1	-.00160	.36652	.00166	-.00088	-.00302	.06250	.00056	.00113	-.00264
#2	-.00280	.36709	.00230	-.00011	-.00371	.00510	.00035	.00157	-.00072

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3999.4	47085.	3518.0
Stddev	21.7	59.	19.2
%RSD	.54299	.12469	.54533

#1	4014.7	47043.	3504.5
#2	3984.0	47126.	3531.6

Sample Name: 280-123355-B-9-A Acquired: 5/13/2019 17:50:55 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457389 6010B (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00140	.00155	-.00562	.02766	.20332	-.00002	-.00545	129.82	.00033
Stddev	.00023	.00011	.00188	.00008	.00056	.00009	.00188	.07	.00006
%RSD	16.412	7.1799	33.409	.29775	.27515	465.13	34.517	.05695	18.855

#1	.00124	.00147	-.00429	.02760	.20372	.00004	-.00678	129.77	.00029
#2	.00156	.00163	-.00694	.02772	.20293	-.00008	-.00412	129.88	.00038

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00035	-.00065	.01892	1.9044	.00707	16.854	.04955	.00032
Stddev	.00010	.00019	.00043	.00436	.0116	.00228	.038	.00008	.00015
%RSD	131.93	55.682	66.995	23.070	.61011	32.303	.22402	.17061	46.376

#1	-.00001	.00021	-.00034	.02200	1.9126	.00869	16.881	.04949	.00022
#2	-.00015	.00048	-.00096	.01583	1.8962	.00546	16.828	.04961	.00043

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.2358	.00056	.08586	-.00375	5.4015	-.00060	.00517	8.5565	18.311
Stddev	.0207	.00003	.00339	.00106	.0553	.00181	.00240	.0199	.043
%RSD	.48919	6.0125	3.9532	28.228	1.0230	301.17	46.423	.23267	.23267

#1	4.2504	.00054	.08827	-.00300	5.4406	-.00188	.00686	8.5424	18.281
#2	4.2211	.00059	.08346	-.00450	5.3624	.00068	.00347	8.5705	18.341

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00115	.42589	.00364	-.00044	-.00330	-.11178	.00048	.00222	-.00375
Stddev	.00145	.00116	.00151	.00055	.00057	.02307	.00053	.00041	.00102
%RSD	125.99	.27312	41.508	125.18	17.405	20.641	109.43	18.629	27.220

#1	-.00218	.42507	.00471	-.00005	-.00290	-.12809	.00086	.00251	-.00448
#2	-.00013	.42671	.00257	-.00083	-.00371	-.09546	.00011	.00193	-.00303

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3953.1	46716.	3459.1
Stddev	.8	70.	.4
%RSD	.02127	.14899	.01112

#1	3953.7	46667.	3459.4
#2	3952.5	46765.	3458.8

Sample Name: 280-123355-B-10-A Acquired: 5/13/2019 17:53:27 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457389 6010B (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00205	.00145	-.00314	.07749	.18752	.00025	-.00928	102.16	.00037
Stddev	.00033	.00078	.00506	.00085	.00030	.00018	.00196	.11	.00024
%RSD	15.888	53.517	160.99	1.0977	.15799	72.655	21.072	.11072	64.073

#1	.00182	.00090	-.00672	.07810	.18773	.00038	-.00790	102.24	.00020
#2	.00228	.00200	.00043	.07689	.18731	.00012	-.01066	102.08	.00054

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.00514	.00056	.01006	4.5214	.00774	41.664	.00049	.00593
Stddev	.00011	.00031	.00035	.00216	.0307	.00126	.036	.00003	.00032
%RSD	29.658	6.0516	63.381	21.490	.67986	16.269	.08685	6.8644	5.4166

#1	-.00043	.00536	.00031	.01159	4.5431	.00685	41.690	.00052	.00616
#2	-.00028	.00492	.00081	.00853	4.4997	.00863	41.639	.00047	.00571

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.501	.01269	.03416	-.00155	9.8342	-.00202	-.00187	6.6859	14.308
Stddev	.418	.00019	.00243	.00020	.0799	.00231	.00942	.0227	.049
%RSD	2.3896	1.4853	7.1273	13.217	.81258	114.45	504.02	.33905	.33905

#1	17.206	.01282	.03244	-.00140	9.8907	-.00038	-.00853	6.6698	14.273
#2	17.797	.01255	.03588	-.00169	9.7777	-.00365	.00479	6.7019	14.342

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00251	.37314	.00328	-.00042	-.00304	-.09815	.00002	.00550	-.00143
Stddev	.00007	.00020	.00137	.00026	.00309	.01486	.00072	.00056	.00113
%RSD	2.7127	.05433	41.883	62.981	101.78	15.141	3605.7	10.258	78.956

#1	-.00246	.37328	.00231	-.00061	-.00522	-.08764	.00053	.00510	-.00223
#2	-.00255	.37300	.00425	-.00023	-.00085	-.10866	-.00049	.00590	-.00063

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3903.1	46008.	3441.9
Stddev	9.4	416.	6.1
%RSD	.24067	.90389	.17710

#1	3909.7	46302.	3446.2
#2	3896.4	45714.	3437.6

Sample Name: CCVH-5690583 Acquired: 5/13/2019 17:55:59 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00321	51.849	-.00346	.00463	.00180	.00122	.99879	.03415	.00092	.00314	.00151	.01343	52.610
Stddev	.00015	.151	.00395	.00033	.00070	.00001	.00959	.00188	.00065	.00040	.00012	.00080	.547
%RSD	4.5555	.29121	114.25	7.0926	39.088	.67833	.96034	5.5126	70.377	12.569	8.0685	5.9875	1.0401

#1	.00311	51.956	-.00625	.00486	.00130	.00123	1.0056	.03548	.00046	.00342	.00142	.01400	52.997
#2	.00332	51.743	-.00066	.00439	.00230	.00122	.99201	.03282	.00138	.00286	.00159	.01286	52.223

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.29535	-.00040	.00841	.00404	.00016	264.60	.00410	.00157	.00489	4.7420	.00414	-.00098	.03939
Stddev	.03243	.00410	.00096	.00000	.00006	1.65	.00091	.00018	.00268	.0478	.00194	.00194	.02922
%RSD	10.981	1019.8	11.410	.02975	38.347	.62268	22.087	11.346	54.748	1.0076	46.947	198.07	74.169

#1	.27242	-.00330	.00909	.00404	.00020	265.77	.00474	.00144	.00300	4.7758	.00276	-.00235	.01873
#2	.31829	.00250	.00773	.00404	.00012	263.44	.00346	.00169	.00678	4.7083	.00551	.00039	.06005

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08430	.00070	.00211	5.0350	-.00912	.00120	10.286	.00544	.00339	.06896
Stddev	.06253	.00006	.00018	.0000	.00043	.00057	.082	.00089	.00075	.00501
%RSD	74.169	8.9133	8.7540	.00077	4.6661	47.226	.79407	16.316	22.103	7.2601

#1	.04009	.00065	.00224	5.0350	-.00942	.00080	10.344	.00606	.00392	.07250
#2	.12852	.00074	.00198	5.0350	-.00882	.00161	10.228	.00481	.00286	.06542

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3830.1	45198.	3380.2
Stddev	99.8	8.	12.7
%RSD	2.6064	.01763	.37615

#1	3900.7	45192.	3371.2
#2	3759.5	45203.	3389.2

Sample Name: CCV-5690581 Acquired: 5/13/2019 17:58:29 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51883	F .62735	.98913	.49721	.53193	.50430	-.00433	5.3078	.50921	.52045	.53035	.51494
Stddev	.00214	.01004	.00704	.00590	.00133	.00090	.00032	.0058	.00405	.00376	.00644	.00071
%RSD	.41340	1.6003	.71188	1.1856	.24927	.17877	7.3274	.10962	.79475	.72223	1.2146	.13764

#1	.52035	.63445	.99411	.50138	.53100	.50494	-.00455	5.3036	.51207	.52311	.53490	.51544
#2	.51732	.62025	.98415	.49304	.53287	.50366	-.00410	5.3119	.50635	.51779	.52579	.51444

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.6177	53.593	1.0477	20.846	.51257	.52600	F 6.0376	.52052	1.0307	1.0366	-.00227	.97499
Stddev	.0039	.119	.0020	.001	.00073	.00500	.0227	.00367	.0114	.0117	.00025	.00803
%RSD	.14786	.22297	.18919	.00330	.14337	.94981	.37636	.70548	1.1076	1.1248	10.794	.82341

#1	2.6150	53.508	1.0463	20.847	.51205	.52953	6.0536	.52311	1.0387	1.0449	-.00245	.98067
#2	2.6205	53.677	1.0491	20.846	.51309	.52246	6.0215	.51792	1.0226	1.0284	-.00210	.96932

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97371	5.0708	10.852	1.0489	.50966	.00728	.50730	1.0643	-.02650	.51602	.51995	.51791
Stddev	.01241	.0315	.067	.0126	.00035	.00189	.00093	.0032	.01625	.00037	.00072	.00122
%RSD	1.2748	.62184	.62184	1.2020	.06945	25.968	.18240	.30212	61.297	.07164	.13936	.23467

#1	.98248	5.0485	10.804	1.0578	.50991	.00594	.50664	1.0666	-.01502	.51576	.51943	.51705
#2	.96493	5.0931	10.899	1.0399	.50941	.00862	.50795	1.0621	-.03799	.51628	.52046	.51877

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3995.0	46391.	3453.6
Stddev	13.6	132.	19.0
%RSD	.33996	.28422	.54981

#1	3985.4	46297.	3467.0
#2	4004.6	46484.	3440.2

Sample Name: CCB Acquired: 5/13/2019 18:00:51 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00142	-.00087	-.00287	.00020	-.00090	.00020	-.00152	.00172	-.00004	.00031	.00009	-.00135
Stddev	.00042	.00067	.00654	.00052	.00009	.00007	.00359	.00275	.00007	.00006	.00016	.00026
%RSD	29.825	77.106	228.07	257.77	9.8443	35.653	235.67	160.39	207.41	19.416	170.64	19.062

#1	.00112	-.00134	.00176	-.00017	-.00084	.00015	-.00406	.00366	-.00009	.00027	-.00002	-.00153
#2	.00172	-.00040	-.00750	.00057	-.00097	.00025	.00101	-.00023	.00002	.00035	.00021	-.00117

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00569	.07371	.00019	-.00851	.00001	.00029	W .42446	.00018	-.00467	-.00181	-.00126	.00021
Stddev	.00388	.04767	.00222	.00116	.00008	.00005	.02343	.00016	.00389	.00056	.00107	.00302
%RSD	68.149	64.680	1154.5	13.686	848.52	17.155	5.5204	90.313	83.247	31.088	84.468	1436.6

#1	.00295	.04000	.00176	-.00933	-.00005	.00032	.44103	.00029	-.00742	-.00141	-.00202	.00234
#2	.00843	.10742	-.00138	-.00769	.00007	.00025	.40789	.00006	-.00192	-.00221	-.00051	-.00192

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							.35000					
Low Limit							-.35000					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00377	.01466	.03136	-.00211	.00011	.00421	-.00087	-.00160	-.05719	.00018	-.00060	-.00445
Stddev	.00245	.01557	.03333	.00160	.00014	.00039	.00075	.00165	.02472	.00014	.00026	.00001
%RSD	64.904	106.26	106.26	75.749	121.01	9.2242	85.702	102.82	43.221	79.284	43.497	.31640

#1	.00550	.02567	.05493	-.00324	.00002	.00448	-.00140	-.00044	-.07467	.00008	-.00078	-.00444
#2	.00204	.00364	.00780	-.00098	.00021	.00393	-.00034	-.00277	-.03971	.00028	-.00041	-.00446

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4042.1	47143.	3421.1
Stddev	19.6	204.	.3
%RSD	.48540	.43222	.00865
#1	4028.2	47287.	3421.3
#2	4056.0	46999.	3420.9

Sample Name: CCVL-5699390 Acquired: 5/13/2019 18:03:26 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01125	F .15540	F .00990	.09682	.01008	.00095	.10396	.21755	.00519	.00982	.01036	.01775
Stddev	.00010	.00137	.00157	.00105	.00036	.00005	.00789	.01042	.00011	.00004	.00026	.00006
%RSD	.91916	.88070	15.867	1.0883	3.6039	5.4605	7.5858	4.7900	2.0649	.39932	2.5475	.36024
#1	.01133	.15443	.01101	.09757	.00982	.00098	.10954	.21018	.00526	.00984	.01054	.01780
#2	.01118	.15637	.00879	.09608	.01033	.00091	.09838	.22492	.00511	.00979	.01017	.01771
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.10000	.01500									
Range		30.000%	-30.000%									
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.12342	3.2199	.01891	.20181	.01056	.01991	F 1.3930	.04089	2.9120	.00798	.08778	.01573
Stddev	.00099	.0183	.00537	.00302	.00008	.00033	.0024	.00053	.0258	.00108	.01278	.00190
%RSD	.80058	.56697	28.384	1.4980	.79951	1.6730	.17384	1.2877	.88617	13.476	14.561	12.096
#1	.12412	3.2070	.01512	.20395	.01050	.02015	1.3947	.04126	2.9303	.00874	.07874	.01708
#2	.12273	3.2328	.02271	.19968	.01062	.01968	1.3913	.04051	2.8938	.00722	.09682	.01438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							1.0000					
Range							30.000%					
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02128	.55501	1.1877	.10023	.01019	.01686	.00898	.01438	F .00603	.00952	.02086	.01135
Stddev	.00341	.02375	.0508	.00168	.00005	.00143	.00000	.00132	.03745	.00043	.00003	.00409
%RSD	16.024	4.2786	4.2786	1.6734	.47523	8.4858	.04985	9.1847	620.60	4.4806	.15512	36.037
#1	.01887	.57180	1.2237	.10142	.01015	.01585	.00898	.01531	.03251	.00922	.02083	.01425
#2	.02369	.53822	1.1518	.09905	.01022	.01788	.00898	.01344	-.02045	.00983	.02088	.00846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value									.06000			
Range									-30.000%			
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4041.3	47095.	3415.6									
Stddev	10.5	313.	4.5									
%RSD	.25946	.66398	.13054									
#1	4033.9	46874.	3412.4									
#2	4048.8	47316.	3418.8									

Sample Name: 280-123355-D-11-A Acquired: 5/13/2019 18:05:59 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457389 6010B (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00154	.00012	.00071	.22870	.09442	-.00007	-.00716	133.88	.00017
Stddev	.00083	.00006	.00402	.00259	.00066	.00012	.00156	.06	.00020
%RSD	53.957	50.971	567.21	1.1311	.69682	161.35	21.719	.04359	117.38

#1	.00213	.00007	.00355	.23053	.09488	-.00016	-.00826	133.92	.00031
#2	.00095	.00016	-.00213	.22687	.09395	.00001	-.00606	133.83	.00003

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00006	.00093	.05983	4.0897	.01529	40.957	.19541	.00085
Stddev	.00005	.00017	.00024	.00435	.1802	.00028	.083	.00066	.00038
%RSD	366.71	273.97	25.838	7.2769	4.4073	1.7987	.20380	.33526	44.744

#1	.00005	-.00006	.00076	.06290	3.9623	.01510	40.898	.19495	.00112
#2	-.00002	.00018	.00110	.05675	4.2172	.01549	41.016	.19587	.00058

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.466	.00357	.03224	-.00360	26.373	.00247	-.00051	7.8648	16.831
Stddev	.488	.00056	.00377	.00223	.210	.00009	.00062	.0339	.073
%RSD	2.0778	15.743	11.687	62.109	.79598	3.5543	121.87	.43104	.43104

#1	23.811	.00396	.03491	-.00517	26.521	.00254	-.00095	7.8887	16.882
#2	23.122	.00317	.02958	-.00202	26.224	.00241	-.00007	7.8408	16.779

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00252	.44963	.00367	-.00056	-.00260	.31049	-.00043	.00172	-.00159
Stddev	.00064	.00022	.00028	.00020	.00152	.01612	.00022	.00014	.00063
%RSD	25.466	.04892	7.6239	35.371	58.511	5.1924	50.725	8.4065	39.778

#1	-.00206	.44978	.00387	-.00042	-.00152	.32189	-.00028	.00162	-.00115
#2	-.00297	.44947	.00347	-.00070	-.00367	.29909	-.00059	.00182	-.00204

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3792.2	45047.	3390.0
Stddev	.5	367.	11.4
%RSD	.01394	.81548	.33542

#1	3792.6	45306.	3398.1
#2	3791.9	44787.	3382.0

Sample Name: 280-123355-D-13-A Acquired: 5/13/2019 18:08:33 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457389 6010B (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00187	.00117	.00156	.03302	.16610	-.00015	-.00825	115.66	.00002
Stddev	.00015	.00018	.00548	.00012	.00052	.00008	.00563	.09	.00011
%RSD	8.1683	15.247	351.44	.35902	.31596	53.780	68.254	.07516	513.25

#1	.00176	.00130	-.00232	.03294	.16647	-.00009	-.00427	115.72	.00010
#2	.00198	.00104	.00543	.03310	.16573	-.00020	-.01223	115.59	-.00006

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00022	-.00013	.01454	1.8957	.00891	17.510	.13772	.00056
Stddev	.00007	.00018	.00013	.00301	.0941	.00210	.019	.00012	.00040
%RSD	17.537	83.014	98.864	20.698	4.9657	23.553	.10683	.08784	71.014

#1	-.00044	.00009	-.00022	.01667	1.8291	.00742	17.523	.13781	.00084
#2	-.00034	.00035	-.00004	.01241	1.9622	.01039	17.496	.13764	.00028

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.1849	.00093	.08046	-.00400	7.1116	.00103	.00197	8.1683	17.480
Stddev	.0089	.00036	.00298	.00117	.0505	.00019	.00438	.0019	.004
%RSD	.14434	38.612	3.7051	29.204	.70980	18.637	222.33	.02388	.02388

#1	6.1785	.00068	.08257	-.00317	7.1473	.00089	.00507	8.1697	17.483
#2	6.1912	.00119	.07835	-.00482	7.0759	.00116	-.00113	8.1670	17.477

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00217	.38007	.00296	-.00022	-.00406	-.10189	.00048	.00150	-.00478
Stddev	.00270	.00033	.00043	.00000	.00301	.04441	.00032	.00033	.00334
%RSD	124.66	.08765	14.491	1.4384	74.136	43.586	66.866	21.904	69.807

#1	-.00026	.37984	.00266	-.00022	-.00193	-.07049	.00025	.00127	-.00242
#2	-.00408	.38031	.00327	-.00022	-.00620	-.13330	.00071	.00174	-.00714

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3870.7	45597.	3410.5
Stddev	9.0	378.	7.1
%RSD	.23219	.82986	.20863

#1	3864.4	45864.	3415.6
#2	3877.1	45329.	3405.5

Sample Name: 280-123355-B-14-A Acquired: 5/13/2019 18:11:06 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457389 6010B (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00241	.00488	-.00263	.25093	.07994	.00026	-.00902	84.629	.00025
Stddev	.00009	.00074	.00234	.00265	.00057	.00007	.00198	.071	.00005
%RSD	3.5577	15.110	88.996	1.0551	.70886	27.713	21.993	.08404	19.280

#1	.00235	.00436	-.00097	.25280	.08034	.00031	-.01042	84.679	.00029
#2	.00248	.00540	-.00428	.24905	.07954	.00021	-.00761	84.579	.00022

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.00021	-.00013	.05790	5.9077	.00357	40.835	.00215	.00015
Stddev	.00019	.00008	.00137	.00627	.0452	.00077	.067	.00001	.00023
%RSD	59.549	38.263	1039.0	10.837	.76477	21.627	.16318	.38556	157.61

#1	-.00019	.00015	-.00110	.06233	5.9397	.00412	40.882	.00215	.00031
#2	-.00046	.00027	.00084	.05346	5.8758	.00302	40.788	.00216	-.00002

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.4870	-.00007	.00608	-.00470	14.600	-.00093	.00171	4.6658	9.9848
Stddev	.0011	.00053	.00032	.00040	.137	.00060	.00242	.0012	.0025
%RSD	.01185	806.89	5.2019	8.5442	.93497	64.103	141.58	.02474	.02474

#1	9.4862	.00031	.00630	-.00498	14.697	-.00051	-.00000	4.6650	9.9831
#2	9.4878	-.00044	.00585	-.00441	14.504	-.00136	.00341	4.6666	9.9866

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00093	1.0937	.00044	-.00060	-.00384	-.10226	-.00044	.00538	-.00253
Stddev	.00030	.0004	.00096	.00020	.00294	.02248	.00043	.00006	.00116
%RSD	32.755	.04007	217.03	33.993	76.589	21.980	97.740	1.1187	45.629

#1	-.00072	1.0940	.00112	-.00045	-.00593	-.11816	-.00075	.00542	-.00172
#2	-.00115	1.0934	-.00024	-.00074	-.00176	-.08637	-.00014	.00533	-.00335

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3799.4	45050.	3333.2
Stddev	34.5	72.	.3
%RSD	.90910	.16053	.00786

#1	3823.8	45101.	3333.0
#2	3775.0	44999.	3333.4

Sample Name: 280-123355-B-15-A Acquired: 5/13/2019 18:13:39 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457389 6010B (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00227	.00243	.00037	.14341	.04989	.00008	-.00909	66.645	.00052
Stddev	.00161	.00001	.00080	.00176	.00027	.00007	.00059	.032	.00049
%RSD	70.840	.39981	216.05	1.2287	.55036	88.939	6.5088	.04856	93.484

#1	.00341	.00244	-.00020	.14466	.05009	.00014	-.00951	66.668	.00018
#2	.00113	.00243	.00094	.14217	.04970	.00003	-.00867	66.622	.00087

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	.00043	.00031	.02344	3.4056	.00205	37.990	.00041	.00371
Stddev	.00054	.00005	.00060	.00335	.0694	.00024	.007	.00001	.00021
%RSD	253.33	11.721	196.49	14.291	2.0376	11.529	.01856	2.4749	5.7502

#1	.00017	.00047	.00073	.02580	3.4547	.00188	37.995	.00042	.00356
#2	-.00059	.00040	-.00012	.02107	3.3565	.00222	37.985	.00040	.00387

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	36.380	.00369	.25566	-.00117	24.022	-.00076	-.00206	4.6000	9.8441
Stddev	.446	.00005	.00372	.00067	.341	.00037	.00644	.0073	.0156
%RSD	1.2271	1.4849	1.4550	57.005	1.4178	48.939	312.30	.15822	.15822

#1	36.065	.00365	.25829	-.00165	24.263	-.00050	-.00661	4.5949	9.8330
#2	36.696	.00373	.25303	-.00070	23.781	-.00103	.00249	4.6052	9.8551

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00294	.48149	.00198	-.00034	-.00280	-.10523	-.00030	.00216	-.00412
Stddev	.00056	.00040	.00091	.00028	.00021	.01449	.00020	.00004	.00257
%RSD	19.064	.08223	46.228	80.200	7.6408	13.767	65.350	1.9232	62.323

#1	-.00254	.48121	.00262	-.00015	-.00295	-.11547	-.00016	.00213	-.00230
#2	-.00334	.48177	.00133	-.00054	-.00265	-.09498	-.00044	.00219	-.00594

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3762.8	44019.	3238.0
Stddev	3.9	175.	10.2
%RSD	.10426	.39833	.31608

#1	3765.5	44143.	3230.8
#2	3760.0	43895.	3245.2

Sample Name: 280-123355-B-16-A Acquired: 5/13/2019 18:16:14 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457389 6010B (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00220	.00300	-.00003	.17805	.14223	-.00008	-.00611	101.40	.00050
Stddev	.00026	.00007	.00286	.00181	.00064	.00009	.00020	.04	.00021
%RSD	11.735	2.4159	11397.	1.0179	.44679	110.75	3.3144	.03637	41.765

#1	.00202	.00295	-.00205	.17934	.14267	-.00014	-.00625	101.42	.00065
#2	.00238	.00305	.00200	.17677	.14178	-.00002	-.00596	101.37	.00035

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	-.00018	-.00052	1.0617	4.7554	.00973	30.431	.04286	.00186
Stddev	.00028	.00011	.00002	.0007	.1172	.00039	.041	.00009	.00005
%RSD	46.638	64.048	3.5721	.06791	2.4639	4.0338	.13574	.21305	2.7071

#1	.00040	-.00026	-.00051	1.0612	4.8383	.00945	30.401	.04280	.00189
#2	.00080	-.00010	-.00054	1.0622	4.6726	.01001	30.460	.04293	.00182

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.730	.00097	.01280	-.00303	16.062	.00558	-.00413	6.8691	14.700
Stddev	.674	.00049	.00139	.00124	.208	.00342	.00237	.0164	.035
%RSD	4.5759	50.531	10.824	41.034	1.2938	61.225	57.406	.23806	.23806

#1	14.254	.00062	.01378	-.00215	16.208	.00317	-.00580	6.8575	14.675
#2	15.207	.00131	.01182	-.00391	15.915	.00800	-.00245	6.8807	14.725

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00171	.49859	.00146	-.00044	-.00649	.14584	-.00029	.00924	-.00487
Stddev	.00002	.00072	.00123	.00012	.00275	.04955	.00026	.00028	.00114
%RSD	.89332	.14525	84.364	28.522	42.407	33.976	90.462	3.0077	23.441

#1	-.00169	.49808	.00233	-.00035	-.00454	.11080	-.00011	.00943	-.00567
#2	-.00172	.49910	.00059	-.00053	-.00844	.18087	-.00048	.00904	-.00406

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3805.0	44402.	3299.0
Stddev	10.9	206.	9.1
%RSD	.28581	.46281	.27619

#1	3812.7	44548.	3305.5
#2	3797.3	44257.	3292.6

Sample Name: 280-123355-D-17-A Acquired: 5/13/2019 18:18:46 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457389 6010B (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00173	.04576	.01079	.12214	.63614	-.00019	-.01335	159.00	.00057
Stddev	.00117	.00036	.00298	.00010	.00231	.00013	.00392	.45	.00012
%RSD	67.351	.78772	27.649	.08577	.36359	69.170	29.355	.28299	21.351

#1	.00255	.04602	.00868	.12206	.63450	-.00028	-.01612	158.68	.00066
#2	.00091	.04551	.01290	.12221	.63777	-.00009	-.01058	159.32	.00049

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00012	-.00015	38.829	3.9656	.00538	40.708	1.0479	.00027
Stddev	.00004	.00011	.00038	.068	.0146	.00138	.058	.0029	.00029
%RSD	18.741	89.414	257.16	.17591	.36902	25.627	.14222	.27730	108.05

#1	-.00021	.00005	-.00042	38.780	3.9552	.00635	40.749	1.0499	.00006
#2	-.00027	.00020	.00012	38.877	3.9759	.00440	40.667	1.0458	.00048

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.885	-.00031	1.5662	-.00482	.06389	-.00170	-.00147	24.154	51.689
Stddev	.637	.00022	.0086	.00107	.00513	.00017	.00151	.037	.079
%RSD	3.7731	69.547	.54968	22.140	8.0262	9.9141	103.11	.15347	.15347

#1	16.435	-.00016	1.5723	-.00407	.06751	-.00182	-.00040	24.128	51.633
#2	17.336	-.00047	1.5601	-.00558	.06026	-.00158	-.00254	24.180	51.745

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00171	.51066	.00210	-.00017	-.00533	F -.12350	-.00000	.00099	-.00077
Stddev	.00088	.00187	.00012	.00039	.00052	.05943	.00020	.00006	.00061
%RSD	51.691	.36574	5.5123	223.85	9.7178	48.123	13661.	6.0517	79.554

#1	-.00109	.50934	.00202	.00010	-.00496	-.16552	-.00014	.00095	-.00034
#2	-.00234	.51198	.00219	-.00045	-.00570	-.08147	.00014	.00103	-.00120

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3898.1	45424.	3379.9
Stddev	34.2	273.	14.8
%RSD	.87833	.60164	.43843

#1	3873.9	45231.	3369.5
#2	3922.3	45617.	3390.4

Sample Name: 280-123355-B-18-A Acquired: 5/13/2019 18:21:18 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457389 6010B (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00259	-.00185	-.00418	.08999	.10434	-.00017	-.00450	203.57	.00021
Stddev	.00053	.00008	.00751	.00095	.00147	.00000	.00127	1.21	.00012
%RSD	20.314	4.3461	179.56	1.0553	1.4066	2.5888	28.092	.59340	59.483

#1	.00296	-.00191	.00113	.09067	.10538	-.00016	-.00361	204.42	.00030
#2	.00222	-.00179	-.00950	.08932	.10330	-.00017	-.00540	202.71	.00012

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	-.00028	.00063	.03324	.86591	-.00136	34.843	.07037	-.00040
Stddev	.00036	.00008	.00080	.00391	.09188	.00264	.009	.00002	.00032
%RSD	651.78	27.246	127.49	11.752	10.611	194.98	.02517	.03207	81.161

#1	.00020	-.00033	.00119	.03601	.80094	.00051	34.849	.07039	-.00062
#2	-.00031	-.00022	.00006	.03048	.93088	-.00323	34.836	.07035	-.00017

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 10.240	.00215	.07942	-.00368	44.611	-.00215	-.00084	7.7210	16.523
Stddev	.658	.00011	.00464	.00120	.441	.00459	.00061	.0190	.041
%RSD	6.4278	4.9615	5.8405	32.717	.98832	214.08	72.382	.24544	.24544

#1	9.7745	.00208	.07614	-.00453	44.923	-.00539	-.00127	7.7344	16.552
#2	10.705	.00223	.08270	-.00283	44.300	.00110	-.00041	7.7076	16.494

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00								
Low Limit	11.000								

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00234	.48213	.00099	-.00035	-.00302	1.4402	.00107	.00337	-.00370
Stddev	.00068	.00016	.00155	.00037	.00059	.0326	.00068	.00036	.00061
%RSD	29.120	.03273	156.72	103.88	19.532	2.2617	63.288	10.715	16.428

#1	-.00186	.48224	-.00011	-.00061	-.00344	1.4172	.00059	.00363	-.00413
#2	-.00283	.48202	.00209	-.00009	-.00260	1.4632	.00155	.00312	-.00327

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3835.1	45165.	3394.7
Stddev	11.9	86.	10.8
%RSD	.31100	.19124	.31914

#1	3843.6	45226.	3387.0
#2	3826.7	45104.	3402.3

Sample Name: 280-123355-B-19-A Acquired: 5/13/2019 18:23:50 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457389 6010B (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00245	.01876	.01301	.13751	.21181	-.00002	-.00902	175.68	.00047
Stddev	.00023	.00021	.00058	.00137	.00144	.00013	.00161	.27	.00013
%RSD	9.2320	1.1199	4.4835	.99552	.67991	575.29	17.808	.15443	27.559

#1	.00229	.01861	.01260	.13848	.21283	-.00011	-.00789	175.87	.00056
#2	.00261	.01891	.01343	.13654	.21079	.00007	-.01016	175.48	.00038

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00224	.00038	-.00079	17.587	2.2897	-.00062	32.756	3.7183	-.00016
Stddev	.00016	.00031	.00131	.011	.0044	.00619	.025	.0012	.00000
%RSD	6.9072	82.286	165.73	.06017	.19038	989.77	.07494	.03124	.65376

#1	.00214	.00059	.00014	17.595	2.2928	-.00500	32.774	3.7191	-.00016
#2	.00235	.00016	-.00171	17.580	2.2866	.00375	32.739	3.7175	-.00017

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.027	.00538	.36071	-.00370	4.4996	-.00065	-.00060	14.328	30.663
Stddev	.381	.00054	.00633	.00245	.0586	.00183	.00096	.067	.144
%RSD	3.4548	10.117	1.7539	66.263	1.3031	282.57	160.75	.47089	.47089

#1	11.296	.00576	.36519	-.00197	4.5411	.00065	.00008	14.376	30.765
#2	10.758	.00499	.35624	-.00544	4.4582	-.00194	-.00128	14.281	30.561

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00209	.50713	-.00007	-.00115	-.00510	.13533	.00032	.00069	-.00301
Stddev	.00245	.00036	.00045	.00032	.00103	.03306	.00005	.00116	.00152
%RSD	117.23	.07112	648.83	28.310	20.146	24.432	14.318	167.60	50.630

#1	-.00382	.50688	-.00038	-.00138	-.00437	.15871	.00035	.00151	-.00193
#2	-.00036	.50739	.00025	-.00092	-.00582	.11195	.00029	-.00013	-.00409

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3917.9	45831.	3451.8
Stddev	4.8	72.	3.9
%RSD	.12163	.15757	.11155

#1	3914.5	45882.	3449.1
#2	3921.3	45780.	3454.5

Sample Name: 280-123355-D-20-A Acquired: 5/13/2019 18:26:21 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457389 6010B (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00282	.03429	-.00261	.07946	.14210	.00007	-.00920	151.61	.00014
Stddev	.00044	.00108	.00167	.00051	.00069	.00010	.00337	.07	.00013
%RSD	15.425	3.1354	64.139	.64480	.48439	129.16	36.598	.04598	89.989

#1	.00252	.03505	-.00379	.07982	.14161	.00001	-.01158	151.56	.00023
#2	.00313	.03353	-.00143	.07910	.14258	.00014	-.00682	151.66	.00005

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	.00035	.00074	1.1084	4.2877	.00537	23.852	.85667	.00128
Stddev	.00015	.00032	.00020	.0013	.0170	.00018	.004	.00012	.00038
%RSD	4.6696	90.497	26.851	.12014	.39745	3.4047	.01700	.01400	29.675

#1	.00323	.00013	.00060	1.1074	4.2757	.00550	23.849	.85659	.00155
#2	.00302	.00058	.00088	1.1093	4.2998	.00524	23.855	.85676	.00101

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.269	.00208	.03056	-.00289	22.108	.00049	.00465	9.8673	21.116
Stddev	.690	.00017	.00191	.00140	.201	.00226	.00185	.0121	.026
%RSD	3.5834	8.2983	6.2515	48.497	.91121	459.95	39.773	.12317	.12317

#1	18.781	.00220	.03191	-.00388	22.250	.00209	.00596	9.8759	21.135
#2	19.757	.00196	.02921	-.00190	21.966	-.00111	.00334	9.8587	21.098

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00162	.31507	.00186	.00058	-.00612	.75622	.00069	.00253	-.00335
Stddev	.00106	.00013	.00230	.00010	.00108	.01711	.00073	.00021	.00111
%RSD	65.170	.04237	123.70	16.634	17.691	2.2628	105.17	8.1799	33.195

#1	-.00237	.31516	.00023	.00051	-.00688	.76832	.00018	.00238	-.00257
#2	-.00087	.31497	.00348	.00065	-.00535	.74412	.00121	.00268	-.00414

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3889.7	45676.	3432.0
Stddev	27.1	79.	1.0
%RSD	.69596	.17231	.02781

#1	3908.8	45620.	3432.6
#2	3870.6	45731.	3431.3

Sample Name: CCVH-5690583 Acquired: 5/13/2019 18:28:52 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00415	52.162	-.00491	.00422	.00210	.00140	1.0005	.04525	.00076	.00281	.00170	.01397	53.033
Stddev	.00045	.024	.00006	.00084	.00010	.00033	.0104	.00053	.00005	.00022	.00016	.00092	.050
%RSD	10.852	.04574	1.1951	20.028	4.7242	23.958	1.0385	1.1722	7.2001	7.8435	9.2399	6.5861	.09504

#1	.00447	52.179	-.00486	.00481	.00217	.00116	1.0079	.04563	.00080	.00297	.00159	.01462	52.997
#2	.00384	52.145	-.00495	.00362	.00203	.00164	.99317	.04487	.00072	.00266	.00181	.01332	53.068

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.28987	.00008	.01156	.00418	.00076	267.11	.00438	.00180	.00335	4.8012	.00888	-.00023	.03115
Stddev	.07389	.00145	.00361	.00003	.00023	1.05	.00071	.00060	.00104	.0348	.00106	.00328	.01876
%RSD	25.489	1862.1	31.206	.59833	30.943	.39423	16.283	33.265	31.217	.72374	11.882	1444.2	60.218

#1	.34212	.00110	.00901	.00420	.00092	266.36	.00489	.00137	.00261	4.8258	.00963	-.00255	.01789
#2	.23763	-.00095	.01411	.00416	.00059	267.85	.00388	.00222	.00409	4.7766	.00814	.00209	.04442

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.06667	.00138	.00218	5.0669	-.00913	-.00058	10.257	.00514	.00358	.07220
Stddev	.04015	.00052	.00007	.0138	.00062	.00046	.113	.00020	.00005	.00169
%RSD	60.218	37.243	3.2847	.27208	6.7445	79.687	1.1038	3.8627	1.4238	2.3445

#1	.03828	.00175	.00212	5.0572	-.00956	-.00090	10.177	.00529	.00355	.07340
#2	.09506	.00102	.00223	5.0767	-.00869	-.00025	10.337	.00500	.00362	.07100

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3848.9	44959.	3323.9
Stddev	24.1	158.	.2
%RSD	.62714	.35245	.00469

#1	3831.9	45071.	3323.8
#2	3866.0	44847.	3324.0

Sample Name: CCV-5690581 Acquired: 5/13/2019 18:31:22 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51868	F .62853	.99307	.49799	.53516	.50465	-.00373	5.3097	.51088	.51963	.52755	.51596
Stddev	.00214	.00650	.00338	.00466	.00032	.00178	.00338	.0217	.00560	.00521	.00513	.00074
%RSD	.41189	1.0338	.34069	.93506	.05897	.35344	90.679	.40849	1.0961	1.0035	.97172	.14342

#1	.52019	.63312	.99547	.50128	.53494	.50339	-.00134	5.2944	.51484	.52331	.53118	.51649
#2	.51717	.62393	.99068	.49470	.53538	.50591	-.00612	5.3250	.50692	.51594	.52393	.51544

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.6014	53.901	1.0519	20.838	.51293	.52534	F 6.0153	.52016	1.0333	1.0394	.00078	.97725
Stddev	.0055	.215	.0033	.048	.00056	.00742	.0048	.00465	.0076	.0048	.00002	.00450
%RSD	.21272	.39834	.31586	.23075	.10867	1.4131	.07988	.89398	.73235	.45852	2.9389	.46081

#1	2.6053	53.749	1.0496	20.872	.51333	.53059	6.0187	.52345	1.0387	1.0428	.00077	.98043
#2	2.5975	54.052	1.0543	20.804	.51254	.52009	6.0119	.51687	1.0280	1.0361	.00080	.97406

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98223	5.1238	10.965	1.0499	.51105	.00575	.50920	1.0641	-.07029	.51654	.51791	.51976
Stddev	.00825	.0442	.095	.0102	.00192	.00079	.00037	.0076	.00416	.00202	.00134	.00911
%RSD	.84031	.86332	.86332	.97165	.37477	13.710	.07303	.71690	5.9209	.39054	.25804	1.7524

#1	.98807	5.0925	10.898	1.0571	.50969	.00630	.50946	1.0695	-.06735	.51797	.51886	.52620
#2	.97640	5.1550	11.032	1.0426	.51240	.00519	.50894	1.0587	-.07324	.51512	.51697	.51332

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4044.9	46685.	3439.9
Stddev	2.5	195.	22.1
%RSD	.06167	.41759	.64118

#1	4046.7	46823.	3455.5
#2	4043.1	46547.	3424.3

Sample Name: CCB Acquired: 5/13/2019 18:33:43 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	-.00145	-.00152	.00118	-.00042	.00002	-.00259	.00591	-.00007	.00036	.00002	-.00158	.03532
Stddev	.00008	.00017	.00141	.00033	.00020	.00006	.00395	.00118	.00006	.00016	.00028	.00050	.00122
%RSD	7.8101	11.615	92.913	27.980	48.790	244.28	152.37	19.960	74.740	44.631	1686.6	31.964	3.4596

#1	.00110	-.00157	-.00251	.00141	-.00027	-.00002	-.00539	.00508	-.00003	.00047	-.00018	-.00122	.03445
#2	.00098	-.00133	-.00052	.00095	-.00056	.00006	.00020	.00675	-.00011	.00024	.00022	-.00194	.03618

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit													
Low Limit													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.06306	.00197	-.00057	.00015	.00075	.33443	-.00046	-.00433	-.00032	.00273	.00190	.00370	.01833
Stddev	.05723	.00193	.00484	.00006	.00026	.02738	.00043	.00158	.00076	.00119	.00146	.00438	.00024
%RSD	90.752	97.955	844.12	40.242	34.168	8.1860	95.216	36.419	235.24	43.492	76.599	118.35	1.2968

#1	.02259	.00061	-.00400	.00019	.00057	.35379	-.00076	-.00322	.00022	.00356	.00293	.00680	.01850
#2	.10353	.00334	.00285	.00011	.00094	.31508	-.00015	-.00545	-.00086	.00189	.00087	.00060	.01816

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit													
Low Limit													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03922	-.00278	-.00002	.00308	-.00073	-.00075	-.05624	.00011	-.00054	-.00529
Stddev	.00051	.00065	.00016	.00022	.00004	.00103	.01600	.00102	.00004	.00066
%RSD	1.2968	23.219	831.13	7.1834	5.9768	137.34	28.454	952.51	8.1438	12.538

#1	.03958	-.00324	.00010	.00324	-.00076	-.00002	-.06756	.00083	-.00057	-.00575
#2	.03886	-.00233	-.00014	.00293	-.00070	-.00148	-.04492	-.00061	-.00050	-.00482

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4065.4	47607.	3439.2
Stddev	.1	7.	14.1
%RSD	.00166	.01441	.41103

#1	4065.4	47611.	3429.2
#2	4065.3	47602.	3449.2

Sample Name: CCVL-5699390 Acquired: 5/13/2019 18:36:18 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoadesc Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01168	.12041	F .00817	.09754	.00992	.00106	.10111	.21807	.00505	.00961	F .01319	.01379
Stddev	.00082	.00252	.00243	.00099	.00082	.00026	.00383	.00164	.00005	.00029	.00024	.00193
%RSD	7.0576	2.0946	29.715	1.0150	8.2428	24.381	3.7878	.75177	.94819	3.0205	1.7907	14.017
#1	.01226	.12219	.00988	.09824	.00935	.00087	.10382	.21691	.00502	.00981	.01302	.01242
#2	.01110	.11863	.00645	.09684	.01050	.00124	.09841	.21922	.00509	.00940	.01336	.01516
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value			.01500								.01000	
Range			-30.000%								30.000%	
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.12248	3.3532	.02243	.19994	.01054	.02011	F 1.3590	.04330	2.9361	.00855	.08698	.01890
Stddev	.00778	.0076	.00034	.00116	.00000	.00051	.0124	.00074	.0404	.00086	.00069	.00254
%RSD	6.3483	.22723	1.4975	.58253	.01982	2.5281	.91494	1.7103	1.3767	10.081	.79713	13.433
#1	.11698	3.3586	.02267	.19912	.01054	.02047	1.3502	.04383	2.9647	.00916	.08649	.02069
#2	.12798	3.3478	.02219	.20076	.01053	.01975	1.3678	.04278	2.9076	.00794	.08747	.01710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							1.0000					
Range							30.000%					
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01964	.53873	1.1529	.10085	.01007	.01705	.00847	.01213	F -.02386	.00968	.02149	.01084
Stddev	.00530	.03997	.0855	.00095	.00018	.00034	.00051	.00160	.02222	.00037	.00064	.00268
%RSD	27.010	7.4199	7.4199	.94483	1.7800	2.0109	6.0182	13.166	93.148	3.8653	2.9617	24.769
#1	.01589	.51046	1.0924	.10152	.00995	.01729	.00883	.01326	-.00814	.00942	.02104	.01274
#2	.02339	.56699	1.2134	.10018	.01020	.01680	.00811	.01100	-.03957	.00995	.02194	.00894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value									.06000			
Range									-30.000%			
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4114.0	48036.	3501.9									
Stddev	3.5	126.	15.2									
%RSD	.08540	.26212	.43320									
#1	4116.5	47947.	3512.6									
#2	4111.5	48125.	3491.1									

Sample Name: MB 280-457624/1-A Acquired: 5/13/2019 18:38:50 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/10 Custom ID2: Custom ID3:
Comment: 457624 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00308	-.00403	.00018	-.00078	.00003	-.00024	.01518	.00009
Stddev	.00085	.00029	.00090	.00042	.00012	.00013	.00056	.00259	.00010
%RSD	174.69	9.5460	22.241	234.42	15.590	481.00	237.21	17.085	106.68

#1	.00108	.00329	-.00340	.00048	-.00070	.00012	.00016	.01702	.00016
#2	-.00011	.00287	-.00467	-.00012	-.00087	-.00006	-.00063	.01335	.00002

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00004	-.00110	.04088	-.03552	.00440	-.00354	.00039	-.00048
Stddev	.00011	.00054	.00117	.00373	.15638	.00126	.00866	.00008	.00023
%RSD	124.83	1450.6	105.68	9.1227	440.27	28.576	244.71	21.479	47.146

#1	.00001	.00042	-.00028	.03825	.07506	.00529	-.00966	.00033	-.00065
#2	.00016	-.00034	-.00193	.04352	-.14610	.00351	.00258	.00045	-.00032

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.26674	-.00045	-.00191	-.00266	.00494	-.00230	.00502	.04479	.09585
Stddev	.01403	.00040	.00120	.00017	.00119	.00248	.00428	.00777	.01663
%RSD	5.2614	88.800	63.106	6.5479	24.070	107.81	85.259	17.348	17.348

#1	.27666	-.00017	-.00276	-.00254	.00410	-.00405	.00199	.05028	.10761
#2	.25681	-.00073	-.00105	-.00278	.00578	-.00055	.00804	.03930	.08409

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00244	.00010	W .00534	-.00074	-.00276	F -.07284	.00034	.00079	-.00223
Stddev	.00055	.00010	.00045	.00029	.00276	.00200	.00034	.00026	.00153
%RSD	22.485	96.138	8.3836	38.869	100.02	2.7460	101.68	33.291	68.399

#1	-.00283	.00018	.00566	-.00054	-.00081	-.07143	.00058	.00061	-.00115
#2	-.00205	.00003	.00503	-.00095	-.00472	-.07426	.00009	.00098	-.00331

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit			.00500			.06000			
Low Limit			-.00500			-.06000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4122.2	48832.	3596.6
Stddev	13.5	1026.	12.7
%RSD	.32654	2.1004	.35385

#1	4131.7	49557.	3587.6
#2	4112.7	48107.	3605.6

Sample Name: LCS 280-457624/2-A Acquired: 5/13/2019 18:41:26 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457624 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05595	10.537	2.0059	1.0053	2.1319	W 1.0085	W 2.0500	52.615	1.0202
Stddev	.00065	.055	.0122	.0066	.0012	.0006	.0094	.086	.0071
%RSD	1.1531	.51985	.60963	.65395	.05743	.06212	.45634	.16356	.69441

#1	.05549	10.576	2.0146	1.0099	2.1328	1.0089	2.0566	52.676	1.0252
#2	.05640	10.498	1.9973	1.0006	2.1311	1.0080	2.0433	52.555	1.0152

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Warn	Chk Pass	Chk Pass
High Limit						1.0000	2.0000		
Low Limit						-.00200	-.20000		

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99819	1.0380	1.0137	10.225	54.653	1.0487	51.522	1.0157	1.0496
Stddev	.00666	.0088	.0011	.003	.008	.0049	.045	.0005	.0111
%RSD	.66714	.84970	.11270	.03290	.01379	.46438	.08640	.04987	1.0571

#1	1.0029	1.0442	1.0145	10.222	54.658	1.0522	51.553	1.0154	1.0575
#2	.99348	1.0317	1.0129	10.227	54.648	1.0453	51.490	1.0161	1.0418

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	53.685	.99673	W 21.028	1.0119	9.2903	1.0227	1.9606	2.1194	4.5355
Stddev	.231	.00700	.129	.0061	.0331	.0034	.0033	.0288	.0617
%RSD	.43060	.70253	.61508	.60482	.35637	.33286	.17060	1.3610	1.3610

#1	53.849	1.0017	21.119	1.0163	9.3137	1.0251	1.9630	2.1398	4.5792
#2	53.522	.99178	20.936	1.0076	9.2668	1.0203	1.9582	2.0990	4.4919

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.0680	1.0151	1.0252	1.0200	2.0402	2.0069	1.0343	.51370	.53781
Stddev	.0096	.0004	.0040	.0005	.0135	.0299	.0013	.00286	.00369
%RSD	.46336	.03601	.39271	.04651	.66018	1.4875	.12065	.55683	.68690

#1	2.0747	1.0148	1.0281	1.0197	2.0497	1.9858	1.0352	.51573	.53520
#2	2.0612	1.0153	1.0224	1.0203	2.0306	2.0280	1.0335	.51168	.54043

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000								
Low Limit	-.20000								

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3978.2	46221.	3467.4
Stddev	12.7	238.	23.1
%RSD	.31966	.51585	.66578

#1	3987.2	46390.	3451.1
#2	3969.2	46053.	3483.7

Sample Name: 280-123476-E-1-D Acquired: 5/13/2019 18:43:42 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457624 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00164	.01622	.00284	1.3658	.37548	.00008	-.00234	222.25	.00077
Stddev	.00038	.00057	.00801	.0071	.00129	.00010	.00222	.08	.00003
%RSD	23.257	3.5164	282.03	.52216	.34237	123.68	94.950	.03763	3.3906

#1	.00137	.01581	.00850	1.3708	.37457	.00016	-.00077	222.19	.00075
#2	.00190	.01662	-.00282	1.3607	.37639	.00001	-.00391	222.31	.00078

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00252	.00059	.00111	5.4387	8.6852	.00771	34.204	3.0817	.01064
Stddev	.00054	.00008	.00079	.0077	.0026	.00440	.183	.0121	.00061
%RSD	21.412	13.603	70.646	.14246	.02998	56.988	.53541	.39273	5.7362

#1	.00214	.00053	.00056	5.4442	8.6833	.01082	34.334	3.0902	.01021
#2	.00290	.00064	.00167	5.4333	8.6870	.00460	34.075	3.0731	.01107

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	59.705	.01379	.10872	-.00189	19.238	.00224	.00056	9.3100	19.923
Stddev	.230	.00117	.00317	.00034	.133	.00059	.00285	.0418	.089
%RSD	.38605	8.5018	2.9116	18.069	.69222	26.493	508.21	.44868	.44868

#1	59.868	.01462	.10648	-.00165	19.332	.00266	-.00146	9.3395	19.987
#2	59.542	.01296	.11096	-.00213	19.143	.00182	.00258	9.2804	19.860

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00165	1.3767	.00297	.00027	-.00588	F -.13049	-.00031	.00733	-.00325
Stddev	.00018	.0029	.00081	.00069	.00043	.03356	.00105	.00090	.00030
%RSD	10.740	.20797	27.390	261.32	7.3130	25.717	339.54	12.321	9.2368

#1	-.00153	1.3787	.00355	-.00023	-.00557	-.15421	.00043	.00797	-.00304
#2	-.00178	1.3747	.00240	.00076	-.00618	-.10676	-.00105	.00669	-.00347

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3933.7	45747.	3462.8
Stddev	5.6	676.	11.4
%RSD	.14221	1.4785	.33031

#1	3937.6	45268.	3454.7
#2	3929.7	46225.	3470.9

Sample Name: 280-123476-E-2-B Acquired: 5/13/2019 18:46:13 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457624 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00212	.18071	-.00425	1.3240	.04517	-.00006	-.00399	75.896	.00032
Stddev	.00003	.00365	.00179	.0168	.00007	.00013	.00169	.005	.00016
%RSD	1.3547	2.0180	42.164	1.2684	.15877	197.38	42.282	.00660	48.285

#1	.00210	.18329	-.00551	1.3359	.04512	-.00015	-.00279	75.899	.00021
#2	.00214	.17814	-.00298	1.3121	.04522	.00003	-.00518	75.892	.00043

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00137	.00626	.16285	7.4621	.06711	44.622	.08325	.02601
Stddev	.00011	.00043	.00055	.00384	.1040	.00281	.033	.00006	.00038
%RSD	95.939	31.796	8.8492	2.3602	1.3937	4.1923	.07324	.07522	1.4460

#1	-.00004	.00106	.00665	.16556	7.3885	.06512	44.646	.08329	.02628
#2	-.00019	.00167	.00587	.16013	7.5356	.06910	44.599	.08321	.02574

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 609.52	.00610	.11919	-.00249	F 207.55	.00169	.00620	6.2074	13.284
Stddev	.29	.00049	.00705	.00030	2.93	.00489	.00103	.0235	.050
%RSD	.04752	8.0693	5.9143	12.170	1.4129	289.80	16.673	.37883	.37883

#1	609.72	.00645	.12418	-.00228	209.62	-.00177	.00547	6.2241	13.320
#2	609.31	.00575	.11421	-.00271	205.48	.00515	.00693	6.1908	13.248

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				200.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00283	2.9459	.00192	.00260	-.00173	-.11998	.00053	.00562	.00043
Stddev	.00098	.0015	.00224	.00053	.00197	.04486	.00093	.00064	.00337
%RSD	34.632	.05167	116.72	20.534	113.67	37.391	174.52	11.409	790.96

#1	-.00352	2.9469	.00034	.00222	-.00034	-.08826	.00119	.00516	.00280
#2	-.00214	2.9448	.00351	.00298	-.00312	-.15170	-.00012	.00607	-.00195

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3802.9	43640.	3421.9
Stddev	8.2	55.	5.0
%RSD	.21571	.12614	.14628

#1	3808.7	43601.	3425.4
#2	3797.1	43679.	3418.3

Sample Name: 280-123476-E-3-B Acquired: 5/13/2019 18:48:53 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457624 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00195	.00404	-.00659	.27007	.18477	-.00000	-.00559	185.19	.00028
Stddev	.00086	.00017	.00885	.00380	.00249	.00000	.00600	1.62	.00026
%RSD	44.296	4.3353	134.28	1.4086	1.3458	986.86	107.39	.87441	90.502

#1	.00256	.00416	-.01285	.27276	.18652	-.00000	-.00983	186.34	.00047
#2	.00134	.00391	-.00033	.26738	.18301	.00000	-.00134	184.05	.00010

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	-.00006	-.00013	.13477	5.1183	.04311	57.560	.01349	.00231
Stddev	.00011	.00005	.00025	.00176	.0747	.00056	.113	.00004	.00033
%RSD	62.598	95.952	186.22	1.3094	1.4601	1.2890	.19685	.32363	14.306

#1	-.00010	-.00010	.00004	.13602	5.1711	.04350	57.640	.01345	.00207
#2	-.00026	-.00002	-.00031	.13352	5.0655	.04272	57.479	.01352	.00254

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	118.91	.00746	.00535	-.00501	20.959	-.00251	.00189	11.737	25.118
Stddev	1.47	.00005	.00081	.00076	.090	.00030	.00240	.123	.263
%RSD	1.2397	.68872	15.097	15.257	.43009	11.795	126.80	1.0472	1.0472

#1	119.95	.00749	.00592	-.00555	21.023	-.00230	.00020	11.824	25.304
#2	117.86	.00742	.00478	-.00447	20.895	-.00271	.00359	11.650	24.932

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00175	2.0443	.00318	-.00008	-.00553	F -.14683	-.00081	.00285	-.00625
Stddev	.00024	.0182	.00225	.00042	.00103	.01710	.00022	.00026	.00359
%RSD	13.585	.89206	70.736	538.06	18.646	11.645	26.550	8.9955	57.423

#1	-.00192	2.0572	.00159	-.00038	-.00480	-.15892	-.00066	.00267	-.00879
#2	-.00159	2.0314	.00477	.00022	-.00625	-.13474	-.00096	.00303	-.00371

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3934.2	45977.	3473.6
Stddev	7.7	250.	40.4
%RSD	.19656	.54310	1.1630

#1	3939.7	45801.	3445.0
#2	3928.7	46154.	3502.2

Sample Name: 280-123476-E-4-B Acquired: 5/13/2019 18:51:26 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457624 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00214	.00297	-.00189	1.0894	.08699	.00021	-.00741	142.72	.00077
Stddev	.00008	.00031	.00482	.0059	.00073	.00008	.00281	.00	.00012
%RSD	3.5112	10.317	254.95	.54200	.83915	36.244	37.920	.00226	15.126

#1	.00209	.00319	-.00530	1.0935	.08750	.00015	-.00940	142.73	.00068
#2	.00219	.00276	.00152	1.0852	.08647	.00026	-.00542	142.72	.00085

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00282	.00036	.00023	3.9582	8.3422	.03363	93.438	.63349	.00473
Stddev	.00017	.00027	.00206	.0066	.0010	.00030	.610	.00172	.00058
%RSD	5.9216	73.918	898.63	.16717	.01202	.88626	.65245	.27187	12.332

#1	.00270	.00055	.00168	3.9628	8.3415	.03384	93.007	.63227	.00514
#2	.00294	.00017	-.00123	3.9535	8.3429	.03342	93.869	.63471	.00432

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	224.94	.01663	.04253	-.00429	58.847	.00235	-.00191	11.514	24.641
Stddev	.27	.00017	.00267	.00085	.392	.00167	.00621	.074	.158
%RSD	.12213	1.0317	6.2746	19.800	.66621	70.988	325.22	.64195	.64195

#1	224.74	.01675	.04064	-.00369	59.124	.00117	-.00631	11.462	24.529
#2	225.13	.01651	.04442	-.00489	58.570	.00353	.00248	11.567	24.752

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00254	5.4154	.00055	.00031	-.00120	-.11633	-.00053	.00050	-.00088
Stddev	.00012	.0014	.00003	.00019	.00141	.04173	.00143	.00052	.00040
%RSD	4.8188	.02564	5.3970	61.872	117.65	35.876	272.20	103.39	44.844

#1	-.00263	5.4164	.00053	.00045	-.00020	-.14584	.00049	.00087	-.00116
#2	-.00246	5.4145	.00057	.00018	-.00220	-.08682	-.00154	.00013	-.00060

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3816.3	45000.	3505.4
Stddev	2.5	723.	6.8
%RSD	.06524	1.6074	.19477

#1	3814.6	45511.	3510.3
#2	3818.1	44488.	3500.6

Sample Name: 280-123476-E-5-B Acquired: 5/13/2019 18:53:58 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457624 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00261	.00953	.00118	2.7843	.19435	-.00007	-.00537	5.4815	.00005
Stddev	.00049	.00088	.00532	.0152	.00005	.00010	.00194	.0051	.00038
%RSD	18.910	9.2003	449.23	.54605	.02663	142.48	36.078	.09283	769.83

#1	.00296	.00891	.00494	2.7951	.19439	.00000	-.00400	5.4851	.00032
#2	.00226	.01015	-.00258	2.7736	.19432	-.00013	-.00674	5.4779	-.00022

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	.00026	.00005	.27372	5.3846	.04825	3.0200	.06616	.01723
Stddev	.00010	.00030	.00038	.00390	.1255	.00052	.0056	.00018	.00017
%RSD	9.6773	114.64	782.15	1.4266	2.3309	1.0861	.18394	.26815	.96907

#1	.00109	.00005	.00032	.27648	5.2959	.04788	3.0160	.06603	.01735
#2	.00095	.00048	-.00022	.27096	5.4734	.04862	3.0239	.06628	.01711

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 821.09	.01337	.45476	-.00476	28.961	-.00311	.00341	7.3374	15.702
Stddev	1.97	.00026	.00388	.00033	.207	.00320	.00123	.0241	.052
%RSD	.23933	1.9162	.85414	6.9316	.71575	102.96	36.068	.32823	.32823

#1	822.48	.01355	.45751	-.00499	29.108	-.00537	.00254	7.3203	15.666
#2	819.70	.01319	.45201	-.00452	28.815	-.00085	.00428	7.3544	15.738

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00								
Low Limit	11.000								

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00313	.56667	.00059	-.00116	-.00371	F -.13681	.00043	.00025	.00176
Stddev	.00051	.00124	.00393	.00016	.00059	.02759	.00121	.00036	.00034
%RSD	16.366	.21928	663.99	14.036	15.805	20.169	282.73	146.04	19.170

#1	-.00276	.56755	-.00219	-.00105	-.00330	-.15633	.00128	.00050	.00152
#2	-.00349	.56579	.00337	-.00128	-.00412	-.11730	-.00043	-.00001	.00199

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3685.0	43142.	3355.1
Stddev	41.4	315.	18.3
%RSD	1.1246	.73042	.54690

#1	3714.3	43365.	3342.1
#2	3655.7	42919.	3368.1

Sample Name: 280-123477-B-1-A Acquired: 5/13/2019 18:56:35 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457624 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00256	.01000	-.00176	2.7320	.18512	.00004	-.00604	5.4060	-.00027
Stddev	.00058	.00017	.00320	.0406	.00052	.00031	.00337	.0298	.00040
%RSD	22.739	1.7246	181.49	1.4879	.28133	726.92	55.848	.55057	150.40

#1	.00215	.00988	-.00402	2.7608	.18475	.00026	-.00842	5.4271	-.00055
#2	.00297	.01012	.00050	2.7033	.18549	-.00018	-.00365	5.3850	.00002

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.00052	.00116	.30082	5.5823	.04652	2.9510	.06692	.01663
Stddev	.00026	.00041	.00004	.00061	.0701	.00147	.0178	.00017	.00057
%RSD	31.162	78.968	3.5601	.20181	1.2558	3.1590	.60397	.25824	3.4504

#1	.00066	.00023	.00119	.30039	5.5328	.04548	2.9384	.06680	.01703
#2	.00104	.00081	.00113	.30125	5.6319	.04756	2.9636	.06704	.01622

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 811.76	.01315	.43057	-.00349	28.807	-.00194	.00477	7.2712	15.560
Stddev	1.76	.00072	.00817	.00025	.490	.00132	.00213	.0701	.150
%RSD	.21637	5.5089	1.8985	7.1766	1.7004	68.211	44.735	.96458	.96458

#1	810.51	.01264	.43635	-.00366	29.154	-.00287	.00326	7.3208	15.666
#2	813.00	.01366	.42479	-.00331	28.461	-.00100	.00628	7.2216	15.454

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00								
Low Limit	11.000								

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00282	.55845	.00068	-.00118	-.00453	F -.12121	-.00072	.00089	-.00464
Stddev	.00052	.00221	.00189	.00022	.00120	.01312	.00101	.00011	.00132
%RSD	18.454	.39550	277.14	18.275	26.587	10.824	140.87	12.780	28.438

#1	-.00246	.56001	.00202	-.00103	-.00538	-.11194	-.00144	.00097	-.00371
#2	-.00319	.55689	-.00065	-.00133	-.00368	-.13049	-.00000	.00081	-.00557

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3707.3	42266.	3244.3
Stddev	4.1	313.	44.5
%RSD	.11124	.73958	1.3731

#1	3704.4	42487.	3212.8
#2	3710.3	42045.	3275.8

Sample Name: 280-123477-B-2-A Acquired: 5/13/2019 18:59:12 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457624 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00173	.00346	.00518	1.0993	.08663	.00005	-.00767	142.38	.00040
Stddev	.00027	.00010	.00201	.0075	.00045	.00011	.00257	.30	.00046
%RSD	15.551	2.8861	38.784	.68355	.51955	237.03	33.531	.21385	113.24

#1	.00154	.00339	.00660	1.1046	.08632	-.00003	-.00585	142.59	.00073
#2	.00192	.00353	.00376	1.0940	.08695	.00013	-.00948	142.16	.00008

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00265	.00038	-.00067	4.0120	8.5842	.03218	93.136	.62288	.00454
Stddev	.00035	.00026	.00150	.0019	.0574	.00093	.148	.00077	.00001
%RSD	13.137	68.497	225.52	.04786	.66833	2.9044	.15838	.12295	.31298

#1	.00290	.00019	.00040	4.0107	8.5437	.03284	93.240	.62234	.00453
#2	.00241	.00056	-.00173	4.0134	8.6248	.03152	93.032	.62343	.00455

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	226.37	.01622	.04117	-.00381	57.615	-.00322	-.00087	11.492	24.593
Stddev	.43	.00081	.00116	.00110	.540	.00099	.00540	.047	.101
%RSD	.19051	5.0085	2.8192	28.887	.93645	30.874	621.56	.41158	.41158

#1	226.67	.01679	.04035	-.00303	57.997	-.00252	.00295	11.458	24.521
#2	226.06	.01564	.04199	-.00459	57.234	-.00393	-.00469	11.525	24.664

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00234	5.3891	.00259	-.00013	-.00467	F -.19410	-.00029	.00620	-.00126
Stddev	.00076	.0046	.00064	.00001	.00314	.06988	.00062	.00051	.00210
%RSD	32.637	.08456	24.924	6.1965	67.247	36.003	213.75	8.2837	167.37

#1	-.00288	5.3858	.00213	-.00013	-.00688	-.14468	-.00072	.00583	.00023
#2	-.00180	5.3923	.00304	-.00014	-.00245	-.24351	.00015	.00656	-.00275

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3752.3	43520.	3291.5
Stddev	14.1	105.	33.0
%RSD	.37589	.24129	1.0019

#1	3742.4	43595.	3314.8
#2	3762.3	43446.	3268.2

Sample Name: CCVH-5690583 Acquired: 5/13/2019 19:01:42 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00495	51.488	-.00498	.01202	.00114	.00139	.98005	.03746	.00088	.00289	.00169	.01280	52.473
Stddev	.00060	.140	.00121	.00038	.00005	.00003	.00893	.00301	.00010	.00014	.00013	.00097	.049
%RSD	12.059	.27230	24.303	3.1897	4.1014	2.2641	.91155	8.0409	11.504	4.7793	7.7602	7.5863	.09269

#1	.00537	51.389	-.00583	.01175	.00118	.00142	.98636	.03533	.00095	.00279	.00159	.01211	52.439
#2	.00453	51.587	-.00412	.01230	.00111	.00137	.97373	.03959	.00080	.00299	.00178	.01349	52.508

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49379	.00449	.01068	.00399	.00027	266.05	.00366	.00141	.00430	4.6977	.00768	.00078	.05112
Stddev	.02524	.00335	.00241	.00005	.00047	.25	.00064	.00217	.00147	.0333	.00552	.00320	.00967
%RSD	5.1122	74.676	22.537	1.3485	171.67	.09277	17.559	153.51	34.295	.70958	71.904	409.21	18.910

#1	.51164	.00212	.00898	.00403	.00061	265.88	.00321	-.00012	.00534	4.7213	.00378	-.00148	.05795
#2	.47594	.00686	.01239	.00395	-.00006	266.23	.00412	.00294	.00326	4.6742	.01158	.00305	.04428

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10939	.00138	.00245	5.0185	-.00867	-.00141	10.112	.00595	.00438	.07149
Stddev	.02069	.00174	.00010	.0256	.00047	.00081	.010	.00027	.00053	.00666
%RSD	18.910	126.73	4.2513	.51039	5.3964	57.677	.10197	4.5548	12.006	9.3118

#1	.12402	.00014	.00238	5.0004	-.00834	-.00198	10.119	.00576	.00475	.07620
#2	.09476	.00261	.00253	5.0367	-.00900	-.00083	10.104	.00614	.00401	.06678

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3774.5	43964.	3264.8
Stddev	24.6	406.	5.2
%RSD	.65044	.92445	.15851

#1	3757.1	44252.	3261.2
#2	3791.8	43677.	3268.5

Sample Name: CCV-5690581 Acquired: 5/13/2019 19:04:11 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51717	F .62764	.98736	.49794	.53283	.50270	-.00208	5.3113	.50607	.51653	.52579	.50869
Stddev	.00235	.00770	.00496	.00314	.00181	.00030	.00142	.0266	.00609	.00518	.00504	.00226
%RSD	.45530	1.2263	.50207	.63063	.33878	.05935	68.031	.49991	1.2025	1.0035	.95787	.44443

#1	.51884	.63308	.99087	.50016	.53410	.50291	-.00108	5.3301	.51037	.52019	.52935	.51029
#2	.51551	.62220	.98386	.49572	.53155	.50249	-.00308	5.2925	.50177	.51286	.52222	.50709

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.6031	54.349	1.0579	20.858	.51256	.52065	F 6.5957	.51803	1.0256	1.0308	.00687	.96655
Stddev	.0011	.085	.0009	.074	.00144	.00742	.0660	.00571	.0092	.0147	.00344	.01135
%RSD	.04077	.15622	.08750	.35523	.28006	1.4260	1.0001	1.1028	.89868	1.4292	50.059	1.1747

#1	2.6024	54.289	1.0573	20.910	.51358	.52590	6.6424	.52207	1.0321	1.0412	.00930	.97458
#2	2.6039	54.409	1.0586	20.806	.51155	.51540	6.5491	.51399	1.0191	1.0203	.00444	.95852

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97174	5.0761	10.863	1.0397	.51140	.00636	.50623	1.0558	-.08132	.51324	.52076	.52376
Stddev	.00949	.0212	.045	.0108	.00036	.00179	.00032	.0072	.04364	.00054	.00145	.00455
%RSD	.97653	.41803	.41803	1.0421	.07034	28.198	.06284	.67776	53.663	.10442	.27858	.86868

#1	.97845	5.0911	10.895	1.0474	.51166	.00763	.50646	1.0609	-.05047	.51362	.51973	.52698
#2	.96503	5.0611	10.831	1.0321	.51115	.00510	.50601	1.0507	-.11218	.51286	.52178	.52055

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3930.0	45619.	3360.4
Stddev	17.7	49.	6.1
%RSD	.45067	.10791	.18108

#1	3942.5	45654.	3356.1
#2	3917.5	45584.	3364.7

Sample Name: CCB Acquired: 5/13/2019 19:06:33 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00210	-.00076	-.00250	.00414	-.00047	.00021	-.00400	.00334	.00005	-.00012	-.00003	-.00211
Stddev	.00132	.00080	.00151	.00014	.00074	.00009	.00200	.00518	.00015	.00002	.00011	.00009
%RSD	62.859	105.41	60.139	3.4264	158.92	42.091	50.053	155.04	284.01	13.965	364.54	4.1755
#1	.00303	-.00019	-.00357	.00404	-.00099	.00027	-.00542	-.00032	.00016	-.00013	.00005	-.00205
#2	.00117	-.00133	-.00144	.00424	.00006	.00015	-.00258	.00700	-.00005	-.00010	-.00010	-.00217
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.00200											
Low Limit	-.01000											
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00574	.11742	.00141	-.00208	.00009	.00095	F .77740	-.00046	-.00543	-.00143	.00545	.00184
Stddev	.00965	.00520	.00011	.00352	.00001	.00059	.01861	.00001	.00064	.00086	.00517	.00000
%RSD	168.29	4.4277	7.7369	169.53	8.3483	61.664	2.3938	1.1709	11.816	59.646	94.846	.02589
#1	.01256	.12109	.00133	-.00457	.00010	.00054	.79056	-.00046	-.00589	-.00204	.00179	.00184
#2	-.00109	.11374	.00149	.00041	.00009	.00137	.76424	-.00046	-.00498	-.00083	.00911	.00184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							.50000					
Low Limit							-.50000					
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W .00849	.03501	.07492	-.00257	.00005	.00295	-.00108	-.00014	F -.10881	-.00026	-.00022	-.00112
Stddev	.00292	.03911	.08369	.00120	.00017	.00157	.00041	.00008	.03840	.00010	.00042	.00427
%RSD	34.371	111.71	111.71	46.514	350.33	53.246	37.579	56.202	35.289	38.516	185.55	382.57
#1	.01055	.06266	.13409	-.00173	-.00007	.00184	-.00137	-.00020	-.08166	-.00033	.00007	.00190
#2	.00642	.00736	.01574	-.00342	.00017	.00406	-.00080	-.00009	-.13596	-.00019	-.00052	-.00414
Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit	.00750								.10000			
Low Limit	-.01500								-.10000			
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3917.4	46204.	3358.3									
Stddev	22.0	459.	3.7									
%RSD	.56115	.99354	.10948									
#1	3901.9	46528.	3360.9									
#2	3933.0	45879.	3355.7									

Sample Name: CCVL-5699390 Acquired: 5/13/2019 19:09:09 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01149	.12385	.01382	.09926	.00995	.00091	.09795	.24905	.00533	.00972	.01053	.01419
Stddev	.00050	.00260	.00558	.00122	.00053	.00007	.00079	.00448	.00001	.00024	.00033	.00098
%RSD	4.3638	2.1012	40.390	1.2334	5.3131	7.4175	.80709	1.7979	.23442	2.4412	3.0893	6.9024
#1	.01185	.12569	.00987	.10012	.01032	.00086	.09739	.25222	.00534	.00989	.01076	.01350
#2	.01114	.12201	.01777	.09839	.00957	.00095	.09851	.24589	.00532	.00955	.01030	.01488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.11126	3.3256	.02308	.22504	.01040	.01974	F 2.5574	.04099	2.8961	.00792	F .13733	.01929
Stddev	.00230	.0442	.00176	.00810	.00002	.00087	.0024	.00007	.0348	.00017	.00679	.00063
%RSD	2.0713	1.3306	7.6408	3.5998	.22083	4.4192	.09519	.17355	1.2018	2.1405	4.9447	3.2817
#1	.11289	3.2943	.02183	.23077	.01041	.02035	2.5557	.04104	2.9207	.00804	.13253	.01884
#2	.10964	3.3569	.02432	.21932	.01038	.01912	2.5591	.04094	2.8715	.00780	.14213	.01973
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value							1.0000				.10000	
Range							30.000%				30.000%	
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02154	.54071	1.1571	.10044	.01071	.01546	.00826	.01287	F -.02347	.01005	.02094	F .00917
Stddev	.00558	.01691	.0362	.00126	.00002	.00331	.00028	.00142	.00023	.00011	.00015	.00093
%RSD	25.886	3.1267	3.1267	1.2572	.19855	21.428	3.3707	11.000	.97724	1.0581	.71187	10.129
#1	.02549	.52875	1.1315	.10133	.01073	.01780	.00807	.01187	-.02331	.00998	.02105	.00983
#2	.01760	.55266	1.1827	.09954	.01070	.01311	.00846	.01387	-.02363	.01013	.02084	.00851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail
Value									.06000			.01500
Range									-30.000%			-30.000%
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3883.1	45367.	3281.2									
Stddev	21.2	206.	12.9									
%RSD	.54663	.45466	.39163									
#1	3868.1	45221.	3290.2									
#2	3898.1	45512.	3272.1									

Sample Name: 280-123477-B-3-A Acquired: 5/13/2019 19:11:41 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457624 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00215	.00773	-.00446	.27205	.18858	.00002	-.01070	188.61	.00069
Stddev	.00072	.00023	.00643	.00231	.00096	.00024	.00242	.14	.00024
%RSD	33.758	3.0196	143.98	.85002	.50904	1393.6	22.662	.07520	34.846

#1	.00266	.00756	-.00901	.27368	.18926	-.00015	-.01241	188.51	.00052
#2	.00163	.00789	.00008	.27041	.18790	.00019	-.00898	188.71	.00087

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.00015	.00016	.14331	5.1312	.04331	58.542	.01078	.00282
Stddev	.00004	.00038	.00029	.00613	.0353	.00365	.075	.00004	.00045
%RSD	13.740	258.54	182.80	4.2810	.68718	8.4219	.12811	.35426	16.041

#1	-.00029	.00042	.00037	.14765	5.1062	.04588	58.595	.01080	.00313
#2	-.00024	-.00012	-.00005	.13897	5.1561	.04073	58.489	.01075	.00250

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	122.89	.00643	.00424	-.00367	20.854	-.00052	-.00074	12.026	25.736
Stddev	.24	.00033	.00047	.00203	.166	.00425	.00450	.040	.085
%RSD	.19180	5.2010	11.183	55.200	.79474	812.66	609.66	.33029	.33029

#1	123.05	.00619	.00390	-.00510	20.971	-.00353	-.00392	11.998	25.676
#2	122.72	.00667	.00457	-.00224	20.737	.00248	.00244	12.054	25.796

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00193	2.1018	.00223	-.00069	-.00394	F -.14757	-.00092	.00288	-.00171
Stddev	.00149	.0022	.00055	.00011	.00019	.00628	.00011	.00073	.00015
%RSD	77.488	.10515	24.695	15.354	4.8475	4.2563	11.578	25.350	9.0069

#1	-.00087	2.1002	.00262	-.00077	-.00381	-.14313	-.00099	.00236	-.00181
#2	-.00299	2.1034	.00184	-.00062	-.00408	-.15201	-.00084	.00339	-.00160

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3731.3	43137.	3246.9
Stddev	9.6	109.	8.2
%RSD	.25782	.25172	.25390

#1	3724.5	43214.	3252.7
#2	3738.1	43060.	3241.0

Sample Name: 280-123477-B-4-A Acquired: 5/13/2019 19:14:12 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457624 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00150	.14563	-.00803	1.3260	.04105	.00015	-.00827	68.972	.00076
Stddev	.00037	.00229	.00459	.0149	.00073	.00015	.00076	.034	.00030
%RSD	24.950	1.5727	57.121	1.1227	1.7801	101.26	9.1481	.04937	38.943

#1	.00176	.14725	-.00479	1.3366	.04054	.00026	-.00773	68.948	.00097
#2	.00123	.14401	-.01127	1.3155	.04157	.00004	-.00880	68.996	.00055

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00068	.00536	.11180	7.4609	.07138	39.904	.06642	.02473
Stddev	.00014	.00015	.00013	.00445	.0329	.00131	.032	.00008	.00056
%RSD	97.867	22.569	2.3419	3.9806	.44110	1.8334	.08053	.12117	2.2773

#1	.00024	.00057	.00545	.11494	7.4376	.07230	39.881	.06636	.02512
#2	.00004	.00078	.00527	.10865	7.4841	.07045	39.926	.06648	.02433

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 632.10	.00566	.10618	-.00339	F 200.47	.00326	.00122	5.8349	12.487
Stddev	.95	.00009	.00352	.00117	1.68	.00462	.00371	.0688	.147
%RSD	.15034	1.6680	3.3129	34.553	.83803	141.77	303.09	1.1791	1.1791

#1	631.43	.00573	.10867	-.00421	201.66	.00653	-.00140	5.7862	12.383
#2	632.77	.00560	.10370	-.00256	199.29	-.00001	.00385	5.8835	12.591

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				200.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00314	2.7229	.00072	.00105	-.00095	-.09345	.00099	.00507	-.00355
Stddev	.00099	.0066	.00167	.00035	.00381	.03488	.00043	.00108	.00531
%RSD	31.463	.24360	231.53	33.129	401.24	37.327	43.079	21.286	149.86

#1	-.00383	2.7182	-.00046	.00130	-.00365	-.06878	.00069	.00431	.00021
#2	-.00244	2.7276	.00190	.00080	.00175	-.11811	.00129	.00583	-.00730

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3634.8	41906.	3238.7
Stddev	10.8	170.	16.1
%RSD	.29786	.40447	.49793

#1	3627.1	42026.	3227.3
#2	3642.4	41787.	3250.1

Sample Name: 280-123477-B-5-A Acquired: 5/13/2019 19:16:46 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457624 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00127	.01030	.00888	1.3667	.37713	.00015	-.00445	225.21	.00077
Stddev	.00044	.00003	.00670	.0119	.00081	.00009	.00291	1.00	.00021
%RSD	34.786	.33842	75.429	.86762	.21362	60.225	65.411	.44416	27.135

#1	.00158	.01033	.01361	1.3751	.37770	.00021	-.00239	225.92	.00062
#2	.00096	.01028	.00414	1.3583	.37656	.00008	-.00650	224.51	.00091

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00234	.00068	.00101	5.6173	9.1509	.01631	34.495	3.0711	.00902
Stddev	.00002	.00022	.00086	.0277	.0040	.00218	.095	.0262	.00012
%RSD	.91024	32.040	85.380	.49388	.04335	13.336	.27508	.85152	1.3470

#1	.00235	.00084	.00040	5.6369	9.1537	.01477	34.563	3.0896	.00910
#2	.00232	.00053	.00162	5.5977	9.1481	.01785	34.428	3.0526	.00893

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	61.549	.01350	.07875	-.00427	19.148	-.00005	.00074	9.5357	20.406
Stddev	.083	.00028	.00141	.00148	.208	.00205	.00213	.0153	.033
%RSD	.13521	2.0399	1.7875	34.583	1.0872	4342.1	287.65	.15994	.15994

#1	61.490	.01369	.07776	-.00532	19.296	.00140	-.00076	9.5249	20.383
#2	61.608	.01330	.07975	-.00323	19.001	-.00150	.00224	9.5464	20.429

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00227	1.4001	.00605	.00035	-.00241	-.08249	.00033	.00881	-.00350
Stddev	.00097	.0053	.00071	.00045	.00368	.08818	.00034	.00013	.00050
%RSD	42.963	.37697	11.754	128.06	152.57	106.90	102.09	1.4725	14.387

#1	-.00158	1.4039	.00554	.00003	.00019	-.14485	.00009	.00872	-.00386
#2	-.00295	1.3964	.00655	.00066	-.00501	-.02014	.00057	.00890	-.00314

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3794.3	44207.	3251.9
Stddev	6.2	371.	5.4
%RSD	.16458	.83996	.16553

#1	3789.9	43945.	3248.1
#2	3798.7	44470.	3255.7

Sample Name: 280-123478-E-1-B Acquired: 5/13/2019 19:19:17 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457624 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00171	.72859	-.00017	.06355	.16618	.00005	-.00593	122.28	.00031
Stddev	.00016	.00667	.00323	.00167	.00096	.00014	.00167	.04	.00022
%RSD	9.0721	.91594	1942.6	2.6212	.57513	253.36	28.192	.03635	69.967

#1	.00160	.73331	-.00245	.06473	.16550	-.00004	-.00475	122.31	.00016
#2	.00182	.72387	.00212	.06237	.16685	.00015	-.00711	122.25	.00046

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00113	.00089	.66226	3.4426	.00720	14.267	.11728	.00081
Stddev	.00015	.00009	.00017	.00032	.0160	.00118	.008	.00024	.00027
%RSD	61.835	7.8037	18.732	.04786	.46555	16.371	.05276	.20450	33.837

#1	.00034	.00119	.00101	.66204	3.4539	.00804	14.262	.11711	.00062
#2	.00013	.00106	.00077	.66249	3.4312	.00637	14.273	.11745	.00101

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	37.398	.00186	.14736	-.00132	19.456	-.00036	.00414	10.677	22.849
Stddev	1.232	.00001	.00582	.00072	.137	.00048	.00013	.002	.004
%RSD	3.2939	.69685	3.9511	55.036	.70400	131.86	3.1571	.01853	.01853

#1	38.269	.00185	.15148	-.00183	19.553	-.00070	.00423	10.676	22.846
#2	36.527	.00187	.14325	-.00080	19.359	-.00002	.00405	10.679	22.852

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00163	.53147	.00282	.01470	-.00280	-.07984	.00251	.00398	-.00228
Stddev	.00074	.00131	.00007	.00011	.00001	.00609	.00026	.00061	.00141
%RSD	45.218	.24603	2.6010	.76204	.33467	7.6296	10.200	15.421	61.909

#1	-.00111	.53055	.00287	.01478	-.00279	-.08415	.00233	.00442	-.00327
#2	-.00216	.53240	.00277	.01462	-.00281	-.07553	.00270	.00355	-.00128

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3863.4	45269.	3329.3
Stddev	5.0	212.	.6
%RSD	.12979	.46898	.01902

#1	3859.8	45119.	3329.7
#2	3866.9	45419.	3328.8

Sample Name: 123478-E-1-B SD@5 Acquired: 5/13/2019 19:21:48 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457624 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00127	.15007	-.00391	.01479	.03062	-.00004	-.00728	22.664	.00005
Stddev	.00026	.00117	.00507	.00014	.00026	.00009	.00005	.244	.00030
%RSD	20.597	.77679	129.77	.95542	.84647	240.71	.64318	1.0749	654.72

#1	.00109	.14925	-.00749	.01469	.03044	.00003	-.00731	22.492	-.00017
#2	.00146	.15090	-.00032	.01489	.03080	-.00010	-.00724	22.836	.00026

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.00021	-.00175	.14471	.71245	.00076	2.7520	.02240	-.00025
Stddev	.00025	.00020	.00020	.00422	.10699	.00132	.0311	.00036	.00057
%RSD	57.662	94.667	11.206	2.9144	15.017	173.45	1.1298	1.6062	229.17

#1	.00026	.00035	-.00189	.14173	.78811	.00170	2.7300	.02214	-.00065
#2	.00061	.00007	-.00161	.14770	.63680	-.00017	2.7740	.02265	.00015

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.7012	.00049	.02415	-.00194	3.8285	-.00130	.00299	1.9746	4.2255
Stddev	.0647	.00045	.00334	.00247	.0728	.00156	.00103	.0196	.0419
%RSD	.84019	93.081	13.825	127.44	1.9024	119.93	34.308	.99138	.99138

#1	7.6555	.00017	.02651	-.00019	3.7770	-.00240	.00226	1.9884	4.2552
#2	7.7470	.00081	.02179	-.00369	3.8800	-.00020	.00372	1.9607	4.1959

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00296	.09854	.00387	.00198	-.00253	-.11110	.00001	.00057	-.00389
Stddev	.00024	.00125	.00062	.00077	.00161	.00339	.00025	.00048	.00073
%RSD	7.9554	1.2650	15.953	38.731	63.895	3.0553	1853.1	84.245	18.692

#1	-.00279	.09765	.00343	.00144	-.00138	-.11350	.00019	.00023	-.00337
#2	-.00312	.09942	.00430	.00252	-.00367	-.10870	-.00017	.00091	-.00440

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3947.4	46491.	3393.1
Stddev	20.3	17.	2.7
%RSD	.51539	.03666	.08077

#1	3933.0	46503.	3391.2
#2	3961.8	46479.	3395.0

Sample Name: 280-123478-E-1-C MS Acquired: 5/13/2019 19:24:22 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457624 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05823	11.450	1.7757	1.1014	2.0072	.87652	W 2.0851	174.46	.89265
Stddev	.00021	.080	.0068	.0012	.0063	.00423	.0062	.59	.00105
%RSD	.36092	.69966	.38507	.11279	.31126	.48239	.29917	.33864	.11721

#1	.05808	11.507	1.7806	1.1005	2.0028	.87353	2.0807	174.04	.89339
#2	.05838	11.394	1.7709	1.1023	2.0116	.87951	2.0896	174.88	.89191

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass
High Limit							2.0000		
Low Limit							-.20000		

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.86037	.90704	.87747	10.875	59.261	.92586	65.368	.98493	.91846
Stddev	.00012	.00483	.00095	.045	.272	.00468	.015	.00049	.00444
%RSD	.01419	.53281	.10798	.41065	.45839	.50516	.02273	.04950	.48350

#1	.86046	.91046	.87814	10.843	59.069	.92256	65.379	.98459	.92160
#2	.86029	.90362	.87680	10.906	59.453	.92917	65.358	.98528	.91532

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	92.436	.86098	W 21.744	.86281	29.125	1.0271	1.7253	12.994	27.807
Stddev	.277	.00125	.065	.00237	.022	.0036	.0018	.018	.037
%RSD	.30006	.14484	.30108	.27452	.07517	.34612	.10305	.13487	.13487

#1	92.632	.86187	21.790	.86448	29.109	1.0297	1.7265	13.006	27.834
#2	92.240	.86010	21.698	.86114	29.140	1.0246	1.7240	12.982	27.781

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.7911	1.4048	1.0436	.90125	1.7259	2.0177	.90297	.51786	.51543
Stddev	.0094	.0079	.0006	.00007	.0052	.0653	.00379	.00072	.00426
%RSD	.52503	.56482	.06035	.00766	.30093	3.2385	.41948	.13902	.82645

#1	1.7977	1.3992	1.0441	.90120	1.7295	2.0639	.90029	.51837	.51241
#2	1.7844	1.4104	1.0432	.90130	1.7222	1.9715	.90565	.51735	.51844

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3831.5	44485.	3350.2
Stddev	3.8	142.	15.9
%RSD	.09913	.31845	.47594

#1	3834.2	44384.	3361.5
#2	3828.8	44585.	3338.9

Sample Name: 280-123478-E-1-D MSD Acquired: 5/13/2019 19:26:40 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457624 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05734	11.415	2.0179	1.0746	2.2664	W 1.0054	W 2.0386	172.54	1.0154
Stddev	.00032	.215	.0016	.0042	.0112	.0052	.0078	.94	.0060
%RSD	.56087	1.8817	.07853	.38612	.49431	.51395	.38284	.54321	.58896

#1	.05757	11.263	2.0190	1.0776	2.2585	1.0017	2.0441	171.88	1.0196
#2	.05711	11.567	2.0167	1.0717	2.2743	1.0090	2.0331	173.20	1.0111

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Warn	Chk Pass	Chk Pass
High Limit						1.0000	2.0000		
Low Limit						-.00200	-.20000		

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97731	1.0291	1.0012	10.707	58.635	1.0596	64.392	1.1120	1.0470
Stddev	.00556	.0065	.0003	.010	.208	.0013	.125	.0026	.0081
%RSD	.56870	.63073	.03216	.09370	.35413	.12221	.19401	.23270	.77171

#1	.98124	1.0337	1.0009	10.700	58.488	1.0605	64.480	1.1138	1.0527
#2	.97338	1.0246	1.0014	10.714	58.782	1.0586	64.304	1.1102	1.0413

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	91.137	.97959	W 21.792	.98414	28.981	1.0217	1.9586	13.056	27.940
Stddev	.103	.00585	.120	.00671	.091	.0045	.0014	.051	.109
%RSD	.11268	.59684	.54887	.68197	.31479	.43975	.07028	.39141	.39141

#1	91.064	.98372	21.876	.98889	29.046	1.0249	1.9596	13.020	27.863
#2	91.210	.97545	21.707	.97940	28.917	1.0185	1.9576	13.092	28.017

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.0403	1.5361	1.0253	1.0281	1.9680	2.0333	1.0327	.51026	.50367
Stddev	.0125	.0072	.0040	.0028	.0118	.0443	.0039	.00052	.00044
%RSD	.61078	.46728	.38969	.26838	.60121	2.1808	.37400	.10250	.08825

#1	2.0492	1.5310	1.0225	1.0301	1.9764	2.0647	1.0354	.50989	.50398
#2	2.0315	1.5411	1.0281	1.0262	1.9596	2.0020	1.0300	.51063	.50335

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000								
Low Limit	-.20000								

Int. Std.	Y_2243	Y_3600	Y_3774						
Line	224.306 {450}	360.073 { 94}	377.433 { 89}						
Units	Cts/S	Cts/S	Cts/S						
Avg	3863.2	44612.	3366.3						
Stddev	8.9	392.	7.8						
%RSD	.23079	.87915	.23217						

#1	3856.9	44335.	3371.8						
#2	3869.5	44890.	3360.8						

Sample Name: 280-123478-E-2-C Acquired: 5/13/2019 19:28:59 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457624 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00267	.46572	.00019	.06453	.17124	.00014	-.00646	126.47	.00013
Stddev	.00061	.00399	.00002	.00070	.00051	.00027	.00332	.27	.00045
%RSD	22.752	.85585	13.093	1.0785	.29978	190.20	51.425	.21041	340.14

#1	.00310	.46854	.00017	.06503	.17160	.00033	-.00881	126.66	.00045
#2	.00224	.46290	.00021	.06404	.17087	-.00005	-.00411	126.29	-.00018

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.00080	.00058	.43348	3.4998	.00756	14.630	.11972	.00253
Stddev	.00016	.00005	.00078	.00280	.0507	.00487	.013	.00037	.00025
%RSD	39.317	5.9627	134.12	.64557	1.4495	64.495	.09097	.30860	9.9753

#1	.00051	.00084	.00003	.43546	3.4640	.01101	14.640	.11946	.00235
#2	.00029	.00077	.00113	.43150	3.5357	.00411	14.621	.11998	.00271

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.838	.00213	.14409	-.00100	20.153	-.00127	-.00202	10.509	22.488
Stddev	.696	.00042	.00496	.00102	.042	.00188	.00158	.040	.085
%RSD	1.7908	19.826	3.4445	101.78	.20742	147.72	78.388	.37913	.37913

#1	39.330	.00243	.14759	-.00172	20.182	.00006	-.00090	10.537	22.549
#2	38.346	.00183	.14058	-.00028	20.123	-.00261	-.00314	10.480	22.428

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00230	.55006	.00257	.00939	-.00336	-.07508	.00175	.00381	-.00088
Stddev	.00090	.00059	.00222	.00002	.00215	.04038	.00026	.00087	.00242
%RSD	39.087	.10706	86.533	.19669	63.953	53.786	15.021	22.793	275.92

#1	-.00294	.55048	.00414	.00940	-.00184	-.04652	.00156	.00442	.00084
#2	-.00166	.54964	.00100	.00938	-.00488	-.10363	.00193	.00319	-.00259

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3861.0	45332.	3381.4
Stddev	3.0	199.	16.7
%RSD	.07871	.43968	.49336

#1	3858.8	45473.	3369.6
#2	3863.1	45191.	3393.2

Sample Name: 280-123478-E-3-E Acquired: 5/13/2019 19:31:32 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457624 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00153	.66519	.00448	.06790	.16085	.00003	-.00617	126.32	.00039
Stddev	.00009	.00925	.00125	.00052	.00115	.00017	.00051	.51	.00001
%RSD	5.6496	1.3909	27.853	.76928	.71225	485.55	8.2701	.40494	1.4905

#1	.00159	.67174	.00536	.06827	.16004	-.00008	-.00581	125.96	.00039
#2	.00147	.65865	.00360	.06753	.16166	.00015	-.00653	126.69	.00040

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.00112	.00106	.66893	4.2670	.00669	16.690	.18524	.00218
Stddev	.00007	.00027	.00034	.00137	.0395	.00341	.023	.00033	.00035
%RSD	18.987	23.978	31.627	.20432	.92488	50.935	.13532	.17643	16.082

#1	.00030	.00131	.00130	.66796	4.2391	.00428	16.706	.18547	.00243
#2	.00040	.00093	.00083	.66990	4.2949	.00910	16.674	.18501	.00194

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	36.470	.00220	.13568	-.00194	28.509	-.00210	.00605	9.9810	21.359
Stddev	.592	.00014	.00257	.00075	.184	.00063	.00062	.0525	.112
%RSD	1.6239	6.4259	1.8944	38.571	.64550	30.155	10.166	.52620	.52620

#1	36.889	.00210	.13750	-.00141	28.639	-.00255	.00649	9.9439	21.280
#2	36.051	.00230	.13386	-.00247	28.378	-.00166	.00562	10.018	21.439

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00130	.63883	.00328	.01372	-.00599	-.10545	.00233	.00655	-.00211
Stddev	.00099	.00279	.00048	.00036	.00016	.00368	.00073	.00019	.00110
%RSD	76.472	.43672	14.599	2.6141	2.7141	3.4850	31.395	2.9347	51.993

#1	-.00200	.63686	.00362	.01347	-.00610	-.10805	.00181	.00641	-.00134
#2	-.00060	.64080	.00294	.01398	-.00587	-.10285	.00284	.00668	-.00289

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3973.6	46723.	3513.7
Stddev	1.5	87.	4.3
%RSD	.03802	.18524	.12369

#1	3972.5	46662.	3516.7
#2	3974.7	46784.	3510.6

Sample Name: CCVH-5690583 Acquired: 5/13/2019 19:34:05 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00352	50.918	-.00442	.00678	.00242	.00148	.99717	.03711	.00108	.00283	.00168	.01287	52.204
Stddev	.00032	.098	.00295	.00065	.00033	.00002	.00388	.00460	.00025	.00039	.00001	.00129	.099
%RSD	9.2239	.19281	66.644	9.5230	13.757	1.3570	.38907	12.393	23.337	13.825	.54963	9.9951	.18907

#1	.00329	50.988	-.00234	.00724	.00218	.00150	.99991	.04037	.00126	.00311	.00167	.01196	52.274
#2	.00375	50.849	-.00651	.00632	.00265	.00147	.99443	.03386	.00090	.00255	.00168	.01378	52.134

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.27697	.00504	.01723	.00431	.00069	264.43	.00445	.00254	.00385	4.7821	.00461	.00310	.01958
Stddev	.06297	.00215	.00275	.00007	.00033	2.51	.00037	.00271	.00051	.0334	.00646	.00171	.05564
%RSD	22.733	42.598	15.971	1.6739	47.406	.95040	8.2953	106.71	13.134	.69886	139.99	55.234	284.24

#1	.32150	.00656	.01528	.00436	.00046	266.21	.00418	.00446	.00349	4.8057	.00005	.00189	-.01977
#2	.23245	.00353	.01918	.00426	.00092	262.66	.00471	.00062	.00421	4.7584	.00918	.00431	.05892

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04189	.00130	.00231	5.0048	-.00859	.00239	10.178	.00560	.00465	.07247
Stddev	.11908	.00014	.00024	.0039	.00046	.00007	.041	.00012	.00036	.00182
%RSD	284.24	10.746	10.211	.07833	5.3990	2.8203	.40157	2.1063	7.7062	2.5090

#1	-.04231	.00120	.00215	5.0020	-.00892	.00235	10.149	.00552	.00439	.07376
#2	.12609	.00140	.00248	5.0076	-.00826	.00244	10.207	.00569	.00490	.07119

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3901.8	46345.	3452.9
Stddev	31.8	134.	8.2
%RSD	.81529	.28861	.23708

#1	3924.3	46440.	3458.7
#2	3879.3	46250.	3447.1

Sample Name: CCV-5690581 Acquired: 5/13/2019 19:36:36 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51655	F .63619	1.0007	.50291	.53310	.50454	-.00258	5.4027	.51421	.52300	.53191	.51028
Stddev	.00063	.00362	.0109	.00100	.00308	.00145	.00298	.0193	.00303	.00325	.00343	.00098
%RSD	.12122	.56886	1.0898	.19892	.57866	.28671	115.41	.35708	.58936	.62053	.64419	.19199

#1	.51700	.63875	1.0084	.50361	.53528	.50556	-.00047	5.4163	.51636	.52529	.53433	.50959
#2	.51611	.63363	.99298	.50220	.53091	.50352	-.00468	5.3890	.51207	.52070	.52948	.51097

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.6422	54.149	1.0636	20.736	.51343	.52931	F 6.4576	.52489	1.0412	1.0395	.04933	.98760
Stddev	.0034	.067	.0024	.010	.00050	.00362	.0162	.00346	.0013	.0083	.00664	.00528
%RSD	.13074	.12284	.22424	.04704	.09744	.68466	.25133	.65951	.12172	.80005	13.469	.53418

#1	2.6447	54.196	1.0652	20.729	.51378	.53187	6.4691	.52733	1.0421	1.0454	.05403	.99133
#2	2.6398	54.102	1.0619	20.743	.51307	.52674	6.4462	.52244	1.0403	1.0336	.04463	.98387

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99199	5.1478	11.016	1.0505	.51597	.00549	.50772	1.0606	-.05744	.51442	.52046	.52209
Stddev	.01184	.0064	.014	.0086	.00005	.00172	.00003	.0054	.01334	.00011	.00162	.00408
%RSD	1.1937	.12456	.12456	.81497	.00883	31.380	.00504	.50916	23.224	.02065	.31045	.78162

#1	1.0004	5.1433	11.007	1.0566	.51601	.00670	.50774	1.0644	-.06687	.51434	.52160	.51920
#2	.98361	5.1524	11.026	1.0445	.51594	.00427	.50770	1.0568	-.04801	.51449	.51932	.52497

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3961.8	46441.	3404.4
Stddev	11.3	15.	1.6
%RSD	.28504	.03216	.04629

#1	3953.8	46431.	3403.3
#2	3969.8	46452.	3405.5

Sample Name: CCB Acquired: 5/13/2019 19:38:59 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoades Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00222	-0.00068	-0.00314	.00070	-0.00022	-0.00003	-0.00781	-0.00421	-0.00014	.00001	.00006	-0.00213
Stddev	.00099	.00045	.00314	.00045	.00066	.00022	.00143	.00184	.00002	.00056	.00011	.00052
%RSD	44.659	65.486	99.798	63.931	298.02	872.82	18.267	43.803	16.219	6661.6	182.99	24.456
#1	.00292	-0.00037	-0.00093	.00038	.00025	.00013	-0.00882	-0.00551	-0.00013	.00041	.00013	-0.00249
#2	.00152	-0.00099	-0.00536	.00102	-0.00069	-0.00018	-0.00680	-0.00290	-0.00016	-0.00039	-0.00002	-0.00176
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.00200											
Low Limit	-.01000											
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W .07383	.12017	-0.00023	-0.00032	.00028	.00049	F .54179	.00103	-0.00590	-0.00345	.00716	.00299
Stddev	.00180	.00763	.00206	.00085	.00012	.00019	.01371	.00012	.00007	.00091	.00107	.00056
%RSD	2.4356	6.3487	908.67	267.44	43.834	39.312	2.5312	11.847	1.2055	26.259	15.003	18.847
#1	.07256	.12556	-0.00169	-0.00092	.00037	.00035	.55149	.00095	-0.00595	-0.00281	.00792	.00338
#2	.07510	.11477	.00123	.00028	.00020	.00062	.53210	.00112	-0.00585	-0.00410	.00640	.00259
Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.05000						.50000					
Low Limit	-.05000						-.50000					
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00451	.03015	.06452	-0.00113	.00019	.00193	-0.00036	-0.00398	-0.03587	-0.00071	-0.00048	-0.00464
Stddev	.00081	.00856	.01832	.00030	.00007	.00063	.00068	.00320	.04100	.00079	.00044	.00501
%RSD	17.895	28.400	28.400	26.521	39.134	32.449	187.75	80.324	114.31	112.44	89.876	108.00
#1	.00508	.02409	.05156	-0.00092	.00024	.00237	.00012	-0.00624	-0.06486	-0.00127	-0.00079	-0.00110
#2	.00394	.03620	.07747	-0.00134	.00014	.00149	-0.00084	-0.00172	-0.00688	-0.00014	-0.00018	-0.00818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3989.1	47421.	3432.6									
Stddev	12.1	77.	2.0									
%RSD	.30241	.16271	.05870									
#1	3980.6	47476.	3434.0									
#2	3997.6	47367.	3431.2									

Sample Name: CCVL-5699390 Acquired: 5/13/2019 19:41:36 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01043	.11997	F .00818	.09755	.01005	.00115	.09877	.21641	.00495	.00996	.00998	.01466
Stddev	.00007	.00001	.00589	.00148	.00027	.00010	.00216	.00229	.00001	.00017	.00013	.00020
%RSD	.68304	.00433	72.075	1.5202	2.6702	8.9168	2.1881	1.0563	.21019	1.7376	1.3184	1.3970
#1	.01048	.11998	.01234	.09860	.01024	.00123	.10030	.21803	.00495	.01008	.01007	.0148
#2	.01038	.11997	.00401	.09650	.00986	.00108	.09725	.21479	.00496	.00983	.00988	.01452
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.01500									
Range			-30.000%									
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.11376	3.2895	.02118	.20366	.01027	.01945	F 1.6453	.04078	2.8819	.00844	.09720	.01901
Stddev	.00157	.0932	.00628	.00209	.00011	.00040	.0057	.00006	.0321	.00069	.00060	.00269
%RSD	1.3804	2.8339	29.631	1.0255	1.1003	2.0348	.34638	.15381	1.1142	8.1387	.61486	14.164
#1	.11265	3.3554	.01674	.20219	.01019	.01973	1.6493	.04082	2.9046	.00892	.09678	.02092
#2	.11487	3.2236	.02562	.20514	.01035	.01917	1.6413	.04073	2.8592	.00795	.09762	.01711
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							1.0000					
Range							30.000%					
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02373	.53846	1.1523	.09846	.01007	.01701	.00902	.01291	F -.02216	.00979	.02199	F .00944
Stddev	.00101	.00807	.0173	.00093	.00021	.00269	.00018	.00002	.02843	.00068	.00011	.00146
%RSD	4.2460	1.4993	1.4993	.94893	2.0749	15.838	1.9689	.15928	128.30	6.9468	.51230	15.441
#1	.02444	.53275	1.1401	.09912	.01022	.01892	.00889	.01292	-.00206	.00931	.02191	.01047
#2	.02302	.54417	1.1645	.09780	.00992	.01511	.00914	.01289	-.04226	.01027	.02207	.00841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail
Value									.06000			.01500
Range									-30.000%			-30.000%
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4109.9	47059.	3458.1									
Stddev	35.0	4.	13.8									
%RSD	.85193	.00813	.39830									
#1	4085.1	47062.	3467.9									
#2	4134.7	47056.	3448.4									

Sample Name: MB 280-457629/1-A Acquired: 5/13/2019 19:44:09 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/10 Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00110	.00171	-.00194	.00195	-.00049	-.00003	-.00264	.00952	.00009
Stddev	.00108	.00077	.00390	.00026	.00046	.00002	.00132	.00350	.00001
%RSD	97.926	44.847	200.87	13.244	93.370	78.667	49.817	36.746	16.534

#1	.00186	.00226	.00082	.00177	-.00082	-.00001	-.00357	.00705	.00008
#2	.00034	.00117	-.00470	.00213	-.00017	-.00004	-.00171	.01200	.00010

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00004	-.00167	.01580	-.01235	.00037	-.00140	.00009	.00015
Stddev	.00015	.00002	.00031	.00154	.08140	.00437	.00935	.00003	.00026
%RSD	231.87	49.914	18.465	9.7218	659.21	1183.2	666.08	32.346	171.87

#1	.00017	.00006	-.00189	.01688	-.06991	.00346	.00521	.00007	-.00003
#2	-.00004	.00003	-.00145	.01471	.04521	-.00272	-.00802	.00011	.00033

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.43772	-.00025	-.00455	-.00245	.00462	.00201	-.00160	.03832	.08200
Stddev	.00601	.00064	.00077	.00092	.00188	.00077	.00199	.03548	.07593
%RSD	1.3741	252.51	16.996	37.672	40.775	38.396	124.73	92.594	92.594

#1	.44198	-.00071	-.00510	-.00180	.00595	.00255	-.00301	.06341	.13569
#2	.43347	.00020	-.00400	-.00310	.00329	.00146	-.00019	.01323	.02831

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00195	.00016	.00410	-.00111	-.00240	F -.08819	.00002	.00027	-.00489
Stddev	.00070	.00009	.00110	.00015	.00038	.01672	.00021	.00001	.00253
%RSD	35.728	57.684	26.856	13.108	15.774	18.965	939.80	1.9033	51.788

#1	-.00146	.00022	.00332	-.00101	-.00266	-.07636	.00017	.00028	-.00310
#2	-.00244	.00009	.00488	-.00121	-.00213	-.10001	-.00012	.00027	-.00668

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.06000			
Low Limit						-.06000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4093.0	48372.	3540.0
Stddev	5.0	197.	.0
%RSD	.12282	.40790	.00050

#1	4089.5	48511.	3540.0
#2	4096.6	48232.	3540.0

Sample Name: LCS 280-457629/2-A Acquired: 5/13/2019 19:46:45 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05378	10.248	1.9992	.99679	2.1134	W 1.0001	W 2.0121	51.498	1.0155
Stddev	.00033	.012	.0041	.00382	.0073	.0023	.0116	.160	.0046
%RSD	.61014	.12051	.20585	.38330	.34426	.22808	.57634	.31056	.45287

#1	.05355	10.239	2.0021	.99949	2.1083	.99846	2.0203	51.385	1.0188
#2	.05401	10.257	1.9963	.99409	2.1186	1.0017	2.0039	51.611	1.0123

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Warn	Chk Pass	Chk Pass
High Limit						1.0000	2.0000		
Low Limit						-.00200	-.20000		

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99441	1.0333	1.0003	9.9572	53.633	1.0474	50.040	1.0088	1.0456
Stddev	.00461	.0041	.0002	.0109	.174	.0048	.157	.0035	.0062
%RSD	.46375	.40106	.02415	.10947	.32369	.45579	.31371	.35033	.58785

#1	.99768	1.0362	1.0004	9.9649	53.510	1.0440	50.151	1.0113	1.0500
#2	.99115	1.0303	1.0001	9.9495	53.755	1.0508	49.929	1.0063	1.0413

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	52.403	.99438	W 20.809	1.0018	9.3778	1.0042	1.9624	2.1684	4.6403
Stddev	.968	.00371	.110	.0006	.0299	.0047	.0153	.0183	.0391
%RSD	1.8471	.37340	.52905	.05446	.31889	.47225	.78097	.84283	.84283

#1	51.718	.99700	20.886	1.0022	9.3989	1.0076	1.9733	2.1554	4.6127
#2	53.087	.99175	20.731	1.0014	9.3567	1.0008	1.9516	2.1813	4.6680

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.0481	1.0202	1.0080	1.0160	2.0136	1.9616	1.0224	.50466	.52467
Stddev	.0093	.0023	.0018	.0021	.0025	.0017	.0041	.00053	.00757
%RSD	.45569	.22810	.17686	.20416	.12514	.08526	.40533	.10584	1.4432

#1	2.0547	1.0186	1.0093	1.0174	2.0154	1.9628	1.0253	.50428	.51931
#2	2.0415	1.0219	1.0067	1.0145	2.0118	1.9604	1.0195	.50504	.53002

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000								
Low Limit	-.20000								

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3997.8	46546.	3486.8
Stddev	1.0	213.	9.6
%RSD	.02501	.45662	.27641

#1	3997.1	46396.	3493.6
#2	3998.5	46696.	3480.0

Sample Name: 280-123481-C-2-A Acquired: 5/13/2019 19:49:00 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00140	10.974	-.00201	.06440	.22048	.00052	-.00850	498.92	.00047
Stddev	.00001	.054	.00145	.00196	.00118	.00004	.00073	7.86	.00004
%RSD	.72064	.49640	72.095	3.0488	.53554	8.2861	8.6367	1.5751	7.7457

#1	.00140	10.936	-.00304	.06579	.21964	.00049	-.00902	493.37	.00045
#2	.00139	11.013	-.00099	.06301	.22131	.00055	-.00798	504.48	.00050

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00515	.00875	.01294	12.673	8.7717	.00631	63.045	.53771	.00192
Stddev	.00002	.00001	.00024	.005	.0449	.00109	.218	.00303	.00060
%RSD	.30477	.10894	1.8538	.04156	.51137	17.269	.34626	.56269	31.295

#1	.00516	.00876	.01311	12.669	8.8034	.00708	62.891	.53557	.00149
#2	.00514	.00875	.01277	12.677	8.7400	.00554	63.199	.53985	.00234

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	124.65	.00587	.47309	-.00373	F 430.89	-.00173	.01088	33.309	71.282
Stddev	.83	.00049	.00515	.00146	5.30	.00248	.00253	.086	.184
%RSD	.66701	8.3921	1.0892	39.031	1.2300	143.71	23.277	.25802	.25802

#1	125.23	.00553	.47673	-.00270	434.63	.00003	.00909	33.249	71.152
#2	124.06	.00622	.46944	-.00476	427.14	-.00348	.01268	33.370	71.412

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00433	6.6462	.00564	.24700	-.00199	-.10157	.03414	.04613	.01515
Stddev	.00083	.0054	.00265	.00061	.00044	.05252	.00063	.00054	.00199
%RSD	19.218	.08141	46.867	.24686	21.897	51.711	1.8492	1.1751	13.152

#1	-.00374	6.6424	.00377	.24657	-.00168	-.06443	.03370	.04575	.01656
#2	-.00491	6.6500	.00752	.24743	-.00230	-.13870	.03459	.04652	.01374

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3755.9	44813.	3456.0
Stddev	65.0	140.	88.6
%RSD	1.7317	.31132	2.5630

#1	3801.9	44912.	3518.6
#2	3709.9	44715.	3393.3

Sample Name: 280-123481-C-2-A Acquired: 5/13/2019 19:51:36 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00189	W 2.5231	-.00854	.01496	.04225	.00016	-.00762	98.846	.00012
Stddev	.00000	.0520	.00653	.00044	.00055	.00003	.00091	1.613	.00020
%RSD	.03475	2.0608	76.418	2.9681	1.2912	19.821	11.964	1.6323	162.05

#1	.00189	2.4863	-.00393	.01528	.04186	.00018	-.00698	97.705	-.00002
#2	.00189	2.5599	-.01316	.01465	.04264	.00014	-.00827	99.987	.00026

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		2.5000							
Low Limit		-.20000							

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00118	.00173	.00248	2.5431	1.6444	.00228	13.025	.11184	.00005
Stddev	.00016	.00001	.00009	.0420	.0080	.00629	.082	.00088	.00036
%RSD	13.914	.43675	3.7879	1.6505	.48932	276.13	.62699	.78648	789.53

#1	.00106	.00173	.00242	2.5134	1.6387	.00673	12.967	.11122	-.00021
#2	.00130	.00174	.00255	2.5727	1.6501	-.00217	13.083	.11247	.00030

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.270	.00014	.09267	-.00197	89.904	.00139	-.00033	6.4710	13.848
Stddev	.386	.00036	.00253	.00132	1.067	.00237	.00433	.0964	.206
%RSD	1.6580	265.35	2.7355	66.946	1.1866	170.19	1300.7	1.4898	1.4898

#1	22.997	.00039	.09087	-.00290	89.150	-.00028	.00273	6.4028	13.702
#2	23.543	-.00012	.09446	-.00104	90.658	.00307	-.00340	6.5391	13.994

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00231	1.2977	.00523	.04954	-.00420	F -.16670	.00649	.01012	.00154
Stddev	.00039	.0232	.00251	.00078	.00262	.00497	.00080	.00002	.00096
%RSD	16.986	1.7896	48.054	1.5801	62.431	2.9809	12.346	.16542	62.066

#1	-.00204	1.2813	.00345	.04899	-.00235	-.17021	.00706	.01010	.00086
#2	-.00259	1.3141	.00701	.05009	-.00606	-.16318	.00592	.01013	.00222

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3781.0	44806.	3299.4
Stddev	95.3	299.	31.6
%RSD	2.5196	.66751	.95796

#1	3848.4	44594.	3321.8
#2	3713.6	45017.	3277.1

Sample Name: 280-123481-C-2-B .S Acquired: 5/13/2019 19:54:08 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.06070	31.237	2.1322	1.1039	2.4488	W 1.0308	W 2.0884	W 562.28	1.0733
Stddev	.00133	.059	.0100	.0068	.0101	.0079	.0175	2.58	.0085
%RSD	2.1865	.18995	.46734	.61987	.41457	.76351	.83860	.45969	.79223

#1	.05976	31.195	2.1392	1.1087	2.4417	1.0253	2.1008	560.45	1.0793
#2	.06164	31.279	2.1251	1.0990	2.4560	1.0364	2.0760	564.11	1.0673

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Warn	Chk Warn	Chk Pass
High Limit						1.0000	2.0000	500.00	
Low Limit						-.00200	-.20000	-.40000	

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0068	1.0753	1.0754	23.746	66.449	1.1440	115.64	1.5937	1.0834
Stddev	.0055	.0046	.0017	.192	.604	.0092	.94	.0071	.0082
%RSD	.54657	.42719	.16181	.81032	.90840	.80508	.81336	.44541	.75757

#1	1.0107	1.0785	1.0766	23.610	66.022	1.1375	116.31	1.5987	1.0892
#2	1.0029	1.0720	1.0742	23.882	66.876	1.1505	114.98	1.5887	1.0776

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	182.00	1.0044	W 22.238	.99833	F 439.42	1.0359	2.0597	W 51.485	110.18
Stddev	1.43	.0037	.174	.00465	1.92	.0087	.0086	.306	.65
%RSD	.78782	.36453	.78029	.46558	.43795	.84112	.41972	.59355	.59355

#1	180.99	1.0070	22.360	1.0016	440.78	1.0420	2.0659	51.269	109.72
#2	183.01	1.0018	22.115	.99505	438.06	1.0297	2.0536	51.701	110.64

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit			20.000		200.00			50.000	
Low Limit			-6.0000		-.20000			-1.0000	

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.1110	7.9245	1.0464	1.3191	1.9595	1.8971	1.1139	.55609	.53151
Stddev	.0088	.0476	.0053	.0033	.0069	.0203	.0030	.00465	.00575
%RSD	.41633	.60019	.50894	.25153	.34977	1.0676	.26616	.83680	1.0826

#1	2.1172	7.8908	1.0501	1.3215	1.9643	1.9114	1.1160	.55938	.52744
#2	2.1048	7.9581	1.0426	1.3168	1.9546	1.8827	1.1118	.55280	.53558

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000								
Low Limit	-.20000								

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3348.4	38438.	2927.9
Stddev	12.8	609.	27.5
%RSD	.38325	1.5836	.93970

#1	3339.3	38007.	2908.5
#2	3357.5	38868.	2947.4

Sample Name: 280-123481-C-2-C MSD Acquired: 5/13/2019 19:56:23 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05947	31.450	2.1536	1.1214	2.4429	W 1.0318	W 2.1228	W 564.18	1.0803
Stddev	.00098	.078	.0166	.0067	.0019	.0004	.0210	.80	.0114
%RSD	1.6476	.24692	.77098	.60075	.07996	.03720	.99077	.14131	1.0560

#1	.05878	31.505	2.1653	1.1261	2.4443	1.0315	2.1377	564.75	1.0884
#2	.06016	31.395	2.1418	1.1166	2.4415	1.0320	2.1080	563.62	1.0722

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Warn	Chk Warn	Chk Pass
High Limit						1.0000	2.0000	500.00	
Low Limit						-.00200	-.20000	-.40000	

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0134	1.0846	1.0588	23.878	67.027	1.1459	115.63	1.5645	1.0940
Stddev	.0121	.0126	.0031	.056	.208	.0048	.12	.0014	.0159
%RSD	1.1917	1.1592	.29642	.23630	.30997	.42228	.10642	.09092	1.4580

#1	1.0219	1.0935	1.0610	23.918	67.173	1.1493	115.55	1.5635	1.1053
#2	1.0048	1.0757	1.0566	23.838	66.880	1.1425	115.72	1.5655	1.0827

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	182.38	1.0131	W 22.913	1.0066	F 444.02	1.0614	2.0738	W 51.683	110.60
Stddev	.79	.0094	.242	.0055	3.23	.0182	.0214	.093	.20
%RSD	.43165	.92857	1.0583	.54529	.72745	1.7166	1.0316	.18025	.18025

#1	181.83	1.0198	23.085	1.0104	446.31	1.0743	2.0889	51.749	110.74
#2	182.94	1.0065	22.742	1.0027	441.74	1.0485	2.0587	51.617	110.46

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit			20.000		200.00			50.000	
Low Limit			-6.0000		-.20000			-1.0000	

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.1218	7.9190	1.0576	1.3221	1.9780	1.9612	1.1144	.56541	.54314
Stddev	.0273	.0015	.0068	.0044	.0283	.0192	.0019	.00243	.00438
%RSD	1.2862	.01908	.64389	.33538	1.4322	.97849	.17492	.43005	.80666

#1	2.1411	7.9201	1.0528	1.3190	1.9980	1.9477	1.1130	.56369	.54004
#2	2.1025	7.9179	1.0624	1.3253	1.9580	1.9748	1.1157	.56713	.54624

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000								
Low Limit	-.20000								

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3381.3	38792.	2830.4
Stddev	62.2	276.	4.7
%RSD	1.8399	.71126	.16482

#1	3337.3	38987.	2827.1
#2	3425.3	38596.	2833.7

Sample Name: 280-123481-C-3-A Acquired: 5/13/2019 19:58:39 Type: Unk
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoadesc Prep Date: Custom ID2: Custom ID3:
 Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00362	.29919	-.00735	.07411	.01164	.00008	-.01255	427.88	.00068
Stddev	.00056	.00186	.00311	.00023	.00018	.00027	.00532	1.32	.00014
%RSD	15.392	.62008	42.278	.31542	1.5658	352.98	42.396	.30802	20.870

#1	.00401	.29788	-.00515	.07394	.01177	-.00011	-.01631	426.95	.00078
#2	.00322	.30050	-.00954	.07427	.01151	.00026	-.00879	428.82	.00058

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	-.00011	.00378	.22596	6.0686	.03263	76.402	.00592	.00189
Stddev	.00005	.00026	.00015	.00066	.0216	.00147	.629	.00083	.00100
%RSD	86.571	228.61	3.9180	.29013	.35565	4.5173	.82340	13.947	53.023

#1	-.00009	.00007	.00368	.22550	6.0534	.03367	75.957	.00650	.00118
#2	-.00002	-.00030	.00389	.22643	6.0839	.03159	76.847	.00533	.00260

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	485.03	.00173	.00749	-.00491	F 598.27	.00398	.11880	9.2108	19.711
Stddev	1.61	.00058	.00021	.00051	.00	.00364	.00716	.0466	.100
%RSD	.33292	33.317	2.8078	10.275	.00049	91.475	6.0242	.50580	.50580

#1	483.89	.00132	.00764	-.00456	598.28	.00141	.11374	9.1778	19.641
#2	486.17	.00214	.00734	-.00527	598.27	.00655	.12386	9.2437	19.782

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00487	W 10.289	.00291	.00576	-.00354	F -.21529	-.00048	.00529	-.00752
Stddev	.00005	.048	.00103	.00009	.00111	.01366	.00012	.00006	.00288
%RSD	1.0910	.47023	35.478	1.5622	31.387	6.3438	25.341	1.0404	38.338

#1	-.00483	10.254	.00218	.00570	-.00432	-.20564	-.00039	.00533	-.00956
#2	-.00490	10.323	.00364	.00582	-.00275	-.22495	-.00056	.00525	-.00548

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit		10.000				20.000			
Low Limit		-.02000				-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3307.0	35941.	2756.2
Stddev	87.0	71.	57.1
%RSD	2.6322	.19719	2.0726

#1	3368.6	35891.	2715.8
#2	3245.5	35992.	2796.6

Sample Name: 280-123481-C-4-A Acquired: 5/13/2019 20:01:12 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00283	-.00106	-.00877	.04450	.01630	-.00007	-.01411	391.24	.00017
Stddev	.00024	.00082	.00582	.00049	.00057	.00001	.00101	.77	.00049
%RSD	8.3759	77.307	66.395	1.1075	3.4768	19.986	7.1279	.19684	295.63

#1	.00266	-.00164	-.00465	.04484	.01590	-.00008	-.01482	390.69	-.00018
#2	.00299	-.00048	-.01289	.04415	.01670	-.00006	-.01340	391.78	.00052

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00024	-.00131	.03869	5.3228	.00650	44.133	.00044	-.00011
Stddev	.00005	.00023	.00020	.00239	.1831	.00002	.529	.00015	.00072
%RSD	57.457	95.211	15.277	6.1729	3.4392	.31660	1.1979	33.462	658.60

#1	.00012	.00040	-.00146	.04038	5.1934	.00648	43.760	.00034	.00040
#2	.00005	.00008	-.00117	.03700	5.4523	.00651	44.507	.00054	-.00062

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	83.650	.00107	.02345	-.00237	F 271.03	.00055	.02220	9.0417	19.349
Stddev	.820	.00018	.00103	.00020	1.43	.00985	.00200	.0509	.109
%RSD	.98079	16.800	4.3813	8.5900	.52857	1793.7	9.0251	.56323	.56323

#1	83.070	.00119	.02418	-.00222	272.05	.00751	.02362	9.0057	19.272
#2	84.230	.00094	.02272	-.00251	270.02	-.00642	.02079	9.0777	19.426

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00188	5.3879	.00101	-.00018	-.00364	F -.14957	.00022	.00229	-.00463
Stddev	.00165	.0100	.00133	.00011	.00085	.05205	.00067	.00043	.00428
%RSD	87.636	.18531	132.37	58.040	23.417	34.803	296.09	18.821	92.607

#1	-.00072	5.3949	.00195	-.00026	-.00304	-.18637	-.00025	.00198	-.00160
#2	-.00305	5.3808	.00006	-.00011	-.00424	-.11276	.00069	.00259	-.00766

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3384.0	43534.	3209.0
Stddev	21.1	328.	51.5
%RSD	.62391	.75387	1.6035

#1	3399.0	43767.	3245.4
#2	3369.1	43302.	3172.6

Sample Name: 280-123481-C-5-A Acquired: 5/13/2019 20:03:43 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00201	.02958	-.00696	.05142	.01695	-.00008	-.00975	325.13	.00063
Stddev	.00074	.00090	.00035	.00002	.00032	.00005	.00073	4.54	.00007
%RSD	36.993	3.0435	5.0321	.03958	1.8805	66.922	7.4666	1.3970	11.186

#1	.00253	.02895	-.00671	.05144	.01718	-.00004	-.01026	328.34	.00058
#2	.00148	.03022	-.00721	.05141	.01673	-.00012	-.00923	321.92	.00068

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00092	.00184	.05154	7.6071	.01260	57.424	.00968	-.00053
Stddev	.00056	.00007	.00058	.00326	.0221	.00553	.120	.00006	.00004
%RSD	1001.6	7.9668	31.703	6.3328	.29038	43.864	.20815	.59545	7.3778

#1	-.00034	.00087	.00226	.04923	7.5915	.00869	57.508	.00972	-.00056
#2	.00045	.00097	.00143	.05385	7.6227	.01651	57.339	.00964	-.00050

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	257.22	.00108	.00518	-.00195	F 316.20	-.00016	.07228	4.3624	9.3355
Stddev	3.46	.00030	.00015	.00143	1.86	.00393	.00214	.0811	.1735
%RSD	1.3450	28.091	2.8386	73.259	.58723	2503.6	2.9630	1.8584	1.8584

#1	259.67	.00086	.00529	-.00296	314.88	.00262	.07077	4.4197	9.4582
#2	254.78	.00129	.00508	-.00094	317.51	-.00294	.07380	4.3051	9.2128

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00218	7.2396	.00393	.00024	-.00598	F -.17652	-.00069	.02029	-.00497
Stddev	.00000	.0961	.00150	.00041	.00388	.02724	.00081	.00027	.00672
%RSD	.21270	1.3278	38.288	173.27	64.855	15.432	116.76	1.3362	135.09

#1	-.00219	7.3076	.00499	.00053	-.00873	-.19578	-.00012	.02049	-.00972
#2	-.00218	7.1717	.00287	-.00005	-.00324	-.15726	-.00126	.02010	-.00022

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3376.7	40275.	3050.9
Stddev	199.0	552.	27.5
%RSD	5.8943	1.3694	.90057

#1	3235.9	40665.	3031.5
#2	3517.4	39885.	3070.3

Sample Name: 280-123481-C-6-A Acquired: 5/13/2019 20:06:14 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00233	.02855	-.01292	.08907	.11710	-.00012	-.01205	216.10	.00046
Stddev	.00097	.00162	.00128	.00153	.00015	.00020	.00113	.13	.00021
%RSD	41.605	5.6694	9.9222	1.7231	.13011	162.81	9.3752	.06081	44.873

#1	.00301	.02969	-.01201	.08798	.11699	.00002	-.01285	216.01	.00032
#2	.00164	.02740	-.01383	.09015	.11720	-.00026	-.01125	216.19	.00061

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00021	.00108	.03480	3.3887	.00918	36.279	.03736	-.00001
Stddev	.00023	.00003	.00106	.00077	.0609	.00084	.017	.00007	.00022
%RSD	326.11	14.020	98.125	2.2025	1.7983	9.1319	.04803	.19562	2262.5

#1	-.00023	.00019	.00033	.03534	3.3456	.00859	36.267	.03742	.00015
#2	.00009	.00023	.00183	.03425	3.4317	.00977	36.292	.03731	-.00017

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	64.475	.00074	.00350	-.00509	86.717	.00035	.00097	10.014	21.430
Stddev	1.063	.00033	.00059	.00072	.383	.00006	.00160	.049	.105
%RSD	1.6495	45.032	16.781	14.218	.44161	17.013	164.16	.48967	.48967

#1	63.723	.00051	.00308	-.00560	86.447	.00031	.00210	10.049	21.504
#2	65.227	.00098	.00391	-.00457	86.988	.00039	-.00016	9.9793	21.356

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00186	4.2052	.00376	.00005	-.00622	F -.16390	-.00026	.00469	-.00470
Stddev	.00183	.0034	.00057	.00024	.00239	.02404	.00040	.00063	.00214
%RSD	98.735	.08079	15.033	527.21	38.403	14.669	158.11	13.354	45.587

#1	-.00056	4.2028	.00336	.00022	-.00453	-.18090	-.00054	.00425	-.00622
#2	-.00315	4.2076	.00416	-.00013	-.00791	-.14690	.00003	.00514	-.00319

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3450.7	40863.	3023.4
Stddev	49.2	335.	9.6
%RSD	1.4246	.81913	.31671

#1	3485.4	41100.	3016.7
#2	3415.9	40626.	3030.2

Sample Name: CCVH-5690583 Acquired: 5/13/2019 20:08:45 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00524	54.406	-.00641	.00603	.00151	.00131	1.0423	.04388	.00137	.00278	.00185	.01563
Stddev	.00012	.007	.00456	.00028	.00099	.00002	.0044	.01019	.00036	.00028	.00013	.00032
%RSD	2.2575	.01331	71.097	4.6058	65.395	1.6592	.42310	23.217	26.217	9.9588	6.8894	2.0241

#1	.00515	54.401	-.00319	.00583	.00221	.00133	1.0455	.05108	.00112	.00258	.00194	.01585
#2	.00532	54.411	-.00964	.00623	.00081	.00130	1.0392	.03668	.00162	.00297	.00176	.01541

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	54.811	.48988	.00712	.01291	.00412	.00080	F 280.58	.00398	.00112	.00296	5.0269	.00822
Stddev	.158	.09846	.00094	.00397	.00014	.00025	1.61	.00033	.00145	.00086	.0095	.00283
%RSD	.28806	20.099	13.253	30.722	3.4026	31.251	.57445	8.3400	129.17	29.117	.18917	34.396

#1	54.699	.55950	.00779	.01572	.00402	.00063	279.44	.00374	.00010	.00357	5.0336	.01021
#2	54.923	.42026	.00646	.01011	.00422	.00098	281.72	.00421	.00215	.00235	5.0202	.00622

Check ?	Chk Pass	None	None	None	None	None	Chk Fail	None	None	None	Chk Pass	None
Value							250.00					
Range							10.490%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00115	.03197	.06841	.00116	.00251	5.2676	-.01032	-.00043	10.650	.00518	.00317	.07738
Stddev	.00146	.00245	.00524	.00036	.00029	.0062	.00049	.00367	.137	.00056	.00006	.00460
%RSD	127.27	7.6586	7.6586	31.333	11.670	.11705	4.7516	848.30	1.2826	10.785	1.9759	5.9470

#1	-.00218	.03370	.07211	.00090	.00231	5.2720	-.00997	.00216	10.747	.00558	.00313	.07413
#2	-.00012	.03024	.06470	.00142	.00272	5.2633	-.01066	-.00303	10.553	.00479	.00322	.08064

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3415.0	39999.	2934.3
Stddev	7.2	26.	26.3
%RSD	.21073	.06385	.89628

#1	3420.1	39981.	2952.9
#2	3409.9	40017.	2915.7

Sample Name: CCV-5690581 Acquired: 5/13/2019 20:11:14 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .55662	F .68438	1.0581	.53579	F .57418	.54098	-.00512	F 5.6987	.54900	F .55639	F .56606	.54877
Stddev	.00106	.00960	.0142	.00771	.00399	.00230	.00418	.0259	.00622	.00643	.00759	.00233
%RSD	.19009	1.4029	1.3417	1.4393	.69483	.42555	81.718	.45489	1.1327	1.1552	1.3401	.42441
#1	.55587	.69117	1.0682	.54124	.57136	.53936	-.00216	5.6803	.55340	.56093	.57143	.55042
#2	.55737	.67759	1.0481	.53033	.57700	.54261	-.00808	5.7170	.54460	.55184	.56070	.54713
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass	None	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Pass
Value	.50000	.50000			.50000			5.0000		.50000	.50000	
Range	10.000%	10.000%			10.000%			10.000%		10.000%	10.000%	
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 2.7994	F 58.727	F 1.1516	F 22.231	F .55060	F .56377	F 7.0009	F .55836	F 1.1121	F 1.1103	.05741	1.0443
Stddev	.0027	.215	.0084	.049	.00112	.00661	.0103	.00652	.0092	.0137	.00597	.0125
%RSD	.09834	.36629	.73385	.21846	.20427	1.1724	.14722	1.1672	.83014	1.2327	10.394	1.1996
#1	2.7975	58.575	1.1456	22.265	.55140	.56844	7.0081	.56297	1.1186	1.1200	.06163	1.0532
#2	2.8013	58.879	1.1575	22.196	.54981	.55910	6.9936	.55376	1.1055	1.1006	.05319	1.0354
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	None	Chk Pass
Value	2.5000	50.000	1.0000	20.000	.50000	.50000	5.0000	.50000	1.0000	1.0000		
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%		
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0568	F 5.5672	F 11.914	F 1.1150	F .55056	.00770	.54543	F 1.1303	-.13571	F .55336	F .55696	F .55475
Stddev	.0101	.0138	.029	.0119	.00212	.00167	.00181	.0167	.03414	.00068	.00004	.00260
%RSD	.96075	.24762	.24762	1.0681	.38595	21.741	.33231	1.4767	25.156	.12359	.00650	.46926
#1	1.0640	5.5770	11.935	1.1235	.54906	.00888	.54671	1.1421	-.11157	.55385	.55699	.55660
#2	1.0497	5.5575	11.893	1.1066	.55207	.00652	.54415	1.1185	-.15985	.55288	.55694	.55291
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Fail	None	Chk Pass	Chk Fail	None	Chk Fail	Chk Fail	Chk Fail
Value		5.0000	10.700	1.0000	.50000			1.0000		.50000	.50000	.50000
Range		10.000%	10.000%	10.000%	10.000%			10.000%		10.000%	10.000%	10.000%
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3473.9	40612.	2923.3									
Stddev	.8	61.	10.0									
%RSD	.02220	.14926	.34229									
#1	3474.4	40655.	2930.3									
#2	3473.3	40569.	2916.2									

Sample Name: CCB Acquired: 5/13/2019 20:13:36 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoades Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00257	.00168	-.00004	.00169	-.00105	.00009	-.00589	.00551	.00012	.00010	-.00015	-.00034
Stddev	.00033	.00118	.00086	.00192	.00047	.00005	.00040	.00221	.00042	.00057	.00026	.00016
%RSD	12.861	70.118	2142.2	113.62	44.704	57.174	6.7538	40.100	343.50	565.85	177.46	45.652
#1	.00234	.00085	.00057	.00305	-.00138	.00013	-.00617	.00395	.00042	-.00030	.00004	-.00023
#2	.00280	.00252	-.00065	.00033	-.00071	.00005	-.00561	.00707	-.00018	.00051	-.00033	-.00045
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.00200											
Low Limit	-.01000											
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01587	.19525	.00080	.00512	.00011	.00048	F .74618	-.00029	-.00399	-.00313	.03813	.00137
Stddev	.00311	.06840	.00349	.00123	.00015	.00013	.03054	.00060	.00161	.00133	.01022	.00044
%RSD	19.599	35.032	435.95	24.018	140.15	27.700	4.0928	205.21	40.504	42.396	26.800	31.662
#1	.01367	.14689	.00327	.00425	.00000	.00057	.76777	.00013	-.00513	-.00219	.04536	.00168
#2	.01807	.24362	-.00167	.00599	.00022	.00038	.72459	-.00071	-.00284	-.00406	.03091	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							.50000					
Low Limit							-.50000					
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00390	.04326	.09258	-.00106	.00066	.00267	-.00117	-.00558	F -.13726	-.00027	-.00021	-.00418
Stddev	.00019	.03900	.08345	.00132	.00025	.00147	.00016	.00199	.04917	.00062	.00005	.00130
%RSD	4.8783	90.144	90.144	124.47	38.168	54.893	13.599	35.721	35.820	225.00	22.356	31.038
#1	.00377	.01569	.03357	-.00013	.00049	.00163	-.00129	-.00417	-.10249	-.00071	-.00024	-.00510
#2	.00403	.07084	.15159	-.00200	.00084	.00371	-.00106	-.00699	-.17202	.00016	-.00018	-.00327
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit									.10000			
Low Limit									-.10000			
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3562.8	41772.	2969.0									
Stddev	2.7	31.	7.4									
%RSD	.07456	.07444	.24870									
#1	3560.9	41794.	2963.7									
#2	3564.7	41750.	2974.2									

Sample Name: CCVL-5699390 Acquired: 5/13/2019 20:16:11 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00172	F .00009	F -.00985	F .00042	F -.00126	F -.00012	F -.00800	F .01023	F -.00005	F -.00002	F -.00009	F -.00100
Stddev	.00022	.00040	.00373	.00046	.00060	.00005	.00063	.00195	.00005	.00030	.00058	.00096
%RSD	12.661	458.17	37.894	108.04	47.692	38.662	7.9249	19.054	98.799	1454.3	611.58	95.450
#1	.00156	.00037	-.01249	.00075	-.00168	-.00016	-.00845	.00885	-.00009	-.00024	-.00051	-.00033
#2	.00187	-.00019	-.00721	.00010	-.00083	-.00009	-.00755	.01161	-.00002	.00019	.00032	-.00168
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.01000	.10000	.01500	.10000	.01000	.00100	.10000	.20000	.00500	.01000	.01000	.01500
Range	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00640	F .13761	F .00342	F -.00752	F -.00004	F -.00017	F .59189	F -.00049	F -.00308	F -.00174	F .02551	F .00177
Stddev	.00377	.03439	.00325	.00912	.00000	.00027	.01439	.00034	.00145	.00214	.00071	.00079
%RSD	58.877	24.992	94.999	121.32	10.446	161.35	2.4319	68.017	47.229	123.14	2.7703	44.716
#1	.00906	.11329	.00572	-.00107	-.00004	-.00036	.58171	-.00073	-.00205	-.00023	.02501	.00233
#2	.00373	.16193	.00112	-.01396	-.00004	.00002	.60207	-.00026	-.00411	-.00326	.02601	.00121
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.10000	3.0000	.02000	.20000	.01000	.02000	1.0000	.04000	3.0000	.00900	.10000	.02000
Range	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00244	F .01855	F .03970	F -.00262	F .00024	F .00518	F -.00102	F -.00167	F -.14566	F .00058	F -.00043	F -.00501
Stddev	.00121	.01823	.03901	.00060	.00017	.00282	.00091	.00067	.08282	.00007	.00019	.00024
%RSD	49.657	98.265	98.265	22.886	72.406	54.458	89.269	40.394	56.860	12.354	43.465	4.7937
#1	.00329	.03144	.06729	-.00220	.00036	.00717	-.00038	-.00119	-.20422	.00064	-.00030	-.00518
#2	.00158	.00566	.01212	-.00305	.00012	.00319	-.00166	-.00214	-.08710	.00053	-.00057	-.00484
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.02000	.50000	1.0700	.10000	.01000	.01500	.01000	.01500	.06000	.01000	.02000	.01500
Range	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3674.0	42953.	3070.4									
Stddev	23.0	4.	11.0									
%RSD	.62502	.00939	.35836									
#1	3690.2	42956.	3078.2									
#2	3657.7	42950.	3062.6									

Sample Name: 280-123481-C-7-A Acquired: 5/13/2019 20:18:49 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00225	.78784	-.00546	.09233	.02041	.00013	-.01177	290.34	.00026
Stddev	.00066	.00084	.00210	.00089	.00041	.00017	.00070	.20	.00056
%RSD	29.206	.10688	38.422	.96648	1.9963	137.54	5.9331	.06799	210.77

#1	.00179	.78725	-.00398	.09170	.02012	.00025	-.01226	290.20	-.00013
#2	.00272	.78844	-.00694	.09296	.02069	.00000	-.01128	290.48	.00066

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00055	.00295	.86042	4.8067	.02389	47.463	.02094	-.00051
Stddev	.00077	.00034	.00013	.00213	.0573	.00284	.007	.00019	.00011
%RSD	233.59	61.881	4.2966	.24774	1.1922	11.911	.01515	.93030	20.929

#1	.00087	.00080	.00286	.86193	4.7662	.02590	47.458	.02080	-.00044
#2	-.00021	.00031	.00304	.85892	4.8473	.02187	47.468	.02108	-.00059

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	280.64	.00117	.05236	-.00398	F 236.61	-.00129	.00056	13.876	29.695
Stddev	.50	.00035	.00242	.00111	.49	.00188	.00245	.089	.191
%RSD	.17706	30.157	4.6166	27.835	.20789	145.87	436.68	.64345	.64345

#1	280.29	.00092	.05407	-.00477	236.26	-.00262	-.00117	13.813	29.560
#2	280.99	.00142	.05065	-.00320	236.96	.00004	.00229	13.939	29.830

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00258	5.8139	.00238	.01336	-.00410	F -.16800	.00146	.01426	-.00488
Stddev	.00079	.0008	.00053	.00092	.00339	.00305	.00081	.00045	.00094
%RSD	30.641	.01286	22.360	6.8882	82.814	1.8141	55.612	3.1561	19.184

#1	-.00314	5.8144	.00200	.01402	-.00170	-.17015	.00204	.01458	-.00555
#2	-.00202	5.8134	.00276	.01271	-.00649	-.16584	.00089	.01394	-.00422

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3475.6	39530.	2991.2
Stddev	26.4	567.	20.8
%RSD	.76047	1.4338	.69634

#1	3456.9	39930.	3005.9
#2	3494.3	39129.	2976.5

Sample Name: 280-123481-C-8-A Acquired: 5/13/2019 20:21:19 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00383	.20701	-.01248	.04511	.01465	.00007	-.00912	373.90	.00066
Stddev	.00114	.00105	.00618	.00040	.00007	.00006	.00433	1.38	.00021
%RSD	29.813	.50680	49.525	.88875	.45413	86.908	47.543	.36836	31.526

#1	.00464	.20775	-.00811	.04540	.01470	.00012	-.00605	372.92	.00081
#2	.00302	.20626	-.01685	.04483	.01460	.00003	-.01218	374.87	.00052

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.00016	-.00017	.34280	8.6784	.01409	100.74	.00943	-.00011
Stddev	.00043	.00001	.00068	.00305	.1158	.00353	.22	.00008	.00009
%RSD	122.32	5.0620	411.63	.88917	1.3345	25.058	.21560	.80739	78.318

#1	-.00065	.00016	.00032	.34065	8.5965	.01160	100.89	.00938	-.00005
#2	-.00005	.00015	-.00065	.34496	8.7603	.01659	100.58	.00948	-.00018

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 654.56	.00103	.00526	-.00512	F 561.69	.00161	.09260	6.1029	13.060
Stddev	5.76	.00039	.00019	.00109	9.38	.00094	.00150	.0325	.070
%RSD	.88056	37.869	3.5219	21.311	1.6696	58.201	1.6162	.53305	.53305

#1	650.48	.00076	.00539	-.00590	568.32	.00227	.09154	6.0799	13.011
#2	658.63	.00131	.00513	-.00435	555.06	.00095	.09366	6.1259	13.109

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				200.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00363	8.0942	.00332	.00210	-.00449	F -.23820	-.00089	.00351	-.00390
Stddev	.00078	.0571	.00014	.00077	.00255	.00374	.00048	.00053	.00271
%RSD	21.593	.70551	4.3282	36.758	56.817	1.5682	54.383	15.211	69.422

#1	-.00307	8.0538	.00322	.00264	-.00269	-.23556	-.00055	.00313	-.00581
#2	-.00418	8.1346	.00343	.00155	-.00630	-.24084	-.00123	.00389	-.00199

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3146.8	36238.	2925.6
Stddev	159.0	370.	15.6
%RSD	5.0524	1.0216	.53434

#1	3259.3	36500.	2914.6
#2	3034.4	35976.	2936.7

Sample Name: 280-123546-A-1-A Acquired: 5/13/2019 20:23:51 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00281	.01325	-.00625	.03119	.15098	-.00001	-.01172	198.44	.00077
Stddev	.00018	.00015	.00081	.00001	.00028	.00002	.00028	.40	.00037
%RSD	6.4080	1.1629	13.039	.03371	.18477	238.15	2.3907	.20347	47.715

#1	.00293	.01314	-.00567	.03118	.15118	.00001	-.01152	198.73	.00051
#2	.00268	.01336	-.00683	.03120	.15079	-.00003	-.01191	198.15	.00103

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00120	-.00018	.00064	.14618	2.1500	.01049	25.039	5.5954	.00044
Stddev	.00015	.00006	.00056	.00103	.0103	.00122	.180	.0309	.00032
%RSD	12.718	32.006	87.971	.70452	.47726	11.635	.71694	.55266	73.574

#1	.00109	-.00014	.00103	.14545	2.1573	.01136	25.166	5.6173	.00067
#2	.00131	-.00022	.00024	.14691	2.1428	.00963	24.912	5.5735	.00021

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.895	.01419	.07196	-.00225	26.783	-.00015	-.00170	9.9657	21.327
Stddev	.505	.00037	.00353	.00052	.090	.00082	.00039	.0057	.012
%RSD	4.2422	2.6280	4.9117	23.045	.33450	550.13	23.093	.05697	.05697

#1	12.251	.01392	.06947	-.00188	26.846	.00043	-.00198	9.9697	21.335
#2	11.538	.01445	.07446	-.00261	26.719	-.00073	-.00143	9.9616	21.318

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00113	.84635	.00324	-.00041	-.00559	F -.13851	.00032	.00455	-.00148
Stddev	.00348	.00057	.00074	.00075	.00570	.00842	.00067	.00097	.00144
%RSD	307.13	.06754	22.706	181.81	101.99	6.0773	211.71	21.328	96.963

#1	-.00359	.84594	.00272	.00012	-.00962	-.13256	.00079	.00387	-.00047
#2	.00133	.84675	.00376	-.00094	-.00156	-.14446	-.00016	.00524	-.00250

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3433.3	41540.	3131.0
Stddev	11.9	672.	32.2
%RSD	.34643	1.6179	1.0274

#1	3441.7	42015.	3153.8
#2	3424.9	41065.	3108.3

Sample Name: 280-123546-A-2-A Acquired: 5/13/2019 20:26:22 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00328	.28191	-.00330	.02000	.28973	.00011	-.01208	69.450	.00052
Stddev	.00008	.00443	.00341	.00045	.00160	.00005	.00808	.046	.00032
%RSD	2.3769	1.5700	103.31	2.2654	.55396	41.795	66.842	.06610	61.621

#1	.00334	.28504	-.00571	.01968	.29086	.00014	-.01779	69.482	.00075
#2	.00323	.27878	-.00089	.02032	.28859	.00008	-.00637	69.417	.00029

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00143	.00094	.20161	4.1772	.00286	12.794	.00525	.00069
Stddev	.00031	.00035	.00020	.00208	.0163	.00041	.224	.00008	.00031
%RSD	326.79	24.194	20.963	1.0309	.39084	14.469	1.7533	1.5572	45.429

#1	-.00031	.00168	.00080	.20014	4.1888	.00316	12.635	.00519	.00047
#2	.00012	.00119	.00108	.20308	4.1657	.00257	12.953	.00530	.00091

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 8.0466	.00242	.23386	-.00185	2.0427	.00335	-.00112	10.229	21.891
Stddev	.1048	.00000	.00085	.00350	.0353	.00016	.00153	.010	.021
%RSD	1.3022	.11306	.36507	189.21	1.7299	4.7760	137.27	.09477	.09477

#1	7.9725	.00242	.23326	-.00432	2.0677	.00346	-.00003	10.222	21.876
#2	8.1207	.00243	.23446	.00062	2.0177	.00324	-.00220	10.236	21.905

Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	10000.								
Low Limit	9.0000								

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00199	.42511	.00278	.00470	-.00348	F -.16893	.00090	.00429	-.00503
Stddev	.00269	.00042	.00127	.00056	.00226	.04754	.00077	.00009	.00023
%RSD	134.85	.09894	45.635	11.975	64.876	28.140	86.150	2.0900	4.5856

#1	-.00389	.42481	.00188	.00510	-.00189	-.13532	.00035	.00435	-.00519
#2	-.00009	.42541	.00368	.00431	-.00508	-.20255	.00144	.00422	-.00487

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3353.6	38586.	2715.4
Stddev	19.1	314.	28.1
%RSD	.56995	.81421	1.0361

#1	3340.1	38364.	2735.3
#2	3367.2	38809.	2695.6

Sample Name: 280-123546-A-3-A Acquired: 5/13/2019 20:28:54 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00349	.00953	-.00730	.09311	.08182	.00009	-.01626	217.20	.00176
Stddev	.00006	.00075	.00335	.00190	.00077	.00003	.00456	.02	.00045
%RSD	1.6507	7.8681	45.850	2.0413	.94407	30.460	28.059	.00814	25.451

#1	.00354	.00900	-.00967	.09445	.08237	.00010	-.01948	217.21	.00144
#2	.00345	.01006	-.00493	.09176	.08127	.00007	-.01303	217.19	.00207

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.00097	.00125	.01520	2.7327	.01470	22.857	3.6569	.00307
Stddev	.00009	.00021	.00021	.00114	.0057	.00103	.102	.0134	.00020
%RSD	15.159	21.702	16.770	7.5216	.20967	7.0193	.44431	.36515	6.6004

#1	.00051	.00112	.00140	.01439	2.7367	.01397	22.928	3.6664	.00292
#2	.00064	.00082	.00111	.01601	2.7286	.01543	22.785	3.6475	.00321

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	96.446	.03250	.19656	-.00342	63.627	.00528	.00441	13.506	28.902
Stddev	.701	.00069	.00175	.00361	.569	.00355	.00433	.003	.007
%RSD	.72728	2.1109	.88871	105.66	.89436	67.291	98.141	.02436	.02436

#1	96.942	.03298	.19532	-.00086	64.029	.00277	.00135	13.508	28.907
#2	95.950	.03201	.19779	-.00597	63.224	.00779	.00747	13.503	28.897

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00257	.67700	.00338	-.00098	-.00507	F -.19861	.00091	.00426	.00047
Stddev	.00132	.00064	.00251	.00049	.00302	.05259	.00088	.00025	.00139
%RSD	51.159	.09446	74.170	50.548	59.509	26.479	96.795	5.8265	293.38

#1	-.00351	.67655	.00516	-.00063	-.00720	-.16143	.00029	.00444	-.00051
#2	-.00164	.67746	.00161	-.00133	-.00294	-.23580	.00154	.00409	.00145

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3018.2	38030.	2732.9
Stddev	23.5	373.	13.6
%RSD	.77855	.98120	.49860

#1	3034.8	38294.	2723.3
#2	3001.5	37766.	2742.5

Sample Name: 280-123546-A-4-A Acquired: 5/13/2019 20:31:25 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00387	.04239	-.00752	.08861	.03995	-.00002	-.01114	289.81	.00015
Stddev	.00149	.00007	.00331	.00279	.00048	.00015	.00024	.69	.00018
%RSD	38.462	.17007	43.964	3.1441	1.1952	993.56	2.1120	.23947	116.42

#1	.00282	.04234	-.00518	.09058	.03961	-.00012	-.01131	289.32	.00028
#2	.00493	.04244	-.00986	.08664	.04028	.00009	-.01097	290.30	.00003

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.00046	-.00024	.05345	4.8812	.02237	64.153	.00317	.00609
Stddev	.00021	.00002	.00047	.00238	.1460	.00582	.072	.00000	.00079
%RSD	51.023	3.9059	194.98	4.4606	2.9908	26.004	.11171	.04500	12.921

#1	-.00026	.00045	.00009	.05177	4.7780	.02648	64.203	.00317	.00665
#2	-.00055	.00048	-.00058	.05514	4.9844	.01826	64.102	.00317	.00554

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.572	.00168	.00642	-.00357	W 186.53	.00109	.05567	7.7163	16.513
Stddev	.261	.00025	.00263	.00297	2.92	.00865	.00279	.0092	.020
%RSD	1.4834	14.748	41.019	83.127	1.5643	792.71	5.0177	.11855	.11855

#1	17.756	.00186	.00455	-.00566	188.59	.00721	.05765	7.7099	16.499
#2	17.387	.00151	.00828	-.00147	184.46	-.00503	.05370	7.7228	16.527

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					180.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00370	1.6094	.00329	.00006	-.00480	F -.26536	-.00006	.00767	-.00435
Stddev	.00068	.0067	.00052	.00034	.00181	.05579	.00042	.00007	.00352
%RSD	18.446	.41951	15.707	584.68	37.735	21.024	642.88	.87524	80.873

#1	-.00418	1.6047	.00366	-.00018	-.00352	-.30481	-.00036	.00771	-.00684
#2	-.00321	1.6142	.00293	.00030	-.00608	-.22591	.00023	.00762	-.00186

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3358.1	37938.	2692.3
Stddev	59.6	897.	25.5
%RSD	1.7755	2.3650	.94889

#1	3315.9	37304.	2674.2
#2	3400.2	38573.	2710.3

Sample Name: 280-123546-A-5-A Acquired: 5/13/2019 20:33:56 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00389	.02464	-.00864	1.0803	.23709	-.00004	-.01270	143.78	.00196
Stddev	.00002	.00140	.00184	.0076	.00090	.00011	.00517	.38	.00011
%RSD	.39483	5.6868	21.284	.70578	.38019	270.45	40.738	.26405	5.5004

#1	.00388	.02563	-.00994	1.0856	.23773	-.00012	-.01636	144.05	.00203
#2	.00390	.02365	-.00734	1.0749	.23646	.00004	-.00904	143.52	.00188

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00024	.00239	.29725	5.5488	.03527	83.985	3.0431	.01375
Stddev	.00021	.00048	.00062	.00448	.0584	.00112	.214	.0043	.00005
%RSD	40.933	200.69	25.996	1.5058	1.0518	3.1695	.25531	.14256	.34770

#1	.00036	-.00010	.00195	.30041	5.5075	.03606	84.136	3.0461	.01371
#2	.00065	.00057	.00282	.29408	5.5901	.03448	83.833	3.0400	.01378

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	171.93	.02598	.04122	-.00379	41.753	.00073	.00107	12.822	27.439
Stddev	.18	.00036	.00024	.00010	.014	.00116	.00150	.014	.029
%RSD	.10215	1.3966	.57211	2.5984	.03380	157.61	140.37	.10618	.10618

#1	171.81	.02624	.04105	-.00386	41.763	.00155	.00214	12.812	27.418
#2	172.06	.02573	.04138	-.00372	41.743	-.00008	.00001	12.832	27.460

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00107	2.1840	.00357	-.00040	-.00554	F -.21596	-.00053	.02321	-.00315
Stddev	.00132	.0024	.00456	.00007	.00203	.04063	.00015	.00041	.00074
%RSD	123.20	.11027	127.57	17.923	36.598	18.811	28.882	1.7785	23.648

#1	-.00201	2.1857	.00035	-.00035	-.00410	-.18723	-.00064	.02292	-.00262
#2	-.00014	2.1823	.00679	-.00045	-.00697	-.24468	-.00042	.02350	-.00367

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3441.9	39210.	2903.3
Stddev	90.8	113.	4.5
%RSD	2.6370	.28786	.15653

#1	3377.8	39290.	2906.5
#2	3506.1	39130.	2900.1

Sample Name: 280-123546-A-6-A Acquired: 5/13/2019 20:36:26 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00286	.01437	-.00155	.10627	.04183	-.00011	-.00929	W 510.28	.00044
Stddev	.00017	.00042	.00102	.00029	.00005	.00001	.00167	.15	.00012
%RSD	5.8178	2.9095	65.700	.27674	.11957	12.546	18.031	.02862	27.256

#1	.00274	.01467	-.00227	.10648	.04180	-.00012	-.01047	510.38	.00035
#2	.00298	.01408	-.00083	.10606	.04187	-.00010	-.00810	510.18	.00052

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit								500.00	
Low Limit								-40000	

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00150	.00028	.00537	.79028	1.5483	.00618	32.900	.44271	.00164
Stddev	.00034	.00033	.00156	.00485	.1416	.00046	.153	.00169	.00086
%RSD	22.934	118.83	29.084	.61427	9.1465	7.3669	.46519	.38223	52.248

#1	.00125	.00004	.00426	.78685	1.4481	.00586	32.792	.44151	.00225
#2	.00174	.00051	.00647	.79372	1.6484	.00650	33.009	.44390	.00104

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.214	.01510	.04306	-.00444	F 270.91	.00045	.00105	10.227	21.887
Stddev	.184	.00040	.00152	.00190	2.33	.00749	.00406	.029	.061
%RSD	.46919	2.6464	3.5274	42.702	.86024	1676.9	385.04	.27870	.27870

#1	39.084	.01481	.04413	-.00578	269.26	.00574	.00392	10.248	21.930
#2	39.344	.01538	.04198	-.00310	272.56	-.00485	-.00181	10.207	21.844

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00309	2.1057	.00401	-.00002	-.00718	F -.16133	.00100	.02496	-.00111
Stddev	.00037	.0006	.00126	.00000	.00436	.00895	.00077	.00059	.00231
%RSD	11.929	.02993	31.469	.84389	60.677	5.5491	77.058	2.3561	208.46

#1	-.00335	2.1061	.00312	-.00002	-.00410	-.16767	.00154	.02454	.00052
#2	-.00283	2.1052	.00491	-.00002	-.01026	-.15500	.00045	.02537	-.00274

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3448.2	41316.	3138.1
Stddev	48.3	139.	7.4
%RSD	1.4004	.33645	.23733

#1	3414.1	41415.	3132.8
#2	3482.4	41218.	3143.3

Sample Name: 280-123546-A-7-A Acquired: 5/13/2019 20:38:57 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00308	.02340	-.00249	.07060	.06151	.00009	-.01537	226.18	.00084
Stddev	.00121	.00149	.00668	.00023	.00127	.00001	.00010	4.05	.00028
%RSD	39.385	6.3867	268.41	.33162	2.0718	11.372	.61873	1.7910	33.036

#1	.00394	.02446	.00223	.07076	.06061	.00010	-.01530	223.31	.00064
#2	.00222	.02234	-.00721	.07043	.06241	.00008	-.01544	229.04	.00104

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.00074	.00747	.05642	4.2729	.02245	51.072	.00546	.00553
Stddev	.00056	.00021	.00023	.00245	.0871	.00008	.175	.00009	.00102
%RSD	190.49	28.872	3.0407	4.3375	2.0377	.36693	.34270	1.6181	18.506

#1	.00010	.00090	.00731	.05469	4.2114	.02239	51.195	.00539	.00480
#2	-.00069	.00059	.00763	.05815	4.3345	.02251	50.948	.00552	.00625

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	21.978	.00728	.00591	-.00301	88.980	-.00049	.01359	7.8217	16.738
Stddev	.106	.00027	.00167	.00029	.410	.00327	.00190	.1594	.341
%RSD	.48343	3.7484	28.234	9.5631	.46111	668.21	14.008	2.0383	2.0383

#1	21.903	.00747	.00710	-.00322	89.270	-.00281	.01494	7.7090	16.497
#2	22.053	.00709	.00473	-.00281	88.689	.00183	.01225	7.9345	16.980

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00183	1.3802	.00239	-.00041	-.00487	F -.15943	-.00049	.03182	-.00556
Stddev	.00007	.0293	.00297	.00048	.00005	.01063	.00053	.00001	.00296
%RSD	4.0229	2.1247	123.92	114.93	1.0114	6.6686	108.90	.03537	53.141

#1	-.00189	1.3594	.00449	-.00008	-.00483	-.15192	-.00087	.03181	-.00766
#2	-.00178	1.4009	.00030	-.00075	-.00490	-.16695	-.00011	.03183	-.00347

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3287.6	39693.	2987.3
Stddev	32.4	11.	122.8
%RSD	.98532	.02818	4.1103

#1	3264.7	39701.	3074.1
#2	3310.5	39685.	2900.4

Sample Name: 280-123546-A-8-A Acquired: 5/13/2019 20:41:29 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00280	.00187	-.00096	.25936	.07271	-.00005	-.00845	114.60	.00029
Stddev	.00024	.00029	.00178	.00274	.00033	.00018	.00168	.55	.00013
%RSD	8.6177	15.627	185.92	1.0557	.46053	353.16	19.937	.48424	46.765

#1	.00297	.00166	.00030	.26129	.07294	-.00018	-.00964	114.99	.00038
#2	.00263	.00207	-.00222	.25742	.07247	.00008	-.00726	114.21	.00019

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00061	.00135	.22728	7.1074	.02932	42.198	.09059	.00970
Stddev	.00021	.00014	.00001	.00369	.1254	.00834	.041	.00012	.00035
%RSD	239.49	22.967	.47520	1.6237	1.7638	28.459	.09783	.13571	3.5774

#1	.00024	.00051	.00134	.22989	7.0188	.03521	42.227	.09051	.00994
#2	-.00006	.00071	.00135	.22467	7.1960	.02342	42.169	.09068	.00945

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	123.90	.00057	.01064	-.00518	94.117	.00212	.00303	7.2347	15.482
Stddev	.12	.00042	.00167	.00134	.404	.00237	.00245	.0947	.203
%RSD	.09866	73.891	15.707	25.821	.42954	112.01	80.782	1.3085	1.3085

#1	123.98	.00087	.01182	-.00423	94.403	.00044	.00476	7.3017	15.626
#2	123.81	.00027	.00946	-.00612	93.831	.00379	.00130	7.1678	15.339

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00225	3.5092	.00377	-.00078	-.00017	F -.19157	-.00018	.00245	-.00891
Stddev	.00051	.0112	.00162	.00024	.00265	.00443	.00019	.00037	.00157
%RSD	22.736	.31923	42.885	31.383	1536.0	2.3119	104.36	14.947	17.621

#1	-.00261	3.5171	.00491	-.00061	-.00204	-.18844	-.00032	.00271	-.00780
#2	-.00188	3.5013	.00263	-.00095	.00170	-.19470	-.00005	.00219	-.01002

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3448.6	39028.	2843.3
Stddev	82.1	74.	35.2
%RSD	2.3816	.19016	1.2371

#1	3390.5	38975.	2818.4
#2	3506.7	39080.	2868.2

Sample Name: CCVH-5690583 Acquired: 5/13/2019 20:44:01 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00400	53.563	.00207	.00425	.00153	.00148	1.0273	.04092	.00113	.00300	.00137	.01526
Stddev	.00125	.124	.00892	.00003	.00057	.00008	.0027	.00583	.00022	.00034	.00015	.00135
%RSD	31.311	.23146	431.75	.59447	37.547	5.1994	.25910	14.244	19.831	11.494	11.263	8.8417

#1	.00488	53.476	.00838	.00427	.00193	.00153	1.0291	.04504	.00129	.00324	.00127	.01431
#2	.00311	53.651	-.00424	.00424	.00112	.00143	1.0254	.03680	.00097	.00276	.00148	.01622

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	54.506	.30688	.00297	.01033	.00418	.00027	F 277.91	.00414	.00297	.00282	4.9964	.00581
Stddev	.320	.10607	.00339	.00104	.00007	.00016	2.04	.00002	.00228	.00027	.0605	.00012
%RSD	.58663	34.563	113.89	10.105	1.5717	57.922	.73375	.36569	76.576	9.5132	1.2108	2.0612

#1	54.280	.38188	.00537	.00959	.00423	.00038	276.47	.00413	.00458	.00263	5.0391	.00590
#2	54.732	.23188	.00058	.01107	.00414	.00016	279.35	.00415	.00136	.00301	4.9536	.00573

Check ?	Chk Pass	None	None	None	None	None	Chk Fail	None	None	None	Chk Pass	None
Value							250.00					
Range							10.490%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00298	.02289	.04899	.00044	.00283	5.2342	-.01009	.00124	10.608	.00634	.00414	.07773
Stddev	.00086	.01147	.02454	.00039	.00024	.0096	.00041	.00299	.059	.00020	.00011	.00059
%RSD	29.003	50.085	50.085	89.006	8.6070	.18288	4.0458	241.53	.55980	3.1434	2.6357	.75779

#1	.00237	.03100	.06634	.00072	.00301	5.2410	-.00980	.00335	10.650	.00648	.00422	.07732
#2	.00359	.01479	.03164	.00016	.00266	5.2274	-.01038	-.00088	10.566	.00620	.00406	.07815

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3634.3	42438.	3119.7
Stddev	4.5	68.	18.7
%RSD	.12356	.15919	.60055

#1	3637.5	42390.	3132.9
#2	3631.2	42486.	3106.4

Sample Name: CCV-5690581 Acquired: 5/13/2019 20:46:30 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52923	F .65593	1.0176	.51129	.54580	.51425	-.00490	5.3855	.52473	.53250	.54042	.52090
Stddev	.00056	.00573	.0101	.00314	.00069	.00113	.00150	.0065	.00417	.00453	.00424	.00233
%RSD	.10658	.87346	.99524	.61435	.12583	.21997	30.544	.12145	.79523	.85134	.78395	.44793

#1	.52963	.65999	1.0248	.51351	.54629	.51345	-.00596	5.3809	.52768	.53570	.54342	.52255
#2	.52883	.65188	1.0105	.50906	.54532	.51504	-.00384	5.3902	.52178	.52929	.53743	.51925

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.6643	F 55.579	1.0932	21.238	.52578	.53743	F 6.5424	.53385	1.0628	1.0582	.03602	1.0022
Stddev	.0129	.210	.0015	.024	.00034	.00386	.0281	.00489	.0115	.0079	.00251	.0071
%RSD	.48304	.37803	.13657	.11443	.06383	.71820	.42977	.91583	1.0847	.74682	6.9572	.71287

#1	2.6552	55.431	1.0922	21.255	.52601	.54016	6.5622	.53731	1.0709	1.0638	.03425	1.0073
#2	2.6734	55.728	1.0943	21.221	.52554	.53470	6.5225	.53039	1.0546	1.0526	.03779	.99716

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value		50.000					5.0000					
Range		10.000%					10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0104	5.2464	11.227	1.0700	.52570	.00670	.52103	1.0775	-.11646	.52882	.53210	.52846
Stddev	.0030	.0492	.105	.0055	.00114	.00040	.00048	.0001	.05271	.00227	.00068	.00296
%RSD	.29346	.93800	.93800	.51196	.21664	6.0086	.09170	.01082	45.254	.42993	.12744	.55995

#1	1.0083	5.2116	11.153	1.0739	.52489	.00699	.52136	1.0776	-.15373	.53042	.53258	.52637
#2	1.0125	5.2812	11.302	1.0661	.52650	.00642	.52069	1.0775	-.07920	.52721	.53162	.53055

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3752.2	44216.	3248.3
Stddev	14.3	96.	11.1
%RSD	.38011	.21662	.34167

#1	3762.3	44284.	3240.4
#2	3742.1	44148.	3256.1

Sample Name: CCB Acquired: 5/13/2019 20:48:52 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.00028	.00029	.00029	-.00084	.00002	-.00658	.00165	-.00022	-.00005	.00009	-.00180
Stddev	.00015	.00039	.00063	.00059	.00079	.00005	.00170	.00598	.00017	.00033	.00002	.00014
%RSD	16.373	139.33	217.68	199.07	94.572	231.25	25.775	363.56	76.274	613.11	24.525	8.0607

#1	.00099	.00056	.00073	.00071	-.00028	.00005	-.00778	-.00259	-.00035	-.00029	.00007	-.00190
#2	.00079	.00000	-.00016	-.00012	-.00140	-.00001	-.00538	.00588	-.00010	.00018	.00010	-.00169

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00125	.16145	.00308	-.00334	-.00005	.00071	F .57644	-.00040	-.00511	-.00282	.01736	-.00188
Stddev	.00071	.02884	.00253	.00544	.00002	.00010	.01514	.00071	.00091	.00062	.00841	.00230
%RSD	56.469	17.862	82.059	162.60	48.627	13.954	2.6257	177.63	17.840	21.963	48.455	122.61

#1	-.00075	.14106	.00129	.00050	-.00003	.00078	.56574	.00010	-.00446	-.00239	.02331	-.00025
#2	-.00175	.18184	.00486	-.00719	-.00007	.00064	.58715	-.00090	-.00575	-.00326	.01141	-.00351

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							.50000					
Low Limit							-.50000					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	.02769	.05926	-.00254	.00016	.00289	-.00059	-.00248	-.08650	-.00089	-.00023	-.00531
Stddev	.00384	.02235	.04783	.00191	.00021	.00075	.00007	.00068	.01451	.00053	.00002	.00003
%RSD	323.20	80.700	80.700	75.277	126.46	25.843	11.143	27.331	16.771	59.810	8.5754	.53678

#1	.00390	.01189	.02545	-.00389	.00002	.00341	-.00064	-.00296	-.09676	-.00051	-.00025	-.00529
#2	-.00153	.04350	.09308	-.00119	.00031	.00236	-.00055	-.00200	-.07624	-.00127	-.00022	-.00533

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3874.6	46123.	3344.5
Stddev	22.5	91.	25.8
%RSD	.58160	.19818	.77068

#1	3890.5	46187.	3362.7
#2	3858.6	46058.	3326.3

Sample Name: CCVL-5699390 Acquired: 5/13/2019 20:51:27 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00480	.11737	F .00302	.09203	F .00148	F .00059	.09823	F .03008	.00470	.00958	.00967	F .00043
Stddev	.00289	.00217	.00816	.00175	.00040	.00013	.00315	.00464	.00012	.00012	.00032	.00325
%RSD	60.083	1.8461	270.58	1.8978	26.814	21.544	3.2069	15.425	2.6418	1.2241	3.2598	763.82
#1	.00276	.11890	-.00276	.09326	.00176	.00068	.10046	.02680	.00461	.00949	.00990	-.00187
#2	.00685	.11584	.00879	.09079	.00120	.00050	.09600	.03336	.00479	.00966	.00945	.00272
Check ?	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value	.01000		.01500		.01000	.00100		.20000				.01500
Range	-30.000%		-30.000%		-30.000%	-30.000%		-30.000%				-30.000%
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .03838	F .55244	F .00342	F .07813	F .00463	.01867	F .63569	.03931	2.7641	.00657	.09848	.01752
Stddev	.00274	.03290	.00016	.03970	.00218	.00076	.02601	.00010	.0240	.00031	.00633	.00287
%RSD	7.1342	5.9548	4.6537	50.813	47.026	4.0564	4.0914	.25008	.86670	4.7427	6.4291	16.405
#1	.03644	.52918	.00353	.05006	.00309	.01921	.61730	.03924	2.7811	.00635	.10296	.01549
#2	.04032	.57570	.00331	.10620	.00617	.01814	.65408	.03938	2.7472	.00679	.09401	.01956
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.10000	3.0000	.02000	.20000	.01000		1.0000					
Range	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%		-30.000%					
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01412	F .11328	F .24243	.09382	F .00137	F .00935	F .00379	.01081	.06807	F .00438	F .00821	F .00408
Stddev	.00023	.01568	.03356	.00269	.00014	.00085	.00153	.00049	.02508	.00159	.00387	.00047
%RSD	1.6052	13.842	13.842	2.8693	9.8696	9.1269	40.385	4.5755	36.846	36.346	47.205	11.466
#1	.01396	.10220	.21870	.09573	.00127	.00874	.00271	.01046	.05034	.00325	.00547	.00375
#2	.01428	.12437	.26616	.09192	.00147	.00995	.00487	.01116	.08581	.00550	.01095	.00441
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Fail
Value		.50000	1.0700		.01000	.01500	.01000			.01000	.02000	.01500
Range		-30.000%	-30.000%		-30.000%	-30.000%	-30.000%			-30.000%	-30.000%	-30.000%
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3927.7	59657.	4677.5									
Stddev	18.8	7556.	55.5									
%RSD	.47918	12.666	1.1861									
#1	3941.1	65000.	4716.7									
#2	3914.4	54314.	4638.3									

Sample Name: MB 280-457628/1-A Acquired: 5/13/2019 20:54:00 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/10 Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00296	.00636	-.00442	-.00043	-.00027	.00001	-.00266	.01341	-.00018
Stddev	.00122	.00245	.00025	.00025	.00039	.00002	.00379	.00247	.00014
%RSD	41.059	38.475	5.6152	57.187	145.04	326.51	142.56	18.425	80.685

#1	.00382	.00809	-.00459	-.00060	.00001	-.00001	-.00533	.01166	-.00028
#2	.00210	.00463	-.00424	-.00026	-.00054	.00002	.00002	.01516	-.00008

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00006	-.00152	.01544	.13347	-.00033	-.00460	.00012	.00015
Stddev	.00016	.00010	.00086	.00522	.02172	.00192	.00038	.00014	.00021
%RSD	235.26	178.91	56.504	33.786	16.270	578.98	8.2537	120.84	142.19

#1	-.00019	-.00002	-.00091	.01175	.11812	-.00169	-.00433	.00022	.00029
#2	.00005	.00013	-.00213	.01913	.14883	.00103	-.00487	.00002	-.00000

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W .51072	-.00040	-.00222	-.00246	.04055	-.00134	.00398	.05992	.12824
Stddev	.00158	.00002	.00036	.00092	.03984	.00042	.00068	.01765	.03777
%RSD	.30930	4.4504	16.374	37.264	98.244	31.014	17.087	29.451	29.451

#1	.50961	-.00039	-.00196	-.00311	.06872	-.00105	.00446	.07240	.15494
#2	.51184	-.00042	-.00247	-.00181	.01238	-.00163	.00350	.04745	.10153

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit	.50000								
Low Limit	-.50000								

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00139	.00040	.00266	-.00072	-.00349	F -.08679	.00008	.00004	-.00446
Stddev	.00162	.00020	.00009	.00024	.00361	.03737	.00050	.00015	.00082
%RSD	116.72	50.029	3.4110	33.433	103.37	43.055	600.76	419.31	18.321

#1	-.00024	.00026	.00259	-.00089	-.00094	-.11321	.00044	.00014	-.00388
#2	-.00253	.00055	.00272	-.00055	-.00604	-.06037	-.00027	-.00007	-.00504

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.06000			
Low Limit						-.06000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3753.6	43496.	3126.5
Stddev	19.5	48.	27.6
%RSD	.51987	.11036	.88207

#1	3739.8	43462.	3146.0
#2	3767.4	43530.	3107.0

Sample Name: LCS 280-457628/2-A Acquired: 5/13/2019 20:56:35 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05556	10.575	2.0242	1.0125	2.1488	W 1.0133	W 2.0527	52.112	1.0342
Stddev	.00014	.008	.0225	.0069	.0054	.0001	.0107	.032	.0057
%RSD	.24959	.07437	1.1132	.67841	.24941	.01104	.52315	.06140	.55480

#1	.05566	10.581	2.0401	1.0174	2.1450	1.0132	2.0602	52.089	1.0383
#2	.05546	10.570	2.0082	1.0077	2.1525	1.0134	2.0451	52.134	1.0302

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Warn	Chk Pass	Chk Pass
High Limit						1.0000	2.0000		
Low Limit						-.00200	-.20000		

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0128	1.0518	1.0050	10.155	55.475	1.0821	50.987	1.0235	1.0610
Stddev	.0069	.0079	.0010	.039	.090	.0096	.021	.0001	.0094
%RSD	.67863	.75407	.09656	.38069	.16264	.88545	.04120	.00590	.88885

#1	1.0177	1.0574	1.0044	10.128	55.411	1.0753	51.002	1.0235	1.0676
#2	1.0079	1.0462	1.0057	10.183	55.539	1.0889	50.972	1.0234	1.0543

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	52.967	1.0127	W 20.861	1.0209	9.1585	1.0240	1.9951	2.1595	4.6214
Stddev	.400	.0074	.174	.0015	.0580	.0041	.0200	.0309	.0661
%RSD	.75607	.73318	.83185	.15109	.63309	.39766	1.0014	1.4297	1.4297

#1	53.250	1.0179	20.984	1.0220	9.1995	1.0268	2.0093	2.1377	4.5747
#2	52.684	1.0074	20.739	1.0198	9.1175	1.0211	1.9810	2.1814	4.6681

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.0837	1.0305	1.0211	1.0291	2.0504	1.9331	1.0350	.51511	.56456
Stddev	.0167	.0026	.0065	.0001	.0265	.0782	.0036	.00032	.00309
%RSD	.80223	.25659	.63487	.01241	1.2941	4.0474	.34471	.06127	.54783

#1	2.0955	1.0286	1.0257	1.0290	2.0692	1.8778	1.0325	.51489	.56675
#2	2.0718	1.0324	1.0165	1.0291	2.0316	1.9885	1.0375	.51533	.56238

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000								
Low Limit	-.20000								

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3610.4	42372.	3092.3
Stddev	1.6	150.	1.1
%RSD	.04427	.35366	.03488

#1	3609.3	42266.	3093.0
#2	3611.6	42478.	3091.5

Sample Name: 280-123515-B-1-B Acquired: 5/13/2019 20:58:51 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00211	.00772	-.00745	.01672	.06147	-.00001	-.01075	81.578	.00018
Stddev	.00165	.00024	.00319	.00036	.00059	.00026	.00397	.134	.00049
%RSD	77.965	3.1240	42.820	2.1480	.95179	3795.2	36.961	.16451	270.00

#1	.00328	.00755	-.00971	.01697	.06188	.00018	-.01356	81.483	-.00016
#2	.00095	.00789	-.00519	.01646	.06105	-.00019	-.00794	81.673	.00052

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	-.00006	.00032	.71939	2.9605	.02180	40.248	.00308	.00127
Stddev	.00029	.00050	.00039	.00404	.1545	.00017	.080	.00020	.00010
%RSD	79.686	809.40	121.13	.56210	5.2192	.76622	.19758	6.5430	7.5716

#1	.00057	-.00042	.00005	.71653	2.8513	.02168	40.192	.00294	.00120
#2	.00016	.00029	.00059	.72225	3.0698	.02192	40.304	.00322	.00133

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.7760	-.00064	-.00241	-.00279	10.197	.00618	.00387	4.4486	9.5200
Stddev	.0391	.00035	.00422	.00147	.133	.00101	.00471	.0236	.0505
%RSD	.67693	54.775	175.23	52.913	1.3017	16.322	121.68	.53089	.53089

#1	5.7483	-.00040	.00058	-.00174	10.291	.00547	.00720	4.4319	9.4842
#2	5.8036	-.00089	-.00540	-.00383	10.103	.00690	.00054	4.4653	9.5557

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00148	.13920	.00302	-.00039	-.00128	F -.16721	-.00065	.00066	-.00161
Stddev	.00155	.00068	.00110	.00008	.00099	.00344	.00035	.00052	.00165
%RSD	104.53	.48844	36.250	20.230	77.363	2.0588	52.899	77.846	102.07

#1	-.00257	.13872	.00380	-.00045	-.00058	-.16964	-.00090	.00103	-.00045
#2	-.00039	.13968	.00225	-.00034	-.00198	-.16477	-.00041	.00030	-.00278

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3538.0	41921.	3070.0
Stddev	1.5	193.	2.2
%RSD	.04316	.46150	.07323

#1	3539.1	42058.	3068.4
#2	3537.0	41784.	3071.5

Sample Name: 123515-B-1-B SD@5 Acquired: 5/13/2019 21:01:24 Type: Unk
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoadesc Prep Date: Custom ID2: Custom ID3:
 Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00245	.00142	-.00142	.00415	.01145	-.00016	-.00829	16.402	-.00004
Stddev	.00104	.00060	.00028	.00022	.00035	.00010	.00102	.045	.00040
%RSD	42.395	42.659	19.977	5.3209	3.0772	63.778	12.342	.27188	1136.0

#1	.00171	.00099	-.00162	.00431	.01120	-.00009	-.00756	16.370	.00025
#2	.00318	.00184	-.00122	.00400	.01170	-.00023	-.00901	16.433	-.00032

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	-.00044	-.00012	.17410	.75139	.00622	8.1079	.00082	.00007
Stddev	.00000	.00019	.00036	.00477	.01176	.00208	.0042	.00001	.00044
%RSD	11.389	42.225	288.94	2.7396	1.5657	33.403	.05196	1.4819	679.48

#1	.00000	-.00031	-.00038	.17073	.74307	.00770	8.1049	.00082	-.00025
#2	.00000	-.00057	.00013	.17748	.75971	.00475	8.1109	.00081	.00038

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.5129	-.00075	-.00424	-.00257	2.0066	.00044	.01023	.90879	1.9448
Stddev	.0201	.00007	.00410	.00252	.0179	.00362	.00397	.03087	.0661
%RSD	1.3259	9.8345	96.540	98.114	.89231	823.61	38.857	3.3968	3.3968

#1	1.4987	-.00070	-.00135	-.00434	2.0192	.00300	.01304	.93062	1.9915
#2	1.5271	-.00081	-.00714	-.00079	1.9939	-.00212	.00742	.88697	1.8981

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00198	.02800	.00490	-.00120	-.00216	F -.16591	.00010	.00201	-.00671
Stddev	.00010	.00016	.00231	.00024	.00032	.03733	.00003	.00072	.00332
%RSD	5.0168	.57190	47.237	19.676	14.817	22.500	28.278	36.064	49.443

#1	-.00205	.02788	.00654	-.00137	-.00239	-.19231	.00012	.00252	-.00905
#2	-.00191	.02811	.00326	-.00103	-.00193	-.13951	.00008	.00149	-.00436

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3601.6	42458.	3045.3
Stddev	8.3	80.	33.3
%RSD	.22990	.18841	1.0918

#1	3595.8	42514.	3068.8
#2	3607.5	42401.	3021.8

Sample Name: 280-123515-B-1-C MS Acquired: 5/13/2019 21:03:59 Type: Unk

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoadesc Prep Date: Custom ID2: Custom ID3:

Comment: 457628 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05861	10.626	2.0718	1.0482	2.2319	W 1.0325	W 2.0706	130.41	1.0493
Stddev	.00012	.163	.0060	.0036	.0082	.0034	.0045	.35	.0022
%RSD	.20130	1.5374	.28842	.34164	.36825	.32581	.21535	.27072	.20853

#1	.05852	10.511	2.0760	1.0507	2.2261	1.0301	2.0737	130.16	1.0508
#2	.05869	10.742	2.0676	1.0456	2.2377	1.0348	2.0674	130.66	1.0477

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Warn	Chk Pass	Chk Pass
High Limit						1.0000	2.0000		
Low Limit						-.00200	-.20000		

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0081	1.0563	1.0299	10.781	58.681	1.1243	90.499	1.0394	1.0757
Stddev	.0015	.0025	.0041	.022	.342	.0004	.082	.0007	.0042
%RSD	.14632	.23338	.40200	.20746	.58345	.04043	.09020	.06829	.39422

#1	1.0091	1.0580	1.0328	10.765	58.439	1.1240	90.557	1.0389	1.0787
#2	1.0070	1.0545	1.0270	10.797	58.923	1.1246	90.441	1.0399	1.0728

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	58.674	1.0099	W 20.980	1.0240	19.164	1.0358	2.0203	6.5421	14.000
Stddev	.769	.0037	.080	.0002	.030	.0020	.0079	.0650	.139
%RSD	1.3110	.36598	.38228	.01691	.15644	.18966	.39241	.99292	.99292

#1	58.130	1.0125	21.037	1.0239	19.142	1.0372	2.0259	6.4962	13.902
#2	59.218	1.0073	20.923	1.0241	19.185	1.0344	2.0147	6.5880	14.098

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.0936	1.1768	1.0416	1.0538	2.0454	1.9358	1.0613	.52237	.54106
Stddev	.0093	.0053	.0070	.0013	.0087	.0268	.0041	.00047	.00231
%RSD	.44351	.44796	.67146	.12087	.42569	1.3828	.38353	.09021	.42706

#1	2.1002	1.1731	1.0466	1.0547	2.0515	1.9168	1.0642	.52270	.53943
#2	2.0871	1.1805	1.0367	1.0529	2.0392	1.9547	1.0584	.52203	.54270

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000								
Low Limit	-.20000								

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3511.9	40959.	3034.2
Stddev	12.0	75.	5.3
%RSD	.34056	.18377	.17555

#1	3520.4	41013.	3038.0
#2	3503.5	40906.	3030.5

Sample Name: 280-123515-B-1-D MSD Acquired: 5/13/2019 21:06:15 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.06004	10.620	2.0980	1.0626	2.2663	W 1.0442	W 2.1027	132.25	1.0616
Stddev	.00049	.066	.0303	.0071	.0004	.0063	.0248	.25	.0111
%RSD	.82227	.62020	1.4462	.66614	.01645	.59927	1.1814	.18614	1.0470

#1	.05969	10.667	2.1194	1.0676	2.2666	1.0398	2.1202	132.07	1.0694
#2	.06039	10.573	2.0765	1.0576	2.2661	1.0486	2.0851	132.42	1.0537

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Warn	Chk Pass	Chk Pass
High Limit						1.0000	2.0000		
Low Limit						-.00200	-.20000		

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0209	1.0687	1.0464	10.758	58.377	1.1437	91.283	1.0542	1.0901
Stddev	.0102	.0111	.0002	.048	.345	.0032	.047	.0011	.0126
%RSD	.99830	1.0340	.01561	.44871	.59122	.28246	.05162	.10515	1.1531

#1	1.0281	1.0765	1.0463	10.724	58.133	1.1414	91.316	1.0550	1.0990
#2	1.0137	1.0609	1.0465	10.792	58.621	1.1459	91.250	1.0535	1.0812

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	58.182	1.0209	W 21.935	1.0318	19.789	1.0589	2.0365	6.6883	14.313
Stddev	.009	.0108	.193	.0046	.201	.0112	.0273	.0422	.090
%RSD	.01501	1.0543	.87969	.44631	1.0145	1.0543	1.3422	.63044	.63044

#1	58.176	1.0285	22.072	1.0351	19.931	1.0668	2.0558	6.6585	14.249
#2	58.188	1.0133	21.799	1.0286	19.647	1.0510	2.0172	6.7181	14.377

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.1181	1.1918	1.0620	1.0684	2.0638	2.0115	1.0793	.53283	.55271
Stddev	.0268	.0063	.0010	.0004	.0268	.0581	.0040	.00066	.00066
%RSD	1.2648	.52574	.09178	.04097	1.2999	2.8882	.36817	.12302	.11853

#1	2.1371	1.1873	1.0613	1.0680	2.0828	2.0525	1.0821	.53236	.55317
#2	2.0992	1.1962	1.0627	1.0687	2.0449	1.9704	1.0764	.53329	.55224

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000								
Low Limit	-.20000								

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3443.3	39838.	2960.5
Stddev	17.8	40.	10.9
%RSD	.51645	.10055	.36917

#1	3430.7	39810.	2952.8
#2	3455.9	39866.	2968.2

Sample Name: CCVH-5690583 Acquired: 5/13/2019 21:08:32 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00483	53.063	-.00077	.00854	.00143	.00159	1.0156	.03624	.00149	.00303	.00179	.01594	53.418
Stddev	.00112	.023	.00128	.00078	.00049	.00023	.0186	.00817	.00012	.00008	.00012	.00074	.027
%RSD	23.154	.04363	166.65	9.0857	34.545	14.237	1.8321	22.543	7.9451	2.6904	6.6749	4.6240	.05028

#1	.00562	53.079	-.00167	.00909	.00108	.00175	1.0287	.04202	.00141	.00309	.00171	.01646	53.437
#2	.00404	53.047	.00014	.00799	.00178	.00143	1.0024	.03047	.00158	.00297	.00187	.01542	53.399

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40639	.00907	.04384	.00456	.00261	273.36	.00385	.00631	.00302	4.8635	.01075	.00547	.06103
Stddev	.06964	.00332	.03213	.00040	.00026	.11	.00073	.00190	.00009	.0736	.00075	.00367	.00635
%RSD	17.136	36.555	73.303	8.7106	10.028	.04195	18.982	30.094	2.8516	1.5133	7.0057	67.108	10.397

#1	.45564	.01142	.06656	.00484	.00242	273.27	.00437	.00497	.00308	4.9155	.01021	.00806	.05654
#2	.35715	.00673	.02111	.00428	.00279	273.44	.00333	.00765	.00296	4.8114	.01128	.00287	.06552

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.13061	.00219	.00234	5.1818	-.00970	.00186	10.469	.00589	.00334	.07432
Stddev	.01358	.00081	.00002	.0109	.00019	.00128	.116	.00074	.00056	.00246
%RSD	10.397	36.979	.96771	.21094	1.9300	68.441	1.1112	12.551	16.636	3.3039

#1	.12100	.00162	.00235	5.1741	-.00957	.00277	10.387	.00537	.00373	.07605
#2	.14021	.00277	.00232	5.1895	-.00983	.00096	10.552	.00642	.00295	.07258

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3428.6	40200.	2950.1
Stddev	5.6	204.	10.4
%RSD	.16411	.50819	.35387

#1	3424.7	40344.	2957.5
#2	3432.6	40056.	2942.7

Sample Name: CCV-5690581 Acquired: 5/13/2019 21:11:01 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53898	F .66622	1.0306	.51809	F .55239	.52332	-.00704	5.4918	.53185	.53877	.54659	.52584
Stddev	.00516	.00257	.0033	.00302	.00655	.00438	.00350	.0314	.00052	.00033	.00042	.00516
%RSD	.95681	.38561	.31777	.58382	1.1860	.83684	49.644	.57078	.09697	.06122	.07617	.98147

#1	.54262	.66804	1.0329	.51595	.54776	.52022	-.00457	5.4696	.53221	.53901	.54688	.52949
#2	.53533	.66441	1.0283	.52023	.55702	.52642	-.00952	5.5140	.53148	.53854	.54629	.52219

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000			.50000							
Range		10.000%			10.000%							

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.6977	F 56.800	F 1.1197	21.619	.53576	.54248	F 6.4857	.53982	1.0720	1.0673	.01928	1.0172
Stddev	.0129	.567	.0126	.197	.00370	.00134	.0267	.00043	.0031	.0028	.00281	.0043
%RSD	.47804	.99749	1.1207	.91001	.69085	.24750	.41182	.07956	.28985	.26089	14.561	.42152

#1	2.6886	56.400	1.1108	21.758	.53837	.54153	6.4668	.54012	1.0698	1.0693	.02126	1.0141
#2	2.7068	57.201	1.1286	21.480	.53314	.54343	6.5046	.53951	1.0742	1.0653	.01729	1.0202

Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value		50.000	1.0000				5.0000					
Range		10.000%	10.000%				10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0275	5.3279	11.402	1.0789	.53482	.00769	.53061	1.0848	-.14719	.53384	.54304	.53598
Stddev	.0015	.0771	.165	.0032	.00604	.00188	.00472	.0070	.07150	.00637	.00618	.00670
%RSD	.14250	1.4466	1.4466	.29509	1.1293	24.401	.88913	.64989	48.576	1.1935	1.1383	1.2505

#1	1.0285	5.2734	11.285	1.0812	.53055	.00901	.53394	1.0798	-.19775	.53835	.54741	.53124
#2	1.0265	5.3824	11.518	1.0767	.53910	.00636	.52727	1.0898	-.09663	.52934	.53867	.54072

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3626.4	41541.	2996.3									
Stddev	2.8	292.	32.4									
%RSD	.07847	.70358	1.0800									

#1	3628.5	41335.	3019.2									
#2	3624.4	41748.	2973.5									

Sample Name: CCB Acquired: 5/13/2019 21:13:23 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00283	.00124	-.00549	.00159	-.00184	.00013	-.00640	.00998	-.00013	-.00014	-.00021	-.00107
Stddev	.00025	.00012	.00142	.00070	.00036	.00027	.00394	.00395	.00010	.00009	.00016	.00207
%RSD	8.7301	9.9188	25.871	44.047	19.747	206.24	61.492	39.638	76.796	66.591	79.271	194.38
#1	.00266	.00115	-.00650	.00209	-.00210	.00032	-.00362	.01277	-.00020	-.00007	-.00009	.00040
#2	.00300	.00133	-.00449	.00110	-.00158	-.00006	-.00918	.00718	-.00006	-.00020	-.00032	-.00253
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.00200											
Low Limit	-.01000											
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00706	.19873	.00260	.00315	-.00003	.00039	W .45816	.00005	-.00769	-.00325	.00527	.00516
Stddev	.00149	.00529	.00121	.00108	.00005	.00043	.01814	.00054	.00061	.00242	.00461	.00250
%RSD	21.158	2.6599	46.294	34.219	151.39	110.21	3.9590	1058.9	7.9241	74.540	87.597	48.385
#1	.00812	.20246	.00175	.00391	.00000	.00009	.47099	.00043	-.00726	-.00154	.00853	.00693
#2	.00601	.19499	.00346	.00239	-.00007	.00070	.44533	-.00033	-.00812	-.00496	.00201	.00340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							.35000					
Low Limit							-.35000					
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.02232	.04776	-.00243	.00012	.00016	-.00073	-.00411	-.06446	-.00043	-.00029	-.00591
Stddev	.00005	.02786	.05963	.00076	.00008	.00263	.00030	.00115	.02373	.00099	.00007	.00581
%RSD	5.3096	124.85	124.85	31.187	67.657	1623.0	41.125	27.895	36.809	231.80	23.174	98.275
#1	.00105	.04202	.08992	-.00189	.00018	.00202	-.00094	-.00330	-.04768	.00027	-.00025	-.00180
#2	.00097	.00262	.00560	-.00297	.00006	-.00169	-.00052	-.00492	-.08124	-.00113	-.00034	-.01002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3667.2	42958.	3079.6									
Stddev	9.6	22.	20.6									
%RSD	.26234	.05087	.66880									
#1	3674.0	42973.	3094.2									
#2	3660.4	42943.	3065.0									

Sample Name: CCVL-5699390 Acquired: 5/13/2019 21:15:58 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01211	.12712	F .00672	.09968	.01010	.00108	.09567	.23554	.00513	.01045	.01057	.01567
Stddev	.00101	.00078	.00360	.00032	.00019	.00005	.00155	.00460	.00015	.00047	.00055	.00068
%RSD	8.3474	.61631	53.578	.31890	1.8547	4.5443	1.6160	1.9541	2.9804	4.4917	5.2051	4.3221
#1	.01283	.12768	.00927	.09990	.00997	.00112	.09676	.23880	.00503	.01079	.01095	.01615
#2	.01140	.12657	.00417	.09945	.01024	.00105	.09458	.23229	.00524	.01012	.01018	.01519
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.01500									
Range			-30.000%									
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.12376	3.3598	.02518	.19632	.01072	.02056	F 1.4941	.04161	2.9759	F .00544	.09123	.01784
Stddev	.00327	.0090	.00086	.00154	.00013	.00108	.0000	.00104	.0612	.00046	.00113	.00256
%RSD	2.6399	.26776	3.4140	.78572	1.1832	5.2588	.00060	2.4924	2.0566	8.4418	1.2402	14.345
#1	.12607	3.3662	.02457	.19741	.01081	.02132	1.4941	.04234	3.0192	.00511	.09203	.01603
#2	.12145	3.3534	.02579	.19523	.01063	.01979	1.4941	.04088	2.9326	.00576	.09043	.01965
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
Value							1.0000			.00900		
Range							30.000%			-30.000%		
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01871	.57210	1.2243	.10290	.01081	F .01976	.00912	.01628	F -.12892	.00941	.02376	F .01033
Stddev	.00505	.03103	.0664	.00375	.00021	.00181	.00002	.00072	.03295	.00022	.00086	.00012
%RSD	26.972	5.4242	5.4242	3.6439	1.9073	9.1604	.18039	4.4323	25.556	2.3247	3.6304	1.2075
#1	.01514	.55015	1.1773	.10555	.01096	.01848	.00913	.01679	-.10562	.00926	.02315	.01024
#2	.02228	.59404	1.2712	.10025	.01067	.02104	.00911	.01577	-.15222	.00957	.02437	.01042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail
Value						.01500			.06000			.01500
Range						30.000%			-30.000%			-30.000%
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3611.0	43009.	3093.8									
Stddev	3.2	50.	15.8									
%RSD	.08736	.11567	.50947									
#1	3608.7	43044.	3082.7									
#2	3613.2	42974.	3105.0									

Sample Name: 280-123515-B-2-B Acquired: 5/13/2019 21:18:29 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00343	.06924	-.00413	.02105	.02985	-.00009	-.01326	65.402	.00045
Stddev	.00021	.00097	.00242	.00113	.00002	.00025	.00341	.096	.00014
%RSD	6.0492	1.3967	58.625	5.3812	.07057	274.84	25.730	.14740	30.358

#1	.00329	.06992	-.00584	.02185	.02983	-.00027	-.01085	65.470	.00035
#2	.00358	.06855	-.00242	.02025	.02986	.00009	-.01568	65.334	.00054

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.00037	.00074	.24018	1.8164	.05066	27.918	.12652	-.00001
Stddev	.00034	.00019	.00051	.00233	.0958	.00578	.100	.00033	.00002
%RSD	61.314	51.041	68.672	.96982	5.2749	11.419	.35682	.26157	379.76

#1	.00031	.00050	.00038	.24183	1.8841	.05475	27.988	.12676	.00001
#2	.00079	.00023	.00109	.23853	1.7486	.04657	27.847	.12629	-.00002

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.5415	.00066	.03147	-.00312	14.288	.00416	-.00003	6.8965	14.759
Stddev	.0600	.00072	.00427	.00108	.332	.00090	.00013	.0347	.074
%RSD	.79514	110.36	13.580	34.811	2.3216	21.541	372.60	.50329	.50329

#1	7.5839	.00117	.03449	-.00388	14.522	.00479	.00006	6.9211	14.811
#2	7.4991	.00014	.02845	-.00235	14.053	.00353	-.00012	6.8720	14.706

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00122	.07829	.00136	-.00065	-.00531	F -.19298	-.00007	.00269	-.00896
Stddev	.00009	.00027	.00082	.00067	.00118	.01003	.00047	.00026	.00083
%RSD	6.9888	.34757	60.278	102.56	22.188	5.1956	648.89	9.6886	9.2401

#1	-.00116	.07849	.00078	-.00018	-.00614	-.20007	.00026	.00287	-.00954
#2	-.00128	.07810	.00194	-.00112	-.00447	-.18589	-.00041	.00250	-.00837

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3489.7	41258.	2983.6
Stddev	11.7	29.	9.0
%RSD	.33615	.07010	.30152

#1	3498.0	41278.	2977.3
#2	3481.4	41238.	2990.0

Sample Name: 280-123515-B-3-B Acquired: 5/13/2019 21:21:02 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00197	.00548	-.00133	.02755	.06791	.00014	-.00959	97.674	-.00014
Stddev	.00048	.00081	.00166	.00032	.00022	.00004	.00019	.058	.00025
%RSD	24.232	14.865	124.95	1.1479	.32407	26.203	1.9326	.05983	177.91

#1	.00163	.00606	-.00250	.02778	.06807	.00016	-.00972	97.715	-.00031
#2	.00230	.00490	-.00015	.02733	.06776	.00011	-.00946	97.632	.00004

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	.00001	-.00049	.84368	4.0947	.07637	21.720	.01716	-.00055
Stddev	.00015	.00002	.00165	.00770	.0546	.00561	.001	.00018	.00033
%RSD	72.992	171.80	333.52	.91319	1.3327	7.3466	.00358	1.0761	59.928

#1	-.00032	.00003	.00067	.83823	4.0561	.07240	21.720	.01703	-.00078
#2	-.00010	-.00000	-.00166	.84913	4.1333	.08034	21.721	.01729	-.00032

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 9.3697	-.00064	-.00019	-.00200	22.078	-.00170	.00326	4.0718	8.7137
Stddev	.5806	.00102	.00033	.00134	.251	.00079	.00047	.0054	.0116
%RSD	6.1964	158.22	171.19	67.074	1.1365	46.529	14.450	.13339	.13339

#1	9.7803	.00008	.00004	-.00295	22.256	-.00226	.00359	4.0757	8.7219
#2	8.9592	-.00137	-.00043	-.00105	21.901	-.00114	.00293	4.0680	8.7055

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00								
Low Limit	11.000								

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	.12213	.00741	.00031	-.00477	F -.21721	-.00030	.00199	-.00414
Stddev	.00100	.00048	.00087	.00011	.00059	.00012	.00015	.00028	.00583
%RSD	328.18	.39084	11.706	36.185	12.325	.05426	51.255	14.188	140.89

#1	-.00101	.12179	.00680	.00039	-.00435	-.21729	-.00019	.00179	-.00002
#2	.00040	.12246	.00803	.00023	-.00519	-.21713	-.00041	.00219	-.00826

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3729.3	44009.	3200.4
Stddev	13.4	185.	7.3
%RSD	.35901	.42012	.22913

#1	3738.8	44139.	3205.6
#2	3719.9	43878.	3195.2

Sample Name: 280-123515-B-4-B Acquired: 5/13/2019 21:23:34 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00243	.00451	-.00790	.02876	.07203	.00013	-.00926	116.83	.00037
Stddev	.00067	.00061	.00473	.00059	.00061	.00006	.00312	.32	.00026
%RSD	27.446	13.637	59.944	2.0351	.84430	46.476	33.718	.27362	68.561

#1	.00291	.00494	-.01124	.02917	.07246	.00009	-.00705	117.06	.00056
#2	.00196	.00407	-.00455	.02835	.07160	.00018	-.01147	116.60	.00019

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00008	-.00056	1.7118	4.7419	.07918	23.396	.03360	-.00005
Stddev	.00027	.00035	.00171	.0088	.1138	.00107	.038	.00017	.00018
%RSD	147.36	463.85	307.06	.51642	2.4007	1.3509	.16196	.50159	394.16

#1	-.00001	-.00017	.00065	1.7181	4.8224	.07842	23.423	.03348	-.00017
#2	.00038	.00033	-.00177	1.7056	4.6614	.07993	23.370	.03371	.00008

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 9.1496	-.00032	-.00095	-.00382	27.381	-.00339	.00161	4.1112	8.7980
Stddev	.4258	.00002	.00158	.00123	.543	.00226	.00329	.0047	.0101
%RSD	4.6532	6.5981	165.27	32.289	1.9846	66.535	204.27	.11473	.11473

#1	9.4507	-.00034	-.00207	-.00294	27.765	-.00180	.00393	4.1079	8.7909
#2	8.8486	-.00031	.00016	-.00469	26.997	-.00499	-.00071	4.1145	8.8051

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00								
Low Limit	11.000								

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00192	.12711	.00334	-.00062	-.00104	F -.21595	-.00072	.00345	-.00116
Stddev	.00234	.00033	.00090	.00032	.00099	.00445	.00050	.00043	.00123
%RSD	122.05	.25607	26.907	51.301	95.921	2.0603	68.998	12.318	106.14

#1	-.00357	.12734	.00270	-.00039	-.00174	-.21909	-.00037	.00376	-.00029
#2	-.00026	.12688	.00397	-.00084	-.00033	-.21280	-.00107	.00315	-.00203

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3640.1	42809.	3087.4
Stddev	2.1	8.	14.4
%RSD	.05905	.01881	.46554

#1	3641.6	42815.	3097.5
#2	3638.6	42804.	3077.2

Sample Name: 280-123515-B-5-B Acquired: 5/13/2019 21:26:06 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00257	.00089	.00081	.02123	.03929	-.00007	-.00656	77.389	.00034
Stddev	.00065	.00059	.00990	.00058	.00049	.00030	.00282	.312	.00017
%RSD	25.330	66.021	1223.3	2.7218	1.2580	406.99	43.031	.40353	49.424

#1	.00211	.00131	.00781	.02164	.03894	-.00029	-.00856	77.610	.00046
#2	.00303	.00047	-.00619	.02083	.03964	.00014	-.00457	77.169	.00022

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00085	-.00158	.62252	2.6626	.05730	32.197	.00780	-.00028
Stddev	.00050	.00052	.00028	.00001	.1355	.00240	.109	.00010	.00041
%RSD	664.23	60.943	17.511	.00172	5.0888	4.1892	.33735	1.2559	144.36

#1	.00043	.00122	-.00138	.62253	2.5668	.05560	32.273	.00787	.00001
#2	-.00028	.00049	-.00177	.62251	2.7584	.05899	32.120	.00773	-.00057

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.0320	-.00052	-.00299	-.00453	24.861	-.00116	-.00060	3.9263	8.4023
Stddev	.0768	.00002	.00042	.00309	.384	.00090	.00053	.0172	.0367
%RSD	.95619	3.6043	14.083	68.131	1.5435	77.668	88.212	.43727	.43727

#1	8.0863	-.00051	-.00270	-.00671	25.132	-.00179	-.00023	3.9384	8.4283
#2	7.9777	-.00054	-.00329	-.00235	24.590	-.00052	-.00097	3.9142	8.3763

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00053	.07780	.00056	-.00033	-.00223	-.07087	-.00037	.00080	-.00568
Stddev	.00204	.00014	.00055	.00015	.00246	.06367	.00018	.00002	.00140
%RSD	383.35	.17592	98.584	44.294	109.96	89.845	48.410	2.8711	24.710

#1	.00091	.07790	.00017	-.00043	-.00397	-.02584	-.00050	.00081	-.00667
#2	-.00197	.07771	.00095	-.00023	-.00050	-.11589	-.00024	.00078	-.00468

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3906.7	45828.	3225.7
Stddev	14.8	364.	120.9
%RSD	.37948	.79432	3.7472

#1	3896.2	45571.	3140.3
#2	3917.2	46086.	3311.2

Sample Name: 280-123515-B-6-B Acquired: 5/13/2019 21:28:38 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00186	.00804	-.00238	.01485	.03728	.00001	-.00354	59.008	.00020
Stddev	.00037	.00053	.00286	.00168	.00034	.00022	.00266	.072	.00046
%RSD	19.827	6.6110	120.26	11.285	.91680	3472.4	75.201	.12214	226.11

#1	.00160	.00842	-.00440	.01603	.03752	-.00015	-.00542	59.059	.00052
#2	.00212	.00767	-.00036	.01366	.03704	.00016	-.00166	58.957	-.00012

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	-.00009	-.00141	.67259	3.2395	.01679	41.372	.00615	-.00035
Stddev	.00030	.00015	.00031	.00199	.0592	.00017	.206	.00004	.00053
%RSD	75.467	162.99	21.718	.29544	1.8288	1.0386	.49889	.61439	149.75

#1	.00061	.00001	-.00119	.67119	3.1976	.01667	41.518	.00613	-.00072
#2	.00019	-.00019	-.00162	.67400	3.2814	.01691	41.226	.00618	.00002

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.0486	.00149	.00969	-.00418	17.899	-.00094	.00120	4.0578	8.6838
Stddev	.0200	.00076	.00125	.00283	.058	.00330	.00460	.0300	.0643
%RSD	.65478	50.976	12.925	67.561	.32680	353.08	382.48	.74034	.74034

#1	3.0344	.00203	.00880	-.00618	17.940	.00140	-.00205	4.0366	8.6383
#2	3.0627	.00095	.01058	-.00218	17.857	-.00327	.00446	4.0791	8.7292

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00207	.03667	.00494	-.00088	-.00310	F -.16621	-.00043	.00087	-.00650
Stddev	.00137	.00013	.00363	.00025	.00483	.02447	.00106	.00056	.00041
%RSD	65.990	.34576	73.355	28.301	155.99	14.725	247.53	63.891	6.2632

#1	-.00303	.03658	.00238	-.00106	-.00651	-.14890	-.00117	.00048	-.00679
#2	-.00110	.03676	.00751	-.00070	.00032	-.18351	.00032	.00126	-.00622

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3868.8	45836.	3327.6
Stddev	33.0	208.	4.3
%RSD	.85318	.45347	.12943

#1	3845.5	45689.	3324.6
#2	3892.1	45983.	3330.7

Sample Name: 280-123515-B-7-B Acquired: 5/13/2019 21:31:11 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00166	.00769	.00098	.01357	.03467	.00007	-.00284	61.902	.00013
Stddev	.00001	.00024	.00487	.00082	.00003	.00011	.00161	.044	.00003
%RSD	.41913	3.0660	497.84	6.0190	.09785	154.54	56.920	.07120	22.202

#1	.00166	.00786	.00442	.01415	.03469	.00015	-.00169	61.933	.00015
#2	.00165	.00752	-.00247	.01299	.03465	-.00001	-.00398	61.871	.00011

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02068	.00030	-.00151	2.8797	1.8938	.02306	25.623	.11736	-.00013
Stddev	.00024	.00015	.00015	.0018	.0667	.00095	.068	.00029	.00019
%RSD	1.1396	49.599	10.206	.06299	3.5221	4.1268	.26713	.25000	143.50

#1	.02084	.00041	-.00162	2.8784	1.8467	.02373	25.575	.11715	.00000
#2	.02051	.00020	-.00140	2.8810	1.9410	.02238	25.672	.11757	-.00026

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.5835	.01681	.00959	-.00415	19.025	.00191	.00243	4.0603	8.6891
Stddev	.0144	.00053	.00192	.00045	.230	.00163	.00417	.0473	.1012
%RSD	.31307	3.1737	20.030	10.904	1.2111	85.550	171.14	1.1652	1.1652

#1	4.5936	.01718	.01095	-.00447	19.188	.00306	-.00051	4.0938	8.7607
#2	4.5733	.01643	.00823	-.00383	18.862	.00075	.00538	4.0269	8.6175

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00219	.04541	.00088	-.00104	-.00332	-.09874	-.00146	.00370	-.00519
Stddev	.00022	.00018	.00167	.00056	.00265	.06704	.00013	.00015	.00264
%RSD	10.059	.40738	188.98	54.086	79.666	67.898	8.8522	4.0337	50.899

#1	-.00203	.04554	-.00030	-.00064	-.00145	-.05133	-.00155	.00381	-.00332
#2	-.00234	.04528	.00207	-.00144	-.00519	-.14615	-.00136	.00360	-.00706

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3839.8	45651.	3365.9
Stddev	14.3	243.	24.8
%RSD	.37170	.53287	.73586

#1	3849.9	45823.	3383.4
#2	3829.7	45479.	3348.4

Sample Name: 280-123515-B-9-B Acquired: 5/13/2019 21:33:43 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00138	.00727	-.00730	.01332	.03478	-.00006	-.00203	62.187	.00029
Stddev	.00006	.00013	.00673	.00166	.00006	.00005	.00249	.108	.00018
%RSD	4.4393	1.7844	92.202	12.454	.18661	82.940	122.79	.17356	61.490

#1	.00133	.00736	-.01206	.01215	.03474	-.00002	-.00379	62.111	.00042
#2	.00142	.00718	-.00254	.01450	.03483	-.00009	-.00027	62.263	.00017

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02284	.00042	-.00094	3.0613	1.8966	.02237	25.786	.13502	-.00002
Stddev	.00012	.00034	.00059	.0027	.0525	.00126	.006	.00011	.00027
%RSD	.50480	79.861	62.893	.08642	2.7679	5.6153	.02258	.08284	1328.7

#1	.02276	.00066	-.00136	3.0595	1.8595	.02325	25.790	.13510	-.00021
#2	.02293	.00018	-.00052	3.0632	1.9337	.02148	25.782	.13494	.00017

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.5872	.01638	.01113	-.00214	19.135	.00114	.00170	4.0908	8.7544
Stddev	.0068	.00017	.00054	.00069	.218	.00078	.00479	.0143	.0307
%RSD	.14808	1.0250	4.8255	32.409	1.1393	68.403	281.96	.35034	.35034

#1	4.5824	.01626	.01151	-.00263	19.289	.00059	-.00169	4.0807	8.7327
#2	4.5920	.01650	.01075	-.00165	18.981	.00169	.00509	4.1010	8.7761

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00100	.04545	.00404	-.00049	-.00459	-.08715	-.00101	.00439	-.00022
Stddev	.00023	.00012	.00064	.00012	.00175	.04624	.00010	.00058	.00240
%RSD	22.771	.26382	15.734	23.875	38.151	53.060	9.8647	13.159	1102.6

#1	-.00116	.04537	.00359	-.00041	-.00583	-.11985	-.00108	.00398	-.00191
#2	-.00084	.04554	.00449	-.00057	-.00335	-.05445	-.00094	.00480	.00148

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3880.3	45637.	3322.6
Stddev	2.9	42.	9.7
%RSD	.07352	.09118	.29320

#1	3882.3	45666.	3329.5
#2	3878.3	45608.	3315.7

Sample Name: CCVH-5690583 Acquired: 5/13/2019 21:36:14 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00400	49.627	-.00470	.00278	.00110	.00129	.94103	.02191	.00101	.00298	.00145	.01388	49.861
Stddev	.00014	.278	.00819	.00014	.00046	.00018	.00945	.00135	.00017	.00023	.00038	.00071	.156
%RSD	3.4283	.55988	174.52	5.1060	42.354	13.643	1.0040	6.1639	16.676	7.5863	26.029	5.1227	.31266

#1	.00390	49.824	-.01049	.00288	.00077	.00141	.94771	.02286	.00113	.00282	.00119	.01438	49.971
#2	.00409	49.431	.00110	.00268	.00143	.00116	.93435	.02095	.00089	.00313	.00172	.01338	49.751

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.32382	.00381	.01919	.00381	-.00019	258.09	.00379	.00211	.00229	4.5240	.00698	.00348	.01094
Stddev	.05941	.00221	.00851	.00008	.00051	1.33	.00063	.00097	.00097	.0338	.00072	.00055	.00410
%RSD	18.347	57.888	44.370	2.1982	264.32	.51684	16.654	45.913	42.262	.74611	10.322	15.919	37.525

#1	.36583	.00225	.02521	.00387	-.00055	259.04	.00334	.00279	.00161	4.5478	.00647	.00387	.00804
#2	.28181	.00537	.01317	.00375	.00017	257.15	.00423	.00142	.00298	4.5001	.00748	.00309	.01384

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02341	.00041	.00203	4.7881	-.01011	.00255	9.7809	.00480	.00324	.07220
Stddev	.00878	.00019	.00012	.0130	.00016	.00263	.0381	.00008	.00011	.00800
%RSD	37.525	46.313	6.0567	.27044	1.6294	103.12	.38959	1.6369	3.2993	11.081

#1	.01720	.00054	.00194	4.7972	-.01023	.00069	9.8078	.00474	.00316	.07786
#2	.02962	.00027	.00211	4.7789	-.01000	.00440	9.7539	.00486	.00332	.06654

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3778.9	43788.	3187.5
Stddev	9.2	42.	1.3
%RSD	.24233	.09623	.04091

#1	3785.3	43818.	3188.5
#2	3772.4	43758.	3186.6

Sample Name: CCV-5690581 Acquired: 5/13/2019 21:38:43 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48829	F .64443	.93132	.46651	.50091	.47519	-.00383	4.9519	.47982	.48702	.49300	.47831
Stddev	.00216	.03677	.02125	.00645	.00256	.00247	.00158	.0174	.00901	.00949	.00884	.00186
%RSD	.44238	5.7051	2.2813	1.3823	.51207	.51935	41.188	.35078	1.8781	1.9490	1.7924	.38873

#1	.48982	.61843	.94635	.47107	.49909	.47345	-.00495	4.9397	.48619	.49373	.49925	.47963
#2	.48677	.67043	.91630	.46195	.50272	.47694	-.00272	4.9642	.47345	.48031	.48675	.47700

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.4327	51.760	1.0197	19.614	.48814	.48872	F 5.7916	.48952	.97365	.96833	.00692	.91009
Stddev	.0004	.356	.0056	.053	.00267	.00918	.0088	.00951	.01738	.01724	.00012	.03019
%RSD	.01499	.68760	.54671	.27224	.54629	1.8788	.15135	1.9423	1.7847	1.7803	1.7981	3.3171

#1	2.4330	51.508	1.0157	19.652	.49003	.49521	5.7854	.49624	.98594	.98052	.00683	.93143
#2	2.4325	52.012	1.0236	19.576	.48626	.48223	5.7978	.48280	.96136	.95615	.00701	.88874

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.92715	4.7862	10.242	.97161	.48617	.00712	.48347	.98122	-.11080	.48573	.49481	.48057
Stddev	.01648	.0098	.021	.02030	.00237	.00261	.00269	.01560	.00436	.00151	.00229	.00316
%RSD	1.7777	.20367	.20367	2.0892	.48720	36.580	.55578	1.5903	3.9393	.31027	.46372	.65735

#1	.93880	4.7793	10.228	.98597	.48449	.00528	.48537	.99226	-.11389	.48680	.49643	.47834
#2	.91549	4.7931	10.257	.95726	.48784	.00897	.48157	.97019	-.10771	.48466	.49319	.48281

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3862.8	44802.	3243.4
Stddev	13.5	213.	15.1
%RSD	.34908	.47589	.46655

#1	3853.3	44651.	3254.1
#2	3872.3	44953.	3232.7

Sample Name: CCB Acquired: 5/13/2019 21:41:05 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00232	.00346	-.00109	.00060	-.00007	.00004	-.00761	F .37815	.00068	.00088	.00084	-.00135
Stddev	.00037	.00291	.00133	.00016	.00004	.00007	.00057	.00127	.00021	.00076	.00093	.00091
%RSD	16.111	83.957	121.59	27.343	54.590	193.07	7.4343	.33539	31.649	86.052	110.44	67.618
#1	.00205	.00141	-.00203	.00071	-.00009	.00009	-.00801	.37905	.00053	.00034	.00019	-.00071
#2	.00258	.00552	-.00015	.00048	-.00004	-.00001	-.00721	.37726	.00083	.00141	.00150	-.00200
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.00200							.13500				
Low Limit	-.01000							-.13500				
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .14164	.08664	.00228	W .04502	F .01130	.00278	W .40249	.00013	-.00297	-.00265	W .05886	W .01139
Stddev	.00220	.02635	.00196	.00319	.00008	.00210	.02094	.00055	.00451	.00180	.00168	.00141
%RSD	1.5503	30.410	86.076	7.0749	.74110	75.370	5.2028	420.43	151.68	67.863	2.8466	12.400
#1	.14009	.06801	.00089	.04277	.01124	.00130	.41730	-.00026	-.00616	-.00392	.05768	.01039
#2	.14320	.10527	.00367	.04727	.01136	.00426	.38769	.00052	.00022	-.00138	.06005	.01239
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Warn	Chk Fail	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Warn
High Limit	.10000			.04000	.00500		.35000				.05000	.00600
Low Limit	-.10000			-.04000	-.01000		-.35000				-.20000	-.00600
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00372	.05405	.11567	.00141	W .00171	.00324	-.00076	-.00119	-.09166	-.00034	-.00091	-.00271
Stddev	.00020	.00649	.01388	.00372	.00015	.00660	.00002	.00135	.02350	.00048	.00029	.00071
%RSD	5.4258	12.002	12.002	263.42	8.5834	203.97	3.0666	113.34	25.642	142.78	31.563	26.183
#1	.00358	.04946	.10585	-.00122	.00161	.00791	-.00077	-.00215	-.10828	.00000	-.00112	-.00221
#2	.00387	.05864	.12549	.00404	.00182	-.00143	-.00074	-.00024	-.07504	-.00067	-.00071	-.00321
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					.00120							
Low Limit					-.00120							
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3848.9	44776.	3209.7									
Stddev	25.7	298.	18.7									
%RSD	.66727	.66611	.58359									
#1	3830.8	44987.	3196.4									
#2	3867.1	44565.	3222.9									

Sample Name: CCVL-5699390 Acquired: 5/13/2019 21:43:39 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01091	.11305	F .00833	.08760	.00883	.00087	.09284	.19225	.00453	.00932	.00955	.01271
Stddev	.00081	.00247	.00369	.00260	.00003	.00020	.00500	.00018	.00002	.00009	.00033	.00006
%RSD	7.4589	2.1866	44.312	2.9686	.36997	22.920	5.3867	.09179	.43398	1.0064	3.4465	.44163
#1	.01033	.11480	.01095	.08944	.00885	.00072	.09638	.19212	.00451	.00925	.00978	.01267
#2	.01149	.11131	.00572	.08576	.00881	.00101	.08931	.19237	.00454	.00939	.00931	.01275
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.01500									
Range			-30.000%									
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.12024	3.0637	.01822	.18565	.00953	.01859	1.2945	.03691	2.6515	F .00533	.08450	.02034
Stddev	.00635	.1960	.00119	.00002	.00013	.00043	.0072	.00034	.0505	.00111	.00077	.00312
%RSD	5.2771	6.3974	6.5545	.01296	1.3223	2.3237	.55936	.93471	1.9043	20.831	.90652	15.316
#1	.12473	3.2023	.01906	.18563	.00962	.01890	1.2996	.03715	2.6872	.00612	.08396	.01814
#2	.11576	2.9251	.01737	.18567	.00944	.01829	1.2894	.03666	2.6158	.00455	.08504	.02254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
Value										.00900		
Range										-30.000%		
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01911	.49601	1.0615	.08980	.00949	.01544	.00755	.01152	F -.02330	.00829	.01953	F .00611
Stddev	.00291	.03153	.0675	.00116	.00022	.00161	.00036	.00079	.02684	.00065	.00063	.00161
%RSD	15.211	6.3575	6.3575	1.2963	2.3273	10.415	4.7692	6.8427	115.19	7.8354	3.2310	26.338
#1	.02116	.47371	1.0137	.09062	.00964	.01430	.00781	.01208	-.04228	.00784	.01998	.00498
#2	.01705	.51830	1.1092	.08898	.00933	.01658	.00730	.01097	-.00432	.00875	.01908	.00725
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail
Value									.06000			.01500
Range									-30.000%			-30.000%
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4045.3	46247.	3274.8									
Stddev	35.6	244.	50.7									
%RSD	.87901	.52700	1.5469									
#1	4020.1	46075.	3239.0									
#2	4070.4	46420.	3310.6									

Sample Name: 280-123543-B-1-D Acquired: 5/13/2019 21:46:12 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00240	.01484	-.00701	.03000	.14870	-.00010	-.01015	196.43	.00101
Stddev	.00071	.00129	.00468	.00052	.00058	.00031	.00221	.09	.00013
%RSD	29.450	8.7144	66.845	1.7389	.38700	296.52	21.818	.04639	12.748

#1	.00190	.01393	-.00370	.02963	.14829	.00011	-.00858	196.37	.00092
#2	.00290	.01576	-.01032	.03037	.14911	-.00032	-.01171	196.50	.00110

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	.00022	.00215	.12604	1.9511	.00593	25.115	5.6465	.00142
Stddev	.00018	.00015	.00046	.00605	.0464	.00028	.023	.0154	.00020
%RSD	14.716	66.405	21.677	4.7970	2.3777	4.6734	.09044	.27205	13.943

#1	.00109	.00033	.00247	.13031	1.9839	.00574	25.099	5.6357	.00128
#2	.00134	.00012	.00182	.12176	1.9183	.00613	25.131	5.6574	.00156

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.598	.01436	.08155	-.00245	27.519	.00147	-.00244	9.8862	21.157
Stddev	.327	.00049	.00782	.00030	.247	.00213	.00386	.0070	.015
%RSD	2.5945	3.3789	9.5831	12.139	.89590	144.69	158.36	.07071	.07071

#1	12.829	.01402	.07603	-.00224	27.694	.00298	.00029	9.8912	21.167
#2	12.367	.01471	.08708	-.00266	27.345	-.00003	-.00517	9.8813	21.146

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00174	.84483	.00279	.00001	-.00539	-.10584	.00165	.00521	-.00382
Stddev	.00137	.00124	.00115	.00030	.00027	.06410	.00071	.00017	.00031
%RSD	78.872	.14705	41.252	2552.4	4.9850	60.561	43.310	3.2279	8.0514

#1	-.00271	.84571	.00361	.00023	-.00520	-.06052	.00215	.00533	-.00403
#2	-.00077	.84395	.00198	-.00020	-.00558	-.15117	.00114	.00509	-.00360

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3782.3	44281.	3260.2
Stddev	.5	243.	9.6
%RSD	.01294	.54796	.29365

#1	3782.6	44452.	3253.4
#2	3781.9	44109.	3266.9

Sample Name: 280-123543-B-2-B Acquired: 5/13/2019 21:48:49 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00176	.26024	-.00341	.01709	.25861	.00016	-.00716	62.191	.00031
Stddev	.00058	.00206	.00100	.00173	.00067	.00007	.00085	.190	.00024
%RSD	32.728	.79136	29.289	10.125	.25826	46.540	11.891	.30593	79.121

#1	.00217	.26170	-.00412	.01832	.25908	.00010	-.00656	62.326	.00013
#2	.00135	.25878	-.00270	.01587	.25814	.00021	-.00776	62.057	.00048

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.00199	-.00062	.20716	3.5524	.00787	11.373	.00623	.00016
Stddev	.00000	.00005	.00024	.00303	.0239	.00085	.009	.00021	.00010
%RSD	.30940	2.4884	38.334	1.4626	.67291	10.848	.07597	3.3513	62.845

#1	-.00022	.00202	-.00079	.20502	3.5693	.00726	11.367	.00608	.00023
#2	-.00021	.00195	-.00045	.20930	3.5355	.00847	11.379	.00637	.00009

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.8926	.00288	.20547	-.00382	1.8072	.00191	-.00087	9.1289	19.536
Stddev	.0151	.00044	.00112	.00092	.0122	.00560	.00168	.0417	.089
%RSD	.15264	15.239	.54613	24.136	.67319	293.18	192.74	.45637	.45637

#1	9.9033	.00319	.20468	-.00448	1.7986	-.00205	.00032	9.0995	19.473
#2	9.8819	.00257	.20627	-.00317	1.8158	.00587	-.00206	9.1584	19.599

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00063	.38347	.00382	.00400	-.00537	F -.12967	-.00067	.00336	-.00306
Stddev	.00141	.00104	.00190	.00014	.00128	.00797	.00039	.00035	.00048
%RSD	223.97	.27187	49.709	3.6054	23.818	6.1431	57.955	10.328	15.779

#1	.00037	.38420	.00248	.00390	-.00628	-.12404	-.00095	.00361	-.00272
#2	-.00163	.38273	.00516	.00410	-.00447	-.13530	-.00040	.00312	-.00340

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3898.3	45306.	3291.5
Stddev	18.2	124.	8.3
%RSD	.46573	.27392	.25365

#1	3885.5	45394.	3285.6
#2	3911.1	45219.	3297.4

Sample Name: 280-123543-B-3-B Acquired: 5/13/2019 21:51:25 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	-.00127	-.00578	-.00049	.02027	.00034	-.00418	4.8479	-.00001
Stddev	.00037	.00031	.00504	.00020	.02001	.00001	.00218	4.8358	.00007
%RSD	23.631	24.764	87.147	40.528	98.719	3.9138	52.050	99.751	982.28

#1	.00129	-.00104	-.00222	-.00035	.00612	.00035	-.00572	1.4284	.00004
#2	.00181	-.00149	-.00934	-.00063	.03441	.00033	-.00264	8.2673	-.00006

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	-.00066	-.00100	.01348	.33437	-.00296	.31410	.00253	-.00015
Stddev	.00006	.00024	.00029	.01193	.30081	.00086	.45198	.00341	.00050
%RSD	24.181	36.808	29.416	88.485	89.963	28.953	143.90	134.60	328.05

#1	-.00022	-.00049	-.00079	.00505	.12167	-.00235	.63370	.00495	-.00050
#2	-.00031	-.00083	-.00120	.02192	.54708	-.00356	-.00550	.00012	.00020

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0793	-.00012	-.00181	-.00029	.00757	.00029	.00088	.73284	1.5683
Stddev	.7482	.00025	.00099	.00003	.00337	.00272	.00126	.66267	1.4181
%RSD	69.318	208.68	54.976	11.609	44.556	943.60	142.72	90.426	90.426

#1	.55029	.00006	-.00251	-.00027	.00995	.00221	-.00001	.26426	.56551
#2	1.6084	-.00029	-.00111	-.00032	.00518	-.00163	.00177	1.2014	2.5710

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00215	.02936	.00417	-.00099	-.00305	-.11329	-.00041	.00041	-.00039
Stddev	.00006	.02959	.00041	.00038	.00294	.01263	.00029	.00022	.00181
%RSD	2.9107	100.78	9.9151	38.037	96.425	11.148	70.814	53.182	461.16

#1	-.00210	.00844	.00446	-.00126	-.00514	-.12222	-.00020	.00026	.00089
#2	-.00219	.05028	.00388	-.00072	-.00097	-.10436	-.00061	.00057	-.00167

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3982.1	48529.	4583.0
Stddev	19.0	2004.	3.6
%RSD	.47650	4.1285	.07762

#1	3968.7	49946.	4585.5
#2	3995.5	47112.	4580.4

Sample Name: 280-123543-B-4-B Acquired: 5/13/2019 21:54:01 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00224	.05989	-.00244	.08177	.03766	-.00003	-.00754	270.50	.00052
Stddev	.00094	.00170	.00299	.00046	.00005	.00010	.00125	1.11	.00051
%RSD	41.827	2.8410	122.38	.56465	.12724	354.25	16.584	.40933	97.692

#1	.00290	.06109	-.00033	.08210	.03770	.00004	-.00665	271.28	.00016
#2	.00158	.05869	-.00455	.08145	.03763	-.00010	-.00842	269.71	.00089

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00032	.00081	.05822	4.4555	.01983	61.407	.00451	.00608
Stddev	.00012	.00035	.00218	.00176	.0256	.00006	.342	.00006	.00027
%RSD	68.283	109.24	267.42	3.0232	.57542	.29528	.55751	1.3770	4.4703

#1	.00009	.00057	-.00073	.05947	4.4737	.01979	61.649	.00446	.00589
#2	.00027	.00007	.00236	.05698	4.4374	.01987	61.165	.00455	.00627

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.751	.00160	.00729	-.00310	178.06	-.00271	.05023	7.1960	15.399
Stddev	.314	.00017	.00182	.00088	2.82	.00084	.00084	.0142	.030
%RSD	1.7666	10.370	24.902	28.477	1.5844	31.104	1.6731	.19754	.19754

#1	17.973	.00148	.00601	-.00373	180.05	-.00330	.04964	7.2060	15.421
#2	17.530	.00172	.00857	-.00248	176.06	-.00211	.05083	7.1859	15.378

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00299	1.5329	.00012	.00043	-.00560	-.11435	-.00028	.00917	-.00498
Stddev	.00027	.0071	.00146	.00065	.00058	.02555	.00017	.00022	.00250
%RSD	8.9316	.46078	1215.0	150.33	10.395	22.342	62.436	2.3771	50.212

#1	-.00318	1.5379	.00115	-.00003	-.00519	-.13242	-.00016	.00932	-.00321
#2	-.00280	1.5279	-.00091	.00089	-.00601	-.09629	-.00040	.00901	-.00675

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3726.1	43163.	3163.9
Stddev	50.7	253.	16.1
%RSD	1.3615	.58715	.50740

#1	3690.3	42984.	3175.3
#2	3762.0	43342.	3152.6

Sample Name: 280-123543-B-5-B Acquired: 5/13/2019 21:56:33 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00192	.04109	-.00026	.96776	.21314	.00000	-.00825	129.27	.00138
Stddev	.00126	.00064	.00243	.01377	.00165	.00017	.00204	.49	.00002
%RSD	65.608	1.5585	923.46	1.4225	.77288	11367.	24.720	.37651	1.1318

#1	.00281	.04154	-.00198	.97749	.21430	-.00012	-.00681	129.62	.00139
#2	.00103	.04063	.00146	.95802	.21197	.00012	-.00970	128.93	.00137

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00064	.00354	.27868	4.9150	.03027	75.353	2.7436	.01220
Stddev	.00009	.00023	.00028	.00184	.0197	.00013	.059	.0018	.00000
%RSD	46.343	35.004	8.0143	.65930	.40106	.42402	.07820	.06562	.01441

#1	.00013	.00080	.00374	.27738	4.9010	.03036	75.395	2.7423	.01220
#2	.00026	.00048	.00334	.27998	4.9289	.03018	75.312	2.7449	.01220

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	155.21	.02254	.03830	-.00285	38.151	.00049	-.00230	11.549	24.715
Stddev	.02	.00106	.00047	.00017	.252	.00234	.00660	.030	.064
%RSD	.01531	4.6973	1.2304	5.8632	.66167	474.06	287.10	.25861	.25861

#1	155.20	.02329	.03797	-.00297	38.330	-.00116	.00237	11.570	24.760
#2	155.23	.02179	.03863	-.00273	37.973	.00215	-.00696	11.528	24.670

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00386	1.9700	.00057	-.00007	-.00484	-.09110	-.00013	.01917	-.00250
Stddev	.00077	.0046	.00163	.00021	.00154	.03060	.00009	.00009	.00091
%RSD	19.819	.23203	283.34	290.36	31.748	33.594	63.835	.47796	36.242

#1	-.00440	1.9732	-.00058	.00008	-.00376	-.06946	-.00020	.01911	-.00186
#2	-.00332	1.9667	.00173	-.00022	-.00593	-.11274	-.00007	.01924	-.00314

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3979.5	45576.	3402.6
Stddev	16.2	257.	15.6
%RSD	.40821	.56366	.45878

#1	3968.1	45394.	3413.6
#2	3991.0	45757.	3391.6

Sample Name: 280-123543-B-6-B Acquired: 5/13/2019 21:59:04 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00157	.01792	-.00231	.06674	.03490	.00009	-.00846	497.68	-.00008
Stddev	.00084	.00035	.00520	.00102	.00019	.00022	.00295	1.81	.00037
%RSD	53.625	1.9529	224.45	1.5268	.53745	248.30	34.869	.36309	461.82

#1	.00098	.01816	-.00599	.06602	.03477	-.00007	-.00637	498.96	.00018
#2	.00217	.01767	.00136	.06746	.03504	.00025	-.01054	496.40	-.00034

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.00024	.00733	.96236	1.1906	.00302	25.194	.27618	.00115
Stddev	.00005	.00023	.00085	.00313	.1491	.00135	.723	.00735	.00064
%RSD	5.3253	95.774	11.660	.32545	12.525	44.835	2.8715	2.6623	55.864

#1	.00105	.00039	.00793	.96014	1.0852	.00206	24.682	.27098	.00161
#2	.00098	.00008	.00672	.96457	1.2961	.00398	25.706	.28138	.00070

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	31.012	.01098	.04426	-.00397	F 264.60	.00208	.00435	9.5304	20.395
Stddev	.346	.00016	.00117	.00203	2.12	.00282	.00130	.0479	.103
%RSD	1.1155	1.4647	2.6345	51.292	.80212	135.61	29.830	.50261	.50261

#1	30.768	.01087	.04344	-.00253	263.10	.00009	.00343	9.5642	20.467
#2	31.257	.01109	.04509	-.00541	266.10	.00407	.00526	9.4965	20.322

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00333	1.9792	.00273	-.00041	-.00432	-.08182	.00053	.01956	-.00218
Stddev	.00192	.0070	.00186	.00025	.00147	.00704	.00030	.00068	.00099
%RSD	57.706	.35624	68.082	60.145	33.998	8.6040	56.789	3.5013	45.696

#1	-.00469	1.9841	.00405	-.00024	-.00536	-.07684	.00074	.01908	-.00288
#2	-.00197	1.9742	.00142	-.00058	-.00328	-.08680	.00031	.02005	-.00147

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3821.1	45208.	3354.1
Stddev	75.0	1430.	11.9
%RSD	1.9627	3.1629	.35480

#1	3874.2	46219.	3345.7
#2	3768.1	44196.	3362.5

Sample Name: 280-123543-B-7-B Acquired: 5/13/2019 22:01:36 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00182	.04268	-.00094	.04964	.04950	.00011	-.00701	179.62	.00042
Stddev	.00060	.00080	.00396	.00262	.00022	.00004	.00173	2.61	.00015
%RSD	32.964	1.8653	420.62	5.2837	.44491	32.086	24.676	1.4557	35.493

#1	.00225	.04325	-.00374	.05149	.04935	.00013	-.00823	177.77	.00031
#2	.00140	.04212	.00186	.04778	.04966	.00008	-.00579	181.47	.00052

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	.00073	.00382	.07298	3.4485	.01120	39.794	.00468	.00368
Stddev	.00039	.00005	.00027	.00173	.0082	.00213	.323	.00002	.00017
%RSD	187.94	6.2090	7.0589	2.3716	.23876	19.047	.81201	.43072	4.6525

#1	-.00048	.00070	.00401	.07420	3.4427	.00969	40.022	.00470	.00380
#2	.00007	.00077	.00363	.07175	3.4543	.01271	39.565	.00467	.00356

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.320	.00618	-.00061	-.00413	68.462	.00059	.01103	6.1495	13.160
Stddev	.349	.00009	.00228	.00173	2.079	.00045	.00239	.0081	.017
%RSD	2.0176	1.4968	374.00	41.958	3.0373	76.396	21.683	.13174	.13174

#1	17.567	.00611	-.00222	-.00290	69.933	.00027	.01272	6.1438	13.148
#2	17.073	.00624	.00100	-.00535	66.992	.00092	.00934	6.1553	13.172

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00225	1.0696	.00156	.00070	-.00293	-.11984	-.00022	.02444	-.00412
Stddev	.00076	.0154	.00036	.00061	.00079	.00235	.00055	.00038	.00080
%RSD	33.622	1.4435	22.821	86.487	26.858	1.9583	245.35	1.5398	19.435

#1	-.00278	1.0587	.00131	.00113	-.00238	-.12150	.00017	.02470	-.00355
#2	-.00171	1.0805	.00182	.00027	-.00349	-.11818	-.00062	.02417	-.00469

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3970.8	47228.	3563.5
Stddev	7.1	461.	31.1
%RSD	.17765	.97631	.87192

#1	3965.8	46902.	3585.5
#2	3975.8	47554.	3541.5

Sample Name: 280-123543-B-8-B Acquired: 5/13/2019 22:04:09 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00160	-.00046	-.00172	.21276	.06054	.00011	-.00576	93.465	.00010
Stddev	.00009	.00054	.00078	.00308	.00026	.00001	.00392	.223	.00026
%RSD	5.6879	116.75	45.101	1.4481	.42928	9.7422	68.016	.23899	253.78

#1	.00153	-.00084	-.00227	.21494	.06072	.00011	-.00299	93.307	.00028
#2	.00166	-.00008	-.00117	.21058	.06036	.00010	-.00852	93.623	-.00008

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	-.00011	-.00050	.16363	5.8129	.02308	34.401	.07326	.00789
Stddev	.00003	.00017	.00083	.00773	.0819	.00080	.016	.00023	.00060
%RSD	13.429	154.25	164.69	4.7216	1.4098	3.4654	.04569	.31800	7.5547

#1	.00025	.00001	-.00109	.15817	5.7550	.02251	34.390	.07309	.00831
#2	.00020	-.00023	.00008	.16910	5.8709	.02364	34.412	.07342	.00747

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	105.79	.00081	.00538	-.00187	76.551	.00035	.00077	6.0005	12.841
Stddev	.18	.00047	.00284	.00140	1.721	.00188	.00055	.0472	.101
%RSD	.17343	58.783	52.771	75.119	2.2477	530.90	70.827	.78646	.78646

#1	105.92	.00047	.00337	-.00088	77.768	.00169	.00116	5.9671	12.770
#2	105.66	.00114	.00739	-.00286	75.335	-.00098	.00039	6.0339	12.912

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00334	2.9096	.00482	-.00098	-.00333	-.09278	-.00060	.00249	.00006
Stddev	.00143	.0159	.00033	.00018	.00146	.03393	.00080	.00083	.00432
%RSD	42.840	.54488	6.8229	17.889	43.742	36.568	133.32	33.361	6873.4

#1	-.00233	2.8984	.00459	-.00086	-.00230	-.06879	-.00003	.00308	-.00299
#2	-.00435	2.9208	.00505	-.00110	-.00436	-.11677	-.00116	.00190	.00312

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3909.1	46849.	3461.4
Stddev	8.9	165.	15.5
%RSD	.22707	.35218	.44729

#1	3915.3	46966.	3472.3
#2	3902.8	46732.	3450.4

Sample Name: 280-123543-B-9-B Acquired: 5/13/2019 22:06:42 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.03988	.00116	.05165	.04964	.00013	-.00276	181.21	.00085
Stddev	.00016	.00193	.00399	.00141	.00097	.00008	.00053	.91	.00015
%RSD	18.059	4.8495	343.25	2.7362	1.9531	61.233	19.256	.50057	18.121

#1	.00097	.04125	.00399	.05265	.05033	.00007	-.00313	181.85	.00074
#2	.00075	.03852	-.00166	.05065	.04895	.00018	-.00238	180.57	.00096

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.00054	.00612	.06714	3.5129	.01504	40.073	.00518	.00418
Stddev	.00008	.00017	.00094	.00283	.0627	.00075	.368	.00006	.00030
%RSD	51.903	31.564	15.379	4.2164	1.7853	4.9548	.91941	1.2389	7.1037

#1	-.00021	.00066	.00545	.06514	3.5573	.01556	39.813	.00513	.00439
#2	-.00010	.00042	.00678	.06914	3.4686	.01451	40.334	.00523	.00397

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	18.181	.00628	.00006	-.00216	69.345	-.00086	.01113	6.3044	13.491
Stddev	.058	.00002	.00124	.00079	.555	.00009	.00809	.0250	.053
%RSD	.31823	.25293	2130.9	36.419	.80096	10.693	72.692	.39604	.39604

#1	18.222	.00629	.00094	-.00160	69.738	-.00079	.01685	6.3220	13.529
#2	18.140	.00627	-.00082	-.00272	68.952	-.00092	.00541	6.2867	13.454

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00213	1.1047	.00325	.00025	-.00388	-.08048	-.00011	.02634	-.00256
Stddev	.00022	.0003	.00291	.00046	.00052	.03969	.00075	.00059	.00310
%RSD	10.528	.02597	89.580	182.87	13.321	49.319	664.94	2.2292	121.20

#1	-.00197	1.1049	.00119	-.00007	-.00352	-.05241	.00042	.02593	-.00037
#2	-.00229	1.1045	.00531	.00058	-.00425	-.10854	-.00064	.02676	-.00475

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4079.9	47255.	3443.6
Stddev	25.3	302.	7.8
%RSD	.61917	.63829	.22612

#1	4097.7	47042.	3438.1
#2	4062.0	47469.	3449.1

Sample Name: 280-123543-B-10-B Acquired: 5/13/2019 22:09:14 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00150	.01143	-.00044	.00329	-.00045	.00002	-.00285	.03343	-.00018
Stddev	.00003	.00006	.00317	.00049	.00045	.00025	.00690	.00210	.00005
%RSD	1.7839	.54015	728.48	14.752	101.37	1176.6	242.06	6.2715	29.651

#1	.00149	.01148	-.00268	.00364	-.00076	.00020	.00203	.03195	-.00014
#2	.00152	.01139	.00181	.00295	-.00013	-.00016	-.00773	.03491	-.00022

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00016	-.00180	.02588	.15072	.00025	-.00148	.00037	.00006
Stddev	.00019	.00015	.00027	.00394	.00249	.00512	.00113	.00003	.00070
%RSD	267.07	92.787	14.795	15.235	1.6527	2030.2	76.127	6.9436	1164.5

#1	.00021	.00027	-.00199	.02309	.15248	.00387	-.00228	.00036	-.00043
#2	-.00006	.00006	-.00161	.02867	.14896	-.00337	-.00069	.00039	.00055

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.45273	-.00017	-.00733	-.00317	.10286	-.00186	.00473	.04363	.09336
Stddev	.00141	.00047	.00006	.00102	.07196	.00919	.00377	.01066	.02281
%RSD	.31229	276.10	.79282	32.312	69.962	493.98	79.727	24.429	24.429

#1	.45373	-.00051	-.00729	-.00245	.05197	-.00836	.00206	.05116	.10949
#2	.45173	.00016	-.00737	-.00389	.15374	.00464	.00740	.03609	.07723

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00264	.00052	.00425	.00093	-.00394	-.06755	.00018	.00076	-.00163
Stddev	.00107	.00022	.00214	.00037	.00020	.01934	.00012	.00051	.00211
%RSD	40.387	42.891	50.233	40.183	5.0461	28.628	69.839	67.326	129.77

#1	-.00188	.00036	.00576	.00119	-.00380	-.08122	.00026	.00112	-.00013
#2	-.00339	.00067	.00274	.00066	-.00408	-.05387	.00009	.00040	-.00312

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4159.6	48604.	3413.6
Stddev	8.7	167.	149.1
%RSD	.20822	.34442	4.3667

#1	4153.4	48722.	3308.2
#2	4165.7	48485.	3519.0

Sample Name: CCVH-5690583 Acquired: 5/13/2019 22:11:48 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00362	44.892	-.00327	.00178	.00158	.00114	F .87828	.06761	.00092	.00223	.00116	.01224
Stddev	.00046	.050	.00199	.00033	.00060	.00009	.01552	.00008	.00008	.00002	.00017	.00015
%RSD	12.595	.11117	60.941	18.829	37.793	7.8888	1.7672	.12103	8.8092	.69045	14.824	1.2127

#1	.00330	44.927	-.00186	.00154	.00201	.00107	.88925	.06755	.00087	.00222	.00128	.01214
#2	.00395	44.857	-.00467	.00201	.00116	.00120	.86730	.06766	.00098	.00224	.00104	.01235

Check ?	None	Chk Pass	None	None	None	None	Chk Fail	None	None	None	None	None
Value							1.0000					
Range							-10.000%					

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	45.345	.23401	.00432	.00936	.00368	.00011	234.29	.00351	.00457	.00403	F 4.2498	.00048
Stddev	.270	.04566	.00216	.00349	.00002	.00048	1.08	.00065	.00356	.00113	.0335	.00090
%RSD	.59586	19.514	49.995	37.245	.42612	455.92	.45993	18.435	77.821	27.970	.78778	186.94

#1	45.536	.20172	.00279	.00689	.00369	-.00024	235.05	.00306	.00709	.00483	4.2734	-.00015
#2	45.154	.26629	.00585	.01182	.00367	.00045	233.52	.00397	.00206	.00324	4.2261	.00112

Check ?	Chk Pass	None	None	None	None	None	Chk Pass	None	None	None	Chk Fail	None
Value											5.0000	
Range											-10.490%	

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	.04947	.10587	.00024	.00184	F 4.4214	-.00889	.00096	9.0114	.00548	.00399	.06362
Stddev	.00460	.02963	.06342	.00029	.00007	.0316	.00057	.00200	.0810	.00095	.00028	.00562
%RSD	461.75	59.904	59.904	122.22	3.8465	.71455	6.4652	208.59	.89895	17.413	6.9031	8.8406

#1	-.00226	.02852	.06102	.00044	.00179	4.3990	-.00848	.00237	8.9542	.00480	.00379	.05964
#2	.00425	.07042	.15071	.00003	.00189	4.4437	-.00930	-.00045	9.0687	.00615	.00418	.06760

Check ?	None	None	None	None	None	Chk Fail	None	None	Chk Pass	None	None	None
Value						5.0000						
Range						-10.490%						

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4237.9	47823.	3498.5
Stddev	121.9	427.	25.2
%RSD	2.8764	.89192	.71986

#1	4151.7	48125.	3480.7
#2	4324.1	47521.	3516.3

Sample Name: CCV-5690581 Acquired: 5/13/2019 22:14:18 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .44942	F .66426	F .87002	F .43910	.46842	F .44365	-.00239	4.6269	F .44441	F .44947	.45388	F .44145
Stddev	.00280	.10122	.00648	.00286	.01100	.01077	.00215	.0832	.00328	.00353	.00349	.00380
%RSD	.62279	15.238	.74437	.65212	2.3492	2.4272	89.876	1.7977	.73771	.78474	.76955	.86165
#1	.45140	.59269	.87460	.44112	.47620	.45127	-.00391	4.6857	.44673	.45196	.45635	.44414
#2	.44744	.73584	.86545	.43707	.46064	.43604	-.00087	4.5680	.44209	.44697	.45141	.43876
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail	None	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Fail
Value	.50000	.50000	1.0000	.50000		.50000			.50000	.50000		.50000
Range	-10.000%	10.000%	-10.000%	-10.000%		-10.000%			-10.000%	-10.000%		-10.000%
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.2983	48.308	.94561	F 17.899	F .44567	.45451	5.3552	.45208	F .89936	F .89561	.02236	F .86999
Stddev	.0638	1.109	.01812	.086	.00236	.00323	.1295	.00286	.00158	.00948	.00788	.01442
%RSD	2.7773	2.2958	1.9161	.48046	.53055	.71007	2.4180	.63340	.17548	1.0587	35.230	1.6577
#1	2.3434	49.092	.95842	17.960	.44734	.45679	5.4468	.45410	.90047	.90231	.01679	.88019
#2	2.2531	47.524	.93280	17.839	.44399	.45223	5.2637	.45005	.89824	.88890	.02793	.85979
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	None	Chk Fail
Value				20.000	.50000				1.0000	1.0000		1.0000
Range				-10.000%	-10.000%				-10.000%	-10.000%		-10.000%
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .86067	F 4.4987	F 9.6273	F .89588	.45368	.00692	F .44111	.90811	-.01894	F .44433	F .44984	.45219
Stddev	.00680	.1434	.3068	.01110	.01086	.00042	.00242	.00802	.01115	.00221	.00410	.01082
%RSD	.79002	3.1872	3.1872	1.2388	2.3931	6.0673	.54909	.88299	58.881	.49676	.91171	2.3936
#1	.86548	4.6001	9.8443	.90373	.46136	.00663	.44282	.91378	-.01106	.44589	.45274	.45985
#2	.85586	4.3973	9.4103	.88804	.44600	.00722	.43940	.90244	-.02683	.44277	.44694	.44454
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass	None	Chk Fail	Chk Pass	None	Chk Fail	Chk Fail	Chk Pass
Value	1.0000	5.0000	10.700	1.0000			.50000			.50000	.50000	
Range	-10.000%	-10.000%	-10.000%	-10.000%			-10.000%			-10.000%	-10.000%	
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4408.1	51481.	3746.1									
Stddev	12.3	139.	69.6									
%RSD	.27930	.27070	1.8577									
#1	4399.4	51382.	3696.9									
#2	4416.8	51579.	3795.3									

Sample Name: CCB Acquired: 5/13/2019 22:16:40 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00127	.00766	.00086	-.00083	.00008	.00013	.00010	.00399	.00101	.00099	.00131	-.00128
Stddev	.00072	.00567	.00092	.00005	.00055	.00014	.00154	.00418	.00072	.00116	.00086	.00034
%RSD	56.801	74.041	106.58	5.4497	702.73	107.90	1485.4	104.55	71.115	117.19	65.568	26.478
#1	.00178	.00365	.00151	-.00079	-.00031	.00003	.00119	.00695	.00050	.00017	.00070	-.00104
#2	.00076	.01167	.00021	-.00086	.00047	.00023	-.00098	.00104	.00152	.00181	.00192	-.00152

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00251	.11023	.00194	.00057	.00017	.00289	W .36723	.00119	-.00254	.00181	.00730	.00420
Stddev	.00476	.01127	.00107	.00018	.00002	.00135	.00744	.00092	.00437	.00033	.00153	.00647
%RSD	189.84	10.223	54.974	31.965	13.402	46.810	2.0250	76.957	171.84	18.406	21.001	154.23
#1	-.00086	.11820	.00119	.00044	.00015	.00193	.36198	.00054	-.00563	.00204	.00839	-.00038
#2	.00587	.10226	.00269	.00070	.00019	.00384	.37249	.00185	.00055	.00157	.00622	.00877

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							.35000					
Low Limit							-.35000					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00498	.04672	.09998	.00183	.00009	.00221	-.00027	.00192	.03071	.00046	-.00081	-.00306
Stddev	.00296	.04902	.10491	.00098	.00035	.00023	.00017	.00098	.03414	.00046	.00037	.00218
%RSD	59.497	104.94	104.94	53.635	401.83	10.601	63.810	51.132	111.16	101.56	45.730	71.227
#1	.00707	.01205	.02579	.00114	-.00016	.00238	-.00015	.00122	.05485	.00079	-.00055	-.00460
#2	.00288	.08138	.17416	.00252	.00034	.00204	-.00039	.00261	.00657	.00013	-.00107	-.00152

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4391.1	51916.	3746.1
Stddev	20.3	112.	5.3
%RSD	.46166	.21476	.14072
#1	4376.8	51837.	3749.9
#2	4405.5	51995.	3742.4

Sample Name: CCVL-5699390 Acquired: 5/13/2019 22:19:14 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00934	.11057	F .01026	.08624	.00893	.00110	.09489	.19221	.00461	.00898	.00916	.01222
Stddev	.00079	.00222	.00058	.00005	.00017	.00003	.00493	.00549	.00008	.00040	.00021	.00087
%RSD	8.4279	2.0096	5.6317	.05367	1.9371	3.1572	5.1966	2.8560	1.7146	4.4764	2.2776	7.1407

#1	.00878	.10900	.01067	.08620	.00906	.00108	.09141	.19609	.00467	.00926	.00902	.01284
#2	.00989	.11214	.00985	.08627	.00881	.00113	.09838	.18833	.00456	.00869	.00931	.01160

Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.01500									
Range			-30.000%									

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .14692	2.8146	.01975	.17466	.00954	.01785	1.2760	.03730	2.6385	.00696	.08259	.01539
Stddev	.00494	.0808	.00293	.00349	.00002	.00023	.0250	.00001	.0025	.00013	.00175	.00057
%RSD	3.3652	2.8712	14.816	1.9995	.24352	1.2911	1.9621	.01720	.09391	1.9256	2.1134	3.7032

#1	.15041	2.7575	.01768	.17713	.00955	.01768	1.2583	.03731	2.6403	.00705	.08383	.01499
#2	.14342	2.8718	.02182	.17219	.00952	.01801	1.2937	.03730	2.6367	.00686	.08136	.01579

Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.10000											
Range	30.000%											

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01796	.51088	1.0933	.08911	.00904	.01519	.00827	.01263	.04374	.00909	.02020	F .00972
Stddev	.00361	.01466	.0314	.00185	.00006	.00035	.00002	.00022	.01033	.00011	.00031	.00212
%RSD	20.090	2.8696	2.8696	2.0799	.67710	2.3344	.25021	1.7297	23.624	1.2541	1.5164	21.776

#1	.02051	.52125	1.1155	.09042	.00908	.01494	.00828	.01248	.05104	.00901	.01998	.00822
#2	.01540	.50052	1.0711	.08780	.00899	.01544	.00825	.01279	.03643	.00917	.02042	.01122

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value												.01500
Range												-30.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4407.2	51732.	3754.2
Stddev	52.4	288.	24.5
%RSD	1.1892	.55706	.65302

#1	4444.2	51936.	3736.9
#2	4370.1	51528.	3771.5

Sample Name: MB 280-457365/1-A Acquired: 5/13/2019 22:21:47 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/13 Custom ID2: Custom ID3:
Comment: 457365 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00162	.00450	-.00735	-.00024	-.00047	.00025	.00127	.00965	-.00001
Stddev	.00050	.00147	.01043	.00010	.00082	.00026	.00486	.00253	.00044
%RSD	30.706	32.654	141.99	41.413	174.71	103.67	383.71	26.239	3323.4

#1	.00198	.00346	.00003	-.00032	.00011	.00043	.00470	.01144	-.00033
#2	.00127	.00553	-.01472	-.00017	-.00104	.00007	-.00217	.00786	.00030

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.00026	-.00138	.01316	-.00704	-.00320	-.00477	.00029	.00047
Stddev	.00005	.00009	.00088	.00036	.11785	.00152	.00135	.00000	.00005
%RSD	23.399	36.063	63.567	2.7311	1674.3	47.348	28.222	.71116	11.559

#1	.00018	.00019	-.00200	.01290	.07629	-.00428	-.00382	.00029	.00051
#2	.00026	.00032	-.00076	.01341	-.09037	-.00213	-.00573	.00029	.00043

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.32916	-.00012	.00829	-.00217	.00453	.00054	.00457	.03515	.07521
Stddev	.01555	.00032	.00730	.00008	.00644	.00181	.00674	.01125	.02408
%RSD	4.7227	261.83	87.975	3.5782	142.14	334.11	147.57	32.018	32.018

#1	.34015	.00010	.00313	-.00212	-.00002	.00183	.00933	.02719	.05819
#2	.31817	-.00035	.01345	-.00223	.00908	-.00074	-.00020	.04310	.09224

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00065	.00007	.00283	-.00094	-.00295	-.04449	.00033	.00005	-.00151
Stddev	.00007	.00000	.00149	.00030	.00024	.02062	.00008	.00074	.00322
%RSD	10.310	5.2927	52.405	32.272	8.1178	46.344	25.651	1390.0	214.04

#1	-.00069	.00007	.00388	-.00116	-.00278	-.05907	.00039	.00057	-.00378
#2	-.00060	.00008	.00178	-.00073	-.00312	-.02991	.00027	-.00047	.00077

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4185.6	49891.	3655.0
Stddev	26.4	755.	.3
%RSD	.63108	1.5124	.00701

#1	4204.3	50425.	3654.8
#2	4166.9	49357.	3655.1

Sample Name: LCS 280-457365/2-A Acquired: 5/13/2019 22:24:22 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457365 6010C Q5

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05044	9.7115	1.8298	.90596	1.9419	.92036	1.8550	47.371	.92956
Stddev	.00034	.0949	.0106	.00464	.0124	.00465	.0037	.305	.00420
%RSD	.67392	.97670	.57674	.51221	.64028	.50518	.20096	.64486	.45217

#1	.05020	9.7786	1.8373	.90924	1.9507	.92365	1.8523	47.587	.93253
#2	.05068	9.6444	1.8224	.90268	1.9332	.91708	1.8576	47.155	.92658

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.91070	.94700	.90656	9.2864	50.609	.98481	46.400	.93013	.95767
Stddev	.00525	.00364	.00000	.0650	.119	.00871	.117	.00172	.00619
%RSD	.57688	.38482	.00034	.69967	.23516	.88444	.25141	.18442	.64609

#1	.91441	.94957	.90656	9.3324	50.693	.99097	46.482	.93134	.96204
#2	.90698	.94442	.90655	9.2405	50.525	.97865	46.317	.92891	.95329

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	49.015	.91362	19.400	.91552	8.5099	.00135	1.7932	1.9570	4.1880
Stddev	.193	.00451	.080	.00620	.0427	.00599	.0134	.0184	.0393
%RSD	.39364	.49339	.41011	.67758	.50188	445.65	.74905	.93868	.93868

#1	49.151	.91680	19.456	.91991	8.5401	-.00289	1.8027	1.9440	4.1602
#2	48.878	.91043	19.344	.91114	8.4797	.00558	1.7837	1.9700	4.2158

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8790	.93551	.92993	.93763	1.8406	1.8327	.94038	.46772	.48551
Stddev	.0156	.00400	.00130	.00071	.0176	.0223	.00078	.00076	.00076
%RSD	.83228	.42757	.13993	.07546	.95551	1.2172	.08347	.16233	.15601

#1	1.8901	.93834	.92901	.93813	1.8530	1.8485	.94094	.46826	.48605
#2	1.8680	.93268	.93085	.93713	1.8282	1.8169	.93983	.46719	.48497

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4006.2	46361.	3382.2
Stddev	5.6	155.	35.4
%RSD	.14017	.33338	1.0478

#1	4002.2	46471.	3357.1
#2	4010.1	46252.	3407.2

Sample Name: LCSD 280-457365/3-A Acquired: 5/13/2019 22:26:41 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457365 6010C Q5

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05214	9.6566	1.8524	.92666	1.9417	.91950	1.8881	47.337	.94050
Stddev	.00113	.1025	.0057	.00117	.0021	.00119	.0058	.097	.00001
%RSD	2.1593	1.0610	.30692	.12596	.10687	.12928	.30620	.20496	.00084

#1	.05135	9.5841	1.8484	.92748	1.9432	.92034	1.8922	47.406	.94049
#2	.05294	9.7290	1.8564	.92583	1.9403	.91866	1.8840	47.268	.94051

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.92115	.95658	.91551	9.2456	50.637	.98256	46.819	.93992	.97190
Stddev	.00038	.00099	.00515	.0311	.188	.00047	.010	.00011	.00209
%RSD	.04108	.10299	.56288	.33645	.37111	.04737	.02083	.01152	.21501

#1	.92142	.95728	.91916	9.2676	50.770	.98289	46.826	.93999	.97338
#2	.92089	.95589	.91187	9.2236	50.504	.98223	46.812	.93984	.97042

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	48.882	.92239	19.602	.92849	8.6328	.00376	1.8254	1.9705	4.2168
Stddev	.166	.00339	.015	.00000	.0117	.00217	.0028	.0358	.0766
%RSD	.34056	.36727	.07719	.00008	.13556	57.689	.15477	1.8174	1.8174

#1	48.765	.92478	19.613	.92849	8.6411	.00222	1.8274	1.9958	4.2710
#2	49.000	.91999	19.592	.92849	8.6246	.00529	1.8234	1.9451	4.1626

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8953	.93699	.94282	.94749	1.8635	1.8661	.94929	.47848	.48403
Stddev	.0013	.00128	.00248	.00010	.0031	.0828	.00397	.00222	.00167
%RSD	.06605	.13625	.26352	.01013	.16816	4.4377	.41871	.46336	.34524

#1	1.8962	.93789	.94106	.94756	1.8657	1.9246	.95210	.48005	.48521
#2	1.8944	.93608	.94458	.94742	1.8613	1.8075	.94648	.47691	.48284

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4013.0	46628.	3453.4
Stddev	15.5	135.	14.9
%RSD	.38557	.28933	.43000

#1	4023.9	46533.	3463.9
#2	4002.1	46723.	3442.9

Sample Name: 280-123345-F-1-A Acquired: 5/13/2019 22:28:57 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457365 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.09309	.02229	.29753	.08112	.00065	.00669	56.629	.00424
Stddev	.00115	.04714	.01012	.00158	.00024	.00010	.00807	.392	.00330
%RSD	121.91	50.645	45.406	.53257	.29882	15.210	120.68	.69222	77.904

#1	.00175	.05975	.01513	.29641	.08095	.00058	.00098	56.352	.00191
#2	.00013	.12642	.02944	.29865	.08130	.00072	.01239	56.906	.00658

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01063	.00686	.00095	24.926	11.093	.00210	9.5694	.22622	.00944
Stddev	.00356	.00413	.00010	.153	.054	.00116	.0367	.00112	.00468
%RSD	33.526	60.189	10.455	.61451	.48247	55.173	.38342	.49436	49.603

#1	.00811	.00394	.00088	24.818	11.055	.00128	9.5435	.22543	.00613
#2	.01315	.00978	.00102	25.035	11.131	.00292	9.5953	.22701	.01274

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.532	.01052	.24417	-.00004	12.661	.00030	.01554	2.0938	4.4808
Stddev	.794	.00400	.06648	.00340	.054	.00012	.01022	.0034	.0072
%RSD	4.5295	37.995	27.226	7643.5	.42407	39.371	65.756	.15982	.15982

#1	18.094	.00769	.19716	-.00245	12.699	.00021	.00831	2.0915	4.4757
#2	16.971	.01334	.29117	.00236	12.624	.00038	.02276	2.0962	4.4859

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01015	.26408	.00355	.00077	.01358	-.06829	.00300	.01431	-.00178
Stddev	.00883	.00087	.00148	.00003	.01215	.00165	.00009	.00011	.00001
%RSD	86.962	.32894	41.704	4.2383	89.463	2.4129	2.9496	.77509	.52386

#1	.00391	.26346	.00250	.00080	.00499	-.06712	.00294	.01439	-.00178
#2	.01640	.26469	.00459	.00075	.02218	-.06945	.00306	.01423	-.00177

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3997.1	46950.	3415.5
Stddev	17.6	225.	5.8
%RSD	.44147	.47961	.16999

#1	3984.6	47109.	3411.4
#2	4009.6	46791.	3419.6

Sample Name: 280-123345-F-2-A Acquired: 5/13/2019 22:31:28 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457365 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00170	.04706	.01565	.08305	.19104	.00020	-.00463	7.4387	.00026
Stddev	.00006	.00125	.00326	.00109	.00011	.00019	.00618	.0213	.00006
%RSD	3.4093	2.6576	20.842	1.3174	.05558	95.489	133.35	.28567	24.394

#1	.00166	.04795	.01795	.08228	.19111	.00033	-.00900	7.4537	.00030
#2	.00174	.04618	.01334	.08383	.19096	.00006	-.00026	7.4236	.00021

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00269	.00080	-.00116	15.423	5.0531	-.00140	5.2695	.08972	.00033
Stddev	.00047	.00024	.00061	.018	.1074	.00244	.0286	.00030	.00039
%RSD	17.390	30.320	52.567	.11700	2.1245	175.05	.54215	.32882	118.48

#1	.00236	.00097	-.00160	15.436	4.9772	.00033	5.2493	.08951	.00005
#2	.00302	.00063	-.00073	15.410	5.1290	-.00312	5.2897	.08993	.00060

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	28.495	.01024	.10269	-.00255	3.0093	-.00108	-.00107	2.8819	6.1673
Stddev	.197	.00017	.00119	.00067	.0374	.00310	.00167	.0476	.1020
%RSD	.68957	1.7028	1.1549	26.231	1.2415	287.78	156.32	1.6536	1.6536

#1	28.634	.01011	.10353	-.00303	2.9829	-.00326	-.00225	2.9156	6.2394
#2	28.356	.01036	.10186	-.00208	3.0357	.00111	.00011	2.8482	6.0952

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	.05769	.00381	-.00058	-.00003	-.05191	.00074	.00493	-.00080
Stddev	.00016	.00010	.00020	.00011	.00007	.00693	.00017	.00004	.00157
%RSD	112270.	.17091	5.1258	18.697	206.86	13.349	23.450	.73052	196.05

#1	.00012	.05762	.00367	-.00066	.00002	-.04701	.00086	.00495	-.00191
#2	-.00012	.05776	.00394	-.00051	-.00008	-.05681	.00062	.00490	.00031

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4144.1	48315.	3521.1
Stddev	15.2	269.	13.4
%RSD	.36793	.55634	.38065

#1	4133.3	48505.	3511.6
#2	4154.9	48124.	3530.6

Sample Name: 123345-A-11-A Acquired: 5/13/2019 22:33:59 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457365 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00165	.00456	-.00101	.16385	.07942	.00012	.00044	27.908	.00035
Stddev	.00052	.00034	.00042	.00209	.00080	.00004	.00169	.121	.00007
%RSD	31.287	7.5501	41.217	1.2764	1.0018	28.567	382.44	.43241	18.753

#1	.00201	.00480	-.00072	.16533	.07886	.00010	.00164	27.993	.00040
#2	.00128	.00431	-.00131	.16237	.07998	.00015	-.00075	27.823	.00031

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	.00050	-.00055	.09473	7.4267	-.00036	6.6931	.00565	.00017
Stddev	.00003	.00010	.00113	.00063	.0292	.00137	.0101	.00002	.00006
%RSD	1.7831	19.200	204.39	.66252	.39311	374.91	.15059	.43145	34.874

#1	.00153	.00043	-.00135	.09517	7.4473	.00060	6.7003	.00563	.00022
#2	.00157	.00057	.00025	.09428	7.4060	-.00133	6.6860	.00567	.00013

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	66.252	.00457	.32111	-.00137	7.0617	.00434	-.00040	2.0150	4.3121
Stddev	.240	.00035	.00056	.00097	.0851	.00172	.00336	.0250	.0534
%RSD	.36165	7.5548	.17467	70.723	1.2053	39.699	833.75	1.2388	1.2388

#1	66.421	.00433	.32071	-.00069	7.1218	.00312	.00197	2.0327	4.3499
#2	66.082	.00482	.32151	-.00206	7.0015	.00556	-.00278	1.9974	4.2743

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00134	.13980	.00303	-.00048	-.00276	-.05167	.00036	.00087	-.00459
Stddev	.00176	.00047	.00001	.00071	.00062	.06491	.00009	.00016	.00205
%RSD	131.95	.33518	.24613	148.12	22.499	125.61	25.362	18.779	44.698

#1	-.00258	.13946	.00303	-.00098	-.00320	-.09757	.00030	.00098	-.00605
#2	-.00009	.14013	.00302	.00002	-.00232	-.00578	.00043	.00075	-.00314

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4086.5	47559.	3472.2
Stddev	13.1	146.	33.9
%RSD	.32174	.30609	.97622

#1	4077.2	47456.	3448.2
#2	4095.8	47662.	3496.1

Sample Name: 123345-A-11-A SD@5 Acquired: 5/13/2019 22:36:31 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457365 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00050	-.00125	.03226	.01567	.00011	-.00204	5.6734	-.00042
Stddev	.00062	.00062	.00009	.00072	.00042	.00002	.00013	.0058	.00022
%RSD	72.152	123.37	7.2549	2.2250	2.6933	14.090	6.5849	.10144	52.333

#1	.00130	.00006	-.00118	.03277	.01537	.00010	-.00213	5.6693	-.00057
#2	.00042	.00094	-.00131	.03175	.01597	.00013	-.00194	5.6775	-.00026

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.00008	-.00088	.02931	1.4762	-.00264	1.3704	.00127	.00024
Stddev	.00013	.00045	.00087	.00710	.0383	.00449	.0119	.00001	.00005
%RSD	60.551	592.65	99.501	24.227	2.5926	169.93	.86655	1.1736	20.029

#1	.00013	.00039	-.00149	.02429	1.5033	-.00582	1.3788	.00125	.00020
#2	.00031	-.00024	-.00026	.03433	1.4492	.00053	1.3620	.00128	.00027

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.224	.00089	.05880	-.00194	1.3964	-.00054	.00206	.39548	.84633
Stddev	.102	.00052	.00328	.00026	.0117	.00030	.00240	.00865	.01851
%RSD	.76886	57.928	5.5774	13.631	.83414	56.134	116.42	2.1868	2.1868

#1	13.152	.00053	.05648	-.00176	1.4046	-.00076	.00036	.40160	.85942
#2	13.296	.00126	.06112	-.00213	1.3881	-.00033	.00376	.38937	.83325

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00169	.02791	.00309	-.00098	-.00321	-.07579	-.00017	.00129	-.00201
Stddev	.00029	.00028	.00169	.00021	.00079	.04704	.00003	.00015	.00155
%RSD	17.222	1.0163	54.837	21.439	24.587	62.067	18.620	11.613	77.018

#1	-.00190	.02771	.00189	-.00113	-.00377	-.04253	-.00020	.00140	-.00092
#2	-.00148	.02811	.00428	-.00083	-.00265	-.10905	-.00015	.00119	-.00311

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4184.7	48681.	3572.4
Stddev	8.8	12.	.7
%RSD	.20972	.02397	.01935

#1	4190.9	48689.	3571.9
#2	4178.5	48673.	3572.9

Sample Name: 123345-A-11-B MS Acquired: 5/13/2019 22:39:04 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457365 6010C Q5

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04652	8.8509	1.6889	.99110	1.8417	.84382	1.6870	69.508	.85046
Stddev	.00017	.0142	.0079	.01027	.0013	.00042	.0265	.043	.01007
%RSD	.37038	.16036	.46969	1.0367	.06983	.05005	1.5721	.06130	1.1835

#1	.04639	8.8409	1.6945	.99837	1.8426	.84412	1.7058	69.478	.85757
#2	.04664	8.8610	1.6833	.98384	1.8408	.84352	1.6683	69.538	.84334

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.82921	.85742	.83825	8.4950	53.831	.89956	48.973	.85894	.86920
Stddev	.01079	.00968	.00733	.0025	.074	.00088	.201	.00272	.01310
%RSD	1.3016	1.1291	.87476	.02928	.13755	.09760	.41122	.31696	1.5066

#1	.83684	.86427	.84343	8.4932	53.883	.89894	49.116	.86087	.87846
#2	.82157	.85058	.83306	8.4968	53.779	.90018	48.831	.85702	.85994

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	108.40	.83478	18.189	.83161	14.787	.00461	1.6513	3.6341	7.7769
Stddev	.23	.00916	.189	.00837	.139	.00445	.0250	.0095	.0202
%RSD	.21486	1.0968	1.0391	1.0068	.94139	96.505	1.5118	.26023	.26023

#1	108.24	.84126	18.322	.83753	14.885	.00146	1.6690	3.6274	7.7626
#2	108.57	.82831	18.055	.82569	14.688	.00776	1.6337	3.6407	7.7912

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.7021	.98738	.85525	.86295	1.6509	1.7093	.86930	.43151	.43467
Stddev	.0160	.00041	.00138	.00036	.0254	.0122	.00053	.00065	.00109
%RSD	.93806	.04103	.16096	.04128	1.5376	.71214	.06121	.15091	.25096

#1	1.7134	.98710	.85623	.86320	1.6688	1.7179	.86892	.43105	.43544
#2	1.6908	.98767	.85428	.86270	1.6329	1.7007	.86967	.43197	.43390

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4076.2	47523.	3531.1
Stddev	19.8	42.	17.5
%RSD	.48502	.08847	.49474

#1	4090.2	47493.	3543.4
#2	4062.2	47553.	3518.7

Sample Name: 123345-A-11-C MSD Acquired: 5/13/2019 22:41:23 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457365 6010C Q5

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05069	9.6031	1.8251	1.0717	1.9955	.91010	1.8104	75.653	.91818
Stddev	.00034	.0216	.0232	.0097	.0027	.00068	.0162	.073	.00984
%RSD	.66591	.22456	1.2721	.90050	.13428	.07451	.89647	.09682	1.0720

#1	.05045	9.5879	1.8415	1.0785	1.9974	.90963	1.8219	75.705	.92514
#2	.05093	9.6184	1.8087	1.0649	1.9936	.91058	1.7989	75.601	.91122

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.89568	.92866	.90200	9.2156	58.334	.97615	52.701	.91955	.94534
Stddev	.01076	.01181	.00225	.0241	.016	.00344	.102	.00254	.01333
%RSD	1.2008	1.2713	.24957	.26160	.02783	.35206	.19302	.27573	1.4102

#1	.90328	.93701	.90041	9.1986	58.346	.97372	52.629	.91775	.95477
#2	.88807	.92031	.90359	9.2327	58.323	.97858	52.773	.92134	.93592

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	117.28	.90045	19.715	.89451	16.074	.00293	1.7787	3.9680	8.4915
Stddev	.27	.00813	.208	.00862	.142	.00117	.0229	.0363	.0777
%RSD	.22656	.90294	1.0534	.96372	.88628	40.006	1.2872	.91503	.91503

#1	117.09	.90620	19.861	.90060	16.175	.00210	1.7949	3.9937	8.5464
#2	117.47	.89470	19.568	.88841	15.974	.00376	1.7625	3.9423	8.4366

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8400	1.0665	.91515	.92665	1.7798	1.8510	.93247	.46228	.46341
Stddev	.0199	.0001	.00475	.00322	.0214	.0404	.00112	.00434	.00617
%RSD	1.0842	.00675	.51936	.34775	1.2003	2.1826	.12060	.93804	1.3309

#1	1.8541	1.0665	.91179	.92438	1.7949	1.8796	.93168	.45922	.46777
#2	1.8259	1.0666	.91851	.92893	1.7647	1.8224	.93327	.46535	.45904

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3990.6	46247.	3454.5
Stddev	10.4	112.	5.6
%RSD	.25946	.24151	.16276

#1	3997.9	46168.	3458.5
#2	3983.3	46326.	3450.6

Sample Name: 123345-A-11-A PDS Acquired: 5/13/2019 22:43:40 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457365 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04670	.98081	.17432	.24608	.16776	.04360	-.00563	44.221	.04419
Stddev	.00064	.00376	.00671	.00473	.00094	.00025	.00092	.309	.00011
%RSD	1.3613	.38327	3.8486	1.9225	.56143	.58259	16.401	.69821	.24755

#1	.04715	.98347	.17906	.24943	.16709	.04342	-.00628	44.003	.04411
#2	.04625	.97816	.16958	.24274	.16842	.04378	-.00498	44.440	.04427

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04498	.04513	.04469	.97723	26.258	.09187	23.619	.04930	.04953
Stddev	.00064	.00033	.00042	.00295	.254	.00107	.140	.00022	.00136
%RSD	1.4195	.72296	.94576	.30136	.96857	1.1683	.59348	.43745	2.7396

#1	.04453	.04490	.04439	.97515	26.078	.09111	23.718	.04945	.04857
#2	.04543	.04536	.04499	.97932	26.438	.09262	23.520	.04914	.05049

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	81.693	.04831	2.1179	.08380	6.7143	.08412	.17235	6.4495	13.802
Stddev	.373	.00024	.0197	.00238	.0828	.00230	.00628	.0499	.107
%RSD	.45637	.50209	.92932	2.8446	1.2332	2.7392	3.6463	.77348	.77348

#1	81.430	.04848	2.1318	.08211	6.7728	.08575	.17679	6.4143	13.727
#2	81.957	.04813	2.1040	.08548	6.6557	.08249	.16790	6.4848	13.878

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08791	.17882	.17976	.04422	.17127	.36628	.04459	.17878	.04906
Stddev	.00198	.00221	.00009	.00024	.00009	.01984	.00130	.00010	.00047
%RSD	2.2533	1.2374	.04943	.54478	.05124	5.4171	2.9122	.05813	.96786

#1	.08651	.17726	.17970	.04439	.17134	.35225	.04551	.17871	.04940
#2	.08931	.18039	.17983	.04405	.17121	.38031	.04367	.17886	.04873

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4075.3	47225.	3479.0
Stddev	24.7	33.	7.1
%RSD	.60551	.06986	.20296

#1	4057.9	47202.	3474.0
#2	4092.8	47248.	3484.0

Sample Name: CCVH-5690583 Acquired: 5/13/2019 22:46:07 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00357	45.593	-.00694	.00564	.00187	.00124	F .88488	.02206	.00093	.00267	.00146	.01306
Stddev	.00010	.079	.00298	.00176	.00058	.00009	.00852	.00782	.00008	.00065	.00035	.00021
%RSD	2.8611	.17415	43.028	31.115	30.906	6.8739	.96285	35.439	8.3889	24.507	23.582	1.6379

#1	.00350	45.649	-.00905	.00688	.00228	.00118	.89091	.01653	.00099	.00220	.00122	.01291
#2	.00364	45.537	-.00483	.00440	.00146	.00130	.87886	.02758	.00088	.00313	.00171	.01321

Check ?	None	Chk Pass	None	None	None	None	Chk Fail	None	None	None	None	None
Value							1.0000					
Range							-10.000%					

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	46.168	.33938	.00081	.01244	.00356	.00078	238.40	.00393	.00232	.00275	F 4.2131	.00353
Stddev	.337	.18330	.00170	.00637	.00006	.00070	.44	.00057	.00424	.00098	.0285	.00110
%RSD	.73059	54.011	208.68	51.202	1.6831	90.280	.18573	14.588	183.12	35.566	.67774	31.167

#1	46.407	.46900	-.00039	.00794	.00360	.00028	238.72	.00434	-.00068	.00344	4.2333	.00275
#2	45.930	.20977	.00201	.01694	.00352	.00127	238.09	.00353	.00532	.00206	4.1929	.00431

Check ?	Chk Pass	None	None	None	None	None	Chk Pass	None	None	None	Chk Fail	None
Value											5.0000	
Range											-10.490%	

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00259	.03803	.08139	.00168	.00197	F 4.4713	-.00880	.00372	9.0927	.00485	.00300	.06325
Stddev	.00349	.01852	.03963	.00040	.00035	.0044	.00047	.00208	.0497	.00033	.00041	.00290
%RSD	134.89	48.697	48.697	23.790	17.997	.09817	5.2860	55.858	.54665	6.8434	13.634	4.5907

#1	.00506	.05113	.10942	.00140	.00222	4.4744	-.00847	.00518	9.0575	.00462	.00271	.06120
#2	.00012	.02494	.05337	.00196	.00172	4.4682	-.00913	.00225	9.1278	.00509	.00329	.06530

Check ?	None	None	None	None	None	Chk Fail	None	None	Chk Pass	None	None	None
Value						5.0000						
Range						-10.490%						

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3996.0	46328.	3390.9
Stddev	14.0	40.	17.1
%RSD	.34972	.08619	.50489

#1	4005.9	46300.	3378.8
#2	3986.1	46356.	3403.0

Sample Name: CCV-5690581 Acquired: 5/13/2019 22:48:37 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.45831	F .64208	F .88008	F .44565	.46907	F .44305	.00102	4.6183	.45502	.46007	.46541	F .44921
Stddev	.00366	.06264	.00346	.00251	.00130	.00048	.00424	.0265	.00117	.00042	.00129	.00236
%RSD	.79882	9.7555	.39333	.56382	.27795	.10903	415.34	.57414	.25740	.09054	.27706	.52503

#1	.45572	.59779	.88253	.44742	.46815	.44271	-.00198	4.5995	.45585	.46036	.46632	.44755
#2	.46090	.68637	.87763	.44387	.46999	.44339	.00402	4.6370	.45419	.45978	.46450	.45088

Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value		.50000	1.0000	.50000		.50000						.50000
Range		10.000%	-10.000%	-10.000%		-10.000%						-10.000%

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.5024	48.520	.95391	18.328	.45624	.46280	5.4365	.46340	.92287	.91733	.00841	F .87005
Stddev	.0042	.001	.00028	.095	.00260	.00261	.0069	.00087	.00321	.00190	.00135	.00600
%RSD	.16856	.00283	.02941	.51642	.56897	.56344	.12656	.18786	.34780	.20691	16.090	.68989

#1	2.5053	48.519	.95410	18.261	.45440	.46465	5.4414	.46402	.92514	.91867	.00937	.87430
#2	2.4994	48.521	.95371	18.395	.45807	.46096	5.4317	.46279	.92060	.91599	.00745	.86581

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Fail
Value												1.0000
Range												-10.000%

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .87875	F 4.4980	F 9.6256	.92114	.45360	.00941	.45154	.93133	-.03492	.45366	.46193	.45377
Stddev	.00486	.0379	.0812	.00777	.00053	.00214	.00298	.00174	.00273	.00301	.00018	.00184
%RSD	.55320	.84318	.84318	.84346	.11594	22.781	.66058	.18645	7.8212	.66371	.03833	.40481

#1	.88218	4.5248	9.6830	.92664	.45323	.00789	.44943	.93011	-.03298	.45153	.46181	.45507
#2	.87531	4.4711	9.5682	.91565	.45397	.01092	.45365	.93256	-.03685	.45579	.46206	.45247

Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value	1.0000	5.0000	10.700									
Range	-10.000%	-10.000%	-10.000%									

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4098.5	47870.	3464.2
Stddev	1.1	49.	2.7
%RSD	.02661	.10265	.07906

#1	4099.2	47904.	3462.3
#2	4097.7	47835.	3466.2

Sample Name: CCB Acquired: 5/13/2019 22:50:59 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00138	.00591	-.00422	.00156	-.00004	.00015	-.00092	.00628	.00052	.00079	.00096	-.00185
Stddev	.00002	.00485	.00375	.00022	.00001	.00011	.00269	.00412	.00062	.00086	.00071	.00027
%RSD	1.4042	81.932	88.859	14.012	17.991	73.635	291.83	65.615	118.27	109.23	74.017	14.739

#1	.00139	.00249	-.00157	.00140	-.00003	.00007	-.00282	.00337	.00009	.00018	.00046	-.00204
#2	.00137	.00934	-.00687	.00171	-.00004	.00022	.00098	.00919	.00096	.00139	.00146	-.00165

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00465	.11313	-.00197	-.00254	.00013	.00207	W .35025	.00059	-.00273	-.00007	.00606	W .00722
Stddev	.00399	.00062	.00249	.00191	.00004	.00113	.00760	.00043	.00034	.00228	.00112	.00436
%RSD	85.822	.54460	126.09	75.220	30.071	54.712	2.1687	73.050	12.351	3050.2	18.472	60.445

#1	.00747	.11269	-.00373	-.00119	.00016	.00127	.34488	.00029	-.00249	-.00169	.00685	.00413
#2	.00183	.11356	-.00021	-.00389	.00010	.00287	.35563	.00090	-.00297	.00154	.00527	.01031

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit							.35000					.00600
Low Limit							-.35000					-.00600

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00521	.03151	.06744	-.00030	-.00017	.00572	-.00038	-.00092	-.05695	.00011	-.00025	-.00094
Stddev	.00444	.01487	.03183	.00095	.00003	.00044	.00009	.00186	.00746	.00018	.00059	.00149
%RSD	85.276	47.198	47.198	321.39	17.714	7.6618	23.706	201.60	13.100	159.68	231.78	158.27

#1	.00207	.04203	.08994	-.00097	-.00015	.00603	-.00032	.00039	-.05167	.00024	.00016	.00011
#2	.00835	.02100	.04493	.00038	-.00019	.00541	-.00045	-.00223	-.06222	-.00001	-.00067	-.00199

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4222.4	49603.	3536.4
Stddev	8.1	179.	18.1
%RSD	.19193	.36181	.51081
#1	4228.2	49730.	3523.6
#2	4216.7	49476.	3549.2

Sample Name: CCVL-5699390 Acquired: 5/13/2019 22:53:34 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01005	.10859	F .00556	.08486	.00830	.00098	.08732	.19159	.00447	.00910	.00904	.01189
Stddev	.00020	.00103	.00405	.00111	.00015	.00004	.00602	.00285	.00001	.00027	.00018	.00044
%RSD	1.9566	.94753	72.897	1.3051	1.8399	3.9268	6.8986	1.4891	.26467	2.9729	2.0404	3.7269
#1	.00991	.10786	.00269	.08565	.00819	.00095	.08306	.18957	.00446	.00929	.00917	.01220
#2	.01019	.10932	.00843	.08408	.00840	.00101	.09158	.19361	.00447	.00891	.00891	.01157
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.01500									
Range			-30.000%									
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .14157	2.8990	.01951	.16908	.00951	.01745	1.2461	.03538	2.5418	F .00560	.07575	.01660
Stddev	.00398	.0040	.00021	.00062	.00005	.00001	.0006	.00018	.0383	.00008	.00475	.00406
%RSD	2.8119	.13844	1.0592	.36906	.54474	.05683	.05086	.51253	1.5065	1.4444	6.2712	24.433
#1	.13875	2.9018	.01936	.16952	.00954	.01744	1.2466	.03551	2.5689	.00565	.07910	.01373
#2	.14438	2.8961	.01966	.16864	.00947	.01745	1.2457	.03525	2.5147	.00554	.07239	.01946
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
Value	.10000									.00900		
Range	30.000%									-30.000%		
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01794	.47668	1.0201	.08678	.00886	.01666	.00775	.01144	F -.02800	.00839	.02050	F .00867
Stddev	.00322	.00421	.0090	.00132	.00033	.00042	.00015	.00365	.02499	.00108	.00030	.00044
%RSD	17.963	.88256	.88256	1.5171	3.7293	2.5278	1.9754	31.930	89.267	12.849	1.4440	5.0605
#1	.02022	.47965	1.0265	.08771	.00910	.01636	.00786	.01402	-.04567	.00916	.02029	.00836
#2	.01566	.47370	1.0137	.08584	.00863	.01695	.00764	.00886	-.01032	.00763	.02071	.00898
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail
Value									.06000			.01500
Range									-30.000%			-30.000%
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4221.4	49107.	3509.2									
Stddev	7.0	19.	9.9									
%RSD	.16480	.03783	.28093									
#1	4216.5	49094.	3516.2									
#2	4226.4	49120.	3502.3									

Sample Name: 280-123350-A-3-A Acquired: 5/13/2019 22:56:05 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457365 6010C Q5

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00157	6.6920	.00520	.80197	.05951	.00048	-.00779	37.874	.00028
Stddev	.00011	.0214	.00276	.00967	.00020	.00005	.00322	.081	.00013
%RSD	7.2670	.31921	53.040	1.2061	.33727	10.439	41.365	.21269	46.579

#1	.00165	6.6769	.00325	.79513	.05937	.00045	-.00551	37.931	.00037
#2	.00148	6.7071	.00716	.80881	.05965	.00052	-.01007	37.817	.00019

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00583	.01915	.01114	6.0980	6.9890	.16797	6.6139	.10589	.02976
Stddev	.00027	.00010	.00147	.0182	.0286	.00054	.0043	.00015	.00040
%RSD	4.6663	.52087	13.166	.29787	.40944	.31965	.06444	.13955	1.3528

#1	.00563	.01908	.01011	6.1109	6.9688	.16759	6.6169	.10579	.02947
#2	.00602	.01922	.01218	6.0852	7.0093	.16835	6.6109	.10600	.03004

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	346.49	.01197	.15720	-.00166	99.895	-.00064	-.00078	24.011	51.385
Stddev	.24	.00012	.00276	.00136	.645	.00203	.00110	.070	.151
%RSD	.07027	1.0295	1.7545	81.790	.64592	317.98	139.84	.29299	.29299

#1	346.31	.01206	.15525	-.00070	99.439	.00080	-.00156	23.962	51.278
#2	346.66	.01188	.15915	-.00262	100.35	-.00208	-.00001	24.061	51.491

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00202	.69809	.00326	.08576	-.00037	-.08074	.01531	.03436	.00365
Stddev	.00083	.00049	.00067	.00030	.00080	.00682	.00015	.00031	.00250
%RSD	40.870	.06980	20.644	.34936	212.84	8.4481	.97921	.88836	68.508

#1	-.00261	.69844	.00278	.08598	.00019	-.07592	.01542	.03415	.00542
#2	-.00144	.69775	.00373	.08555	-.00094	-.08556	.01521	.03458	.00188

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3915.6	45375.	3430.9
Stddev	60.9	170.	22.1
%RSD	1.5551	.37402	.64340

#1	3958.7	45495.	3415.3
#2	3872.6	45255.	3446.5

Sample Name: 280-123350-A-4-A Acquired: 5/13/2019 22:58:34 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457365 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00198	.52794	-.00640	.19043	.08788	.00001	-.00662	122.42	-.00002
Stddev	.00028	.01095	.00615	.00253	.00109	.00003	.00106	1.11	.00014
%RSD	14.193	2.0733	95.956	1.3276	1.2373	263.25	15.961	.90649	619.63

#1	.00178	.52020	-.01075	.19222	.08711	-.00001	-.00587	121.64	.00008
#2	.00218	.53568	-.00206	.18864	.08865	.00003	-.00736	123.21	-.00012

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.04801	.02173	.80101	80.180	.08788	.33872	.01046	.04111
Stddev	.00012	.00036	.00080	.00606	.602	.00077	.00445	.00008	.00050
%RSD	66.297	.74703	3.6858	.75617	.75092	.88001	1.3134	.79950	1.2125

#1	-.00028	.04826	.02230	.79673	79.754	.08843	.33557	.01040	.04076
#2	-.00010	.04776	.02116	.80530	80.606	.08734	.34186	.01052	.04146

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	237.95	.00228	.08364	-.00421	133.29	.00104	.00421	22.959	49.133
Stddev	2.44	.00025	.00376	.00341	.51	.00204	.00220	.064	.136
%RSD	1.0256	11.028	4.4907	81.013	.38348	196.55	52.344	.27767	.27767

#1	236.23	.00246	.08629	-.00663	133.65	-.00041	.00576	22.914	49.036
#2	239.68	.00210	.08098	-.00180	132.93	.00249	.00265	23.004	49.229

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00197	1.1138	.00416	.01989	-.00390	F -.15974	.01292	.00576	-.00270
Stddev	.00228	.0089	.00060	.00042	.00009	.00703	.00016	.00013	.00064
%RSD	115.29	.80180	14.369	2.1220	2.3431	4.4006	1.2757	2.2135	23.551

#1	-.00359	1.1075	.00458	.01959	-.00397	-.15477	.01304	.00585	-.00315
#2	-.00036	1.1201	.00373	.02018	-.00384	-.16472	.01281	.00567	-.00225

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3955.7	45272.	3391.2
Stddev	8.7	305.	1.9
%RSD	.22009	.67419	.05725

#1	3961.9	45488.	3389.9
#2	3949.6	45056.	3392.6

Sample Name: MB 280-457249/1-A Acquired: 5/13/2019 23:01:06 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/13 Custom ID2: Custom ID3:
Comment: 457249 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00167	.00701	-.00243	.00061	-.00015	.00010	-.00405	.04093	.00018
Stddev	.00120	.00276	.00289	.00009	.00029	.00034	.00443	.00308	.00012
%RSD	72.163	39.303	118.80	14.285	194.37	335.93	109.19	7.5313	65.421

#1	.00082	.00506	-.00447	.00067	.00006	-.00014	-.00092	.03875	.00026
#2	.00252	.00896	-.00039	.00055	-.00035	.00034	-.00718	.04311	.00010

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	-.00002	-.00098	.01816	.21997	-.00138	-.00562	.00120	.00025
Stddev	.00024	.00004	.00027	.00138	.01413	.00294	.00186	.00001	.00001
%RSD	4503.5	225.76	27.163	7.5810	6.4223	213.20	33.136	.94272	3.4238

#1	.00018	-.00005	-.00117	.01913	.20998	.00070	-.00693	.00119	.00026
#2	-.00016	.00001	-.00080	.01718	.22996	-.00346	-.00430	.00120	.00025

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W .72537	-.00054	-.00380	-.00235	F .24891	-.00060	.00249	.23792	.50914
Stddev	.01222	.00032	.00176	.00033	.19094	.00545	.00073	.00256	.00547
%RSD	1.6853	59.430	46.206	14.147	76.714	916.38	29.541	1.0751	1.0751

#1	.73401	-.00031	-.00256	-.00211	.11389	-.00445	.00301	.23972	.51301
#2	.71672	-.00077	-.00505	-.00258	.38392	.00326	.00197	.23611	.50527

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None
High Limit	.50000				.10000				
Low Limit	-.50000				-.10000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00178	.00014	.00255	-.00042	-.00195	F -.09725	.00014	.00118	-.00230
Stddev	.00086	.00012	.00296	.00013	.00177	.06135	.00061	.00002	.00100
%RSD	48.209	89.479	116.17	30.290	90.785	63.089	434.16	1.9897	43.646

#1	-.00238	.00005	.00046	-.00052	-.00070	-.05387	.00057	.00116	-.00301
#2	-.00117	.00023	.00465	-.00033	-.00321	-.14064	-.00029	.00120	-.00159

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.06000			
Low Limit						-.06000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4154.6	49051.	3477.1
Stddev	7.4	89.	6.6
%RSD	.17864	.18200	.19076

#1	4159.9	49114.	3481.8
#2	4149.4	48988.	3472.4

Sample Name: LCS 280-457249/2-A Acquired: 5/13/2019 23:03:41 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457249 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00306	9.3028	1.7989	.89661	1.8794	.88790	1.8156	45.862	.91167
Stddev	.00029	.0809	.0022	.00216	.0062	.00294	.0053	.174	.00072
%RSD	9.3137	.86951	.12258	.24125	.32755	.33103	.28969	.37940	.07883

#1	.00286	9.3600	1.8005	.89508	1.8838	.88998	1.8193	45.985	.91116
#2	.00327	9.2456	1.7973	.89814	1.8751	.88582	1.8119	45.739	.91217

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.89264	.92565	.87943	8.9359	49.490	.95587	45.424	.90765	.93560
Stddev	.00121	.00092	.00009	.0392	.169	.00271	.012	.00025	.00118
%RSD	.13609	.09993	.01022	.43907	.34229	.28370	.02610	.02757	.12658

#1	.89178	.92500	.87936	8.9636	49.609	.95779	45.432	.90747	.93476
#2	.89350	.92631	.87949	8.9082	49.370	.95395	45.415	.90782	.93643

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	47.955	.89586	18.973	.90129	8.3516	.00571	1.7663	1.9508	4.1746
Stddev	.381	.00087	.006	.00256	.0077	.00289	.0037	.0115	.0246
%RSD	.79392	.09720	.03204	.28354	.09190	50.595	.20801	.58891	.58891

#1	47.686	.89524	18.969	.89948	8.3570	.00776	1.7637	1.9426	4.1572
#2	48.225	.89647	18.977	.90309	8.3462	.00367	1.7689	1.9589	4.1920

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8271	.90645	.90766	.91353	1.8072	1.7890	.91508	.45883	.46338
Stddev	.0010	.00524	.00724	.00063	.0023	.0317	.00012	.00052	.00065
%RSD	.05539	.57805	.79742	.06901	.12598	1.7697	.01362	.11270	.13979

#1	1.8278	.91016	.90254	.91397	1.8056	1.8114	.91499	.45846	.46292
#2	1.8263	.90275	.91278	.91308	1.8089	1.7666	.91517	.45919	.46384

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3958.9	46532.	3396.8
Stddev	2.9	131.	21.4
%RSD	.07379	.28084	.62927

#1	3961.0	46625.	3381.7
#2	3956.8	46440.	3411.9

Sample Name: 280-123411-C-2-A Acquired: 5/13/2019 23:05:59 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457249 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00215	.62871	-.00117	.03469	.02160	.00052	.00419	W 685.02	.00484
Stddev	.00026	.03896	.00128	.00161	.00072	.00013	.01561	10.16	.00425
%RSD	11.966	6.1962	109.22	4.6295	3.3129	25.993	372.01	1.4835	87.840

#1	.00197	.60116	-.00208	.03356	.02110	.00061	-.00684	677.84	.00183
#2	.00234	.65626	-.00027	.03583	.02211	.00042	.01523	692.21	.00784

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit								500.00	
Low Limit								-40000	

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00979	.00707	.00425	3.0372	15.059	.03580	90.379	.38419	.01031
Stddev	.00422	.00539	.00043	.0508	.271	.00063	.456	.00192	.00555
%RSD	43.115	76.219	10.139	1.6710	1.8022	1.7514	.50426	.49847	53.853

#1	.00680	.00326	.00394	3.0014	14.867	.03536	90.056	.38284	.00638
#2	.01277	.01088	.00455	3.0731	15.251	.03625	90.701	.38554	.01424

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	448.32	.01005	.18820	.00082	F 378.29	-.00028	.01903	6.9950	14.969
Stddev	5.64	.00402	.08752	.00580	8.32	.00186	.01064	.0505	.108
%RSD	1.2574	40.011	46.503	710.17	2.2005	657.73	55.937	.72149	.72149

#1	444.33	.00720	.12632	-.00328	384.18	.00103	.01150	6.9593	14.893
#2	452.30	.01289	.25009	.00492	372.41	-.00160	.02656	7.0307	15.046

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00866	W 14.285	.00358	.00969	.01396	F -.18711	.00173	.00550	-.00071
Stddev	.01093	.202	.00155	.00002	.01421	.07173	.00012	.00035	.00148
%RSD	126.28	1.4128	43.255	.18409	101.79	38.337	7.0585	6.4505	207.87

#1	.00093	14.142	.00467	.00970	.00391	-.23783	.00182	.00525	.00033
#2	.01639	14.428	.00248	.00968	.02401	-.13639	.00164	.00575	-.00176

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit		10.000				20.000			
Low Limit		-.02000				-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3673.1	39792.	3143.8
Stddev	119.3	145.	23.4
%RSD	3.2489	.36526	.74519

#1	3588.7	39895.	3160.4
#2	3757.5	39689.	3127.3

Sample Name: 280-123412-C-2-A Acquired: 5/13/2019 23:08:40 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457249 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.02637	-.00673	.03194	.00658	.00016	-.00167	429.13	.00001
Stddev	.00048	.00092	.00227	.00305	.00108	.00001	.00103	11.40	.00005
%RSD	56.316	3.4983	33.726	9.5482	16.476	8.9439	61.641	2.6570	530.23

#1	.00052	.02702	-.00513	.03409	.00735	.00017	-.00240	437.19	.00004
#2	.00120	.02572	-.00834	.02978	.00581	.00015	-.00094	421.07	-.00002

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.00029	.00246	.03518	11.745	.01630	37.044	.03017	.00028
Stddev	.00012	.00014	.00002	.00278	.131	.00183	.738	.00033	.00026
%RSD	40.003	46.981	.81914	7.8926	1.1163	11.214	1.9911	1.1076	93.256

#1	-.00021	.00019	.00244	.03714	11.838	.01501	37.565	.03041	.00046
#2	-.00038	.00039	.00247	.03322	11.653	.01759	36.522	.02993	.00009

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	474.96	.00299	-.00338	-.00452	F 524.97	-.00294	.03987	4.9449	10.582
Stddev	12.04	.00047	.00088	.00097	40.41	.00010	.01011	.1455	.311
%RSD	2.5349	15.712	25.893	21.458	7.6975	3.5094	25.349	2.9414	2.9414

#1	483.48	.00266	-.00276	-.00383	553.54	-.00287	.04701	5.0478	10.802
#2	466.45	.00333	-.00400	-.00521	496.39	-.00302	.03272	4.8421	10.362

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00313	W 10.284	.00260	-.00085	-.00209	-.11353	-.00055	.00390	-.00104
Stddev	.00014	.676	.00332	.00052	.00079	.00451	.00003	.00031	.00123
%RSD	4.4817	6.5759	127.63	61.099	37.829	3.9728	4.6833	7.8747	118.33

#1	-.00323	9.8055	.00025	-.00048	-.00265	-.11034	-.00057	.00368	-.00017
#2	-.00303	10.762	.00495	-.00121	-.00153	-.11672	-.00053	.00412	-.00190

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		10.000							
Low Limit		-.02000							

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4205.0	45318.	3344.3
Stddev	374.8	681.	188.5
%RSD	8.9124	1.5027	5.6360

#1	3940.0	45799.	3477.6
#2	4470.0	44836.	3211.0

Sample Name: 123412-C-2-A SD@5 Acquired: 5/13/2019 23:11:19 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457249 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.00116	-.00128	.00743	.00107	.00012	.00018	79.412	.00002
Stddev	.00068	.00005	.00011	.00065	.00046	.00003	.00389	.337	.00028
%RSD	238.93	4.5251	8.2839	8.7239	42.816	26.403	2110.0	.42446	1609.2

#1	-.00020	.00119	-.00121	.00697	.00074	.00015	-.00257	79.174	.00021
#2	.00077	.00112	-.00136	.00789	.00139	.00010	.00294	79.650	-.00018

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	.00011	-.00001	.01232	2.1900	.00287	6.9643	.00570	-.00020
Stddev	.00017	.00037	.00031	.00233	.0136	.00082	.0785	.00018	.00033
%RSD	81.530	330.41	4159.3	18.884	.62188	28.639	1.1264	3.1475	164.03

#1	-.00034	-.00015	-.00023	.01397	2.1804	.00345	6.9088	.00558	-.00044
#2	-.00009	.00037	.00021	.01068	2.1996	.00229	7.0197	.00583	.00003

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	87.438	-.00034	-.00832	-.00121	110.58	-.00095	.00620	.89693	1.9194
Stddev	.550	.00008	.00194	.00266	5.27	.00359	.00027	.03025	.0647
%RSD	.62922	24.323	23.348	219.93	4.7687	379.43	4.3664	3.3728	3.3728

#1	87.049	-.00040	-.00695	-.00309	106.86	.00159	.00601	.91832	1.9652
#2	87.827	-.00029	-.00970	.00067	114.31	-.00348	.00639	.87554	1.8737

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00273	1.8626	.00305	-.00001	-.00276	-.06654	-.00006	.00214	.00276
Stddev	.00091	.0128	.00010	.00035	.00010	.04190	.00034	.00032	.00157
%RSD	33.344	.68633	3.3904	4873.7	3.7929	62.975	524.55	14.883	56.981

#1	-.00209	1.8536	.00312	-.00025	-.00269	-.03691	.00018	.00192	.00387
#2	-.00337	1.8717	.00297	.00024	-.00284	-.09617	-.00031	.00237	.00165

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4428.2	51551.	3982.5
Stddev	46.5	367.	54.7
%RSD	1.0510	.71107	1.3725

#1	4461.1	51810.	3943.8
#2	4395.3	51292.	4021.1

Sample Name: 280-123412-C-2-B MS Acquired: 5/13/2019 23:13:52 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457249 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00238	9.7439	1.9458	.95711	1.9298	.90054	1.9115	486.22	.96547
Stddev	.00122	.0998	.0260	.01425	.0221	.01414	.0191	7.70	.01336
%RSD	51.167	1.0241	1.3341	1.4884	1.1456	1.5697	.99984	1.5832	1.3842

#1	.00152	9.6734	1.9274	.94703	1.9142	.89055	1.8980	480.77	.95602
#2	.00325	9.8145	1.9642	.96718	1.9455	.91054	1.9250	491.66	.97492

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.91054	.94211	.97027	9.1114	64.627	1.0097	84.956	.97047	.96153
Stddev	.01345	.01461	.00883	.1160	.908	.0159	.409	.00798	.01588
%RSD	1.4772	1.5504	.91048	1.2726	1.4052	1.5752	.48099	.82233	1.6515

#1	.90102	.93178	.96402	9.0294	63.985	.99841	84.667	.96483	.95031
#2	.92005	.95244	.97652	9.1934	65.269	1.0209	85.245	.97612	.97276

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 535.55	.91265	W 20.963	.88814	F 573.97	.00460	1.9524	7.0228	15.029
Stddev	6.26	.01408	.315	.01316	8.59	.00137	.0267	.0651	.139
%RSD	1.1682	1.5422	1.5019	1.4819	1.4965	29.870	1.3678	.92676	.92676

#1	531.13	.90270	20.740	.87883	567.90	.00363	1.9335	6.9768	14.930
#2	539.98	.92260	21.186	.89745	580.05	.00557	1.9713	7.0689	15.127

Check ?	Chk Warn	Chk Pass	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00		20.000		200.00				
Low Limit	11.000		-6.0000		-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8670	W 11.500	.95750	.96305	1.6981	1.9891	.97562	.47019	.47333
Stddev	.0256	.208	.00743	.00991	.0276	.0213	.00964	.00083	.00263
%RSD	1.3696	1.8068	.77611	1.0293	1.6231	1.0718	.98819	.17620	.55571

#1	1.8489	11.353	.95224	.95604	1.6787	1.9740	.96880	.47078	.47147
#2	1.8851	11.647	.96275	.97006	1.7176	2.0042	.98243	.46960	.47519

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		10.000							
Low Limit		-.02000							

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4070.0	48547.	3856.1
Stddev	74.6	1044.	74.2
%RSD	1.8337	2.1510	1.9247

#1	4122.8	49285.	3908.6
#2	4017.2	47808.	3803.6

Sample Name: 280-123412-C-2-C MSD Acquired: 5/13/2019 23:16:26 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457249 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00291	10.150	1.8962	.93383	2.0365	.95343	1.8400	W 504.46	.95060
Stddev	.00024	.036	.0215	.00832	.0204	.01019	.0177	5.43	.00885
%RSD	8.1644	.35118	1.1321	.89084	1.0022	1.0692	.96435	1.0763	.93131

#1	.00274	10.125	1.8810	.92795	2.0221	.94622	1.8274	500.62	.94434
#2	.00308	10.175	1.9114	.93971	2.0510	.96064	1.8525	508.30	.95686

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit								500.00	
Low Limit								-40000	

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.90225	.93598	.94186	9.6030	68.655	1.0829	83.307	.95711	.95933
Stddev	.00805	.00646	.02032	.1366	.878	.0198	1.620	.01797	.00749
%RSD	.89203	.69054	2.1570	1.4224	1.2783	1.8271	1.9445	1.8771	.78118

#1	.89656	.93141	.95622	9.5064	68.034	1.0689	84.452	.96982	.95403
#2	.90794	.94055	.92749	9.6996	69.276	1.0969	82.161	.94441	.96463

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 561.43	.90536	W 20.346	.88020	F 539.12	.00292	1.8738	7.4683	15.982
Stddev	7.41	.00840	.216	.01067	8.13	.00230	.0328	.0656	.140
%RSD	1.3206	.92758	1.0639	1.2120	1.5071	78.733	1.7520	.87813	.87813

#1	556.19	.89942	20.193	.87265	533.38	.00455	1.8506	7.4220	15.883
#2	566.67	.91130	20.499	.88774	544.87	.00130	1.8970	7.5147	16.081

Check ?	Chk Warn	Chk Pass	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00		20.000		200.00				
Low Limit	11.000		-6.0000		-20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8522	W 12.188	.93576	.94936	1.6909	1.7876	.96204	.46980	.50190
Stddev	.0177	.052	.01725	.01850	.0078	.0502	.01667	.01067	.00715
%RSD	.95553	.42474	1.8434	1.9490	.46429	2.8082	1.7323	2.2712	1.4246

#1	1.8396	12.225	.94795	.96244	1.6853	1.7521	.97382	.47735	.49685
#2	1.8647	12.151	.92356	.93627	1.6964	1.8231	.95026	.46226	.50696

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		10.000							
Low Limit		-.02000							

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3508.9	40748.	3076.1
Stddev	105.9	1005.	181.5
%RSD	3.0178	2.4666	5.8991

#1	3434.0	40037.	3204.4
#2	3583.8	41458.	2947.7

Sample Name: CCVH-5690583 Acquired: 5/13/2019 23:18:50 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00408	49.188	-.00033	.00774	.00194	.00137	1.0182	.13009	.00305	.00513	.00407	.01510
Stddev	.00042	.447	.00984	.00056	.00019	.00003	.0018	.00689	.00179	.00182	.00238	.00128
%RSD	10.265	.90941	2965.3	7.2191	9.9636	2.1530	.17364	5.2939	58.580	35.459	58.410	8.5057

#1	.00437	49.504	-.00729	.00735	.00181	.00140	1.0169	.12522	.00179	.00385	.00239	.01419
#2	.00378	48.871	.00663	.00814	.00208	.00135	1.0194	.13496	.00432	.00642	.00575	.01600

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	49.461	.62326	.00888	.03143	.00439	.00689	256.81	.00618	.04356	.00614	F 5.8514	.00694
Stddev	.366	.09607	.00330	.00798	.00010	.00385	1.13	.00329	.03657	.00077	.7796	.00033
%RSD	.74074	15.414	37.153	25.384	2.3608	55.852	.43933	53.314	83.958	12.575	13.324	4.7132

#1	49.720	.69120	.00655	.02579	.00432	.00417	257.61	.00385	.01770	.00559	5.3001	.00718
#2	49.202	.55533	.01122	.03707	.00446	.00961	256.01	.00851	.06942	.00668	6.4027	.00671

Check ?	Chk Pass	None	None	None	None	None	Chk Pass	None	None	None	Chk Fail	None
Value											5.0000	
Range											10.490%	

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00779	.03503	.07496	.00583	.00417	4.9789	-.00875	.01252	10.103	.00622	.00434	.06541
Stddev	.00735	.00750	.01604	.00488	.00020	.0393	.00035	.00846	.001	.00123	.00017	.00288
%RSD	94.304	21.402	21.402	83.573	4.7197	.78838	4.0184	67.581	.01025	19.804	3.8458	4.4089

#1	.00260	.02973	.06362	.00239	.00403	4.9512	-.00900	.00654	10.104	.00535	.00422	.06745
#2	.01299	.04033	.08630	.00928	.00431	5.0067	-.00851	.01850	10.103	.00709	.00446	.06337

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3811.6	44448.	3292.2
Stddev	12.1	165.	34.3
%RSD	.31624	.37025	1.0408

#1	3820.2	44564.	3316.4
#2	3803.1	44331.	3268.0

Sample Name: CCV-5690581 Acquired: 5/13/2019 23:21:19 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49185	F .72476	.95110	.47952	.51787	.48783	-.00199	5.0905	.48725	.49238	.49837	.48582
Stddev	.00039	.09938	.00484	.00020	.00592	.00677	.00728	.0537	.00294	.00271	.00226	.00071
%RSD	.07900	13.712	.50909	.04274	1.1433	1.3878	366.47	1.0557	.60366	.55004	.45341	.14690

#1	.49157	.65449	.95452	.47938	.52206	.49262	-.00713	5.1285	.48933	.49429	.49997	.48531
#2	.49212	.79504	.94767	.47967	.51369	.48304	.00316	5.0525	.48517	.49046	.49678	.48632

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.4941	53.539	1.0493	19.601	.48653	.49553	F 6.5932	.49431	.99015	.98028	.16046	.95139
Stddev	.0339	.572	.0173	.107	.00221	.00249	.0976	.00120	.00331	.00380	.03224	.00767
%RSD	1.3598	1.0681	1.6517	.54351	.45502	.50269	1.4801	.24178	.33412	.38797	20.091	.80626

#1	2.5181	53.943	1.0616	19.526	.48496	.49729	6.6622	.49516	.99249	.98297	.13767	.95682
#2	2.4701	53.134	1.0371	19.676	.48810	.49377	6.5242	.49347	.98781	.97759	.18326	.94597

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94415	4.9744	10.645	.98379	.49995	.00869	.48190	.99766	-.06137	.48665	.48897	.49874
Stddev	.00035	.0406	.087	.00626	.00664	.00013	.00261	.00288	.00098	.00135	.00131	.00276
%RSD	.03674	.81532	.81532	.63589	1.3272	1.4392	.54141	.28900	1.6008	.27802	.26698	.55286

#1	.94439	5.0031	10.707	.98822	.50464	.00860	.48006	.99970	-.06207	.48569	.48804	.50069
#2	.94390	4.9457	10.584	.97937	.49526	.00878	.48375	.99562	-.06068	.48760	.48989	.49679

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3914.1	45840.	3199.8
Stddev	35.8	91.	35.7
%RSD	.91479	.19795	1.1166

#1	3888.8	45776.	3174.6
#2	3939.4	45904.	3225.1

Sample Name: CCB Acquired: 5/13/2019 23:23:42 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00197	.00715	.00304	.00222	-.00010	.00028	-.00240	.02383	.00158	.00162	.00195	-.00042
Stddev	.00079	.00559	.00738	.00032	.00033	.00006	.00308	.00886	.00142	.00086	.00224	.00091
%RSD	40.071	78.298	242.97	14.614	324.22	20.090	128.37	37.174	89.304	53.099	114.98	217.32

#1	.00253	.00319	-.00218	.00199	-.00034	.00032	-.00458	.03009	.00058	.00101	.00037	-.00106
#2	.00141	.01110	.00826	.00245	.00013	.00024	-.00022	.01756	.00259	.00223	.00354	.00022

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00305	.28709	.00239	.00364	.00004	.00395	F .79445	.00112	-.00003	-.00056	W .07667	W .00867
Stddev	.00117	.03805	.00213	.00227	.00002	.00127	.04178	.00110	.00381	.00186	.00925	.00349
%RSD	38.521	13.252	89.266	62.472	52.536	32.109	5.2591	98.665	14291.	334.03	12.068	40.210

#1	.00388	.26019	.00088	.00203	.00002	.00305	.82399	.00034	-.00272	-.00187	.07012	.00621
#2	.00222	.31399	.00390	.00524	.00005	.00484	.76491	.00190	.00267	.00076	.08321	.01114

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Warn
High Limit							.50000				.05000	.00600
Low Limit							-.50000				-.20000	-.00600

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W .00824	.03220	.06891	.00194	.00089	.00270	-.00077	.00109	-.04860	.00058	-.00044	-.00369
Stddev	.00324	.01220	.02610	.00388	.00009	.00075	.00040	.00281	.04508	.00009	.00077	.00296
%RSD	39.282	37.882	37.882	199.59	10.399	27.936	52.138	257.62	92.768	15.180	174.02	80.442

#1	.01053	.02357	.05045	-.00080	.00095	.00216	-.00049	-.00090	-.01672	.00064	-.00099	-.00578
#2	.00595	.04082	.08737	.00469	.00082	.00323	-.00106	.00308	-.08048	.00052	.00010	-.00159

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.00750											
Low Limit	-.01500											

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4011.2	46776.	3349.1
Stddev	12.2	187.	26.3
%RSD	.30464	.40083	.78625

#1	4002.5	46909.	3330.4
#2	4019.8	46644.	3367.7

Sample Name: CCVL-5699390 Acquired: 5/13/2019 23:26:17 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01098	.12649	F .00794	.09830	.00901	.00110	.10271	.23625	.00535	.01022	.01032	.01608
Stddev	.00060	.00055	.00358	.00014	.00032	.00021	.00081	.00536	.00006	.00014	.00017	.00013
%RSD	5.5055	.43423	45.133	.14315	3.5247	18.988	.78446	2.2705	1.0786	1.3455	1.6826	.79881
#1	.01141	.12688	.01048	.09840	.00878	.00095	.10328	.24004	.00531	.01031	.01044	.0161
#2	.01055	.12610	.00541	.09820	.00923	.00125	.10214	.23245	.00539	.01012	.01020	.01599
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.01500									
Range			-30.000%									
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .26409	3.3046	.02170	.19359	.01090	.02026	F 1.7094	.04119	2.9357	.00710	F .13364	.01667
Stddev	.00124	.0930	.00048	.00294	.00007	.00002	.0217	.00037	.0033	.00147	.00234	.00192
%RSD	.46818	2.8140	2.2272	1.5175	.67318	.09995	1.2711	.89974	.11299	20.647	1.7505	11.527
#1	.26496	3.3703	.02204	.19152	.01084	.02027	1.6940	.04145	2.9381	.00813	.13529	.01803
#2	.26321	3.2388	.02136	.19567	.01095	.02024	1.7247	.04093	2.9334	.00606	.13198	.01531
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value	.10000						1.0000				.10000	
Range	30.000%						30.000%				30.000%	
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02183	.53892	1.1533	.09844	.01021	.01655	.00865	.01106	F .01784	.00938	.02434	F .00975
Stddev	.00767	.01325	.0284	.00001	.00006	.00164	.00041	.00190	.00398	.00055	.00003	.00616
%RSD	35.121	2.4586	2.4586	.00663	.56714	9.9174	4.7812	17.153	22.325	5.8709	.13240	63.179
#1	.01641	.52955	1.1332	.09844	.01025	.01539	.00836	.00972	-.02065	.00977	.02431	.00539
#2	.02725	.54829	1.1733	.09843	.01017	.01771	.00894	.01240	-.01502	.00899	.02436	.01410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail
Value									.06000			.01500
Range									-30.000%			-30.000%
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3985.0	46685.	3343.7									
Stddev	.8	66.	1.8									
%RSD	.02073	.14119	.05313									
#1	3985.6	46639.	3344.9									
#2	3984.4	46732.	3342.4									

Sample Name: 280-123412-C-3-A Acquired: 5/13/2019 23:28:50 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457249 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00213	.04605	-.00291	.08045	.03772	.00006	-.00839	339.04	.00007
Stddev	.00022	.00152	.00054	.00065	.00079	.00018	.00226	8.24	.00025
%RSD	10.519	3.2999	18.559	.80757	2.0860	322.71	26.915	2.4301	361.01

#1	.00197	.04497	-.00253	.08091	.03828	.00018	-.00999	344.87	.00025
#2	.00228	.04712	-.00329	.07999	.03717	-.00007	-.00679	333.22	-.00011

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	.00249	.00327	.21499	2.7178	.03717	45.411	.00283	.00543
Stddev	.00040	.00017	.00101	.00166	.0034	.00223	.155	.00004	.00029
%RSD	92.619	6.8114	30.848	.77065	.12475	5.9869	.34025	1.3412	5.4022

#1	-.00015	.00237	.00398	.21617	2.7154	.03874	45.520	.00281	.00564
#2	-.00072	.00261	.00255	.21382	2.7202	.03559	45.301	.00286	.00522

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	160.90	.00191	.03727	-.00418	F 221.21	-.00156	.00659	12.732	27.247
Stddev	3.13	.00065	.00585	.00054	1.41	.00047	.00170	.298	.638
%RSD	1.9462	33.758	15.707	12.943	.63667	30.277	25.775	2.3405	2.3405

#1	163.11	.00237	.03313	-.00457	222.20	-.00190	.00539	12.943	27.698
#2	158.68	.00146	.04141	-.00380	220.21	-.00123	.00779	12.521	26.796

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00151	5.5280	.00014	.00119	-.00492	-.10283	-.00046	.00085	.00001
Stddev	.00174	.1274	.00062	.00051	.00386	.02428	.00000	.00003	.00151
%RSD	114.76	2.3047	441.50	42.876	78.372	23.613	.53723	4.1279	15894.

#1	-.00029	5.6181	-.00030	.00083	-.00219	-.08566	-.00046	.00082	-.00106
#2	-.00274	5.4379	.00058	.00155	-.00765	-.12000	-.00046	.00087	.00108

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3841.7	44670.	3374.8
Stddev	8.3	30.	109.8
%RSD	.21666	.06609	3.2525

#1	3847.6	44649.	3297.2
#2	3835.8	44691.	3452.4

Sample Name: 280-123412-C-4-A Acquired: 5/13/2019 23:31:21 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457249 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.13971	-.00597	.04680	.04711	.00011	-.00282	260.20	.00005
Stddev	.00067	.00097	.00114	.00189	.00055	.00011	.00220	2.36	.00001
%RSD	294.12	.69163	19.031	4.0353	1.1749	99.361	77.947	.90742	13.161

#1	.00071	.13902	-.00517	.04547	.04750	.00003	-.00438	261.87	.00004
#2	-.00025	.14039	-.00678	.04814	.04671	.00018	-.00127	258.53	.00005

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.00022	.00169	.14907	6.2326	.03234	23.870	.00370	-.00009
Stddev	.00030	.00006	.00136	.00803	.0687	.00265	.125	.00005	.00002
%RSD	75.084	26.236	80.867	5.3857	1.1027	8.1824	.52161	1.4626	24.593

#1	-.00019	.00018	.00265	.15475	6.2812	.03421	23.958	.00366	-.00010
#2	-.00061	.00026	.00072	.14340	6.1840	.03047	23.781	.00374	-.00007

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	158.18	.00115	.03345	-.00455	136.37	-.00036	-.00338	12.262	26.241
Stddev	2.15	.00005	.00061	.00213	.79	.00051	.00304	.100	.214
%RSD	1.3573	4.4823	1.8363	46.911	.58109	142.52	90.076	.81400	.81400

#1	159.70	.00111	.03301	-.00304	135.81	.00000	-.00123	12.333	26.392
#2	156.66	.00118	.03388	-.00605	136.93	-.00072	-.00553	12.192	26.090

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00250	2.9900	.00255	.00285	-.00339	-.06624	.00033	.00236	-.00127
Stddev	.00131	.0174	.00102	.00029	.00081	.05176	.00044	.00027	.00509
%RSD	52.317	.58064	39.769	10.256	23.935	78.144	134.71	11.318	402.36

#1	-.00343	3.0023	.00327	.00305	-.00396	-.10284	.00064	.00217	-.00487
#2	-.00158	2.9777	.00184	.00264	-.00281	-.02964	.00002	.00255	.00234

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4111.9	47251.	3568.1
Stddev	10.6	345.	62.9
%RSD	.25813	.73013	1.7619

#1	4104.4	47007.	3523.6
#2	4119.4	47495.	3612.5

Sample Name: 280-123412-C-5-A Acquired: 5/13/2019 23:33:53 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457249 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00165	.06348	-.00342	.04410	.05242	.00006	-.00477	273.08	.00011
Stddev	.00096	.00340	.00546	.00083	.00002	.00008	.00043	2.64	.00021
%RSD	58.499	5.3629	159.90	1.8831	.04263	120.79	8.9393	.96806	199.02

#1	.00233	.06108	-.00728	.04351	.05241	.00001	-.00507	271.21	-.00004
#2	.00097	.06589	.00045	.04469	.05244	.00012	-.00447	274.95	.00026

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.00168	.00071	.09554	3.1533	.01496	30.593	.00464	.00049
Stddev	.00010	.00016	.00019	.01064	.0193	.00011	.150	.00009	.00018
%RSD	35.790	9.4765	26.880	11.133	.61248	.73687	.48870	1.9320	35.539

#1	-.00034	.00179	.00085	.08802	3.1396	.01488	30.699	.00457	.00037
#2	-.00021	.00156	.00058	.10306	3.1669	.01504	30.487	.00470	.00062

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	143.05	.00128	.01626	-.00408	167.79	-.00068	.00496	10.490	22.450
Stddev	1.90	.00021	.00139	.00051	3.41	.00096	.00610	.121	.258
%RSD	1.3258	16.445	8.5694	12.435	2.0311	140.92	123.07	1.1509	1.1509

#1	141.71	.00113	.01528	-.00444	165.38	-.00135	.00064	10.405	22.267
#2	144.39	.00143	.01725	-.00372	170.20	-.00000	.00927	10.576	22.632

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00436	4.6479	.00082	.00109	-.00312	-.07225	-.00001	.00194	.00098
Stddev	.00059	.0454	.00069	.00040	.00085	.01865	.00005	.00053	.00217
%RSD	13.595	.97601	84.469	36.714	27.317	25.812	682.94	27.213	220.20

#1	-.00394	4.6158	.00131	.00137	-.00252	-.05906	-.00004	.00157	-.00055
#2	-.00478	4.6800	.00033	.00080	-.00372	-.08544	.00003	.00231	.00252

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4124.3	48163.	3743.7
Stddev	82.2	1281.	.5
%RSD	1.9931	2.6589	.01447

#1	4182.4	49068.	3744.0
#2	4066.2	47257.	3743.3

Sample Name: 280-123412-C-6-A Acquired: 5/13/2019 23:36:26 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457249 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00251	.80156	-.00869	.03637	.01275	.00011	-.00719	W 582.10	.00003
Stddev	.00020	.02229	.00459	.00040	.00014	.00019	.00306	10.48	.00015
%RSD	7.8879	2.7802	52.745	1.0909	1.1044	171.91	42.591	1.8009	497.01

#1	.00237	.81732	-.01194	.03665	.01265	-.00002	-.00935	574.69	.00013
#2	.00265	.78580	-.00545	.03609	.01285	.00025	-.00502	589.51	-.00007

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit								500.00	
Low Limit								-40000	

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.00082	.00310	.66079	16.283	.06235	97.111	.03987	-.00043
Stddev	.00007	.00026	.00003	.00305	.066	.00222	1.427	.00032	.00021
%RSD	57.305	31.833	1.1059	.46162	.40724	3.5580	1.4697	.79073	50.521

#1	-.00007	.00064	.00307	.65864	16.330	.06078	96.102	.03965	-.00058
#2	-.00018	.00101	.00312	.66295	16.236	.06392	98.120	.04009	-.00027

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	449.19	.00471	.09410	-.00295	F 626.13	-.00527	.05592	9.0136	19.289
Stddev	1.71	.00019	.00411	.00263	11.82	.00010	.00251	.0977	.209
%RSD	.37971	4.0270	4.3712	89.006	1.8874	1.8572	4.4812	1.0842	1.0842

#1	450.40	.00458	.09701	-.00481	634.48	-.00520	.05769	9.0827	19.437
#2	447.98	.00485	.09119	-.00110	617.77	-.00534	.05415	8.9445	19.141

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00349	W 13.237	-.00030	.02153	-.00312	-.04129	.00099	.00631	.00119
Stddev	.00060	.055	.00046	.00195	.00125	.04710	.00034	.00058	.00173
%RSD	17.170	.41569	151.64	9.0491	40.140	114.09	33.979	9.1877	145.15

#1	-.00307	13.198	.00002	.02015	-.00401	-.00798	.00075	.00672	.00241
#2	-.00392	13.276	-.00062	.02291	-.00224	-.07459	.00123	.00590	-.00003

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		10.000							
Low Limit		-.02000							

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3932.9	43416.	3529.2
Stddev	261.1	995.	11.3
%RSD	6.6384	2.2929	.32148

#1	3748.3	44119.	3537.2
#2	4117.5	42712.	3521.1

Sample Name: CCVH-5690583 Acquired: 5/13/2019 23:39:08 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00321	50.144	-.00293	.00225	.00260	.00148	1.0158	.42970	.00101	.00252	.00143	.01512
Stddev	.00080	.566	.00714	.00061	.00017	.00007	.0177	.02376	.00018	.00005	.00015	.00067
%RSD	24.824	1.1293	243.67	27.301	6.3894	4.9906	1.7472	5.5306	17.471	2.1473	10.664	4.4290

#1	.00265	49.744	-.00798	.00181	.00248	.00143	1.0283	.41289	.00113	.00256	.00154	.01559
#2	.00377	50.545	.00212	.00268	.00271	.00153	1.0032	.44650	.00088	.00249	.00132	.01464

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	50.682	.44031	.00387	.10245	.00410	.00006	262.60	.00433	.00164	.00127	F 7.0504	.00117
Stddev	.281	.05773	.00105	.01279	.00010	.00018	2.76	.00018	.00249	.00150	1.4591	.00546
%RSD	.55396	13.110	27.151	12.484	2.3676	319.96	1.0508	4.2363	152.19	117.69	20.696	466.14

#1	50.483	.39949	.00312	.09340	.00403	.00018	260.65	.00420	-.00012	.00233	6.0186	-.00269
#2	50.880	.48113	.00461	.11149	.00417	-.00007	264.55	.00446	.00340	.00021	8.0822	.00503

Check ?	Chk Pass	None	None	None	None	None	Chk Pass	None	None	None	Chk Fail	None
Value											5.0000	
Range											10.490%	

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.04565	.09769	.00133	.01123	4.9851	-.00977	-.00122	10.285	.00534	.00420	.07146
Stddev	.00134	.01018	.02178	.00050	.00067	.0335	.00069	.00028	.035	.00063	.00082	.00228
%RSD	146.50	22.291	22.291	37.375	5.9463	.67224	7.0501	23.098	.33818	11.787	19.604	3.1849

#1	-.00003	.05285	.11309	.00168	.01076	4.9614	-.00928	-.00102	10.260	.00489	.00362	.06985
#2	.00186	.03846	.08229	.00098	.01170	5.0088	-.01026	-.00142	10.310	.00578	.00478	.07307

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4278.9	50101.	3822.4
Stddev	12.5	288.	43.8
%RSD	.29304	.57391	1.1461

#1	4287.8	49897.	3853.4
#2	4270.0	50304.	3791.5

Sample Name: CCV-5690581 Acquired: 5/13/2019 23:41:37 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoadesc Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52827	F .83127	1.0380	.52047	.54443	.51705	.00439	5.3712	.53284	.53463	.54032	.52635
Stddev	.00220	.11146	.0134	.00187	.00165	.00048	.00185	.0139	.00465	.00579	.00520	.00240
%RSD	.41645	13.409	1.2884	.35906	.30348	.09380	42.091	.25830	.87339	1.0827	.96237	.45546

#1	.52982	.75246	1.0475	.52180	.54326	.51671	.00570	5.3810	.53613	.53872	.54400	.52805
#2	.52671	.91009	1.0286	.51915	.54560	.51739	.00309	5.3614	.52955	.53053	.53664	.52466

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.6562	F 55.241	1.0880	21.009	.52179	.53898	F 6.7494	.53628	1.0858	1.0652	.13353	1.0360
Stddev	.0049	.141	.0033	.080	.00261	.00614	.0039	.00476	.0094	.0103	.02157	.0132
%RSD	.18352	.25531	.30669	.38185	.50036	1.1396	.05701	.88811	.86926	.96543	16.151	1.2724

#1	2.6527	55.142	1.0857	21.066	.52364	.54332	6.7467	.53965	1.0925	1.0725	.11828	1.0453
#2	2.6596	55.341	1.0904	20.952	.51994	.53464	6.7521	.53291	1.0792	1.0580	.14878	1.0267

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value		50.000					5.0000					
Range		10.000%					10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0458	5.1935	11.114	1.0754	.52886	.00846	.52099	1.0863	.00368	.52152	.52237	.52918
Stddev	.0161	.0107	.023	.0075	.00264	.00029	.00235	.0082	.02303	.00227	.00320	.00279
%RSD	1.5389	.20620	.20620	.70057	.49887	3.3715	.45048	.75767	626.52	.43574	.61302	.52804

#1	1.0572	5.1859	11.098	1.0808	.52700	.00826	.52265	1.0921	-.01261	.52313	.52463	.52720
#2	1.0345	5.2010	11.130	1.0701	.53073	.00866	.51933	1.0805	.01996	.51991	.52010	.53115

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4340.6	50459.	3710.9
Stddev	42.0	152.	14.4
%RSD	.96784	.30112	.38724

#1	4310.9	50566.	3700.7
#2	4370.3	50351.	3721.0

Sample Name: CCB Acquired: 5/13/2019 23:43:59 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoades Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00121	.00591	-.00014	.00115	.00061	.00062	-.00229	.02469	W .00231	.00230	W .00300	.00079
Stddev	.00104	.00510	.00038	.00024	.00016	.00006	.00204	.00558	.00154	.00185	.00260	.00054
%RSD	85.504	86.180	271.55	20.401	26.964	10.466	89.294	22.598	66.455	80.134	86.684	67.636
#1	.00048	.00231	-.00041	.00099	.00072	.00066	-.00374	.02075	.00123	.00100	.00116	.00041
#2	.00194	.00952	.00013	.00132	.00049	.00057	-.00084	.02864	.00340	.00361	.00484	.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Warn	Chk Pass
High Limit									.00180		.00260	
Low Limit									-.00180		-.00260	
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01367	.17707	-.00191	.01947	.00060	.00479	F .66033	.00215	-.00121	.00112	W .08340	F .01363
Stddev	.00355	.00490	.00020	.00593	.00008	.00296	.00771	.00224	.00738	.00282	.00563	.00897
%RSD	25.965	2.7689	10.697	30.457	14.038	61.889	1.1683	104.13	610.47	250.88	6.7501	65.839
#1	.01116	.18054	-.00205	.01528	.00054	.00269	.66579	.00057	-.00642	-.00087	.07942	.00728
#2	.01618	.17360	-.00176	.02366	.00066	.00689	.65488	.00374	.00401	.00312	.08738	.01997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Fail
High Limit							.50000				.05000	.01200
Low Limit							-.50000				-.20000	-.01200
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W .00915	.03177	.06799	.00376	.00087	.00319	.00031	.00133	-.04558	.00013	.00009	.00181
Stddev	.00291	.01969	.04215	.00470	.00002	.00087	.00025	.00151	.02480	.00033	.00043	.00052
%RSD	31.748	61.993	61.993	125.14	2.6798	27.237	78.809	113.73	54.419	255.82	496.49	28.891
#1	.00710	.04570	.09779	.00043	.00085	.00381	.00049	.00026	-.02804	.00036	-.00022	.00144
#2	.01121	.01784	.03818	.00709	.00088	.00258	.00014	.00240	-.06312	-.00010	.00039	.00217
Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.00750											
Low Limit	-.01500											
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4523.1	53160.	3913.3									
Stddev	12.8	245.	19.8									
%RSD	.28310	.46130	.50565									
#1	4514.0	53333.	3927.3									
#2	4532.1	52987.	3899.3									

Sample Name: CCVL-5699390 Acquired: 5/13/2019 23:46:37 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00127	F .00337	F -.00557	F .00050	F .00009	F .00019	F -.00227	F .01747	F .00011	F -.00008	F .00009	F .00131
Stddev	.00116	.00240	.00294	.00135	.00074	.00014	.00027	.00650	.00058	.00031	.00023	.00144
%RSD	90.905	71.192	52.832	272.03	779.60	73.167	11.940	37.224	512.68	403.25	263.89	110.17
#1	.00045	.00167	-.00765	-.00046	.00061	.00009	-.00208	.01287	-.00030	-.00030	-.00007	.00029
#2	.00209	.00507	-.00349	.00145	-.00043	.00028	-.00247	.02207	.00053	.00014	.00024	.00233
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.01000	.10000	.01500	.10000	.01000	.00100	.10000	.20000	.00500	.01000	.01000	.01500
Range	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00607	F .04065	F -.00165	F .03806	F .00032	F .00008	F .57731	F -.00003	F -.00701	F -.00310	.07659	F .00113
Stddev	.00216	.08615	.00412	.04631	.00051	.00013	.01705	.00005	.00095	.00089	.02320	.00303
%RSD	35.608	211.95	249.52	121.67	156.96	170.47	2.9529	208.03	13.510	28.597	30.298	267.25
#1	.00454	-.02027	-.00456	.00532	-.00004	.00017	.58936	-.00006	-.00768	-.00248	.06018	-.00101
#2	.00760	.10156	.00126	.07081	.00068	-.00002	.56525	.00001	-.00634	-.00373	.09300	.00327
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail
Value	.10000	3.0000	.02000	.20000	.01000	.02000	1.0000	.04000	3.0000	.00900		.02000
Range	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%		-30.000%
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00448	F .03635	F .07779	F -.00200	F .00043	F .00236	F -.00015	F -.00245	F -.02574	F .00060	F -.00066	F .00052
Stddev	.00468	.00252	.00540	.00029	.00009	.00425	.00007	.00077	.01600	.00013	.00005	.00112
%RSD	104.46	6.9425	6.9425	14.760	20.244	180.29	44.168	31.397	62.148	21.123	7.7597	215.19
#1	.00780	.03457	.07398	-.00221	.00050	-.00065	-.00010	-.00299	-.01443	.00069	-.00070	.00131
#2	.00117	.03814	.08161	-.00179	.00037	.00537	-.00020	-.00190	-.03705	.00051	-.00062	-.00027
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.02000	.50000	1.0700	.10000	.01000	.01500	.01000	.01500	.06000	.01000	.02000	.01500
Range	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4136.6	50949.	3779.5									
Stddev	15.6	366.	8.9									
%RSD	.37670	.71781	.23594									
#1	4147.7	51208.	3785.8									
#2	4125.6	50690.	3773.2									

Sample Name: MB 280-456955/1-A Acquired: 5/13/2019 23:49:15 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/13 Custom ID2: Custom ID3:
Comment: 456955 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00129	.00315	-.00436	-.00094	.00001	.00000	-.00500	.03445	-.00027
Stddev	.00103	.00039	.00016	.00078	.00049	.00004	.00103	.00834	.00015
%RSD	79.677	12.531	3.6445	83.160	4202.0	2920.8	20.640	24.206	55.855

#1	.00056	.00343	-.00425	-.00149	.00035	.00003	-.00573	.04035	-.00038
#2	.00201	.00287	-.00447	-.00039	-.00033	-.00003	-.00427	.02856	-.00016

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	-.00004	.00004	.01301	.09815	.00178	.01537	.00063	-.00015
Stddev	.00029	.00033	.00025	.00147	.09544	.00656	.02996	.00016	.00012
%RSD	87.391	774.16	567.42	11.261	97.237	368.99	194.93	25.562	79.018

#1	-.00013	-.00027	-.00013	.01405	.16564	.00642	-.00581	.00052	-.00023
#2	-.00053	.00019	.00022	.01198	.03066	-.00286	.03655	.00075	-.00007

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W .54962	-.00049	-.00401	-.00218	.03840	-.00278	.00479	.02214	.04738
Stddev	.03087	.00000	.00146	.00194	.00232	.00200	.00188	.00646	.01382
%RSD	5.6174	.76163	36.430	89.042	6.0448	71.792	39.156	29.170	29.170

#1	.57145	-.00050	-.00504	-.00081	.03675	-.00137	.00346	.02671	.05716
#2	.52779	-.00049	-.00298	-.00355	.04004	-.00419	.00612	.01757	.03761

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit	.50000								
Low Limit	-.50000								

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00073	.00028	.00387	-.00070	-.00462	W -.05411	-.00030	.00302	-.00238
Stddev	.00003	.00004	.00028	.00041	.00087	.00968	.00019	.00024	.00330
%RSD	4.6564	14.253	7.3113	58.202	18.780	17.888	62.175	7.8603	138.36

#1	-.00075	.00025	.00407	-.00099	-.00523	-.06096	-.00017	.00319	-.00471
#2	-.00071	.00031	.00367	-.00041	-.00400	-.04727	-.00043	.00285	-.00005

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass
High Limit						.05000			
Low Limit						-.05000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4007.6	47615.	3474.6
Stddev	17.7	460.	8.1
%RSD	.44200	.96610	.23375

#1	3995.1	47940.	3468.9
#2	4020.1	47289.	3480.4

Sample Name: LCS 280-456955/2-A Acquired: 5/13/2019 23:51:52 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05864	10.980	2.1606	1.0677	2.2403	W 1.0633	W 2.1848	54.571	1.0909
Stddev	.00021	.027	.0024	.0003	.0012	.0038	.0030	.183	.0028
%RSD	.35726	.24753	.11305	.02812	.05285	.36074	.13677	.33615	.25534

#1	.05850	10.999	2.1623	1.0679	2.2412	1.0660	2.1869	54.701	1.0929
#2	.05879	10.961	2.1589	1.0675	2.2395	1.0606	2.1826	54.441	1.0889

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Warn	Chk Pass	Chk Pass
High Limit						1.0000	2.0000		
Low Limit						-.00200	-.20000		

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0632	1.1025	1.0659	10.718	58.282	1.1323	54.246	1.0827	1.1165
Stddev	.0029	.0044	.0008	.019	.020	.0040	.065	.0025	.0044
%RSD	.26864	.40085	.07024	.17989	.03507	.34957	.11890	.23229	.39650

#1	1.0652	1.1057	1.0654	10.732	58.296	1.1351	54.201	1.0809	1.1197
#2	1.0611	1.0994	1.0665	10.704	58.268	1.1295	54.292	1.0845	1.1134

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	57.073	1.0654	W 22.713	1.0730	10.159	.00315	2.1259	2.2575	4.8311
Stddev	.062	.0053	.032	.0058	.026	.00283	.0019	.0096	.0206
%RSD	.10878	.49584	.14300	.54143	.25223	89.796	.08700	.42566	.42566

#1	57.117	1.0691	22.736	1.0771	10.141	.00515	2.1272	2.2643	4.8456
#2	57.029	1.0616	22.690	1.0689	10.177	.00115	2.1246	2.2507	4.8166

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.1907	1.0831	1.0858	1.0939	2.1491	2.1732	1.0940	.54075	.55939
Stddev	.0051	.0004	.0018	.0026	.0084	.0127	.0033	.00143	.00189
%RSD	.23360	.03467	.16430	.23570	.39127	.58654	.30420	.26461	.33780

#1	2.1943	1.0834	1.0871	1.0921	2.1550	2.1822	1.0916	.54176	.55806
#2	2.1870	1.0829	1.0846	1.0958	2.1431	2.1641	1.0963	.53974	.56073

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000								
Low Limit	-.20000								

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3922.8	44985.	3363.6
Stddev	43.8	258.	19.5
%RSD	1.1175	.57329	.57832

#1	3891.8	45168.	3377.4
#2	3953.8	44803.	3349.9

Sample Name: LCSD 280-456955/3-A Acquired: 5/13/2019 23:54:11 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05797	10.849	2.1072	1.0433	2.2085	W 1.0470	W 2.1465	53.750	1.0669
Stddev	.00054	.024	.0026	.0073	.0014	.0013	.0131	.031	.0045
%RSD	.92382	.22284	.12483	.69806	.06328	.11999	.61103	.05798	.42155

#1	.05835	10.832	2.1090	1.0381	2.2075	1.0479	2.1372	53.772	1.0637
#2	.05759	10.866	2.1053	1.0484	2.2095	1.0461	2.1558	53.728	1.0701

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Warn	Chk Pass	Chk Pass
High Limit						1.0000	2.0000		
Low Limit						-.00200	-.20000		

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0380	1.0761	1.0529	10.598	57.412	1.1135	53.283	1.0643	1.0952
Stddev	.0032	.0040	.0072	.025	.016	.0033	.097	.0034	.0058
%RSD	.30879	.36776	.68639	.23575	.02819	.29318	.18230	.31888	.53073

#1	1.0358	1.0733	1.0580	10.580	57.400	1.1112	53.352	1.0667	1.0911
#2	1.0403	1.0789	1.0478	10.615	57.423	1.1159	53.214	1.0619	1.0993

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	56.001	1.0409	W 22.278	1.0467	9.9917	.00363	2.0762	2.2323	4.7772
Stddev	.182	.0058	.094	.0055	.0513	.00122	.0221	.0207	.0443
%RSD	.32513	.55974	.42151	.52931	.51310	33.627	1.0620	.92826	.92826

#1	55.872	1.0368	22.212	1.0428	9.9555	.00277	2.0606	2.2177	4.7458
#2	56.130	1.0451	22.344	1.0506	10.028	.00449	2.0918	2.2470	4.8085

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.1384	1.0669	1.0680	1.0755	2.1074	2.1913	1.0753	.53005	.54868
Stddev	.0091	.0002	.0033	.0028	.0133	.0359	.0027	.00015	.00398
%RSD	.42522	.01970	.30560	.26017	.63116	1.6392	.24849	.02772	.72607

#1	2.1320	1.0667	1.0703	1.0775	2.0980	2.1659	1.0772	.53015	.55149
#2	2.1449	1.0670	1.0657	1.0735	2.1168	2.2167	1.0734	.52995	.54586

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000								
Low Limit	-.20000								

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4067.7	47285.	3525.7
Stddev	9.3	117.	12.5
%RSD	.22823	.24638	.35348
#1	4074.3	47202.	3534.5
#2	4061.2	47367.	3516.9

Sample Name: 280-123304-A-1-A Acquired: 5/13/2019 23:56:28 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02057	3.4358	.00905	.68254	.06656	.00089	.00340	42.465	1.0496
Stddev	.00013	.0746	.00648	.00165	.00197	.00003	.00492	.606	.0005
%RSD	.61453	2.1717	71.547	.24218	2.9530	2.8834	144.54	1.4282	.04691

#1	.02066	3.3830	.00447	.68137	.06517	.00087	-.00008	42.036	1.0492
#2	.02048	3.4886	.01363	.68371	.06795	.00091	.00688	42.894	1.0499

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00666	.04167	5.0434	4.4191	F 658.44	.05099	19.181	.34140	2.4240
Stddev	.00283	.00361	.0154	.0642	10.73	.00162	.024	.00098	.0064
%RSD	42.487	8.6643	.30526	1.4537	1.6290	3.1771	.12393	.28783	.26500

#1	.00466	.03912	5.0543	4.3737	650.86	.04984	19.165	.34071	2.4286
#2	.00866	.04423	5.0325	4.4645	666.03	.05213	19.198	.34210	2.4195

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					500.00				
Low Limit					-6.0000				

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 702.85	.02993	F 126.63	.00548	F 1316.1	.05002	.01502	5.1700	11.064
Stddev	12.56	.00270	.10	.00277	.8	.00039	.00367	.0782	.167
%RSD	1.7872	9.0221	.08112	50.469	.05847	.77586	24.410	1.5123	1.5123

#1	693.96	.02802	126.71	.00353	1316.6	.04975	.01243	5.1147	10.945
#2	711.73	.03184	126.56	.00744	1315.5	.05030	.01762	5.2253	11.182

Check ?	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00		50.000		200.00				
Low Limit	11.000		-6.0000		-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01689	.59078	.00483	.14904	.00960	-.09722	-.00557	.10204	.00709
Stddev	.00617	.01040	.00240	.00035	.00650	.01018	.00007	.00183	.00274
%RSD	36.503	1.7597	49.621	.23591	67.706	10.471	1.3251	1.7966	38.702

#1	.01253	.58343	.00652	.14929	.00501	-.09002	-.00552	.10074	.00903
#2	.02125	.59813	.00313	.14879	.01420	-.10442	-.00562	.10333	.00515

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3854.0	43817.	3481.9
Stddev	16.7	314.	33.5
%RSD	.43219	.71710	.96239

#1	3865.8	44039.	3505.6
#2	3842.2	43595.	3458.2

Sample Name: 123304-A-1-A SD@5 Acquired: 5/13/2019 23:59:02 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00562	.88756	-.00293	.16129	.01308	.00019	-.00344	8.6180	.24133
Stddev	.00003	.02156	.00230	.00343	.00041	.00005	.00282	.1129	.00699
%RSD	.57626	2.4291	78.424	2.1273	3.1368	24.561	81.890	1.3101	2.8948

#1	.00564	.87231	-.00456	.15886	.01279	.00016	-.00544	8.5382	.23639
#2	.00559	.90280	-.00131	.16371	.01337	.00023	-.00145	8.6978	.24627

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.00866	1.0690	.89616	W 130.97	.00935	4.1779	.07657	.57116
Stddev	.00011	.00053	.0166	.01189	1.30	.00186	.0726	.00133	.01633
%RSD	12.048	6.1021	1.5542	1.3268	.99109	19.933	1.7372	1.7343	2.8589

#1	.00083	.00829	1.0572	.88776	130.05	.01067	4.1266	.07563	.55961
#2	.00099	.00904	1.0807	.90457	131.88	.00804	4.2292	.07751	.58271

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					100.00				
Low Limit					-6.0000				

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	140.64	.00622	W 29.444	-.00149	F 318.82	.01224	.00300	1.0262	2.1960
Stddev	2.34	.00054	.764	.00052	7.34	.00020	.00699	.0288	.0616
%RSD	1.6648	8.6339	2.5936	35.201	2.3019	1.6381	232.94	2.8055	2.8055

#1	138.99	.00584	28.904	-.00112	313.64	.01238	-.00194	1.0058	2.1524
#2	142.30	.00660	29.984	-.00186	324.01	.01210	.00794	1.0465	2.2395

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000		200.00				
Low Limit			-6.0000		-20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00168	.11901	.00382	.03043	.00117	-.10494	-.00032	.02194	-.00056
Stddev	.00045	.00199	.00039	.00045	.00016	.04670	.00020	.00026	.00051
%RSD	26.950	1.6741	10.272	1.4639	13.503	44.501	61.856	1.1779	90.383

#1	.00136	.11760	.00354	.03012	.00105	-.07192	-.00046	.02175	-.00092
#2	.00200	.12041	.00410	.03075	.00128	-.13797	-.00018	.02212	-.00020

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4013.6	46675.	3518.2
Stddev	5.9	12.	34.7
%RSD	.14808	.02601	.98514

#1	4017.8	46684.	3493.7
#2	4009.4	46667.	3542.7

Sample Name: 280-123304-A-2-A Acquired: 5/14/2019 0:01:33 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	W 2.9096	.00650	.60592	.32316	.00042	-.00428	67.686	.00400
Stddev	.00092	.0313	.00066	.00023	.00107	.00000	.00229	.015	.00032
%RSD	57.683	1.0746	10.141	.03736	.33197	.94901	53.593	.02246	7.9043

#1	.00224	2.8875	.00603	.60608	.32240	.00042	-.00266	67.697	.00378
#2	.00094	2.9317	.00697	.60576	.32392	.00041	-.00590	67.676	.00422

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		500.00							
Low Limit		3.2000							

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00972	.24157	.30555	9.1487	28.035	.08809	66.988	.41797	.55161
Stddev	.00011	.00077	.00115	.0050	.005	.00228	.148	.00147	.00124
%RSD	1.1127	.31681	.37491	.05473	.01797	2.5856	.22048	.35230	.22402

#1	.00964	.24212	.30636	9.1522	28.039	.08648	66.883	.41693	.55074
#2	.00980	.24103	.30474	9.1452	28.032	.08970	67.092	.41901	.55249

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	315.97	.08109	5.2595	.00447	146.23	.00231	.01841	7.2085	15.426
Stddev	.32	.00001	.0407	.00006	.42	.00202	.00630	.0575	.123
%RSD	.10241	.01214	.77391	1.4181	.29011	87.578	34.243	.79777	.79777

#1	315.74	.08109	5.2307	.00451	145.93	.00374	.01395	7.1678	15.339
#2	316.20	.08108	5.2883	.00442	146.53	.00088	.02287	7.2491	15.513

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00331	.95973	.00142	.05135	-.00084	-.08250	.01109	.32787	.02646
Stddev	.00115	.00094	.00005	.00096	.00031	.02943	.00088	.00075	.00132
%RSD	34.830	.09785	3.8108	1.8660	36.395	35.677	7.9094	.22932	4.9880

#1	.00413	.95907	.00146	.05067	-.00106	-.10331	.01047	.32734	.02553
#2	.00250	.96040	.00138	.05202	-.00062	-.06168	.01171	.32840	.02740

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3832.4	44903.	3480.5
Stddev	8.8	852.	7.0
%RSD	.22974	1.8965	.20219

#1	3826.2	45505.	3485.4
#2	3838.6	44301.	3475.5

Sample Name: 280-123304-A-3-A Acquired: 5/14/2019 0:04:00 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 {74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02170	W 3.0546	.07789	.32431	.17042	.02246	.05073	33.560	.03211
Stddev	.00016	.0302	.00281	.00041	.00012	.00031	.00066	.150	.00001
%RSD	.75296	.99040	3.6130	.12502	.07315	1.3818	1.2979	.44745	.03088

#1	.02181	3.0332	.07988	.32403	.17033	.02224	.05026	33.453	.03211
#2	.02158	3.0760	.07590	.32460	.17051	.02268	.05119	33.666	.03212

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		500.00							
Low Limit		3.2000							

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 {44}	670.784 {50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03311	.08142	.08848	5.4159	94.101	.09220	14.240	F 62.051	.03986
Stddev	.00014	.00001	.00133	.0286	.400	.00316	.265	1.265	.00205
%RSD	.41581	.01832	1.5031	.52765	.42532	3.4283	1.8610	2.0387	5.1369

#1	.03301	.08141	.08942	5.3956	93.818	.09443	14.427	62.946	.03841
#2	.03321	.08143	.08754	5.4361	94.384	.08996	14.052	61.157	.04131

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit								20.000	
Low Limit								-.02000	

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 {41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	308.51	.04388	1.1781	.12718	F 552.88	.02228	.05963	2.3436	5.0153
Stddev	1.63	.00020	.0146	.00079	.78	.00142	.00309	.0258	.0552
%RSD	.52821	.45279	1.2368	.62115	.14115	6.3917	5.1739	1.1013	1.1013

#1	307.36	.04374	1.1678	.12774	552.33	.02328	.06181	2.3254	4.9762
#2	309.67	.04402	1.1884	.12662	553.43	.02127	.05745	2.3619	5.0544

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 {83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 {91}	292.402 {115}	206.200 {163}	339.198 {99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08674	.28789	.05931	.07890	.03159	.23987	.04331	.41624	.03147
Stddev	.00089	.00074	.00221	.00194	.00344	.03809	.00066	.00849	.00074
%RSD	1.0276	.25661	3.7229	2.4615	10.875	15.878	1.5196	2.0407	2.3428

#1	.08737	.28737	.06087	.08027	.02916	.21294	.04377	.42225	.03095
#2	.08611	.28841	.05775	.07753	.03402	.26680	.04284	.41023	.03199

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 {94}	377.433 {89}
Units	Cts/S	Cts/S	Cts/S
Avg	4949.2	56409.	4306.0
Stddev	11.8	1225.	23.4
%RSD	.23819	2.1717	.54320

#1	4940.8	55543.	4322.6
#2	4957.5	57275.	4289.5

Sample Name: 280-123304-A-4-A Acquired: 5/14/2019 0:06:32 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00461	4.3283	-.00043	.07291	.35980	.00035	.08415	54.786	.00344
Stddev	.00059	.0284	.00486	.00063	.00098	.00002	.00028	.129	.00006
%RSD	12.783	.65491	1133.5	.86400	.27257	5.5439	.33166	.23558	1.6517

#1	.00419	4.3083	.00301	.07336	.36050	.00033	.08435	54.877	.00348
#2	.00502	4.3484	-.00387	.07247	.35911	.00036	.08396	54.695	.00340

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01401	.10120	.75107	8.8274	W 370.02	.05586	24.426	1.2045	F 10.536
Stddev	.00033	.00097	.00089	.0277	.50	.00134	.059	.0202	.163
%RSD	2.3545	.95843	.11784	.31344	.13453	2.4019	.24298	1.6796	1.5449

#1	.01424	.10189	.75044	8.8469	369.67	.05491	24.384	1.1902	10.651
#2	.01377	.10052	.75170	8.8078	370.37	.05681	24.468	1.2188	10.421

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit					100.00				10.000
Low Limit					-6.0000				-.04000

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 6867.1	.03315	6.9003	.00906	F 788.92	-.00236	.01519	10.868	23.258
Stddev	20.0	.00007	.0937	.00157	7.67	.00138	.00274	.005	.011
%RSD	.29104	.19779	1.3574	17.317	.97236	58.420	18.010	.04753	.04753

#1	6881.2	.03311	6.9666	.00795	794.34	-.00138	.01326	10.872	23.266
#2	6853.0	.03320	6.8341	.01017	783.49	-.00333	.01712	10.865	23.251

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				200.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.06976	.31082	.00305	.08290	-.00572	F -.14760	F -.06068	.63794	.01074
Stddev	.00040	.00134	.00100	.00397	.00290	.06564	.00416	.00170	.00227
%RSD	.57181	.43266	32.870	4.7946	50.740	44.469	6.8627	.26652	21.110

#1	.07004	.31177	.00234	.08009	-.00367	-.10119	-.05774	.63674	.01234
#2	.06948	.30987	.00376	.08571	-.00778	-.19401	-.06363	.63914	.00914

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass
High Limit						20.000	10.000		
Low Limit						-.12000	-.02000		

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3417.5	38055.	3298.1
Stddev	13.4	22.	5.9
%RSD	.39144	.05800	.17786

#1	3408.0	38039.	3294.0
#2	3427.0	38071.	3302.3

Sample Name: 280-123304-B-5-A Acquired: 5/14/2019 0:09:03 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00138	.14857	-.00460	.17657	.02608	-.00005	-.00646	16.748	.01187
Stddev	.00088	.01517	.00174	.00079	.00001	.00014	.00286	.131	.00006
%RSD	63.684	10.210	37.824	.44770	.05007	273.55	44.352	.77930	.49409

#1	.00200	.13784	-.00584	.17713	.02609	.00005	-.00443	16.655	.01183
#2	.00076	.15929	-.00337	.17601	.02607	-.00015	-.00848	16.840	.01191

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00487	.07646	.49543	13.318	.01866	10.162	.25362	.11730
Stddev	.00008	.00032	.00064	.00308	.031	.00078	.100	.00287	.04364
%RSD	21.023	6.6733	.84054	.62210	.23189	4.1699	.98043	1.1335	37.206

#1	.00033	.00464	.07691	.49325	13.340	.01811	10.233	.25565	.08644
#2	.00044	.00510	.07600	.49760	13.296	.01921	10.092	.25159	.14816

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	73.559	.00652	2.2553	-.00281	39.280	-.00357	-.00145	1.2131	2.5961
Stddev	.017	.00041	.0032	.00023	1.157	.00018	.00101	.0277	.0592
%RSD	.02370	6.2519	.14169	8.1283	2.9463	5.1434	69.590	2.2822	2.2822

#1	73.572	.00623	2.2576	-.00297	38.461	-.00344	-.00216	1.1936	2.5542
#2	73.547	.00681	2.2530	-.00265	40.098	-.00370	-.00074	1.2327	2.6380

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.19994	.00189	.00358	-.00223	-.10527	.00227	.01623	-.00207
Stddev	.00167	.00129	.00152	.00016	.00105	.03200	.00044	.00041	.00434
%RSD	1671.6	.64432	80.562	4.3596	47.186	30.401	19.301	2.5469	209.72

#1	-.00108	.19903	.00297	.00347	-.00149	-.08264	.00196	.01652	-.00514
#2	.00128	.20085	.00081	.00369	-.00298	-.12790	.00258	.01593	.00100

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3902.8	45339.	3372.1
Stddev	9.2	638.	.2
%RSD	.23648	1.4081	.00657

#1	3909.4	44888.	3372.3
#2	3896.3	45791.	3372.0

Sample Name: 280-123304-A-6-A Acquired: 5/14/2019 0:11:34 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00128	1.6578	.00502	.32865	.16792	.00031	-.00809	52.998	.00044
Stddev	.00113	.0216	.00072	.00101	.00016	.00002	.00031	.194	.00011
%RSD	88.244	1.3029	14.258	.30643	.09774	5.4594	3.7700	.36696	25.079

#1	.00048	1.6731	.00553	.32936	.16803	.00030	-.00831	53.135	.00052
#2	.00208	1.6425	.00452	.32794	.16780	.00032	-.00788	52.860	.00036

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	.02688	.01001	9.9484	24.441	.01691	18.395	.37229	.00936
Stddev	.00038	.00006	.00007	.0216	.070	.00131	.032	.00010	.00177
%RSD	27.960	.20999	.70118	.21740	.28557	7.7534	.17315	.02613	18.937

#1	.00110	.02692	.01006	9.9637	24.490	.01784	18.417	.37236	.00811
#2	.00164	.02684	.00996	9.9331	24.392	.01599	18.372	.37222	.01061

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	79.172	.01296	11.948	-.00051	33.747	.00085	.00542	5.5711	11.922
Stddev	.097	.00005	.082	.00227	.167	.00179	.00225	.0263	.056
%RSD	.12203	.41503	.68430	442.82	.49524	211.35	41.391	.47169	.47169

#1	79.240	.01299	12.006	-.00212	33.865	.00212	.00384	5.5897	11.962
#2	79.104	.01292	11.890	.00109	33.629	-.00042	.00701	5.5525	11.882

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00242	.32641	.00333	.10481	-.00426	-.11556	.00440	.02783	-.00118
Stddev	.00013	.00044	.00070	.00033	.00030	.01396	.00065	.00063	.00041
%RSD	5.2499	.13627	21.112	.31705	7.0000	12.077	14.888	2.2741	35.081

#1	-.00233	.32673	.00382	.10505	-.00447	-.10569	.00486	.02738	-.00089
#2	-.00251	.32610	.00283	.10458	-.00405	-.12543	.00393	.02828	-.00147

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3963.7	45602.	3380.1
Stddev	41.2	223.	5.1
%RSD	1.0385	.48845	.15095

#1	3934.6	45445.	3376.5
#2	3992.8	45760.	3383.7

Sample Name: CCVH-5690583 Acquired: 5/14/2019 0:14:03 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00374	53.387	.00210	.00522	.00259	.00147	1.0477	.05688	.00113	.00271	.00167	.01679
Stddev	.00055	.099	.00264	.00007	.00054	.00001	.0138	.00353	.00018	.00003	.00022	.00072
%RSD	14.697	.18480	126.06	1.2913	20.775	.48885	1.3213	6.2125	15.597	.97101	12.957	4.2964

#1	.00413	53.318	.00397	.00517	.00221	.00147	1.0575	.05438	.00100	.00273	.00182	.01730
#2	.00335	53.457	.00023	.00526	.00297	.00148	1.0379	.05938	.00125	.00269	.00151	.01628

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	53.671	.89164	.00704	.02676	.00525	.00118	F 280.39	.00386	.04929	.00357	5.2802	.00375
Stddev	.104	.10367	.00074	.00339	.00009	.00054	.15	.00080	.03211	.00064	.0237	.00075
%RSD	.19340	11.627	10.563	12.658	1.6682	45.949	.05488	20.758	65.153	17.856	.44847	20.035

#1	53.744	.96495	.00757	.02436	.00519	.00080	280.50	.00330	.02658	.00312	5.2635	.00322
#2	53.597	.81833	.00652	.02915	.00531	.00156	280.28	.00443	.07199	.00402	5.2970	.00428

Check ?	Chk Pass	None	None	None	None	None	Chk Fail	None	None	None	Chk Pass	None
Value							250.00					
Range							10.490%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.05863	.12546	.00138	.00247	5.2465	-.01018	-.00017	10.754	.00602	.00417	.07905
Stddev	.00167	.00639	.01367	.00057	.00008	.0023	.00076	.00197	.080	.00070	.00019	.00102
%RSD	8154.6	10.893	10.893	41.238	3.0741	.04453	7.4269	1136.4	.74227	11.639	4.5564	1.2884

#1	-.00120	.06314	.13512	.00178	.00241	5.2449	-.00964	.00122	10.810	.00553	.00431	.07833
#2	.00116	.05411	.11580	.00097	.00252	5.2482	-.01071	-.00157	10.697	.00652	.00404	.07977

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3982.8	46098.	3406.9
Stddev	34.5	92.	20.8
%RSD	.86512	.19861	.60914

#1	3958.5	46033.	3421.6
#2	4007.2	46163.	3392.2

Sample Name: CCV-5690581 Acquired: 5/14/2019 0:16:32 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54944	F .82978	1.0547	.53119	F .56226	.53253	-.00107	F 5.5197	.54452	.54948	F .55623	.54323
Stddev	.00156	.10216	.0071	.00310	.00154	.00049	.00361	.0184	.00098	.00119	.00267	.00157
%RSD	.28321	12.312	.67352	.58449	.27302	.09194	337.57	.33360	.18044	.21627	.48050	.28957
#1	.54834	.75754	1.0597	.53339	.56335	.53288	-.00362	5.5327	.54522	.55032	.55812	.54434
#2	.55054	.90202	1.0497	.52899	.56118	.53218	.00148	5.5067	.54383	.54863	.55434	.54212
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass	None	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value		.50000			.50000			5.0000			.50000	
Range		10.000%			10.000%			10.000%			10.000%	
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 2.8694	F 57.923	F 1.1370	21.927	.54331	F .55351	F 7.5921	F .55093	F 1.1113	1.0954	.09294	1.0550
Stddev	.0052	.071	.0042	.032	.00111	.00257	.0700	.00036	.0029	.0008	.00600	.0022
%RSD	.18208	.12238	.36679	.14550	.20421	.46454	.92181	.06479	.25797	.06855	6.4552	.20334
#1	2.8657	57.973	1.1399	21.950	.54409	.55533	7.6416	.55068	1.1093	1.0949	.09718	1.0535
#2	2.8731	57.873	1.1340	21.905	.54252	.55169	7.5426	.55119	1.1134	1.0959	.08870	1.0565
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass	None	Chk Pass
Value	2.5000	50.000	1.0000			.50000	5.0000	.50000	1.0000			
Range	10.000%	10.000%	10.000%			10.000%	10.000%	10.000%	10.000%			
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0629	5.3785	11.510	F 1.1021	.54538	.01077	.54007	F 1.1048	-.06311	.54020	.54716	.54817
Stddev	.0017	.0153	.033	.0036	.00057	.00103	.00077	.0065	.05823	.00153	.00130	.00447
%RSD	.15887	.28422	.28422	.32363	.10378	9.5971	.14326	.59174	92.266	.28235	.23779	.81505
#1	1.0641	5.3894	11.533	1.1046	.54578	.01004	.54062	1.1094	-.10428	.54128	.54808	.54501
#2	1.0617	5.3677	11.487	1.0996	.54498	.01150	.53953	1.1001	-.02193	.53912	.54624	.55133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	None	Chk Pass	Chk Fail	None	Chk Pass	Chk Pass	Chk Pass
Value				1.0000				1.0000				
Range				10.000%				10.000%				
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3971.3	46511.	3390.9									
Stddev	30.0	134.	14.5									
%RSD	.75650	.28818	.42692									
#1	3992.5	46417.	3380.7									
#2	3950.1	46606.	3401.2									

Sample Name: CCB Acquired: 5/14/2019 0:18:53 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoadesc Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00217	.00388	.00404	.00223	-.00044	.00037	-.00357	.00030	W .00236	.00276	W .00297	.00040
Stddev	.00007	.00399	.00118	.00051	.00032	.00016	.00268	.00110	.00204	.00192	.00247	.00000
%RSD	3.0332	102.95	29.282	22.740	70.845	43.072	75.119	361.99	86.164	69.585	82.973	.33626
#1	.00221	.00106	.00320	.00187	-.00022	.00026	-.00167	.00108	.00092	.00140	.00123	.00040
#2	.00212	.00670	.00487	.00259	-.00067	.00048	-.00546	-.00047	.00381	.00412	.00471	.00040
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Warn	Chk Pass
High Limit	.00200								.00180		.00260	
Low Limit	-.01000								-.00180		-.00260	
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00915	.42973	.00145	.01656	W .00102	.00547	F 1.3139	.00238	.00031	.00340	.04671	F .01227
Stddev	.00359	.11295	.00480	.00283	.00014	.00265	.0240	.00250	.00300	.00207	.00358	.00318
%RSD	39.271	26.283	329.79	17.109	13.653	48.507	1.8252	105.25	968.25	60.750	7.6645	25.895
#1	.00661	.34986	-.00194	.01455	.00092	.00359	1.3309	.00061	-.00181	.00194	.04418	.01002
#2	.01169	.50960	.00485	.01856	.00112	.00734	1.2970	.00415	.00243	.00486	.04924	.01452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit					.00100		.50000					.01200
Low Limit					-.01000		-.50000					-.01200
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W .00943	.03252	.06959	.00371	.00056	.00056	-.00059	.00127	-.09244	.00060	.00048	.00037
Stddev	.00202	.01986	.04250	.00461	.00018	.00143	.00020	.00173	.06222	.00050	.00000	.00129
%RSD	21.404	61.069	61.069	124.30	31.522	255.45	33.410	136.45	67.309	84.529	.15408	346.01
#1	.00800	.04656	.09965	.00045	.00044	.00157	-.00073	.00004	-.04844	.00024	.00048	-.00054
#2	.01085	.01848	.03954	.00696	.00069	-.00045	-.00045	.00249	-.13644	.00095	.00048	.00129
Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.00750											
Low Limit	-.01500											
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4178.4	47804.	3452.6									
Stddev	73.9	431.	3.4									
%RSD	1.7686	.90057	.09970									
#1	4126.1	47500.	3455.0									
#2	4230.6	48108.	3450.2									

Sample Name: CCVL-5699390 Acquired: 5/14/2019 0:21:28 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00123	F -.00034	F -.00304	F -.00134	F -.00018	F -.00008	F -.00701	F -.00058	F .00024	F -.00007	F -.00007	F .00070
Stddev	.00034	.00094	.00652	.00077	.00015	.00022	.00284	.00046	.00007	.00028	.00003	.00100
%RSD	27.991	275.31	214.26	57.076	87.606	287.33	40.534	78.288	27.555	421.62	37.290	142.65
#1	.00099	-.00101	-.00765	-.00080	-.00007	.00008	-.00500	-.00026	.00029	.00013	-.00009	.0014
#2	.00147	.00032	.00157	-.00189	-.00028	-.00023	-.00902	-.00090	.00019	-.00027	-.00005	-.00001
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.01000	.10000	.01500	.10000	.01000	.00100	.10000	.20000	.00500	.01000	.01000	.01500
Range	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .01990	F .31318	F .00142	F -.00216	F .00069	F .00056	1.1333	F .00016	F -.00517	F -.00081	F .04591	F -.00162
Stddev	.00155	.09200	.00101	.00001	.00009	.00060	.0123	.00013	.00024	.00190	.00655	.00192
%RSD	7.7802	29.375	71.282	.30343	13.577	108.05	1.0888	79.375	4.6636	234.26	14.271	118.97
#1	.02100	.24813	.00070	-.00217	.00062	.00013	1.1246	.00025	-.00500	.00053	.05055	-.00026
#2	.01881	.37823	.00213	-.00216	.00076	.00099	1.1420	.00007	-.00534	-.00215	.04128	-.00298
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.10000	3.0000	.02000	.20000	.01000	.02000		.04000	3.0000	.00900	.10000	.02000
Range	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%		-30.000%	-30.000%	-30.000%	-30.000%	-30.000%
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00295	F .02758	F .05903	F -.00107	F -.00000	F .00320	F -.00107	F -.00356	F -.05462	F -.00026	F -.00030	F -.00364
Stddev	.00221	.02570	.05501	.00055	.00016	.00188	.00093	.00065	.07009	.00023	.00012	.00008
%RSD	74.936	93.180	93.180	51.792	4271.2	58.785	87.050	18.404	128.32	88.336	38.629	2.2212
#1	.00138	.04576	.09793	-.00068	-.00012	.00187	-.00173	-.00402	-.00506	-.00042	-.00038	-.00358
#2	.00451	.00941	.02014	-.00146	.00011	.00452	-.00041	-.00310	-.10418	-.00010	-.00022	-.00369
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.02000	.50000	1.0700	.10000	.01000	.01500	.01000	.01500	.06000	.01000	.02000	.01500
Range	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4127.3	48037.	3462.8									
Stddev	38.8	110.	9.5									
%RSD	.93982	.22990	.27347									
#1	4154.7	47959.	3469.5									
#2	4099.8	48115.	3456.1									

Sample Name: 280-123304-A-7-A Acquired: 5/14/2019 0:24:06 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00237	3.5340	.02074	1.2469	.26505	.00005	-.00813	131.77	.02606
Stddev	.00039	.0050	.00063	.0046	.00084	.00011	.00075	.17	.00008
%RSD	16.343	.14192	3.0372	.36708	.31621	222.34	9.2328	.13195	.29177

#1	.00265	3.5304	.02119	1.2501	.26445	.00012	-.00866	131.65	.02611
#2	.00210	3.5375	.02030	1.2436	.26564	-.00003	-.00760	131.89	.02600

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	271.441 {124}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01200	.06009	.14591	73.771	W 106.00	.05077	74.020	3.4434	.02919
Stddev	.00035	.00077	.00024	.159	.50	.00299	.068	.0017	.00095
%RSD	2.8853	1.2890	.16644	.21551	.47098	5.8959	.09209	.04879	3.2464

#1	.01225	.06064	.14574	73.659	105.65	.05288	73.972	3.4422	.02986
#2	.01176	.05954	.14609	73.884	106.35	.04865	74.068	3.4446	.02852

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					100.00				
Low Limit					-6.0000				

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 577.92	.09387	1.6834	.01091	F 492.68	.00206	-.00420	15.539	33.254
Stddev	3.43	.00070	.0088	.00096	1.98	.00082	.00020	.149	.318
%RSD	.59427	.74276	.52028	8.7934	.40100	39.662	4.8702	.95647	.95647

#1	575.49	.09437	1.6896	.01023	494.08	.00263	-.00435	15.434	33.030
#2	580.35	.09338	1.6772	.01158	491.29	.00148	-.00406	15.645	33.479

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				200.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03091	1.2069	-.00127	.09984	-.00282	-.06786	.02254	.46839	.01062
Stddev	.00239	.0031	.00160	.00010	.00254	.00843	.00021	.00315	.00087
%RSD	7.7452	.25294	125.95	.10223	90.205	12.421	.91522	.67206	8.1933

#1	.03260	1.2047	-.00014	.09992	-.00462	-.06190	.02269	.46617	.01123
#2	.02922	1.2090	-.00241	.09977	-.00102	-.07382	.02240	.47062	.01000

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3866.1	44132.	3413.9
Stddev	50.7	85.	7.3
%RSD	1.3111	.19149	.21414

#1	3830.3	44191.	3419.1
#2	3901.9	44072.	3408.7

Sample Name: 280-123304-A-8-A Acquired: 5/14/2019 0:26:35 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00253	9.7719	.01739	.89871	.38716	.00114	-.01138	145.62	.01509
Stddev	.00040	.0813	.00237	.00047	.00038	.00008	.00391	.31	.00010
%RSD	15.751	.83237	13.606	.05209	.09775	7.2516	34.367	.21235	.65005

#1	.00281	9.8294	.01571	.89904	.38743	.00120	-.01415	145.84	.01502
#2	.00225	9.7143	.01906	.89838	.38689	.00108	-.00862	145.40	.01516

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	271.441 {124}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01585	.08202	.21939	171.12	32.443	.05661	43.519	2.6906	.08889
Stddev	.00009	.00088	.00034	.05	.016	.00545	.120	.0063	.00007
%RSD	.54230	1.0682	.15663	.02742	.04940	9.6274	.27516	.23359	.07508

#1	.01579	.08264	.21915	171.15	32.432	.06046	43.604	2.6951	.08884
#2	.01591	.08140	.21964	171.09	32.454	.05276	43.435	2.6862	.08893

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 645.60	.08878	5.6540	.01900	F 612.59	.00383	-.00058	27.167	58.138
Stddev	.17	.00024	.0438	.00091	2.66	.00014	.00245	.029	.062
%RSD	.02676	.27477	.77534	4.7897	.43341	3.7739	423.02	.10714	.10714

#1	645.72	.08896	5.6850	.01964	614.46	.00373	.00116	27.188	58.182
#2	645.48	.08861	5.6230	.01835	610.71	.00394	-.00232	27.147	58.094

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				200.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.11804	1.1587	-.00203	.28863	-.00606	-.07963	.03689	.65915	.03000
Stddev	.00071	.0015	.00229	.00107	.00107	.01034	.00039	.00234	.00341
%RSD	.59851	.12591	112.79	.37101	17.681	12.988	1.0500	.35428	11.358

#1	.11754	1.1577	-.00041	.28787	-.00682	-.08694	.03662	.66081	.03241
#2	.11854	1.1598	-.00365	.28938	-.00530	-.07231	.03717	.65750	.02759

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3879.1	44331.	3429.3
Stddev	13.8	383.	8.0
%RSD	.35648	.86491	.23375

#1	3869.4	44060.	3435.0
#2	3888.9	44602.	3423.6

Sample Name: 280-123304-A-9-A Acquired: 5/14/2019 0:29:04 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05252	6.5179	.11982	1.6509	.71002	.00043	-.00629	110.99	.01339
Stddev	.00036	.0770	.00027	.0052	.00450	.00032	.00379	.71	.00002
%RSD	.68510	1.1811	.22454	.31672	.63315	73.914	60.251	.63641	.12143

#1	.05227	6.4635	.12001	1.6546	.71320	.00021	-.00361	111.49	.01340
#2	.05278	6.5724	.11963	1.6472	.70684	.00066	-.00897	110.49	.01337

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	271.441 {124}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01799	.12948	.85637	132.70	45.816	.08924	45.739	1.1068	.10545
Stddev	.00031	.00032	.00443	.19	.131	.00193	.057	.0011	.00038
%RSD	1.7483	.24957	.51690	.14205	.28676	2.1607	.12471	.10114	.36500

#1	.01777	.12971	.85950	132.83	45.909	.08788	45.780	1.1076	.10573
#2	.01821	.12925	.85324	132.57	45.723	.09061	45.699	1.1060	.10518

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 546.47	.07308	10.187	.05794	F 410.64	.00688	.00373	24.916	53.321
Stddev	.57	.00015	.062	.00009	1.47	.00022	.00195	.121	.260
%RSD	.10445	.20933	.60854	.15245	.35908	3.1763	52.239	.48752	.48752

#1	546.87	.07298	10.231	.05788	411.68	.00704	.00511	25.002	53.504
#2	546.06	.07319	10.144	.05801	409.60	.00673	.00235	24.830	53.137

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				200.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20378	1.5889	-.00353	.34437	-.00176	.02730	.04241	.55113	.02532
Stddev	.00070	.0055	.00201	.00003	.00204	.04145	.00048	.00203	.00092
%RSD	.34328	.34412	57.070	.00997	115.58	151.82	1.1363	.36744	3.6149

#1	.20328	1.5928	-.00495	.34440	-.00032	.05661	.04275	.55256	.02467
#2	.20427	1.5850	-.00210	.34435	-.00321	-.00201	.04207	.54970	.02596

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3939.9	45933.	3575.6
Stddev	40.2	19.	58.4
%RSD	1.0209	.04178	1.6331

#1	3968.4	45920.	3534.3
#2	3911.5	45947.	3616.9

Sample Name: 280-123304-A-10-A Acquired: 5/14/2019 0:31:33 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	4.3834	.06539	7.8706	1.0748	.00033	-0.00866	118.83	.00202
Stddev	.00011	.0327	.00831	.0587	.0007	.00006	.00093	.14	.00028
%RSD	3.6027	.74696	12.703	.74646	.06864	17.896	10.770	.11825	13.978

#1	.00304	4.3602	.05951	7.9121	1.0753	.00037	-.00800	118.93	.00182
#2	.00320	4.4065	.07126	7.8290	1.0743	.00029	-.00932	118.73	.00222

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	271.441 {124}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01203	.09115	.11713	50.336	F 1253.6	.36651	114.78	.91764	.01199
Stddev	.00007	.00027	.00114	.164	1.2	.00772	.45	.00520	.00009
%RSD	.59127	.30090	.97687	.32672	.09968	2.1071	.39307	.56681	.74119

#1	.01208	.09135	.11794	50.220	1252.7	.36105	115.10	.92132	.01193
#2	.01198	.09096	.11632	50.453	1254.5	.37197	114.46	.91396	.01205

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					500.00				
Low Limit					-6.0000				

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 3444.9	.06429	8.7139	.00644	F 664.63	.02182	.00123	19.586	41.915
Stddev	7.5	.00071	.0420	.00308	4.40	.00322	.00340	.091	.194
%RSD	.21834	1.1119	.48227	47.777	.66181	14.772	276.87	.46295	.46295

#1	3439.5	.06479	8.7436	.00427	667.74	.02410	-.00118	19.522	41.778
#2	3450.2	.06378	8.6842	.00862	661.52	.01954	.00364	19.651	42.052

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				200.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03607	2.0617	.00513	.17639	-0.00265	F -.18982	.06892	.28026	.02208
Stddev	.00212	.0049	.00087	.00037	.00333	.02404	.00021	.00058	.00264
%RSD	5.8702	.23723	16.893	.21009	125.40	12.664	.29832	.20621	11.949

#1	.03458	2.0583	.00575	.17665	-.00501	-.17282	.06877	.28067	.02021
#2	.03757	2.0652	.00452	.17613	-.00030	-.20682	.06906	.27985	.02394

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3651.2	40145.	3355.5
Stddev	9.5	366.	19.9
%RSD	.26066	.91240	.59373

#1	3644.5	39886.	3369.6
#2	3658.0	40404.	3341.4

Sample Name: 280-123304-A-11-A Acquired: 5/14/2019 0:34:04 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00161	14.751	.10610	2.9208	.62098	.00064	-.00743	328.30	.00667
Stddev	.00009	.027	.00830	.0225	.00020	.00014	.00239	.14	.00024
%RSD	5.6118	.18491	7.8203	.77144	.03203	22.210	32.190	.04139	3.5525

#1	.00168	14.770	.11197	2.9049	.62084	.00054	-.00574	328.40	.00684
#2	.00155	14.732	.10023	2.9368	.62112	.00074	-.00912	328.21	.00650

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	271.441 {124}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01348	.23587	.36920	186.41	W 242.96	.26139	264.38	1.5346	.06113
Stddev	.00073	.00036	.00108	.03	.69	.00136	.95	.0042	.00030
%RSD	5.3924	.15073	.29282	.01461	.28339	.52127	.36049	.27181	.48295

#1	.01400	.23612	.36997	186.39	242.48	.26043	265.05	1.5375	.06092
#2	.01297	.23562	.36844	186.43	243.45	.26236	263.70	1.5316	.06134

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					100.00				
Low Limit					-6.0000				

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2650.8	.09575	13.554	.06842	F 470.95	.00627	.00071	35.143	75.207
Stddev	.1	.00002	.032	.00166	2.85	.00058	.00260	.098	.210
%RSD	.00505	.02275	.23558	2.4306	.60533	9.3269	367.57	.27891	.27891

#1	2650.9	.09574	13.531	.06959	468.94	.00585	-.00113	35.213	75.355
#2	2650.7	.09577	13.576	.06724	472.97	.00668	.00255	35.074	75.058

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				200.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05745	5.0133	-.00369	.24462	-.00582	-.03586	.13145	.87687	.03825
Stddev	.00109	.0024	.00156	.00137	.00025	.02578	.00048	.00441	.00006
%RSD	1.8961	.04797	42.264	.56066	4.2973	71.873	.36412	.50313	.16274

#1	.05822	5.0150	-.00258	.24559	-.00564	-.01764	.13179	.87998	.03821
#2	.05668	5.0116	-.00479	.24365	-.00600	-.05409	.13112	.87375	.03830

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4064.4	45485.	3675.4
Stddev	18.1	189.	6.9
%RSD	.44570	.41557	.18768

#1	4051.6	45351.	3680.3
#2	4077.2	45619.	3670.5

Sample Name: 280-123304-A-12-A Acquired: 5/14/2019 0:36:39 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 {74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	374.53	.16769	5.0305	4.3973	.01568	-0.0906	F 1102.2	.01382
Stddev	.00053	2.61	.00425	.0368	.0044	.00029	.00326	9.2	.00023
%RSD	113.59	.69609	2.5316	.73190	.09985	1.8656	35.984	.83286	1.6775
#1	.00009	376.38	.16469	5.0566	4.4004	.01589	-.01137	1108.7	.01398
#2	.00083	372.69	.17069	5.0045	4.3942	.01547	-.00676	1095.7	.01365
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit								1000.0	
Low Limit								-40000	
Elem	Co2286	Cr2055	Cu3247	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	271.441 {124}	766.490 {44}	670.784 {50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09379	.35591	.88949	238.24	W 106.52	.35624	W 500.88	5.7217	.10798
Stddev	.00235	.00377	.00400	2.32	.12	.00005	.17	.0276	.00142
%RSD	2.5030	1.0587	.45002	.97406	.11211	.01265	.03334	.48311	1.3147
#1	.09545	.35857	.89232	239.88	106.44	.35627	501.00	5.7021	.10898
#2	.09213	.35324	.88666	236.60	106.61	.35621	500.76	5.7412	.10698
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Warn	Chk Pass	Chk Pass
High Limit					100.00		500.00		
Low Limit					-6.0000		-40000		
Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 {41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 1640.7	.34301	W 40.168	.13393	F 558.56	-0.00115	.09642	F 252.66	W 540.69
Stddev	10.7	.00365	.424	.00349	3.56	.00133	.00033	3.21	6.87
%RSD	.65207	1.0629	1.0562	2.6052	.63680	116.12	.34507	1.2708	1.2708
#1	1648.3	.34559	40.468	.13640	561.08	-.00209	.09666	254.93	545.55
#2	1633.2	.34043	39.868	.13146	556.05	-.00021	.09619	250.39	535.83
Check ?	Chk Warn	Chk Pass	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Warn
High Limit	500.00		20.000		200.00			200.00	107.00
Low Limit	11.000		-6.0000		-20000			-1.0000	-21400
Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 {83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 {91}	292.402 {115}	206.200 {163}	339.198 {99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04301	W 18.425	.09574	F 23.840	-0.00165	.15718	.89008	.98672	.29018
Stddev	.00161	.137	.00028	.008	.00688	.04080	.00642	.00368	.00217
%RSD	3.7457	.74307	.29174	.03263	417.12	25.955	.72092	.37275	.74704
#1	.04415	18.521	.09555	23.846	-.00651	.12833	.89461	.98932	.29172
#2	.04188	18.328	.09594	23.835	.00322	.18603	.88554	.98412	.28865
Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		10.000		10.000					
Low Limit		-.02000		-.02000					
Int. Std.	Y_2243	Y_3600	Y_3774						
Line	224.306 {450}	360.073 {94}	377.433 {89}						
Units	Cts/S	Cts/S	Cts/S						
Avg	5007.6	57439.	4931.3						
Stddev	42.8	272.	53.9						
%RSD	.85504	.47376	1.0937						
#1	4977.4	57247.	4893.2						
#2	5037.9	57632.	4969.4						

Sample Name: 280-123304-A-13-A Acquired: 5/14/2019 0:39:33 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00195	82.849	.11660	1.0642	.48479	.01393	-.01211	233.67	.00289
Stddev	.00029	.081	.00245	.0222	.00147	.00011	.00081	.22	.00004
%RSD	14.930	.09771	2.1047	2.0832	.30300	.82381	6.6512	.09260	1.4015

#1	-.00215	82.792	.11486	1.0485	.48583	.01401	-.01268	233.82	.00286
#2	-.00174	82.906	.11833	1.0798	.48375	.01385	-.01154	233.52	.00292

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	271.441 {124}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05636	.07997	.23033	150.29	49.969	.16266	W 623.35	3.8430	.47632
Stddev	.00072	.00226	.00161	.14	.833	.00370	4.82	.0115	.00084
%RSD	1.2794	2.8209	.70009	.09060	1.6675	2.2723	.77322	.29926	.17726

#1	.05585	.07837	.23147	150.39	49.380	.16005	626.76	3.8511	.47691
#2	.05687	.08156	.22919	150.20	50.558	.16527	619.94	3.8348	.47572

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass
High Limit							500.00		
Low Limit							-4.0000		

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 3449.7	.75070	2.9812	.00555	F 683.54	-.01122	.00729	W 79.825	170.82
Stddev	3.2	.00089	.2233	.00329	2.24	.00016	.00078	.090	.19
%RSD	.09370	.11920	7.4910	59.279	.32831	1.4423	10.678	.11270	.11270

#1	3447.4	.75007	2.8233	.00323	681.95	-.01110	.00784	79.761	170.69
#2	3452.0	.75133	3.1391	.00788	685.12	-.01133	.00674	79.888	170.96

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit	500.00				200.00			50.000	
Low Limit	11.000				-20000			-1.0000	

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00594	2.8944	-.00878	.07938	-.00365	.02213	.26035	.68798	.13716
Stddev	.00129	.0029	.00580	.01102	.00204	.03010	.00006	.00261	.00116
%RSD	21.672	.10119	66.097	13.877	55.817	136.01	.02368	.37902	.84326

#1	.00684	2.8965	-.00468	.07159	-.00509	.00085	.26031	.68982	.13634
#2	.00503	2.8923	-.01288	.08717	-.00221	.04341	.26040	.68613	.13797

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4994.3	56109.	4849.6
Stddev	17.1	243.	48.2
%RSD	.34329	.43261	.99409

#1	4982.1	55937.	4883.7
#2	5006.4	56280.	4815.5

Sample Name: 280-123304-A-14-A Acquired: 5/14/2019 0:42:07 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	7.9123	.93951	4.0439	.54437	.00630	-.00562	F 1527.7	.00480
Stddev	.00059	.0097	.00936	.0270	.00274	.00007	.00328	15.7	.00013
%RSD	52.860	.12278	.99607	.66698	.50269	1.1131	58.432	1.0300	2.7257
#1	.00070	7.9055	.94612	4.0629	.54630	.00635	-.00794	1516.6	.00489
#2	.00154	7.9192	.93289	4.0248	.54243	.00625	-.00330	1538.8	.00470
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit								1000.0	
Low Limit								-.40000	
Elem	Co2286	Cr2055	Cu3247	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	271.441 {124}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03073	.87234	.10625	66.750	93.387	.41601	W 580.10	2.8001	.50157
Stddev	.00071	.01266	.00232	.095	.706	.00144	3.32	.0067	.00234
%RSD	2.3150	1.4514	2.1807	.14259	.75625	.34565	.57305	.24024	.46642
#1	.03023	.88129	.10461	66.817	92.888	.41500	577.75	2.7953	.50322
#2	.03123	.86338	.10789	66.683	93.887	.41703	582.45	2.8048	.49992
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass
High Limit							500.00		
Low Limit							-.40000		
Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 4710.4	1.0553	F 129.79	.01088	F 377.83	-.00081	.03365	W 56.651	121.23
Stddev	17.5	.0056	1.56	.00194	1.24	.00227	.00091	.228	.49
%RSD	.37142	.52549	1.2007	17.857	.32753	281.47	2.7002	.40182	.40182
#1	4722.8	1.0593	130.89	.01226	376.95	-.00241	.03429	56.812	121.58
#2	4698.1	1.0514	128.68	.00951	378.70	.00080	.03301	56.490	120.89
Check ?	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit	500.00		50.000		200.00			50.000	
Low Limit	11.000		-6.0000		-.20000			-1.0000	
Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00115	F 31.193	-.00713	.07280	-.00833	.04738	.18344	5.0066	.05848
Stddev	.00029	.009	.00162	.00226	.00088	.05032	.00031	.0151	.00383
%RSD	24.873	.02960	22.643	3.1075	10.597	106.21	.16861	.30142	6.5490
#1	-.00135	31.199	-.00828	.07120	-.00771	.01180	.18365	4.9960	.06118
#2	-.00094	31.186	-.00599	.07440	-.00896	.08297	.18322	5.0173	.05577
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		20.000							
Low Limit		-.02000							
Int. Std.	Y_2243	Y_3600	Y_3774						
Line	224.306 {450}	360.073 { 94}	377.433 { 89}						
Units	Cts/S	Cts/S	Cts/S						
Avg	3699.6	44341.	3929.4						
Stddev	4.5	152.	1.0						
%RSD	.12134	.34312	.02667						
#1	3702.7	44448.	3928.7						
#2	3696.4	44233.	3930.2						

Sample Name: 280-123304-A-15-A Acquired: 5/14/2019 0:44:52 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	1.2307	.01488	1.7312	.30750	.00008	-.00095	170.43	.00070
Stddev	.00005	.0375	.00455	.0104	.00053	.00015	.00270	.47	.00033
%RSD	4.3747	3.0483	30.573	.59809	.17288	186.12	285.25	.27519	46.906

#1	.00111	1.2042	.01166	1.7385	.30788	-.00003	.00096	170.10	.00093
#2	.00118	1.2572	.01810	1.7238	.30713	.00018	-.00286	170.76	.00047

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00452	.10433	.02316	9.8893	43.404	.11783	82.891	.67117	.24179
Stddev	.00055	.00295	.00063	.0081	.516	.00060	.230	.00193	.00084
%RSD	12.252	2.8227	2.7058	.08155	1.1883	.51107	.27807	.28703	.34695

#1	.00413	.10225	.02361	9.8836	43.040	.11826	83.054	.67253	.24238
#2	.00491	.10642	.02272	9.8950	43.769	.11741	82.728	.66981	.24120

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 3440.2	.16656	9.8052	.00063	F 271.62	-.00442	.00966	11.965	25.605
Stddev	10.4	.00243	.4546	.00240	2.39	.00259	.00211	.149	.319
%RSD	.30189	1.4562	4.6360	380.33	.87865	58.528	21.823	1.2440	1.2440

#1	3432.8	.16484	9.4837	-.00107	273.31	-.00625	.01115	11.860	25.379
#2	3447.5	.16827	10.127	.00233	269.93	-.00259	.00817	12.070	25.830

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				200.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	2.3516	.00136	.01822	-.00458	-.10472	.03133	.05914	.00962
Stddev	.00012	.0110	.00134	.00070	.00314	.02769	.00111	.00153	.00004
%RSD	15.499	.46635	98.379	3.8319	68.730	26.438	3.5443	2.5918	.42067

#1	-.00088	2.3439	.00041	.01871	-.00235	-.08514	.03212	.05806	.00959
#2	-.00070	2.3594	.00231	.01772	-.00680	-.12430	.03055	.06023	.00965

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3865.8	44454.	3706.9
Stddev	23.1	139.	10.2
%RSD	.59848	.31353	.27473

#1	3849.4	44355.	3714.1
#2	3882.2	44553.	3699.7

Sample Name: 280-123304-A-16-A Acquired: 5/14/2019 0:47:24 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00207	2.0889	.01069	1.9723	1.2400	.00006	-.00372	96.538	.00098
Stddev	.00002	.0057	.00080	.0025	.0041	.00005	.00043	.377	.00016
%RSD	.73869	.27500	7.4448	.12533	.32798	89.828	11.677	.39013	15.885

#1	.00206	2.0848	.01013	1.9706	1.2372	.00002	-.00403	96.272	.00109
#2	.00208	2.0929	.01125	1.9741	1.2429	.00010	-.00341	96.805	.00087

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00388	.03234	.07060	8.3975	20.998	.03472	30.460	.49155	.38711
Stddev	.00002	.00067	.00139	.0423	.045	.00460	.034	.00066	.00000
%RSD	.56426	2.0653	1.9694	.50316	.21212	13.240	.11103	.13448	.00024

#1	.00387	.03187	.06961	8.3677	21.029	.03147	30.484	.49201	.38711
#2	.00390	.03281	.07158	8.4274	20.966	.03797	30.436	.49108	.38711

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	169.70	.06072	2.1216	.15829	F 1133.7	.00267	.07678	10.856	23.232
Stddev	.30	.00042	.0346	.00094	1.4	.00157	.00334	.017	.036
%RSD	.17468	.69981	1.6310	.59588	.12334	58.905	4.3539	.15582	.15582

#1	169.49	.06042	2.0971	.15762	1134.7	.00156	.07915	10.868	23.258
#2	169.91	.06102	2.1460	.15896	1132.7	.00378	.07442	10.844	23.207

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03811	.70820	.00330	.11173	-.00232	-.07126	.06342	.89931	.00691
Stddev	.00053	.00201	.00013	.00034	.00153	.02153	.00041	.00359	.00038
%RSD	1.3888	.28356	4.0378	.30516	65.818	30.218	.64003	.39881	5.4312

#1	.03849	.70678	.00340	.11197	-.00124	-.05604	.06313	.90185	.00717
#2	.03774	.70962	.00321	.11149	-.00340	-.08649	.06371	.89677	.00664

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4273.5	49238.	3605.7
Stddev	10.1	458.	46.3
%RSD	.23564	.93052	1.2829

#1	4280.6	48914.	3638.4
#2	4266.3	49562.	3573.0

Sample Name: CCVH-5690583 Acquired: 5/14/2019 0:49:50 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoadesc Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00375	49.143	-.00331	.02810	.00274	.00146	.99558	.13636	.00093	.00257	.00158	.01499
Stddev	.00062	.092	.00004	.00459	.00007	.00002	.00230	.01322	.00017	.00000	.00031	.00042
%RSD	16.513	.18788	1.1687	16.340	2.6595	1.4520	.23108	9.6922	18.170	.16479	19.429	2.7743

#1	.00331	49.208	-.00333	.02485	.00269	.00145	.99721	.12702	.00081	.00257	.00136	.01469
#2	.00418	49.077	-.00328	.03135	.00279	.00148	.99395	.14571	.00105	.00257	.00179	.01528

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	49.511	1.2272	.00648	.07073	.00501	.00481	262.08	.00455	.01862	.00507	F 10.373	.00497
Stddev	.225	.0344	.00085	.01052	.00012	.00175	.60	.00031	.00630	.00126	3.747	.00340
%RSD	.45497	2.8030	13.185	14.874	2.3263	36.374	.22964	6.7340	33.842	24.813	36.120	68.362

#1	49.671	1.2515	.00587	.06329	.00493	.00357	262.50	.00433	.01416	.00418	7.7238	.00257
#2	49.352	1.2029	.00708	.07816	.00509	.00604	261.65	.00476	.02307	.00595	13.023	.00737

Check ?	Chk Pass	None	None	None	None	None	Chk Pass	None	None	None	Chk Fail	None
Value											5.0000	
Range											10.490%	

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00472	.11658	.24948	.00063	.00321	4.9348	-.00891	.00156	10.081	.00528	.00578	.07192
Stddev	.00103	.00891	.01906	.00017	.00007	.0261	.00007	.00011	.013	.00092	.00107	.00308
%RSD	21.903	7.6405	7.6405	26.614	2.3160	.52895	.75492	6.7670	.13109	17.363	18.537	4.2782

#1	.00399	.11028	.23600	.00075	.00316	4.9164	-.00896	.00149	10.090	.00463	.00502	.07409
#2	.00545	.12288	.26296	.00052	.00327	4.9533	-.00886	.00164	10.072	.00593	.00654	.06974

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4222.6	48936.	3641.3
Stddev	11.2	97.	22.8
%RSD	.26540	.19887	.62654

#1	4214.7	49005.	3657.4
#2	4230.5	48867.	3625.1

Sample Name: CCV-5690581 Acquired: 5/14/2019 0:52:19 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49473	F .87459	.97343	.49374	.49996	.47551	.00180	4.9921	.49250	.49819	.50203	.48636
Stddev	.00242	.15479	.00647	.00021	.00093	.00039	.00264	.0332	.00058	.00121	.00121	.00018
%RSD	.48831	17.699	.66435	.04298	.18618	.08115	146.97	.66428	.11719	.24284	.24194	.03661

#1	.49644	.76513	.96886	.49359	.50062	.47524	-.00007	4.9686	.49291	.49905	.50289	.48624
#2	.49302	.98404	.97801	.49389	.49930	.47579	.00366	5.0155	.49209	.49734	.50117	.48649

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.5588	52.398	1.0220	19.948	.49407	.49935	F 8.2888	.50033	1.0281	.99141	.37855	.95374
Stddev	.0019	.182	.0003	.001	.00038	.00163	.0510	.00090	.0010	.00644	.07860	.00287
%RSD	.07513	.34815	.02650	.00465	.07740	.32682	.61505	.18080	.09746	.64909	20.764	.30118

#1	2.5574	52.269	1.0218	19.948	.49434	.50051	8.2527	.50097	1.0274	.99596	.32297	.95578
#2	2.5601	52.527	1.0222	19.949	.49380	.49820	8.3248	.49969	1.0288	.98686	.43414	.95171

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97222	4.8737	10.430	.99568	.49154	.01050	.49012	1.0005	-.05830	.48962	.50033	.48993
Stddev	.00327	.0389	.083	.00228	.00130	.00136	.00119	.0018	.00560	.00223	.00007	.00558
%RSD	.33605	.79848	.79848	.22853	.26514	12.994	.24341	.17443	9.6100	.45503	.01393	1.1392

#1	.96991	4.8462	10.371	.99729	.49061	.00954	.49096	.99922	-.06227	.49120	.50038	.49388
#2	.97453	4.9013	10.489	.99407	.49246	.01147	.48927	1.0017	-.05434	.48805	.50028	.48599

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4326.7	50313.	3669.6
Stddev	13.7	237.	17.3
%RSD	.31588	.47162	.47258

#1	4336.4	50146.	3657.3
#2	4317.1	50481.	3681.8

Sample Name: CCB Acquired: 5/14/2019 0:54:41 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoadesc Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00235	.04769	-.00083	.01115	-.00014	.00020	.00046	.07211	W .00212	.00200	.00250	.00022
Stddev	.00092	.01627	.00092	.00107	.00007	.00001	.00000	.01786	.00138	.00179	.00194	.00012
%RSD	39.040	34.105	110.83	9.5611	51.634	5.1986	.71155	24.767	64.962	89.702	77.612	54.762
#1	.00170	.03619	-.00018	.01040	-.00019	.00020	.00047	.05948	.00115	.00073	.00113	.00031
#2	.00300	.05919	-.00149	.01191	-.00009	.00019	.00046	.08474	.00309	.00327	.00387	.00014
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass
High Limit	.00200								.00180			
Low Limit	-.01000								-.00180			
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03099	.59066	.00135	W .06844	.00095	.00471	F 2.4144	.00235	.01384	.00007	F .26949	W .01121
Stddev	.00210	.03704	.00056	.00939	.00008	.00250	.0227	.00157	.00962	.00304	.06315	.00306
%RSD	6.7803	6.2711	41.296	13.724	8.5292	53.097	.94185	66.635	69.488	4483.1	23.431	27.274
#1	.02950	.56447	.00174	.06180	.00089	.00294	2.3983	.00124	.00704	-.00208	.22484	.00905
#2	.03247	.61685	.00096	.07508	.00101	.00647	2.4304	.00346	.02064	.00221	.31414	.01338
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Warn
High Limit				.04000			.50000				.10000	.00600
Low Limit				-.04000			-.50000				-.20000	-.00600
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00723	.09106	W .19487	.00312	W .00158	.00346	.00034	.00225	-.08983	-.00066	.00006	-.00059
Stddev	.00783	.01565	.03348	.00389	.00016	.00241	.00057	.00342	.03456	.00020	.00055	.00094
%RSD	108.22	17.183	17.183	124.53	10.476	69.546	165.70	151.94	38.477	29.871	917.04	160.89
#1	.00170	.07999	.17119	.00037	.00146	.00176	-.00006	-.00017	-.06539	-.00052	-.00033	.00008
#2	.01277	.10212	.21854	.00587	.00169	.00516	.00075	.00467	-.11427	-.00080	.00045	-.00125
Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			.13000		.00120							
Low Limit			-.13000		-.00120							
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4255.4	49601.	3541.7									
Stddev	12.9	108.	9.8									
%RSD	.30410	.21699	.27711									
#1	4246.2	49525.	3548.6									
#2	4264.6	49677.	3534.7									

Sample Name: CCVL-5699390 Acquired: 5/14/2019 0:57:18 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00080	F .01940	F -.00381	F .00705	F -.00029	F .00008	F -.00487	F .03367	F .00003	F -.00012	F -.00004	F .00125
Stddev	.00092	.00383	.00130	.00029	.00011	.00013	.00213	.00501	.00011	.00028	.00026	.00012
%RSD	115.30	19.738	34.083	4.0666	39.138	168.79	43.851	14.882	378.61	241.49	735.38	9.2162
#1	.00145	.01669	-.00289	.00725	-.00037	-.00002	-.00637	.03013	.00010	.00008	-.00022	.00111
#2	.00015	.02210	-.00473	.00684	-.00021	.00017	-.00336	.03721	-.00005	-.00031	.00015	.00133
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.01000	.10000	.01500	.10000	.01000	.00100	.10000	.20000	.00500	.01000	.01000	.01500
Range	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .31011	F .33663	F -.00017	F .02935	F .00216	F .00022	F 1.9889	F .00053	F .00166	F -.00108	F .14802	F .00089
Stddev	.00303	.06045	.00078	.00013	.00001	.00001	.0035	.00052	.00179	.00113	.01795	.00036
%RSD	.97596	17.956	453.43	.44599	.50525	6.3823	.17695	97.761	107.85	104.97	12.129	40.290
#1	.30797	.37937	-.00072	.02925	.00216	.00021	1.9913	.00090	.00039	-.00188	.13533	.00063
#2	.31225	.29389	.00038	.02944	.00217	.00023	1.9864	.00016	.00292	-.00028	.16071	.00114
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.10000	3.0000	.02000	.20000	.01000	.02000	1.0000	.04000	3.0000	.00900	.10000	.02000
Range	30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	30.000%	-30.000%	-30.000%	-30.000%	30.000%	-30.000%
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.00051	F .08755	F .18735	F -.00187	F .00079	F .00322	F -.00046	F -.00279	F -.07444	F -.00025	F .00113	F -.00266
Stddev	.00725	.00206	.00441	.00020	.00018	.00142	.00025	.00110	.01823	.00051	.00020	.00239
%RSD	1430.8	2.3561	2.3561	10.769	23.398	44.075	54.354	39.555	24.493	201.91	17.936	89.924
#1	.00462	.08609	.18423	-.00173	.00066	.00423	-.00028	-.00201	-.06155	.00011	.00128	-.00435
#2	-.00563	.08900	.19047	-.00202	.00092	.00222	-.00063	-.00357	-.08733	-.00061	.00099	-.00097
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.02000	.50000	1.0700	.10000	.01000	.01500	.01000	.01500	.06000	.01000	.02000	.01500
Range	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%	-30.000%
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4171.6	49099.	3559.2									
Stddev	2.9	329.	1.5									
%RSD	.07012	.67059	.04234									
#1	4169.5	49332.	3560.2									
#2	4173.6	48866.	3558.1									

Sample Name: MB 280-457045/1-A Acquired: 5/14/2019 0:59:53 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/7 Custom ID2: Custom ID3:
Comment: 457045 200.7

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	.01882	-.00721	.00573	F .01952	.00016	-.00343	.07496	.00006
Stddev	.00050	.00227	.00534	.00026	.00006	.00002	.00123	.00662	.00028
%RSD	51.894	12.044	74.112	4.6015	.32330	11.281	35.760	8.8274	455.95
#1	.00133	.01721	-.00343	.00554	.01957	.00015	-.00256	.07028	.00026
#2	.00061	.02042	-.01098	.00592	.01948	.00017	-.00429	.07964	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					.01000				
Low Limit					-.01000				
Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00006	.00031	F .25428	.40777	.00171	.02963	.00165	.00003
Stddev	.00014	.00011	.00063	.00539	.10421	.00564	.00460	.00002	.00009
%RSD	1323.2	171.56	206.16	2.1184	25.556	330.14	15.530	1.3279	298.57
#1	.00011	.00014	-.00014	.25809	.48145	.00570	.03289	.00166	.00009
#2	-.00009	-.00001	.00075	.25047	.33408	-.00228	.02638	.00163	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit				.10000					
Low Limit				-.10000					
Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.8637	-.00017	.00223	-.00185	F .13140	.00186	.00378	.06443	.13787
Stddev	.0016	.00037	.00025	.00077	.01438	.00590	.00475	.00804	.01720
%RSD	.08754	224.20	10.988	41.422	10.944	317.00	125.57	12.472	12.472
#1	1.8625	-.00043	.00206	-.00239	.12123	-.00231	.00042	.05874	.12571
#2	1.8648	.00010	.00241	-.00131	.14156	.00603	.00714	.07011	.15003
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None
High Limit	1.0000				.10000				
Low Limit	-1.0000				-.10000				
Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00147	.00116	.00203	.00006	-.00265	-.04321	.00014	.00080	.00011
Stddev	.00118	.00014	.00125	.00018	.00233	.02744	.00062	.00001	.00062
%RSD	80.330	12.075	61.352	288.33	87.848	63.519	428.02	1.7412	552.28
#1	-.00064	.00126	.00291	-.00006	-.00100	-.06261	-.00029	.00081	.00055
#2	-.00231	.00106	.00115	.00019	-.00430	-.02380	.00058	.00079	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									
Int. Std.	Y_2243	Y_3600	Y_3774						
Line	224.306 {450}	360.073 { 94}	377.433 { 89}						
Units	Cts/S	Cts/S	Cts/S						
Avg	4202.0	47358.	3413.6						
Stddev	55.1	165.	11.2						
%RSD	1.3114	.34799	.32738						
#1	4163.0	47474.	3405.7						
#2	4241.0	47241.	3421.5						

Sample Name: LCS 280-457045/2-A Acquired: 5/14/2019 1:02:28 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457045 200.7

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05352	F 10.192	F 1.9606	.96791	2.0286	F .96377	1.9936	49.314	F .98620
Stddev	.00054	.076	.0096	.00217	.0050	.00281	.0001	.176	.00205
%RSD	1.0072	.74772	.49173	.22429	.24695	.29168	.00564	.35773	.20737
#1	.05314	10.246	1.9674	.96945	2.0251	.96178	1.9937	49.190	.98764
#2	.05390	10.138	1.9538	.96638	2.0322	.96576	1.9935	49.439	.98475
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Fail	None	Chk Pass	Chk Fail
High Limit		2.2250	1.1050			.05650			.11100
Low Limit		1.7300	.87500			.04450			.08800
Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .96354	F .99548	F .96484	F 9.6649	53.837	1.0373	49.841	F .99195	1.0026
Stddev	.00125	.00128	.00323	.0590	.212	.0021	.047	.00007	.0005
%RSD	.12983	.12901	.33495	.61030	.39429	.20490	.09466	.00717	.04996
#1	.96442	.99639	.96712	9.6232	53.687	1.0358	49.875	.99190	1.0029
#2	.96266	.99458	.96255	9.7066	53.988	1.0388	49.808	.99200	1.0022
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit	.55500	.22000	.28000	1.1500				.55000	
Low Limit	.44500	.18000	.21500	.89000				.45000	
Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	52.593	F .96405	F 20.674	F .96975	9.4315	F .99243	1.9456	F 2.0334	4.3514
Stddev	.722	.00048	.045	.00301	.0054	.00035	.0029	.0327	.0700
%RSD	1.3735	.05016	.21552	.31047	.05699	.03478	.14862	1.6080	1.6080
#1	52.082	.96439	20.705	.97188	9.4277	.99267	1.9477	2.0103	4.3019
#2	53.104	.96371	20.642	.96762	9.4353	.99218	1.9436	2.0565	4.4009
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Fail	None	Chk Fail	Chk Pass	Chk Fail	None
High Limit		.55500	11.100	.55000		.55499		11.000	
Low Limit		.44500	9.1000	.44500		.44000		9.0000	
Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.9820	.99268	1.0001	1.0019	1.9336	2.0471	F 1.0001	.49986	.50945
Stddev	.0042	.00329	.0018	.0001	.0080	.0115	.0029	.00009	.00381
%RSD	.21220	.33186	.18318	.01228	.41483	.56249	.29087	.01775	.74774
#1	1.9790	.99035	1.0014	1.0018	1.9393	2.0552	1.0022	.49980	.50676
#2	1.9850	.99501	.99877	1.0020	1.9280	2.0389	.99807	.49992	.51214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit							.55500		
Low Limit							.45000		
Int. Std.	Y_2243	Y_3600	Y_3774						
Line	224.306 {450}	360.073 { 94}	377.433 { 89}						
Units	Cts/S	Cts/S	Cts/S						
Avg	4196.4	48511.	3604.2						
Stddev	12.7	30.	2.4						
%RSD	.30158	.06246	.06590						
#1	4205.3	48533.	3605.9						
#2	4187.4	48490.	3602.5						

Sample Name: 280-123236-A-1-A@5 Acquired: 5/14/2019 1:04:45 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457045 200.7

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.06622	.00902	.08768	.00349	.00059	.00771	92.368	.00410
Stddev	.00030	.04324	.01172	.00241	.00010	.00009	.00723	.142	.00308
%RSD	53.871	65.306	129.91	2.7507	2.9201	15.770	93.761	.15372	75.036

#1	.00076	.03564	.00073	.08597	.00356	.00053	.00260	92.468	.00193
#2	.00034	.09679	.01731	.08939	.00342	.00066	.01283	92.267	.00628

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00393	.00495	.00090	.25205	4.3778	.05463	44.689	.04716	.00835
Stddev	.00290	.00354	.00020	.00176	.0576	.00304	.004	.00021	.00470
%RSD	73.840	71.384	21.620	.69906	1.3160	5.5572	.00788	.43633	56.369

#1	.00188	.00245	.00077	.25330	4.4186	.05678	44.692	.04701	.00502
#2	.00598	.00745	.00104	.25081	4.3371	.05249	44.687	.04730	.01167

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.591	.00509	.07345	.00170	123.07	-.00050	.00905	.69259	1.4821
Stddev	.516	.00308	.05932	.00355	.42	.00347	.00521	.00759	.0162
%RSD	2.0156	60.472	80.762	209.39	.34109	692.05	57.524	1.0959	1.0959

#1	25.955	.00291	.03150	-.00081	122.77	-.00295	.00537	.69796	1.4936
#2	25.226	.00726	.11539	.00421	123.36	.00195	.01273	.68722	1.4707

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00666	2.3693	.00447	.00133	.01200	-.09515	.00052	.00474	-.00065
Stddev	.00546	.0019	.00034	.00068	.01047	.05208	.00029	.00035	.00341
%RSD	81.862	.08034	7.5210	51.636	87.268	54.738	55.737	7.3583	527.25

#1	.00281	2.3707	.00424	.00084	.00459	-.05832	.00031	.00449	-.00306
#2	.01052	2.3680	.00471	.00181	.01940	-.13197	.00072	.00498	.00176

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4195.3	48442.	3600.1
Stddev	16.5	94.	20.8
%RSD	.39346	.19345	.57808

#1	4207.0	48509.	3585.4
#2	4183.6	48376.	3614.8

Sample Name: 280-123238-B-1-D Acquired: 5/14/2019 1:07:19 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457045 200.7

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00087	1.2238	-.00031	.09590	.07591	.00012	-.00295	65.852	.00016
Stddev	.00006	.0029	.00145	.00073	.00043	.00017	.00330	.047	.00008
%RSD	6.4998	.23395	467.08	.75996	.56926	143.77	111.64	.07111	48.649

#1	.00091	1.2258	.00072	.09539	.07561	-.00000	-.00062	65.819	.00022
#2	.00083	1.2218	-.00134	.09642	.07622	.00023	-.00528	65.885	.00011

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00149	.00707	1.1404	6.1839	.02733	15.490	.13877	.00694
Stddev	.00005	.00017	.00083	.0004	.0130	.00071	.005	.00022	.00040
%RSD	9.2418	11.386	11.757	.03719	.21062	2.5941	.03363	.16020	5.7682

#1	.00048	.00137	.00765	1.1401	6.1747	.02682	15.494	.13861	.00665
#2	.00055	.00161	.00648	1.1407	6.1931	.02783	15.486	.13892	.00722

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	77.243	.00129	.46194	.00046	35.848	-.00469	.00290	5.9897	12.818
Stddev	.451	.00022	.00094	.00019	.160	.00103	.00290	.0237	.051
%RSD	.58368	17.303	.20354	41.006	.44676	21.938	99.977	.39590	.39590

#1	76.924	.00113	.46261	.00033	35.735	-.00396	.00085	5.9730	12.782
#2	77.562	.00145	.46128	.00060	35.961	-.00542	.00495	6.0065	12.854

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.54704	.00140	.03635	-.00190	-.03530	.00282	.02390	.00352
Stddev	.00074	.00128	.00026	.00006	.00002	.00366	.00043	.00024	.00285
%RSD	161.22	.23351	18.478	.16841	.83332	10.372	15.422	.98394	80.802

#1	-.00006	.54613	.00158	.03639	-.00192	-.03789	.00251	.02374	.00553
#2	.00099	.54794	.00122	.03631	-.00189	-.03271	.00313	.02407	.00151

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4316.9	50457.	3780.2
Stddev	46.8	17.	14.0
%RSD	1.0848	.03289	.37111

#1	4350.0	50446.	3790.2
#2	4283.8	50469.	3770.3

Sample Name: 280-123238-B-1-Dsd@5 Acquired: 5/14/2019 1:09:53 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457045 200.7

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.30706	.00026	.02355	.01568	.00014	-.00152	14.067	-.00002
Stddev	.00094	.00489	.00056	.00057	.00023	.00001	.00134	.003	.00019
%RSD	113.82	1.5934	213.30	2.4296	1.4388	5.5794	87.872	.01942	942.36

#1	.00149	.30360	.00066	.02314	.01552	.00013	-.00246	14.065	-.00016
#2	.00016	.31052	-.00013	.02395	.01584	.00014	-.00058	14.069	.00012

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.00204	.02273	1.9887	1.5099	.00647	3.3741	.04083	.00154
Stddev	.00038	.00030	.00100	.0016	.0202	.00144	.0009	.00007	.00021
%RSD	82.693	14.940	4.3953	.08147	1.3407	22.263	.02619	.18058	13.544

#1	.00019	.00225	.02203	1.9898	1.5242	.00545	3.3748	.04088	.00139
#2	.00073	.00182	.02344	1.9875	1.4956	.00749	3.3735	.04078	.00168

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	15.897	.00137	.09557	-.00044	7.5093	-.00115	-.00016	1.3615	2.9136
Stddev	.506	.00050	.00271	.00091	.0255	.00244	.00068	.0386	.0826
%RSD	3.1824	36.386	2.8347	206.83	.33901	212.53	417.74	2.8346	2.8346

#1	15.539	.00173	.09366	-.00108	7.4913	.00058	-.00064	1.3342	2.8552
#2	16.254	.00102	.09749	.00020	7.5273	-.00287	.00032	1.3888	2.9720

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	.11690	.00220	.00777	-.00411	-.05611	-.00038	.00943	-.00036
Stddev	.00053	.00040	.00217	.00011	.00045	.00463	.00034	.00122	.00128
%RSD	84.918	.34484	98.913	1.3999	10.863	8.2519	87.743	12.915	358.82

#1	-.00025	.11661	.00066	.00770	-.00379	-.05283	-.00015	.00857	-.00126
#2	-.00100	.11718	.00374	.00785	-.00442	-.05938	-.00062	.01029	.00055

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4157.1	48509.	3552.4
Stddev	49.8	110.	20.3
%RSD	1.1979	.22775	.57272

#1	4192.3	48587.	3538.0
#2	4121.9	48430.	3566.8

Sample Name: 280-123238-B-1-E MS Acquired: 5/14/2019 1:12:27 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457045 200.7

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05697	12.675	2.0860	1.1208	2.2164	W 1.0228	W 2.0819	127.94	1.0422
Stddev	.00045	.038	.0119	.0052	.0152	.0066	.0047	1.00	.0057
%RSD	.79183	.29891	.57177	.45962	.68546	.64059	.22436	.77781	.55183

#1	.05665	12.702	2.0944	1.1245	2.2271	1.0275	2.0852	128.65	1.0463
#2	.05729	12.648	2.0775	1.1172	2.2056	1.0182	2.0786	127.24	1.0382

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Warn	Chk Pass	Chk Pass
High Limit						1.0000	2.0000		
Low Limit						-.00200	-.20000		

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0115	1.0504	1.0261	11.675	64.767	1.1318	70.560	1.2018	1.0692
Stddev	.0062	.0068	.0064	.074	.500	.0011	.125	.0014	.0028
%RSD	.61038	.64328	.62004	.63735	.77173	.09983	.17749	.11791	.26365

#1	1.0159	1.0552	1.0216	11.728	65.121	1.1326	70.471	1.2008	1.0712
#2	1.0071	1.0456	1.0306	11.623	64.414	1.1310	70.649	1.2028	1.0672

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	144.60	1.0097	W 22.726	1.0136	50.636	1.0556	2.0489	10.849	23.216
Stddev	.38	.0035	.111	.0085	.056	.0105	.0005	.148	.317
%RSD	.26444	.34831	.48924	.83523	.11041	.99187	.02236	1.3665	1.3665

#1	144.87	1.0122	22.805	1.0196	50.676	1.0630	2.0492	10.953	23.440
#2	144.32	1.0072	22.647	1.0076	50.597	1.0482	2.0485	10.744	22.992

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.0811	1.6815	1.0570	1.1072	1.9824	2.0909	1.0637	.55303	.49048
Stddev	.0102	.0097	.0050	.0012	.0056	.0034	.0001	.00315	.00582
%RSD	.48917	.57875	.47313	.10677	.28076	.16183	.00996	.56870	1.1856

#1	2.0883	1.6884	1.0534	1.1063	1.9863	2.0933	1.0638	.55081	.49460
#2	2.0739	1.6746	1.0605	1.1080	1.9785	2.0886	1.0636	.55526	.48637

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000								
Low Limit	-.20000								

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3916.2	44833.	3354.1
Stddev	35.8	195.	33.7
%RSD	.91390	.43496	1.0042

#1	3890.9	44971.	3330.3
#2	3941.5	44695.	3378.0

Sample Name: 280-123238-B-1-F MSD Acquired: 5/14/2019 1:14:44 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457045 200.7

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05770	12.867	2.1459	1.1513	2.2761	W 1.0499	W 2.1270	129.50	1.0666
Stddev	.00026	.065	.0005	.0035	.0065	.0027	.0103	.44	.0046
%RSD	.44965	.50673	.02244	.30740	.28544	.25678	.48469	.33868	.42959

#1	.05751	12.913	2.1456	1.1538	2.2807	1.0518	2.1342	129.81	1.0698
#2	.05788	12.821	2.1463	1.1488	2.2715	1.0480	2.1197	129.19	1.0633

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Warn	Chk Pass	Chk Pass
High Limit						1.0000	2.0000		
Low Limit						-.00200	-.20000		

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0319	1.0719	1.0583	11.786	65.715	1.1647	71.473	1.2285	1.0952
Stddev	.0041	.0026	.0075	.004	.194	.0030	.094	.0017	.0030
%RSD	.39787	.24251	.71225	.03497	.29488	.25797	.13203	.13473	.27401

#1	1.0348	1.0738	1.0637	11.789	65.852	1.1669	71.540	1.2297	1.0973
#2	1.0290	1.0701	1.0530	11.783	65.578	1.1626	71.406	1.2273	1.0930

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	146.22	1.0319	W 23.069	1.0304	51.331	1.0821	2.1081	11.041	23.628
Stddev	.72	.0037	.129	.0035	.269	.0031	.0130	.022	.047
%RSD	.49578	.36101	.55937	.33848	.52374	.28709	.61444	.19709	.19709

#1	145.71	1.0345	23.161	1.0329	51.521	1.0843	2.1172	11.057	23.661
#2	146.74	1.0292	22.978	1.0279	51.140	1.0799	2.0989	11.026	23.595

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2.1244	1.7163	1.0841	1.1321	2.0300	2.1574	1.0925	.56255	.49471
Stddev	.0048	.0025	.0055	.0004	.0051	.0121	.0048	.00179	.00564
%RSD	.22730	.14746	.50927	.03982	.25304	.56060	.44326	.31866	1.1407

#1	2.1278	1.7181	1.0880	1.1318	2.0336	2.1488	1.0959	.56382	.49870
#2	2.1209	1.7145	1.0802	1.1324	2.0264	2.1659	1.0891	.56128	.49072

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	2.0000								
Low Limit	-.20000								

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3920.6	45149.	3399.0
Stddev	21.9	120.	.7
%RSD	.55741	.26598	.02066

#1	3905.2	45234.	3399.5
#2	3936.1	45065.	3398.5

Sample Name: CCVH-5690583 Acquired: 5/14/2019 1:17:00 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00380	52.550	.00134	.01276	.00263	.00183	1.0325	.09469	.00493	.00703	.00636	.01876	52.050
Stddev	.00027	.218	.00134	.00139	.00014	.00030	.0062	.00479	.00321	.00306	.00339	.00000	.007
%RSD	7.0925	.41450	100.29	10.883	5.4347	16.133	.60091	5.0591	65.120	43.505	53.354	.02049	.01268

#1	.00399	52.704	.00039	.01178	.00253	.00162	1.0368	.09130	.00266	.00487	.00396	.01876	52.045
#2	.00361	52.396	.00229	.01374	.00273	.00204	1.0281	.09807	.00721	.00919	.00876	.01875	52.055

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.68747	.00453	.06306	.00533	.00986	276.11	.00826	.08778	.00633	5.2346	.01549	.00989	.05602
Stddev	.00550	.00375	.00800	.00010	.00439	.76	.00350	.06019	.00368	.1056	.00525	.00656	.03524
%RSD	.80054	82.738	12.693	1.9513	44.491	.27502	42.397	68.567	58.138	2.0169	33.874	66.370	62.905

#1	.69136	.00188	.05740	.00526	.00676	276.65	.00579	.04522	.00373	5.1599	.01178	.00525	.03110
#2	.68358	.00719	.06872	.00541	.01297	275.57	.01074	.13034	.00893	5.3092	.01920	.01453	.08094

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.11988	.01224	.00310	5.2065	-.00988	.01735	10.624	.00635	.00567	.07486
Stddev	.07541	.00651	.00025	.0157	.00074	.00792	.008	.00057	.00029	.00049
%RSD	62.905	53.219	7.9970	.30146	7.5258	45.633	.07846	8.9520	5.1041	.65672

#1	.06656	.00763	.00327	5.2176	-.01040	.01175	10.630	.00595	.00547	.07452
#2	.17321	.01684	.00292	5.1954	-.00935	.02295	10.618	.00675	.00588	.07521

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3986.5	45463.	3338.1
Stddev	12.7	130.	32.0
%RSD	.31769	.28494	.95760

#1	3977.6	45371.	3315.5
#2	3995.5	45554.	3360.7

Sample Name: CCV-5690581 Acquired: 5/14/2019 1:19:30 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50053	F .84909	.98266	.49102	.50865	.48532	.00170	4.9821	.49830	.50479	.50581	.49154
Stddev	.00460	.13191	.00526	.00225	.00045	.00069	.00299	.0287	.00036	.00070	.00002	.00197
%RSD	.91917	15.535	.53505	.45824	.08782	.14313	175.77	.57638	.07252	.13875	.00430	.39985

#1	.50378	.75582	.98638	.48943	.50897	.48483	-.00041	4.9618	.49855	.50528	.50583	.49015
#2	.49728	.94236	.97895	.49262	.50834	.48581	.00382	5.0024	.49804	.50429	.50580	.49293

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.4838	53.201	1.0471	20.259	.50334	.50363	F 6.6119	.50642	1.0253	1.0037	.06304	.97089
Stddev	.0177	.129	.0043	.061	.00168	.00086	.0024	.00040	.0004	.0022	.00773	.00677
%RSD	.71304	.24321	.41246	.30269	.33319	.17167	.03551	.07982	.04365	.21718	12.257	.69697

#1	2.4712	53.109	1.0440	20.302	.50453	.50424	6.6102	.50671	1.0256	1.0021	.05758	.97568
#2	2.4963	53.292	1.0501	20.215	.50215	.50302	6.6136	.50614	1.0250	1.0052	.06850	.96611

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98331	4.9025	10.491	.99731	.50083	.00958	.50304	1.0079	-.02893	.50004	.51359	.49841
Stddev	.00656	.0027	.006	.00019	.00093	.00086	.00251	.0025	.01566	.00194	.00110	.00192
%RSD	.66696	.05485	.05485	.01866	.18573	8.9857	.49981	.24777	54.133	.38820	.21461	.38580

#1	.97867	4.9044	10.495	.99718	.50149	.00898	.50481	1.0097	-.01786	.50141	.51282	.49977
#2	.98794	4.9006	10.487	.99744	.50017	.01019	.50126	1.0062	-.04001	.49866	.51437	.49705

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4204.4	48858.	3553.0
Stddev	7.0	48.	1.0
%RSD	.16634	.09881	.02820

#1	4209.4	48824.	3552.3
#2	4199.5	48892.	3553.8

Sample Name: CCB Acquired: 5/14/2019 1:21:52 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.01726	.00165	.00598	-.00019	.00040	-.00173	.02535	W .00204	.00225	W .00280	.00111
Stddev	.00110	.00547	.00291	.00037	.00011	.00015	.00042	.00531	.00170	.00175	.00255	.00010
%RSD	143.53	31.662	176.94	6.2454	60.812	38.596	24.454	20.952	83.317	77.520	91.407	8.7291
#1	-.00001	.01340	-.00041	.00572	-.00027	.00051	-.00203	.02910	.00084	.00102	.00099	.00104
#2	.00154	.02113	.00370	.00625	-.00011	.00029	-.00143	.02159	.00325	.00349	.00460	.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Warn	Chk Pass
High Limit									.00180		.00260	
Low Limit									-.00180		-.00260	
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01060	.31788	W .00594	.02505	.00059	.00450	F 1.0066	.00202	.00406	.00184	.04442	W .00952
Stddev	.00401	.04045	.00371	.00385	.00017	.00235	.0090	.00104	.00019	.00386	.00215	.00735
%RSD	37.841	12.725	62.417	15.384	28.612	52.206	.89627	51.783	4.7901	209.38	4.8338	77.175
#1	.01344	.34648	.00332	.02778	.00047	.00284	1.0130	.00128	.00392	-.00089	.04291	.00432
#2	.00777	.28927	.00856	.02233	.00071	.00616	1.0002	.00276	.00419	.00457	.04594	.01471
Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit			.00500				.50000					.00600
Low Limit			-.01000				-.50000					-.00600
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00454	.02873	.06149	.00479	.00053	.00228	-.00012	.00195	-.08076	.00060	.00107	-.00281
Stddev	.00047	.01250	.02676	.00423	.00020	.00300	.00013	.00122	.04327	.00052	.00038	.00027
%RSD	10.261	43.512	43.512	88.137	36.825	131.40	115.21	62.619	53.575	86.527	35.210	9.4699
#1	.00421	.01989	.04257	.00181	.00039	.00016	-.00002	.00109	-.11136	.00023	.00080	-.00299
#2	.00486	.03757	.08041	.00778	.00067	.00441	-.00021	.00282	-.05017	.00096	.00133	-.00262
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4148.3	47328.	3375.5									
Stddev	3.7	869.	33.1									
%RSD	.08917	1.8362	.98209									
#1	4145.7	46713.	3352.0									
#2	4150.9	47942.	3398.9									

Sample Name: CCVL-5699390 Acquired: 5/14/2019 1:24:27 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01029	F .13027	.01426	.10214	.00961	.00118	.10560	.22879	.00541	.01093	.01049	.01656
Stddev	.00009	.00054	.00342	.00122	.00007	.00010	.00407	.00076	.00036	.00020	.00031	.00003
%RSD	.91485	.41361	24.002	1.1952	.76973	8.2210	3.8514	.33103	6.7078	1.8192	2.9335	.16158
#1	.01022	.13065	.01668	.10301	.00956	.00125	.10273	.22825	.00515	.01079	.01027	.01658
#2	.01035	.12989	.01184	.10128	.00966	.00111	.10848	.22932	.00567	.01107	.01071	.01654
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.10000										
Range		30.000%										
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.11410	3.5531	.02334	.21656	.01072	.02050	F 1.9771	.04193	2.9748	.00761	.12556	.02031
Stddev	.00054	.0562	.00525	.00030	.00007	.00012	.0014	.00028	.0180	.00215	.00325	.00068
%RSD	.47386	1.5830	22.479	.14053	.67716	.57637	.06921	.66919	.60600	28.222	2.5920	3.3243
#1	.11372	3.5133	.02705	.21634	.01067	.02059	1.9761	.04173	2.9875	.00913	.12326	.02078
#2	.11449	3.5929	.01963	.21677	.01077	.02042	1.9781	.04212	2.9620	.00609	.12786	.01983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							1.0000					
Range							30.000%					
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02460	.56838	1.2163	.10033	.01066	.01662	.00988	.01424	F .01680	.00954	.02223	.01251
Stddev	.00468	.05182	.1109	.00197	.00036	.00140	.00034	.00303	.01014	.00070	.00094	.00024
%RSD	19.045	9.1179	9.1179	1.9674	3.3708	8.4475	3.4377	21.273	60.362	7.3456	4.2203	1.9429
#1	.02791	.60503	1.2948	.10172	.01091	.01563	.01012	.01639	.00963	.01003	.02289	.01268
#2	.02128	.53173	1.1379	.09893	.01040	.01761	.00964	.01210	.02397	.00904	.02157	.01234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value									.06000			
Range									-30.000%			
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4030.9	46362.	3331.0									
Stddev	2.7	157.	11.1									
%RSD	.06604	.33817	.33390									
#1	4029.1	46251.	3323.2									
#2	4032.8	46473.	3338.9									

Sample Name: 280-123238-B-2-B Acquired: 5/14/2019 1:26:59 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457045 200.7

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	1.3622	-.00126	.11333	.08937	.00025	-.00389	81.305	.00055
Stddev	.00034	.0108	.00035	.00121	.00017	.00008	.00045	.376	.00018
%RSD	40.579	.78971	27.656	1.0678	.18479	30.866	11.515	.46278	31.997

#1	.00060	1.3698	-.00101	.11419	.08925	.00020	-.00421	81.571	.00043
#2	.00109	1.3546	-.00151	.11248	.08949	.00031	-.00358	81.039	.00067

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	.00179	.00922	1.3602	7.2464	.03458	18.960	.20878	.00780
Stddev	.00012	.00019	.00076	.0206	.0270	.00228	.058	.00009	.00017
%RSD	17.417	10.827	8.2891	1.5130	.37313	6.6017	.30462	.04480	2.2352

#1	.00059	.00192	.00976	1.3747	7.2655	.03619	19.001	.20871	.00768
#2	.00075	.00165	.00868	1.3456	7.2272	.03296	18.920	.20884	.00793

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	93.508	.00249	.50917	-.00107	43.060	-.00007	.00407	7.0847	15.161
Stddev	.093	.00088	.00529	.00059	.285	.00490	.00032	.0468	.100
%RSD	.09905	35.492	1.0390	54.505	.66141	6607.7	7.8591	.66082	.66082

#1	93.574	.00186	.50543	-.00149	43.261	-.00354	.00385	7.1178	15.232
#2	93.443	.00311	.51291	-.00066	42.858	.00339	.00430	7.0516	15.090

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.68330	.00365	.03756	-.00402	-.06908	.00375	.03067	-.00206
Stddev	.00137	.00275	.00162	.00106	.00289	.04337	.00104	.00023	.00253
%RSD	2587.2	.40275	44.399	2.8148	71.870	62.775	27.710	.75089	122.76

#1	-.00102	.68524	.00250	.03831	-.00198	-.03842	.00448	.03083	-.00385
#2	.00092	.68135	.00479	.03681	-.00607	-.09975	.00301	.03051	-.00027

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3739.9	42978.	3181.2
Stddev	23.1	378.	34.6
%RSD	.61729	.87956	1.0871

#1	3723.6	43246.	3156.8
#2	3756.2	42711.	3205.7

Sample Name: 280-123238-B-3-B Acquired: 5/14/2019 1:29:30 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457045 200.7

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	1.2121	-.00105	.08680	.07727	.00023	-.00518	73.717	.00054
Stddev	.00015	.0016	.00032	.00033	.00087	.00010	.00306	.554	.00020
%RSD	17.157	.12860	29.955	.38088	1.1298	44.997	59.055	.75118	36.181

#1	.00100	1.2132	-.00128	.08704	.07665	.00016	-.00302	73.326	.00040
#2	.00078	1.2110	-.00083	.08657	.07789	.00030	-.00734	74.109	.00068

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00122	.00671	1.1364	5.7283	.03400	17.407	.16049	.00681
Stddev	.00031	.00027	.00037	.0090	.0997	.00053	.160	.00159	.00048
%RSD	61.653	22.170	5.5719	.79016	1.7411	1.5578	.92042	.99159	6.9979

#1	.00073	.00141	.00645	1.1301	5.6578	.03363	17.294	.15937	.00648
#2	.00029	.00103	.00698	1.1428	5.7988	.03438	17.520	.16162	.00715

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	79.574	.00141	.34168	-.00159	40.264	.00025	-.00011	5.9754	12.787
Stddev	1.040	.00022	.00640	.00162	.154	.00174	.00124	.0289	.062
%RSD	1.3068	15.802	1.8723	102.34	.38170	687.41	1139.4	.48311	.48311

#1	78.839	.00156	.33716	-.00273	40.373	.00148	.00077	5.9958	12.831
#2	80.309	.00125	.34621	-.00044	40.155	-.00098	-.00098	5.9550	12.744

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00109	.64743	.00202	.03261	-.00368	-.04933	.00251	.02253	-.00422
Stddev	.00148	.00572	.00255	.00183	.00158	.01115	.00079	.00046	.00019
%RSD	136.23	.88317	126.19	5.6174	42.870	22.605	31.438	2.0628	4.5195

#1	-.00004	.64338	.00383	.03131	-.00257	-.05721	.00307	.02220	-.00436
#2	-.00214	.65147	.00022	.03390	-.00480	-.04144	.00195	.02286	-.00409

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4109.1	47628.	3455.5
Stddev	32.9	173.	18.3
%RSD	.80121	.36319	.52824

#1	4132.4	47505.	3468.4
#2	4085.8	47750.	3442.6

Sample Name: 280-123238-B-4-B Acquired: 5/14/2019 1:32:01 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457045 200.7

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00196	1.0876	-0.00343	.08822	.07372	.00016	-0.00078	67.320	.00043
Stddev	.00026	.0006	.00346	.00045	.00073	.00006	.00557	.267	.00014
%RSD	13.306	.05630	100.79	.50939	.98465	40.101	709.90	.39608	32.044

#1	.00178	1.0880	-.00587	.08791	.07321	.00020	.00315	67.132	.00052
#2	.00215	1.0871	-.00099	.08854	.07423	.00011	-.00472	67.509	.00033

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.00105	.00762	1.0198	6.7127	.02628	16.403	.14950	.00683
Stddev	.00006	.00006	.00002	.0057	.0144	.00198	.015	.00044	.00005
%RSD	7.5356	5.2604	.31540	.56172	.21400	7.5535	.08948	.29589	.75012

#1	.00079	.00101	.00760	1.0158	6.7026	.02768	16.392	.14918	.00686
#2	.00087	.00109	.00763	1.0239	6.7229	.02488	16.413	.14981	.00679

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	74.122	.00093	.55002	-0.00132	36.684	.00017	.00404	5.6395	12.068
Stddev	.031	.00018	.00513	.00027	.111	.00163	.00094	.0616	.132
%RSD	.04209	19.392	.93341	20.522	.30321	986.29	23.207	1.0916	1.0916

#1	74.100	.00080	.55365	-.00113	36.763	-.00099	.00338	5.5959	11.975
#2	74.144	.00106	.54639	-.00151	36.606	.00132	.00471	5.6830	12.162

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00368	.59164	.00239	.03072	-0.00224	-0.05516	.00229	.01839	-0.00216
Stddev	.00054	.00315	.00199	.00031	.00138	.04897	.00053	.00034	.00045
%RSD	14.576	.53233	83.231	1.0089	61.683	88.775	23.052	1.8681	20.661

#1	-.00330	.58942	.00380	.03050	-.00126	-.08978	.00266	.01815	-.00185
#2	-.00406	.59387	.00098	.03094	-.00322	-.02053	.00192	.01864	-.00248

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4170.1	47695.	3513.5
Stddev	22.7	102.	12.5
%RSD	.54548	.21358	.35492

#1	4154.1	47623.	3522.3
#2	4186.2	47767.	3504.7

Sample Name: 280-123238-B-5-B Acquired: 5/14/2019 1:34:33 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457045 200.7

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	1.1208	-.00465	.07300	.08712	.00001	-.00607	75.488	.00058
Stddev	.00023	.0067	.00246	.00078	.00114	.00006	.00125	.558	.00006
%RSD	61.680	.59378	52.838	1.0723	1.3042	499.23	20.623	.73950	11.036

#1	.00053	1.1161	-.00639	.07244	.08792	.00005	-.00518	75.882	.00054
#2	.00021	1.1255	-.00291	.07355	.08631	-.00003	-.00695	75.093	.00063

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00132	.00664	1.2133	5.2124	.03255	18.104	.16449	.00735
Stddev	.00004	.00014	.00149	.0198	.0122	.00185	.057	.00032	.00016
%RSD	12.495	10.732	22.466	1.6351	.23457	5.6934	.31419	.19272	2.2119

#1	.00034	.00122	.00769	1.2273	5.2037	.03124	18.145	.16471	.00746
#2	.00028	.00142	.00558	1.1993	5.2210	.03386	18.064	.16427	.00723

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	76.019	.00107	.12146	-.00161	38.127	.00102	.00314	5.9374	12.706
Stddev	.811	.00037	.00334	.00241	.084	.00211	.00276	.0792	.170
%RSD	1.0673	34.742	2.7462	149.72	.22123	207.30	88.059	1.3345	1.3345

#1	76.593	.00133	.11910	.00009	38.068	-.00048	.00118	5.9934	12.826
#2	75.445	.00081	.12382	-.00331	38.187	.00251	.00509	5.8813	12.586

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00142	.67649	.00286	.02917	-.00272	-.11317	.00202	.01464	-.00241
Stddev	.00004	.00549	.00137	.00029	.00211	.03707	.00006	.00072	.00007
%RSD	2.7971	.81120	47.959	1.0050	77.546	32.755	2.8278	4.8833	3.0382

#1	-.00139	.68037	.00189	.02937	-.00421	-.08696	.00198	.01515	-.00236
#2	-.00145	.67261	.00383	.02896	-.00123	-.13938	.00206	.01414	-.00246

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3890.9	44894.	3276.8
Stddev	.6	210.	44.8
%RSD	.01517	.46867	1.3662

#1	3891.4	44746.	3245.1
#2	3890.5	45043.	3308.4

Sample Name: CCVH-5690583 Acquired: 5/14/2019 1:37:03 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoadescc Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00466	52.622	-.00297	.00571	.00194	.00142	1.0262	.07971	.00105	.00276	.00147	.01771
Stddev	.00040	.171	.00259	.00048	.00017	.00028	.0126	.00252	.00013	.00085	.00006	.00005
%RSD	8.5290	.32564	87.211	8.4022	8.5164	19.549	1.2289	3.1586	12.194	30.775	3.7462	.27117

#1	.00438	52.743	-.00480	.00605	.00206	.00162	1.0351	.07793	.00114	.00216	.00151	.01774
#2	.00494	52.501	-.00114	.00537	.00182	.00123	1.0173	.08150	.00096	.00336	.00143	.01767

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	51.804	.45848	.00528	.02705	.00481	.00072	F 277.36	.00411	.00190	.00257	5.2293	.00757
Stddev	.172	.01281	.00036	.00170	.00003	.00035	1.02	.00020	.00005	.00159	.0165	.00091
%RSD	.33266	2.7944	6.7837	6.3021	.55797	48.217	.36604	4.7758	2.5201	61.817	.31532	11.975

#1	51.926	.44943	.00503	.02826	.00479	.00047	278.07	.00425	.00187	.00145	5.2176	.00821
#2	51.682	.46754	.00553	.02584	.00483	.00096	276.64	.00397	.00194	.00369	5.2409	.00693

Check ?	Chk Pass	None	None	None	None	None	Chk Fail	None	None	None	Chk Pass	None
Value							250.00					
Range							10.490%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00230	.05255	.11245	.00176	.00260	5.2888	-.01142	.00142	10.830	.00642	.00656	.07575
Stddev	.00180	.05591	.11964	.00084	.00014	.0068	.00057	.00348	.065	.00050	.00049	.00198
%RSD	78.289	106.40	106.40	47.836	5.4059	.12878	4.9996	245.00	.60214	7.8564	7.4912	2.6203

#1	.00358	.01301	.02785	.00235	.00270	5.2936	-.01101	.00389	10.876	.00677	.00622	.07715
#2	.00103	.09208	.19705	.00116	.00250	5.2840	-.01182	-.00104	10.784	.00606	.00691	.07435

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3950.8	45043.	3343.1
Stddev	31.7	39.	9.7
%RSD	.80230	.08639	.28876

#1	3928.4	45015.	3336.2
#2	3973.2	45070.	3349.9

Sample Name: CCV-5690581 Acquired: 5/14/2019 1:39:32 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50720	F .80880	.98568	.49223	.51402	.49469	.00204	5.0142	.50165	.50765	.50742	.49756
Stddev	.00207	.11259	.00607	.00217	.00237	.00015	.00895	.0053	.00223	.00151	.00239	.00177
%RSD	.40814	13.920	.61605	.44019	.46111	.03052	438.35	.10500	.44535	.29782	.47083	.35494

#1	.50867	.72919	.98997	.49376	.51570	.49458	-.00429	5.0180	.50323	.50872	.50911	.49881
#2	.50574	.88841	.98139	.49069	.51235	.49479	.00837	5.0105	.50007	.50658	.50573	.49631

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.5073	53.737	1.0714	20.458	.51045	.50349	F 6.5095	.50829	1.0249	1.0074	.03691	.97869
Stddev	.0020	.212	.0000	.089	.00362	.00358	.0733	.00173	.0011	.0049	.00330	.00480
%RSD	.08101	.39416	.00063	.43613	.70990	.71130	1.1255	.34101	.10788	.48539	8.9436	.49094

#1	2.5059	53.887	1.0714	20.521	.51301	.50602	6.5613	.50952	1.0257	1.0109	.03457	.98209
#2	2.5087	53.587	1.0714	20.395	.50789	.50095	6.4577	.50706	1.0241	1.0039	.03924	.97529

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99468	4.9399	10.571	1.0015	.51207	.01045	.50932	1.0115	-.05105	.50526	.52005	.49588
Stddev	.00488	.0270	.058	.0055	.00105	.00079	.00275	.0060	.06203	.00481	.00277	.00365
%RSD	.49103	.54684	.54684	.54917	.20442	7.5659	.53955	.59417	121.51	.95241	.53248	.73530

#1	.99123	4.9590	10.612	1.0054	.51281	.01100	.51126	1.0158	-.09492	.50866	.52201	.49330
#2	.99813	4.9208	10.530	.99762	.51133	.00989	.50738	1.0073	-.00719	.50185	.51810	.49845

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4152.1	48100.	3524.3
Stddev	51.0	272.	28.2
%RSD	1.2288	.56456	.79925

#1	4188.2	47908.	3504.4
#2	4116.0	48292.	3544.2

Sample Name: CCB Acquired: 5/14/2019 1:41:56 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoades Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.01202	-.00035	.00188	-.00028	.00027	-.00185	.01106	.00146	.00141	.00202	.00058
Stddev	.00070	.00557	.00351	.00090	.00001	.00018	.00062	.00394	.00088	.00129	.00157	.00115
%RSD	97.426	46.297	1007.9	47.582	1.9648	66.369	33.219	35.649	60.530	91.510	77.624	198.84
#1	.00121	.00809	.00214	.00125	-.00027	.00039	-.00229	.00828	.00083	.00050	.00091	-.00023
#2	.00022	.01596	-.00283	.00252	-.00028	.00014	-.00142	.01385	.00208	.00232	.00312	.00139
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01749	.22008	-.00331	.02636	.00071	.00372	F .74500	.00126	-.00340	.00158	.02744	W .01012
Stddev	.00304	.02721	.00088	.02086	.00024	.00204	.00902	.00191	.00117	.00221	.00861	.00447
%RSD	17.396	12.365	26.702	79.114	33.408	54.897	1.2105	150.84	34.437	139.49	31.364	44.168
#1	.01534	.20084	-.00269	.04111	.00088	.00228	.75137	-.00008	-.00423	.00002	.02136	.00696
#2	.01965	.23932	-.00394	.01161	.00054	.00516	.73862	.00261	-.00257	.00315	.03353	.01328
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit							.50000					.00600
Low Limit							-.50000					-.00600
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W .01179	.03748	.08022	.00169	.00023	.00352	.00012	-.00215	-.07406	-.00038	.00034	-.00383
Stddev	.00707	.02370	.05071	.00254	.00008	.00156	.00019	.00016	.00339	.00042	.00038	.00159
%RSD	59.938	63.222	63.222	150.23	35.956	44.390	158.59	7.4350	4.5817	109.89	110.66	41.633
#1	.00679	.05424	.11608	-.00011	.00029	.00242	.00025	-.00226	-.07166	-.00068	.00061	-.00270
#2	.01679	.02073	.04436	.00349	.00017	.00463	-.00001	-.00203	-.07646	-.00009	.00007	-.00495
Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.00750											
Low Limit	-.01500											
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	4308.4	49267.	3501.4									
Stddev	13.6	6.	41.9									
%RSD	.31537	.01223	1.1963									
#1	4298.8	49272.	3471.8									
#2	4318.0	49263.	3531.0									

Sample Name: CCVL-5699390 Acquired: 5/14/2019 1:44:31 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00976	.12273	F .00987	.09447	.00934	.00103	.10210	.20515	.00480	.00967	.00974	.01496
Stddev	.00046	.00114	.00415	.00058	.00073	.00004	.00091	.00170	.00027	.00017	.00011	.00108
%RSD	4.7364	.92918	42.019	.61487	7.8009	4.0185	.89163	.82960	5.6256	1.7750	1.1413	7.2258

#1	.01008	.12192	.01280	.09406	.00985	.00106	.10145	.20395	.00461	.00979	.00982	.01420
#2	.00943	.12353	.00694	.09488	.00882	.00100	.10274	.20636	.00499	.00955	.00966	.01573

Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.01500									
Range			-30.000%									

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10618	3.2173	.01763	.19562	.01022	.01910	F 1.6752	.03973	2.8405	F .00619	.11047	.01701
Stddev	.00184	.0360	.00166	.00081	.00012	.00029	.0111	.00003	.0234	.00073	.00717	.00135
%RSD	1.7359	1.1193	9.4065	.41172	1.1380	1.5358	.66376	.07480	.82257	11.769	6.4939	7.9409

#1	.10748	3.2428	.01881	.19505	.01014	.01931	1.6674	.03975	2.8570	.00671	.10539	.01606
#2	.10487	3.1919	.01646	.19619	.01030	.01890	1.6831	.03971	2.8240	.00568	.11554	.01797

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
Value							1.0000			.00900		
Range							30.000%			-30.000%		

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01965	.53201	1.1385	.09463	.00978	.01376	.00887	.01167	F .02881	.00881	.02021	.01311
Stddev	.00484	.00712	.0153	.00069	.00006	.00020	.00024	.00148	.01104	.00006	.00001	.00304
%RSD	24.610	1.3392	1.3392	.73328	.61989	1.4411	2.6893	12.657	38.316	.70327	.06448	23.178

#1	.01623	.53705	1.1493	.09414	.00974	.01362	.00903	.01062	.02101	.00885	.02020	.01525
#2	.02307	.52697	1.1277	.09512	.00983	.01390	.00870	.01271	.03662	.00876	.02022	.01096

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value									.06000			
Range									-30.000%			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	4428.2	50579.	3681.5
Stddev	15.7	93.	9.1
%RSD	.35372	.18432	.24822

#1	4417.1	50645.	3675.1
#2	4439.3	50513.	3688.0

Sample Name: ICIS Acquired: 5/14/2019 8:14:32 Type: Cal
Method: 6500_025(v4) Mode: IR Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00144	.00303	-.01725	-.00064	.00082	.00579	-.00267	-.00297	.00392	.00037	.00110	-.00120
Stddev	.00014	.00012	.00078	.00023	.00017	.00156	.00009	.00013	.00094	.00036	.00010	.00025
%RSD	9.7811	3.9210	4.5187	36.102	21.045	26.907	3.2149	4.4110	23.935	99.488	9.5043	21.248
#1	-.00154	.00295	-.01780	-.00080	.00070	.00468	-.00261	-.00288	.00325	.00011	.00103	-.00102
#2	-.00134	.00312	-.01670	-.00048	.00095	.00689	-.00273	-.00307	.00458	.00062	.00118	-.00138
Elem	Cu3247	Fe2599	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Na8183	Ni2316	P_1782
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00420	.00463	.00073	.00600	.00811	.00009	.00027	.00113	.01007	-.03451	-.00061	.00046
Stddev	.00025	.00255	.00016	.00056	.00020	.00012	.00005	.00006	.00038	.00435	.00014	.00007
%RSD	5.8981	55.125	22.669	9.3331	2.5243	139.33	19.096	5.5312	3.7509	12.620	22.263	16.431
#1	.00403	.00643	.00061	.00560	.00825	.00017	.00023	.00118	.00980	-.03143	-.00052	.00051
#2	.00438	.00282	.00084	.00639	.00796	.00000	.00031	.00109	.01034	-.03759	-.00071	.00040
Elem	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00105	.00026	.00024	.00008	.00194	.00194	.00012	.00225	-.00041	-.00092	.00020	-.00317
Stddev	.00020	.00019	.00020	.00026	.00061	.00061	.00016	.00055	.00003	.00000	.00010	.00004
%RSD	18.679	72.518	83.416	325.15	31.387	31.387	132.57	24.467	8.1178	.48203	51.739	1.3480
#1	-.00119	.00013	.00039	-.00011	.00151	.00151	.00001	.00263	-.00038	-.00092	.00013	-.00313
#2	-.00091	.00039	.00010	.00027	.00237	.00237	.00024	.00186	-.00043	-.00093	.00027	-.00320
Elem	V_2924	Zn2062	Zr3391									
Units	Cts/S	Cts/S	Cts/S									
Avg	.00004	.00008	-.00537									
Stddev	.00008	.00001	.00015									
%RSD	188.82	7.7214	2.7675									
#1	.00009	.00009	-.00548									
#2	-.00001	.00008	-.00527									
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3453.4	48849.	2773.9									
Stddev	4.0	181.	10.0									
%RSD	.11618	.37076	.36226									
#1	3456.2	48977.	2766.8									
#2	3450.6	48721.	2781.0									

Sample Name: ICAL1 Acquired: 5/14/2019 8:17:14 Type: Cal
Method: 6500_025(v4) Mode: IR Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00152	.00235	-.00068	.00081	.00496	-.00295	.00298	.00058	.00038	-.00135	.00428	.00081
Stddev	.00014	.00013	.00020	.00012	.00344	.00117	.00093	.00030	.00031	.00031	.00011	.00020
%RSD	9.2900	5.5475	29.916	14.576	69.208	39.787	31.136	51.666	81.926	22.927	2.4941	24.654
#1	-.00162	.00226	-.00083	.00089	.00739	-.00377	.00364	.00037	.00016	-.00113	.00420	.00067
#2	-.00142	.00244	-.00054	.00073	.00253	-.00212	.00233	.00079	.00060	-.00157	.00435	.00096
Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	Sb2068	Se1960	Si2881
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00021	.01257	-.00003	.00009	.00044	.01514	-.00132	.00030	-.00104	-.00028	.00022	.00084
Stddev	.00000	.00115	.00007	.00012	.00004	.00117	.00035	.00008	.00016	.00001	.00008	.00045
%RSD	.17195	9.1504	227.16	131.85	8.6964	7.7566	26.397	25.902	15.424	1.8946	38.050	53.237
#1	-.00021	.01338	-.00008	.00018	.00042	.01431	-.00157	.00024	-.00093	-.00029	.00016	.00052
#2	-.00021	.01176	.00002	.00001	.00047	.01597	-.00108	.00035	-.00115	-.00028	.00028	.00115
Elem	SiO2	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062	Zr3391				
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S				
Avg	.00084	.00014	.00042	-.00118	.00006	-.00012	.00001	-.00447				
Stddev	.00045	.00008	.00425	.00016	.00016	.00034	.00000	.00083				
%RSD	53.237	57.586	1009.7	13.540	247.49	292.15	5.1478	18.656				
#1	.00052	.00008	-.00259	-.00129	-.00005	-.00036	.00001	-.00506				
#2	.00115	.00019	.00343	-.00107	.00018	.00012	.00001	-.00388				
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3535.2	50271.	2819.1									
Stddev	32.6	112.	4.8									
%RSD	.92356	.22310	.17195									
#1	3558.3	50191.	2815.7									
#2	3512.1	50350.	2822.5									

Sample Name: ICAL2 Acquired: 5/14/2019 8:19:55 Type: Cal
Method: 6500_025(v4) Mode: IR Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Al3092	Bi2230	Fe2714	Na8183	S_1820	Th2837	U_3701
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.01624	-.00298	.00041	-.03600	.00022	-.00036	-.00304
Stddev	.00101	.00055	.00072	.00416	.00018	.00010	.00056
%RSD	6.2466	18.560	176.76	11.565	78.384	27.169	18.304
#1	-.01696	-.00337	.00091	-.03305	.00010	-.00029	-.00265
#2	-.01552	-.00259	-.00010	-.03894	.00035	-.00042	-.00344
Int. Std.	Y_2243	Y_3600	Y_3774				
Units	Cts/S	Cts/S	Cts/S				
Avg	3504.0	49213.	2777.7				
Stddev	.5	131.	.7				
%RSD	.01463	.26598	.02545				
#1	3504.4	49121.	2777.2				
#2	3503.6	49306.	2778.2				

Sample Name: S1-5690580 Acquired: 5/14/2019 8:22:38 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoadesc Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -1.3600	F .83640	107.85	F -6.2219	F 17.460	F .61684	F .44339	-73.839	F 1.4974	F -.11849	F .72941	.98194
Stddev	1.0506	.00846	153.98	.4936	42.691	3.4157	2.3696	39.348	2.2080	3.3040	.38078	1.2684
%RSD	77.250	1.0121	142.77	7.9342	244.51	553.74	534.42	53.288	147.46	2788.4	52.203	129.18
#1	-.61713	.83042	-1.0279	-5.8728	47.647	-1.7984	-1.2321	-46.016	3.0586	-2.4548	.99866	.08502
#2	-2.1029	.84239	216.73	-6.5709	-12.728	3.0321	2.1189	-101.66	-.06392	2.2178	.46016	1.8789
Check ?	Chk Fail	Chk Fail	None	Chk Fail	Chk Fail	Chk Fail	Chk Fail	None	Chk Fail	Chk Fail	Chk Fail	Chk Pass
Value	1.0000	1.0000		2.0000	1.0000	1.0000	1.0000		10.000	1.0000	1.0000	
Range	-5.0000%	-5.0000%		-5.0000%	5.0000%	-5.0000%	-5.0000%		-5.0000%	-5.0000%	-5.0000%	
Elem	Cu3247	Fe2599	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Na8183	Ni2316	P_1782
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.7405	5.1366	103.47	F 83.370	F 2.4030	F 28.867	F 1.2163	F .45499	F 1.8793	299.31	F .91982	F 2.4946
Stddev	3.9791	.0858	114.64	34.447	3.1822	35.756	.4091	.00582	5.7045	1040.2	.35346	.8619
%RSD	228.62	1.6693	110.80	41.318	132.42	123.86	33.635	1.2798	303.54	347.53	38.428	34.551
#1	-1.0732	5.0760	184.53	59.012	4.6531	54.150	.92701	.45087	-2.1544	1034.8	1.1698	3.1041
#2	4.5541	5.1972	22.406	107.73	.15287	3.5836	1.5056	.45910	5.9130	-436.21	.66988	1.8851
Check ?	Chk Fail	Chk Pass	None	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	None	Chk Fail	Chk Fail
Value	1.0000			100.00	2.0000	40.000	1.0000	1.0000	10.000		1.0000	2.0000
Range	5.0000%			-5.0000%	5.0000%	-5.0000%	5.0000%	-5.0000%	-5.0000%		-5.0000%	5.0000%
Elem	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -66.408	-10.123	F 2.4857	F 4.6713	F 2.0002	F 4.2805	F -5.0207	F .03179	-12.759	F 1.0754	F .91310	16.511
Stddev	35.660	16.680	1.0739	.4104	7.7606	16.608	26.073	.28549	9.090	.1136	2.1748	25.559
%RSD	53.698	164.77	43.201	8.7866	387.99	387.99	519.31	898.10	71.240	10.561	238.17	154.80
#1	-91.624	-21.918	3.2451	4.9615	7.4878	16.024	13.416	-.17008	-6.3318	1.1557	2.4509	-1.5624
#2	-41.193	1.6712	1.7264	4.3810	-3.4874	-7.4630	-23.457	.23366	-19.186	.99505	-.62469	34.584
Check ?	Chk Fail	None	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	None	Chk Fail	Chk Fail	None
Value	2.0000		2.0000	2.0000	10.000	21.400	2.0000	1.0000		1.0000	2.0000	
Range	-5.0000%		5.0000%	5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%		5.0000%	-5.0000%	
Elem	V_2924	Zn2062	Zr3391									
Units	ppm	ppm	ppm									
Avg	F .79796	F .90472	F 1.4368									
Stddev	.74686	.16473	.7620									
%RSD	93.597	18.208	53.032									
#1	.26984	.78824	.89802									
#2	1.3261	1.0212	1.9756									
Check ?	Chk Fail	Chk Fail	Chk Fail									
Value	1.0000	1.0000	1.0000									
Range	-5.0000%	-5.0000%	5.0000%									
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3543.9	50105.	2810.8									
Stddev	8.2	133.	3.6									
%RSD	.23052	.26512	.12640									
#1	3549.7	50011.	2808.3									
#2	3538.2	50199.	2813.4									

Sample Name: S2-5690582 Acquired: 5/14/2019 8:25:17 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-61202	.74288	F 71.282	-3.7423	9.2799	3.1348	4.7213	F -8.1810	9.3471	1.8920	.99504	2.5430
Stddev	.67229	.10744	181.96	8.1030	12.425	7.6140	3.6343	25.655	19.215	.7092	.35302	.3931
%RSD	109.85	14.463	255.27	216.52	133.89	242.88	76.976	313.59	205.57	37.484	35.478	15.459
#1	-.13664	.66691	-57.382	-9.4720	18.065	-2.2491	7.2912	-26.322	22.934	1.3905	.74542	2.821
#2	-1.0874	.81885	199.95	1.9873	.49434	8.5188	2.1515	9.9597	-4.2400	2.3934	1.2447	2.2650
Check ?	None	None	Chk Fail	None	None	None	None	Chk Fail	None	None	None	None
Value			100.00					2.0000				
Range			-5.0000%					-5.0000%				
Elem	Cu3247	Fe2599	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.8467	4.8187	F 235.15	55.921	.70013	53.256	1.4924	.57998	-1.6190	.73037	.85474	9.5984
Stddev	1.7271	.0316	71.25	36.511	1.8230	5.486	.5201	.02126	6.5299	.44008	1.6534	14.385
%RSD	44.898	.65528	30.299	65.290	260.38	10.300	34.853	3.6660	403.32	60.254	193.44	149.87
#1	5.0679	4.7964	285.53	30.104	1.9892	49.378	1.8602	.56495	2.9983	.41919	2.0239	-.57353
#2	2.6254	4.8411	184.77	81.738	-.58892	57.135	1.1246	.59502	-6.2364	1.0416	-.31442	19.770
Check ?	None	None	Chk Fail	None	None	None	None	None	None	None	None	None
Value			100.00									
Range			5.0000%									
Elem	S_1820	Sb2068	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -26.187	1.1217	2.2102	-.23296	-.49853	11.060	1.4079	F -12.730	.33276	-2.3526	F 4.8102	.71516
Stddev	55.078	.9255	2.0333	4.4923	9.6136	20.301	1.9512	1.618	.27614	.8097	29.812	.70628
%RSD	210.33	82.514	91.999	1928.4	1928.4	183.55	138.59	12.707	82.987	34.416	619.76	98.759
#1	12.759	1.7761	3.6480	-3.4095	-7.2964	-3.2950	2.7876	-11.586	.52802	-1.7801	25.890	1.2146
#2	-65.133	.46722	.77239	2.9436	6.2993	25.415	.02822	-13.874	.13749	-2.9251	-16.270	.21574
Check ?	Chk Fail	None	None	None	None	None	None	Chk Fail	None	None	Chk Fail	None
Value	10.000							10.000			20.000	
Range	-5.0000%							-5.0000%			-5.0000%	
Elem	Zn2062	Zr3391										
Units	ppm	ppm										
Avg	.93236	.51731										
Stddev	.11323	1.4155										
%RSD	12.145	273.63										
#1	.85230	-.48359										
#2	1.0124	1.5182										
Check ?	None	None										
Value												
Range												
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3585.8	50090.	2808.0									
Stddev	6.5	144.	24.6									
%RSD	.18013	.28701	.87434									
#1	3581.2	50192.	2790.6									
#2	3590.4	49988.	2825.3									

Sample Name: ICVH- Acquired: 5/14/2019 8:27:59 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-3.8268	.80454	1.6373	25.924	2.9849	1.8123	F 46.779	12.140	.55553	.94370	.05649	2.4015
Stddev	1.0829	.05994	1.5387	5.274	1.6972	.0484	129.90	6.529	.30014	.24536	2.6029	.6010
%RSD	28.298	7.4503	93.981	20.344	56.859	2.6729	277.69	53.775	54.028	26.000	4607.9	25.027

#1	-4.5926	.84692	2.7253	29.653	4.1851	1.7780	138.63	7.5241	.76777	1.1172	-1.7840	2.8264
#2	-3.0611	.76215	.54923	22.195	1.7848	1.8465	-45.074	16.757	.34330	.77020	1.8970	1.9765

Check ?	None	None	None	None	None	None	Chk Fail	None	None	None	None	None
Value							.50000					
Range							10.490%					

Elem	Fe2599	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.1774	F 295.98	106.33	2.2622	53.224	1.6857	.71882	1.4824	1.3642	.38960	54.570	F 33.607
Stddev	.1632	220.23	9.75	.3764	20.445	.1100	.27185	2.0253	.3187	1.3865	25.098	40.318
%RSD	3.9066	74.406	9.1700	16.638	38.413	6.5238	37.819	136.63	23.359	355.89	45.993	119.97

#1	4.2928	451.71	99.439	2.5283	67.681	1.6080	.52660	2.9145	1.5895	-.59083	36.823	5.0976
#2	4.0620	140.26	113.23	1.9960	38.767	1.7635	.91105	.05026	1.1389	1.3700	72.317	62.116

Check ?	None	Chk Fail	None	None	None	None	None	None	None	None	None	Chk Fail
Value		80.000										4.0000
Range		10.490%										10.490%

Elem	Sb2068	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.9385	2.4873	13.105	28.045	-14.066	.96006	F 5.2598	1.3786	4.3588	F 14.099	-.09600	.98661
Stddev	.6554	2.6664	1.896	4.058	12.163	.64664	9.3178	.6627	2.5275	43.599	.14573	.08800
%RSD	33.808	107.20	14.469	14.469	86.469	67.353	177.15	48.071	57.984	309.24	151.81	8.9192

#1	2.4020	.60189	14.446	30.915	-22.667	.50282	11.848	1.8472	6.1460	-16.730	-.19905	1.0488
#2	1.4751	4.3727	11.764	25.176	-5.4657	1.4173	-1.3288	.91000	2.5717	44.928	.00705	.92439

Check ?	None	None	None	None	None	None	Chk Fail	None	None	Chk Fail	None	None
Value							3.0000			5.0000		
Range							10.490%			10.490%		

Elem	Zr3391
Units	ppm
Avg	-.06853
Stddev	.58467
%RSD	853.12

#1	.34489
#2	-.48196

Check ?	None
Value	
Range	

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3530.5	49961.	2840.0
Stddev	6.4	617.	5.9
%RSD	.18180	1.2343	.20928

#1	3525.9	50397.	2844.2
#2	3535.0	49525.	2835.8

Sample Name: ICVH- Acquired: 5/14/2019 8:30:41 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoadesc Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.2333	1.9696	F 693.33	-16.583	37.050	2.9009	-7.0962	F -245.12	14.591	-63729	1.1985	-1.1076
Stddev	.7924	.3172	283.80	10.680	5.484	2.3716	.7186	.06	15.692	.77105	.3018	.2092
%RSD	18.717	16.103	40.932	64.405	14.800	81.753	10.126	.02404	107.54	120.99	25.180	18.888

#1	3.6730	1.7453	492.65	-24.135	33.173	1.2240	-6.5881	-245.17	3.4952	-1.1825	1.4119	-1.2555
#2	4.7936	2.1939	894.00	-9.0310	40.928	4.5779	-7.6043	-245.08	25.687	-.09208	.98515	-.95968

Check ?	None	None	Chk Fail	None	None	None	None	Chk Fail	None	None	None	None
Value			40.000					.50000				
Range			10.490%					-10.490%				

Elem	Cu3247	Fe2599	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.0109	5.1567	F 47.288	20.479	.27504	46.949	1.5910	.87628	7.8540	.26120	2.5134	75.381
Stddev	.9022	.2496	35.421	21.307	2.4163	2.866	.1039	.19939	16.762	.34259	.1634	45.539
%RSD	11.262	4.8400	74.906	104.04	878.54	6.1035	6.5304	22.754	213.41	131.16	6.5010	60.412

#1	8.6488	4.9802	72.334	5.4131	1.9836	44.923	1.6645	.73530	19.706	.01896	2.3979	107.58
#2	7.3729	5.3332	22.241	35.545	-1.4336	48.975	1.5175	1.0173	-3.9982	.50345	2.6290	43.180

Check ?	None	None	Chk Fail	None	None	None	None	None	None	None	None	None
Value			80.000									
Range			-10.490%									

Elem	S_1820	Sb2068	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 28.101	.98144	1.3260	.01790	.03831	-8.3851	1.8062	F 52.800	-2.1924	.72456	F 282.36	.23877
Stddev	11.042	1.0823	1.1528	25.710	55.019	6.4372	1.4521	6.548	.1301	.48529	23.41	.40151
%RSD	39.294	110.28	86.937	143620.	143620.	76.769	80.394	12.402	5.9347	66.977	8.2909	168.16

#1	20.293	.21614	.51087	-18.162	-38.866	-12.937	.77941	48.170	-2.1004	1.0677	298.92	-.04514
#2	35.909	1.7467	2.1412	18.198	38.943	-3.8333	2.8330	57.430	-2.2844	.38140	265.81	.52268

Check ?	Chk Fail	None	None	None	None	None	None	Chk Fail	None	None	Chk Fail	None
Value	4.0000							3.0000			5.0000	
Range	10.490%							10.490%			10.490%	

Elem	Zn2062	Zr3391
Units	ppm	ppm
Avg	1.0333	-.83714
Stddev	.0775	2.0974
%RSD	7.5009	250.54

#1	1.0881	-2.3202
#2	.97847	.64592

Check ?	None	None
Value		
Range		

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	5211.7	118840.	4041.4
Stddev	235.0	5708.	1773.6
%RSD	4.5093	4.8031	43.886

#1	5045.6	122870.	2787.3
#2	5377.9	114800.	5295.6

Sample Name: ICIS Acquired: 5/14/2019 9:07:29 Type: Cal
Method: 6500_025(v4) Mode: IR Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00139	.00276	-.01971	-.00056	.00094	.00288	-.00399	-.00304	.00362	.00069	.00057	-.00108
Stddev	.00001	.00023	.00088	.00035	.00012	.00253	.00053	.00008	.00057	.00013	.00002	.00007
%RSD	.93970	8.3647	4.4661	63.374	13.042	88.057	13.225	2.5866	15.860	18.681	4.3032	6.7439
#1	-.00138	.00260	-.01909	-.00081	.00085	.00109	-.00437	-.00299	.00321	.00078	.00059	-.00113
#2	-.00140	.00292	-.02033	-.00031	.00103	.00467	-.00362	-.00310	.00402	.00060	.00055	-.00102
Elem	Cu3247	Fe2599	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Na8183	Ni2316	P_1782
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00437	.00111	-.00012	.00552	.01320	.00001	.00010	.00050	.01117	-.03275	.00248	.00031
Stddev	.00008	.00023	.00008	.00104	.00030	.00003	.00008	.00011	.00328	.00250	.00051	.00017
%RSD	1.7561	21.070	68.926	18.852	2.2658	178.79	78.277	21.103	29.382	7.6476	20.590	55.702
#1	.00432	.00128	-.00006	.00626	.01341	-.00000	.00015	.00057	.00885	-.03453	.00212	.00044
#2	.00443	.00095	-.00017	.00479	.01299	.00003	.00004	.00042	.01349	-.03098	.00284	.00019
Elem	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00113	.00031	-.00022	.00018	.00177	.00177	.00014	.00305	-.00035	-.00124	-.00007	-.00328
Stddev	.00011	.00001	.00056	.00002	.00037	.00037	.00024	.00108	.00006	.00015	.00011	.00010
%RSD	10.043	4.4246	262.38	8.7609	20.734	20.734	168.81	35.313	17.264	11.863	176.09	3.1913
#1	-.00105	.00031	.00018	.00019	.00203	.00203	.00031	.00381	-.00031	-.00134	.00002	-.00320
#2	-.00121	.00030	-.00061	.00017	.00151	.00151	-.00003	.00229	-.00040	-.00114	-.00015	-.00335
Elem	V_2924	Zn2062	Zr3391									
Units	Cts/S	Cts/S	Cts/S									
Avg	-.00006	.00007	-.00547									
Stddev	.00014	.00001	.00150									
%RSD	244.00	13.535	27.492									
#1	.00004	.00008	-.00653									
#2	-.00016	.00006	-.00440									
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3450.7	48716.	2676.7									
Stddev	4.5	237.	63.2									
%RSD	.13079	.48601	2.3596									
#1	3447.5	48883.	2632.0									
#2	3453.9	48548.	2721.4									

Sample Name: ICAL1 Acquired: 5/14/2019 9:10:08 Type: Cal
Method: 6500_025(v4) Mode: IR Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599	K_7664
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.19437	.20022	.07348	.26835	5.2888	5.9752	1.6371	1.7474	.95893	.98849	.25675	.66247	3.6827
Stddev	.00012	.00087	.00017	.00025	.0116	.0093	.0040	.0025	.00199	.00022	.00043	.00179	.0007
%RSD	.06080	.43501	.23639	.09336	.21996	.15625	.24406	.14171	.20793	.02271	.16607	.27068	.01821
#1	.19428	.20084	.07360	.26817	5.2806	5.9686	1.6343	1.7491	.96034	.98865	.25705	.66120	3.6822
#2	.19445	.19961	.07335	.26853	5.2971	5.9818	1.6399	1.7456	.95752	.98833	.25645	.66374	3.6832
Elem	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	Sb2068	Se1960	Si2881	SiO2	Sn1899
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2.0583	.94128	1.2914	.48000	1.6049	.83398	.11971	.49013	.18181	.09022	.24283	.24283	.24054
Stddev	.0065	.00387	.0033	.00080	.0002	.00204	.00006	.00250	.00000	.00005	.00047	.00047	.00019
%RSD	.31595	.41132	.25432	.16573	.01149	.24435	.04857	.51045	.00181	.04991	.19533	.19533	.07724
#1	2.0537	.94401	1.2938	.48056	1.6051	.83542	.11967	.49190	.18181	.09026	.24250	.24250	.24067
#2	2.0629	.93854	1.2891	.47944	1.6048	.83254	.11975	.48836	.18181	.09019	.24317	.24317	.24041
Elem	Sr4077	Ti3349	Tl1908	V_2924	Zn2062	Zr3391							
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S							
Avg	9.6278	.31572	.21040	.20050	.03255	.29902							
Stddev	.0247	.00070	.00099	.00040	.00010	.00144							
%RSD	.25640	.22316	.47102	.20120	.30379	.48214							
#1	9.6103	.31622	.21110	.20079	.03248	.29800							
#2	9.6452	.31522	.20970	.20022	.03262	.30004							
Int. Std.	Y_2243	Y_3600	Y_3774										
Units	Cts/S	Cts/S	Cts/S										
Avg	3412.8	47796.	2730.5										
Stddev	3.2	54.	3.5										
%RSD	.09319	.11205	.12969										
#1	3415.1	47758.	2733.0										
#2	3410.6	47834.	2728.0										

Sample Name: ICAL2 Acquired: 5/14/2019 9:12:31 Type: Cal
Method: 6500_025(v4) Mode: IR Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Al3092	Bi2230	Fe2714	Na8183	S_1820	Th2837	U_3701
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	3.3660	.24413	.49376	2.3105	.29133	.54642	.11533
Stddev	.0312	.00001	.00409	.0196	.00014	.00051	.00054
%RSD	.92693	.00242	.82772	.84844	.04843	.09316	.46592
#1	3.3439	.24412	.49087	2.2967	.29123	.54678	.11495
#2	3.3880	.24413	.49665	2.3244	.29143	.54606	.11571
Int. Std.	Y_2243	Y_3600	Y_3774				
Units	Cts/S	Cts/S	Cts/S				
Avg	3388.9	46595.	2714.1				
Stddev	3.6	14.	13.3				
%RSD	.10482	.03037	.49080				
#1	3386.4	46585.	2723.5				
#2	3391.4	46605.	2704.7				

Sample Name: S1-5690580 Acquired: 5/14/2019 9:15:02 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0165	.99754	1.9938	1.0040	.99364	.99844	.00052	9.9059	1.0041	1.0062	.99200	1.0057	5.0091
Stddev	.0012	.00173	.0096	.0012	.00678	.00431	.00484	.0621	.0015	.0030	.00009	.0010	.0408
%RSD	.11452	.17313	.48270	.11575	.68201	.43189	938.35	.62663	.14998	.30105	.00907	.10279	.81535

#1	1.0173	.99876	2.0006	1.0048	.98884	.99539	.00394	9.8620	1.0052	1.0083	.99194	1.0050	4.9802
#2	1.0157	.99632	1.9870	1.0031	.99843	1.0015	-.00291	9.9498	1.0030	1.0041	.99207	1.0065	5.0380

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	99.676	1.9896	40.610	1.0115	1.0103	10.343	9.9459	1.0069	2.0134	2.0079	-.00523	2.0033	1.9996
Stddev	.723	.0214	.024	.0012	.0021	.025	.1563	.0044	.0034	.0011	.00216	.0016	.0019
%RSD	.72518	1.0768	.05846	.11783	.21171	.23793	1.5713	.43679	.16837	.05395	41.377	.07784	.09752

#1	99.165	1.9744	40.593	1.0107	1.0118	10.361	10.056	1.0100	2.0158	2.0086	-.00370	2.0044	2.0009
#2	100.19	2.0047	40.626	1.0124	1.0088	10.326	9.8354	1.0038	2.0110	2.0071	-.00676	2.0022	1.9982

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
Value													
Range													

Elem	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9800	21.357	1.9875	.99499	-.00419	1.0118	1.9891	-.02240	1.0115	1.0088	1.0110
Stddev	.1156	.247	.0027	.00387	.00007	.0002	.0005	.01840	.0026	.0005	.0014
%RSD	1.1583	1.1583	.13765	.38906	1.6863	.02089	.02306	82.149	.25464	.04604	.14365

#1	9.8983	21.182	1.9895	.99226	-.00424	1.0119	1.9894	-.00939	1.0097	1.0084	1.0100
#2	10.062	21.532	1.9856	.99773	-.00414	1.0116	1.9887	-.03542	1.0133	1.0091	1.0120

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value											
Range											

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3412.1	47090.	2785.0
Stddev	13.9	73.	47.1
%RSD	.40689	.15558	1.6925

#1	3421.9	47039.	2818.4
#2	3402.3	47142.	2751.7

Sample Name: S2-5690582 Acquired: 5/14/2019 9:17:23 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01362	98.831	-.00546	.00689	.00571	.00261	1.9716	.01968	.00238	.00590	.00255	.00632	98.296
Stddev	.00037	.666	.00813	.00134	.00034	.00003	.0083	.00916	.00028	.00048	.00007	.00004	1.188
%RSD	2.6846	.67424	149.12	19.506	5.8689	1.0986	.42017	46.572	11.784	8.1828	2.7977	.62790	1.2091

#1	.01336	98.360	.00030	.00784	.00548	.00263	1.9775	.02616	.00218	.00624	.00250	.00629	97.456
#2	.01388	99.302	-.01121	.00594	.00595	.00259	1.9658	.01320	.00258	.00556	.00260	.00634	99.137

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50748	.00912	-.00073	.00258	.00307	495.28	.00341	.01613	.00997	10.003	-.03527	-.01206	-.00701
Stddev	.04976	.00195	.00059	.00011	.00009	4.16	.00042	.00220	.00265	.060	.00185	.00093	.01152
%RSD	9.8054	21.418	80.409	4.2603	2.8598	.83982	12.381	13.656	26.548	.59632	5.2546	7.7112	164.44

#1	.54266	.00774	-.00032	.00266	.00313	492.34	.00311	.01457	.00810	10.045	-.03658	-.01140	.00114
#2	.47229	.01050	-.00115	.00250	.00301	498.22	.00371	.01769	.01185	9.9611	-.03396	-.01271	-.01516

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.01500	.00300	.00316	9.9090	-.01928	.00930	20.080	.01464	.00354	.21256
Stddev	.02466	.00201	.00007	.0043	.00066	.00546	.079	.00000	.00019	.00988
%RSD	164.44	67.031	2.3700	.04312	3.4057	58.674	.39305	.02969	5.4105	4.6478

#1	.00244	.00158	.00322	9.9060	-.01974	.01316	20.135	.01464	.00340	.20557
#2	-.03244	.00443	.00311	9.9120	-.01881	.00544	20.024	.01464	.00367	.21955

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3356.4	46409.	2707.9
Stddev	16.3	526.	.9
%RSD	.48657	1.1333	.03306

#1	3344.9	46037.	2708.5
#2	3368.0	46781.	2707.3

Sample Name: ICVH-5701325 Acquired: 5/14/2019 9:19:53 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00378	40.683	-.00489	.00141	.00092	.00012	.50895	.00764	.00009	-.00041	.00042	.00046
Stddev	.00130	.339	.00859	.00057	.00044	.00012	.00779	.00531	.00022	.00009	.00039	.00077
%RSD	34.356	.83306	175.58	40.245	47.881	102.05	1.5304	69.501	263.14	22.172	91.933	167.08
#1	.00286	40.922	-.01097	.00182	.00123	.00020	.51446	.01139	.00024	-.00034	.00015	-.00008
#2	.00470	40.443	.00118	.00101	.00061	.00003	.50344	.00389	-.00007	-.00047	.00069	.00101
Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												
Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	80.142	.02770	.00043	-.03356	-.00087	.00011	40.597	-.00408	.00104	.00083	W 3.7653	-.01581
Stddev	.737	.07492	.00242	.00201	.00016	.00014	.870	.00039	.00011	.00114	.0208	.00303
%RSD	.91945	270.44	557.15	5.9790	17.738	126.36	2.1441	9.5383	10.105	137.38	.55344	19.180
#1	80.663	-.02527	-.00128	-.03214	-.00076	.00001	41.213	-.00436	.00112	.00164	3.7506	-.01795
#2	79.621	.08068	.00215	-.03497	-.00098	.00021	39.982	-.00381	.00097	.00002	3.7800	-.01366
Check ?	Chk Pass	None	None	None	None	None	Chk Pass	None	None	None	Chk Warn	None
Value											4.0000	
Range											-5.4900%	
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00418	-.02795	-.05981	-.00114	-.00012	3.0070	-.00736	.00438	5.2133	.00419	-.00167	.06152
Stddev	.00119	.02198	.04704	.00107	.00025	.0069	.00019	.00082	.0250	.00023	.00027	.00146
%RSD	28.454	78.654	78.654	93.593	199.63	.22928	2.5577	18.615	.48047	5.3867	15.922	2.3749
#1	.00502	-.01240	-.02654	-.00190	-.00030	3.0021	-.00722	.00495	5.1956	.00403	-.00149	.06255
#2	.00334	-.04349	-.09307	-.00039	.00005	3.0119	-.00749	.00380	5.2310	.00435	-.00186	.06048
Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3430.9	47113.	2692.5									
Stddev	64.4	74.	14.2									
%RSD	1.8776	.15639	.52789									
#1	3385.3	47061.	2682.5									
#2	3476.4	47165.	2702.6									

Sample Name: ICVH-5701325 Acquired: 5/14/2019 9:22:26 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00299	40.314	-.00422	.00042	.00104	.00032	.51080	.01695	.00003	-.00030	.00075	.00076
Stddev	.00009	.038	.00893	.00162	.00100	.00018	.00022	.01000	.00002	.00002	.00039	.00039
%RSD	3.0186	.09407	211.45	381.69	96.577	55.661	.04333	59.014	51.600	7.8886	52.140	51.231
#1	.00306	40.341	.00209	-.00072	.00174	.00044	.51064	.02402	.00002	-.00029	.00048	.00103
#2	.00293	40.287	-.01053	.00157	.00033	.00019	.51096	.00987	.00004	-.00032	.00103	.00048
Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												
Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	79.346	.00213	.00053	-.02558	-.00092	-.00038	39.891	-.00379	.00391	.00338	W 3.7241	-.01450
Stddev	.076	.12895	.00253	.00025	.00006	.00006	.506	.00025	.00027	.00374	.0017	.00214
%RSD	.09590	6046.6	473.63	.99225	6.0479	15.076	1.2689	6.7312	6.8263	110.53	.04607	14.724
#1	79.400	.09331	.00232	-.02540	-.00095	-.00042	39.533	-.00397	.00372	.00603	3.7253	-.01299
#2	79.292	-.08905	-.00125	-.02576	-.00088	-.00034	40.249	-.00361	.00410	.00074	3.7229	-.01601
Check ?	Chk Pass	None	None	None	None	None	Chk Pass	None	None	None	Chk Warn	None
Value											4.0000	
Range											-5.4900%	
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00556	-.02235	-.04783	-.00122	.00014	2.9551	-.00646	.00260	5.1465	.00388	-.00189	.06116
Stddev	.00038	.01521	.03254	.00109	.00013	.0465	.00035	.00200	.1102	.00104	.00028	.00473
%RSD	6.7537	68.037	68.037	89.816	98.530	1.5738	5.4744	77.020	2.1411	26.856	14.607	7.7282
#1	-.00529	-.01160	-.02482	-.00199	.00004	2.9222	-.00621	.00401	5.0685	.00462	-.00208	.06450
#2	-.00582	-.03311	-.07085	-.00044	.00023	2.9879	-.00671	.00118	5.2244	.00315	-.00169	.05781
Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3490.9	48328.	2738.6									
Stddev	9.8	367.	9.9									
%RSD	.28041	.75842	.35976									
#1	3497.8	48587.	2731.6									
#2	3483.9	48069.	2745.6									

Sample Name: ICV-5701328 Acquired: 5/14/2019 9:25:18 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.25805	.25366	.24164	.24676	.24694	.24852	.50491	2.4770	.24809	.25052	.24467	.24763	1.2580	24.905
Stddev	.00039	.00197	.00618	.00092	.00118	.00167	.00739	.0283	.00076	.00028	.00152	.00132	.0002	.115
%RSD	.15231	.77530	2.5575	.37208	.47791	.67293	1.4641	1.1440	.30800	.11275	.62313	.53247	.01253	.46288

#1	.25777	.25505	.23727	.24612	.24778	.24970	.51014	2.4970	.24863	.25072	.24575	.24670	1.2581	24.986
#2	.25833	.25227	.24601	.24741	.24611	.24733	.49968	2.4569	.24755	.25033	.24359	.24857	1.2579	24.823

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value														
Range														

Elem	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.25183	10.100	.25454	.25061	11.881	.24691	2.0419	.25133	.00234	.24559	.24433	2.4848	5.3174	.24653
Stddev	.00196	.018	.00055	.00256	1.237	.00016	.0120	.00149	.00508	.00253	.00509	.0040	.0085	.00017
%RSD	.77846	.18116	.21599	1.0197	10.409	.06639	.58859	.59163	216.61	1.0322	2.0833	.15981	.15981	.07033

#1	.25044	10.087	.25493	.25242	11.007	.24702	2.0504	.25027	-.00125	.24739	.24793	2.4820	5.3114	.24641
#2	.25321	10.113	.25415	.24880	12.756	.24679	2.0334	.25238	.00593	.24380	.24073	2.4876	5.3234	.24665

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value														
Range														

Elem	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.24712	.00014	.25035	.24786	.01328	.25055	.25772	.25006
Stddev	.00133	.00171	.00044	.00140	.03746	.00150	.00082	.00378
%RSD	.53621	1213.2	.17570	.56548	282.10	.59697	.31940	1.5132

#1	.24806	.00135	.25066	.24687	-.01321	.25161	.25714	.25273
#2	.24619	-.00107	.25004	.24885	.03977	.24949	.25831	.24738

Check ?	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3513.7	48470.	2736.7
Stddev	.4	82.	14.1
%RSD	.01235	.17015	.51413

#1	3513.4	48412.	2726.8
#2	3514.0	48529.	2746.7

Sample Name: ICV-5701328 Acquired: 5/14/2019 9:27:52 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoadesc Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.25739	.25276	.24171	.24665	.24685	.24768	.50051	2.4583	.24834	.24996	.24448	.24866	1.2574
Stddev	.00032	.00188	.00178	.00119	.00193	.00008	.00223	.0149	.00073	.00153	.00032	.00133	.0062
%RSD	.12320	.74495	.73742	.48360	.78189	.03221	.44483	.60780	.29475	.61401	.13120	.53340	.49651

#1	.25717	.25410	.24045	.24749	.24821	.24763	.49894	2.4689	.24885	.25105	.24471	.24772	1.2619
#2	.25761	.25143	.24297	.24580	.24548	.24774	.50209	2.4477	.24782	.24888	.24426	.24959	1.2530

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.812	.24747	10.121	.25490	.25071	12.894	.24828	2.0442	.25133	-.00063	.24311	.24885	2.4792
Stddev	.137	.00267	.036	.00021	.00110	.397	.00151	.0015	.00065	.00382	.00212	.00759	.0317
%RSD	.55368	1.0795	.35127	.08182	.43900	3.0807	.60635	.07173	.25866	609.46	.87115	3.0488	1.2803

#1	24.909	.24936	10.146	.25475	.25149	13.175	.24935	2.0452	.25179	-.00333	.24161	.25421	2.4567
#2	24.715	.24558	10.096	.25505	.24993	12.613	.24722	2.0432	.25087	.00207	.24461	.24348	2.5016

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.3054	.24608	.24562	-.00365	.25044	.25345	-.03327	.25145	.26123	.25223
Stddev	.0679	.00005	.00205	.00147	.00017	.00287	.03415	.00041	.00166	.00130
%RSD	1.2803	.02218	.83633	40.157	.06824	1.1333	102.65	.16177	.63500	.51371

#1	5.2574	.24612	.24707	-.00469	.25032	.25142	-.05741	.25173	.26240	.25314
#2	5.3534	.24604	.24417	-.00261	.25056	.25548	-.00912	.25116	.26006	.25131

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3518.7	48714.	2772.7
Stddev	2.8	222.	8.1
%RSD	.07957	.45486	.29102

#1	3520.7	48557.	2767.0
#2	3516.7	48871.	2778.4

Sample Name: ICVL-5701318 Acquired: 5/14/2019 9:30:26 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01083	.09936	.01069	.09582	.01069	.00129	.10026	.19862	.00514	.01027	.00957	.01427	.11633	2.9730
Stddev	.00106	.00008	.00336	.00000	.00003	.00003	.00299	.00754	.00011	.00056	.00003	.00043	.00383	.0065
%RSD	9.7856	.07553	31.389	.00296	.26119	2.3936	2.9852	3.7976	2.0611	5.4767	.27816	3.0078	3.2954	.21906
#1	.01008	.09941	.00832	.09582	.01067	.00131	.09815	.20395	.00507	.00987	.00959	.01396	.11904	2.9776
#2	.01158	.09931	.01306	.09582	.01071	.00126	.10238	.19329	.00522	.01067	.00955	.01457	.11362	2.9684

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value														
Range														

Elem	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02050	.20357	.01057	.02059	1.0974	.03642	2.8492	.00918	.09352	.02031	.02399	.48245	1.0324	.09769
Stddev	.00056	.00261	.00013	.00064	.0182	.00021	.0139	.00116	.00024	.00056	.00034	.01521	.0325	.00086
%RSD	2.7233	1.2840	1.2369	3.1206	1.6589	.57945	.48892	12.592	.25506	2.7615	1.4245	3.1520	3.1520	.87589
#1	.02090	.20172	.01048	.02104	1.1103	.03657	2.8591	.01000	.09335	.01991	.02423	.47170	1.0094	.09829
#2	.02011	.20542	.01066	.02013	1.0846	.03627	2.8394	.00836	.09369	.02071	.02375	.49321	1.0555	.09708

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value														
Range														

Elem	Sr4077	Th2837	Ti3349	Tl1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00990	.01485	.01091	.01734	.07486	.00940	.01916	.01162
Stddev	.00001	.00296	.00062	.00184	.02709	.00003	.00086	.00262
%RSD	.08759	19.939	5.6909	10.609	36.189	.27302	4.4732	22.557
#1	.00990	.01694	.01047	.01864	.09402	.00938	.01855	.01348
#2	.00991	.01275	.01135	.01603	.05571	.00942	.01977	.00977

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3557.5	49101.	2765.2
Stddev	4.7	85.	10.4
%RSD	.13110	.17394	.37473
#1	3560.8	49162.	2772.5
#2	3554.2	49041.	2757.9

Sample Name: CCVH-5699817 Acquired: 5/14/2019 9:33:36 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoadesc Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00735	49.530	.00019	.00423	.00348	.00157	.99659	.00916	.00164	.00298	.00113	.00381	49.131
Stddev	.00034	.131	.00002	.00061	.00041	.00041	.00336	.00459	.00000	.00002	.00023	.00042	.403
%RSD	4.5889	.26349	11.303	14.496	11.891	26.249	.33764	50.091	.09268	.69407	19.853	10.941	.82044

#1	.00759	49.438	.00020	.00466	.00377	.00128	.99421	.00592	.00164	.00299	.00129	.00352	48.846
#2	.00711	49.622	.00017	.00380	.00319	.00186	.99897	.01241	.00164	.00296	.00097	.00411	49.416

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.13689	-.00098	.00764	.00150	.00101	248.76	.00036	.00770	.00479	4.9161	-.01445	-.00247	-.01441
Stddev	.01312	.00147	.00350	.00006	.00051	.11	.00045	.00165	.00071	.0141	.00034	.00316	.00966
%RSD	9.5824	150.35	45.878	4.1043	50.397	.04490	127.51	21.416	14.903	.28772	2.3837	127.96	67.035

#1	.12762	.00006	.01011	.00154	.00065	248.68	.00068	.00886	.00429	4.9261	-.01470	-.00471	-.02124
#2	.14617	-.00202	.00516	.00145	.00137	248.84	.00004	.00653	.00529	4.9061	-.01421	-.00024	-.00758

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.03083	.00056	.00159	4.9780	-.00954	.00671	10.162	.00772	.00190	.10783
Stddev	.02067	.00017	.00012	.0037	.00054	.00238	.001	.00011	.00079	.00310
%RSD	67.035	30.921	7.4403	.07532	5.6864	35.454	.01170	1.4101	41.449	2.8721

#1	-.04545	.00044	.00167	4.9807	-.00916	.00839	10.163	.00764	.00134	.10564
#2	-.01622	.00068	.00150	4.9754	-.00992	.00503	10.161	.00780	.00245	.11002

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3425.6	47514.	2759.8
Stddev	37.2	57.	1.8
%RSD	1.0863	.11984	.06685

#1	3451.9	47473.	2761.1
#2	3399.3	47554.	2758.5

Sample Name: CCV-5699804 Acquired: 5/14/2019 9:36:06 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51429	W .54279	.98663	.49287	.49875	.49933	.00207	4.9796	.50219	.50649	.49399	.50238
Stddev	.00209	.00535	.00329	.00100	.00049	.00099	.00411	.0035	.00308	.00238	.00378	.00155
%RSD	.40644	.98578	.33346	.20285	.09837	.19844	198.33	.07088	.61387	.47006	.76441	.30767

#1	.51282	.54657	.98431	.49357	.49840	.49863	.00497	4.9771	.50437	.50817	.49666	.50348
#2	.51577	.53900	.98896	.49216	.49910	.50003	-.00083	4.9821	.50001	.50480	.49132	.50129

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		5.0000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.5640	50.050	.99833	20.445	.51031	.50407	W 5.4731	.50476	.99948	1.0156	-.00319	.96946
Stddev	.0020	.086	.00401	.075	.00017	.00335	.0155	.00367	.01169	.0035	.00676	.00885
%RSD	.07773	.17109	.40139	.36901	.03419	.66362	.28392	.72716	1.1691	.34070	212.25	.91238

#1	2.5654	49.989	1.0012	20.498	.51018	.50643	5.4841	.50736	1.0077	1.0180	-.00797	.97572
#2	2.5626	50.110	.99550	20.392	.51043	.50170	5.4621	.50216	.99121	1.0131	.00160	.96321

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							5.0000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99115	4.9536	10.601	.99227	.49962	.00010	.50734	1.0066	.01685	.50493	.50308	.50215
Stddev	.00554	.0318	.068	.00980	.00047	.00224	.00093	.0050	.04906	.00130	.00130	.00498
%RSD	.55886	.64190	.64190	.98802	.09445	2160.9	.18302	.49771	291.14	.25773	.25931	.99253

#1	.99507	4.9311	10.553	.99920	.49929	.00169	.50800	1.0101	-.01784	.50401	.50400	.50567
#2	.98723	4.9761	10.649	.98534	.49995	-.00148	.50668	1.0031	.05154	.50585	.50216	.49862

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3517.6	48260.	2765.8
Stddev	2.6	19.	11.8
%RSD	.07506	.03913	.42778
#1	3515.8	48273.	2774.2
#2	3519.5	48246.	2757.5

Sample Name: ICB Acquired: 5/14/2019 9:38:29 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	-.00134	.00053	.00078	.00101	.00021	-.00163	.00293	-.00009	.00019	-.00007	-.00148
Stddev	.00045	.00087	.01251	.00120	.00114	.00005	.00254	.00147	.00006	.00003	.00044	.00062
%RSD	91.068	64.349	2350.4	153.97	112.01	22.641	156.31	49.938	64.335	14.232	597.44	42.299
#1	.00082	-.00196	-.00831	-.00007	.00182	.00024	-.00343	.00397	-.00005	.00017	-.00038	-.00192
#2	.00018	-.00073	.00938	.00163	.00021	.00017	.00017	.00190	-.00014	.00020	.00024	-.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01642	.01932	-.00327	.00125	.00022	.00157	.10766	-.00422	-.00052	.00025	.00351	W .01015
Stddev	.00126	.03962	.00084	.00190	.00008	.00068	.03560	.00029	.00052	.00017	.00989	.00130
%RSD	7.6580	205.06	25.579	151.63	37.161	43.149	33.072	6.8683	99.422	67.422	281.72	12.835
#1	.01731	.04733	-.00387	.00260	.00016	.00109	.13283	-.00442	-.00089	.00013	.01051	.01107
#2	.01553	-.00869	-.00268	-.00009	.00027	.00204	.08248	-.00401	-.00015	.00037	-.00348	.00923
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit												.00600
Low Limit												-.00600
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00649	.00367	.00786	-.00061	-.00007	-.00015	-.00001	.00235	.02296	.00026	-.00192	.00100
Stddev	.00289	.01498	.03206	.00028	.00016	.00095	.00064	.00034	.03929	.00126	.00004	.00239
%RSD	44.532	408.08	408.08	46.050	238.74	655.32	12140.	14.476	171.12	482.58	1.8818	238.65
#1	.00853	-.00692	-.01482	-.00041	-.00018	-.00082	-.00046	.00211	.05075	.00116	-.00195	.00269
#2	.00445	.01427	.03053	-.00081	.00005	.00053	.00045	.00259	-.00482	-.00063	-.00190	-.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3509.1	48383.	2741.0									
Stddev	13.3	33.	9.6									
%RSD	.37958	.06921	.35145									
#1	3499.7	48407.	2734.2									
#2	3518.6	48359.	2747.8									

Sample Name: ICB Acquired: 5/14/2019 9:41:11 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	-.00125	-.00178	.00100	.00031	-.00000	-.00197	.00243	.00004	-.00035	-.00029	-.00095	-.00360
Stddev	.00037	.00023	.00018	.00055	.00043	.00016	.00109	.00656	.00008	.00059	.00014	.00127	.00169
%RSD	734.97	18.504	10.067	54.987	139.31	3579.2	55.260	269.40	208.50	171.42	49.299	133.63	46.843

#1	-.00021	-.00141	-.00165	.00139	.00062	.00011	-.00120	.00707	-.00002	.00007	-.00019	-.00005	-.00241
#2	.00031	-.00109	-.00190	.00061	.00000	-.00012	-.00275	-.00220	.00010	-.00077	-.00039	-.00185	-.00479

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit													
Low Limit													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.17149	.00306	.00112	-.00009	.00033	.06927	-.00432	.00013	.00226	-.00244	.00322	.00203	-.05200
Stddev	.01778	.00187	.00144	.00002	.00003	.02477	.00019	.00434	.00209	.00056	.00704	.00468	.01582
%RSD	10.366	61.182	128.61	26.646	10.291	35.752	4.4483	3223.2	92.799	22.775	218.29	230.42	30.430

#1	-.18406	.00173	.00010	-.00011	.00036	.08679	-.00445	-.00294	.00078	-.00205	-.00175	-.00128	-.06319
#2	-.15892	.00438	.00214	-.00007	.00031	.05176	-.00418	.00321	.00374	-.00283	.00820	.00534	-.04081

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit													
Low Limit													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.11128	-.00072	-.00011	-.00072	.00004	.00266	-.01462	.00027	-.00109	.00090
Stddev	.03386	.00027	.00002	.00215	.00028	.00210	.02416	.00007	.00007	.00534
%RSD	30.430	37.176	14.818	296.63	629.30	78.991	165.27	24.993	6.4135	590.63

#1	-.13522	-.00090	-.00009	.00079	.00024	.00118	-.03171	.00032	-.00104	.00468
#2	-.08733	-.00053	-.00012	-.00224	-.00015	.00415	.00247	.00022	-.00114	-.00287

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3425.8	49204.	2794.2
Stddev	2.1	101.	13.9
%RSD	.06019	.20609	.49831

#1	3427.3	49276.	2804.1
#2	3424.3	49132.	2784.4

Sample Name: CRI-5701318 Acquired: 5/14/2019 9:43:45 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00965	.10051	W .02023	.09637	.01013	.00115	.09974	.19104	.00511	.01054	.00998	.01495
Stddev	.00114	.00053	.01006	.00007	.00087	.00016	.00502	.00964	.00014	.00004	.00036	.00061
%RSD	11.801	.52598	49.707	.07025	8.6085	14.062	5.0300	5.0465	2.7670	.36406	3.5909	4.1112
#1	.00885	.10088	.02734	.09642	.01075	.00103	.09620	.18422	.00501	.01051	.01023	.01452
#2	.01046	.10014	.01312	.09632	.00951	.00126	.10329	.19786	.00521	.01056	.00973	.01539
Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.01500									
Range			20.490%									
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09772	2.9284	.01881	.20165	.01035	.02018	1.0435	.03729	2.8535	.01058	.08261	.02232
Stddev	.00267	.0008	.00481	.00487	.00006	.00005	.0086	.00021	.0086	.00171	.00480	.00239
%RSD	2.7363	.02853	25.568	2.4150	.53761	.26742	.82865	.56564	.30078	16.144	5.8078	10.690
#1	.09583	2.9278	.01541	.19820	.01039	.02022	1.0374	.03715	2.8475	.00938	.08600	.02063
#2	.09961	2.9289	.02221	.20509	.01031	.02015	1.0496	.03744	2.8596	.01179	.07921	.02401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01740	4.7997	1.0271	.09827	.00986	W .01190	.00977	.01789	F .11313	.01047	.01871	.01414
Stddev	.00536	.03046	.0652	.00060	.00006	.00036	.00020	.00270	.01799	.00078	.00008	.00038
%RSD	30.811	6.3467	6.3467	.61246	.64770	3.0241	2.0611	15.086	15.903	7.4411	.41346	2.6601
#1	.02119	.50151	1.0732	.09870	.00991	.01165	.00991	.01598	.10041	.01102	.01876	.01440
#2	.01361	.45843	.98104	.09785	.00982	.01216	.00963	.01980	.12585	.00992	.01866	.01387
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value						.01500			.06000			
Range						-20.490%			50.000%			
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3486.2	48188.	2713.3									
Stddev	2.6	22.	8.9									
%RSD	.07403	.04586	.32686									
#1	3488.0	48203.	2719.6									
#2	3484.3	48172.	2707.0									

Sample Name: CRI- Acquired: 5/14/2019 9:49:52 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: Alt CRI As 15 ppb

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	-.00156	.00708	-.00042	.00034	.00016	.00297	-.00980	.00010	-.00022	-.00037	-.00119	-.00626
Stddev	.00006	.00077	.00300	.00011	.00067	.00007	.00102	.00118	.00016	.00016	.00009	.00032	.00481
%RSD	109.06	49.206	42.315	25.120	197.36	45.859	34.374	12.087	159.76	70.901	25.454	26.769	76.910

#1	-.00001	-.00102	.00920	-.00050	-.00013	.00011	.00369	-.01063	.00021	-.00011	-.00030	-.00141	-.00285
#2	-.00010	-.00210	.00496	-.00035	.00082	.00021	.00225	-.00896	-.00001	-.00034	-.00044	-.00096	-.00966

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit													
Low Limit													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.03828	-.00453	.00047	.00068	.00019	.05321	-.00468	.00012	-.00014	.00804	.00308	-.00137	.01963
Stddev	.06853	.00265	.00333	.00007	.00033	.00135	.00050	.00179	.00000	.00085	.00231	.00673	.02744
%RSD	179.02	58.602	708.75	9.6753	170.75	2.5346	10.696	1448.1	3.0180	10.578	74.759	491.48	139.76

#1	.01018	-.00641	.00282	.00063	.00042	.05416	-.00504	.00139	-.00014	.00744	.00145	.00339	.03904
#2	-.08674	-.00265	-.00188	.00072	-.00004	.05225	-.00433	-.00114	-.00015	.00864	.00471	-.00613	.00023

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit													
Low Limit													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04201	.00065	-.00009	-.00102	-.00011	.00157	.06174	.00066	-.00152	.00584
Stddev	.05872	.00106	.00000	.00064	.00083	.00335	.03617	.00042	.00012	.00512
%RSD	139.76	163.91	3.9967	63.297	756.47	213.68	58.583	63.839	7.8075	87.694

#1	.08354	-.00010	-.00009	-.00056	-.00070	.00394	.08731	.00036	-.00161	.00222
#2	.00049	.00140	-.00009	-.00147	.00048	-.00080	.03616	.00095	-.00144	.00946

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3589.4	49200.	2786.9
Stddev	41.1	952.	5.5
%RSD	1.1437	1.9358	.19820

#1	3560.4	48526.	2783.0
#2	3618.4	49873.	2790.8

Sample Name: ICSA-5681701 Acquired: 5/14/2019 9:54:31 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	499.79	-.00785	.00619	W .00223	.00053	-.01107	462.56	.00087	.00034	W .00316	.00146
Stddev	.00045	.59	.00458	.00059	.00022	.00008	.00064	.34	.00043	.00034	.00069	.00030
%RSD	56.001	.11858	58.265	9.4734	9.6517	14.290	5.8022	.07387	49.139	100.80	21.786	20.685
#1	.00048	499.37	-.00462	.00578	.00238	.00059	-.01062	462.80	.00117	.00010	.00365	.00125
#2	.00112	500.21	-.01109	.00661	.00208	.00048	-.01152	462.32	.00057	.00058	.00267	.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit					.00200						.00260	
Low Limit					-.00200						-.00260	
Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	182.99	-.12760	-.00824	525.80	W .00120	.00198	.30683	-.00227	.01315	-.00210	-.13860	F -.04835
Stddev	.63	.05562	.00187	6.27	.00001	.00050	.02612	.00027	.00236	.00125	.00302	.00328
%RSD	.34616	43.590	22.649	1.1920	.73933	25.015	8.5130	11.715	17.913	59.659	2.1806	6.7851
#1	182.54	-.08827	-.00692	530.23	.00120	.00233	.32530	-.00246	.01482	-.00121	-.13647	-.04603
#2	183.44	-.16693	-.00956	521.37	.00119	.00163	.28836	-.00208	.01149	-.00298	-.14074	-.05067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit					.00100							.04000
Low Limit					-.00100							-.04000
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00335	-.02294	-.04909	.00067	W .00828	.00884	W .00282	.00427	-.02536	.00118	-.00594	.00317
Stddev	.00061	.03227	.06907	.00235	.00006	.00138	.00021	.00041	.06386	.00035	.00035	.00244
%RSD	18.318	140.70	140.70	352.64	.69478	15.584	7.5790	9.6462	251.83	29.761	5.9014	76.818
#1	.00378	-.04576	-.09792	-.00100	.00824	.00787	.00267	.00456	-.07051	.00143	-.00619	.00489
#2	.00292	-.00012	-.00025	.00233	.00832	.00982	.00297	.00398	.01980	.00093	-.00569	.00145
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Warn	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					.00120		.00230					
Low Limit					-.00120		-.00230					
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3280.4	43750.	2847.7									
Stddev	1.8	524.	19.2									
%RSD	.05386	1.1974	.67596									
#1	3279.1	44120.	2834.1									
#2	3281.6	43379.	2861.3									

Sample Name: ICSAB-5676207 Acquired: 5/14/2019 9:57:05 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1306	508.89	.97927	9.5242	.95762	.47428	.95661	468.17	.99134	.90373	.92238	1.0576	185.48
Stddev	.0027	1.10	.00034	.0560	.00331	.00012	.00314	1.18	.00789	.00396	.00720	.0021	1.44
%RSD	.23654	.21646	.03519	.58803	.34607	.02469	.32779	.25185	.79615	.43866	.78092	.19487	.77744

#1	1.1325	508.12	.97903	9.5638	.95527	.47419	.95883	467.34	.99692	.90654	.92748	1.0590	184.46
#2	1.1287	509.67	.97951	9.4846	.95996	.47436	.95439	469.01	.98576	.90093	.91729	1.0561	186.50

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.633	1.0120	531.48	1.0036	.95322	11.195	.90176	9.6626	.91239	9.7435	.88511	1.0082	9.6953
Stddev	.018	.0016	3.34	.0031	.00802	.122	.00517	.0667	.00623	.0466	.01455	.0021	.0420
%RSD	.17092	.15786	.62861	.31002	.84119	1.0921	.57365	.69012	.68229	.47830	1.6435	.20625	.43265

#1	10.620	1.0109	529.12	1.0058	.95889	11.108	.90541	9.7098	.91679	9.7765	.89539	1.0068	9.7250
#2	10.645	1.0131	533.85	1.0014	.94755	11.281	.89810	9.6155	.90798	9.7106	.87482	1.0097	9.6657

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.748	.99879	.97011	2.0465	1.0256	.95088	-.11371	1.0294	.97445	.99047
Stddev	.090	.01058	.00097	.0063	.0061	.00431	.05523	.0037	.00021	.00769
%RSD	.43265	1.0597	.09956	.30877	.59785	.45309	48.571	.36053	.02119	.77632

#1	20.811	1.0063	.96943	2.0510	1.0299	.95393	-.07465	1.0320	.97431	.99591
#2	20.684	.99131	.97079	2.0420	1.0212	.94783	-.15276	1.0268	.97460	.98503

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3275.7	42772.	2753.2
Stddev	12.2	59.	7.9
%RSD	.37228	.13806	.28789

#1	3267.1	42814.	2747.6
#2	3284.3	42731.	2758.8

Sample Name: LRA-5681702 Acquired: 5/14/2019 9:59:28 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.31498	9.6220	9.7063	12.063	-.00463	-.01380	.04332	2.0289	4.9598	9.6756	10.559	491.50
Stddev	.00017	.00117	.0418	.0171	.048	.00021	.00535	.00086	.0089	.0260	.0577	.008	1.36
%RSD	30.122	.37040	.43462	.17601	.39846	4.5254	38.741	1.9856	.43968	.52324	.59655	.07681	.27687

#1	.00069	.31581	9.6516	9.7184	12.097	-.00478	-.01002	.04393	2.0352	4.9781	9.7164	10.565	492.46
#2	.00045	.31416	9.5924	9.6942	12.029	-.00448	-.01758	.04271	2.0226	4.9414	9.6347	10.553	490.54

Check ?	None	None	Chk Pass	Chk Pass	Chk Pass	None	None	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.32751	-.00129	-.05681	10.039	4.9123	.06061	10.033	-.00069	10.059	-.06413	.01448	4.8148	47.056
Stddev	.16170	.00554	.00471	.058	.0377	.00931	.049	.00454	.054	.00179	.00285	.0184	.142
%RSD	49.373	429.06	8.2851	.57342	.76634	15.354	.49024	661.54	.53957	2.7965	19.658	.38222	.30092

#1	-.21317	-.00521	-.05348	10.080	4.9390	.05403	10.067	-.00390	10.097	-.06286	.01649	4.8278	47.156
#2	-.44185	.00263	-.06013	9.9986	4.8857	.06719	9.9979	.00253	10.021	-.06540	.01247	4.8018	46.956

Check ?	None	None	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	100.70	.00140	10.001	.01668	9.9690	4.8946	.04897	10.061	9.7506	.00560
Stddev	.30	.00047	.035	.00106	.0212	.0311	.02127	.014	.0264	.00150
%RSD	.30092	33.649	.35466	6.3670	.21259	.63627	43.428	.14402	.27077	26.813

#1	100.91	.00173	10.026	.01592	9.9840	4.9166	.06401	10.071	9.7692	.00454
#2	100.49	.00107	9.9755	.01743	9.9540	4.8726	.03393	10.050	9.7319	.00666

Check ?	None	None	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3484.2	48642.	2767.0
Stddev	3.1	218.	2.7
%RSD	.08844	.44753	.09882

#1	3482.1	48488.	2765.1
#2	3486.4	48796.	2769.0

Sample Name: CCVH-5699817 Acquired: 5/14/2019 10:01:55 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00690	48.746	-.00091	.03595	.00471	.00164	.97767	.01592	.00152	.00297	.00156	.00341	47.937
Stddev	.00021	.052	.00322	.00330	.00072	.00020	.01132	.00488	.00019	.00027	.00010	.00001	.029
%RSD	3.0328	.10700	354.51	9.1670	15.313	11.998	1.1579	30.663	12.163	8.9470	6.6782	.17732	.06066

#1	.00705	48.783	-.00319	.03828	.00420	.00178	.98567	.01247	.00165	.00316	.00163	.00341	47.957
#2	.00675	48.709	.00137	.03362	.00522	.00151	.96966	.01937	.00139	.00278	.00149	.00340	47.916

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04985	.00455	.01136	.00262	.00839	245.63	-.00070	.00546	.00473	4.7871	-.01500	.00042	.01911
Stddev	.04396	.00014	.00177	.00006	.00083	.20	.00019	.00009	.00116	.0590	.00084	.00576	.08564
%RSD	88.185	3.0037	15.541	2.3467	9.8461	.07961	27.235	1.6333	24.623	1.2331	5.5704	1378.9	448.13

#1	.08093	.00465	.01261	.00266	.00781	245.76	-.00084	.00552	.00391	4.8288	-.01441	.00449	.07967
#2	.01877	.00446	.01011	.00258	.00898	245.49	-.00057	.00539	.00555	4.7454	-.01559	-.00366	-.04145

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04090	.00035	.00231	4.9648	-.00695	.00552	10.114	.00804	.00248	.09897
Stddev	.18327	.00075	.00034	.0100	.00057	.00197	.040	.00055	.00087	.00074
%RSD	448.13	216.51	14.942	.20037	8.1461	35.691	.39126	6.8411	34.938	.74749

#1	.17049	-.00018	.00255	4.9578	-.00735	.00692	10.142	.00843	.00310	.09949
#2	-.08869	.00087	.00206	4.9719	-.00655	.00413	10.086	.00765	.00187	.09845

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3432.5	47036.	2761.8
Stddev	15.8	25.	4.7
%RSD	.46128	.05392	.17044

#1	3443.7	47054.	2765.1
#2	3421.3	47018.	2758.4

Sample Name: CCV-5699804 Acquired: 5/14/2019 10:04:27 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoadesc Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51389	.53965	.98291	.50618	.49010	.49318	.00656	4.8711	.49836	.50455	.48933	.50414	2.5493
Stddev	.00171	.00228	.00157	.00153	.00031	.00069	.00145	.0123	.00216	.00174	.00297	.00000	.0144
%RSD	.33317	.42311	.15941	.30315	.06421	.13941	22.090	.25205	.43440	.34582	.60775	.00075	.56696

#1	.51511	.54126	.98180	.50726	.48987	.49270	.00758	4.8624	.49989	.50578	.49144	.50414	2.5391
#2	.51268	.53803	.98401	.50509	.49032	.49367	.00553	4.8798	.49683	.50332	.48723	.50414	2.5595

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	49.410	.99039	20.472	.50869	.50385	5.3118	.50367	.99564	1.0105	-.00079	.97033	.98327	4.8957
Stddev	.065	.00192	.034	.00063	.00211	.0285	.00106	.00882	.0075	.00094	.00181	.00027	.0151
%RSD	.13131	.19418	.16789	.12457	.41851	.53707	.21045	.88624	.74086	120.17	.18702	.02788	.30755

#1	49.456	.98903	20.496	.50914	.50534	5.3319	.50442	1.0019	1.0158	-.00012	.96905	.98346	4.8851
#2	49.364	.99175	20.447	.50824	.50236	5.2916	.50292	.98940	1.0052	-.00145	.97161	.98307	4.9064

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.477	.98648	.49333	.00107	.50599	.99711	.04834	.50531	.50328	.50525
Stddev	.032	.00292	.00002	.00076	.00111	.00058	.00453	.00235	.00112	.00452
%RSD	.30755	.29644	.00430	71.214	.21843	.05830	9.3655	.46506	.22290	.89385

#1	10.454	.98854	.49331	.00161	.50677	.99669	.04514	.50697	.50407	.50845
#2	10.500	.98441	.49334	.00053	.50521	.99752	.05154	.50365	.50249	.50206

Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3515.0	48557.	2771.2
Stddev	7.8	44.	15.4
%RSD	.22096	.09078	.55524

#1	3520.5	48588.	2760.3
#2	3509.5	48525.	2782.0

Sample Name: CCB Acquired: 5/14/2019 10:06:52 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoadesc Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.00093	.00140	.01270	.00056	.00016	-.00433	-.00370	-.00021	-.00019	-.00003	-.00090
Stddev	.00024	.00048	.00493	.00247	.00041	.00007	.00028	.00946	.00019	.00014	.00008	.00162
%RSD	42.055	51.689	353.13	19.479	73.177	42.724	6.3624	255.76	89.445	73.225	263.46	179.32

#1	.00074	.00127	.00488	.01445	.00085	.00020	-.00413	-.01039	-.00034	-.00009	.00003	-.00205
#2	.00040	.00059	-.00209	.01095	.00027	.00011	-.00452	.00299	-.00008	-.00028	-.00008	.00024

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00611	-.00895	.00189	.00809	.00014	.00179	.02436	-.00466	-.00203	.00084	-.00146	W .00629
Stddev	.00693	.07406	.00133	.00958	.00010	.00010	.00354	.00023	.00105	.00309	.00456	.00080
%RSD	113.36	827.62	70.424	118.45	71.697	5.6528	14.514	4.9969	51.910	366.99	312.79	12.684

#1	.00121	-.06132	.00282	.00131	.00007	.00172	.02687	-.00482	-.00278	.00303	-.00469	.00573
#2	.01102	.04342	.00095	.01486	.00021	.00186	.02186	-.00449	-.00129	-.00134	.00177	.00686

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit												.00600
Low Limit												-.00600

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00060	-.00087	-.00186	-.00052	-.00005	.00072	.00024	.00078	-.00261	.00035	-.00165	.00004
Stddev	.00221	.01695	.03628	.00051	.00007	.00319	.00002	.00264	.02845	.00076	.00055	.00146
%RSD	364.59	1953.3	1953.3	99.472	147.55	445.69	6.5715	339.83	1091.4	216.70	33.188	3272.3

#1	.00095	.01112	.02380	-.00015	-.00010	-.00154	.00025	.00264	.01751	.00088	-.00204	-.00098
#2	-.00216	-.01286	-.02751	-.00088	.00000	.00297	.00022	-.00109	-.02272	-.00019	-.00126	.00107

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3587.0	49641.	2822.0
Stddev	4.2	87.	3.5
%RSD	.11588	.17542	.12417
#1	3589.9	49579.	2819.5
#2	3584.0	49702.	2824.5

Sample Name: CCVL-5701318 Acquired: 5/14/2019 10:09:27 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01018	.09871	F .00979	.10484	.01018	.00118	.10201	.18881	.00495	.00996	.00956	.01502
Stddev	.00008	.00155	.00154	.00076	.00032	.00013	.00118	.00242	.00048	.00052	.00022	.00011
%RSD	.77762	1.5692	15.704	.72915	3.1157	10.630	1.1597	1.2821	9.7050	5.2368	2.2568	.75288

#1	.01023	.09981	.00870	.10538	.00995	.00109	.10118	.18710	.00529	.01033	.00971	.01494
#2	.01012	.09762	.01087	.10430	.01040	.00127	.10285	.19052	.00461	.00959	.00940	.01510

Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.01500									
Range			-30.000%									

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10417	2.8268	.01851	.20181	.01039	.02100	.99572	.03615	2.8129	.00963	.08840	.02400
Stddev	.00205	.0688	.00094	.00481	.00002	.00031	.00129	.00067	.0147	.00170	.00376	.00378
%RSD	1.9701	2.4335	5.0891	2.3819	.14553	1.4938	.12937	1.8633	.52372	17.631	4.2496	15.752

#1	.10562	2.8754	.01784	.20521	.01038	.02122	.99663	.03662	2.8233	.01083	.09106	.02668
#2	.10272	2.7781	.01917	.19841	.01040	.02078	.99480	.03567	2.8025	.00843	.08574	.02133

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02303	.49362	1.0564	.09663	.00974	.01264	.01003	.01749	F .10402	.01080	.01873	.01484
Stddev	.00121	.01309	.0280	.00121	.00003	.00188	.00025	.00164	.04253	.00069	.00052	.00037
%RSD	5.2703	2.6508	2.6508	1.2480	.31688	14.884	2.4991	9.3617	40.885	6.4078	2.7893	2.4800

#1	.02388	.48437	1.0366	.09749	.00972	.01131	.01021	.01865	.07395	.01129	.01909	.01510
#2	.02217	.50288	1.0762	.09578	.00976	.01397	.00985	.01633	.13409	.01031	.01836	.01458

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value									.06000			
Range									30.000%			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3507.2	49129.	2858.5
Stddev	19.2	887.	14.7
%RSD	.54688	1.8050	.51493

#1	3493.7	49756.	2848.1
#2	3520.8	48502.	2868.9

Sample Name: MB 280-457070/1-A Acquired: 5/14/2019 11:36:47 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/9 Custom ID2: Custom ID3:
Comment: 457070 6010C Q5 (Al Fe Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00039	-0.00113	-0.00541	-0.00148	.00054	.00022	-0.00115	.00343	.00028
Stddev	.00025	.00094	.00622	.00043	.00014	.00004	.00604	.00857	.00009
%RSD	63.444	83.415	115.01	29.285	25.736	16.384	523.90	250.15	32.666

#1	-0.00057	-0.00046	-0.00981	-0.00179	.00064	.00019	-0.00542	-0.00263	.00035
#2	-0.00022	-0.00179	-0.00101	-0.00117	.00044	.00024	.00312	.00948	.00022

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00007	-0.00012	-0.00130	.00361	-0.03651	-0.00425	.00088	.00003	.00078
Stddev	.00035	.00031	.00005	.00291	.06640	.00115	.00541	.00007	.00009
%RSD	498.80	260.01	4.1619	80.663	181.87	26.997	611.88	220.14	11.616

#1	-0.00032	-0.00034	-0.00134	.00567	.01044	-0.00506	.00471	.00009	.00085
#2	.00018	.00010	-0.00126	.00155	-.08346	-0.00344	-0.00294	-0.00002	.00072

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01179	-0.00472	.00008	.00091	.00359	.00111	-0.00168	-.01596	-.03416
Stddev	.00121	.00011	.00005	.00113	.00066	.00286	.00166	.02728	.05838
%RSD	10.221	2.4294	61.010	124.02	18.371	257.29	99.152	170.90	170.90

#1	.01094	-0.00464	.00011	.00011	.00312	.00313	-0.00050	-.03525	-.07544
#2	.01264	-0.00480	.00004	.00171	.00405	-0.00091	-0.00285	.00333	.00712

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00097	-0.00012	-0.00053	-0.00058	.00226	.03101	-0.00009	-.00114	.00155
Stddev	.00013	.00018	.00294	.00016	.00046	.02703	.00020	.00014	.00574
%RSD	13.274	151.78	557.79	26.929	20.471	87.160	218.85	11.868	371.45

#1	-0.00106	-0.00025	-0.00260	-0.00069	.00193	.05013	.00005	-0.00104	.00560
#2	-0.00088	.00001	.00155	-0.00047	.00258	.01190	-0.00024	-0.00123	-0.00251

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3570.0	49287.	2768.6
Stddev	22.0	119.	23.6
%RSD	.61708	.24127	.85230

#1	3554.4	49203.	2751.9
#2	3585.6	49372.	2785.3

Sample Name: LCS 280-457070/2-A Acquired: 5/14/2019 11:39:25 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5 (Al Fe Na)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05389	9.7796	1.9114	.94332	1.9093	.95319	1.9025	46.635	.95833
Stddev	.00075	.0556	.0072	.00136	.0020	.00180	.0032	.133	.00459
%RSD	1.3832	.56822	.37642	.14468	.10690	.18919	.17002	.28418	.47904

#1	.05336	9.8189	1.9165	.94429	1.9108	.95447	1.9048	46.729	.96158
#2	.05442	9.7403	1.9063	.94236	1.9079	.95192	1.9002	46.541	.95509

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93912	.93682	.95876	9.5020	47.982	.96384	48.168	.97717	.97484
Stddev	.00220	.00421	.00310	.0009	.063	.00555	.021	.00008	.00433
%RSD	.23402	.44977	.32382	.00951	.13086	.57584	.04302	.00825	.44394

#1	.94067	.93980	.96096	9.5027	48.026	.96776	48.182	.97711	.97790
#2	.93756	.93384	.95657	9.5014	47.938	.95991	48.153	.97723	.97178

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	48.658	.93765	19.330	.94691	9.1318	.96926	1.8936	1.9880	4.2543
Stddev	.140	.00261	.041	.00489	.0159	.00344	.0133	.0189	.0404
%RSD	.28768	.27887	.21275	.51661	.17401	.35448	.70341	.95056	.95056

#1	48.559	.93950	19.359	.95037	9.1431	.97169	1.9030	2.0014	4.2829
#2	48.757	.93580	19.301	.94345	9.1206	.96683	1.8842	1.9746	4.2258

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8834	.95460	.97033	.98686	1.8621	2.0493	.99008	.48218	.50227
Stddev	.0068	.00210	.00082	.00178	.0062	.0055	.00439	.00320	.00067
%RSD	.36134	.22033	.08486	.18062	.33184	.27029	.44303	.66366	.13402

#1	1.8882	.95609	.97091	.98560	1.8665	2.0454	.98698	.48444	.50179
#2	1.8786	.95312	.96975	.98812	1.8577	2.0532	.99319	.47991	.50274

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3529.3	47987.	2781.4
Stddev	24.3	277.	7.1
%RSD	.68951	.57788	.25450

#1	3512.1	47791.	2776.4
#2	3546.6	48183.	2786.4

Sample Name: LCSD 280-457070/3-A Acquired: 5/14/2019 11:41:45 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5 (Al Fe Na)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05346	9.9809	1.9242	.95573	1.9243	.96673	1.9208	47.655	.96825
Stddev	.00115	.0501	.0109	.00191	.0020	.00074	.0029	.005	.00506
%RSD	2.1581	.50204	.56760	.20024	.10313	.07620	.15293	.01021	.52288

#1	.05264	10.016	1.9319	.95708	1.9229	.96725	1.9229	47.651	.97183
#2	.05427	9.9454	1.9164	.95438	1.9257	.96621	1.9187	47.658	.96467

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94778	.93903	.96894	9.8495	49.321	.97703	49.622	.99338	.99071
Stddev	.00569	.00688	.00073	.0290	.000	.00536	.061	.00107	.00526
%RSD	.60058	.73301	.07575	.29458	.00067	.54848	.12348	.10793	.53116

#1	.95181	.94389	.96842	9.8700	49.321	.97324	49.665	.99413	.99443
#2	.94376	.93416	.96946	9.8290	49.320	.98082	49.578	.99262	.98699

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	49.836	.94896	19.480	.95810	9.1422	.97200	1.8925	1.9624	4.1995
Stddev	.342	.00472	.106	.00032	.0484	.00603	.0213	.0053	.0112
%RSD	.68569	.49781	.54172	.03388	.52975	.62058	1.1261	.26741	.26741

#1	50.078	.95230	19.555	.95788	9.1764	.97626	1.9076	1.9587	4.1916
#2	49.595	.94562	19.406	.95833	9.1079	.96773	1.8775	1.9661	4.2075

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8902	.96765	.98729	1.0020	1.8688	2.0853	1.0034	.48704	.51752
Stddev	.0145	.00031	.00262	.0008	.0144	.0333	.0021	.00036	.00742
%RSD	.76862	.03158	.26555	.07717	.76993	1.5972	.20403	.07455	1.4346

#1	1.9005	.96744	.98544	1.0026	1.8790	2.1088	1.0019	.48678	.52277
#2	1.8799	.96787	.98914	1.0015	1.8586	2.0617	1.0048	.48729	.51227

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3572.7	48408.	2796.8
Stddev	16.4	80.	12.3
%RSD	.45946	.16577	.44057

#1	3561.1	48465.	2788.0
#2	3584.3	48351.	2805.5

Sample Name: 280-123205-A-5-A Acquired: 5/14/2019 11:44:05 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5 (Al Fe Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.05229	.00116	.06266	.04495	.00016	-.00273	84.201	.00038
Stddev	.00075	.00039	.00007	.00165	.00022	.00005	.00047	.344	.00046
%RSD	198.46	.73643	6.2466	2.6277	.48826	31.156	17.305	.40852	119.57

#1	-.00090	.05257	.00121	.06149	.04479	.00020	-.00240	83.958	.00006
#2	.00015	.05202	.00111	.06382	.04510	.00013	-.00307	84.444	.00071

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.01749	-.00045	.19023	.40842	.00169	29.118	.00385	.00499
Stddev	.00038	.00045	.00113	.00402	.12720	.00271	.082	.00004	.00026
%RSD	649.75	2.5570	249.43	2.1139	31.145	160.07	.28197	1.1219	5.1589

#1	-.00032	.01780	.00034	.18738	.31848	-.00022	29.176	.00382	.00481
#2	.00021	.01717	-.00125	.19307	.49837	.00360	29.060	.00388	.00517

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	31.530	-.00044	.00997	-.00043	19.322	.00341	-.00161	5.6127	12.011
Stddev	.133	.00025	.00167	.00077	.066	.00221	.00002	.0149	.032
%RSD	.42329	56.735	16.755	176.93	.34233	64.896	1.2193	.26584	.26584

#1	31.436	-.00027	.01116	-.00098	19.369	.00497	-.00160	5.6021	11.989
#2	31.625	-.00062	.00879	.00011	19.275	.00184	-.00162	5.6232	12.034

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.15975	-.00126	.00046	.00238	.00111	.00093	-.00044	.00112
Stddev	.00080	.00031	.00215	.00009	.00206	.02667	.00091	.00077	.00220
%RSD	87.487	.19160	170.18	19.521	86.517	2398.4	98.556	176.01	196.47

#1	.00148	.15954	.00026	.00040	.00384	-.01775	.00028	.00011	.00267
#2	.00035	.15997	-.00278	.00053	.00093	.01997	.00157	-.00098	-.00044

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3582.5	49063.	2869.5
Stddev	5.8	61.	28.5
%RSD	.16120	.12346	.99492

#1	3578.4	49106.	2889.7
#2	3586.5	49020.	2849.3

Sample Name: 123205-A-5-A SD@5 Acquired: 5/14/2019 11:46:40 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5 (Al Fe Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.01102	.00225	.01400	.00879	.00003	.00217	16.766	-.00030
Stddev	.00035	.00047	.00107	.00010	.00016	.00013	.00179	.229	.00008
%RSD	129.47	4.2677	47.747	.73502	1.7892	441.33	82.233	1.3646	27.285

#1	-.00052	.01135	.00149	.01393	.00868	-.00006	.00343	16.605	-.00024
#2	-.00002	.01069	.00300	.01407	.00890	.00012	.00091	16.928	-.00036

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00382	-.00042	.07030	.02909	.00212	6.0999	.00101	.00155
Stddev	.00007	.00057	.00011	.00235	.02581	.00016	.0718	.00004	.00022
%RSD	99.993	14.806	27.289	3.3415	88.696	7.3330	1.1764	3.9155	13.948

#1	-.00012	.00342	-.00050	.06864	.01085	.00223	6.0492	.00104	.00170
#2	-.00002	.00422	-.00034	.07196	.04734	.00201	6.1506	.00098	.00140

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.0945	-.00343	.00087	.00356	4.1566	.00334	.00082	1.0658	2.2807
Stddev	.0513	.00000	.00258	.00103	.0927	.00061	.00078	.0020	.0042
%RSD	.84203	.04599	295.55	28.989	2.2293	18.345	95.312	.18496	.18496

#1	6.0582	-.00343	.00270	.00283	4.0910	.00378	.00138	1.0644	2.2778
#2	6.1308	-.00344	-.00095	.00429	4.2221	.00291	.00027	1.0672	2.2837

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00198	.03165	-.00124	.00087	.00319	.02606	.00156	-.00164	.00158
Stddev	.00151	.00066	.00246	.00053	.00085	.00998	.00020	.00032	.00224
%RSD	76.127	2.0772	198.93	60.672	26.818	38.296	12.753	19.267	141.88

#1	.00091	.03119	.00050	.00049	.00258	.03311	.00170	-.00141	-.00001
#2	.00304	.03212	-.00298	.00124	.00379	.01900	.00142	-.00186	.00317

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3603.1	49548.	2847.5
Stddev	19.8	89.	.2
%RSD	.54833	.17940	.00858

#1	3617.0	49485.	2847.3
#2	3589.1	49611.	2847.7

Sample Name: 280-123205-A-5-B MS Acquired: 5/14/2019 11:49:14 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5 (Al Fe Na)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05460	9.8989	1.9134	1.0051	1.9092	.95045	1.8788	129.57	.96157
Stddev	.00029	.0340	.0019	.0028	.0014	.00010	.0047	.03	.00110
%RSD	.53396	.34352	.10042	.28115	.07306	.01012	.24957	.02613	.11478

#1	.05439	9.9229	1.9121	1.0031	1.9082	.95038	1.8755	129.55	.96235
#2	.05480	9.8748	1.9148	1.0071	1.9102	.95052	1.8821	129.60	.96079

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.92383	.93157	.95994	9.7514	49.330	.95805	78.759	.97812	.97973
Stddev	.00107	.00346	.00068	.0022	.147	.00319	.097	.00093	.00411
%RSD	.11555	.37172	.07051	.02304	.29842	.33334	.12276	.09512	.41945

#1	.92458	.93402	.95946	9.7529	49.225	.95579	78.827	.97878	.98264
#2	.92307	.92912	.96041	9.7498	49.434	.96031	78.691	.97746	.97682

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	79.138	.92999	19.591	.93647	28.499	.96883	1.8907	7.6056	16.276
Stddev	.066	.00208	.007	.00093	.022	.00216	.0030	.0284	.061
%RSD	.08289	.22319	.03497	.09887	.07679	.22294	.15797	.37341	.37341

#1	79.092	.93145	19.586	.93713	28.514	.97035	1.8928	7.5856	16.233
#2	79.184	.92852	19.596	.93582	28.483	.96730	1.8886	7.6257	16.319

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8450	1.0993	.97432	.99412	1.8029	2.0410	1.0004	.47706	.50625
Stddev	.0008	.0013	.00238	.00057	.0072	.0472	.0027	.00045	.00060
%RSD	.04221	.11800	.24436	.05772	.40036	2.3110	.26639	.09442	.11907

#1	1.8456	1.0984	.97264	.99453	1.8080	2.0076	1.0022	.47674	.50668
#2	1.8445	1.1002	.97600	.99371	1.7978	2.0743	.99847	.47737	.50582

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3526.9	47637.	2823.4
Stddev	11.3	25.	7.2
%RSD	.31981	.05155	.25466

#1	3518.9	47619.	2818.3
#2	3534.9	47654.	2828.5

Sample Name: 280-123205-A-5-C MSD Acquired: 5/14/2019 11:51:33 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5 (Al Fe Na)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05459	9.4954	1.8928	1.0052	1.8908	.94031	1.8747	126.66	.95247
Stddev	.00009	.0010	.0055	.0035	.0030	.00319	.0074	.24	.00157
%RSD	.16993	.01097	.29042	.34705	.15871	.33952	.39298	.18660	.16500

#1	.05452	9.4947	1.8889	1.0077	1.8929	.94257	1.8799	126.83	.95359
#2	.05465	9.4962	1.8967	1.0027	1.8887	.93806	1.8695	126.49	.95136

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.91718	.92125	.95565	9.3329	47.406	.94719	76.702	.97349	.97409
Stddev	.00104	.00057	.00031	.0020	.013	.00462	.021	.00061	.00037
%RSD	.11370	.06196	.03210	.02150	.02769	.48779	.02737	.06240	.03786

#1	.91791	.92165	.95543	9.3343	47.415	.95046	76.717	.97306	.97435
#2	.91644	.92084	.95587	9.3315	47.397	.94393	76.687	.97392	.97383

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	77.336	.91978	19.449	.92861	28.213	.95687	1.8666	7.5996	16.263
Stddev	.171	.00088	.061	.00242	.052	.00389	.0177	.0063	.013
%RSD	.22063	.09529	.31212	.26085	.18396	.40687	.94783	.08252	.08252

#1	77.215	.92040	19.492	.93032	28.250	.95962	1.8791	7.6041	16.273
#2	77.456	.91916	19.406	.92690	28.176	.95411	1.8541	7.5952	16.254

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8237	1.0879	.97768	.98829	1.7780	1.9827	.99661	.47869	.50164
Stddev	.0067	.0017	.00362	.00034	.0051	.0553	.00015	.00046	.00152
%RSD	.36599	.15445	.37032	.03394	.28756	2.7901	.01504	.09696	.30385

#1	1.8284	1.0891	.97512	.98852	1.7816	2.0219	.99651	.47901	.50271
#2	1.8190	1.0867	.98024	.98805	1.7743	1.9436	.99672	.47836	.50056

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3541.0	47799.	2870.1
Stddev	50.5	229.	13.3
%RSD	1.4274	.47976	.46442

#1	3576.8	47961.	2860.7
#2	3505.3	47637.	2879.5

Sample Name: 280-123205-A-5-A PDS Acquired: 5/14/2019 11:53:53 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5 (Al Fe Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05178	1.0190	.19412	.15733	.14258	.05038	.00021	101.82	.05149
Stddev	.00105	.0045	.00088	.00206	.00059	.00046	.00256	.40	.00081
%RSD	2.0283	.44069	.45574	1.3063	.41572	.90588	1215.0	.39456	1.5677

#1	.05253	1.0222	.19349	.15878	.14216	.05006	.00202	101.53	.05206
#2	.05104	1.0158	.19474	.15588	.14300	.05071	-.00160	102.10	.05092

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04872	.06518	.05146	1.2054	20.711	.10225	49.519	.05568	.05336
Stddev	.00022	.00082	.00013	.0042	.085	.00038	.250	.00011	.00023
%RSD	.44672	1.2592	.25799	.34831	.41105	.37404	.50503	.20017	.43690

#1	.04888	.06576	.05156	1.2083	20.651	.10198	49.342	.05560	.05353
#2	.04857	.06460	.05137	1.2024	20.771	.10252	49.696	.05576	.05320

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	50.737	.04832	2.0600	.10186	18.927	.09048	.19807	10.249	21.933
Stddev	.344	.00020	.0138	.00024	.112	.00053	.00025	.017	.036
%RSD	.67733	.41584	.66812	.23723	.58946	.58238	.12680	.16554	.16554

#1	50.494	.04818	2.0697	.10169	19.006	.09085	.19789	10.261	21.959
#2	50.980	.04846	2.0503	.10203	18.849	.09011	.19825	10.237	21.908

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09304	.20915	.20114	.04976	.19354	.51093	.05301	.20526	.05680
Stddev	.00075	.00046	.00014	.00058	.00085	.08555	.00004	.00106	.00163
%RSD	.80603	.22074	.06916	1.1562	.43905	16.743	.07126	.51723	2.8747

#1	.09357	.20882	.20124	.05017	.19414	.45044	.05304	.20451	.05564
#2	.09251	.20947	.20104	.04936	.19294	.57142	.05298	.20602	.05795

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3486.9	47070.	2754.6
Stddev	3.4	358.	14.2
%RSD	.09751	.76104	.51673

#1	3489.3	47324.	2764.6
#2	3484.5	46817.	2744.5

Sample Name: 280-123205-A-13-A Acquired: 5/14/2019 11:56:20 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5 (Al Fe Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.04431	-.00011	.03758	.02927	.00023	.00096	33.496	.00041
Stddev	.00073	.00035	.00157	.00059	.00106	.00009	.00187	.149	.00001
%RSD	325.48	.78475	1477.8	1.5811	3.6076	37.775	195.55	.44531	2.6673

#1	-.00029	.04407	-.00121	.03800	.03001	.00017	-.00037	33.602	.00041
#2	.00074	.04456	.00100	.03716	.02852	.00029	.00228	33.391	.00042

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.00672	-.00016	.18285	2.2689	.08142	28.234	.09226	.00207
Stddev	.00057	.00021	.00010	.00042	.1172	.00207	.201	.00108	.00000
%RSD	486.53	3.0498	61.489	.23206	5.1635	2.5456	.71183	1.1756	.02450

#1	-.00052	.00658	-.00009	.18255	2.3518	.07995	28.092	.09149	.00207
#2	.00029	.00687	-.00023	.18315	2.1861	.08289	28.377	.09303	.00207

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	55.694	.00461	.01747	-.00355	25.318	.00097	-.00069	16.304	34.890
Stddev	.246	.00023	.00002	.00083	.199	.00132	.00433	.041	.088
%RSD	.44167	5.0670	.08958	23.245	.78503	136.82	628.66	.25176	.25176

#1	55.520	.00444	.01749	-.00414	25.459	.00190	.00237	16.333	34.952
#2	55.868	.00477	.01746	-.00297	25.178	.00003	-.00375	16.275	34.828

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.23128	-.00106	.00065	.00014	-.00149	.00063	.00034	.00316
Stddev	.00047	.00090	.00119	.00017	.00098	.06207	.00043	.00005	.00040
%RSD	112.69	.38737	112.00	25.930	690.75	4174.2	68.510	13.553	12.595

#1	.00009	.23191	-.00191	.00077	.00083	.04241	.00033	.00030	.00287
#2	.00076	.23064	-.00022	.00053	-.00055	-.04538	.00094	.00037	.00344

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3581.6	48238.	2797.2
Stddev	1.7	132.	4.7
%RSD	.04839	.27350	.16710

#1	3580.4	48145.	2793.8
#2	3582.9	48331.	2800.5

Sample Name: CCVH-5699817 Acquired: 5/14/2019 11:58:52 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00616	46.989	-.00710	.00426	.00279	.00137	.93829	.01660	.00158	.00241	.00111	.00081	45.386
Stddev	.00011	.294	.00100	.00033	.00063	.00002	.01152	.00285	.00013	.00050	.00007	.00017	.183
%RSD	1.7787	.62542	14.114	7.7091	22.569	1.7594	1.2281	17.192	7.9628	20.902	6.6290	20.576	.40326

#1	.00624	46.782	-.00781	.00403	.00235	.00139	.94644	.01458	.00166	.00205	.00117	.00069	45.257
#2	.00608	47.197	-.00640	.00450	.00324	.00135	.93015	.01862	.00149	.00277	.00106	.00093	45.515

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.12824	.00037	.00975	.00140	.00091	239.57	-.00063	.00744	.00605	4.5977	-.01391	-.00161	-.01059
Stddev	.02717	.00090	.01054	.00005	.00002	.45	.00049	.00106	.00041	.0160	.00263	.00084	.02964
%RSD	21.186	246.71	108.08	3.4362	2.3112	.18958	77.809	14.189	6.8089	.34854	18.887	52.237	279.78

#1	.14746	.00101	.00230	.00137	.00089	239.89	-.00028	.00819	.00634	4.6090	-.01576	-.00221	-.03155
#2	.10903	-.00027	.01721	.00143	.00092	239.25	-.00098	.00669	.00576	4.5863	-.01205	-.00102	.01036

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.02267	-.00046	.00147	4.8680	-.00771	.00529	9.9307	.00640	.00164	.09148
Stddev	.06343	.00256	.00033	.0097	.00049	.00198	.0566	.00000	.00064	.00613
%RSD	279.78	551.32	22.659	.20004	6.3056	37.389	.56954	.07613	38.756	6.7009

#1	-.06752	.00134	.00171	4.8749	-.00737	.00389	9.9707	.00641	.00119	.08715
#2	.02218	-.00227	.00124	4.8612	-.00806	.00669	9.8907	.00640	.00209	.09581

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3585.6	47708.	2788.2
Stddev	28.5	181.	.7
%RSD	.79479	.37949	.02480

#1	3565.5	47836.	2787.7
#2	3605.8	47580.	2788.7

Sample Name: CCV-5699804 Acquired: 5/14/2019 12:01:21 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50943	.51664	.93869	.47443	.47053	.47581	.00062	4.6928	.48201	.48786	.46465	.49219	2.4425	47.939
Stddev	.00115	.00153	.00627	.00097	.00185	.00059	.00028	.0124	.00300	.00183	.00226	.00005	.0075	.163
%RSD	.22544	.29652	.66794	.20440	.39408	.12404	45.355	.26314	.62154	.37563	.48582	.01054	.30763	.34040

#1	.50862	.51772	.94312	.47512	.46922	.47539	.00042	4.6841	.48413	.48916	.46625	.49222	2.4371	47.824
#2	.51024	.51556	.93425	.47375	.47184	.47622	.00082	4.7015	.47989	.48657	.46306	.49215	2.4478	48.055

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value														
Range														

Elem	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95885	20.294	.50191	.49136	5.2328	.48755	.95842	.97897	.00308	.93227	.94439	4.7391	10.142	.93534
Stddev	.00214	.019	.00050	.00375	.0136	.00289	.00053	.00561	.00122	.00650	.00450	.0014	.003	.00354
%RSD	.22364	.09194	.09984	.76226	.25957	.59274	.05557	.57301	39.746	.69684	.47618	.02958	.02958	.37858

#1	.96037	20.280	.50155	.49401	5.2424	.48959	.95804	.98293	.00221	.93687	.94757	4.7381	10.140	.93785
#2	.95733	20.307	.50226	.48871	5.2232	.48550	.95880	.97500	.00394	.92768	.94121	4.7401	10.144	.93284

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value														
Range														

Elem	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47534	.00438	.49669	.95486	.05424	.50103	.49500	.49528
Stddev	.00028	.00056	.00063	.00722	.03212	.00116	.00038	.00104
%RSD	.05944	12.674	.12612	.75563	59.207	.23062	.07638	.20964

#1	.47514	.00477	.49713	.95996	.03153	.50185	.49527	.49455
#2	.47554	.00399	.49625	.94976	.07695	.50021	.49473	.49602

Check ?	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3673.5	49639.	2887.6
Stddev	12.5	44.	1.1
%RSD	.34014	.08909	.03820

#1	3682.4	49670.	2886.9
#2	3664.7	49607.	2888.4

Sample Name: CCB Acquired: 5/14/2019 12:03:44 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	-.00184	.00170	.00124	.00021	.00008	-.00028	.00020	-.00037	-.00017	-.00024	-.00120	-.00182
Stddev	.00113	.00052	.00358	.00053	.00068	.00010	.00028	.00950	.00013	.00016	.00006	.00058	.00318
%RSD	853.30	28.166	210.81	42.949	323.04	125.45	101.83	4860.0	34.733	93.524	24.395	48.132	174.34

#1	.00066	-.00220	.00422	.00162	.00069	.00015	-.00048	-.00653	-.00028	-.00029	-.00028	-.00161	-.00407
#2	-.00093	-.00147	-.00083	.00087	-.00027	.00001	-.00008	.00692	-.00046	-.00006	-.00020	-.00079	.00042

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit													
Low Limit													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.04758	-.00337	.00416	.00005	.00122	.09768	-.00430	.00088	.00127	.00812	.00247	.00068	-.02473
Stddev	.07067	.00216	.00025	.00003	.00004	.00836	.00028	.00041	.00066	.00332	.00168	.00319	.00962
%RSD	148.52	64.186	5.9280	60.655	3.6216	8.5585	6.4157	46.506	51.797	40.911	68.106	470.38	38.888

#1	-.09755	-.00489	.00433	.00006	.00125	.10359	-.00411	.00059	.00173	.01047	.00128	.00293	-.03153
#2	.00239	-.00184	.00398	.00003	.00119	.09177	-.00450	.00117	.00080	.00577	.00366	-.00158	-.01793

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit													
Low Limit													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.05292	-.00024	-.00010	-.00169	.00013	.00349	.01059	-.00045	-.00110	.00337
Stddev	.02058	.00042	.00014	.00239	.00016	.00015	.01290	.00033	.00039	.00063
%RSD	38.888	170.42	137.30	141.77	126.20	4.2361	121.79	71.644	35.600	18.751

#1	-.06747	-.00054	-.00020	.00000	.00001	.00359	.00147	-.00068	-.00137	.00382
#2	-.03837	.00005	-.00000	-.00338	.00024	.00338	.01972	-.00022	-.00082	.00292

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3666.0	49972.	2857.7
Stddev	24.3	221.	.6
%RSD	.66326	.44142	.01933

#1	3648.8	49816.	2858.1
#2	3683.2	50128.	2857.3

Sample Name: CCVL-5701318 Acquired: 5/14/2019 12:06:20 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01067	.09449	.01339	.09447	.00943	.00124	.09888	.18751	.00459	.00984	.00943	.01364
Stddev	.00043	.00008	.00296	.00184	.00031	.00000	.00335	.01087	.00004	.00041	.00029	.00020
%RSD	4.0555	.08540	22.100	1.9508	3.3290	.18501	3.3838	5.7981	.80830	4.2032	3.0404	1.4716

#1	.01036	.09455	.01548	.09316	.00920	.00124	.10124	.17982	.00462	.00955	.00964	.01349
#2	.01097	.09443	.01130	.09577	.00965	.00124	.09651	.19520	.00456	.01013	.00923	.01378

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10055	2.7222	.01637	.20808	.01017	.01948	1.0168	.03590	2.7475	.00809	.08404	.01921
Stddev	.00275	.0368	.00077	.00323	.00005	.00020	.0102	.00029	.0036	.00004	.00242	.00054
%RSD	2.7367	1.3519	4.7137	1.5522	.47181	1.0359	1.0060	.79420	.13216	.53768	2.8784	2.7921

#1	.09860	2.6962	.01582	.21036	.01021	.01933	1.0095	.03570	2.7500	.00806	.08575	.01959
#2	.10249	2.7482	.01691	.20580	.01014	.01962	1.0240	.03610	2.7449	.00812	.08233	.01883

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02027	.50974	1.0908	.09336	.00913	.01121	.01002	.01898	F .14163	.01050	.01831	.01314
Stddev	.00159	.00898	.0192	.00174	.00054	.00032	.00014	.00040	.00270	.00027	.00013	.00005
%RSD	7.8497	1.7610	1.7610	1.8606	5.9308	2.8248	1.4013	2.1052	1.9042	2.6121	.70844	.41182

#1	.01914	.51609	1.1044	.09459	.00875	.01144	.00992	.01926	.13972	.01070	.01840	.01318
#2	.02139	.50339	1.0773	.09213	.00951	.01099	.01012	.01869	.14354	.01031	.01821	.01311

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value									.06000			
Range									30.000%			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3692.5	49940.	2884.1
Stddev	13.0	.	21.0
%RSD	.35171	.00086	.72883

#1	3683.4	49940.	2899.0
#2	3701.7	49940.	2869.3

Sample Name: 280-123221-E-2-A Acquired: 5/14/2019 12:08:53 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5 (Al Fe Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00049	.03229	.00895	.02084	.08240	.00029	-.00303	76.869	.00004
Stddev	.00123	.00086	.00299	.00079	.00005	.00018	.00028	.031	.00001
%RSD	247.99	2.6567	33.439	3.7887	.06007	60.465	9.1758	.04028	16.463

#1	.00037	.03290	.01106	.02140	.08243	.00042	-.00283	76.847	.00005
#2	-.00136	.03169	.00683	.02028	.08236	.00017	-.00323	76.891	.00004

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	-.00009	-.00084	.97363	1.1913	.01105	21.449	.34706	.00191
Stddev	.00031	.00027	.00024	.00455	.0374	.00100	.076	.00041	.00043
%RSD	2922.2	299.19	28.911	.46713	3.1353	9.0459	.35455	.11846	22.476

#1	.00023	.00010	-.00067	.97042	1.2177	.01175	21.395	.34676	.00221
#2	-.00021	-.00028	-.00101	.97685	1.1649	.01034	21.503	.34735	.00160

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.3970	-.00484	.00959	.00008	17.966	-.00033	.00224	8.2757	17.710
Stddev	.0305	.00021	.00005	.00027	.071	.00162	.00368	.0248	.053
%RSD	.47740	4.3419	.53631	335.32	.39504	493.33	164.44	.30018	.30018

#1	6.3754	-.00469	.00963	.00027	18.016	.00082	-.00036	8.2582	17.672
#2	6.4186	-.00499	.00955	-.00011	17.916	-.00147	.00484	8.2933	17.748

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.13146	-.00089	.00057	-.00013	-.00463	.00067	-.00149	.00510
Stddev	.00192	.00061	.00130	.00050	.00177	.02150	.00016	.00005	.00074
%RSD	2383.9	.46456	145.82	87.601	1351.2	464.06	23.490	3.2976	14.460

#1	.00144	.13189	.00003	.00022	.00112	-.01984	.00078	-.00145	.00458
#2	-.00128	.13103	-.00181	.00093	-.00139	.01057	.00056	-.00152	.00563

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3559.2	48686.	2868.0
Stddev	14.3	158.	12.6
%RSD	.40258	.32511	.43758

#1	3549.1	48798.	2876.9
#2	3569.3	48574.	2859.2

Sample Name: 280-123221-J-4-A Acquired: 5/14/2019 12:11:26 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5 (Al Fe Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.00194	.00522	.02638	.04405	.00039	-.00432	82.023	.00022
Stddev	.00022	.00045	.00122	.00022	.00007	.00030	.00013	.072	.00005
%RSD	27.608	23.241	23.360	.84720	.16476	77.475	3.0932	.08831	22.924

#1	.00094	.00226	.00608	.02654	.04410	.00018	-.00441	82.075	.00019
#2	.00063	.00162	.00436	.02622	.04399	.00060	-.00422	81.972	.00026

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00070	-.00124	1.8976	1.6019	.01524	33.008	.25592	.00105
Stddev	.00014	.00035	.00032	.0026	.0510	.00209	.119	.00084	.00076
%RSD	50.371	50.266	25.460	.13682	3.1831	13.690	.35977	.32714	72.238

#1	.00037	.00095	-.00102	1.8995	1.6380	.01376	32.924	.25532	.00052
#2	.00018	.00045	-.00147	1.8958	1.5659	.01671	33.092	.25651	.00159

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.803	-.00556	.00484	-.00090	30.193	.00258	.00296	7.4442	15.931
Stddev	.297	.00069	.00081	.00077	.162	.00002	.00300	.0159	.034
%RSD	2.5136	12.337	16.821	85.785	.53491	.75512	101.38	.21290	.21290

#1	12.012	-.00604	.00426	-.00144	30.307	.00256	.00509	7.4554	15.955
#2	11.593	-.00507	.00541	-.00035	30.078	.00259	.00084	7.4330	15.907

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	.13783	-.00051	.00026	.00445	-.06315	-.00022	.00068	.00107
Stddev	.00021	.00029	.00037	.00008	.00301	.01679	.00114	.00046	.00237
%RSD	21.007	.20776	72.772	32.745	67.744	26.591	509.41	68.082	220.91

#1	.00113	.13803	-.00077	.00031	.00658	-.05128	.00058	.00101	-.00060
#2	.00084	.13763	-.00025	.00020	.00232	-.07503	-.00103	.00035	.00275

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3538.7	48662.	2838.3
Stddev	30.4	184.	17.9
%RSD	.86041	.37813	.63098

#1	3560.3	48793.	2825.6
#2	3517.2	48532.	2850.9

Sample Name: 280-123221-F-5-A Acquired: 5/14/2019 12:14:01 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5 (Al Fe Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	-.00004	.01122	.02667	.04412	.00007	.00184	82.356	.00015
Stddev	.00021	.00026	.00097	.00116	.00059	.00042	.00266	.329	.00004
%RSD	18.734	587.68	8.6522	4.3634	1.3293	619.48	144.64	.39970	23.562

#1	.00128	-.00023	.01053	.02585	.04370	.00037	.00373	82.123	.00018
#2	.00098	.00014	.01190	.02749	.04453	-.00023	-.00004	82.589	.00013

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	-.00025	-.00037	1.9285	1.7140	.01772	33.345	.25652	.00088
Stddev	.00003	.00015	.00016	.0110	.0347	.00350	.025	.00019	.00018
%RSD	21.005	59.216	41.842	.57251	2.0216	19.741	.07459	.07361	20.688

#1	-.00010	-.00015	-.00026	1.9207	1.6895	.02020	33.328	.25639	.00075
#2	-.00014	-.00035	-.00048	1.9363	1.7385	.01525	33.363	.25665	.00101

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.802	-.00509	.00751	.00002	30.149	-.00084	.00022	7.4827	16.013
Stddev	.084	.00010	.00223	.00087	.029	.00123	.00063	.0894	.191
%RSD	.71040	1.9176	29.745	5447.9	.09728	146.01	288.71	1.1949	1.1949

#1	11.861	-.00502	.00909	.00063	30.128	-.00172	-.00023	7.4195	15.878
#2	11.743	-.00516	.00593	-.00060	30.170	.00003	.00066	7.5459	16.148

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.13851	-.00266	.00056	.00168	-.00606	.00017	-.00029	.00600
Stddev	.00077	.00070	.00140	.00033	.00395	.01256	.00055	.00005	.00325
%RSD	564.66	.50230	52.514	58.441	235.10	207.36	331.44	16.747	54.153

#1	.00041	.13802	-.00365	.00079	.00448	.00282	.00055	-.00032	.00370
#2	-.00068	.13900	-.00167	.00033	-.00111	-.01494	-.00022	-.00025	.00830

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3604.9	47954.	2814.3
Stddev	21.6	363.	10.5
%RSD	.60013	.75773	.37327

#1	3589.6	47697.	2821.7
#2	3620.2	48211.	2806.9

Sample Name: 280-123221-J-7-A Acquired: 5/14/2019 12:16:35 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5 (Al Fe Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00033	-.00129	.05514	.05710	.00005	-.00150	115.24	.00017
Stddev	.00065	.00015	.00381	.00002	.00010	.00002	.00168	.11	.00001
%RSD	158.06	46.499	295.97	.02734	.16762	48.615	112.21	.09292	3.4017

#1	-.00005	.00043	.00141	.05513	.05703	.00003	-.00269	115.16	.00018
#2	.00087	.00022	-.00398	.05515	.05716	.00007	-.00031	115.31	.00017

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00016	.00078	.00918	1.0829	-.00137	25.015	.00054	-.00001
Stddev	.00002	.00004	.00006	.00131	.0897	.00096	.041	.00004	.00083
%RSD	22.647	26.381	7.1347	14.327	8.2837	70.245	.16358	6.6795	9431.2

#1	.00012	.00013	.00074	.01011	1.1463	-.00069	25.044	.00052	-.00060
#2	.00009	.00018	.00082	.00825	1.0194	-.00205	24.986	.00057	.00058

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.1589	-.00414	.00773	.00069	12.020	-.00133	.00050	5.0919	10.897
Stddev	.0176	.00025	.00197	.00133	.000	.00055	.00195	.0114	.024
%RSD	.81747	6.1105	25.532	191.66	.00103	40.906	387.64	.22420	.22420

#1	2.1465	-.00396	.00912	-.00025	12.020	-.00095	-.00088	5.0838	10.879
#2	2.1714	-.00432	.00633	.00164	12.020	-.00172	.00188	5.1000	10.914

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.25122	-.00184	-.00003	.00157	.05661	.00028	.01381	.00100
Stddev	.00093	.00048	.00008	.00004	.00039	.01551	.00002	.00071	.00447
%RSD	311.60	.18915	4.3961	118.87	25.081	27.395	8.8647	5.1610	445.42

#1	-.00036	.25155	-.00178	-.00006	.00129	.04565	.00030	.01431	-.00215
#2	.00096	.25088	-.00190	-.00000	.00184	.06758	.00026	.01330	.00416

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3612.2	48938.	2894.8
Stddev	35.7	84.	16.0
%RSD	.98806	.17098	.55147

#1	3637.4	48998.	2883.5
#2	3586.9	48879.	2906.1

Sample Name: 280-123221-C-8-A Acquired: 5/14/2019 12:19:09 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5 (Al Fe Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00128	.03240	.00723	.06365	.02005	.00006	-.00303	118.43	.00064
Stddev	.00021	.00059	.00024	.00082	.00097	.00001	.00254	.27	.00003
%RSD	16.804	1.8201	3.2701	1.2915	4.8514	17.773	83.763	.22837	4.5991

#1	.00143	.03282	.00739	.06423	.01936	.00007	-.00482	118.62	.00067
#2	.00113	.03199	.00706	.06306	.02074	.00005	-.00124	118.23	.00062

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00071	-.00015	.16226	2.2406	.02895	65.449	.13152	.00030
Stddev	.00044	.00017	.00073	.00370	.0326	.00499	.067	.00000	.00017
%RSD	326.32	23.339	485.06	2.2804	1.4548	17.250	.10197	.00007	56.922

#1	.00045	.00059	-.00067	.15965	2.2637	.03249	65.497	.13152	.00018
#2	-.00018	.00082	.00037	.16488	2.2176	.02542	65.402	.13152	.00043

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Line	589.592 { 57}	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.485	W 10.965	-.00356	.00152	.00011	85.539	.00178	-.00558	5.2350
Stddev	.011	.754	.00014	.00265	.00173	.903	.00466	.00241	.0177
%RSD	.10734	6.8756	3.8302	174.52	1597.2	1.0551	261.82	43.213	.33843

#1	10.493	11.498	-.00365	-.00036	.00133	86.177	.00508	-.00729	5.2224
#2	10.477	10.432	-.00346	.00340	-.00112	84.900	-.00152	-.00388	5.2475

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		500.00							
Low Limit		11.000							

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.203	.00022	.22620	-.00326	.00098	.00124	-.03296	-.00058	.00067
Stddev	.038	.00130	.00167	.00158	.00015	.00118	.02086	.00021	.00018
%RSD	.33843	584.53	.73662	48.395	14.947	95.155	63.283	36.049	26.458

#1	11.176	.00114	.22737	-.00214	.00087	.00208	-.04771	-.00073	.00054
#2	11.230	-.00070	.22502	-.00437	.00108	.00041	-.01821	-.00043	.00080

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Zr3391								
Line	339.198 { 99}								
Units	ppm								
Avg	.00454								
Stddev	.00161								
%RSD	35.432								

#1	.00340								
#2	.00568								

Check ?	Chk Pass								
High Limit									
Low Limit									

Sample Name: 280-123221-C-8-A Acquired: 5/14/2019 12:19:09 Type: Unk
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoadesc Prep Date: Custom ID2: Custom ID3:
 Comment: 457070 6010C Q5 (Al Fe Na)

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3586.0	48189.	2839.2
Stddev	38.6	182.	1.4
%RSD	1.0761	.37719	.05005
#1	3558.7	48317.	2840.2
#2	3613.3	48060.	2838.2

Sample Name: 280-123221-C-9-A Acquired: 5/14/2019 12:21:42 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5 (Al Fe Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00176	.01405	.00399	.00835	.01585	.00011	-.00324	28.260	.00038
Stddev	.00105	.00071	.00130	.00155	.00017	.00007	.00298	.163	.00017
%RSD	59.581	5.0475	32.617	18.612	1.0810	61.897	92.111	.57607	45.499

#1	-.00102	.01455	.00491	.00725	.01573	.00006	-.00113	28.375	.00050
#2	-.00250	.01355	.00307	.00944	.01597	.00016	-.00535	28.145	.00026

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	-.00046	-.00083	3.4458	.71222	.00556	10.517	.23273	.00034
Stddev	.00016	.00003	.00061	.0304	.10672	.00080	.021	.00039	.00015
%RSD	316.46	5.8538	73.464	.88260	14.984	14.466	.19914	.16570	42.579

#1	.00016	-.00048	-.00040	3.4673	.78767	.00613	10.502	.23245	.00044
#2	-.00006	-.00044	-.00126	3.4242	.63676	.00499	10.532	.23300	.00024

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.9109	-.00224	.06829	.00000	7.8693	.00276	.00195	7.4211	15.881
Stddev	.0434	.00010	.00106	.00057	.0141	.00119	.00245	.1270	.272
%RSD	1.1104	4.5808	1.5477	25951.	.17850	43.136	126.14	1.7112	1.7112

#1	3.9416	-.00217	.06754	.00040	7.8792	.00360	.00021	7.5109	16.073
#2	3.8802	-.00232	.06903	-.00040	7.8593	.00192	.00368	7.3313	15.689

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.03765	-.00380	-.00004	.00278	.03121	-.00034	-.00021	.00491
Stddev	.00049	.00006	.00154	.00024	.00003	.07861	.00015	.00012	.00080
%RSD	147.26	.14971	40.464	607.24	1.1999	251.92	43.779	59.691	16.259

#1	-.00001	.03761	-.00489	.00013	.00275	.08679	-.00023	-.00012	.00548
#2	.00068	.03769	-.00272	-.00021	.00280	-.02438	-.00044	-.00030	.00435

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3724.2	50166.	2912.4
Stddev	6.0	29.	34.0
%RSD	.15978	.05691	1.1667

#1	3728.4	50187.	2888.4
#2	3720.0	50146.	2936.5

Sample Name: 280-123221-C-10-A Acquired: 5/14/2019 12:24:15 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5 (Al Fe Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00063	.01917	-0.00299	.06432	.02099	.00036	-0.00426	70.809	.00040
Stddev	.00041	.00008	.00492	.00111	.00008	.00012	.00598	.021	.00009
%RSD	64.732	.39951	164.63	1.7182	.38628	32.914	140.36	.02976	23.439

#1	-0.00034	.01911	-0.00647	.06354	.02094	.00045	-0.00003	70.824	.00046
#2	-0.00092	.01922	.00049	.06510	.02105	.00028	-0.00849	70.794	.00033

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00009	-0.00039	.04560	.73353	.01408	26.194	.10309	.00135
Stddev	.00028	.00001	.00025	.00147	.14125	.00112	.140	.00043	.00026
%RSD	2692.6	15.246	62.733	3.2165	19.256	7.9393	.53428	.41502	19.504

#1	.00021	.00010	-0.00022	.04456	.83341	.01487	26.095	.10279	.00116
#2	-0.00019	.00008	-0.00057	.04663	.63366	.01329	26.293	.10339	.00153

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.5491	-0.00413	.00449	.00152	8.2673	-0.00060	-0.00131	6.1871	13.240
Stddev	.0272	.00039	.00164	.00044	.0684	.00161	.00531	.0335	.072
%RSD	.49044	9.5591	36.564	28.727	.82753	268.22	406.51	.54192	.54192

#1	5.5684	-0.00441	.00565	.00121	8.3157	.00054	-0.00506	6.2108	13.291
#2	5.5299	-0.00385	.00333	.00183	8.2190	-0.00174	.00245	6.1634	13.190

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.11077	-0.00140	.00038	.00054	.04432	-0.00002	-0.00142	.00536
Stddev	.00032	.00022	.00315	.00014	.00155	.01389	.00044	.00024	.00309
%RSD	93.493	.19850	224.86	36.286	286.32	31.341	2332.7	16.931	57.674

#1	.00056	.11062	-0.00363	.00028	-0.00055	.05414	.00029	-0.00125	.00755
#2	.00011	.11093	.00083	.00048	.00164	.03450	-0.00033	-0.00159	.00318

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3673.1	49568.	2902.2
Stddev	9.2	251.	22.8
%RSD	.25072	.50680	.78417

#1	3679.6	49746.	2886.1
#2	3666.6	49390.	2918.3

Sample Name: 280-123221-C-11-A Acquired: 5/14/2019 12:26:48 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5 (Al Fe Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00657	.00661	.03464	.05392	.00011	-.00235	69.095	.00031
Stddev	.00033	.00052	.00633	.00092	.00038	.00008	.00318	.342	.00019
%RSD	605.82	7.9138	95.761	2.6606	.70066	70.279	135.33	.49444	60.669

#1	-.00018	.00693	.01108	.03529	.05365	.00006	-.00460	68.853	.00044
#2	.00029	.00620	.00213	.03399	.05419	.00017	-.00010	69.336	.00017

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	-.00017	-.00107	.81758	1.3167	.00975	19.152	.37446	.00015
Stddev	.00022	.00015	.00001	.00053	.0131	.00412	.004	.00012	.00004
%RSD	71.063	87.826	.90068	.06431	.99214	42.292	.01833	.03284	24.700

#1	-.00015	-.00028	-.00108	.81720	1.3075	.01266	19.149	.37437	.00017
#2	-.00046	-.00007	-.00106	.81795	1.3260	.00683	19.154	.37454	.00012

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.7796	-.00456	.02460	-.00129	11.890	.00032	-.00382	6.9780	14.933
Stddev	.0497	.00055	.00175	.00088	.083	.00390	.00412	.0477	.102
%RSD	1.0401	12.142	7.0949	68.454	.69588	1215.7	107.67	.68417	.68417

#1	4.7445	-.00495	.02337	-.00066	11.949	.00307	-.00091	6.9442	14.861
#2	4.8148	-.00417	.02583	-.00191	11.832	-.00243	-.00673	7.0117	15.005

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00045	.13738	-.00115	-.00017	.00219	-.00609	.00068	-.00188	.00234
Stddev	.00048	.00071	.00099	.00029	.00154	.04657	.00001	.00018	.00328
%RSD	106.07	.51467	85.739	165.84	70.374	764.11	1.8349	9.6391	140.19

#1	-.00079	.13688	-.00185	.00003	.00328	-.03903	.00069	-.00201	.00466
#2	-.00011	.13788	-.00045	-.00038	.00110	.02684	.00067	-.00175	.00002

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3624.0	48699.	2878.1
Stddev	16.6	150.	17.0
%RSD	.45852	.30751	.59007

#1	3612.3	48805.	2890.1
#2	3635.8	48593.	2866.1

Sample Name: 280-123221-C-12-A Acquired: 5/14/2019 12:29:21 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5 (Al Fe Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.01859	-.00499	.01682	.02552	.00024	-.00076	43.763	.00017
Stddev	.00044	.00012	.00252	.00148	.00037	.00002	.00107	.007	.00002
%RSD	289.56	.64215	50.539	8.8087	1.4540	7.0224	141.05	.01627	12.789

#1	-.00016	.01867	-.00677	.01786	.02526	.00026	-.00152	43.768	.00015
#2	.00046	.01851	-.00321	.01577	.02578	.00023	-.00000	43.758	.00018

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00009	-.00056	.05777	.44664	.01264	11.760	.17189	.00072
Stddev	.00071	.00027	.00060	.00351	.09578	.00096	.010	.00009	.00021
%RSD	147.23	299.51	105.50	6.0763	21.445	7.5650	.08916	.05115	28.777

#1	-.00002	-.00010	-.00099	.05529	.37892	.01332	11.768	.17196	.00058
#2	.00098	.00028	-.00014	.06025	.51437	.01197	11.753	.17183	.00087

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.2808	-.00254	.00739	-.00138	5.2216	-.00026	.00312	6.8475	14.654
Stddev	.0186	.00022	.00171	.00345	.0406	.00167	.00372	.0297	.064
%RSD	.56649	8.7109	23.173	250.86	.77720	635.78	119.03	.43391	.43391

#1	3.2677	-.00238	.00618	.00106	5.2503	.00092	.00049	6.8685	14.699
#2	3.2940	-.00270	.00860	-.00382	5.1929	-.00144	.00575	6.8265	14.609

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.12160	-.00145	.00031	.00106	-.01217	-.00040	-.00046	.00173
Stddev	.00065	.00003	.00217	.00015	.00195	.02882	.00067	.00011	.00513
%RSD	25778.	.02147	149.43	47.640	184.96	236.89	166.77	24.115	296.37

#1	-.00046	.12158	.00008	.00020	.00244	.00821	-.00088	-.00038	.00536
#2	.00046	.12162	-.00299	.00041	-.00033	-.03255	.00007	-.00053	-.00190

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3547.2	48180.	2889.2
Stddev	2.9	236.	9.0
%RSD	.08147	.48912	.31005

#1	3545.1	48014.	2882.9
#2	3549.2	48347.	2895.6

Sample Name: 280-123221-C-13-A Acquired: 5/14/2019 12:31:53 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5 (Al Fe Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	.00037	.00726	.06567	.05059	.00017	-.00205	93.837	.00012
Stddev	.00008	.00025	.00534	.00141	.00057	.00014	.00036	.152	.00011
%RSD	12.522	67.586	73.521	2.1498	1.1299	84.524	17.717	.16165	92.807

#1	.00069	.00054	.00349	.06667	.05019	.00027	-.00231	93.944	.00004
#2	.00058	.00019	.01103	.06468	.05099	.00007	-.00179	93.730	.00020

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.00002	-.00115	.62514	2.0643	.01022	27.824	.20595	.00041
Stddev	.00012	.00015	.00004	.00437	.0243	.00062	.022	.00022	.00018
%RSD	34.622	741.50	3.5437	.69973	1.1768	6.1063	.07802	.10893	43.473

#1	-.00027	.00013	-.00112	.62205	2.0815	.01066	27.809	.20611	.00028
#2	-.00044	-.00009	-.00118	.62824	2.0472	.00978	27.840	.20579	.00053

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.073	-.00551	.01524	-.00134	31.579	-.00102	-.00294	6.8404	14.639
Stddev	.157	.00021	.00007	.00034	.203	.00183	.00322	.0105	.023
%RSD	1.4210	3.8629	.43052	25.072	.64387	178.23	109.67	.15397	.15397

#1	11.184	-.00536	.01519	-.00110	31.723	.00027	-.00066	6.8479	14.654
#2	10.961	-.00566	.01529	-.00158	31.435	-.00231	-.00522	6.8330	14.623

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.25717	.00154	-.00024	.00199	-.02852	-.00072	-.00130	.00140
Stddev	.00126	.00019	.00032	.00054	.00199	.03776	.00051	.00025	.00331
%RSD	512.62	.07572	20.873	223.58	99.789	132.38	71.456	19.131	236.77

#1	.00113	.25703	.00131	.00014	.00340	-.00182	-.00108	-.00112	.00374
#2	-.00064	.25731	.00177	-.00062	.00059	-.05522	-.00035	-.00148	-.00094

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3515.1	47068.	2749.7
Stddev	39.9	337.	20.7
%RSD	1.1359	.71629	.75394

#1	3486.8	47307.	2735.0
#2	3543.3	46830.	2764.4

Sample Name: CCVH-5699817 Acquired: 5/14/2019 12:34:25 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00551	47.317	-.00150	.00348	.00273	.00147	.94327	.01073	.00159	.00302	.00213	-.00005	46.423
Stddev	.00050	.192	.00322	.00029	.00001	.00010	.00735	.00727	.00002	.00011	.00003	.00065	.399
%RSD	9.1068	.40634	214.58	8.1990	.25416	6.5806	.77901	67.800	1.3576	3.7897	1.2115	1224.9	.85848

#1	.00587	47.453	.00078	.00369	.00272	.00140	.94847	.00558	.00157	.00310	.00215	.00041	46.705
#2	.00516	47.181	-.00377	.00328	.00273	.00154	.93808	.01587	.00161	.00294	.00211	-.00051	46.141

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04182	.00448	.01417	.00694	.00095	240.77	.00012	.00984	.00564	4.5685	-.01427	-.00316	-.01585
Stddev	.00840	.00198	.00154	.00004	.00018	1.85	.00046	.00258	.00268	.0218	.00073	.00083	.00916
%RSD	20.096	44.219	10.879	.57636	19.020	.76709	379.54	26.195	47.608	.47813	5.1246	26.202	57.797

#1	.03588	.00308	.01526	.00697	.00082	242.07	-.00020	.01166	.00374	4.5840	-.01376	-.00375	-.00937
#2	.04776	.00588	.01308	.00691	.00108	239.46	.00045	.00802	.00754	4.5531	-.01479	-.00258	-.02233

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.03392	.00120	.00164	4.8867	-.00824	.00733	9.8781	.00632	.00149	.08953
Stddev	.01961	.00084	.00037	.0132	.00048	.00126	.0072	.00058	.00049	.00203
%RSD	57.797	69.470	22.815	.26999	5.8580	17.215	.07329	9.1200	32.847	2.2699

#1	-.02006	.00179	.00138	4.8960	-.00858	.00822	9.8730	.00672	.00114	.08809
#2	-.04779	.00061	.00190	4.8774	-.00789	.00644	9.8832	.00591	.00183	.09096

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3558.2	47340.	2747.8
Stddev	13.5	56.	51.3
%RSD	.37841	.11819	1.8660

#1	3548.7	47379.	2711.5
#2	3567.7	47300.	2784.0

Sample Name: CCV-5699804 Acquired: 5/14/2019 12:36:54 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoadesc Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51427	.51311	.94383	.47077	.46648	.47541	.00803	4.6438	.47978	.48720	.46004	.49097	2.4431	47.784
Stddev	.00054	.00351	.01190	.00493	.00201	.00227	.00113	.0348	.00365	.00283	.00453	.00033	.0255	.340
%RSD	.10446	.68369	1.2613	1.0463	.43151	.47674	14.043	.74850	.76118	.58138	.98427	.06738	1.0430	.71062

#1	.51389	.51559	.95225	.47425	.46506	.47381	.00723	4.6192	.48236	.48920	.46324	.49121	2.4251	47.544
#2	.51465	.51063	.93541	.46729	.46790	.47701	.00882	4.6684	.47720	.48520	.45684	.49074	2.4611	48.024

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value														
Range														

Elem	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95413	20.420	.50294	.48964	5.1928	.48645	.95633	.97683	.00797	.92611	.93758	4.7457	10.156	.92725
Stddev	.01385	.019	.00061	.00400	.0104	.00499	.00343	.00745	.00274	.00100	.00556	.0345	.074	.00775
%RSD	1.4521	.09451	.12085	.81711	.20091	1.0265	.35912	.76256	34.379	.10792	.59302	.72609	.72609	.83607

#1	.94433	20.407	.50251	.49247	5.1854	.48998	.95876	.98210	.00991	.92541	.94151	4.7213	10.104	.93273
#2	.96392	20.434	.50337	.48681	5.2002	.48291	.95391	.97157	.00603	.92682	.93365	4.7701	10.208	.92177

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value														
Range														

Elem	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47335	.00310	.49812	.94113	.06166	.50389	.49506	.49537
Stddev	.00247	.00305	.00112	.00773	.05524	.00157	.00015	.00082
%RSD	.52197	98.502	.22505	.82087	89.586	.31118	.03094	.16511
#1	.47160	.00526	.49733	.94660	.02260	.50278	.49517	.49595
#2	.47510	.00094	.49891	.93567	.10072	.50500	.49495	.49479

Check ?	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3668.6	49070.	2843.3
Stddev	20.7	288.	19.4
%RSD	.56340	.58743	.68284

#1	3654.0	49274.	2857.1
#2	3683.2	48867.	2829.6

Sample Name: CCB Acquired: 5/14/2019 12:39:18 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoades Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	-.00150	-.00048	.00068	.00055	.00005	.00184	-.00121	-.00004	.00004	-.00009	-.00066
Stddev	.00113	.00071	.00302	.00045	.00039	.00019	.00027	.00055	.00009	.00005	.00027	.00064
%RSD	688.98	47.535	628.40	66.446	71.047	371.23	14.819	45.043	241.66	139.53	294.05	96.876

#1	.00096	-.00100	-.00262	.00099	.00028	-.00008	.00165	-.00160	.00003	.00000	-.00029	-.00021
#2	-.00064	-.00201	.00166	.00036	.00083	.00018	.00204	-.00083	-.00011	.00007	.00010	-.00111

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00397	-.01820	-.00163	-.00236	.00015	.00073	.08386	-.00467	.00278	.00154	.00142	W .00603
Stddev	.00036	.03251	.00343	.00725	.00003	.00002	.00272	.00009	.00010	.00137	.00340	.00031
%RSD	9.0036	178.57	210.35	307.66	22.737	3.0544	3.2449	1.9772	3.7112	88.717	239.60	5.1371

#1	.00371	-.04119	.00079	-.00749	.00017	.00075	.08194	-.00474	.00271	.00057	.00382	.00625
#2	.00422	.00478	-.00405	.00277	.00012	.00072	.08578	-.00461	.00286	.00251	-.00099	.00581

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit												.00600
Low Limit												-.00600

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00174	-.01959	-.04192	-.00051	-.00014	.00086	-.00039	.00175	-.01479	-.00055	-.00142	.00311
Stddev	.00215	.01638	.03505	.00133	.00003	.00034	.00001	.00364	.01950	.00074	.00047	.00132
%RSD	123.82	83.615	83.615	258.51	23.154	39.676	2.1891	208.00	131.84	133.18	33.126	42.564

#1	.00326	-.00801	-.01713	-.00145	-.00016	.00110	-.00040	-.00082	-.02858	-.00003	-.00175	.00217
#2	.00022	-.03117	-.06670	.00042	-.00012	.00062	-.00038	.00433	-.00100	-.00107	-.00108	.00404

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3683.4	49490.	2845.0
Stddev	3.4	296.	1.1
%RSD	.09327	.59890	.03945

#1	3685.8	49280.	2845.8
#2	3680.9	49699.	2844.3

Sample Name: CCVL-5701318 Acquired: 5/14/2019 12:42:04 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01115	.09277	.01297	.09249	.00971	.00114	.10058	.17598	.00468	.00976	.00964	.01394	.09763	2.7874
Stddev	.00023	.00003	.00745	.00017	.00018	.00003	.00167	.00226	.00011	.00019	.00020	.00103	.00248	.0771
%RSD	2.0427	.03475	57.461	.18123	1.8390	2.7702	1.6584	1.2870	2.4363	1.9880	2.0457	7.4236	2.5433	2.7657

#1	.01099	.09279	.01823	.09261	.00983	.00116	.10176	.17758	.00476	.00990	.00977	.01321	.09587	2.7329
#2	.01132	.09275	.00770	.09237	.00958	.00111	.09940	.17438	.00460	.00962	.00950	.01467	.09938	2.8419

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value														
Range														

Elem	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01767	.19217	.01025	.01936	1.0322	.03516	2.7352	.00820	.08411	.01985	.02254	.45843	.98104	.09194
Stddev	.00067	.00648	.00004	.00035	.0121	.00004	.0242	.00177	.00205	.00011	.00022	.03754	.08034	.00116
%RSD	3.8040	3.3695	.43241	1.7928	1.1688	.11717	.88357	21.553	2.4423	.55533	.97025	8.1895	8.1895	1.2616

#1	.01720	.18759	.01028	.01960	1.0408	.03513	2.7523	.00945	.08266	.01992	.02269	.48498	1.0379	.09112
#2	.01815	.19675	.01022	.01911	1.0237	.03519	2.7181	.00695	.08557	.01977	.02239	.43188	.92423	.09276

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value														
Range														

Elem	Sr4077	Th2837	Ti3349	Tl1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00927	.01405	.00972	.01558	.07235	.01018	.01856	.01495
Stddev	.00019	.00171	.00055	.00027	.02843	.00135	.00057	.00331
%RSD	2.0288	12.206	5.6402	1.7281	39.296	13.286	3.0562	22.155

#1	.00940	.01283	.01011	.01577	.09245	.01114	.01896	.01729
#2	.00913	.01526	.00933	.01539	.05224	.00923	.01816	.01261

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3724.1	50024.	2873.2
Stddev	8.0	34.	16.9
%RSD	.21535	.06791	.58719

#1	3718.4	50048.	2885.2
#2	3729.8	50000.	2861.3

Sample Name: 280-123261-B-6-A Acquired: 5/14/2019 12:53:34 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5 (Al Fe Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00127	.49375	.01137	.04565	.02447	.00003	-.00235	89.848	.00059
Stddev	.00098	.00023	.00321	.00083	.00010	.00011	.00408	.058	.00001
%RSD	77.399	.04600	28.219	1.8148	.40037	329.06	173.99	.06510	.91148

#1	.00197	.49391	.01364	.04624	.02454	.00011	-.00524	89.890	.00058
#2	.00058	.49359	.00910	.04506	.02440	-.00004	.00054	89.807	.00059

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00053	.00010	1.6053	2.1634	.04075	52.285	.15443	.00114
Stddev	.00020	.00031	.00065	.0117	.1534	.00022	.078	.00043	.00085
%RSD	66.630	58.066	642.28	.72707	7.0910	.53713	.14835	.27652	74.100

#1	.00044	.00031	.00056	1.6136	2.2719	.04091	52.230	.15473	.00174
#2	.00016	.00075	-.00036	1.5971	2.0549	.04060	52.340	.15412	.00054

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	21.525	-.00386	.01448	.00198	43.843	.00052	-.00263	7.5260	16.106
Stddev	.695	.00039	.00327	.00004	.036	.00532	.00171	.0071	.015
%RSD	3.2282	10.037	22.616	2.2656	.08144	1032.2	64.817	.09434	.09434

#1	21.034	-.00414	.01216	.00201	43.817	-.00325	-.00384	7.5210	16.095
#2	22.017	-.00359	.01679	.00194	43.868	.00428	-.00143	7.5310	16.116

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00066	.28501	-.00348	.00538	.00360	-.01818	.00063	.00322	.00341
Stddev	.00080	.00016	.00203	.00078	.00053	.03362	.00086	.00026	.00223
%RSD	120.27	.05677	58.412	14.549	14.864	184.89	137.32	8.1701	65.290

#1	-.00010	.28489	-.00492	.00483	.00398	-.04196	.00002	.00304	.00498
#2	-.00122	.28512	-.00204	.00594	.00322	.00559	.00124	.00341	.00184

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3504.1	47759.	2774.0
Stddev	16.7	34.	14.4
%RSD	.47685	.07203	.51822

#1	3516.0	47735.	2763.8
#2	3492.3	47783.	2784.2

Sample Name: 280-123261-B-8-A Acquired: 5/14/2019 12:56:04 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457070 6010C Q5 (Al Fe Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.00658	.00348	.01696	.01978	.00018	-.00211	35.219	.00005
Stddev	.00043	.00016	.01201	.00047	.00004	.00006	.00014	.076	.00019
%RSD	100.34	2.4743	345.24	2.7609	.18718	34.743	6.5589	.21695	348.15

#1	.00073	.00670	-.00502	.01663	.01975	.00014	-.00201	35.273	-.00008
#2	.00012	.00646	.01197	.01729	.01980	.00023	-.00220	35.164	.00019

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00561	.00033	-.00076	8.6469	1.0115	.00218	12.379	.43442	-.00021
Stddev	.00004	.00012	.00079	.0275	.0031	.00389	.011	.00110	.00087
%RSD	.69696	37.677	104.32	.31822	.30622	178.74	.09209	.25407	408.44

#1	.00564	.00042	-.00020	8.6663	1.0093	-.00057	12.387	.43520	.00040
#2	.00559	.00024	-.00132	8.6274	1.0137	.00493	12.371	.43364	-.00083

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.4171	.00350	.04173	.00024	11.702	.00402	-.00148	4.1120	8.7998
Stddev	.0268	.00013	.00042	.00190	.085	.00245	.00606	.0573	.1225
%RSD	.49490	3.8471	1.0042	798.10	.72908	61.039	410.65	1.3924	1.3924

#1	5.3981	.00341	.04202	-.00110	11.762	.00229	-.00577	4.1525	8.8864
#2	5.4360	.00360	.04143	.00158	11.641	.00576	.00281	4.0715	8.7131

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.06228	.00150	.00023	.00134	-.01921	-.00033	.04835	.00508
Stddev	.00055	.00017	.00222	.00010	.00223	.04283	.00107	.00015	.00027
%RSD	334.84	.27171	148.13	42.347	166.34	222.99	319.60	.30840	5.3295

#1	-.00055	.06240	-.00007	.00031	.00291	.01108	.00042	.04845	.00527
#2	.00022	.06216	.00307	.00016	-.00024	-.04949	-.00109	.04824	.00489

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3578.4	48672.	2779.4
Stddev	6.5	80.	1.0
%RSD	.18064	.16449	.03492

#1	3573.8	48728.	2778.7
#2	3583.0	48615.	2780.1

Sample Name: MB 280-457367/1-A Acquired: 5/14/2019 12:58:36 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/10 Custom ID2: Custom ID3:
Comment: 457367 6010C Q5 (Fe Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	.00177	-.00484	-.00024	.00019	.00013	.00263	.00798	-.00015
Stddev	.00044	.00034	.00142	.00001	.00083	.00010	.00097	.00680	.00010
%RSD	39.081	19.418	29.321	3.5224	442.66	72.031	36.728	85.235	66.057

#1	.00143	.00201	-.00384	-.00024	-.00040	.00020	.00331	.00317	-.00022
#2	.00081	.00152	-.00584	-.00023	.00078	.00007	.00195	.01278	-.00008

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00049	-.00043	.01967	.03665	.00136	-.00092	.00021	-.00007
Stddev	.00000	.00006	.00036	.00241	.06050	.00083	.00163	.00007	.00016
%RSD	.59863	13.109	82.840	12.236	165.10	61.105	177.82	33.782	237.53

#1	-.00005	.00045	-.00068	.02138	.07943	.00195	-.00207	.00016	-.00018
#2	-.00005	.00054	-.00018	.01797	-.00614	.00077	.00024	.00026	.00004

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03530	-.00406	.00195	-.00094	.01340	.00209	.00296	.00892	.01908
Stddev	.00671	.00015	.00353	.00078	.00155	.00634	.00269	.07532	.16119
%RSD	19.021	3.6799	181.45	83.196	11.539	302.84	90.696	844.63	844.63

#1	.04005	-.00395	-.00055	-.00039	.01449	-.00239	.00106	.06218	.13306
#2	.03055	-.00416	.00444	-.00149	.01230	.00658	.00487	-.04434	-.09489

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	-.00014	-.00190	.00060	.00302	-.00350	.00023	-.00107	.00015
Stddev	.00059	.00005	.00021	.00025	.00087	.05548	.00010	.00009	.00179
%RSD	144.10	35.154	11.142	41.874	28.854	1585.1	43.812	8.4140	1228.8

#1	.00001	-.00018	-.00205	.00077	.00241	.03573	.00016	-.00113	-.00112
#2	-.00082	-.00011	-.00175	.00042	.00364	-.04273	.00030	-.00101	.00141

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3718.8	50068.	2844.2
Stddev	4.5	148.	2.4
%RSD	.11973	.29552	.08545

#1	3721.9	50173.	2846.0
#2	3715.6	49963.	2842.5

Sample Name: LCS 280-457367/2-A Acquired: 5/14/2019 13:01:14 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457367 6010C Q5 (Fe Na)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05473	9.7292	1.9033	.88531	1.8778	.95378	1.7681	45.908	.96542
Stddev	.00022	.0274	.0079	.00107	.0016	.00105	.0056	.037	.00408
%RSD	.39577	.28209	.41339	.12114	.08612	.10956	.31424	.08019	.42241

#1	.05488	9.7098	1.8977	.88607	1.8767	.95305	1.7721	45.934	.96831
#2	.05457	9.7487	1.9088	.88456	1.8790	.95452	1.7642	45.882	.96254

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94535	.91709	.97177	9.6025	48.205	.96756	49.768	1.0026	.99065
Stddev	.00218	.00112	.00031	.0292	.039	.00178	.162	.0031	.00259
%RSD	.23034	.12164	.03211	.30403	.08143	.18381	.32482	.30490	.26163

#1	.94689	.91788	.97199	9.6232	48.233	.96630	49.883	1.0047	.99248
#2	.94381	.91630	.97155	9.5819	48.177	.96882	49.654	1.0004	.98882

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	48.813	.94681	19.236	.95910	8.8895	.96645	1.8758	1.9721	4.2203
Stddev	.593	.00368	.029	.00020	.0202	.00279	.0046	.0146	.0313
%RSD	1.2150	.38851	.15158	.02094	.22712	.28856	.24290	.74173	.74173

#1	48.394	.94941	19.257	.95924	8.9038	.96842	1.8790	1.9825	4.2424
#2	49.232	.94420	19.215	.95896	8.8753	.96448	1.8726	1.9618	4.1982

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8424	.94928	.92355	1.0084	1.8360	2.0616	1.0190	.45461	.48005
Stddev	.0099	.00003	.00598	.0039	.0050	.0390	.0036	.00210	.00067
%RSD	.53913	.00286	.64781	.38261	.27244	1.8926	.35029	.46142	.14059

#1	1.8494	.94926	.92778	1.0111	1.8396	2.0892	1.0215	.45609	.47958
#2	1.8354	.94930	.91932	1.0057	1.8325	2.0341	1.0164	.45313	.48053

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3620.4	48422.	2871.4
Stddev	13.3	228.	.8
%RSD	.36816	.47133	.02669

#1	3629.8	48261.	2870.9
#2	3611.0	48584.	2871.9

Sample Name: LCSD 280-457367/3-A Acquired: 5/14/2019 13:03:34 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457367 6010C Q5 (Fe Na)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05555	9.5512	1.8623	.93180	1.8254	.92929	1.8645	45.024	.94524
Stddev	.00002	.0169	.0014	.00223	.0067	.00484	.0079	.192	.00240
%RSD	.03868	.17700	.07394	.23887	.36813	.52053	.42556	.42648	.25369

#1	.05553	9.5392	1.8632	.93337	1.8301	.93271	1.8702	45.160	.94694
#2	.05556	9.5632	1.8613	.93023	1.8206	.92587	1.8589	44.889	.94355

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.92496	.89446	.95015	9.4197	47.609	.94498	49.497	.98533	.96986
Stddev	.00226	.00172	.00120	.0123	.209	.00509	.046	.00057	.00441
%RSD	.24443	.19174	.12633	.13078	.43964	.53914	.09363	.05749	.45513

#1	.92655	.89568	.95100	9.4284	47.757	.94858	49.464	.98573	.97298
#2	.92336	.89325	.94930	9.4110	47.461	.94138	49.530	.98493	.96674

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	48.685	.92523	19.090	.94108	8.8049	.95277	1.8434	1.9261	4.1219
Stddev	.232	.00351	.063	.00517	.0276	.00282	.0035	.0484	.1035
%RSD	.47648	.37962	.32991	.54982	.31320	.29649	.19153	2.5113	2.5113

#1	48.521	.92771	19.134	.94474	8.8244	.95477	1.8409	1.8919	4.0488
#2	48.849	.92274	19.045	.93742	8.7854	.95077	1.8459	1.9603	4.1951

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.7957	.92560	.97100	.99129	1.7969	2.0297	1.0011	.48158	.50416
Stddev	.0072	.00305	.00122	.00097	.0037	.0394	.0005	.00124	.00174
%RSD	.40055	.32940	.12534	.09780	.20783	1.9431	.05426	.25763	.34460

#1	1.8008	.92776	.97014	.99197	1.7995	2.0576	1.0007	.48071	.50539
#2	1.7906	.92344	.97186	.99060	1.7943	2.0018	1.0015	.48246	.50293

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3621.2	48351.	2864.9
Stddev	2.5	122.	3.6
%RSD	.06965	.25305	.12444

#1	3623.0	48437.	2862.4
#2	3619.4	48264.	2867.5

Sample Name: 280-123356-A-4-A Acquired: 5/14/2019 13:05:53 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457367 6010C Q5 (Fe Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.00694	.00445	.03083	.04169	.00027	-.00138	28.272	.00070
Stddev	.00087	.00058	.00477	.00076	.00008	.00012	.00440	.021	.00020
%RSD	186.91	8.3404	107.24	2.4573	.18577	44.403	317.59	.07497	28.961

#1	.00108	.00734	.00782	.03137	.04164	.00035	-.00449	28.257	.00056
#2	-.00015	.00653	.00107	.03029	.04175	.00018	.00172	28.287	.00085

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00361	.41801	.01596	3.1900	2.2455	.06375	21.787	.14005	.00556
Stddev	.00006	.00157	.00003	.0110	.0057	.00215	.003	.00037	.00061
%RSD	1.6609	.37441	.19945	.34505	.25513	3.3660	.01167	.26301	11.007

#1	.00365	.41911	.01593	3.1978	2.2415	.06527	21.789	.14031	.00513
#2	.00357	.41690	.01598	3.1823	2.2496	.06224	21.785	.13979	.00599

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	62.831	.26586	.00593	-.00179	37.233	.00039	.00650	18.921	40.492
Stddev	.050	.00006	.00071	.00009	.099	.00358	.00279	.054	.116
%RSD	.07908	.02163	11.943	5.0249	.26668	911.28	42.818	.28615	.28615

#1	62.796	.26581	.00543	-.00173	37.303	-.00214	.00454	18.960	40.574
#2	62.866	.26590	.00643	-.00186	37.163	.00292	.00847	18.883	40.410

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.26512	.00105	.00041	.00066	-.03336	.00075	.00421	.00387
Stddev	.00024	.00039	.00153	.00001	.00271	.01550	.00026	.00027	.00091
%RSD	116.51	.14685	146.42	2.7596	409.49	46.450	34.757	6.4866	23.520

#1	.00038	.26485	.00213	.00040	.00258	-.04432	.00056	.00401	.00451
#2	.00004	.26540	-.00004	.00042	-.00125	-.02240	.00093	.00440	.00322

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3726.6	49878.	2922.8
Stddev	11.4	257.	19.6
%RSD	.30633	.51552	.67208

#1	3718.5	50060.	2936.7
#2	3734.7	49697.	2908.9

Sample Name: 280-123356-A-14-A Acquired: 5/14/2019 13:08:23 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457367 6010C Q5 (Fe Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.02336	.00060	.03990	.02983	.00030	-.00200	29.103	.00053
Stddev	.00009	.00003	.00093	.00015	.00004	.00012	.00278	.113	.00030
%RSD	10.350	.12855	153.37	.38355	.13955	41.567	138.73	.38799	56.958

#1	.00098	.02338	-.00005	.03980	.02986	.00039	-.00397	29.024	.00032
#2	.00084	.02334	.00126	.04001	.02980	.00021	-.00004	29.183	.00075

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00076	.00077	-.00063	.12616	2.0311	.06167	20.272	.00503	.00037
Stddev	.00021	.00005	.00073	.00204	.0562	.00086	.001	.00006	.00038
%RSD	26.916	6.9742	116.35	1.6159	2.7675	1.3985	.00292	1.1096	100.41

#1	-.00062	.00073	-.00011	.12471	1.9914	.06106	20.272	.00507	.00064
#2	-.00091	.00081	-.00115	.12760	2.0709	.06227	20.272	.00499	.00011

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	51.216	-.00084	.00989	-.00201	38.139	.00373	.00250	20.987	44.913
Stddev	.566	.00028	.00229	.00078	.280	.00069	.00109	.009	.019
%RSD	1.1052	33.003	23.148	38.701	.73483	18.506	43.711	.04185	.04185

#1	50.815	-.00065	.00827	-.00256	38.337	.00324	.00327	20.994	44.926
#2	51.616	-.00104	.01151	-.00146	37.940	.00422	.00173	20.981	44.900

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.16515	-.00230	.00058	.00206	.05298	.00043	.00381	.00485
Stddev	.00071	.00086	.00233	.00052	.00005	.03211	.00030	.00030	.00474
%RSD	1074.5	.51873	101.04	90.054	2.3784	60.611	68.486	7.8100	97.777

#1	-.00057	.16455	-.00066	.00095	.00202	.03028	.00022	.00402	.00820
#2	.00043	.16576	-.00395	.00021	.00209	.07569	.00064	.00360	.00150

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3606.5	48947.	2906.9
Stddev	8.3	218.	11.2
%RSD	.23028	.44580	.38637

#1	3612.4	49101.	2898.9
#2	3600.7	48793.	2914.8

Sample Name: 280-123356-A-22-A Acquired: 5/14/2019 13:11:23 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457367 6010C Q5 (Fe Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00047	.00120	.00087	.00130	-.00002	.00019	.00049	.00497	.00005
Stddev	.00209	.00042	.00408	.00021	.00016	.00004	.00002	.00579	.00008
%RSD	441.45	35.346	466.58	16.293	975.23	23.060	3.8025	116.50	151.52

#1	-.00195	.00090	-.00201	.00115	-.00013	.00022	.00048	.00906	.00011
#2	.00100	.00150	.00376	.00145	.00010	.00016	.00050	.00088	-.00000

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	-.00003	-.00092	.14624	-.06708	-.00120	.00269	.00047	.00019
Stddev	.00017	.00016	.00022	.00630	.15818	.00218	.00753	.00005	.00021
%RSD	48.819	627.52	24.314	4.3077	235.79	181.65	279.87	10.235	109.82

#1	-.00046	.00009	-.00107	.15069	.04477	.00034	.00801	.00043	.00004
#2	-.00022	-.00014	-.00076	.14178	-.17893	-.00274	-.00263	.00050	.00033

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.07828	-.00450	.00426	.00131	.01760	.00114	.00004	-.01605	-.03434
Stddev	.01431	.00000	.00045	.00076	.00253	.00008	.00114	.02254	.04823
%RSD	18.278	.05192	10.590	58.022	14.390	7.4187	3051.0	140.42	140.42

#1	.08840	-.00451	.00394	.00077	.01581	.00108	.00085	-.03198	-.06844
#2	.06817	-.00450	.00458	.00185	.01939	.00120	-.00077	-.00011	-.00024

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	-.00021	-.00085	.00037	.00399	.03437	-.00019	-.00077	.00244
Stddev	.00219	.00015	.00339	.00011	.00122	.05750	.00045	.00004	.00234
%RSD	1443.2	70.454	397.26	28.154	30.597	167.29	233.21	4.5738	95.763

#1	.00140	-.00010	.00154	.00030	.00313	-.00629	.00012	-.00074	.00079
#2	-.00170	-.00031	-.00325	.00045	.00485	.07502	-.00051	-.00079	.00410

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3633.9	49387.	2838.2
Stddev	.8	150.	60.3
%RSD	.02153	.30364	2.1250

#1	3634.4	49493.	2795.6
#2	3633.3	49281.	2880.9

Sample Name: CCVH-5699817 Acquired: 5/14/2019 13:13:59 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .01243	47.260	k -.00790	k .00368	k .00336	k .00156	k .92779	k .00507	k .00041	k .00336	k .00167	k .00589
Stddev	.00900	.018	.00187	.00025	.00038	.00013	.00143	.00377	.00075	.00251	.00063	.00728
%RSD	72.472	.03737	23.628	6.8319	11.283	8.4538	.15375	74.330	183.53	74.524	37.449	123.64

#1	k .01879	47.273	k -.00658	k .00351	k .00363	k .00165	k .92678	k .00240	k -.00012	k .00513	k .00211	k .01104
#2	.00606	47.248	-.00922	.00386	.00309	.00147	.92879	.00773	.00094	.00159	.00123	.00074

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k 45.050	.08779	.00333	k .01865	k .00094	k .00025	240.06	k -.00049	k .00852	k .01320	k 4.5448	k -.01936
Stddev	.143	.03966	.00126	.02068	.00057	.00093	1.20	.00082	.00257	.00485	.0251	.01686
%RSD	.31660	45.176	37.969	110.87	60.719	366.91	.49993	168.35	30.146	36.753	.55339	87.105

#1	k 44.949	.11583	.00422	k .03328	k .00054	k -.00040	239.21	k .00009	k .00670	k .01663	k 4.5626	k -.03128
#2	45.151	.05974	.00243	.00403	.00134	.00091	240.91	-.00107	.01033	.00977	4.5271	-.00744

Check ?	Chk Pass	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None
Value												
Range												

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.00226	k -.01808	k -.03868	k .00228	.00180	k 5.0203	k .00688	k .00338	k 9.9568	k .00874	k .00205	k .19593
Stddev	.01094	.00621	.01328	.00129	.00005	.1860	.01999	.00026	.0026	.00277	.00057	.14596
%RSD	484.50	34.342	34.342	56.548	2.7561	3.7040	290.58	7.5806	.02635	31.642	27.792	74.496

#1	k -.01000	k -.02247	k -.04808	k .00319	.00177	k 5.1517	k .02101	k .00356	k 9.9550	k .01070	k .00245	k .29914
#2	.00548	-.01369	-.02929	.00137	.00184	4.8888	-.00726	.00320	9.9587	.00679	.00165	.09272

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3548.6	47089.	2756.4
Stddev	11.5	13.	37.0
%RSD	.32454	.02736	1.3433

#1	3540.4	47080.	2730.2
#2	3556.7	47098.	2782.6

Sample Name: CCV-5699804 Acquired: 5/14/2019 13:16:30 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoadesc Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51642	.51531	.92923	.47306	.46568	.47186	.00133	4.5998	.48200	.48871	.46225	.49192	2.4427	47.648
Stddev	.00121	.00450	.00960	.00229	.00259	.00360	.00098	.0361	.00221	.00286	.00215	.00018	.0056	.408
%RSD	.23414	.87254	1.0328	.48339	.55511	.76310	74.057	.78420	.45886	.58431	.46577	.03696	.22784	.85616

#1	.51556	.51849	.93602	.47468	.46385	.46931	.00063	4.5743	.48356	.49073	.46378	.49204	2.4387	47.359
#2	.51727	.51213	.92244	.47145	.46750	.47440	.00202	4.6253	.48043	.48670	.46073	.49179	2.4466	47.936

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value														
Range														

Elem	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95684	20.609	.50698	.49295	5.2815	.48792	.96199	.98118	.00330	.93164	.93491	4.6975	10.053	.93010
Stddev	.00619	.019	.00088	.00418	.0063	.00245	.00600	.00649	.00184	.00604	.00193	.0535	.115	.00791
%RSD	.64685	.09138	.17327	.84703	.11993	.50256	.62376	.66171	55.832	.64823	.20678	1.1390	1.1390	.85024

#1	.95247	20.595	.50760	.49590	5.2770	.48965	.96623	.98577	.00460	.93591	.93628	4.6597	9.9718	.93569
#2	.96122	20.622	.50636	.49000	5.2859	.48618	.95774	.97659	.00200	.92737	.93355	4.7354	10.134	.92451

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value														
Range														

Elem	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47096	.00265	.50165	.94547	.00639	.50992	.49727	.48842
Stddev	.00237	.00191	.00078	.00340	.03487	.00239	.00020	.00617
%RSD	.50373	72.095	.15531	.35959	545.55	.46920	.04057	1.2642

#1	.46928	.00130	.50110	.94787	-.01827	.51161	.49713	.48405
#2	.47263	.00400	.50220	.94307	.03105	.50823	.49742	.49279

Check ?	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3663.7	47999.	2821.9
Stddev	24.1	26.	18.2
%RSD	.65653	.05504	.64400

#1	3646.7	47981.	2834.7
#2	3680.8	48018.	2809.0

Sample Name: CCB Acquired: 5/14/2019 13:19:00 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoades Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	-.00190	.00365	.00108	.00068	.00017	.00235	-.00113	.00002	.00008	.00013	-.00095
Stddev	.00067	.00062	.00384	.00008	.00035	.00016	.00311	.00033	.00005	.00004	.00012	.00016
%RSD	204.90	32.711	105.14	7.8692	51.983	95.659	132.22	29.445	268.39	53.385	89.272	16.318
#1	.00080	-.00146	.00094	.00102	.00092	.00005	.00455	-.00136	-.00002	.00011	.00005	-.00084
#2	-.00015	-.00234	.00636	.00114	.00043	.00028	.00015	-.00089	.00006	.00005	.00021	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00390	-.04566	-.00174	-.00557	.00008	.00112	.07746	-.00485	.00098	-.00098	-.00019	W .00781
Stddev	.00174	.11355	.00109	.00674	.00005	.00038	.00843	.00056	.00015	.00193	.00209	.00344
%RSD	44.703	248.70	62.268	121.05	58.024	33.952	10.887	11.440	15.711	196.36	1120.1	44.066
#1	-.00513	-.12595	-.00251	-.00080	.00012	.00139	.08342	-.00525	.00109	.00038	-.00167	.00537
#2	-.00266	.03463	-.00098	-.01033	.00005	.00085	.07149	-.00446	.00087	-.00235	.00129	.01024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit												.00600
Low Limit												-.00600
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00325	-.03400	-.07277	-.00142	-.00042	-.00201	.00033	-.00025	.05728	-.00006	-.00199	.00354
Stddev	.00146	.02568	.05496	.00018	.00009	.00092	.00020	.00142	.05179	.00041	.00040	.00290
%RSD	44.971	75.528	75.528	12.731	20.965	45.568	59.535	572.10	90.412	650.12	20.240	81.938
#1	.00222	-.05216	-.11163	-.00155	-.00036	-.00137	.00047	.00076	.02066	-.00035	-.00228	.00559
#2	.00429	-.01584	-.03390	-.00130	-.00048	-.00266	.00019	-.00126	.09390	.00023	-.00171	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3721.3	50108.	2850.4									
Stddev	51.5	384.	54.7									
%RSD	1.3840	.76618	1.9181									
#1	3757.7	49836.	2811.7									
#2	3684.9	50379.	2889.0									

Sample Name: CCVL-5701318 Acquired: 5/14/2019 13:22:03 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00951	.09339	F .00892	.09340	.00984	.00094	.09771	.18167	.00508	.00976	.00940	.01366
Stddev	.00021	.00123	.00170	.00070	.00030	.00014	.00130	.00440	.00007	.00020	.00031	.00019
%RSD	2.1551	1.3120	19.111	.75268	3.0554	15.037	1.3348	2.4200	1.3180	2.0154	3.2694	1.3859

#1	.00966	.09426	.01012	.09290	.00962	.00084	.09863	.18478	.00503	.00990	.00918	.01353
#2	.00937	.09252	.00771	.09389	.01005	.00104	.09678	.17857	.00513	.00962	.00961	.01379

Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.01500									
Range			-30.000%									

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09622	2.8462	.01737	.19956	.01014	.01950	1.0398	.03564	2.7519	.00857	.08409	.02226
Stddev	.00211	.0520	.00196	.00047	.00005	.00011	.0135	.00076	.0187	.00100	.00587	.00131
%RSD	2.1971	1.8252	11.309	.23604	.45042	.53918	1.2990	2.1456	.67877	11.607	6.9814	5.8642

#1	.09473	2.8829	.01598	.19989	.01017	.01958	1.0303	.03510	2.7651	.00928	.07994	.02133
#2	.09772	2.8095	.01876	.19922	.01011	.01943	1.0494	.03619	2.7387	.00787	.08825	.02318

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .02675	.50745	1.0859	.09229	.00925	.01323	.00979	.01648	.07748	.00962	.01812	.01390
Stddev	.00402	.01359	.0291	.00052	.00016	.00072	.00015	.00097	.03104	.00036	.00044	.00407
%RSD	15.045	2.6778	2.6778	.55902	1.6982	5.4721	1.4830	5.9134	40.065	3.6962	2.4562	29.280

#1	.02390	.51706	1.1065	.09193	.00936	.01272	.00969	.01580	.09943	.00937	.01780	.01102
#2	.02960	.49784	1.0654	.09266	.00914	.01375	.00990	.01717	.05553	.00987	.01843	.01678

Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.02000											
Range	30.000%											

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3765.1	50147.	2871.8
Stddev	2.0	162.	7.9
%RSD	.05419	.32379	.27497

#1	3763.7	50032.	2877.4
#2	3766.5	50262.	2866.2

Sample Name: 280-123356-A-31-A Acquired: 5/14/2019 13:24:37 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457367 6010C Q5 (Fe Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.02954	.00316	.05094	.02031	.00008	-.00038	41.295	.00088
Stddev	.00058	.00070	.00507	.00016	.00026	.00001	.00078	.058	.00024
%RSD	77.484	2.3540	160.32	.31069	1.2898	10.526	202.30	.14162	27.197

#1	.00117	.02905	.00675	.05083	.02012	.00008	-.00093	41.253	.00071
#2	.00034	.03004	-.00042	.05106	.02049	.00009	.00017	41.336	.00105

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00188	.00029	-.00078	.12777	2.2606	.05246	37.032	.02147	.00055
Stddev	.00008	.00018	.00001	.00135	.0188	.00221	.124	.00011	.00010
%RSD	4.3646	62.059	.79496	1.0544	.83280	4.2076	.33467	.51873	18.671

#1	.00194	.00042	-.00077	.12873	2.2473	.05402	36.944	.02139	.00062
#2	.00183	.00016	-.00078	.12682	2.2740	.05090	37.119	.02155	.00047

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	54.837	.00205	.00810	-.00108	67.344	-.00064	.00003	17.368	37.167
Stddev	.428	.00017	.00170	.00156	.593	.00231	.00205	.073	.157
%RSD	.78094	8.0720	21.032	144.41	.88027	363.88	6530.1	.42235	.42235

#1	54.535	.00193	.00689	-.00218	67.763	-.00227	.00148	17.316	37.056
#2	55.140	.00217	.00930	.00002	66.925	.00100	-.00142	17.420	37.278

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.25578	-.00324	.00092	.00229	.06660	.00002	.00565	.00156
Stddev	.00136	.00007	.00209	.00019	.00041	.00372	.00028	.00031	.00288
%RSD	452.80	.02911	64.548	20.742	17.695	5.5805	1166.8	5.5291	184.96

#1	-.00066	.25573	-.00472	.00078	.00258	.06397	-.00018	.00587	-.00048
#2	.00126	.25583	-.00176	.00105	.00201	.06922	.00022	.00543	.00359

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3709.9	50074.	2943.3
Stddev	25.9	25.	4.4
%RSD	.69823	.04909	.15013

#1	3728.3	50091.	2946.5
#2	3691.6	50056.	2940.2

Sample Name: 123356-A-31-A SD@5 Acquired: 5/14/2019 13:27:09 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457367 6010C Q5 (Fe Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 {74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.00528	-.00058	.01029	.00422	.00009	.00304	7.5331	.00041
Stddev	.00085	.00122	.00170	.00056	.00024	.00014	.00396	.0945	.00026
%RSD	193.91	23.066	292.85	5.4785	5.7599	149.37	130.13	1.2538	63.967
#1	.00104	.00442	.00062	.01069	.00405	.00019	.00585	7.4663	.00022
#2	-.00016	.00614	-.00179	.00989	.00439	-.00001	.00024	7.5999	.00060

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
High Limit
Low Limit

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 {44}	670.784 {50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00006	-.00184	.02414	.38883	.00664	7.0046	.00402	.00016
Stddev	.00022	.00017	.00069	.00122	.15191	.00136	.0813	.00005	.00017
%RSD	91.035	278.68	37.165	5.0587	39.068	20.491	1.1605	1.2268	105.20
#1	.00039	.00018	-.00233	.02328	.49624	.00568	6.9471	.00399	.00028
#2	.00008	-.00006	-.00136	.02501	.28141	.00761	7.0621	.00406	.00004

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
High Limit
Low Limit

Elem	Na5895	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Line	589.592 {57}	818.326 {41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.126	W 10.058	-.00335	.00259	.00212	13.302	.00073	.00270	3.1192
Stddev	.020	.491	.00086	.00083	.00097	.303	.00017	.00222	.0378
%RSD	.20190	4.8807	25.632	31.891	45.677	2.2800	23.507	82.248	1.2122
#1	10.111	9.7112	-.00275	.00201	.00280	13.087	.00085	.00113	3.0925
#2	10.140	10.405	-.00396	.00318	.00143	13.516	.00061	.00426	3.1460

Check ? Chk Pass Chk Warn Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
High Limit 500.00
Low Limit 11.000

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062
Line	288.158 {117}2	189.989 {477}	407.771 {83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 {91}	292.402 {115}	206.200 {163}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.6751	-.00083	.04649	.00008	.00058	.00371	.00742	.00006	-.00078
Stddev	.0809	.00097	.00043	.00184	.00001	.00154	.05637	.00109	.00033
%RSD	1.2122	117.19	.92833	2191.5	1.7180	41.414	759.53	1678.8	42.079
#1	6.6179	-.00151	.04618	.00138	.00058	.00262	-.03244	-.00070	-.00101
#2	6.7324	-.00014	.04679	-.00122	.00057	.00479	.04728	.00083	-.00055

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
High Limit
Low Limit

Elem	Zr3391								
Line	339.198 {99}								
Units	ppm								
Avg	.00011								
Stddev	.00350								
%RSD	3206.8								
#1	.00258								
#2	-.00237								

Check ? Chk Pass
High Limit
Low Limit

Sample Name: 123356-A-31-A SD@5 Acquired: 5/14/2019 13:27:09 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457367 6010C Q5 (Fe Na)

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3704.8	49874.	2878.2
Stddev	6.5	80.	6.0
%RSD	.17641	.16120	.20843
#1	3700.2	49931.	2874.0
#2	3709.5	49817.	2882.5

Sample Name: 123356-A-31-B MS Acquired: 5/14/2019 13:29:42 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457367 6010C Q5 (Fe Na)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05700	9.8552	1.9666	.98484	1.9388	.97861	1.8405	89.094	.98609
Stddev	.00021	.0240	.0066	.00706	.0058	.00160	.0091	.068	.00690
%RSD	.36255	.24348	.33837	.71667	.30002	.16378	.49580	.07578	.69940
#1	.05714	9.8383	1.9618	.97985	1.9347	.97975	1.8341	89.046	.98121
#2	.05685	9.8722	1.9713	.98984	1.9429	.97748	1.8470	89.142	.99096

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
High Limit
Low Limit

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95694	.92905	1.0014	9.8296	51.724	1.0433	90.251	1.0495	1.0116
Stddev	.00735	.00683	.0024	.0006	.126	.0032	.254	.0021	.0056
%RSD	.76783	.73569	.23481	.00643	.24293	.30753	.28198	.20070	.55089
#1	.95175	.92422	1.0031	9.8300	51.635	1.0456	90.431	1.0510	1.0076
#2	.96214	.93388	.99977	9.8291	51.813	1.0411	90.071	1.0480	1.0155

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
High Limit
Low Limit

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	107.13	.96187	19.879	.96239	79.726	.98691	1.9122	20.245	43.324
Stddev	.28	.00806	.138	.00836	.711	.00640	.0068	.006	.014
%RSD	.25747	.83802	.69514	.86858	.89203	.64876	.35758	.03171	.03171
#1	106.94	.95617	19.781	.95648	79.223	.98238	1.9073	20.240	43.314
#2	107.33	.96757	19.977	.96830	80.229	.99144	1.9170	20.249	43.334

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
High Limit
Low Limit

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8828	1.2379	.97585	1.0409	1.8162	2.1267	1.0566	.48553	.50333
Stddev	.0177	.0025	.00217	.0034	.0177	.0381	.0018	.00149	.00235
%RSD	.94205	.19986	.22187	.33017	.97261	1.7936	.16684	.30721	.46697
#1	1.8702	1.2362	.97738	1.0434	1.8037	2.1537	1.0553	.48448	.50167
#2	1.8953	1.2397	.97432	1.0385	1.8287	2.0998	1.0578	.48659	.50499

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
High Limit
Low Limit

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3624.7	47930.	2865.3
Stddev	31.5	61.	1.2
%RSD	.86788	.12654	.04361
#1	3647.0	47887.	2866.1
#2	3602.5	47973.	2864.4

Sample Name: 123356-A-31-C MSD Acquired: 5/14/2019 13:31:58 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457367 6010C Q5 (Fe Na)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05635	9.7336	1.9088	.98132	1.8784	.94409	1.8266	86.754	.96259
Stddev	.00068	.0563	.0086	.00114	.0009	.00084	.0103	.115	.00239
%RSD	1.1997	.57891	.45304	.11659	.04928	.08866	.56318	.13297	.24794
#1	.05683	9.6937	1.9150	.98213	1.8791	.94468	1.8338	86.835	.96428
#2	.05587	9.7734	1.9027	.98052	1.8777	.94350	1.8193	86.672	.96090

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
High Limit
Low Limit

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93559	.90513	.96715	9.6244	50.838	1.0156	88.088	1.0179	.98699
Stddev	.00506	.00292	.00215	.0043	.074	.0043	.066	.0014	.00430
%RSD	.54117	.32224	.22213	.04441	.14639	.42644	.07444	.13259	.43534
#1	.93917	.90719	.96867	9.6214	50.891	1.0187	88.042	1.0170	.99003
#2	.93200	.90306	.96563	9.6274	50.786	1.0125	88.134	1.0189	.98395

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
High Limit
Low Limit

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	103.81	.93981	18.735	.94005	77.240	.97338	1.8637	19.632	42.012
Stddev	.20	.00364	.082	.00295	.224	.00164	.0097	.020	.043
%RSD	.19310	.38740	.43662	.31360	.28975	.16884	.51969	.10176	.10176
#1	103.67	.94239	18.793	.94213	77.398	.97222	1.8706	19.617	41.981
#2	103.95	.93724	18.677	.93796	77.082	.97454	1.8569	19.646	42.042

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
High Limit
Low Limit

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8359	1.1979	.96509	1.0118	1.7679	1.9437	1.0230	.48293	.50157
Stddev	.0074	.0015	.00234	.0012	.0029	.0139	.0009	.00125	.00314
%RSD	.40127	.12248	.24291	.12020	.16300	.71381	.08755	.25788	.62612
#1	1.8412	1.1990	.96674	1.0109	1.7700	1.9535	1.0236	.48205	.50379
#2	1.8307	1.1969	.96343	1.0126	1.7659	1.9339	1.0224	.48381	.49935

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
High Limit
Low Limit

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3603.3	47938.	2818.8
Stddev	5.6	101.	36.3
%RSD	.15440	.21003	1.2861
#1	3607.3	48009.	2793.2
#2	3599.4	47867.	2844.4

Sample Name: 123356-A-31-A PDS Acquired: 5/14/2019 13:34:15 Type: Unk
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoadesc Prep Date: Custom ID2: Custom ID3:
 Comment: 457367 6010C Q5 (Fe Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05127	.92485	.18968	.14726	.11077	.04632	.00371	57.717	.04797
Stddev	.00167	.00732	.00198	.00113	.00154	.00005	.00189	.070	.00032
%RSD	3.2667	.79101	1.0413	.76760	1.3890	.09981	50.926	.12117	.67050

#1	.05008	.93002	.18828	.14805	.11186	.04629	.00237	57.767	.04820
#2	.05245	.91967	.19108	.14646	.10969	.04635	.00504	57.668	.04775

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04713	.04399	.04803	1.0603	21.102	.14159	56.072	.06966	.05053
Stddev	.00059	.00028	.00051	.0011	.012	.00116	.088	.00022	.00007
%RSD	1.2561	.64198	1.0545	.10764	.05734	.81631	.15717	.30971	.13763

#1	.04754	.04419	.04839	1.0611	21.093	.14078	56.134	.06981	.05048
#2	.04671	.04379	.04767	1.0595	21.111	.14241	56.010	.06950	.05058

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	72.686	.04827	1.9086	.09153	66.148	.09548	.18502	21.601	46.227
Stddev	.340	.00013	.0110	.00247	.405	.00317	.00328	.022	.048
%RSD	.46835	.26778	.57727	2.6954	.61248	3.3156	1.7745	.10387	.10387

#1	72.927	.04836	1.9163	.09327	66.434	.09772	.18734	21.617	46.261
#2	72.445	.04818	1.9008	.08978	65.861	.09324	.18270	21.586	46.193

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09133	.29492	.18564	.05027	.17886	.46494	.04976	.19822	.05366
Stddev	.00074	.00051	.00075	.00043	.00212	.01445	.00086	.00199	.00097
%RSD	.81211	.17294	.40226	.84555	1.1834	3.1080	1.7285	1.0062	1.8119

#1	.09081	.29528	.18511	.05057	.17736	.47516	.05036	.19963	.05297
#2	.09186	.29456	.18617	.04997	.18035	.45472	.04915	.19681	.05434

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3648.4	48227.	2869.6
Stddev	13.5	251.	4.8
%RSD	.36934	.52140	.16727

#1	3638.8	48050.	2873.0
#2	3657.9	48405.	2866.2

Sample Name: CCVH-5699817 Acquired: 5/14/2019 13:36:43 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .01756	46.879	k -.00185	k .00601	k .00320	k .00167	k .91306	k .00224	k -.00017	k .00491	k .00135	k .00944
Stddev	.00157	.311	.00072	.00058	.00002	.00030	.00586	.00217	.00019	.00027	.00008	.00031
%RSD	8.9219	.66401	38.725	9.5789	.58679	18.154	.64159	96.503	110.88	5.4457	6.2172	3.2396

#1	k .01866	46.659	k -.00135	k .00641	k .00321	k .00188	k .91720	k .00071	k -.00004	k .00472	k .00141	k .00965
#2	k .01645	47.099	k -.00236	k .00560	k .00319	k .00146	k .90891	k .00378	k -.00030	k .00510	k .00129	k .00922

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k 44.901	.25677	.00232	k .03403	k .00057	k .00058	240.05	k -.00055	k .00714	k .01651	k 4.5229	k -.03179
Stddev	.076	.09963	.00281	.00079	.00016	.00028	1.67	.00025	.00001	.00140	.0101	.00189
%RSD	.17018	38.800	121.00	2.3205	28.923	47.630	.69726	45.427	.19787	8.5049	.22230	5.9302

#1	k 44.847	.32722	.00431	k .03459	k .00069	k .00078	238.87	k -.00037	k .00713	k .01552	k 4.5301	k -.03312
#2	k 44.955	.18633	.00034	k .03347	k .00045	k .00039	241.23	k -.00072	k .00715	k .01750	k 4.5158	k -.03046

Check ?	Chk Pass	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None
Value												
Range												

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.00805	k .00260	k .00557	k .00186	.00147	k 5.1421	k .02152	k .00418	k 9.9300	k .01009	k .00219	k .29441
Stddev	.00074	.03209	.06867	.00044	.00000	.0115	.00075	.00019	.0125	.00062	.00037	.00349
%RSD	9.1452	1233.4	1233.4	23.826	.02211	.22429	3.4633	4.5317	.12578	6.1122	16.760	1.1856

#1	k -.00857	k -.02009	k -.04299	k .00154	.00147	k 5.1502	k .02205	k .00405	k 9.9211	k .01052	k .00193	k .29194
#2	k -.00753	k .02529	k .05412	k .00217	.00147	k 5.1339	k .02099	k .00432	k 9.9388	k .00965	k .00245	k .29688

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3525.9	47461.	2818.9
Stddev	2.2	34.	.4
%RSD	.06199	.07099	.01295

#1	3524.4	47485.	2819.1
#2	3527.4	47437.	2818.6

Sample Name: CCV-5699804 Acquired: 5/14/2019 13:39:15 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51216	.51626	.93199	.47124	.46764	.47286	.00254	4.6168	.48105	.48853	.45985	.48686	2.4421	47.813
Stddev	.00019	.00004	.00780	.00052	.00051	.00089	.00128	.0008	.00164	.00052	.00184	.00004	.0111	.124
%RSD	.03795	.00812	.83680	.11047	.10835	.18883	50.430	.01625	.34093	.10605	.40071	.00830	.45298	.26001

#1	.51230	.51623	.93750	.47161	.46800	.47349	.00345	4.6173	.48221	.48890	.46115	.48689	2.4499	47.901
#2	.51202	.51629	.92647	.47087	.46728	.47222	.00164	4.6162	.47989	.48816	.45854	.48684	2.4343	47.725

Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Elem	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95852	20.459	.50427	.49338	5.3635	.48789	.95417	.97791	.01041	.92580	.93659	4.7947	10.261	.92559
Stddev	.00135	.013	.00001	.00383	.0341	.00209	.00864	.00492	.00090	.00765	.00339	.0504	.108	.00124
%RSD	.14093	.06535	.00137	.77582	.63617	.42765	.90598	.50287	8.6752	.82639	.36237	1.0510	1.0510	.13377

#1	.95948	20.468	.50427	.49609	5.3876	.48936	.96028	.98139	.01104	.93121	.93899	4.8303	10.337	.92647
#2	.95757	20.449	.50426	.49068	5.3394	.48641	.94806	.97443	.00977	.92039	.93419	4.7590	10.184	.92472

Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Elem	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47273	.00108	.49809	.93915	.05441	.50543	.49627	.49104
Stddev	.00027	.00417	.00038	.00158	.02006	.00255	.00355	.00063
%RSD	.05801	386.63	.07547	.16802	36.878	.50407	.71632	.12736

#1	.47293	.00403	.49835	.94026	.06860	.50362	.49376	.49148
#2	.47254	-.00187	.49782	.93803	.04022	.50723	.49879	.49060

Check ? Value Range	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
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Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3613.1	48257.	2790.8
Stddev	2.5	248.	13.8
%RSD	.06870	.51352	.49596

#1	3614.9	48432.	2781.0
#2	3611.4	48082.	2800.6

Sample Name: CCB Acquired: 5/14/2019 13:41:39 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoades Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	-.00157	-.00126	.00192	.00086	.00025	.00158	-.00015	-.00007	-.00005	-.00016	-.00262	-.00409
Stddev	.00092	.00004	.00314	.00085	.00022	.00021	.00179	.00811	.00007	.00020	.00029	.00020	.00078
%RSD	118.32	2.5036	249.01	44.450	25.554	85.088	112.64	5370.5	98.586	373.17	182.92	7.6843	19.029

#1	.00143	-.00159	.00096	.00252	.00101	.00010	.00285	.00558	-.00012	.00009	-.00037	-.00248	-.00354
#2	.00013	-.00154	-.00348	.00131	.00070	.00040	.00032	-.00588	-.00002	-.00020	.00005	-.00276	-.00464

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit													
Low Limit													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.02766	.00317	.00316	.00011	.00079	.14278	-.00457	-.00085	.00041	.00499	.00590	.00405	-.00501
Stddev	.15440	.00352	.00257	.00005	.00045	.02790	.00035	.00173	.00125	.00216	.00146	.00043	.00037
%RSD	558.29	111.02	81.475	47.038	56.859	19.539	7.7345	202.72	306.37	43.258	24.792	10.703	7.4486

#1	-.13683	.00566	.00497	.00007	.00047	.16251	-.00432	.00037	.00129	.00652	.00487	.00375	-.00475
#2	.08152	.00068	.00134	.00014	.00111	.12305	-.00482	-.00207	-.00047	.00347	.00694	.00436	-.00528

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit													
Low Limit													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.01073	-.00173	-.00020	.00005	.00022	.00499	.02871	.00103	-.00184	.00328
Stddev	.00080	.00052	.00010	.00093	.00003	.00147	.07513	.00027	.00027	.00224
%RSD	7.4486	29.785	50.515	1867.6	13.222	29.496	261.73	26.493	14.842	68.324

#1	-.01017	-.00209	-.00027	.00071	.00020	.00395	-.02442	.00122	-.00203	.00169
#2	-.01130	-.00137	-.00013	-.00061	.00024	.00603	.08183	.00083	-.00165	.00486

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3672.9	48869.	2809.5
Stddev	23.2	130.	20.2
%RSD	.63255	.26555	.71909

#1	3656.5	48960.	2823.8
#2	3689.4	48777.	2795.2

Sample Name: CCVL-5701318 Acquired: 5/14/2019 13:44:16 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00876	.09406	.01320	.09390	.00942	.00097	.09763	.18005	.00483	.00993	.00915	.01382
Stddev	.00008	.00003	.00260	.00035	.00006	.00026	.00476	.00846	.00021	.00013	.00000	.00139
%RSD	.95144	.03242	19.664	.37007	.62461	26.428	4.8741	4.6980	4.4264	1.3408	.04414	10.036

#1	.00870	.09408	.01504	.09365	.00946	.00079	.09426	.17407	.00467	.01002	.00916	.01480
#2	.00882	.09404	.01137	.09415	.00937	.00115	.10099	.18603	.00498	.00983	.00915	.01284

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09502	2.8299	.01845	.20084	.01038	.01980	1.0654	.03573	2.7429	.01053	.08954	.02133
Stddev	.00179	.0794	.00370	.00638	.00005	.00066	.0187	.00047	.0059	.00155	.00022	.00122
%RSD	1.8880	2.8061	20.030	3.1782	.48708	3.3250	1.7536	1.3138	.21569	14.761	.24959	5.7395

#1	.09375	2.8860	.02106	.20536	.01034	.01934	1.0522	.03606	2.7471	.00943	.08938	.02046
#2	.09629	2.7737	.01584	.19633	.01042	.02027	1.0786	.03540	2.7387	.01163	.08970	.02219

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01879	.46551	.99620	.09153	.00912	.01214	.00998	.01597	F .14898	.01070	.01864	.01483
Stddev	.00237	.01314	.02813	.00152	.00000	.00060	.00095	.00120	.02588	.00135	.00047	.00257
%RSD	12.633	2.8237	2.8237	1.6640	.02034	4.9053	9.4770	7.5073	17.375	12.650	2.5264	17.356

#1	.02047	.45622	.97631	.09261	.00912	.01172	.00931	.01513	.16728	.01166	.01897	.01301
#2	.01712	.47481	1.0161	.09046	.00912	.01257	.01065	.01682	.13067	.00974	.01831	.01665

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value									.06000			
Range									30.000%			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3723.6	49739.	2860.3
Stddev	.3	452.	25.1
%RSD	.00853	.90785	.87626

#1	3723.4	49420.	2878.0
#2	3723.9	50058.	2842.6

Sample Name: MB 280-457366/1-A Acquired: 5/14/2019 13:46:49 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/9 Custom ID2: Custom ID3:
Comment: 457366 6010C Q5 (Al Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00030	-0.00104	.00078	.00089	.00070	-0.00011	.00087	.00149	-0.00010
Stddev	.00097	.00021	.01219	.00084	.00010	.00003	.00240	.00237	.00017
%RSD	324.13	20.626	1571.0	94.333	13.871	28.357	274.50	158.72	178.71

#1	-.00098	-.00119	.00939	.00149	.00063	-.00009	.00257	.00317	-.00022
#2	.00039	-.00088	-.00784	.00030	.00077	-.00013	-.00082	-.00018	.00003

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00014	-0.00141	.03268	-0.06150	-0.00037	-0.00000	.00027	-0.00013
Stddev	.00010	.00047	.00015	.00024	.00361	.00073	.00722	.00014	.00048
%RSD	41.446	330.90	10.529	.74201	5.8617	197.23	270600.	51.480	371.10

#1	.00030	-.00019	-.00130	.03251	-.05896	-.00088	-.00511	.00036	.00021
#2	.00017	.00048	-.00151	.03285	-.06405	.00015	.00511	.00017	-.00047

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.14026	-0.00435	-0.00067	.00007	.00371	.00395	.00328	-.02276	-0.04871
Stddev	.01002	.00013	.00058	.00182	.00063	.00047	.00058	.01773	.03794
%RSD	7.1426	2.9195	86.229	2516.7	17.089	11.845	17.635	77.875	77.875

#1	.14734	-.00426	-.00109	-.00122	.00326	.00428	.00287	-.03530	-.07554
#2	.13318	-.00444	-.00026	.00136	.00416	.00362	.00369	-.01023	-.02189

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00045	-0.00029	.00161	-0.00004	.00257	.01751	.00043	-0.00052	.00271
Stddev	.00017	.00023	.00347	.00012	.00045	.05211	.00020	.00062	.00215
%RSD	37.143	81.466	214.64	271.83	17.359	297.53	46.562	118.47	79.418

#1	-.00033	-.00045	.00407	-.00013	.00289	-.01933	.00029	-.00008	.00423
#2	-.00057	-.00012	-.00084	.00004	.00226	.05436	.00057	-.00095	.00119

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3763.9	50103.	2907.9
Stddev	13.7	118.	6.4
%RSD	.36437	.23602	.22080

#1	3754.2	50187.	2903.3
#2	3773.6	50019.	2912.4

Sample Name: LCS 280-457366/2-A Acquired: 5/14/2019 13:49:24 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5 (Al Na)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00275	9.4060	1.8183	.90447	1.7860	.90974	1.8001	44.032	.91983
Stddev	.00031	.1289	.0057	.00057	.0077	.00609	.0031	.153	.00293
%RSD	11.389	1.3706	.31283	.06333	.42870	.66973	.17227	.34722	.31890

#1	.00297	9.4972	1.8224	.90406	1.7914	.91405	1.7979	44.140	.91776
#2	.00253	9.3148	1.8143	.90487	1.7806	.90543	1.8023	43.924	.92191

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.89716	.85809	.92789	9.2142	46.784	.92403	48.484	.96206	.94374
Stddev	.00342	.00007	.00441	.0418	.118	.00328	.221	.00185	.00058
%RSD	.38071	.00774	.47565	.45307	.25206	.35536	.45609	.19237	.06105

#1	.89475	.85805	.93102	9.2437	46.868	.92636	48.640	.96337	.94333
#2	.89958	.85814	.92477	9.1847	46.701	.92171	48.327	.96076	.94415

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	47.323	.89882	18.575	.91635	8.5913	.00831	1.7914	1.9274	4.1246
Stddev	.240	.00165	.039	.00207	.0077	.00115	.0074	.0046	.0098
%RSD	.50709	.18319	.21033	.22637	.08994	13.862	.41262	.23719	.23719

#1	47.492	.89766	18.548	.91489	8.5859	.00913	1.7861	1.9306	4.1315
#2	47.153	.89998	18.603	.91782	8.5968	.00750	1.7966	1.9242	4.1177

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.7378	.90674	.94130	.96505	1.7366	2.0129	.98154	.46787	.49425
Stddev	.0004	.00452	.00059	.00471	.0014	.0355	.00020	.00053	.00059
%RSD	.02421	.49886	.06308	.48795	.08258	1.7636	.02071	.11430	.11932

#1	1.7375	.90994	.94088	.96838	1.7377	1.9878	.98140	.46824	.49467
#2	1.7381	.90354	.94172	.96172	1.7356	2.0380	.98169	.46749	.49384

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3705.2	48432.	2884.5
Stddev	11.4	8.	23.4
%RSD	.30784	.01744	.81284

#1	3713.3	48427.	2867.9
#2	3697.2	48438.	2901.1

Sample Name: LCSD 280-457366/3-A Acquired: 5/14/2019 13:51:43 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5 (Al Na)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00343	9.4599	1.8193	.91268	1.7897	.91338	1.8077	44.168	.92542
Stddev	.00042	.0559	.0100	.00620	.0049	.00289	.0198	.143	.00810
%RSD	12.275	.59058	.54741	.67879	.27479	.31670	1.0948	.32383	.87534

#1	.00372	9.4203	1.8263	.91706	1.7862	.91133	1.8217	44.067	.93115
#2	.00313	9.4994	1.8122	.90830	1.7932	.91542	1.7938	44.269	.91969

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.90926	.87427	.93594	9.2660	46.538	.91990	49.488	.97949	.95515
Stddev	.00582	.00835	.00133	.0145	.385	.00147	.043	.00022	.00910
%RSD	.63990	.95558	.14195	.15633	.82627	.16020	.08753	.02290	.95225

#1	.91338	.88017	.93688	9.2557	46.266	.91885	49.458	.97965	.96158
#2	.90515	.86836	.93500	9.2762	46.810	.92094	49.519	.97933	.94872

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	47.399	.91052	18.770	.92555	8.6079	.00535	1.7999	1.8617	3.9841
Stddev	.073	.00741	.146	.00934	.0437	.00075	.0140	.0488	.1044
%RSD	.15484	.81403	.77630	1.0088	.50782	14.072	.78010	2.6194	2.6194

#1	47.347	.91576	18.873	.93215	8.6388	.00588	1.8098	1.8272	3.9103
#2	47.450	.90528	18.667	.91895	8.5770	.00482	1.7900	1.8962	4.0579

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.7623	.90943	.96220	.98187	1.7484	2.0790	.99581	.47689	.49852
Stddev	.0177	.00278	.00451	.00074	.0189	.0442	.00128	.00011	.00030
%RSD	1.0045	.30621	.46858	.07525	1.0787	2.1246	.12818	.02349	.06092

#1	1.7748	.90746	.95902	.98239	1.7618	2.1102	.99490	.47681	.49830
#2	1.7498	.91139	.96539	.98135	1.7351	2.0477	.99671	.47697	.49873

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3720.2	48741.	2919.6
Stddev	3.0	192.	1.1
%RSD	.07955	.39383	.03745

#1	3722.3	48605.	2920.4
#2	3718.1	48876.	2918.9

Sample Name: 280-123330-B-1-A Acquired: 5/14/2019 13:54:02 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5 (Al Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	1.5468	.02055	.04105	.03135	.00028	-.00311	65.329	.00055
Stddev	.00056	.0117	.00109	.00117	.00008	.00009	.00271	.057	.00014
%RSD	109.42	.75579	5.3276	2.8601	.25579	30.075	87.195	.08683	24.925

#1	.00012	1.5551	.01977	.04188	.03141	.00034	-.00119	65.289	.00064
#2	.00091	1.5385	.02132	.04022	.03129	.00022	-.00503	65.370	.00045

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00154	.00234	.00144	4.0440	2.1647	.03901	46.262	.10930	.00440
Stddev	.00017	.00002	.00082	.0167	.0604	.00314	.076	.00014	.00007
%RSD	10.801	1.0467	56.880	.41374	2.7894	8.0461	.16428	.12571	1.4990

#1	.00142	.00236	.00086	4.0321	2.1220	.03679	46.209	.10921	.00445
#2	.00165	.00232	.00202	4.0558	2.2074	.04123	46.316	.10940	.00435

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	28.167	-.00170	.04543	.00280	20.905	-.00082	.00192	9.5205	20.374
Stddev	.077	.00064	.00135	.00098	.124	.00496	.00196	.0437	.093
%RSD	.27202	37.554	2.9698	35.161	.59401	606.71	102.05	.45883	.45883

#1	28.221	-.00215	.04638	.00210	20.993	-.00433	.00331	9.4897	20.308
#2	28.113	-.00125	.04448	.00349	20.817	.00269	.00054	9.5514	20.440

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00222	.24605	-.00106	.01583	.00145	-.01789	.00254	.01045	.00515
Stddev	.00004	.00007	.00167	.00068	.00029	.01591	.00076	.00016	.00143
%RSD	1.6594	.02849	157.50	4.3242	20.333	88.951	30.028	1.4910	27.763

#1	.00219	.24600	-.00224	.01535	.00124	-.00664	.00307	.01034	.00414
#2	.00224	.24610	.00012	.01632	.00166	-.02914	.00200	.01056	.00616

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3645.2	48886.	2939.5
Stddev	8.0	621.	12.4
%RSD	.21834	1.2710	.42183

#1	3639.6	49325.	2948.3
#2	3650.9	48446.	2930.7

Sample Name: 280-123330-A-2-A Acquired: 5/14/2019 13:56:32 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5 (Al Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00125	.00346	-.00136	.01591	.00777	.00032	-.00170	54.448	.00031
Stddev	.00045	.00046	.00439	.00075	.00038	.00007	.00048	.143	.00022
%RSD	35.601	13.292	322.14	4.7270	4.8406	22.450	28.093	.26324	70.049

#1	.00094	.00378	.00174	.01538	.00804	.00037	-.00203	54.347	.00046
#2	.00157	.00313	-.00446	.01645	.00750	.00027	-.00136	54.550	.00016

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	.00006	-.00006	.23297	.54006	.00381	14.166	.56472	.00084
Stddev	.00024	.00002	.00071	.00484	.00922	.00233	.037	.00038	.00015
%RSD	93.882	37.182	1233.5	2.0761	1.7081	61.112	.25822	.06677	17.696

#1	-.00042	.00008	.00044	.22955	.53354	.00217	14.192	.56498	.00073
#2	-.00009	.00005	-.00056	.23639	.54659	.00546	14.140	.56445	.00094

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.1333	-.00462	.02526	.00070	5.5793	.00106	.00203	4.7618	10.190
Stddev	.0306	.00029	.00419	.00104	.0313	.00134	.00452	.0201	.043
%RSD	.97705	6.2561	16.602	149.56	.56141	126.16	222.98	.42293	.42293

#1	3.1549	-.00483	.02822	-.00004	5.6014	.00011	-.00117	4.7760	10.221
#2	3.1116	-.00442	.02229	.00143	5.5571	.00201	.00522	4.7475	10.160

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.08090	-.00136	.00032	.00106	.01593	-.00001	-.00069	.00183
Stddev	.00102	.00036	.00431	.00045	.00109	.05056	.00025	.00019	.00151
%RSD	123.95	.44710	317.49	141.66	102.45	317.36	2062.0	27.943	82.504

#1	.00010	.08065	-.00441	.00064	.00183	.05168	.00017	-.00055	.00290
#2	.00154	.08116	.00169	-.00000	.00029	-.01982	-.00019	-.00082	.00076

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3650.4	48469.	2893.3
Stddev	1.2	241.	28.9
%RSD	.03396	.49723	1.0005

#1	3649.5	48639.	2872.9
#2	3651.3	48299.	2913.8

Sample Name: 280-123330-B-6-A Acquired: 5/14/2019 13:59:04 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5 (Al Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	.00190	-.00369	.08116	.24435	.00008	-.00631	F 1022.3	-.00029
Stddev	.00078	.00057	.00143	.00004	.00166	.00002	.00592	10.9	.00040
%RSD	98.146	30.133	38.822	.04346	.68107	22.245	93.693	1.0687	140.10
#1	.00024	.00150	-.00268	.08119	.24317	.00007	-.00213	1014.6	-.00057
#2	.00135	.00231	-.00470	.08114	.24553	.00010	-.01050	1030.0	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit								1000.0	
Low Limit								-40000	

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01077	-.00052	-.00053	.02562	54.603	.48816	342.58	2.6030	-.00051
Stddev	.00051	.00051	.00031	.00032	.230	.00267	.28	.0016	.00034
%RSD	4.6966	98.026	58.439	1.2429	.42051	.54734	.08196	.06074	66.756
#1	.01112	-.00089	-.00075	.02540	54.441	.49005	342.78	2.6042	-.00075
#2	.01041	-.00016	-.00031	.02585	54.766	.48627	342.38	2.6019	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.923	.01599	-.00087	-.00134	58.335	.00232	.00724	4.9174	10.523
Stddev	.078	.00098	.00382	.00013	.646	.00341	.00106	.0043	.009
%RSD	.19473	6.1287	437.25	9.7864	1.1070	147.01	14.591	.08654	.08654
#1	39.978	.01530	-.00357	-.00125	58.792	-.00009	.00798	4.9143	10.517
#2	39.868	.01669	.00183	-.00143	57.878	.00473	.00649	4.9204	10.530
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00045	2.6553	-.00210	.00168	-.00046	-.07886	-.00032	.00564	.00430
Stddev	.00132	.0013	.00193	.00029	.00191	.05373	.00067	.00092	.00317
%RSD	293.93	.04724	91.635	17.169	411.30	68.131	213.67	16.392	73.727
#1	-.00138	2.6544	-.00347	.00147	-.00181	-.04087	-.00079	.00629	.00654
#2	.00048	2.6562	-.00074	.00188	.00089	-.11685	.00016	.00498	.00206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3258.8	43659.	2717.5
Stddev	40.8	3.	9.8
%RSD	1.2531	.00770	.35897
#1	3287.6	43656.	2724.4
#2	3229.9	43661.	2710.6

Sample Name: 123330-B-6-A SD@5 Acquired: 5/14/2019 14:01:47 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5 (Al Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.00174	.00176	.01976	.05058	.00031	-.00355	217.99	.00022
Stddev	.00080	.00079	.00658	.00046	.00045	.00013	.00056	3.30	.00008
%RSD	88.725	45.506	374.59	2.3159	.89597	43.137	15.736	1.5155	34.136

#1	.00147	.00230	-.00290	.02009	.05026	.00041	-.00315	215.66	.00028
#2	.00034	.00118	.00641	.01944	.05090	.00022	-.00394	220.33	.00017

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00218	-.00015	-.00193	.03104	10.809	.09892	73.771	.56652	.00018
Stddev	.00036	.00053	.00012	.00626	.205	.00051	.595	.00450	.00003
%RSD	16.509	359.66	6.3410	20.177	1.9007	.51559	.80698	.79471	18.943

#1	.00192	-.00052	-.00201	.03547	10.664	.09856	73.350	.56334	.00016
#2	.00243	.00023	-.00184	.02661	10.955	.09928	74.192	.56971	.00020

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.5855	.00106	-.00123	.00014	12.758	.00163	-.00302	.98175	2.1010
Stddev	.1963	.00000	.00245	.00003	.214	.00732	.00396	.04700	.1006
%RSD	2.2858	.27655	198.82	24.253	1.6741	449.20	131.08	4.7876	4.7876

#1	8.4467	.00106	.00050	.00016	12.607	.00680	-.00022	.94852	2.0298
#2	8.7243	.00106	-.00297	.00011	12.909	-.00354	-.00582	1.0150	2.1721

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.54462	-.00009	.00013	.00061	-.00591	-.00025	.03747	-.00058
Stddev	.00022	.00959	.00067	.00004	.00254	.03586	.00080	.00477	.00236
%RSD	140.22	1.7602	717.14	31.051	415.95	606.51	319.52	12.737	407.31

#1	-.00000	.53784	-.00056	.00010	.00241	-.03127	-.00082	.04084	.00109
#2	-.00032	.55140	.00038	.00016	-.00119	.01945	.00031	.03409	-.00225

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3482.8	46150.	2750.0
Stddev	1.1	2.	3.9
%RSD	.03278	.00451	.14299

#1	3482.0	46152.	2752.8
#2	3483.6	46149.	2747.2

Sample Name: 280-123330-B-6-B MS Acquired: 5/14/2019 14:04:19 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5 (Al Na)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00266	9.4019	1.8354	.96913	1.9888	.87306	1.8133	W 991.74	.93916
Stddev	.00097	.0683	.0052	.00505	.0086	.00124	.0170	10.69	.00551
%RSD	36.491	.72675	.28318	.52148	.43113	.14259	.93775	1.0777	.58672
#1	.00198	9.4502	1.8391	.97271	1.9827	.87218	1.8253	999.30	.94305
#2	.00335	9.3536	1.8317	.96556	1.9948	.87394	1.8013	984.18	.93526

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit								500.00	
Low Limit								-40000	

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.85250	.82392	.93304	8.7537	99.760	1.4043	362.98	3.3309	.92694
Stddev	.00457	.00586	.00154	.0158	.433	.0060	.20	.0056	.00633
%RSD	.53627	.71148	.16504	.18043	.43391	.42373	.05505	.16942	.68319
#1	.85573	.82807	.93413	8.7426	99.454	1.4001	362.84	3.3349	.93142
#2	.84927	.81978	.93195	8.7649	100.07	1.4085	363.12	3.3269	.92246

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	85.408	.86021	19.301	.85957	64.528	-.00073	1.8127	6.4693	13.844
Stddev	.426	.00356	.105	.00932	.377	.00061	.0134	.0507	.108
%RSD	.49914	.41381	.54412	1.0848	.58480	83.450	.73983	.78314	.78314
#1	85.106	.86273	19.375	.86616	64.795	-.00116	1.8222	6.5052	13.921
#2	85.709	.85769	19.227	.85297	64.261	-.00030	1.8033	6.4335	13.768

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.6425	3.3439	.94347	.96187	1.5700	1.8744	.98276	.44916	.47906
Stddev	.0076	.0135	.00518	.00032	.0077	.0262	.00157	.00059	.00204
%RSD	.46471	.40356	.54905	.03279	.49194	1.3980	.16026	.13130	.42628
#1	1.6479	3.3343	.94713	.96210	1.5755	1.8929	.98387	.44958	.48051
#2	1.6371	3.3534	.93980	.96165	1.5646	1.8559	.98164	.44874	.47762

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774						
Line	224.306 {450}	360.073 { 94}	377.433 { 89}						
Units	Cts/S	Cts/S	Cts/S						
Avg	3344.6	44075.	2742.1						
Stddev	17.5	187.	2.7						
%RSD	.52240	.42537	.09826						
#1	3356.9	43942.	2744.0						
#2	3332.2	44208.	2740.2						

Sample Name: 280-123330-B-6-C MSD Acquired: 5/14/2019 14:06:49 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5 (Al Na)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00366	9.7052	1.9085	1.0019	2.0479	.90442	1.8609	F 1004.7	.97156
Stddev	.00146	.0785	.0046	.0071	.0138	.00565	.0152	12.2	.00651
%RSD	39.777	.80860	.23852	.70699	.67273	.62506	.81550	1.2125	.67001
#1	.00263	9.6497	1.9118	1.0069	2.0382	.90042	1.8717	1013.3	.97616
#2	.00469	9.7607	1.9053	.99690	2.0576	.90842	1.8502	996.10	.96696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit								1000.0	
Low Limit								-40000	

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.88954	.85954	.96022	9.0640	W 102.24	1.4362	373.89	3.4361	.96655
Stddev	.00524	.00588	.00023	.0140	.64	.0024	2.28	.0005	.00796
%RSD	.58855	.68394	.02414	.15427	.62354	.17063	.60978	.01579	.82380
#1	.89324	.86369	.96005	9.0541	101.79	1.4345	372.27	3.4365	.97218
#2	.88584	.85538	.96038	9.0739	102.69	1.4379	375.50	3.4357	.96092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					100.00				
Low Limit					-6.0000				

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	87.459	.89548	19.919	.89051	65.991	-.00068	1.8627	6.5916	14.106
Stddev	.641	.00387	.123	.00592	.344	.00134	.0049	.0023	.005
%RSD	.73301	.43179	.61683	.66455	.52134	196.39	.26071	.03430	.03430
#1	87.912	.89821	20.006	.89470	66.234	-.00163	1.8661	6.5900	14.103
#2	87.005	.89274	19.832	.88633	65.748	.00026	1.8592	6.5932	14.109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.7015	3.4416	.97244	.99284	1.5986	1.9612	1.0128	.46244	.50112
Stddev	.0054	.0157	.00601	.00030	.0110	.0240	.0024	.00102	.00387
%RSD	.31519	.45735	.61761	.03030	.68483	1.2230	.23999	.21956	.77290
#1	1.7053	3.4304	.97668	.99305	1.6063	1.9443	1.0111	.46316	.49838
#2	1.6977	3.4527	.96819	.99262	1.5909	1.9782	1.0145	.46173	.50386
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3310.2	43780.	2717.0
Stddev	7.0	52.	37.6
%RSD	.21283	.11875	1.3832
#1	3305.3	43817.	2743.6
#2	3315.2	43743.	2690.5

Sample Name: 280-123330-B-6-A PDS Acquired: 5/14/2019 14:09:19 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5 (Al Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05419	.84630	.18100	.18343	.33021	.04451	-.00253	F 1012.9	.04806
Stddev	.00100	.00520	.00156	.00094	.00038	.00007	.00888	.9	.00043
%RSD	1.8516	.61488	.86426	.51262	.11611	.14737	350.75	.09314	.89912

#1	.05348	.84998	.17989	.18410	.32994	.04456	.00375	1013.6	.04837
#2	.05489	.84262	.18210	.18277	.33048	.04446	-.00881	1012.3	.04776

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit								1000.0	
Low Limit								-.40000	

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05441	.04227	.04704	.93138	73.665	.57922	356.93	2.5842	.05365
Stddev	.00062	.00010	.00164	.00179	.198	.00631	6.15	.0505	.00128
%RSD	1.1468	.23850	3.4762	.19194	.26916	1.0896	1.7218	1.9521	2.3918

#1	.05485	.04234	.04589	.93011	73.524	.57476	352.58	2.5486	.05456
#2	.05397	.04220	.04820	.93264	73.805	.58368	361.27	2.6199	.05275

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	59.269	.06021	1.9366	.08599	57.421	.09306	.18773	10.003	21.406
Stddev	.420	.00096	.0204	.00167	.459	.00160	.00119	.035	.074
%RSD	.70785	1.6017	1.0525	1.9427	.79855	1.7244	.63550	.34598	.34598

#1	58.972	.06089	1.9510	.08717	57.745	.09420	.18858	9.9784	21.354
#2	59.565	.05953	1.9222	.08480	57.097	.09193	.18689	10.027	21.459

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08974	2.6652	.18486	.05448	.15968	.43736	.04891	.18675	.06370
Stddev	.00016	.0048	.00084	.00235	.00203	.00203	.00135	.00151	.00318
%RSD	.18000	.17849	.45531	4.3094	1.2686	.46469	2.7663	.80627	4.9938

#1	.08963	2.6619	.18426	.05282	.16112	.43879	.04795	.18569	.06595
#2	.08986	2.6686	.18545	.05614	.15825	.43592	.04987	.18782	.06145

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3269.5	44175.	2746.2
Stddev	1.2	1319.	9.9
%RSD	.03529	2.9852	.36225

#1	3270.3	45107.	2753.3
#2	3268.7	43242.	2739.2

Sample Name: CCVH-5699817 Acquired: 5/14/2019 14:11:58 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .01766	46.568	k .00052	k .00597	k .00335	k .00167	k .90518	k .06724	k -.00025	k .00450	k .00136	k .00879
Stddev	.00016	.381	.00498	.00092	.00044	.00007	.01057	.02170	.00014	.00024	.00004	.00116
%RSD	.88705	.81792	956.18	15.321	13.187	4.2065	1.1681	32.266	56.660	5.3145	3.1336	13.191

#1	k .01754	46.299	k .00405	k .00533	k .00304	k .00172	k .91266	k .08259	k -.00035	k .00467	k .00140	k .00797
#2	k .01777	46.838	k -.00300	k .00662	k .00366	k .00162	k .89770	k .05190	k -.00015	k .00433	k .00133	k .00961

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	kF 44.145	.34763	k .00193	k .05564	k .00059	k -.00033	239.07	k -.00020	k .00553	k .01586	k 4.4803	k -.02894
Stddev	.488	.07111	.00312	.00635	.00001	.00009	2.28	.00053	.00046	.00001	.0529	.00372
%RSD	1.1056	20.456	161.54	11.415	1.5203	28.257	.95203	267.47	8.3015	.07702	1.1807	12.854

#1	k 43.800	.29734	k -.00027	k .05115	k .00059	k -.00040	237.46	k .00018	k .00585	k .01586	k 4.5177	k -.03157
#2	k 44.490	.39791	.00414	k .06014	k .00058	k -.00027	240.68	k -.00058	k .00520	k .01587	k 4.4429	k -.02631

Check ?	Chk Fail	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None
Value	50.000											
Range	-10.490%											

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.00323	k -.01343	k -.02874	k .00252	.00189	k 5.1488	k .02155	k .00257	k 9.9058	k .01087	k .00288	k .29185
Stddev	.00214	.02227	.04767	.00053	.00019	.0077	.00007	.00030	.0233	.00062	.00008	.00421
%RSD	66.376	165.83	165.83	20.909	10.195	.15001	.33998	11.683	.23492	5.6974	2.7944	1.4409

#1	k -.00475	k -.02918	k -.06245	k .00290	.00203	k 5.1543	k .02150	k .00278	k 9.9222	k .01043	k .00294	k .29483
#2	k -.00171	k .00232	k .00496	k .00215	.00176	k 5.1433	k .02161	k .00236	k 9.8893	k .01130	k .00283	k .28888

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3586.7	46884.	2784.3
Stddev	1.2	210.	11.8
%RSD	.03370	.44798	.42241
#1	3585.8	47033.	2792.7
#2	3587.5	46736.	2776.0

Sample Name: CCV-5699804 Acquired: 5/14/2019 14:14:28 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52124	.51317	.93495	.47267	.46457	.47088	.00310	4.5989	.48012	.48800	.45601	.49181
Stddev	.00085	.00159	.00967	.00103	.00066	.00078	.00122	.0106	.00206	.00227	.00242	.00179
%RSD	.16401	.30900	1.0347	.21883	.14119	.16545	39.470	.23030	.42973	.46581	.53024	.36481

#1	.52185	.51429	.94179	.47340	.46504	.47143	.00223	4.6064	.48157	.48961	.45772	.49054
#2	.52064	.51205	.92811	.47194	.46411	.47033	.00396	4.5914	.47866	.48639	.45430	.49308

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.4435	47.777	.95445	20.743	.50931	.49401	F 5.5478	.48803	.95813	.97808	.01268	.92718
Stddev	.0005	.082	.00015	.024	.00043	.00496	.0509	.00354	.00474	.00126	.00472	.00606
%RSD	.02147	.17176	.01567	.11678	.08474	1.0045	.91673	.72437	.49507	.12929	37.230	.65402

#1	2.4431	47.835	.95456	20.760	.50961	.49752	5.5838	.49053	.96149	.97718	.01601	.93147
#2	2.4439	47.719	.95435	20.726	.50900	.49050	5.5118	.48553	.95478	.97897	.00934	.92289

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93585	4.7538	10.173	.92001	.47021	.00309	.50355	.93326	.03446	.51118	.50102	.49552
Stddev	.01132	.0519	.111	.00636	.00005	.00030	.00014	.00215	.03457	.00111	.00286	.00084
%RSD	1.2097	1.0922	1.0922	.69117	.01117	9.7055	.02760	.23020	100.32	.21758	.57022	.17001

#1	.94385	4.7905	10.252	.92451	.47017	.00331	.50345	.93478	.05890	.51040	.49900	.49612
#2	.92784	4.7170	10.094	.91551	.47025	.00288	.50365	.93174	.01001	.51197	.50304	.49493

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3672.4	48300.	2853.0
Stddev	1.1	421.	34.6
%RSD	.03120	.87231	1.2138

#1	3671.6	48597.	2828.5
#2	3673.2	48002.	2877.5

Sample Name: CCB Acquired: 5/14/2019 14:16:54 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoades Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0039	-0.0143	.00022	.00224	.00119	.00021	.00426	.00675	.00008	.00010	.00013	-0.0157
Stddev	.00044	.00015	.00187	.00015	.00043	.00012	.00027	.00274	.00027	.00008	.00010	.00014
%RSD	113.30	10.777	856.05	6.7785	36.610	56.207	6.4478	40.644	357.07	82.699	78.664	8.7068
#1	-.00070	-.00132	-.00111	.00235	.00088	.00029	.00407	.00869	.00027	.00016	.00020	-.00167
#2	-.00008	-.00154	.00154	.00213	.00149	.00013	.00446	.00481	-.00012	.00004	.00006	-.00147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01468	.07448	-0.00313	.00373	.00010	.00086	.31006	-0.00436	-0.00060	.00166	.00648	W .01022
Stddev	.00280	.04456	.00250	.00511	.00005	.00043	.01657	.00048	.00002	.00115	.00756	.00590
%RSD	19.063	59.827	79.678	136.93	46.649	49.611	5.3438	10.916	2.9169	69.482	116.69	57.795
#1	.01666	.10599	-.00490	.00012	.00014	.00056	.32178	-.00403	-.00058	.00247	.01182	.00604
#2	.01271	.04297	-.00137	.00734	.00007	.00117	.29835	-.00470	-.00061	.00084	.00113	.01439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit												.00600
Low Limit												-.00600
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	-0.00275	-0.00588	.00096	-0.00014	-0.00015	.00030	.00333	.04306	.00017	-0.00115	-0.00017
Stddev	.00017	.01328	.02843	.00025	.00013	.00247	.00027	.00116	.01146	.00085	.00003	.00306
%RSD	54.730	483.55	483.55	25.945	93.413	1648.4	90.304	34.774	26.609	495.99	2.9239	1767.9
#1	.00043	.00665	.01422	.00078	-.00005	-.00190	.00011	.00251	.05117	.00078	-.00112	.00199
#2	.00019	-.01214	-.02598	.00113	-.00023	.00160	.00050	.00415	.03496	-.00043	-.00117	-.00234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3722.1	49425.	2861.2									
Stddev	9.9	183.	11.2									
%RSD	.26593	.36981	.39228									
#1	3715.1	49296.	2853.3									
#2	3729.1	49554.	2869.2									

Sample Name: CCVL-5701318 Acquired: 5/14/2019 14:19:31 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01098	.09349	.01574	.09382	.00969	.00107	.10132	.20272	.00482	.00974	.00908	.01419
Stddev	.00054	.00152	.00280	.00189	.00044	.00027	.00207	.00502	.00018	.00001	.00005	.00030
%RSD	4.8906	1.6205	17.787	2.0105	4.5659	25.501	2.0465	2.4773	3.8230	.13919	.50696	2.0847

#1	.01136	.09457	.01376	.09516	.00938	.00126	.10279	.20627	.00495	.00973	.00905	.01398
#2	.01060	.09242	.01772	.09249	.01001	.00088	.09986	.19917	.00469	.00975	.00912	.01440

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .17492	2.8822	.01988	.20543	.01103	.01933	1.1860	.03563	2.7403	.00966	.09109	.01850
Stddev	.00012	.0533	.00771	.00145	.00002	.00020	.0195	.00066	.0294	.00131	.00121	.00112
%RSD	.06815	1.8499	38.802	.70446	.17007	1.0279	1.6418	1.8639	1.0738	13.584	1.3336	6.0613

#1	.17501	2.8445	.02534	.20645	.01101	.01947	1.1998	.03610	2.7611	.01059	.09195	.01771
#2	.17484	2.9199	.01443	.20440	.01104	.01918	1.1722	.03516	2.7195	.00873	.09023	.01929

Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.10000											
Range	30.000%											

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02162	.47621	1.0191	.09039	.00920	.01176	.01000	.01394	F .08485	.01037	.01945	.01300
Stddev	.00228	.02026	.0434	.00035	.00001	.00026	.00020	.00030	.02376	.00047	.00130	.00205
%RSD	10.555	4.2544	4.2544	.38329	.10642	2.2078	1.9590	2.1827	28.000	4.5338	6.6672	15.751

#1	.02001	.49054	1.0498	.09014	.00919	.01194	.00986	.01372	.06805	.01003	.01853	.01155
#2	.02323	.46189	.98844	.09063	.00920	.01157	.01014	.01415	.10165	.01070	.02037	.01445

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value									.06000			
Range									30.000%			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3788.3	50165.	2812.7
Stddev	10.1	302.	134.8
%RSD	.26541	.60141	4.7945

#1	3781.1	49952.	2717.3
#2	3795.4	50378.	2908.0

Sample Name: 123330-B-6-A @2 Acquired: 5/14/2019 14:22:04 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5 (Ca) 2x

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00212	.00002	-.00461	.04274	.12309	.00011	-.00599	W 530.01	.00017
Stddev	.00008	.00064	.00496	.00088	.00131	.00026	.00088	.62	.00018
%RSD	3.9118	3607.1	107.57	2.0684	1.0641	230.75	14.664	.11749	108.90

#1	.00206	.00047	-.00812	.04211	.12216	.00030	-.00661	529.57	.00004
#2	.00218	-.00044	-.00110	.04336	.12401	-.00007	-.00537	530.45	.00030

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit								500.00	
Low Limit								-.40000	

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00517	-.00013	-.00022	.00774	26.989	.24873	175.52	1.3342	-.00038
Stddev	.00010	.00009	.00051	.00675	.006	.00343	.28	.0001	.00020
%RSD	2.0061	66.033	233.18	87.205	.02101	1.3803	.15797	.01017	53.187

#1	.00525	-.00007	.00014	.01251	26.985	.24631	175.72	1.3343	-.00024
#2	.00510	-.00020	-.00058	.00297	26.993	.25116	175.33	1.3342	-.00053

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.422	.00573	.00062	-.00029	29.377	-.00307	.00585	2.4649	5.2749
Stddev	.369	.00101	.00071	.00059	.271	.00068	.00353	.0205	.0440
%RSD	1.8051	17.596	114.16	204.89	.92388	22.023	60.381	.83364	.83364

#1	20.162	.00644	.00012	-.00070	29.569	-.00259	.00335	2.4795	5.3060
#2	20.683	.00502	.00113	.00013	29.185	-.00354	.00835	2.4504	5.2438

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	1.3406	-.00277	.00095	.00061	-.04852	-.00030	.00397	.00131
Stddev	.00040	.0053	.00197	.00015	.00053	.03224	.00050	.00078	.00355
%RSD	7575.0	.39711	71.342	16.171	85.967	66.460	166.61	19.574	272.14

#1	.00028	1.3368	-.00416	.00106	.00099	-.07131	.00005	.00452	-.00121
#2	-.00029	1.3443	-.00137	.00084	.00024	-.02572	-.00066	.00342	.00382

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3496.1	46121.	2832.6
Stddev	10.5	90.	.3
%RSD	.30002	.19530	.00986

#1	3488.7	46057.	2832.4
#2	3503.5	46185.	2832.8

Sample Name: 123330-B-6-A SD@10 Acquired: 5/14/2019 14:24:35 Type: Unk

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoadesc Prep Date: Custom ID2: Custom ID3:

Comment: 457366 6010C Q5 (Ca) 2x

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	-.00168	-.00192	.00924	.02477	.00010	-.00301	104.34	.00021
Stddev	.00030	.00005	.00020	.00064	.00038	.00014	.00301	1.96	.00001
%RSD	37.948	2.8725	10.439	6.9286	1.5163	139.31	99.881	1.8751	3.5470

#1	.00099	-.00165	-.00177	.00879	.02451	.00000	-.00088	102.95	.00021
#2	.00057	-.00171	-.00206	.00969	.02504	.00020	-.00514	105.72	.00022

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	-.00039	-.00164	-.00036	5.1368	.04544	35.590	.27524	.00029
Stddev	.00033	.00060	.00057	.00538	.0507	.00090	.479	.00342	.00029
%RSD	31.724	153.14	34.996	1496.3	.98743	1.9828	1.3454	1.2437	98.646

#1	.00080	-.00082	-.00123	-.00416	5.1727	.04480	35.252	.27282	.00009
#2	.00127	.00003	-.00204	.00344	5.1009	.04607	35.929	.27766	.00050

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.1424	-.00294	.00139	.00186	6.1961	.00061	-.00259	.46177	.98818
Stddev	.0746	.00016	.00165	.00025	.1455	.00010	.00037	.01535	.03284
%RSD	1.7998	5.5374	118.41	13.294	2.3480	16.766	14.285	3.3235	3.3235

#1	4.0897	-.00305	.00023	.00204	6.0932	.00068	-.00285	.47262	1.0114
#2	4.1951	-.00282	.00256	.00169	6.2990	.00054	-.00233	.45091	.96496

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.26192	-.00154	.00035	.00096	-.02885	-.00059	-.00099	.00685
Stddev	.00000	.00415	.00124	.00020	.00174	.01803	.00028	.00035	.00542
%RSD	.19933	1.5861	80.570	57.626	180.47	62.497	47.022	35.914	79.068

#1	.00083	.25898	-.00242	.00049	.00219	-.04159	-.00079	-.00074	.01068
#2	.00083	.26486	-.00066	.00021	-.00027	-.01610	-.00040	-.00124	.00302

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3593.3	47903.	2825.2
Stddev	6.3	68.	20.5
%RSD	.17423	.14212	.72651

#1	3588.9	47855.	2839.8
#2	3597.8	47951.	2810.7

Sample Name: 123330-B-6-B MS @2 Acquired: 5/14/2019 14:27:07 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5 (Ca) 2x

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00191	5.0036	1.0469	.55595	1.0453	.46759	1.0198	W 531.66	.53504
Stddev	.00055	.1063	.0109	.00805	.0161	.00609	.0125	7.58	.00690
%RSD	28.569	2.1242	1.0449	1.4487	1.5439	1.3021	1.2281	1.4249	1.2894

#1	.00153	4.9285	1.0391	.55025	1.0339	.46328	1.0109	526.30	.53016
#2	.00230	5.0788	1.0546	.56164	1.0567	.47189	1.0286	537.02	.53992

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit								500.00	
Low Limit								-40000	

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50266	.48386	.50410	4.6622	51.501	.72721	199.54	1.8312	.53760
Stddev	.00581	.00635	.00437	.0581	.855	.01206	1.60	.0147	.00543
%RSD	1.1554	1.3133	.86678	1.2456	1.6611	1.6587	.79954	.80423	1.0105

#1	.49855	.47937	.50101	4.6211	50.896	.71868	198.41	1.8208	.53376
#2	.50676	.48835	.50719	4.7032	52.106	.73574	200.66	1.8416	.54144

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	44.268	.50594	11.060	.50241	36.030	.00128	1.0296	3.3181	7.1007
Stddev	.975	.00568	.155	.01112	.490	.00691	.0058	.0677	.1448
%RSD	2.2021	1.1233	1.4024	2.2132	1.3601	540.04	.56052	2.0391	2.0391

#1	43.579	.50192	10.950	.49455	35.683	-.00361	1.0256	3.2702	6.9983
#2	44.958	.50996	11.169	.51028	36.376	.00617	1.0337	3.3659	7.2031

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96191	1.7603	.51152	.52575	.92223	1.0283	.53245	.24684	.25734
Stddev	.01277	.0240	.00258	.00509	.01598	.0138	.00389	.00153	.00227
%RSD	1.3277	1.3634	.50422	.96847	1.7330	1.3377	.72991	.61921	.88350

#1	.95288	1.7433	.50970	.52215	.91093	1.0185	.52970	.24575	.25573
#2	.97094	1.7772	.51335	.52935	.93354	1.0380	.53520	.24792	.25894

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3344.7	45093.	2754.9
Stddev	22.7	25.	21.4
%RSD	.67848	.05440	.77835

#1	3360.8	45111.	2770.1
#2	3328.7	45076.	2739.7

Sample Name: 123330-B-6-C MSD @2 Acquired: 5/14/2019 14:29:28 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5 (Ca) 2x

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00328	4.9674	1.0660	.56700	1.0432	.46716	1.0393	W 529.29	.54367
Stddev	.00113	.0250	.0204	.01270	.0204	.00907	.0110	9.49	.01116
%RSD	34.471	.50326	1.9150	2.2403	1.9515	1.9409	1.0569	1.7937	2.0532
#1	.00248	4.9497	1.0516	.55802	1.0288	.46074	1.0316	522.58	.53578
#2	.00408	4.9850	1.0804	.57598	1.0576	.47357	1.0471	536.00	.55157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit								500.00	
Low Limit								-40000	

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51001	.49266	.51039	4.6828	51.465	.72699	202.58	1.8561	.54657
Stddev	.00943	.00907	.00352	.1092	1.317	.01225	2.91	.0261	.00984
%RSD	1.8486	1.8401	.69044	2.3317	2.5583	1.6848	1.4376	1.4062	1.8009
#1	.50334	.48625	.50790	4.6056	50.534	.71833	200.52	1.8377	.53961
#2	.51668	.49907	.51288	4.7600	52.396	.73565	204.64	1.8746	.55353
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	45.070	.51429	11.204	.51249	36.576	-.00243	1.0443	3.3980	7.2717
Stddev	1.181	.00910	.197	.00655	.795	.00451	.0124	.0624	.1334
%RSD	2.6202	1.7696	1.7627	1.2785	2.1735	185.79	1.1877	1.8349	1.8349
#1	44.235	.50785	11.064	.50785	36.014	-.00561	1.0356	3.3539	7.1773
#2	45.905	.52072	11.344	.51712	37.138	.00076	1.0531	3.4421	7.3660
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97552	1.7537	.51659	.53191	.94001	1.0449	.54207	.25144	.25668
Stddev	.02263	.0355	.00567	.00825	.01320	.0142	.00707	.00334	.00392
%RSD	2.3199	2.0221	1.0980	1.5516	1.4045	1.3623	1.3051	1.3276	1.5275
#1	.95952	1.7286	.51258	.52607	.93067	1.0348	.53707	.24908	.25390
#2	.99152	1.7788	.52060	.53774	.94934	1.0549	.54708	.25380	.25945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3333.4	44494.	2697.9
Stddev	7.8	360.	11.7
%RSD	.23447	.80874	.43281
#1	3339.0	44749.	2706.1
#2	3327.9	44240.	2689.6

Sample Name: 123330-B-6-A PDS @2 Acquired: 5/14/2019 14:31:49 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5 (Ca) 2x

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05388	.92335	.19838	.13996	.21534	.04807	-.00255	W 532.79	.05109
Stddev	.00009	.00676	.00407	.00119	.00107	.00004	.00106	1.32	.00018
%RSD	.16416	.73249	2.0497	.85117	.49752	.07842	41.618	.24807	.36140

#1	.05382	.92813	.20126	.14080	.21458	.04804	-.00180	531.86	.05122
#2	.05394	.91857	.19550	.13912	.21610	.04809	-.00330	533.73	.05096

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit								500.00	
Low Limit								-.40000	

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05260	.04547	.05011	.97577	46.802	.33866	192.23	1.3493	.05099
Stddev	.00018	.00110	.00022	.00553	.467	.00011	.42	.0020	.00016
%RSD	.34362	2.4211	.43506	.56718	.99797	.03153	.21595	.14896	.31586

#1	.05248	.04625	.05026	.97186	46.471	.33873	192.53	1.3507	.05087
#2	.05273	.04470	.04995	.97968	47.132	.33858	191.94	1.3478	.05110

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.790	.05335	2.0585	.09531	28.607	.09281	.19880	7.2710	15.560
Stddev	.338	.00038	.0090	.00147	.105	.00153	.00403	.0195	.042
%RSD	.84845	.71969	.43824	1.5462	.36758	1.6437	2.0259	.26830	.26830

#1	39.551	.05308	2.0649	.09635	28.682	.09173	.19595	7.2848	15.589
#2	40.029	.05362	2.0521	.09427	28.533	.09389	.20165	7.2572	15.530

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08939	1.3498	.19275	.05223	.17865	.48666	.05219	.20475	.06112
Stddev	.00185	.0043	.00080	.00062	.00276	.00631	.00008	.00094	.00370
%RSD	2.0684	.32202	.41441	1.1843	1.5454	1.2968	.15841	.45727	6.0497

#1	.09069	1.3467	.19331	.05179	.17670	.49112	.05213	.20541	.06374
#2	.08808	1.3529	.19218	.05266	.18060	.48220	.05225	.20409	.05851

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3459.3	45452.	2783.8
Stddev	4.2	91.	8.7
%RSD	.12079	.20070	.31109

#1	3456.3	45388.	2789.9
#2	3462.2	45517.	2777.6

Sample Name: 280-123330-D-7-A Acquired: 5/14/2019 14:34:15 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5 (Al Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	.03094	.01747	.06759	.02230	.00021	-.00119	135.13	.00042
Stddev	.00018	.00120	.00361	.00019	.00008	.00009	.00452	.15	.00021
%RSD	11.972	3.8678	20.663	.28829	.33723	43.140	379.58	.10839	50.586

#1	.00160	.03178	.01491	.06772	.02235	.00028	-.00439	135.02	.00057
#2	.00135	.03009	.02002	.06745	.02224	.00015	.00201	135.23	.00027

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	-.00016	-.00003	.71869	3.3164	.06025	72.611	.10382	.00298
Stddev	.00019	.00030	.00075	.00160	.0478	.00615	.071	.00039	.00034
%RSD	25.610	180.60	2344.3	.22329	1.4417	10.204	.09751	.37537	11.556

#1	.00086	-.00037	.00050	.71982	3.3502	.06460	72.661	.10355	.00273
#2	.00059	.00005	-.00056	.71755	3.2826	.05591	72.561	.10410	.00322

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.690	-.00335	.00172	-.00132	60.842	.00011	-.00131	8.7562	18.738
Stddev	.229	.00035	.00160	.00003	.342	.00102	.00118	.0035	.008
%RSD	.96489	10.607	92.884	2.3858	.56133	888.71	90.012	.04042	.04042

#1	23.852	-.00360	.00285	-.00134	61.084	-.00060	-.00215	8.7537	18.733
#2	23.528	-.00310	.00059	-.00130	60.601	.00083	-.00048	8.7587	18.744

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.30539	-.00398	.00085	.00144	.05629	-.00049	.00385	-.00003
Stddev	.00091	.00047	.00318	.00042	.00282	.00928	.00030	.00045	.00006
%RSD	109.50	.15514	79.966	49.378	195.18	16.494	61.358	11.563	237.81

#1	.00019	.30506	-.00173	.00056	-.00055	.06286	-.00027	.00354	.00002
#2	.00148	.30573	-.00623	.00115	.00344	.04973	-.00070	.00417	-.00007

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3629.1	48360.	2880.6
Stddev	22.4	83.	23.6
%RSD	.61721	.17257	.81838

#1	3613.2	48419.	2897.2
#2	3644.9	48301.	2863.9

Sample Name: 280-123330-C-8-A Acquired: 5/14/2019 14:36:48 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5 (Al Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.10070	-.00066	.02215	.01464	.00019	.00162	25.449	.00054
Stddev	.00097	.00153	.00305	.00073	.00031	.00007	.00098	.002	.00001
%RSD	270.16	1.5204	461.22	3.3065	2.1343	36.436	60.610	.00924	2.1655

#1	-.00105	.10178	.00150	.02267	.01486	.00014	.00231	25.450	.00053
#2	.00033	.09962	-.00282	.02163	.01442	.00024	.00092	25.447	.00055

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00379	.00069	-.00027	2.4751	.65877	.01444	13.233	.55125	.00078
Stddev	.00048	.00025	.00032	.0011	.14020	.00413	.019	.00053	.00004
%RSD	12.762	36.615	119.43	.04541	21.282	28.582	.14021	.09617	4.5330

#1	.00345	.00051	-.00049	2.4759	.75791	.01736	13.246	.55163	.00080
#2	.00413	.00087	-.00004	2.4743	.55963	.01152	13.220	.55088	.00075

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.3187	-.00172	.00533	.00065	14.084	-.00028	.00076	5.9328	12.696
Stddev	.0549	.00004	.00030	.00036	.043	.00002	.00493	.0661	.141
%RSD	.74989	2.5858	5.6068	55.958	.30735	7.0340	647.52	1.1140	1.1140

#1	7.3575	-.00169	.00512	.00039	14.115	-.00029	-.00273	5.8861	12.596
#2	7.2799	-.00175	.00554	.00090	14.054	-.00026	.00425	5.9796	12.796

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.05621	.00017	.00147	.00187	-.00003	.00034	.00417	.00509
Stddev	.00171	.00025	.00054	.00022	.00043	.02828	.00107	.00007	.00007
%RSD	168.30	.44925	317.89	15.001	22.983	88060.	317.95	1.6720	1.4604

#1	.00222	.05639	.00055	.00163	.00218	.01996	.00109	.00412	.00503
#2	-.00019	.05603	-.00021	.00132	.00157	-.02003	-.00042	.00422	.00514

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3764.6	50045.	2936.8
Stddev	8.0	196.	19.3
%RSD	.21273	.39260	.65592

#1	3758.9	49906.	2923.1
#2	3770.2	50184.	2950.4

Sample Name: 280-123330-C-9-A Acquired: 5/14/2019 14:39:21 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5 (Al Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.08699	.00513	.02387	.01587	.00017	.00021	73.370	-.00010
Stddev	.00056	.00044	.00256	.00066	.00017	.00025	.00312	.351	.00022
%RSD	8370.6	.50419	49.815	2.7515	1.0715	143.67	1465.8	.47845	225.63

#1	.00041	.08730	.00332	.02340	.01575	-.00000	.00242	73.121	-.00026
#2	-.00039	.08668	.00694	.02433	.01599	.00035	-.00199	73.618	.00006

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	.00031	.00023	.27665	.75841	.00977	20.596	.03534	.00054
Stddev	.00005	.00015	.00146	.00066	.11636	.00219	.079	.00015	.00026
%RSD	20.965	48.443	639.15	.23828	15.343	22.438	.38269	.43030	47.774

#1	-.00029	.00042	-.00080	.27712	.67613	.01132	20.652	.03544	.00073
#2	-.00021	.00020	.00126	.27618	.84069	.00822	20.541	.03523	.00036

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.2309	-.00421	.00517	.00162	22.350	.00243	-.00012	4.1588	8.8997
Stddev	.1029	.00043	.00059	.00105	.220	.00094	.00090	.0211	.0451
%RSD	1.1145	10.137	11.383	64.878	.98452	38.857	761.87	.50718	.50718

#1	9.1582	-.00451	.00558	.00236	22.505	.00176	-.00075	4.1438	8.8678
#2	9.3037	-.00391	.00475	.00087	22.194	.00310	.00052	4.1737	8.9317

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00142	.16661	.00023	.00155	.00100	-.01085	.00157	-.00051	.00188
Stddev	.00089	.00108	.00131	.00056	.00053	.05319	.00063	.00041	.00578
%RSD	62.952	.64791	564.19	36.004	52.551	490.37	40.193	80.349	307.17

#1	.00079	.16585	-.00069	.00195	.00063	.02676	.00113	-.00081	.00597
#2	.00205	.16738	.00116	.00116	.00138	-.04845	.00202	-.00022	-.00221

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3705.5	49231.	2922.9
Stddev	1.3	191.	12.2
%RSD	.03491	.38846	.41756

#1	3704.6	49096.	2931.5
#2	3706.4	49366.	2914.3

Sample Name: 280-123330-A-10-A Acquired: 5/14/2019 14:41:53 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457366 6010C Q5 (Al Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.01638	.00272	.10370	.05192	.00028	-.00247	143.61	.00041
Stddev	.00050	.00068	.00116	.00029	.00000	.00027	.00183	.22	.00004
%RSD	152.05	4.1595	42.695	.28016	.00013	97.846	74.014	.15600	9.0953

#1	.00069	.01590	.00355	.10350	.05192	.00009	-.00118	143.76	.00043
#2	-.00002	.01687	.00190	.10391	.05192	.00047	-.00376	143.45	.00038

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00098	.02587	.08332	2.7501	.01804	63.723	.77624	.00198
Stddev	.00012	.00022	.00071	.00148	.0416	.00083	.074	.00024	.00032
%RSD	52.416	22.465	2.7562	1.7799	1.5134	4.6069	.11577	.03073	15.915

#1	-.00033	.00082	.02537	.08227	2.7206	.01745	63.775	.77640	.00176
#2	-.00015	.00113	.02638	.08437	2.7795	.01863	63.671	.77607	.00221

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.884	.00535	.01103	.00799	115.64	.00366	-.00463	5.6746	12.144
Stddev	.031	.00081	.00086	.00126	.88	.00061	.00586	.0076	.016
%RSD	.26398	15.212	7.7789	15.738	.75870	16.755	126.37	.13470	.13470

#1	11.861	.00593	.01042	.00710	116.26	.00323	-.00049	5.6800	12.155
#2	11.906	.00477	.01164	.00888	115.02	.00410	-.00878	5.6692	12.132

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	.50304	-.00173	.00048	.00266	-.01242	-.00068	.40825	.00553
Stddev	.00074	.00003	.00176	.00026	.00001	.04370	.00028	.00116	.00208
%RSD	55.545	.00534	101.80	55.076	.55242	351.83	41.379	.28537	37.636

#1	.00081	.50306	-.00049	.00029	.00264	-.04332	-.00048	.40742	.00406
#2	.00185	.50302	-.00298	.00066	.00267	.01848	-.00089	.40907	.00701

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3595.8	48084.	2871.3
Stddev	20.1	53.	6.6
%RSD	.55887	.11074	.22983

#1	3610.1	48122.	2875.9
#2	3581.6	48047.	2866.6

Sample Name: CCVH-5699817 Acquired: 5/14/2019 14:44:25 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .01646	46.685	k -.00179	k .00358	k .00296	k .00172	k .90650	k .02111	k -.00025	k .00446	k .00111	k .00912
Stddev	.00085	.240	.00532	.00099	.00044	.00003	.00329	.00451	.00011	.00059	.00024	.00061
%RSD	5.1613	.51307	296.73	27.556	14.934	1.8841	.36267	21.354	43.781	13.235	21.486	6.6780

#1	k .01706	46.516	k -.00556	k .00428	k .00265	k .00175	k .90882	k .02430	k -.00017	k .00488	k .00094	k .00869
#2	k .01586	46.855	k .00197	k .00288	k .00328	k .00170	k .90417	k .01792	k -.00032	k .00404	k .00128	k .00955

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	kF 44.363	.25018	.00243	k .03503	k .00058	k -.00005	240.13	k -.00035	k .00736	k .01758	k 4.5287	k -.03220
Stddev	.153	.05680	.00420	.00524	.00001	.00050	1.68	.00009	.00147	.00110	.0445	.00105
%RSD	.34561	22.705	173.15	14.951	1.7857	927.73	.69893	26.919	19.955	6.2513	.98223	3.2544

#1	k 44.255	.21001	.00540	k .03873	k .00058	k .00030	238.95	k -.00042	k .00632	k .01681	k 4.5602	k -.03146
#2	k 44.472	.29034	-.00054	k .03133	k .00059	k -.00041	241.32	k -.00028	k .00840	k .01836	k 4.4973	k -.03294

Check ?	Chk Fail	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None
Value	50.000											
Range	-10.490%											

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.00423	k -.02838	k -.06073	k .00159	.00156	k 5.1706	k .02203	k .00382	k 9.9689	k .01026	k .00299	k .29005
Stddev	.00389	.01308	.02798	.00077	.00007	.0179	.00003	.00449	.0062	.00003	.00017	.00238
%RSD	91.964	46.075	46.075	48.225	4.3323	.34575	.12086	117.51	.06194	.28876	5.6697	.82103

#1	k -.00148	k -.03763	k -.08052	k .00213	.00151	k 5.1833	k .02201	k .00700	k 9.9733	k .01028	k .00287	k .28837
#2	k -.00697	k -.01913	k -.04095	k .00105	.00160	k 5.1580	k .02205	k .00065	k 9.9646	k .01024	k .00311	k .29174

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3599.2	47580.	2820.7
Stddev	65.6	114.	2.5
%RSD	1.8214	.23954	.08811

#1	3645.6	47499.	2822.4
#2	3552.9	47660.	2818.9

Sample Name: CCV-5699804 Acquired: 5/14/2019 14:46:56 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoadesc Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51794	.51408	.94102	.47102	.46661	.47097	.00344	4.6190	.47961	.48746	.45389	.48938	2.4950	47.764
Stddev	.00192	.00500	.00103	.00049	.00209	.00152	.00245	.0167	.00196	.00309	.00205	.00018	.0019	.095
%RSD	.37101	.97310	.10956	.10467	.44826	.32375	71.349	.36136	.40866	.63360	.45270	.03743	.07438	.19786

#1	.51930	.51762	.94175	.47137	.46514	.46990	.00517	4.6072	.48100	.48964	.45534	.48925	2.4937	47.697
#2	.51659	.51055	.94029	.47067	.46809	.47205	.00170	4.6308	.47823	.48527	.45244	.48951	2.4963	47.830

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value														
Range														

Elem	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95416	20.818	.50931	.49434	5.4812	.48919	.95334	.97919	.00866	.92798	.92672	4.7298	10.122	.91505
Stddev	.00149	.038	.00012	.00331	.0027	.00303	.00220	.00140	.00018	.00325	.00173	.0184	.039	.00648
%RSD	.15593	.18356	.02441	.66894	.04966	.61991	.23088	.14327	2.1156	.34969	.18620	.38893	.38893	.70858

#1	.95521	20.845	.50939	.49668	5.4792	.49134	.95490	.98018	.00853	.93027	.92794	4.7168	10.094	.91964
#2	.95311	20.791	.50922	.49200	5.4831	.48705	.95179	.97820	.00879	.92568	.92550	4.7428	10.150	.91047

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value														
Range														

Elem	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47243	.00270	.50249	.92991	.01690	.51257	.50129	.49315
Stddev	.00094	.00011	.00033	.00165	.01473	.00143	.00005	.00490
%RSD	.19853	4.1651	.06590	.17701	87.144	.27920	.01091	.99407

#1	.47177	.00278	.50273	.93107	.00649	.51358	.50133	.49661
#2	.47309	.00262	.50226	.92875	.02732	.51155	.50125	.48968

Check ?	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3619.3	47998.	2793.5
Stddev	2.2	352.	9.3
%RSD	.06095	.73279	.33221

#1	3617.8	48247.	2800.1
#2	3620.9	47749.	2787.0

Sample Name: CCB Acquired: 5/14/2019 14:49:19 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00092	-.00202	-.00076	.00068	.00040	.00008	-.00008	.00043	-.00004	.00033	.00004	-.00186	.00160
Stddev	.00008	.00032	.00411	.00053	.00034	.00015	.00052	.00096	.00006	.00028	.00027	.00007	.00134
%RSD	8.7893	15.578	543.34	79.103	84.841	186.79	675.82	221.03	140.68	84.381	687.13	3.9332	83.673

#1	.00086	-.00180	-.00366	.00105	.00016	-.00003	.00029	.00111	-.00000	.00013	-.00015	-.00181	.00065
#2	.00097	-.00225	.00215	.00030	.00065	.00018	-.00044	-.00024	-.00009	.00052	.00023	-.00191	.00255

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit													
Low Limit													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.11022	-.00291	.00388	.00016	.00148	.26815	-.00421	.00067	.00374	.01195	.00101	.00248	-.01770
Stddev	.01144	.00052	.00397	.00003	.00040	.01255	.00011	.00164	.00093	.00013	.00080	.00334	.05536
%RSD	10.381	17.959	102.36	15.980	26.998	4.6808	2.6260	243.11	24.933	1.0703	80.016	134.65	312.77

#1	.10213	-.00254	.00107	.00014	.00120	.27703	-.00429	-.00048	.00308	.01186	.00044	.00484	.02145
#2	.11832	-.00328	.00668	.00018	.00177	.25928	-.00413	.00183	.00440	.01204	.00157	.00012	-.05685

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit													
Low Limit													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.03788	-.00033	-.00011	-.00152	.00004	.00483	.00608	.00098	-.00136	.00272
Stddev	.11848	.00055	.00001	.00225	.00023	.00083	.00679	.00065	.00035	.00192
%RSD	312.77	167.73	8.0040	147.93	567.60	17.193	111.74	66.721	25.682	70.362

#1	.04590	-.00071	-.00011	.00007	.00020	.00541	.01088	.00052	-.00111	.00408
#2	-.12166	.00006	-.00010	-.00311	-.00012	.00424	.00128	.00144	-.00161	.00137

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3628.0	48262.	2779.6
Stddev	11.6	73.	7.9
%RSD	.32060	.15030	.28504

#1	3619.8	48313.	2785.2
#2	3636.3	48211.	2774.0

Sample Name: CCVL-5701318 Acquired: 5/14/2019 14:51:54 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00997	.09388	.01291	.09168	.00963	.00081	.10181	.18863	.00473	.00954	.00877	.01291	.11265	2.7003
Stddev	.00042	.00134	.00054	.00061	.00016	.00009	.00402	.00195	.00011	.00037	.00009	.00050	.00024	.0474
%RSD	4.2199	1.4249	4.2155	.66737	1.6161	10.559	3.9519	1.0320	2.3013	3.8690	1.0249	3.8958	.20965	1.7554

#1	.01027	.09483	.01253	.09125	.00952	.00087	.10466	.18725	.00465	.00980	.00884	.01326	.11282	2.7338
#2	.00968	.09293	.01330	.09211	.00974	.00075	.09897	.19000	.00480	.00928	.00871	.01255	.11249	2.6668

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value														
Range														

Elem	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01866	.20468	.01040	.01884	1.1574	.03494	2.7167	.00968	.08431	.02354	.01700	.44318	.94840	.09117
Stddev	.00014	.00328	.00013	.00072	.0037	.00006	.0289	.00131	.00006	.00114	.00958	.00036	.00077	.00160
%RSD	.72805	1.6021	1.2514	3.8438	.32105	.16661	1.0629	13.562	.06968	4.8279	56.379	.08126	.08126	1.7555

#1	.01875	.20236	.01031	.01935	1.1547	.03498	2.7371	.00875	.08435	.02273	.02377	.44292	.94785	.09231
#2	.01856	.20700	.01050	.01833	1.1600	.03490	2.6963	.01061	.08427	.02434	.01022	.44343	.94894	.09004

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value														
Range														

Elem	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00922	.01401	.00993	.01651	.04918	.00960	.01817	.01488
Stddev	.00004	.00029	.00025	.00077	.02677	.00043	.00131	.00426
%RSD	.38440	2.0693	2.5403	4.6675	54.421	4.4492	7.2085	28.666
#1	.00925	.01421	.01011	.01705	.03026	.00991	.01724	.01789
#2	.00920	.01380	.00976	.01596	.06811	.00930	.01909	.01186

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3729.5	49725.	2846.3
Stddev	.9	139.	20.5
%RSD	.02416	.27963	.71866

#1	3730.1	49627.	2831.8
#2	3728.8	49823.	2860.7

Sample Name: MB 280-457365/1-A Acquired: 5/14/2019 14:54:29 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/13 Custom ID2: Custom ID3:
Comment: 457365 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00026	.00013	-0.00370	-0.00015	.00018	.00025	.00148	.00692	-0.00006
Stddev	.00016	.00014	.00414	.00002	.00033	.00001	.00070	.00645	.00014
%RSD	59.727	105.62	112.08	16.109	185.74	2.4223	47.380	93.282	223.63

#1	-0.00038	.00003	-0.00077	-0.00017	.00041	.00024	.00099	.00235	.00004
#2	-0.00015	.00023	-0.00663	-0.00014	-0.00006	.00025	.00198	.01148	-0.00017

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00016	.00038	-0.00136	.01162	.02477	-0.00189	.00359	.00040	-0.00003
Stddev	.00025	.00002	.00017	.00419	.00938	.00514	.00423	.00005	.00024
%RSD	155.38	5.1029	12.802	36.068	37.850	271.67	117.91	12.954	699.93

#1	-0.00034	.00039	-0.00124	.00866	.03141	-0.00553	.00658	.00044	.00014
#2	.00002	.00036	-0.00149	.01459	.01814	.00174	.00060	.00036	-0.00021

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18095	-0.00423	.00081	.00003	.00627	.00374	.00309	-0.00471	-0.01008
Stddev	.00417	.00116	.00193	.00007	.00003	.00073	.00216	.00108	.00232
%RSD	2.3057	27.510	237.99	243.88	.49786	19.509	69.908	22.970	22.970

#1	.18390	-0.00341	.00217	-0.00002	.00625	.00426	.00462	-0.00548	-0.01172
#2	.17800	-0.00505	-0.00055	.00008	.00629	.00323	.00156	-0.00395	-0.00844

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00018	-0.00037	.00125	.00038	.00261	-0.00090	.00006	-0.00102	.00418
Stddev	.00027	.00009	.00055	.00004	.00404	.00104	.00038	.00005	.00322
%RSD	150.62	25.217	44.295	10.442	154.99	115.05	631.42	4.6005	77.049

#1	-0.00037	-0.00030	.00086	.00041	-0.00025	-0.00017	-0.00021	-0.00105	.00190
#2	.00001	-0.00043	.00164	.00036	.00547	-0.00163	.00032	-0.00099	.00646

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3759.4	50398.	2910.6
Stddev	15.4	56.	16.3
%RSD	.41074	.11014	.56157

#1	3770.4	50437.	2899.1
#2	3748.5	50359.	2922.2

Sample Name: LCS 280-457365/2-A Acquired: 5/14/2019 14:57:05 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457365 6010C Q5

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05661	9.6889	1.8957	.94367	1.8460	.94346	1.8713	45.449	.95490
Stddev	.00095	.1073	.0003	.00037	.0015	.00081	.0066	.051	.00310
%RSD	1.6779	1.1071	.01783	.03888	.08041	.08618	.35293	.11313	.32414

#1	.05594	9.6131	1.8955	.94393	1.8470	.94289	1.8666	45.485	.95709
#2	.05728	9.7648	1.8960	.94341	1.8449	.94404	1.8760	45.413	.95271

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94159	.89631	.97279	9.5937	48.178	.95078	51.481	1.0165	.98948
Stddev	.00459	.00088	.00623	.0324	.121	.00088	.025	.0015	.00512
%RSD	.48717	.09857	.64070	.33799	.25183	.09263	.04840	.14835	.51733

#1	.94484	.89693	.97720	9.6166	48.092	.95016	51.498	1.0175	.99310
#2	.93835	.89568	.96839	9.5708	48.264	.95141	51.463	1.0154	.98586

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	49.384	.94375	19.522	.95531	8.9284	.00546	1.8532	1.9307	4.1317
Stddev	.421	.00357	.035	.00756	.0122	.00091	.0167	.0408	.0873
%RSD	.85164	.37876	.17855	.79123	.13714	16.725	.90238	2.1132	2.1132

#1	49.682	.94628	19.547	.96065	8.9197	.00610	1.8650	1.9595	4.1934
#2	49.087	.94122	19.497	.94997	8.9370	.00481	1.8414	1.9018	4.0699

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8091	.93675	1.0047	1.0197	1.7912	2.0780	1.0371	.49530	.50859
Stddev	.0065	.00009	.0034	.0004	.0026	.0319	.0006	.00038	.00410
%RSD	.35682	.00939	.33369	.03961	.14660	1.5363	.05615	.07615	.80619

#1	1.8137	.93681	1.0071	1.0199	1.7894	2.0554	1.0375	.49556	.50569
#2	1.8045	.93669	1.0023	1.0194	1.7931	2.1006	1.0367	.49503	.51149

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3756.8	49157.	2938.1
Stddev	40.5	76.	1.1
%RSD	1.0784	.15499	.03853

#1	3785.5	49211.	2938.9
#2	3728.2	49103.	2937.3

Sample Name: LCSD 280-457365/3-A Acquired: 5/14/2019 14:59:24 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457365 6010C Q5

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05622	9.7755	1.9028	.95471	1.8670	.95206	1.8930	45.899	.96238
Stddev	.00011	.1326	.0015	.00427	.0042	.00220	.0004	.124	.00216
%RSD	.19584	1.3560	.07790	.44682	.22450	.23150	.01829	.26987	.22492

#1	.05630	9.8692	1.9039	.95773	1.8700	.95362	1.8928	45.987	.96391
#2	.05614	9.6818	1.9018	.95169	1.8641	.95050	1.8933	45.811	.96085

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94733	.90709	.97481	9.6513	48.605	.96584	51.185	1.0133	.99811
Stddev	.00282	.00273	.01440	.0427	.005	.00167	.849	.0171	.00210
%RSD	.29820	.30143	1.4774	.44190	.01019	.17306	1.6590	1.6906	.21009

#1	.94933	.90902	.98499	9.6815	48.608	.96702	51.786	1.0254	.99959
#2	.94534	.90515	.96462	9.6212	48.601	.96466	50.585	1.0012	.99663

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	49.352	.94976	19.643	.96010	9.0022	.00558	1.8702	1.9491	4.1710
Stddev	.226	.00078	.039	.00016	.0126	.00173	.0019	.0343	.0734
%RSD	.45825	.08182	.19908	.01624	.14033	30.970	.09888	1.7600	1.7600

#1	49.512	.95030	19.671	.95999	9.0112	.00681	1.8689	1.9733	4.2230
#2	49.192	.94921	19.616	.96021	8.9933	.00436	1.8715	1.9248	4.1191

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8295	.94717	1.0085	1.0163	1.8120	2.1008	1.0345	.49934	.51336
Stddev	.0015	.00214	.0168	.0169	.0004	.0101	.0204	.00769	.00057
%RSD	.08031	.22547	1.6676	1.6619	.02497	.47856	1.9673	1.5391	.11152

#1	1.8305	.94868	1.0204	1.0283	1.8123	2.0937	1.0489	.50478	.51295
#2	1.8284	.94566	.99658	1.0044	1.8117	2.1079	1.0201	.49391	.51376

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3725.0	49003.	2891.0
Stddev	1.1	743.	11.5
%RSD	.02879	1.5163	.39659

#1	3724.3	48478.	2882.9
#2	3725.8	49529.	2899.1

Sample Name: 123345-A-11-A Acquired: 5/14/2019 15:01:41 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457365 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	.00178	.00151	.17750	.08023	.00016	-.00170	27.839	-.00024
Stddev	.00023	.00032	.00415	.00095	.00154	.00011	.00124	.150	.00001
%RSD	93.230	18.270	274.62	.53514	1.9134	69.273	73.122	.53771	4.9896

#1	-.00008	.00155	.00444	.17817	.08131	.00008	-.00258	27.945	-.00023
#2	-.00041	.00201	-.00142	.17682	.07914	.00024	-.00082	27.733	-.00025

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00152	.00038	-.00118	.11659	7.3597	-.00101	7.4804	.00636	.00223
Stddev	.00024	.00032	.00067	.00635	.1214	.00078	.1901	.00013	.00019
%RSD	15.725	84.840	56.874	5.4426	1.6493	76.897	2.5418	1.9809	8.6218

#1	.00168	.00015	-.00071	.12108	7.4455	-.00156	7.6149	.00645	.00209
#2	.00135	.00061	-.00166	.11210	7.2739	-.00046	7.3460	.00627	.00236

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	66.711	.00099	.33965	.00027	7.5865	.00274	.00742	2.0215	4.3260
Stddev	.330	.00007	.00163	.00148	.0275	.00359	.00169	.0251	.0538
%RSD	.49401	7.3392	.47918	548.88	.36216	130.72	22.719	1.2436	1.2436

#1	66.944	.00093	.34080	.00131	7.6059	.00021	.00623	2.0393	4.3641
#2	66.478	.00104	.33850	-.00078	7.5670	.00528	.00862	2.0037	4.2880

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	.14558	.00023	.00011	.00314	.01672	.00014	-.00023	.00124
Stddev	.00062	.00030	.00516	.00038	.00008	.05647	.00071	.00066	.00022
%RSD	63.697	.20792	2245.0	341.40	2.5305	337.72	510.18	288.06	17.647

#1	.00053	.14579	.00388	-.00016	.00308	-.02321	-.00036	.00024	.00140
#2	.00141	.14537	-.00342	.00038	.00319	.05665	.00064	-.00069	.00109

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3711.6	49987.	2925.1
Stddev	13.0	654.	15.2
%RSD	.34984	1.3084	.51942

#1	3720.8	49524.	2914.3
#2	3702.4	50449.	2935.8

Sample Name: 123345-A-11-A SD@5 Acquired: 5/14/2019 15:04:15 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457365 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	-.00129	-.00002	.03941	.01583	.00016	.00269	5.4387	-.00025
Stddev	.00063	.00024	.00281	.00159	.00046	.00009	.00205	.0831	.00016
%RSD	64.131	18.599	18253.	4.0283	2.8915	56.929	76.469	1.5282	62.247

#1	.00142	-.00112	-.00201	.03828	.01550	.00010	.00414	5.3799	-.00036
#2	.00053	-.00145	.00197	.04053	.01615	.00023	.00123	5.4974	-.00014

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.00029	-.00153	.02426	1.4337	-.00401	1.5500	.00131	.00069
Stddev	.00014	.00040	.00139	.00030	.0209	.00264	.0199	.00004	.00016
%RSD	37.620	136.44	90.793	1.2265	1.4584	65.960	1.2828	3.3938	23.865

#1	.00028	.00001	-.00055	.02448	1.4189	-.00214	1.5360	.00128	.00057
#2	.00048	.00058	-.00251	.02405	1.4485	-.00587	1.5641	.00134	.00080

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.037	-.00325	.07016	.00050	1.5957	.00023	.00568	.36179	.77422
Stddev	.073	.00059	.00025	.00057	.0200	.00326	.00444	.01173	.02510
%RSD	.56247	18.152	.36229	115.13	1.2522	1389.2	78.168	3.2422	3.2422

#1	12.986	-.00283	.07034	.00009	1.5816	-.00207	.00254	.35349	.75647
#2	13.089	-.00366	.06998	.00090	1.6098	.00254	.00882	.37008	.79197

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.02814	.00097	-.00024	.00289	-.04179	.00020	-.00187	.00465
Stddev	.00003	.00068	.00379	.00023	.00098	.01575	.00059	.00025	.00185
%RSD	11.424	2.4004	392.61	93.880	34.050	37.685	292.66	13.313	39.763

#1	.00026	.02766	.00365	-.00008	.00219	-.03065	-.00022	-.00169	.00334
#2	.00022	.02862	-.00172	-.00041	.00359	-.05292	.00062	-.00205	.00596

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3636.7	48552.	2820.4
Stddev	8.8	106.	7.5
%RSD	.24187	.21809	.26471

#1	3630.5	48626.	2825.7
#2	3642.9	48477.	2815.1

Sample Name: 123345-A-11-B MS Acquired: 5/14/2019 15:06:49 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457365 6010C Q5

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05605	9.4749	1.8811	1.1058	1.8921	.92822	1.8277	71.879	.94398
Stddev	.00198	.1300	.0151	.0071	.0057	.00239	.0099	.202	.00616
%RSD	3.5336	1.3725	.80482	.64564	.30003	.25733	.54195	.28080	.65295

#1	.05745	9.5668	1.8918	1.1109	1.8962	.92991	1.8347	72.022	.94834
#2	.05465	9.3829	1.8704	1.1008	1.8881	.92653	1.8207	71.737	.93962

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.92398	.88335	.95309	9.4979	55.034	.93356	57.966	1.0010	.97386
Stddev	.00651	.00455	.00027	.0045	.246	.00162	.063	.0005	.00626
%RSD	.70466	.51561	.02808	.04695	.44681	.17324	.10847	.04638	.64281

#1	.92859	.88657	.95328	9.5010	55.208	.93242	58.010	1.0013	.97828
#2	.91938	.88013	.95290	9.4947	54.860	.93471	57.921	1.0007	.96943

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	113.47	.92967	19.680	.93519	16.586	.00729	1.8305	3.8969	8.3394
Stddev	.09	.00249	.134	.00541	.061	.00133	.0160	.0103	.0221
%RSD	.07637	.26764	.67844	.57868	.37076	18.318	.87524	.26505	.26505

#1	113.41	.93143	19.774	.93902	16.630	.00634	1.8418	3.8896	8.3238
#2	113.53	.92791	19.585	.93137	16.543	.00823	1.8192	3.9042	8.3551

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.7810	1.0641	.97558	1.0032	1.7422	2.0214	1.0233	.50383	.49849
Stddev	.0081	.0026	.00373	.0010	.0111	.0164	.0009	.00390	.00030
%RSD	.45234	.24145	.38242	.10003	.63436	.80860	.08976	.77310	.05942

#1	1.7867	1.0659	.97294	1.0039	1.7500	2.0099	1.0239	.50659	.49870
#2	1.7753	1.0623	.97822	1.0025	1.7344	2.0330	1.0226	.50108	.49828

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3608.9	46855.	2832.9
Stddev	15.2	25.	27.4
%RSD	.42007	.05238	.96843

#1	3598.2	46873.	2813.5
#2	3619.6	46838.	2852.3

Sample Name: 123345-A-11-C MSD Acquired: 5/14/2019 15:09:08 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457365 6010C Q5

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05553	9.9150	1.9373	1.1407	1.9681	.96151	1.8734	75.169	.96984
Stddev	.00009	.0045	.0216	.0039	.0005	.00207	.0078	.078	.00331
%RSD	.16666	.04495	1.1138	.33974	.02507	.21552	.41458	.10333	.34138

#1	.05559	9.9118	1.9526	1.1434	1.9684	.96005	1.8789	75.114	.97219
#2	.05546	9.9181	1.9221	1.1379	1.9677	.96298	1.8679	75.223	.96750

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95215	.91484	.98687	9.8108	57.453	.96897	59.712	1.0288	1.0046
Stddev	.00507	.00580	.00123	.0036	.078	.00557	.146	.0015	.0043
%RSD	.53201	.63367	.12419	.03614	.13609	.57449	.24383	.14151	.43175

#1	.95573	.91893	.98774	9.8083	57.398	.96504	59.815	1.0298	1.0076
#2	.94857	.91074	.98601	9.8133	57.509	.97291	59.609	1.0278	1.0015

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	118.71	.95515	W 20.371	.95865	17.265	.00819	1.8891	4.0828	8.7371
Stddev	.68	.00370	.063	.00065	.085	.00540	.0023	.0025	.0054
%RSD	.57048	.38763	.30840	.06818	.48998	65.943	.12000	.06200	.06200

#1	118.24	.95777	20.415	.95911	17.325	.00437	1.8907	4.0846	8.7410
#2	119.19	.95253	20.327	.95819	17.205	.01201	1.8875	4.0810	8.7333

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8438	1.1050	1.0134	1.0318	1.7880	2.0360	1.0539	.50141	.50442
Stddev	.0106	.0010	.0010	.0012	.0129	.0491	.0028	.00271	.00651
%RSD	.57259	.09468	.09505	.11362	.71937	2.4096	.26543	.53987	1.2897

#1	1.8512	1.1043	1.0141	1.0327	1.7971	2.0013	1.0519	.50333	.49982
#2	1.8363	1.1057	1.0127	1.0310	1.7789	2.0707	1.0558	.49950	.50902

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3658.5	47837.	2828.0
Stddev	9.9	521.	6.5
%RSD	.27197	1.0894	.23129

#1	3651.5	47469.	2823.4
#2	3665.5	48206.	2832.6

Sample Name: 123345-A-11-A PDS Acquired: 5/14/2019 15:11:27 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457365 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05197	.89163	.18647	.27126	.16812	.04600	.00478	44.603	.04650
Stddev	.00004	.00959	.00020	.00220	.00051	.00013	.00638	.013	.00000
%RSD	.07385	1.0753	.10776	.81235	.30386	.29121	133.27	.02809	.00507

#1	.05200	.89841	.18633	.27281	.16848	.04590	.00929	44.612	.04650
#2	.05194	.88485	.18662	.26970	.16776	.04609	.00028	44.594	.04650

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04713	.04329	.04700	1.0105	25.761	.08987	26.768	.05459	.05053
Stddev	.00065	.00041	.00035	.0077	.214	.00281	.121	.00014	.00039
%RSD	1.3826	.93615	.75073	.76030	.83055	3.1224	.45363	.25085	.77633

#1	.04760	.04358	.04725	1.0050	25.610	.08789	26.854	.05468	.05081
#2	.04667	.04300	.04675	1.0159	25.913	.09185	26.683	.05449	.05025

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	84.687	.04716	2.2222	.09350	7.5644	.09498	.17868	6.7193	14.379
Stddev	.665	.00058	.0180	.00207	.0233	.00123	.00079	.0645	.138
%RSD	.78503	1.2315	.80994	2.2127	.30851	1.2921	.44005	.95975	.95975

#1	84.217	.04757	2.2349	.09496	7.5809	.09585	.17812	6.7649	14.477
#2	85.157	.04675	2.2094	.09203	7.5479	.09412	.17924	6.6737	14.282

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09091	.18837	.20085	.04960	.17531	.47884	.05040	.19281	.05458
Stddev	.00169	.00010	.00208	.00030	.00321	.04789	.00112	.00127	.00049
%RSD	1.8550	.05045	1.0344	.60462	1.8335	10.002	2.2197	.65766	.89780

#1	.09210	.18830	.19938	.04939	.17758	.51270	.05119	.19371	.05423
#2	.08972	.18844	.20232	.04982	.17303	.44497	.04961	.19192	.05493

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3669.1	48568.	2909.1
Stddev	7.6	75.	10.0
%RSD	.20669	.15400	.34321

#1	3663.7	48515.	2902.1
#2	3674.4	48620.	2916.2

Sample Name: CCVH-5699817 Acquired: 5/14/2019 15:13:54 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .01767	46.882	k -.00266	k .00649	k .00307	k .00167	k .91911	k -.00204	k -.00044	k .00434	k .00136	k .00909
Stddev	.00077	.134	.00743	.00037	.00030	.00009	.00863	.00158	.00030	.00016	.00037	.00056
%RSD	4.3825	.28498	279.42	5.6796	9.6169	5.4604	.93900	77.255	67.478	3.6395	27.294	6.1712

#1	k .01822	46.788	k -.00792	k .00623	k .00286	k .00174	k .92522	k -.00093	k -.00023	k .00445	k .00109	k .00869
#2	k .01713	46.977	k .00260	k .00675	k .00328	k .00161	k .91301	k -.00316	k -.00065	k .00423	k .00162	k .00948

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	kF 44.474	.22361	.00177	k .03837	k .00048	k .00018	240.58	k -.00021	k .00617	k .01746	k 4.5487	k -.03003
Stddev	.136	.00812	.00358	.00627	.00003	.00018	.50	.00055	.00172	.00015	.0239	.00100
%RSD	.30578	3.6330	202.48	16.346	6.0516	103.52	.20860	261.61	27.867	.84148	.52450	3.3399

#1	k 44.378	.22935	-.00076	k .04280	k .00046	k .00005	240.93	k -.00059	k .00738	k .01757	k 4.5656	k -.03074
#2	k 44.570	.21787	.00430	k .03393	k .00050	k .00031	240.22	k .00018	k .00495	k .01736	k 4.5319	k -.02932

Check ?	Chk Fail	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None
Value	50.000											
Range	-10.490%											

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.00870	k .00946	k .02024	k .00388	.00139	k 5.1922	k .02242	k .00417	k 9.9873	k .00998	k .00272	k .29585
Stddev	.00116	.01214	.02597	.00109	.00031	.0072	.00001	.00133	.0635	.00089	.00016	.00762
%RSD	13.342	128.32	128.32	28.136	22.594	.13828	.04312	31.923	.63554	8.9346	5.9181	2.5773

#1	k -.00952	k .01804	k .03860	k .00465	.00117	k 5.1973	k .02243	k .00511	k 10.032	k .01061	k .00283	k .29045
#2	k -.00788	k .00088	k .00187	k .00311	.00162	k 5.1872	k .02241	k .00323	k 9.9424	k .00935	k .00261	k .30124

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3733.2	48801.	2904.1
Stddev	13.9	160.	13.0
%RSD	.37324	.32691	.44930

#1	3743.1	48688.	2913.3
#2	3723.4	48914.	2894.9

Sample Name: CCV-5699804 Acquired: 5/14/2019 15:16:24 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52062	.51525	.93524	.47262	.46602	.47438	.00347	4.6038	.47833	.48784	.45670	.49290	2.4464	47.865
Stddev	.00118	.00436	.00107	.00241	.00047	.00066	.00124	.0157	.00298	.00361	.00322	.00029	.0123	.065
%RSD	.22759	.84561	.11480	.51084	.10029	.14014	35.609	.34118	.62239	.74055	.70577	.05919	.50073	.13590

#1	.52146	.51833	.93448	.47433	.46569	.47485	.00435	4.5927	.48044	.49039	.45898	.49269	2.4550	47.819
#2	.51979	.51217	.93600	.47091	.46635	.47391	.00260	4.6149	.47623	.48528	.45442	.49310	2.4377	47.911

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value														
Range														

Elem	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95379	20.774	.50921	.49271	5.4843	.48734	.96039	.98023	.00097	.92809	.93774	4.6940	10.045	.92400
Stddev	.00195	.007	.00084	.00443	.0235	.00440	.00806	.00656	.00085	.00887	.00598	.0632	.135	.00748
%RSD	.20475	.03136	.16511	.90007	.42828	.90306	.83897	.66954	87.676	.95593	.63734	1.3470	1.3470	.80951

#1	.95241	20.779	.50981	.49584	5.4677	.49045	.96609	.98487	.00158	.93437	.94196	4.6493	9.9496	.92929
#2	.95517	20.770	.50862	.48957	5.5009	.48423	.95470	.97558	.00037	.92182	.93351	4.7387	10.141	.91871

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value														
Range														

Elem	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47368	.00380	.50384	.93924	.05357	.51290	.49931	.49865
Stddev	.00133	.00270	.00103	.00675	.07168	.00066	.00063	.00213
%RSD	.28054	71.021	.20357	.71913	133.81	.12845	.12583	.42729

#1	.47274	.00570	.50457	.94402	.00288	.51337	.49886	.50016
#2	.47462	.00189	.50312	.93446	.10426	.51244	.49975	.49714

Check ?	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3748.3	49401.	2880.7
Stddev	29.1	89.	1.6
%RSD	.77576	.18072	.05436

#1	3727.8	49338.	2879.6
#2	3768.9	49464.	2881.8

Sample Name: CCB Acquired: 5/14/2019 15:18:47 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoadesc Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	-.00240	.00259	.00266	.00089	.00031	-.00059	-.00454	-.00028	-.00012	.00004	-.00097
Stddev	.00064	.00099	.00209	.00093	.00009	.00007	.00132	.00714	.00038	.00004	.00012	.00051
%RSD	367.98	41.358	80.834	34.918	9.8729	23.328	224.07	157.11	136.97	34.424	322.41	52.235
#1	.00063	-.00170	.00407	.00332	.00083	.00026	.00034	-.00959	-.00055	-.00015	-.00005	-.00133
#2	-.00028	-.00310	.00111	.00200	.00095	.00036	-.00152	.00050	-.00001	-.00009	.00012	-.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01086	.05481	-.00318	-.00057	.00014	.00104	.25196	-.00454	.00045	.00054	.00324	W .00880
Stddev	.00353	.13851	.00363	.00209	.00008	.00007	.01633	.00021	.00258	.00231	.00278	.00170
%RSD	32.493	252.73	114.16	367.81	55.970	6.4399	6.4831	4.6001	577.45	429.75	85.754	19.261
#1	.00837	-.04314	-.00061	-.00205	.00008	.00100	.26351	-.00440	-.00138	.00217	.00127	.01000
#2	.01336	.15275	-.00575	.00091	.00019	.00109	.24041	-.00469	.00227	-.00109	.00520	.00760
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit												.00600
Low Limit												-.00600
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	-.04307	-.09217	-.00019	-.00024	-.00090	-.00011	.00293	.07015	.00010	-.00209	.00562
Stddev	.00058	.03146	.06733	.00019	.00028	.00190	.00001	.00222	.01453	.00044	.00027	.00218
%RSD	65.416	73.054	73.054	101.29	117.32	211.79	13.008	75.827	20.711	448.73	13.012	38.757
#1	.00048	-.06532	-.13978	-.00005	-.00004	.00045	-.00011	.00136	.05988	.00040	-.00229	.00408
#2	.00130	-.02082	-.04456	-.00033	-.00044	-.00224	-.00010	.00450	.08042	-.00021	-.00190	.00716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3773.4	50190.	2903.5									
Stddev	7.5	46.	4.9									
%RSD	.19975	.09087	.16726									
#1	3778.8	50158.	2906.9									
#2	3768.1	50222.	2900.0									

Sample Name: CCVL-5701318 Acquired: 5/14/2019 15:21:23 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01065	.09478	.01409	.09426	.00989	.00106	.09820	.18520	.00440	.00972	.00890	.01344
Stddev	.00095	.00057	.00287	.00014	.00025	.00021	.00014	.00018	.00010	.00020	.00000	.00041
%RSD	8.9317	.60610	20.380	.14810	2.5171	20.174	.14657	.09550	2.2558	2.0855	.00017	3.0509

#1	.00997	.09437	.01612	.09436	.00972	.00121	.09810	.18533	.00447	.00986	.00890	.01373
#2	.01132	.09519	.01206	.09417	.01007	.00091	.09830	.18508	.00433	.00957	.00890	.01315

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09761	2.8880	.01447	.20806	.01032	.01956	1.1703	.03538	2.7420	.01022	.08417	.01943
Stddev	.00263	.0268	.00411	.00223	.00011	.00080	.0286	.00000	.0134	.00025	.00099	.00100
%RSD	2.6992	.92926	28.428	1.0742	1.0327	4.1098	2.4429	.00111	.48889	2.4090	1.1747	5.1546

#1	.09948	2.8690	.01156	.20648	.01024	.02013	1.1905	.03538	2.7514	.01005	.08486	.01872
#2	.09575	2.9070	.01738	.20964	.01039	.01899	1.1501	.03538	2.7325	.01039	.08347	.02014

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02056	.47527	1.0171	.09206	.00923	.01337	.00980	.01695	F .10036	.01041	.01902	.01347
Stddev	.00264	.03088	.0661	.00037	.00006	.00064	.00022	.00208	.00937	.00031	.00012	.00299
%RSD	12.845	6.4972	6.4972	.40520	.64059	4.7820	2.2119	12.245	9.3326	2.9388	.64610	22.209

#1	.02242	.49711	1.0638	.09180	.00919	.01383	.00965	.01841	.09374	.01063	.01893	.01558
#2	.01869	.45344	.97036	.09233	.00927	.01292	.00995	.01548	.10698	.01019	.01910	.01135

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value									.06000			
Range									30.000%			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3752.3	49849.	2870.8
Stddev	10.0	198.	14.7
%RSD	.26608	.39811	.51133

#1	3759.4	49989.	2881.2
#2	3745.2	49708.	2860.4

Sample Name: 280-123345-F-1-A Acquired: 5/14/2019 15:23:56 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457365 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.02332	.01537	.30102	.07620	.00001	-.00011	54.085	.00043
Stddev	.00086	.00069	.00226	.00046	.00017	.00004	.00063	.111	.00020
%RSD	113.62	2.9743	14.697	.15388	.22487	293.32	594.38	.20477	47.036

#1	.00015	.02381	.01696	.30069	.07608	.00005	-.00055	54.164	.00057
#2	.00136	.02283	.01377	.30135	.07632	-.00002	.00034	54.007	.00028

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00591	.00099	-.00074	25.146	10.448	-.00037	10.347	.23839	.00059
Stddev	.00036	.00034	.00028	.110	.078	.00042	.000	.00046	.00046
%RSD	6.1603	34.100	38.267	.43908	.74751	113.53	.00402	.19224	77.780

#1	.00566	.00123	-.00054	25.224	10.504	-.00066	10.347	.23872	.00027
#2	.00617	.00075	-.00094	25.068	10.393	-.00007	10.347	.23807	.00092

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.124	.00141	.16368	.00082	13.064	-.00188	.00476	2.0490	4.3848
Stddev	.543	.00030	.00110	.00117	.077	.00037	.00091	.0164	.0352
%RSD	2.8410	21.651	.67069	141.72	.59140	19.660	19.168	.80268	.80268

#1	18.740	.00162	.16446	.00165	13.119	-.00214	.00541	2.0606	4.4097
#2	19.508	.00119	.16290	-.00000	13.009	-.00162	.00412	2.0374	4.3600

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00175	.26323	.00158	-.00009	.00153	.01273	.00301	.01402	.00171
Stddev	.00117	.00049	.00198	.00039	.00127	.08285	.00022	.00034	.00143
%RSD	67.011	.18538	125.53	431.75	82.592	650.99	7.2681	2.4361	83.367

#1	.00258	.26289	.00018	-.00036	.00243	.07131	.00316	.01378	.00070
#2	.00092	.26358	.00297	.00018	.00064	-.04586	.00285	.01427	.00272

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3694.9	49011.	2900.8
Stddev	8.7	254.	29.0
%RSD	.23427	.51822	.99891

#1	3688.8	48832.	2921.3
#2	3701.0	49191.	2880.3

Sample Name: 280-123345-F-2-A Acquired: 5/14/2019 15:26:27 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457365 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.03418	.01425	.08588	.18914	.00017	-.00193	7.3775	.00002
Stddev	.00073	.00032	.00043	.00173	.00178	.00014	.00104	.0381	.00015
%RSD	275.27	.92757	3.0199	2.0196	.94213	81.737	53.701	.51686	655.96

#1	.00078	.03440	.01455	.08711	.19040	.00007	-.00266	7.4045	-.00008
#2	-.00025	.03396	.01394	.08465	.18788	.00027	-.00120	7.3506	.00013

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00263	-.00008	-.00077	16.377	4.8501	-.00111	5.8849	.09891	-.00022
Stddev	.00035	.00005	.00088	.075	.1167	.00353	.0130	.00003	.00017
%RSD	13.383	69.027	114.11	.45868	2.4069	318.97	.22065	.02965	77.838

#1	.00238	-.00012	-.00139	16.430	4.7676	.00139	5.8757	.09893	-.00010
#2	.00287	-.00004	-.00015	16.324	4.9327	-.00360	5.8940	.09889	-.00034

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	30.464	.00665	.10426	.00237	3.1362	.00249	-.00196	2.9906	6.3999
Stddev	.674	.00000	.00143	.00207	.0194	.00167	.00082	.0268	.0573
%RSD	2.2131	.00820	1.3756	87.105	.61801	67.165	41.631	.89582	.89582

#1	29.987	.00665	.10324	.00091	3.1499	.00367	-.00253	2.9716	6.3593
#2	30.940	.00665	.10527	.00383	3.1225	.00131	-.00138	3.0095	6.4404

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	.05949	.00060	.00090	.00225	.01130	.00027	.00345	.00229
Stddev	.00116	.00020	.00280	.00005	.00034	.04740	.00088	.00092	.00282
%RSD	94.158	.33691	464.42	5.4946	15.273	419.61	330.93	26.514	123.01

#1	.00041	.05963	-.00138	.00087	.00200	.04481	.00089	.00280	.00429
#2	.00205	.05935	.00259	.00094	.00249	-.02222	-.00036	.00410	.00030

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3672.7	49208.	2875.7
Stddev	42.9	309.	24.9
%RSD	1.1671	.62876	.86668

#1	3642.4	49427.	2858.0
#2	3703.0	48989.	2893.3

Sample Name: 280-123350-A-3-A Acquired: 5/14/2019 15:28:59 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457365 6010C Q5

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00072	7.1270	-0.00040	.84815	.06092	.00035	-0.00094	37.939	.00020
Stddev	.00092	.0774	.00276	.00422	.00014	.00031	.00033	.049	.00010
%RSD	128.04	1.0864	682.72	.49710	.22908	88.910	34.891	.12798	49.969

#1	-0.00007	7.1818	.00155	.85113	.06102	.00057	-0.00071	37.904	.00027
#2	-0.00137	7.0723	-.00236	.84517	.06082	.00013	-0.00117	37.973	.00013

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00639	.01833	.01173	6.5770	6.8818	.16611	7.5339	.11889	.03191
Stddev	.00043	.00001	.00002	.0051	.0220	.00161	.0192	.00002	.00103
%RSD	6.6802	.02838	.18447	.07743	.31978	.96997	.25482	.01270	3.2200

#1	.00669	.01833	.01172	6.5806	6.8663	.16725	7.5475	.11891	.03264
#2	.00609	.01834	.01175	6.5734	6.8974	.16498	7.5203	.11888	.03118

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	354.64	.00852	.16271	.00277	106.68	.00006	.00377	25.483	54.533
Stddev	1.03	.00026	.00248	.00052	.53	.00129	.00401	.049	.105
%RSD	.28933	3.0320	1.5214	18.782	.49273	2198.9	106.45	.19279	.19279

#1	355.37	.00871	.16446	.00240	107.05	-.00085	.00660	25.517	54.607
#2	353.92	.00834	.16096	.00314	106.31	.00097	.00093	25.448	54.459

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00035	.73212	.00234	.09561	.00134	-0.01029	.01734	.03519	.00950
Stddev	.00091	.00028	.00513	.00012	.00117	.01370	.00035	.00077	.00127
%RSD	262.63	.03835	218.79	.12809	87.642	133.14	2.0382	2.1861	13.322

#1	-0.00099	.73192	-.00128	.09553	.00051	-.01997	.01759	.03573	.01040
#2	.00030	.73231	.00597	.09570	.00217	-.00060	.01709	.03464	.00861

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3628.5	47032.	2844.4
Stddev	19.7	107.	1.9
%RSD	.54425	.22693	.06644

#1	3614.5	46957.	2845.7
#2	3642.4	47108.	2843.0

Sample Name: 280-123350-A-4-A Acquired: 5/14/2019 15:31:29 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457365 6010C Q5

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.45979	-.00081	.20151	.08789	-.00009	-.00201	121.61	-.00008
Stddev	.00043	.00142	.00471	.00004	.00059	.00004	.00231	.20	.00010
%RSD	3247.5	.30835	579.77	.01786	.67064	41.346	114.65	.16843	121.67

#1	.00032	.46079	.00252	.20149	.08830	-.00006	-.00365	121.76	-.00001
#2	-.00029	.45879	-.00415	.20154	.08747	-.00012	-.00038	121.47	-.00015

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.04657	.02316	.84817	78.834	.08509	.38567	.01141	.04399
Stddev	.00002	.00056	.00030	.00491	.092	.00208	.00327	.00012	.00004
%RSD	5.5198	1.2031	1.3067	.57926	.11693	2.4418	.84686	1.0197	.08254

#1	-.00033	.04617	.02294	.84469	78.769	.08362	.38336	.01149	.04401
#2	-.00030	.04696	.02337	.85164	78.899	.08656	.38798	.01132	.04396

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	241.07	-.00208	.09003	-.00261	142.86	.00028	-.00056	24.558	52.553
Stddev	.97	.00024	.00174	.00209	.42	.00126	.00150	.104	.223
%RSD	.40140	11.572	1.9305	80.190	.29724	444.81	267.76	.42415	.42415

#1	241.75	-.00225	.08880	-.00113	143.16	.00118	.00050	24.631	52.711
#2	240.38	-.00191	.09126	-.00409	142.56	-.00061	-.00162	24.484	52.396

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00134	1.1551	.00001	.02223	.00215	-.01737	.01606	.00510	.00206
Stddev	.00083	.0020	.00130	.00077	.00021	.01871	.00079	.00085	.00406
%RSD	62.381	.17394	22988.	3.4703	9.9698	107.72	4.9139	16.610	196.65

#1	-.00193	1.1565	-.00092	.02278	.00200	-.00414	.01662	.00570	.00494
#2	-.00075	1.1537	.00093	.02169	.00230	-.03061	.01550	.00450	-.00081

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3660.3	47457.	2880.1
Stddev	16.3	693.	17.8
%RSD	.44557	1.4604	.61889

#1	3648.8	46967.	2892.7
#2	3671.9	47947.	2867.5

Sample Name: CCVH-5699817 Acquired: 5/14/2019 15:34:00 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .01663	46.862	k .00369	k .00603	k .00339	k .00153	k .91137	k .00972	k -.00018	k .00440	k .00152	k .00941
Stddev	.00032	.036	.00512	.00020	.00040	.00011	.01850	.01000	.00010	.00013	.00010	.00073
%RSD	1.9005	.07599	138.98	3.3366	11.922	7.1849	2.0296	102.92	58.035	2.9018	6.6352	7.7184

#1	k .01685	46.888	k .00006	k .00589	k .00310	k .00146	k .92445	k .00265	k -.00025	k .00449	k .00159	k .00890
#2	k .01640	46.837	k .00731	k .00618	k .00367	k .00161	k .89829	k .01679	k -.00010	k .00431	k .00145	k .00992

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	kF 44.269	.41366	.00337	k .04140	k .00053	k -.00010	239.97	k -.00028	k .00509	k .01665	k 4.5657	k -.03175
Stddev	.104	.01308	.00128	.00042	.00016	.00003	.10	.00025	.00091	.00039	.0446	.00300
%RSD	.23396	3.1628	38.068	1.0040	29.512	29.266	.04067	90.042	17.877	2.3486	.97747	9.4557

#1	k 44.196	.42291	.00428	k .04169	k .00064	k -.00012	240.04	k -.00046	k .00573	k .01637	k 4.5973	k -.02963
#2	k 44.343	.40441	.00246	k .04110	k .00042	k -.00008	239.90	k -.00010	k .00444	k .01692	k 4.5342	k -.03388

Check ?	Chk Fail	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None
Value	50.000											
Range	-10.490%											

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.00809	k .03528	k .07551	k .00134	.00168	k 5.1836	k .02249	k .00589	k 9.9751	k .01079	k .00266	k .29198
Stddev	.00097	.02574	.05509	.00256	.00008	.0072	.00005	.00036	.0023	.00013	.00040	.00077
%RSD	11.994	72.965	72.965	191.56	4.9959	.13814	.22172	6.0604	.02322	1.2174	15.179	.26261

#1	k -.00878	k .05349	k .11446	k -.00047	.00162	k 5.1887	k .02253	k .00615	k 9.9767	k .01088	k .00294	k .29144
#2	k -.00741	k .01708	k .03655	k .00314	.00174	k 5.1785	k .02246	k .00564	k 9.9734	k .01069	k .00237	k .29252

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3664.1	48280.	2825.5
Stddev	14.4	1.	4.8
%RSD	.39279	.00274	.16996

#1	3674.2	48281.	2822.1
#2	3653.9	48279.	2828.9

Sample Name: CCV-5699804 Acquired: 5/14/2019 15:36:31 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51750	.51275	.93843	.47007	.46575	.47198	.00364	4.5938	.47792	.48682	.45442	.49378
Stddev	.00156	.00224	.01187	.00115	.00047	.00074	.00039	.0037	.00313	.00191	.00237	.00046
%RSD	.30132	.43752	1.2650	.24527	.10148	.15737	10.812	.08142	.65388	.39334	.52112	.09328

#1	.51860	.51434	.94683	.47088	.46608	.47251	.00336	4.5912	.48013	.48817	.45609	.49411
#2	.51640	.51116	.93004	.46925	.46541	.47146	.00392	4.5964	.47571	.48546	.45274	.49345

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.4479	47.811	.95332	20.736	.50809	.49412	F 5.5834	.48748	.95848	.97624	.01827	.93239
Stddev	.0021	.011	.00025	.049	.00067	.00504	.0387	.00324	.01075	.00595	.00072	.00358
%RSD	.08539	.02371	.02578	.23760	.13166	1.0208	.69388	.66486	1.1214	.60930	3.9409	.38348

#1	2.4494	47.803	.95315	20.770	.50856	.49769	5.6108	.48977	.96608	.98045	.01878	.93492
#2	2.4464	47.819	.95350	20.701	.50762	.49056	5.5560	.48518	.95088	.97203	.01776	.92986

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93391	4.6708	9.9955	.91304	.47157	.00465	.50307	.93005	.00016	.51163	.49844	.49385
Stddev	.00491	.0269	.0576	.00556	.00172	.00248	.00005	.00440	.04673	.00152	.00037	.00181
%RSD	.52570	.57647	.57647	.60859	.36452	53.379	.00939	.47278	29089.	.29786	.07408	.36619

#1	.93738	4.6898	10.036	.91697	.47278	.00290	.50303	.93316	.03321	.51270	.49818	.49258
#2	.93044	4.6517	9.9547	.90911	.47035	.00641	.50310	.92694	-.03289	.51055	.49870	.49513

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3742.5	49176.	2870.8
Stddev	15.0	209.	14.6
%RSD	.40204	.42439	.50781

#1	3731.9	49029.	2860.5
#2	3753.1	49324.	2881.1

Sample Name: CCB Acquired: 5/14/2019 15:38:53 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00237	.00062	.00188	.00029	.00014	.00006	-.00258	-.00016	-.00031	.00009	-.00167	.00440
Stddev	.00014	.00018	.01171	.00083	.00040	.00005	.00122	.00664	.00009	.00032	.00014	.00089	.00622
%RSD	61.676	7.4344	1889.5	44.030	139.00	31.588	2146.7	257.52	52.636	102.47	160.66	53.363	141.32

#1	.00012	-.00225	-.00766	.00247	.00000	.00011	.00092	.00212	-.00010	-.00009	-.00001	-.00230	.00881
#2	.00032	-.00250	.00890	.00129	.00058	.00018	-.00080	-.00728	-.00022	-.00053	.00018	-.00104	.00000

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit													
Low Limit													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00481	-.00379	-.00021	-.00002	.00115	.33023	-.00489	-.00013	.00372	.00871	.00426	.00743	-.01345
Stddev	.03022	.00054	.00326	.00005	.00014	.02060	.00040	.00020	.00194	.00055	.00343	.00219	.01539
%RSD	628.78	14.332	1544.1	232.00	12.461	6.2372	8.0932	153.58	52.075	6.3681	80.389	29.487	114.41

#1	.01656	-.00418	.00210	-.00006	.00125	.34479	-.00517	.00001	.00235	.00832	.00184	.00588	-.02434
#2	-.02618	-.00341	-.00252	.00001	.00105	.31567	-.00461	-.00028	.00509	.00910	.00669	.00898	-.00257

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit													
Low Limit													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.02879	.00004	-.00016	-.00111	.00058	.00234	.02563	-.00007	-.00126	.00196
Stddev	.03294	.00086	.00023	.00064	.00013	.00048	.01176	.00038	.00016	.00116
%RSD	114.41	2094.0	139.17	57.255	22.962	20.478	45.874	578.74	12.630	59.488

#1	-.05208	.00065	-.00000	-.00066	.00048	.00200	.01731	-.00034	-.00137	.00278
#2	-.00550	-.00057	-.00032	-.00156	.00067	.00268	.03394	.00021	-.00114	.00113

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3750.0	49957.	2879.6
Stddev	7.7	38.	11.7
%RSD	.20604	.07539	.40588

#1	3755.5	49930.	2887.9
#2	3744.6	49984.	2871.4

Sample Name: CCVL-5701318 Acquired: 5/14/2019 15:41:29 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00897	.09394	.01323	.09316	.00942	.00098	.09624	.18682	.00434	.00952	.00912	.01316
Stddev	.00039	.00019	.00586	.00179	.00015	.00011	.00483	.00220	.00037	.00021	.00001	.00026
%RSD	4.3455	.19979	44.286	1.9228	1.6357	10.904	5.0232	1.1761	8.4629	2.1801	.09474	2.0075

#1	.00869	.09407	.00909	.09442	.00931	.00106	.09966	.18527	.00460	.00967	.00911	.01297
#2	.00924	.09380	.01737	.09189	.00953	.00091	.09282	.18838	.00408	.00937	.00912	.01334

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .16778	2.8370	.01588	.20560	.01074	.01960	1.1941	.03542	2.7132	.00873	.08487	.01746
Stddev	.00224	.0345	.00362	.00523	.00001	.00050	.0051	.00076	.0289	.00050	.00353	.00072
%RSD	1.3343	1.2142	22.814	2.5429	.08139	2.5404	.42361	2.1400	1.0641	5.7683	4.1650	4.1199

#1	.16936	2.8613	.01844	.20930	.01074	.01995	1.1906	.03596	2.7336	.00908	.08237	.01797
#2	.16619	2.8126	.01332	.20191	.01073	.01925	1.1977	.03489	2.6928	.00837	.08737	.01695

Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.10000											
Range	30.000%											

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01967	.51219	1.0961	.09080	.00923	.01397	.00924	.01621	.05520	.00979	.01863	.01341
Stddev	.00441	.00863	.0185	.00140	.00019	.00122	.00047	.00052	.05394	.00017	.00034	.00251
%RSD	22.437	1.6850	1.6850	1.5464	2.1100	8.7658	5.0940	3.2194	97.709	1.7292	1.8228	18.728

#1	.02279	.51829	1.1091	.09180	.00937	.01311	.00891	.01657	.09334	.00967	.01839	.01163
#2	.01655	.50609	1.0830	.08981	.00909	.01484	.00957	.01584	.01706	.00991	.01887	.01519

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3727.3	50052.	2919.8
Stddev	19.3	379.	.3
%RSD	.51707	.75661	.01075

#1	3740.9	50319.	2919.5
#2	3713.7	49784.	2920.0

Sample Name: MB 280-457027/1-A Acquired: 5/14/2019 15:44:02 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/9 Custom ID2: Custom ID3:
Comment: 457027 6010C (Fe Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	-.00100	-.00446	.00062	.00071	.00008	-.00134	-.00271	-.00006
Stddev	.00024	.00042	.00280	.00037	.00031	.00025	.00192	.00073	.00033
%RSD	44.690	41.780	62.703	59.545	43.591	304.65	143.38	26.757	527.86

#1	.00069	-.00070	-.00644	.00087	.00049	.00026	.00002	-.00220	-.00030
#2	.00036	-.00129	-.00248	.00036	.00093	-.00010	-.00269	-.00322	.00017

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	-.00021	-.00195	.00933	-.02980	-.00037	.00052	.00007	-.00008
Stddev	.00057	.00004	.00070	.00707	.12538	.00380	.00041	.00004	.00082
%RSD	471.55	18.122	35.597	75.709	420.74	1039.5	78.468	57.948	1074.8

#1	.00052	-.00023	-.00146	.01433	.05886	-.00305	.00081	.00010	.00051
#2	-.00028	-.00018	-.00245	.00434	-.11845	.00232	.00023	.00004	-.00066

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.22969	-.00438	-.00095	.00206	.00971	.00434	W .00945	-.00897	-.01920
Stddev	.02625	.00008	.00053	.00164	.00149	.00164	.00112	.00092	.00196
%RSD	11.430	1.8682	55.470	79.827	15.329	37.695	11.831	10.231	10.231

#1	.21112	-.00432	-.00133	.00322	.01077	.00318	.01024	-.00962	-.02059
#2	.24825	-.00444	-.00058	.00090	.00866	.00549	.00866	-.00832	-.01781

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	None
High Limit							.00750		
Low Limit							-.00750		

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00049	-.00017	.00027	.00034	.00202	.01915	.00032	-.00115	.00299
Stddev	.00148	.00000	.00271	.00068	.00029	.02499	.00006	.00019	.00415
%RSD	303.93	1.6536	1001.2	198.16	14.181	130.53	17.499	16.303	138.99

#1	.00056	-.00017	.00219	.00083	.00222	.00147	.00036	-.00128	.00592
#2	-.00153	-.00016	-.00165	-.00014	.00182	.03682	.00028	-.00102	.00005

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3738.6	50044.	2865.1
Stddev	6.6	89.	1.7
%RSD	.17753	.17789	.06107

#1	3743.3	49981.	2863.9
#2	3733.9	50107.	2866.4

Sample Name: LCS 280-457027/2-A Acquired: 5/14/2019 15:46:39 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457027 6010C (Fe Na)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00322	9.3634	1.8145	.91488	1.7823	.90439	1.8048	43.974	.91882
Stddev	.00137	.0552	.0076	.00070	.0120	.00046	.0046	.215	.00381
%RSD	42.411	.58957	.41630	.07690	.67179	.05043	.25273	.48833	.41447

#1	.00225	9.3244	1.8198	.91538	1.7738	.90407	1.8080	43.822	.92151
#2	.00418	9.4025	1.8091	.91439	1.7908	.90471	1.8016	44.125	.91612

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.90243	.86255	.91935	9.2110	47.030	.92449	49.172	.96715	.94747
Stddev	.00268	.00062	.00042	.0101	.194	.00636	.136	.00033	.00567
%RSD	.29642	.07221	.04530	.10976	.41333	.68821	.27607	.03362	.59822

#1	.90432	.86211	.91906	9.2181	46.893	.91999	49.268	.96738	.95148
#2	.90054	.86299	.91964	9.2038	47.168	.92899	49.076	.96692	.94346

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	48.411	.90349	18.696	.92122	8.6075	.00849	1.7902	1.8319	3.9202
Stddev	.240	.00258	.095	.00105	.0218	.00009	.0101	.0252	.0539
%RSD	.49600	.28541	.50929	.11450	.25278	1.0102	.56222	1.3756	1.3756

#1	48.241	.90531	18.763	.92047	8.6229	.00855	1.7973	1.8497	3.9583
#2	48.581	.90167	18.629	.92197	8.5921	.00843	1.7830	1.8140	3.8821

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.7467	.90506	.95685	.97080	1.7436	1.9964	.98605	.47821	.49447
Stddev	.0005	.00383	.00512	.00101	.0018	.0653	.00146	.00153	.00152
%RSD	.02945	.42370	.53552	.10392	.10360	3.2709	.14836	.32024	.30647

#1	1.7463	.90235	.96048	.97151	1.7449	2.0426	.98502	.47929	.49554
#2	1.7470	.90777	.95323	.97009	1.7423	1.9502	.98709	.47712	.49339

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3542.2	47441.	2785.1
Stddev	40.2	20.	12.9
%RSD	1.1358	.04274	.46363

#1	3570.7	47455.	2794.3
#2	3513.8	47426.	2776.0

Sample Name: 280-123149-C-1-A Acquired: 5/14/2019 15:48:56 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457027 6010C (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.01958	-.00714	.22127	.01810	.00027	-.00349	W 500.86	-.00044
Stddev	.00028	.00045	.00887	.00326	.00086	.00010	.00267	1.17	.00019
%RSD	38.749	2.2908	124.31	1.4720	4.7487	37.245	76.532	.23423	43.639

#1	.00053	.01990	-.01341	.22357	.01871	.00020	-.00160	501.69	-.00030
#2	.00093	.01926	-.00086	.21897	.01750	.00034	-.00538	500.03	-.00057

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit								500.00	
Low Limit								-40000	

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00099	-.00032	-.00110	.01517	16.000	.45492	37.901	.00391	.03479
Stddev	.00016	.00001	.00088	.00163	.501	.00047	.047	.00010	.00011
%RSD	15.965	2.7945	80.052	10.737	3.1334	.10263	.12493	2.5706	.31292

#1	-.00110	-.00033	-.00173	.01633	15.645	.45525	37.934	.00398	.03487
#2	-.00087	-.00032	-.00048	.01402	16.354	.45459	37.867	.00384	.03471

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2635.4	-.00195	.02210	-.00146	F 1006.5	-.00443	.00105	3.7895	8.1096
Stddev	.3	.00017	.00157	.00134	9.1	.00197	.00472	.0445	.0952
%RSD	.00949	8.9150	7.1020	92.374	.90723	44.526	451.76	1.1735	1.1735

#1	2635.6	-.00207	.02321	-.00050	1012.9	-.00304	.00439	3.8210	8.1769
#2	2635.3	-.00183	.02099	-.00241	1000.00	-.00583	-.00229	3.7581	8.0423

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				200.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00209	W 13.761	-.00096	.00122	-.00190	-.05981	-.00026	.00115	.00243
Stddev	.00103	.157	.00329	.00095	.00234	.07979	.00046	.00084	.00171
%RSD	49.297	1.1383	342.83	77.897	123.07	133.41	177.68	73.464	70.600

#1	-.00136	13.651	-.00328	.00189	-.00355	-.00339	-.00059	.00174	.00364
#2	-.00281	13.872	.00136	.00055	-.00025	-.11623	.00007	.00055	.00122

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		10.000							
Low Limit		-.02000							

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3283.9	41925.	2669.9
Stddev	18.1	262.	35.8
%RSD	.55034	.62579	1.3404

#1	3271.2	41740.	2644.6
#2	3296.7	42111.	2695.2

Sample Name: 280-123149-C-2-A Acquired: 5/14/2019 15:51:41 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457027 6010C (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	-.00612	-.00625	.21361	.03885	.00010	-.00416	298.66	-.00058
Stddev	.00004	.00025	.00622	.00068	.00037	.00032	.00189	.96	.00022
%RSD	5.1676	4.0599	99.542	.31935	.94107	306.16	45.336	.32048	38.362

#1	.00087	-.00594	-.01065	.21409	.03860	-.00012	-.00550	297.99	-.00042
#2	.00081	-.00629	-.00185	.21312	.03911	.00033	-.00283	299.34	-.00073

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00096	.00030	.00005	.09387	13.482	.37494	22.285	.00156	.04709
Stddev	.00077	.00005	.00111	.00004	.365	.00527	.112	.00014	.00100
%RSD	80.918	16.358	2197.0	.03828	2.7082	1.4056	.50253	9.1784	2.1326

#1	-.00041	.00033	.00084	.09390	13.224	.37121	22.364	.00146	.04780
#2	-.00150	.00026	-.00074	.09385	13.740	.37867	22.206	.00166	.04638

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2001.8	-.00370	.00638	.00089	F 780.41	-.00126	-.00598	4.5372	9.7097
Stddev	6.0	.00017	.00490	.00023	6.17	.00610	.00185	.0515	.1103
%RSD	.30014	4.4857	76.895	26.078	.79038	483.98	30.962	1.1361	1.1361

#1	1997.6	-.00382	.00291	.00106	784.77	-.00557	-.00729	4.5008	9.6317
#2	2006.1	-.00358	.00984	.00073	776.04	.00305	-.00467	4.5737	9.7877

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				200.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00110	6.8534	-.00074	-.00004	.00083	-.08994	-.00064	-.00116	.00355
Stddev	.00106	.0210	.00166	.00072	.00006	.07129	.00032	.00001	.00131
%RSD	95.779	.30636	225.93	1626.5	7.6419	79.265	50.464	1.1989	36.824

#1	-.00036	6.8385	.00044	.00047	.00087	-.14035	-.00041	-.00117	.00448
#2	-.00185	6.8682	-.00191	-.00055	.00078	-.03953	-.00087	-.00115	.00263

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3283.0	41914.	2716.3
Stddev	6.5	281.	83.6
%RSD	.19859	.67045	3.0782

#1	3287.6	41715.	2775.4
#2	3278.4	42112.	2657.2

Sample Name: 123149-C-2-A SD@5 Acquired: 5/14/2019 15:54:19 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457027 6010C (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00136	-.00551	-.00104	.04795	.00713	.00034	.00190	59.056	-.00034
Stddev	.00018	.00034	.00045	.00039	.00033	.00023	.00024	1.478	.00038
%RSD	13.599	6.1758	42.710	.80558	4.6122	68.863	12.723	2.5022	111.91

#1	.00123	-.00527	-.00073	.04767	.00690	.00017	.00207	58.012	-.00061
#2	.00149	-.00575	-.00136	.04822	.00736	.00050	.00173	60.101	-.00007

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00061	.00025	-.00032	.02451	2.6830	.06798	4.6380	.00044	.01065
Stddev	.00009	.00028	.00013	.00048	.1534	.00130	.0525	.00004	.00038
%RSD	14.284	111.98	40.733	1.9614	5.7175	1.9118	1.1320	8.9936	3.5841

#1	-.00067	.00045	-.00022	.02485	2.7915	.06706	4.6009	.00046	.01038
#2	-.00055	.00005	-.00041	.02417	2.5746	.06889	4.6751	.00041	.01092

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	385.04	-.00472	.00085	.00217	165.20	.00140	-.00321	.89466	1.9146
Stddev	8.81	.00030	.00138	.00007	4.40	.00520	.00190	.00872	.0187
%RSD	2.2883	6.2928	162.05	3.2256	2.6605	370.78	59.089	.97413	.97413

#1	378.81	-.00493	-.00012	.00222	162.09	.00508	-.00455	.88849	1.9014
#2	391.27	-.00451	.00183	.00212	168.31	-.00228	-.00187	.90082	1.9278

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	1.3364	.00131	-.00013	.00247	-.04897	.00049	-.00124	.00160
Stddev	.00052	.0300	.00093	.00030	.00051	.01760	.00043	.00030	.00145
%RSD	346.44	2.2451	71.231	224.51	20.670	35.943	86.956	24.468	90.976

#1	-.00022	1.3152	.00065	.00008	.00284	-.03653	.00019	-.00103	.00262
#2	.00052	1.3576	.00196	-.00034	.00211	-.06142	.00080	-.00146	.00057

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3537.3	46929.	2783.7
Stddev	6.8	200.	11.9
%RSD	.19120	.42664	.42661

#1	3532.6	47070.	2792.1
#2	3542.1	46787.	2775.3

Sample Name: 280-123149-C-2-B MS Acquired: 5/14/2019 15:56:52 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457027 6010C (Fe)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00352	9.8310	1.9653	1.1165	1.9012	.94739	1.8519	344.48	.97475
Stddev	.00121	.0678	.0094	.0096	.0066	.00336	.0169	.44	.00888
%RSD	34.373	.68992	.47918	.85602	.34908	.35422	.91392	.12835	.91111

#1	.00437	9.7830	1.9719	1.1233	1.9059	.94976	1.8639	344.79	.98103
#2	.00266	9.8790	1.9586	1.1098	1.8965	.94502	1.8400	344.17	.96847

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.91163	.86516	.97328	9.4926	67.130	1.3734	71.104	.99651	1.0125
Stddev	.00982	.00717	.00048	.0164	.235	.0031	.015	.00056	.0130
%RSD	1.0775	.82865	.04943	.17291	.34962	.22563	.02064	.05646	1.2825

#1	.91858	.87023	.97294	9.5042	66.964	1.3756	71.114	.99691	1.0217
#2	.90469	.86009	.97362	9.4810	67.296	1.3712	71.093	.99611	1.0033

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2056.2	.91487	W 20.827	.89267	F 780.22	.00560	1.9066	6.6475	14.226
Stddev	3.9	.00932	.207	.00664	4.83	.00404	.0192	.0001	.000
%RSD	.19053	1.0186	.99375	.74331	.61843	72.070	1.0042	.00225	.00225

#1	2059.0	.92146	20.974	.89736	783.63	.00846	1.9202	6.6474	14.225
#2	2053.5	.90828	20.681	.88797	776.81	.00275	1.8931	6.6476	14.226

Check ?	Chk Warn	Chk Pass	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00		20.000		200.00				
Low Limit	11.000		-6.0000		-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.7463	7.8506	1.0130	1.0216	1.5517	1.9096	1.0476	.51144	.51732
Stddev	.0141	.0175	.0033	.0002	.0107	.0612	.0002	.00348	.00045
%RSD	.80580	.22300	.32585	.01530	.69132	3.2024	.02267	.67981	.08613

#1	1.7563	7.8630	1.0153	1.0217	1.5593	1.9528	1.0478	.51390	.51700
#2	1.7364	7.8383	1.0106	1.0215	1.5442	1.8663	1.0475	.50898	.51763

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3367.6	43166.	2738.4
Stddev	3.9	40.	15.2
%RSD	.11475	.09321	.55466

#1	3370.3	43138.	2749.1
#2	3364.8	43195.	2727.7

Sample Name: 280-123149-C-2-C MSD Acquired: 5/14/2019 15:59:17 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457027 6010C (Fe)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00326	9.4328	1.9189	1.1009	1.8510	.92255	1.8192	338.53	.95577
Stddev	.00139	.0618	.0195	.0054	.0029	.00004	.0143	.17	.00613
%RSD	42.710	.65538	1.0183	.49426	.15376	.00447	.78800	.05051	.64157

#1	.00227	9.3890	1.9327	1.1047	1.8530	.92258	1.8293	338.65	.96010
#2	.00424	9.4765	1.9051	1.0970	1.8490	.92252	1.8090	338.41	.95143

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.88873	.84386	.95006	9.1577	66.251	1.3455	68.947	.96663	.99264
Stddev	.00454	.00763	.00010	.0101	.095	.0025	.079	.00100	.00798
%RSD	.51133	.90359	.01103	.11022	.14365	.18453	.11465	.10350	.80438

#1	.89195	.84925	.95013	9.1506	66.184	1.3437	69.003	.96734	.99829
#2	.88552	.83846	.94998	9.1649	66.318	1.3473	68.891	.96592	.98700

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2029.6	.89220	W 20.356	.87017	F 777.31	.00529	1.8635	6.5449	14.006
Stddev	1.3	.00816	.118	.00508	4.83	.00055	.0133	.0052	.011
%RSD	.06528	.91405	.57733	.58427	.62150	10.470	.71498	.07905	.07905

#1	2028.7	.89797	20.439	.87376	780.73	.00569	1.8729	6.5413	13.998
#2	2030.6	.88643	20.273	.86657	773.90	.00490	1.8540	6.5486	14.014

Check ?	Chk Warn	Chk Pass	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00		20.000		200.00				
Low Limit	11.000		-6.0000		-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.7041	7.7165	.98323	.99154	1.5225	1.9050	1.0171	.49525	.50270
Stddev	.0073	.0100	.00186	.00203	.0147	.0572	.0013	.00121	.00334
%RSD	.42791	.12983	.18876	.20429	.96214	3.0005	.12850	.24494	.66498

#1	1.7092	7.7236	.98192	.99297	1.5329	1.9454	1.0180	.49439	.50506
#2	1.6989	7.7094	.98455	.99010	1.5121	1.8645	1.0162	.49611	.50034

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3378.3	43575.	2770.2
Stddev	.9	104.	18.9
%RSD	.02740	.23931	.68124

#1	3377.7	43649.	2783.5
#2	3379.0	43502.	2756.8

Sample Name: 280-123149-C-2-A PDS Acquired: 5/14/2019 16:01:40 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457027 6010C (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05530	.86092	.19281	.31034	.13178	.04639	-.00194	327.87	.04875
Stddev	.00078	.00740	.00425	.00209	.00011	.00019	.00160	.10	.00029
%RSD	1.4073	.85904	2.2018	.67490	.08337	.40230	82.547	.03173	.58810

#1	.05585	.86615	.19581	.31182	.13185	.04626	-.00308	327.79	.04895
#2	.05475	.85569	.18981	.30886	.13170	.04652	-.00081	327.94	.04855

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04415	.04248	.04911	1.0752	36.018	.48901	42.091	.05104	.09725
Stddev	.00011	.00057	.00034	.0033	.222	.00141	.012	.00010	.00111
%RSD	.25347	1.3380	.69331	.30275	.61694	.28882	.02746	.19313	1.1456

#1	.04423	.04288	.04936	1.0775	35.860	.48801	42.100	.05097	.09804
#2	.04407	.04207	.04887	1.0729	36.175	.49001	42.083	.05111	.09646

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2079.9	.04255	2.0954	.08686	F 787.80	.08862	.19351	9.2559	19.808
Stddev	.2	.00036	.0151	.00374	4.46	.00049	.00070	.0143	.030
%RSD	.00816	.83688	.72052	4.3090	.56601	.55772	.36256	.15392	.15392

#1	2079.8	.04280	2.1061	.08950	790.95	.08897	.19301	9.2459	19.786
#2	2080.1	.04230	2.0848	.08421	784.64	.08827	.19400	9.2660	19.829

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				200.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08270	7.1962	.20022	.04998	.15464	.41290	.05181	.20881	.05825
Stddev	.00042	.0049	.00500	.00007	.00174	.06016	.00082	.00029	.00011
%RSD	.50477	.06854	2.4998	.13472	1.1269	14.571	1.5908	.13811	.19010

#1	.08300	7.1927	.20375	.05002	.15587	.37036	.05123	.20861	.05832
#2	.08241	7.1997	.19668	.04993	.15341	.45544	.05239	.20902	.05817

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3390.3	43837.	2783.6
Stddev	2.4	49.	2.7
%RSD	.07164	.11182	.09783

#1	3388.6	43803.	2781.6
#2	3392.0	43872.	2785.5

Sample Name: 280-123149-C-3-A Acquired: 5/14/2019 16:04:12 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457027 6010C (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	-.00086	-.00051	.21629	.00911	.00029	.00228	59.162	-.00023
Stddev	.00053	.00054	.00204	.00276	.00040	.00001	.00476	.166	.00007
%RSD	77.540	62.292	402.41	1.2764	4.4065	4.0562	208.97	.28098	30.301

#1	.00031	-.00124	.00093	.21824	.00882	.00029	.00564	59.045	-.00018
#2	.00107	-.00048	-.00195	.21434	.00939	.00030	-.00109	59.280	-.00028

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00083	.00012	-.00131	.00522	6.7405	.17954	4.3667	.28550	.18983
Stddev	.00028	.00011	.00067	.00692	.0927	.00024	.0181	.00060	.00248
%RSD	34.193	94.635	50.622	132.57	1.3756	.13632	.41572	.20912	1.3038

#1	-.00063	.00020	-.00179	.01011	6.6750	.17971	4.3795	.28592	.19158
#2	-.00103	.00004	-.00084	.00033	6.8061	.17937	4.3538	.28507	.18808

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 942.35	-.00495	.01863	-.00075	F 396.16	-.00016	.00018	3.8587	8.2576
Stddev	2.96	.00002	.00038	.00005	2.14	.00216	.00489	.0732	.1566
%RSD	.31460	.38760	2.0401	6.5079	.54076	1349.6	2734.6	1.8964	1.8964

#1	940.26	-.00493	.01890	-.00072	397.68	-.00169	.00363	3.8070	8.1469
#2	944.45	-.00496	.01836	-.00079	394.65	.00137	-.00328	3.9104	8.3683

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				200.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	2.5835	-.00034	-.00047	.00251	-.01406	-.00109	-.00071	.00247
Stddev	.00060	.0138	.00108	.00013	.00143	.02405	.00048	.00053	.00105
%RSD	451.15	.53216	318.37	28.700	57.251	171.09	44.272	74.416	42.469

#1	-.00029	2.5738	-.00110	-.00037	.00352	-.03107	-.00075	-.00109	.00322
#2	.00056	2.5932	.00042	-.00056	.00149	.00295	-.00144	-.00034	.00173

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3480.2	45392.	2781.3
Stddev	9.7	66.	1.2
%RSD	.27775	.14485	.04281

#1	3487.1	45345.	2780.5
#2	3473.4	45438.	2782.1

Sample Name: 280-123149-C-4-A Acquired: 5/14/2019 16:06:50 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457027 6010C (Fe)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 {74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00175	-.00227	-.00458	.22086	.01794	.00035	-.00111	W 504.18	-.00044
Stddev	.00102	.00074	.00024	.00022	.00027	.00015	.00394	.70	.00002
%RSD	58.334	32.437	5.2228	.10022	1.5163	41.867	354.63	.13908	4.3408
#1	.00103	-.00279	-.00475	.22102	.01813	.00045	-.00390	504.67	-.00045
#2	.00247	-.00175	-.00441	.22070	.01775	.00025	.00168	503.68	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit								500.00	
Low Limit								-40000	
Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 {44}	670.784 {50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00106	-.00023	-.00020	.02812	18.648	.46334	37.714	.00367	.03404
Stddev	.00014	.00007	.00061	.00147	.431	.00416	.150	.00016	.00133
%RSD	12.995	30.357	301.18	5.2273	2.3119	.89774	.39655	4.4931	3.8958
#1	-.00097	-.00018	-.00063	.02708	18.344	.46040	37.820	.00379	.03498
#2	-.00116	-.00028	.00023	.02916	18.953	.46628	37.608	.00356	.03310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									
Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 {41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2670.6	-.00201	.02123	-.00055	F 1011.7	-.00228	.00651	3.7490	8.0229
Stddev	1.5	.00026	.00198	.00215	10.4	.00039	.00418	.0346	.0741
%RSD	.05682	13.115	9.3176	390.82	1.0260	17.309	64.148	.92294	.92294
#1	2671.6	-.00220	.02263	-.00207	1019.1	-.00200	.00946	3.7735	8.0753
#2	2669.5	-.00182	.01983	.00097	1004.4	-.00256	.00356	3.7246	7.9706
Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				200.00				
Low Limit	11.000				-.20000				
Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 {83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 {91}	292.402 {115}	206.200 {163}	339.198 {99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00075	W 13.808	-.00151	.00055	.00097	-.11522	.00021	.00061	-.00119
Stddev	.00033	.072	.00361	.00028	.00243	.02210	.00168	.00016	.00079
%RSD	43.352	.51906	239.31	49.872	251.08	19.185	797.69	25.858	66.456
#1	-.00099	13.757	.00105	.00036	.00269	-.13085	.00140	.00050	-.00063
#2	-.00052	13.859	-.00407	.00075	-.00075	-.09959	-.00098	.00072	-.00175
Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		10.000							
Low Limit		-.02000							
Int. Std.	Y_2243	Y_3600	Y_3774						
Line	224.306 {450}	360.073 {94}	377.433 {89}						
Units	Cts/S	Cts/S	Cts/S						
Avg	3207.6	41448.	2634.3						
Stddev	25.6	112.	4.5						
%RSD	.79666	.27012	.17202						
#1	3189.5	41369.	2637.5						
#2	3225.7	41527.	2631.1						

Sample Name: CCVH-5699817 Acquired: 5/14/2019 16:09:34 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .01765	46.487	k -.00570	k .00602	k .00367	k .00168	k .90669	k .02662	k -.00010	k .00439	k .00117	k .00957
Stddev	.00102	.159	.00362	.00013	.00052	.00022	.00411	.00747	.00000	.00012	.00005	.00010
%RSD	5.8072	.34132	63.472	2.1470	14.064	13.247	.45374	28.079	1.3773	2.8368	3.9599	.99786

#1	k .01837	46.375	k -.00826	k .00593	k .00330	k .00152	k .90960	k .03190	k -.00010	k .00447	k .00120	k .00963
#2	k .01692	46.600	k -.00314	k .00611	k .00403	k .00183	k .90378	k .02133	k -.00010	k .00430	k .00114	k .00950

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	kF 44.038	1.1830	.00320	k .03522	k .00041	k .00012	242.00	k -.00017	k .00550	k .01767	k 4.7098	k -.02981
Stddev	.064	.0477	.00079	.00230	.00008	.00024	1.28	.00023	.00194	.00076	.0672	.00023
%RSD	.14484	4.0300	24.612	6.5371	20.212	204.51	.52970	133.58	35.170	4.3289	1.4257	.76102

#1	k 43.993	1.2167	.00376	k .03685	k .00046	k .00029	241.10	k -.00001	k .00687	k .01821	k 4.7573	k -.02965
#2	k 44.083	1.1493	.00265	k .03360	k .00035	k -.00005	242.91	k -.00034	k .00413	k .01713	k 4.6624	k -.02997

Check ?	Chk Fail	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None
Value	50.000											
Range	-10.490%											

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.01249	k -.01083	k -.02318	k .00160	.00232	k 5.1764	k .02237	k .00495	k 10.013	k .00992	k .00242	k .29218
Stddev	.00218	.04612	.09870	.00032	.00010	.0059	.00079	.00130	.015	.00056	.00045	.00056
%RSD	17.487	425.77	425.77	19.776	4.1407	.11430	3.5343	26.176	.14704	5.6265	18.436	.19093

#1	k -.01404	k .02178	k .04661	k .00137	.00239	k 5.1806	k .02293	k .00404	k 10.003	k .00953	k .00273	k .29179
#2	k -.01095	k -.04344	k -.09297	k .00182	.00225	k 5.1722	k .02181	k .00587	k 10.023	k .01031	k .00210	k .29258

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3617.4	47545.	2784.7
Stddev	3.6	95.	5.2
%RSD	.09935	.20061	.18793

#1	3620.0	47477.	2788.4
#2	3614.9	47612.	2781.0

Sample Name: CCV-5699804 Acquired: 5/14/2019 16:12:05 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51920	.51674	.92840	.47064	.46708	.47086	.00143	4.6097	.47778	.48643	.45547	.48986
Stddev	.00204	.00393	.00098	.00378	.00051	.00002	.00131	.0129	.00364	.00258	.00350	.00038
%RSD	.39342	.76035	.10547	.80256	.10890	.00331	91.714	.27869	.76219	.53131	.76778	.07765

#1	.51775	.51952	.92909	.47331	.46672	.47085	.00050	4.6006	.48035	.48826	.45795	.48959
#2	.52064	.51396	.92770	.46797	.46744	.47087	.00236	4.6188	.47520	.48460	.45300	.49013

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.4206	48.746	.96384	20.729	.50808	.49223	F 7.4806	.48668	.95766	.98069	.09905	.93093
Stddev	.0037	.116	.00398	.048	.00062	.00366	.0414	.00345	.00958	.00655	.00480	.01089
%RSD	.15329	.23771	.41243	.22959	.12199	.74428	.55285	.70843	1.0000	.66794	4.8476	1.1702

#1	2.4232	48.828	.96103	20.763	.50852	.49482	7.5099	.48912	.96444	.98532	.10244	.93863
#2	2.4179	48.664	.96665	20.696	.50764	.48964	7.4514	.48424	.95089	.97606	.09565	.92322

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93563	4.6702	9.9943	.92085	.47363	.00026	.50197	.93513	.06048	.50938	.49997	.49314
Stddev	.00662	.0075	.0161	.00836	.00077	.00173	.00131	.00767	.08550	.00077	.00007	.00268
%RSD	.70726	.16140	.16140	.90758	.16236	658.50	.26111	.81991	141.36	.15126	.01358	.54381

#1	.94030	4.6756	10.006	.92676	.47418	-.00096	.50289	.94055	.12094	.50884	.49992	.49124
#2	.93095	4.6649	9.9829	.91494	.47309	.00148	.50104	.92971	.00002	.50993	.50002	.49503

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3744.8	49118.	2818.6
Stddev	4.3	418.	21.9
%RSD	.11373	.85168	.77578

#1	3741.8	48822.	2803.1
#2	3747.8	49414.	2834.1

Sample Name: CCB Acquired: 5/14/2019 16:14:27 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoadesc Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	-.00158	.00074	.00203	.00090	.00023	.00327	.00233	-.00023	-.00023	-.00010	-.00085
Stddev	.00009	.00024	.00482	.00001	.00004	.00010	.00370	.00178	.00004	.00027	.00003	.00033
%RSD	133.95	14.921	647.31	.55834	4.2620	42.580	113.26	76.575	18.673	120.71	28.536	39.086
#1	.00000	-.00141	.00415	.00203	.00088	.00030	.00588	.00359	-.00026	-.00042	-.00012	-.00109
#2	.00014	-.00175	-.00266	.00204	.00093	.00016	.00065	.00107	-.00020	-.00003	-.00008	-.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00654	.47264	-.00242	.00181	.00001	.00142	F 1.6402	-.00378	-.00045	.00071	W .06625	W .00601
Stddev	.00328	.11447	.00032	.00233	.00008	.00048	.0481	.00002	.00133	.00198	.00054	.00204
%RSD	50.227	24.220	13.223	128.26	971.80	33.505	2.9338	.49425	294.17	280.03	.81681	33.987
#1	.00886	.39170	-.00265	.00017	-.00005	.00108	1.6742	-.00379	.00049	-.00069	.06587	.00457
#2	.00422	.55359	-.00220	.00346	.00006	.00176	1.6061	-.00376	-.00140	.00211	.06664	.00746
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Warn
High Limit							.50000				.05000	.00600
Low Limit							-.50000				-.20000	-.00600
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00485	-.02643	-.05656	.00052	-.00011	-.00018	.00062	.00287	.00009	.00024	-.00105	.00232
Stddev	.00516	.02811	.06015	.00091	.00034	.00070	.00019	.00108	.01137	.00079	.00051	.00253
%RSD	106.56	106.33	106.33	176.46	317.12	395.56	30.575	37.566	12366.	331.78	48.907	109.11
#1	.00850	-.04631	-.09909	.00116	.00013	.00032	.00075	.00211	.00813	-.00032	-.00069	.00411
#2	.00119	-.00656	-.01403	-.00013	-.00034	-.00067	.00048	.00364	-.00795	.00080	-.00142	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3733.1	49695.	2844.8									
Stddev	1.6	187.	5.8									
%RSD	.04196	.37562	.20364									
#1	3732.0	49827.	2840.7									
#2	3734.2	49563.	2848.9									

Sample Name: CCVL-5701318 Acquired: 5/14/2019 16:17:02 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00987	.09389	.01558	.09323	.01017	.00108	.09925	.18418	.00477	.00950	.00908	.01286
Stddev	.00085	.00187	.00564	.00203	.00014	.00012	.00262	.00212	.00018	.00019	.00002	.00139
%RSD	8.5988	1.9940	36.177	2.1769	1.3653	11.161	2.6422	1.1516	3.7027	2.0380	.21533	10.804

#1	.00927	.09522	.01159	.09466	.01007	.00116	.10111	.18268	.00489	.00936	.00909	.01188
#2	.01048	.09257	.01956	.09179	.01026	.00099	.09740	.18568	.00464	.00963	.00907	.01384

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09823	3.1750	.01607	.20345	.01026	.01956	F 2.2923	.03539	2.7015	.01048	.12811	.02213
Stddev	.00162	.1006	.00100	.00077	.00011	.00014	.0111	.00030	.0400	.00025	.00970	.00242
%RSD	1.6496	3.1674	6.2088	.37720	1.0701	.71160	.48452	.83815	1.4821	2.4270	7.5695	10.917

#1	.09709	3.1038	.01677	.20291	.01034	.01965	2.3002	.03560	2.7298	.01066	.13497	.02042
#2	.09938	3.2461	.01536	.20399	.01018	.01946	2.2845	.03518	2.6732	.01030	.12126	.02384

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							1.0000					
Range							30.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02238	.47939	1.0259	.09299	.00925	.01442	.00876	.01680	.07485	.01026	.01805	.01275
Stddev	.00483	.01869	.0400	.00167	.00010	.00124	.00006	.00088	.01030	.00010	.00081	.00247
%RSD	21.571	3.8982	3.8982	1.7995	1.1124	8.5951	.74123	5.2332	13.766	.95915	4.4857	19.362

#1	.01897	.46617	.99761	.09418	.00932	.01354	.00872	.01742	.08213	.01033	.01862	.01100
#2	.02580	.49260	1.0542	.09181	.00917	.01530	.00881	.01617	.06756	.01019	.01748	.01450

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3783.5	50586.	2837.5
Stddev	.4	75.	7.1
%RSD	.01152	.14759	.24995

#1	3783.8	50533.	2842.5
#2	3783.2	50639.	2832.5

Sample Name: 280-123149-C-1-A @10 Acquired: 5/14/2019 16:19:34 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457027 6010C (Na) 10x

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	-.00253	.00204	.02555	.00238	.00024	.00127	45.809	-.00018
Stddev	.00019	.00058	.00447	.00190	.00011	.00021	.00379	.745	.00009
%RSD	28.416	22.760	218.89	7.4496	4.4520	85.035	298.69	1.6261	50.902

#1	.00053	-.00294	-.00112	.02421	.00230	.00010	.00395	45.282	-.00025
#2	.00080	-.00212	.00520	.02690	.00245	.00039	-.00141	46.335	-.00012

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	-.00040	-.00101	.00352	1.3927	.03817	3.7058	.00051	.00400
Stddev	.00023	.00015	.00002	.00498	.0413	.00002	.0716	.00000	.00043
%RSD	58.730	38.309	1.7907	141.69	2.9670	.04043	1.9324	.29049	10.760

#1	-.00023	-.00050	-.00103	-.00001	1.3635	.03818	3.6551	.00052	.00369
#2	-.00057	-.00029	-.00100	.00704	1.4219	.03816	3.7564	.00051	.00430

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	235.43	-.00518	.00236	.00014	105.02	.00174	-.00002	.33483	.71653
Stddev	3.71	.00020	.00284	.00099	4.34	.00222	.00345	.01677	.03589
%RSD	1.5770	3.9088	120.09	724.30	4.1309	128.02	14213.	5.0091	5.0091

#1	232.81	-.00503	.00437	-.00056	101.95	.00016	-.00246	.32297	.69115
#2	238.06	-.00532	.00036	.00083	108.09	.00331	.00241	.34669	.74191

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	1.2565	-.00188	.00022	.00126	.00612	.00036	-.00076	.00154
Stddev	.00052	.0199	.00216	.00042	.00010	.02540	.00006	.00003	.00300
%RSD	272.56	1.5798	114.92	190.81	7.5837	415.13	15.888	4.1768	194.87

#1	.00018	1.2424	-.00035	-.00008	.00133	-.01184	.00032	-.00073	-.00058
#2	-.00056	1.2705	-.00340	.00051	.00119	.02408	.00040	-.00078	.00366

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3626.3	48005.	2842.0
Stddev	4.7	121.	3.9
%RSD	.12829	.25209	.13883

#1	3623.0	48091.	2839.2
#2	3629.6	47919.	2844.8

Sample Name: 123149-C-2-A @10 Acquired: 5/14/2019 16:22:06 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457027 6010C (Na) 10x

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	-.00387	-.00407	.02377	.00470	.00021	.00286	32.394	-.00019
Stddev	.00045	.00011	.00631	.00046	.00015	.00006	.00313	.124	.00013
%RSD	124.04	2.7823	154.82	1.9342	3.1951	28.373	109.49	.38224	69.368

#1	.00068	-.00379	-.00854	.02410	.00459	.00017	.00065	32.306	-.00010
#2	.00004	-.00395	.00039	.02345	.00481	.00026	.00507	32.482	-.00028

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00011	-.00137	.04037	1.4031	.04091	2.4577	.00034	.00537
Stddev	.00005	.00039	.00065	.00337	.0377	.00669	.0024	.00000	.00009
%RSD	49.493	359.52	47.523	8.3592	2.6872	16.340	.09617	1.0637	1.7629

#1	-.00015	.00038	-.00091	.03798	1.4298	.04564	2.4594	.00034	.00530
#2	-.00007	-.00017	-.00184	.04275	1.3765	.03619	2.4560	.00033	.00544

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	211.71	-.00455	-.00007	.00056	79.656	.00426	-.00031	.48992	1.0484
Stddev	.23	.00045	.00244	.00036	.281	.00529	.00194	.03684	.0788
%RSD	.10641	9.8041	3374.3	63.856	.35226	124.34	626.97	7.5196	7.5196

#1	211.87	-.00424	-.00179	.00081	79.854	.00800	.00106	.51597	1.1042
#2	211.55	-.00487	.00165	.00031	79.457	.00051	-.00168	.46387	.99268

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.73334	-.00453	-.00043	.00090	.02956	.00039	-.00069	.00408
Stddev	.00049	.00067	.00018	.00030	.00157	.04008	.00020	.00016	.00427
%RSD	266.24	.09200	3.9707	69.507	175.58	135.59	52.042	22.676	104.67

#1	-.00016	.73287	-.00466	-.00022	-.00022	.05790	.00025	-.00058	.00106
#2	.00053	.73382	-.00440	-.00063	.00201	.00122	.00053	-.00080	.00710

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3544.9	46978.	2811.6
Stddev	32.2	264.	8.3
%RSD	.90705	.56221	.29486

#1	3522.2	46791.	2817.4
#2	3567.6	47165.	2805.7

Sample Name: 123149-C-2-A SD@50 Acquired: 5/14/2019 16:24:39 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457027 6010C (Na) 10x

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	-.00210	.00042	.00554	.00149	.00017	.00177	6.6050	-.00011
Stddev	.00103	.00047	.00001	.00144	.00062	.00023	.00094	.0376	.00028
%RSD	136.11	22.216	2.9978	25.899	41.467	139.04	53.311	.56987	252.83

#1	.00149	-.00243	.00041	.00453	.00105	.00000	.00243	6.5784	-.00031
#2	.00003	-.00177	.00042	.00656	.00193	.00033	.00110	6.6316	.00009

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00047	.00001	-.00155	.01071	.42857	.00497	.50198	.00009	.00104
Stddev	.00007	.00039	.00028	.00274	.04497	.00120	.00053	.00005	.00036
%RSD	15.900	3590.8	18.129	25.575	10.494	24.238	.10466	61.231	34.743

#1	-.00052	.00029	-.00135	.01265	.46037	.00412	.50235	.00013	.00130
#2	-.00042	-.00027	-.00175	.00877	.39677	.00582	.50161	.00005	.00078

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	44.002	-.00458	.00173	.00100	15.841	.00208	.00233	.08192	.17531
Stddev	.230	.00015	.00041	.00365	.138	.00302	.00138	.01732	.03706
%RSD	.52276	3.3011	23.711	363.34	.86813	145.50	59.283	21.138	21.138

#1	44.165	-.00447	.00144	.00358	15.938	-.00006	.00331	.09416	.20151
#2	43.840	-.00468	.00202	-.00158	15.743	.00422	.00136	.06968	.14911

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.14928	-.00055	.00026	.00527	.01869	.00006	-.00178	.00357
Stddev	.00160	.00034	.00168	.00018	.00166	.03080	.00024	.00080	.00038
%RSD	650.86	.22942	304.30	67.464	31.426	164.81	410.94	44.712	10.702

#1	.00138	.14903	.00064	.00014	.00644	-.00309	.00023	-.00235	.00384
#2	-.00089	.14952	-.00174	.00039	.00410	.04047	-.00011	-.00122	.00330

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3677.4	49062.	2816.8
Stddev	1.9	145.	14.2
%RSD	.05283	.29652	.50294

#1	3678.8	48959.	2826.8
#2	3676.0	49164.	2806.8

Sample Name: 123149-C-2-B MS @10 Acquired: 5/14/2019 16:27:11 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457027 6010C (Na) 10x

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.94577	.19431	.12003	.16844	.08335	.18667	30.745	.09831
Stddev	.00052	.02629	.00789	.00550	.00279	.00118	.00351	.523	.00311
%RSD	158.82	2.7801	4.0581	4.5793	1.6534	1.4142	1.8814	1.7006	3.1654

#1	-.00004	.92717	.18874	.11614	.16647	.08252	.18419	30.375	.09611
#2	.00069	.96436	.19989	.12391	.17041	.08418	.18915	31.115	.10051

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09882	.09180	.09106	.84252	5.6508	.11622	6.9290	.09577	.10549
Stddev	.00157	.00252	.00100	.01319	.2025	.00342	.1001	.00153	.00258
%RSD	1.5896	2.7478	1.0985	1.5653	3.5834	2.9456	1.4452	1.5939	2.4493

#1	.09771	.09002	.09035	.83319	5.5076	.11380	6.8582	.09469	.10366
#2	.09993	.09359	.09177	.85185	5.7940	.11864	6.9998	.09685	.10732

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	181.41	.09506	2.0431	.09871	78.109	.00081	.18923	.56933	1.2184
Stddev	3.32	.00245	.0558	.00286	2.542	.00485	.00954	.00864	.0185
%RSD	1.8276	2.5781	2.7315	2.8980	3.2543	602.26	5.0428	1.5178	1.5178

#1	179.07	.09333	2.0037	.09669	76.311	-.00263	.18248	.56322	1.2053
#2	183.76	.09680	2.0826	.10074	79.906	.00424	.19598	.57544	1.2314

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18702	.69069	.08883	.09576	.18072	.23461	.09857	.04679	.04547
Stddev	.00667	.01220	.00560	.00132	.00170	.04771	.00052	.00084	.00328
%RSD	3.5644	1.7666	6.3054	1.3817	.93838	20.337	.52740	1.7938	7.2084

#1	.18231	.68206	.08487	.09482	.17952	.26835	.09820	.04620	.04779
#2	.19174	.69932	.09279	.09669	.18192	.20087	.09894	.04738	.04315

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3522.0	46594.	2732.3
Stddev	18.6	41.	12.2
%RSD	.52716	.08778	.44526

#1	3535.1	46565.	2740.9
#2	3508.8	46623.	2723.7

Sample Name: 123149-C-2-C MSD @10 Acquired: 5/14/2019 16:29:37 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457027 6010C (Na) 10x

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	.91519	.18493	.11443	.16433	.08082	.18428	30.264	.09473
Stddev	.00155	.02400	.00199	.00330	.00175	.00161	.00649	.427	.00340
%RSD	215.13	2.6224	1.0758	2.8847	1.0635	1.9908	3.5219	1.4116	3.5853

#1	.00181	.89822	.18634	.11209	.16310	.07969	.17969	29.962	.09233
#2	-.00037	.93216	.18353	.11676	.16557	.08196	.18887	30.566	.09713

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09488	.08908	.08822	.81587	5.4948	.11343	6.6667	.09200	.10277
Stddev	.00270	.00241	.00271	.00222	.0382	.00321	.1364	.00185	.00410
%RSD	2.8419	2.7026	3.0723	.27214	.69596	2.8332	2.0455	2.0156	3.9907

#1	.09297	.08737	.08630	.81430	5.4677	.11571	6.5702	.09068	.09987
#2	.09679	.09078	.09013	.81744	5.5218	.11116	6.7631	.09331	.10567

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	177.86	.09138	1.9749	.09225	76.316	-.00064	.17801	.55387	1.1853
Stddev	2.07	.00278	.0684	.00080	2.357	.00240	.01544	.02431	.0520
%RSD	1.1650	3.0463	3.4632	.87221	3.0880	376.96	8.6749	4.3888	4.3888

#1	176.40	.08942	1.9265	.09168	74.649	.00106	.16709	.57106	1.2221
#2	179.33	.09335	2.0233	.09282	77.982	-.00234	.18893	.53669	1.1485

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18109	.67879	.08816	.09147	.17579	.14796	.09383	.04529	.04549
Stddev	.00512	.00946	.00225	.00141	.00508	.01004	.00080	.00277	.00516
%RSD	2.8246	1.3943	2.5545	1.5364	2.8910	6.7863	.85143	6.1071	11.346

#1	.17748	.67210	.08657	.09048	.17220	.15506	.09327	.04333	.04184
#2	.18471	.68548	.08976	.09246	.17938	.14086	.09440	.04724	.04914

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3463.9	46091.	2672.8
Stddev	10.1	125.	.3
%RSD	.29135	.27023	.01175

#1	3471.1	46003.	2673.1
#2	3456.8	46179.	2672.6

Sample Name: 123149-C-2-A PDS @10 Acquired: 5/14/2019 16:32:03 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457027 6010C (Na) 10x

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05324	.90440	.18727	.11706	.09611	.04649	-.00090	49.030	.04749
Stddev	.00166	.01258	.00020	.00109	.00047	.00018	.00161	.172	.00043
%RSD	3.1114	1.3906	.10885	.92947	.48989	.37963	178.38	.35131	.91038

#1	.05206	.91329	.18712	.11783	.09577	.04637	-.00204	48.909	.04779
#2	.05441	.89551	.18741	.11629	.09644	.04662	.00024	49.152	.04718

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04686	.04334	.04694	.95379	21.078	.13429	22.395	.05028	.05405
Stddev	.00045	.00061	.00082	.00451	.247	.00053	.069	.00001	.00026
%RSD	.96284	1.4080	1.7558	.47280	1.1698	.39705	.30920	.02773	.48440

#1	.04717	.04377	.04635	.95060	20.903	.13467	22.444	.05027	.05424
#2	.04654	.04291	.04752	.95697	21.252	.13391	22.346	.05029	.05387

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	224.50	.04221	1.9874	.09348	77.210	.09097	.18047	5.0778	10.866
Stddev	.46	.00024	.0223	.00046	.854	.00364	.00609	.0318	.068
%RSD	.20682	.57797	1.1199	.48823	1.1061	4.0063	3.3737	.62668	.62668

#1	224.83	.04204	2.0032	.09316	77.814	.09355	.18477	5.0553	10.818
#2	224.18	.04238	1.9717	.09380	76.606	.08840	.17616	5.1003	10.915

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09074	.75967	.20014	.04973	.17564	.42244	.05136	.20466	.05860
Stddev	.00190	.00269	.00021	.00023	.00164	.00135	.00025	.00067	.00123
%RSD	2.0884	.35363	.10456	.46298	.93235	.31884	.48895	.32537	2.1001

#1	.09208	.75777	.20029	.04957	.17680	.42149	.05154	.20513	.05773
#2	.08940	.76157	.19999	.04990	.17448	.42339	.05118	.20418	.05947

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3573.5	46967.	2718.9
Stddev	4.9	123.	41.1
%RSD	.13722	.26135	1.5124

#1	3570.1	46880.	2689.8
#2	3577.0	47054.	2748.0

Sample Name: 280-123149-C-3-A @10 Acquired: 5/14/2019 16:34:30 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457027 6010C (Na) 10x

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	-.00181	.00059	.02368	.00147	.00009	.00076	5.1760	-.00016
Stddev	.00053	.00091	.00482	.00133	.00090	.00004	.00059	.1038	.00036
%RSD	49.970	50.147	810.24	5.6227	61.337	47.700	77.885	2.0048	221.31

#1	.00069	-.00245	-.00281	.02274	.00083	.00012	.00034	5.1026	.00009
#2	.00144	-.00117	.00400	.02462	.00211	.00006	.00118	5.2494	-.00041

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00002	-.00094	.02519	.62730	.01198	.41205	.02664	.01965
Stddev	.00012	.00000	.00059	.00084	.04607	.00123	.00615	.00069	.00052
%RSD	114.99	7.3282	63.156	3.3415	7.3442	10.259	1.4937	2.6056	2.6236

#1	.00019	-.00002	-.00052	.02460	.59472	.01111	.40769	.02614	.01929
#2	.00002	-.00002	-.00135	.02579	.65988	.01285	.41640	.02713	.02002

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	81.802	-.00496	.00209	.00159	38.628	.00081	-.00140	.29847	.63873
Stddev	1.141	.00030	.00240	.00101	2.206	.00079	.00328	.02280	.04879
%RSD	1.3944	5.9786	114.94	63.611	5.7106	98.599	234.69	7.6381	7.6381

#1	80.995	-.00517	.00039	.00087	37.068	.00137	-.00372	.28235	.60423
#2	82.608	-.00475	.00379	.00230	40.187	.00024	.00092	.31459	.67323

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.22523	-.00041	.00013	.00225	-.00026	.00057	-.00172	.00778
Stddev	.00072	.00507	.00209	.00020	.00083	.01696	.00025	.00079	.00104
%RSD	220.31	2.2507	516.70	149.82	36.739	6448.0	44.085	45.954	13.391

#1	-.00083	.22165	-.00189	-.00001	.00284	.01173	.00074	-.00228	.00851
#2	.00018	.22882	.00108	.00027	.00167	-.01226	.00039	-.00116	.00704

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3556.2	48062.	2804.5
Stddev	6.9	505.	14.7
%RSD	.19407	1.0505	.52286

#1	3561.1	48419.	2814.9
#2	3551.3	47705.	2794.2

Sample Name: 280-123149-C-4-A @10 Acquired: 5/14/2019 16:37:02 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457027 6010C (Na) 10x

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	-.00434	-.00020	.02201	.00208	.00034	-.00040	42.526	.00003
Stddev	.00056	.00004	.00935	.00090	.00025	.00007	.00391	.478	.00039
%RSD	68.900	.84496	4775.8	4.1023	11.916	20.130	966.76	1.1243	1169.3

#1	.00042	-.00431	.00641	.02137	.00191	.00039	-.00317	42.188	-.00024
#2	.00121	-.00436	-.00681	.02265	.00226	.00029	.00236	42.864	.00031

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00066	.00015	-.00129	-.00405	1.3504	.03794	3.4455	.00031	.00378
Stddev	.00003	.00026	.00137	.00075	.1624	.00241	.0532	.00006	.00031
%RSD	4.8172	172.33	105.67	18.532	12.028	6.3575	1.5440	20.522	8.1875

#1	-.00069	.00033	-.00033	-.00459	1.2356	.03965	3.4079	.00036	.00399
#2	-.00064	-.00003	-.00226	-.00352	1.4653	.03624	3.4831	.00027	.00356

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	220.58	-.00478	.00089	.00218	95.691	.00044	.00268	.27704	.59286
Stddev	1.80	.00013	.00130	.00012	4.209	.00089	.00031	.04748	.10160
%RSD	.81807	2.6722	146.48	5.6519	4.3982	201.47	11.493	17.137	17.137

#1	219.30	-.00487	-.00003	.00209	92.715	.00107	.00246	.31061	.66470
#2	221.86	-.00469	.00181	.00226	98.667	-.00019	.00290	.24347	.52102

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00093	1.1708	-.00289	-.00085	.00122	-.00628	.00038	-.00213	.00261
Stddev	.00061	.0115	.00080	.00001	.00013	.05204	.00045	.00002	.00252
%RSD	65.679	.98281	27.737	1.6967	11.008	828.46	118.80	.70944	96.552

#1	-.00050	1.1626	-.00346	-.00086	.00132	.03052	.00006	-.00212	.00439
#2	-.00136	1.1789	-.00233	-.00084	.00113	-.04308	.00070	-.00214	.00083

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3529.4	46570.	2693.2
Stddev	9.0	169.	19.9
%RSD	.25361	.36377	.73977

#1	3523.1	46450.	2679.1
#2	3535.7	46690.	2707.3

Sample Name: CCVH-5699817 Acquired: 5/14/2019 16:39:35 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .01696	46.347	k -.00065	k .00354	k .00285	k .00156	k .91175	k .01726	k .00011	k .00388	k .00176	k .00790
Stddev	.00124	.301	.00144	.00042	.00014	.00000	.00842	.00813	.00014	.00050	.00024	.00139
%RSD	7.3020	.65035	221.64	11.814	4.7515	.04830	.92324	47.104	125.80	13.001	13.858	17.607

#1	k .01609	46.134	k .00037	k .00325	k .00276	k .00156	k .91770	k .01151	k .00001	k .00424	k .00193	k .00692
#2	k .01784	46.560	k -.00166	k .00384	k .00295	k .00156	k .90580	k .02301	k .00021	k .00353	k .00159	k .00888

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	kF 43.679	.36319	.00232	k .03671	k .00035	k -.00010	241.71	k -.00077	k .00411	k .01657	k 4.5156	k -.03084
Stddev	.121	.04351	.00079	.00121	.00016	.00009	.48	.00011	.00155	.00002	.0212	.00097
%RSD	.27694	11.981	34.032	3.3032	46.510	85.220	.19742	15.005	37.729	.12832	.46912	3.1338

#1	k 43.594	.39396	.00288	k .03585	k .00046	k -.00004	241.38	k -.00068	k .00301	k .01659	k 4.5305	k -.03015
#2	k 43.765	.33242	.00176	k .03757	k .00023	k -.00016	242.05	k -.00085	k .00521	k .01656	k 4.5006	k -.03152

Check ?	Chk Fail	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None
Value	50.000											
Range	-10.490%											

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.01042	k -.01152	k -.02466	k .00167	.00193	k 5.1776	k .02258	k .00413	k 9.9138	k .01021	k .00293	k .28731
Stddev	.00685	.06409	.13714	.00087	.00012	.0119	.00050	.00021	.0006	.00005	.00024	.00342
%RSD	65.810	556.14	556.14	51.969	6.2949	.23065	2.2081	4.9791	.00630	.50613	8.0389	1.1911

#1	k -.00557	k -.05684	k -.12163	k .00106	.00184	k 5.1860	k .02293	k .00427	k 9.9133	k .01017	k .00310	k .28489
#2	k -.01526	k .03379	k .07231	k .00229	.00202	k 5.1691	k .02223	k .00398	k 9.9142	k .01025	k .00276	k .28973

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3572.1	46735.	2709.0
Stddev	26.5	139.	7.4
%RSD	.74235	.29661	.27338
#1	3553.4	46637.	2714.2
#2	3590.9	46833.	2703.7

Sample Name: CCV-5699804 Acquired: 5/14/2019 16:42:06 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52624	.52105	.94902	.47769	.47362	.47516	.00306	4.6397	.48596	.49412	.46203	.49857
Stddev	.00082	.00382	.00399	.00293	.00000	.00176	.00638	.0240	.00432	.00442	.00418	.00328
%RSD	.15625	.73306	.42034	.61421	.00071	.37069	208.24	.51777	.88946	.89415	.90450	.65860

#1	.52566	.52376	.95184	.47977	.47362	.47392	.00757	4.6227	.48901	.49724	.46498	.49624
#2	.52682	.51835	.94620	.47562	.47363	.47641	-.00145	4.6566	.48290	.49099	.45907	.50089

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.4451	49.345	.98001	21.070	.51593	.49999	F 6.1641	.49349	.97463	.99195	.02945	.94777
Stddev	.0184	.177	.00285	.078	.00088	.00442	.0244	.00458	.00724	.00589	.00338	.00872
%RSD	.75057	.35935	.29125	.36890	.16988	.88385	.39503	.92803	.74293	.59341	11.466	.92018

#1	2.4321	49.220	.97800	21.125	.51655	.50312	6.1468	.49673	.97975	.99611	.03184	.95394
#2	2.4581	49.470	.98203	21.015	.51531	.49687	6.1813	.49026	.96951	.98778	.02706	.94160

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94832	4.7530	10.171	.93041	.47992	.00452	.51064	.94865	-.01911	.51679	.50853	.50147
Stddev	.00989	.0340	.073	.00941	.00170	.00048	.00098	.00351	.02028	.00159	.00024	.00331
%RSD	1.0424	.71629	.71629	1.0117	.35371	10.540	.19273	.37048	106.12	.30705	.04809	.66040

#1	.95531	4.7289	10.120	.93707	.47872	.00419	.50994	.95113	-.03345	.51791	.50870	.49913
#2	.94133	4.7771	10.223	.92376	.48112	.00486	.51133	.94616	-.00477	.51567	.50836	.50381

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3730.2	48153.	2717.3
Stddev	.8	1096.	16.1
%RSD	.02153	2.2760	.59416

#1	3730.7	47378.	2728.7
#2	3729.6	48928.	2705.9

Sample Name: CCB Acquired: 5/14/2019 16:44:28 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00087	-.00243	.00445	.00008	.00043	.00032	.00359	.00591	.00008	-.00024	.00028	-.00165
Stddev	.00164	.00004	.00460	.00165	.00015	.00007	.00007	.00419	.00007	.00001	.00034	.00147
%RSD	187.39	1.6362	103.32	1973.0	34.136	23.334	1.8334	70.874	81.748	5.4227	118.96	89.407

#1	-.00028	-.00246	.00120	-.00108	.00053	.00037	.00364	.00887	.00013	-.00025	.00004	-.00061
#2	.00203	-.00240	.00770	.00125	.00032	.00027	.00354	.00295	.00004	-.00023	.00052	-.00269

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01494	.16065	-.00395	-.00632	.00016	.00112	F .76253	-.00426	-.00044	.00331	.02779	.00375
Stddev	.00032	.03174	.00474	.00050	.00001	.00010	.02338	.00059	.00047	.00040	.00496	.00055
%RSD	2.1341	19.755	119.82	7.9473	5.7868	8.7415	3.0656	13.770	108.53	12.108	17.837	14.750

#1	.01517	.18310	-.00730	-.00667	.00017	.00119	.74600	-.00468	-.00010	.00303	.03130	.00414
#2	.01472	.13821	-.00060	-.00596	.00016	.00105	.77906	-.00385	-.00077	.00359	.02429	.00336

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							.50000					
Low Limit							-.50000					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00278	-.02279	-.04877	-.00048	-.00011	-.00151	.00003	.00336	.03712	-.00006	-.00209	.00358
Stddev	.00019	.01534	.03283	.00033	.00000	.00121	.00002	.00148	.04252	.00034	.00004	.00595
%RSD	6.9305	67.318	67.318	68.323	3.1894	79.836	71.462	44.063	114.53	523.45	2.1479	166.36

#1	.00291	-.03364	-.07198	-.00025	-.00011	-.00236	.00005	.00231	.06719	-.00031	-.00206	.00778
#2	.00264	-.01194	-.02555	-.00072	-.00011	-.00066	.00002	.00440	.00706	.00018	-.00212	-.00063

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3742.0	49738.	2827.0
Stddev	6.9	252.	12.9
%RSD	.18530	.50600	.45642

#1	3737.1	49560.	2836.1
#2	3746.9	49916.	2817.9

Sample Name: CCVL-5701318 Acquired: 5/14/2019 16:47:04 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01253	.09412	F .00886	.09278	.00979	.00098	.09741	.18260	.00466	.00958	.00881	.01330
Stddev	.00349	.00103	.00699	.00059	.00003	.00011	.00337	.00253	.00028	.00027	.00003	.00028
%RSD	27.843	1.0990	78.911	.63919	.30607	11.261	3.4617	1.3836	5.9864	2.7969	.34227	2.0904

#1	.01006	.09486	.00391	.09319	.00977	.00106	.09502	.18081	.00486	.00939	.00883	.01349
#2	.01500	.09339	.01380	.09236	.00981	.00091	.09979	.18439	.00447	.00977	.00879	.01310

Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.01500									
Range			-30.000%									

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.11247	3.0024	.01846	.20967	.01059	.01911	F 1.6428	.03570	2.7269	.01128	.09772	.02361
Stddev	.00370	.0311	.00342	.00385	.00020	.00008	.0341	.00051	.0364	.00071	.00238	.00047
%RSD	3.2889	1.0353	18.510	1.8345	1.9089	.42594	2.0753	1.4152	1.3348	6.2610	2.4343	1.9740

#1	.10986	3.0244	.02087	.21239	.01045	.01916	1.6669	.03605	2.7527	.01178	.09940	.02394
#2	.11509	2.9804	.01604	.20695	.01073	.01905	1.6187	.03534	2.7012	.01078	.09604	.02328

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							1.0000					
Range							30.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02094	.47698	1.0207	.09251	.00922	.01228	.01031	.01721	F .10705	.01065	.01987	.01845
Stddev	.00246	.01462	.0313	.00307	.00004	.00081	.00004	.00124	.01652	.00096	.00011	.00187
%RSD	11.755	3.0659	3.0659	3.3211	.40365	6.6023	.35324	7.1911	15.433	9.0554	.54628	10.112

#1	.01920	.46664	.99861	.09468	.00919	.01171	.01034	.01633	.11873	.00997	.01995	.01977
#2	.02268	.48732	1.0429	.09033	.00924	.01286	.01029	.01808	.09537	.01133	.01980	.01713

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value									.06000			
Range									30.000%			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3701.5	49272.	2807.4
Stddev	15.0	34.	28.5
%RSD	.40434	.06941	1.0154

#1	3712.1	49247.	2787.3
#2	3691.0	49296.	2827.6

Sample Name: MB 280-456954/1-A Acquired: 5/14/2019 16:49:37 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/6 Custom ID2: Custom ID3:
Comment: 456954 6010B (Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00088	.00197	.00096	.00045	.00021	.00157	.00086	.00003
Stddev	.00106	.00054	.00214	.00066	.00082	.00006	.00219	.00201	.00012
%RSD	1224.6	61.721	108.81	68.754	182.08	28.812	139.37	233.73	371.98

#1	-.00066	.00126	.00045	.00143	.00103	.00017	-.00312	.00229	.00005
#2	.00084	.00050	.00348	.00049	-.00013	.00025	-.00002	-.00056	-.00011

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	-.00011	-.00040	.00961	.14555	.00133	-.00048	.00057	.00043
Stddev	.00019	.00041	.00011	.00140	.04808	.00015	.00214	.00001	.00033
%RSD	110.68	370.46	26.202	14.566	33.034	11.144	442.72	1.8252	76.053

#1	.00004	.00018	-.00048	.00862	.11155	.00143	-.00200	.00056	.00066
#2	.00030	-.00040	-.00033	.01060	.17955	.00122	.00103	.00057	.00020

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W .62971	-.00380	-.00019	.00128	.01744	.00363	.00397	-.00781	-.01670
Stddev	.00008	.00002	.00259	.00120	.00120	.00198	.00202	.00844	.01805
%RSD	.01342	.55769	1331.0	93.821	6.8530	54.742	50.733	108.07	108.07

#1	.62965	-.00379	.00164	.00043	.01829	.00222	.00540	-.00184	-.00394
#2	.62977	-.00382	-.00203	.00213	.01660	.00503	.00255	-.01377	-.02947

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit	.50000								
Low Limit	-.50000								

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	-.00014	-.00129	.00031	.00219	.02380	.00024	.00009	.00260
Stddev	.00015	.00005	.00095	.00055	.00120	.00509	.00036	.00049	.00046
%RSD	21.662	38.419	73.892	177.93	54.898	21.382	153.12	558.14	17.724

#1	.00082	-.00010	-.00196	.00070	.00134	.02740	.00049	.00043	.00292
#2	.00060	-.00018	-.00062	-.00008	.00303	.02020	-.00002	-.00026	.00227

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3702.4	50589.	2833.7
Stddev	1.3	268.	3.2
%RSD	.03528	.52991	.11415

#1	3703.4	50400.	2836.0
#2	3701.5	50779.	2831.4

Sample Name: LCS 280-456954/2-A Acquired: 5/14/2019 16:52:12 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456954 6010B (Na)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00359	9.5431	1.8363	.91957	1.8154	.91489	1.8174	44.543	.93018
Stddev	.00057	.0823	.0088	.00283	.0064	.00369	.0109	.211	.00389
%RSD	15.967	.86206	.47924	.30756	.35014	.40383	.60035	.47461	.41792

#1	.00318	9.4849	1.8425	.92157	1.8109	.91228	1.8251	44.393	.93293
#2	.00399	9.6012	1.8301	.91757	1.8199	.91750	1.8097	44.692	.92744

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.91566	.87441	.93947	9.3186	48.286	.94490	50.463	.99169	.96282
Stddev	.00520	.00749	.00045	.0181	.227	.00268	.181	.00173	.00544
%RSD	.56755	.85620	.04809	.19386	.46933	.28381	.35806	.17465	.56532

#1	.91934	.87970	.93915	9.3058	48.126	.94301	50.591	.99291	.96667
#2	.91199	.86911	.93979	9.3313	48.447	.94680	50.335	.99046	.95898

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	48.950	.91807	18.932	.93352	8.6041	.00402	1.7962	1.8451	3.9485
Stddev	.576	.00487	.100	.00743	.0570	.00099	.0105	.0220	.0470
%RSD	1.1775	.53087	.53007	.79539	.66195	24.669	.58551	1.1912	1.1912

#1	49.358	.92151	19.003	.93877	8.6444	.00332	1.8036	1.8296	3.9153
#2	48.543	.91462	18.861	.92827	8.5638	.00473	1.7887	1.8606	3.9818

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.7683	.92155	.98384	.99421	1.7443	2.0239	1.0108	.48721	.50434
Stddev	.0122	.00347	.00345	.00027	.0169	.0825	.0019	.00054	.00123
%RSD	.69205	.37670	.35075	.02706	.97020	4.0771	.19089	.11114	.24345

#1	1.7770	.91910	.98628	.99440	1.7563	1.9655	1.0121	.48682	.50347
#2	1.7597	.92401	.98140	.99402	1.7324	2.0822	1.0094	.48759	.50521

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3621.2	47541.	2774.7
Stddev	13.4	59.	9.7
%RSD	.37139	.12489	.34796

#1	3611.6	47499.	2781.5
#2	3630.7	47583.	2767.8

Sample Name: LCSD 280-456954/3-A Acquired: 5/14/2019 16:54:31 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456954 6010B (Na)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00348	9.4644	1.8457	.92344	1.8266	.92182	1.8288	44.592	.93702
Stddev	.00024	.0125	.0062	.00561	.0065	.00293	.0165	.248	.00692
%RSD	6.9929	.13241	.33737	.60736	.35355	.31802	.90372	.55508	.73855

#1	.00365	9.4732	1.8501	.92740	1.8220	.91975	1.8405	44.417	.94191
#2	.00330	9.4555	1.8413	.91947	1.8312	.92389	1.8171	44.767	.93213

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.92183	.88560	.94741	9.3389	48.486	.95504	50.502	.99822	.97060
Stddev	.00891	.00496	.00209	.0538	.316	.00437	.199	.00237	.00866
%RSD	.96653	.56058	.22075	.57580	.65070	.45734	.39338	.23699	.89254

#1	.92813	.88911	.94889	9.3009	48.263	.95195	50.642	.99989	.97673
#2	.91553	.88209	.94594	9.3769	48.709	.95812	50.361	.99655	.96448

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	49.546	.92415	19.010	.94032	8.6652	.00882	1.8119	1.9208	4.1106
Stddev	.923	.00797	.161	.00563	.0497	.00184	.0007	.0408	.0873
%RSD	1.8633	.86246	.84806	.59895	.57384	20.906	.03992	2.1232	2.1232

#1	50.199	.92978	19.124	.94430	8.7003	.01012	1.8124	1.8920	4.0489
#2	48.893	.91851	18.896	.93633	8.6300	.00752	1.8113	1.9497	4.1723

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.7845	.92658	.98739	1.0024	1.7611	2.0455	1.0194	.48951	.50631
Stddev	.0156	.00347	.00212	.0036	.0131	.0653	.0054	.00036	.00506
%RSD	.87583	.37492	.21492	.35973	.74488	3.1936	.52939	.07295	.99845

#1	1.7955	.92412	.98889	1.0049	1.7704	2.0917	1.0232	.48977	.50274
#2	1.7734	.92904	.98589	.99983	1.7519	1.9993	1.0156	.48926	.50989

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3629.6	47658.	2779.7
Stddev	9.6	53.	8.8
%RSD	.26462	.11034	.31762

#1	3622.8	47621.	2785.9
#2	3636.4	47695.	2773.5

Sample Name: 280-123216-B-1-A Acquired: 5/14/2019 16:56:48 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456954 6010B (Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.02359	-.00270	.24197	.22282	.00032	.00155	63.292	.00008
Stddev	.00023	.00042	.00867	.00298	.00185	.00009	.00651	.200	.00013
%RSD	146.00	1.7646	321.02	1.2325	.82827	29.109	421.23	.31608	167.80

#1	.00032	.02330	-.00883	.24408	.22413	.00025	.00615	63.433	-.00001
#2	-.00001	.02389	.00343	.23987	.22152	.00038	-.00306	63.150	.00017

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00048	.00468	-.00094	.03009	2.2116	.03302	47.306	.00131	.00792
Stddev	.00008	.00026	.00018	.00103	.0106	.00068	.089	.00004	.00046
%RSD	17.514	5.4805	19.006	3.4368	.47825	2.0540	.18861	2.9940	5.8429

#1	-.00042	.00486	-.00107	.03082	2.2041	.03350	47.370	.00128	.00825
#2	-.00054	.00450	-.00082	.02936	2.2191	.03254	47.243	.00134	.00759

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	244.44	.00684	.00654	.00043	19.209	.00257	.00200	9.9189	21.226
Stddev	1.45	.00063	.00014	.00189	.152	.00028	.00174	.0115	.025
%RSD	.59379	9.2083	2.0756	442.27	.79217	10.966	86.941	.11623	.11623

#1	245.46	.00728	.00644	-.00091	19.317	.00237	.00323	9.9271	21.244
#2	243.41	.00639	.00664	.00177	19.101	.00277	.00077	9.9108	21.209

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.79362	-.00166	.00063	.00258	.00417	.00259	.00484	.00353
Stddev	.00044	.00127	.00114	.00019	.00278	.08938	.00025	.00074	.00331
%RSD	4112.2	.16046	68.372	30.098	107.84	2144.7	9.6335	15.328	93.708

#1	-.00032	.79452	-.00247	.00049	.00454	.06737	.00277	.00431	.00119
#2	.00030	.79272	-.00086	.00076	.00061	-.05904	.00242	.00536	.00587

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3611.1	47534.	2787.6
Stddev	3.1	92.	26.5
%RSD	.08471	.19382	.95064

#1	3613.3	47469.	2768.8
#2	3609.0	47599.	2806.3

Sample Name: 280-123216-B-2-A Acquired: 5/14/2019 16:59:20 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456954 6010B (Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.03336	.00210	.24356	.22576	.00020	-.00130	64.256	.00024
Stddev	.00030	.00030	.00945	.00166	.00053	.00010	.00548	.139	.00014
%RSD	111.39	.88997	449.88	.68258	.23630	49.397	420.76	.21682	57.174

#1	.00048	.03315	.00878	.24238	.22538	.00027	.00257	64.158	.00034
#2	.00006	.03357	-.00458	.24474	.22614	.00013	-.00518	64.355	.00014

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	.00459	-.00017	.03416	2.2624	.03228	48.426	.00161	.00691
Stddev	.00048	.00050	.00001	.00251	.0094	.00204	.098	.00006	.00032
%RSD	130.67	10.817	7.0843	7.3566	.41438	6.3250	.20168	3.8008	4.6246

#1	-.00071	.00424	-.00018	.03239	2.2558	.03083	48.495	.00166	.00669
#2	-.00003	.00494	-.00016	.03594	2.2690	.03372	48.357	.00157	.00714

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	249.56	.00839	.02975	.00016	19.025	-.00135	.00049	10.106	21.627
Stddev	.31	.00058	.00068	.00009	.081	.00842	.00076	.050	.106
%RSD	.12244	6.9713	2.2894	54.455	.42478	623.49	154.05	.49240	.49240

#1	249.78	.00797	.02927	.00022	18.968	.00460	.00103	10.071	21.551
#2	249.35	.00880	.03024	.00010	19.082	-.00731	-.00004	10.141	21.702

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	.80887	-.00124	.00042	-.00161	-.00264	.00226	.00243	.00158
Stddev	.00060	.00016	.00252	.00042	.00039	.05058	.00069	.00030	.00300
%RSD	60.624	.01939	203.57	99.670	24.346	1913.8	30.697	12.277	189.97

#1	.00056	.80898	-.00302	.00072	-.00134	.03312	.00275	.00222	-.00054
#2	.00141	.80876	.00054	.00012	-.00189	-.03841	.00177	.00264	.00370

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3656.2	47506.	2816.7
Stddev	28.1	92.	7.7
%RSD	.76917	.19281	.27495

#1	3676.1	47571.	2811.2
#2	3636.3	47441.	2822.1

Sample Name: 280-123216-B-3-A Acquired: 5/14/2019 17:01:51 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456954 6010B (Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.01584	.00557	.06220	.06711	.00017	-.00056	28.379	-.00006
Stddev	.00078	.00059	.00019	.00033	.00035	.00012	.00273	.056	.00026
%RSD	1047.0	3.7346	3.4128	.52670	.52201	70.154	485.45	.19627	443.52

#1	.00062	.01626	.00543	.06243	.06736	.00008	.00137	28.339	.00012
#2	-.00047	.01542	.00570	.06197	.06686	.00025	-.00249	28.418	-.00024

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.01582	.00112	.02108	4.1969	.00820	2.6058	.00140	.00661
Stddev	.00027	.00044	.00016	.00038	.0662	.00250	.0099	.00009	.00021
%RSD	596.26	2.7731	14.430	1.7961	1.5769	30.476	.38099	6.3104	3.1810

#1	.00014	.01613	.00124	.02135	4.1501	.00997	2.6128	.00147	.00676
#2	-.00024	.01551	.00101	.02081	4.2436	.00643	2.5988	.00134	.00646

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	62.965	-.00352	.01955	.00048	6.7451	.00322	-.00361	3.4646	7.4143
Stddev	.364	.00011	.00001	.00163	.0346	.00090	.00376	.0321	.0686
%RSD	.57837	3.0778	.06697	339.45	.51241	27.924	104.17	.92534	.92534

#1	62.708	-.00345	.01954	-.00067	6.7695	.00386	-.00627	3.4873	7.4628
#2	63.223	-.00360	.01956	.00163	6.7206	.00259	-.00095	3.4419	7.3658

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.21844	.00263	.00017	.00432	-.00268	.00213	.00326	.00677
Stddev	.00152	.00060	.00032	.00001	.00072	.05984	.00110	.00030	.00145
%RSD	269.86	.27565	12.343	5.6753	16.664	2235.1	51.475	9.2465	21.477

#1	-.00051	.21801	.00240	.00018	.00381	.03964	.00290	.00304	.00574
#2	.00164	.21886	.00286	.00016	.00483	-.04499	.00135	.00347	.00780

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3756.5	49500.	2889.2
Stddev	9.7	39.	18.5
%RSD	.25925	.07819	.64189

#1	3763.4	49473.	2876.0
#2	3749.6	49528.	2902.3

Sample Name: 280-123216-B-4-A Acquired: 5/14/2019 17:04:25 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456954 6010B (Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.02014	-.00200	.06062	.06858	.00014	.00087	28.541	.00012
Stddev	.00131	.00079	.00315	.00105	.00071	.00010	.00545	.032	.00025
%RSD	1205.9	3.9430	157.57	1.7391	1.0332	71.349	627.26	.11125	209.51

#1	.00082	.02070	-.00423	.06136	.06908	.00007	-.00299	28.564	.00030
#2	-.00104	.01958	.00023	.05987	.06808	.00021	.00472	28.519	-.00006

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.01571	.00088	.13821	4.0522	.01126	2.5537	.00170	.00652
Stddev	.00003	.00035	.00013	.00420	.0577	.00398	.0307	.00006	.00002
%RSD	9.4580	2.2419	15.071	3.0411	1.4229	35.324	1.2005	3.3028	.27095

#1	.00031	.01596	.00079	.13524	4.0930	.00845	2.5754	.00174	.00651
#2	.00028	.01546	.00098	.14119	4.0114	.01408	2.5320	.00166	.00653

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	62.977	-.00370	.02353	.00133	7.5438	.00388	.00199	3.4614	7.4074
Stddev	.677	.00002	.00014	.00019	.0796	.00105	.00041	.0061	.0132
%RSD	1.0749	.55537	.59536	13.993	1.0551	26.999	20.607	.17749	.17749

#1	62.498	-.00368	.02363	.00146	7.6001	.00462	.00170	3.4571	7.3981
#2	63.456	-.00371	.02343	.00120	7.4876	.00314	.00228	3.4658	7.4167

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00405	.21783	.00025	.00092	.00206	.01828	.00246	.01317	.00512
Stddev	.00009	.00009	.00072	.00065	.00085	.01676	.00022	.00024	.00058
%RSD	2.2638	.03989	288.44	71.100	41.435	91.728	8.8634	1.8142	11.352

#1	.00398	.21789	-.00026	.00046	.00146	.03013	.00261	.01300	.00553
#2	.00411	.21777	.00075	.00138	.00266	.00642	.00230	.01334	.00471

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3756.6	49717.	2874.7
Stddev	5.1	54.	3.7
%RSD	.13609	.10935	.12868

#1	3760.2	49678.	2877.4
#2	3753.0	49755.	2872.1

Sample Name: CCVH-5699817 Acquired: 5/14/2019 17:06:58 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .01667	45.721	k -.00103	k .00479	k .00331	k .00157	k .90711	k .00231	k -.00019	k .00403	k .00125	k .00941
Stddev	.00053	.151	.00032	.00023	.00014	.00019	.00445	.00625	.00003	.00000	.00019	.00064
%RSD	3.2010	.33085	30.874	4.7463	4.2962	12.190	.49065	270.21	18.525	.03646	15.006	6.8225

#1	k .01629	45.828	k -.00080	k .00463	k .00341	k .00170	k .91026	k .00673	k -.00016	k .00403	k .00139	k .00896
#2	k .01705	45.614	k -.00125	k .00495	k .00321	k .00143	k .90396	k -.00211	k -.00021	k .00403	k .00112	k .00986

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	kF 43.622	.29017	.00516	k .03480	k .00135	k -.00043	239.81	k .00088	k .00404	k .01779	k 4.4957	k -.03215
Stddev	.243	.07487	.00107	.00272	.00002	.00001	1.10	.00011	.00077	.00073	.0544	.00289
%RSD	.55753	25.803	20.724	7.8257	1.6484	1.1960	.45701	12.668	18.979	4.0976	1.2104	8.9877

#1	k 43.794	.34311	.00592	k .03672	k .00136	k -.00042	240.58	k .00096	k .00459	k .01830	k 4.5342	k -.03011
#2	k 43.450	.23723	.00441	k .03287	k .00133	k -.00043	239.03	k .00080	k .00350	k .01727	k 4.4572	k -.03420

Check ?	Chk Fail	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None
Value	50.000											
Range	-10.490%											

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.00867	k -.02867	k -.06135	k .00179	.00168	k 5.0897	k .02177	k .00443	k 9.8739	k .00993	k .00282	k .28761
Stddev	.00356	.01865	.03991	.00167	.00021	.0056	.00017	.00240	.0046	.00166	.00009	.00382
%RSD	41.088	65.055	65.055	93.140	12.507	.10922	.78657	54.222	.04644	16.730	3.0287	1.3298

#1	k -.00615	k -.04186	k -.08957	k .00298	.00183	k 5.0936	k .02165	k .00273	k 9.8707	k .00876	k .00276	k .29032
#2	k -.01119	k -.01548	k -.03313	k .00061	.00153	k 5.0857	k .02189	k .00612	k 9.8772	k .01111	k .00288	k .28491

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3711.6	49253.	2813.5
Stddev	9.8	71.	13.1
%RSD	.26496	.14482	.46594

#1	3718.5	49304.	2822.8
#2	3704.6	49203.	2804.2

Sample Name: CCV-5699804 Acquired: 5/14/2019 17:09:28 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52109	.50938	.93214	.46831	.46284	.46522	.00296	4.5516	.47709	.48536	.45298	.48834
Stddev	.00127	.00600	.00288	.00118	.00077	.00238	.00124	.0228	.00339	.00328	.00393	.00002
%RSD	.24464	1.1781	.30910	.25228	.16725	.51115	41.851	.50181	.71133	.67519	.86814	.00318

#1	.52019	.51363	.93418	.46914	.46229	.46353	.00208	4.5355	.47949	.48768	.45577	.48832
#2	.52199	.50514	.93010	.46747	.46339	.46690	.00383	4.5678	.47469	.48305	.45020	.48835

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.3883	48.407	.95899	20.803	.50781	.49125	F 5.8228	.48604	.95352	.97909	.00996	.92587
Stddev	.0211	.259	.00099	.017	.00053	.00416	.0016	.00269	.01010	.00189	.00265	.00735
%RSD	.88513	.53476	.10328	.08379	.10402	.84660	.02726	.55445	1.0594	.19295	26.620	.79369

#1	2.3734	48.224	.95829	20.815	.50743	.49419	5.8216	.48795	.96066	.98042	.01184	.93107
#2	2.4033	48.590	.95969	20.791	.50818	.48831	5.8239	.48413	.94638	.97775	.00809	.92068

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93107	4.6372	9.9235	.91229	.46946	.00102	.50148	.92528	.02521	.50912	.49896	.49666
Stddev	.00397	.0164	.0350	.00635	.00231	.00150	.00028	.00619	.00287	.00042	.00072	.00649
%RSD	.42594	.35299	.35299	.69592	.49194	147.77	.05668	.66945	11.382	.08173	.14349	1.3066

#1	.93388	4.6256	9.8988	.91678	.46783	.00208	.50168	.92966	.02319	.50882	.49947	.49207
#2	.92827	4.6487	9.9483	.90780	.47110	-.00005	.50127	.92090	.02724	.50941	.49845	.50124

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3676.3	48452.	2787.8
Stddev	12.4	46.	21.9
%RSD	.33800	.09580	.78699

#1	3667.5	48419.	2803.3
#2	3685.1	48485.	2772.3

Sample Name: CCB Acquired: 5/14/2019 17:11:52 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	-.00113	-.00550	.00104	.00070	.00015	.00088	.00262	.00030	-.00009	-.00012	-.00167
Stddev	.00088	.00006	.00202	.00033	.00052	.00018	.00440	.00873	.00011	.00017	.00025	.00101
%RSD	86.209	5.2164	36.710	31.695	74.564	125.70	500.18	332.63	37.250	193.25	202.86	60.500
#1	.00040	-.00117	-.00407	.00127	.00106	.00027	.00399	.00880	.00022	-.00020	.00005	-.00096
#2	.00164	-.00109	-.00693	.00081	.00033	.00002	-.00223	-.00355	.00038	.00003	-.00030	-.00239
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W .07608	.16523	-.00656	-.00165	.00070	.00122	F .58297	-.00456	-.00033	-.00077	.00752	.00477
Stddev	.00012	.06252	.00055	.00484	.00002	.00001	.00800	.00093	.00172	.00103	.00096	.00012
%RSD	.16408	37.836	8.3191	293.32	2.4802	1.1651	1.3725	20.376	522.50	134.40	12.729	2.4493
#1	.07600	.20943	-.00695	.00177	.00071	.00123	.57731	-.00522	.00089	-.00004	.00820	.00469
#2	.07617	.12102	-.00617	-.00508	.00069	.00121	.58863	-.00390	-.00154	-.00150	.00685	.00486
Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.05000						.50000					
Low Limit	-.05000						-.50000					
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00066	-.01005	-.02150	.00103	-.00012	-.00089	.00050	.00166	-.00230	.00030	-.00199	.00441
Stddev	.00349	.04412	.09441	.00021	.00011	.00124	.00024	.00212	.04109	.00089	.00023	.00194
%RSD	532.60	439.07	439.07	20.402	94.346	138.48	48.492	127.83	1789.2	297.52	11.329	44.008
#1	-.00313	-.04124	-.08826	.00118	-.00004	-.00177	.00033	.00016	.02676	-.00033	-.00215	.00304
#2	.00181	.02115	.04525	.00088	-.00020	-.00002	.00067	.00316	-.03135	.00093	-.00183	.00578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3610.0	48247.	2740.3									
Stddev	.3	134.	21.1									
%RSD	.00866	.27871	.76821									
#1	3609.8	48342.	2755.2									
#2	3610.2	48152.	2725.4									

Sample Name: CCVL-5701318 Acquired: 5/14/2019 17:14:26 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01103	.09391	.01270	.09293	.01018	.00117	.09846	.17746	.00487	.00932	.00863	.01258
Stddev	.00080	.00023	.00694	.00072	.00001	.00004	.00289	.00301	.00026	.00029	.00023	.00037
%RSD	7.2078	.24666	54.655	.77657	.14054	3.4810	2.9389	1.6968	5.4328	3.1468	2.6113	2.9497

#1	.01047	.09408	.01760	.09344	.01017	.00114	.10050	.17959	.00505	.00953	.00879	.01232
#2	.01160	.09375	.00779	.09242	.01019	.00120	.09641	.17533	.00468	.00911	.00847	.01285

Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10776	2.9625	.02044	.20623	.01030	.01926	F 1.5117	.03517	2.6969	.00972	.08843	.01964
Stddev	.00245	.0743	.00155	.00048	.00012	.00012	.0042	.00031	.0149	.00166	.00011	.00212
%RSD	2.2713	2.5097	7.5914	.23342	1.1445	.61077	.27572	.88863	.55286	17.102	.12250	10.799

#1	.10603	3.0150	.01934	.20589	.01039	.01917	1.5087	.03539	2.7074	.01090	.08851	.01814
#2	.10949	2.9099	.02153	.20657	.01022	.01934	1.5146	.03495	2.6864	.00855	.08836	.02114

Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail 1.0000 30.000%	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02114	.45808	.98029	.09020	.00919	.01307	.01000	.01499	F .11152	.00990	.01847	.01565
Stddev	.00263	.00608	.01300	.00150	.00028	.00096	.00018	.00109	.06789	.00016	.00061	.00101
%RSD	12.420	1.3266	1.3266	1.6589	3.0082	7.3712	1.7796	7.2438	60.880	1.5957	3.3034	6.4389

#1	.01929	.45378	.97109	.09125	.00899	.01238	.01013	.01423	.06351	.01001	.01890	.01636
#2	.02300	.46237	.98948	.08914	.00938	.01375	.00988	.01576	.15952	.00979	.01804	.01493

Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail .06000 30.000%	Chk Pass	Chk Pass	Chk Pass
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Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3609.4	48173.	2694.9
Stddev	5.4	142.	1.3
%RSD	.14822	.29468	.04870

#1	3605.7	48073.	2694.0
#2	3613.2	48273.	2695.9

Sample Name: 280-123216-B-5-A Acquired: 5/14/2019 17:16:59 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456954 6010B (Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00249	.04422	.00478	.21641	.24567	.00020	.00114	84.660	.00030
Stddev	.00136	.00121	.00273	.00210	.00082	.00004	.00220	.401	.00041
%RSD	54.676	2.7329	57.169	.96974	.33529	21.260	193.22	.47356	138.56

#1	.00346	.04508	.00285	.21789	.24508	.00017	.00269	84.376	.00001
#2	.00153	.04337	.00671	.21492	.24625	.00023	-.00042	84.943	.00058

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00049	.00007	-.00076	.04195	1.9424	.03555	53.310	.02409	.00126
Stddev	.00014	.00007	.00012	.00147	.0356	.00145	.098	.00012	.00011
%RSD	29.022	112.60	16.040	3.5085	1.8343	4.0663	.18403	.49301	8.8424

#1	-.00039	.00001	-.00067	.04299	1.9676	.03453	53.379	.02417	.00118
#2	-.00059	.00012	-.00085	.04091	1.9172	.03657	53.240	.02400	.00134

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	269.56	-.00469	.00833	-.00080	6.6668	.00026	.00140	10.422	22.302
Stddev	1.18	.00120	.00277	.00260	.0629	.00084	.00025	.026	.057
%RSD	.43957	25.663	33.296	325.03	.94362	317.03	18.212	.25390	.25390

#1	268.72	-.00554	.00637	-.00264	6.7113	-.00033	.00158	10.403	22.262
#2	270.40	-.00384	.01029	.00104	6.6223	.00085	.00122	10.440	22.342

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	.90589	-.00118	.00058	.00182	-.07769	.00370	.00145	.00515
Stddev	.00037	.00457	.00015	.00041	.00256	.02061	.00095	.00069	.00323
%RSD	38.289	.50446	12.429	71.488	140.85	26.529	25.702	47.804	62.661

#1	.00071	.90266	-.00108	.00087	.00001	-.06311	.00303	.00096	.00287
#2	.00123	.90912	-.00128	.00029	.00363	-.09226	.00437	.00193	.00744

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3522.0	46119.	2708.2
Stddev	20.8	41.	27.1
%RSD	.58925	.08823	.99998

#1	3507.3	46090.	2727.3
#2	3536.7	46148.	2689.0

Sample Name: 123216-B-5-A SD@5 Acquired: 5/14/2019 17:19:30 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456954 6010B (Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00664	-.00242	.04331	.04388	.00020	.00319	15.104	-.00003
Stddev	.00036	.00038	.00523	.00160	.00183	.00000	.00395	.142	.00003
%RSD	147.59	5.6930	215.84	3.7003	4.1664	1.8941	123.76	.94250	108.51

#1	-.00001	.00637	-.00612	.04217	.04259	.00020	.00599	15.003	-.00005
#2	.00049	.00690	.00127	.04444	.04517	.00020	.00040	15.204	-.00001

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	-.00017	-.00131	.02360	.47381	.00571	9.8338	.00457	.00044
Stddev	.00063	.00018	.00070	.00247	.00383	.00056	.0636	.00009	.00018
%RSD	1231.5	102.06	53.395	10.447	.80768	9.8822	.64712	2.0520	40.863

#1	.00049	-.00005	-.00082	.02535	.47111	.00611	9.7888	.00450	.00056
#2	-.00039	-.00030	-.00181	.02186	.47652	.00531	9.8788	.00463	.00031

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	49.077	-.00468	-.00244	-.00012	1.2714	-.00053	.00026	1.8052	3.8631
Stddev	1.744	.00083	.00233	.00180	.0232	.00190	.00731	.0198	.0424
%RSD	3.5533	17.722	95.700	1470.2	1.8213	356.59	2835.5	1.0977	1.0977

#1	47.844	-.00527	-.00409	.00115	1.2550	-.00187	-.00491	1.8192	3.8931
#2	50.310	-.00410	-.00079	-.00139	1.2877	.00081	.00543	1.7912	3.8332

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.16193	-.00175	.00001	.00174	.00103	.00088	-.00078	.00347
Stddev	.00092	.00225	.00135	.00021	.00169	.02526	.00091	.00001	.00057
%RSD	235.28	1.3879	77.081	2218.9	96.932	2461.9	104.13	1.0381	16.293

#1	.00026	.16034	-.00080	-.00014	.00294	-.01684	.00023	-.00079	.00387
#2	-.00104	.16352	-.00270	.00016	.00055	.01889	.00152	-.00078	.00307

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3731.9	48989.	2769.8
Stddev	5.3	314.	9.3
%RSD	.14239	.64177	.33402

#1	3728.2	48767.	2763.2
#2	3735.7	49211.	2776.3

Sample Name: 280-123216-B-5-B MS Acquired: 5/14/2019 17:22:03 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456954 6010B (Na)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00343	9.6840	1.8902	1.1319	2.0727	.93213	1.8254	128.62	.95308
Stddev	.00019	.0870	.0107	.0022	.0041	.00148	.0092	.16	.00536
%RSD	5.5611	.89824	.56656	.19282	.19794	.15913	.50691	.12752	.56269

#1	.00356	9.6225	1.8978	1.1335	2.0698	.93108	1.8320	128.50	.95687
#2	.00329	9.7455	1.8826	1.1304	2.0756	.93318	1.8189	128.73	.94928

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.91495	.88472	.95258	9.3996	52.742	.99454	104.76	1.0187	.97597
Stddev	.00511	.00348	.00059	.0113	.133	.00236	.25	.0022	.00645
%RSD	.55900	.39315	.06186	.12029	.25141	.23736	.23449	.22008	.66120

#1	.91857	.88718	.95217	9.3916	52.648	.99287	104.93	1.0202	.98053
#2	.91133	.88226	.95300	9.4076	52.836	.99621	104.59	1.0171	.97141

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	318.95	.91232	19.624	.91999	15.745	.00383	1.8408	12.459	26.663
Stddev	.49	.00449	.116	.00522	.046	.00256	.0094	.018	.039
%RSD	.15469	.49237	.59113	.56690	.28973	66.896	.51238	.14744	.14744

#1	318.60	.91550	19.706	.92368	15.777	.00202	1.8475	12.472	26.690
#2	319.29	.90915	19.542	.91630	15.713	.00565	1.8342	12.446	26.635

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.7735	1.8328	.99240	1.0132	1.6859	2.0428	1.0372	.49318	.50505
Stddev	.0102	.0023	.00143	.0005	.0083	.0109	.0043	.00175	.00508
%RSD	.57264	.12475	.14397	.04770	.49151	.53222	.40938	.35560	1.0054

#1	1.7807	1.8312	.99139	1.0136	1.6918	2.0351	1.0402	.49442	.50146
#2	1.7664	1.8344	.99341	1.0129	1.6801	2.0505	1.0342	.49194	.50864

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3636.3	47419.	2843.7
Stddev	9.9	5.	24.8
%RSD	.27277	.01061	.87094

#1	3643.3	47423.	2861.2
#2	3629.3	47415.	2826.2

Sample Name: 280-123216-B-5-C MSD Acquired: 5/14/2019 17:24:21 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456954 6010B (Na)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00291	9.7172	1.9095	1.1576	2.0909	.93920	1.8427	130.85	.95576
Stddev	.00080	.0493	.0097	.0068	.0023	.00068	.0198	.03	.00630
%RSD	27.638	.50772	.50670	.58734	.10786	.07192	1.0757	.02598	.65886

#1	.00234	9.7521	1.9163	1.1624	2.0925	.93872	1.8567	130.87	.96021
#2	.00347	9.6823	1.9026	1.1528	2.0893	.93968	1.8286	130.82	.95131

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.91749	.88760	.96251	9.4219	52.595	1.0078	105.85	1.0232	.98576
Stddev	.00752	.00821	.00246	.0047	.078	.0005	.21	.0009	.00881
%RSD	.81940	.92475	.25559	.04944	.14862	.05176	.19689	.08802	.89380

#1	.92281	.89340	.96077	9.4252	52.539	1.0081	105.99	1.0238	.99200
#2	.91218	.88179	.96425	9.4186	52.650	1.0074	105.70	1.0226	.97953

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	323.21	.91452	19.757	.92136	15.996	.00557	1.8554	12.684	27.144
Stddev	.09	.00602	.132	.00768	.145	.00618	.0219	.035	.075
%RSD	.02726	.65878	.67007	.83301	.90850	111.05	1.1824	.27803	.27803

#1	323.27	.91878	19.851	.92679	16.099	.00994	1.8709	12.659	27.091
#2	323.15	.91026	19.664	.91594	15.893	.00120	1.8399	12.709	27.197

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.7830	1.8605	1.0011	1.0208	1.6852	2.0138	1.0413	.49142	.50963
Stddev	.0161	.0013	.0033	.0025	.0187	.0021	.0036	.00030	.00349
%RSD	.90344	.07124	.32533	.24919	1.1069	.10441	.34325	.06205	.68569

#1	1.7944	1.8596	1.0034	1.0226	1.6984	2.0153	1.0438	.49120	.51210
#2	1.7716	1.8615	.99881	1.0190	1.6720	2.0123	1.0387	.49164	.50716

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3568.3	47052.	2802.0
Stddev	2.3	145.	.1
%RSD	.06419	.30907	.00530

#1	3566.7	47155.	2801.9
#2	3570.0	46949.	2802.1

Sample Name: 280-123216-B-6-A Acquired: 5/14/2019 17:26:39 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456954 6010B (Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.03749	-.00571	.22414	.24875	.00032	-.00210	85.296	.00031
Stddev	.00032	.00049	.00409	.00093	.00115	.00011	.00262	.154	.00005
%RSD	42.010	1.2947	71.626	.41419	.46416	32.926	124.94	.18092	15.149

#1	.00054	.03783	-.00860	.22480	.24793	.00025	-.00024	85.187	.00028
#2	.00099	.03715	-.00282	.22349	.24957	.00040	-.00395	85.405	.00034

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	.00021	.00000	.25868	2.1725	.03820	53.685	.02428	.00353
Stddev	.00026	.00004	.00059	.00142	.0872	.00110	.167	.00007	.00033
%RSD	68.649	20.697	25562.	.54877	4.0134	2.8918	.31111	.27528	9.2944

#1	-.00055	.00018	-.00042	.25768	2.1108	.03742	53.803	.02432	.00330
#2	-.00019	.00024	.00042	.25968	2.2341	.03898	53.567	.02423	.00376

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	273.20	-.00503	.01020	-.00076	6.8200	.00121	-.00510	10.604	22.693
Stddev	.06	.00024	.00196	.00348	.0316	.00060	.00289	.001	.002
%RSD	.02228	4.8209	19.251	459.04	.46359	49.354	56.734	.00982	.00982

#1	273.25	-.00486	.01159	-.00322	6.8423	.00163	-.00305	10.605	22.694
#2	273.16	-.00520	.00881	.00170	6.7976	.00079	-.00714	10.603	22.691

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00149	.91621	-.00222	.00059	.00236	.04493	.00403	.00015	.00324
Stddev	.00133	.00184	.00374	.00028	.00110	.08963	.00007	.00014	.00288
%RSD	89.582	.20095	168.24	47.238	46.817	199.51	1.6434	91.853	88.768

#1	.00055	.91491	.00042	.00078	.00314	-.01845	.00408	.00025	.00527
#2	.00243	.91751	-.00487	.00039	.00158	.10830	.00399	.00005	.00121

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3613.2	47279.	2795.8
Stddev	21.7	155.	1.7
%RSD	.59959	.32773	.05952

#1	3597.8	47389.	2797.0
#2	3628.5	47170.	2794.7

Sample Name: CCVH-5699817 Acquired: 5/14/2019 17:29:12 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .01760	46.172	k -.00106	k .00611	k .00342	k .00162	k .91325	k .00771	k -.00009	k .00406	k .00150	k .00850
Stddev	.00104	.140	.00267	.00058	.00038	.00025	.00830	.00734	.00003	.00024	.00029	.00025
%RSD	5.9010	.30393	251.22	9.4223	11.126	15.282	.90857	95.194	37.682	6.0309	19.553	2.9595

#1	k .01687	46.271	k .00083	k .00652	k .00369	k .00179	k .91912	k .01290	k -.00011	k .00388	k .00171	k .00868
#2	k .01834	46.073	k -.00296	k .00570	k .00315	k .00144	k .90738	k .00252	k -.00007	k .00423	k .00130	k .00832

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	kF 43.784	.49365	.00301	k .03936	k .00036	k .00027	241.86	k -.00024	k .00903	k .01744	k 4.5077	k -.03054
Stddev	.682	.05620	.00337	.00091	.00008	.00043	2.52	.00072	.00333	.00026	.0316	.00042
%RSD	1.5573	11.384	112.11	2.3210	22.914	159.25	1.0420	297.10	36.927	1.4763	.70092	1.3703

#1	k 44.266	.53339	.00539	k .03871	k .00042	k -.00003	243.64	k .00027	k .01139	k .01726	k 4.5300	k -.03083
#2	k 43.302	.45391	.00062	k .04000	k .00030	k .00057	240.07	k -.00076	k .00667	k .01762	k 4.4853	k -.03024

Check ?	Chk Fail	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None
Value	50.000											
Range	-10.490%											

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.00824	k -.01850	k -.03960	k .00056	.00154	k 5.1583	k .02241	k .00391	k 9.9368	k .01001	k .00334	k .29090
Stddev	.00310	.00428	.00916	.00065	.00021	.0051	.00026	.00168	.0623	.00145	.00012	.00377
%RSD	37.646	23.125	23.125	115.18	13.356	.09881	1.1430	43.139	.62712	14.499	3.5142	1.2969

#1	k -.00605	k -.02153	k -.04607	k .00010	.00169	k 5.1619	k .02223	k .00510	k 9.9809	k .00899	k .00325	k .28823
#2	k -.01043	k -.01548	k -.03312	k .00102	.00140	k 5.1546	k .02259	k .00271	k 9.8928	k .01104	k .00342	k .29357

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3600.2	47330.	2743.2
Stddev	11.7	143.	11.0
%RSD	.32556	.30240	.40026

#1	3591.9	47229.	2735.4
#2	3608.5	47431.	2750.9

Sample Name: CCV-5699804 Acquired: 5/14/2019 17:31:42 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51798	.51166	.93864	.47271	.46671	.46856	.00195	4.5516	.48021	.48580	.45742	.48794
Stddev	.00221	.00506	.00211	.00324	.00078	.00204	.00051	.0221	.00232	.00210	.00177	.00061
%RSD	.42702	.98985	.22500	.68588	.16613	.43541	26.032	.48518	.48347	.43315	.38667	.12473

#1	.51954	.51524	.93715	.47501	.46616	.46712	.00231	4.5360	.48185	.48729	.45867	.48837
#2	.51641	.50808	.94013	.47042	.46726	.47000	.00159	4.5672	.47856	.48431	.45617	.48751

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.3987	48.717	.97019	20.488	.50586	.49231	F 6.0613	.48560	.95568	.97493	.00618	.93253
Stddev	.0103	.197	.00354	.114	.00204	.00370	.0163	.00235	.00440	.00174	.00194	.00275
%RSD	.43086	.40378	.36436	.55786	.40277	.75086	.26912	.48304	.46002	.17844	31.366	.29520

#1	2.4060	48.578	.96769	20.569	.50730	.49492	6.0728	.48725	.95879	.97616	.00481	.93447
#2	2.3914	48.856	.97269	20.407	.50442	.48969	6.0497	.48394	.95257	.97370	.00755	.93058

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94204	4.6588	9.9699	.91923	.47256	-.00064	.50091	.93285	.03908	.50678	.49605	.49461
Stddev	.01413	.0191	.0409	.00428	.00198	.00161	.00094	.00696	.01515	.00285	.00409	.00156
%RSD	1.5003	.41060	.41060	.46549	.41879	252.27	.18755	.74560	38.754	.56208	.82375	.31560

#1	.95203	4.6453	9.9409	.92226	.47116	-.00178	.50157	.93777	.04979	.50879	.49894	.49572
#2	.93204	4.6723	9.9988	.91621	.47396	.00050	.50025	.92793	.02837	.50476	.49316	.49351

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3639.4	48501.	2777.3
Stddev	18.9	190.	19.4
%RSD	.51931	.39169	.69842

#1	3652.8	48367.	2791.0
#2	3626.1	48636.	2763.6

Sample Name: CCB Acquired: 5/14/2019 17:34:04 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	-.00149	-.00403	.00165	.00074	.00017	.00087	-.00142	-.00008	.00013	.00009
Stddev	.00014	.00054	.00121	.00045	.00015	.00003	.00324	.01235	.00016	.00007	.00007
%RSD	29.141	36.084	30.132	27.101	19.757	19.453	371.58	868.26	203.18	57.229	71.934

#1	.00060	-.00111	-.00317	.00196	.00085	.00015	.00317	-.01016	-.00019	.00018	.00004
#2	.00039	-.00187	-.00489	.00133	.00064	.00019	-.00142	.00731	.00003	.00008	.00014

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit											
Low Limit											

Elem	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00168	.01900	.07997	-.00232	-.00074	.00014	.00125	F .72882	-.00439	.00118	.00098
Stddev	.00088	.00407	.06820	.00417	.00061	.00001	.00070	.00547	.00010	.00248	.00096
%RSD	52.642	21.429	85.279	179.97	83.497	8.5823	55.992	.75008	2.3527	209.72	97.607

#1	-.00105	.01612	.12819	.00063	-.00030	.00013	.00075	.72495	-.00446	-.00057	.00166
#2	-.00230	.02188	.03175	-.00527	-.00117	.00015	.00174	.73268	-.00432	.00293	.00030

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit								.50000			
Low Limit								-.50000			

Elem	S_1820	Sb2068	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00487	.00585	.00656	-.06328	W -.13541	-.00013	-.00021	.00165	.00031	.00347	-.00411
Stddev	.00205	.00251	.00287	.02338	.05003	.00090	.00005	.00116	.00011	.00085	.04100
%RSD	42.004	42.910	43.755	36.948	36.948	708.03	25.002	70.563	36.046	24.564	997.45

#1	.00343	.00763	.00859	-.04674	-.10003	.00051	-.00025	.00083	.00039	.00286	-.03311
#2	.00632	.00408	.00453	-.07981	-.17079	-.00077	-.00017	.00247	.00023	.00407	.02488

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					.13000						
Low Limit					-.13000						

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00032	-.00127	.00493
Stddev	.00059	.00001	.00263
%RSD	185.00	1.0304	53.402

#1	-.00010	-.00128	.00679
#2	.00074	-.00126	.00307

Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3618.2	48764.	2737.2
Stddev	8.6	113.	5.6
%RSD	.23886	.23258	.20502

#1	3624.3	48844.	2741.2
#2	3612.1	48683.	2733.3

Sample Name: CCVL-5701318 Acquired: 5/14/2019 17:36:40 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00987	.09407	.01084	.09519	.00998	.00091	.09696	.19457	.00478	.00991	.00903	.01368
Stddev	.00012	.00080	.00004	.00045	.00056	.00004	.00337	.00346	.00018	.00030	.00022	.00022
%RSD	1.2261	.84966	.33513	.46922	5.5969	4.1972	3.4764	1.7777	3.7443	3.0389	2.4849	1.6417

#1	.00978	.09464	.01082	.09551	.00959	.00093	.09934	.19701	.00466	.01012	.00919	.01352
#2	.00996	.09351	.01087	.09488	.01038	.00088	.09458	.19212	.00491	.00969	.00888	.01384

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.11009	3.0238	.01826	.20175	.01035	.01988	F 1.5823	.03545	2.7530	.00938	.08870	.01731
Stddev	.00211	.1372	.00470	.00555	.00014	.00004	.0006	.00039	.0238	.00014	.00726	.00399
%RSD	1.9158	4.5379	25.750	2.7506	1.3327	.19341	.03755	1.1072	.86365	1.5007	8.1831	23.050

#1	.11158	3.1209	.02158	.20567	.01045	.01985	1.5827	.03573	2.7699	.00928	.08357	.02013
#2	.10859	2.9268	.01493	.19783	.01025	.01991	1.5819	.03517	2.7362	.00948	.09384	.01449

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							1.0000					
Range							30.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02535	.48430	1.0364	.09136	.00931	.01453	.01003	.01419	.06609	.01010	.01877	.01510
Stddev	.00187	.00876	.0188	.00225	.00019	.00088	.00035	.00245	.00004	.00083	.00010	.00080
%RSD	7.3601	1.8097	1.8097	2.4579	2.0892	6.0773	3.4439	17.259	.06457	8.2276	.53344	5.2937

#1	.02667	.47811	1.0231	.08977	.00945	.01515	.00978	.01593	.06612	.01069	.01870	.01454
#2	.02403	.49050	1.0497	.09295	.00918	.01390	.01027	.01246	.06606	.00952	.01884	.01567

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3664.9	49553.	2761.5
Stddev	.9	14.	17.9
%RSD	.02476	.02876	.64662

#1	3665.6	49543.	2748.9
#2	3664.3	49563.	2774.1

Sample Name: MB 280-457065/1-A Acquired: 5/14/2019 17:39:12 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/9 Custom ID2: Custom ID3:
Comment: 457065 200.7 (Al)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	-.00092	.00054	.00118	.00080	.00007	-.00072	-.00221	-.00036
Stddev	.00081	.00046	.00157	.00111	.00006	.00006	.00517	.00941	.00012
%RSD	112.53	50.456	288.19	94.228	7.1416	87.387	715.87	426.19	32.561

#1	.00130	-.00125	.00165	.00039	.00076	.00011	-.00438	.00445	-.00044
#2	.00015	-.00059	-.00056	.00196	.00084	.00003	.00293	-.00886	-.00028

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	-.00007	-.00103	.01162	.05551	.00128	.00183	-.00006	.00021
Stddev	.00040	.00002	.00030	.00185	.00238	.00516	.00417	.00008	.00013
%RSD	584.48	33.638	29.211	15.885	4.2808	402.16	228.14	137.43	62.445

#1	.00035	-.00008	-.00082	.01031	.05719	.00494	-.00112	-.00012	.00030
#2	-.00022	-.00005	-.00124	.01292	.05383	-.00237	.00477	-.00000	.00012

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W .55422	-.00419	.00043	.00270	-.00147	.00266	.00227	-.01719	-.03679
Stddev	.00021	.00111	.00240	.00221	.00389	.00273	.00159	.01898	.04061
%RSD	.03713	26.436	563.20	81.800	263.92	102.70	70.179	110.37	110.37

#1	.55437	-.00498	-.00127	.00114	-.00422	.00073	.00114	-.00377	-.00808
#2	.55407	-.00341	.00212	.00427	.00128	.00459	.00339	-.03061	-.06551

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit	.50000								
Low Limit	-.50000								

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	-.00022	-.00266	.00067	.00255	F .08299	-.00002	-.00179	.00274
Stddev	.00082	.00006	.00068	.00010	.00191	.01624	.00082	.00017	.00293
%RSD	189.29	28.096	25.734	15.393	74.832	19.569	4959.0	9.4363	106.88

#1	.00015	-.00027	-.00315	.00075	.00390	.09448	.00056	-.00167	.00481
#2	-.00101	-.00018	-.00218	.00060	.00120	.07151	-.00059	-.00191	.00067

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.06000			
Low Limit						-.06000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3734.4	50143.	2801.7
Stddev	22.2	158.	7.1
%RSD	.59360	.31412	.25172

#1	3718.7	50031.	2796.7
#2	3750.1	50254.	2806.7

Sample Name: LCS 280-457065/2-A Acquired: 5/14/2019 17:41:47 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457065 200.7 (Al)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05508	9.1940	1.8568	.92765	1.8168	.91996	1.8379	43.264	.94150
Stddev	.00042	.0002	.0029	.00112	.0006	.00085	.0016	.067	.00361
%RSD	.77126	.00230	.15839	.12090	.03100	.09198	.08806	.15557	.38303

#1	.05478	9.1938	1.8589	.92844	1.8172	.92056	1.8390	43.216	.94405
#2	.05538	9.1941	1.8547	.92686	1.8164	.91936	1.8367	43.312	.93895

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.92298	.88334	.95104	9.0743	47.308	.95053	49.047	.99110	.96492
Stddev	.00484	.00292	.00189	.0215	.128	.00402	.112	.00128	.00409
%RSD	.52449	.33019	.19916	.23724	.27029	.42326	.22806	.12882	.42354

#1	.92641	.88540	.95238	9.0591	47.218	.95337	49.127	.99200	.96781
#2	.91956	.88128	.94970	9.0896	47.399	.94768	48.968	.99019	.96203

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	48.274	.92367	19.109	.93310	8.7322	.93528	1.8323	1.8528	3.9651
Stddev	.468	.00362	.064	.00165	.0253	.00143	.0093	.0014	.0029
%RSD	.96969	.39238	.33498	.17732	.29000	.15309	.50791	.07426	.07426

#1	48.605	.92624	19.154	.93427	8.7501	.93629	1.8389	1.8538	3.9671
#2	47.943	.92111	19.064	.93193	8.7143	.93426	1.8257	1.8519	3.9630

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.7725	.92139	.97306	.99371	1.7656	2.0134	1.0082	.48316	.49924
Stddev	.0063	.00016	.00312	.00313	.0013	.0207	.0015	.00102	.00315
%RSD	.35626	.01762	.32045	.31542	.07284	1.0295	.15049	.21209	.63137

#1	1.7770	.92151	.97086	.99593	1.7665	1.9988	1.0092	.48389	.50147
#2	1.7681	.92128	.97527	.99149	1.7646	2.0281	1.0071	.48244	.49701

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3768.4	49317.	2860.3
Stddev	.2	79.	14.8
%RSD	.00570	.16006	.51889

#1	3768.2	49261.	2870.8
#2	3768.5	49373.	2849.9

Sample Name: 280-123255-A-3-A Acquired: 5/14/2019 17:44:06 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457065 200.7 (Al)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	3.3438	.00886	.02853	.03513	.00034	.00054	22.589	-.00017
Stddev	.00002	.0275	.00517	.00042	.00015	.00005	.00298	.132	.00008
%RSD	3.8533	.82213	58.365	1.4575	.41374	14.240	552.69	.58603	48.071

#1	.00044	3.3244	.01252	.02823	.03502	.00037	-.00157	22.495	-.00023
#2	.00047	3.3633	.00520	.02882	.03523	.00031	.00265	22.683	-.00011

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.00316	.00268	1.7072	3.3784	.00077	1.8871	.02823	.00234
Stddev	.00061	.00004	.00016	.0036	.0322	.00033	.0050	.00007	.00019
%RSD	173.28	1.3737	6.0590	.21237	.95399	42.656	.26304	.25092	8.3087

#1	.00008	.00319	.00256	1.7046	3.3556	.00100	1.8906	.02818	.00220
#2	-.00078	.00312	.00279	1.7097	3.4012	.00054	1.8836	.02828	.00248

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.5531	-.00336	.23484	.00133	2.4645	-.00171	.00159	9.1709	19.626
Stddev	.0026	.00047	.00675	.00191	.0173	.00132	.00294	.0727	.156
%RSD	.07174	14.004	2.8737	143.22	.69986	77.170	184.55	.79332	.79332

#1	3.5512	-.00369	.23961	.00269	2.4767	-.00078	-.00049	9.1194	19.516
#2	3.5549	-.00303	.23006	-.00002	2.4523	-.00264	.00367	9.2223	19.736

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.05276	.00282	.01768	.00185	-.01606	.01134	.04904	.00604
Stddev	.00077	.00028	.00449	.00133	.00202	.08054	.00052	.00095	.00325
%RSD	71.268	.52915	159.46	7.5409	109.24	501.54	4.6246	1.9454	53.803

#1	.00054	.05256	.00599	.01674	.00042	-.07301	.01171	.04836	.00833
#2	.00162	.05295	-.00036	.01862	.00327	.04089	.01097	.04971	.00374

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3803.1	51179.	2947.6
Stddev	7.6	222.	15.1
%RSD	.19866	.43413	.51240

#1	3808.5	51021.	2958.3
#2	3797.8	51336.	2937.0

Sample Name: 280-123256-B-1-A Acquired: 5/14/2019 17:46:38 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457065 200.7 (Al)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.20994	.00173	.59511	.02636	.00007	-.00101	467.06	.00011
Stddev	.00099	.00068	.00362	.00444	.00014	.00006	.00190	.18	.00024
%RSD	115.25	.32364	209.95	.74620	.53821	75.478	187.49	.03901	218.54

#1	.00016	.21042	.00429	.59825	.02646	.00011	-.00236	466.94	-.00006
#2	.00155	.20946	-.00084	.59197	.02626	.00003	.00033	467.19	.00028

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00219	.01190	.25212	3.2003	.08116	116.21	.21216	.00566
Stddev	.00041	.00012	.00007	.00208	.0364	.00366	.45	.00058	.00008
%RSD	145.96	5.2765	.55045	.82585	1.1359	4.5091	.38360	.27189	1.4724

#1	.00058	.00211	.01195	.25359	3.2260	.08375	116.53	.21257	.00572
#2	-.00001	.00228	.01185	.25065	3.1746	.07857	115.90	.21175	.00560

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	64.838	.00347	.01066	-.00041	F 459.33	-.00017	-.00024	7.8096	16.713
Stddev	.022	.00034	.00009	.00026	3.21	.00116	.00015	.0815	.175
%RSD	.03332	9.8364	.86645	63.558	.69790	691.29	64.165	1.0443	1.0443

#1	64.823	.00323	.01060	-.00023	461.60	.00065	-.00013	7.8673	16.836
#2	64.853	.00371	.01073	-.00059	457.06	-.00099	-.00034	7.7519	16.589

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00107	9.9737	-.00300	.00278	-.00022	-.02072	-.00030	.15876	.00466
Stddev	.00196	.0147	.00071	.00042	.00195	.02653	.00020	.00169	.00528
%RSD	183.64	.14708	23.688	14.974	884.41	128.04	66.902	1.0673	113.24

#1	.00245	9.9633	-.00350	.00249	-.00160	-.03948	-.00045	.15996	.00093
#2	-.00032	9.9840	-.00250	.00308	.00116	-.00196	-.00016	.15756	.00839

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3557.1	47901.	2835.7
Stddev	1.3	126.	2.5
%RSD	.03701	.26250	.08711

#1	3556.2	47812.	2837.4
#2	3558.0	47990.	2833.9

Sample Name: 123256-B-1-A SD@5 Acquired: 5/14/2019 17:49:09 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457065 200.7 (Al)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00135	.03960	.00391	.10726	.00528	.00011	-.00185	80.956	.00013
Stddev	.00016	.00003	.00263	.00043	.00061	.00009	.00000	.121	.00001
%RSD	11.808	.06640	67.222	.39920	11.489	87.536	.11486	.14972	9.9538

#1	.00146	.03962	.00205	.10696	.00485	.00017	-.00184	80.870	.00014
#2	.00124	.03958	.00577	.10756	.00570	.00004	-.00185	81.042	.00012

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00010	.00171	.06896	.64970	.01323	20.259	.03765	.00104
Stddev	.00021	.00052	.00045	.00489	.08615	.00114	.089	.00041	.00031
%RSD	117.37	505.54	26.459	7.0946	13.260	8.6228	.43796	1.0967	29.300

#1	.00003	-.00027	.00203	.07242	.58878	.01404	20.196	.03736	.00126
#2	.00032	.00047	.00139	.06550	.71061	.01243	20.322	.03794	.00083

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.212	-.00343	.00293	.00190	81.305	.00230	-.00449	1.3394	2.8663
Stddev	1.117	.00027	.00089	.00021	.953	.00070	.00058	.0412	.0882
%RSD	8.4507	7.8888	30.420	11.033	1.1724	30.502	12.970	3.0774	3.0774

#1	14.002	-.00324	.00230	.00205	80.631	.00181	-.00490	1.3102	2.8039
#2	12.423	-.00362	.00356	.00175	81.979	.00280	-.00408	1.3685	2.9287

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00198	1.7123	-.00150	.00123	-.00004	.00787	.00040	.02830	.00413
Stddev	.00049	.0035	.00173	.00047	.00084	.02120	.00033	.00142	.00186
%RSD	24.543	.20608	114.96	38.035	2188.2	269.53	84.108	5.0265	45.160

#1	.00164	1.7098	-.00272	.00156	-.00064	-.00713	.00063	.02730	.00281
#2	.00233	1.7148	-.00028	.00090	.00056	.02286	.00016	.02931	.00545

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3638.4	49290.	2860.8
Stddev	38.0	329.	6.7
%RSD	1.0441	.66801	.23495

#1	3665.2	49057.	2856.1
#2	3611.5	49523.	2865.6

Sample Name: 280-123256-B-1-B MS Acquired: 5/14/2019 17:51:42 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457065 200.7 (Al)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05616	10.015	1.9719	1.5646	1.9054	.92620	1.9277	W 507.96	.99046
Stddev	.00073	.097	.0335	.0057	.0069	.00299	.0065	1.41	.00489
%RSD	1.3064	.96472	1.6966	.36326	.36193	.32292	.33868	.27710	.49373

#1	.05668	10.083	1.9955	1.5686	1.9102	.92831	1.9323	508.95	.99392
#2	.05564	9.9465	1.9482	1.5606	1.9005	.92408	1.9230	506.96	.98700

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit								500.00	
Low Limit								-40000	

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.92261	.90983	.99688	9.6219	54.050	1.0824	166.36	1.2009	1.0031
Stddev	.00426	.00625	.00207	.0361	.214	.0050	.74	.0032	.0078
%RSD	.46134	.68641	.20787	.37551	.39551	.46599	.44462	.26679	.78246

#1	.92562	.91425	.99835	9.6475	54.201	1.0860	166.88	1.2031	1.0087
#2	.91960	.90542	.99542	9.5964	53.899	1.0789	165.83	1.1986	.99758

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	114.75	.93030	W 20.451	.93068	F 469.31	.98522	1.9393	9.9016	21.189
Stddev	.45	.00493	.103	.00125	2.49	.00282	.0051	.0258	.055
%RSD	.39045	.53005	.50313	.13390	.53005	.28597	.26277	.26099	.26099

#1	115.07	.93378	20.524	.93156	471.07	.98323	1.9429	9.9199	21.229
#2	114.43	.92681	20.379	.92980	467.55	.98722	1.9357	9.8833	21.150

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000		200.00				
Low Limit			-6.0000		-20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8125	W 10.947	.99161	1.0140	1.7092	2.0662	1.0328	.63449	.50970
Stddev	.0131	.041	.00170	.0034	.0131	.0515	.0040	.00180	.00727
%RSD	.72156	.37884	.17102	.33714	.76674	2.4936	.39097	.28316	1.4256

#1	1.8217	10.918	.99041	1.0164	1.7184	2.1027	1.0357	.63576	.51484
#2	1.8032	10.976	.99280	1.0115	1.6999	2.0298	1.0300	.63322	.50456

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		10.000							
Low Limit		-.02000							

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3388.9	45731.	2739.3
Stddev	8.7	217.	3.9
%RSD	.25676	.47536	.14376

#1	3395.1	45577.	2736.6
#2	3382.8	45884.	2742.1

Sample Name: 280-123256-B-1-C MSD Acquired: 5/14/2019 17:54:02 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457065 200.7 (Al)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05665	9.9115	1.9434	1.5391	1.8907	.91901	1.8915	499.03	.97941
Stddev	.00084	.0071	.0019	.0095	.0031	.00129	.0086	.19	.00662
%RSD	1.4818	.07187	.09921	.61425	.16108	.14002	.45703	.03803	.67542

#1	.05605	9.9165	1.9448	1.5458	1.8928	.91992	1.8976	499.16	.98409
#2	.05724	9.9065	1.9421	1.5324	1.8885	.91810	1.8854	498.89	.97474

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.91070	.89860	.98903	9.5096	53.733	1.0721	162.15	1.1818	.99254
Stddev	.00580	.00611	.00187	.0076	.138	.0052	.05	.0015	.00768
%RSD	.63643	.67950	.18865	.07966	.25716	.48353	.03105	.12530	.77351

#1	.91480	.90292	.98771	9.5149	53.830	1.0758	162.12	1.1807	.99797
#2	.90660	.89428	.99035	9.5042	53.635	1.0684	162.19	1.1828	.98711

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	112.25	.91726	W 20.238	.91874	F 457.86	.97929	1.9103	9.6407	20.631
Stddev	.11	.00630	.149	.00445	2.91	.00387	.0148	.0124	.027
%RSD	.09662	.68717	.73649	.48394	.63476	.39563	.77250	.12869	.12869

#1	112.17	.92172	20.343	.92189	459.91	.98203	1.9207	9.6319	20.612
#2	112.32	.91280	20.132	.91560	455.80	.97655	1.8998	9.6495	20.650

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000		200.00				
Low Limit			-6.0000		-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.7936	W 10.690	.97582	1.0008	1.6852	1.9901	1.0194	.62019	.50621
Stddev	.0111	.012	.00105	.0012	.0106	.0047	.0008	.00065	.00440
%RSD	.61702	.10809	.10788	.12171	.63060	.23565	.07478	.10556	.86997

#1	1.8014	10.698	.97656	.99992	1.6927	1.9868	1.0189	.61973	.50933
#2	1.7857	10.682	.97507	1.0016	1.6776	1.9934	1.0199	.62065	.50310

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		10.000							
Low Limit		-.02000							

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3433.2	46040.	2715.0
Stddev	2.7	64.	5.8
%RSD	.07727	.13974	.21324

#1	3435.1	45995.	2719.1
#2	3431.4	46086.	2710.9

Sample Name: 280-123286-C-1-D Acquired: 5/14/2019 17:56:19 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457065 200.7 (Al)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00121	6.5816	.00181	.02796	.07457	.00065	.00172	16.370	.00015
Stddev	.00016	.1100	.00268	.00040	.00130	.00016	.00279	.047	.00006
%RSD	13.598	1.6708	148.13	1.4227	1.7490	24.806	162.14	.28567	41.480

#1	.00110	6.5039	-.00009	.02824	.07365	.00053	-.00025	16.337	.00020
#2	.00133	6.6594	.00370	.02768	.07549	.00076	.00369	16.403	.00011

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00479	.00684	.01007	5.1306	5.8334	.01692	4.1508	.09660	.00312
Stddev	.00005	.00047	.00044	.0079	.0175	.00006	.0029	.00027	.00049
%RSD	.98730	6.9203	4.3584	.15372	.29976	.36470	.07026	.28126	15.693

#1	.00483	.00651	.00976	5.1250	5.8458	.01687	4.1529	.09679	.00278
#2	.00476	.00718	.01038	5.1362	5.8210	.01696	4.1488	.09641	.00347

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	80.276	.00130	.39407	.00446	4.0783	.00225	.00143	17.918	38.344
Stddev	.713	.00044	.00522	.00108	.0376	.00272	.00557	.059	.125
%RSD	.88874	34.166	1.3250	24.241	.92196	120.63	388.85	.32651	.32651

#1	79.772	.00099	.39776	.00370	4.1049	.00418	.00537	17.959	38.433
#2	80.781	.00161	.39038	.00523	4.0517	.00033	-.00251	17.876	38.256

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.05936	-.00131	.15048	.00271	.02501	.02242	.06388	.01133
Stddev	.00049	.00011	.00069	.00027	.00314	.03436	.00069	.00022	.00601
%RSD	1969.6	.18437	52.694	.17829	116.08	137.39	3.0866	.34435	53.048

#1	-.00037	.05929	-.00082	.15067	.00049	.04930	.02291	.06403	.00708
#2	.00032	.05944	-.00180	.15029	.00493	.00071	.02193	.06372	.01559

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3786.5	49832.	2895.7
Stddev	6.9	63.	.9
%RSD	.18117	.12607	.03109

#1	3781.7	49788.	2895.1
#2	3791.4	49877.	2896.4

Sample Name: 280-123319-B-1-A Acquired: 5/14/2019 17:58:49 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457065 200.7 (Al)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.10029	-.00578	.29586	.11412	.00004	-.00143	324.41	-.00021
Stddev	.00031	.00114	.00687	.00006	.00014	.00026	.00083	.48	.00003
%RSD	112.55	1.1348	118.97	.01975	.12438	708.51	57.857	.14859	11.822

#1	.00050	.10110	-.01064	.29590	.11402	.00022	-.00202	324.75	-.00023
#2	.00006	.09949	-.00092	.29582	.11422	-.00015	-.00085	324.07	-.00020

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00327	.00887	.16539	15.943	.10281	38.754	.06591	.02178
Stddev	.00013	.00014	.00011	.00603	.023	.00080	.020	.00010	.00028
%RSD	32.251	4.3684	1.2843	3.6471	.14725	.77587	.05231	.15467	1.3077

#1	.00030	.00337	.00879	.16966	15.959	.10337	38.769	.06584	.02158
#2	.00048	.00317	.00895	.16112	15.926	.10224	38.740	.06598	.02199

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 666.21	.00274	.04784	.00104	W 186.64	.00186	-.00205	4.1310	8.8404
Stddev	1.48	.00010	.00295	.00155	1.47	.00204	.00095	.0042	.0090
%RSD	.22270	3.6090	6.1757	149.50	.78714	109.51	46.606	.10141	.10141

#1	667.26	.00267	.04993	-.00006	187.68	.00331	-.00137	4.1340	8.8467
#2	665.16	.00281	.04575	.00213	185.60	.00042	-.00272	4.1281	8.8340

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				180.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00176	2.1705	-.00203	.00434	-.00038	-.07104	.00349	.00629	.00293
Stddev	.00005	.0037	.00130	.00001	.00343	.02249	.00009	.00121	.00371
%RSD	2.6802	.16869	64.033	.13916	908.62	31.661	2.5167	19.166	126.71

#1	-.00179	2.1731	-.00295	.00434	.00205	-.05514	.00343	.00544	.00030
#2	-.00173	2.1679	-.00111	.00433	-.00280	-.08694	.00356	.00715	.00556

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3526.9	46128.	2819.6
Stddev	5.6	361.	11.8
%RSD	.15908	.78285	.41849

#1	3522.9	46383.	2811.3
#2	3530.9	45872.	2828.0

Sample Name: CCVH-5699817 Acquired: 5/14/2019 18:01:26 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .01757	45.647	k -.00165	k .00646	k .00379	k .00153	kF .89923	k .02420	k -.00028	k .00452	k .00140	k .00904
Stddev	.00023	.041	.00373	.00013	.00018	.00006	.00195	.00091	.00021	.00035	.00017	.00038
%RSD	1.3127	.09072	226.70	1.9920	4.7581	4.0706	.21721	3.7459	73.275	7.7626	12.112	4.1700

#1	k .01740	45.618	k .00099	k .00637	k .00367	k .00157	k .90061	k .02484	k -.00043	k .00477	k .00128	k .00877
#2	k .01773	45.677	k -.00428	k .00655	k .00392	k .00148	k .89785	k .02356	k -.00014	k .00427	k .00152	k .00930

Check ?	None	Chk Pass	None	None	None	None	Chk Fail	None	None	None	None	None
Value							1.0000					
Range							-10.000%					

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	kF 43.009	.51337	-.00023	k .03910	k .00044	k -.00021	241.18	k .00070	k .00968	k .01652	k 4.4856	k -.03129
Stddev	.116	.07225	.00230	.00980	.00006	.00058	.15	.00010	.00316	.00001	.0398	.00131
%RSD	.26980	14.074	1007.9	25.078	13.892	272.25	.06175	14.849	32.598	.05102	.88761	4.1946

#1	k 42.927	.56446	.00140	k .04603	k .00040	k .00020	241.28	k .00077	k .00745	k .01652	k 4.5138	k -.03221
#2	k 43.091	.46228	-.00185	k .03216	k .00049	k -.00062	241.07	k .00063	k .01191	k .01651	k 4.4575	k -.03036

Check ?	Chk Fail	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None
Value	50.000											
Range	-10.490%											

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.00808	k -.02279	k -.04877	k .00258	.00183	k 5.0955	k .02200	k .00624	k 9.8827	k .00992	k .00264	k .29167
Stddev	.00005	.02369	.05069	.00098	.00006	.0029	.00019	.00009	.0388	.00082	.00015	.00137
%RSD	.60242	103.93	103.93	38.035	3.2848	.05729	.85078	1.4575	.39275	8.2677	5.5388	.46924

#1	k -.00812	k -.03954	k -.08462	k .00328	.00187	k 5.0975	k .02187	k .00630	k 9.8552	k .00934	k .00253	k .29070
#2	k -.00805	k -.00604	k -.01293	k .00189	.00179	k 5.0934	k .02213	k .00617	k 9.9101	k .01050	k .00274	k .29264

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3620.5	47683.	2762.4
Stddev	5.3	139.	13.7
%RSD	.14731	.29131	.49641

#1	3616.7	47585.	2752.7
#2	3624.3	47781.	2772.1

Sample Name: CCV-5699804 Acquired: 5/14/2019 18:03:56 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52157	.51541	.94559	.48093	.47122	.47066	-.00015	4.5690	.48586	.49370	.46304	.49520
Stddev	.00130	.00586	.00532	.00299	.00017	.00160	.00145	.0139	.00304	.00391	.00338	.00020
%RSD	.24834	1.1361	.56255	.62183	.03581	.34062	964.93	.30346	.62663	.79134	.72972	.04077

#1	.52248	.51955	.94183	.48304	.47134	.46952	-.00117	4.5592	.48801	.49646	.46543	.49534
#2	.52065	.51127	.94935	.47882	.47110	.47179	.00087	4.5788	.48370	.49094	.46065	.49506

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.4049	48.954	.97729	20.774	.51226	.49961	F 6.1240	.49396	.97065	.98939	.03146	.95090
Stddev	.0011	.173	.00897	.035	.00014	.00355	.0326	.00266	.00465	.00451	.00296	.00038
%RSD	.04549	.35386	.91782	.16757	.02686	.70961	.53194	.53890	.47901	.45627	9.4225	.04005

#1	2.4041	48.831	.97094	20.799	.51235	.50212	6.1471	.49584	.97394	.99258	.02936	.95063
#2	2.4057	49.076	.98363	20.750	.51216	.49710	6.1010	.49208	.96736	.98620	.03355	.95116

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94352	4.7044	10.067	.92931	.47535	.00018	.50504	.94192	.02755	.51543	.50260	.49494
Stddev	.00441	.0091	.019	.00588	.00071	.00194	.00117	.00892	.14428	.00062	.00134	.00264
%RSD	.46770	.19279	.19279	.63297	.14906	1048.5	.23200	.94709	523.74	.12032	.26567	.53323

#1	.94664	4.7108	10.081	.93347	.47485	-.00118	.50587	.94822	.12957	.51499	.50355	.49681
#2	.94040	4.6980	10.054	.92515	.47585	.00155	.50421	.93561	-.07447	.51587	.50166	.49308

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3610.6	48188.	2755.5
Stddev	4.7	113.	8.6
%RSD	.13016	.23443	.31189

#1	3607.2	48109.	2761.6
#2	3613.9	48268.	2749.4

Sample Name: CCB Acquired: 5/14/2019 18:06:19 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoades Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	-.00128	.00024	.00234	.00004	.00001	.00266	-.00062	.00014	-.00003	-.00020	-.00149
Stddev	.00012	.00090	.00034	.00098	.00040	.00006	.00116	.00401	.00024	.00002	.00030	.00055
%RSD	109.61	70.260	142.61	42.036	973.89	872.78	43.648	645.02	172.62	84.628	146.13	36.631
#1	.00002	-.00191	.00048	.00304	.00032	.00005	.00184	-.00346	.00031	-.00001	-.00041	-.00188
#2	.00019	-.00064	-.00000	.00164	-.00024	-.00003	.00349	.00222	-.00003	-.00004	.00001	-.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00200	.17747	-.00160	.00116	-.00008	.00085	F .71899	-.00422	.00011	.00023	.02392	W .00628
Stddev	.00179	.04082	.00111	.00289	.00007	.00005	.02060	.00010	.00409	.00087	.00193	.00164
%RSD	89.597	23.003	69.465	248.85	86.033	6.4221	2.8646	2.3785	3751.4	385.19	8.0606	26.067
#1	-.00327	.20634	-.00238	-.00088	-.00013	.00081	.73356	-.00429	-.00278	-.00039	.02528	.00744
#2	-.00073	.14861	-.00081	.00321	-.00003	.00089	.70443	-.00415	.00300	.00084	.02255	.00513
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit							.50000					.00600
Low Limit							-.50000					-.00600
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00181	-.03186	-.06817	.00057	-.00029	.00132	-.00002	.00419	.01557	-.00046	-.00072	.00295
Stddev	.00078	.01511	.03233	.00104	.00010	.00152	.00013	.00043	.00470	.00007	.00008	.00119
%RSD	43.134	47.425	47.425	183.74	34.202	114.55	823.60	10.188	30.192	14.139	11.624	40.224
#1	-.00236	-.02117	-.04531	.00131	-.00022	.00025	.00008	.00450	.01889	-.00042	-.00078	.00379
#2	-.00125	-.04254	-.09103	-.00017	-.00036	.00240	-.00011	.00389	.01225	-.00051	-.00066	.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3637.3	49722.	2764.6									
Stddev	44.0	135.	7.6									
%RSD	1.2109	.27074	.27620									
#1	3668.4	49626.	2770.0									
#2	3606.1	49817.	2759.2									

Sample Name: CCVL-5701318 Acquired: 5/14/2019 18:08:54 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00996	.09467	.01232	.09621	.00991	F .00133	.09713	.18208	.00451	.00990	.00897	.01364
Stddev	.00078	.00107	.00175	.00143	.00030	.00005	.00081	.00963	.00011	.00012	.00019	.00060
%RSD	7.8701	1.1287	14.202	1.4815	3.0439	3.5180	.83489	5.2870	2.4458	1.1895	2.1075	4.3625

#1	.00941	.09543	.01109	.09722	.01012	.00130	.09770	.18889	.00443	.00998	.00884	.01406
#2	.01052	.09392	.01356	.09520	.00970	.00136	.09656	.17527	.00458	.00981	.00911	.01322

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value						.00100						
Range						30.000%						

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09728	3.0912	.01604	.20436	.01037	.01959	F 1.5888	.03583	2.7378	.00979	.09475	.01765
Stddev	.00071	.0822	.00127	.00366	.00007	.00031	.0012	.00026	.0138	.00026	.00358	.00241
%RSD	.73393	2.6595	7.9357	1.7912	.69290	1.5858	.07298	.73458	.50603	2.6168	3.7752	13.631

#1	.09778	3.1493	.01514	.20695	.01032	.01981	1.5880	.03565	2.7476	.00961	.09222	.01935
#2	.09677	3.0331	.01694	.20178	.01042	.01937	1.5896	.03602	2.7280	.00997	.09728	.01595

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							1.0000					
Range							30.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01913	.41876	.89614	.09160	.00940	.01287	.00940	.01602	.06281	.00996	.01835	.01900
Stddev	.00513	.04410	.09438	.00019	.00013	.00230	.00065	.00279	.02940	.00019	.00011	.00108
%RSD	26.812	10.532	10.532	.20244	1.4172	17.848	6.9129	17.425	46.806	1.9016	.61271	5.6606

#1	.01550	.38757	.82941	.09173	.00931	.01449	.00894	.01799	.08360	.01010	.01843	.01976
#2	.02275	.44994	.96288	.09147	.00950	.01124	.00986	.01405	.04203	.00983	.01827	.01824

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3709.1	48478.	2716.7									
Stddev	16.3	253.	6.3									
%RSD	.43992	.52152	.23341									

#1	3697.6	48299.	2712.2									
#2	3720.6	48657.	2721.2									

Sample Name: MB 280-457629/1-A Acquired: 5/14/2019 18:11:27 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/10 Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00067	.00042	-0.00171	.00164	.00046	.00018	.00585	.00099	-0.00019
Stddev	.00028	.00026	.00108	.00081	.00016	.00002	.00197	.00126	.00014
%RSD	42.016	62.954	63.208	49.521	34.111	12.287	33.720	127.48	73.496
#1	-0.00047	.00023	-0.00095	.00106	.00035	.00020	.00446	.00189	-0.00009
#2	-0.00086	.00060	-0.00248	.00221	.00057	.00016	.00725	.00010	-0.00029

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
High Limit
Low Limit

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00018	-0.00171	.00457	.14666	-0.00355	.00035	.00004	.00014
Stddev	.00032	.00038	.00010	.00269	.07004	.00045	.00004	.00010	.00019
%RSD	352.67	206.94	6.0374	58.889	47.753	12.763	11.538	260.03	139.76
#1	-0.00014	-0.00009	-0.00163	.00267	.19619	-0.00323	.00032	.00011	.00000
#2	.00032	.00045	-0.00178	.00647	.09714	-0.00388	.00038	-0.00003	.00028

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
High Limit
Low Limit

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49372	-0.00362	.00294	.00270	.01484	.00094	-0.00247	-.01626	-.03480
Stddev	.00671	.00008	.00116	.00048	.00037	.00248	.00210	.01320	.02825
%RSD	1.3588	2.3359	39.309	17.871	2.4646	264.38	84.834	81.174	81.174
#1	.48898	-0.00368	.00213	.00304	.01458	.00270	-0.00099	-.02560	-.05478
#2	.49846	-0.00356	.00376	.00236	.01509	-0.00082	-0.00396	-0.00693	-.01483

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass None
High Limit
Low Limit

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00049	-0.00000	-0.00127	.00013	.00324	F .07606	.00053	-.00162	W .00894
Stddev	.00025	.00029	.00271	.00030	.00142	.03131	.00038	.00030	.00238
%RSD	51.841	8794.6	213.50	229.64	43.692	41.161	71.838	18.548	26.625
#1	-0.00067	-0.00021	.00065	-0.00008	.00425	.05392	.00080	-.00140	.00726
#2	-0.00031	.00020	-0.00319	.00034	.00224	.09819	.00026	-.00183	.01063

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Fail Chk Pass Chk Pass Chk Warn
High Limit .06000
Low Limit -.06000 .00750 -.00750

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3737.7	50732.	2845.9
Stddev	4.9	518.	.6
%RSD	.13011	1.0207	.02003
#1	3734.3	51098.	2846.3
#2	3741.1	50366.	2845.5

Sample Name: LCS 280-457629/2-A Acquired: 5/14/2019 18:14:05 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05416	9.5507	1.9010	.94604	1.8612	.93747	1.8672	45.037	.96170
Stddev	.00029	.0299	.0046	.00248	.0054	.00023	.0137	.135	.00500
%RSD	.52673	.31327	.24398	.26249	.28879	.02409	.73153	.30024	.51984

#1	.05436	9.5296	1.9043	.94780	1.8574	.93731	1.8769	44.942	.96523
#2	.05395	9.5719	1.8977	.94428	1.8650	.93762	1.8576	45.133	.95816

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94470	.89922	.97014	9.5301	48.717	.97367	50.530	1.0136	.99138
Stddev	.00238	.00517	.00361	.0332	.145	.00638	.069	.0033	.00693
%RSD	.25198	.57491	.37215	.34880	.29730	.65538	.13659	.32568	.69935

#1	.94639	.90288	.97270	9.5066	48.615	.96916	50.579	1.0159	.99629
#2	.94302	.89557	.96759	9.5537	48.820	.97818	50.481	1.0112	.98648

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	49.754	.94789	19.307	.95819	8.9845	.95767	1.8637	1.9623	4.1993
Stddev	.389	.00427	.111	.00223	.0503	.00298	.0144	.0106	.0227
%RSD	.78087	.44995	.57362	.23266	.56007	.31079	.76973	.54001	.54001

#1	50.028	.95091	19.385	.95977	9.0201	.95977	1.8739	1.9548	4.1833
#2	49.479	.94488	19.228	.95662	8.9489	.95556	1.8536	1.9698	4.2154

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8128	.95087	.99600	1.0142	1.7945	2.0326	1.0320	.49289	.51376
Stddev	.0152	.00328	.00109	.0010	.0177	.0545	.0046	.00383	.00044
%RSD	.83763	.34452	.10947	.09372	.98462	2.6791	.44790	.77614	.08483

#1	1.8235	.94855	.99677	1.0149	1.8070	2.0711	1.0353	.49559	.51407
#2	1.8021	.95318	.99523	1.0135	1.7820	1.9941	1.0288	.49018	.51345

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3656.6	48376.	2820.5
Stddev	10.4	154.	14.6
%RSD	.28543	.31912	.51658

#1	3649.2	48485.	2830.8
#2	3664.0	48267.	2810.2

Sample Name: 280-123481-C-2-A Acquired: 5/14/2019 18:16:23 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	10.147	-.00062	.06064	.19449	.00062	-.00274	437.69	.00013
Stddev	.00044	.026	.00460	.00140	.00020	.00003	.00339	1.30	.00003
%RSD	70.361	.25511	743.73	2.3073	.10121	4.7803	123.89	.29785	25.505

#1	.00093	10.166	-.00387	.06163	.19463	.00064	-.00034	438.62	.00011
#2	.00031	10.129	.00263	.05965	.19435	.00060	-.00514	436.77	.00016

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00458	.00751	.01232	11.929	7.8549	.00766	63.827	.54012	.00151
Stddev	.00007	.00049	.00064	.026	.0440	.00408	.073	.00013	.00012
%RSD	1.4263	6.5767	5.1824	.21927	.56054	53.294	.11503	.02337	7.6146

#1	.00462	.00716	.01187	11.947	7.8238	.01055	63.879	.54020	.00143
#2	.00453	.00785	.01277	11.910	7.8860	.00478	63.775	.54003	.00159

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	116.35	.00062	.44063	-.00033	F 410.46	.00094	.00274	30.920	66.169
Stddev	.52	.00005	.00098	.00037	1.38	.00545	.00125	.182	.390
%RSD	.44306	7.3766	.22198	111.92	.33553	581.18	45.677	.58913	.58913

#1	116.72	.00065	.43994	-.00059	411.44	-.00292	.00362	31.049	66.445
#2	115.99	.00059	.44132	-.00007	409.49	.00479	.00185	30.791	65.894

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	6.2218	.00219	.24734	.00265	.01306	.03408	.04326	.02164
Stddev	.00170	.0139	.00100	.00063	.00089	.01558	.00011	.00020	.00045
%RSD	144.88	.22286	45.805	.25536	33.547	119.31	.30974	.45192	2.0863

#1	-.00003	6.2316	.00290	.24689	.00328	.00204	.03416	.04340	.02132
#2	.00237	6.2120	.00148	.24778	.00202	.02408	.03401	.04312	.02195

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3539.9	46978.	2805.0
Stddev	.1	159.	11.2
%RSD	.00331	.33932	.39960

#1	3539.8	47091.	2797.1
#2	3540.0	46865.	2812.9

Sample Name: 123481-C-2-A SD@5 Acquired: 5/14/2019 18:18:52 Type: Unk

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoadesc Prep Date: Custom ID2: Custom ID3:

Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	1.8633	.00446	.01211	.03395	.00058	.00015	74.076	.00009
Stddev	.00015	.0402	.00563	.00027	.00073	.00000	.00076	.537	.00019
%RSD	19.476	2.1581	126.22	2.2107	2.1359	.59652	504.68	.72457	220.85

#1	.00064	1.8349	.00048	.01192	.03344	.00058	-.00039	73.696	-.00005
#2	.00085	1.8917	.00844	.01230	.03446	.00058	.00069	74.455	.00022

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	.00112	.00124	2.0262	1.4081	-.00140	10.922	.09300	.00050
Stddev	.00039	.00029	.00039	.0029	.0208	.00147	.049	.00028	.00004
%RSD	58.170	25.706	31.007	.14382	1.4750	104.58	.44894	.30154	8.2400

#1	.00095	.00092	.00097	2.0241	1.3934	-.00244	10.888	.09280	.00047
#2	.00040	.00132	.00152	2.0282	1.4228	-.00037	10.957	.09319	.00053

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.033	-.00451	.07767	.00111	72.108	-.00045	.00306	5.3584	11.467
Stddev	.460	.00049	.00005	.00217	1.459	.00185	.00018	.0699	.150
%RSD	2.2942	10.862	.06540	196.15	2.0232	413.00	5.8155	1.3048	1.3048

#1	19.708	-.00485	.07763	.00265	71.076	-.00175	.00294	5.3090	11.361
#2	20.358	-.00416	.07771	-.00043	73.139	.00086	.00319	5.4079	11.573

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	1.0361	-.00049	.05190	.00502	.04659	.00590	.00642	.00628
Stddev	.00036	.0079	.00005	.00204	.00033	.02536	.00165	.00062	.00206
%RSD	323.22	.76448	10.931	3.9216	6.5103	54.443	27.929	9.6359	32.888

#1	-.00036	1.0305	-.00046	.05047	.00479	.06452	.00473	.00598	.00482
#2	.00014	1.0417	-.00053	.05334	.00525	.02865	.00706	.00686	.00774

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3659.0	49349.	2804.5
Stddev	2.0	326.	9.2
%RSD	.05400	.66086	.32687

#1	3657.6	49118.	2810.9
#2	3660.4	49579.	2798.0

Sample Name: 280-123481-C-2-B MS Acquired: 5/14/2019 18:21:23 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05965	27.851	2.0000	1.0394	2.1238	.95492	1.9347	483.81	1.0043
Stddev	.00047	.010	.0086	.0068	.0009	.00090	.0122	.31	.0053
%RSD	.79603	.03486	.42771	.65598	.04281	.09376	.63107	.06440	.52567

#1	.05931	27.858	2.0060	1.0442	2.1232	.95429	1.9433	483.59	1.0081
#2	.05998	27.844	1.9939	1.0346	2.1245	.95556	1.9261	484.03	1.0006

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94523	.92324	1.0220	21.929	58.736	1.0283	113.98	1.5652	1.0146
Stddev	.00405	.00437	.0001	.015	.139	.0016	.14	.0006	.0048
%RSD	.42865	.47367	.01397	.06861	.23582	.15385	.12559	.03642	.47138

#1	.94809	.92633	1.0221	21.939	58.638	1.0294	114.08	1.5656	1.0180
#2	.94236	.92015	1.0219	21.918	58.834	1.0271	113.88	1.5648	1.0113

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	167.11	.94433	W 20.345	.94527	F 423.21	.98502	1.9573	46.563	99.645
Stddev	.25	.00370	.127	.00422	2.00	.00477	.0073	.180	.386
%RSD	.14823	.39157	.62575	.44645	.47171	.48437	.37480	.38706	.38706

#1	167.28	.94694	20.435	.94825	424.62	.98839	1.9625	46.436	99.373
#2	166.93	.94171	20.255	.94229	421.80	.98164	1.9521	46.691	99.918

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000		200.00				
Low Limit			-6.0000		-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8385	7.2660	1.0183	1.2870	1.7210	2.0557	1.0962	.52778	.51044
Stddev	.0119	.0014	.0011	.0003	.0072	.0224	.0006	.00008	.00422
%RSD	.64958	.01913	.10589	.02030	.41778	1.0886	.05150	.01602	.82719

#1	1.8469	7.2650	1.0175	1.2868	1.7261	2.0399	1.0966	.52772	.50746
#2	1.8300	7.2669	1.0191	1.2872	1.7159	2.0715	1.0958	.52784	.51343

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3494.5	46609.	2772.8
Stddev	4.4	188.	10.2
%RSD	.12568	.40382	.36775

#1	3491.4	46742.	2765.6
#2	3497.6	46476.	2780.0

Sample Name: 280-123481-C-2-C MSD Acquired: 5/14/2019 18:23:39 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05725	27.192	1.9497	1.0233	2.0567	.92678	1.9000	469.93	.97742
Stddev	.00053	.117	.0031	.0032	.0016	.00044	.0104	.08	.00214
%RSD	.92918	.42860	.15657	.31205	.07801	.04755	.54783	.01606	.21942

#1	.05687	27.274	1.9518	1.0256	2.0578	.92709	1.9074	469.99	.97893
#2	.05762	27.109	1.9475	1.0211	2.0555	.92646	1.8926	469.88	.97590

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.91856	.89883	.99384	21.329	57.521	1.0028	111.22	1.4988	.99008
Stddev	.00346	.00277	.00202	.016	.114	.0006	.23	.0015	.00598
%RSD	.37679	.30834	.20279	.07728	.19881	.05519	.20741	.10049	.60383

#1	.92101	.90079	.99242	21.341	57.602	1.0024	111.38	1.4999	.99430
#2	.91612	.89687	.99527	21.318	57.440	1.0032	111.06	1.4977	.98585

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	161.11	.92168	W 20.305	.92061	F 412.70	.97454	1.9034	45.081	96.474
Stddev	1.11	.00468	.088	.00890	.84	.00795	.0064	.231	.494
%RSD	.69040	.50808	.43259	.96705	.20377	.81561	.33637	.51243	.51243

#1	161.90	.92499	20.367	.92691	413.30	.98016	1.9080	45.245	96.823
#2	160.33	.91837	20.242	.91432	412.11	.96892	1.8989	44.918	96.124

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000		200.00				
Low Limit			-6.0000		-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.7854	7.0317	1.0020	1.2597	1.6807	2.0340	1.0683	.52027	.50562
Stddev	.0092	.0019	.0019	.0003	.0067	.0049	.0018	.00138	.00478
%RSD	.51246	.02754	.18888	.02525	.39906	.23829	.16534	.26482	.94620

#1	1.7919	7.0331	1.0007	1.2600	1.6854	2.0306	1.0695	.52125	.50900
#2	1.7789	7.0303	1.0033	1.2595	1.6759	2.0374	1.0670	.51930	.50224

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3530.3	46734.	2816.3
Stddev	5.3	155.	7.8
%RSD	.14872	.33237	.27758

#1	3526.6	46624.	2821.9
#2	3534.0	46844.	2810.8

Sample Name: 280-123481-C-3-A Acquired: 5/14/2019 18:25:56 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	.23150	.00268	.06931	.01189	.00020	.00181	371.33	.00055
Stddev	.00033	.00329	.00948	.00157	.00049	.00004	.00132	.26	.00008
%RSD	33.244	1.4194	353.46	2.2595	4.1419	17.963	72.995	.07063	15.375

#1	.00076	.23382	.00939	.07042	.01224	.00017	.00274	371.51	.00049
#2	.00123	.22917	-.00402	.06820	.01154	.00022	.00088	371.14	.00061

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.00053	.00115	.21655	5.4239	.02749	73.144	.00510	.00164
Stddev	.00027	.00022	.00011	.00294	.1324	.00001	.316	.00001	.00106
%RSD	658.35	41.811	9.7287	1.3557	2.4408	.03582	.43167	.22100	64.681

#1	.00015	.00069	.00122	.21862	5.3303	.02750	73.368	.00509	.00089
#2	-.00023	.00037	.00107	.21447	5.5175	.02748	72.921	.00511	.00239

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	445.47	-.00270	.01106	-.00002	F 561.97	.00545	.10970	8.2723	17.703
Stddev	.18	.00046	.00111	.00036	6.47	.00011	.00623	.0299	.064
%RSD	.04079	16.919	10.073	1654.5	1.1521	1.9949	5.6759	.36101	.36101

#1	445.59	-.00303	.01027	.00023	566.55	.00553	.10530	8.2934	17.748
#2	445.34	-.00238	.01185	-.00028	557.40	.00538	.11410	8.2512	17.658

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00075	9.5368	-.00149	.00605	.00058	.03790	.00013	.00493	.00297
Stddev	.00041	.0083	.00158	.00007	.00145	.03222	.00010	.00003	.00134
%RSD	54.378	.08718	106.39	1.1434	250.67	85.027	77.999	.55264	45.165

#1	-.00104	9.5427	-.00037	.00600	.00160	.06068	.00006	.00495	.00391
#2	-.00046	9.5309	-.00261	.00610	-.00045	.01511	.00020	.00491	.00202

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3501.0	46988.	2806.8
Stddev	10.5	129.	6.1
%RSD	.29871	.27438	.21558

#1	3508.4	46897.	2802.5
#2	3493.6	47079.	2811.1

Sample Name: 280-123481-C-4-A Acquired: 5/14/2019 18:28:28 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00322	-.00045	.04127	.01511	.00031	-.00603	336.19	-.00036
Stddev	.00175	.00025	.00311	.00030	.00026	.00007	.00210	.73	.00043
%RSD	806.64	7.9051	686.79	.72179	1.7016	23.615	34.855	.21606	117.15

#1	.00146	-.00340	-.00265	.04106	.01529	.00036	-.00752	335.67	-.00006
#2	-.00102	-.00304	.00174	.04148	.01493	.00025	-.00455	336.70	-.00067

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.00036	-.00087	.02238	4.7523	.00335	44.588	.00048	.00081
Stddev	.00002	.00038	.00024	.00778	.0780	.00024	.066	.00003	.00043
%RSD	13.707	105.89	27.071	34.776	1.6412	7.1310	.14847	5.9934	53.296

#1	-.00013	.00009	-.00070	.01688	4.8074	.00352	44.541	.00050	.00112
#2	-.00016	.00062	-.00104	.02789	4.6971	.00319	44.634	.00046	.00051

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	77.806	-.00317	.02251	.00016	F 253.29	.00042	.02141	8.1735	17.491
Stddev	.389	.00066	.00044	.00256	1.28	.00108	.00201	.0780	.167
%RSD	.49965	20.899	1.9516	1645.9	.50600	254.96	9.4093	.95385	.95385

#1	78.081	-.00270	.02282	.00196	254.19	.00119	.01999	8.1184	17.373
#2	77.531	-.00364	.02220	-.00165	252.38	-.00034	.02284	8.2287	17.609

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00105	4.9379	-.00101	.00104	.00323	.02021	.00021	.00063	.00361
Stddev	.00039	.0092	.00055	.00011	.00185	.06901	.00017	.00002	.00513
%RSD	37.381	.18566	54.640	10.876	57.252	341.39	78.015	3.2626	142.28

#1	.00133	4.9315	-.00062	.00096	.00192	.06901	.00010	.00064	-.00002
#2	.00077	4.9444	-.00140	.00112	.00453	-.02858	.00033	.00061	.00723

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3455.6	46707.	2742.0
Stddev	19.4	116.	2.2
%RSD	.56124	.24750	.07858

#1	3469.3	46625.	2743.5
#2	3441.9	46789.	2740.4

Sample Name: 280-123481-C-5-A Acquired: 5/14/2019 18:31:01 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00167	.02143	.00070	.04855	.01685	.00018	-.00294	290.27	.00007
Stddev	.00058	.00006	.00236	.00156	.00005	.00005	.00029	.64	.00002
%RSD	35.031	.26176	337.24	3.2232	.31912	29.503	9.7075	.22000	22.786

#1	.00125	.02139	-.00097	.04966	.01681	.00021	-.00314	289.82	.00006
#2	.00208	.02147	.00236	.04744	.01689	.00014	-.00274	290.73	.00009

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00091	.00034	.05945	6.8681	.00921	57.939	.00964	.00019
Stddev	.00032	.00010	.00003	.00879	.2013	.00135	.389	.00024	.00052
%RSD	478.51	10.477	7.3244	14.781	2.9304	14.665	.67093	2.5090	274.61

#1	-.00030	.00097	.00036	.06567	6.7258	.00825	58.213	.00981	.00055
#2	.00016	.00084	.00032	.05324	7.0104	.01016	57.664	.00947	-.00018

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	243.79	-.00331	.00477	.00044	F 302.06	.00145	.06254	4.0951	8.7635
Stddev	.30	.00014	.00004	.00251	2.01	.00359	.00187	.0351	.0752
%RSD	.12179	4.3178	.83924	563.76	.66480	248.05	2.9881	.85767	.85767

#1	243.58	-.00321	.00474	.00222	303.48	-.00109	.06386	4.1199	8.8167
#2	244.00	-.00341	.00480	-.00133	300.64	.00399	.06122	4.0703	8.7104

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	6.8993	.00107	.00137	.00124	-.06052	-.00020	.01847	.00843
Stddev	.00006	.0143	.00069	.00008	.00006	.00199	.00003	.00056	.00074
%RSD	33.631	.20708	64.328	5.7235	4.8935	3.2958	16.709	3.0420	8.7899

#1	.00021	6.8892	.00059	.00131	.00128	-.06193	-.00017	.01887	.00790
#2	.00013	6.9094	.00156	.00142	.00119	-.05911	-.00022	.01808	.00895

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3431.2	46007.	2698.8
Stddev	29.1	116.	17.5
%RSD	.84831	.25183	.64962

#1	3451.8	45925.	2711.2
#2	3410.6	46089.	2686.4

Sample Name: 280-123481-C-6-A Acquired: 5/14/2019 18:33:33 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.01835	.00549	.08052	.10136	.00027	-.00175	183.63	.00009
Stddev	.00094	.00001	.00024	.00022	.00008	.00004	.00048	.33	.00005
%RSD	168.87	.07837	4.3793	.27724	.07756	14.933	27.408	.17954	48.624

#1	-.00011	.01836	.00532	.08036	.10142	.00024	-.00208	183.86	.00013
#2	.00122	.01834	.00566	.08068	.10131	.00030	-.00141	183.40	.00006

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.00002	-.00062	.02565	2.9618	.00739	35.322	.03641	.00007
Stddev	.00025	.00014	.00059	.00111	.0592	.00210	.054	.00014	.00039
%RSD	2198.5	884.27	95.434	4.3290	1.9999	28.438	.15372	.38189	604.67

#1	.00017	.00011	-.00104	.02643	2.9199	.00887	35.284	.03631	.00034
#2	-.00019	-.00008	-.00020	.02486	3.0037	.00590	35.361	.03651	-.00021

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	59.210	-.00373	.01002	-.00096	80.476	.00272	-.00161	8.9648	19.185
Stddev	.204	.00002	.00201	.00129	.498	.00145	.00412	.0068	.014
%RSD	.34469	.48492	20.089	134.23	.61840	53.456	255.65	.07545	.07545

#1	59.066	-.00371	.01144	-.00005	80.828	.00375	.00130	8.9696	19.195
#2	59.354	-.00374	.00860	-.00187	80.124	.00169	-.00452	8.9600	19.174

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	3.8005	-.00123	.00034	-.00154	-.02883	-.00010	.00247	.00283
Stddev	.00008	.0040	.00253	.00038	.00030	.04809	.00009	.00018	.00118
%RSD	9.3058	.10400	206.34	110.09	19.465	166.77	87.087	7.3571	41.824

#1	.00078	3.8033	-.00302	.00008	-.00175	.00517	-.00004	.00234	.00199
#2	.00089	3.7977	.00056	.00061	-.00133	-.06284	-.00017	.00260	.00366

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3526.7	47838.	2733.5
Stddev	.8	366.	6.3
%RSD	.02299	.76546	.23131

#1	3526.1	48097.	2729.0
#2	3527.3	47579.	2738.0

Sample Name: CCVH-5699817 Acquired: 5/14/2019 18:36:07 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .01663	46.198	k -.00720	k .00537	k .00317	k .00153	k .90878	k .01090	k -.00022	k .00422	k .00169	k .01116
Stddev	.00077	.007	.00925	.00092	.00009	.00009	.01001	.00951	.00008	.00034	.00012	.00029
%RSD	4.6356	.01485	128.58	17.172	2.7125	5.6486	1.1012	87.291	35.599	8.1754	7.3629	2.6030

#1	k .01718	46.194	k -.00065	k .00602	k .00323	k .00159	k .91585	k .00417	k -.00016	k .00446	k .00178	k .01095
#2	k .01609	46.203	k -.01374	k .00472	k .00310	k .00147	k .90170	k .01762	k -.00027	k .00397	k .00160	k .01136

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	kF 43.862	.34091	.00130	k .03526	k .00243	k .00003	245.26	k -.00017	k .00506	k .01703	k 4.5421	k -.02954
Stddev	.086	.07534	.00166	.00363	.00001	.00038	.22	.00101	.00204	.00163	.0337	.00568
%RSD	.19583	22.101	127.44	10.299	.55202	1098.2	.08971	604.82	40.440	9.5436	.74208	19.224

#1	k 43.923	.39419	.00247	k .03270	k .00242	k .00031	245.11	k -.00088	k .00361	k .01588	k 4.5659	k -.03356
#2	k 43.801	.28763	.00013	k .03783	k .00244	k -.00024	245.42	k .00055	k .00650	k .01818	k 4.5183	k -.02553

Check ?	Chk Fail	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None
Value	50.000											
Range	-10.490%											

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.00535	k -.03106	k -.06646	k .00209	.00199	k 5.1411	k .02224	k .00485	k 9.9028	k .01025	k .00224	k .29041
Stddev	.00747	.06047	.12940	.00009	.00007	.0018	.00016	.00031	.0181	.00112	.00043	.00287
%RSD	139.60	194.70	194.70	4.4018	3.3928	.03531	.74128	6.4959	.18264	10.881	19.268	.98692

#1	k -.00007	k .01170	k .02504	k .00203	.00204	k 5.1398	k .02213	k .00507	k 9.8901	k .00946	k .00193	k .28839
#2	k -.01063	k -.07381	k -.15796	k .00216	.00195	k 5.1423	k .02236	k .00463	k 9.9156	k .01104	k .00254	k .29244

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3615.5	47730.	2738.7
Stddev	4.7	65.	12.4
%RSD	.12953	.13520	.45173

#1	3612.2	47776.	2730.0
#2	3618.8	47685.	2747.5

Sample Name: CCV-5699804 Acquired: 5/14/2019 18:38:38 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51619	.50583	.94005	.47244	.46466	.46585	-.00043	4.5124	.47914	.48663	.45551	.48942
Stddev	.00106	.00332	.01026	.00187	.00318	.00038	.00024	.0037	.00361	.00344	.00283	.00047
%RSD	.20593	.65621	1.0911	.39478	.68429	.08108	55.419	.08086	.75283	.70657	.62027	.09647

#1	.51694	.50818	.94730	.47376	.46241	.46558	-.00059	4.5099	.48169	.48906	.45751	.48909
#2	.51544	.50348	.93280	.47112	.46691	.46611	-.00026	4.5150	.47659	.48420	.45352	.48976

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.3762	48.603	.96819	20.531	.50558	.49210	F 5.9003	.48621	.95967	.97807	.04100	.93802
Stddev	.0002	.232	.00754	.025	.00057	.00477	.0019	.00374	.00719	.00392	.00423	.00723
%RSD	.00905	.47808	.77835	.12313	.11184	.96853	.03260	.76851	.74936	.40113	10.311	.77038

#1	2.3760	48.439	.96286	20.549	.50598	.49547	5.8989	.48885	.96475	.98084	.04399	.94313
#2	2.3764	48.768	.97352	20.513	.50518	.48873	5.9016	.48357	.95458	.97529	.03801	.93291

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93531	4.6521	9.9555	.91815	.47066	.00194	.50078	.92764	.04071	.50821	.49559	.49599
Stddev	.00461	.0622	.1331	.00590	.00166	.00075	.00131	.00005	.05018	.00238	.00054	.00191
%RSD	.49258	1.3371	1.3371	.64297	.35345	38.519	.26195	.00538	123.25	.46810	.10966	.38544

#1	.93857	4.6081	9.8614	.92232	.46948	.00141	.50171	.92767	.00523	.50989	.49521	.49734
#2	.93205	4.6961	10.050	.91398	.47183	.00247	.49985	.92760	.07619	.50653	.49598	.49464

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3681.2	48627.	2775.4
Stddev	8.1	89.	22.4
%RSD	.22113	.18230	.80550

#1	3675.4	48565.	2791.2
#2	3686.9	48690.	2759.6

Sample Name: CCB Acquired: 5/14/2019 18:41:01 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	.00169	.00237	.00196	.00100	.00019	.00162	-.00219	.00010	-.00011	-.00001	-.00149
Stddev	.00097	.00018	.00219	.00028	.00087	.00009	.00048	.00018	.00025	.00055	.00002	.00025
%RSD	134.60	10.816	92.671	14.108	86.885	48.855	29.771	8.4122	243.13	496.96	180.11	16.506

#1	.00003	.00156	.00392	.00215	.00161	.00025	.00128	-.00232	-.00007	.00028	-.00003	-.00166
#2	.00140	.00182	.00082	.00176	.00039	.00012	.00196	-.00206	.00028	-.00050	.00000	-.00132

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00516	.06583	.00243	-.00197	.00004	.00096	F .56861	-.00403	-.00100	.00134	.03198	.00488
Stddev	.00202	.04922	.00387	.00243	.00010	.00012	.02269	.00002	.00256	.00157	.00112	.00070
%RSD	39.103	74.767	159.35	123.45	287.36	12.959	3.9909	.41126	256.47	117.20	3.5126	14.319

#1	.00659	.10064	.00517	-.00368	.00011	.00088	.58466	-.00401	.00081	.00023	.03119	.00537
#2	.00373	.03103	-.00031	-.00025	-.00004	.00105	.55256	-.00404	-.00281	.00245	.03278	.00439

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							.50000					
Low Limit							-.50000					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00353	-.00388	-.00830	-.00002	-.00011	.00232	.00045	.00157	.01900	.00013	-.00144	-.00246
Stddev	.00418	.01970	.04216	.00025	.00026	.00028	.00052	.00184	.04368	.00021	.00003	.00036
%RSD	118.69	507.62	507.62	991.27	236.92	12.000	116.95	117.06	229.88	164.91	1.8309	14.612

#1	-.00648	-.01781	-.03811	-.00020	.00007	.00251	.00008	.00027	-.01188	.00028	-.00146	-.00221
#2	-.00057	.01005	.02150	.00015	-.00030	.00212	.00082	.00287	.04989	-.00002	-.00142	-.00272

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3689.4	48921.	2770.5
Stddev	2.7	197.	18.0
%RSD	.07331	.40217	.64804

#1	3687.5	49060.	2757.8
#2	3691.3	48782.	2783.2

Sample Name: CCVL-5701318 Acquired: 5/14/2019 18:43:37 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01052	.09275	F .00596	.09409	.00965	.00112	.09921	.19195	.00477	.00954	.00916	.01321
Stddev	.00081	.00116	.00369	.00211	.00040	.00006	.00199	.00426	.00001	.00007	.00015	.00094
%RSD	7.7109	1.2492	61.992	2.2382	4.1382	5.6955	2.0101	2.2191	.25327	.77402	1.6214	7.0923

#1	.01110	.09357	.00335	.09558	.00993	.00116	.10062	.19496	.00478	.00959	.00906	.01255
#2	.00995	.09193	.00857	.09260	.00937	.00107	.09780	.18894	.00476	.00949	.00927	.01388

Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.01500									
Range			-30.000%									

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08910	3.0279	.01640	.20279	.01015	.01936	F 1.4451	.03571	2.7488	.00882	.10770	.01720
Stddev	.00179	.0931	.00116	.00265	.00013	.00005	.0112	.00003	.0311	.00072	.00425	.00059
%RSD	2.0106	3.0746	7.0674	1.3073	1.2657	.25309	.77187	.08939	1.1311	8.1810	3.9451	3.4379

#1	.09037	2.9621	.01722	.20092	.01024	.01932	1.4530	.03573	2.7708	.00933	.10469	.01678
#2	.08783	3.0937	.01558	.20467	.01006	.01939	1.4372	.03568	2.7269	.00831	.11070	.01762

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							1.0000					
Range							30.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01681	.47649	1.0197	.09187	.00954	.01246	.00961	.01623	F .12158	.01021	.01884	.01364
Stddev	.00263	.05711	.1222	.00082	.00029	.00216	.00051	.00299	.02239	.00004	.00027	.00268
%RSD	15.622	11.986	11.986	.88976	3.0574	17.325	5.3088	18.432	18.417	.41722	1.4488	19.644

#1	.01495	.43610	.93326	.09245	.00974	.01399	.00925	.01411	.10575	.01018	.01903	.01553
#2	.01867	.51687	1.1061	.09129	.00933	.01094	.00998	.01834	.13742	.01024	.01865	.01175

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value									.06000			
Range									30.000%			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3789.5	50867.	2846.9
Stddev	3.5	11.	8.3
%RSD	.09243	.02249	.29289

#1	3787.1	50859.	2852.8
#2	3792.0	50876.	2841.0

Sample Name: 280-123481-C-7-A Acquired: 5/14/2019 18:46:10 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	.60916	-.00275	.08684	.01867	.00011	.00126	240.19	.00049
Stddev	.00008	.00443	.00286	.00035	.00052	.00017	.00294	.21	.00021
%RSD	7.0277	.72764	104.04	.40507	2.8001	155.91	233.90	.08837	42.014

#1	.00106	.61229	-.00477	.08709	.01904	.00023	-.00082	240.34	.00063
#2	.00118	.60602	-.00073	.08659	.01830	-.00001	.00334	240.04	.00034

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00082	.00183	.76342	4.0541	.01680	45.402	.01989	-.00023
Stddev	.00029	.00007	.00016	.00104	.0256	.00743	.015	.00003	.00062
%RSD	176.20	8.3437	8.6986	.13674	.63035	44.209	.03261	.17178	262.69

#1	-.00004	.00077	.00171	.76268	4.0722	.01155	45.413	.01991	-.00067
#2	.00037	.00086	.00194	.76416	4.0360	.02205	45.392	.01986	.00020

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	248.03	-.00291	.04923	-.00026	F 222.08	-.00075	-.00470	12.125	25.947
Stddev	.93	.00087	.00167	.00050	1.72	.00406	.00481	.063	.135
%RSD	.37311	29.867	3.3903	190.29	.77603	544.01	102.42	.52201	.52201

#1	248.68	-.00230	.04805	-.00061	223.29	.00212	-.00130	12.169	26.043
#2	247.37	-.00352	.05041	.00009	220.86	-.00362	-.00810	12.080	25.851

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	5.1571	.00093	.01255	.00193	-.01280	.00228	.01168	.00529
Stddev	.00183	.0054	.00272	.00016	.00256	.04188	.00140	.00019	.00302
%RSD	271.94	.10533	292.36	1.2435	132.43	327.19	61.273	1.6467	57.135

#1	-.00062	5.1610	-.00099	.01244	.00375	-.04242	.00129	.01182	.00743
#2	.00197	5.1533	.00286	.01267	.00012	.01682	.00327	.01155	.00315

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3515.3	46957.	2762.1
Stddev	10.9	135.	24.2
%RSD	.31063	.28739	.87625

#1	3523.0	47053.	2745.0
#2	3507.6	46862.	2779.2

Sample Name: 280-123481-C-8-A Acquired: 5/14/2019 18:48:41 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.16345	-.00189	.04357	.01390	.00024	-.00519	305.74	.00006
Stddev	.00020	.00182	.00501	.00074	.00039	.00000	.00588	1.43	.00020
%RSD	29.358	1.1132	265.19	1.6961	2.7715	.29801	113.32	.46768	326.00

#1	.00054	.16474	.00165	.04409	.01417	.00024	-.00103	304.73	-.00008
#2	.00082	.16217	-.00543	.04304	.01362	.00024	-.00935	306.75	.00020

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.00061	.00027	.28551	7.2201	.01132	95.896	.00892	.00064
Stddev	.00025	.00009	.00006	.00506	.3055	.00347	.059	.00012	.00010
%RSD	115.20	14.825	23.135	1.7720	4.2319	30.649	.06116	1.3559	15.797

#1	-.00004	.00054	.00023	.28909	7.0040	.00887	95.854	.00900	.00071
#2	-.00040	.00067	.00032	.28194	7.4361	.01378	95.937	.00883	.00057

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 568.49	-.00321	.01107	.00096	F 548.67	.00051	.09236	5.2550	11.246
Stddev	1.30	.00054	.00063	.00079	4.28	.00477	.00065	.0149	.032
%RSD	.22783	16.766	5.7302	82.763	.77917	938.56	.70869	.28322	.28322

#1	567.58	-.00283	.01062	.00152	551.69	-.00286	.09283	5.2445	11.223
#2	569.41	-.00359	.01152	.00040	545.64	.00388	.09190	5.2655	11.268

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				200.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	7.0742	-.00370	.00397	-.00205	-.00617	.00053	.00143	.00597
Stddev	.00098	.0263	.00153	.00021	.00016	.04921	.00054	.00016	.00163
%RSD	445.79	.37146	41.356	5.2009	7.7751	797.41	101.02	11.252	27.264

#1	.00047	7.0556	-.00262	.00383	-.00193	-.04097	.00091	.00154	.00712
#2	-.00091	7.0928	-.00478	.00412	-.00216	.02862	.00015	.00131	.00482

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3452.5	45374.	2734.4
Stddev	17.9	70.	32.2
%RSD	.51889	.15368	1.1780

#1	3439.8	45423.	2757.2
#2	3465.2	45324.	2711.6

Sample Name: 280-123546-A-1-A Acquired: 5/14/2019 18:51:13 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00932	.00580	.03232	.14369	.00016	-.00231	184.67	.00056
Stddev	.00048	.00065	.00390	.00091	.00022	.00001	.00222	.01	.00007
%RSD	712.89	7.0256	67.222	2.8120	.15396	4.7008	96.083	.00420	11.728

#1	-.00027	.00885	.00304	.03168	.14384	.00016	-.00388	184.68	.00061
#2	.00041	.00978	.00856	.03296	.14353	.00017	-.00074	184.67	.00051

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	.00026	.00173	.12402	1.8609	.00342	26.661	5.8576	.00092
Stddev	.00004	.00017	.00102	.00006	.0021	.00123	.008	.0017	.00022
%RSD	4.4189	64.356	58.861	.04581	.11467	35.837	.02986	.02960	24.191

#1	.00078	.00014	.00101	.12406	1.8624	.00255	26.667	5.8564	.00076
#2	.00083	.00038	.00245	.12398	1.8594	.00429	26.656	5.8588	.00108

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.048	.01003	.07389	.00163	28.250	.00200	-.00360	9.7376	20.838
Stddev	.350	.00028	.00125	.00092	.241	.00319	.00107	.0063	.014
%RSD	2.4901	2.7713	1.6862	56.737	.85396	159.68	29.693	.06508	.06508

#1	13.800	.01023	.07301	.00098	28.421	-.00026	-.00284	9.7331	20.829
#2	14.295	.00984	.07477	.00228	28.079	.00426	-.00435	9.7421	20.848

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.83808	-.00065	.00063	-.00065	-.01468	.00137	.00515	.00573
Stddev	.00054	.00069	.00245	.00014	.00142	.03874	.00020	.00074	.00092
%RSD	49.872	.08198	376.63	21.988	217.11	264.00	14.314	14.342	15.971

#1	.00146	.83759	.00108	.00073	.00035	-.04207	.00151	.00462	.00638
#2	.00070	.83856	-.00238	.00053	-.00165	.01272	.00123	.00567	.00509

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3686.9	49352.	2856.3
Stddev	14.7	213.	22.9
%RSD	.39761	.43096	.80146

#1	3697.3	49502.	2840.1
#2	3676.6	49201.	2872.5

Sample Name: 280-123546-A-2-A Acquired: 5/14/2019 18:53:50 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.20244	.00534	.01871	.24602	.00030	-.00085	58.015	.00054
Stddev	.00034	.00034	.00109	.00065	.00018	.00002	.00422	.078	.00007
%RSD	140.88	.16965	20.448	3.4676	.07261	6.7600	495.43	.13446	13.170

#1	.00048	.20268	.00457	.01826	.24615	.00032	.00213	57.960	.00058
#2	.00000	.20219	.00611	.01917	.24589	.00029	-.00384	58.070	.00049

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.00163	.00020	.18379	3.4327	.00067	12.031	.00478	.00065
Stddev	.00040	.00030	.00132	.00312	.0398	.00081	.025	.00006	.00008
%RSD	124.82	18.541	673.67	1.7001	1.1608	120.90	.20989	1.3569	11.836

#1	-.00061	.00185	-.00074	.18600	3.4608	.00010	12.048	.00482	.00070
#2	-.00004	.00142	.00113	.18158	3.4045	.00124	12.013	.00473	.00059

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Line	589.592 { 57}	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.104	W 10.504	-.00138	.20887	.00088	1.8823	.00554	-.00145	8.8632
Stddev	.015	.439	.00036	.00289	.00020	.0224	.00167	.00230	.0452
%RSD	.15289	4.1813	25.850	1.3856	22.288	1.1917	30.231	158.69	.50971

#1	10.115	10.193	-.00113	.21092	.00102	1.8982	.00435	-.00308	8.8952
#2	10.093	10.814	-.00163	.20683	.00074	1.8664	.00672	.00018	8.8313

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		500.00							
Low Limit		11.000							

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	18.967	-.00012	.37718	-.00298	.00525	.00087	.02548	.00148	.00138
Stddev	.097	.00067	.00012	.00167	.00046	.00079	.02929	.00005	.00058
%RSD	.50971	578.37	.03254	56.116	8.8412	90.105	114.97	3.3404	41.732

#1	19.036	.00036	.37710	-.00180	.00492	.00032	.00476	.00145	.00179
#2	18.899	-.00059	.37727	-.00416	.00558	.00143	.04619	.00152	.00097

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Zr3391								
Line	339.198 { 99}								
Units	ppm								
Avg	.00452								
Stddev	.00116								
%RSD	25.670								

#1	.00534								
#2	.00370								

Check ?	Chk Pass								
High Limit									
Low Limit									

Sample Name: 280-123546-A-2-A Acquired: 5/14/2019 18:53:50 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3756.8	50366.	2910.3
Stddev	6.2	242.	8.6
%RSD	.16562	.48109	.29413
#1	3761.2	50538.	2904.2
#2	3752.4	50195.	2916.3

Sample Name: 280-123546-A-3-A Acquired: 5/14/2019 18:56:23 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.00396	.00142	.08819	.07219	.00008	-.00186	184.38	.00095
Stddev	.00036	.00011	.00101	.00189	.00086	.00029	.00697	.43	.00003
%RSD	89.619	2.6882	71.002	2.1483	1.1854	342.36	375.73	.23187	2.7951

#1	.00065	.00404	.00213	.08953	.07159	-.00012	.00307	184.07	.00097
#2	.00015	.00389	.00071	.08685	.07280	.00029	-.00678	184.68	.00093

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.00123	.00039	.00674	2.3107	.00180	22.015	3.5124	.00298
Stddev	.00007	.00046	.00004	.00292	.0211	.00239	.018	.0022	.00036
%RSD	19.903	37.289	10.504	43.330	.91516	132.94	.08073	.06368	11.904

#1	.00032	.00156	.00042	.00881	2.3257	.00348	22.028	3.5140	.00324
#2	.00043	.00091	.00037	.00468	2.2958	.00011	22.002	3.5108	.00273

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	87.459	.02624	.18520	-.00000	62.139	.00154	-.00049	11.805	25.263
Stddev	.261	.00068	.00010	.00086	.582	.00168	.00188	.020	.043
%RSD	.29899	2.5958	.05170	59763.	.93708	108.81	382.78	.16976	.16976

#1	87.274	.02672	.18527	.00061	62.550	.00273	-.00182	11.819	25.293
#2	87.643	.02576	.18514	-.00061	61.727	.00036	.00084	11.791	25.233

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00107	.60995	.00173	.00011	.00136	-.06021	.00080	.00337	.00421
Stddev	.00046	.00146	.00221	.00018	.00327	.01262	.00012	.00034	.00212
%RSD	43.342	.24013	127.41	162.41	239.62	20.958	15.633	10.143	50.397

#1	.00074	.60891	.00017	-.00002	.00368	-.05129	.00089	.00313	.00271
#2	.00139	.61098	.00329	.00024	-.00095	-.06913	.00071	.00361	.00571

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3550.4	48041.	2861.4
Stddev	.4	17.	17.7
%RSD	.01212	.03510	.61947

#1	3550.1	48053.	2874.0
#2	3550.7	48029.	2848.9

Sample Name: 280-123546-A-4-A Acquired: 5/14/2019 18:58:55 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00163	.03171	.00219	.08125	.03521	.00024	-.00105	241.37	.00032
Stddev	.00028	.00034	.00349	.00117	.00038	.00009	.00020	.28	.00005
%RSD	17.206	1.0833	159.46	1.4359	1.0779	37.881	19.078	.11596	15.349

#1	.00183	.03195	.00466	.08207	.03547	.00018	-.00119	241.17	.00028
#2	.00143	.03147	-.00028	.08042	.03494	.00031	-.00091	241.57	.00035

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.00000	.00013	.03442	4.0684	.01786	61.523	.00288	.00581
Stddev	.00026	.00022	.00054	.00124	.0649	.00022	.108	.00002	.00054
%RSD	68.959	7008.9	426.12	3.5924	1.5942	1.2218	.17623	.72790	9.2327

#1	-.00019	.00016	-.00025	.03355	4.0225	.01771	61.600	.00290	.00543
#2	-.00056	-.00015	.00051	.03530	4.1142	.01801	61.446	.00287	.00619

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.741	-.00288	.00844	-.00030	174.03	-.00007	.04625	6.6457	14.222
Stddev	.555	.00055	.00098	.00400	1.58	.00048	.00227	.0100	.021
%RSD	3.1288	19.046	11.600	1316.4	.90864	714.73	4.9154	.15060	.15060

#1	17.348	-.00249	.00914	.00252	175.14	-.00041	.04786	6.6386	14.207
#2	18.133	-.00326	.00775	-.00313	172.91	.00027	.04465	6.6527	14.237

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	1.4263	-.00117	.00151	.00167	.00236	.00022	.00617	.00455
Stddev	.00124	.0023	.00117	.00042	.00148	.01257	.00005	.00016	.00407
%RSD	193.09	.16273	100.14	27.955	88.978	531.57	22.732	2.5366	89.409

#1	-.00023	1.4246	-.00199	.00180	.00272	.01125	.00019	.00628	.00167
#2	.00152	1.4279	-.00034	.00121	.00062	-.00652	.00026	.00606	.00743

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3557.4	48120.	2807.8
Stddev	.3	39.	3.5
%RSD	.00730	.08193	.12377

#1	3557.2	48092.	2805.4
#2	3557.6	48148.	2810.3

Sample Name: 280-123546-A-5-A Acquired: 5/14/2019 19:01:27 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.01763	.00103	1.0217	.20707	.00032	-.00244	122.76	.00147
Stddev	.00009	.00065	.00013	.0070	.00100	.00001	.00325	.35	.00035
%RSD	27.178	3.7024	12.518	.68610	.48103	3.3987	133.10	.28122	23.984

#1	.00028	.01717	.00094	1.0267	.20636	.00033	-.00474	122.51	.00122
#2	.00041	.01809	.00112	1.0168	.20777	.00032	-.00014	123.00	.00172

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.00003	.00099	.29104	4.7975	.02789	82.517	2.9729	.01365
Stddev	.00017	.00016	.00055	.00386	.1710	.00284	.357	.0109	.00030
%RSD	21.536	568.39	55.903	1.3259	3.5646	10.200	.43248	.36733	2.2151

#1	.00065	.00014	.00138	.29377	4.6766	.02990	82.770	2.9806	.01343
#2	.00088	-.00009	.00060	.28831	4.9184	.02588	82.265	2.9652	.01386

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	155.78	.01978	.04250	-.00003	39.806	-.00238	-.00063	11.450	24.504
Stddev	.62	.00021	.00152	.00127	.245	.00482	.00219	.072	.155
%RSD	.39576	1.0443	3.5861	4502.2	.61583	202.69	347.99	.63205	.63205

#1	155.34	.01963	.04143	-.00092	39.979	-.00579	-.00218	11.399	24.394
#2	156.21	.01992	.04358	.00087	39.633	.00103	.00092	11.502	24.613

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	1.9816	-.00154	.00055	.00328	-.03615	.00054	.02038	.00319
Stddev	.00103	.0048	.00490	.00037	.00175	.04817	.00034	.00063	.00191
%RSD	239.92	.24056	317.75	66.790	53.172	133.26	63.622	3.0707	59.969

#1	.00030	1.9782	-.00500	.00029	.00452	-.00209	.00030	.02082	.00454
#2	-.00116	1.9850	.00192	.00081	.00205	-.07021	.00078	.01993	.00184

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3486.4	46625.	2724.8
Stddev	11.9	189.	15.4
%RSD	.33994	.40459	.56358

#1	3478.0	46492.	2735.7
#2	3494.7	46758.	2713.9

Sample Name: 280-123546-A-6-A Acquired: 5/14/2019 19:03:57 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.00993	-.00100	.09654	.03817	.00031	-.00160	444.97	-.00030
Stddev	.00002	.00007	.00175	.00118	.00034	.00009	.00005	.17	.00039
%RSD	1.7799	.66000	174.82	1.2213	.90023	30.260	2.8680	.03879	130.64

#1	.00091	.00998	.00024	.09737	.03841	.00025	-.00157	444.85	-.00057
#2	.00089	.00988	-.00224	.09570	.03793	.00038	-.00163	445.10	-.00002

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	.00001	.00457	.73697	1.3304	.00305	32.442	.43525	.00165
Stddev	.00012	.00008	.00050	.00578	.0112	.00162	.007	.00012	.00073
%RSD	8.7073	623.61	10.877	.78476	.83981	53.142	.02078	.02680	44.023

#1	.00142	.00007	.00422	.73288	1.3383	.00420	32.437	.43534	.00216
#2	.00126	-.00004	.00492	.74106	1.3225	.00190	32.447	.43517	.00114

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	37.735	.00950	.04041	-.00177	F 249.19	-.00078	.00361	9.4090	20.135
Stddev	.452	.00043	.00350	.00055	1.19	.00147	.00314	.0170	.036
%RSD	1.1973	4.5028	8.6562	31.036	.47785	186.90	87.000	.18017	.18017

#1	38.055	.00981	.03794	-.00138	250.03	-.00182	.00139	9.4210	20.161
#2	37.416	.00920	.04289	-.00215	248.35	.00025	.00583	9.3971	20.110

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00070	1.9491	.00030	.00098	-.00034	-.04759	-.00001	.02127	.00631
Stddev	.00045	.0029	.00337	.00022	.00070	.04878	.00041	.00017	.00268
%RSD	63.569	.14839	1119.1	22.735	204.45	102.50	4320.8	.79829	42.514

#1	-.00102	1.9511	-.00208	.00114	-.00084	-.01310	-.00030	.02139	.00820
#2	-.00039	1.9470	.00268	.00083	.00015	-.08208	.00028	.02115	.00441

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3465.3	46727.	2705.6
Stddev	2.2	246.	4.3
%RSD	.06243	.52563	.15990

#1	3466.8	46901.	2702.5
#2	3463.7	46554.	2708.6

Sample Name: 280-123546-A-7-A Acquired: 5/14/2019 19:06:29 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.01495	.00142	.05992	.05117	.00020	-.00104	181.40	.00064
Stddev	.00118	.00146	.00846	.00065	.00038	.00006	.00568	.68	.00051
%RSD	110.79	9.7794	595.47	1.0819	.74935	29.667	547.02	.37235	79.683

#1	.00190	.01392	.00740	.06038	.05090	.00016	.00298	180.93	.00028
#2	.00023	.01599	-.00456	.05946	.05144	.00024	-.00505	181.88	.00099

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00038	.00549	.03693	3.5012	.01262	46.257	.00497	.00409
Stddev	.00020	.00056	.00017	.00162	.0363	.00090	.023	.00003	.00021
%RSD	296.67	145.15	3.1870	4.3953	1.0358	7.1177	.04933	.50806	5.1615

#1	.00007	-.00001	.00536	.03578	3.4756	.01198	46.241	.00495	.00424
#2	-.00021	.00078	.00561	.03808	3.5269	.01325	46.273	.00498	.00394

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.980	.00182	.00414	-.00223	78.735	-.00048	.01314	6.5660	14.051
Stddev	.030	.00018	.00291	.00096	.224	.00227	.00171	.0127	.027
%RSD	.14488	9.6151	70.335	42.842	.28433	476.15	13.021	.19292	.19292

#1	21.001	.00194	.00208	-.00291	78.893	-.00208	.01435	6.5571	14.032
#2	20.959	.00170	.00621	-.00156	78.576	.00113	.01193	6.5750	14.070

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00087	1.1789	-.00380	.00028	.00114	.01224	-.00004	.02551	.00505
Stddev	.00072	.0027	.00127	.00026	.00020	.05916	.00099	.00004	.00385
%RSD	82.947	.23208	33.276	91.770	17.358	483.46	2232.2	.15683	76.372

#1	.00138	1.1770	-.00470	.00047	.00128	.05407	-.00075	.02554	.00232
#2	.00036	1.1809	-.00291	.00010	.00100	-.02960	.00066	.02548	.00777

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3578.5	47986.	2784.4
Stddev	1.6	92.	.8
%RSD	.04445	.19115	.02807

#1	3577.4	47921.	2785.0
#2	3579.7	48051.	2783.9

Sample Name: 280-123546-A-8-A Acquired: 5/14/2019 19:09:01 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457629 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	-.00134	.00368	.23243	.06113	.00004	.00057	93.201	.00018
Stddev	.00088	.00071	.00165	.00128	.00005	.00022	.00011	.050	.00002
%RSD	185.55	53.092	44.845	.54928	.08132	515.69	19.531	.05379	13.287

#1	-.00015	-.00084	.00251	.23333	.06110	.00020	.00064	93.166	.00017
#2	.00109	-.00184	.00484	.23152	.06117	-.00011	.00049	93.237	.00020

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.00042	-.00112	.17154	5.8681	.01976	38.465	.08207	.00907
Stddev	.00008	.00016	.00001	.00629	.0544	.00008	.032	.00029	.00042
%RSD	17.204	37.572	.66407	3.6654	.92653	.38518	.08260	.35763	4.6796

#1	.00051	.00053	-.00112	.16709	5.8296	.01981	38.487	.08228	.00877
#2	.00040	.00031	-.00113	.17598	5.9065	.01970	38.442	.08187	.00937

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	109.04	-.00367	.01030	-.00148	84.597	.00225	-.00529	6.1304	13.119
Stddev	.20	.00029	.00145	.00233	.255	.00093	.00404	.0485	.104
%RSD	.18515	7.9219	14.084	157.32	.30189	41.196	76.419	.79068	.79068

#1	109.18	-.00388	.00927	.00017	84.778	.00159	-.00243	6.0961	13.046
#2	108.90	-.00347	.01132	-.00313	84.417	.00290	-.00815	6.1646	13.192

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	3.0303	-.00109	.00025	.00022	.01812	-.00011	.00074	.00392
Stddev	.00109	.0005	.00088	.00041	.00001	.01642	.00023	.00008	.00081
%RSD	9754.0	.01664	80.648	162.34	4.2805	90.603	213.46	10.716	20.726

#1	-.00078	3.0307	-.00171	-.00004	.00021	.00651	.00006	.00080	.00335
#2	.00076	3.0300	-.00047	.00054	.00023	.02973	-.00027	.00068	.00450

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3633.4	48753.	2798.1
Stddev	4.2	258.	4.9
%RSD	.11547	.52938	.17602

#1	3630.4	48571.	2801.6
#2	3636.3	48936.	2794.7

Sample Name: CCVH-5699817 Acquired: 5/14/2019 19:11:34 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .01625	45.083	k -.00282	k .00386	k .00341	k .00158	k .90368	k .02509	k -.00013	k .00404	k .00113	k .00940
Stddev	.00065	.120	.00506	.00081	.00036	.00048	.00436	.00831	.00032	.00042	.00003	.00045
%RSD	4.0297	.26602	179.48	20.856	10.655	30.240	.48229	33.127	250.88	10.454	2.9841	4.7696

#1	k .01671	44.998	k .00076	.00329	k .00315	k .00124	k .90676	k .03097	k .00010	k .00434	k .00111	k .00972
#2	k .01578	45.167	k -.00640	k .00443	k .00366	k .00191	k .90060	k .01922	k -.00035	k .00374	k .00116	k .00908

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	kF 42.889	.24943	.00074	k .03048	k .00027	k .00012	239.65	k -.00006	k .00863	k .01522	k 4.4911	k -.02997
Stddev	.438	.01132	.00121	.00287	.00007	.00017	.20	.00028	.00193	.00126	.0298	.00608
%RSD	1.0204	4.5366	163.15	9.4001	27.044	140.26	.08139	476.69	22.354	8.2869	.66316	20.280

#1	k 43.198	.24143	.00160	k .02845	k .00022	k .00000	239.79	k -.00025	k .00999	k .01433	k 4.5121	k -.02567
#2	k 42.579	.25743	-.00011	k .03250	k .00032	k .00024	239.51	k .00014	k .00726	k .01611	k 4.4700	k -.03426

Check ?	Chk Fail	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None
Value	50.000											
Range	-10.490%											

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.01055	k -.01092	k -.02336	k .00208	.00179	k 5.0229	k .02124	k .00611	k 9.7315	k .01026	k .00265	k .28322
Stddev	.00434	.00145	.00309	.00011	.00003	.0166	.00049	.00160	.0187	.00086	.00087	.00152
%RSD	41.136	13.239	13.239	5.0763	1.7306	.33007	2.3086	26.176	.19237	8.3913	32.860	.53718

#1	k -.00748	k -.00989	k -.02118	k .00215	.00181	k 5.0346	k .02159	k .00724	k 9.7447	k .00965	k .00203	k .28214
#2	k -.01362	k -.01194	k -.02555	k .00200	.00177	k 5.0112	k .02089	k .00498	k 9.7182	k .01087	k .00326	k .28429

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3598.5	48008.	2749.1
Stddev	11.1	74.	11.2
%RSD	.30860	.15494	.40902

#1	3606.3	48060.	2757.0
#2	3590.6	47955.	2741.1

Sample Name: CCV-5699804 Acquired: 5/14/2019 19:14:04 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51381	.51034	.94323	.47508	.47126	.46925	.00340	4.5728	.48121	.48837	.45978	.48843
Stddev	.00382	.00509	.00086	.00123	.00074	.00248	.00173	.0078	.00288	.00415	.00460	.00208
%RSD	.74337	.99767	.09068	.25872	.15634	.52899	50.932	.17115	.59913	.84981	.99951	.42665

#1	.51651	.51394	.94384	.47595	.47074	.46749	.00218	4.5673	.48325	.49130	.46303	.48990
#2	.51111	.50674	.94263	.47421	.47178	.47100	.00463	4.5784	.47917	.48543	.45653	.48696

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.3783	48.918	.97580	20.257	.50133	.49230	F 5.8029	.48803	.95694	.97817	.02803	.93812
Stddev	.0010	.072	.00252	.015	.00010	.00554	.0194	.00142	.00664	.00431	.00103	.00691
%RSD	.04107	.14747	.25832	.07189	.02077	1.1253	.33433	.29003	.69372	.44096	3.6913	.73615

#1	2.3790	48.867	.97402	20.267	.50140	.49622	5.8166	.48904	.96163	.98122	.02730	.94300
#2	2.3776	48.969	.97759	20.247	.50126	.48838	5.7892	.48703	.95225	.97512	.02876	.93323

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93937	4.6139	9.8737	.92121	.47452	.00300	.49674	.93606	-.00247	.50375	.49281	.49711
Stddev	.00042	.0279	.0597	.00703	.00217	.00142	.00027	.00082	.01378	.00212	.00019	.00327
%RSD	.04509	.60414	.60414	.76338	.45629	47.165	.05407	.08811	558.10	.42110	.03892	.65766

#1	.93967	4.5942	9.8315	.92618	.47299	.00200	.49693	.93664	.00728	.50525	.49294	.49942
#2	.93907	4.6336	9.9159	.91623	.47605	.00400	.49655	.93547	-.01222	.50225	.49267	.49479

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3612.3	48542.	2785.0
Stddev	13.3	279.	15.5
%RSD	.36679	.57485	.55618

#1	3603.0	48739.	2796.0
#2	3621.7	48345.	2774.0

Sample Name: CCB Acquired: 5/14/2019 19:16:29 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoades Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	-.00151	-.00291	.00164	.00124	.00011	-.00016	.00087	-.00007	-.00006	-.00013	-.00111
Stddev	.00104	.00107	.00523	.00093	.00022	.00035	.00011	.00552	.00003	.00009	.00003	.00042
%RSD	110.03	70.878	179.45	56.735	17.421	315.83	64.604	632.91	35.457	170.22	20.148	37.559
#1	.00021	-.00227	.00078	.00099	.00109	.00035	-.00024	.00478	-.00005	.00001	-.00011	-.00082
#2	.00168	-.00076	-.00661	.00230	.00139	-.00014	-.00009	-.00303	-.00009	-.00012	-.00015	-.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W .06475	.18900	-.00364	-.00453	.00060	.00084	F .53123	-.00495	-.00130	.00129	.01699	W .00636
Stddev	.00512	.10655	.00105	.00125	.00009	.00048	.03358	.00069	.00179	.00006	.00016	.00183
%RSD	7.9114	56.376	28.783	27.678	14.399	56.827	6.3208	13.940	137.99	4.4610	.94409	28.818
#1	.06113	.26434	-.00290	-.00541	.00066	.00118	.50749	-.00446	-.00003	.00125	.01710	.00507
#2	.06838	.11366	-.00438	-.00364	.00054	.00050	.55498	-.00543	-.00257	.00133	.01687	.00766
Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit	.05000						.50000					.00600
Low Limit	-.05000						-.50000					-.00600
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00508	-.02802	-.05996	-.00007	-.00008	-.00156	.00011	.00225	.03464	.00050	-.00120	.00613
Stddev	.00134	.01733	.03709	.00038	.00036	.00183	.00013	.00214	.03852	.00026	.00008	.00269
%RSD	26.341	61.865	61.865	561.77	437.27	117.26	118.93	95.095	111.22	51.571	6.8333	43.882
#1	.00602	-.04027	-.08619	.00020	.00017	-.00286	.00002	.00074	.06188	.00068	-.00126	.00423
#2	.00413	-.01576	-.03373	-.00034	-.00033	-.00027	.00021	.00377	.00740	.00032	-.00115	.00803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3545.8	47990.	2677.0									
Stddev	32.7	131.	14.4									
%RSD	.92157	.27194	.53747									
#1	3568.9	47897.	2687.2									
#2	3522.7	48082.	2666.8									

Sample Name: CCVL-5701318 Acquired: 5/14/2019 19:19:05 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01026	.09405	F .00997	.09369	.01040	.00130	.09979	.18272	.00459	.01031	.00921	.01399
Stddev	.00102	.00148	.00021	.00105	.00005	.00007	.00193	.00437	.00005	.00037	.00045	.00015
%RSD	9.9721	1.5705	2.0583	1.1168	.44012	5.5618	1.9371	2.3920	.98494	3.5781	4.8441	1.0872

#1	.01098	.09510	.01012	.09443	.01037	.00125	.10116	.18581	.00462	.01005	.00952	.01410
#2	.00954	.09301	.00983	.09295	.01044	.00135	.09842	.17963	.00455	.01057	.00889	.01388

Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.01500									
Range			-30.000%									

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09632	2.8714	.01835	.20322	.01021	.01918	F 1.4395	.03492	2.7415	.00870	.09953	.02095
Stddev	.00261	.0480	.00166	.00170	.00007	.00004	.0354	.00046	.0282	.00236	.00747	.00253
%RSD	2.7125	1.6710	9.0465	.83832	.67572	.23118	2.4611	1.3314	1.0286	27.071	7.5101	12.072

#1	.09447	2.9053	.01717	.20202	.01026	.01915	1.4144	.03525	2.7614	.01037	.10481	.02274
#2	.09816	2.8375	.01952	.20442	.01016	.01921	1.4645	.03459	2.7216	.00704	.09424	.01916

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							1.0000					
Range							30.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02088	.44726	.95714	.09174	.00947	.01547	.01004	.01537	.05771	.01019	.01850	.01130
Stddev	.00203	.02345	.05017	.00210	.00005	.00010	.00013	.00142	.04884	.00024	.00043	.00034
%RSD	9.7093	5.2419	5.2419	2.2916	.48080	.64638	1.2566	9.2179	84.615	2.3793	2.3448	3.0130

#1	.02231	.43068	.92166	.09323	.00950	.01540	.00995	.01637	.02318	.01002	.01820	.01154
#2	.01944	.46384	.99261	.09025	.00943	.01554	.01013	.01436	.09225	.01036	.01881	.01106

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3626.7	48920.	2663.6
Stddev	.8	248.	4.6
%RSD	.02317	.50779	.17137

#1	3626.1	48744.	2666.9
#2	3627.3	49096.	2660.4

Sample Name: MB 280-457628/1-A Acquired: 5/14/2019 19:21:37 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/10 Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.00224	.00390	.00034	.00069	.00012	.00026	.01404	-.00017
Stddev	.00041	.00006	.00410	.00046	.00079	.00004	.00027	.00719	.00003
%RSD	116.71	2.5167	105.20	134.89	114.21	32.762	105.51	51.177	20.107

#1	.00064	.00228	.00100	.00002	.00124	.00014	.00006	.01912	-.00020
#2	.00006	.00220	.00680	.00066	.00013	.00009	.00045	.00896	-.00015

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00035	-.00119	.01304	.07293	-.00254	.00378	.00013	.00020
Stddev	.00020	.00012	.00055	.00050	.11117	.00059	.00571	.00001	.00059
%RSD	86.693	35.965	45.873	3.8136	152.42	23.054	151.13	5.2851	292.06

#1	-.00009	.00026	-.00158	.01339	.15154	-.00212	.00781	.00012	.00062
#2	-.00038	.00043	-.00081	.01268	-.00567	-.00295	-.00026	.00013	-.00022

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41346	-.00495	.00189	.00147	.01359	.00366	-.00314	-.02512	-.05376
Stddev	.00472	.00012	.00020	.00096	.00127	.00258	.00422	.02302	.04927
%RSD	1.1410	2.5065	10.669	65.137	9.3621	70.533	134.27	91.655	91.655

#1	.41012	-.00504	.00203	.00079	.01269	.00183	-.00016	-.04140	-.08859
#2	.41680	-.00486	.00175	.00215	.01449	.00548	-.00613	-.00884	-.01892

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00086	-.00029	.00014	.00019	.00196	.00907	.00113	-.00187	.00260
Stddev	.00143	.00016	.00349	.00036	.00102	.02631	.00092	.00021	.00215
%RSD	166.55	55.340	2515.1	189.58	51.969	290.19	81.204	11.148	82.681

#1	-.00186	-.00040	.00261	-.00007	.00268	-.00954	.00178	-.00172	.00108
#2	.00015	-.00018	-.00233	.00045	.00124	.02767	.00048	-.00202	.00413

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3680.1	50004.	2796.1
Stddev	11.7	129.	19.3
%RSD	.31847	.25754	.69061

#1	3688.4	49913.	2809.8
#2	3671.8	50095.	2782.5

Sample Name: LCS 280-457628/2-A Acquired: 5/14/2019 19:24:15 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05429	9.4864	1.8789	.93731	1.8530	.92801	1.8565	44.550	.94791
Stddev	.00134	.0443	.0037	.00258	.0005	.00003	.0045	.043	.00339
%RSD	2.4744	.46711	.19416	.27475	.02818	.00363	.23953	.09664	.35760

#1	.05334	9.4551	1.8814	.93913	1.8527	.92803	1.8596	44.581	.95030
#2	.05524	9.5178	1.8763	.93549	1.8534	.92798	1.8533	44.520	.94551

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.92831	.89386	.95208	9.2564	48.687	.97095	49.338	.98778	.97125
Stddev	.00404	.00512	.00115	.0213	.211	.00187	.138	.00206	.00633
%RSD	.43526	.57251	.12064	.22962	.43288	.19217	.28038	.20868	.65220

#1	.93116	.89748	.95289	9.2714	48.836	.96963	49.436	.98924	.97573
#2	.92545	.89024	.95127	9.2413	48.538	.97227	49.240	.98633	.96678

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	48.883	.93150	18.754	.94232	8.6299	.95681	1.8497	1.8799	4.0231
Stddev	.492	.00492	.131	.00061	.0176	.00185	.0063	.0029	.0062
%RSD	1.0059	.52834	.69956	.06472	.20371	.19322	.34171	.15315	.15315

#1	49.230	.93498	18.847	.94275	8.6423	.95550	1.8542	1.8779	4.0187
#2	48.535	.92802	18.661	.94189	8.6174	.95812	1.8453	1.8820	4.0274

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.7973	.93521	.97599	.99306	1.7870	1.9896	1.0028	.48131	.53203
Stddev	.0086	.00189	.00763	.00176	.0068	.0099	.0017	.00046	.00054
%RSD	.47863	.20251	.78171	.17766	.38099	.49535	.16479	.09568	.10222

#1	1.8033	.93655	.98138	.99430	1.7918	1.9966	1.0040	.48098	.53164
#2	1.7912	.93387	.97060	.99181	1.7822	1.9826	1.0016	.48163	.53241

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3679.5	48938.	2800.2
Stddev	12.1	98.	41.2
%RSD	.32804	.19968	1.4729

#1	3671.0	48869.	2771.0
#2	3688.1	49008.	2829.3

Sample Name: 280-123515-B-1-B Acquired: 5/14/2019 19:26:32 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	.00293	.00103	.01547	.05457	.00021	-.00192	69.182	.00043
Stddev	.00110	.00030	.00601	.00065	.00044	.00001	.00622	.085	.00024
%RSD	177.01	10.279	583.97	4.2030	.81546	4.0388	324.69	.12298	55.064

#1	.00016	.00272	.00528	.01593	.05425	.00022	-.00632	69.243	.00026
#2	-.00140	.00315	-.00322	.01501	.05488	.00021	.00248	69.122	.00060

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00050	.00020	-.00079	.63747	2.6449	.01510	37.877	.00285	.00259
Stddev	.00040	.00008	.00092	.00481	.0219	.00256	.246	.00001	.00067
%RSD	79.322	39.975	117.55	.75413	.82915	16.963	.64842	.29123	25.794

#1	-.00022	.00015	-.00013	.64087	2.6604	.01329	38.051	.00285	.00212
#2	-.00079	.00026	-.00144	.63407	2.6294	.01692	37.704	.00286	.00306

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.0744	-.00471	.00409	.00217	9.6297	.00222	-.00080	3.8823	8.3081
Stddev	.0019	.00015	.00265	.00066	.0920	.00184	.00364	.0238	.0510
%RSD	.03837	3.1573	64.839	30.323	.95544	83.162	453.07	.61396	.61396

#1	5.0730	-.00482	.00222	.00263	9.6948	.00091	.00177	3.8991	8.3441
#2	5.0758	-.00461	.00597	.00170	9.5646	.00352	-.00337	3.8654	8.2720

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00149	.12456	-.00111	.00089	.00066	.00410	.00017	-.00013	.00156
Stddev	.00169	.00027	.00093	.00011	.00020	.02770	.00015	.00091	.00076
%RSD	113.63	.22075	84.017	12.302	30.786	675.58	84.805	689.51	48.721

#1	.00029	.12476	-.00177	.00081	.00080	-.01549	.00028	.00051	.00209
#2	.00268	.12437	-.00045	.00096	.00051	.02369	.00007	-.00078	.00102

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3684.0	49794.	2819.6
Stddev	23.0	57.	.3
%RSD	.62463	.11524	.00979

#1	3667.7	49835.	2819.8
#2	3700.3	49754.	2819.4

Sample Name: 123515-B-1-B SD@5 Acquired: 5/14/2019 19:29:05 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00009	-0.00109	.00501	.00309	.01169	.00025	-0.00058	14.156	-0.00005
Stddev	.00064	.00025	.00525	.00021	.00024	.00016	.00171	.030	.00007
%RSD	741.08	22.961	104.70	6.8473	2.0478	62.402	292.99	.20872	131.90

#1	.00037	-.00091	.00872	.00294	.01152	.00036	-.00179	14.177	-.00000
#2	-.00054	-.00126	.00130	.00324	.01186	.00014	.00062	14.135	-.00010

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00013	.00019	-0.00097	.13030	.55445	.00067	7.7798	.00074	.00078
Stddev	.00029	.00014	.00085	.00241	.03723	.00005	.0133	.00002	.00007
%RSD	229.30	74.799	87.585	1.8522	6.7152	6.8338	.17040	2.5759	8.9603

#1	.00008	.00009	-.00156	.12859	.52812	.00064	7.7892	.00075	.00083
#2	-.00033	.00029	-.00037	.13201	.58078	.00071	7.7704	.00072	.00073

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.4041	-0.00449	.00817	-0.00006	1.9237	.00291	.00585	.75701	1.6200
Stddev	.0027	.00001	.00221	.00074	.0061	.00248	.00109	.02068	.0443
%RSD	.19097	.25919	26.994	1228.5	.31780	85.283	18.562	2.7321	2.7321

#1	1.4060	-.00450	.00973	-.00059	1.9280	.00116	.00661	.77163	1.6513
#2	1.4022	-.00448	.00661	.00046	1.9194	.00467	.00508	.74238	1.5887

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.00031	.02527	-0.00245	.00077	.00055	.03300	-0.00011	.00198	.00350
Stddev	.00018	.00046	.00034	.00028	.00283	.02912	.00015	.00064	.00264
%RSD	56.550	1.8212	13.983	37.010	511.38	88.251	132.16	32.017	75.449

#1	-.00019	.02560	-.00221	.00057	-.00145	.05359	-.00001	.00154	.00163
#2	-.00044	.02495	-.00269	.00097	.00255	.01241	-.00022	.00243	.00537

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3759.3	50875.	2851.1
Stddev	5.4	187.	20.3
%RSD	.14259	.36780	.71344

#1	3755.6	50742.	2836.7
#2	3763.1	51007.	2865.5

Sample Name: 280-123515-B-1-C MS Acquired: 5/14/2019 19:31:39 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05682	9.5057	1.9298	.97910	1.9285	.94756	1.8958	111.62	.97024
Stddev	.00010	.1108	.0046	.00275	.0029	.00067	.0030	.07	.00372
%RSD	.16737	1.1654	.23659	.28117	.14805	.07072	.16017	.06498	.38291

#1	.05675	9.5840	1.9330	.98105	1.9305	.94804	1.8979	111.57	.97286
#2	.05689	9.4274	1.9265	.97715	1.9265	.94709	1.8936	111.67	.96761

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93594	.90666	.97660	9.8198	51.636	1.0027	87.819	1.0056	.99169
Stddev	.00296	.00313	.00118	.0100	.034	.0022	.057	.0005	.00608
%RSD	.31667	.34529	.12085	.10195	.06615	.21637	.06477	.05392	.61356

#1	.93804	.90887	.97744	9.8269	51.660	1.0012	87.859	1.0060	.99599
#2	.93385	.90445	.97577	9.8127	51.611	1.0042	87.778	1.0052	.98738

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	54.707	.93655	19.054	.94706	18.275	.97159	1.8979	5.8427	12.503
Stddev	.663	.00368	.108	.00349	.018	.00796	.0094	.0146	.031
%RSD	1.2120	.39323	.56928	.36866	.10041	.81917	.49485	.24969	.24969

#1	54.239	.93915	19.130	.94953	18.288	.97722	1.9045	5.8324	12.481
#2	55.176	.93394	18.977	.94459	18.262	.96597	1.8912	5.8530	12.525

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8197	1.0694	1.0005	1.0193	1.7928	2.0273	1.0283	.48720	.51368
Stddev	.0044	.0011	.0033	.0020	.0037	.0651	.0032	.00196	.00054
%RSD	.24074	.10111	.32738	.19734	.20870	3.2115	.31134	.40187	.10571

#1	1.8228	1.0702	.99814	1.0208	1.7954	2.0734	1.0306	.48581	.51329
#2	1.8166	1.0687	1.0028	1.0179	1.7901	1.9813	1.0261	.48858	.51406

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3653.1	48969.	2877.6
Stddev	1.4	549.	11.7
%RSD	.03722	1.1213	.40774

#1	3654.1	49357.	2885.9
#2	3652.2	48580.	2869.3

Sample Name: 280-123515-B-1-D MSD Acquired: 5/14/2019 19:33:57 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05475	9.3139	1.9053	.97372	1.9262	.94163	1.8938	111.32	.96049
Stddev	.00054	.0096	.0163	.00550	.0167	.00717	.0084	.86	.00419
%RSD	.99489	.10339	.85434	.56448	.86630	.76096	.44193	.77186	.43658

#1	.05436	9.3071	1.9168	.97761	1.9144	.93656	1.8997	110.71	.96345
#2	.05513	9.3207	1.8938	.96983	1.9380	.94670	1.8879	111.93	.95752

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.92629	.90497	.97100	9.6334	50.559	.99799	85.669	.98770	.98421
Stddev	.00428	.00686	.00015	.0554	.293	.01038	.032	.00107	.00485
%RSD	.46192	.75795	.01496	.57518	.58010	1.0400	.03734	.10804	.49239

#1	.92931	.90982	.97110	9.5942	50.352	.99066	85.647	.98845	.98764
#2	.92326	.90012	.97090	9.6725	50.767	1.0053	85.692	.98694	.98078

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	52.737	.92739	19.508	.94171	18.636	.97295	1.8810	5.8052	12.423
Stddev	.036	.00356	.136	.00028	.099	.00935	.0057	.0053	.011
%RSD	.06869	.38384	.69782	.02990	.53260	.96136	.30139	.09180	.09180

#1	52.763	.92990	19.605	.94191	18.706	.97957	1.8850	5.8090	12.431
#2	52.712	.92487	19.412	.94151	18.565	.96634	1.8770	5.8015	12.415

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8193	1.0653	.99129	1.0033	1.7882	2.0480	1.0096	.48213	.50817
Stddev	.0102	.0069	.00033	.0001	.0129	.0018	.0046	.00166	.00473
%RSD	.56270	.64601	.03358	.01229	.72160	.08670	.45227	.34443	.93159

#1	1.8266	1.0604	.99106	1.0032	1.7973	2.0468	1.0129	.48330	.50482
#2	1.8121	1.0701	.99153	1.0034	1.7791	2.0493	1.0064	.48096	.51152

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3641.6	48483.	2809.3
Stddev	15.1	20.	4.8
%RSD	.41387	.04027	.17186

#1	3630.9	48469.	2812.7
#2	3652.3	48497.	2805.9

Sample Name: CCVH-5699817 Acquired: 5/14/2019 19:36:13 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .01641	45.630	k -.00020	k .00578	k .00286	k .00154	k .91031	k .01488	k -.00054	k .00419	k .00137	k .00999
Stddev	.00128	.316	.00120	.00065	.00003	.00019	.01022	.00108	.00002	.00004	.00055	.00113
%RSD	7.7795	.69229	596.58	11.233	1.1232	12.592	1.1227	7.2379	3.6600	1.0621	40.005	11.336

#1	k .01551	45.406	k .00065	k .00532	k .00289	k .00140	k .91754	k .01411	k -.00053	k .00423	k .00176	k .01079
#2	k .01731	45.853	k -.00105	k .00623	k .00284	k .00168	k .90309	k .01564	k -.00056	k .00416	k .00098	k .00919

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	kF 43.675	.30482	.00613	k .02577	k .00037	k .00157	242.23	k .00049	k .00770	k .01643	k 4.5178	k -.03129
Stddev	.218	.02751	.00598	.00268	.00006	.00008	2.84	.00032	.00119	.00093	.0213	.00186
%RSD	.49988	9.0236	97.645	10.387	16.260	4.9446	1.1726	66.198	15.443	5.6429	.47111	5.9425

#1	k 43.521	.32426	.00190	k .02388	k .00041	k .00162	240.22	k .00026	k .00854	k .01578	k 4.5328	k -.02997
#2	k 43.830	.28537	.01036	k .02766	k .00033	k .00151	244.24	k .00071	k .00686	k .01709	k 4.5027	k -.03260

Check ?	Chk Fail	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None
Value	50.000											
Range	-10.490%											

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.00555	k -.01082	k -.02315	k .00171	.00180	k 5.0543	k .02182	k .00250	k 9.7919	k .00994	k .00232	k .29143
Stddev	.00759	.01681	.03597	.00092	.00001	.0045	.00055	.00011	.0225	.00040	.00012	.00266
%RSD	136.65	155.37	155.37	53.701	.45832	.08808	2.5432	4.3027	.22944	3.9991	5.0182	.91291

#1	k -.00019	k -.02270	k -.04858	k .00106	.00180	k 5.0575	k .02221	k .00242	k 9.7760	k .00966	k .00240	k .28955
#2	k -.01092	k .00107	k .00228	k .00236	.00179	k 5.0512	k .02142	k .00258	k 9.8078	k .01022	k .00224	k .29331

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3640.5	48542.	2787.1
Stddev	7.6	199.	2.0
%RSD	.20908	.41013	.07339

#1	3635.1	48402.	2785.7
#2	3645.8	48683.	2788.5

Sample Name: CCV-5699804 Acquired: 5/14/2019 19:38:44 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoadescc Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51187	.50687	.93189	.47347	.47164	.46943	.00126	4.5730	.47913	.48457	.45779	.48836
Stddev	.00147	.00312	.00623	.00279	.00163	.00106	.00637	.0049	.00340	.00213	.00109	.00011
%RSD	.28745	.61600	.66821	.58941	.34601	.22668	504.46	.10655	.70930	.43935	.23880	.02169

#1	.51083	.50907	.93630	.47544	.47049	.47018	.00577	4.5764	.48154	.48607	.45857	.48828
#2	.51291	.50466	.92749	.47150	.47280	.46867	-.00324	4.5695	.47673	.48306	.45702	.48843

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.4115	48.982	.97745	20.241	.50020	.48816	F 5.6275	.48497	.95800	.97046	.00636	.93061
Stddev	.0107	.019	.00096	.003	.00001	.00244	.0396	.00214	.00355	.00721	.00243	.00443
%RSD	.44540	.03826	.09867	.01345	.00133	.50070	.70303	.44072	.37042	.74247	38.239	.47645

#1	2.4191	48.996	.97813	20.239	.50020	.48989	5.6554	.48648	.96051	.97556	.00808	.93375
#2	2.4039	48.969	.97677	20.243	.50019	.48643	5.5995	.48346	.95549	.96537	.00464	.92747

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.92981	4.6560	9.9638	.91927	.47465	.00193	.49591	.93360	.06096	.50040	.48990	.49274
Stddev	.00804	.0276	.0590	.00370	.00067	.00094	.00028	.00574	.06191	.00136	.00031	.00713
%RSD	.86513	.59267	.59267	.40196	.14213	48.668	.05668	.61491	101.55	.27130	.06340	1.4471

#1	.93549	4.6364	9.9220	.92189	.47417	.00259	.49611	.93766	.01718	.49944	.49012	.48769
#2	.92412	4.6755	10.006	.91666	.47512	.00126	.49571	.92954	.10473	.50136	.48968	.49778

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3648.2	49317.	2764.4
Stddev	30.6	102.	12.5
%RSD	.83908	.20680	.45265

#1	3669.8	49389.	2773.2
#2	3626.5	49245.	2755.5

Sample Name: CCB Acquired: 5/14/2019 19:41:07 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoades Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0006	-0.0088	.00059	.00250	.00086	.00017	.00133	.00417	-0.00012	.00017	-0.00027	-0.00160
Stddev	.00011	.00039	.00157	.00007	.00016	.00001	.00105	.01266	.00015	.00051	.00001	.00030
%RSD	175.22	43.987	267.37	2.8097	18.208	7.4069	79.065	303.39	119.07	300.91	4.2032	18.828
#1	-.00014	-.00116	-.00052	.00255	.00075	.00016	.00059	.01313	-.00002	-.00019	-.00026	-.00138
#2	.00001	-.00061	.00170	.00245	.00097	.00018	.00208	-.00478	-.00022	.00053	-.00027	-.00181

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03168	.24255	-0.00209	.00021	.00021	.00145	W .39063	-0.00443	-0.00128	.00001	.00460	W .00668
Stddev	.00177	.00331	.00335	.00237	.00019	.00028	.01281	.00058	.00162	.00015	.00109	.00031
%RSD	5.5886	1.3662	160.24	1103.5	89.106	19.269	3.2792	12.986	126.40	1629.9	23.769	4.6692
#1	.03043	.24489	.00028	.00189	.00034	.00125	.39968	-.00402	-.00243	.00012	.00538	.00690
#2	.03293	.24021	-.00446	-.00146	.00008	.00164	.38157	-.00484	-.00014	-.00010	.00383	.00646

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit							.35000					.00600
Low Limit							-.35000					-.00600

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	-0.03810	-0.08153	-0.00039	-0.00006	.00086	-0.00017	.00207	.01867	.00032	-0.00095	.00071
Stddev	.00501	.04244	.09082	.00001	.00033	.00087	.00018	.00355	.03119	.00026	.00013	.00147
%RSD	4152.0	111.40	111.40	2.3756	531.47	100.96	110.53	171.27	167.08	80.872	13.862	207.84
#1	.00366	-.00809	-.01731	-.00040	.00017	.00025	-.00030	.00458	.04072	.00014	-.00086	.00175
#2	-.00342	-.06811	-.14575	-.00038	-.00030	.00148	-.00004	-.00044	-.00339	.00051	-.00105	-.00033

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3588.4	49007.	2724.1
Stddev	16.2	132.	8.6
%RSD	.45098	.26856	.31697
#1	3576.9	49100.	2730.2
#2	3599.8	48914.	2718.0

Sample Name: CCVL-5701318 Acquired: 5/14/2019 19:43:42 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01004	.09433	.01434	.09521	.01026	.00109	.09483	.19125	.00493	.00986	.00914	.01409
Stddev	.00083	.00030	.00273	.00042	.00002	.00013	.00317	.00299	.00010	.00025	.00013	.00049
%RSD	8.2615	.31842	19.045	.43856	.17289	11.838	3.3450	1.5633	2.0474	2.5286	1.4417	3.4876

#1	.00945	.09454	.01627	.09491	.01025	.00118	.09708	.19336	.00486	.01004	.00923	.01443
#2	.01063	.09411	.01241	.09551	.01028	.00100	.09259	.18914	.00500	.00969	.00904	.01374

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08828	2.9620	.01713	.20287	.01004	.01951	F 1.3415	.03605	2.7539	.01070	.08556	.02404
Stddev	.00251	.0847	.00594	.00850	.00011	.00027	.0239	.00086	.0346	.00110	.00225	.00031
%RSD	2.8466	2.8598	34.657	4.1918	1.1425	1.3968	1.7825	2.3876	1.2561	10.280	2.6349	1.3091

#1	.08650	2.9021	.02133	.20888	.01012	.01932	1.3246	.03666	2.7784	.01147	.08396	.02381
#2	.09006	3.0219	.01293	.19685	.00996	.01970	1.3584	.03544	2.7295	.00992	.08715	.02426

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							1.0000					
Range							30.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01681	.44112	.94399	.09241	.00953	.01322	.01038	.01698	F .14069	.01052	.01872	.01340
Stddev	.00274	.01382	.02957	.00220	.00006	.00006	.00011	.00123	.00310	.00035	.00035	.00142
%RSD	16.309	3.1324	3.1324	2.3785	.64509	.45681	1.0247	7.2458	2.2002	3.2997	1.8432	10.587

#1	.01875	.45089	.96490	.09396	.00948	.01317	.01045	.01785	.14288	.01077	.01896	.01441
#2	.01488	.43134	.92308	.09085	.00957	.01326	.01030	.01611	.13850	.01028	.01848	.01240

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value									.06000			
Range									30.000%			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3725.5	50508.	2790.3
Stddev	15.0	330.	25.9
%RSD	.40245	.65376	.92740

#1	3714.9	50275.	2808.5
#2	3736.1	50742.	2772.0

Sample Name: 280-123515-B-2-B Acquired: 5/14/2019 19:46:15 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	.05285	.00214	.01970	.02687	.00019	.00039	55.298	.00028
Stddev	.00110	.00006	.00240	.00119	.00028	.00004	.00111	.140	.00016
%RSD	164.70	.11233	111.91	6.0493	1.0380	21.451	282.75	.25281	57.151

#1	.00144	.05281	.00045	.02054	.02667	.00022	.00118	55.199	.00040
#2	-.00011	.05289	.00384	.01886	.02707	.00016	-.00039	55.397	.00017

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.00035	-.00076	.23986	1.5783	.04258	26.244	.11888	.00004
Stddev	.00020	.00005	.00019	.00661	.0530	.00035	.006	.00011	.00025
%RSD	27.233	13.421	24.953	2.7573	3.3556	.83014	.02429	.08984	581.69

#1	.00089	.00038	-.00063	.24453	1.5408	.04233	26.240	.11880	-.00013
#2	.00060	.00031	-.00089	.23518	1.6157	.04283	26.249	.11895	.00022

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.6593	-.00321	.02884	.00161	13.807	.00062	-.00120	6.0914	13.036
Stddev	.0039	.00058	.00231	.00319	.157	.00107	.00036	.0274	.059
%RSD	.05828	18.013	8.0145	198.95	1.1335	171.65	29.899	.44988	.44988

#1	6.6565	-.00280	.02720	-.00065	13.918	.00138	-.00145	6.0720	12.994
#2	6.6620	-.00362	.03047	.00386	13.696	-.00013	-.00094	6.1108	13.077

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	.06959	-.00040	.00097	.00098	-.02652	-.00047	.00027	.00261
Stddev	.00075	.00009	.00007	.00001	.00185	.05715	.00033	.00027	.00442
%RSD	71.946	.13166	17.191	1.3070	188.25	215.52	70.718	99.304	169.54

#1	.00051	.06952	-.00035	.00096	-.00033	.01390	-.00023	.00046	.00573
#2	.00157	.06965	-.00045	.00097	.00229	-.06693	-.00070	.00008	-.00052

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3649.0	49681.	2777.3
Stddev	15.2	62.	14.9
%RSD	.41636	.12516	.53723

#1	3638.2	49725.	2787.8
#2	3659.7	49637.	2766.7

Sample Name: 280-123515-B-3-B Acquired: 5/14/2019 19:48:47 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.00368	-.00164	.02885	.06596	.00025	-.00437	90.766	.00038
Stddev	.00016	.00048	.00214	.00024	.00052	.00031	.00317	.547	.00025
%RSD	34.038	13.025	130.44	.82247	.78387	119.85	72.584	.60220	65.877

#1	.00035	.00334	-.00316	.02902	.06560	.00047	-.00661	90.380	.00055
#2	.00057	.00402	-.00013	.02868	.06633	.00004	-.00213	91.153	.00020

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00009	-.00120	.81087	3.7047	.07053	22.516	.01780	.00023
Stddev	.00034	.00030	.00059	.00796	.0615	.00061	.020	.00002	.00029
%RSD	188.61	344.08	48.693	.98217	1.6590	.86535	.09011	.11301	123.32

#1	-.00042	.00030	-.00079	.80524	3.6612	.07010	22.502	.01778	.00003
#2	.00006	-.00013	-.00162	.81650	3.7481	.07096	22.531	.01781	.00043

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 10.699	-.00457	.00228	-.00154	22.936	.00393	.00138	3.8906	8.3258
Stddev	.235	.00049	.00156	.00259	.144	.00189	.00084	.0127	.0272
%RSD	2.1982	10.770	68.377	168.46	.62779	48.093	60.774	.32698	.32698

#1	10.866	-.00492	.00118	-.00337	23.038	.00260	.00079	3.8996	8.3451
#2	10.533	-.00422	.00339	.00029	22.834	.00527	.00198	3.8816	8.3066

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00								
Low Limit	11.000								

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00105	.11949	-.00164	.00166	-.00077	-.00713	.00031	.00053	.00490
Stddev	.00104	.00066	.00148	.00051	.00340	.00955	.00076	.00014	.00280
%RSD	98.590	.54888	90.107	30.995	441.76	133.92	241.55	25.770	57.214

#1	.00178	.11902	-.00059	.00130	.00163	-.01388	-.00022	.00062	.00292
#2	.00032	.11995	-.00268	.00202	-.00317	-.00038	.00085	.00043	.00688

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3636.3	49551.	2805.9
Stddev	4.1	80.	20.9
%RSD	.11361	.16133	.74631

#1	3639.2	49607.	2820.7
#2	3633.4	49494.	2791.1

Sample Name: 280-123515-B-4-B Acquired: 5/14/2019 19:51:19 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00139	.00193	-.00175	.03025	.06884	.00016	-.00110	108.21	.00016
Stddev	.00008	.00004	.00408	.00023	.00054	.00002	.00459	.13	.00002
%RSD	5.8298	2.3170	232.62	.75152	.78337	15.355	415.92	.11961	11.214

#1	.00145	.00190	-.00464	.03009	.06846	.00018	-.00435	108.31	.00017
#2	.00134	.00196	.00113	.03041	.06922	.00014	.00214	108.12	.00015

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00032	-.00053	1.6374	4.4273	.06851	24.516	.03482	.00032
Stddev	.00040	.00008	.00072	.0022	.0256	.00243	.103	.00005	.00085
%RSD	254.73	25.422	136.62	.13724	.57751	3.5522	.41877	.14228	265.49

#1	.00044	.00026	-.00104	1.6358	4.4092	.06679	24.589	.03485	-.00028
#2	-.00012	.00038	-.00002	1.6390	4.4454	.07023	24.443	.03478	.00092

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Line	589.592 { 57}	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.497	W 10.373	-.00423	.00120	.00209	28.815	.00065	.00020	3.9982
Stddev	.014	.882	.00036	.00346	.00113	.158	.00150	.00452	.0496
%RSD	.13325	8.5044	8.4771	287.60	53.975	.54991	231.67	2283.9	1.2403

#1	10.487	9.7489	-.00448	.00364	.00289	28.927	-.00041	.00339	3.9631
#2	10.507	10.996	-.00398	-.00124	.00129	28.703	.00171	-.00300	4.0332

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		500.00							
Low Limit		11.000							

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.5560	-.00055	.12483	.00130	.00099	-.00083	-.01204	.00015	.00055
Stddev	.1061	.00357	.00026	.00345	.00050	.00031	.10707	.00056	.00003
%RSD	1.2403	644.49	.21174	265.60	50.198	37.169	889.58	375.50	5.5742

#1	8.4810	-.00308	.12501	.00374	.00134	-.00104	-.08775	.00055	.00057
#2	8.6311	.00197	.12464	-.00114	.00064	-.00061	.06367	-.00025	.00053

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Zr3391								
Line	339.198 { 99}								
Units	ppm								
Avg	.00389								
Stddev	.00255								
%RSD	65.550								

#1	.00569								
#2	.00208								

Check ?	Chk Pass								
High Limit									
Low Limit									

Sample Name: 280-123515-B-4-B Acquired: 5/14/2019 19:51:19 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3588.1	48900.	2778.7
Stddev	2.7	315.	.1
%RSD	.07416	.64416	.00247
#1	3586.3	49122.	2778.7
#2	3590.0	48677.	2778.6

Sample Name: 280-123515-B-5-B Acquired: 5/14/2019 19:53:54 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00065	.00526	.02250	.03806	.00018	-.00063	73.592	-.00004
Stddev	.00188	.00011	.00921	.00058	.00016	.00015	.00054	.036	.00035
%RSD	1604.8	17.055	174.91	2.5595	.41611	81.144	86.008	.04921	796.78

#1	-.00121	.00073	-.00125	.02290	.03795	.00008	-.00101	73.566	-.00029
#2	.00144	.00057	.01178	.02209	.03818	.00029	-.00025	73.617	.00020

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.00023	-.00070	.58366	2.4755	.05338	34.321	.00795	.00017
Stddev	.00009	.00006	.00070	.00372	.0029	.00537	.144	.00016	.00021
%RSD	23.052	27.401	99.873	.63765	.11765	10.053	.41823	2.0405	121.27

#1	-.00034	.00018	-.00021	.58630	2.4775	.04958	34.422	.00784	.00032
#2	-.00047	.00027	-.00120	.58103	2.4734	.05717	34.219	.00807	.00002

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.8759	-.00462	.00395	-.00028	26.709	.00167	-.00149	3.8627	8.2662
Stddev	.0002	.00008	.00247	.00303	.166	.00175	.00107	.0741	.1587
%RSD	.00254	1.6987	62.548	1092.1	.62306	104.65	71.867	1.9194	1.9194

#1	7.8761	-.00467	.00569	.00186	26.827	.00291	-.00225	3.8103	8.1540
#2	7.8758	-.00456	.00220	-.00242	26.592	.00043	-.00073	3.9151	8.3784

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.07768	-.00542	.00032	.00243	.02806	-.00038	-.00103	.00725
Stddev	.00034	.00029	.00003	.00006	.00026	.05587	.00032	.00041	.00074
%RSD	44.994	.37417	.58870	17.837	10.749	199.12	84.749	39.767	10.168

#1	.00100	.07748	-.00544	.00028	.00262	-.01145	-.00015	-.00132	.00673
#2	.00052	.07789	-.00540	.00037	.00225	.06757	-.00060	-.00074	.00777

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3675.3	49732.	2787.7
Stddev	10.1	331.	6.0
%RSD	.27522	.66498	.21673

#1	3682.4	49498.	2783.4
#2	3668.1	49965.	2792.0

Sample Name: 280-123515-B-6-B Acquired: 5/14/2019 19:56:28 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00535	.00060	.01715	.03815	.00022	-.00123	57.438	.00037
Stddev	.00109	.00078	.00575	.00227	.00003	.00004	.00119	.152	.00019
%RSD	329.75	14.541	954.70	13.239	.06807	18.899	96.560	.26384	51.414

#1	-.00044	.00480	-.00346	.01554	.03816	.00025	-.00207	57.330	.00050
#2	.00110	.00590	.00467	.01875	.03813	.00019	-.00039	57.545	.00023

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.00054	-.00135	.62870	3.1280	.01341	44.960	.00644	.00043
Stddev	.00025	.00001	.00018	.00432	.0219	.00111	.177	.00004	.00025
%RSD	57.507	1.2974	13.032	.68655	.69881	8.2832	.39325	.58215	56.907

#1	.00026	.00053	-.00148	.63176	3.1434	.01262	45.085	.00641	.00061
#2	.00060	.00054	-.00123	.62565	3.1125	.01419	44.835	.00646	.00026

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.0071	-.00287	.01598	-.00045	19.102	.00187	-.00472	4.0605	8.6894
Stddev	.0006	.00032	.00091	.00048	.124	.00169	.00155	.0039	.0083
%RSD	.02030	11.202	5.7234	106.95	.65033	90.832	32.715	.09604	.09604

#1	3.0075	-.00310	.01533	-.00011	19.189	.00067	-.00363	4.0577	8.6835
#2	3.0067	-.00264	.01663	-.00079	19.014	.00306	-.00582	4.0632	8.6953

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00053	.03716	-.00174	.00056	.00231	.00620	-.00042	-.00119	.00035
Stddev	.00099	.00000	.00003	.00044	.00156	.01547	.00093	.00051	.00064
%RSD	188.14	.01245	1.9165	78.202	67.638	249.66	222.27	42.764	181.37

#1	-.00123	.03716	-.00172	.00087	.00120	.01713	-.00108	-.00155	-.00010
#2	.00017	.03717	-.00177	.00025	.00341	-.00474	.00024	-.00083	.00081

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3646.2	50510.	2824.0
Stddev	65.3	172.	1.0
%RSD	1.7923	.34029	.03450

#1	3692.4	50388.	2824.7
#2	3599.9	50632.	2823.3

Sample Name: 280-123515-B-7-B Acquired: 5/14/2019 19:59:01 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.00512	-.00251	.01524	.03391	.00018	-.00184	59.276	.00012
Stddev	.00106	.00028	.00447	.00069	.00051	.00015	.00176	.142	.00017
%RSD	129.18	5.5395	178.12	4.5360	1.5055	84.988	95.716	.23983	136.23

#1	.00158	.00492	.00065	.01573	.03427	.00007	-.00309	59.176	.00024
#2	.00007	.00532	-.00567	.01475	.03355	.00028	-.00060	59.377	.00000

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02058	.00051	-.00090	3.0112	1.8530	.02323	27.019	.12417	.00036
Stddev	.00086	.00017	.00002	.0184	.0728	.00003	.016	.00007	.00009
%RSD	4.1747	33.638	2.1324	.60959	3.9277	.12938	.05868	.05876	25.101

#1	.02119	.00063	-.00088	2.9983	1.8016	.02325	27.008	.12411	.00042
#2	.01997	.00039	-.00091	3.0242	1.9045	.02321	27.030	.12422	.00030

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.5706	.01281	.01476	.00024	19.636	.00038	.00037	4.0109	8.5833
Stddev	.0105	.00033	.00208	.00135	.217	.00094	.00114	.0315	.0675
%RSD	.22904	2.5370	14.106	570.51	1.1040	244.92	305.61	.78629	.78629

#1	4.5632	.01304	.01329	-.00072	19.789	.00104	.00118	3.9886	8.5356
#2	4.5780	.01258	.01624	.00120	19.483	-.00028	-.00043	4.0332	8.6310

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.04525	-.00051	.00043	.00238	.00096	.00059	.00232	.00189
Stddev	.00078	.00008	.00260	.00038	.00019	.02511	.00000	.00011	.00214
%RSD	335.17	.18317	506.73	87.661	7.7796	2613.9	.03557	4.8984	113.27

#1	.00032	.04531	-.00235	.00070	.00251	-.01679	.00059	.00224	.00340
#2	-.00079	.04519	.00133	.00016	.00225	.01871	.00059	.00240	.00038

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3573.1	48907.	2733.0
Stddev	3.4	32.	1.5
%RSD	.09428	.06561	.05526

#1	3575.4	48929.	2732.0
#2	3570.7	48884.	2734.1

Sample Name: 280-123515-B-9-B Acquired: 5/14/2019 20:01:32 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.00604	.00247	.01452	.03446	.00018	-.00411	58.861	.00007
Stddev	.00111	.00136	.00455	.00052	.00048	.00010	.00439	.103	.00010
%RSD	103.28	22.556	184.54	3.5671	1.3825	53.668	106.80	.17501	138.00

#1	.00029	.00508	.00569	.01489	.03479	.00011	-.00722	58.934	.00000
#2	.00187	.00700	-.00075	.01416	.03412	.00025	-.00101	58.789	.00014

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02307	-.00007	-.00121	3.0098	1.7896	.02231	27.051	.14019	.00043
Stddev	.00011	.00019	.00056	.0080	.0412	.00208	.053	.00026	.00040
%RSD	.49228	257.68	46.392	.26605	2.3020	9.3439	.19413	.18719	93.863

#1	.02315	.00006	-.00081	3.0154	1.8187	.02379	27.088	.14037	.00014
#2	.02299	-.00021	-.00160	3.0041	1.7604	.02084	27.014	.14000	.00071

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.5092	.01285	.01565	.00102	19.938	-.00176	-.00453	3.9906	8.5399
Stddev	.0003	.00051	.00296	.00024	.113	.00030	.00064	.0482	.1032
%RSD	.00555	4.0008	18.884	23.844	.56726	16.795	14.200	1.2085	1.2085

#1	4.5091	.01321	.01774	.00085	20.018	-.00197	-.00499	3.9565	8.4669
#2	4.5094	.01249	.01356	.00119	19.858	-.00155	-.00408	4.0247	8.6129

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00149	.04485	-.00329	.00043	.00149	.01891	-.00032	.00248	.00096
Stddev	.00198	.00025	.00089	.00041	.00056	.02231	.00097	.00064	.00432
%RSD	132.41	.56523	26.960	95.236	37.842	118.02	306.91	25.651	451.97

#1	.00289	.04503	-.00267	.00073	.00109	.03468	-.00100	.00293	-.00210
#2	.00010	.04467	-.00392	.00014	.00189	.00313	.00037	.00203	.00401

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3569.5	48968.	2724.6
Stddev	5.3	103.	17.7
%RSD	.14844	.20953	.65142

#1	3565.7	49040.	2712.0
#2	3573.2	48895.	2737.1

Sample Name: CCVH-5699817 Acquired: 5/14/2019 20:04:05 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .01765	45.962	k .00162	k .00320	k .00281	k .00143	k .91211	k .02181	k -.00012	k .00424	k .00086	k .01012
Stddev	.00017	.184	.00313	.00165	.00070	.00018	.00540	.00267	.00019	.00020	.00001	.00034
%RSD	.98280	.40049	193.72	51.561	24.954	12.901	.59149	12.225	155.49	4.7226	1.2958	3.3696

#1	k .01753	45.832	k -.00060	k .00204	k .00331	k .00156	k .91593	k .01992	k -.00026	k .00410	k .00087	k .01036
#2	k .01777	46.093	k .00383	k .00437	k .00231	k .00130	k .90830	k .02370	k .00001	k .00438	k .00085	k .00988

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	kF 43.821	.25288	.00459	k .03190	k .00049	k -.00057	242.04	k .00012	k .00642	k .01847	k 4.5085	k -.02882
Stddev	.240	.03247	.00360	.00359	.00012	.00039	.11	.00002	.00297	.00123	.0163	.00097
%RSD	.54838	12.838	78.507	11.238	25.013	68.101	.04563	19.942	46.310	6.6370	.36058	3.3702

#1	k 43.651	.27583	.00714	k .03444	k .00057	k -.00030	242.12	k .00013	k .00852	k .01934	k 4.5200	k -.02951
#2	k 43.991	.22992	.00204	k .02937	k .00040	k -.00084	241.97	k .00010	k .00432	k .01760	k 4.4970	k -.02814

Check ?	Chk Fail	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None
Value	50.000											
Range	-10.490%											

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.01001	k .00044	k .00094	k .00214	.00153	k 5.0165	k .02097	k .00381	k 9.8059	k .01051	k .00323	k .28551
Stddev	.01055	.02111	.04517	.00062	.00009	.0022	.00018	.00158	.0218	.00132	.00047	.00220
%RSD	105.41	4805.0	4805.0	29.020	6.0624	.04483	.83568	41.572	.22210	12.592	14.412	.77071

#1	k -.01747	k -.01449	k -.03100	k .00258	.00146	k 5.0181	k .02085	k .00493	k 9.8213	k .00958	k .00290	k .28706
#2	k -.00255	k .01536	k .03288	k .00170	.00160	k 5.0149	k .02109	k .00269	k 9.7905	k .01145	k .00356	k .28395

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3571.2	48305.	2715.5
Stddev	14.4	311.	20.4
%RSD	.40360	.64346	.75259

#1	3561.0	48085.	2701.0
#2	3581.4	48525.	2729.9

Sample Name: CCV-5699804 Acquired: 5/14/2019 20:06:35 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50905	.50400	.93469	.46837	.47041	.46767	.00334	4.5755	.47625	.48353	.45653	.48315
Stddev	.00056	.00604	.00804	.00163	.00080	.00027	.00191	.0017	.00213	.00256	.00312	.00146
%RSD	.10968	1.1990	.85983	.34776	.17018	.05793	57.095	.03650	.44736	.52955	.68341	.30166

#1	.50866	.50828	.94037	.46952	.47097	.46748	.00469	4.5767	.47776	.48534	.45873	.48418
#2	.50945	.49973	.92901	.46722	.46984	.46787	.00199	4.5744	.47474	.48172	.45432	.48212

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.3981	48.776	.97263	20.170	.49847	.48629	F 5.5188	.48384	.95360	.97084	.00782	.93293
Stddev	.0012	.244	.00096	.076	.00060	.00403	.0361	.00200	.00832	.00526	.00091	.00906
%RSD	.04995	.50114	.09847	.37819	.11946	.82869	.65352	.41237	.87209	.54134	11.653	.97071

#1	2.3989	48.949	.97196	20.224	.49889	.48914	5.5443	.48525	.95948	.97456	.00717	.93933
#2	2.3972	48.603	.97331	20.116	.49805	.48344	5.4933	.48243	.94772	.96713	.00846	.92652

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93559	4.6279	9.9038	.91403	.47286	.00259	.49365	.93304	-.01644	.49895	.49008	.48601
Stddev	.00945	.1165	.2494	.00569	.00010	.00320	.00093	.00437	.03240	.00171	.00104	.00185
%RSD	1.0097	2.5179	2.5179	.62302	.02064	123.49	.18825	.46829	197.05	.34311	.21263	.38009

#1	.94227	4.5455	9.7275	.91806	.47293	.00486	.49431	.93613	-.03935	.50016	.49082	.48732
#2	.92891	4.7103	10.080	.91000	.47279	.00033	.49300	.92995	.00647	.49774	.48935	.48470

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3713.1	49739.	2789.5
Stddev	3.8	74.	17.8
%RSD	.10209	.14917	.63846

#1	3710.4	49687.	2776.9
#2	3715.8	49792.	2802.1

Sample Name: CCB Acquired: 5/14/2019 20:08:58 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	-.00160	.00163	.00107	.00061	.00017	.00096	.00355	.00005	.00024	.00013	-.00146	-.00018
Stddev	.00026	.00029	.00420	.00107	.00018	.00021	.00314	.00133	.00014	.00029	.00003	.00056	.00177
%RSD	22.745	17.932	256.64	100.83	28.947	122.71	325.69	37.516	290.50	119.14	21.418	38.137	981.78

#1	.00096	-.00140	-.00133	.00182	.00073	.00002	-.00126	.00449	.00015	.00045	.00011	-.00185	.00107
#2	.00133	-.00181	.00460	.00031	.00048	.00033	.00318	.00261	-.00005	.00004	.00015	-.00107	-.00143

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit													
Low Limit													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05769	-.00230	.00638	.00004	.00108	.33141	-.00443	.00014	.00079	.00687	.00323	.00239	-.01816
Stddev	.08330	.00009	.00045	.00010	.00008	.00502	.00065	.00046	.00149	.00862	.00202	.00326	.04131
%RSD	144.40	3.7360	6.9896	250.90	7.6387	1.5157	14.605	329.86	188.18	125.40	62.379	136.82	227.41

#1	.11659	-.00224	.00669	-.00003	.00102	.33496	-.00397	.00047	.00185	.00078	.00181	.00008	.01104
#2	-.00122	-.00236	.00606	.00012	.00114	.32786	-.00489	-.00019	-.00026	.01296	.00466	.00469	-.04737

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit													
Low Limit													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.03887	.00059	-.00026	-.00022	.00082	.00155	.02521	.00024	-.00103	.00641
Stddev	.08840	.00237	.00000	.00181	.00025	.00001	.01087	.00016	.00004	.00159
%RSD	227.41	404.09	1.3479	811.92	30.336	.55822	43.119	65.594	4.1694	24.735

#1	.02364	-.00109	-.00027	.00106	.00064	.00154	.01753	.00013	-.00106	.00753
#2	-.10138	.00227	-.00026	-.00150	.00099	.00155	.03290	.00035	-.00100	.00529

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3711.7	50532.	2804.2
Stddev	.8	171.	18.0
%RSD	.02079	.33753	.64262

#1	3711.1	50412.	2816.9
#2	3712.2	50653.	2791.4

Sample Name: CCVL-5701318 Acquired: 5/14/2019 20:11:34 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01065	.09460	.01802	.09357	.01054	.00103	.09778	.18159	.00465	.00985	.00916	.01382	.09374	2.9263
Stddev	.00085	.00015	.00584	.00098	.00057	.00006	.00152	.00653	.00005	.00004	.00039	.00040	.00431	.0194
%RSD	7.9353	.15878	32.407	1.0441	5.4052	6.0658	1.5538	3.5983	.99667	.39001	4.3028	2.9122	4.5970	.66406

#1	.01125	.09471	.02215	.09426	.01095	.00098	.09671	.18621	.00462	.00983	.00944	.01353	.09069	2.9125
#2	.01005	.09449	.01389	.09288	.01014	.00107	.09885	.17697	.00469	.00988	.00888	.01410	.09679	2.9400

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value														
Range														

Elem	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2	Sn1899
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02140	.20189	.01021	.01939	1.2730	.03528	2.7455	.00979	.09348	.02035	.02089	.45616	.97618	.09314
Stddev	.00223	.00006	.00018	.00013	.0219	.00026	.0167	.00008	.00476	.00268	.00113	.00189	.00405	.00036
%RSD	10.435	.03216	1.7560	.65766	1.7194	.72557	.60880	.79415	5.0923	13.156	5.3872	.41482	.41482	.39012

#1	.01982	.20185	.01008	.01948	1.2575	.03510	2.7573	.00984	.09684	.01846	.02010	.45482	.97332	.09288
#2	.02298	.20194	.01034	.01930	1.2885	.03546	2.7336	.00973	.09011	.02225	.02169	.45750	.97905	.09339

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value														
Range														

Elem	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00941	.01301	.01005	.01496	.07325	.01036	.01869	.01364
Stddev	.00021	.00024	.00024	.00074	.01068	.00019	.00095	.00162
%RSD	2.2524	1.8731	2.4182	4.9618	14.574	1.8465	5.0934	11.867

#1	.00926	.01284	.00988	.01444	.06570	.01050	.01801	.01478
#2	.00956	.01319	.01022	.01549	.08080	.01023	.01936	.01249

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3761.2	50975.	2831.5
Stddev	4.8	14.	7.3
%RSD	.12710	.02671	.25687

#1	3757.8	50965.	2836.7
#2	3764.6	50985.	2826.4

Sample Name: 280-123543-B-1-D Acquired: 5/14/2019 20:14:06 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	.01024	.00755	.03215	.14216	.00006	.00146	184.45	.00044
Stddev	.00019	.00016	.00931	.00134	.00016	.00025	.00931	.67	.00013
%RSD	26.356	1.5187	123.40	4.1722	.11187	382.72	636.54	.36535	30.325

#1	.00058	.01035	.01413	.03310	.14227	.00024	.00805	183.98	.00035
#2	.00085	.01013	.00096	.03121	.14205	-.00011	-.00512	184.93	.00054

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	.00008	.00258	.11795	1.8073	.00338	26.209	5.8909	.00176
Stddev	.00010	.00003	.00042	.00571	.0492	.00094	.000	.0320	.00007
%RSD	10.076	36.230	16.080	4.8403	2.7223	27.921	.00058	.54302	4.0969

#1	.00104	.00006	.00287	.11391	1.7726	.00271	26.209	5.8683	.00171
#2	.00091	.00010	.00229	.12199	1.8421	.00405	26.209	5.9136	.00181

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.238	.01027	.07585	-.00153	28.368	.00511	-.00323	9.6583	20.669
Stddev	.193	.00013	.00253	.00053	.304	.00071	.00009	.0000	.000
%RSD	1.3569	1.2538	3.3381	34.314	1.0727	13.894	2.8059	.00026	.00026

#1	14.374	.01018	.07764	-.00116	28.583	.00461	-.00317	9.6583	20.669
#2	14.101	.01036	.07406	-.00191	28.152	.00561	-.00330	9.6583	20.669

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.83590	-.00131	.00111	-.00037	.05069	.00001	.00341	.00309
Stddev	.00035	.00443	.00190	.00018	.00136	.03258	.00045	.00003	.00347
%RSD	191.21	.52943	144.63	15.994	364.58	64.269	3782.5	1.0107	112.56

#1	-.00006	.83277	-.00266	.00124	.00059	.07373	-.00031	.00339	.00063
#2	.00043	.83903	.00003	.00099	-.00133	.02766	.00033	.00343	.00554

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3651.9	49580.	2833.8
Stddev	18.1	156.	13.2
%RSD	.49504	.31536	.46604

#1	3664.7	49691.	2843.2
#2	3639.1	49469.	2824.5

Sample Name: 280-123543-B-2-B Acquired: 5/14/2019 20:16:44 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.21439	.00138	.01737	.24822	.00021	.00238	58.166	.00003
Stddev	.00008	.00334	.00194	.00102	.00025	.00011	.00179	.020	.00014
%RSD	102.71	1.5597	139.96	5.8677	.09913	53.043	75.362	.03493	435.42

#1	.00014	.21676	.00276	.01809	.24839	.00029	.00111	58.181	-.00007
#2	.00002	.21203	.00001	.01665	.24804	.00013	.00365	58.152	.00014

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.00130	.00009	.19208	3.2150	.00533	11.790	.00492	.00082
Stddev	.00033	.00029	.00046	.01003	.1018	.00084	.015	.00003	.00003
%RSD	224.77	22.585	518.52	5.2210	3.1672	15.831	.13046	.63177	3.0588

#1	.00009	.00109	-.00023	.18498	3.2870	.00593	11.779	.00490	.00084
#2	-.00038	.00151	.00041	.19917	3.1430	.00473	11.801	.00494	.00080

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.6255	-.00205	.20610	.00008	1.8131	-.00150	-.00219	8.8160	18.866
Stddev	.0770	.00031	.00193	.00042	.0119	.00151	.00340	.0529	.113
%RSD	.80009	15.160	.93586	520.56	.65754	101.06	155.18	.60049	.60049

#1	9.5711	-.00227	.20746	-.00022	1.8216	-.00257	.00021	8.8534	18.946
#2	9.6800	-.00183	.20473	.00038	1.8047	-.00043	-.00459	8.7785	18.786

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.37606	-.00111	.00504	.00104	.04858	.00144	.00220	.00607
Stddev	.00021	.00027	.00028	.00131	.00213	.04188	.00099	.00007	.00100
%RSD	18.180	.07290	25.692	26.091	204.68	86.208	68.782	3.3149	16.442

#1	.00101	.37587	-.00131	.00411	.00255	.01897	.00074	.00225	.00678
#2	.00131	.37626	-.00091	.00596	-.00047	.07820	.00214	.00215	.00537

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3704.6	50644.	2856.7
Stddev	30.1	116.	6.8
%RSD	.81121	.22840	.23943

#1	3725.8	50562.	2851.9
#2	3683.3	50726.	2861.6

Sample Name: 280-123543-B-3-B Acquired: 5/14/2019 20:19:18 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00151	.01038	.00081	.09190	.06800	.00017	.00260	190.23	.00131
Stddev	.00039	.00093	.00614	.00042	.00048	.00021	.00042	.14	.00011
%RSD	25.775	8.9748	756.24	.45414	.71101	118.85	16.280	.07292	8.4789

#1	.00179	.01104	.00515	.09220	.06834	.00003	.00289	190.14	.00123
#2	.00124	.00972	-.00353	.09161	.06766	.00032	.00230	190.33	.00139

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.00082	.00002	.06952	2.1364	.00645	22.264	3.9031	.00389
Stddev	.00021	.00018	.00031	.00493	.0036	.00384	.041	.0051	.00002
%RSD	43.760	21.585	1749.1	7.0910	.16897	59.556	.18633	.13003	.53613

#1	.00062	.00070	-.00020	.06603	2.1390	.00917	22.293	3.9067	.00387
#2	.00032	.00095	.00024	.07300	2.1339	.00373	22.234	3.8995	.00390

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	93.364	.02898	.18062	-.00128	64.110	.00299	-.00401	11.987	25.652
Stddev	.208	.00018	.00035	.00093	.338	.00523	.00346	.011	.024
%RSD	.22281	.62813	.19527	72.743	.52688	174.71	86.204	.09540	.09540

#1	93.511	.02911	.18087	-.00062	64.349	-.00070	-.00646	11.979	25.635
#2	93.217	.02885	.18037	-.00194	63.871	.00669	-.00157	11.995	25.669

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.62170	.00093	.00099	.00174	-.04563	.00161	.00226	.00494
Stddev	.00150	.00075	.00033	.00036	.00128	.03844	.00048	.00028	.00526
%RSD	253.84	.12103	35.775	36.208	73.683	84.246	29.836	12.530	106.41

#1	.00165	.62223	.00117	.00074	.00083	-.07281	.00127	.00206	.00122
#2	-.00047	.62117	.00070	.00124	.00264	-.01845	.00195	.00246	.00866

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3574.8	48295.	2763.6
Stddev	19.7	65.	4.8
%RSD	.55175	.13453	.17473

#1	3560.9	48249.	2760.1
#2	3588.8	48341.	2767.0

Sample Name: 280-123543-B-4-B Acquired: 5/14/2019 20:21:51 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.05099	.00279	.08129	.03630	.00017	-.00420	245.60	.00026
Stddev	.00024	.00074	.00118	.00233	.00041	.00023	.00114	.69	.00008
%RSD	75.527	1.4491	42.481	2.8619	1.1272	135.73	27.085	.28266	29.508

#1	.00015	.05151	.00362	.08294	.03659	.00001	-.00340	246.09	.00031
#2	.00048	.05047	.00195	.07965	.03601	.00033	-.00501	245.10	.00020

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00033	.00021	.04908	4.0627	.01387	61.237	.00386	.00617
Stddev	.00033	.00013	.00038	.00151	.2173	.00160	.344	.00001	.00029
%RSD	359.67	40.046	182.28	3.0673	5.3492	11.574	.56230	.21096	4.6393

#1	-.00033	.00042	-.00006	.05015	4.2163	.01273	61.481	.00385	.00597
#2	.00014	.00024	.00048	.04802	3.9090	.01500	60.994	.00386	.00637

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	18.196	-.00295	.01330	-.00066	176.13	-.00372	.04943	6.7763	14.501
Stddev	.209	.00004	.00387	.00068	2.07	.00162	.00173	.0702	.150
%RSD	1.1506	1.3140	29.084	103.20	1.1778	43.501	3.5095	1.0359	1.0359

#1	18.344	-.00293	.01057	-.00018	177.59	-.00257	.04821	6.8259	14.607
#2	18.048	-.00298	.01604	-.00114	174.66	-.00486	.05066	6.7267	14.395

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	1.4633	-.00284	.00152	.00186	.00494	-.00028	.00752	.00383
Stddev	.00105	.0004	.00120	.00056	.00202	.04278	.00018	.00031	.00097
%RSD	413.11	.02513	42.317	36.924	108.58	865.42	65.651	4.0624	25.430

#1	-.00049	1.4636	-.00370	.00192	.00328	.03520	-.00015	.00730	.00314
#2	.00100	1.4631	-.00199	.00112	.00043	-.02531	-.00041	.00773	.00451

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3468.2	47040.	2671.8
Stddev	4.5	274.	.3
%RSD	.12933	.58327	.01041

#1	3465.0	46846.	2671.6
#2	3471.4	47234.	2672.0

Sample Name: 280-123543-B-5-B Acquired: 5/14/2019 20:24:24 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.03881	-.00065	1.0418	.21144	.00010	-.00053	126.85	.00185
Stddev	.00107	.00045	.00574	.0023	.00174	.00012	.00614	.93	.00037
%RSD	162.11	1.1617	880.37	.22144	.82473	122.64	1159.7	.73030	19.785

#1	-.00010	.03913	.00341	1.0435	.21021	.00001	.00381	126.19	.00159
#2	.00142	.03849	-.00471	1.0402	.21268	.00018	-.00487	127.50	.00211

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.00025	.00269	.30097	4.9769	.03094	82.605	2.9931	.01361
Stddev	.00013	.00014	.00046	.00085	.0177	.00061	.005	.0002	.00093
%RSD	18.502	55.025	16.953	.28110	.35544	1.9782	.00613	.00539	6.8095

#1	.00082	.00016	.00237	.30037	4.9644	.03051	82.609	2.9930	.01427
#2	.00063	.00035	.00302	.30157	4.9894	.03138	82.601	2.9933	.01296

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	159.30	.01951	.04392	-.00077	40.901	-.00202	.00071	11.733	25.109
Stddev	.41	.00069	.00434	.00110	.159	.00209	.00081	.073	.156
%RSD	.25543	3.5133	9.8872	143.17	.38962	103.82	114.14	.62296	.62296

#1	159.01	.01999	.04699	.00001	41.014	-.00054	.00128	11.681	24.998
#2	159.58	.01902	.04085	-.00155	40.788	-.00350	.00014	11.785	25.219

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	2.0254	-.00367	.00063	.00037	.01303	.00106	.01849	.00493
Stddev	.00006	.0138	.00160	.00034	.00164	.02145	.00032	.00036	.00116
%RSD	41.447	.68179	43.717	54.590	440.05	164.63	30.033	1.9263	23.469

#1	.00010	2.0156	-.00253	.00038	.00153	-.00214	.00129	.01874	.00574
#2	.00019	2.0351	-.00480	.00087	-.00079	.02819	.00084	.01824	.00411

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3427.7	46700.	2679.4
Stddev	20.7	180.	5.6
%RSD	.60396	.38456	.20924

#1	3442.4	46827.	2683.4
#2	3413.1	46573.	2675.5

Sample Name: 280-123543-B-6-B Acquired: 5/14/2019 20:26:55 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.01558	-.00952	.06678	.03395	.00016	-.00227	465.24	-.00007
Stddev	.00088	.00165	.00316	.00037	.00036	.00003	.00766	1.95	.00020
%RSD	197.98	10.593	33.184	.55808	1.0579	17.605	337.44	.41911	283.61

#1	-.00018	.01674	-.00728	.06705	.03420	.00018	-.00768	466.62	.00007
#2	.00107	.01441	-.01175	.06652	.03370	.00014	.00315	463.86	-.00021

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.00033	.00676	.94659	1.0587	.00273	26.409	.28760	.00150
Stddev	.00039	.00035	.00076	.00691	.0532	.00190	.068	.00073	.00037
%RSD	55.052	104.95	11.231	.73001	5.0270	69.545	.25742	.25289	24.722

#1	.00043	.00058	.00729	.95148	1.0963	.00139	26.458	.28812	.00176
#2	.00098	.00009	.00622	.94171	1.0210	.00407	26.361	.28709	.00123

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	29.909	.00650	.04875	-.00037	F 267.22	.00088	.00378	9.2665	19.830
Stddev	.538	.00057	.00002	.00013	.24	.00256	.00063	.1651	.353
%RSD	1.7974	8.7357	.04494	35.441	.08978	291.45	16.676	1.7812	1.7812

#1	29.529	.00691	.04874	-.00046	267.39	.00269	.00334	9.3832	20.080
#2	30.289	.00610	.04877	-.00028	267.05	-.00093	.00423	9.1498	19.581

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	1.9339	-.00215	.00094	.00129	-.03741	.00075	.01814	.00267
Stddev	.00140	.0082	.00121	.00016	.00062	.02998	.00095	.00000	.00059
%RSD	284.60	.42425	56.257	16.632	47.989	80.127	127.67	.02693	22.190

#1	-.00050	1.9397	-.00129	.00083	.00085	-.01621	.00142	.01814	.00309
#2	.00148	1.9281	-.00300	.00105	.00173	-.05861	.00007	.01813	.00225

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3414.7	46273.	2617.8
Stddev	29.8	170.	3.4
%RSD	.87326	.36660	.13095

#1	3393.6	46153.	2615.4
#2	3435.8	46393.	2620.2

Sample Name: 280-123543-B-7-B Acquired: 5/14/2019 20:29:27 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.03994	-.00686	.05367	.05023	.00019	-.00053	180.43	.00074
Stddev	.00041	.00109	.00283	.00007	.00013	.00017	.00133	.40	.00016
%RSD	99.422	2.7217	41.288	.13803	.25481	89.229	252.22	.22024	20.927

#1	-.00071	.04070	-.00886	.05361	.05014	.00031	-.00147	180.15	.00063
#2	-.00012	.03917	-.00485	.05372	.05032	.00007	.00041	180.71	.00085

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00071	.00489	.07444	3.4762	.01686	43.255	.00508	.00448
Stddev	.00018	.00012	.00032	.00135	.00099	.00198	.037	.00002	.00065
%RSD	362.21	17.042	6.4995	1.8177	.28380	11.737	.08494	.37693	14.565

#1	.00008	.00063	.00511	.07349	3.4692	.01546	43.281	.00510	.00494
#2	-.00018	.00080	.00466	.07540	3.4832	.01826	43.229	.00507	.00402

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.323	.00150	.00885	.00140	73.232	.00164	.01277	6.4903	13.889
Stddev	.234	.00017	.00115	.00037	.444	.00333	.00126	.0226	.048
%RSD	1.2116	11.440	13.036	26.747	.60693	203.17	9.8855	.34756	.34756

#1	19.157	.00138	.00967	.00113	73.546	.00399	.01366	6.5063	13.923
#2	19.488	.00163	.00804	.00166	72.917	-.00071	.01188	6.4744	13.855

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	1.1269	-.00055	.00115	.00418	.00238	-.00030	.02435	.00321
Stddev	.00064	.0008	.00035	.00001	.00199	.05544	.00101	.00007	.00318
%RSD	112.86	.07036	64.031	.59105	47.682	2331.3	332.47	.29594	98.959

#1	.00011	1.1264	-.00080	.00114	.00277	-.03682	-.00102	.02430	.00096
#2	.00102	1.1275	-.00030	.00115	.00559	.04158	.00041	.02440	.00545

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3501.4	47956.	2714.2
Stddev	23.3	11.	11.9
%RSD	.66621	.02239	.43929

#1	3484.9	47964.	2722.7
#2	3517.9	47948.	2705.8

Sample Name: 280-123543-B-8-B Acquired: 5/14/2019 20:32:02 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00105	-.00132	-.00062	.23430	.06266	.00043	.00153	93.402	.00014
Stddev	.00092	.00010	.00275	.00072	.00041	.00003	.00214	.361	.00000
%RSD	87.307	7.4127	443.65	.30620	.65847	8.0898	139.51	.38635	2.6501

#1	.00040	-.00125	.00132	.23481	.06295	.00045	.00002	93.658	.00015
#2	.00170	-.00139	-.00257	.23379	.06237	.00040	.00305	93.147	.00014

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00022	-.00026	.16800	5.9754	.02441	37.902	.08004	.00909
Stddev	.00006	.00018	.00019	.00800	.0887	.00210	.002	.00004	.00014
%RSD	208.22	84.792	74.071	4.7637	1.4850	8.5847	.00436	.04763	1.5392

#1	-.00001	-.00035	-.00040	.17366	5.9126	.02293	37.904	.08001	.00919
#2	.00008	-.00009	-.00012	.16234	6.0381	.02589	37.901	.08007	.00899

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	111.26	-.00360	.01253	.00095	85.107	-.00113	-.00456	6.1854	13.237
Stddev	.27	.00012	.00060	.00198	.262	.00290	.00182	.0195	.042
%RSD	.24536	3.1958	4.7757	207.52	.30830	255.96	39.947	.31468	.31468

#1	111.45	-.00368	.01211	.00235	85.292	.00092	-.00327	6.1991	13.266
#2	111.07	-.00352	.01295	-.00045	84.921	-.00319	-.00585	6.1716	13.207

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	3.0523	-.00259	.00020	.00360	-.01751	.00005	.00047	.00256
Stddev	.00003	.0103	.00274	.00045	.00111	.03925	.00070	.00060	.00080
%RSD	7.6758	.33590	106.03	230.85	30.843	224.18	1518.4	127.52	31.263

#1	.00040	3.0595	-.00453	-.00012	.00438	-.04526	-.00045	.00005	.00199
#2	.00036	3.0450	-.00065	.00052	.00281	.01024	.00054	.00090	.00312

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3559.1	48324.	2744.5
Stddev	13.0	23.	7.0
%RSD	.36602	.04822	.25373

#1	3549.9	48340.	2739.6
#2	3568.3	48307.	2749.4

Sample Name: 280-123543-B-9-B Acquired: 5/14/2019 20:34:33 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.03848	-.00277	.05969	.05291	.00027	-.00060	186.97	.00056
Stddev	.00026	.00020	.00224	.00069	.00028	.00002	.00287	1.48	.00033
%RSD	64.864	.51843	81.149	1.1587	.53511	8.2390	479.85	.79148	58.249

#1	.00022	.03834	-.00435	.05920	.05311	.00028	.00143	185.93	.00033
#2	.00058	.03863	-.00118	.06018	.05271	.00025	-.00263	188.02	.00079

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00026	.00561	.10101	3.4698	.01454	45.422	.00605	.00505
Stddev	.00043	.00037	.00021	.00679	.0947	.00052	.088	.00012	.00075
%RSD	476.45	145.06	3.7633	6.7206	2.7297	3.5791	.19397	1.9154	14.882

#1	.00039	.00052	.00546	.09621	3.5368	.01417	45.484	.00597	.00452
#2	-.00021	-.00001	.00576	.10582	3.4028	.01491	45.359	.00613	.00559

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.061	.00158	.00607	-.00101	78.420	-.00047	.01080	6.6305	14.189
Stddev	.359	.00059	.00311	.00031	.532	.00286	.00501	.0030	.006
%RSD	1.7917	37.234	51.267	30.419	.67852	606.98	46.349	.04500	.04500

#1	19.806	.00116	.00387	-.00123	78.797	.00155	.01435	6.6284	14.185
#2	20.315	.00199	.00827	-.00079	78.044	-.00249	.00726	6.6326	14.194

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00052	1.1920	-.00081	.00098	.00254	-.01639	.00013	.02713	.00429
Stddev	.00020	.0094	.00105	.00015	.00074	.02178	.00043	.00018	.00270
%RSD	38.059	.79073	130.33	14.985	29.296	132.90	321.59	.65742	62.989

#1	-.00066	1.1854	-.00006	.00108	.00307	-.03179	.00044	.02701	.00238
#2	-.00038	1.1987	-.00155	.00088	.00202	-.00099	-.00017	.02726	.00620

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3532.3	49296.	2783.4
Stddev	58.0	48.	14.9
%RSD	1.6418	.09646	.53666

#1	3573.3	49262.	2794.0
#2	3491.3	49329.	2772.9

Sample Name: 280-123543-B-10-B Acquired: 5/14/2019 20:37:08 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457628 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.01045	.00099	.00557	.00050	.00018	.00447	.02352	.00009
Stddev	.00034	.00106	.00592	.00023	.00020	.00001	.00073	.00750	.00014
%RSD	121.21	10.172	600.24	4.1303	39.888	7.8478	16.399	31.915	150.01

#1	-.00004	.01120	-.00320	.00541	.00065	.00019	.00499	.01821	.00019
#2	-.00052	.00969	.00517	.00573	.00036	.00017	.00395	.02882	-.00001

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00030	-.00147	.02320	.02816	-.00125	.00930	.00031	.00013
Stddev	.00050	.00003	.00091	.00057	.04531	.00252	.00491	.00005	.00041
%RSD	551.50	9.8265	61.937	2.4390	160.89	201.08	52.836	16.687	309.93

#1	.00026	.00028	-.00083	.02360	.06020	-.00303	.00583	.00035	-.00016
#2	-.00045	.00033	-.00212	.02280	-.00388	.00053	.01278	.00027	.00043

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.34836	-.00487	.00154	.00188	.03267	.00128	.00289	.00951	.02036
Stddev	.03617	.00008	.00078	.00019	.00589	.00307	.00181	.03083	.06598
%RSD	10.383	1.6444	50.604	10.091	18.016	240.06	62.582	324.09	324.09

#1	.32278	-.00493	.00099	.00201	.03683	-.00089	.00161	-.01229	-.02630
#2	.37393	-.00482	.00209	.00175	.02850	.00345	.00417	.03132	.06701

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00012	-.00187	.00132	.00228	-.01119	-.00064	-.00112	.00169
Stddev	.00155	.00008	.00090	.00009	.00189	.00323	.00089	.00019	.00337
%RSD	1522.0	66.056	48.279	7.0744	82.888	28.883	138.41	16.862	199.22

#1	.00120	-.00006	-.00123	.00139	.00361	-.00891	-.00001	-.00099	-.00069
#2	-.00099	-.00017	-.00250	.00126	.00094	-.01348	-.00127	-.00125	.00408

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3679.4	49886.	2763.5
Stddev	35.7	51.	20.9
%RSD	.97030	.10266	.75761

#1	3654.1	49850.	2748.7
#2	3704.6	49922.	2778.3

Sample Name: CCVH-5699817 Acquired: 5/14/2019 20:39:44 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoadesc Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .01763	45.855	k .00354	k .00355	k .00288	k .00139	k .90400	k .01148	k -.00010	k .00387	k .00142	k .01095
Stddev	.00064	.414	.00759	.00033	.00013	.00001	.00019	.00111	.00025	.00010	.00003	.00013
%RSD	3.6430	.90221	214.02	9.3943	4.6499	.42478	.02121	9.6291	241.87	2.5154	1.9388	1.1666

#1	k .01808	45.563	k .00891	k .00379	k .00297	k .00139	k .90413	k .01070	k -.00028	k .00380	k .00144	k .01086
#2	k .01717	46.148	k -.00182	k .00332	k .00278	k .00138	k .90386	k .01226	k .00007	k .00394	k .00140	k .01104

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	kF 44.290	.20861	.00001	k .02935	k .00053	k .00022	242.96	k -.00015	k .00755	k .01535	k 4.5078	k -.03105
Stddev	.040	.05468	.00010	.00848	.00003	.00007	1.53	.00063	.00138	.00129	.0121	.00079
%RSD	.08969	26.211	1498.9	28.884	6.3034	29.857	.63070	425.32	18.289	8.3948	.26807	2.5528

#1	k 44.318	.24728	.00008	k .02335	k .00051	k .00026	241.87	k .00030	k .00853	k .01626	k 4.5163	k -.03049
#2	k 44.262	.16995	-.00006	k .03534	k .00055	k .00017	244.04	k -.00059	k .00657	k .01444	k 4.4992	k -.03161

Check ?	Chk Fail	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None
Value	50.000											
Range	-10.490%											

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.00247	k -.02242	k -.04797	k .00212	.00131	k 5.0006	k .02071	k .00553	k 9.7357	k .00980	k .00254	k .29268
Stddev	.00164	.05032	.10768	.00064	.00004	.0022	.00035	.00248	.0363	.00132	.00038	.00642
%RSD	66.315	224.48	224.48	30.256	3.2295	.04405	1.6761	44.763	.37299	13.441	15.010	2.1939

#1	k -.00363	k .01316	k .02817	k .00167	.00134	k 4.9991	k .02095	k .00378	k 9.7101	k .00887	k .00227	k .28814
#2	k -.00131	k -.05800	k -.12411	k .00257	.00128	k 5.0022	k .02046	k .00728	k 9.7614	k .01073	k .00281	k .29722

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3591.1	48384.	2749.7
Stddev	4.2	476.	3.0
%RSD	.11820	.98339	.10793

#1	3594.1	48048.	2747.6
#2	3588.1	48721.	2751.8

Sample Name: CCV-5699804 Acquired: 5/14/2019 20:42:14 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50479	.51203	.93802	.47216	.47094	.46790	.00235	4.5730	.47869	.48506	.46320	.48698
Stddev	.00044	.00131	.00232	.00085	.00168	.00177	.00334	.0037	.00278	.00238	.00157	.00105
%RSD	.08814	.25665	.24707	.18036	.35710	.37864	142.26	.08068	.58108	.49125	.33980	.21607

#1	.50511	.51296	.93966	.47156	.47213	.46915	.00471	4.5756	.48066	.48675	.46431	.48624
#2	.50448	.51110	.93638	.47277	.46975	.46665	-.00001	4.5704	.47672	.48338	.46209	.48772

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.4267	48.968	.97608	20.086	.49719	.48619	F 5.5653	.48497	.95514	.97260	.01246	.93822
Stddev	.0053	.013	.00312	.012	.00182	.00222	.0350	.00042	.00189	.00392	.00360	.00195
%RSD	.21981	.02675	.31985	.05980	.36580	.45608	.62885	.08645	.19742	.40259	28.860	.20813

#1	2.4229	48.959	.97829	20.094	.49848	.48776	5.5901	.48526	.95647	.97537	.01501	.93960
#2	2.4305	48.977	.97388	20.077	.49591	.48463	5.5406	.48467	.95381	.96983	.00992	.93684

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94128	4.5996	9.8431	.92655	.47383	.00228	.49275	.94378	.05980	.49544	.48800	.49017
Stddev	.00153	.0379	.0811	.00553	.00182	.00091	.00143	.00341	.00728	.00289	.00133	.00329
%RSD	.16288	.82398	.82398	.59726	.38489	40.024	.28958	.36092	12.180	.58396	.27278	.67209

#1	.94020	4.5728	9.7858	.93046	.47512	.00164	.49376	.94619	.05465	.49749	.48894	.48784
#2	.94236	4.6264	9.9005	.92264	.47254	.00293	.49174	.94138	.06495	.49340	.48706	.49250

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3674.7	49673.	2799.8
Stddev	8.2	150.	1.4
%RSD	.22256	.30225	.05049

#1	3680.5	49567.	2800.8
#2	3668.9	49779.	2798.8

Sample Name: CCB Acquired: 5/14/2019 20:44:37 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00132	-.00170	.00347	.00052	.00050	.00023	.00294	-.00456	-.00007	-.00020	.00022	-.00133	.01057
Stddev	.00030	.00007	.00034	.00054	.00016	.00011	.00178	.00551	.00012	.00004	.00016	.00044	.00049
%RSD	22.363	3.9481	9.8488	103.46	32.059	50.893	60.459	120.83	171.89	17.576	72.377	33.292	4.6723

#1	.00153	-.00175	.00372	.00091	.00039	.00014	.00420	-.00066	.00002	-.00017	.00011	-.00101	.01022
#2	.00111	-.00165	.00323	.00014	.00062	.00031	.00168	-.00845	-.00016	-.00022	.00034	-.00164	.01092

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit													
Low Limit													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.06892	-.00155	-.00027	.00014	.00095	.31839	-.00450	-.00112	.00160	.01051	.00346	-.00191	-.01572
Stddev	.02283	.00349	.00147	.00009	.00052	.00983	.00065	.00205	.00215	.00451	.00376	.00125	.01280
%RSD	33.131	226.05	544.47	62.592	54.755	3.0872	14.438	183.27	133.88	42.928	108.77	65.322	81.400

#1	.08507	-.00402	-.00131	.00008	.00131	.32534	-.00404	.00033	.00009	.01370	.00080	-.00103	-.00667
#2	.05278	.00093	.00077	.00021	.00058	.31144	-.00496	-.00257	.00312	.00732	.00612	-.00279	-.02477

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit													
Low Limit													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.03365	.00117	-.00008	.00106	-.00030	.00285	.01704	-.00002	-.00112	.00165
Stddev	.02739	.00115	.00009	.00162	.00019	.00030	.00802	.00006	.00020	.00356
%RSD	81.400	98.274	110.57	152.66	61.604	10.617	47.058	234.72	17.929	215.10

#1	-.01428	.00036	-.00002	.00220	-.00043	.00307	.02271	-.00007	-.00127	-.00086
#2	-.05302	.00198	-.00014	-.00008	-.00017	.00264	.01137	.00002	-.00098	.00417

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit										
Low Limit										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3674.9	50200.	2772.6
Stddev	1.9	142.	14.1
%RSD	.05098	.28206	.50729

#1	3673.6	50300.	2782.6
#2	3676.3	50100.	2762.7

Sample Name: CCVL-5701318 Acquired: 5/14/2019 20:47:12 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01104	.09410	.01399	.09364	.01004	.00124	.09991	.19020	.00453	.00968	.00925	.01329
Stddev	.00036	.00094	.00077	.00028	.00023	.00023	.00148	.00221	.00009	.00031	.00033	.00134
%RSD	3.2545	1.0007	5.4797	.30072	2.2570	18.794	1.4814	1.1630	1.8888	3.2024	3.5622	10.092

#1	.01130	.09476	.01453	.09345	.00988	.00108	.10095	.19176	.00459	.00990	.00949	.01234
#2	.01079	.09343	.01345	.09384	.01020	.00141	.09886	.18863	.00447	.00947	.00902	.01424

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10399	2.9906	.01915	.19826	.01035	.01950	1.2792	.03552	2.7602	.01055	.09552	.02151
Stddev	.00053	.0437	.00068	.00124	.00010	.00009	.0280	.00008	.0299	.00159	.00372	.00167
%RSD	.51059	1.4599	3.5476	.62729	.96846	.47096	2.1862	.21891	1.0835	15.046	3.8895	7.7475

#1	.10362	3.0215	.01867	.19738	.01042	.01944	1.2594	.03557	2.7814	.01167	.09289	.02269
#2	.10437	2.9597	.01963	.19914	.01028	.01957	1.2989	.03546	2.7391	.00942	.09815	.02034

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01880	.44741	.95746	.09252	.00932	.01408	.00978	.01656	F .09129	.00935	.01835	.01611
Stddev	.00339	.03229	.06910	.00040	.00014	.00103	.00074	.00035	.03378	.00035	.00034	.00249
%RSD	18.054	7.2171	7.2171	.43585	1.5109	7.3268	7.5383	2.1245	37.003	3.7085	1.8640	15.477

#1	.02119	.42458	.90859	.09280	.00942	.01481	.00926	.01681	.06740	.00910	.01811	.01435
#2	.01640	.47024	1.0063	.09223	.00922	.01335	.01030	.01631	.11518	.00959	.01860	.01787

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value									.06000			
Range									30.000%			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3741.8	50588.	2785.9
Stddev	20.2	61.	12.9
%RSD	.53950	.11993	.46174

#1	3756.0	50545.	2795.0
#2	3727.5	50631.	2776.8

Sample Name: MB 280-457249/1-A Acquired: 5/14/2019 20:49:46 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/13 Custom ID2: Custom ID3:
Comment: 457249 6010B (As Be Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.00366	-.00209	.00109	.00058	.00011	.00374	.01019	-.00000
Stddev	.00117	.00007	.00078	.00068	.00034	.00010	.00449	.01228	.00047
%RSD	192.68	1.9836	37.144	62.205	59.586	90.341	120.02	120.51	21290.

#1	-.00022	.00361	-.00154	.00157	.00033	.00018	.00057	.01887	.00033
#2	.00143	.00372	-.00264	.00061	.00082	.00004	.00692	.00151	-.00033

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.00006	.00082	.01916	.09585	-.00182	.00227	.00100	.00031
Stddev	.00051	.00016	.00007	.00561	.07797	.00184	.00231	.00003	.00017
%RSD	127.11	262.74	8.9459	29.283	81.342	100.66	102.08	3.2300	53.792

#1	-.00004	-.00005	.00076	.02313	.15099	-.00053	.00063	.00102	.00043
#2	-.00076	.00017	.00087	.01520	.04072	-.00312	.00390	.00098	.00019

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.27612	-.00433	-.00070	.00116	.01731	.00259	-.00014	-.00924	-.01977
Stddev	.02395	.00008	.00286	.00334	.00193	.00289	.00315	.03397	.07269
%RSD	8.6750	1.8008	408.81	288.59	11.173	111.75	2313.8	367.60	367.60

#1	.25918	-.00428	.00132	.00352	.01595	.00054	.00209	.01478	.03163
#2	.29305	-.00439	-.00272	-.00120	.01868	.00464	-.00236	-.03326	-.07117

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	-.00019	-.00076	.00010	.00094	.03912	.00055	-.00035	.00210
Stddev	.00045	.00013	.00088	.00010	.00068	.05315	.00089	.00020	.00398
%RSD	83.451	65.230	115.89	93.550	72.032	135.89	161.88	57.131	189.69

#1	.00022	-.00028	-.00139	.00017	.00046	.07670	-.00008	-.00049	-.00072
#2	.00087	-.00010	-.00014	.00004	.00142	.00153	.00118	-.00021	.00491

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3643.1	50424.	2850.9
Stddev	1.7	854.	2.3
%RSD	.04598	1.6927	.08153

#1	3641.9	51028.	2849.3
#2	3644.3	49821.	2852.6

Sample Name: LCS 280-457249/2-A Acquired: 5/14/2019 20:52:22 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457249 6010B (As Be Na)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00272	9.7072	1.9233	.96290	1.9037	.94704	1.9138	46.180	.97214
Stddev	.00124	.0786	.0136	.00274	.0016	.00074	.0099	.043	.00239
%RSD	45.546	.80981	.70448	.28496	.08432	.07767	.51965	.09405	.24548

#1	.00184	9.6516	1.9329	.96484	1.9049	.94756	1.9208	46.210	.97383
#2	.00359	9.7628	1.9137	.96096	1.9026	.94652	1.9067	46.149	.97046

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95094	.92449	.97700	9.5216	50.372	.99967	50.480	1.0028	.99092
Stddev	.00380	.00243	.00178	.0179	.168	.00042	.255	.0037	.00427
%RSD	.39973	.26237	.18194	.18756	.33361	.04168	.50445	.37394	.43137

#1	.95362	.92620	.97574	9.5343	50.254	.99938	50.660	1.0055	.99394
#2	.94825	.92277	.97825	9.5090	50.491	.99997	50.300	1.0002	.98789

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	50.284	.95489	19.763	.96478	9.1221	.00606	1.9072	1.9180	4.1044
Stddev	.570	.00256	.075	.00332	.0738	.00391	.0038	.0311	.0665
%RSD	1.1331	.26815	.38032	.34360	.80868	64.639	.19966	1.6208	1.6208

#1	50.687	.95670	19.816	.96244	9.1743	.00329	1.9099	1.8960	4.0574
#2	49.881	.95308	19.710	.96713	9.0700	.00882	1.9045	1.9399	4.1515

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8609	.95654	.99539	1.0093	1.8486	2.0768	1.0150	.49154	.50718
Stddev	.0088	.00033	.00190	.0023	.0093	.0109	.0012	.00113	.00367
%RSD	.47263	.03490	.19088	.22630	.50513	.52542	.12235	.23035	.72332

#1	1.8671	.95630	.99674	1.0109	1.8552	2.0845	1.0158	.49234	.50977
#2	1.8547	.95677	.99405	1.0077	1.8420	2.0691	1.0141	.49074	.50459

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3560.0	48336.	2738.9
Stddev	66.4	319.	11.0
%RSD	1.8643	.65929	.40086

#1	3607.0	48111.	2746.7
#2	3513.1	48562.	2731.1

Sample Name: 280-123411-C-2-A Acquired: 5/14/2019 20:54:39 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457249 6010B (As Be Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00138	.48221	-.00345	.03212	.02044	.00013	-.00349	W 615.08	-.00001
Stddev	.00031	.00408	.00403	.00180	.00029	.00024	.00032	12.31	.00034
%RSD	22.437	.84512	116.68	5.5941	1.4418	187.49	9.1779	2.0014	3414.4
#1	.00160	.48510	-.00630	.03339	.02065	.00029	-.00326	606.38	.00023
#2	.00116	.47933	-.00060	.03085	.02024	-.00004	-.00371	623.79	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit								500.00	
Low Limit								-40000	

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00558	.00080	.00164	2.8836	13.747	.02590	87.221	.36953	.00176
Stddev	.00025	.00023	.00091	.0059	.062	.00095	.032	.00017	.00051
%RSD	4.5448	28.543	55.685	.20320	.45252	3.6798	.03638	.04539	28.844
#1	.00575	.00064	.00099	2.8877	13.791	.02658	87.243	.36942	.00211
#2	.00540	.00096	.00228	2.8794	13.703	.02523	87.198	.36965	.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	421.70	-.00014	.08838	.00088	F 386.84	-.00368	.01130	6.4970	13.904
Stddev	1.86	.00030	.00060	.00271	.06	.00170	.00682	.0285	.061
%RSD	.44041	210.54	.68026	306.95	.01608	46.160	60.411	.43812	.43812
#1	423.01	.00007	.08796	.00280	386.80	-.00248	.00647	6.5171	13.947
#2	420.39	-.00036	.08881	-.00103	386.88	-.00488	.01612	6.4768	13.860
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	W 13.461	-.00283	.01019	.00101	-.01676	.00145	.00323	.00551
Stddev	.00014	.263	.00199	.00030	.00108	.02452	.00146	.00003	.00217
%RSD	209.77	1.9555	70.507	2.9396	107.23	146.30	101.05	.98231	39.377
#1	-.00016	13.647	-.00142	.01040	.00024	.00058	.00041	.00320	.00704
#2	.00003	13.275	-.00424	.00998	.00177	-.03409	.00248	.00325	.00397
Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		10.000							
Low Limit		-.02000							

Int. Std.	Y_2243	Y_3600	Y_3774						
Line	224.306 {450}	360.073 { 94}	377.433 { 89}						
Units	Cts/S	Cts/S	Cts/S						
Avg	3306.0	44536.	2612.0						
Stddev	44.5	91.	.6						
%RSD	1.3460	.20369	.02262						
#1	3274.6	44472.	2611.6						
#2	3337.5	44600.	2612.4						

Sample Name: 280-123412-C-2-A Acquired: 5/14/2019 20:57:23 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457249 6010B (As Be Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.02169	-.00783	.03451	.00770	.00024	-.00387	419.41	-.00033
Stddev	.00068	.00095	.00317	.00070	.00050	.00001	.00142	1.35	.00021
%RSD	164.20	4.3697	40.408	2.0209	6.5152	5.7196	36.591	.32275	64.858
#1	-.00007	.02236	-.01007	.03500	.00734	.00023	-.00287	418.46	-.00048
#2	.00090	.02102	-.00560	.03402	.00805	.00025	-.00487	420.37	-.00018

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00061	-.00032	.00168	.02923	11.377	.01896	38.301	.03077	.00079
Stddev	.00011	.00022	.00078	.00008	.022	.00127	.003	.00022	.00037
%RSD	18.782	67.296	46.612	.28665	.19349	6.7058	.00783	.70434	46.702
#1	-.00069	-.00017	.00113	.02917	11.393	.01986	38.299	.03061	.00105
#2	-.00053	-.00048	.00224	.02929	11.362	.01806	38.303	.03092	.00053

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	480.35	-.00197	.00300	.00004	F 552.75	-.00076	.04254	4.9666	10.628
Stddev	.90	.00030	.00219	.00079	9.83	.00080	.00542	.0139	.030
%RSD	.18653	15.073	72.937	1855.4	1.7790	106.23	12.741	.27910	.27910
#1	480.99	-.00218	.00145	.00060	559.71	-.00019	.04637	4.9764	10.649
#2	479.72	-.00176	.00455	-.00052	545.80	-.00132	.03871	4.9568	10.607

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	W 10.402	-.00059	.00082	.00111	-.02267	-.00099	.00340	.00302
Stddev	.00054	.024	.00182	.00088	.00220	.01011	.00104	.00000	.00043
%RSD	78.486	.23066	307.87	108.09	197.33	44.604	105.00	.10497	14.404
#1	.00030	10.385	-.00188	.00144	.00267	-.02983	-.00172	.00340	.00333
#2	.00106	10.419	.00070	.00019	-.00044	-.01552	-.00025	.00340	.00271

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		10.000							
Low Limit		-.02000							

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3452.3	47225.	2738.9
Stddev	2.6	52.	26.0
%RSD	.07542	.11017	.94749
#1	3454.1	47262.	2720.6
#2	3450.4	47188.	2757.3

Sample Name: 123412-C-2-A SD@5 Acquired: 5/14/2019 20:59:56 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457249 6010B (As Be Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00126	-.00157	.00651	.00170	.00019	.00095	77.121	-.00016
Stddev	.00097	.00080	.00082	.00115	.00031	.00018	.00040	.085	.00004
%RSD	186.86	64.037	51.999	17.705	18.045	95.025	41.646	.10999	25.098

#1	-.00017	.00069	-.00099	.00733	.00148	.00006	.00123	77.181	-.00019
#2	.00120	.00182	-.00215	.00570	.00191	.00032	.00067	77.061	-.00013

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.00002	-.00029	.01256	2.0956	.00215	7.1915	.00589	-.00010
Stddev	.00028	.00011	.00038	.00005	.0110	.00200	.0065	.00001	.00030
%RSD	200.35	642.17	131.15	.41534	.52565	93.030	.09086	.10151	308.01

#1	.00006	.00010	-.00002	.01260	2.1034	.00073	7.1869	.00590	-.00031
#2	-.00033	-.00006	-.00056	.01252	2.0878	.00356	7.1962	.00589	.00012

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	88.504	-.00486	.00147	-.00066	103.50	.00146	.00646	.87117	1.8643
Stddev	.015	.00054	.00021	.00097	.11	.00212	.00085	.01158	.0248
%RSD	.01717	11.087	14.291	146.58	.11072	145.08	13.243	1.3290	1.3290

#1	88.514	-.00448	.00132	-.00134	103.42	-.00004	.00585	.86299	1.8468
#2	88.493	-.00524	.00162	.00002	103.58	.00296	.00706	.87936	1.8818

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	1.8873	-.00092	.00029	.00215	.03833	-.00066	-.00111	.00376
Stddev	.00123	.0010	.00143	.00030	.00044	.01854	.00113	.00066	.00483
%RSD	262.45	.05177	156.60	102.65	20.590	48.376	170.24	59.731	128.67

#1	.00133	1.8880	-.00193	.00050	.00184	.02522	.00013	-.00064	.00718
#2	-.00040	1.8866	.00010	.00008	.00246	.05144	-.00146	-.00157	.00034

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3585.3	49378.	2770.1
Stddev	20.1	30.	19.9
%RSD	.56183	.06040	.71735

#1	3599.6	49399.	2756.1
#2	3571.1	49357.	2784.2

Sample Name: 280-123412-C-2-B MS Acquired: 5/14/2019 21:02:29 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457249 6010B (As Be Na)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00319	9.8974	1.9630	.97024	1.9197	.94386	1.8925	479.55	.97286
Stddev	.00040	.0286	.0275	.01102	.0006	.00242	.0270	.64	.01179
%RSD	12.635	.28859	1.4004	1.1360	.03157	.25603	1.4249	.13291	1.2117

#1	.00291	9.8772	1.9825	.97803	1.9201	.94557	1.9116	480.00	.98120
#2	.00348	9.9176	1.9436	.96244	1.9193	.94215	1.8735	479.09	.96453

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.91922	.89997	.97632	9.4419	65.127	1.0407	88.111	1.0037	.96616
Stddev	.01334	.01281	.00100	.0016	.246	.0008	.188	.0006	.01407
%RSD	1.4511	1.4231	.10241	.01689	.37737	.07389	.21361	.05970	1.4560

#1	.92865	.90902	.97702	9.4408	64.954	1.0412	88.244	1.0042	.97611
#2	.90978	.89091	.97561	9.4430	65.301	1.0402	87.978	1.0033	.95621

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 549.41	.91814	W 20.594	.90480	F 585.28	.00791	1.9685	7.2488	15.512
Stddev	.39	.01418	.283	.01253	7.37	.00199	.0174	.0423	.090
%RSD	.07127	1.5448	1.3738	1.3844	1.2597	25.143	.88473	.58297	.58297

#1	549.68	.92817	20.794	.91366	590.49	.00650	1.9808	7.2189	15.448
#2	549.13	.90811	20.394	.89594	580.07	.00931	1.9561	7.2787	15.576

Check ?	Chk Warn	Chk Pass	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00		20.000		200.00				
Low Limit	11.000		-6.0000		-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.7964	W 11.777	.98139	.99953	1.6533	2.0400	1.0082	.48044	.50470
Stddev	.0229	.039	.00348	.00288	.0293	.0048	.0060	.00121	.00190
%RSD	1.2746	.32785	.35484	.28801	1.7706	.23371	.59805	.25103	.37686

#1	1.8126	11.804	.97893	1.0016	1.6740	2.0366	1.0125	.48130	.50335
#2	1.7802	11.750	.98386	.99749	1.6326	2.0434	1.0040	.47959	.50604

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		10.000							
Low Limit		-.02000							

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3446.7	46753.	2745.9
Stddev	3.1	265.	2.4
%RSD	.08916	.56660	.08741

#1	3448.9	46940.	2747.6
#2	3444.5	46565.	2744.2

Sample Name: 280-123412-C-2-C MSD Acquired: 5/14/2019 21:04:54 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457249 6010B (As Be Na)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00257	9.8885	1.9792	.98053	1.9447	.95689	1.9017	478.94	.98570
Stddev	.00016	.0693	.0296	.01126	.0000	.00025	.0212	.29	.01090
%RSD	6.2901	.70088	1.4970	1.1488	.00152	.02599	1.1128	.05972	1.1059

#1	.00269	9.9375	2.0001	.98849	1.9448	.95706	1.9167	478.74	.99340
#2	.00246	9.8395	1.9582	.97256	1.9447	.95671	1.8868	479.14	.97799

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93091	.91189	.98942	9.7608	65.801	1.0508	88.259	1.0175	.98190
Stddev	.01520	.01117	.00282	.0352	.282	.0001	.610	.0048	.01262
%RSD	1.6328	1.2250	.28548	.36082	.42821	.00639	.69064	.47244	1.2850

#1	.94166	.91979	.99142	9.7358	65.602	1.0507	88.690	1.0209	.99082
#2	.92016	.90399	.98742	9.7857	66.000	1.0508	87.828	1.0141	.97298

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 548.93	.92963	W 20.632	.91589	F 584.57	.00782	2.0020	7.2497	15.514
Stddev	.42	.01301	.271	.00992	5.72	.00029	.0273	.0331	.071
%RSD	.07577	1.3995	1.3135	1.0831	.97793	3.7270	1.3630	.45721	.45721

#1	549.23	.93883	20.823	.92291	588.61	.00762	2.0213	7.2263	15.464
#2	548.64	.92043	20.440	.90888	580.53	.00803	1.9827	7.2731	15.565

Check ?	Chk Warn	Chk Pass	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00		20.000		200.00				
Low Limit	11.000		-6.0000		-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8174	W 11.717	.98706	1.0123	1.6702	2.0371	1.0200	.48093	.51218
Stddev	.0247	.026	.00263	.0062	.0253	.0593	.0101	.00427	.00024
%RSD	1.3591	.22176	.26646	.60768	1.5133	2.9124	.98509	.88889	.04680

#1	1.8348	11.735	.98892	1.0167	1.6880	1.9951	1.0271	.48396	.51235
#2	1.7999	11.698	.98520	1.0080	1.6523	2.0790	1.0129	.47791	.51201

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		10.000							
Low Limit		-.02000							

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3472.4	46902.	2744.8
Stddev	12.9	65.	1.1
%RSD	.37129	.13902	.04083

#1	3463.3	46856.	2744.0
#2	3481.5	46948.	2745.5

Sample Name: CCVH-5699817 Acquired: 5/14/2019 21:07:17 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .01712	46.093	k .00295	k .00601	k .00287	k .00156	k .90826	k .03960	k -.00036	k .00409	k .00158	k .01196
Stddev	.00080	.003	.00360	.00028	.00030	.00017	.01420	.00557	.00023	.00059	.00012	.00018
%RSD	4.6847	.00609	122.04	4.6723	10.589	10.911	1.5638	14.072	63.799	14.313	7.2991	1.5419

#1	k .01769	46.095	k .00550	k .00581	k .00309	k .00169	k .91830	k .04355	k -.00052	k .00451	k .00150	k .01209
#2	k .01655	46.091	k .00040	k .00621	k .00266	k .00144	k .89821	k .03566	k -.00020	k .00368	k .00166	k .01183

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	kF 44.678	.34661	.00201	k .03545	k .00062	k .00254	245.39	k .00041	k .00887	k .01592	k 4.6384	k -.03253
Stddev	.340	.03931	.00063	.00211	.00004	.00128	.24	.00031	.00055	.00066	.1007	.00395
%RSD	.76125	11.341	31.182	5.9668	5.9665	50.493	.09696	77.244	6.2071	4.1324	2.1710	12.154

#1	k 44.918	.37441	.00156	k .03395	k .00065	k .00163	245.22	k .00018	k .00926	k .01545	k 4.7096	k -.02973
#2	k 44.437	.31882	.00245	k .03694	k .00060	k .00345	245.56	k .00063	k .00848	k .01638	k 4.5671	k -.03533

Check ?	Chk Fail	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None
Value	50.000											
Range	-10.490%											

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.00850	k -.03895	k -.08334	k .00273	.00215	k 5.0117	k .02059	k .00803	k 9.7399	k .00955	k .00337	k .29709
Stddev	.00153	.02311	.04945	.00030	.00003	.0082	.00019	.00186	.0496	.00066	.00073	.00397
%RSD	18.012	59.330	59.330	11.045	1.5631	.16369	.94702	23.210	.50961	6.8806	21.586	1.3374

#1	k -.00742	k -.05528	k -.11831	k .00251	.00212	k 5.0175	k .02073	k .00671	k 9.7048	k .00908	k .00286	k .29990
#2	k -.00958	k -.02261	k -.04838	k .00294	.00217	k 5.0059	k .02045	k .00934	k 9.7750	k .01001	k .00389	k .29428

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3622.4	49787.	2776.8
Stddev	80.2	337.	13.3
%RSD	2.2136	.67767	.47985

#1	3679.1	49548.	2767.4
#2	3565.7	50025.	2786.2

Sample Name: CCV-5699804 Acquired: 5/14/2019 21:09:51 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoadesc Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50507	.52870	.94692	.47909	.47418	.46942	.00192	4.6129	.48492	.48997	.47104	.48632
Stddev	.00245	.01021	.00307	.00055	.00050	.00002	.00126	.0022	.00243	.00089	.00011	.00357
%RSD	.48444	1.9304	.32397	.11427	.10642	.00447	65.795	.04699	.50067	.18233	.02428	.73366

#1	.50334	.52148	.94909	.47871	.47383	.46944	.00281	4.6114	.48664	.49060	.47112	.48379
#2	.50680	.53591	.94475	.47948	.47454	.46941	.00102	4.6145	.48321	.48933	.47096	.48884

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.3807	49.426	.98038	20.007	.49596	.49350	F 5.9758	.49161	.96894	.98492	.05654	.94758
Stddev	.0172	.126	.00221	.024	.00155	.00102	.0210	.00105	.00518	.00138	.00632	.00523
%RSD	.72245	.25553	.22528	.12113	.31159	.20586	.35146	.21457	.53495	.13982	11.178	.55229

#1	2.3928	49.516	.98194	19.990	.49487	.49278	5.9906	.49236	.96527	.98589	.05207	.94388
#2	2.3685	49.337	.97882	20.024	.49705	.49422	5.9609	.49087	.97260	.98395	.06101	.95128

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95049	4.6339	9.9165	.94338	.47602	.00234	.49229	.95924	.04984	.49336	.48586	.48837
Stddev	.00645	.0128	.0273	.00372	.00139	.00216	.00189	.00268	.06714	.00237	.00231	.00347
%RSD	.67908	.27549	.27549	.39389	.29215	92.577	.38484	.27983	134.70	.48132	.47513	.71064

#1	.95506	4.6249	9.8972	.94601	.47700	.00081	.49095	.95734	.09732	.49504	.48423	.49082
#2	.94593	4.6429	9.9358	.94076	.47503	.00387	.49363	.96114	.00237	.49169	.48750	.48591

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3679.7	49997.	2771.5
Stddev	6.8	187.	9.7
%RSD	.18379	.37384	.35165

#1	3674.9	50129.	2764.6
#2	3684.5	49865.	2778.4

Sample Name: CCB Acquired: 5/14/2019 21:12:15 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	-.00039	.00508	.00243	.00081	.00014	.00050	.00956	.00036	.00034	.00034	-.00074
Stddev	.00033	.00133	.00105	.00040	.00062	.00008	.00516	.00364	.00041	.00057	.00028	.00105
%RSD	55.896	339.12	20.755	16.536	76.635	55.878	1030.6	38.077	112.94	167.16	81.406	142.17

#1	.00035	-.00134	.00433	.00215	.00037	.00008	-.00315	.00698	.00007	-.00006	.00014	-.00148
#2	.00082	.00055	.00582	.00272	.00125	.00019	.00415	.01213	.00065	.00074	.00054	.00000

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00310	.13731	.00017	.00498	.00000	.00237	F .58100	-.00414	.00067	.00258	.03910	.00416
Stddev	.00337	.03554	.00285	.00073	.00017	.00129	.02328	.00060	.00126	.00116	.00203	.00279
%RSD	108.93	25.883	1660.9	14.644	3692.3	54.477	4.0066	14.487	186.85	44.838	5.1939	67.056

#1	.00548	.11218	.00218	.00447	-.00012	.00145	.59746	-.00457	.00157	.00339	.04053	.00219
#2	.00071	.16244	-.00184	.00550	.00013	.00328	.56454	-.00372	-.00022	.00176	.03766	.00613

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							.50000					
Low Limit							-.50000					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00310	-.01561	-.03342	.00129	-.00009	.00060	.00018	.00461	-.00389	-.00015	-.00119	.00632
Stddev	.00512	.02769	.05925	.00110	.00010	.00297	.00025	.00125	.00846	.00148	.00038	.00117
%RSD	165.38	177.31	177.31	85.506	107.93	496.34	141.80	27.186	217.69	965.40	32.050	18.491

#1	.00672	-.03519	-.07531	.00051	-.00002	.00269	-.00000	.00550	.00210	.00089	-.00146	.00550
#2	-.00053	.00396	.00848	.00207	-.00016	-.00150	.00036	.00373	-.00987	-.00120	-.00092	.00715

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3621.0	50364.	2775.3
Stddev	34.7	221.	25.8
%RSD	.95928	.43929	.92809

#1	3645.6	50521.	2793.6
#2	3596.5	50208.	2757.1

Sample Name: CCVL-5701318 Acquired: 5/14/2019 21:14:51 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00983	.09871	F .00985	.09644	.00954	.00108	.10210	.19212	.00479	.01005	.00943	.01440
Stddev	.00048	.00033	.00167	.00132	.00008	.00024	.00276	.00205	.00019	.00032	.00005	.00083
%RSD	4.8330	.33815	16.937	1.3663	.79700	22.399	2.7060	1.0677	3.9447	3.2129	.54672	5.7324

#1	.01017	.09895	.01103	.09738	.00948	.00091	.10015	.19357	.00493	.01028	.00947	.01498
#2	.00950	.09848	.00867	.09551	.00959	.00125	.10406	.19067	.00466	.00983	.00939	.01382

Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.01500									
Range			-30.000%									

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09354	2.9561	.01759	.20283	.01018	.02005	F 1.4955	.03586	2.7934	.01020	.11465	.02093
Stddev	.00759	.0610	.00296	.00510	.00002	.00019	.0036	.00004	.0036	.00109	.00058	.00559
%RSD	8.1190	2.0628	16.841	2.5140	.15168	.94839	.24047	.10916	.12801	10.681	.50806	26.724

#1	.09891	2.9992	.01550	.19922	.01019	.01992	1.4980	.03583	2.7959	.00943	.11506	.01697
#2	.08817	2.9129	.01969	.20643	.01017	.02019	1.4930	.03589	2.7909	.01097	.11423	.02488

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							1.0000					
Range							30.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01598	.48104	1.0294	.09421	.00951	.01193	.01014	.01527	F .10068	.01073	.01856	.01595
Stddev	.00219	.01927	.0412	.00126	.00012	.00052	.00048	.00238	.00464	.00090	.00071	.00447
%RSD	13.723	4.0056	4.0056	1.3406	1.2677	4.3394	4.7487	15.552	4.6102	8.3729	3.8380	28.019

#1	.01753	.46742	1.0003	.09510	.00960	.01156	.01048	.01695	.09739	.01009	.01806	.01911
#2	.01443	.49467	1.0586	.09331	.00942	.01229	.00980	.01359	.10396	.01137	.01907	.01279

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value									.06000			
Range									30.000%			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3615.7	49898.	2698.2
Stddev	1.6	32.	18.5
%RSD	.04541	.06434	.68456

#1	3614.6	49875.	2685.1
#2	3616.9	49921.	2711.3

Sample Name: 280-123412-C-3-A Acquired: 5/14/2019 21:17:25 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457249 6010B (As Be Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.03504	.00223	.07522	.03648	.00022	-.00145	308.39	-.00012
Stddev	.00020	.00090	.00143	.00013	.00000	.00011	.00264	1.71	.00003
%RSD	25.227	2.5700	64.160	.16676	.00841	49.631	181.98	.55329	22.402

#1	.00091	.03440	.00122	.07531	.03647	.00030	-.00331	307.18	-.00010
#2	.00064	.03567	.00324	.07513	.03648	.00014	.00042	309.60	-.00014

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00053	.00155	.00071	.06392	2.4592	.03209	43.782	.00167	.00530
Stddev	.00011	.00011	.00007	.00077	.0170	.00018	.207	.00007	.00069
%RSD	19.708	7.0798	10.520	1.2008	.69197	.55458	.47317	4.0387	12.940

#1	-.00061	.00163	.00066	.06447	2.4713	.03196	43.929	.00163	.00482
#2	-.00046	.00147	.00076	.06338	2.4472	.03221	43.636	.00172	.00579

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	152.07	-.00316	.03434	-.00088	F 210.56	.00369	.01036	11.989	25.656
Stddev	.01	.00027	.00321	.00195	.08	.00046	.00250	.037	.078
%RSD	.00831	8.5989	9.3363	222.10	.03884	12.584	24.118	.30559	.30559

#1	152.08	-.00335	.03207	-.00226	210.62	.00401	.00859	11.963	25.601
#2	152.06	-.00297	.03661	.00050	210.50	.00336	.01212	12.015	25.712

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	5.2465	-.00382	.00175	.00023	-.01409	-.00014	-.00059	.00459
Stddev	.00067	.0224	.00071	.00074	.00235	.01452	.00070	.00020	.00290
%RSD	91.775	.42710	18.555	42.349	1009.5	103.02	487.74	33.714	63.066

#1	.00025	5.2306	-.00432	.00228	.00189	-.02436	.00035	-.00045	.00254
#2	.00120	5.2623	-.00332	.00123	-.00143	-.00383	-.00064	-.00073	.00664

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3528.4	47980.	2717.3
Stddev	6.3	724.	10.2
%RSD	.17872	1.5093	.37486

#1	3532.8	47468.	2724.5
#2	3523.9	48492.	2710.1

Sample Name: 280-123412-C-4-A Acquired: 5/14/2019 21:19:58 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457249 6010B (As Be Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	.10899	-.00147	.04596	.04331	.00024	-.00135	234.35	-.00008
Stddev	.00046	.00072	.00257	.00007	.00032	.00005	.00153	1.15	.00038
%RSD	44.760	.65752	174.56	.14363	.73626	21.309	113.10	.48859	495.23

#1	.00136	.10950	-.00329	.04592	.04354	.00020	-.00244	235.16	.00019
#2	.00071	.10848	.00034	.04601	.04308	.00027	-.00027	233.54	-.00034

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.00006	.00133	.11925	5.7228	.02728	23.634	.00363	.00034
Stddev	.00011	.00004	.00033	.00121	.0982	.00205	.055	.00003	.00009
%RSD	34.780	59.246	24.614	1.0120	1.7153	7.5151	.23403	.75605	27.652

#1	-.00039	.00003	.00110	.11840	5.7922	.02583	23.673	.00361	.00041
#2	-.00024	.00008	.00156	.12010	5.6534	.02873	23.595	.00365	.00027

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	149.26	-.00298	.03196	-.00055	132.25	.00210	-.00290	11.530	24.674
Stddev	.04	.00005	.00252	.00273	.46	.00106	.00495	.030	.065
%RSD	.02466	1.7520	7.8725	495.33	.34528	50.201	170.66	.26327	.26327

#1	149.29	-.00294	.03374	-.00248	132.57	.00285	.00060	11.551	24.720
#2	149.23	-.00302	.03018	.00138	131.93	.00136	-.00640	11.508	24.628

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	2.8068	-.00289	.00342	.00101	.04413	.00087	.00053	.00563
Stddev	.00002	.0112	.00367	.00043	.00004	.03979	.00056	.00073	.00049
%RSD	12.581	.39850	126.83	12.483	3.9237	90.158	64.119	139.15	8.6715

#1	.00018	2.8147	-.00548	.00312	.00099	.01600	.00048	.00001	.00598
#2	.00015	2.7989	-.00030	.00372	.00104	.07227	.00127	.00104	.00529

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3578.7	49331.	2809.2
Stddev	9.4	99.	13.4
%RSD	.26147	.20006	.47749

#1	3585.3	49401.	2799.8
#2	3572.0	49261.	2818.7

Sample Name: 280-123412-C-5-A Acquired: 5/14/2019 21:22:31 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457249 6010B (As Be Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	.05333	.00737	.04468	.05047	.00024	-.00121	256.65	-.00028
Stddev	.00047	.00106	.00277	.00065	.00050	.00000	.00427	.56	.00048
%RSD	45.199	1.9818	37.648	1.4655	.99169	.38152	353.90	.21853	170.20

#1	.00137	.05259	.00540	.04514	.05011	.00024	-.00422	256.25	-.00062
#2	.00071	.05408	.00933	.04421	.05082	.00024	.00181	257.04	.00006

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.00147	.00047	.07562	2.8737	.01795	31.066	.00465	.00025
Stddev	.00056	.00034	.00052	.00288	.0697	.00096	.016	.00012	.00028
%RSD	431.44	23.377	111.57	3.8110	2.4244	5.3410	.05055	2.5714	112.00

#1	-.00053	.00123	.00010	.07766	2.8244	.01727	31.055	.00473	.00005
#2	.00027	.00171	.00083	.07358	2.9229	.01863	31.077	.00457	.00044

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	139.32	-.00337	.02410	.00037	168.58	.00187	-.00253	10.244	21.922
Stddev	.32	.00032	.00090	.00084	.00	.00089	.00789	.054	.116
%RSD	.22816	9.4507	3.7477	229.61	.00188	47.794	312.18	.52821	.52821

#1	139.55	-.00314	.02346	.00096	168.58	.00250	-.00811	10.206	21.840
#2	139.10	-.00359	.02474	-.00023	168.58	.00124	.00305	10.282	22.004

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00057	4.5557	-.00078	.00165	.00153	-.00674	-.00039	.00057	.00757
Stddev	.00032	.0063	.00027	.00024	.00044	.04787	.00021	.00004	.00068
%RSD	55.875	.13873	34.653	14.386	29.052	709.81	52.371	7.0046	9.0225

#1	-.00079	4.5513	-.00059	.00181	.00184	-.04059	-.00054	.00060	.00709
#2	-.00034	4.5602	-.00097	.00148	.00121	.02710	-.00025	.00054	.00805

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3555.0	48719.	2776.7
Stddev	8.0	55.	5.5
%RSD	.22425	.11383	.19641

#1	3549.3	48759.	2772.8
#2	3560.6	48680.	2780.5

Sample Name: 280-123412-C-6-A Acquired: 5/14/2019 21:25:03 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457249 6010B (As Be Na)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.60666	-.00403	.03795	.01242	.00026	-.00278	W 547.21	-.00001
Stddev	.00041	.00145	.00339	.00031	.00052	.00011	.00087	.05	.00007
%RSD	2637.4	.23928	84.171	.81044	4.2193	41.154	31.424	.00883	511.66

#1	.00030	.60769	-.00642	.03774	.01205	.00018	-.00340	547.24	-.00007
#2	-.00027	.60564	-.00163	.03817	.01279	.00033	-.00217	547.17	.00004

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit								500.00	
Low Limit								-40000	

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00076	.00252	.63448	15.141	.05963	97.685	.04010	-.00001
Stddev	.00029	.00033	.00081	.00443	.067	.00143	.094	.00015	.00020
%RSD	335.08	43.276	32.053	.69896	.44103	2.4043	.09587	.37454	1886.6

#1	-.00029	.00099	.00309	.63135	15.094	.06064	97.619	.04021	.00013
#2	.00012	.00053	.00195	.63762	15.189	.05861	97.752	.03999	-.00015

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	428.76	-.00067	.09593	-.00025	F 633.53	-.00292	.04768	8.4647	18.114
Stddev	.13	.00069	.00143	.00261	.29	.00205	.00310	.0170	.036
%RSD	.03094	103.08	1.4934	1041.2	.04501	70.236	6.4916	.20019	.20019

#1	428.66	-.00018	.09492	.00160	633.33	-.00147	.04987	8.4767	18.140
#2	428.85	-.00115	.09694	-.00210	633.73	-.00436	.04550	8.4527	18.089

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00379	W 13.130	-.00293	.01836	-.00181	.03580	.00080	.00414	.00639
Stddev	.00002	.340	.00001	.00132	.00245	.00476	.00032	.00008	.00262
%RSD	.53128	2.5892	.29735	7.1926	135.00	13.292	40.450	1.8629	40.973

#1	-.00378	13.370	-.00292	.01742	-.00354	.03916	.00057	.00420	.00454
#2	-.00380	12.890	-.00293	.01929	-.00008	.03243	.00103	.00409	.00824

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		10.000							
Low Limit		-.02000							

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3397.5	46621.	2714.9
Stddev	22.0	261.	4.0
%RSD	.64636	.56012	.14842

#1	3413.1	46805.	2712.1
#2	3382.0	46436.	2717.8

Sample Name: MB 280-456955/1-A Acquired: 5/14/2019 21:27:41 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/13 Custom ID2: Custom ID3:
Comment: 456955 6010B (Ag Ba Cr Mo)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.00425	.00297	.00088	.00118	.00030	.00028	F .46241	-.00009
Stddev	.00022	.00180	.00149	.00034	.00016	.00044	.00074	.04114	.00008
%RSD	59.240	42.263	50.056	38.193	13.814	144.27	264.85	8.8974	93.206
#1	.00022	.00298	.00402	.00112	.00130	.00061	.00081	.43331	-.00003
#2	.00053	.00552	.00192	.00064	.00107	-.00001	-.00024	.49150	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit								.20000	
Low Limit								-.20000	
Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00034	-.00075	.00441	.05920	.00389	W .10797	.00041	-.00001
Stddev	.00017	.00013	.00017	.00093	.03540	.00363	.00565	.00016	.00020
%RSD	167.33	36.993	23.105	21.015	59.798	93.364	5.2309	40.672	2101.3
#1	-.00022	.00025	-.00087	.00376	.08423	.00132	.10398	.00052	-.00015
#2	.00002	.00043	-.00063	.00507	.03417	.00646	.11197	.00029	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass
High Limit							.10000		
Low Limit							-.10000		
Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.3061	-.00424	.00059	.00133	F 1.7176	W .00538	.00419	.01788	.03825
Stddev	.0554	.00028	.00112	.00013	1.0378	.00112	.00094	.00292	.00625
%RSD	4.2393	6.5820	189.16	9.6861	60.422	20.800	22.439	16.327	16.327
#1	1.3453	-.00405	-.00020	.00142	.98376	.00617	.00485	.01581	.03384
#2	1.2670	-.00444	.00138	.00124	2.4515	.00459	.00352	.01994	.04267
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Warn	Chk Pass	Chk Pass	None
High Limit	1.0000				.10000	.00500			
Low Limit	-1.0000				-.10000	-.00500			
Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	F .01041	-.00065	.00020	.00346	F .07436	-.00041	-.00099	-.00104
Stddev	.00088	.00053	.00132	.00022	.00105	.05117	.00038	.00015	.00332
%RSD	1148.9	5.1059	203.82	110.19	30.282	68.814	92.915	14.988	320.78
#1	.00070	.01004	.00028	.00004	.00272	.03818	-.00014	-.00110	-.00339
#2	-.00054	.01079	-.00158	.00036	.00420	.11055	-.00068	-.00089	.00131
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit		.01000				.06000			
Low Limit		-.01000				-.06000			
Int. Std.	Y_2243	Y_3600	Y_3774						
Line	224.306 {450}	360.073 { 94}	377.433 { 89}						
Units	Cts/S	Cts/S	Cts/S						
Avg	3680.9	51303.	2771.2						
Stddev	10.7	20.	18.4						
%RSD	.29171	.03902	.66542						
#1	3688.5	51289.	2758.1						
#2	3673.3	51317.	2784.2						

Sample Name: LCS 280-456955/2-A Acquired: 5/14/2019 21:30:16 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B (Ag Ba Cr Mo)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05543	9.9483	1.9587	.97118	1.9529	.96625	1.9460	47.328	.99023
Stddev	.00159	.0963	.0021	.00340	.0081	.00403	.0057	.160	.00274
%RSD	2.8737	.96785	.10782	.35036	.41315	.41660	.29193	.33870	.27702

#1	.05431	9.8802	1.9572	.96877	1.9586	.96909	1.9501	47.441	.99217
#2	.05656	10.016	1.9602	.97358	1.9472	.96340	1.9420	47.214	.98829

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97017	.95648	.97984	9.6421	51.526	1.0181	50.313	1.0074	1.0087
Stddev	.00051	.00341	.00580	.0231	.058	.0046	.039	.0003	.0034
%RSD	.05253	.35625	.59228	.23989	.11283	.45324	.07773	.02957	.33443

#1	.97053	.95888	.97573	9.6584	51.567	1.0214	50.341	1.0072	1.0111
#2	.96981	.95407	.98394	9.6257	51.485	1.0149	50.286	1.0077	1.0064

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	51.912	.97220	W 20.029	.97727	9.4151	.00523	1.9345	1.9886	4.2557
Stddev	.384	.00097	.015	.00357	.0235	.00130	.0055	.0017	.0037
%RSD	.74006	.10013	.07489	.36526	.25000	24.772	.28411	.08697	.08697

#1	52.184	.97289	20.019	.97474	9.4317	.00431	1.9306	1.9874	4.2530
#2	51.641	.97151	20.040	.97979	9.3985	.00614	1.9383	1.9899	4.2583

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.9202	.97908	.99696	1.0170	1.8984	2.0601	1.0184	.49278	.51517
Stddev	.0076	.00211	.00453	.0002	.0076	.0147	.0019	.00193	.00449
%RSD	.39782	.21541	.45454	.01980	.39819	.71287	.18693	.39254	.87096

#1	1.9256	.98058	1.0002	1.0168	1.9037	2.0497	1.0197	.49142	.51834
#2	1.9148	.97759	.99375	1.0171	1.8930	2.0705	1.0170	.49415	.51200

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3486.8	48086.	2681.6
Stddev	1.6	352.	17.2
%RSD	.04567	.73102	.64104

#1	3485.7	48335.	2693.7
#2	3487.9	47838.	2669.4

Sample Name: LCSD 280-456955/3-A Acquired: 5/14/2019 21:32:34 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B (Ag Ba Cr Mo)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05492	9.9989	1.9636	.97446	1.9559	.96543	1.9524	47.310	.99070
Stddev	.00102	.0113	.0049	.00151	.0018	.00171	.0050	.118	.00030
%RSD	1.8495	.11320	.25024	.15535	.09178	.17725	.25637	.24913	.03027

#1	.05564	10.007	1.9601	.97339	1.9547	.96422	1.9489	47.227	.99048
#2	.05420	9.9909	1.9670	.97553	1.9572	.96664	1.9559	47.393	.99091

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97155	.96102	.98009	9.6849	51.678	1.0226	50.517	1.0097	1.0148
Stddev	.00110	.00002	.00038	.0477	.064	.0033	.048	.0015	.0021
%RSD	.11305	.00230	.03886	.49257	.12408	.32152	.09526	.15176	.20815

#1	.97078	.96103	.98036	9.6512	51.633	1.0203	50.551	1.0087	1.0134
#2	.97233	.96100	.97983	9.7187	51.723	1.0249	50.483	1.0108	1.0163

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	51.033	.97474	W 20.122	.98202	9.3919	.00879	1.9451	2.0097	4.3007
Stddev	.906	.00231	.036	.00506	.0073	.00255	.0099	.0342	.0732
%RSD	1.7755	.23693	.17673	.51566	.07725	29.020	.51032	1.7032	1.7032

#1	51.674	.97311	20.096	.98560	9.3868	.01060	1.9381	1.9855	4.2489
#2	50.393	.97638	20.147	.97844	9.3971	.00699	1.9522	2.0339	4.3525

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.9278	.97809	1.0017	1.0209	1.9123	2.0987	1.0197	.49298	.51941
Stddev	.0000	.00190	.0006	.0010	.0026	.0316	.0010	.00177	.00571
%RSD	.00111	.19471	.05895	.09815	.13456	1.5055	.09837	.35907	1.0994

#1	1.9278	.97674	1.0013	1.0202	1.9104	2.0763	1.0190	.49423	.52345
#2	1.9278	.97944	1.0021	1.0216	1.9141	2.1210	1.0204	.49173	.51538

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3529.3	47909.	2672.0
Stddev	.7	131.	22.2
%RSD	.02097	.27437	.82986

#1	3528.8	47816.	2656.4
#2	3529.8	48002.	2687.7

Sample Name: 280-123304-A-1-A Acquired: 5/14/2019 21:34:51 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B (Ag Ba Cr Mo)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01686	W 3.1871	.01774	.61756	.05886	.00095	.00389	36.769	.93877
Stddev	.00020	.0726	.00492	.00285	.00052	.00013	.00098	.142	.00044
%RSD	1.1603	2.2778	27.713	.46183	.88620	13.945	25.196	.38547	.04714

#1	.01700	3.1357	.01426	.61555	.05849	.00086	.00320	36.669	.93846
#2	.01672	3.2384	.02121	.61958	.05922	.00104	.00459	36.870	.93908

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		500.00							
Low Limit		3.2000							

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00539	.03537	4.5813	3.9197	F 582.81	.03859	17.848	.31733	2.1802
Stddev	.00202	.00280	.0018	.0145	1.89	.00086	.078	.00068	.0019
%RSD	37.462	7.9085	.04010	.37012	.32416	2.2381	.43781	.21490	.08925

#1	.00396	.03339	4.5800	3.9094	581.47	.03920	17.904	.31781	2.1789
#2	.00681	.03735	4.5826	3.9299	584.14	.03797	17.793	.31684	2.1816

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					500.00				
Low Limit					-6.0000				

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 626.77	.02328	F 111.22	.00936	F 1217.9	.04722	.01206	4.5623	9.7634
Stddev	2.66	.00241	.09	.00256	.2	.00244	.00663	.0901	.1928
%RSD	.42365	10.334	.08121	27.320	.01937	5.1590	54.957	1.9749	1.9749

#1	624.89	.02158	111.29	.00755	1218.0	.04894	.00737	4.4986	9.6270
#2	628.64	.02498	111.16	.01117	1217.7	.04550	.01675	4.6260	9.8997

Check ?	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00		50.000		200.00				
Low Limit	11.000		-6.0000		-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01738	.53118	.00206	.13869	.01276	-.00470	-.01108	.09052	.01450
Stddev	.00597	.00136	.00076	.00007	.00303	.02704	.00010	.00009	.00360
%RSD	34.335	.25594	37.092	.04822	23.716	575.06	.90101	.09764	24.798

#1	.01316	.53022	.00260	.13865	.01062	.01442	-.01115	.09058	.01704
#2	.02160	.53214	.00152	.13874	.01490	-.02382	-.01101	.09046	.01196

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3461.2	46851.	2726.6
Stddev	28.5	53.	15.7
%RSD	.82344	.11217	.57759

#1	3481.3	46814.	2737.8
#2	3441.0	46888.	2715.5

Sample Name: 123304-A-1-A SD@5 Acquired: 5/14/2019 21:37:23 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B (Ag Ba Cr Mo)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00314	.56602	.00477	.11884	.01002	.00010	-.00018	6.0140	.17399
Stddev	.00072	.02202	.00285	.00285	.00050	.00022	.00044	.0727	.00651
%RSD	22.848	3.8897	59.725	2.3985	4.9607	224.46	248.42	1.2084	3.7393

#1	.00365	.55045	.00276	.11682	.00967	-.00006	-.00049	5.9626	.16939
#2	.00263	.58159	.00679	.12085	.01037	.00025	.00014	6.0654	.17859

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00087	.00581	.77234	.65787	94.839	.00703	3.1133	.05451	.41479
Stddev	.00014	.00020	.01008	.00036	1.280	.00011	.0568	.00069	.01765
%RSD	15.899	3.3596	1.3051	.05425	1.3500	1.4960	1.8232	1.2730	4.2562

#1	.00077	.00567	.76522	.65762	93.934	.00696	3.0731	.05402	.40230
#2	.00097	.00595	.77947	.65812	95.744	.00711	3.1534	.05500	.42727

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	102.99	-.00031	W 20.776	-.00091	F 235.28	.01147	.00293	.71400	1.5280
Stddev	2.21	.00036	.739	.00267	8.20	.00065	.00382	.05171	.1107
%RSD	2.1461	116.47	3.5589	293.86	3.4862	5.6971	130.50	7.2428	7.2428

#1	101.43	-.00056	20.253	-.00280	229.48	.01101	.00023	.75057	1.6062
#2	104.55	-.00005	21.298	.00098	241.08	.01193	.00563	.67743	1.4497

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000		200.00				
Low Limit			-6.0000		-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.08604	.00208	.02325	.00256	-.03191	-.00158	.01359	.00207
Stddev	.00069	.00113	.00016	.00022	.00170	.03067	.00037	.00085	.00668
%RSD	131.24	1.3136	7.5012	.92749	66.544	96.110	23.433	6.2501	321.85

#1	.00101	.08524	.00197	.02310	.00135	-.01022	-.00184	.01299	.00680
#2	.00004	.08683	.00219	.02340	.00376	-.05359	-.00132	.01419	-.00265

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3538.0	48141.	2656.8
Stddev	1.5	184.	8.5
%RSD	.04319	.38255	.32108

#1	3539.0	48011.	2650.8
#2	3536.9	48271.	2662.9

Sample Name: CCVH-5699817 Acquired: 5/14/2019 21:39:53 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .01715	46.129	k .00084	k .00615	k .00295	k .00166	k .92765	k .04083	k -.00003	k .00446	k .00168	k .01205
Stddev	.00102	.002	.00367	.00104	.00010	.00025	.00403	.00060	.00031	.00041	.00002	.00040
%RSD	5.9586	.00509	436.71	16.908	3.4684	15.259	.43399	1.4608	1057.4	9.0778	1.2246	3.3112

#1	k .01787	46.128	k -.00175	k .00542	k .00302	k .00183	k .92481	k .04041	k -.00024	k .00418	k .00166	k .01177
#2	k .01642	46.131	k .00343	k .00689	k .00288	k .00148	k .93050	k .04126	k .00019	k .00475	k .00169	k .01233

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	kF 44.475	.81098	.00659	k .03693	k .00060	k .00405	244.40	k .00022	k .07582	k .01878	k 5.3297	k -.02984
Stddev	.002	.04942	.00048	.00222	.00001	.00117	1.41	.00015	.03724	.00132	.3212	.00281
%RSD	.00550	6.0942	7.2336	6.0103	1.0704	28.954	.57634	66.915	49.112	7.0152	6.0270	9.4318

#1	k 44.476	.77604	.00625	k .03849	k .00060	k .00322	243.40	k .00032	k .04949	k .01971	k 5.1026	k -.03183
#2	k 44.473	.84593	.00692	k .03536	k .00061	k .00488	245.40	k .00012	k .10216	k .01785	k 5.5568	k -.02785

Check ?	Chk Fail	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None
Value	50.000											
Range	-10.490%											

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.01085	k .00621	k .01329	k .00231	.00174	k 5.0013	k .01989	k .00412	k 9.7178	k .01032	k .00317	k .29540
Stddev	.00239	.00001	.00002	.00022	.00004	.0036	.00000	.00250	.0356	.00020	.00045	.00235
%RSD	22.012	.16626	.16626	9.6912	2.2482	.07089	.01123	60.595	.36624	1.9617	14.087	.79542

#1	k -.01254	k .00622	k .01331	k .00246	.00177	k 4.9988	k .01989	k .00235	k 9.7429	k .01017	k .00286	k .29706
#2	k -.00917	k .00620	k .01328	k .00215	.00171	k 5.0039	k .01989	k .00588	k 9.6926	k .01046	k .00349	k .29374

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3543.7	48518.	2681.0
Stddev	10.8	28.	.3
%RSD	.30518	.05765	.01301

#1	3536.1	48498.	2680.8
#2	3551.3	48538.	2681.3

Sample Name: CCV-5699804 Acquired: 5/14/2019 21:42:24 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50334	F .66555	.96092	.48369	.48533	.47877	.00278	4.7303	.49017	.49599	.48058	.49022
Stddev	.00202	.08551	.00549	.00290	.00033	.00122	.00381	.0067	.00088	.00001	.00089	.00150
%RSD	.40076	12.848	.57170	.60028	.06724	.25419	136.84	.14116	.17899	.00296	.18416	.30508

#1	.50477	.60508	.96480	.48164	.48556	.47791	.00009	4.7256	.49079	.49600	.47996	.49128
#2	.50192	.72601	.95703	.48574	.48510	.47963	.00548	4.7350	.48954	.49598	.48121	.48916

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.4297	50.693	1.0078	20.061	.49807	.49665	F 6.0829	.49684	.98629	.99251	.13490	.96942
Stddev	.0016	.264	.0007	.040	.00160	.00039	.0384	.00005	.00281	.00098	.01074	.00028
%RSD	.06406	.52074	.06573	.19887	.32168	.07894	.63051	.00907	.28513	.09826	7.9620	.02852

#1	2.4308	50.506	1.0074	20.033	.49693	.49637	6.0557	.49681	.98430	.99182	.12731	.96922
#2	2.4286	50.879	1.0083	20.089	.49920	.49693	6.1100	.49687	.98828	.99320	.14250	.96961

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97018	4.7049	10.069	.96416	.48565	.00748	.49552	.97889	.00287	.49561	.49132	.49525
Stddev	.00283	.0632	.135	.00171	.00144	.00142	.00070	.00350	.00432	.00056	.00165	.00159
%RSD	.29167	1.3440	1.3440	.17756	.29746	18.915	.14170	.35799	150.43	.11233	.33496	.32088

#1	.97218	4.6602	9.9729	.96537	.48463	.00648	.49601	.98137	.00592	.49600	.49249	.49413
#2	.96818	4.7497	10.164	.96295	.48667	.00849	.49502	.97642	-.00018	.49521	.49016	.49638

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3586.7	49239.	2702.0
Stddev	35.0	88.	22.9
%RSD	.97627	.17868	.84813

#1	3561.9	49301.	2718.2
#2	3611.4	49177.	2685.8

Sample Name: CCB Acquired: 5/14/2019 21:44:46 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.00319	.00462	.00344	.00084	.00049	.00142	.01010	.00168	.00140	.00155	-.00065
Stddev	.00017	.00284	.00280	.00032	.00007	.00006	.00667	.00680	.00102	.00121	.00117	.00017
%RSD	18.555	89.081	60.708	9.3984	8.1452	11.623	468.82	67.298	60.394	86.491	75.662	26.350
#1	.00103	.00118	.00263	.00321	.00089	.00045	-.00329	.01491	.00096	.00054	.00072	-.00077
#2	.00079	.00521	.00660	.00367	.00079	.00053	.00614	.00530	.00240	.00225	.00238	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.23154	.00149	.01141	.00042	.00509	F .58609	-.00293	.00995	.00213	F .11694	F .01379
Stddev	.00250	.03611	.00298	.00279	.00003	.00175	.02348	.00117	.00350	.00362	.00935	.00253
%RSD	580.06	15.596	199.97	24.471	6.0882	34.312	4.0057	39.816	35.192	169.65	7.9948	18.371
#1	-.00134	.25707	-.00062	.01338	.00040	.00386	.56949	-.00376	.00748	-.00043	.11033	.01200
#2	.00220	.20600	.00360	.00943	.00044	.00633	.60269	-.00211	.01243	.00469	.12355	.01558
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail
High Limit							.50000				.10000	.01200
Low Limit							-.50000				-.20000	-.01200
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00726	-.00075	-.00161	.00379	.00020	-.00182	.00049	.00669	.05865	.00060	-.00179	W .00791
Stddev	.00063	.02941	.06294	.00252	.00006	.00295	.00042	.00310	.01771	.00019	.00077	.00080
%RSD	8.7145	3914.5	3914.5	66.599	30.845	162.65	84.959	46.346	30.193	31.245	43.021	10.113
#1	.00681	-.02155	-.04611	.00200	.00024	-.00390	.00020	.00449	.07117	.00047	-.00125	.00734
#2	.00770	.02005	.04290	.00557	.00016	.00027	.00079	.00888	.04613	.00074	-.00233	.00848
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit												.00750
Low Limit												-.00900
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3662.8	50536.	2712.5									
Stddev	11.5	48.	6.9									
%RSD	.31369	.09556	.25267									
#1	3654.7	50570.	2707.6									
#2	3670.9	50502.	2717.3									

Sample Name: CCVL-5701318 Acquired: 5/14/2019 21:47:24 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00923	.09997	.01425	.09595	.01029	.00101	.09871	.19810	.00520	.00958	.00945	.01471
Stddev	.00005	.00002	.00946	.00109	.00015	.00018	.00238	.00325	.00016	.00026	.00025	.00020
%RSD	.49901	.01972	66.355	1.1390	1.4467	17.389	2.4109	1.6415	3.1656	2.7119	2.6186	1.3484

#1	.00926	.09996	.02094	.09672	.01018	.00113	.09703	.20040	.00508	.00940	.00963	.01457
#2	.00920	.09998	.00757	.09518	.01039	.00089	.10040	.19580	.00532	.00976	.00928	.01485

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09322	3.1554	.01768	.19958	.01007	.01951	F 1.4619	.03561	2.7937	F .01216	F .17416	.02329
Stddev	.00026	.0015	.00657	.00382	.00012	.00005	.0050	.00054	.0080	.00004	.01771	.00016
%RSD	.28388	.04674	37.142	1.9145	1.1660	.24072	.34110	1.5031	.28533	.31298	10.170	.67127

#1	.09341	3.1543	.01304	.20228	.01015	.01954	1.4654	.03598	2.7881	.01218	.16163	.02318
#2	.09304	3.1564	.02232	.19688	.00999	.01947	1.4583	.03523	2.7994	.01213	.18668	.02340

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
Value							1.0000			.00900	.10000	
Range							30.000%			30.000%	30.000%	

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01942	.46642	.99813	.09414	.00970	.01572	.00945	.01540	F .08231	.00951	.01854	.01382
Stddev	.00231	.01746	.03736	.00104	.00002	.00177	.00060	.00461	.03497	.00062	.00038	.00293
%RSD	11.900	3.7425	3.7425	1.1095	.22554	11.241	6.3347	29.926	42.493	6.5070	2.0451	21.183

#1	.02105	.45407	.97172	.09488	.00968	.01697	.00903	.01866	.05758	.00995	.01828	.01175
#2	.01778	.47876	1.0245	.09340	.00971	.01447	.00988	.01214	.10704	.00908	.01881	.01589

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value									.06000			
Range									30.000%			

Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3579.2	49951.	2718.4									
Stddev	19.4	185.	15.6									
%RSD	.54235	.37047	.57399									

#1	3592.9	49820.	2729.4									
#2	3565.5	50082.	2707.3									

Sample Name: 280-123304-A-2-A Acquired: 5/14/2019 21:49:59 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B (Ag Ba Cr Mo)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	W 3.0245	.01302	.60616	.30845	.00046	-.00316	64.051	.00320
Stddev	.00057	.0170	.00398	.00126	.00042	.00018	.00417	.018	.00032
%RSD	79.753	.56228	30.570	.20720	.13745	39.599	131.67	.02853	10.061

#1	.00031	3.0125	.01584	.60705	.30815	.00033	-.00022	64.064	.00298
#2	.00112	3.0366	.01021	.60528	.30875	.00059	-.00611	64.038	.00343

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		500.00							
Low Limit		3.2000							

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00926	.23589	.29562	8.9801	26.373	.08312	67.315	.42067	.52564
Stddev	.00048	.00093	.00042	.0244	.177	.00181	.142	.00048	.00048
%RSD	5.2346	.39462	.14279	.27221	.67233	2.1730	.21086	.11511	.09068

#1	.00892	.23523	.29591	8.9973	26.248	.08439	67.415	.42101	.52597
#2	.00961	.23655	.29532	8.9628	26.499	.08184	67.214	.42033	.52530

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	309.05	.07549	4.9953	.00675	147.26	.00078	.02117	7.3048	15.632
Stddev	.10	.00070	.0141	.00287	.30	.00199	.00313	.0206	.044
%RSD	.03303	.92181	.28126	42.547	.20541	254.52	14.780	.28153	.28153

#1	308.98	.07599	4.9854	.00472	147.05	-.00063	.01896	7.2902	15.601
#2	309.12	.07500	5.0053	.00879	147.48	.00219	.02338	7.3193	15.663

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00437	.94323	-.00249	.05944	.00301	-.02054	.00982	.32235	.02411
Stddev	.00121	.00054	.00128	.00029	.00031	.01089	.00093	.00242	.00228
%RSD	27.599	.05753	51.532	.49445	10.327	53.006	9.4634	.75018	9.4396

#1	.00523	.94284	-.00339	.05965	.00323	-.02824	.00916	.32406	.02250
#2	.00352	.94361	-.00158	.05923	.00279	-.01284	.01048	.32064	.02572

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3497.3	47659.	2701.4
Stddev	.2	536.	27.3
%RSD	.00589	1.1241	1.0089

#1	3497.5	47280.	2720.7
#2	3497.2	48038.	2682.1

Sample Name: 280-123304-A-3-A Acquired: 5/14/2019 21:52:26 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B (Ag Ba Cr Mo)

Elem	Ag3280	Al1670	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179
Line	328.068 {103}	167.079 {502}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02057	2.4502	W 2.8065	.07382	.29811	.14619	.02008	.04732	28.565
Stddev	.00012	.0030	.0368	.00308	.00160	.00000	.00003	.00071	.003
%RSD	.57920	.12267	1.3105	4.1710	.53661	.00025	.14990	1.5034	.00984

#1	.02049	2.4524	2.7804	.07164	.29698	.14619	.02010	.04682	28.563
#2	.02066	2.4481	2.8325	.07599	.29924	.14619	.02005	.04783	28.567

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			500.00						
Low Limit			3.2000						

Elem	Cd2288	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576
Line	228.802 {447}	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02929	.02983	.07103	.07921	4.7799	81.639	.08565	13.149	F 59.281
Stddev	.00002	.00007	.00064	.00050	.0024	.243	.00030	.003	.576
%RSD	.08518	.25036	.90725	.62985	.05105	.29804	.34564	.02378	.97138

#1	.02928	.02989	.07057	.07886	4.7782	81.467	.08586	13.151	59.688
#2	.02931	.02978	.07148	.07956	4.7816	81.811	.08544	13.147	58.873

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit									20.000
Low Limit									-.02000

Elem	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Line	202.030 {467}	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03569	270.88	.03633	1.0350	.11806	F 512.33	.01866	.04456	2.0278
Stddev	.00116	.94	.00037	.0097	.00225	.53	.00291	.00242	.0040
%RSD	3.2474	.34584	1.0279	.93773	1.9074	.10393	15.610	5.4216	.19618

#1	.03487	270.22	.03606	1.0282	.11966	512.71	.02072	.04285	2.0249
#2	.03651	271.55	.03659	1.0419	.11647	511.95	.01660	.04627	2.0306

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						200.00			
Low Limit						-.20000			

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.3394	.07577	.25428	.05657	.07358	.04499	.25347	.04027	.37733
Stddev	.0085	.00061	.00040	.00082	.00027	.00037	.03042	.00044	.00141
%RSD	.19618	.81004	.15838	1.4550	.36602	.82669	12.002	1.0915	.37399

#1	4.3334	.07534	.25456	.05715	.07378	.04526	.27498	.04058	.37833
#2	4.3454	.07621	.25400	.05598	.07339	.04473	.23196	.03996	.37633

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Zr3391								
Line	339.198 { 99}								
Units	ppm								
Avg	.03191								
Stddev	.00330								
%RSD	10.332								

#1	.02958								
#2	.03424								

Check ?	Chk Pass								
High Limit									
Low Limit									

Sample Name: 280-123304-A-3-A Acquired: 5/14/2019 21:52:26 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B (Ag Ba Cr Mo)

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	4374.6	59786.	3374.5
Stddev	18.2	398.	6.2
%RSD	.41688	.66490	.18245
#1	4361.8	59505.	3370.2
#2	4387.5	60067.	3378.9

Sample Name: 280-123304-A-3-A @5 Acquired: 5/14/2019 21:54:59 Type: Unk

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoadesc Prep Date: Custom ID2: Custom ID3:

Comment: 456955 6010B 5x

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00478	.67428	.01764	.07951	.03499	.00484	.01234	6.8409	.00750
Stddev	.00110	.01575	.00342	.00291	.00132	.00004	.00258	.0813	.00014
%RSD	23.014	2.3363	19.379	3.6581	3.7809	.75914	20.923	1.1889	1.8003

#1	.00555	.66314	.01522	.07745	.03405	.00487	.01416	6.7834	.00760
#2	.00400	.68542	.02005	.08156	.03592	.00481	.01051	6.8984	.00741

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00811	.01835	.01918	1.1442	19.410	.01634	3.3156	W 17.051	.00928
Stddev	.00051	.00018	.00012	.0153	.117	.00109	.0409	.091	.00033
%RSD	6.2440	.97169	.60449	1.3345	.60422	6.6595	1.2333	.53441	3.5195

#1	.00775	.01823	.01926	1.1334	19.327	.01711	3.2867	17.115	.00905
#2	.00847	.01848	.01910	1.1550	19.493	.01557	3.3445	16.987	.00952

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit								10.000	
Low Limit								-.02000	

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	65.321	.00624	.26272	.03278	134.27	.00461	.01254	.48474	1.0373
Stddev	1.667	.00066	.01061	.00101	2.83	.00478	.00016	.00210	.0045
%RSD	2.5517	10.538	4.0375	3.0813	2.1059	103.54	1.2938	.43271	.43271

#1	64.143	.00670	.25522	.03350	132.27	.00124	.01243	.48326	1.0342
#2	66.500	.00577	.27022	.03207	136.27	.00799	.01266	.48623	1.0405

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01834	.06039	.01123	.01801	.01578	.09661	.00992	.09201	.00829
Stddev	.00048	.00072	.00049	.00054	.00088	.02660	.00032	.00051	.00115
%RSD	2.6149	1.1939	4.3824	3.0131	5.5534	27.533	3.1965	.55746	13.929

#1	.01800	.05988	.01158	.01763	.01640	.07780	.01015	.09164	.00747
#2	.01868	.06090	.01088	.01839	.01516	.11542	.00970	.09237	.00911

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3755.9	52114.	2858.9
Stddev	19.5	120.	.6
%RSD	.51802	.23038	.02238

#1	3769.6	52029.	2859.3
#2	3742.1	52199.	2858.4

Sample Name: 280-123304-A-4-A Acquired: 5/14/2019 21:57:35 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B (Ag Ba Cr Mo)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00339	3.8426	.01322	.02569	.31617	.00035	.08294	47.675	.00249
Stddev	.00014	.0050	.00105	.00043	.00168	.00010	.00226	.031	.00036
%RSD	4.2755	.12918	7.9210	1.6727	.53022	28.049	2.7274	.06524	14.505

#1	.00329	3.8391	.01396	.02539	.31499	.00028	.08134	47.653	.00274
#2	.00349	3.8461	.01248	.02599	.31736	.00042	.08454	47.697	.00223

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01040	.08681	.66207	8.1338	W 321.67	.03589	22.444	1.0013	W 9.3696
Stddev	.00017	.00056	.00197	.0093	1.66	.00301	.057	.0045	.0397
%RSD	1.6018	.64044	.29762	.11414	.51683	8.4004	.25597	.44637	.42355

#1	.01028	.08720	.66067	8.1273	320.49	.03802	22.403	.99815	9.3976
#2	.01052	.08641	.66346	8.1404	322.84	.03376	22.484	1.0045	9.3415

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit					100.00				5.0000
Low Limit					-6.0000				-.04000

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 6109.5	.02550	6.0861	.00974	F 721.62	.00296	.00819	9.6739	20.702
Stddev	11.7	.00009	.0166	.00058	1.77	.00283	.00203	.0418	.089
%RSD	.19115	.33830	.27282	5.9465	.24521	95.624	24.749	.43225	.43225

#1	6101.2	.02557	6.0978	.00933	722.88	.00496	.00962	9.6444	20.639
#2	6117.8	.02544	6.0744	.01015	720.37	.00096	.00675	9.7035	20.766

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				200.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.06427	.27996	-.00154	.06507	-.00022	-.05409	F -.08010	.56916	.00900
Stddev	.00186	.00076	.00413	.00143	.00053	.01652	.00106	.00112	.00028
%RSD	2.8981	.27140	268.26	2.1972	244.67	30.552	1.3235	.19640	3.0922

#1	.06558	.27942	-.00446	.06406	-.00059	-.04240	-.07935	.56995	.00881
#2	.06295	.28049	.00138	.06608	.00016	-.06577	-.08085	.56837	.00920

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit							10.000		
Low Limit							-.02000		

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3117.1	40936.	2577.8
Stddev	.8	285.	11.6
%RSD	.02556	.69633	.44888

#1	3117.6	41138.	2569.6
#2	3116.5	40735.	2586.0

Sample Name: 280-123304-A-4-A @2 Acquired: 5/14/2019 22:00:06 Type: Unk

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoadesc Prep Date: Custom ID2: Custom ID3:

Comment: 456955 6010B 2x

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00180	1.9197	.00983	.01316	.15676	.00035	.04588	23.688	.00129
Stddev	.00050	.0401	.01264	.00088	.00098	.00001	.00432	.193	.00041
%RSD	27.675	2.0908	128.61	6.6662	.62465	1.5348	9.4228	.81515	32.043

#1	.00145	1.8913	.01877	.01254	.15606	.00035	.04282	23.552	.00099
#2	.00216	1.9481	.00089	.01378	.15745	.00036	.04893	23.825	.00158

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00557	.04642	.33734	4.0175	W 158.12	.01923	11.488	.50152	W 5.0830
Stddev	.00009	.00118	.00448	.0523	2.18	.00029	.099	.00451	.0927
%RSD	1.6818	2.5447	1.3274	1.3027	1.3780	1.4996	.85832	.89874	1.8230

#1	.00550	.04559	.33417	3.9805	156.58	.01943	11.418	.49833	5.0175
#2	.00563	.04726	.34051	4.0545	159.66	.01902	11.558	.50471	5.1485

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit					100.00				5.0000
Low Limit					-6.0000				-.04000

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 3001.6	.01138	3.1735	.00842	F 384.26	.00331	.00519	4.8166	10.308
Stddev	31.7	.00042	.0533	.00197	6.97	.00166	.00425	.0430	.092
%RSD	1.0559	3.6482	1.6789	23.350	1.8142	50.152	81.932	.89212	.89212

#1	2979.2	.01108	3.1358	.00981	379.33	.00214	.00218	4.7863	10.243
#2	3024.0	.01167	3.2112	.00703	389.19	.00448	.00819	4.8470	10.373

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				200.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03389	.13802	.00026	.03472	-.00004	-.03214	F -.03703	.28587	.00776
Stddev	.00058	.00192	.00065	.00067	.00359	.00536	.00081	.00280	.00129
%RSD	1.7076	1.3941	247.87	1.9394	9618.3	16.666	2.1970	.97798	16.680

#1	.03348	.13666	.00072	.03519	.00250	-.03592	-.03761	.28390	.00867
#2	.03430	.13939	-.00020	.03424	-.00257	-.02835	-.03646	.28785	.00684

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit							10.000		
Low Limit							-.02000		

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3275.3	43299.	2651.0
Stddev	6.1	147.	12.6
%RSD	.18728	.34001	.47616

#1	3271.0	43195.	2642.1
#2	3279.7	43403.	2660.0

Sample Name: 280-123304-B-5-A Acquired: 5/14/2019 22:02:41 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B (Ag Ba Cr Mo)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	.09932	-.00057	.14925	.02058	.00018	.00059	13.826	.01036
Stddev	.00015	.00370	.00371	.00084	.00005	.00001	.00217	.075	.00016
%RSD	40.180	3.7219	649.48	.56576	.22349	4.6513	366.49	.54143	1.5740

#1	-.00047	.09671	.00205	.14984	.02055	.00017	.00212	13.774	.01025
#2	-.00026	.10194	-.00320	.14865	.02062	.00019	-.00094	13.879	.01048

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00377	.06561	.40392	11.190	.01325	8.9046	.22183	.07054
Stddev	.00020	.00025	.00002	.00140	.094	.00118	.0275	.00083	.01592
%RSD	103.21	6.6023	.03428	.34664	.83648	8.9096	.30891	.37325	22.571

#1	.00005	.00395	.06562	.40491	11.256	.01409	8.9240	.22241	.05929
#2	.00034	.00360	.06559	.40293	11.123	.01242	8.8851	.22124	.08180

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	63.613	.00082	1.8945	.00114	31.620	-.00036	.00289	.99601	2.1315
Stddev	.282	.00037	.0011	.00106	.334	.00130	.00411	.00256	.0055
%RSD	.44369	45.003	.05873	92.260	1.0557	361.43	141.90	.25734	.25734

#1	63.813	.00108	1.8953	.00189	31.383	-.00128	-.00001	.99420	2.1276
#2	63.413	.00056	1.8937	.00040	31.856	.00056	.00580	.99783	2.1353

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00195	.17216	-.00433	.00397	.00138	.05276	.00190	.01001	.00438
Stddev	.00025	.00084	.00015	.00054	.00021	.00631	.00265	.00019	.00036
%RSD	13.017	.49022	3.5092	13.693	15.433	11.968	139.37	1.9478	8.2470

#1	.00213	.17157	-.00444	.00435	.00153	.04829	.00003	.00987	.00464
#2	.00177	.17276	-.00422	.00358	.00123	.05722	.00377	.01015	.00413

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3620.5	49861.	2722.5
Stddev	20.6	233.	32.6
%RSD	.56803	.46754	1.1979

#1	3606.0	49696.	2745.6
#2	3635.1	50026.	2699.5

Sample Name: 280-123304-A-6-A Acquired: 5/14/2019 22:05:12 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B (Ag Ba Cr Mo)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	1.2680	.00533	.29748	.14558	.00030	-.00245	45.591	.00009
Stddev	.00028	.0057	.00162	.00081	.00027	.00004	.00546	.090	.00009
%RSD	81.204	.44730	30.320	.27324	.18759	12.348	223.16	.19633	94.674

#1	.00015	1.2720	.00647	.29806	.14539	.00027	-.00630	45.527	.00016
#2	.00055	1.2640	.00419	.29691	.14578	.00033	.00141	45.654	.00003

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	.02303	.00681	8.7636	21.595	.01537	16.796	.34133	.00793
Stddev	.00028	.00010	.00071	.0051	.070	.00302	.015	.00054	.00075
%RSD	34.511	.42494	10.491	.05809	.32620	19.668	.08866	.15710	9.4010

#1	.00060	.02310	.00732	8.7600	21.545	.01323	16.786	.34095	.00740
#2	.00099	.02296	.00631	8.7672	21.645	.01750	16.807	.34171	.00846

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	71.495	.00797	10.469	.00031	30.986	-.00202	.00338	4.8943	10.474
Stddev	.325	.00041	.021	.00097	.001	.00138	.00271	.0131	.028
%RSD	.45462	5.1282	.19962	312.07	.00197	68.248	80.097	.26811	.26811

#1	71.725	.00826	10.484	.00100	30.987	-.00104	.00147	4.8850	10.454
#2	71.266	.00768	10.454	-.00038	30.986	-.00299	.00530	4.9036	10.494

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	.28961	-.00085	.09514	.00203	-.03957	.00491	.02314	.00859
Stddev	.00024	.00032	.00237	.00016	.00212	.00887	.00116	.00035	.00122
%RSD	32.809	.10954	277.63	.17092	104.40	22.410	23.667	1.4948	14.235

#1	.00055	.28983	.00082	.09503	.00353	-.04584	.00573	.02289	.00945
#2	.00089	.28938	-.00253	.09526	.00053	-.03330	.00409	.02338	.00772

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3581.8	49033.	2715.7
Stddev	19.0	71.	8.8
%RSD	.53033	.14454	.32309

#1	3568.4	48983.	2721.9
#2	3595.3	49083.	2709.5

Sample Name: 280-123304-A-7-A Acquired: 5/14/2019 22:07:40 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B (Ag Ba Cr Mo)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00170	3.2202	.02066	1.1729	.23774	.00024	-.00879	117.38	.02438
Stddev	.00159	.0003	.00015	.0004	.00260	.00009	.00180	1.22	.00022
%RSD	93.631	.00875	.70558	.03626	1.0946	38.595	20.502	1.0411	.91694

#1	.00282	3.2200	.02076	1.1726	.23590	.00030	-.00752	116.51	.02422
#2	.00057	3.2204	.02056	1.1732	.23958	.00017	-.01007	118.24	.02454

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	271.441 {124}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01139	.05327	.13525	63.860	96.777	.04673	70.232	3.2837	.02818
Stddev	.00056	.00014	.00020	1.202	1.004	.00051	.026	.0026	.00069
%RSD	4.9053	.26280	.15057	1.8826	1.0379	1.0864	.03712	.07850	2.4477

#1	.01179	.05336	.13511	63.010	96.067	.04709	70.214	3.2819	.02770
#2	.01100	.05317	.13540	64.710	97.487	.04637	70.251	3.2855	.02867

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 531.84	.08417	1.5625	.01344	F 468.63	-.00488	.00133	13.932	29.815
Stddev	3.08	.00014	.0157	.00229	.37	.00283	.00060	.180	.385
%RSD	.57988	.16174	1.0029	17.018	.07873	57.971	45.176	1.2918	1.2918

#1	529.66	.08426	1.5514	.01183	468.89	-.00288	.00090	13.805	29.542
#2	534.02	.08407	1.5736	.01506	468.37	-.00688	.00175	14.059	30.087

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				200.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03054	1.1194	.00099	.09103	.00237	.02357	.02117	.43499	.01550
Stddev	.00119	.0081	.00151	.00064	.00118	.03635	.00016	.00009	.00018
%RSD	3.9072	.72146	152.72	.69813	49.611	154.18	.76519	.02155	1.1521

#1	.02970	1.1137	-.00008	.09058	.00154	-.00213	.02128	.43492	.01562
#2	.03139	1.1251	.00206	.09148	.00321	.04928	.02105	.43505	.01537

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3430.6	47112.	2742.1
Stddev	9.4	54.	56.0
%RSD	.27283	.11516	2.0421

#1	3424.0	47073.	2781.7
#2	3437.3	47150.	2702.5

Sample Name: 280-123304-A-8-A Acquired: 5/14/2019 22:10:06 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B (Ag Ba Cr Mo)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00186	8.5859	.02545	.81824	.33509	.00123	-.00987	125.83	.01330
Stddev	.00132	.0049	.00059	.00214	.00243	.00032	.00017	.62	.00004
%RSD	70.714	.05741	2.3186	.26112	.72392	26.143	1.7521	.48916	.32824

#1	.00093	8.5894	.02587	.81673	.33338	.00101	-.00999	125.40	.01327
#2	.00279	8.5824	.02503	.81975	.33681	.00146	-.00975	126.27	.01333

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	271.441 {124}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01438	.07042	.19222	143.95	28.700	.04933	39.813	2.4551	.08060
Stddev	.00012	.00004	.00038	.86	.357	.00001	.128	.0062	.00044
%RSD	.85496	.05403	.19917	.59755	1.2422	.01397	.32211	.25375	.54934

#1	.01447	.07045	.19249	143.34	28.448	.04933	39.904	2.4595	.08029
#2	.01429	.07039	.19195	144.56	28.952	.04932	39.723	2.4507	.08091

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 576.09	.07541	4.9694	.01859	F 565.73	-.01810	.00058	24.070	51.510
Stddev	2.65	.00013	.0225	.00002	.23	.00223	.00205	.004	.009
%RSD	.45913	.17113	.45350	.12476	.04031	12.331	353.86	.01778	.01778

#1	574.22	.07551	4.9853	.01858	565.90	-.01653	-.00087	24.073	51.517
#2	577.96	.07532	4.9535	.01861	565.57	-.01968	.00203	24.067	51.504

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				200.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10563	1.0384	.01441	.25826	.00215	-.02145	.03350	.58676	.03109
Stddev	.00213	.0034	.00121	.00001	.00353	.01075	.00068	.00415	.00581
%RSD	2.0145	.32368	8.3869	.00250	164.23	50.100	2.0269	.70763	18.682

#1	.10714	1.0360	.01527	.25826	.00464	-.01385	.03398	.58970	.03520
#2	.10413	1.0408	.01356	.25825	-.00035	-.02905	.03302	.58383	.02698

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3539.5	47293.	2660.4
Stddev	14.8	428.	8.5
%RSD	.41873	.90555	.32081

#1	3529.0	46990.	2666.4
#2	3549.9	47596.	2654.3

Sample Name: 280-123304-A-9-A Acquired: 5/14/2019 22:12:30 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B (Ag Ba Cr Mo)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05101	6.0814	.12236	1.6059	.65542	.00049	- .00600	101.96	.01322
Stddev	.00049	.0434	.00408	.0006	.00225	.00001	.00214	.14	.00014
%RSD	.96175	.71429	3.3359	.03903	.34266	1.2096	35.623	.13276	1.0433

#1	.05066	6.0507	.12524	1.6064	.65701	.00048	-.00449	102.06	.01312
#2	.05135	6.1121	.11947	1.6055	.65384	.00049	-.00751	101.86	.01332

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	271.441 {124}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01742	.11887	.82909	119.56	42.914	.08428	44.726	1.0867	.10240
Stddev	.00059	.00078	.00132	.62	.178	.00120	.036	.0001	.00040
%RSD	3.3815	.65965	.15934	.51640	.41518	1.4225	.08143	.00434	.39254

#1	.01701	.11831	.83003	119.99	43.040	.08343	44.752	1.0867	.10211
#2	.01784	.11942	.82816	119.12	42.788	.08513	44.701	1.0868	.10268

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 517.05	.06612	9.5242	.05894	F 402.74	-.00731	.00266	22.924	49.058
Stddev	2.68	.00017	.0138	.00311	.25	.00109	.00488	.080	.171
%RSD	.51864	.26311	.14484	5.2743	.06238	14.874	183.24	.34931	.34931

#1	518.95	.06624	9.5339	.06113	402.92	-.00808	-.00079	22.981	49.180
#2	515.15	.06600	9.5144	.05674	402.56	-.00655	.00611	22.868	48.937

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				200.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19263	1.5153	.00822	.33018	.00291	.07996	.04082	.52524	.02693
Stddev	.00034	.0038	.00040	.00067	.00315	.04541	.00073	.00007	.00085
%RSD	.17458	.25166	4.8257	.20247	108.28	56.786	1.7939	.01327	3.1537

#1	.19287	1.5180	.00794	.33065	.00514	.04786	.04134	.52529	.02633
#2	.19239	1.5126	.00850	.32971	.00068	.11207	.04031	.52519	.02753

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3535.5	47950.	2733.9
Stddev	3.1	395.	8.5
%RSD	.08818	.82343	.30981

#1	3533.3	47671.	2727.9
#2	3537.7	48229.	2739.9

Sample Name: CCVH-5699817 Acquired: 5/14/2019 22:14:54 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .01124	45.904	k .00147	k .01505	k .00349	k .00151	k .93422	k .08522	k .00042	k .00372	k .00182	k .00866
Stddev	.00819	.002	.00115	.00222	.00073	.00001	.02047	.01107	.00127	.00144	.00044	.00745
%RSD	72.829	.00439	78.283	14.741	20.861	.37230	2.1907	12.986	299.52	38.557	24.014	86.066

#1	.00545	45.906	.00229	.01348	.00297	.00151	.94869	.07740	.00132	.00271	.00212	.00339
#2	k .01703	45.903	k .00066	k .01662	k .00400	k .00150	k .91975	k .09305	k -.00047	k .00474	k .00151	k .01393

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k 45.172	.65627	k .00293	k .07550	k .00399	k .00210	246.04	k .00062	k .04316	k .01199	kF 6.0948	k -.02561
Stddev	.317	.16086	.00176	.02396	.00017	.00031	1.80	.00047	.02049	.00681	.6979	.01353
%RSD	.70080	24.512	60.211	31.733	4.3099	14.759	.73230	77.003	47.467	56.798	11.451	52.841

#1	45.396	.77002	.00418	.05856	.00412	.00188	244.77	.00028	.02868	.00717	5.6013	-.01604
#2	k 44.948	.54252	k .00168	k .09244	k .00387	k .00232	247.32	k .00095	k .05765	k .01681	k 6.5883	k -.03518

Check ?	Chk Pass	None	None	None	None	None	Chk Pass	None	None	None	Chk Fail	None
Value											5.0000	
Range											10.490%	

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.00507	k -.00969	k -.02073	k .00145	.00255	k 4.8407	k .00664	k .00390	k 9.6618	k .00878	k .00356	k .19488
Stddev	.00842	.00911	.01949	.00398	.00008	.1849	.02018	.00185	.0061	.00237	.00078	.14241
%RSD	166.07	94.010	94.010	273.96	3.3031	3.8195	304.02	47.410	.06295	27.011	22.065	73.076

#1	.00088	-.01613	-.03451	-.00136	.00249	4.7099	-.00763	.00521	9.6661	.00710	.00300	.09418
#2	k -.01102	k -.00325	k -.00695	k .00427	.00261	k 4.9714	k .02091	k .00259	k 9.6575	k .01046	k .00411	k .29558

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3563.1	49322.	2725.9
Stddev	27.8	181.	9.3
%RSD	.78035	.36657	.34264

#1	3582.7	49450.	2719.3
#2	3543.4	49194.	2732.5

Sample Name: CCV-5699804 Acquired: 5/14/2019 22:17:24 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49974	F .70658	.95585	.48031	.48382	.47421	.00429	4.7075	.48595	.49154	.47741	.48492
Stddev	.00007	.10233	.00207	.00191	.00136	.00112	.00338	.0001	.00103	.00016	.00213	.00109
%RSD	.01359	14.482	.21641	.39777	.28108	.23702	78.818	.00220	.21284	.03333	.44604	.22502

#1	.49979	.63423	.95439	.47896	.48286	.47500	.00190	4.7076	.48668	.49143	.47892	.48569
#2	.49969	.77894	.95732	.48166	.48478	.47341	.00668	4.7074	.48522	.49166	.47591	.48414

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.4237	50.944	1.0117	19.836	.49366	.49119	F 6.6576	.49156	.96663	.98614	.17678	.95907
Stddev	.0126	.006	.0016	.035	.00175	.00066	.0356	.00047	.00468	.00188	.01315	.00156
%RSD	.52167	.01110	.15661	.17571	.35460	.13386	.53519	.09507	.48433	.19105	7.4373	.16225

#1	2.4326	50.948	1.0106	19.860	.49490	.49165	6.6828	.49123	.96332	.98747	.16748	.95797
#2	2.4148	50.940	1.0128	19.811	.49242	.49072	6.6324	.49189	.96994	.98481	.18607	.96017

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96317	4.7670	10.201	.95966	.48257	.00927	.49129	.97229	.04850	.48931	.48676	.48620
Stddev	.00219	.0296	.063	.00156	.00037	.00252	.00041	.00337	.00677	.00255	.00282	.00209
%RSD	.22752	.62150	.62150	.16204	.07697	27.133	.08398	.34654	13.961	.52092	.57896	.42898

#1	.96162	4.7461	10.157	.96076	.48283	.00749	.49158	.97467	.04371	.49111	.48875	.48767
#2	.96472	4.7879	10.246	.95856	.48230	.01105	.49100	.96991	.05329	.48751	.48477	.48472

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3566.4	49395.	2654.1
Stddev	9.2	73.	20.1
%RSD	.25724	.14765	.75794

#1	3559.9	49343.	2639.9
#2	3572.9	49446.	2668.3

Sample Name: CCB Acquired: 5/14/2019 22:19:47 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoades Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00130	.00386	.00236	.00480	.00099	.00035	-.00065	.00727	W .00197	.00207	.00235	-.00072
Stddev	.00224	.00360	.00227	.00028	.00037	.00002	.00093	.00433	.00163	.00159	.00128	.00046
%RSD	173.07	93.188	96.230	5.7961	37.406	6.4589	143.24	59.600	82.702	76.450	54.649	64.035
#1	-.00029	.00132	.00075	.00461	.00073	.00034	.00001	.01033	.00082	.00095	.00144	-.00039
#2	.00288	.00641	.00396	.00500	.00126	.00037	-.00131	.00421	.00312	.00319	.00325	-.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass
High Limit									.00180			
Low Limit									-.00180			
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00570	.32389	.00267	.02356	W .00174	.00499	F 1.1004	-.00228	.00903	W .00625	F .15803	W .01068
Stddev	.00803	.03262	.00385	.00188	.00013	.00210	.0015	.00171	.00001	.00312	.02065	.00081
%RSD	140.92	10.072	144.17	7.9788	7.5391	42.019	.13991	74.938	.13400	49.899	13.067	7.5440
#1	.00002	.30082	.00540	.02224	.00165	.00351	1.0993	-.00349	.00902	.00404	.14343	.01011
#2	.01138	.34696	-.00005	.02489	.00183	.00647	1.1015	-.00107	.00904	.00845	.17263	.01125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Warn	Chk Fail	Chk Warn
High Limit					.00100		.50000			.00450	.10000	.00600
Low Limit					-.01000		-.50000			-.00450	-.20000	-.00600
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W .00824	-.02337	-.05001	.00400	.00010	-.00052	.00098	.00690	.01155	.00077	-.00058	.00496
Stddev	.00046	.03369	.07209	.00416	.00009	.00135	.00025	.00150	.00087	.00012	.00075	.00135
%RSD	5.5442	144.13	144.13	103.99	92.876	262.68	25.387	21.765	7.5295	15.194	127.72	27.172
#1	.00856	-.04719	-.10099	.00106	.00017	-.00147	.00116	.00583	.01216	.00085	-.00006	.00591
#2	.00792	.00045	.00096	.00694	.00003	.00044	.00081	.00796	.01093	.00069	-.00111	.00400
Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.00750											
Low Limit	-.01500											
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3533.1	49437.	2628.1									
Stddev	14.6	100.	18.6									
%RSD	.41267	.20326	.70838									
#1	3543.4	49508.	2641.2									
#2	3522.8	49366.	2614.9									

Sample Name: CCVL-5701318 Acquired: 5/14/2019 22:22:22 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00878	.10091	.01297	.09805	.01021	.00094	.09991	.19939	.00507	.01002	.00986	.01499
Stddev	.00147	.00026	.00159	.00045	.00039	.00005	.00203	.00358	.00067	.00070	.00054	.00035
%RSD	16.713	.25971	12.281	.46195	3.8641	5.7729	2.0335	1.7943	13.270	6.9628	5.5148	2.3421

#1	.00982	.10110	.01409	.09837	.01049	.00090	.09848	.19686	.00459	.00953	.01024	.01474
#2	.00775	.10073	.01184	.09773	.00993	.00098	.10135	.20192	.00554	.01052	.00947	.01523

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09903	3.2823	.01890	.20431	.01116	.01974	F 1.9807	.03671	2.7918	.01109	F .21069	.02192
Stddev	.00218	.0356	.00214	.00201	.00007	.00032	.0034	.00049	.0044	.00120	.01876	.00111
%RSD	2.2030	1.0859	11.330	.98264	.67073	1.6108	.17012	1.3270	.15768	10.788	8.9060	5.0527

#1	.10057	3.2571	.02042	.20573	.01122	.01996	1.9783	.03637	2.7950	.01024	.19742	.02113
#2	.09748	3.3075	.01739	.20289	.01111	.01951	1.9831	.03706	2.7887	.01193	.22395	.02270

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value							1.0000				.10000	
Range							30.000%				30.000%	

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02490	.49669	1.0629	.09637	.00985	.01240	.00991	.01633	F .09643	.00874	.01793	.01785
Stddev	.00176	.00066	.0014	.00021	.00008	.00073	.00053	.00044	.02039	.00048	.00030	.00041
%RSD	7.0857	.13352	.13352	.21352	.78849	5.9011	5.3843	2.7180	21.147	5.5317	1.6666	2.2902

#1	.02615	.49622	1.0619	.09652	.00991	.01291	.00953	.01602	.08201	.00840	.01814	.01814
#2	.02366	.49716	1.0639	.09623	.00980	.01188	.01029	.01665	.11085	.00909	.01772	.01756

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value									.06000			
Range									30.000%			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3522.5	49125.	2592.7
Stddev	6.3	142.	24.5
%RSD	.17954	.28943	.94389

#1	3527.0	49024.	2610.0
#2	3518.1	49225.	2575.3

Sample Name: 280-123304-A-10-A Acquired: 5/14/2019 22:24:56 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B (Ag Ba Cr Mo)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .00203	k 4.2581	k .06065	7.3876	.96623	k .00053	k .01038	105.82	k .00287
Stddev	.00061	.0149	.00616	.0016	.00290	.00012	.00140	.25	.00013
%RSD	29.854	.35063	10.163	.02120	.30055	22.212	13.467	.23200	4.5433

#1	k .00160	k 4.2686	k .06500	7.3865	.96417	k .00045	k .00939	105.65	k .00278
#2	k .00246	k 4.2475	k .05629	7.3887	.96828	k .00062	k .01137	106.00	k .00296

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	271.441 {124}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .01108	.07987	k .10453	k 44.085	F 1147.7	.31393	k 107.28	k .86239	k .01087
Stddev	.00036	.00089	.00104	.024	1.1	.00194	.41	.00198	.00043
%RSD	3.2087	1.1202	.99368	.05421	.09443	.61677	.37967	.22920	3.9819

#1	k .01083	.08051	k .10527	k 44.068	1146.9	.31530	k 107.57	k .86379	k .01057
#2	k .01133	.07924	k .10380	k 44.101	1148.5	.31256	k 106.99	k .86099	k .01118

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					500.00				
Low Limit					-6.0000				

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 3153.8	k .05537	7.7365	k .00918	kF 615.76	k .01825	k -.00199	18.028	38.581
Stddev	4.3	.00039	.0082	.00174	.79	.00159	.00134	.094	.202
%RSD	.13606	.70910	.10628	18.956	.12826	8.7245	67.137	.52387	.52387

#1	3150.8	k .05509	7.7307	k .01041	k 616.32	k .01937	k -.00294	17.962	38.438
#2	3156.8	k .05565	7.7423	k .00795	k 615.21	k .01712	k -.00105	18.095	38.724

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				200.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .03559	1.8981	k .03922	k .16493	k .00004	kF -.14237	k .06358	k .25265	k .02140
Stddev	.00149	.0034	.00108	.00136	.00293	.00633	.00053	.00055	.00205
%RSD	4.1973	.18096	2.7614	.82381	7262.5	4.4445	.83721	.21678	9.5678

#1	k .03453	1.8956	k .03846	k .16589	k -.00203	k -.13789	k .06321	k .25303	k .02285
#2	k .03664	1.9005	k .03999	k .16397	k .00212	k -.14684	k .06396	k .25226	k .01995

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						20.000			
Low Limit						-.12000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3233.2	42270.	2538.9
Stddev	14.5	363.	.4
%RSD	.44731	.85780	.01510

#1	3223.0	42014.	2539.1
#2	3243.5	42527.	2538.6

Sample Name: 280-123304-A-11-A Acquired: 5/14/2019 22:27:30 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B (Ag Ba Cr Mo)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	13.872	.10137	2.8178	.57290	.00092	-.01323	302.45	.00713
Stddev	.00016	.002	.00179	.0091	.00012	.00033	.00052	.62	.00031
%RSD	18.656	.01560	1.7622	.32102	.02147	36.122	3.9642	.20431	4.2787

#1	.00073	13.874	.10010	2.8114	.57299	.00068	-.01286	302.89	.00692
#2	.00095	13.871	.10263	2.8242	.57281	.00115	-.01360	302.01	.00735

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	271.441 {124}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01289	.21608	.35110	168.65	W 225.91	.23687	261.46	1.5078	.05889
Stddev	.00015	.00059	.00021	.88	.18	.00096	1.10	.0017	.00031
%RSD	1.1748	.27223	.05982	.51897	.07909	.40422	.42237	.11294	.52550

#1	.01299	.21649	.35095	169.26	226.03	.23755	262.24	1.5090	.05911
#2	.01278	.21566	.35125	168.03	225.78	.23620	260.68	1.5066	.05867

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					100.00				
Low Limit					-6.0000				

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2501.1	.08796	12.556	.06925	F 444.92	-.01331	.00367	33.072	70.773
Stddev	.9	.00034	.072	.00053	.04	.00111	.00717	.050	.107
%RSD	.03540	.38363	.56951	.76855	.00931	8.3099	195.16	.15142	.15142

#1	2501.7	.08820	12.607	.06963	444.94	-.01409	-.00140	33.036	70.697
#2	2500.5	.08772	12.506	.06887	444.89	-.01253	.00874	33.107	70.849

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				200.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05602	4.7612	.00827	.24031	.00238	.01011	.12901	.84387	.04336
Stddev	.00280	.0079	.00280	.00040	.00228	.00746	.00052	.00130	.00006
%RSD	4.9993	.16584	33.806	.16743	96.136	73.775	.40194	.15453	.13124

#1	.05801	4.7668	.00629	.24060	.00399	.00484	.12864	.84479	.04340
#2	.05404	4.7556	.01025	.24003	.00076	.01539	.12938	.84295	.04332

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3283.3	43650.	2614.8
Stddev	10.4	77.	3.0
%RSD	.31569	.17618	.11453

#1	3276.0	43596.	2616.9
#2	3290.6	43704.	2612.7

Sample Name: 280-123304-A-12-A Acquired: 5/14/2019 22:30:04 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B (Ag Ba Cr Mo)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	341.08	.16230	4.8415	3.6492	.01452	.03681	F 1029.2	.01339
Stddev	.00029	.38	.00010	.0007	.0101	.00019	.00091	2.0	.00009
%RSD	158.85	.11239	.05996	.01475	.27786	1.3212	2.4845	.18969	.70613
#1	.00002	341.36	.16237	4.8420	3.6563	.01465	.03746	1027.8	.01332
#2	-.00039	340.81	.16223	4.8410	3.6420	.01438	.03617	1030.6	.01345
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit								1000.0	
Low Limit								-40000	

Elem	Co2286	Cr2055	Cu3247	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	271.441 {124}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09092	.32466	.84237	212.27	96.315	.32106	498.14	5.7092	.10260
Stddev	.00117	.00041	.00117	.13	.196	.00428	3.53	.0308	.00022
%RSD	1.2881	.12570	.13923	.06290	.20336	1.3316	.70913	.53854	.21714
#1	.09175	.32495	.84320	212.36	96.176	.32408	495.64	5.6874	.10276
#2	.09009	.32437	.84154	212.17	96.453	.31804	500.64	5.7309	.10245
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 1523.7	.32761	W 36.899	.13432	F 530.85	-.03924	.08795	F 235.03	W 502.96
Stddev	2.2	.00065	.160	.00183	.69	.00449	.00262	1.80	3.84
%RSD	.14723	.19833	.43318	1.3618	.13079	11.453	2.9835	.76382	.76382
#1	1525.3	.32807	37.012	.13303	530.36	-.03606	.08609	236.30	505.67
#2	1522.1	.32715	36.786	.13561	531.34	-.04242	.08980	233.76	500.24
Check ?	Chk Warn	Chk Pass	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Warn
High Limit	500.00		20.000		200.00			200.00	107.00
Low Limit	11.000		-6.0000		-20000			-1.0000	-21400

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04717	W 17.393	.11563	F 23.470	.00736	.08639	.87595	.96614	.27351
Stddev	.00109	.029	.00019	.101	.00210	.00604	.00115	.00284	.00321
%RSD	2.3195	.16903	.16503	.42950	28.536	6.9947	.13093	.29442	1.1727
#1	.04640	17.414	.11576	23.399	.00884	.09067	.87676	.96413	.27578
#2	.04795	17.373	.11549	23.541	.00587	.08212	.87514	.96815	.27124
Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		10.000		10.000					
Low Limit		-.02000		-.02000					

Int. Std.	Y_2243	Y_3600	Y_3774						
Line	224.306 {450}	360.073 { 94}	377.433 { 89}						
Units	Cts/S	Cts/S	Cts/S						
Avg	4000.6	53291.	3347.0						
Stddev	20.6	109.	16.2						
%RSD	.51419	.20489	.48348						
#1	4015.2	53368.	3335.5						
#2	3986.1	53214.	3358.4						

Sample Name: 280-123304-A-12-A @2 Acquired: 5/14/2019 22:33:01 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B 2x

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00179	194.05	.09579	3.0224	1.9935	.00880	.02261	W 608.71	.00855
Stddev	.00009	3.29	.00445	.0228	.0264	.00022	.00352	1.07	.00013
%RSD	4.9080	1.6948	4.6453	.75525	1.3251	2.4561	15.551	.17645	1.5442
#1	.00173	191.72	.09893	3.0062	1.9748	.00865	.02510	609.47	.00865
#2	.00185	196.37	.09264	3.0385	2.0121	.00896	.02013	607.95	.00846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit								500.00	
Low Limit								-40000	
Elem	Co2286	Cr2055	Cu3247	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	271.441 {124}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05858	.20145	.50120	126.86	54.174	.18122	297.14	3.4763	.06348
Stddev	.00078	.00220	.00502	2.07	.866	.00630	1.88	.0326	.00078
%RSD	1.3310	1.0922	1.0013	1.6340	1.5979	3.4775	.63359	.93791	1.2318
#1	.05803	.19989	.49765	125.40	53.562	.17677	295.81	3.4532	.06292
#2	.05913	.20301	.50475	128.33	54.787	.18568	298.48	3.4993	.06403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									
Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 878.26	.20481	W 22.761	.08942	F 326.44	-.02677	.05288	W 137.42	W 294.09
Stddev	15.63	.00220	.136	.00057	2.09	.00092	.00465	2.22	4.76
%RSD	1.7802	1.0718	.59763	.63480	.64045	3.4241	8.7860	1.6184	1.6184
#1	867.20	.20326	22.665	.08982	324.97	-.02742	.05617	135.85	290.72
#2	889.31	.20637	22.857	.08902	327.92	-.02613	.04959	139.00	297.45
Check ?	Chk Warn	Chk Pass	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Warn	Chk Warn
High Limit	500.00		20.000		200.00			50.000	107.00
Low Limit	11.000		-6.0000		-20000			-1.0000	-21400
Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02934	W 10.014	.06987	F 14.235	.00836	.14221	.52692	.58743	.16296
Stddev	.00033	.098	.00383	.146	.00013	.00210	.00297	.00632	.00632
%RSD	1.1271	.98330	5.4808	1.0270	1.5663	1.4765	.56375	1.0757	3.8812
#1	.02911	10.084	.07258	14.131	.00845	.14073	.52482	.58297	.15849
#2	.02958	9.9444	.06716	14.338	.00827	.14370	.52902	.59190	.16743
Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		10.000		10.000					
Low Limit		-.02000		-.02000					
Int. Std.	Y_2243	Y_3600	Y_3774						
Line	224.306 {450}	360.073 { 94}	377.433 { 89}						
Units	Cts/S	Cts/S	Cts/S						
Avg	3863.2	51037.	3028.3						
Stddev	6.5	139.	32.2						
%RSD	.16913	.27314	1.0617						
#1	3867.8	51136.	3005.5						
#2	3858.5	50938.	3051.0						

Sample Name: 280-123304-A-12-A @5 Acquired: 5/14/2019 22:35:45 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B 5x

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	80.870	.03912	1.3353	.87593	.00381	.01021	264.96	.00392
Stddev	.00048	.392	.00855	.0228	.00487	.00005	.00106	1.55	.00021
%RSD	69.145	.48438	21.854	1.7086	.55636	1.4245	10.337	.58481	5.2641

#1	.00036	80.593	.03308	1.3191	.87249	.00377	.00946	263.87	.00377
#2	.00104	81.147	.04517	1.3514	.87938	.00384	.01095	266.06	.00406

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	271.441 {124}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02705	.08863	.20679	54.321	22.099	.07275	125.06	1.4570	.02758
Stddev	.00029	.00149	.00258	.861	.102	.00420	1.58	.0182	.00069
%RSD	1.0548	1.6815	1.2468	1.5858	.46240	5.7708	1.2598	1.2462	2.5028

#1	.02685	.08758	.20497	53.711	22.026	.06978	123.94	1.4441	.02709
#2	.02726	.08969	.20862	54.930	22.171	.07572	126.17	1.4698	.02807

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	364.85	.08691	9.7399	.04139	138.81	-.01232	.02067	W 57.619	123.30
Stddev	2.68	.00124	.1560	.00090	2.34	.00098	.00897	.300	.64
%RSD	.73439	1.4273	1.6021	2.1812	1.6867	7.9926	43.417	.52097	.52097

#1	362.95	.08604	9.6296	.04203	137.15	-.01302	.02701	57.407	122.85
#2	366.74	.08779	9.8503	.04076	140.46	-.01162	.01432	57.831	123.76

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit								50.000	
Low Limit								-1.0000	

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01314	4.2888	.02779	5.9022	.00583	.04399	.21911	.25056	.06931
Stddev	.00095	.0267	.00153	.0767	.00150	.00480	.00196	.00268	.00572
%RSD	7.2264	.62212	5.5096	1.2998	25.719	10.915	.89440	1.0713	8.2561

#1	.01247	4.2700	.02888	5.8480	.00690	.04060	.21773	.24866	.06526
#2	.01381	4.3077	.02671	5.9565	.00477	.04739	.22050	.25246	.07335

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3666.4	48634.	2780.7
Stddev	14.4	160.	30.7
%RSD	.39327	.32997	1.1048

#1	3656.2	48520.	2759.0
#2	3676.6	48747.	2802.5

Sample Name: 280-123304-A-13-A Acquired: 5/14/2019 22:38:11 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B (Ag Ba Cr Mo)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00243	79.232	.11639	1.0483	.46053	.01367	-.01229	222.64	.00331
Stddev	.00149	.240	.00316	.0016	.00227	.00014	.00175	.52	.00053
%RSD	61.570	.30254	2.7169	.15390	.49283	1.0390	14.227	.23307	15.917

#1	-.00348	79.063	.11862	1.0495	.45893	.01357	-.01353	222.27	.00368
#2	-.00137	79.402	.11415	1.0472	.46214	.01377	-.01105	223.01	.00294

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	271.441 {124}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05550	.07440	.22999	140.45	42.482	.13464	W 640.02	3.9357	.47531
Stddev	.00029	.00013	.00063	.66	1.514	.00246	3.33	.0055	.00129
%RSD	.52998	.17301	.27328	.47143	3.5646	1.8299	.52066	.13902	.27136

#1	.05571	.07431	.22955	139.98	41.411	.13290	642.38	3.9318	.47622
#2	.05529	.07449	.23044	140.91	43.552	.13638	637.67	3.9396	.47440

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass
High Limit							500.00		
Low Limit							-4.0000		

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 3332.7	.75732	2.6059	.00895	F 681.45	-.02585	-.00012	W 77.603	166.07
Stddev	13.3	.00251	.0128	.00071	1.02	.00100	.00639	.008	.02
%RSD	.39795	.33080	.49004	7.8983	.14919	3.8582	5214.3	.01019	.01019

#1	3323.3	.75909	2.5969	.00945	682.17	-.02655	.00440	77.609	166.08
#2	3342.1	.75555	2.6149	.00845	680.73	-.02514	-.00464	77.598	166.06

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit	500.00				200.00			50.000	
Low Limit	11.000				-20000			-1.0000	

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00748	2.8099	.00404	.05153	.00299	.02826	.26405	.69222	.13783
Stddev	.00001	.0107	.00260	.00162	.00249	.00190	.00018	.00352	.00289
%RSD	.18010	.37917	64.441	3.1503	83.138	6.7156	.06883	.50857	2.1004

#1	.00747	2.8023	.00220	.05038	.00476	.02961	.26417	.68973	.13987
#2	.00749	2.8174	.00588	.05267	.00123	.02692	.26392	.69471	.13578

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3943.4	52144.	3186.4
Stddev	8.9	274.	8.1
%RSD	.22676	.52613	.25302

#1	3937.1	52338.	3180.7
#2	3949.7	51950.	3192.1

Sample Name: 280-123304-A-14-A Acquired: 5/14/2019 22:40:44 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B (Ag Ba Cr Mo)

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	7.7920	.92982	4.0939	.53603	.00655	-.00625	F 1533.2	.00581
Stddev	.00013	.0724	.00637	.0319	.00180	.00015	.00470	8.9	.00023
%RSD	9.6855	.92945	.68465	.77865	.33596	2.2638	75.156	.57997	3.9155
#1	.00142	7.7408	.93432	4.1164	.53475	.00666	-.00293	1526.9	.00565
#2	.00123	7.8432	.92532	4.0714	.53730	.00645	-.00957	1539.5	.00597
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit								1000.0	
Low Limit								-.40000	

Elem	Co2286	Cr2055	Cu3247	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	271.441 {124}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03151	.83916	.10452	65.023	89.013	.38673	W 609.53	2.9226	.50483
Stddev	.00047	.01121	.00027	.440	1.469	.00380	4.32	.0067	.00063
%RSD	1.4960	1.3355	.25682	.67667	1.6500	.98164	.70842	.23058	.12495
#1	.03118	.84709	.10433	64.712	87.975	.38404	606.48	2.9178	.50528
#2	.03185	.83124	.10471	65.334	90.052	.38941	612.58	2.9274	.50439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass
High Limit							500.00		
Low Limit							-.40000		

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 4723.6	1.0671	F 125.81	.01365	F 375.31	-.00996	.03303	W 57.680	123.44
Stddev	16.0	.0036	1.31	.00169	2.07	.00113	.00597	.101	.22
%RSD	.33893	.34024	1.0409	12.396	.55235	11.336	18.076	.17543	.17543
#1	4712.3	1.0697	126.74	.01485	373.85	-.00916	.03725	57.609	123.28
#2	4734.9	1.0645	124.89	.01245	376.78	-.01076	.02881	57.752	123.59
Check ?	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit	500.00		50.000		200.00			50.000	
Low Limit	11.000		-6.0000		-.20000			-1.0000	

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	F 32.109	.00065	.07399	-.00081	.01817	.18891	5.1551	.06135
Stddev	.00000	.048	.00106	.00055	.00450	.01977	.00090	.0024	.00654
%RSD	.37504	.15094	162.43	.74818	556.18	108.82	.47489	.04713	10.665
#1	.00127	32.074	-.00010	.07360	-.00399	.03215	.18827	5.1568	.05673
#2	.00126	32.143	.00140	.07438	.00238	.00419	.18954	5.1534	.06598
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		20.000							
Low Limit		-.02000							

Int. Std.	Y_2243	Y_3600	Y_3774						
Line	224.306 {450}	360.073 { 94}	377.433 { 89}						
Units	Cts/S	Cts/S	Cts/S						
Avg	3032.2	40915.	2595.4						
Stddev	13.1	249.	10.4						
%RSD	.43171	.60736	.40227						
#1	3022.9	41091.	2588.0						
#2	3041.4	40739.	2602.8						

Sample Name: 280-123304-A-14-A @2 Acquired: 5/14/2019 22:43:29 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B 2x

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 {74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	4.1498	.53133	2.4006	.28707	.00358	-.00698	W 853.72	.00379
Stddev	.00053	.0315	.01050	.0078	.00407	.00004	.00282	12.80	.00033
%RSD	55.283	.75927	1.9754	.32602	1.4178	1.2102	40.339	1.4993	8.8002

#1	.00134	4.1721	.52391	2.3951	.28420	.00361	-.00897	844.67	.00355
#2	.00059	4.1276	.53876	2.4062	.28995	.00355	-.00499	862.77	.00402

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass
High Limit								500.00	
Low Limit								-40000	

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 {44}	670.784 {50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01748	.49635	.05833	36.356	43.968	.19806	341.17	1.6426	.29344
Stddev	.00021	.00178	.00098	.446	1.065	.00387	4.57	.0170	.00132
%RSD	1.2180	.35848	1.6752	1.2280	2.4227	1.9533	1.3389	1.0364	.44956

#1	.01733	.49509	.05764	36.040	43.215	.19532	337.94	1.6305	.29250
#2	.01763	.49761	.05902	36.671	44.722	.20079	344.40	1.6546	.29437

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 {41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 2500.0	.62815	F 73.521	.01115	F 211.14	-.00828	.02028	30.777	65.863
Stddev	34.6	.00203	.184	.00264	.91	.00129	.00684	.527	1.127
%RSD	1.3823	.32267	.25004	23.676	.42935	15.582	33.739	1.7110	1.7110

#1	2475.6	.62671	73.391	.01301	210.50	-.00920	.01544	30.405	65.066
#2	2524.4	.62958	73.651	.00928	211.78	-.00737	.02512	31.149	66.660

Check ?	Chk Warn	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00		50.000		200.00				
Low Limit	11.000		-6.0000		-20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 {83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 {91}	292.402 {115}	206.200 {163}	339.198 {99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00218	W 17.498	-.00225	.04201	.00192	-.02540	.10541	2.9681	.03745
Stddev	.00134	.221	.00307	.00076	.00069	.01966	.00107	.0298	.00464
%RSD	61.530	1.2603	136.44	1.8132	35.762	77.414	1.0149	1.0051	12.383

#1	.00123	17.342	-.00008	.04147	.00241	-.01150	.10465	2.9470	.04073
#2	.00313	17.654	-.00442	.04255	.00144	-.03931	.10617	2.9892	.03417

Check ?	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		10.000							
Low Limit		-.02000							

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 {94}	377.433 {89}
Units	Cts/S	Cts/S	Cts/S
Avg	3183.8	42903.	2612.6
Stddev	2.8	68.	22.5
%RSD	.08754	.15868	.86103

#1	3181.8	42952.	2596.7
#2	3185.7	42855.	2628.5

Sample Name: 280-123304-A-15-A Acquired: 5/14/2019 22:46:15 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B (Ag Ba Cr Mo)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	1.0366	.00813	1.7745	.30831	.00043	-.00248	168.87	.00090
Stddev	.00024	.0106	.00009	.0014	.00229	.00012	.00250	.26	.00005
%RSD	1133.2	1.0238	1.1607	.07715	.74402	27.032	100.73	.15132	5.1004

#1	.00019	1.0291	.00807	1.7735	.30669	.00035	-.00425	168.69	.00093
#2	-.00015	1.0441	.00820	1.7755	.30994	.00051	-.00071	169.05	.00087

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00461	.09770	.02193	10.110	41.259	.10298	87.036	.71222	.24573
Stddev	.00057	.00141	.00076	.008	.614	.00321	.064	.00018	.00046
%RSD	12.276	1.4397	3.4551	.07601	1.4872	3.1156	.07369	.02540	.18799

#1	.00421	.09671	.02247	10.105	40.825	.10525	86.990	.71209	.24605
#2	.00501	.09870	.02139	10.115	41.693	.10071	87.081	.71234	.24540

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W 3505.3	.16262	9.0820	.00353	F 277.08	-.00396	.00253	11.862	25.384
Stddev	1.9	.00157	.1583	.00186	.44	.00091	.00964	.004	.009
%RSD	.05380	.96261	1.7426	52.725	.15798	23.043	381.27	.03388	.03388

#1	3504.0	.16152	8.9701	.00221	277.39	-.00461	-.00429	11.864	25.390
#2	3506.7	.16373	9.1939	.00484	276.77	-.00332	.00935	11.859	25.378

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	500.00				200.00				
Low Limit	11.000				-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	2.3828	-.00350	.01646	-.00004	-.03103	.03364	.05248	.01265
Stddev	.00159	.0035	.00214	.00009	.00147	.02699	.00072	.00050	.00613
%RSD	256.60	.14640	61.102	.55173	3607.4	86.982	2.1334	.94730	48.480

#1	.00174	2.3803	-.00199	.01652	.00100	-.05012	.03313	.05213	.00831
#2	-.00050	2.3853	-.00502	.01639	-.00108	-.01195	.03415	.05283	.01698

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3245.0	43287.	2631.8
Stddev	29.6	41.	2.2
%RSD	.91184	.09525	.08507

#1	3266.0	43258.	2630.2
#2	3224.1	43316.	2633.4

Sample Name: 280-123304-A-16-A Acquired: 5/14/2019 22:48:47 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 456955 6010B (Ag Ba Cr Mo)

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00107	1.7641	.00980	1.9850	1.1762	.00034	.00051	90.232	.00156
Stddev	.00087	.0038	.00257	.0030	.0018	.00013	.00163	.394	.00028
%RSD	81.487	.21393	26.230	.15061	.15625	37.444	322.68	.43706	17.985

#1	.00168	1.7668	.01161	1.9871	1.1749	.00025	.00166	89.953	.00136
#2	.00045	1.7615	.00798	1.9829	1.1775	.00043	-.00065	90.511	.00175

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00340	.03034	.07128	8.1316	19.922	.03147	30.817	.49841	.38698
Stddev	.00002	.00015	.00043	.0368	.009	.00211	.181	.00116	.00018
%RSD	.62799	.49628	.60090	.45204	.04447	6.6903	.58693	.23353	.04675

#1	.00342	.03023	.07158	8.1056	19.928	.03296	30.945	.49923	.38711
#2	.00339	.03044	.07097	8.1576	19.916	.02998	30.689	.49759	.38686

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	165.52	.05617	2.0253	.16041	F 1148.1	.00357	.08070	10.396	22.247
Stddev	1.43	.00000	.0028	.00203	4.2	.00534	.00028	.044	.094
%RSD	.86669	.00126	.14023	1.2637	.36225	149.72	.34602	.42339	.42339

#1	164.50	.05618	2.0233	.16185	1151.0	-.00021	.08090	10.365	22.181
#2	166.53	.05617	2.0273	.15898	1145.1	.00735	.08050	10.427	22.314

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					200.00				
Low Limit					-.20000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04198	.68886	.00163	.11413	.00118	.01844	.06378	.88818	.00927
Stddev	.00037	.00239	.00031	.00063	.00080	.01378	.00089	.00255	.00126
%RSD	.88396	.34647	18.986	.55360	68.078	74.726	1.4006	.28673	13.554

#1	.04224	.68717	.00185	.11457	.00061	.02818	.06441	.88998	.01016
#2	.04172	.69054	.00141	.11368	.00175	.00870	.06315	.88638	.00838

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3704.9	50442.	2793.3
Stddev	9.0	331.	8.3
%RSD	.24196	.65555	.29588

#1	3711.3	50209.	2799.1
#2	3698.6	50676.	2787.4

Sample Name: CCVH-5699817 Acquired: 5/14/2019 22:51:14 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00677	46.202	-.00003	.02979	.00450	.00126	.95592	.16556	.00102	.00261	.00168	.00290
Stddev	.00028	.124	.00329	.00364	.00005	.00027	.00188	.00111	.00016	.00016	.00018	.00078
%RSD	4.1075	.26875	10244.	12.208	1.0038	21.753	.19688	.66856	15.335	6.2431	10.865	26.709

#1	.00657	46.115	-.00236	.02722	.00447	.00145	.95725	.16634	.00113	.00272	.00155	.00236
#2	.00697	46.290	.00229	.03236	.00453	.00107	.95459	.16478	.00091	.00249	.00181	.00345

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	45.046	.98283	.00152	.10216	.00276	.00499	251.87	.00061	.02509	.00564	F 9.5189	-.01144
Stddev	.054	.09237	.00157	.00839	.00016	.00090	.78	.00046	.00284	.00015	2.7304	.00115
%RSD	.12072	9.3987	103.38	8.2164	5.7626	17.973	.31018	76.508	11.333	2.7321	28.684	10.090

#1	45.008	1.0482	.00041	.09622	.00265	.00436	251.31	.00094	.02308	.00553	7.5882	-.01225
#2	45.085	.91751	.00263	.10809	.00287	.00563	252.42	.00028	.02710	.00575	11.450	-.01062

Check ?	Chk Pass	None	None	None	None	None	Chk Pass	None	None	None	Chk Fail	None
Value											5.0000	
Range											10.490%	

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00535	.00364	.00778	.00035	.00362	4.7924	-.00720	.00537	9.8398	.00673	.00343	.09384
Stddev	.00184	.01699	.03637	.00021	.00022	.0094	.00017	.00217	.0611	.00041	.00032	.00128
%RSD	34.413	467.24	467.24	59.505	6.1555	.19570	2.3003	40.361	.62124	6.1001	9.2257	1.3608

#1	-.00405	-.00838	-.01793	.00049	.00346	4.7990	-.00708	.00383	9.8830	.00702	.00320	.09294
#2	-.00666	.01565	.03350	.00020	.00377	4.7858	-.00732	.00690	9.7966	.00644	.00365	.09474

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3672.2	50531.	2747.2
Stddev	27.0	41.	22.3
%RSD	.73533	.08210	.81321

#1	3691.3	50560.	2763.0
#2	3653.1	50502.	2731.4

Sample Name: CCV-5699804 Acquired: 5/14/2019 22:53:43 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50056	F .67501	.96372	.49682	.49054	.47556	.00508	4.7815	.49076	.49613	.48479	.49308
Stddev	.00109	.07272	.00427	.00140	.00103	.00166	.00213	.0059	.00005	.00009	.00019	.00299
%RSD	.21752	10.773	.44293	.28247	.21017	.35007	41.863	.12426	.00935	.01720	.03831	.60720

#1	.50133	.62358	.96674	.49781	.49127	.47439	.00358	4.7857	.49072	.49607	.48466	.49520
#2	.49979	.72643	.96070	.49583	.48981	.47674	.00658	4.7773	.49079	.49619	.48492	.49097

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.4436	51.766	1.0234	19.927	.49601	.49525	F 7.8332	.49637	.98813	.99416	.30585	.96397
Stddev	.0141	.127	.0009	.008	.00041	.00160	.0970	.00115	.00029	.00352	.05134	.00515
%RSD	.57875	.24541	.08500	.03863	.08306	.32383	1.2388	.23256	.02968	.35404	16.786	.53382

#1	2.4336	51.677	1.0240	19.922	.49630	.49638	7.9018	.49719	.98834	.99167	.26954	.96761
#2	2.4536	51.856	1.0228	19.933	.49572	.49411	7.7645	.49555	.98793	.99665	.34215	.96033

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97660	4.7632	10.193	.97021	.48838	.00753	.49487	.98129	.08808	.49264	.48811	.49275
Stddev	.00219	.0219	.047	.00301	.00011	.00123	.00052	.00202	.00061	.00125	.00109	.00488
%RSD	.22457	.45865	.45865	.30991	.02259	16.395	.10577	.20559	.69260	.25295	.22388	.98993

#1	.97505	4.7477	10.160	.97233	.48830	.00840	.49524	.98271	.08765	.49352	.48734	.49620
#2	.97815	4.7786	10.226	.96808	.48845	.00666	.49450	.97986	.08851	.49176	.48889	.48930

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3619.2	50768.	2687.0
Stddev	15.0	176.	11.1
%RSD	.41367	.34719	.41453

#1	3629.8	50893.	2679.1
#2	3608.7	50643.	2694.9

Sample Name: CCB Acquired: 5/14/2019 22:56:06 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoades Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00949	W .00911	.01303	.00127	.00054	.00112	.03647	W .00218	.00225	W .00274	-.00016
Stddev	.00070	.00309	.00334	.00074	.00029	.00023	.00184	.00682	.00110	.00113	.00177	.00010
%RSD	456.78	32.584	36.622	5.6879	22.690	42.288	164.63	18.703	50.307	50.212	64.776	60.925
#1	-.00034	.00731	.00675	.01251	.00106	.00038	-.00018	.03164	.00140	.00145	.00148	-.00023
#2	.00064	.01168	.01147	.01356	.00147	.00070	.00242	.04129	.00295	.00305	.00399	-.00009
Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Warn	Chk Pass
High Limit			.00750						.00180		.00260	
Low Limit			-.01500						-.00180		-.00260	
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02159	.43681	.00350	W .04179	.00079	.00485	F 1.9314	-.00197	.00464	W .00491	F .12927	W .01154
Stddev	.00907	.10665	.00153	.00761	.00003	.00204	.0187	.00175	.00298	.00223	.00213	.00020
%RSD	41.982	24.416	43.808	18.204	3.9907	42.178	.96542	88.887	64.245	45.435	1.6486	1.7043
#1	.01518	.51222	.00458	.03641	.00076	.00340	1.9446	-.00320	.00253	.00333	.12777	.01168
#2	.02800	.36139	.00241	.04717	.00081	.00629	1.9182	-.00073	.00674	.00649	.13078	.01141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Warn	Chk Fail	Chk Warn
High Limit				.04000			.50000			.00450	.10000	.00600
Low Limit				-.04000			-.50000			-.00450	-.20000	-.00600
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00664	.04733	.10128	.00501	.00062	.00153	.00130	.00696	.02444	.00078	-.00104	.00239
Stddev	.00600	.02312	.04948	.00266	.00031	.00052	.00045	.00505	.04412	.00014	.00054	.00204
%RSD	90.352	48.849	48.849	53.013	49.664	33.943	34.401	72.557	180.57	17.944	51.958	85.606
#1	.00240	.03098	.06630	.00313	.00040	.00190	.00098	.00339	.05564	.00088	-.00066	.00094
#2	.01089	.06368	.13627	.00689	.00084	.00116	.00161	.01053	-.00676	.00068	-.00142	.00383
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3683.2	51234.	2668.7									
Stddev	1.0	121.	10.2									
%RSD	.02773	.23529	.38215									
#1	3684.0	51149.	2676.0									
#2	3682.5	51319.	2661.5									

Sample Name: CCVL-5701318 Acquired: 5/14/2019 22:58:41 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00985	.10986	.01744	.10472	.01082	.00097	.10187	.23301	.00479	.00971	.00979	.01405
Stddev	.00002	.00234	.00030	.00004	.00019	.00003	.00348	.00232	.00009	.00012	.00009	.00037
%RSD	.18015	2.1304	1.7372	.03882	1.7882	2.8916	3.4196	.99397	1.8107	1.1944	.96892	2.6496

#1	.00984	.10821	.01766	.10475	.01068	.00095	.10434	.23137	.00473	.00979	.00973	.01432
#2	.00986	.11152	.01723	.10469	.01095	.00098	.09941	.23465	.00485	.00962	.00986	.01379

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09768	3.4903	.02090	.22045	.01037	.01993	F 2.6935	.03625	2.8292	.00913	F .21652	.02132
Stddev	.00539	.0449	.00038	.00364	.00006	.00057	.0015	.00007	.0047	.00085	.02355	.00276
%RSD	5.5138	1.2858	1.8287	1.6507	.56489	2.8487	.05630	.19606	.16638	9.3559	10.875	12.951

#1	.09387	3.5220	.02117	.21788	.01041	.02034	2.6946	.03630	2.8325	.00853	.19987	.02327
#2	.10149	3.4586	.02063	.22303	.01033	.01953	2.6924	.03620	2.8259	.00974	.23317	.01937

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value							1.0000				.10000	
Range							30.000%				30.000%	

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01832	.52622	1.1261	.09702	.01027	.01375	.01053	.01630	F .10812	.00947	.01879	.01400
Stddev	.00590	.02549	.0546	.00019	.00035	.00036	.00042	.00020	.05772	.00024	.00007	.00314
%RSD	32.193	4.8443	4.8443	.19456	3.3937	2.6117	4.0291	1.2563	53.385	2.5675	.35607	22.461

#1	.02248	.50819	1.0875	.09689	.01002	.01350	.01083	.01644	.14894	.00964	.01883	.01622
#2	.01415	.54425	1.1647	.09715	.01051	.01400	.01023	.01615	.06731	.00930	.01874	.01178

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value									.06000			
Range									30.000%			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3599.2	50492.	2592.1
Stddev	15.3	73.	8.8
%RSD	.42458	.14361	.34129

#1	3610.0	50544.	2585.8
#2	3588.4	50441.	2598.4

Sample Name: MB 280-457520/1-B Acquired: 5/14/2019 23:01:13 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/13 Custom ID2: Custom ID3:
Comment: 457771 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.01058	-.00031	.00919	.00079	.00017	.00151	.03891	-.00004
Stddev	.00085	.00070	.00094	.00152	.00000	.00015	.00313	.01293	.00019
%RSD	449.91	6.5912	306.81	16.532	.12676	84.960	207.04	33.215	524.75

#1	.00079	.01008	.00036	.00812	.00079	.00028	.00372	.02977	.00010
#2	-.00041	.01107	-.00097	.01027	.00079	.00007	-.00070	.04805	-.00017

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	-.00004	.00007	.00853	.43389	.00170	.02689	.00044	.00099
Stddev	.00016	.00007	.00004	.00057	.10487	.00062	.00391	.00007	.00055
%RSD	107.53	190.48	55.762	6.7276	24.171	36.453	14.534	16.367	55.669

#1	-.00004	-.00009	.00004	.00894	.50805	.00127	.02413	.00039	.00138
#2	-.00026	.00001	.00009	.00813	.35973	.00214	.02965	.00049	.00060

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.5108	-.00411	.01845	-.00051	F .12696	.00337	.00050	.01477	.03160
Stddev	.0031	.00017	.00739	.00021	.01172	.00401	.00519	.02692	.05761
%RSD	.20602	4.0451	40.040	40.458	9.2280	119.03	1039.6	182.32	182.32

#1	1.5086	-.00399	.01322	-.00036	.11868	.00621	.00417	.03380	.07234
#2	1.5130	-.00422	.02367	-.00066	.13524	.00053	-.00317	-.00427	-.00914

Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None
High Limit	1.0000				.10000				
Low Limit	-1.0000				-.10000				

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00052	-.00095	.00046	.00397	.01107	-.00012	.00005	.00086
Stddev	.00101	.00015	.00248	.00050	.00029	.02284	.00056	.00010	.00645
%RSD	1578.4	28.777	259.71	107.11	7.2722	206.39	457.31	193.64	751.92

#1	-.00065	.00042	.00080	.00011	.00418	-.00508	.00027	-.00002	.00542
#2	.00078	.00063	-.00270	.00081	.00377	.02722	-.00052	.00013	-.00370

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3662.2	50570.	2641.1
Stddev	55.4	207.	17.0
%RSD	1.5116	.41015	.64314

#1	3623.1	50424.	2653.1
#2	3701.3	50717.	2629.1

Sample Name: LCS 280-457520/2-B Acquired: 5/14/2019 23:03:49 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457771 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05334	9.4358	1.9317	.94885	1.9392	.94133	1.8927	45.287	.96970
Stddev	.00051	.0402	.0136	.00252	.0086	.00066	.0045	.138	.00375
%RSD	.94759	.42591	.70409	.26604	.44562	.06962	.23910	.30531	.38621

#1	.05298	9.4643	1.9413	.94707	1.9331	.94087	1.8959	45.189	.97234
#2	.05370	9.4074	1.9221	.95064	1.9453	.94179	1.8895	45.385	.96705

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94691	.93992	.95684	9.0944	50.615	1.0181	47.823	.98064	.98059
Stddev	.00193	.00011	.00060	.0187	.136	.0035	.185	.00306	.00457
%RSD	.20373	.01157	.06279	.20556	.26953	.34791	.38651	.31244	.46565

#1	.94827	.94000	.95727	9.1076	50.518	1.0156	47.953	.98281	.98382
#2	.94554	.93984	.95642	9.0812	50.711	1.0206	47.692	.97847	.97737

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	50.608	.94954	19.467	.96074	9.3624	.95974	1.9209	1.9333	4.1372
Stddev	.150	.00051	.055	.00139	.0049	.00199	.0107	.0165	.0354
%RSD	.29653	.05392	.28019	.14476	.05228	.20724	.55854	.85573	.85573

#1	50.502	.94990	19.506	.96172	9.3589	.95834	1.9133	1.9216	4.1121
#2	50.715	.94918	19.429	.95975	9.3658	.96115	1.9285	1.9450	4.1622

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8905	.96325	.95943	.98878	1.8789	2.0269	.98277	.47513	.49435
Stddev	.0022	.00333	.00067	.00026	.0002	.0200	.00304	.00237	.00432
%RSD	.11830	.34612	.06941	.02594	.01099	.98457	.30966	.49825	.87387

#1	1.8921	.96089	.95990	.98860	1.8788	2.0411	.98492	.47680	.49741
#2	1.8889	.96560	.95896	.98896	1.8791	2.0128	.98062	.47345	.49130

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3626.7	49687.	2669.9
Stddev	8.4	145.	6.7
%RSD	.23037	.29159	.25180

#1	3620.8	49584.	2674.6
#2	3632.6	49789.	2665.1

Sample Name: 280-122863-E-35-C Acquired: 5/14/2019 23:06:06 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457771 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.07956	.00974	.01362	.00279	.00074	.00592	13.164	.00332
Stddev	.00035	.02817	.00448	.00126	.00079	.00017	.00280	.050	.00227
%RSD	15594.	35.405	45.967	9.2660	28.442	23.548	47.205	.38051	68.258

#1	.00025	.05964	.00657	.01273	.00223	.00086	.00395	13.128	.00172
#2	-.00025	.09947	.01291	.01451	.00335	.00061	.00790	13.199	.00493

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00339	.00453	.00086	.07429	.52061	.00140	6.0340	.00231	.00855
Stddev	.00258	.00313	.00020	.00434	.09789	.00215	.0207	.00014	.00437
%RSD	76.071	69.198	22.936	5.8372	18.803	154.32	.34355	5.9312	51.129

#1	.00157	.00231	.00072	.07736	.58983	.00292	6.0486	.00221	.00546
#2	.00522	.00675	.00100	.07123	.45139	-.00013	6.0193	.00240	.01164

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.1131	-.00076	.07082	.00235	.54384	.00572	.01499	11.819	25.293
Stddev	.0164	.00199	.03672	.00178	.02364	.00186	.00168	.045	.097
%RSD	.23025	260.93	51.853	75.524	4.3469	32.432	11.181	.38236	.38236

#1	7.1015	-.00217	.04485	.00110	.52713	.00441	.01381	11.787	25.225
#2	7.1247	.00064	.09679	.00361	.56056	.00703	.01618	11.851	25.361

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00811	.03032	.00050	.00573	.01615	.03984	.00561	.00352	.00456
Stddev	.00611	.00019	.00137	.00037	.00716	.02073	.00042	.00046	.00138
%RSD	75.314	.63432	272.93	6.5121	44.309	52.024	7.5392	13.182	30.215

#1	.00379	.03018	.00147	.00547	.01109	.02519	.00531	.00385	.00553
#2	.01243	.03045	-.00047	.00599	.02121	.05450	.00591	.00319	.00359

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3714.2	51733.	2751.6
Stddev	.9	152.	2.2
%RSD	.02299	.29303	.07964

#1	3713.6	51840.	2753.1
#2	3714.8	51625.	2750.0

Sample Name: 280-122863-E-36-C Acquired: 5/14/2019 23:08:40 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457771 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	.06028	.00076	.01074	.00243	.00030	.00305	14.021	.00072
Stddev	.00016	.00506	.00359	.00003	.00026	.00010	.00225	.020	.00059
%RSD	53.091	8.3923	470.24	.29999	10.556	34.068	73.856	.14352	82.108

#1	-.00018	.05670	.00331	.01071	.00225	.00023	.00465	14.035	.00030
#2	-.00041	.06385	-.00178	.01076	.00261	.00037	.00146	14.007	.00114

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.00170	.00074	.10941	.44378	-.00117	6.4003	.00337	.00118
Stddev	.00034	.00033	.00031	.00359	.05932	.00176	.0156	.00005	.00044
%RSD	44.875	19.438	41.523	3.2850	13.366	150.04	.24421	1.4084	36.744

#1	.00052	.00147	.00095	.10687	.48573	.00007	6.4114	.00340	.00088
#2	.00101	.00194	.00052	.11195	.40184	-.00241	6.3893	.00333	.00149

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.3856	-.00326	.02307	.00033	.54635	.00454	.00077	12.584	26.931
Stddev	.0137	.00049	.00684	.00051	.02340	.00473	.00237	.043	.092
%RSD	.18597	14.903	29.633	155.57	4.2828	104.26	308.42	.34266	.34266

#1	7.3953	-.00361	.01824	.00069	.52980	.00789	-.00091	12.554	26.865
#2	7.3759	-.00292	.02791	-.00003	.56289	.00119	.00244	12.615	26.996

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00138	.03194	-.00294	.00617	.00255	.07541	.00504	.00294	.00353
Stddev	.00014	.00021	.00143	.00010	.00072	.00316	.00070	.00053	.00185
%RSD	9.8521	.65802	48.800	1.6919	28.189	4.1859	13.835	17.955	52.394

#1	.00147	.03179	-.00192	.00625	.00305	.07318	.00455	.00257	.00222
#2	.00128	.03208	-.00395	.00610	.00204	.07764	.00554	.00331	.00484

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3694.7	51500.	2732.6
Stddev	4.4	78.	9.1
%RSD	.11778	.15072	.33186

#1	3697.8	51445.	2726.2
#2	3691.6	51555.	2739.0

Sample Name: 122863-E-37-C Acquired: 5/14/2019 23:11:13 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457771 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.05592	-.00016	.01156	.00223	.00034	.00061	13.565	.00071
Stddev	.00056	.00289	.00068	.00022	.00012	.00001	.00262	.005	.00028
%RSD	336.48	5.1624	431.86	1.9076	5.4912	2.1650	426.75	.03694	38.980

#1	.00023	.05388	-.00064	.01141	.00232	.00034	-.00124	13.568	.00051
#2	-.00056	.05796	.00032	.01172	.00214	.00035	.00247	13.561	.00091

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	.00171	.00187	.72565	.48039	-.00185	6.0792	.00798	.00058
Stddev	.00025	.00001	.00068	.00537	.04946	.00113	.0179	.00003	.00012
%RSD	8136.5	.63115	36.494	.73987	10.295	60.865	.29373	.31389	20.216

#1	-.00018	.00172	.00139	.72186	.51536	-.00106	6.0666	.00796	.00050
#2	.00018	.00170	.00236	.72945	.44541	-.00265	6.0918	.00799	.00066

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.3059	-.00374	.01552	-.00103	.66276	.00017	.00904	11.702	25.042
Stddev	.0148	.00014	.00403	.00011	.01408	.00296	.00221	.028	.059
%RSD	.20283	3.6993	25.951	11.087	2.1247	1732.9	24.470	.23730	.23730

#1	7.3164	-.00384	.01268	-.00111	.65281	.00226	.01061	11.722	25.084
#2	7.2954	-.00364	.01837	-.00095	.67272	-.00192	.00748	11.682	25.000

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00153	.03248	-.00149	.00588	.00255	.02694	.00428	.00427	.00293
Stddev	.00091	.00005	.00336	.00040	.00086	.00709	.00054	.00030	.00400
%RSD	59.143	.14089	225.41	6.8373	33.858	26.317	12.633	7.1302	136.42

#1	.00089	.03252	-.00387	.00559	.00194	.03195	.00390	.00449	.00010
#2	.00217	.03245	.00089	.00616	.00316	.02192	.00467	.00406	.00576

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3668.9	50968.	2715.9
Stddev	7.2	31.	7.1
%RSD	.19704	.06059	.26026

#1	3674.0	50990.	2710.9
#2	3663.8	50947.	2720.9

Sample Name: 122863-E-37-C SD@5 Acquired: 5/14/2019 23:13:46 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457771 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00046	.01156	.00171	.00609	.00092	.00020	.00045	2.7318	.00030
Stddev	.00011	.00165	.00204	.00012	.00032	.00000	.00172	.0043	.00014
%RSD	23.389	14.236	119.31	1.9424	34.942	1.9191	379.17	.15856	47.135

#1	-.00053	.01040	.00315	.00600	.00069	.00021	-.00076	2.7287	.00039
#2	-.00038	.01273	.00027	.00617	.00115	.00020	.00167	2.7348	.00020

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00014	-.00036	.01872	.18907	.00096	1.2363	.00059	.00071
Stddev	.00015	.00014	.00000	.00202	.01556	.00071	.0041	.00005	.00015
%RSD	64.033	99.561	.98543	10.786	8.2284	73.428	.33253	8.0298	20.406

#1	-.00034	.00023	-.00036	.02015	.17807	.00146	1.2392	.00063	.00061
#2	-.00013	.00004	-.00036	.01730	.20007	.00046	1.2334	.00056	.00081

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.1738	-.00431	.00645	.00185	.15033	.00135	-.00213	2.3266	4.9790
Stddev	.0036	.00104	.00058	.00134	.00945	.00309	.00328	.0400	.0856
%RSD	.16664	24.219	9.0019	72.552	6.2832	228.71	154.41	1.7182	1.7182

#1	2.1712	-.00358	.00604	.00280	.14365	.00353	-.00445	2.2984	4.9185
#2	2.1764	-.00505	.00686	.00090	.15701	-.00083	.00020	2.3549	5.0395

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00063	.00671	-.00275	.00177	.00157	.06047	.00060	-.00062	.00005
Stddev	.00087	.00007	.00478	.00080	.00097	.01824	.00056	.00014	.00017
%RSD	138.21	1.0538	173.96	45.403	62.043	30.162	92.721	22.137	365.77

#1	-.00124	.00666	-.00613	.00234	.00088	.07337	.00021	-.00071	.00017
#2	-.00001	.00676	.00063	.00120	.00226	.04757	.00099	-.00052	-.00008

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3693.9	51060.	2671.1
Stddev	1.9	313.	13.0
%RSD	.05058	.61385	.48572

#1	3695.2	50838.	2680.2
#2	3692.6	51281.	2661.9

Sample Name: 122863-E-37-D MS Acquired: 5/14/2019 23:16:20 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457771 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05165	9.5103	1.9061	.95911	1.9009	.93413	1.8953	58.437	.95273
Stddev	.00011	.0242	.0006	.00054	.0033	.00010	.0022	.069	.00139
%RSD	.20572	.25478	.03283	.05670	.17126	.01074	.11719	.11780	.14639

#1	.05172	9.5274	1.9057	.95873	1.8986	.93405	1.8938	58.485	.95174
#2	.05157	9.4932	1.9066	.95950	1.9032	.93420	1.8969	58.388	.95371

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.92903	.92875	.94825	9.2205	51.063	1.0044	54.259	.96807	.96501
Stddev	.00217	.00090	.00304	.0000	.022	.0028	.046	.00056	.00012
%RSD	.23362	.09660	.32093	.00005	.04234	.28045	.08514	.05754	.01274

#1	.93057	.92811	.94609	9.2205	51.048	1.0024	54.226	.96846	.96509
#2	.92750	.92938	.95040	9.2205	51.078	1.0064	54.292	.96767	.96492

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	57.247	.93069	19.234	.93699	9.8544	.96637	1.8826	13.399	28.673
Stddev	.312	.00001	.004	.00019	.0050	.00049	.0050	.003	.007
%RSD	.54472	.00079	.02056	.01975	.05121	.05030	.26427	.02562	.02562

#1	57.027	.93068	19.231	.93686	9.8508	.96672	1.8861	13.396	28.668
#2	57.468	.93069	19.236	.93713	9.8579	.96603	1.8791	13.401	28.678

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8629	.97897	.96003	.98388	1.8365	1.9993	.97934	.47577	.48380
Stddev	.0048	.00109	.00666	.00100	.0059	.0028	.00360	.00077	.00024
%RSD	.25771	.11097	.69357	.10115	.31907	.13826	.36747	.16229	.04914

#1	1.8595	.97974	.95532	.98318	1.8406	1.9973	.97680	.47632	.48363
#2	1.8663	.97821	.96474	.98459	1.8323	2.0012	.98189	.47523	.48397

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3646.0	49770.	2716.1
Stddev	14.9	107.	3.5
%RSD	.40929	.21524	.12763

#1	3656.6	49694.	2713.6
#2	3635.5	49845.	2718.5

Sample Name: 122863-E-37-E MSD Acquired: 5/14/2019 23:18:36 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457771 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05264	9.7801	1.9617	.98514	1.9662	.96102	1.9502	59.977	.98136
Stddev	.00039	.0382	.0091	.00090	.0049	.00253	.0007	.165	.00162
%RSD	.74591	.39070	.46552	.09123	.24861	.26328	.03613	.27530	.16496

#1	.05292	9.8071	1.9681	.98578	1.9696	.96280	1.9507	60.093	.98250
#2	.05236	9.7531	1.9552	.98451	1.9627	.95923	1.9497	59.860	.98021

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95517	.95938	.97849	9.4127	52.256	1.0325	55.112	.98951	.99756
Stddev	.00005	.00097	.00007	.0059	.094	.0066	.188	.00115	.00030
%RSD	.00556	.10086	.00676	.06282	.18057	.64176	.34168	.11616	.03007

#1	.95513	.96007	.97844	9.4169	52.323	1.0372	55.245	.99032	.99734
#2	.95520	.95870	.97853	9.4085	52.189	1.0279	54.978	.98870	.99777

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	58.013	.95883	19.634	.96849	10.107	.98495	1.9409	13.805	29.542
Stddev	1.564	.00006	.015	.00306	.040	.00182	.0146	.035	.075
%RSD	2.6961	.00625	.07534	.31583	.39745	.18445	.74956	.25380	.25380

#1	56.907	.95879	19.645	.96632	10.135	.98366	1.9512	13.829	29.595
#2	59.119	.95887	19.624	.97065	10.078	.98623	1.9307	13.780	29.489

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.9316	1.0094	.98384	1.0088	1.9024	2.0430	1.0007	.48697	.50368
Stddev	.0039	.0022	.00032	.0008	.0118	.0227	.0004	.00130	.00030
%RSD	.20073	.22106	.03230	.07862	.62012	1.1106	.03800	.26690	.05909

#1	1.9343	1.0110	.98407	1.0094	1.9108	2.0269	1.0010	.48789	.50389
#2	1.9288	1.0078	.98362	1.0083	1.8941	2.0590	1.0004	.48605	.50347

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3654.6	50042.	2719.1
Stddev	12.7	138.	27.7
%RSD	.34778	.27598	1.0197

#1	3645.6	49944.	2699.5
#2	3663.6	50139.	2738.7

Sample Name: 280-122863-E-38-F Acquired: 5/14/2019 23:20:54 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457771 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.08666	.00544	.01414	.00410	.00102	.01042	13.401	.00371
Stddev	.00099	.02583	.00722	.00041	.00042	.00004	.00282	.047	.00212
%RSD	1097.4	29.804	132.75	2.8759	10.194	3.8790	27.015	.35212	57.149

#1	.00061	.06839	.00033	.01442	.00440	.00105	.00843	13.367	.00221
#2	-.00079	.10492	.01054	.01385	.00381	.00100	.01241	13.434	.00520

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00323	.00487	.00220	.09776	.40940	-.00348	6.1311	.00382	.00845
Stddev	.00251	.00292	.00047	.00324	.01586	.00564	.0336	.00004	.00369
%RSD	77.752	59.947	21.225	3.3118	3.8744	161.85	.54861	1.1568	43.631

#1	.00145	.00281	.00187	.10005	.42061	.00050	6.1549	.00379	.00584
#2	.00500	.00693	.00253	.09547	.39818	-.00747	6.1073	.00386	.01106

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.0923	-.00031	.07058	.00183	.61220	.00450	.00927	11.500	24.610
Stddev	.0259	.00238	.03892	.00043	.01455	.00284	.00331	.042	.091
%RSD	.36544	778.49	55.150	23.264	2.3774	63.173	35.650	.36846	.36846

#1	7.0740	-.00199	.04305	.00153	.60190	.00249	.00694	11.470	24.546
#2	7.1106	.00138	.09810	.00214	.62249	.00651	.01161	11.530	24.674

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00885	.03298	.00251	.00689	.01840	.01289	.00558	.00075	.00667
Stddev	.00476	.00024	.00024	.00014	.00686	.02237	.00016	.00072	.00036
%RSD	53.728	.71283	9.5587	2.0578	37.299	173.59	2.9176	94.858	5.3853

#1	.00549	.03281	.00234	.00699	.01354	-.00293	.00569	.00126	.00693
#2	.01221	.03314	.00268	.00679	.02325	.02871	.00546	.00025	.00642

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3765.4	51960.	2744.2
Stddev	1.6	318.	14.9
%RSD	.04281	.61192	.54120

#1	3764.2	51735.	2754.7
#2	3766.5	52185.	2733.7

Sample Name: CCVH-5699817 Acquired: 5/14/2019 23:23:27 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247	Fe2714
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00608	47.075	-.00383	.00737	.00318	.00146	.97862	.02976	.00157	.00253	.00170	.00303	46.040
Stddev	.00023	.293	.00183	.00017	.00017	.00015	.00405	.00114	.00014	.00040	.00051	.00064	.308
%RSD	3.7268	.62283	47.833	2.2829	5.4381	9.9382	.41422	3.8327	8.9348	15.935	30.034	20.988	.66841

#1	.00592	47.282	-.00512	.00749	.00306	.00156	.98148	.03057	.00167	.00224	.00134	.00348	46.257
#2	.00624	46.868	-.00253	.00725	.00331	.00136	.97575	.02896	.00147	.00281	.00206	.00258	45.822

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None	Chk Pass
Value													
Range													

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.33900	.00124	.02503	.00246	.00151	255.00	.00005	.01356	.00530	4.7879	-.01385	.00381	.01568
Stddev	.23682	.00193	.00665	.00010	.00022	.06	.00012	.00128	.00152	.0055	.00020	.00607	.00724
%RSD	69.858	156.37	26.553	4.1135	14.735	.02370	253.51	9.4571	28.624	.11476	1.4724	159.34	46.201

#1	.17155	.00260	.02033	.00239	.00135	255.04	.00013	.01447	.00423	4.7917	-.01370	.00811	.02080
#2	.50646	-.00013	.02973	.00253	.00167	254.96	-.00004	.01265	.00637	4.7840	-.01399	-.00048	.01055

Check ?	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None	None	None
Value													
Range													

Elem	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03355	.00247	.00182	4.8502	-.00847	.00680	9.9571	.00659	.00257	.10054
Stddev	.01550	.00045	.00037	.0096	.00032	.00194	.0272	.00021	.00008	.00596
%RSD	46.201	18.414	20.211	.19747	3.7485	28.468	.27281	3.1649	3.0051	5.9318

#1	.04451	.00279	.00156	4.8570	-.00870	.00817	9.9379	.00674	.00263	.10476
#2	.02259	.00215	.00208	4.8434	-.00825	.00543	9.9763	.00644	.00252	.09632

Check ?	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value										
Range										

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3655.5	50143.	2702.5
Stddev	5.0	158.	15.5
%RSD	.13552	.31435	.57252

#1	3659.0	50031.	2691.6
#2	3652.0	50254.	2713.5

Sample Name: CCV-5699804 Acquired: 5/14/2019 23:25:58 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50604	F .64964	.97401	.48672	.49148	.47791	.00557	4.7349	.49216	.49794	.48424	.49428
Stddev	.00026	.06587	.00486	.00066	.00283	.00088	.00029	.0119	.00016	.00023	.00181	.00201
%RSD	.05142	10.140	.49925	.13612	.57558	.18489	5.2022	.25058	.03219	.04645	.37396	.40633

#1	.50623	.60306	.97057	.48719	.49348	.47854	.00577	4.7433	.49205	.49777	.48296	.49570
#2	.50586	.69621	.97745	.48626	.48948	.47729	.00536	4.7265	.49227	.49810	.48552	.49286

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.4103	51.788	1.0228	20.111	.50018	.49846	F 6.1531	.49806	.98582	.99741	.02634	.97542
Stddev	.0031	.315	.0013	.071	.00134	.00008	.0166	.00029	.00112	.00527	.00207	.00147
%RSD	.13035	.60919	.12415	.35408	.26745	.01677	.27026	.05763	.11373	.52861	7.8459	.15117

#1	2.4081	52.011	1.0237	20.161	.50113	.49852	6.1648	.49826	.98661	1.0011	.02780	.97438
#2	2.4126	51.565	1.0219	20.060	.49924	.49840	6.1413	.49785	.98503	.99368	.02488	.97647

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97934	4.6834	10.023	.97071	.48936	.00468	.49801	.98729	.08144	.49724	.49367	.49605
Stddev	.00170	.0214	.046	.00290	.00159	.00239	.00235	.00211	.02241	.00257	.00299	.00368
%RSD	.17396	.45744	.45744	.29912	.32437	51.034	.47257	.21347	27.521	.51760	.60635	.74228

#1	.98054	4.6986	10.055	.97276	.49048	.00299	.49968	.98878	.09729	.49906	.49579	.49865
#2	.97813	4.6683	9.9901	.96866	.48824	.00637	.49635	.98580	.06559	.49542	.49156	.49344

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3746.0	51329.	2764.0
Stddev	6.9	200.	8.2
%RSD	.18519	.38967	.29555

#1	3741.1	51188.	2758.3
#2	3750.9	51471.	2769.8

Sample Name: CCB Acquired: 5/14/2019 23:28:20 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.02656	.00123	.00519	.00091	.00049	.00102	.00198	.00155	.00171	.00186	-.00065
Stddev	.00000	.01092	.00531	.00026	.00082	.00009	.00241	.00239	.00137	.00152	.00177	.00029
%RSD	.73723	41.128	432.61	4.9878	90.158	18.604	236.47	121.16	88.834	89.160	94.919	45.053

#1	.00021	.01883	-.00253	.00500	.00149	.00042	-.00068	.00367	.00057	.00063	.00061	-.00086
#2	.00022	.03428	.00499	.00537	.00033	.00055	.00272	.00028	.00252	.00278	.00311	-.00044

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00346	.21911	-.00039	.02298	.00036	.00463	F .73107	-.00292	.01000	.00340	.01983	F .01221
Stddev	.00171	.03351	.00357	.00477	.00012	.00162	.02272	.00078	.00736	.00341	.00889	.00051
%RSD	49.485	15.294	909.65	20.740	33.321	34.889	3.1072	26.626	73.566	100.38	44.814	4.1845

#1	.00225	.24280	.00213	.02634	.00028	.00349	.74714	-.00347	.00480	.00099	.01354	.01185
#2	.00467	.19541	-.00291	.01961	.00045	.00578	.71501	-.00237	.01520	.00581	.02611	.01257

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							.50000					.01200
Low Limit							-.50000					-.01200

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00515	.00077	.00165	.00494	.00020	-.00210	.00120	.00545	.04245	.00081	-.00125	.00345
Stddev	.00535	.05909	.12645	.00275	.00002	.00031	.00019	.00115	.01377	.00026	.00028	.00338
%RSD	103.91	7664.6	7664.6	55.785	7.4908	14.714	16.183	21.040	32.443	31.950	22.730	98.006

#1	.00136	-.04101	-.08777	.00299	.00019	-.00231	.00106	.00464	.03271	.00063	-.00105	.00106
#2	.00893	.04255	.09107	.00689	.00021	-.00188	.00134	.00627	.05219	.00099	-.00145	.00583

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3603.4	50911.	2663.0
Stddev	16.2	248.	9.8
%RSD	.44914	.48760	.36755

#1	3614.9	51086.	2656.0
#2	3592.0	50735.	2669.9

Sample Name: CCVL-5701318 Acquired: 5/14/2019 23:30:56 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00988	.11104	F .02054	.10040	.01027	.00119	.10617	.19276	.00531	.01026	.01004	.01463
Stddev	.00063	.00363	.00186	.00055	.00110	.00021	.00275	.00214	.00008	.00012	.00030	.00180
%RSD	6.3732	3.2682	9.0441	.55001	10.749	17.889	2.5865	1.1081	1.5576	1.1258	3.0300	12.271

#1	.01033	.10848	.01922	.10079	.00949	.00134	.10812	.19427	.00537	.01018	.00983	.01590
#2	.00944	.11361	.02185	.10001	.01105	.00104	.10423	.19125	.00525	.01034	.01026	.01336

Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.01500									
Range			30.000%									

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09789	3.3042	.02194	.20425	.01034	.02016	F 1.7417	.03660	2.8267	.00979	.10481	.01907
Stddev	.00250	.1048	.00025	.00184	.00003	.00030	.0028	.00047	.0029	.00041	.00180	.00167
%RSD	2.5584	3.1730	1.1342	.90186	.24893	1.4645	.15866	1.2893	.10367	4.1922	1.7135	8.7688

#1	.09966	3.2300	.02177	.20555	.01036	.02037	1.7397	.03627	2.8288	.01008	.10608	.02025
#2	.09612	3.3783	.02212	.20295	.01032	.01995	1.7436	.03693	2.8246	.00950	.10354	.01789

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							1.0000					
Range							30.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02460	.47503	1.0166	.09843	.00981	.01648	.01000	.01823	F .02028	.00968	.02004	.01464
Stddev	.00136	.07013	.1501	.00029	.00013	.00210	.00092	.00011	.03291	.00012	.00003	.00220
%RSD	5.5271	14.764	14.764	.29852	1.3502	12.725	9.1700	.58066	162.29	1.2152	.13230	15.049

#1	.02364	.42544	.91044	.09863	.00972	.01500	.00935	.01816	.04356	.00960	.02003	.01620
#2	.02556	.52462	1.1227	.09822	.00990	.01796	.01065	.01831	-.00299	.00977	.02006	.01308

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value									.06000			
Range									-30.000%			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3625.8	49663.	2595.4
Stddev	1.5	116.	14.6
%RSD	.04139	.23409	.56390

#1	3626.9	49581.	2585.0
#2	3624.8	49745.	2605.7

Sample Name: MB 280-457943/1-A Acquired: 5/14/2019 23:33:28 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: 5/14 Custom ID2: Custom ID3:
Comment: 457943 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00731	.00539	.00462	.00035	.00020	-.00483	.01375	.00011
Stddev	.00083	.00302	.00315	.00018	.00048	.00013	.00059	.01266	.00026
%RSD	655.08	41.360	58.516	3.9611	137.58	64.387	12.203	92.053	244.26

#1	-.00046	.00517	.00761	.00475	.00001	.00028	-.00441	.00480	-.00008
#2	.00071	.00944	.00316	.00449	.00069	.00011	-.00524	.02270	.00030

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00030	-.00035	.02154	.12576	-.00373	.00307	.00057	.00089
Stddev	.00014	.00037	.00109	.00244	.00771	.00191	.00240	.00002	.00040
%RSD	179.02	125.69	312.04	11.327	6.1322	51.226	78.104	2.8248	45.385

#1	-.00002	.00003	-.00112	.01982	.12031	-.00238	.00137	.00058	.00060
#2	.00018	.00056	.00042	.02327	.13121	-.00508	.00476	.00056	.00117

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W .63634	-.00410	.01191	.00055	.01250	W .00571	.00526	-.00223	-.00477
Stddev	.00047	.00023	.00938	.00107	.00565	.00053	.00133	.02400	.05136
%RSD	.07396	5.6634	78.749	192.57	45.210	9.2539	25.329	1076.2	1076.2

#1	.63601	-.00394	.00528	-.00020	.00851	.00533	.00432	-.01920	-.04109
#2	.63667	-.00426	.01854	.00131	.01650	.00608	.00620	.01474	.03154

Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	None
High Limit	.50000					.00500			
Low Limit	-.50000					-.00500			

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	-.00026	-.00139	.00015	.00082	F .08053	.00031	.00156	.00229
Stddev	.00100	.00007	.00111	.00067	.00014	.05872	.00099	.00073	.00037
%RSD	289.19	26.833	79.802	456.15	16.697	72.914	315.19	47.110	16.144

#1	-.00036	-.00031	-.00060	-.00033	.00072	.03901	.00101	.00208	.00202
#2	.00106	-.00021	-.00217	.00062	.00092	.12205	-.00039	.00104	.00255

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit						.06000			
Low Limit						-.06000			

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3643.4	51180.	2672.2
Stddev	3.3	121.	18.1
%RSD	.09037	.23574	.67617

#1	3641.1	51265.	2685.0
#2	3645.7	51094.	2659.5

Sample Name: LCS 280-457943/2-A Acquired: 5/14/2019 23:36:05 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457943 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 {74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00284	F 9.7441	F 1.9392	.96257	1.9527	F .95169	1.9316	46.703	F .97315
Stddev	.00063	.0322	.0006	.00013	.0053	.00440	.0095	.151	.00029
%RSD	22.220	.33070	.03112	.01364	.27273	.46214	.49236	.32299	.02962
#1	.00329	9.7214	1.9388	.96248	1.9490	.94858	1.9384	46.596	.97295
#2	.00240	9.7669	1.9396	.96266	1.9565	.95480	1.9249	46.809	.97335
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Fail	None	Chk Pass	Chk Fail
High Limit	.05750	2.2250	1.1050			.05650			.11100
Low Limit	.04275	1.7300	.87500			.04450			.08800
Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 {44}	670.784 {50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .95289	F .94567	F .96935	F 9.3666	52.376	1.0285	49.355	F .98957	.98894
Stddev	.00142	.00166	.00042	.0008	.122	.0015	.015	.00047	.00457
%RSD	.14891	.17573	.04348	.00897	.23241	.14491	.02955	.04768	.46236
#1	.95189	.94684	.96964	9.3672	52.290	1.0295	49.344	.98990	.99217
#2	.95390	.94449	.96905	9.3660	52.462	1.0274	49.365	.98924	.98571
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit	.55500	.22000	.28000	1.1500				.55000	
Low Limit	.44500	.18000	.21500	.89000				.45000	
Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 {41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	52.028	F .95759	F 19.779	F .96378	9.4236	F .00541	1.9175	F 1.9936	4.2662
Stddev	.245	.00080	.001	.00151	.0168	.00305	.0046	.0062	.0133
%RSD	.47088	.08399	.00485	.15673	.17856	56.439	.23864	.31237	.31237
#1	51.855	.95702	19.780	.96484	9.4117	.00757	1.9207	1.9892	4.2568
#2	52.201	.95816	19.779	.96271	9.4355	.00325	1.9143	1.9980	4.2756
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Fail	None	Chk Fail	Chk Pass	Chk Fail	None
High Limit		.55500	11.100	.55000		.55499		11.000	
Low Limit		.44500	9.1000	.44500		.44000		9.0000	
Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 {83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 {91}	292.402 {115}	206.200 {163}	339.198 {99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.9044	.97188	.98809	1.0021	1.8739	2.0844	F .99539	.49051	.51078
Stddev	.0028	.00350	.00025	.0007	.0026	.0525	.00215	.00009	.00005
%RSD	.14615	.35963	.02555	.07280	.14030	2.5193	.21637	.01787	.01033
#1	1.9063	.96941	.98826	1.0026	1.8757	2.0473	.99691	.49057	.51074
#2	1.9024	.97435	.98791	1.0016	1.8720	2.1215	.99387	.49045	.51082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit							.55500		
Low Limit							.45000		
Int. Std.	Y_2243	Y_3600	Y_3774						
Line	224.306 {450}	360.073 {94}	377.433 {89}						
Units	Cts/S	Cts/S	Cts/S						
Avg	3667.1	49929.	2688.2						
Stddev	8.6	297.	8.3						
%RSD	.23567	.59535	.30933						
#1	3661.0	49719.	2694.1						
#2	3673.2	50139.	2682.3						

Sample Name: LCSD 280-457943/3-A Acquired: 5/14/2019 23:38:24 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457943 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00246	9.7006	1.9431	.96417	1.9400	.94499	1.9345	46.455	.97459
Stddev	.00003	.0555	.0075	.00315	.0166	.00475	.0029	.326	.00252
%RSD	1.1123	.57172	.38652	.32655	.85617	.50285	.15130	.70123	.25904

#1	.00248	9.7399	1.9484	.96640	1.9282	.94163	1.9325	46.224	.97638
#2	.00244	9.6614	1.9378	.96194	1.9517	.94835	1.9366	46.685	.97281

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95508	.94943	.96240	9.3420	52.029	1.0237	49.411	.98876	.99343
Stddev	.00190	.00156	.00077	.0416	.481	.0097	.117	.00108	.00294
%RSD	.19873	.16418	.07956	.44525	.92501	.94397	.23641	.10880	.29548

#1	.95642	.95053	.96186	9.3126	51.688	1.0168	49.329	.98800	.99550
#2	.95374	.94833	.96294	9.3714	52.369	1.0305	49.494	.98952	.99135

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	51.784	.95649	19.776	.96560	9.4545	.00785	1.9262	1.9222	4.1134
Stddev	.470	.00018	.017	.00024	.0090	.00015	.0037	.0177	.0380
%RSD	.90814	.01889	.08443	.02470	.09477	1.8761	.19209	.92306	.92306

#1	51.451	.95636	19.788	.96543	9.4609	.00774	1.9288	1.9096	4.0866
#2	52.116	.95662	19.764	.96577	9.4482	.00795	1.9236	1.9347	4.1403

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.9107	.96519	.98519	1.0005	1.8843	2.1080	.99610	.48845	.50951
Stddev	.0034	.00543	.00011	.0020	.0008	.0176	.00096	.00105	.00832
%RSD	.17726	.56281	.01069	.20210	.04192	.83526	.09612	.21590	1.6338

#1	1.9083	.96135	.98511	.99906	1.8838	2.1204	.99542	.48920	.50362
#2	1.9130	.96903	.98526	1.0019	1.8849	2.0955	.99677	.48771	.51539

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3659.1	49945.	2708.4
Stddev	10.6	59.	7.4
%RSD	.28998	.11742	.27258

#1	3651.5	49986.	2713.6
#2	3666.6	49903.	2703.2

Sample Name: 280-123577-Q-1-A Acquired: 5/14/2019 23:40:42 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457943 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00070	.03800	.01625	.06577	.05945	.00110	.00625	99.937	.00290
Stddev	.00124	.02363	.00110	.00123	.00011	.00006	.00776	.079	.00187
%RSD	177.39	62.188	6.7571	1.8672	.18487	5.2286	124.22	.07868	64.392

#1	.00018	.02129	.01548	.06490	.05952	.00114	.00076	99.882	.00158
#2	-.00157	.05471	.01703	.06664	.05937	.00106	.01174	99.993	.00422

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00307	.00472	.00529	.21651	3.3662	.07969	15.362	.19484	.01253
Stddev	.00213	.00203	.00055	.00452	.0199	.00359	.049	.00033	.00326
%RSD	69.394	43.056	10.308	2.0865	.59048	4.5032	.31860	.17134	26.022

#1	.00156	.00328	.00568	.21331	3.3803	.07716	15.396	.19507	.01023
#2	.00458	.00616	.00491	.21970	3.3522	.08223	15.327	.19460	.01484

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	43.687	.00187	.06245	.00272	27.910	.00373	.00677	8.8547	18.949
Stddev	.125	.00190	.03589	.00118	.005	.00700	.00287	.0750	.161
%RSD	.28540	101.85	57.473	43.358	.01660	187.57	42.345	.84702	.84702

#1	43.775	.00052	.03707	.00189	27.913	-.00122	.00474	8.8017	18.836
#2	43.599	.00321	.08783	.00355	27.906	.00868	.00880	8.9077	19.063

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00804	.36318	.00128	.00239	.01322	.08171	.00150	.11424	.00488
Stddev	.00430	.00023	.00096	.00032	.00571	.02304	.00050	.00130	.00222
%RSD	53.427	.06359	74.538	13.233	43.150	28.201	33.030	1.1361	45.481

#1	.00500	.36302	.00061	.00217	.00919	.09801	.00185	.11516	.00645
#2	.01108	.36334	.00196	.00262	.01726	.06542	.00115	.11332	.00331

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3668.6	50537.	2707.2
Stddev	10.8	83.	.9
%RSD	.29511	.16342	.03210

#1	3661.0	50479.	2706.6
#2	3676.3	50595.	2707.9

Sample Name: 123577-Q-1-A SD@5 Acquired: 5/14/2019 23:43:15 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457943 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.00012	.00553	.01565	.01170	.00040	-.00016	20.421	.00011
Stddev	.00026	.00096	.00201	.00034	.00017	.00013	.00632	.029	.00023
%RSD	104.21	800.90	36.301	2.1803	1.4173	33.014	4013.1	.14066	211.94

#1	.00044	.00080	.00411	.01589	.01181	.00049	-.00462	20.401	.00027
#2	.00007	-.00056	.00695	.01541	.01158	.00030	.00431	20.441	-.00005

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00042	.00036	.05041	.67288	.01193	3.2314	.04045	.00156
Stddev	.00002	.00024	.00114	.00018	.03168	.00170	.0025	.00004	.00076
%RSD	29.133	57.829	319.22	.35994	4.7088	14.241	.07614	.09155	48.866

#1	.00010	.00059	-.00045	.05053	.65048	.01073	3.2297	.04042	.00210
#2	.00006	.00025	.00116	.05028	.69528	.01313	3.2332	.04047	.00102

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	589.592 { 57}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.3019	-.00353	.00078	-.00047	5.6164	.00293	.00265	1.7486	3.7420
Stddev	.0187	.00069	.00475	.00037	.0673	.00351	.00404	.0007	.0014
%RSD	.20056	19.501	608.23	78.961	1.1988	119.87	152.57	.03817	.03817

#1	9.2887	-.00401	-.00258	-.00021	5.5688	.00541	.00550	1.7481	3.7409
#2	9.3151	-.00304	.00414	-.00073	5.6640	.00045	-.00021	1.7490	3.7430

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.07404	-.00161	.00030	-.00030	-.01358	.00025	.02369	.00457
Stddev	.00061	.00043	.00013	.00051	.00156	.00561	.00014	.00048	.00244
%RSD	416.91	.57623	8.3281	171.98	526.87	41.337	53.217	2.0469	53.256

#1	-.00029	.07374	-.00171	-.00006	-.00140	-.01755	.00016	.02403	.00630
#2	.00058	.07434	-.00152	.00066	.00081	-.00961	.00035	.02335	.00285

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3707.1	51194.	2711.2
Stddev	12.2	248.	17.2
%RSD	.33006	.48481	.63536

#1	3715.7	51019.	2723.4
#2	3698.4	51370.	2699.0

Sample Name: 280-123577-Q-1-B MS Acquired: 5/14/2019 23:45:47 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457943 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00256	9.7146	1.9674	1.0331	1.9988	.95422	1.9507	144.21	.98039
Stddev	.00058	.0109	.0031	.0023	.0079	.00229	.0056	.38	.00184
%RSD	22.476	.11204	.15801	.22251	.39595	.24043	.28683	.26330	.18777

#1	.00297	9.7069	1.9696	1.0347	1.9932	.95260	1.9546	143.94	.98169
#2	.00216	9.7223	1.9652	1.0315	2.0044	.95585	1.9467	144.48	.97909

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94210	.95214	.97715	9.5252	55.732	1.1102	63.899	1.1660	.99566
Stddev	.00181	.00112	.00058	.0190	.228	.0055	.036	.0013	.00328
%RSD	.19187	.11783	.05904	.19977	.40995	.49411	.05662	.11479	.32920

#1	.94337	.95294	.97674	9.5386	55.571	1.1063	63.925	1.1669	.99798
#2	.94082	.95135	.97755	9.5117	55.894	1.1140	63.874	1.1650	.99335

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	94.534	.94680	W 20.102	.95395	37.353	.00467	1.9439	10.619	22.724
Stddev	.147	.00191	.056	.00102	.082	.00160	.0113	.055	.118
%RSD	.15534	.20132	.27917	.10682	.22058	34.180	.58247	.52027	.52027

#1	94.430	.94815	20.141	.95323	37.412	.00354	1.9359	10.580	22.641
#2	94.638	.94545	20.062	.95467	37.295	.00580	1.9519	10.658	22.808

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.9206	1.3215	.98717	.99993	1.8471	2.0540	.99669	.59540	.51504
Stddev	.0046	.0049	.00164	.00144	.0026	.0024	.00031	.00069	.00219
%RSD	.24145	.37246	.16575	.14449	.14280	.11712	.03089	.11528	.42454

#1	1.9174	1.3181	.98833	1.0010	1.8489	2.0523	.99691	.59589	.51659
#2	1.9239	1.3250	.98601	.99891	1.8452	2.0557	.99647	.59491	.51349

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3609.8	49694.	2701.9
Stddev	1.5	13.	3.8
%RSD	.04105	.02699	.14229

#1	3610.8	49685.	2704.6
#2	3608.7	49704.	2699.2

Sample Name: 280-123577-Q-1-C MSD Acquired: 5/14/2019 23:48:05 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457943 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00253	9.6815	1.9579	1.0326	2.0015	.94934	1.9285	145.66	.97523
Stddev	.00092	.0487	.0241	.0006	.0134	.00363	.0028	.70	.00157
%RSD	36.193	.50289	1.2297	.06165	.66761	.38266	.14384	.48089	.16133

#1	.00188	9.7159	1.9408	1.0330	2.0110	.95191	1.9304	146.15	.97411
#2	.00318	9.6471	1.9749	1.0321	1.9921	.94677	1.9265	145.16	.97634

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93608	.94068	.96582	9.4968	55.936	1.1027	64.027	1.1646	.99283
Stddev	.00033	.00288	.00101	.0392	.224	.0026	.022	.0019	.00061
%RSD	.03496	.30610	.10479	.41299	.39996	.23373	.03482	.16242	.06186

#1	.93584	.93864	.96511	9.5245	56.094	1.1045	64.011	1.1659	.99327
#2	.93631	.94271	.96654	9.4691	55.778	1.1008	64.043	1.1633	.99240

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	95.516	.94096	W 20.028	.94667	37.444	.00073	1.9282	10.785	23.079
Stddev	.872	.00057	.001	.00101	.031	.00139	.0028	.072	.153
%RSD	.91326	.06043	.00697	.10647	.08321	190.92	.14483	.66421	.66421

#1	96.133	.94136	20.029	.94738	37.422	-.00025	1.9262	10.835	23.187
#2	94.899	.94055	20.027	.94596	37.466	.00171	1.9302	10.734	22.971

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8895	1.3258	.98632	.99535	1.8292	2.0522	.99015	.59728	.50691
Stddev	.0046	.0076	.00083	.00162	.0058	.0339	.00182	.00064	.00719
%RSD	.24590	.57287	.08406	.16260	.31894	1.6509	.18332	.10690	1.4175

#1	1.8862	1.3312	.98573	.99650	1.8250	2.0761	.99143	.59773	.51199
#2	1.8928	1.3205	.98691	.99421	1.8333	2.0282	.98886	.59683	.50183

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3608.7	49745.	2713.8
Stddev	16.1	61.	6.1
%RSD	.44750	.12208	.22517

#1	3620.1	49702.	2709.5
#2	3597.3	49788.	2718.1

Sample Name: 280-123577-A-2-A Acquired: 5/14/2019 23:50:22 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457943 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00092	.03965	.00652	.06850	.00500	.00103	.00603	100.89	.00355
Stddev	.00044	.02542	.01153	.00290	.00006	.00017	.00104	.17	.00173
%RSD	47.723	64.114	176.74	4.2269	1.2919	16.160	17.263	.16904	48.818

#1	.00123	.02167	-.00163	.06646	.00504	.00091	.00529	100.77	.00232
#2	.00061	.05762	.01468	.07055	.00495	.00115	.00676	101.01	.00477

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00293	.00484	.00263	.03958	3.4172	.08254	15.893	.00390	.01037
Stddev	.00294	.00236	.00012	.00131	.0072	.00182	.049	.00000	.00350
%RSD	100.41	48.783	4.5811	3.3016	.21114	2.2040	.30560	.09575	33.708

#1	.00085	.00317	.00271	.04051	3.4223	.08383	15.928	.00390	.00790
#2	.00500	.00651	.00254	.03866	3.4121	.08126	15.859	.00391	.01284

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	44.946	-.00093	.07471	.00290	28.470	-.00428	.00793	9.2388	19.771
Stddev	.461	.00197	.04074	.00339	.004	.00183	.00546	.0536	.115
%RSD	1.0262	213.19	54.540	117.21	.01365	42.636	68.861	.58040	.58040

#1	44.620	-.00232	.04589	.00050	28.472	-.00299	.00407	9.2009	19.690
#2	45.272	.00047	.10352	.00529	28.467	-.00557	.01180	9.2767	19.852

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01057	.29460	.00166	.00299	.01413	.01474	.00252	.01264	.00640
Stddev	.00488	.00093	.00017	.00049	.00672	.00837	.00013	.00010	.00014
%RSD	46.196	.31622	10.210	16.346	47.574	56.792	5.2357	.82012	2.1492

#1	.00711	.29394	.00154	.00264	.00938	.02066	.00242	.01257	.00630
#2	.01402	.29526	.00178	.00333	.01889	.00882	.00261	.01271	.00650

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3533.9	49173.	2632.3
Stddev	7.0	9.	9.7
%RSD	.19799	.01832	.36693

#1	3529.0	49167.	2639.1
#2	3538.8	49180.	2625.4

Sample Name: 280-123577-Q-6-A Acquired: 5/14/2019 23:52:56 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457943 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00120	.00572	.00357	.01008	.04232	.00054	-.00079	89.908	.00025
Stddev	.00032	.00016	.00309	.00102	.00065	.00006	.00225	.232	.00045
%RSD	26.604	2.7559	86.512	10.134	1.5277	11.085	283.17	.25814	176.34

#1	.00097	.00561	.00139	.00936	.04186	.00050	-.00238	89.744	.00057
#2	.00142	.00583	.00575	.01080	.04278	.00058	.00080	90.072	-.00006

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	.00036	.00082	.04036	3.7881	.07580	17.584	.09589	.00055
Stddev	.00018	.00028	.00067	.00013	.1568	.00106	.015	.00018	.00006
%RSD	52.462	77.473	81.405	.32989	4.1391	1.3954	.08798	.18351	10.197

#1	-.00047	.00016	.00130	.04045	3.8990	.07506	17.595	.09601	.00051
#2	-.00021	.00056	.00035	.04027	3.6772	.07655	17.573	.09576	.00059

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	44.583	-.00431	.13855	-.00085	3.3318	.00042	-.00164	9.1592	19.601
Stddev	.339	.00065	.00403	.00142	.0453	.00215	.00842	.0381	.081
%RSD	.75948	15.122	2.9080	168.21	1.3587	508.90	514.63	.41543	.41543

#1	44.344	-.00385	.13570	.00016	3.2998	-.00110	-.00759	9.1861	19.658
#2	44.823	-.00478	.14140	-.00185	3.3639	.00194	.00432	9.1323	19.543

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.37358	-.00269	.00110	.00185	.04387	.00017	.00556	-.00065
Stddev	.00030	.00036	.00084	.00018	.00181	.02661	.00138	.00064	.00274
%RSD	34.802	.09529	31.230	16.095	98.033	60.667	828.74	11.456	419.66

#1	.00064	.37333	-.00328	.00122	.00313	.06269	.00115	.00601	.00128
#2	.00106	.37383	-.00209	.00097	.00057	.02505	-.00081	.00511	-.00259

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3586.3	49225.	2605.8
Stddev	8.0	385.	1.2
%RSD	.22266	.78289	.04603

#1	3591.9	48953.	2605.0
#2	3580.7	49498.	2606.7

Sample Name: 280-123577-AD-7-A Acquired: 5/14/2019 23:55:27 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457943 6010B

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	167.079 {502}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00117	.00124	.00861	.04204	.00016	-.00075	90.815	.00046
Stddev	.00052	.00119	.00056	.00092	.00020	.00009	.00224	.043	.00027
%RSD	133.59	102.01	44.882	10.628	.47790	58.587	297.19	.04743	58.913

#1	.00076	.00033	.00163	.00796	.04190	.00022	-.00233	90.845	.00027
#2	.00002	.00201	.00085	.00926	.04218	.00009	.00083	90.784	.00066

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00024	.00028	.02572	3.6886	.07433	17.516	.09479	.00035
Stddev	.00006	.00004	.00138	.00143	.0147	.00104	.067	.00022	.00029
%RSD	444.42	15.728	485.24	5.5725	.39848	1.4056	.38014	.22749	81.638

#1	-.00003	.00021	-.00069	.02673	3.6782	.07359	17.563	.09494	.00015
#2	.00006	.00027	.00126	.02470	3.6990	.07507	17.469	.09464	.00056

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	44.719	-.00401	.14005	.00078	3.3298	-.00004	.00520	9.1042	19.483
Stddev	.031	.00108	.00267	.00121	.0213	.00317	.00672	.0417	.089
%RSD	.06893	26.897	1.9040	155.65	.63814	7549.9	129.25	.45843	.45843

#1	44.741	-.00325	.13816	.00163	3.3148	-.00228	.00995	9.0747	19.420
#2	44.698	-.00478	.14193	-.00008	3.3448	.00220	.00045	9.1337	19.546

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.37613	-.00061	.00021	.00093	-.03398	.00022	.00506	.00037
Stddev	.00105	.00043	.00252	.00009	.00234	.02067	.00039	.00065	.00048
%RSD	2035.7	.11462	410.28	43.148	251.56	60.816	173.68	12.935	129.90

#1	-.00079	.37643	.00117	.00014	-.00073	-.04860	-.00005	.00459	.00071
#2	.00069	.37582	-.00239	.00027	.00259	-.01937	.00050	.00552	.00003

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3612.9	49897.	2674.3
Stddev	9.0	264.	6.7
%RSD	.25042	.52980	.24881

#1	3606.5	49710.	2669.6
#2	3619.3	50084.	2679.0

Sample Name: CCVH-5699817 Acquired: 5/14/2019 23:58:00 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .01740	45.740	k -.00146	k .00574	k .00310	k .00177	k .93781	k .06568	k -.00008	k .00460	k .00154	k .01288
Stddev	.00107	.040	.00241	.00010	.00057	.00008	.00203	.00072	.00006	.00068	.00014	.00027
%RSD	6.1243	.08683	165.51	1.6983	18.497	4.3076	.21668	1.0887	71.491	14.677	9.2586	2.0844

#1	k .01664	45.768	k .00025	k .00580	k .00270	k .00172	k .93925	k .06619	k -.00012	k .00412	k .00144	k .01269
#2	k .01815	45.712	k -.00316	k .00567	k .00351	k .00182	k .93638	k .06518	k -.00004	k .00508	k .00164	k .01307

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	kF 44.693	.36455	k .00059	k .04929	k .00054	k .00010	249.81	k .00040	k .01072	k .01655	k 4.7042	k -.03139
Stddev	.375	.01784	.00386	.00803	.00009	.00010	.02	.00022	.00043	.00160	.0142	.00469
%RSD	.83922	4.8942	660.36	16.295	15.986	98.732	.00660	55.703	4.0287	9.6834	.30217	14.944

#1	k 44.959	.37717	k -.00215	k .04361	k .00048	k .00003	249.82	k .00024	k .01102	k .01542	k 4.7142	k -.03470
#2	k 44.428	.35194	.00332	k .05497	k .00060	k .00017	249.80	k .00055	k .01041	k .01768	k 4.6941	k -.02807

Check ?	Chk Fail	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None
Value	50.000											
Range	-10.490%											

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.00881	k -.02418	k -.05174	k .00076	.00199	k 5.0106	k .02052	k .00720	k 9.7249	k .01103	k .00257	k .29594
Stddev	.00309	.00118	.00252	.00057	.00002	.0022	.00011	.00043	.0373	.00063	.00055	.00411
%RSD	35.123	4.8779	4.8779	75.093	.95467	.04459	.53235	5.9116	.38388	5.6830	21.509	1.3884

#1	k -.01100	k -.02335	k -.04996	k .00036	.00201	k 5.0121	k .02060	k .00690	k 9.6985	k .01147	k .00296	k .29304
#2	k -.00662	k -.02501	k -.05353	k .00117	.00198	k 5.0090	k .02045	k .00750	k 9.7513	k .01058	k .00218	k .29885

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3606.5	49315.	2659.9
Stddev	1.6	145.	29.2
%RSD	.04359	.29412	1.0970

#1	3605.4	49213.	2639.3
#2	3607.6	49418.	2680.5

Sample Name: CCV-5699804 Acquired: 5/15/2019 0:00:30 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50401	F .63754	.97419	.49070	.49821	.48269	.00563	4.7941	.49602	.50096	.48878	.49607
Stddev	.00005	.06207	.00363	.00131	.00055	.00179	.00161	.0394	.00158	.00139	.00132	.00151
%RSD	.00955	9.7364	.37265	.26791	.10953	.37057	28.682	.82233	.31879	.27677	.27036	.30354

#1	.50405	.59365	.97676	.49163	.49783	.48143	.00677	4.7662	.49714	.50194	.48971	.49713
#2	.50398	.68143	.97162	.48977	.49860	.48396	.00449	4.8219	.49490	.49998	.48785	.49501

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.4427	52.328	1.0447	20.040	.50023	.50003	F 6.1231	.50195	.99073	1.0079	.01689	.97526
Stddev	.0098	.174	.0013	.012	.00015	.00198	.0024	.00166	.00255	.0053	.00995	.00072
%RSD	.39995	.33266	.12071	.05823	.03035	.39573	.03877	.33075	.25714	.52998	58.890	.07355

#1	2.4358	52.205	1.0456	20.049	.50034	.50143	6.1214	.50313	.99254	1.0117	.00986	.97475
#2	2.4496	52.451	1.0438	20.032	.50012	.49863	6.1248	.50078	.98893	1.0042	.02393	.97577

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98063	4.7083	10.076	.98475	.49565	.00697	.49933	.99515	.05957	.49428	.49640	.49638
Stddev	.00753	.0186	.040	.00429	.00252	.00216	.00036	.00151	.00165	.00240	.00044	.00337
%RSD	.76827	.39487	.39487	.43565	.50836	30.964	.07294	.15138	2.7629	.48630	.08854	.67957

#1	.98596	4.7214	10.104	.98779	.49387	.00545	.49907	.99622	.05841	.49598	.49671	.49399
#2	.97530	4.6951	10.048	.98172	.49744	.00850	.49958	.99409	.06074	.49258	.49609	.49876

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3709.2	51166.	2704.6
Stddev	18.3	82.	6.9
%RSD	.49432	.16006	.25418

#1	3696.2	51108.	2699.7
#2	3722.1	51224.	2709.4

Sample Name: CCB Acquired: 5/15/2019 0:02:52 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoadesc Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00712	.00539	.00378	.00099	.00052	-.00321	.01958	.00167	.00195	.00211	.00023
Stddev	.00026	.00408	.00479	.00030	.00080	.00013	.00093	.00038	.00139	.00108	.00108	.00124
%RSD	79.599	57.254	88.762	7.8781	81.070	24.467	29.019	1.9398	83.371	55.323	51.289	547.21
#1	.00014	.00424	.00201	.00357	.00156	.00043	-.00387	.01985	.00069	.00119	.00135	.00110
#2	.00052	.01000	.00878	.00400	.00042	.00061	-.00255	.01932	.00266	.00271	.00288	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02369	.20373	.00188	.01462	.00064	.00487	F .56711	-.00198	.00351	W .00524	.00719	W .00954
Stddev	.00229	.05767	.00358	.00058	.00004	.00300	.02982	.00156	.00241	.00329	.00168	.00481
%RSD	9.6777	28.309	190.20	3.9434	6.7611	61.687	5.2586	79.140	68.770	62.790	23.318	50.448
#1	.02531	.24451	-.00065	.01503	.00061	.00274	.54602	-.00308	.00180	.00291	.00600	.00614
#2	.02207	.16295	.00441	.01421	.00067	.00699	.58820	-.00087	.00521	.00757	.00838	.01295
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Warn
High Limit							.50000			.00450		.00600
Low Limit							-.50000			-.00450		-.00600
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	W .00909	.01619	.03465	.00514	.00006	-.00075	.00078	.00492	.03135	.00098	-.00057	.00436
Stddev	.00152	.00708	.01515	.00255	.00009	.00092	.00004	.00169	.00854	.00096	.00026	.00110
%RSD	16.659	43.736	43.736	49.558	149.09	121.84	5.3761	34.336	27.230	97.671	45.619	25.130
#1	.00802	.02120	.04536	.00334	-.00000	-.00140	.00075	.00373	.03738	.00030	-.00075	.00359
#2	.01017	.01118	.02393	.00694	.00012	-.00010	.00081	.00612	.02531	.00166	-.00039	.00514
Check ?	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.00750											
Low Limit	-.01500											
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3686.2	51328.	2686.5									
Stddev	3.3	149.	15.2									
%RSD	.08859	.29071	.56631									
#1	3683.9	51223.	2697.3									
#2	3688.5	51434.	2675.8									

Sample Name: CCVL-5701318 Acquired: 5/15/2019 0:05:28 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00941	.10729	.01533	.09862	.01038	.00122	.10436	.19940	.00512	.01089	.01011	.01495
Stddev	.00052	.00279	.00095	.00081	.00071	.00013	.00104	.00443	.00029	.00015	.00005	.00073
%RSD	5.4929	2.5993	6.1710	.82345	6.8019	10.409	.99549	2.2196	5.7021	1.4202	.47242	4.8548

#1	.00904	.10532	.01600	.09804	.01088	.00113	.10363	.19627	.00533	.01100	.01007	.01546
#2	.00977	.10926	.01466	.09919	.00989	.00131	.10510	.20253	.00492	.01078	.01014	.01444

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.11112	3.2678	.02097	.20086	.01032	.02072	F 1.5320	.03685	2.8589	.00976	.09484	.02069
Stddev	.00228	.0584	.00037	.00299	.00009	.00001	.0281	.00033	.0048	.00063	.00141	.00211
%RSD	2.0483	1.7865	1.7414	1.4893	.89816	.03834	1.8356	.90865	.16760	6.4592	1.4899	10.185

#1	.11273	3.2265	.02071	.19875	.01038	.02073	1.5121	.03662	2.8555	.00932	.09384	.01920
#2	.10951	3.3091	.02123	.20298	.01025	.02072	1.5518	.03709	2.8623	.01021	.09584	.02218

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							1.0000					
Range							30.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01907	.49285	1.0547	.09971	.00979	.01294	.01027	.01783	F .13502	.00991	.01851	.01694
Stddev	.00138	.07466	.1598	.00149	.00004	.00136	.00088	.00186	.02324	.00013	.00037	.00328
%RSD	7.2347	15.148	15.148	1.4986	.36236	10.542	8.5533	10.435	17.211	1.2815	2.0100	19.351

#1	.01810	.44006	.94172	.10077	.00976	.01391	.01089	.01652	.11858	.01000	.01877	.01926
#2	.02005	.54564	1.1677	.09865	.00981	.01198	.00965	.01915	.15145	.00982	.01824	.01462

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value									.06000			
Range									30.000%			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3721.4	51972.	2716.7
Stddev	1.7	25.	7.0
%RSD	.04617	.04894	.25635

#1	3722.7	51990.	2721.6
#2	3720.2	51954.	2711.8

Sample Name: 280-123577-Q-1-B MS Acquired: 5/15/2019 0:08:01 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457943 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00285	9.7216	1.9880	1.0402	2.0149	.95756	1.9631	145.33	.98484
Stddev	.00022	.0132	.0045	.0014	.0040	.00135	.0038	.25	.00161
%RSD	7.6317	.13558	.22473	.13636	.19689	.14085	.19172	.17263	.16386

#1	.00270	9.7310	1.9848	1.0392	2.0177	.95852	1.9658	145.51	.98598
#2	.00301	9.7123	1.9912	1.0412	2.0120	.95661	1.9605	145.15	.98369

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94615	.95776	.97848	9.5967	56.387	1.1156	64.474	1.1771	1.0009
Stddev	.00114	.00011	.00060	.0447	.017	.0018	.052	.0004	.0010
%RSD	.12083	.01115	.06087	.46562	.02956	.16421	.08034	.03454	.09525

#1	.94696	.95783	.97890	9.6283	56.375	1.1169	64.511	1.1773	1.0015
#2	.94534	.95768	.97806	9.5651	56.399	1.1143	64.437	1.1768	1.0002

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	95.746	.95566	W 20.219	.96024	37.703	.00735	1.9520	10.640	22.770
Stddev	.845	.00026	.022	.00102	.045	.00190	.0036	.011	.022
%RSD	.88282	.02690	.10793	.10588	.12030	25.865	.18251	.09874	.09874

#1	96.343	.95548	20.234	.96096	37.671	.00869	1.9495	10.633	22.754
#2	95.148	.95584	20.203	.95952	37.735	.00600	1.9546	10.647	22.786

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.9375	1.3318	.99795	1.0084	1.8553	2.0910	1.0037	.59807	.50944
Stddev	.0015	.0028	.00017	.0014	.0024	.0114	.0003	.00197	.00567
%RSD	.07611	.21221	.01730	.14061	.12859	.54371	.02683	.32872	1.1131

#1	1.9386	1.3338	.99783	1.0094	1.8570	2.0990	1.0035	.59668	.51345
#2	1.9365	1.3298	.99807	1.0074	1.8537	2.0829	1.0039	.59946	.50543

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3658.2	50119.	2737.2
Stddev	.4	55.	2.1
%RSD	.01087	.11043	.07578

#1	3657.9	50158.	2735.7
#2	3658.4	50080.	2738.6

Sample Name: 280-123577-Q-1-C MSD Acquired: 5/15/2019 0:10:19 Type: Unk
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoadesc Prep Date: Custom ID2: Custom ID3:
Comment: 457943 6010B

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288
Line	328.068 {103}	309.271 {109}	189.042 {478}	208.959 {461}	455.403 { 74}	313.042 {108}	223.061 {451}	317.933 {106}	228.802 {447}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00294	9.8153	1.9756	1.0322	2.0205	.95744	1.9454	147.03	.97452
Stddev	.00066	.0085	.0008	.0024	.0054	.00147	.0076	.16	.00049
%RSD	22.295	.08623	.04303	.22775	.26628	.15338	.38815	.10686	.04986

#1	.00340	9.8213	1.9762	1.0339	2.0167	.95848	1.9401	146.91	.97487
#2	.00248	9.8093	1.9750	1.0305	2.0243	.95641	1.9508	147.14	.97418

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Co2286	Cr2055	Cu3247	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020
Line	228.616 {447}	205.560 {464}	324.754 {104}	259.940 {130}	766.490 { 44}	670.784 { 50}	279.079 {121}2	257.610 {131}	202.030 {467}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93690	.94616	.97425	9.5586	56.433	1.1158	63.834	1.1651	.99224
Stddev	.00077	.00115	.00141	.0110	.015	.0004	.116	.0006	.00124
%RSD	.08270	.12166	.14467	.11518	.02578	.03374	.18125	.05125	.12483

#1	.93745	.94535	.97525	9.5664	56.443	1.1156	63.915	1.1655	.99137
#2	.93635	.94698	.97326	9.5508	56.423	1.1161	63.752	1.1646	.99312

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Elem	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068	Se1960	Si2881	SiO2
Line	818.326 { 41}	231.604 {446}	178.284 {489}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}	288.158 {117}	288.158 {117}2
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	96.841	.94343	W 20.046	.94709	37.744	.00463	1.9388	10.841	23.199
Stddev	.222	.00112	.015	.00488	.060	.00037	.0004	.056	.120
%RSD	.22900	.11913	.07680	.51490	.16016	7.9759	.01826	.51680	.51680

#1	96.684	.94263	20.035	.94364	37.701	.00489	1.9385	10.801	23.114
#2	96.998	.94422	20.057	.95054	37.786	.00437	1.9390	10.880	23.284

Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			20.000						
Low Limit			-6.0000						

Elem	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Line	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}	190.856 {477}	370.152 { 91}	292.402 {115}	206.200 {163}	339.198 { 99}
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.9148	1.3371	.98892	.99806	1.8537	2.0892	.99199	.59442	.51024
Stddev	.0057	.0003	.00030	.00056	.0031	.0030	.00004	.00278	.00156
%RSD	.29715	.01926	.03024	.05561	.16562	.14376	.00391	.46795	.30671

#1	1.9108	1.3369	.98913	.99846	1.8515	2.0913	.99202	.59245	.51134
#2	1.9189	1.3373	.98871	.99767	1.8558	2.0870	.99196	.59639	.50913

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit									
Low Limit									

Int. Std.	Y_2243	Y_3600	Y_3774
Line	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S
Avg	3600.5	49887.	2714.0
Stddev	1.9	47.	1.4
%RSD	.05360	.09380	.05281

#1	3599.1	49920.	2715.0
#2	3601.8	49854.	2713.0

Sample Name: CCVH-5699817 Acquired: 5/15/2019 0:12:37 Type: QC

Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000

User: rhoades Prep Date: Custom ID2: Custom ID3:

Comment:

Elem	Ag3280	Al3092	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .01147	46.201	k .00263	k .01039	k .00393	k .00210	k .95543	k .09580	k .00356	k .00692	k .00509	k .00811
Stddev	.00738	.134	.00284	.00165	.00011	.00016	.01309	.00065	.00094	.00359	.00270	.00701
%RSD	64.335	.29109	108.17	15.843	2.8636	7.7122	1.3702	.67615	26.540	51.952	53.138	86.423

#1	.00625	46.296	.00062	.00923	.00385	.00198	.96469	.09626	.00289	.00438	.00318	.00315
#2	k .01669	46.106	k .00463	k .01156	k .00401	k .00221	k .94618	k .09534	k .00423	k .00946	k .00700	k .01307

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	None	None	None	None	None
Value												
Range												

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na8183	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k 45.199	.51094	.00416	k .07084	k .00180	k .00821	252.18	k .00370	k .06894	k .01331	k 4.8109	k -.01870
Stddev	.406	.04691	.00137	.03201	.00036	.00234	.56	.00171	.03646	.00803	.0691	.01209
%RSD	.89865	9.1804	33.006	45.182	20.020	28.522	.22379	46.249	52.896	60.321	1.4372	64.647

#1	45.487	.54411	.00319	.04821	.00205	.00656	251.78	.00249	.04315	.00763	4.7620	-.01015
#2	k 44.912	.47777	.00513	k .09347	k .00154	k .00987	252.58	k .00490	k .09472	k .01899	k 4.8598	k -.02725

Check ?	Chk Pass	None	None	None	None	None	Chk Pass	None	None	None	Chk Pass	None
Value												
Range												

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.00088	k -.00347	k -.00742	k .00947	.00222	k 4.9010	k .00728	k .01676	k 9.7901	k .00954	k .00281	k .19725
Stddev	.00351	.01507	.03225	.00503	.00004	.1807	.02025	.00283	.0117	.00175	.00068	.13645
%RSD	400.48	434.86	434.86	53.130	1.8375	3.6880	278.15	16.908	.11955	18.288	24.134	69.179

#1	.00160	.00719	.01539	.00591	.00219	4.7732	-.00704	.01475	9.7819	.00831	.00233	.10076
#2	k -.00336	k -.01412	k -.03022	k .01302	.00225	k 5.0289	k .02160	k .01876	k 9.7984	k .01078	k .00329	k .29373

Check ?	None	None	None	None	None	Chk Pass	None	None	Chk Pass	None	None	None
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3594.1	49845.	2652.7
Stddev	11.8	353.	.7
%RSD	.32900	.70790	.02795

#1	3602.5	50095.	2652.2
#2	3585.8	49596.	2653.3

Sample Name: CCV-5699804 Acquired: 5/15/2019 0:15:07 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50800	F .67554	.99097	.49461	.50481	.48645	.00656	4.8588	.50196	.50819	.49529	.50168
Stddev	.00022	.07131	.00927	.00023	.00232	.00300	.00155	.0295	.00007	.00038	.00219	.00024
%RSD	.04359	10.556	.93527	.04625	.45936	.61719	23.671	.60630	.01335	.07494	.44219	.04810

#1	.50816	.62512	.99752	.49445	.50317	.48433	.00766	4.8380	.50200	.50846	.49684	.50151
#2	.50785	.72597	.98441	.49477	.50645	.48858	.00547	4.8797	.50191	.50792	.49374	.50185

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000										
Range		10.000%										

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.4515	52.976	1.0501	20.315	.50625	.50611	F 6.1866	.50737	1.0206	1.0146	.03234	.98147
Stddev	.0201	.236	.0003	.027	.00021	.00127	.0134	.00121	.0004	.0021	.00872	.00365
%RSD	.82103	.44518	.02670	.13436	.04112	.25084	.21686	.23758	.03478	.20495	26.978	.37165

#1	2.4373	52.810	1.0503	20.335	.50610	.50701	6.1771	.50822	1.0203	1.0131	.02617	.98405
#2	2.4657	53.143	1.0499	20.296	.50640	.50521	6.1961	.50652	1.0209	1.0161	.03851	.97889

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value							5.0000					
Range							10.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99977	4.7828	10.235	.99616	.50005	.00588	.50504	1.0045	.03493	.50246	.50070	.49935
Stddev	.00016	.0049	.010	.00115	.00229	.00424	.00003	.0052	.00866	.00175	.00106	.00370
%RSD	.01602	.10145	.10145	.11501	.45887	72.096	.00582	.51885	24.788	.34737	.21127	.74132

#1	.99965	4.7862	10.242	.99535	.49842	.00288	.50502	1.0082	.02881	.50122	.50145	.49673
#2	.99988	4.7794	10.228	.99697	.50167	.00888	.50506	1.0008	.04105	.50369	.49996	.50197

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3595.3	49710.	2645.2
Stddev	3.0	68.	11.5
%RSD	.08369	.13714	.43459

#1	3593.2	49758.	2653.4
#2	3597.4	49661.	2637.1

Sample Name: CCB Acquired: 5/15/2019 0:17:29 Type: QC
 Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
 User: rhoades Prep Date: Custom ID2: Custom ID3:
 Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00128	.00770	.00261	.00370	.00143	.00038	-.00139	.00834	.00169	.00149	.00200	-.00032
Stddev	.00049	.00416	.00279	.00054	.00012	.00019	.00157	.01212	.00122	.00080	.00148	.00009
%RSD	38.115	53.946	106.95	14.544	8.5398	48.756	112.99	145.25	72.137	53.207	74.128	29.083
#1	.00094	.00476	.00458	.00332	.00135	.00025	-.00028	-.00023	.00083	.00093	.00095	-.00038
#2	.00163	.01064	.00064	.00408	.00152	.00051	-.00251	.01691	.00255	.00206	.00305	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00999	.26041	-.00021	.01914	.00039	.00470	F .52696	-.00225	.00769	.00354	.01886	W .00828
Stddev	.00170	.05020	.00333	.00281	.00015	.00162	.02473	.00138	.00352	.00200	.00337	.00140
%RSD	17.046	19.278	1598.3	14.681	39.274	34.462	4.6937	61.480	45.804	56.540	17.887	16.896
#1	.01119	.22491	.00214	.02113	.00029	.00355	.54445	-.00323	.00520	.00212	.02125	.00927
#2	.00878	.29591	-.00256	.01716	.00050	.00584	.50947	-.00127	.01018	.00495	.01647	.00729
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Warn
High Limit							.50000					.00600
Low Limit							-.50000					-.00600
Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00367	-.01621	-.03469	.00355	.00009	-.00096	.00114	.00729	.05273	.00099	.00004	.00590
Stddev	.00492	.03923	.08396	.00248	.00028	.00007	.00050	.00005	.01833	.00078	.00024	.00216
%RSD	134.01	242.03	242.03	69.919	299.95	7.4298	43.875	.65931	34.769	78.464	592.20	36.537
#1	.00715	-.04395	-.09406	.00179	-.00011	-.00101	.00149	.00726	.03977	.00154	.00021	.00743
#2	.00019	.01153	.02468	.00530	.00029	-.00091	.00078	.00732	.06569	.00044	-.00013	.00438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit												
Low Limit												
Int. Std.	Y_2243	Y_3600	Y_3774									
Units	Cts/S	Cts/S	Cts/S									
Avg	3608.7	50321.	2606.3									
Stddev	7.3	73.	10.6									
%RSD	.20325	.14504	.40640									
#1	3603.5	50269.	2598.8									
#2	3613.9	50373.	2613.8									

Sample Name: CCVL-5701318 Acquired: 5/15/2019 0:20:04 Type: QC
Method: 6500_025(v4) Mode: CONC Corr. Factor: 1.000000
User: rhoades Prep Date: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al1670	As1890	B_2089	Ba4554	Be3130	Bi2230	Ca3179	Cd2288	Co2286	Cr2055	Cu3247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00954	.10692	.01518	.09920	.01119	.00108	.10622	.20807	.00521	.01019	.01017	.01433
Stddev	.00063	.00062	.00164	.00055	.00060	.00006	.00291	.00551	.00002	.00020	.00024	.00026
%RSD	6.5926	.58295	10.777	.55665	5.3893	5.8024	2.7396	2.6497	.37746	1.9473	2.3211	1.8103

#1	.00998	.10648	.01634	.09959	.01077	.00113	.10827	.20418	.00522	.01005	.01001	.01414
#2	.00909	.10736	.01402	.09881	.01162	.00104	.10416	.21197	.00520	.01033	.01034	.01451

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Elem	Fe2599	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_1782	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10172	3.3526	.01944	.20948	.01037	.02078	F 1.5450	.03725	2.8468	.00854	.09216	.02057
Stddev	.00224	.1050	.00162	.00343	.00032	.00020	.0409	.00033	.0036	.00102	.00142	.00154
%RSD	2.2033	3.1305	8.3357	1.6369	3.0920	.98293	2.6456	.87773	.12616	11.939	1.5403	7.5025

#1	.10013	3.2783	.01829	.20705	.01014	.02093	1.5161	.03748	2.8494	.00782	.09316	.01947
#2	.10330	3.4268	.02058	.21190	.01059	.02064	1.5739	.03702	2.8443	.00926	.09115	.02166

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							1.0000					
Range							30.000%					

Elem	Se1960	Si2881	SiO2	Sn1899	Sr4077	Th2837	Ti3349	Ti1908	U_3701	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02507	.48635	1.0408	.09975	.01005	.01335	.01013	.01874	.05510	.00922	.01940	.01445
Stddev	.00318	.03980	.0852	.00031	.00005	.00017	.00044	.00351	.00906	.00001	.00065	.00038
%RSD	12.695	8.1833	8.1833	.30809	.45296	1.2946	4.3220	18.739	16.448	.05454	3.3349	2.6507

#1	.02732	.45821	.98056	.09997	.01002	.01323	.01044	.01626	.06151	.00922	.01894	.01417
#2	.02282	.51449	1.1010	.09953	.01009	.01347	.00982	.02123	.04870	.00923	.01986	.01472

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value												
Range												

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	3680.5	50782.	2639.7
Stddev	27.8	254.	7.3
%RSD	.75630	.49967	.27671

#1	3660.8	50603.	2644.9
#2	3700.2	50962.	2634.5

Current Signal

Operator Name Denver Metals
 Acq. Date-Time 2019-05-13 9:37:24 AM
 Instrument Name G3281A JP12422099
 Batch Folder D:\Agilent\ICPMH\1\DATA\051319.b

[No Gas]

Sensitivity



Ch	Mass	Range	Count	Avg Count	RSD%
1	7	50000	30411	29904	1.558
2	59	100000	47339	47388	0.928
3	63	10000	32792	33475	1.533
4	70	5000	2129	2103	1.827
5	80	5000000	2057892	2053370	0.328
6	89	100000	80921	80613	1.235
7	115	100000	77362	75545	2.334
8	118	1000	650	593	9.794
9	137	10000	8539	8743	2.197
10	140	100000	74545	74912	1.027
11	205	50000	39570	40276	1.778
12	6	5000	4103	4167	2.285
13	70/140	5	2.856 %	2.808 %	2.347
14	156/140	2	1.374 %	1.506 %	5.557

Integration Time [sec] 0.1

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	1.03 L/min	Dilution Gas	0.00 L/min
RF Power	1550 W	Option Gas	0.0 %	Auxiliary Gas	0.90 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Q1 Entrance	---	Cell Exit	-50 V
Extract 2	-195.0 V	Q1 Exit	---	Deflect	14.3 V
Omega Bias	-80 V	Cell Focus	---	Plate Bias	-40 V
Omega Lens	9.3 V	Cell Entrance	-30 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Axial Acceleration	---
He Flow	0.0 mL/min	4th Gas Flow	---	OctP RF	180 V
H2 Flow	0.0 mL/min	OctP Bias	-8.0 V	Energy Discrimination	3.0 V

QP Parameters

Mass Gain	140	Axis Gain	1.0017	QP Bias	-5.0 V
Mass Offset	135	Axis Offset	-0.06		

Torch

Current Signal

Torch H	-0.4 mm	Torch V	1.0 mm		
EM					
Discriminator	4.5 mV	Analog HV	1758 V	Pulse HV	1292 V

Meter

Name	Value	Unit
IF/BK Press	1.68E+2	Pa
Water RF/WC/IF	1.36	L/min
Water Temp	22.1	°C
Reflected Power	5	W
Forward Power	1550	W

Current Signal

Operator Name Denver Metals
Acq. Date-Time 2019-05-13 9:37:41 AM
Instrument Name G3281A JP12422099
Batch Folder D:\Agilent\ICPMH\1\DATA\051319.b

[HMI He]

Sensitivity



Ch	Mass	Range	Count	Avg Count	RSD%
1	7	50	18	19	29.356
2	9	200	141	148	11.966
3	25	500	944	942	5.192
4	51	1000	690	678	6.442
5	70	1000	392	432	11.651
6	75	20	17	15	22.682
7	78	20	4	4	50.305
8	59	20000	12707	12537	2.083
9	118	200	139	131	9.788
10	137	5000	1762	1799	5.128
11	140	50000	28185	28690	3.556
12	205	20000	16353	16345	1.536
13	238	50000	24104	24290	1.234
14	70/140	5	1.391 %	1.510 %	13.929
15	156/140	1	0.319 %	0.355 %	9.296

Integration Time [sec] 0.1

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.75 L/min	Dilution Gas	0.28 L/min
RF Power	1550 W	Option Gas	0.0 %	Auxiliary Gas	0.90 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Q1 Entrance	---	Cell Exit	-60 V
Extract 2	-195.0 V	Q1 Exit	---	Deflect	-0.5 V
Omega Bias	-80 V	Cell Focus	---	Plate Bias	-60 V
Omega Lens	9.3 V	Cell Entrance	-40 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Axial Acceleration	---
He Flow	5.0 mL/min	4th Gas Flow	---	OctP RF	200 V
H2 Flow	0.0 mL/min	OctP Bias	-18.0 V	Energy Discrimination	3.0 V

QP Parameters

Mass Gain	140	Axis Gain	1.0017	QP Bias	-15.0 V
Mass Offset	135	Axis Offset	-0.06		

Current Signal

Torch

Torch H -0.4 mm

Torch V 1.0 mm

EM

Discriminator 4.5 mV

Analog HV 1758 V

Pulse HV 1292 V

Meter

Name	Value	Unit
IF/BK Press	1.68E+2	Pa
Water RF/WC/IF	1.36	L/min
Water Temp	22.1	°C
Reflected Power	5	W
Forward Power	1550	W

Current Signal

Operator Name Denver Metals
Acq. Date-Time 2019-05-13 9:38:08 AM
Instrument Name G3281A JP12422099
Batch Folder D:\Agilent\ICPMH\1\DATA\051319.b

[HMI H2]

Sensitivity



Ch	Mass	Range	Count	Avg Count	RSD%
1	7	1000	623	450	32.668
2	9	5000	2474	2028	26.723
3	59	20000	13718	12113	12.549
4	63	2000	5490	4862	15.574
5	70	2000	1209	1151	13.089
6	78	20	10	7	44.238
7	89	100000	63359	60970	2.820
8	115	100000	59423	57779	1.980
9	118	500	371	397	5.176
10	137	10000	6679	6760	3.572
11	140	100000	62550	58820	5.323
12	205	50000	22550	22008	5.466
13	238	50000	23359	25181	11.640
14	70/140	5	1.934 %	1.954 %	10.366
15	156/140	2	1.652 %	1.578 %	5.885

Integration Time [sec] 0.1

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.75 L/min	Dilution Gas	0.28 L/min
RF Power	1550 W	Option Gas	0.0 %	Auxiliary Gas	0.90 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Q1 Entrance	---	Cell Exit	-60 V
Extract 2	-195.0 V	Q1 Exit	---	Deflect	-0.5 V
Omega Bias	-80 V	Cell Focus	---	Plate Bias	-60 V
Omega Lens	9.3 V	Cell Entrance	-40 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Axial Acceleration	---
He Flow	0.0 mL/min	4th Gas Flow	---	OctP RF	200 V
H2 Flow	4.0 mL/min	OctP Bias	-18.0 V	Energy Discrimination	3.0 V

QP Parameters

Mass Gain	140	Axis Gain	1.0017	QP Bias	-15.0 V
Mass Offset	135	Axis Offset	-0.06		

Current Signal

Torch

Torch H -0.4 mm

Torch V 1.0 mm

EM

Discriminator 4.5 mV

Analog HV 1758 V

Pulse HV 1292 V

Meter

Name	Value	Unit
IF/BK Press	1.77E+2	Pa
Water RF/WC/IF	1.37	L/min
Water Temp	22.1	°C
Reflected Power	5	W
Forward Power	1551	W

US EPA Tune Check Report

Operator Name Denver Metals
Acq/Data Batch D:\Agilent\ICPMH\1\DATA\051319.b
Acq. Date-Time 2019-05-13 9:46:03 AM
Report Comment ---
Instrument Name G3281A JP12422099

[HMI H2]

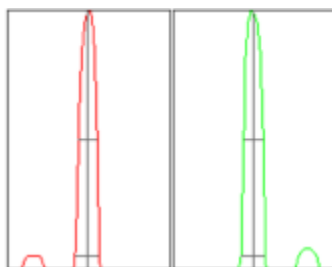
Sensitivity

Mass	Conc. [ug/l]	Count	CPS	RSD%	RSD% (Required)	RSD% (Flag)
7		223	2228.98	2.457	5.000	
9		997	9966.36	1.115	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	228	216	220	221	229
9	982	1004	994	1011	992

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	684.63	7.00	6.90 - 7.10	
9	2822.90	9.00	8.90 - 9.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
7	0.33	0.441	0.750	
9	0.36	0.444	0.750	

Integration Time [sec] 0.1

Acquisition Time [sec] 51.09

Y Axis Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas		Dilution Gas	0.28 L/min
RF Power	1550 W	Option Gas	0.0 %	Auxiliary Gas	0.90 L/min
RF Matching		Nebulizer Pump		Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	9.3 V	Deflect	-0.5 V
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US EPA Tune Check Report

Extract 2 -195.0 V Cell Entrance -40 V Plate Bias -60 V
Omega Bias -80 V Cell Exit -60 V

Cell Parameters

Use Gas Yes 3rd Gas Flow --- Energy Discrimination 0.0 V
He Flow 0.0 mL/min OctP Bias -18.0 V
H2 Flow 4.0 mL/min OctP RF 200 V

QP Parameters

Mass Gain 140 Axis Gain 1.0017 QP Bias -15.0 V
Mass Offset 135 Axis Offset -0.06

Hardware Settings

EM

Discriminator 4.5 mV Analog HV 1758 V Pulse HV 1292 V

Torch

Torch H -0.4 mm Torch V 1.0 mm

[HMI He]

Sensitivity

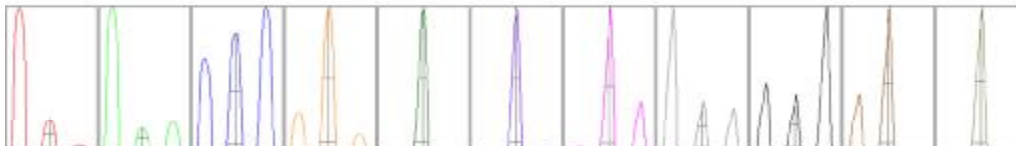
Mass	Conc. [ug/l]	Count	CPS	RSD%	RSD% (Required)	RSD% (Flag)
24		1847	18472.41	1.866	5.000	
25		270	2701.89	3.558	5.000	
26		351	3514.42	1.590	5.000	
59		4272	42720.57	1.001	5.000	
103		9402	94019.48	1.198	5.000	
115		3354	33538.25	1.359	5.000	
205		4346	43462.80	2.162	5.000	
206		1522	15215.67	1.232	5.000	
207		1243	12427.75	1.569	5.000	
208		3174	31737.64	1.738	5.000	
238		6341	63407.84	2.117	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	1856	1844	1888	1854	1793
25	261	267	266	286	271
26	346	352	357	356	346
59	4215	4324	4304	4261	4256
103	9547	9402	9404	9426	9231
115	3360	3333	3420	3295	3361
205	4492	4343	4367	4254	4275
206	1537	1518	1537	1524	1491
207	1274	1234	1230	1249	1227
208	3259	3187	3115	3172	3137
238	6534	6428	6264	6257	6221

US EPA Tune Check Report

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	4944.56	23.95	23.90 - 24.10	
25	728.80	24.95	24.90 - 25.10	
26	935.80	25.95	25.90 - 26.10	
59	12012.59	58.95	58.90 - 59.10	
103	31982.65	103.00	102.90 - 103.10	
115	12057.58	115.00	114.90 - 115.10	
205	14671.16	205.00	204.90 - 205.10	
206	5013.78	206.00	205.90 - 206.10	
207	4214.24	207.00	206.90 - 207.10	
208	11179.81	208.00	207.90 - 208.10	
238	21424.57	238.00	237.90 - 238.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
24	0.38	0.492	0.750	
25	0.38	0.491	0.750	
26	0.38	0.525	0.750	
59	0.36	0.516	0.750	
103	0.29	0.471	0.750	
115	0.27	0.435	0.750	
205	0.29	0.469	0.750	
206	0.30	0.447	0.750	
207	0.30	0.464	0.750	
208	0.29	0.473	0.750	
238	0.30	0.485	0.750	

Integration Time [sec] 0.1

Acquisition Time [sec] 235.339999999997

Y Axis Linear

Tune Parameters

Plasma Parameters

Plasma Mode ---

Nebulizer Gas

Dilution Gas 0.28 L/min

US EPA Tune Check Report

RF Power	1550 W	Option Gas	0.0 %	Auxiliary Gas	0.90 L/min
RF Matching		Nebulizer Pump		Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	9.3 V	Deflect	-0.5 V
Extract 2	-195.0 V	Cell Entrance	-40 V	Plate Bias	-60 V
Omega Bias	-80 V	Cell Exit	-60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	0.0 V
He Flow	5.0 mL/min	OctP Bias	-18.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	140	Axis Gain	1.0017	QP Bias	-15.0 V
Mass Offset	135	Axis Offset	-0.06		

Hardware Settings

EM

Discriminator	4.5 mV	Analog HV	1758 V	Pulse HV	1292 V
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Torch

Torch H	-0.4 mm	Torch V	1.0 mm
---------	---------	---------	--------

[No Gas]

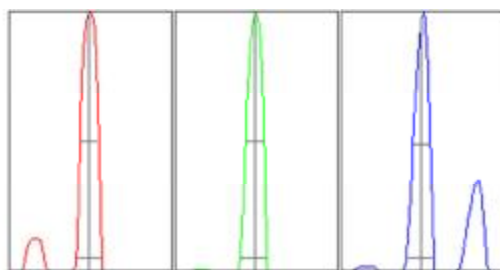
Sensitivity

Mass	Conc. [ug/l]	Count	CPS	RSD%	RSD% (Required)	RSD% (Flag)
7	10.00	9547	95472.75	0.672	5.000	
89		25634	256337.21	0.639	5.000	
205		10631	106307.92	0.479	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	9624	9591	9553	9503	9466
89	25821	25769	25519	25432	25628
205	10677	10640	10555	10675	10607

Integration Time [sec] 0.1

Resolution/Axis



US EPA Tune Check Report

Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	28953.39	7.00	6.90 - 7.10	
89	77391.21	89.00	88.90 - 89.10	
205	34412.12	205.00	204.90 - 205.10	
Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
7	0.33	0.483	0.750	
89	0.34	0.485	0.750	
205	0.31	0.522	0.750	

Integration Time [sec] 0.1
 Acquisition Time [sec] 92.3700000000001
 Y Axis Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas		Dilution Gas	0.00 L/min
RF Power	1550 W	Option Gas	0.0 %	Auxiliary Gas	0.90 L/min
RF Matching		Nebulizer Pump		Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	9.3 V	Deflect	14.3 V
Extract 2	-195.0 V	Cell Entrance	-30 V	Plate Bias	-40 V
Omega Bias	-80 V	Cell Exit	-50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	0.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	180 V		

QP Parameters

Mass Gain	140	Axis Gain	1.0017	QP Bias	-5.0 V
Mass Offset	135	Axis Offset	-0.06		

Hardware Settings

EM

Discriminator	4.5 mV	Analog HV	1758 V	Pulse HV	1292 V
---------------	--------	-----------	--------	----------	--------

Torch

Torch H	-0.4 mm	Torch V	1.0 mm
---------	---------	---------	--------

	Mass (Custom Setting)	Element Name	Current Value	Retain Mass for Startup
	6		0.090590	☒
	9		0.105043	☒
	23		0.117461	☒
	24		0.123145	☒
	27		0.127176	☒
	39		0.128671	☒
	45		0.129071	☒
	48		0.128862	☒
	51		0.130926	☒
	52		0.135799	☒
	55		0.137748	☒
	59		0.142073	☒
	60		0.142701	☒
	63		0.145352	☒
	66		0.145091	☒
	72		0.138610	☒
	75		0.143066	☒
	88		0.145922	☒
	98		0.144895	☒
	102		0.147347	☒
	106		0.151073	☒
	114		0.152753	☒
	115		0.152317	☒
	118		0.151813	☒
	121		0.152074	☒

	Mass (Custom Setting)	Element Name	Current Value	Retain Mass for Startup
	138		0.153322	☒
	175		0.158826	☒
	193		0.158537	☒
	205		0.157280	☒
	208		0.160961	☒
	209		0.160218	☒
	232		0.157799	☒
	238		0.158254	☒

Sample Report

Sample Table

Sample Name	rinse-5699932
Data File Name	001SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\051319.b
Acq Date Time	2019-05-13T10:59:12-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	IS
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-5699932
Data File Name	002SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\051319.b
Acq Date Time	2019-05-13T11:02:45-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	IS
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-5626316
Data File Name	003SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\051319.b
Acq Date Time	2019-05-13T11:06:18-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	PA
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-5626316
Data File Name	004SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\051319.b
Acq Date Time	2019-05-13T11:09:51-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	PA
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-5620980
Data File Name	005SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\051319.b
Acq Date Time	2019-05-13T11:13:24-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	TUNE
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-5620980
Data File Name	006SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\051319.b
Acq Date Time	2019-05-13T11:16:56-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	TUNE
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Calibration Blank Report

Sample Table

Sample Name2 ICIS-5699924
Data File Name 007CALB.d
Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
Method
Acq Date Time 2019-05-13T11:20:27-06:00
Sample Type CalBlk
Level 1
Dilution 1
Comment

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Li	7	45	1	HMI H2	130769	0.00
Li	7	45	3	No Gas	8163367	0.00
B	11	6	1	HMI H2	537	3.71
Na	23	45	2	HMI He	51508	0.00
Mg	24	45	2	HMI He	427	8.25
Al	27	45	2	HMI He	353	2.57
K	39	45	2	HMI He	112796	0.00
Ca	44	45	2	HMI He	293	2.42
V	51	72	2	HMI He	16181	0.02
Cr	52	72	2	HMI He	1793	0.27
Mn	55	72	2	HMI He	300	5.88
Fe	57	72	2	HMI He	1207	0.80
Co	59	72	2	HMI He	6145	0.04
Ni	60	72	2	HMI He	937	1.21
Cu	63	72	2	HMI He	4377	0.14
Zn	66	72	2	HMI He	693	4.01
As	75	72	2	HMI He	195	2.98
Se	78	72	1	HMI H2	29	268.40
Sr	88	45	2	HMI He	160	23.76
Zr	90	72	2	HMI He	293	1.78
Zr	90	72	1	HMI H2	1625	0.11
Nb	93	72	2	HMI He	473	7.17
Mo	95	115	2	HMI He	153	31.92
Pd	105	115	2	HMI He	130	25.79
Ag	107	115	2	HMI He	17	415.69
Cd	111	115	2	HMI He	23	424.18
Sn	120	115	2	HMI He	617	2.90
Sb	121	115	2	HMI He	87	20.34
Ba	137	115	2	HMI He	153	17.19
W	182	165	2	HMI He	3127	0.17
Tl	205	165	2	HMI He	227	12.51
Pb	208	165	2	HMI He	640	1.84
Th	232	165	2	HMI He	350	4.08
U	238	165	2	HMI He	70	61.22

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li-6 Internal Standard	6	1	HMI H2	1051415	1.48
Sc (IS)	45	2	HMI He	4493818	1.74
Sc IS)	45	3	No Gas	128947567	1.04
Ge Internal Standard	72	1	HMI H2	25453947	1.82
Ge Internal Standard	72	2	HMI He	5129673	1.40
In Internal standard	115	2	HMI He	16025016	2.79
Ho-165	165	2	HMI He	34875115	4.21

Calibration Standard Report

Sample Table

Sample Name IC-5699925
 Data File Name 008CAL.S.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 method
 Acq Date Time 2019-05-13T11:23:59-06:00
 Sample Type CalStd
 Level 2
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Li	7	45	1	HMI H2	211114	0.00
Li	7	45	3	No Gas	13434789	0.00
Be	9	6	1	HMI H2	43173	0.00
B	11	6	1	HMI H2	1827	0.77
Na	23	45	2	HMI He	1696666	0.00
Mg	24	45	2	HMI He	653334	0.00
Al	27	45	2	HMI He	188674	0.00
K	39	45	2	HMI He	725689	0.00
Ca	44	45	2	HMI He	45853	0.00
V	51	72	2	HMI He	511996	0.00
Cr	52	72	2	HMI He	663476	0.00
Mn	55	72	2	HMI He	292662	0.00
Fe	57	72	2	HMI He	248548	0.00
Co	59	72	2	HMI He	1043819	0.00
Ni	60	72	2	HMI He	282331	0.00
Cu	63	72	2	HMI He	777021	0.00
Zn	66	72	2	HMI He	112029	0.00
As	75	72	2	HMI He	82879	0.00
Se	78	72	1	HMI H2	65158	0.00
Sr	88	45	2	HMI He	682804	0.00
Zr	90	72	2	HMI He	6161	0.07
Zr	90	72	1	HMI H2	13619	0.01
Nb	93	72	2	HMI He	1289228	0.00
Mo	95	115	2	HMI He	373005	0.00
Pd	105	115	2	HMI He	551313	0.00
Ag	107	115	2	HMI He	1119823	0.00
Cd	111	115	2	HMI He	164120	0.00
Sn	120	115	2	HMI He	468773	0.00
Sb	121	115	2	HMI He	395157	0.00
Ba	137	115	2	HMI He	122899	0.00
W	182	165	2	HMI He	742899	0.00
Pt	195	165	2	HMI He	511438	0.00
Tl	205	165	2	HMI He	1213811	0.00
Pb	208	165	2	HMI He	1661395	0.00
Th	232	165	2	HMI He	1726565	0.00
U	238	165	2	HMI He	1795801	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1076154	4.49	1051415	102.35	60	125	
Sc (IS)	45	2	HMI He	4456353	1.40	4493818	99.17	60	125	
Sc IS)	45	3	No Gas	129946222	0.72	128947567	100.77	60	120	
Ge Internal Standard	72	1	HMI H2	25811836	2.32	25453947	101.41	60	125	
Ge Internal Standard	72	2	HMI He	5074448	1.42	5129673	98.92	60	125	
In Internal standard	115	2	HMI He	16016141	3.69	16025016	99.94	60	125	
Ho-165	165	2	HMI He	36422769	1.14	34875115	104.44	60	125	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name ICV-5699927
 Data File Name 009_ICV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T11:27:28-06:00
 Sample Type ICV
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	1	45	60.700	ppb	12.506	163762	80	75.9	90	110	>+ -10%
Li	7	3	45	75.928	ppb	16.029	10197551	80	94.9	90	110	
Be	9	1	6	40.243	ppb	6.303	17452	40	100.6	90	110	
B	11	1	6	29.626	ppb	7.551	933	40	74.1	90	110	>+ -10%
Na	23	2	45	770.525	ppb	0.706	693009	800	96.3	90	110	
Mg	24	2	45	814.778	ppb	1.140	269496	800	101.8	90	110	
Al	27	2	45	802.157	ppb	1.570	76762	800	100.3	90	110	
K	39	2	45	820.748	ppb	0.478	367972	800	102.6	90	110	
Ca	44	2	45	803.112	ppb	1.532	18804	800	100.4	90	110	
V	51	2	72	39.980	ppb	3.530	214637	40	100.0	90	110	
Cr	52	2	72	39.102	ppb	1.391	260993	40	97.8	90	110	
Mn	55	2	72	41.659	ppb	1.158	122337	40	104.1	90	110	
Fe	57	2	72	785.889	ppb	1.856	98578	800	98.2	90	110	
Co	59	2	72	39.646	ppb	1.531	418422	40	99.1	90	110	
Ni	60	2	72	40.070	ppb	1.603	113902	40	100.2	90	110	
Cu	63	2	72	41.874	ppb	3.374	328401	40	104.7	90	110	
Zn	66	2	72	39.765	ppb	1.066	45039	40	99.4	90	110	
As	75	2	72	40.328	ppb	0.848	33598	40	100.8	90	110	
Se	78	1	72	40.217	ppb	1.979	27055	40	100.5	90	110	
Sr	88	2	45	77.010	ppb	0.805	266052	80	96.3	90	110	
Zr	90	2	72	15.169	ppb	5.374	1183	40	37.9	90	110	>+ -10%
Zr	90	1	72	19.411	ppb	11.532	4098	40	48.5	90	110	>+ -10%
Nb	93	2	72	90.759	ppb	1.746	586351	80	113.4	90	110	>+ -10%
Mo	95	2	115	41.243	ppb	2.731	151640	40	103.1	90	110	
Pd	105	2	115	39.942	ppb	4.261	216782	40	99.9	90	110	
Ag	107	2	115	39.828	ppb	3.283	439159	40	99.6	90	110	
Cd	111	2	115	40.771	ppb	3.723	65948	40	101.9	90	110	
Sn	120	2	115	40.314	ppb	2.735	186558	40	100.8	90	110	
Sb	121	2	115	41.842	ppb	0.840	162901	40	104.6	90	110	
Ba	137	2	115	42.753	ppb	2.725	51813	40	106.9	90	110	
W	182	2	165	39.689	ppb	1.403	292398	40	99.2	90	110	
Pt	195	2	165	38.799	ppb	0.984	195428	40	97.0	90	110	
Tl	205	2	165	38.954	ppb	2.286	465680	40	97.4	90	110	
Pb	208	2	165	39.117	ppb	1.819	640528	40	97.8	90	110	
Th	232	2	165	37.384	ppb	2.585	635950	40	93.5	90	110	
U	238	2	165	38.659	ppb	2.824	683891	40	96.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1081616	5.19	1051415	102.87	60	125	
Sc (IS)	45	2	HMI He	4507171	0.15	4493818	100.30	60	125	
Sc IS)	45	3	No Gas	129937983	2.84	128947567	100.77	60	120	
Ge Internal Standard	72	1	HMI H2	26616158	1.18	25453947	104.57	60	125	
Ge Internal Standard	72	2	HMI He	5082953	1.28	5129673	99.09	60	125	
In Internal standard	115	2	HMI He	15766086	2.72	16025016	98.38	60	125	
Ho-165	165	2	HMI He	35872091	0.46	34875115	102.86	60	125	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name ICB-5699924
 Data File Name 010_ICB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T11:31:38-06:00
 Sample Type ICB
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	7.892	ppb	200.9	135127	0.1	>RL
Li	7	3	5.578	ppb	112.0	8198541	0.05	>RL
Be	9	1	0.015	ppb	114.2	7	0.5	
B	11	1	-5.538	ppb	-99.8	500	0.1	
Na	23	2	0.288	ppb	782.3	50451	25	
Mg	24	2	0.288	ppb	134.5	513	25	
Al	27	2	1.823	ppb	13.0	513	15	
K	39	2	7.882	ppb	200.7	112337	50	
Ca	44	2	-2.843	ppb	-43.1	223	25	
V	51	2	-0.141	ppb	-45.5	15570	1	
Cr	52	2	-0.020	ppb	-23.5	1667	1	
Mn	55	2	0.047	ppb	61.6	440	0.5	
Fe	57	2	1.281	ppb	69.9	1373	25	
Co	59	2	-0.001	ppb	-591.0	6171	0.5	
Ni	60	2	0.040	ppb	57.7	1057	1	
Cu	63	2	-0.044	ppb	-66.2	4057	1	
Zn	66	2	0.078	ppb	92.6	787	5	
As	75	2	-0.009	ppb	-192.9	189	1	
Se	78	1	0.027	ppb	119.5	47	1	
Sr	88	2	0.001	ppb	1075.0	160	1	
Zr	90	2	-0.540	ppb	-143.5	263	1	
Zr	90	1	0.154	ppb	729.7	1665	1	
Nb	93	2	5.435	ppb	5.4	36086	2	>RL
Mo	95	2	0.057	ppb	78.7	357	0.5	
Pd	105	2	0.084	ppb	19.4	577	1	
Ag	107	2	0.016	ppb	46.5	187	1	
Cd	111	2	0.001	ppb	1983.0	23	0.5	
Sn	120	2	0.098	ppb	56.8	1047	1	
Sb	121	2	0.551	ppb	11.9	2220	1	
Ba	137	2	0.022	ppb	187.9	177	0.5	
W	182	2	0.038	ppb	38.6	3601	1	
Pt	195	2	0.009	ppb	115.5	43	1	
Tl	205	2	0.005	ppb	92.6	303	0.1	
Pb	208	2	0.028	ppb	19.4	1153	0.5	
Th	232	2	0.240	ppb	8.3	4557	1	
U	238	2	0.015	ppb	30.8	343	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1120635	1.08	1051415	106.58	60	125	
Sc (IS)	45	2	HMI He	4384031	3.56	4493818	97.56	60	125	
Sc IS)	45	3	No Gas	127259640	0.80	128947567	98.69	60	120	
Ge Internal Standard	72	1	HMI H2	25807805	4.09	25453947	101.39	60	125	
Ge Internal Standard	72	2	HMI He	5160707	1.88	5129673	100.60	60	125	
In Internal standard	115	2	HMI He	15670024	2.46	16025016	97.78	60	125	
Ho-165	165	2	HMI He	36882782	2.64	34875115	105.76	60	125	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name ICVL-5699928
 Data File Name 011LICV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T11:35:23-06:00
 Sample Type LLICV
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	1	6	1.181	ppb	17.674	500	1	118.1	70	130	
Na	23	2	45	51.173	ppb	2.414	93118	50	102.3	70	130	
Mg	24	2	45	55.964	ppb	3.111	18680	50	111.9	70	130	
Al	27	2	45	56.458	ppb	5.943	5661	50	112.9	70	130	
K	39	2	45	117.324	ppb	18.969	147721	100	117.3	70	130	
Ca	44	2	45	39.626	ppb	6.120	1193	50	79.3	70	130	
V	51	2	72	5.095	ppb	7.836	41546	5	101.9	70	130	
Cr	52	2	72	2.335	ppb	5.988	17345	2	116.7	70	130	
Mn	55	2	72	1.396	ppb	7.773	4411	1	139.6	70	130	> +/-30%
Fe	57	2	72	55.399	ppb	9.020	8095	50	110.8	70	130	
Co	59	2	72	1.333	ppb	7.271	20058	1	133.3	70	130	> +/-30%
Ni	60	2	72	1.872	ppb	9.629	6231	1.5	124.8	70	130	
Cu	63	2	72	2.319	ppb	2.509	22405	2	115.9	70	130	
Zn	66	2	72	9.682	ppb	5.074	11564	10	96.8	70	130	
As	75	2	72	5.053	ppb	2.563	4401	5	101.1	70	130	
Se	78	1	72	4.939	ppb	4.804	3240	5	98.8	70	130	
Sr	88	2	45	1.667	ppb	8.592	5841	1	166.7	70	130	> +/-30%
Zr	90	2	72	-0.123	ppb	-1105.542	283	0.5	-24.7	70	130	> +/-30%
Zr	90	1	72	0.405	ppb	600.927	1695	0.5	81.0	70	130	
Nb	93	2	72	4.186	ppb	2.937	27660	2	209.3	70	130	> +/-30%
Mo	95	2	115	2.589	ppb	2.281	9449	2	129.4	70	130	
Pd	105	2	115	0.493	ppb	15.629	2740	1	49.3	70	130	> +/-30%
Ag	107	2	115	5.369	ppb	1.082	57917	5	107.4	70	130	
Cd	111	2	115	1.419	ppb	1.039	2267	1	141.9	70	130	> +/-30%
Sn	120	2	115	10.165	ppb	3.274	46413	10	101.7	70	130	
Sb	121	2	115	2.562	ppb	2.558	9826	2	128.1	70	130	
Ba	137	2	115	1.410	ppb	10.624	1813	1	141.0	70	130	> +/-30%
W	182	2	165	5.005	ppb	5.284	40398	1	500.5	70	130	> +/-30%
Pt	195	2	165	0.371	ppb	1.687	1907	1	37.1	70	130	> +/-30%
Tl	205	2	165	1.336	ppb	1.027	16520	1	133.6	70	130	> +/-30%
Pb	208	2	165	1.290	ppb	10.660	22120	1	129.0	70	130	
Th	232	2	165	2.075	ppb	4.430	36295	2	103.8	70	130	
U	238	2	165	1.296	ppb	5.058	23406	1	129.6	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1050481	3.56	1051415	99.91	60	125	
Sc (IS)	45	2	HMI He	4452614	1.08	4493818	99.08	60	125	
Sc (IS)	45	3	No Gas	131119491	1.41	128947567	101.68	60	120	
Ge Internal Standard	72	1	HMI H2	25762109	2.23	25453947	101.21	60	125	
Ge Internal Standard	72	2	HMI He	5111552	3.18	5129673	99.65	60	125	
In Internal standard	115	2	HMI He	15412084	2.04	16025016	96.18	60	125	
Ho-165	165	2	HMI He	36562661	3.99	34875115	104.84	60	125	

Sample Report

Sample Table

Sample Name rinse-5626316
 Data File Name 012SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T11:40:18-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment PA
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-0.512	ppb	-0.512	-1910.20	8283136	40000	
Be	9	1	6	0.019	ppb	0.019	35.02	8	2000	
B	11	1	6	4.627	ppb	4.627	381.72	610	100	
Na	23	2	45	2.511	ppb	2.511	150.06	53517	400000	
Mg	24	2	45	1.114	ppb	1.114	34.23	797	400000	
Al	27	2	45	3.562	ppb	3.562	33.14	693	400000	
K	39	2	45	9.452	ppb	9.452	183.83	115616	400000	
Ca	44	2	45	-0.784	ppb	-0.784	-188.64	277	400000	
V	51	2	72	0.055	ppb	0.055	84.75	16461	2000	
Cr	52	2	72	-0.017	ppb	-0.017	-127.73	1680	5000	
Mn	55	2	72	0.202	ppb	0.202	23.81	897	10000	
Fe	57	2	72	14.138	ppb	14.138	16.72	2974	400000	
Co	59	2	72	-0.008	ppb	-0.008	-259.11	6058	2000	
Ni	60	2	72	0.030	ppb	0.030	139.56	1023	5000	
Cu	63	2	72	0.233	ppb	0.233	20.94	6201	5000	
Zn	66	2	72	0.612	ppb	0.612	24.32	1383	5000	
As	75	2	72	0.027	ppb	0.027	87.14	218	2000	
Se	78	1	72	-0.003	ppb	-0.003	-234.83	28	2000	
Sr	88	2	45	0.029	ppb	0.029	68.85	257	2000	
Zr	90	2	72	1.901	ppb	1.901	75.71	407	1000	
Zr	90	1	72	0.033	ppb	0.033	3256.98	1675	1000	
Nb	93	2	72	2.345	ppb	2.345	9.54	15744	200	
Mo	95	2	115	0.026	ppb	0.026	25.89	250	2000	
Pd	105	2	115	0.032	ppb	0.032	5.50	307	100	
Ag	107	2	115	0.018	ppb	0.018	15.90	220	100	
Cd	111	2	115	-0.002	ppb	-0.002	-854.14	20	2000	
Sn	120	2	115	0.035	ppb	0.035	72.73	773	2000	
Sb	121	2	115	0.073	ppb	0.073	26.16	373	1000	
Ba	137	2	115	0.072	ppb	0.072	7.47	240	5000	
W	182	2	165	-0.029	ppb	-0.029	-110.01	3064	100	
Pt	195	2	165	0.003	ppb	0.003	91.97	17	100	
Tl	205	2	165	0.008	ppb	0.008	79.00	337	2000	
Pb	208	2	165	0.024	ppb	0.024	28.79	1073	5000	
Th	232	2	165	0.091	ppb	0.091	18.43	1947	2000	
U	238	2	165	0.007	ppb	0.007	48.52	200	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1084687	2.99	1051415	103.16	60	125	
Sc (IS)	45	2	HMI He	4495480	5.11	4493818	100.04	60	125	
Sc IS)	45	3	No Gas	131116875	2.55	128947567	101.68	60	120	
Ge Internal Standard	72	1	HMI H2	26178540	2.14	25453947	102.85	60	125	
Ge Internal Standard	72	2	HMI He	5129720	0.92	5129673	100.00	60	125	
In Internal standard	115	2	HMI He	15932582	1.94	16025016	99.42	60	125	
Ho-165	165	2	HMI He	36520698	1.01	34875115	104.72	60	125	

Sample Report

Sample Table

Sample Name rinse-5626316
 Data File Name 013SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T11:43:51-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment PA
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-0.420	ppb	-0.420	-663.50	8268003	40000	
Be	9	1	6	0.037	ppb	0.037	124.82	17	2000	
B	11	1	6	-8.392	ppb	-8.392	-70.08	457	100	
Na	23	2	45	4.980	ppb	4.980	29.56	53299	400000	
Mg	24	2	45	0.774	ppb	0.774	43.72	653	400000	
Al	27	2	45	4.933	ppb	4.933	38.56	787	400000	
K	39	2	45	30.643	ppb	30.643	60.69	117056	400000	
Ca	44	2	45	0.365	ppb	0.365	604.24	290	400000	
V	51	2	72	-0.278	ppb	-0.278	-81.20	14716	2000	
Cr	52	2	72	-0.012	ppb	-0.012	-52.32	1707	5000	
Mn	55	2	72	0.206	ppb	0.206	34.32	907	10000	
Fe	57	2	72	13.714	ppb	13.714	28.16	2904	400000	
Co	59	2	72	-0.002	ppb	-0.002	-2516.73	6095	2000	
Ni	60	2	72	0.025	ppb	0.025	16.63	1003	5000	
Cu	63	2	72	0.220	ppb	0.220	10.37	6068	5000	
Zn	66	2	72	0.554	ppb	0.554	10.26	1313	5000	
As	75	2	72	0.020	ppb	0.020	206.31	210	2000	
Se	78	1	72	-0.009	ppb	-0.009	-64.24	24	2000	
Sr	88	2	45	0.016	ppb	0.016	118.37	203	2000	
Zr	90	2	72	0.654	ppb	0.654	175.46	330	1000	
Zr	90	1	72	0.446	ppb	0.446	243.18	1705	1000	
Nb	93	2	72	1.778	ppb	1.778	6.21	12001	200	
Mo	95	2	115	0.024	ppb	0.024	22.98	243	2000	
Pd	105	2	115	0.021	ppb	0.021	25.69	247	100	
Ag	107	2	115	0.010	ppb	0.010	38.59	130	100	
Cd	111	2	115	0.000	ppb	0.000	3619.02	23	2000	
Sn	120	2	115	0.060	ppb	0.060	6.72	897	2000	
Sb	121	2	115	0.054	ppb	0.054	12.19	300	1000	
Ba	137	2	115	0.054	ppb	0.054	123.06	220	5000	
W	182	2	165	-0.046	ppb	-0.046	-106.36	2947	100	
Pt	195	2	165	0.002	ppb	0.002	98.69	10	100	
Tl	205	2	165	0.008	ppb	0.008	149.01	337	2000	
Pb	208	2	165	0.022	ppb	0.022	41.28	1033	5000	
Th	232	2	165	0.054	ppb	0.054	5.56	1300	2000	
U	238	2	165	0.004	ppb	0.004	24.73	140	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1107018	1.35	1051415	105.29	60	125	
Sc (IS)	45	2	HMI He	4305219	3.17	4493818	95.80	60	125	
Sc IS)	45	3	No Gas	130783660	1.58	128947567	101.42	60	120	
Ge Internal Standard	72	1	HMI H2	25859564	2.60	25453947	101.59	60	125	
Ge Internal Standard	72	2	HMI He	5108347	2.17	5129673	99.58	60	125	
In Internal standard	115	2	HMI He	16003759	0.21	16025016	99.87	60	125	
Ho-165	165	2	HMI He	36606411	2.76	34875115	104.96	60	125	

Sample Report

Sample Table

Sample Name rinse-5620980
 Data File Name 014SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T11:47:23-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment TUNE
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-1.608	ppb	-1.608	-523.52	8113743	40000	
Be	9	1	6	0.016	ppb	0.016	173.21	7	2000	
B	11	1	6	-7.316	ppb	-7.316	-100.78	453	100	
Na	23	2	45	1.199	ppb	1.199	79.78	52814	400000	
Mg	24	2	45	0.915	ppb	0.915	39.48	733	400000	
Al	27	2	45	3.856	ppb	3.856	31.17	723	400000	
K	39	2	45	11.521	ppb	11.521	109.13	117056	400000	
Ca	44	2	45	-1.387	ppb	-1.387	-68.62	263	400000	
V	51	2	72	-0.287	ppb	-0.287	-57.05	14963	2000	
Cr	52	2	72	-0.027	ppb	-0.027	-42.44	1640	5000	
Mn	55	2	72	0.171	ppb	0.171	19.16	817	10000	
Fe	57	2	72	13.519	ppb	13.519	3.22	2944	400000	
Co	59	2	72	-0.010	ppb	-0.010	-139.58	6131	2000	
Ni	60	2	72	-0.006	ppb	-0.006	-285.13	937	5000	
Cu	63	2	72	0.201	ppb	0.201	17.47	6041	5000	
Zn	66	2	72	0.547	ppb	0.547	5.88	1330	5000	
As	75	2	72	-0.036	ppb	-0.036	-44.13	167	2000	
Se	78	1	72	-0.011	ppb	-0.011	-166.58	23	2000	
Sr	88	2	45	0.037	ppb	0.037	8.63	287	2000	
Zr	90	2	72	0.164	ppb	0.164	745.38	307	1000	
Zr	90	1	72	2.115	ppb	2.115	105.37	1915	1000	
Nb	93	2	72	1.287	ppb	1.287	9.82	8983	200	
Mo	95	2	115	0.021	ppb	0.021	160.71	230	2000	
Pd	105	2	115	0.014	ppb	0.014	130.34	207	100	
Ag	107	2	115	0.011	ppb	0.011	14.87	140	100	
Cd	111	2	115	-0.006	ppb	-0.006	-241.41	13	2000	
Sn	120	2	115	0.024	ppb	0.024	36.70	723	2000	
Sb	121	2	115	0.034	ppb	0.034	39.15	220	1000	
Ba	137	2	115	0.033	ppb	0.033	218.51	193	5000	
W	182	2	165	-0.033	ppb	-0.033	-84.17	3027	100	
Pt	195	2	165	0.003	ppb	0.003	37.24	17	100	
Tl	205	2	165	0.005	ppb	0.005	139.92	300	2000	
Pb	208	2	165	0.009	ppb	0.009	28.47	820	5000	
Th	232	2	165	0.041	ppb	0.041	19.24	1073	2000	
U	238	2	165	0.002	ppb	0.002	124.06	113	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1072111	3.64	1051415	101.97	60	125	
Sc (IS)	45	2	HMI He	4520223	1.61	4493818	100.59	60	125	
Sc IS)	45	3	No Gas	128896534	3.36	128947567	99.96	60	120	
Ge Internal Standard	72	1	HMI H2	26000157	0.91	25453947	102.15	60	125	
Ge Internal Standard	72	2	HMI He	5210878	3.12	5129673	101.58	60	125	
In Internal standard	115	2	HMI He	15909570	0.70	16025016	99.28	60	125	
Ho-165	165	2	HMI He	36450258	3.99	34875115	104.52	60	125	

Sample Report

Sample Table

Sample Name rinse-5620980
 Data File Name 015SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T11:50:56-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment TUNE
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	5.088	ppb	5.088	84.53	8259513	40000	
Be	9	1	6	0.028	ppb	0.028	102.25	12	2000	
B	11	1	6	-0.626	ppb	-0.626	-1170.59	547	100	
Na	23	2	45	1.663	ppb	1.663	51.55	51618	400000	
Mg	24	2	45	0.360	ppb	0.360	106.01	533	400000	
Al	27	2	45	3.936	ppb	3.936	12.49	710	400000	
K	39	2	45	11.918	ppb	11.918	12.99	113691	400000	
Ca	44	2	45	-0.145	ppb	-0.145	-1682.12	283	400000	
V	51	2	72	-0.196	ppb	-0.196	-40.18	14666	2000	
Cr	52	2	72	0.000	ppb	0.000	-7495.70	1727	5000	
Mn	55	2	72	0.210	ppb	0.210	20.25	887	10000	
Fe	57	2	72	15.529	ppb	15.529	11.68	3037	400000	
Co	59	2	72	-0.002	ppb	-0.002	-1268.17	5908	2000	
Ni	60	2	72	0.009	ppb	0.009	227.11	930	5000	
Cu	63	2	72	0.231	ppb	0.231	19.61	5961	5000	
Zn	66	2	72	0.574	ppb	0.574	14.74	1293	5000	
As	75	2	72	0.007	ppb	0.007	940.03	194	2000	
Se	78	1	72	0.020	ppb	0.020	188.30	43	2000	
Sr	88	2	45	0.024	ppb	0.024	73.32	237	2000	
Zr	90	2	72	0.994	ppb	0.994	72.76	340	1000	
Zr	90	1	72	-0.494	ppb	-0.494	-58.70	1602	1000	
Nb	93	2	72	1.065	ppb	1.065	5.43	7148	200	
Mo	95	2	115	0.004	ppb	0.004	602.87	167	2000	
Pd	105	2	115	0.030	ppb	0.030	34.67	293	100	
Ag	107	2	115	0.009	ppb	0.009	39.76	113	100	
Cd	111	2	115	-0.010	ppb	-0.010	-35.11	7	2000	
Sn	120	2	115	0.038	ppb	0.038	11.00	783	2000	
Sb	121	2	115	0.028	ppb	0.028	68.51	193	1000	
Ba	137	2	115	0.017	ppb	0.017	378.01	173	5000	
W	182	2	165	-0.077	ppb	-0.077	-50.14	2607	100	
Pt	195	2	165	0.001	ppb	0.001	86.60	7	100	
Tl	205	2	165	-0.003	ppb	-0.003	-142.94	190	2000	
Pb	208	2	165	0.008	ppb	0.008	84.55	773	5000	
Th	232	2	165	0.030	ppb	0.030	27.82	850	2000	
U	238	2	165	0.002	ppb	0.002	160.42	110	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1080671	4.62	1051415	102.78	60	125	
Sc (IS)	45	2	HMI He	4385120	0.63	4493818	97.58	60	125	
Sc IS)	45	3	No Gas	128392053	0.51	128947567	99.57	60	120	
Ge Internal Standard	72	1	HMI H2	26017437	2.09	25453947	102.21	60	125	
Ge Internal Standard	72	2	HMI He	4947617	1.03	5129673	96.45	60	125	
In Internal standard	115	2	HMI He	15803426	3.61	16025016	98.62	60	125	
Ho-165	165	2	HMI He	35131950	1.20	34875115	100.74	60	125	

Calibration Blank Report

Sample Table

Sample Name2 ICIS-5699924
Data File Name 016CALB.d
Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
Method
Acq Date Time 2019-05-13T11:54:27-06:00
Sample Type CalBlk
Level 1
Dilution 1
Comment

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Li	7	45	1	HMI H2	129198	0.00
Li	7	45	3	No Gas	8141525	0.00
Be	9	6	1	HMI H2	3	5196.15
B	11	6	1	HMI H2	480	2.30
Na	23	45	2	HMI He	49686	0.00
Mg	24	45	2	HMI He	377	5.70
Al	27	45	2	HMI He	313	7.91
K	39	45	2	HMI He	115087	0.00
Ca	44	45	2	HMI He	227	4.50
V	51	72	2	HMI He	16051	0.01
Cr	52	72	2	HMI He	1630	0.62
Mn	55	72	2	HMI He	350	2.94
Fe	57	72	2	HMI He	1383	0.39
Co	59	72	2	HMI He	5691	0.10
Ni	60	72	2	HMI He	927	1.47
Cu	63	72	2	HMI He	4224	0.08
Zn	66	72	2	HMI He	1067	1.80
As	75	72	2	HMI He	192	5.41
Se	78	72	1	HMI H2	21	282.53
Sr	88	45	2	HMI He	170	15.08
Zr	90	72	2	HMI He	263	7.26
Zr	90	72	1	HMI H2	1812	0.46
Nb	93	72	2	HMI He	5238	0.24
Mo	95	115	2	HMI He	150	23.52
Pd	105	115	2	HMI He	193	16.35
Ag	107	115	2	HMI He	63	100.76
Cd	111	115	2	HMI He	20	661.44
Sn	120	115	2	HMI He	610	3.69
Sb	121	115	2	HMI He	170	24.22
Ba	137	115	2	HMI He	80	15.63
W	182	165	2	HMI He	2770	0.12
Pt	195	165	2	HMI He	7	2598.08
Tl	205	165	2	HMI He	293	7.74
Pb	208	165	2	HMI He	860	0.36
Th	232	165	2	HMI He	887	2.23
U	238	165	2	HMI He	70	70.70

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li-6 Internal Standard	6	1	HMI H2	1064431	1.81
Sc (IS)	45	2	HMI He	4396295	1.45
Sc IS)	45	3	No Gas	127813551	1.85
Ge Internal Standard	72	1	HMI H2	25714075	1.25
Ge Internal Standard	72	2	HMI He	5123248	0.79
In Internal standard	115	2	HMI He	16027027	1.30
Ho-165	165	2	HMI He	37248956	2.11

Calibration Standard Report

Sample Table

Sample Name IC-5699925
 Data File Name 017CALS.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 method
 Acq Date Time 2019-05-13T11:57:58-06:00
 Sample Type CalStd
 Level 2
 Dilution 1
 Comment
 ISTD Ref File Name 016CALB.d
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Li	7	45	1	HMI H2	209364	0.00
Li	7	45	3	No Gas	13042399	0.00
Be	9	6	1	HMI H2	43031	0.00
B	11	6	1	HMI H2	1603	0.38
Na	23	45	2	HMI He	1595936	0.00
Mg	24	45	2	HMI He	644603	0.00
Al	27	45	2	HMI He	183288	0.00
K	39	45	2	HMI He	722999	0.00
Ca	44	45	2	HMI He	46315	0.01
V	51	72	2	HMI He	506947	0.00
Cr	52	72	2	HMI He	649982	0.00
Mn	55	72	2	HMI He	286411	0.00
Fe	57	72	2	HMI He	239987	0.00
Co	59	72	2	HMI He	1026218	0.00
Ni	60	72	2	HMI He	274720	0.00
Cu	63	72	2	HMI He	745961	0.00
Zn	66	72	2	HMI He	109921	0.00
As	75	72	2	HMI He	81520	0.00
Se	78	72	1	HMI H2	65587	0.00
Sr	88	45	2	HMI He	669021	0.00
Zr	90	72	2	HMI He	3150	0.15
Zr	90	72	1	HMI H2	8387	0.07
Nb	93	72	2	HMI He	1259342	0.00
Mo	95	115	2	HMI He	362972	0.00
Pd	105	115	2	HMI He	529722	0.00
Ag	107	115	2	HMI He	1087721	0.00
Cd	111	115	2	HMI He	158391	0.00
Sn	120	115	2	HMI He	466666	0.00
Sb	121	115	2	HMI He	387555	0.00
Ba	137	115	2	HMI He	121475	0.00
W	182	165	2	HMI He	711469	0.00
Pt	195	165	2	HMI He	489943	0.00
Tl	205	165	2	HMI He	1167969	0.00
Pb	208	165	2	HMI He	1581000	0.00
Th	232	165	2	HMI He	1617898	0.00
U	238	165	2	HMI He	1713479	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1043007	1.76	1064431	97.99	60	125	
Sc (IS)	45	2	HMI He	4357598	3.08	4396295	99.12	60	125	
Sc IS)	45	3	No Gas	129305968	0.75	127813551	101.17	60	120	
Ge Internal Standard	72	1	HMI H2	25988618	0.75	25714075	101.07	60	125	
Ge Internal Standard	72	2	HMI He	5046635	3.05	5123248	98.50	60	125	
In Internal standard	115	2	HMI He	15501361	1.04	16027027	96.72	60	125	
Ho-165	165	2	HMI He	35362318	2.78	37248956	94.94	60	125	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name ICV-5699927
 Data File Name 018_ICV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T12:01:28-06:00
 Sample Type ICV
 Dilution 1
 Comment
 ISTD Ref File Name 016CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	1	45	83.399	ppb	16.678	162208	80	104.2	90	110	
Li	7	3	45	75.940	ppb	8.048	10072514	80	94.9	90	110	
Be	9	1	6	38.151	ppb	0.629	17529	40	95.4	90	110	
B	11	1	6	34.456	ppb	20.589	917	40	86.1	90	110	>+ -10%
Na	23	2	45	804.572	ppb	5.204	673276	800	100.6	90	110	
Mg	24	2	45	821.394	ppb	3.995	265739	800	102.7	90	110	
Al	27	2	45	818.264	ppb	5.545	75396	800	102.3	90	110	
K	39	2	45	840.414	ppb	6.320	371005	800	105.1	90	110	
Ca	44	2	45	795.458	ppb	6.180	18593	800	99.4	90	110	
V	51	2	72	39.451	ppb	0.676	212034	40	98.6	90	110	
Cr	52	2	72	39.454	ppb	1.168	260512	40	98.6	90	110	
Mn	55	2	72	41.738	ppb	1.098	121167	40	104.3	90	110	
Fe	57	2	72	820.131	ppb	2.626	100395	800	102.5	90	110	
Co	59	2	72	40.448	ppb	1.334	423186	40	101.1	90	110	
Ni	60	2	72	40.077	ppb	0.859	111939	40	100.2	90	110	
Cu	63	2	72	41.709	ppb	2.644	317179	40	104.3	90	110	
Zn	66	2	72	40.371	ppb	1.084	45523	40	100.9	90	110	
As	75	2	72	40.203	ppb	1.545	33270	40	100.5	90	110	
Se	78	1	72	41.309	ppb	3.002	26979	40	103.3	90	110	
Sr	88	2	45	79.676	ppb	3.725	267470	80	99.6	90	110	
Zr	90	2	72	27.299	ppb	8.858	1060	40	68.2	90	110	>+ -10%
Zr	90	1	72	22.746	ppb	18.759	3307	40	56.9	90	110	>+ -10%
Nb	93	2	72	92.056	ppb	0.898	589286	80	115.1	90	110	>+ -10%
Mo	95	2	115	41.942	ppb	5.981	152216	40	104.9	90	110	
Pd	105	2	115	40.917	ppb	4.936	216748	40	102.3	90	110	
Ag	107	2	115	40.226	ppb	5.800	437303	40	100.6	90	110	
Cd	111	2	115	40.919	ppb	4.787	64807	40	102.3	90	110	
Sn	120	2	115	40.662	ppb	4.606	190060	40	101.7	90	110	
Sb	121	2	115	41.916	ppb	6.204	162385	40	104.8	90	110	
Ba	137	2	115	41.783	ppb	3.294	50806	40	104.5	90	110	
W	182	2	165	39.612	ppb	3.513	288735	40	99.0	90	110	
Pt	195	2	165	39.269	ppb	1.743	196040	40	98.2	90	110	
Tl	205	2	165	38.751	ppb	3.007	461058	40	96.9	90	110	
Pb	208	2	165	39.124	ppb	5.132	630321	40	97.8	90	110	
Th	232	2	165	38.775	ppb	0.626	639419	40	96.9	90	110	
U	238	2	165	39.265	ppb	3.316	684483	40	98.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1113451	3.54	1064431	104.61	60	125	
Sc (IS)	45	2	HMI He	4372498	3.92	4396295	99.46	60	125	
Sc IS)	45	3	No Gas	129439276	1.70	127813551	101.27	60	120	
Ge Internal Standard	72	1	HMI H2	25863856	0.32	25714075	100.58	60	125	
Ge Internal Standard	72	2	HMI He	5102292	1.86	5123248	99.59	60	125	
In Internal standard	115	2	HMI He	15516840	4.87	16027027	96.82	60	125	
Ho-165	165	2	HMI He	36025716	2.69	37248956	96.72	60	125	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name ICB-5699924
 Data File Name 019_ICB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T12:05:46-06:00
 Sample Type ICB
 Dilution 1
 Comment
 ISTD Ref File Name 016CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	-2.910	ppb	-227.0	128248	0.1	
Li	7	3	-3.140	ppb	-151.3	8103120	0.05	
Be	9	1	0.004	ppb	284.8	5	0.5	
B	11	1	5.814	ppb	73.5	537	0.1	>RL
Na	23	2	-1.897	ppb	-55.5	48609	25	
Mg	24	2	0.488	ppb	16.1	540	25	
Al	27	2	4.639	ppb	35.3	747	15	
K	39	2	-16.817	ppb	-22.8	110886	50	
Ca	44	2	1.208	ppb	179.2	257	25	
V	51	2	-0.156	ppb	-66.7	15474	1	
Cr	52	2	0.015	ppb	99.2	1753	1	
Mn	55	2	0.052	ppb	53.0	507	0.5	
Fe	57	2	0.282	ppb	497.5	1437	25	
Co	59	2	0.044	ppb	22.8	6231	0.5	
Ni	60	2	-0.033	ppb	-68.1	847	1	
Cu	63	2	-0.041	ppb	-87.9	3967	1	
Zn	66	2	-0.126	ppb	-83.7	940	5	
As	75	2	0.024	ppb	112.2	214	1	
Se	78	1	0.057	ppb	35.7	59	1	
Sr	88	2	0.030	ppb	29.1	273	1	
Zr	90	2	1.340	ppb	287.6	307	1	>RL
Zr	90	1	-0.376	ppb	-557.4	1789	1	
Nb	93	2	5.148	ppb	7.4	38548	2	>RL
Mo	95	2	0.099	ppb	11.7	517	0.5	
Pd	105	2	0.069	ppb	52.1	570	1	
Ag	107	2	0.021	ppb	8.8	297	1	
Cd	111	2	0.000	ppb	-4792.0	20	0.5	
Sn	120	2	0.121	ppb	35.4	1180	1	
Sb	121	2	0.463	ppb	7.9	2007	1	
Ba	137	2	0.057	ppb	65.4	150	0.5	
W	182	2	0.086	ppb	40.5	3284	1	
Pt	195	2	0.011	ppb	35.1	60	1	
Tl	205	2	0.015	ppb	60.6	463	0.1	
Pb	208	2	0.021	ppb	45.5	1170	0.5	
Th	232	2	0.199	ppb	4.4	4127	1	
U	238	2	0.025	ppb	16.8	500	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1043047	4.94	1064431	97.99	60	125	
Sc (IS)	45	2	HMI He	4434290	1.78	4396295	100.86	60	125	
Sc IS)	45	3	No Gas	128373789	2.97	127813551	100.44	60	120	
Ge Internal Standard	72	1	HMI H2	25731400	0.94	25714075	100.07	60	125	
Ge Internal Standard	72	2	HMI He	5190600	0.55	5123248	101.31	60	125	
In Internal standard	115	2	HMI He	15902906	3.50	16027027	99.23	60	125	
Ho-165	165	2	HMI He	35865129	2.66	37248956	96.28	60	125	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name ICVL-5699928
 Data File Name 020LICV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T12:15:10-06:00
 Sample Type LLICV
 Dilution 1
 Comment
 ISTD Ref File Name 016CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	1	6	1.328	ppb	10.008	587	1	132.8	70	130	> +/-30%
Na	23	2	45	49.555	ppb	2.518	90384	50	99.1	70	130	
Mg	24	2	45	54.337	ppb	2.006	18456	50	108.7	70	130	
Al	27	2	45	57.736	ppb	4.915	5774	50	115.5	70	130	
K	39	2	45	91.700	ppb	7.045	146583	100	91.7	70	130	
Ca	44	2	45	36.490	ppb	11.672	1100	50	73.0	70	130	
V	51	2	72	5.083	ppb	10.694	41058	5	101.7	70	130	
Cr	52	2	72	2.402	ppb	5.627	17309	2	120.1	70	130	
Mn	55	2	72	1.339	ppb	4.139	4217	1	133.9	70	130	> +/-30%
Fe	57	2	72	59.602	ppb	0.688	8552	50	119.2	70	130	
Co	59	2	72	1.461	ppb	3.652	20683	1	146.1	70	130	> +/-30%
Ni	60	2	72	1.874	ppb	5.493	6091	1.5	125.0	70	130	
Cu	63	2	72	2.500	ppb	2.685	22912	2	125.0	70	130	
Zn	66	2	72	9.851	ppb	2.836	11871	10	98.5	70	130	
As	75	2	72	5.134	ppb	5.131	4399	5	102.7	70	130	
Se	78	1	72	4.907	ppb	6.142	3244	5	98.1	70	130	
Sr	88	2	45	1.799	ppb	5.795	6388	1	179.9	70	130	> +/-30%
Zr	90	2	72	1.891	ppb	165.345	317	0.5	378.1	70	130	> +/-30%
Zr	90	1	72	-5.166	ppb	-89.958	1495	0.5	-1033.2	70	130	> +/-30%
Nb	93	2	72	2.632	ppb	13.556	21831	2	131.6	70	130	> +/-30%
Mo	95	2	115	2.380	ppb	3.205	8942	2	119.0	70	130	
Pd	105	2	115	0.441	ppb	3.568	2567	1	44.1	70	130	> +/-30%
Ag	107	2	115	5.369	ppb	1.221	59523	5	107.4	70	130	
Cd	111	2	115	1.370	ppb	6.874	2230	1	137.0	70	130	> +/-30%
Sn	120	2	115	9.630	ppb	2.027	46306	10	96.3	70	130	
Sb	121	2	115	2.336	ppb	4.345	9379	2	116.8	70	130	
Ba	137	2	115	1.657	ppb	9.216	2127	1	165.7	70	130	> +/-30%
W	182	2	165	5.206	ppb	3.298	40525	1	520.6	70	130	> +/-30%
Pt	195	2	165	0.423	ppb	11.429	2127	1	42.3	70	130	> +/-30%
Tl	205	2	165	1.350	ppb	2.816	16439	1	135.0	70	130	> +/-30%
Pb	208	2	165	1.320	ppb	4.310	22207	1	132.0	70	130	> +/-30%
Th	232	2	165	2.081	ppb	3.584	35330	2	104.0	70	130	
U	238	2	165	1.380	ppb	2.623	24270	1	138.0	70	130	> +/-30%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1068033	5.18	1064431	100.34	60	125	
Sc (IS)	45	2	HMI He	4497113	1.08	4396295	102.29	60	125	
Sc (IS)	45	3	No Gas	130380350	1.55	127813551	102.01	60	120	
Ge Internal Standard	72	1	HMI H2	26028097	1.06	25714075	101.22	60	125	
Ge Internal Standard	72	2	HMI He	5088686	4.41	5123248	99.33	60	125	
In Internal standard	115	2	HMI He	15783000	0.43	16027027	98.48	60	125	
Ho-165	165	2	HMI He	36250405	2.69	37248956	97.32	60	125	

Sample Report

Sample Table

Sample Name rinse-5626316
 Data File Name 021SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T12:19:51-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment PA
 ISTD Ref FileName 016CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	4.099	ppb	4.099	31.48	8327994	40000	
Be	9	1	6	0.018	ppb	0.018	33.67	12	2000	
B	11	1	6	-10.863	ppb	-10.863	-38.16	360	100	
Na	23	2	45	-2.204	ppb	-2.204	-20.16	49746	400000	
Mg	24	2	45	0.719	ppb	0.719	26.97	633	400000	
Al	27	2	45	4.436	ppb	4.436	22.90	750	400000	
K	39	2	45	-12.432	ppb	-12.432	-89.37	115439	400000	
Ca	44	2	45	2.122	ppb	2.122	212.76	287	400000	
V	51	2	72	-0.291	ppb	-0.291	-62.78	14813	2000	
Cr	52	2	72	0.004	ppb	0.004	295.68	1680	5000	
Mn	55	2	72	0.197	ppb	0.197	9.36	937	10000	
Fe	57	2	72	11.732	ppb	11.732	12.58	2847	400000	
Co	59	2	72	0.038	ppb	0.038	108.75	6185	2000	
Ni	60	2	72	0.039	ppb	0.039	95.07	1050	5000	
Cu	63	2	72	0.240	ppb	0.240	32.45	6118	5000	
Zn	66	2	72	0.107	ppb	0.107	46.67	1207	5000	
As	75	2	72	0.011	ppb	0.011	644.01	202	2000	
Se	78	1	72	0.002	ppb	0.002	235.12	23	2000	
Sr	88	2	45	0.028	ppb	0.028	52.17	273	2000	
Zr	90	2	72	1.730	ppb	1.730	64.73	320	1000	
Zr	90	1	72	-2.194	ppb	-2.194	-49.41	1682	1000	
Nb	93	2	72	1.152	ppb	1.152	13.53	12768	200	
Mo	95	2	115	-0.006	ppb	-0.006	-310.59	127	2000	
Pd	105	2	115	-0.004	ppb	-0.004	-291.14	170	100	
Ag	107	2	115	0.006	ppb	0.006	42.88	133	100	
Cd	111	2	115	0.002	ppb	0.002	211.85	23	2000	
Sn	120	2	115	0.042	ppb	0.042	27.30	817	2000	
Sb	121	2	115	0.033	ppb	0.033	54.55	300	1000	
Ba	137	2	115	0.079	ppb	0.079	21.51	180	5000	
W	182	2	165	0.038	ppb	0.038	99.68	3064	100	
Pt	195	2	165	0.005	ppb	0.005	116.72	30	100	
Tl	205	2	165	0.000	ppb	0.000	663.25	300	2000	
Pb	208	2	165	0.010	ppb	0.010	89.20	1030	5000	
Th	232	2	165	0.049	ppb	0.049	39.84	1720	2000	
U	238	2	165	0.004	ppb	0.004	103.27	147	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1081984	0.95	1064431	101.65	60	125	
Sc (IS)	45	2	HMI He	4559765	0.52	4396295	103.72	60	125	
Sc IS)	45	3	No Gas	129150990	0.28	127813551	101.05	60	120	
Ge Internal Standard	72	1	HMI H2	25905597	2.15	25714075	100.74	60	125	
Ge Internal Standard	72	2	HMI He	5207118	4.05	5123248	101.64	60	125	
In Internal standard	115	2	HMI He	16089495	3.77	16027027	100.39	60	125	
Ho-165	165	2	HMI He	37408229	3.62	37248956	100.43	60	125	

Sample Report

Sample Table

Sample Name rinse-5626316
 Data File Name 022SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T12:23:23-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment PA
 ISTD Ref FileName 016CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	7.426	ppb	7.426	78.20	8470223	40000	
Be	9	1	6	0.003	ppb	0.003	336.74	5	2000	
B	11	1	6	0.177	ppb	0.177	4860.27	490	100	
Na	23	2	45	-0.079	ppb	-0.079	-3150.43	50852	400000	
Mg	24	2	45	1.042	ppb	1.042	13.03	733	400000	
Al	27	2	45	5.727	ppb	5.727	9.91	863	400000	
K	39	2	45	-15.866	ppb	-15.866	-85.64	112973	400000	
Ca	44	2	45	6.350	ppb	6.350	66.82	383	400000	
V	51	2	72	-0.171	ppb	-0.171	-63.44	15477	2000	
Cr	52	2	72	-0.020	ppb	-0.020	-71.29	1523	5000	
Mn	55	2	72	0.153	ppb	0.153	44.59	810	10000	
Fe	57	2	72	13.101	ppb	13.101	20.18	3024	400000	
Co	59	2	72	0.066	ppb	0.066	39.20	6495	2000	
Ni	60	2	72	0.019	ppb	0.019	264.88	997	5000	
Cu	63	2	72	0.239	ppb	0.239	12.09	6131	5000	
Zn	66	2	72	0.271	ppb	0.271	53.40	1393	5000	
As	75	2	72	-0.031	ppb	-0.031	-23.91	169	2000	
Se	78	1	72	0.020	ppb	0.020	245.29	36	2000	
Sr	88	2	45	0.039	ppb	0.039	117.01	307	2000	
Zr	90	2	72	2.625	ppb	2.625	84.32	347	1000	
Zr	90	1	72	-1.623	ppb	-1.623	-95.18	1745	1000	
Nb	93	2	72	0.734	ppb	0.734	19.26	10103	200	
Mo	95	2	115	0.024	ppb	0.024	28.88	243	2000	
Pd	105	2	115	0.003	ppb	0.003	439.05	210	100	
Ag	107	2	115	0.003	ppb	0.003	51.44	103	100	
Cd	111	2	115	-0.010	ppb	-0.010	-34.14	3	2000	
Sn	120	2	115	0.019	ppb	0.019	154.19	707	2000	
Sb	121	2	115	0.017	ppb	0.017	84.09	240	1000	
Ba	137	2	115	0.073	ppb	0.073	58.69	173	5000	
W	182	2	165	-0.001	ppb	-0.001	-1047.63	2770	100	
Pt	195	2	165	0.003	ppb	0.003	72.42	20	100	
Tl	205	2	165	-0.001	ppb	-0.001	-855.95	287	2000	
Pb	208	2	165	0.002	ppb	0.002	482.94	897	5000	
Th	232	2	165	0.012	ppb	0.012	94.80	1097	2000	
U	238	2	165	0.002	ppb	0.002	63.46	100	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1085264	2.92	1064431	101.96	60	125	
Sc (IS)	45	2	HMI He	4506454	1.17	4396295	102.51	60	125	
Sc IS)	45	3	No Gas	130109142	1.24	127813551	101.80	60	120	
Ge Internal Standard	72	1	HMI H2	26258808	4.50	25714075	102.12	60	125	
Ge Internal Standard	72	2	HMI He	5219060	1.74	5123248	101.87	60	125	
In Internal standard	115	2	HMI He	16250740	3.13	16027027	101.40	60	125	
Ho-165	165	2	HMI He	37397318	2.29	37248956	100.40	60	125	

Sample Report

Sample Table

Sample Name rinse-5620980
 Data File Name 023SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T12:26:54-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment TUNE
 ISTD Ref FileName 016CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-2.825	ppb	-2.825	-216.23	8374003	40000	
Be	9	1	6	0.007	ppb	0.007	360.26	7	2000	
B	11	1	6	2.582	ppb	2.582	132.76	523	100	
Na	23	2	45	-2.119	ppb	-2.119	-146.30	49876	400000	
Mg	24	2	45	0.906	ppb	0.906	32.22	700	400000	
Al	27	2	45	3.223	ppb	3.223	24.79	637	400000	
K	39	2	45	-16.179	ppb	-16.179	-48.53	114426	400000	
Ca	44	2	45	4.027	ppb	4.027	42.56	333	400000	
V	51	2	72	-0.284	ppb	-0.284	-28.11	15070	2000	
Cr	52	2	72	0.011	ppb	0.011	231.24	1750	5000	
Mn	55	2	72	0.221	ppb	0.221	30.88	1020	10000	
Fe	57	2	72	12.893	ppb	12.893	23.82	3024	400000	
Co	59	2	72	0.064	ppb	0.064	56.57	6538	2000	
Ni	60	2	72	0.034	ppb	0.034	105.45	1050	5000	
Cu	63	2	72	0.200	ppb	0.200	15.45	5898	5000	
Zn	66	2	72	0.138	ppb	0.138	89.89	1253	5000	
As	75	2	72	-0.001	ppb	-0.001	-5020.80	197	2000	
Se	78	1	72	0.006	ppb	0.006	382.87	25	2000	
Sr	88	2	45	0.023	ppb	0.023	68.53	257	2000	
Zr	90	2	72	0.614	ppb	0.614	208.31	290	1000	
Zr	90	1	72	-0.445	ppb	-0.445	-435.17	1805	1000	
Nb	93	2	72	0.491	ppb	0.491	18.37	8616	200	
Mo	95	2	115	0.009	ppb	0.009	158.46	183	2000	
Pd	105	2	115	-0.009	ppb	-0.009	-84.48	147	100	
Ag	107	2	115	0.007	ppb	0.007	38.01	143	100	
Cd	111	2	115	-0.004	ppb	-0.004	-78.65	13	2000	
Sn	120	2	115	0.040	ppb	0.040	45.65	810	2000	
Sb	121	2	115	0.025	ppb	0.025	86.65	270	1000	
Ba	137	2	115	0.078	ppb	0.078	33.89	180	5000	
W	182	2	165	0.032	ppb	0.032	72.85	3040	100	
Pt	195	2	165	0.002	ppb	0.002	153.19	17	100	
Tl	205	2	165	0.001	ppb	0.001	1688.74	303	2000	
Pb	208	2	165	0.002	ppb	0.002	327.45	903	5000	
Th	232	2	165	0.006	ppb	0.006	63.07	1003	2000	
U	238	2	165	0.001	ppb	0.001	108.63	93	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1092263	0.92	1064431	102.61	60	125	
Sc (IS)	45	2	HMI He	4569328	2.91	4396295	103.94	60	125	
Sc IS)	45	3	No Gas	132512055	0.36	127813551	103.68	60	120	
Ge Internal Standard	72	1	HMI H2	26067686	2.29	25714075	101.38	60	125	
Ge Internal Standard	72	2	HMI He	5272344	3.32	5123248	102.91	60	125	
In Internal standard	115	2	HMI He	16130158	1.28	16027027	100.64	60	125	
Ho-165	165	2	HMI He	37613501	0.43	37248956	100.98	60	125	

Sample Report

Sample Table

Sample Name rinse-5620980
 Data File Name 024SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T12:30:27-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment TUNE
 ISTD Ref FileName 016CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	4.559	ppb	4.559	135.49	8504597	40000	
Be	9	1	6	0.000	ppb	0.000	-2528.26	3	2000	
B	11	1	6	3.169	ppb	3.169	377.93	547	100	
Na	23	2	45	-2.442	ppb	-2.442	-62.83	49960	400000	
Mg	24	2	45	0.851	ppb	0.851	38.08	683	400000	
Al	27	2	45	4.124	ppb	4.124	27.57	727	400000	
K	39	2	45	-28.294	ppb	-28.294	-37.40	111272	400000	
Ca	44	2	45	1.901	ppb	1.901	158.63	283	400000	
V	51	2	72	-0.159	ppb	-0.159	-78.45	15320	2000	
Cr	52	2	72	0.014	ppb	0.014	440.11	1730	5000	
Mn	55	2	72	0.154	ppb	0.154	16.87	800	10000	
Fe	57	2	72	14.646	ppb	14.646	8.28	3170	400000	
Co	59	2	72	0.009	ppb	0.009	431.04	5801	2000	
Ni	60	2	72	0.028	ppb	0.028	141.03	1010	5000	
Cu	63	2	72	0.257	ppb	0.257	5.59	6181	5000	
Zn	66	2	72	0.098	ppb	0.098	224.95	1180	5000	
As	75	2	72	-0.013	ppb	-0.013	-195.89	181	2000	
Se	78	1	72	0.030	ppb	0.030	42.14	43	2000	
Sr	88	2	45	0.024	ppb	0.024	106.94	263	2000	
Zr	90	2	72	2.352	ppb	2.352	148.53	333	1000	
Zr	90	1	72	-0.521	ppb	-0.521	-129.77	1845	1000	
Nb	93	2	72	0.297	ppb	0.297	29.07	7162	200	
Mo	95	2	115	0.010	ppb	0.010	114.27	193	2000	
Pd	105	2	115	-0.006	ppb	-0.006	-51.36	167	100	
Ag	107	2	115	0.006	ppb	0.006	65.10	140	100	
Cd	111	2	115	-0.001	ppb	-0.001	-1082.04	20	2000	
Sn	120	2	115	0.029	ppb	0.029	23.74	777	2000	
Sb	121	2	115	0.011	ppb	0.011	75.72	220	1000	
Ba	137	2	115	0.056	ppb	0.056	67.61	157	5000	
W	182	2	165	0.004	ppb	0.004	1582.34	2894	100	
Pt	195	2	165	0.005	ppb	0.005	157.23	30	100	
Tl	205	2	165	-0.001	ppb	-0.001	-605.10	290	2000	
Pb	208	2	165	0.006	ppb	0.006	97.74	983	5000	
Th	232	2	165	-0.005	ppb	-0.005	-233.49	837	2000	
U	238	2	165	0.002	ppb	0.002	131.50	117	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1128257	2.30	1064431	106.00	60	125	
Sc (IS)	45	2	HMI He	4597545	0.67	4396295	104.58	60	125	
Sc IS)	45	3	No Gas	131703741	0.81	127813551	103.04	60	120	
Ge Internal Standard	72	1	HMI H2	26683009	2.79	25714075	103.77	60	125	
Ge Internal Standard	72	2	HMI He	5142493	0.48	5123248	100.38	60	125	
In Internal standard	115	2	HMI He	16612980	1.88	16027027	103.66	60	125	
Ho-165	165	2	HMI He	38571456	3.67	37248956	103.55	60	125	

Calibration Blank Report

Sample Table

Sample Name2 ICIS-5699924
Data File Name 025CALB.d
Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
Method
Acq Date Time 2019-05-13T12:33:58-06:00
Sample Type CalBlk
Level 1
Dilution 1
Comment

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Li	7	45	1	HMI H2	133076	0.00
Li	7	45	3	No Gas	8409006	0.00
Be	9	6	1	HMI H2	5	2000.00
B	11	6	1	HMI H2	463	6.36
Na	23	45	2	HMI He	48182	0.00
Mg	24	45	2	HMI He	397	1.47
Al	27	45	2	HMI He	403	6.77
K	39	45	2	HMI He	112329	0.00
Ca	44	45	2	HMI He	307	4.03
V	51	72	2	HMI He	14863	0.01
Cr	52	72	2	HMI He	1570	0.85
Mn	55	72	2	HMI He	243	3.90
Fe	57	72	2	HMI He	1270	0.69
Co	59	72	2	HMI He	6181	0.04
Ni	60	72	2	HMI He	953	0.32
Cu	63	72	2	HMI He	4184	0.23
Zn	66	72	2	HMI He	727	0.79
As	75	72	2	HMI He	175	5.11
Se	78	72	1	HMI H2	24	69.44
Sr	88	45	2	HMI He	197	16.82
Zr	90	72	2	HMI He	510	8.35
Zr	90	72	1	HMI H2	2015	0.42
Nb	93	72	2	HMI He	4894	0.19
Mo	95	115	2	HMI He	167	16.23
Pd	105	115	2	HMI He	340	10.80
Ag	107	115	2	HMI He	123	43.77
Cd	111	115	2	HMI He	3	5196.15
Sn	120	115	2	HMI He	637	2.37
Sb	121	115	2	HMI He	237	11.62
Ba	137	115	2	HMI He	137	30.91
W	182	165	2	HMI He	2837	0.21
Pt	195	165	2	HMI He	13	1299.04
Tl	205	165	2	HMI He	243	7.03
Pb	208	165	2	HMI He	907	1.45
Th	232	165	2	HMI He	893	1.74
U	238	165	2	HMI He	60	27.78

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li-6 Internal Standard	6	1	HMI H2	1092921	0.67
Sc (IS)	45	2	HMI He	4591929	2.36
Sc IS)	45	3	No Gas	129634638	3.02
Ge Internal Standard	72	1	HMI H2	26305534	0.85
Ge Internal Standard	72	2	HMI He	5205670	1.34
In Internal standard	115	2	HMI He	16441998	2.11
Ho-165	165	2	HMI He	37362695	3.55

Calibration Standard Report

Sample Table

Sample Name IC-5699925
 Data File Name 026CALB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 method
 Acq Date Time 2019-05-13T12:37:29-06:00
 Sample Type CalStd
 Level 2
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Li	7	45	1	HMI H2	212027	0.00
Li	7	45	3	No Gas	13107329	0.00
Be	9	6	1	HMI H2	44112	0.00
B	11	6	1	HMI H2	1747	0.59
Na	23	45	2	HMI He	1677394	0.00
Mg	24	45	2	HMI He	673438	0.00
Al	27	45	2	HMI He	192067	0.00
K	39	45	2	HMI He	739235	0.00
Ca	44	45	2	HMI He	48574	0.00
V	51	72	2	HMI He	512335	0.00
Cr	52	72	2	HMI He	662739	0.00
Mn	55	72	2	HMI He	295635	0.00
Fe	57	72	2	HMI He	250930	0.00
Co	59	72	2	HMI He	1050281	0.00
Ni	60	72	2	HMI He	281224	0.00
Cu	63	72	2	HMI He	786669	0.00
Zn	66	72	2	HMI He	116132	0.00
As	75	72	2	HMI He	84217	0.00
Se	78	72	1	HMI H2	67221	0.00
Sr	88	45	2	HMI He	687567	0.00
Zr	90	72	2	HMI He	2397	0.24
Zr	90	72	1	HMI H2	6918	0.05
Nb	93	72	2	HMI He	1353605	0.00
Mo	95	115	2	HMI He	383320	0.00
Pd	105	115	2	HMI He	553794	0.00
Ag	107	115	2	HMI He	1117969	0.00
Cd	111	115	2	HMI He	160038	0.00
Sn	120	115	2	HMI He	475243	0.00
Sb	121	115	2	HMI He	401772	0.00
Ba	137	115	2	HMI He	128871	0.00
W	182	165	2	HMI He	745522	0.00
Pt	195	165	2	HMI He	516245	0.00
Tl	205	165	2	HMI He	1266574	0.00
Pb	208	165	2	HMI He	1657771	0.00
Th	232	165	2	HMI He	1644672	0.00
U	238	165	2	HMI He	1793710	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1069735	1.22	1092921	97.88	60	125	
Sc (IS)	45	2	HMI He	4483345	2.70	4591929	97.64	60	125	
Sc IS)	45	3	No Gas	130370056	1.03	129634638	100.57	60	120	
Ge Internal Standard	72	1	HMI H2	27153012	1.80	26305534	103.22	60	125	
Ge Internal Standard	72	2	HMI He	5189152	1.92	5205670	99.68	60	125	
In Internal standard	115	2	HMI He	15920199	1.44	16441998	96.83	60	125	
Ho-165	165	2	HMI He	36195606	3.90	37362695	96.88	60	125	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name ICV-5699927
 Data File Name 027_ICV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T12:40:59-06:00
 Sample Type ICV
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	1	45	86.775	ppb	22.256	167129	80	108.5	90	110	
Li	7	3	45	80.374	ppb	12.637	10366124	80	100.5	90	110	
Be	9	1	6	40.496	ppb	3.498	18301	40	101.2	90	110	
B	11	1	6	35.468	ppb	24.783	933	40	88.7	90	110	>+ -10%
Na	23	2	45	777.910	ppb	2.394	694413	800	97.2	90	110	
Mg	24	2	45	786.195	ppb	3.301	270153	800	98.3	90	110	
Al	27	2	45	785.957	ppb	2.238	77224	800	98.2	90	110	
K	39	2	45	804.368	ppb	2.228	370162	800	100.5	90	110	
Ca	44	2	45	757.489	ppb	1.848	18954	800	94.7	90	110	
V	51	2	72	41.326	ppb	3.317	215885	40	103.3	90	110	
Cr	52	2	72	40.662	ppb	3.244	264831	40	101.7	90	110	
Mn	55	2	72	41.732	ppb	2.965	121005	40	104.3	90	110	
Fe	57	2	72	804.121	ppb	3.477	99567	800	100.5	90	110	
Co	59	2	72	40.718	ppb	4.455	422343	40	101.8	90	110	
Ni	60	2	72	40.320	ppb	1.929	111671	40	100.8	90	110	
Cu	63	2	72	40.923	ppb	4.346	317576	40	102.3	90	110	
Zn	66	2	72	39.985	ppb	0.198	45945	40	100.0	90	110	
As	75	2	72	41.406	ppb	3.274	34259	40	103.5	90	110	
Se	78	1	72	41.384	ppb	0.594	27291	40	103.5	90	110	
Sr	88	2	45	77.964	ppb	3.305	273462	80	97.5	90	110	
Zr	90	2	72	20.741	ppb	13.372	880	40	51.9	90	110	>+ -10%
Zr	90	1	72	23.031	ppb	22.515	3133	40	57.6	90	110	>+ -10%
Nb	93	2	72	90.044	ppb	4.140	599274	80	112.6	90	110	>+ -10%
Mo	95	2	115	39.762	ppb	1.717	155173	40	99.4	90	110	
Pd	105	2	115	38.737	ppb	3.912	218310	40	96.8	90	110	
Ag	107	2	115	39.520	ppb	3.503	449289	40	98.8	90	110	
Cd	111	2	115	40.105	ppb	1.499	65286	40	100.3	90	110	
Sn	120	2	115	39.434	ppb	4.941	190847	40	98.6	90	110	
Sb	121	2	115	40.610	ppb	2.349	166067	40	101.5	90	110	
Ba	137	2	115	40.389	ppb	2.984	53013	40	101.0	90	110	
W	182	2	165	37.763	ppb	6.646	295349	40	94.4	90	110	
Pt	195	2	165	36.939	ppb	6.865	198709	40	92.3	90	110	
Tl	205	2	165	37.422	ppb	5.814	494237	40	93.6	90	110	
Pb	208	2	165	37.992	ppb	3.609	658174	40	95.0	90	110	
Th	232	2	165	38.493	ppb	3.785	661555	40	96.2	90	110	
U	238	2	165	37.574	ppb	2.653	704117	40	93.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1095840	1.66	1092921	100.27	60	125	
Sc (IS)	45	2	HMI He	4571255	1.97	4591929	99.55	60	125	
Sc IS)	45	3	No Gas	130859238	0.83	129634638	100.94	60	120	
Ge Internal Standard	72	1	HMI H2	26624897	0.65	26305534	101.21	60	125	
Ge Internal Standard	72	2	HMI He	5085403	3.42	5205670	97.69	60	125	
In Internal standard	115	2	HMI He	16201143	4.10	16441998	98.54	60	125	
Ho-165	165	2	HMI He	37808488	5.98	37362695	101.19	60	125	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name ICB-5699924
 Data File Name 028_ICB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T12:46:26-06:00
 Sample Type ICB
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	-4.874	ppb	-65.3	133042	0.1	
Li	7	3	0.817	ppb	1123.7	8342146	0.05	>RL
Be	9	1	-0.004	ppb	-319.5	3	0.5	
B	11	1	-0.283	ppb	-2923.3	450	0.1	
Na	23	2	0.642	ppb	180.1	47971	25	
Mg	24	2	0.077	ppb	202.4	417	25	
Al	27	2	0.914	ppb	122.9	487	15	
K	39	2	15.134	ppb	52.1	115429	50	
Ca	44	2	-1.166	ppb	-193.7	273	25	
V	51	2	0.216	ppb	53.9	15681	1	
Cr	52	2	0.029	ppb	124.2	1730	1	
Mn	55	2	0.073	ppb	62.6	453	0.5	
Fe	57	2	9.566	ppb	16.3	2427	25	
Co	59	2	-0.020	ppb	-356.5	5871	0.5	
Ni	60	2	0.014	ppb	39.4	977	1	
Cu	63	2	-0.031	ppb	-85.6	3874	1	
Zn	66	2	0.005	ppb	3994.3	723	5	
As	75	2	0.083	ppb	55.7	241	1	
Se	78	1	0.019	ppb	52.4	36	1	
Sr	88	2	0.000	ppb	14418.2	193	1	
Zr	90	2	-14.313	ppb	-21.3	233	1	
Zr	90	1	-2.016	ppb	-243.9	1902	1	
Nb	93	2	5.471	ppb	10.9	41174	2	>RL
Mo	95	2	0.107	ppb	24.3	583	0.5	
Pd	105	2	0.026	ppb	54.0	480	1	
Ag	107	2	0.013	ppb	37.3	267	1	
Cd	111	2	0.016	ppb	73.3	30	0.5	
Sn	120	2	0.157	ppb	9.8	1387	1	
Sb	121	2	0.748	ppb	6.0	3287	1	
Ba	137	2	0.006	ppb	302.8	143	0.5	
W	182	2	0.123	ppb	10.8	3917	1	
Pt	195	2	0.004	ppb	92.1	37	1	
Tl	205	2	0.022	ppb	41.2	550	0.1	
Pb	208	2	0.025	ppb	67.9	1387	0.5	
Th	232	2	0.302	ppb	9.1	6228	1	
U	238	2	0.027	ppb	18.5	577	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1078659	4.53	1092921	98.70	60	125	
Sc (IS)	45	2	HMI He	4521283	2.16	4591929	98.46	60	125	
Sc IS)	45	3	No Gas	128294349	0.60	129634638	98.97	60	120	
Ge Internal Standard	72	1	HMI H2	26069193	1.43	26305534	99.10	60	125	
Ge Internal Standard	72	2	HMI He	5122678	2.36	5205670	98.41	60	125	
In Internal standard	115	2	HMI He	16189243	1.87	16441998	98.46	60	125	
Ho-165	165	2	HMI He	38648598	2.43	37362695	103.44	60	125	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name ICVL-5699928
 Data File Name 029LICV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T12:49:57-06:00
 Sample Type LLICV
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	1	6	0.910	ppb	11.343	418	1	91.0	70	130	
Na	23	2	45	43.579	ppb	5.138	84234	50	87.2	70	130	
Mg	24	2	45	49.109	ppb	2.160	17258	50	98.2	70	130	
Al	27	2	45	47.436	ppb	8.557	5041	50	94.9	70	130	
K	39	2	45	105.327	ppb	6.929	145736	100	105.3	70	130	
Ca	44	2	45	39.825	ppb	6.801	1287	50	79.7	70	130	
V	51	2	72	5.345	ppb	6.875	40704	5	106.9	70	130	
Cr	52	2	72	2.000	ppb	1.668	14546	2	100.0	70	130	
Mn	55	2	72	0.996	ppb	6.865	3130	1	99.6	70	130	
Fe	57	2	72	50.583	ppb	3.981	7455	50	101.2	70	130	
Co	59	2	72	1.102	ppb	4.929	17386	1	110.2	70	130	
Ni	60	2	72	1.472	ppb	2.906	4994	1.5	98.1	70	130	
Cu	63	2	72	1.939	ppb	2.115	19024	2	97.0	70	130	
Zn	66	2	72	9.720	ppb	4.955	11747	10	97.2	70	130	
As	75	2	72	4.708	ppb	6.173	4061	5	94.2	70	130	
Se	78	1	72	5.193	ppb	8.604	3374	5	103.9	70	130	
Sr	88	2	45	0.988	ppb	8.752	3660	1	98.8	70	130	
Zr	90	2	72	-9.973	ppb	-43.425	313	0.5	-1994.6	70	130	> +/-30%
Zr	90	1	72	-5.565	ppb	-84.559	1739	0.5	-1113.1	70	130	> +/-30%
Nb	93	2	72	3.445	ppb	10.787	27647	2	172.3	70	130	> +/-30%
Mo	95	2	115	1.983	ppb	6.088	7902	2	99.1	70	130	
Pd	105	2	115	0.012	ppb	172.276	407	1	1.2	70	130	> +/-30%
Ag	107	2	115	4.998	ppb	5.906	57018	5	100.0	70	130	
Cd	111	2	115	1.043	ppb	6.089	1703	1	104.3	70	130	
Sn	120	2	115	9.386	ppb	4.620	46011	10	93.9	70	130	
Sb	121	2	115	2.061	ppb	6.870	8659	2	103.1	70	130	
Ba	137	2	115	0.962	ppb	16.702	1393	1	96.2	70	130	
W	182	2	165	4.652	ppb	4.927	39192	1	465.2	70	130	> +/-30%
Pt	195	2	165	0.007	ppb	103.741	50	1	0.7	70	130	> +/-30%
Tl	205	2	165	0.900	ppb	8.798	12212	1	90.0	70	130	
Pb	208	2	165	0.953	ppb	4.002	17521	1	95.3	70	130	
Th	232	2	165	1.920	ppb	1.923	34090	2	96.0	70	130	
U	238	2	165	0.962	ppb	6.563	18191	1	96.2	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1102622	5.01	1092921	100.89	60	125	
Sc (IS)	45	2	HMI He	4573046	0.46	4591929	99.59	60	125	
Sc IS)	45	3	No Gas	130084865	2.57	129634638	100.35	60	120	
Ge Internal Standard	72	1	HMI H2	26070440	2.84	26305534	99.11	60	125	
Ge Internal Standard	72	2	HMI He	5103755	2.18	5205670	98.04	60	125	
In Internal standard	115	2	HMI He	16236942	4.02	16441998	98.75	60	125	
Ho-165	165	2	HMI He	38037785	3.16	37362695	101.81	60	125	

CRI Report

Sample Table

Sample Name CRI-5699929
 Data File Name 030RLST.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T12:58:02-06:00
 Sample Type CRI
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	-0.001	ppb	-625363.834	8505109	10	0.0	50	150	>+ -20%
Be	9	1	6	1.135	ppb	15.768	515	1	113.5	80	120	
Na	23	2	45	46.969	ppb	10.626	87091	100	47.0	80	120	>+ -20%
Mg	24	2	45	21.670	ppb	6.529	7838	100	21.7	80	120	>+ -20%
Al	27	2	45	25.386	ppb	10.163	2890	20	126.9	80	120	>+ -20%
K	39	2	45	31.353	ppb	37.498	122047	20	156.8	80	120	>+ -20%
Ca	44	2	45	159.434	ppb	7.136	4234	20	797.2	80	120	>+ -20%
V	51	2	72	1.014	ppb	10.552	19511	1	101.4	80	120	
Cr	52	2	72	1.058	ppb	5.449	8402	1	105.8	80	120	
Mn	55	2	72	2.041	ppb	8.427	6161	1	204.1	80	120	>+ -20%
Fe	57	2	72	34.335	ppb	9.471	5464	20	171.7	80	120	>+ -20%
Co	59	2	72	1.045	ppb	11.659	16742	1	104.5	80	120	
Ni	60	2	72	1.256	ppb	20.660	4381	1	125.6	80	120	>+ -20%
Cu	63	2	72	3.594	ppb	2.613	31709	1	359.4	80	120	>+ -20%
Zn	66	2	72	4.153	ppb	2.939	5418	1	415.3	80	120	>+ -20%
As	75	2	72	1.061	ppb	8.899	1046	1	106.1	80	120	
Se	78	1	72	1.008	ppb	6.258	684	1	100.8	80	120	
Sr	88	2	45	2.070	ppb	5.018	7462	2	103.5	80	120	
Nb	93	2	72	3.610	ppb	6.038	28695	2	180.5	80	120	>+ -20%
Mo	95	2	115	0.976	ppb	6.092	4011	1	97.6	80	120	
Pd	105	2	115	0.913	ppb	4.343	5528	1	91.3	80	120	
Ag	107	2	115	1.025	ppb	7.318	11888	1	102.5	80	120	
Cd	111	2	115	0.958	ppb	9.300	1580	1	95.8	80	120	
Sn	120	2	115	1.351	ppb	6.742	7215	1	135.1	80	120	>+ -20%
Sb	121	2	115	1.054	ppb	0.918	4584	1	105.4	80	120	
Ba	137	2	115	1.260	ppb	2.158	1803	1	126.0	80	120	>+ -20%
W	182	2	165	0.942	ppb	3.761	10007	1	94.2	80	120	
Pt	195	2	165	0.957	ppb	9.535	5081	1	95.7	80	120	
Tl	205	2	165	0.928	ppb	2.658	12299	1	92.8	80	120	
Pb	208	2	165	1.069	ppb	1.857	19094	1	106.9	80	120	
Th	232	2	165	0.843	ppb	2.661	15118	1	84.3	80	120	
U	238	2	165	0.965	ppb	2.082	17831	1	96.5	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1091903	3.03	1092921	99.91	60	125	
Sc (IS)	45	2	HMI He	4577759	2.09	4591929	99.69	60	125	
Sc IS)	45	3	No Gas	131100128	1.05	129634638	101.13	60	120	
Ge Internal Standard	72	1	HMI H2	26446114	1.70	26305534	100.53	60	125	
Ge Internal Standard	72	2	HMI He	5097607	3.88	5205670	97.92	60	125	
In Internal standard	115	2	HMI He	16362376	2.86	16441998	99.52	60	125	
Ho-165	165	2	HMI He	37138439	1.85	37362695	99.40	60	125	

CRI Report

Sample Table

Sample Name CRI-
Data File Name 031RLST.d
Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
Acq Date Time 2019-05-13T13:06:00-06:00
Sample Type CRI
Dilution 1
Comment
ISTD Ref File Name 025CALB.d
Sample QC Pass/Fail Fail
ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	-5.840	ppb	-110.808	8383825	10	-58.4	50	150	>+ -20%
Be	9	1	6	-0.007	ppb	-84.064	2	1	-0.7	80	120	>+ -20%
Na	23	2	45	-1.426	ppb	-88.181	46591	100	-1.4	80	120	>+ -20%
Mg	24	2	45	-0.078	ppb	-292.751	367	100	-0.1	80	120	>+ -20%
Al	27	2	45	-0.998	ppb	-56.189	303	20	-5.0	80	120	>+ -20%
K	39	2	45	7.838	ppb	76.592	113892	20	39.2	80	120	>+ -20%
Ca	44	2	45	1.863	ppb	119.529	350	20	9.3	80	120	>+ -20%
V	51	2	72	0.157	ppb	51.283	15754	1	15.7	80	120	>+ -20%
Cr	52	2	72	0.031	ppb	99.538	1790	1	3.1	80	120	>+ -20%
Mn	55	2	72	1.202	ppb	7.392	3837	1	120.2	80	120	>+ -20%
Fe	57	2	72	0.161	ppb	621.342	1300	20	0.8	80	120	>+ -20%
Co	59	2	72	-0.035	ppb	-33.903	5858	1	-3.5	80	120	>+ -20%
Ni	60	2	72	2.085	ppb	11.217	6858	1	208.5	80	120	>+ -20%
Cu	63	2	72	2.097	ppb	2.581	20789	1	209.7	80	120	>+ -20%
Zn	66	2	72	8.917	ppb	1.971	11134	1	891.7	80	120	>+ -20%
As	75	2	72	-0.007	ppb	-239.837	170	1	-0.7	80	120	>+ -20%
Se	78	1	72	0.003	ppb	743.512	25	1	0.3	80	120	>+ -20%
Sr	88	2	45	0.036	ppb	8.667	320	2	1.8	80	120	>+ -20%
Nb	93	2	72	0.803	ppb	17.216	10393	2	40.1	80	120	>+ -20%
Mo	95	2	115	0.023	ppb	26.917	250	1	2.3	80	120	>+ -20%
Pd	105	2	115	-0.019	ppb	-69.087	227	1	-1.9	80	120	>+ -20%
Ag	107	2	115	0.001	ppb	131.689	130	1	0.1	80	120	>+ -20%
Cd	111	2	115	0.012	ppb	124.454	23	1	1.2	80	120	>+ -20%
Sn	120	2	115	9.641	ppb	3.583	46517	1	964.1	80	120	>+ -20%
Sb	121	2	115	0.013	ppb	99.613	280	1	1.3	80	120	>+ -20%
Ba	137	2	115	0.979	ppb	5.303	1400	1	97.9	80	120	>+ -20%
W	182	2	165	0.015	ppb	85.988	3090	1	1.5	80	120	>+ -20%
Pt	195	2	165	0.000	ppb	693.963	17	1	0.0	80	120	>+ -20%
Tl	205	2	165	0.006	ppb	66.738	337	1	0.6	80	120	>+ -20%
Pb	208	2	165	-0.008	ppb	-61.131	797	1	-0.8	80	120	>+ -20%
Th	232	2	165	0.079	ppb	16.319	2344	1	7.9	80	120	>+ -20%
U	238	2	165	0.002	ppb	73.109	100	1	0.2	80	120	>+ -20%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1102624	1.69	1092921	100.89	60	125	
Sc (IS)	45	2	HMI He	4551742	0.85	4591929	99.12	60	125	
Sc IS)	45	3	No Gas	131356475	2.34	129634638	101.33	60	120	
Ge Internal Standard	72	1	HMI H2	25895826	3.64	26305534	98.44	60	125	
Ge Internal Standard	72	2	HMI He	5243421	1.91	5205670	100.73	60	125	
In Internal standard	115	2	HMI He	15978089	3.50	16441998	97.18	60	125	
Ho-165	165	2	HMI He	39083842	1.75	37362695	104.61	60	125	

CRI Report

Sample Table

Sample Name CRI5699930
 Data File Name 032_CRI.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T13:10:40-06:00
 Sample Type AFCRI
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	6	0.218	ppb	28.168	103	0.2	109.2	80	120	
Na	23	2	45	6.861	ppb	4.803	53256	20	34.3	80	120	AFCRI Main CR1 Failed
Mg	24	1	45	3.898	ppb	5.987	19347	20	19.5	80	120	AFCRI Main CR1 Failed
Mg	24	2	45	4.533	ppb	11.198	1933	20	22.7	80	120	AFCRI Main CR1 Failed
Al	27	2	45	3.468	ppb	32.504	737	20	17.3	80	120	AFCRI Main CR1 Failed
K	39	2	45	16.853	ppb	64.271	116282	20	84.3	80	120	
Ca	44	2	45	8.177	ppb	59.953	503	20	40.9	80	120	AFCRI Main CR1 Failed
V	51	2	72	0.047	ppb	369.756	15404	0.2	23.5	80	120	AFCRI Main CR1 Failed
Cr	52	2	72	0.216	ppb	17.200	3067	0.2	108.1	80	120	
(Cr)	53	2	72	-0.623	ppb	-83.697	5661	0.2	-311.5	80	120	AFCRI Main CR1 Failed
Mn	55	2	72	0.268	ppb	3.550	1060	0.2	134.2	80	120	AFCRI Main CR1 Failed
Fe	57	2	72	3.962	ppb	32.565	1803	20	19.8	80	120	AFCRI Main CR1 Failed
Co	59	2	72	0.167	ppb	29.045	8089	0.2	83.3	80	120	
Ni	60	2	72	0.176	ppb	6.766	1477	0.2	87.8	80	120	
Cu	63	2	72	0.702	ppb	12.697	9896	0.2	351.2	80	120	AFCRI Main CR1 Failed
Zn	66	2	72	0.308	ppb	65.946	1103	0.2	153.8	80	120	AFCRI Main CR1 Failed
As	75	2	72	0.187	ppb	11.128	339	0.2	93.3	80	120	
Se	78	1	72	0.206	ppb	23.396	160	0.2	102.8	80	120	
(Se)	82	1	72	-1.038	ppb	-32.968	1990	0.2	-519.1	80	120	AFCRI Main CR1 Failed
Sr	88	2	45	0.398	ppb	9.736	1577	0.2	198.9	80	120	AFCRI Main CR1 Failed
Nb	93	2	72	0.739	ppb	9.474	10100	0.4	184.8	80	120	AFCRI Main CR1 Failed
Mo	95	2	115	0.234	ppb	9.791	1107	0.2	116.9	80	120	
Pd	105	2	115	0.134	ppb	9.370	1120	0.2	67.1	80	120	AFCRI Main CR1 Failed
Ag	107	2	115	0.206	ppb	10.688	2527	0.2	103.0	80	120	
Cd	111	2	115	0.179	ppb	13.847	303	0.2	89.6	80	120	
(Cd)	114	2	115	0.180	ppb	12.193	823	0.2	90.0	80	120	
Sn	120	2	115	0.167	ppb	27.547	1467	0.2	83.4	80	120	
Sb	121	2	115	0.184	ppb	2.180	1010	0.2	91.9	80	120	
Ba	137	2	115	0.199	ppb	8.442	407	0.2	99.5	80	120	
W	182	2	165	0.171	ppb	33.985	4187	0.2	85.6	80	120	
Pt	195	2	165	0.156	ppb	9.850	853	0.2	78.2	80	120	AFCRI Main CR1 Failed
Tl	205	2	165	0.168	ppb	11.172	2467	0.2	84.2	80	120	
(Pb)	206	2	165	0.168	ppb	11.392	913	0.2	84.0	80	120	
(Pb)	207	2	165	0.177	ppb	22.109	853	0.2	88.5	80	120	
Pb	208	2	165	0.178	ppb	7.246	3997	0.2	89.2	80	120	
Th	232	2	165	0.127	ppb	5.018	3074	0.2	63.4	80	120	AFCRI Main CR1 Failed
U	238	2	165	0.194	ppb	5.220	3687	0.2	96.8	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1096040	3.29	1092921	100.29	60	125	
Sc (IS)	45	2	HMI He	4534836	2.19	4591929	98.76	60	125	
Sc (IS)	45	3	No Gas	130611603	2.46	129634638	100.75	60	120	
Ge Internal Standard	72	1	HMI H2	26687209	2.26	26305534	101.45	60	125	
Ge Internal Standard	72	2	HMI He	5310728	0.79	5205670	102.02	60	125	
In Internal standard	115	2	HMI He	16639378	3.02	16441998	101.20	60	125	
Ho-165	165	2	HMI He	37714458	2.59	37362695	100.94	60	125	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name ICSA-5695552
 Data File Name 033ICSA.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T13:14:12-06:00
 Sample Type ICSA
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	3.183	ppb	300.6	125271	10	
Li	7	3	45	-13.013	ppb	-64.5	7802727	10	
Be	9	1	6	-0.003	ppb	-438.0	3	1	
B	11	1	6	15.231	ppb	38.5	630	10	>RL or LOD
Na	23	2	45	95303.047	ppb	1.7	74497647	100000	
Mg	24	2	45	98228.422	ppb	0.8	31693104	100000	
Al	27	2	45	100349.864	ppb	3.8	9219976	100000	>RL or LOD
K	39	2	45	98557.368	ppb	0.5	29861283	100000	
V	51	2	72	0.405	ppb	45.8	15864	1	
Cr	52	2	72	1.402	ppb	5.8	10220	1	>RL or LOD
Mn	55	2	72	0.628	ppb	9.7	1977	1	
Co	59	2	72	0.220	ppb	16.3	7972	1	
Ni	60	2	72	0.222	ppb	26.6	1483	1	
Cu	63	2	72	0.240	ppb	4.8	5704	1	
Zn	66	2	72	0.865	ppb	20.8	1623	1	
As	75	2	72	0.097	ppb	9.3	241	1	
Se	78	1	72	0.066	ppb	35.2	63	1	
Sr	88	2	45	1.769	ppb	6.2	6014	1	>RL or LOD
Nb	93	2	72	19.263	ppb	6.2	127043	1	>RL or LOD
Mo	95	2	115	2067.466	ppb	3.2	7553856	2000	>RL or LOD
Pd	105	2	115	-0.033	ppb	-10.4	140	1	
Ag	107	2	115	0.040	ppb	24.6	540	1	
Cd	111	2	115	0.715	ppb	11.4	1093	1	
Sn	120	2	115	0.073	ppb	38.2	920	1	
Sb	121	2	115	0.188	ppb	3.2	940	1	
Ba	137	2	115	0.723	ppb	23.9	1013	1	
W	182	2	165	0.370	ppb	4.6	5681	1	
Pt	195	2	165	0.016	ppb	40.0	100	1	
Tl	205	2	165	0.004	ppb	117.2	297	1	
Pb	208	2	165	0.255	ppb	4.7	5264	1	
Th	232	2	165	0.567	ppb	2.4	10527	1	
U	238	2	165	0.024	ppb	12.5	497	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1037251	1.45	1092921	94.91	60	125	
Sc (IS)	45	2	HMI He	4296623	0.89	4591929	93.57	60	125	
Sc IS)	45	3	No Gas	124762577	2.74	129634638	96.24	60	120	
Ge Internal Standard	72	1	HMI H2	24647056	1.46	26305534	93.70	60	125	
Ge Internal Standard	72	2	HMI He	4892870	0.96	5205670	93.99	60	125	
In Internal standard	115	2	HMI He	15183909	1.41	16441998	92.35	60	125	
Ho-165	165	2	HMI He	37381955	2.43	37362695	100.05	60	125	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name ICSAB-5695553
 Data File Name 034ICSB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T13:17:42-06:00
 Sample Type ICSB
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	1	45	186.151	ppb	2.873	191150	100	186.2	80	120	>+ -20%
Li	7	3	45	167.959	ppb	3.036	12165015	100	168.0	80	120	>+ -20%
Be	9	1	6	94.681	ppb	2.574	38718	100	94.7	80	120	
B	11	1	6	19.279	ppb	42.309	650	100	19.3	80	120	>+ -20%
V	51	2	72	100.982	ppb	1.565	494803	100	101.0	80	120	
Cr	52	2	72	96.543	ppb	0.191	612148	100	96.5	80	120	
Mn	55	2	72	101.474	ppb	2.796	287006	100	101.5	80	120	
Co	59	2	72	95.010	ppb	2.463	954946	100	95.0	80	120	
Ni	60	2	72	95.890	ppb	1.971	258039	100	95.9	80	120	
Cu	63	2	72	94.245	ppb	2.302	709348	100	94.2	80	120	
Zn	66	2	72	95.617	ppb	1.789	106269	100	95.6	80	120	
As	75	2	72	103.040	ppb	1.758	83023	100	103.0	80	120	
Se	78	1	72	106.027	ppb	1.929	63950	100	106.0	80	120	
Sr	88	2	45	197.122	ppb	2.091	668436	100	197.1	80	120	>+ -20%
Zr	90	2	72	120.915	ppb	4.504	2670	100	120.9	80	120	>+ -20%
Zr	90	1	72	118.002	ppb	7.370	6989	100	118.0	80	120	>+ -20%
Nb	93	2	72	269.058	ppb	5.637	1739379	100	269.1	80	120	>+ -20%
Mo	95	2	115	2144.527	ppb	2.248	7850267	100	2144.5	80	120	>+ -20%
Pd	105	2	115	95.841	ppb	1.611	506920	100	95.8	80	120	
Ag	107	2	115	100.245	ppb	2.503	1070116	100	100.2	80	120	
Cd	111	2	115	102.063	ppb	2.412	155993	100	102.1	80	120	
Sn	120	2	115	101.912	ppb	3.215	462446	100	101.9	80	120	
Sb	121	2	115	109.242	ppb	2.170	419232	100	109.2	80	120	
Ba	137	2	115	103.135	ppb	1.391	126936	100	103.1	80	120	
W	182	2	165	99.924	ppb	4.419	761410	100	99.9	80	120	
Pt	195	2	165	94.334	ppb	5.972	497275	100	94.3	80	120	
Tl	205	2	165	91.736	ppb	6.453	1187068	100	91.7	80	120	
Pb	208	2	165	92.104	ppb	2.870	1561990	100	92.1	80	120	
Th	232	2	165	102.953	ppb	7.573	1729932	100	103.0	80	120	
U	238	2	165	97.509	ppb	7.901	1787351	100	97.5	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	992253	4.79	1092921	90.79	60	125	
Sc (IS)	45	2	HMI He	4421224	2.48	4591929	96.28	60	125	
Sc (IS)	45	3	No Gas	128272008	0.89	129634638	98.95	60	120	
Ge Internal Standard	72	1	HMI H2	24370974	2.18	26305534	92.65	60	125	
Ge Internal Standard	72	2	HMI He	4963905	1.26	5205670	95.36	60	125	
In Internal standard	115	2	HMI He	15205069	1.74	16441998	92.48	60	125	
Ho-165	165	2	HMI He	37007416	3.53	37362695	99.05	60	125	

Sample Report

Sample Table

Sample Name RINSE
Data File Name 035SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
Acq Date Time 2019-05-13T13:21:10-06:00
Analyst Denver Metals
Sample Type Sample
Dilution 1
Comment
ISTD Ref FileName 025CALB.d
Sample QC Pass/Fail Pass
ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-14.555	ppb	-14.555	-52.94	7874759	40000	
Be	9	1	6	0.024	ppb	0.024	84.67	15	2000	
B	11	1	6	0.110	ppb	0.110	7086.23	437	100	
Na	23	2	45	83.396	ppb	83.396	4.90	112740	400000	
Mg	24	2	45	11.188	ppb	11.188	3.48	4071	400000	
Al	27	2	45	8.905	ppb	8.905	33.87	1223	400000	
K	39	2	45	18.469	ppb	18.469	20.52	113204	400000	
Ca	44	2	45	2.767	ppb	2.767	141.03	360	400000	
V	51	2	72	0.218	ppb	0.218	39.14	15634	2000	
Cr	52	2	72	0.038	ppb	0.038	69.73	1783	5000	
Mn	55	2	72	0.051	ppb	0.051	45.49	387	10000	
Fe	57	2	72	16.550	ppb	16.550	17.39	3274	400000	
Co	59	2	72	-0.035	ppb	-0.035	-56.45	5691	2000	
Ni	60	2	72	1.089	ppb	1.089	8.88	3931	5000	
Cu	63	2	72	0.080	ppb	0.080	101.95	4711	5000	
Zn	66	2	72	0.036	ppb	0.036	81.29	753	5000	
As	75	2	72	0.030	ppb	0.030	66.69	195	2000	
Se	78	1	72	0.045	ppb	0.045	44.14	52	2000	
Sr	88	2	45	0.006	ppb	0.006	169.84	210	2000	
Zr	90	2	72	-9.777	ppb	-9.777	-15.57	317	1000	
Zr	90	1	72	-7.918	ppb	-7.918	-9.79	1608	1000	
Nb	93	2	72	-0.182	ppb	-0.182	-23.15	3587	200	
Mo	95	2	115	2.094	ppb	2.094	4.43	8192	2000	
Pd	105	2	115	0.035	ppb	0.035	11.49	523	100	
Ag	107	2	115	0.029	ppb	0.029	18.04	440	100	
Cd	111	2	115	0.021	ppb	0.021	48.67	37	2000	
Sn	120	2	115	0.065	ppb	0.065	13.85	927	2000	
Sb	121	2	115	0.039	ppb	0.039	47.13	383	1000	
Ba	137	2	115	0.053	ppb	0.053	184.14	200	5000	
W	182	2	165	0.032	ppb	0.032	56.88	3117	100	
Pt	195	2	165	0.008	ppb	0.008	106.23	57	100	
Tl	205	2	165	0.032	ppb	0.032	10.02	667	2000	
Pb	208	2	165	0.020	ppb	0.020	52.69	1260	5000	
Th	232	2	165	-0.001	ppb	-0.001	-519.02	877	2000	
U	238	2	165	0.032	ppb	0.032	12.36	667	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1030035	1.55	1092921	94.25	60	125	
Sc (IS)	45	2	HMI He	4393831	1.12	4591929	95.69	60	125	
Sc IS)	45	3	No Gas	126439698	1.02	129634638	97.54	60	120	
Ge Internal Standard	72	1	HMI H2	25733692	2.43	26305534	97.83	60	125	
Ge Internal Standard	72	2	HMI He	5101598	2.91	5205670	98.00	60	125	
In Internal standard	115	2	HMI He	15944347	3.83	16441998	96.97	60	125	
Ho-165	165	2	HMI He	37668492	1.72	37362695	100.82	60	125	

Linear Range Sample (LRS) Report

Sample Table

Sample Name LRA-5680342
 Data File Name 036_LR.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T13:24:43-06:00
 Sample Type LR
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	1	6	1968.470	ppb	5.315	819498	2000	98.4	90	110	
V	51	2	72	2030.703	ppb	2.635	9531626	2000	101.5	90	110	
Cr	52	2	72	4991.274	ppb	3.311	31079231	5000	99.8	90	110	
(Cr)	53	2	72	5276.289	ppb	5.498	3866666	5000	105.5	90	110	
Mn	55	2	72	10184.833	ppb	4.236	28329172	10000	101.8	90	110	
Co	59	2	72	2003.322	ppb	3.942	19701559	2000	100.2	90	110	
Ni	60	2	72	5066.214	ppb	4.164	13377454	5000	101.3	90	110	
Cu	63	2	72	5035.485	ppb	2.126	37127891	5000	100.7	90	110	
Zn	66	2	72	5026.520	ppb	0.749	5469745	5000	100.5	90	110	
As	75	2	72	1987.608	ppb	2.355	1574042	2000	99.4	90	110	
Se	78	1	72	2061.913	ppb	2.251	1296030	2000	103.1	90	110	
(Se)	82	1	72	1837.027	ppb	2.742	541186	2000	91.9	90	110	
Mo	95	2	115	2014.455	ppb	1.321	7530279	2000	100.7	90	110	
Cd	111	2	115	2134.940	ppb	2.176	3332245	2000	106.7	90	110	
(Cd)	114	2	115	2073.886	ppb	0.626	8178765	2000	103.7	90	110	
Sn	120	2	115	2018.278	ppb	3.452	9346285	2000	100.9	90	110	
Sb	121	2	115	1066.327	ppb	3.489	4176559	1000	106.6	90	110	
Ba	137	2	115	4833.174	ppb	1.316	6069986	5000	96.7	90	110	
Tl	205	2	165	950.321	ppb	5.957	12369642	1000	95.0	90	110	
(Pb)	206	2	165	4838.471	ppb	4.185	19968062	5000	96.8	90	110	
(Pb)	207	2	165	5091.591	ppb	5.388	18593470	5000	101.8	90	110	
Pb	208	2	165	5056.601	ppb	4.511	86177394	5000	101.1	90	110	
Th	232	2	165	968.019	ppb	2.128	16372747	1000	96.8	90	110	
U	238	2	165	1948.460	ppb	2.524	35960251	2000	97.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1011065	4.54	1092921	92.51	60	125	
Sc (IS)	45	2	HMI He	4087307	0.60	4591929	89.01	60	125	
Sc IS)	45	3	No Gas	123372034	1.00	129634638	95.17	60	120	
Ge Internal Standard	72	1	HMI H2	25405082	1.69	26305534	96.58	60	125	
Ge Internal Standard	72	2	HMI He	4891791	5.07	5205670	93.97	60	125	
In Internal standard	115	2	HMI He	15529671	0.97	16441998	94.45	60	125	
Ho-165	165	2	HMI He	37210317	1.72	37362695	99.59	60	125	

Sample Report

Sample Table

Sample Name RINSE
 Data File Name 037SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T13:28:08-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-14.992	ppb	-14.992	-27.67	7541956	40000	
Be	9	1	6	0.494	ppb	0.494	8.25	208	2000	
B	11	1	6	-11.320	ppb	-11.320	-28.22	287	100	
Na	23	2	45	28.543	ppb	28.543	7.86	65061	400000	
Mg	24	2	45	3.311	ppb	3.311	10.98	1390	400000	
Al	27	2	45	3.091	ppb	3.091	65.10	640	400000	
K	39	2	45	8.398	ppb	8.398	111.05	103935	400000	
Ca	44	2	45	-0.477	ppb	-0.477	-434.59	267	400000	
V	51	2	72	-0.081	ppb	-0.081	-130.99	13569	2000	
Cr	52	2	72	0.444	ppb	0.444	10.58	4241	5000	
Mn	55	2	72	0.902	ppb	0.902	4.21	2737	10000	
Fe	57	2	72	6.166	ppb	6.166	22.07	1920	400000	
Co	59	2	72	0.187	ppb	0.187	26.28	7642	2000	
Ni	60	2	72	0.430	ppb	0.430	3.99	2030	5000	
Cu	63	2	72	0.586	ppb	0.586	8.23	8252	5000	
Zn	66	2	72	0.924	ppb	0.924	20.83	1683	5000	
As	75	2	72	0.363	ppb	0.363	16.77	452	2000	
Se	78	1	72	0.836	ppb	0.836	7.43	533	2000	
Sr	88	2	45	0.008	ppb	0.008	65.63	203	2000	
Zr	90	2	72	-10.910	ppb	-10.910	-8.35	283	1000	
Zr	90	1	72	-8.272	ppb	-8.272	-64.76	1528	1000	
Nb	93	2	72	-0.493	ppb	-0.493	-2.63	1470	200	
Mo	95	2	115	2.378	ppb	2.378	3.24	9273	2000	
Pd	105	2	115	-0.013	ppb	-0.013	-68.47	257	100	
Ag	107	2	115	0.006	ppb	0.006	108.01	183	100	
Cd	111	2	115	0.211	ppb	0.211	15.83	340	2000	
Sn	120	2	115	3.873	ppb	3.873	1.53	18991	2000	
Sb	121	2	115	8.138	ppb	8.138	5.42	32900	1000	
Ba	137	2	115	0.482	ppb	0.482	17.56	753	5000	
W	182	2	165	-0.018	ppb	-0.018	-66.92	2710	100	
Pt	195	2	165	0.002	ppb	0.002	216.74	23	100	
Tl	205	2	165	0.189	ppb	0.189	5.31	2717	2000	
Pb	208	2	165	1.117	ppb	1.117	4.84	20056	5000	
Th	232	2	165	1.924	ppb	1.924	4.65	33602	2000	
U	238	2	165	0.631	ppb	0.631	6.59	11772	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1000155	1.23	1092921	91.51	60	125	
Sc (IS)	45	2	HMI He	4148153	0.94	4591929	90.34	60	125	
Sc IS)	45	3	No Gas	121218330	1.58	129634638	93.51	60	120	
Ge Internal Standard	72	1	HMI H2	24667873	1.16	26305534	93.77	60	125	
Ge Internal Standard	72	2	HMI He	4888417	2.69	5205670	93.91	60	125	
In Internal standard	115	2	HMI He	15915408	0.78	16441998	96.80	60	125	
Ho-165	165	2	HMI He	37403361	0.16	37362695	100.11	60	125	

Sample Report

Sample Table

Sample Name RINSE
 Data File Name 038SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T13:31:41-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-8.356	ppb	-8.356	-90.16	7672944	40000	
Be	9	1	6	0.092	ppb	0.092	43.34	42	2000	
B	11	1	6	2.498	ppb	2.498	152.65	447	100	
Na	23	2	45	24.405	ppb	24.405	9.95	62315	400000	
Mg	24	2	45	2.833	ppb	2.833	28.00	1247	400000	
Al	27	2	45	2.452	ppb	2.452	28.70	587	400000	
K	39	2	45	3.098	ppb	3.098	278.71	103026	400000	
Ca	44	2	45	-1.286	ppb	-1.286	-128.37	250	400000	
V	51	2	72	-0.178	ppb	-0.178	-49.74	13309	2000	
Cr	52	2	72	0.151	ppb	0.151	14.35	2454	5000	
Mn	55	2	72	0.281	ppb	0.281	20.38	1023	10000	
Fe	57	2	72	93.886	ppb	93.886	166.31	12485	400000	
Co	59	2	72	0.066	ppb	0.066	35.31	6548	2000	
Ni	60	2	72	0.095	ppb	0.095	69.80	1163	5000	
Cu	63	2	72	0.139	ppb	0.139	30.50	5021	5000	
Zn	66	2	72	0.164	ppb	0.164	40.93	873	5000	
As	75	2	72	0.150	ppb	0.150	15.59	287	2000	
Se	78	1	72	0.195	ppb	0.195	27.31	141	2000	
Sr	88	2	45	-0.007	ppb	-0.007	-123.01	157	2000	
Zr	90	2	72	-12.976	ppb	-12.976	-14.15	250	1000	
Zr	90	1	72	-12.796	ppb	-12.796	-33.84	1328	1000	
Nb	93	2	72	-0.539	ppb	-0.539	-4.77	1193	200	
Mo	95	2	115	0.668	ppb	0.668	7.85	2657	2000	
Pd	105	2	115	-0.025	ppb	-0.025	-26.94	187	100	
Ag	107	2	115	0.002	ppb	0.002	176.94	137	100	
Cd	111	2	115	0.066	ppb	0.066	51.71	107	2000	
Sn	120	2	115	1.093	ppb	1.093	11.00	5668	2000	
Sb	121	2	115	2.374	ppb	2.374	5.12	9533	1000	
Ba	137	2	115	0.130	ppb	0.130	40.91	293	5000	
W	182	2	165	-0.022	ppb	-0.022	-11.72	2664	100	
Pt	195	2	165	-0.001	ppb	-0.001	-165.90	7	100	
Tl	205	2	165	0.048	ppb	0.048	0.50	863	2000	
Pb	208	2	165	0.375	ppb	0.375	8.82	7291	5000	
Th	232	2	165	0.632	ppb	0.632	2.61	11578	2000	
U	238	2	165	0.142	ppb	0.142	7.72	2674	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	985066	2.90	1092921	90.13	60	125	
Sc (IS)	45	2	HMI He	4173741	1.67	4591929	90.89	60	125	
Sc IS)	45	3	No Gas	121045962	0.89	129634638	93.37	60	120	
Ge Internal Standard	72	1	HMI H2	24667642	0.48	26305534	93.77	60	125	
Ge Internal Standard	72	2	HMI He	4957341	1.45	5205670	95.23	60	125	
In Internal standard	115	2	HMI He	15556508	1.43	16441998	94.61	60	125	
Ho-165	165	2	HMI He	37223236	2.08	37362695	99.63	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5699926
 Data File Name 039_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T13:35:12-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	99.866	ppb	15.361	161975	100	99.9	90	110	
Li	7	3	45	96.507	ppb	10.210	10121883	100	96.5	90	110	
Be	9	1	6	50.166	ppb	6.755	20819	50	100.3	90	110	
B	11	1	6	39.220	ppb	15.233	907	50	78.4	90	110	>+/-10%
Na	23	2	45	1006.491	ppb	0.306	795871	1000	100.6	90	110	
Mg	24	2	45	1027.458	ppb	1.436	317648	1000	102.7	90	110	
Al	27	2	45	1026.315	ppb	1.249	90633	1000	102.6	90	110	
K	39	2	45	1041.380	ppb	1.165	401577	1000	104.1	90	110	
Ca	44	2	45	1001.929	ppb	3.746	22468	1000	100.2	90	110	
V	51	2	72	49.164	ppb	1.260	249496	50	98.3	90	110	
Cr	52	2	72	49.291	ppb	1.448	314946	50	98.6	90	110	
Mn	55	2	72	51.220	ppb	2.763	145767	50	102.4	90	110	
Fe	57	2	72	1020.396	ppb	2.114	123748	1000	102.0	90	110	
Co	59	2	72	49.803	ppb	1.062	506095	50	99.6	90	110	
Ni	60	2	72	51.059	ppb	2.554	138550	50	102.1	90	110	
Cu	63	2	72	50.748	ppb	1.611	385892	50	101.5	90	110	
Zn	66	2	72	50.269	ppb	2.901	56509	50	100.5	90	110	
As	75	2	72	50.624	ppb	3.111	41089	50	101.2	90	110	
Se	78	1	72	50.395	ppb	2.223	31980	50	100.8	90	110	
Sr	88	2	45	102.986	ppb	2.258	325056	100	103.0	90	110	
Zr	90	2	72	1.641	ppb	319.373	517	50	3.3	90	110	>+/-10%
Zr	90	1	72	11.878	ppb	2.264	2506	50	23.8	90	110	>+/-10%
Nb	93	2	72	92.236	ppb	2.453	602768	100	92.2	90	110	
Mo	95	2	115	50.883	ppb	5.634	188855	50	101.8	90	110	
Pd	105	2	115	50.854	ppb	2.971	272853	50	101.7	90	110	
Ag	107	2	115	51.261	ppb	2.911	555056	50	102.5	90	110	
Cd	111	2	115	50.683	ppb	2.787	78556	50	101.4	90	110	
Sn	120	2	115	51.419	ppb	3.690	236881	50	102.8	90	110	
Sb	121	2	115	52.958	ppb	3.449	206108	50	105.9	90	110	
Ba	137	2	115	51.024	ppb	6.962	63730	50	102.0	90	110	
W	182	2	165	48.793	ppb	2.636	372008	50	97.6	90	110	
Pt	195	2	165	49.086	ppb	2.213	258091	50	98.2	90	110	
Tl	205	2	165	48.722	ppb	3.904	628744	50	97.4	90	110	
Pb	208	2	165	50.175	ppb	4.666	847967	50	100.4	90	110	
Th	232	2	165	51.408	ppb	2.732	862189	50	102.8	90	110	
U	238	2	165	49.793	ppb	3.711	910370	50	99.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1008090	4.53	1092921	92.24	60	125	
Sc (IS)	45	2	HMI He	4112637	0.58	4591929	89.56	60	125	
Sc IS)	45	3	No Gas	123300619	0.81	129634638	95.11	60	120	
Ge Internal Standard	72	1	HMI H2	25631377	3.05	26305534	97.44	60	125	
Ge Internal Standard	72	2	HMI He	4990670	0.97	5205670	95.87	60	125	
In Internal standard	115	2	HMI He	15423787	2.86	16441998	93.81	60	125	
Ho-165	165	2	HMI He	36875248	3.22	37362695	98.70	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5699924
 Data File Name 040_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T13:38:44-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-3.609	ppb	-161.4	127508	0.1	
Li	7	3	45	-8.770	ppb	-12.2	7869363	0.05	
Be	9	1	6	0.091	ppb	52.6	43	0.5	
B	11	1	6	1.022	ppb	82.6	450	0.1	>RL
Na	23	2	45	18.217	ppb	11.4	59010	25	
Mg	24	2	45	2.198	ppb	31.9	1073	25	
Al	27	2	45	0.838	ppb	77.9	453	15	
K	39	2	45	21.753	ppb	36.8	111107	50	
Ca	44	2	45	-1.993	ppb	-24.5	240	25	
V	51	2	72	-0.112	ppb	-141.1	13656	1	
Cr	52	2	72	0.128	ppb	14.1	2310	1	
Mn	55	2	72	0.356	ppb	8.8	1240	0.5	
Fe	57	2	72	2.280	ppb	8.1	1487	25	
Co	59	2	72	0.048	ppb	67.7	6378	0.5	
Ni	60	2	72	0.187	ppb	18.8	1413	1	
Cu	63	2	72	0.768	ppb	10.7	9743	1	
Zn	66	2	72	0.375	ppb	31.9	1107	5	
As	75	2	72	0.092	ppb	16.0	241	1	
Se	78	1	72	0.135	ppb	37.7	108	1	
Sr	88	2	45	-0.009	ppb	-41.9	153	1	
Zr	90	2	72	-15.405	ppb	-13.5	207	1	
Zr	90	1	72	-6.121	ppb	-51.9	1665	1	
Nb	93	2	72	3.411	ppb	3.9	26735	2	>RL
Mo	95	2	115	0.340	ppb	14.7	1427	0.5	
Pd	105	2	115	-0.005	ppb	-256.0	293	1	
Ag	107	2	115	0.010	ppb	20.5	227	1	
Cd	111	2	115	0.060	ppb	33.7	97	0.5	
Sn	120	2	115	0.482	ppb	19.9	2830	1	
Sb	121	2	115	0.694	ppb	13.3	2934	1	
Ba	137	2	115	0.162	ppb	47.2	333	0.5	
W	182	2	165	0.056	ppb	87.5	3330	1	
Pt	195	2	165	0.007	ppb	99.2	50	1	
Tl	205	2	165	0.044	ppb	29.9	830	0.1	
Pb	208	2	165	0.230	ppb	5.9	4930	0.5	
Th	232	2	165	0.187	ppb	12.3	4131	1	
U	238	2	165	0.079	ppb	6.6	1557	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1032680	0.41	1092921	94.49	60	125	
Sc (IS)	45	2	HMI He	4274731	1.81	4591929	93.09	60	125	
Sc IS)	45	3	No Gas	124281192	1.16	129634638	95.87	60	120	
Ge Internal Standard	72	1	HMI H2	25333370	0.19	26305534	96.30	60	125	
Ge Internal Standard	72	2	HMI He	4972641	2.89	5205670	95.52	60	125	
In Internal standard	115	2	HMI He	15503199	1.32	16441998	94.29	60	125	
Ho-165	165	2	HMI He	38013206	1.18	37362695	101.74	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5699928
 Data File Name 041LCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T13:44:16-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	1.301	ppb	184.628	7991169	50	2.6	70	130	> +/-30%
Be	9	1	6	1.050	ppb	8.931	445	1	105.0	70	130	
Na	23	2	45	57.093	ppb	5.991	88173	50	114.2	70	130	
Mg	24	2	45	50.951	ppb	3.875	16525	50	101.9	70	130	
Al	27	2	45	51.235	ppb	5.453	5001	50	102.5	70	130	
K	39	2	45	107.305	ppb	4.402	135214	100	107.3	70	130	
Ca	44	2	45	37.420	ppb	29.835	1137	50	74.8	70	130	
V	51	2	72	4.962	ppb	6.473	37594	5	99.2	70	130	
Cr	52	2	72	2.135	ppb	12.136	14897	2	106.8	70	130	
Mn	55	2	72	1.178	ppb	14.005	3557	1	117.8	70	130	
Fe	57	2	72	52.068	ppb	7.720	7388	50	104.1	70	130	
Co	59	2	72	1.099	ppb	8.870	16782	1	109.9	70	130	
Ni	60	2	72	1.501	ppb	0.780	4914	1.5	100.1	70	130	
Cu	63	2	72	2.024	ppb	6.773	19037	2	101.2	70	130	
Zn	66	2	72	9.509	ppb	7.050	11127	10	95.1	70	130	
As	75	2	72	4.777	ppb	1.038	3991	5	95.5	70	130	
Se	78	1	72	5.132	ppb	1.664	3231	5	102.6	70	130	
Sr	88	2	45	0.987	ppb	2.398	3380	1	98.7	70	130	
Zr	90	2	72	-10.003	ppb	-27.884	303	0.5	-2000.6	70	130	> +/-30%
Zr	90	1	72	-8.599	ppb	-7.355	1548	0.5	-1719.9	70	130	> +/-30%
Nb	93	2	72	1.410	ppb	15.265	13672	2	70.5	70	130	
Mo	95	2	115	2.135	ppb	4.230	8375	2	106.7	70	130	
Pd	105	2	115	-0.022	ppb	-33.535	207	1	-2.2	70	130	> +/-30%
Ag	107	2	115	4.967	ppb	1.014	55874	5	99.3	70	130	
Cd	111	2	115	1.009	ppb	6.609	1623	1	100.9	70	130	
Sn	120	2	115	10.077	ppb	3.680	48639	10	100.8	70	130	
Sb	121	2	115	2.574	ppb	4.964	10607	2	128.7	70	130	
Ba	137	2	115	1.021	ppb	7.865	1453	1	102.1	70	130	
W	182	2	165	4.630	ppb	3.921	39178	1	463.0	70	130	> +/-30%
Pt	195	2	165	0.006	ppb	80.989	50	1	0.6	70	130	> +/-30%
Tl	205	2	165	0.931	ppb	3.468	12696	1	93.1	70	130	
Pb	208	2	165	1.156	ppb	2.143	21146	1	115.6	70	130	
Th	232	2	165	2.009	ppb	2.976	35814	2	100.5	70	130	
U	238	2	165	1.003	ppb	4.252	19046	1	100.3	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1016987	1.73	1092921	93.05	60	125	
Sc (IS)	45	2	HMI He	4224845	2.02	4591929	92.01	60	125	
Sc IS)	45	3	No Gas	122730095	1.66	129634638	94.67	60	120	
Ge Internal Standard	72	1	HMI H2	25260688	1.95	26305534	96.03	60	125	
Ge Internal Standard	72	2	HMI He	4943580	4.24	5205670	94.97	60	125	
In Internal standard	115	2	HMI He	15986026	0.72	16441998	97.23	60	125	
Ho-165	165	2	HMI He	38185347	3.34	37362695	102.20	60	125	

Sample Report

Sample Table

Sample Name LCSD 280-457010/3-A
 Data File Name 042SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T13:47:47-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457010 200.8
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	72.920	ppb	72.920	1.96	9564312	40000	
Be	9	1	6	41.327	ppb	41.327	4.02	17487	2000	
B	11	1	6	1263.972	ppb	1263.972	9.60	16107	100	>LDR
Na	23	2	45	13.754	ppb	13.754	13.78	54373	400000	
Mg	24	2	45	1.638	ppb	1.638	44.32	873	400000	
Al	27	2	45	425.265	ppb	425.265	6.82	38392	400000	
K	39	2	45	21.070	ppb	21.070	59.56	108542	400000	
Ca	44	2	45	157.602	ppb	157.602	10.02	3827	400000	
V	51	2	72	43.823	ppb	43.823	0.79	219059	2000	
Cr	52	2	72	42.882	ppb	42.882	0.99	268219	5000	
Mn	55	2	72	43.444	ppb	43.444	3.82	120967	10000	
Fe	57	2	72	419.057	ppb	419.057	2.86	50417	400000	
Co	59	2	72	42.743	ppb	42.743	2.75	425648	2000	
Ni	60	2	72	43.316	ppb	43.316	1.18	115113	5000	
Cu	63	2	72	43.324	ppb	43.324	2.72	322841	5000	
Zn	66	2	72	42.436	ppb	42.436	0.53	46767	5000	
As	75	2	72	40.603	ppb	40.603	1.18	32272	2000	
Se	78	1	72	43.101	ppb	43.101	0.53	27298	2000	
Sr	88	2	45	43.706	ppb	43.706	1.48	140463	2000	
Zr	90	2	72	438.371	ppb	438.371	3.84	8272	1000	
Zr	90	1	72	412.792	ppb	412.792	2.32	20764	1000	
Nb	93	2	72	1.122	ppb	1.122	0.65	11707	200	
Mo	95	2	115	41.489	ppb	41.489	3.06	158294	2000	
Pd	105	2	115	-0.020	ppb	-0.020	-62.56	217	100	
Ag	107	2	115	42.905	ppb	42.905	2.99	477341	100	
Cd	111	2	115	42.826	ppb	42.826	2.23	68184	2000	
Sn	120	2	115	42.259	ppb	42.259	2.15	200172	2000	
Sb	121	2	115	45.327	ppb	45.327	2.78	181284	1000	
Ba	137	2	115	43.154	ppb	43.154	1.15	55414	5000	
W	182	2	165	33.389	ppb	33.389	2.56	264078	100	
Pt	195	2	165	0.002	ppb	0.002	124.95	23	100	
Tl	205	2	165	39.535	ppb	39.535	3.03	527337	2000	
Pb	208	2	165	42.300	ppb	42.300	2.08	739425	5000	
Th	232	2	165	39.757	ppb	39.757	2.80	689463	2000	
U	238	2	165	41.310	ppb	41.310	1.66	780967	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1026338	2.26	1092921	93.91	60	125	
Sc (IS)	45	2	HMI He	4185002	2.38	4591929	91.14	60	125	
Sc IS)	45	3	No Gas	122796140	1.27	129634638	94.72	60	120	
Ge Internal Standard	72	1	HMI H2	25571048	1.93	26305534	97.21	60	125	
Ge Internal Standard	72	2	HMI He	4881483	0.75	5205670	93.77	60	125	
In Internal standard	115	2	HMI He	15838919	1.22	16441998	96.33	60	125	
Ho-165	165	2	HMI He	38112207	2.38	37362695	102.01	60	125	

Sample Report

Sample Table

Sample Name 280-123337-D-1-B MS
 Data File Name 043SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T13:51:18-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457259 200.8
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	49.622	ppb	49.622	2.55	9131245	40000	
Be	9	1	6	30.071	ppb	30.071	2.10	12649	2000	
B	11	1	6	1688.825	ppb	1688.825	1.66	21276	100	>LDR
Na	23	2	45	155664.213	ppb	155664.213	1.66	123971289	400000	
Mg	24	2	45	1142.802	ppb	1142.802	1.67	376107	400000	
Al	27	2	45	331.462	ppb	331.462	2.58	31418	400000	
K	39	2	45	4590.045	ppb	4590.045	3.32	1518881	400000	
Ca	44	2	45	1624.628	ppb	1624.628	0.62	38613	400000	
V	51	2	72	31.989	ppb	31.989	1.63	163962	2000	
Cr	52	2	72	31.925	ppb	31.925	4.77	200334	5000	
Mn	55	2	72	33.924	ppb	33.924	2.31	94680	10000	
Fe	57	2	72	328.449	ppb	328.449	6.68	39829	400000	
Co	59	2	72	31.103	ppb	31.103	2.27	311867	2000	
Ni	60	2	72	30.882	ppb	30.882	2.08	82469	5000	
Cu	63	2	72	32.183	ppb	32.183	2.59	241216	5000	
Zn	66	2	72	31.544	ppb	31.544	6.23	34986	5000	
As	75	2	72	30.774	ppb	30.774	1.46	24544	2000	
Se	78	1	72	31.326	ppb	31.326	1.73	19350	2000	
Sr	88	2	45	47.221	ppb	47.221	1.71	158747	2000	
Zr	90	2	72	401.689	ppb	401.689	2.45	7635	1000	
Zr	90	1	72	415.768	ppb	415.768	4.45	20373	1000	
Nb	93	2	72	0.482	ppb	0.482	21.25	7662	200	
Mo	95	2	115	33.792	ppb	33.792	2.42	125758	2000	
Pd	105	2	115	-0.025	ppb	-0.025	-37.62	183	100	
Ag	107	2	115	31.321	ppb	31.321	0.78	339852	100	
Cd	111	2	115	31.743	ppb	31.743	2.73	49277	2000	
Sn	120	2	115	31.838	ppb	31.838	3.18	147165	2000	
Sb	121	2	115	34.795	ppb	34.795	2.38	135745	1000	
Ba	137	2	115	38.246	ppb	38.246	4.71	47880	5000	
W	182	2	165	25.374	ppb	25.374	3.43	201506	100	
Pt	195	2	165	-0.003	ppb	-0.003	0.00	0	100	
Tl	205	2	165	28.692	ppb	28.692	3.21	383048	2000	
Pb	208	2	165	29.890	ppb	29.890	2.76	523112	5000	
Th	232	2	165	29.173	ppb	29.173	3.99	506559	2000	
U	238	2	165	30.133	ppb	30.133	2.93	570059	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1019985	2.95	1092921	93.33	60	125	
Sc (IS)	45	2	HMI He	4379146	2.37	4591929	95.37	60	125	
Sc IS)	45	3	No Gas	123839526	1.12	129634638	95.53	60	120	
Ge Internal Standard	72	1	HMI H2	24928969	0.62	26305534	94.77	60	125	
Ge Internal Standard	72	2	HMI He	4890836	1.65	5205670	93.95	60	125	
In Internal standard	115	2	HMI He	15447056	2.00	16441998	93.95	60	125	
Ho-165	165	2	HMI He	38140835	2.02	37362695	102.08	60	125	

Sample Report

Sample Table

Sample Name 280-123337-D-1-C MSD
 Data File Name 044SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T13:54:49-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457259 200.8
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	51.583	ppb	51.583	9.95	9185488	40000	
Be	9	1	6	31.289	ppb	31.289	1.42	13051	2000	
B	11	1	6	1746.498	ppb	1746.498	4.14	21783	100	>LDR
Na	23	2	45	160397.602	ppb	160397.602	3.05	125149923	400000	
Mg	24	2	45	1163.794	ppb	1163.794	1.38	375286	400000	
Al	27	2	45	358.824	ppb	358.824	2.39	33298	400000	
K	39	2	45	4948.028	ppb	4948.028	1.60	1597016	400000	
Ca	44	2	45	1679.928	ppb	1679.928	1.85	39107	400000	
V	51	2	72	30.742	ppb	30.742	4.99	167032	2000	
Cr	52	2	72	30.486	ppb	30.486	4.96	202227	5000	
Mn	55	2	72	32.471	ppb	32.471	4.20	95776	10000	
Fe	57	2	72	308.180	ppb	308.180	5.34	39565	400000	
Co	59	2	72	29.897	ppb	29.897	5.06	316933	2000	
Ni	60	2	72	29.950	ppb	29.950	6.74	84472	5000	
Cu	63	2	72	30.354	ppb	30.354	4.13	240638	5000	
Zn	66	2	72	30.252	ppb	30.252	4.16	35497	5000	
As	75	2	72	29.989	ppb	29.989	6.04	25260	2000	
Se	78	1	72	31.158	ppb	31.158	2.62	19258	2000	
Sr	88	2	45	49.139	ppb	49.139	2.41	161856	2000	
Zr	90	2	72	380.513	ppb	380.513	7.62	7659	1000	
Zr	90	1	72	399.977	ppb	399.977	2.38	19691	1000	
Nb	93	2	72	0.242	ppb	0.242	9.80	6488	200	
Mo	95	2	115	34.449	ppb	34.449	2.20	128784	2000	
Pd	105	2	115	-0.031	ppb	-0.031	-20.02	153	100	
Ag	107	2	115	31.719	ppb	31.719	1.15	345654	100	
Cd	111	2	115	32.681	ppb	32.681	2.22	50959	2000	
Sn	120	2	115	32.779	ppb	32.779	1.95	152208	2000	
Sb	121	2	115	34.931	ppb	34.931	3.75	136876	1000	
Ba	137	2	115	38.456	ppb	38.456	2.22	48388	5000	
W	182	2	165	25.446	ppb	25.446	1.57	203054	100	
Pt	195	2	165	0.001	ppb	0.001	751.37	17	100	
Tl	205	2	165	30.094	ppb	30.094	2.40	403659	2000	
Pb	208	2	165	30.063	ppb	30.063	1.49	528659	5000	
Th	232	2	165	29.833	ppb	29.833	3.28	520399	2000	
U	238	2	165	30.381	ppb	30.381	2.61	577449	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1011227	2.20	1092921	92.53	60	125	
Sc (IS)	45	2	HMI He	4290720	1.63	4591929	93.44	60	125	
Sc IS)	45	3	No Gas	123983764	0.72	129634638	95.64	60	120	
Ge Internal Standard	72	1	HMI H2	24951695	1.38	26305534	94.85	60	125	
Ge Internal Standard	72	2	HMI He	5173034	4.46	5205670	99.37	60	125	
In Internal standard	115	2	HMI He	15514941	1.05	16441998	94.36	60	125	
Ho-165	165	2	HMI He	38315054	1.57	37362695	102.55	60	125	

Sample Report

Sample Table

Sample Name 280-123328-B-5-Asd@5
 Data File Name 045SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T13:58:20-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457254 6020a dod4
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-3.935	ppb	-3.935	-163.59	8147178	40000	
Be	9	1	6	0.069	ppb	0.069	86.20	33	2000	
B	11	1	6	218.960	ppb	218.960	9.49	3100	100	
Na	23	2	45	64546.849	ppb	64546.849	1.66	51005564	400000	
Mg	24	2	45	4091.608	ppb	4091.608	3.47	1333971	400000	
Al	27	2	45	11.966	ppb	11.966	6.39	1493	400000	
K	39	2	45	848.956	ppb	848.956	3.49	365250	400000	
Ca	44	2	45	19545.289	ppb	19545.289	0.65	457464	400000	
V	51	2	72	0.195	ppb	0.195	36.39	15684	2000	
Cr	52	2	72	1.600	ppb	1.600	4.42	12068	5000	
Mn	55	2	72	7.875	ppb	7.875	0.10	23359	10000	
Fe	57	2	72	35.483	ppb	35.483	7.59	5661	400000	
Co	59	2	72	0.160	ppb	0.160	17.45	7778	2000	
Ni	60	2	72	7.009	ppb	7.009	4.00	20462	5000	
Cu	63	2	72	0.822	ppb	0.822	7.34	10540	5000	
Zn	66	2	72	24.918	ppb	24.918	1.53	29299	5000	
As	75	2	72	0.190	ppb	0.190	7.15	332	2000	
Se	78	1	72	0.129	ppb	0.129	47.53	103	2000	
Sr	88	2	45	80.536	ppb	80.536	1.59	268373	2000	
Zr	90	2	72	18.637	ppb	18.637	23.60	853	1000	
Zr	90	1	72	22.849	ppb	22.849	15.87	2947	1000	
Nb	93	2	72	0.037	ppb	0.037	291.84	5098	200	
Mo	95	2	115	1.179	ppb	1.179	5.68	4704	2000	
Pd	105	2	115	-0.033	ppb	-0.033	-19.37	150	100	
Ag	107	2	115	0.018	ppb	0.018	18.09	320	100	
Cd	111	2	115	0.046	ppb	0.046	34.30	77	2000	
Sn	120	2	115	0.279	ppb	0.279	5.38	1950	2000	
Sb	121	2	115	0.301	ppb	0.301	18.17	1447	1000	
Ba	137	2	115	157.044	ppb	157.044	0.58	203456	5000	
W	182	2	165	0.097	ppb	0.097	38.18	3774	100	
Pt	195	2	165	0.000	ppb	0.000	259.40	17	100	
Tl	205	2	165	0.031	ppb	0.031	56.90	670	2000	
Pb	208	2	165	0.326	ppb	0.326	10.80	6791	5000	
Th	232	2	165	0.866	ppb	0.866	3.49	16376	2000	
U	238	2	165	0.231	ppb	0.231	10.89	4554	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1009543	1.42	1092921	92.37	60	125	
Sc (IS)	45	2	HMI He	4342770	2.31	4591929	94.57	60	125	
Sc IS)	45	3	No Gas	126943148	0.41	129634638	97.92	60	120	
Ge Internal Standard	72	1	HMI H2	25096491	2.11	26305534	95.40	60	125	
Ge Internal Standard	72	2	HMI He	5155591	0.45	5205670	99.04	60	125	
In Internal standard	115	2	HMI He	16008095	0.48	16441998	97.36	60	125	
Ho-165	165	2	HMI He	39270272	4.98	37362695	105.11	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5699926
 Data File Name 046_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T14:01:50-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	92.018	ppb	4.787	165497	100	92.0	90	110	
Li	7	3	45	106.779	ppb	9.228	10382409	100	106.8	90	110	
Be	9	1	6	48.006	ppb	0.449	20807	50	96.0	90	110	
B	11	1	6	69.877	ppb	23.163	1333	50	139.8	90	110	>+/-10%
Na	23	2	45	1092.825	ppb	4.403	902257	1000	109.3	90	110	
Mg	24	2	45	1019.725	ppb	1.935	330818	1000	102.0	90	110	
Al	27	2	45	1030.720	ppb	3.748	95458	1000	103.1	90	110	
K	39	2	45	1017.846	ppb	4.125	414068	1000	101.8	90	110	
Ca	44	2	45	987.929	ppb	4.849	23236	1000	98.8	90	110	
V	51	2	72	51.108	ppb	4.301	260444	50	102.2	90	110	
Cr	52	2	72	50.451	ppb	3.783	324420	50	100.9	90	110	
Mn	55	2	72	51.374	ppb	5.338	147114	50	102.7	90	110	
Fe	57	2	72	1019.766	ppb	3.382	124480	1000	102.0	90	110	
Co	59	2	72	51.313	ppb	4.626	524526	50	102.6	90	110	
Ni	60	2	72	51.128	ppb	4.272	139659	50	102.3	90	110	
Cu	63	2	72	49.982	ppb	3.542	382588	50	100.0	90	110	
Zn	66	2	72	50.272	ppb	2.192	56887	50	100.5	90	110	
As	75	2	72	51.061	ppb	2.915	41720	50	102.1	90	110	
Se	78	1	72	51.773	ppb	4.560	33395	50	103.5	90	110	
Sr	88	2	45	102.757	ppb	3.785	340097	100	102.8	90	110	
Zr	90	2	72	89.905	ppb	2.229	2137	50	179.8	90	110	>+/-10%
Zr	90	1	72	130.817	ppb	9.727	8067	50	261.6	90	110	>+/-10%
Nb	93	2	72	92.852	ppb	3.375	610766	100	92.9	90	110	
Mo	95	2	115	48.738	ppb	1.634	185713	50	97.5	90	110	
Pd	105	2	115	50.839	ppb	3.044	279817	50	101.7	90	110	
Ag	107	2	115	50.902	ppb	4.323	565217	50	101.8	90	110	
Cd	111	2	115	51.891	ppb	4.706	82479	50	103.8	90	110	
Sn	120	2	115	51.445	ppb	3.853	243140	50	102.9	90	110	
Sb	121	2	115	51.649	ppb	5.436	206156	50	103.3	90	110	
Ba	137	2	115	52.016	ppb	2.390	66664	50	104.0	90	110	
W	182	2	165	48.342	ppb	1.781	389653	50	96.7	90	110	
Pt	195	2	165	46.723	ppb	1.331	259654	50	93.4	90	110	
Tl	205	2	165	45.684	ppb	4.670	623096	50	91.4	90	110	
Pb	208	2	165	48.454	ppb	1.498	865948	50	96.9	90	110	
Th	232	2	165	47.428	ppb	1.543	840963	50	94.9	90	110	
U	238	2	165	46.641	ppb	2.895	901572	50	93.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1050706	0.33	1092921	96.14	60	125	
Sc (IS)	45	2	HMI He	4316666	3.53	4591929	94.01	60	125	
Sc IS)	45	3	No Gas	123740741	2.06	129634638	95.45	60	120	
Ge Internal Standard	72	1	HMI H2	26055562	1.11	26305534	99.05	60	125	
Ge Internal Standard	72	2	HMI He	5025586	2.57	5205670	96.54	60	125	
In Internal standard	115	2	HMI He	15821559	2.51	16441998	96.23	60	125	
Ho-165	165	2	HMI He	38959176	0.26	37362695	104.27	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5699924
 Data File Name 047_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T14:08:04-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-7.634	ppb	-112.2	128053	0.1	
Li	7	3	45	-2.344	ppb	-437.7	8136556	0.05	
Be	9	1	6	0.019	ppb	121.1	13	0.5	
B	11	1	6	0.206	ppb	3048.3	457	0.1	>RL
Na	23	2	45	64.567	ppb	1.4	96730	25	>RL
Mg	24	2	45	0.888	ppb	15.1	667	25	
Al	27	2	45	-0.316	ppb	-148.4	353	15	
K	39	2	45	12.757	ppb	59.5	110326	50	
Ca	44	2	45	0.823	ppb	240.1	310	25	
V	51	2	72	0.261	ppb	43.0	15884	1	
Cr	52	2	72	0.003	ppb	644.2	1563	1	
Mn	55	2	72	0.127	ppb	44.8	607	0.5	
Fe	57	2	72	1.955	ppb	79.1	1487	25	
Co	59	2	72	0.002	ppb	4141.6	6081	0.5	
Ni	60	2	72	0.148	ppb	16.3	1347	1	
Cu	63	2	72	0.662	ppb	11.4	9216	1	
Zn	66	2	72	0.093	ppb	162.0	817	5	
As	75	2	72	0.016	ppb	221.9	184	1	
Se	78	1	72	0.054	ppb	41.1	59	1	
Sr	88	2	45	-0.007	ppb	-159.2	163	1	
Zr	90	2	72	-10.734	ppb	-36.2	300	1	
Zr	90	1	72	-6.522	ppb	-46.3	1692	1	
Nb	93	2	72	2.111	ppb	4.2	18847	2	>RL
Mo	95	2	115	0.067	ppb	21.6	417	0.5	
Pd	105	2	115	-0.019	ppb	-92.2	223	1	
Ag	107	2	115	-0.001	ppb	-189.3	110	1	
Cd	111	2	115	0.034	ppb	42.5	57	0.5	
Sn	120	2	115	0.122	ppb	34.8	1190	1	
Sb	121	2	115	0.117	ppb	8.5	693	1	
Ba	137	2	115	0.016	ppb	464.4	153	0.5	
W	182	2	165	0.011	ppb	440.0	2974	1	
Pt	195	2	165	-0.001	ppb	-241.1	10	1	
Tl	205	2	165	0.005	ppb	102.3	320	0.1	
Pb	208	2	165	0.043	ppb	27.7	1663	0.5	
Th	232	2	165	0.093	ppb	3.1	2520	1	
U	238	2	165	0.018	ppb	9.9	410	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1074582	3.83	1092921	98.32	60	125	
Sc (IS)	45	2	HMI He	4350148	1.15	4591929	94.73	60	125	
Sc IS)	45	3	No Gas	126259068	2.17	129634638	97.40	60	120	
Ge Internal Standard	72	1	HMI H2	26046500	1.66	26305534	99.02	60	125	
Ge Internal Standard	72	2	HMI He	5116221	2.49	5205670	98.28	60	125	
In Internal standard	115	2	HMI He	15843511	1.33	16441998	96.36	60	125	
Ho-165	165	2	HMI He	38072353	2.20	37362695	101.90	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5699928
 Data File Name 048LCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T14:11:35-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	6.763	ppb	121.822	8149247	50	13.5	70	130	> +/-30%
Be	9	1	6	1.038	ppb	22.916	448	1	103.8	70	130	
Na	23	2	45	93.347	ppb	1.425	117023	50	186.7	70	130	> +/-30%
Mg	24	2	45	50.686	ppb	3.385	16588	50	101.4	70	130	
Al	27	2	45	46.179	ppb	7.603	4584	50	92.4	70	130	
K	39	2	45	108.776	ppb	5.379	136800	100	108.8	70	130	
Ca	44	2	45	32.618	ppb	5.336	1033	50	65.2	70	130	> +/-30%
V	51	2	72	5.659	ppb	2.733	40798	5	113.2	70	130	
Cr	52	2	72	1.977	ppb	4.014	13899	2	98.9	70	130	
Mn	55	2	72	0.986	ppb	6.956	2994	1	98.6	70	130	
Fe	57	2	72	50.224	ppb	8.089	7152	50	100.4	70	130	
Co	59	2	72	0.956	ppb	6.945	15327	1	95.6	70	130	
Ni	60	2	72	1.522	ppb	2.438	4954	1.5	101.5	70	130	
Cu	63	2	72	2.024	ppb	3.922	18994	2	101.2	70	130	
Zn	66	2	72	10.318	ppb	3.912	11994	10	103.2	70	130	
As	75	2	72	4.800	ppb	3.743	3994	5	96.0	70	130	
Se	78	1	72	4.677	ppb	10.148	3011	5	93.5	70	130	
Sr	88	2	45	0.997	ppb	9.559	3444	1	99.7	70	130	
Zr	90	2	72	-13.819	ppb	-27.203	233	0.5	-2763.8	70	130	> +/-30%
Zr	90	1	72	-7.604	ppb	-19.413	1628	0.5	-1520.8	70	130	> +/-30%
Nb	93	2	72	1.422	ppb	6.188	13742	2	71.1	70	130	
Mo	95	2	115	1.957	ppb	4.572	7565	2	97.8	70	130	
Pd	105	2	115	-0.022	ppb	-39.508	203	1	-2.2	70	130	> +/-30%
Ag	107	2	115	4.973	ppb	5.233	54924	5	99.5	70	130	
Cd	111	2	115	1.105	ppb	3.979	1750	1	110.5	70	130	
Sn	120	2	115	9.966	ppb	3.936	47259	10	99.7	70	130	
Sb	121	2	115	1.977	ppb	2.110	8059	2	98.9	70	130	
Ba	137	2	115	0.992	ppb	29.152	1383	1	99.2	70	130	
W	182	2	165	4.699	ppb	1.195	38758	1	469.9	70	130	> +/-30%
Pt	195	2	165	0.003	ppb	122.823	30	1	0.3	70	130	> +/-30%
Tl	205	2	165	0.973	ppb	5.204	12922	1	97.3	70	130	
Pb	208	2	165	1.029	ppb	2.795	18452	1	102.9	70	130	
Th	232	2	165	1.924	ppb	3.506	33451	2	96.2	70	130	
U	238	2	165	0.981	ppb	0.966	18176	1	98.1	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1042624	4.20	1092921	95.40	60	125	
Sc (IS)	45	2	HMI He	4260347	1.85	4591929	92.78	60	125	
Sc IS)	45	3	No Gas	123329142	1.52	129634638	95.14	60	120	
Ge Internal Standard	72	1	HMI H2	25816160	0.49	26305534	98.14	60	125	
Ge Internal Standard	72	2	HMI He	4925814	1.36	5205670	94.62	60	125	
In Internal standard	115	2	HMI He	15711285	3.35	16441998	95.56	60	125	
Ho-165	165	2	HMI He	37240053	1.44	37362695	99.67	60	125	

Blank Report

Sample Table

Sample Name MB 280-457083/1-A
Data File Name 049_BLK.d
Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
Acq Date Time 2019-05-13T14:15:06-06:00
Sample Type Blank
Dilution 1
Comment 457083 6020a
ISTD Ref File Name 025CALB.d
Sample QC Pass/Fail Fail
ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	1	45	-18.794	ppb	-53.00298805	124787	0.1
Li	7	3	45	-3.803	ppb	-154.2225261	8241127	0.05
Be	9	1	6	0.001	ppb	2199.061316	5	0.5
Na	23	2	45	53.095	ppb	1.798212012	89921	25
Mg	24	2	45	2.431	ppb	28.1131456	1203	25
Al	27	2	45	2.628	ppb	13.21972231	643	15
K	39	2	45	5.783	ppb	198.0639608	110977	50
Ca	44	2	45	14.438	ppb	23.97324998	647	25
V	51	2	72	-1.145	ppb	-10.81999635	9122	1
Cr	52	2	72	0.167	ppb	3.951119455	2670	1
Mn	55	2	72	0.354	ppb	11.73419142	1290	0.5
Fe	57	2	72	23.320	ppb	14.91882183	4184	25
Co	59	2	72	0.046	ppb	56.38677885	6651	0.5
Ni	60	2	72	0.048	ppb	176.3148977	1087	1
Cu	63	2	72	-0.036	ppb	-48.51887426	3894	1
Zn	66	2	72	0.841	ppb	27.09346545	1697	5
As	75	2	72	0.191	ppb	15.7372492	335	1
Se	78	1	72	0.012	ppb	164.9748668	31	1
Sr	88	2	45	0.078	ppb	10.10683989	460	1
Zr	90	2	72	-3.720	ppb	-73.60034598	437	1
Zr	90	1	72	2.668	ppb	199.5418937	2079	1
Nb	93	2	72	1.821	ppb	7.853859494	17172	2
Mo	95	2	115	0.068	ppb	19.90161703	447	0.5
Pd	105	2	115	-0.031	ppb	-35.07412041	167	1
Ag	107	2	115	0.007	ppb	48.45830074	203	1
Cd	111	2	115	0.040	ppb	1.402171054	70	0.5
Sn	120	2	115	0.250	ppb	9.314254314	1900	1
Sb	121	2	115	0.147	ppb	8.346247228	863	1
Ba	137	2	115	0.150	ppb	33.54601236	343	0.5
W	182	2	165	0.046	ppb	77.92539842	3327	1
Pt	195	2	165	0.011	ppb	77.7291887	73	1
Tl	205	2	165	0.013	ppb	46.95886821	427	0.1
Pb	208	2	165	0.190	ppb	9.667730607	4307	0.5
Th	232	2	165	1.075	ppb	5.035296091	19857	1
U	238	2	165	0.025	ppb	17.18271016	543	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1025751	3.27	1092921	93.85	60	125	
Sc (IS)	45	2	HMI He	4462671	1.95	4591929	97.19	60	125	
Sc IS)	45	3	No Gas	128364730	2.61	129634638	99.02	60	120	
Ge Internal Standard	72	1	HMI H2	25551632	1.09	26305534	97.13	60	125	
Ge Internal Standard	72	2	HMI He	5192665	0.85	5205670	99.75	60	125	
In Internal standard	115	2	HMI He	16786720	1.34	16441998	102.10	60	125	
Ho-165	165	2	HMI He	38824808	5.63	37362695	103.91	60	125	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name LCS 280-457083/2-A
 Data File Name 050_LCS.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T14:18:39-06:00
 Sample Type LCS
 Dilution 1
 Analyst Denver Metals
 Comment 457083 6020a
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	72.063	72.063	ppb	17.333	10237364	400	18.0	80	120	> +/-20%
Be	9	1	6	38.524	38.524	ppb	2.009	16813	40	96.3	80	120	
Na	23	2	45	34.537	34.537	ppb	1.588	76590	40	86.3	80	120	
Mg	24	2	45	2.195	2.195	ppb	26.286	1147	40	5.5	80	120	> +/-20%
Al	27	2	45	409.188	409.188	ppb	1.388	40356	40	1023.0	80	120	> +/-20%
K	39	2	45	8.358	8.358	ppb	55.902	114386	40	20.9	80	120	> +/-20%
Ca	44	2	45	147.233	147.233	ppb	11.601	3927	40	368.1	80	120	> +/-20%
V	51	2	72	37.978	37.978	ppb	2.256	208367	40	94.9	80	120	
Cr	52	2	72	40.269	40.269	ppb	2.547	273853	40	100.7	80	120	
Mn	55	2	72	40.748	40.748	ppb	2.598	123358	40	101.9	80	120	
Fe	57	2	72	412.370	412.370	ppb	1.903	53950	40	1030.9	80	120	> +/-20%
Co	59	2	72	39.096	39.096	ppb	4.504	423560	40	97.7	80	120	
Ni	60	2	72	39.778	39.778	ppb	6.098	114892	40	99.4	80	120	
Cu	63	2	72	38.370	38.370	ppb	4.039	311123	40	95.9	80	120	
Zn	66	2	72	38.123	38.123	ppb	5.788	45707	40	95.3	80	120	
As	75	2	72	37.048	37.048	ppb	4.350	32010	40	92.6	80	120	
Se	78	1	72	38.394	38.394	ppb	1.414	24379	40	96.0	80	120	
Sr	88	2	45	41.277	41.277	ppb	1.730	144724	40	103.2	80	120	
Nb	93	2	72	1.241	1.241	ppb	4.867	13559	40	3.1	80	120	> +/-20%
Mo	95	2	115	39.470	39.470	ppb	3.793	156269	40	98.7	80	120	
Pd	105	2	115	-0.034	-0.034	ppb	-22.809	147	40	-0.1	80	120	> +/-20%
Ag	107	2	115	40.711	40.711	ppb	3.624	469884	40	101.8	80	120	
Cd	111	2	115	38.642	38.642	ppb	4.528	63813	40	96.6	80	120	
Sn	120	2	115	40.284	40.284	ppb	4.602	197940	40	100.7	80	120	
Sb	121	2	115	41.172	41.172	ppb	5.219	170798	40	102.9	80	120	
Ba	137	2	115	39.912	39.912	ppb	4.599	53163	40	99.8	80	120	
W	182	2	165	31.454	31.454	ppb	3.423	264073	40	78.6	80	120	> +/-20%
Pt	195	2	165	0.001	0.001	ppb	336.253	20	40	0.0	80	120	> +/-20%
Tl	205	2	165	35.674	35.674	ppb	0.649	504929	40	89.2	80	120	
Pb	208	2	165	38.243	38.243	ppb	0.639	709428	40	95.6	80	120	
Th	232	2	165	35.821	35.821	ppb	0.102	659290	40	89.6	80	120	
U	238	2	165	36.388	36.388	ppb	2.191	729720	40	91.0	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1057981	3.98	1092921	96.80	60	125	
Sc (IS)	45	2	HMI He	4565281	0.55	4591929	99.42	60	125	
Sc IS)	45	3	No Gas	131744563	2.12	129634638	101.63	60	120	
Ge Internal Standard	72	1	HMI H2	25640531	2.90	26305534	97.47	60	125	
Ge Internal Standard	72	2	HMI He	5308201	3.08	5205670	101.97	60	125	
In Internal standard	115	2	HMI He	16447079	3.91	16441998	100.03	60	125	
Ho-165	165	2	HMI He	40425255	1.33	37362695	108.20	60	125	

Sample Report

Sample Table

Sample Name 280-123279-A-1-B
 Data File Name 051SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T14:22:11-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457083 6020a
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	291.891	ppb	291.891	5.16	14802917	40000	
Be	9	1	6	0.049	ppb	0.049	104.86	23	2000	
B	11	1	6	4780.688	ppb	4780.688	3.24	55432	100	>LDR
Na	23	2	45	790412.955	ppb	790412.955	4.80	648651913	400000	
Mg	24	2	45	117332.572	ppb	117332.572	4.52	39759636	400000	
Al	27	2	45	38.676	ppb	38.676	3.23	4137	400000	
K	39	2	45	20777.922	ppb	20777.922	1.08	6709300	400000	
Ca	44	2	45	72542.230	ppb	72542.230	1.21	1766884	400000	
V	51	2	72	-1.164	ppb	-1.164	-3.18	8759	2000	
Cr	52	2	72	0.403	ppb	0.403	13.95	4104	5000	
Mn	55	2	72	81.319	ppb	81.319	3.82	233315	10000	
Fe	57	2	72	85.195	ppb	85.195	3.22	11557	400000	
Co	59	2	72	1.469	ppb	1.469	3.50	20873	2000	
Ni	60	2	72	6.802	ppb	6.802	3.08	19431	5000	
Cu	63	2	72	0.226	ppb	0.226	20.47	5761	5000	
Zn	66	2	72	1.649	ppb	1.649	11.03	2547	5000	
As	75	2	72	1.253	ppb	1.253	2.99	1191	2000	
Se	78	1	72	0.222	ppb	0.222	26.05	151	2000	
Sr	88	2	45	2393.284	ppb	2393.284	6.58	8278511	2000	
Zr	90	2	72	267.517	ppb	267.517	3.07	5398	1000	
Zr	90	1	72	284.473	ppb	284.473	2.57	13693	1000	
Nb	93	2	72	1.002	ppb	1.002	23.44	11276	200	
Mo	95	2	115	0.922	ppb	0.922	6.60	3614	2000	
Pd	105	2	115	0.033	ppb	0.033	60.88	500	100	
Ag	107	2	115	0.017	ppb	0.017	22.54	303	100	
Cd	111	2	115	0.026	ppb	0.026	12.67	43	2000	
Sn	120	2	115	0.387	ppb	0.387	18.35	2400	2000	
Sb	121	2	115	0.632	ppb	0.632	7.03	2707	1000	
Ba	137	2	115	11.956	ppb	11.956	2.66	15188	5000	
W	182	2	165	0.052	ppb	0.052	83.24	3150	100	
Pt	195	2	165	0.002	ppb	0.002	187.76	27	100	
Tl	205	2	165	0.077	ppb	0.077	10.22	1217	2000	
Pb	208	2	165	0.151	ppb	0.151	13.68	3394	5000	
Th	232	2	165	0.879	ppb	0.879	6.49	15358	2000	
U	238	2	165	3.183	ppb	3.183	2.72	57421	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	951690	3.07	1092921	87.08	60	125	
Sc (IS)	45	2	HMI He	4519234	4.86	4591929	98.42	60	125	
Sc IS)	45	3	No Gas	126616864	1.94	129634638	97.67	60	120	
Ge Internal Standard	72	1	HMI H2	23470415	1.51	26305534	89.22	60	125	
Ge Internal Standard	72	2	HMI He	5036018	2.37	5205670	96.74	60	125	
In Internal standard	115	2	HMI He	15574838	1.59	16441998	94.73	60	125	
Ho-165	165	2	HMI He	36333489	4.08	37362695	97.25	60	125	

Sample Report

Sample Table

Sample Name 280-123323-A-2-A
 Data File Name 052SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T14:25:40-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457083 6020a
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	538.475	ppb	538.475	4.11	20901844	40000	
Be	9	1	6	0.005	ppb	0.005	526.82	7	2000	
B	11	1	6	47063.452	ppb	47063.452	4.78	547724	100	>LDR
Na	23	2	45	656096.341	ppb	656096.341	1.30	563170857	400000	
Mg	24	2	45	162657.067	ppb	162657.067	0.55	57655701	400000	
Al	27	2	45	2.061	ppb	2.061	18.60	623	400000	
K	39	2	45	4292.688	ppb	4292.688	0.59	1539381	400000	
Ca	44	2	45	282323.270	ppb	282323.270	1.18	7178368	400000	
V	51	2	72	77.127	ppb	77.127	1.60	392321	2000	
Cr	52	2	72	21.458	ppb	21.458	1.53	141204	5000	
Mn	55	2	72	38.630	ppb	38.630	3.81	112536	10000	
Fe	57	2	72	351.959	ppb	351.959	4.04	44480	400000	
Co	59	2	72	0.959	ppb	0.959	2.05	15924	2000	
Ni	60	2	72	14.365	ppb	14.365	3.45	40551	5000	
Cu	63	2	72	0.834	ppb	0.834	8.51	10530	5000	
Zn	66	2	72	2.085	ppb	2.085	6.90	3080	5000	
As	75	2	72	6.944	ppb	6.944	3.23	5915	2000	
Se	78	1	72	15.164	ppb	15.164	1.93	8905	2000	
Sr	88	2	45	14594.092	ppb	14594.092	0.59	52838145	2000	>LDR
Zr	90	2	72	47.206	ppb	47.206	14.82	1380	1000	
Zr	90	1	72	64.620	ppb	64.620	7.81	4539	1000	
Nb	93	2	72	1.137	ppb	1.137	19.43	12318	200	
Mo	95	2	115	40.481	ppb	40.481	2.61	153700	2000	
Pd	105	2	115	0.475	ppb	0.475	10.45	2930	100	
Ag	107	2	115	0.024	ppb	0.024	45.17	383	100	
Cd	111	2	115	0.019	ppb	0.019	162.89	33	2000	
Sn	120	2	115	0.253	ppb	0.253	12.90	1797	2000	
Sb	121	2	115	0.295	ppb	0.295	10.77	1397	1000	
Ba	137	2	115	9.844	ppb	9.844	6.90	12669	5000	
W	182	2	165	0.256	ppb	0.256	16.23	4834	100	
Pt	195	2	165	-0.002	ppb	-0.002	-55.12	3	100	
Tl	205	2	165	0.020	ppb	0.020	33.18	513	2000	
Pb	208	2	165	0.072	ppb	0.072	9.27	2147	5000	
Th	232	2	165	0.275	ppb	0.275	8.08	5584	2000	
U	238	2	165	30.167	ppb	30.167	4.81	561978	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	962301	3.64	1092921	88.05	60	125	
Sc (IS)	45	2	HMI He	4720327	0.75	4591929	102.80	60	125	
Sc IS)	45	3	No Gas	129935862	3.30	129634638	100.23	60	120	
Ge Internal Standard	72	1	HMI H2	23678907	1.99	26305534	90.01	60	125	
Ge Internal Standard	72	2	HMI He	5109626	3.65	5205670	98.16	60	125	
In Internal standard	115	2	HMI He	15763429	2.26	16441998	95.87	60	125	
Ho-165	165	2	HMI He	37577355	2.75	37362695	100.57	60	125	

Sample Report

Sample Table

Sample Name 280-123323-A-2-Asd@5
 Data File Name 053SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T14:29:10-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457083 6020a
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	115.581	ppb	115.581	6.47	11140836	40000	
Be	9	1	6	-0.004	ppb	-0.004	-347.28	3	2000	
B	11	1	6	10456.020	ppb	10456.020	3.70	134071	100	>LDR
Na	23	2	45	146838.708	ppb	146838.708	2.98	118407956	400000	
Mg	24	2	45	36681.535	ppb	36681.535	3.39	12208618	400000	
Al	27	2	45	0.331	ppb	0.331	412.50	420	400000	
K	39	2	45	916.485	ppb	916.485	3.90	393919	400000	
Ca	44	2	45	61606.826	ppb	61606.826	1.51	1471701	400000	
V	51	2	72	15.271	ppb	15.271	2.01	91251	2000	
Cr	52	2	72	4.585	ppb	4.585	0.72	32050	5000	
Mn	55	2	72	7.659	ppb	7.659	0.15	22992	10000	
Fe	57	2	72	69.265	ppb	69.265	5.96	9963	400000	
Co	59	2	72	0.208	ppb	0.208	9.16	8379	2000	
Ni	60	2	72	3.188	ppb	3.188	7.13	9933	5000	
Cu	63	2	72	0.747	ppb	0.747	14.67	10060	5000	
Zn	66	2	72	0.500	ppb	0.500	44.09	1310	5000	
As	75	2	72	1.431	ppb	1.431	1.62	1384	2000	
Se	78	1	72	3.052	ppb	3.052	10.96	2000	2000	
Sr	88	2	45	3322.043	ppb	3322.043	4.04	11291729	2000	
Zr	90	2	72	-9.788	ppb	-9.788	-6.86	323	1000	
Zr	90	1	72	-1.967	ppb	-1.967	-139.15	1912	1000	
Nb	93	2	72	-0.084	ppb	-0.084	-21.70	4337	200	
Mo	95	2	115	8.475	ppb	8.475	1.15	33270	2000	
Pd	105	2	115	0.054	ppb	0.054	44.03	640	100	
Ag	107	2	115	0.023	ppb	0.023	10.54	383	100	
Cd	111	2	115	0.006	ppb	0.006	59.61	13	2000	
Sn	120	2	115	0.094	ppb	0.094	27.22	1080	2000	
Sb	121	2	115	0.129	ppb	0.129	36.35	763	1000	
Ba	137	2	115	1.932	ppb	1.932	2.17	2670	5000	
W	182	2	165	0.000	ppb	0.000	4060.11	2994	100	
Pt	195	2	165	0.000	ppb	0.000	-1160.65	13	100	
Tl	205	2	165	0.009	ppb	0.009	60.25	387	2000	
Pb	208	2	165	0.045	ppb	0.045	20.98	1763	5000	
Th	232	2	165	0.000	ppb	0.000	-883.90	930	2000	
U	238	2	165	6.402	ppb	6.402	3.22	124937	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1057176	3.25	1092921	96.73	60	125	
Sc (IS)	45	2	HMI He	4434748	2.63	4591929	96.58	60	125	
Sc IS)	45	3	No Gas	130302930	0.62	129634638	100.52	60	120	
Ge Internal Standard	72	1	HMI H2	26117366	2.73	26305534	99.28	60	125	
Ge Internal Standard	72	2	HMI He	5216302	2.20	5205670	100.20	60	125	
In Internal standard	115	2	HMI He	16229791	1.89	16441998	98.71	60	125	
Ho-165	165	2	HMI He	39346322	3.79	37362695	105.31	60	125	

Sample Report

Sample Table

Sample Name 280-123323-A-2-B MS
 Data File Name 054SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T14:32:40-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457083 6020a
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	610.148	ppb	610.148	1.06	22326145	40000	
Be	9	1	6	40.498	ppb	40.498	5.24	15365	2000	
B	11	1	6	49260.240	ppb	49260.240	2.94	548678	100	>LDR
Na	23	2	45	664736.930	ppb	664736.930	3.91	546439532	400000	
Mg	24	2	45	165401.288	ppb	165401.288	1.48	56154776	400000	
Al	27	2	45	416.084	ppb	416.084	2.16	40630	400000	
K	39	2	45	4265.691	ppb	4265.691	3.33	1465693	400000	
Ca	44	2	45	280838.212	ppb	280838.212	1.17	6839903	400000	
V	51	2	72	118.381	ppb	118.381	4.44	580559	2000	
Cr	52	2	72	61.075	ppb	61.075	1.54	389848	5000	
Mn	55	2	72	78.465	ppb	78.465	2.02	223168	10000	
Fe	57	2	72	739.222	ppb	739.222	1.28	89985	400000	
Co	59	2	72	39.183	ppb	39.183	1.23	399396	2000	
Ni	60	2	72	51.003	ppb	51.003	1.78	138405	5000	
Cu	63	2	72	37.940	ppb	37.940	1.47	289468	5000	
Zn	66	2	72	39.265	ppb	39.265	3.01	44281	5000	
As	75	2	72	46.608	ppb	46.608	1.37	37843	2000	
Se	78	1	72	54.863	ppb	54.863	2.22	33052	2000	
Sr	88	2	45	15355.640	ppb	15355.640	1.85	53247499	2000	>LDR
Zr	90	2	72	602.659	ppb	602.659	8.73	11441	1000	
Zr	90	1	72	601.891	ppb	601.891	3.99	27941	1000	
Nb	93	2	72	0.533	ppb	0.533	11.04	8149	200	
Mo	95	2	115	80.675	ppb	80.675	0.92	305725	2000	
Pd	105	2	115	0.521	ppb	0.521	7.60	3174	100	
Ag	107	2	115	36.366	ppb	36.366	3.23	401710	100	
Cd	111	2	115	37.718	ppb	37.718	4.10	59611	2000	
Sn	120	2	115	40.577	ppb	40.577	3.10	190872	2000	
Sb	121	2	115	43.771	ppb	43.771	4.42	173791	1000	
Ba	137	2	115	51.374	ppb	51.374	3.92	65483	5000	
W	182	2	165	31.609	ppb	31.609	3.91	254589	100	
Pt	195	2	165	0.002	ppb	0.002	278.14	23	100	
Tl	205	2	165	33.829	ppb	33.829	2.35	459368	2000	
Pb	208	2	165	34.734	ppb	34.734	2.46	618111	5000	
Th	232	2	165	36.148	ppb	36.148	1.84	638214	2000	
U	238	2	165	64.780	ppb	64.780	1.30	1246598	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	920544	2.98	1092921	84.23	60	125	
Sc (IS)	45	2	HMI He	4521770	1.31	4591929	98.47	60	125	
Sc IS)	45	3	No Gas	128536573	1.64	129634638	99.15	60	120	
Ge Internal Standard	72	1	HMI H2	24334494	1.91	26305534	92.51	60	125	
Ge Internal Standard	72	2	HMI He	4990100	0.71	5205670	95.86	60	125	
In Internal standard	115	2	HMI He	15737732	3.60	16441998	95.72	60	125	
Ho-165	165	2	HMI He	38782463	0.94	37362695	103.80	60	125	

Sample Report

Sample Table

Sample Name 280-123323-A-2-C MSD
 Data File Name 055SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T14:36:09-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457083 6020a
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	613.596	ppb	613.596	2.91	22246978	40000	
Be	9	1	6	41.393	ppb	41.393	2.37	15929	2000	
B	11	1	6	50766.022	ppb	50766.022	1.43	573403	100	>LDR
Na	23	2	45	653990.798	ppb	653990.798	4.27	542345318	400000	
Mg	24	2	45	159523.106	ppb	159523.106	3.20	54625761	400000	
Al	27	2	45	414.063	ppb	414.063	1.97	40804	400000	
K	39	2	45	4305.824	ppb	4305.824	4.06	1491267	400000	
Ca	44	2	45	271852.849	ppb	271852.849	1.43	6680589	400000	
V	51	2	72	113.710	ppb	113.710	3.54	572580	2000	
Cr	52	2	72	59.045	ppb	59.045	1.69	386637	5000	
Mn	55	2	72	78.041	ppb	78.041	0.29	227706	10000	
Fe	57	2	72	733.393	ppb	733.393	1.05	91580	400000	
Co	59	2	72	38.554	ppb	38.554	4.14	403095	2000	
Ni	60	2	72	51.049	ppb	51.049	2.46	142079	5000	
Cu	63	2	72	36.234	ppb	36.234	0.93	283784	5000	
Zn	66	2	72	37.381	ppb	37.381	1.11	43281	5000	
As	75	2	72	45.097	ppb	45.097	2.03	37561	2000	
Se	78	1	72	55.583	ppb	55.583	2.53	33124	2000	
Sr	88	2	45	14915.470	ppb	14915.470	2.50	52175578	2000	>LDR
Zr	90	2	72	608.681	ppb	608.681	3.59	11844	1000	
Zr	90	1	72	601.028	ppb	601.028	2.46	27607	1000	
Nb	93	2	72	0.250	ppb	0.250	29.72	6481	200	
Mo	95	2	115	80.593	ppb	80.593	2.02	300904	2000	
Pd	105	2	115	0.526	ppb	0.526	7.88	3157	100	
Ag	107	2	115	37.929	ppb	37.929	2.49	413066	100	
Cd	111	2	115	38.150	ppb	38.150	1.77	59457	2000	
Sn	120	2	115	40.085	ppb	40.085	1.35	185902	2000	
Sb	121	2	115	43.361	ppb	43.361	0.49	169791	1000	
Ba	137	2	115	51.629	ppb	51.629	1.17	64867	5000	
W	182	2	165	33.095	ppb	33.095	3.68	253001	100	
Pt	195	2	165	0.003	ppb	0.003	161.55	27	100	
Tl	205	2	165	37.325	ppb	37.325	4.80	481099	2000	
Pb	208	2	165	37.287	ppb	37.287	3.15	629994	5000	
Th	232	2	165	38.133	ppb	38.133	3.98	639040	2000	
U	238	2	165	68.415	ppb	68.415	0.54	1250471	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	933075	1.81	1092921	85.37	60	125	
Sc (IS)	45	2	HMI He	4563418	3.43	4591929	99.38	60	125	
Sc IS)	45	3	No Gas	127624387	0.18	129634638	98.45	60	120	
Ge Internal Standard	72	1	HMI H2	24067182	1.17	26305534	91.49	60	125	
Ge Internal Standard	72	2	HMI He	5118918	1.55	5205670	98.33	60	125	
In Internal standard	115	2	HMI He	15504564	0.47	16441998	94.30	60	125	
Ho-165	165	2	HMI He	36843364	3.27	37362695	98.61	60	125	

Sample Report

Sample Table

Sample Name 280-123323-A-2-A pds
 Data File Name 056SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T14:39:40-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457083 6020a
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	527.596	ppb	527.596	1.65	20701362	40000	
Be	9	1	6	214.618	ppb	214.618	0.85	80702	2000	
B	11	1	6	49075.159	ppb	49075.159	0.37	541653	100	>LDR
Na	23	2	45	627769.563	ppb	627769.563	0.85	548101638	400000	
Mg	24	2	45	156516.788	ppb	156516.788	3.11	56407233	400000	
Al	27	2	45	2017.642	ppb	2017.642	1.38	207580	400000	
K	39	2	45	4206.237	ppb	4206.237	2.76	1536065	400000	
Ca	44	2	45	269927.156	ppb	269927.156	0.74	6982143	400000	
V	51	2	72	301.967	ppb	301.967	5.81	1514765	2000	
Cr	52	2	72	237.816	ppb	237.816	2.96	1571999	5000	
Mn	55	2	72	245.612	ppb	245.612	2.95	725058	10000	
Fe	57	2	72	2332.858	ppb	2332.858	1.30	292281	400000	
Co	59	2	72	207.534	ppb	207.534	1.65	2170932	2000	
Ni	60	2	72	206.516	ppb	206.516	1.81	579158	5000	
Cu	63	2	72	194.762	ppb	194.762	1.38	1526362	5000	
Zn	66	2	72	194.466	ppb	194.466	1.30	224982	5000	
As	75	2	72	207.194	ppb	207.194	2.71	174125	2000	
Se	78	1	72	232.114	ppb	232.114	1.07	137356	2000	
Sr	88	2	45	14869.174	ppb	14869.174	3.13	54760199	2000	>LDR
Zr	90	2	72	93181.244	ppb	93181.244	4.04	1759314	1000	>LDR
Zr	90	1	72	90917.594	ppb	90917.594	0.55	3873455	1000	>LDR
Nb	93	2	72	5.811	ppb	5.811	8.63	44001	200	
Mo	95	2	115	239.918	ppb	239.918	3.80	937023	2000	
Pd	105	2	115	0.608	ppb	0.608	7.67	3767	100	
Ag	107	2	115	37.712	ppb	37.712	4.70	429746	100	
Cd	111	2	115	197.050	ppb	197.050	4.81	321255	2000	
Sn	120	2	115	206.296	ppb	206.296	2.65	998896	2000	
Sb	121	2	115	217.790	ppb	217.790	3.17	891531	1000	
Ba	137	2	115	224.771	ppb	224.771	5.37	294964	5000	
W	182	2	165	205.156	ppb	205.156	3.87	1634433	100	
Pt	195	2	165	0.100	ppb	0.100	22.18	570	100	
Tl	205	2	165	190.031	ppb	190.031	3.89	2575447	2000	
Pb	208	2	165	193.745	ppb	193.745	2.25	3437192	5000	
Th	232	2	165	0.996	ppb	0.996	3.90	18452	2000	
U	238	2	165	223.001	ppb	223.001	3.54	4281596	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	911695	1.08	1092921	83.42	60	125	
Sc (IS)	45	2	HMI He	4801703	2.59	4591929	104.57	60	125	
Sc IS)	45	3	No Gas	130227157	1.85	129634638	100.46	60	120	
Ge Internal Standard	72	1	HMI H2	23907263	1.19	26305534	90.88	60	125	
Ge Internal Standard	72	2	HMI He	5184221	1.85	5205670	99.59	60	125	
In Internal standard	115	2	HMI He	16238356	3.65	16441998	98.76	60	125	
Ho-165	165	2	HMI He	38721808	2.74	37362695	103.64	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5699926
 Data File Name 057_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T14:43:09-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	83.983	ppb	3.907	168407	100	84.0	90	110	>+ -10%
Li	7	3	45	108.518	ppb	11.965	10964776	100	108.5	90	110	
Be	9	1	6	50.418	ppb	0.650	22053	50	100.8	90	110	
B	11	1	6	1129.752	ppb	8.329	14930	50	2259.5	90	110	>+ -10%
Na	23	2	45	1763.919	ppb	1.902	1531156	1000	176.4	90	110	>+ -10%
Mg	24	2	45	1047.685	ppb	1.600	364072	1000	104.8	90	110	
Al	27	2	45	1009.291	ppb	4.233	100141	1000	100.9	90	110	
K	39	2	45	1013.002	ppb	4.258	442053	1000	101.3	90	110	
Ca	44	2	45	1059.853	ppb	4.605	26684	1000	106.0	90	110	
V	51	2	72	48.720	ppb	2.493	273573	50	97.4	90	110	
Cr	52	2	72	48.448	ppb	1.937	342388	50	96.9	90	110	
Mn	55	2	72	50.557	ppb	2.128	159132	50	101.1	90	110	
Fe	57	2	72	998.965	ppb	2.485	134013	1000	99.9	90	110	
Co	59	2	72	48.998	ppb	0.942	550822	50	98.0	90	110	
Ni	60	2	72	49.263	ppb	1.343	147884	50	98.5	90	110	
Cu	63	2	72	49.287	ppb	2.101	414656	50	98.6	90	110	
Zn	66	2	72	49.190	ppb	2.973	61172	50	98.4	90	110	
As	75	2	72	49.439	ppb	2.086	44388	50	98.9	90	110	
Se	78	1	72	51.285	ppb	1.002	34157	50	102.6	90	110	
Sr	88	2	45	106.619	ppb	1.868	378204	100	106.6	90	110	
Zr	90	2	72	115.978	ppb	10.730	2870	50	232.0	90	110	>+ -10%
Zr	90	1	72	226.262	ppb	7.693	12888	50	452.5	90	110	>+ -10%
Nb	93	2	72	91.630	ppb	1.501	662360	100	91.6	90	110	
Mo	95	2	115	49.545	ppb	3.249	202570	50	99.1	90	110	
Pd	105	2	115	50.677	ppb	1.001	299447	50	101.4	90	110	
Ag	107	2	115	51.252	ppb	1.493	611018	50	102.5	90	110	
Cd	111	2	115	50.728	ppb	1.256	86553	50	101.5	90	110	
Sn	120	2	115	51.519	ppb	0.852	261406	50	103.0	90	110	
Sb	121	2	115	51.647	ppb	3.062	221347	50	103.3	90	110	
Ba	137	2	115	50.620	ppb	0.999	69637	50	101.2	90	110	
W	182	2	165	50.900	ppb	4.392	414401	50	101.8	90	110	
Pt	195	2	165	49.101	ppb	4.243	275737	50	98.2	90	110	
Tl	205	2	165	49.127	ppb	3.571	677207	50	98.3	90	110	
Pb	208	2	165	50.378	ppb	6.247	909311	50	100.8	90	110	
Th	232	2	165	49.484	ppb	4.055	886689	50	99.0	90	110	
U	238	2	165	49.531	ppb	1.619	968141	50	99.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1060414	1.66	1092921	97.03	60	125	
Sc (IS)	45	2	HMI He	4624093	2.99	4591929	100.70	60	125	
Sc (IS)	45	3	No Gas	130202145	1.91	129634638	100.44	60	120	
Ge Internal Standard	72	1	HMI H2	26890716	1.86	26305534	102.22	60	125	
Ge Internal Standard	72	2	HMI He	5520196	1.80	5205670	106.04	60	125	
In Internal standard	115	2	HMI He	16976376	1.15	16441998	103.25	60	125	
Ho-165	165	2	HMI He	39410996	3.81	37362695	105.48	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5699924
 Data File Name 058_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T14:46:40-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-8.634	ppb	-130.7	127553	0.1	
Li	7	3	45	-5.839	ppb	-77.0	8273165	0.05	
Be	9	1	6	0.016	ppb	185.6	12	0.5	
B	11	1	6	538.831	ppb	5.0	7338	0.1	>RL
Na	23	2	45	631.092	ppb	1.9	565743	25	>RL
Mg	24	2	45	14.215	ppb	4.2	5211	25	
Al	27	2	45	-0.697	ppb	-44.1	330	15	
K	39	2	45	8.792	ppb	122.8	113329	50	
Ca	44	2	45	17.935	ppb	44.3	740	25	
V	51	2	72	-0.332	ppb	-51.0	13299	1	
Cr	52	2	72	0.027	ppb	27.3	1767	1	
Mn	55	2	72	0.138	ppb	7.3	657	0.5	
Fe	57	2	72	3.122	ppb	46.5	1673	25	
Co	59	2	72	0.002	ppb	2453.5	6241	0.5	
Ni	60	2	72	0.059	ppb	29.2	1127	1	
Cu	63	2	72	0.884	ppb	1.4	11207	1	
Zn	66	2	72	0.144	ppb	22.3	900	5	
As	75	2	72	0.040	ppb	30.9	210	1	
Se	78	1	72	0.129	ppb	17.7	107	1	
Sr	88	2	45	1.131	ppb	5.4	4111	1	>RL
Zr	90	2	72	0.770	ppb	244.1	527	1	
Zr	90	1	72	5.720	ppb	60.9	2252	1	>RL
Nb	93	2	72	3.241	ppb	3.8	27028	2	>RL
Mo	95	2	115	0.122	ppb	10.2	667	0.5	
Pd	105	2	115	0.002	ppb	300.3	360	1	
Ag	107	2	115	0.030	ppb	18.5	483	1	
Cd	111	2	115	0.018	ppb	77.4	33	0.5	
Sn	120	2	115	0.189	ppb	11.1	1607	1	
Sb	121	2	115	0.136	ppb	24.8	823	1	
Ba	137	2	115	0.043	ppb	51.7	200	0.5	
W	182	2	165	0.089	ppb	68.0	3754	1	
Pt	195	2	165	0.017	ppb	86.5	113	1	
Tl	205	2	165	0.029	ppb	18.9	660	0.1	
Pb	208	2	165	0.051	ppb	15.9	1890	0.5	
Th	232	2	165	0.142	ppb	12.8	3527	1	
U	238	2	165	0.046	ppb	13.8	977	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1057130	1.94	1092921	96.73	60	125	
Sc (IS)	45	2	HMI He	4517429	1.29	4591929	98.38	60	125	
Sc IS)	45	3	No Gas	129577819	1.40	129634638	99.96	60	120	
Ge Internal Standard	72	1	HMI H2	25979172	3.17	26305534	98.76	60	125	
Ge Internal Standard	72	2	HMI He	5244300	1.25	5205670	100.74	60	125	
In Internal standard	115	2	HMI He	16918063	0.33	16441998	102.90	60	125	
Ho-165	165	2	HMI He	39830719	1.61	37362695	106.61	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5699928
 Data File Name 059LCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T14:50:10-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	-1.878	ppb	-158.897	8440052	50	-3.8	70	130	> +/-30%
Be	9	1	6	1.040	ppb	22.871	450	1	104.0	70	130	
Na	23	2	45	722.381	ppb	3.169	621591	50	1444.8	70	130	> +/-30%
Mg	24	2	45	62.049	ppb	8.318	20776	50	124.1	70	130	
Al	27	2	45	52.859	ppb	2.024	5344	50	105.7	70	130	
K	39	2	45	118.629	ppb	13.380	143751	100	118.6	70	130	
Ca	44	2	45	43.833	ppb	17.624	1330	50	87.7	70	130	
V	51	2	72	4.672	ppb	9.632	38185	5	93.4	70	130	
Cr	52	2	72	2.022	ppb	2.155	14997	2	101.1	70	130	
Mn	55	2	72	0.942	ppb	3.779	3037	1	94.2	70	130	
Fe	57	2	72	50.140	ppb	1.377	7558	50	100.3	70	130	
Co	59	2	72	0.961	ppb	2.181	16261	1	96.1	70	130	
Ni	60	2	72	1.384	ppb	12.042	4844	1.5	92.3	70	130	
Cu	63	2	72	2.047	ppb	3.195	20262	2	102.3	70	130	
Zn	66	2	72	9.025	ppb	3.392	11190	10	90.3	70	130	
As	75	2	72	4.875	ppb	2.836	4288	5	97.5	70	130	
Se	78	1	72	5.080	ppb	8.803	3244	5	101.6	70	130	
Sr	88	2	45	1.781	ppb	0.524	6178	1	178.1	70	130	> +/-30%
Zr	90	2	72	-7.332	ppb	-21.928	370	0.5	-1466.4	70	130	> +/-30%
Zr	90	1	72	-3.159	ppb	-160.806	1819	0.5	-631.8	70	130	> +/-30%
Nb	93	2	72	1.621	ppb	12.121	15884	2	81.0	70	130	
Mo	95	2	115	1.959	ppb	1.306	8252	2	97.9	70	130	
Pd	105	2	115	-0.017	ppb	-71.257	253	1	-1.7	70	130	> +/-30%
Ag	107	2	115	4.720	ppb	1.421	56921	5	94.4	70	130	
Cd	111	2	115	1.053	ppb	3.725	1817	1	105.3	70	130	
Sn	120	2	115	9.693	ppb	0.586	50180	10	96.9	70	130	
Sb	121	2	115	1.857	ppb	5.650	8269	2	92.8	70	130	
Ba	137	2	115	0.931	ppb	9.321	1433	1	93.1	70	130	
W	182	2	165	4.661	ppb	1.453	40999	1	466.1	70	130	> +/-30%
Pt	195	2	165	0.002	ppb	263.730	23	1	0.2	70	130	> +/-30%
Tl	205	2	165	0.897	ppb	6.256	12716	1	89.7	70	130	
Pb	208	2	165	0.968	ppb	1.710	18568	1	96.8	70	130	
Th	232	2	165	1.872	ppb	2.771	34734	2	93.6	70	130	
U	238	2	165	0.920	ppb	4.432	18191	1	92.0	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1036925	0.66	1092921	94.88	60	125	
Sc (IS)	45	2	HMI He	4384318	2.83	4591929	95.48	60	125	
Sc IS)	45	3	No Gas	130772295	2.74	129634638	100.88	60	120	
Ge Internal Standard	72	1	HMI H2	25661378	2.80	26305534	97.55	60	125	
Ge Internal Standard	72	2	HMI He	5209784	1.94	5205670	100.08	60	125	
In Internal standard	115	2	HMI He	17135418	0.93	16441998	104.22	60	125	
Ho-165	165	2	HMI He	39693773	1.09	37362695	106.24	60	125	

Blank Report

Sample Table

Sample Name MB 280-457028/1-A
 Data File Name 060_BLK.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T14:53:42-06:00
 Sample Type Blank
 Dilution 1
 Comment 457028 6020a dod5
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	1	45	-15.390	ppb	-27.92346083	125079	0.1
Li	7	3	45	-2.886	ppb	-190.5738755	8324826	0.05
Be	9	1	6	-0.007	ppb	-99.4589399	2	0.5
Na	23	2	45	782.002	ppb	1.783595385	683716	25
Mg	24	2	45	6.851	ppb	12.52684827	2690	25
Al	27	2	45	0.099	ppb	915.8588993	403	15
K	39	2	45	3.036	ppb	275.4707736	110515	50
Ca	44	2	45	8.175	ppb	15.85855204	497	25
V	51	2	72	-1.344	ppb	-0.395808199	8065	1
Cr	52	2	72	0.116	ppb	25.07225664	2314	1
Mn	55	2	72	0.094	ppb	45.87813915	517	0.5
Fe	57	2	72	2.442	ppb	20.16769002	1560	25
Co	59	2	72	0.014	ppb	65.84861493	6258	0.5
Ni	60	2	72	0.020	ppb	117.0408208	1000	1
Cu	63	2	72	0.096	ppb	31.64670286	4881	1
Zn	66	2	72	0.053	ppb	156.0970396	780	5
As	75	2	72	0.028	ppb	138.742213	195	1
Se	78	1	72	0.038	ppb	65.2721234	49	1
Sr	88	2	45	0.489	ppb	18.26908797	1873	1
Zr	90	2	72	-8.132	ppb	-15.98940264	350	1
Zr	90	1	72	-3.829	ppb	-37.37902239	1849	1
Nb	93	2	72	1.088	ppb	7.275865011	12128	2
Mo	95	2	115	0.066	ppb	29.98262008	433	0.5
Pd	105	2	115	-0.036	ppb	-23.45373352	133	1
Ag	107	2	115	0.027	ppb	21.60904029	437	1
Cd	111	2	115	0.010	ppb	59.78807441	20	0.5
Sn	120	2	115	0.084	ppb	47.00289488	1063	1
Sb	121	2	115	0.025	ppb	22.97599078	343	1
Ba	137	2	115	-0.019	ppb	-172.2105688	113	0.5
W	182	2	165	0.023	ppb	146.2712918	3170	1
Pt	195	2	165	0.000	ppb	-1782.259616	13	1
Tl	205	2	165	0.014	ppb	49.92141732	447	0.1
Pb	208	2	165	0.020	ppb	48.96741326	1310	0.5
Th	232	2	165	0.263	ppb	2.783602101	5641	1
U	238	2	165	0.014	ppb	10.47772591	337	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1048606	3.79	1092921	95.95	60	125	
Sc (IS)	45	2	HMI He	4477758	0.34	4591929	97.51	60	125	
Sc IS)	45	3	No Gas	129350854	1.69	129634638	99.78	60	120	
Ge Internal Standard	72	1	HMI H2	26466854	2.64	26305534	100.61	60	125	
Ge Internal Standard	72	2	HMI He	5147810	2.00	5205670	98.89	60	125	
In Internal standard	115	2	HMI He	16691121	0.24	16441998	101.52	60	125	
Ho-165	165	2	HMI He	39312983	2.59	37362695	105.22	60	125	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name LCS 280-457028/2-A
 Data File Name 061_LCS.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T14:57:14-06:00
 Sample Type LCS
 Dilution 1
 Analyst Denver Metals
 Comment 457028 6020a dod5
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	88.317	88.317	ppb	13.748	10340762	400	22.1	80	120	> +/-20%
Be	9	1	6	38.313	38.313	ppb	3.287	17016	40	95.8	80	120	
Na	23	2	45	591.304	591.304	ppb	1.682	521361	40	1478.3	80	120	> +/-20%
Mg	24	2	45	6.879	6.879	ppb	4.049	2664	40	17.2	80	120	> +/-20%
Al	27	2	45	427.097	427.097	ppb	3.629	40730	40	1067.7	80	120	> +/-20%
K	39	2	45	5.127	5.127	ppb	206.498	109703	40	12.8	80	120	> +/-20%
Ca	44	2	45	151.388	151.388	ppb	5.646	3900	40	378.5	80	120	> +/-20%
V	51	2	72	39.113	39.113	ppb	3.989	210077	40	97.8	80	120	
Cr	52	2	72	39.914	39.914	ppb	3.458	266349	40	99.8	80	120	
Mn	55	2	72	41.531	41.531	ppb	2.905	123354	40	103.8	80	120	
Fe	57	2	72	411.107	411.107	ppb	2.467	52780	40	1027.8	80	120	> +/-20%
Co	59	2	72	40.389	40.389	ppb	4.829	429165	40	101.0	80	120	
Ni	60	2	72	39.723	39.723	ppb	3.045	112678	40	99.3	80	120	
Cu	63	2	72	39.834	39.834	ppb	1.887	316942	40	99.6	80	120	
Zn	66	2	72	39.280	39.280	ppb	2.719	46239	40	98.2	80	120	
As	75	2	72	38.041	38.041	ppb	3.184	32254	40	95.1	80	120	
Se	78	1	72	39.846	39.846	ppb	4.217	25116	40	99.6	80	120	
Sr	88	2	45	44.186	44.186	ppb	2.689	149876	40	110.5	80	120	
Nb	93	2	72	0.723	0.723	ppb	16.004	9790	40	1.8	80	120	> +/-20%
Mo	95	2	115	39.297	39.297	ppb	3.988	157820	40	98.2	80	120	
Pd	105	2	115	-0.042	-0.042	ppb	-12.366	103	40	-0.1	80	120	> +/-20%
Ag	107	2	115	40.517	40.517	ppb	2.861	474474	40	101.3	80	120	
Cd	111	2	115	40.233	40.233	ppb	2.017	67438	40	100.6	80	120	
Sn	120	2	115	40.164	40.164	ppb	4.704	200207	40	100.4	80	120	
Sb	121	2	115	40.553	40.553	ppb	3.585	170741	40	101.4	80	120	
Ba	137	2	115	41.163	41.163	ppb	3.979	55624	40	102.9	80	120	
W	182	2	165	32.229	32.229	ppb	1.477	264849	40	80.6	80	120	
Pt	195	2	165	0.004	0.004	ppb	69.067	37	40	0.0	80	120	> +/-20%
Tl	205	2	165	38.331	38.331	ppb	2.639	531021	40	95.8	80	120	
Pb	208	2	165	38.903	38.903	ppb	1.681	706338	40	97.3	80	120	
Th	232	2	165	36.807	36.807	ppb	3.721	663055	40	92.0	80	120	
U	238	2	165	38.938	38.938	ppb	1.531	764483	40	97.3	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1076913	1.77	1092921	98.54	60	125	
Sc (IS)	45	2	HMI He	4418330	1.88	4591929	96.22	60	125	
Sc IS)	45	3	No Gas	128293914	2.49	129634638	98.97	60	120	
Ge Internal Standard	72	1	HMI H2	25460718	2.09	26305534	96.79	60	125	
Ge Internal Standard	72	2	HMI He	5208582	2.84	5205670	100.06	60	125	
In Internal standard	115	2	HMI He	16684508	4.05	16441998	101.47	60	125	
Ho-165	165	2	HMI He	39571323	0.39	37362695	105.91	60	125	

Sample Report

Sample Table

Sample Name LCSD 280-457028/3-A
 Data File Name 062SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T15:00:46-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457028 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	79.513	ppb	79.513	20.26	10351140	40000	
Be	9	1	6	40.317	ppb	40.317	4.60	17250	2000	
B	11	1	6	1474.889	ppb	1474.889	1.74	18960	100	>LDR
Na	23	2	45	452.627	ppb	452.627	1.68	411567	400000	
Mg	24	2	45	2.738	ppb	2.738	21.51	1297	400000	
Al	27	2	45	430.815	ppb	430.815	1.37	41255	400000	
K	39	2	45	-0.943	ppb	-0.943	-385.81	108227	400000	
Ca	44	2	45	155.518	ppb	155.518	4.80	4014	400000	
V	51	2	72	39.263	ppb	39.263	2.82	213514	2000	
Cr	52	2	72	40.819	ppb	40.819	0.78	275796	5000	
Mn	55	2	72	42.084	ppb	42.084	2.62	126572	10000	
Fe	57	2	72	408.594	ppb	408.594	1.10	53121	400000	
Co	59	2	72	40.839	ppb	40.839	1.87	439562	2000	
Ni	60	2	72	41.570	ppb	41.570	2.70	119350	5000	
Cu	63	2	72	40.435	ppb	40.435	2.38	325677	5000	
Zn	66	2	72	41.122	ppb	41.122	2.17	48967	5000	
As	75	2	72	38.679	ppb	38.679	2.03	33211	2000	
Se	78	1	72	40.904	ppb	40.904	1.39	25065	2000	
Sr	88	2	45	43.034	ppb	43.034	0.94	146586	2000	
Zr	90	2	72	492.929	ppb	492.929	2.17	9980	1000	
Zr	90	1	72	514.387	ppb	514.387	3.10	24566	1000	
Nb	93	2	72	0.386	ppb	0.386	18.79	7605	200	
Mo	95	2	115	39.702	ppb	39.702	8.04	160001	2000	
Pd	105	2	115	-0.033	ppb	-0.033	-24.02	157	100	
Ag	107	2	115	41.057	ppb	41.057	1.69	482829	100	
Cd	111	2	115	40.680	ppb	40.680	1.14	68472	2000	
Sn	120	2	115	41.223	ppb	41.223	0.87	206463	2000	
Sb	121	2	115	41.798	ppb	41.798	4.27	176697	1000	
Ba	137	2	115	42.641	ppb	42.641	3.28	57870	5000	
W	182	2	165	32.423	ppb	32.423	0.76	268001	100	
Pt	195	2	165	0.000	ppb	0.000	-1123.54	13	100	
Tl	205	2	165	37.881	ppb	37.881	3.38	527811	2000	
Pb	208	2	165	39.350	ppb	39.350	2.19	718598	5000	
Th	232	2	165	38.831	ppb	38.831	2.66	703555	2000	
U	238	2	165	39.537	ppb	39.537	1.13	780846	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1037728	2.31	1092921	94.95	60	125	
Sc (IS)	45	2	HMI He	4435594	1.58	4591929	96.60	60	125	
Sc IS)	45	3	No Gas	131005582	3.26	129634638	101.06	60	120	
Ge Internal Standard	72	1	HMI H2	24740464	0.63	26305534	94.05	60	125	
Ge Internal Standard	72	2	HMI He	5271882	0.37	5205670	101.27	60	125	
In Internal standard	115	2	HMI He	16747917	2.55	16441998	101.86	60	125	
Ho-165	165	2	HMI He	39805607	1.07	37362695	106.54	60	125	

Sample Report

Sample Table

Sample Name 280-123051-B-1-A
 Data File Name 063SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T15:04:17-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457028 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	107.091	ppb	107.091	4.35	10657846	40000	
Be	9	1	6	0.032	ppb	0.032	83.73	17	2000	
B	11	1	6	2687.846	ppb	2687.846	1.30	31317	100	>LDR
Na	23	2	45	25610.843	ppb	25610.843	2.12	21084457	400000	
Mg	24	2	45	139939.020	ppb	139939.020	2.31	47468583	400000	
Al	27	2	45	0.298	ppb	0.298	281.31	427	400000	
K	39	2	45	5000.664	ppb	5000.664	3.29	1697303	400000	
Ca	44	2	45	252552.166	ppb	252552.166	2.73	6143388	400000	
V	51	2	72	-1.714	ppb	-1.714	-2.76	6315	2000	
Cr	52	2	72	0.155	ppb	0.155	27.24	2597	5000	
Mn	55	2	72	798.043	ppb	798.043	6.37	2365340	10000	
Fe	57	2	72	146.313	ppb	146.313	0.64	19618	400000	
Co	59	2	72	2.980	ppb	2.980	3.69	37410	2000	
Ni	60	2	72	6.946	ppb	6.946	3.54	20492	5000	
Cu	63	2	72	0.550	ppb	0.550	0.59	8512	5000	
Zn	66	2	72	7.809	ppb	7.809	1.57	9776	5000	
As	75	2	72	0.309	ppb	0.309	6.10	435	2000	
Se	78	1	72	0.117	ppb	0.117	43.46	92	2000	
Sr	88	2	45	3123.300	ppb	3123.300	2.49	10817456	2000	
Zr	90	2	72	116.506	ppb	116.506	1.07	2720	1000	
Zr	90	1	72	139.604	ppb	139.604	3.14	7846	1000	
Nb	93	2	72	0.272	ppb	0.272	37.07	6735	200	
Mo	95	2	115	5.384	ppb	5.384	0.55	21557	2000	
Pd	105	2	115	0.048	ppb	0.048	66.57	613	100	
Ag	107	2	115	0.031	ppb	0.031	26.78	483	100	
Cd	111	2	115	0.083	ppb	0.083	41.07	140	2000	
Sn	120	2	115	0.302	ppb	0.302	8.21	2127	2000	
Sb	121	2	115	0.766	ppb	0.766	13.25	3424	1000	
Ba	137	2	115	15.144	ppb	15.144	4.94	20347	5000	
W	182	2	165	0.237	ppb	0.237	18.07	4821	100	
Pt	195	2	165	0.000	ppb	0.000	231.98	17	100	
Tl	205	2	165	0.076	ppb	0.076	3.85	1277	2000	
Pb	208	2	165	0.085	ppb	0.085	11.18	2450	5000	
Th	232	2	165	0.989	ppb	0.989	4.32	18302	2000	
U	238	2	165	26.347	ppb	26.347	1.45	505552	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	950578	3.04	1092921	86.98	60	125	
Sc (IS)	45	2	HMI He	4516627	1.45	4591929	98.36	60	125	
Sc IS)	45	3	No Gas	126908873	0.82	129634638	97.90	60	120	
Ge Internal Standard	72	1	HMI H2	24124479	0.90	26305534	91.71	60	125	
Ge Internal Standard	72	2	HMI He	5210292	2.53	5205670	100.09	60	125	
In Internal standard	115	2	HMI He	16506735	1.35	16441998	100.39	60	125	
Ho-165	165	2	HMI He	38668724	0.64	37362695	103.50	60	125	

Sample Report

Sample Table

Sample Name 280-123051-B-1-Asd@5
 Data File Name 064SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T15:07:47-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457028 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	11.639	ppb	11.639	48.53	8581706	40000	
Be	9	1	6	0.005	ppb	0.005	385.41	7	2000	
B	11	1	6	729.220	ppb	729.220	6.08	9389	100	>LDR
Na	23	2	45	5815.167	ppb	5815.167	3.30	4559789	400000	
Mg	24	2	45	31162.081	ppb	31162.081	2.11	9991664	400000	
Al	27	2	45	-1.226	ppb	-1.226	-48.01	263	400000	
K	39	2	45	1048.660	ppb	1048.660	0.76	419128	400000	
Ca	44	2	45	53569.093	ppb	53569.093	1.55	1232420	400000	
V	51	2	72	-0.891	ppb	-0.891	-12.38	10505	2000	
Cr	52	2	72	0.070	ppb	0.070	26.46	2053	5000	
Mn	55	2	72	152.783	ppb	152.783	0.87	456970	10000	
Fe	57	2	72	29.843	ppb	29.843	9.00	5051	400000	
Co	59	2	72	0.573	ppb	0.573	9.77	12288	2000	
Ni	60	2	72	1.520	ppb	1.520	4.16	5271	5000	
Cu	63	2	72	0.469	ppb	0.469	1.23	7932	5000	
Zn	66	2	72	1.481	ppb	1.481	11.00	2464	5000	
As	75	2	72	0.044	ppb	0.044	108.62	214	2000	
Se	78	1	72	0.054	ppb	0.054	67.01	57	2000	
Sr	88	2	45	698.943	ppb	698.943	5.22	2288485	2000	
Zr	90	2	72	3.187	ppb	3.187	185.26	573	1000	
Zr	90	1	72	4.138	ppb	4.138	131.70	2159	1000	
Nb	93	2	72	-0.210	ppb	-0.210	-20.70	3510	200	
Mo	95	2	115	1.156	ppb	1.156	9.74	4681	2000	
Pd	105	2	115	-0.024	ppb	-0.024	-39.28	203	100	
Ag	107	2	115	0.017	ppb	0.017	13.21	317	100	
Cd	111	2	115	0.027	ppb	0.027	59.02	47	2000	
Sn	120	2	115	0.183	ppb	0.183	9.87	1513	2000	
Sb	121	2	115	0.295	ppb	0.295	14.64	1440	1000	
Ba	137	2	115	3.228	ppb	3.228	8.43	4377	5000	
W	182	2	165	0.053	ppb	0.053	68.28	3320	100	
Pt	195	2	165	-0.003	ppb	-0.003	0.00	0	100	
Tl	205	2	165	0.018	ppb	0.018	49.23	490	2000	
Pb	208	2	165	0.032	ppb	0.032	22.76	1480	5000	
Th	232	2	165	0.115	ppb	0.115	16.08	2907	2000	
U	238	2	165	5.534	ppb	5.534	3.43	104934	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1017319	4.75	1092921	93.08	60	125	
Sc (IS)	45	2	HMI He	4269975	0.95	4591929	92.99	60	125	
Sc IS)	45	3	No Gas	128167867	1.38	129634638	98.87	60	120	
Ge Internal Standard	72	1	HMI H2	25718952	1.37	26305534	97.77	60	125	
Ge Internal Standard	72	2	HMI He	5249647	1.00	5205670	100.84	60	125	
In Internal standard	115	2	HMI He	16256026	2.87	16441998	98.87	60	125	
Ho-165	165	2	HMI He	38227643	4.00	37362695	102.32	60	125	

Sample Report

Sample Table

Sample Name 280-123051-B-1-B MS
 Data File Name 065SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T15:11:18-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457028 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	176.112	ppb	176.112	3.98	12374712	40000	
Be	9	1	6	40.760	ppb	40.760	0.92	15794	2000	
B	11	1	6	3773.110	ppb	3773.110	1.61	43272	100	>LDR
Na	23	2	45	25657.156	ppb	25657.156	4.30	21365586	400000	
Mg	24	2	45	138817.406	ppb	138817.406	3.36	47641209	400000	
Al	27	2	45	415.489	ppb	415.489	3.84	41067	400000	
K	39	2	45	4942.910	ppb	4942.910	3.33	1699256	400000	
Ca	44	2	45	248579.719	ppb	248579.719	3.08	6120368	400000	
V	51	2	72	39.597	ppb	39.597	2.73	211316	2000	
Cr	52	2	72	39.412	ppb	39.412	2.59	261502	5000	
Mn	55	2	72	858.238	ppb	858.238	2.00	2529983	10000	
Fe	57	2	72	543.011	ppb	543.011	0.69	68910	400000	
Co	59	2	72	40.366	ppb	40.366	2.26	426646	2000	
Ni	60	2	72	44.358	ppb	44.358	1.89	124976	5000	
Cu	63	2	72	37.027	ppb	37.027	2.24	293147	5000	
Zn	66	2	72	43.122	ppb	43.122	2.10	50384	5000	
As	75	2	72	39.110	ppb	39.110	3.01	32966	2000	
Se	78	1	72	40.712	ppb	40.712	3.43	25353	2000	
Sr	88	2	45	3091.985	ppb	3091.985	5.90	10832584	2000	
Zr	90	2	72	583.357	ppb	583.357	3.98	11504	1000	
Zr	90	1	72	563.863	ppb	563.863	5.69	27173	1000	
Nb	93	2	72	-0.064	ppb	-0.064	-86.31	4441	200	
Mo	95	2	115	44.910	ppb	44.910	1.26	177525	2000	
Pd	105	2	115	0.066	ppb	0.066	35.96	717	100	
Ag	107	2	115	38.243	ppb	38.243	2.88	440618	100	
Cd	111	2	115	38.297	ppb	38.297	2.11	63154	2000	
Sn	120	2	115	40.483	ppb	40.483	3.68	198611	2000	
Sb	121	2	115	42.237	ppb	42.237	1.08	175013	1000	
Ba	137	2	115	58.050	ppb	58.050	2.02	77168	5000	
W	182	2	165	32.323	ppb	32.323	3.16	266510	100	
Pt	195	2	165	0.000	ppb	0.000	-392.55	13	100	
Tl	205	2	165	34.105	ppb	34.105	6.01	473747	2000	
Pb	208	2	165	36.416	ppb	36.416	6.20	662946	5000	
Th	232	2	165	36.147	ppb	36.147	4.50	653044	2000	
U	238	2	165	62.394	ppb	62.394	4.55	1228510	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	939405	2.27	1092921	85.95	60	125	
Sc (IS)	45	2	HMI He	4573977	3.90	4591929	99.61	60	125	
Sc IS)	45	3	No Gas	128518304	0.93	129634638	99.14	60	120	
Ge Internal Standard	72	1	HMI H2	25158033	2.93	26305534	95.64	60	125	
Ge Internal Standard	72	2	HMI He	5176855	1.08	5205670	99.45	60	125	
In Internal standard	115	2	HMI He	16406223	0.97	16441998	99.78	60	125	
Ho-165	165	2	HMI He	39723824	3.70	37362695	106.32	60	125	

Sample Report

Sample Table

Sample Name 280-123051-B-1-C MSD
 Data File Name 066SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T15:14:48-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457028 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	173.820	ppb	173.820	7.35	12461770	40000	
Be	9	1	6	39.773	ppb	39.773	3.12	15714	2000	
B	11	1	6	3759.922	ppb	3759.922	4.50	43960	100	>LDR
Na	23	2	45	24153.992	ppb	24153.992	1.51	20035995	400000	
Mg	24	2	45	136457.109	ppb	136457.109	3.26	46628263	400000	
Al	27	2	45	411.640	ppb	411.640	2.71	40469	400000	
K	39	2	45	4841.841	ppb	4841.841	2.00	1659593	400000	
Ca	44	2	45	248111.415	ppb	248111.415	1.52	6081816	400000	
V	51	2	72	37.684	ppb	37.684	3.30	205363	2000	
Cr	52	2	72	37.953	ppb	37.953	2.74	256341	5000	
Mn	55	2	72	798.907	ppb	798.907	2.62	2396623	10000	
Fe	57	2	72	650.252	ppb	650.252	3.74	83698	400000	
Co	59	2	72	40.951	ppb	40.951	1.87	440428	2000	
Ni	60	2	72	43.521	ppb	43.521	2.35	124819	5000	
Cu	63	2	72	36.855	ppb	36.855	2.17	297002	5000	
Zn	66	2	72	42.429	ppb	42.429	3.18	50454	5000	
As	75	2	72	38.686	ppb	38.686	2.81	33189	2000	
Se	78	1	72	41.507	ppb	41.507	1.54	25475	2000	
Sr	88	2	45	3103.005	ppb	3103.005	2.56	10830722	2000	
Zr	90	2	72	593.772	ppb	593.772	7.91	11898	1000	
Zr	90	1	72	607.999	ppb	607.999	3.69	28733	1000	
Nb	93	2	72	-0.189	ppb	-0.189	-29.98	3657	200	
Mo	95	2	115	44.614	ppb	44.614	3.92	176477	2000	
Pd	105	2	115	0.057	ppb	0.057	50.90	663	100	
Ag	107	2	115	36.906	ppb	36.906	2.71	425613	100	
Cd	111	2	115	38.284	ppb	38.284	1.62	63190	2000	
Sn	120	2	115	39.294	ppb	39.294	2.80	192988	2000	
Sb	121	2	115	41.101	ppb	41.101	2.96	170434	1000	
Ba	137	2	115	55.444	ppb	55.444	1.82	73774	5000	
W	182	2	165	31.893	ppb	31.893	1.54	256938	100	
Pt	195	2	165	-0.001	ppb	-0.001	-241.38	10	100	
Tl	205	2	165	37.089	ppb	37.089	2.54	503775	2000	
Pb	208	2	165	37.681	ppb	37.681	1.17	670747	5000	
Th	232	2	165	37.999	ppb	37.999	1.77	670936	2000	
U	238	2	165	64.208	ppb	64.208	0.72	1235684	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	957909	1.46	1092921	87.65	60	125	
Sc (IS)	45	2	HMI He	4550796	0.73	4591929	99.10	60	125	
Sc IS)	45	3	No Gas	129977400	0.62	129634638	100.26	60	120	
Ge Internal Standard	72	1	HMI H2	24779328	0.20	26305534	94.20	60	125	
Ge Internal Standard	72	2	HMI He	5269802	2.32	5205670	101.23	60	125	
In Internal standard	115	2	HMI He	16424251	1.92	16441998	99.89	60	125	
Ho-165	165	2	HMI He	38789477	0.95	37362695	103.82	60	125	

Sample Report

Sample Table

Sample Name 280-123051-B-1-A pds
 Data File Name 067SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T15:18:18-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457028 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	93.851	ppb	93.851	1.36	10197082	40000	
Be	9	1	6	201.516	ppb	201.516	2.38	77317	2000	
B	11	1	6	2576.226	ppb	2576.226	2.82	29391	100	>LDR
Na	23	2	45	24528.043	ppb	24528.043	2.07	20192557	400000	
Mg	24	2	45	135953.387	ppb	135953.387	1.21	46115203	400000	
Al	27	2	45	2058.323	ppb	2058.323	2.96	199260	400000	
K	39	2	45	4947.982	ppb	4947.982	1.67	1681056	400000	
Ca	44	2	45	245896.780	ppb	245896.780	0.68	5983975	400000	
V	51	2	72	201.855	ppb	201.855	3.42	1020007	2000	
Cr	52	2	72	200.259	ppb	200.259	5.52	1326291	5000	
Mn	55	2	72	973.585	ppb	973.585	3.01	2879529	10000	
Fe	57	2	72	2103.754	ppb	2103.754	2.91	264208	400000	
Co	59	2	72	198.558	ppb	198.558	5.13	2080746	2000	
Ni	60	2	72	191.514	ppb	191.514	2.55	538343	5000	
Cu	63	2	72	191.028	ppb	191.028	2.14	1500460	5000	
Zn	66	2	72	196.433	ppb	196.433	1.37	227766	5000	
As	75	2	72	196.320	ppb	196.320	3.11	165351	2000	
Se	78	1	72	208.799	ppb	208.799	1.83	126493	2000	
Sr	88	2	45	3007.024	ppb	3007.024	4.11	10417641	2000	
Zr	90	2	72	89285.101	ppb	89285.101	3.42	1689392	1000	>LDR
Zr	90	1	72	88156.812	ppb	88156.812	4.23	3844602	1000	>LDR
Nb	93	2	72	4.789	ppb	4.789	6.22	37265	200	
Mo	95	2	115	206.490	ppb	206.490	2.60	797805	2000	
Pd	105	2	115	0.117	ppb	0.117	47.33	983	100	
Ag	107	2	115	38.806	ppb	38.806	1.12	437453	100	
Cd	111	2	115	196.863	ppb	196.863	2.99	317529	2000	
Sn	120	2	115	206.260	ppb	206.260	0.84	987605	2000	
Sb	121	2	115	219.148	ppb	219.148	3.03	887276	1000	
Ba	137	2	115	228.126	ppb	228.126	2.27	296215	5000	
W	182	2	165	202.223	ppb	202.223	2.29	1639424	100	
Pt	195	2	165	0.087	ppb	0.087	9.09	503	100	
Tl	205	2	165	192.516	ppb	192.516	3.33	2654427	2000	
Pb	208	2	165	197.825	ppb	197.825	1.73	3572883	5000	
Th	232	2	165	1.177	ppb	1.177	3.64	22027	2000	
U	238	2	165	215.082	ppb	215.082	1.59	4205429	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	930446	1.20	1092921	85.13	60	125	
Sc (IS)	45	2	HMI He	4517672	1.64	4591929	98.38	60	125	
Sc IS)	45	3	No Gas	124928452	1.86	129634638	96.37	60	120	
Ge Internal Standard	72	1	HMI H2	24482151	2.01	26305534	93.07	60	125	
Ge Internal Standard	72	2	HMI He	5196702	2.81	5205670	99.83	60	125	
In Internal standard	115	2	HMI He	16050127	0.91	16441998	97.62	60	125	
Ho-165	165	2	HMI He	39412970	1.89	37362695	105.49	60	125	

Sample Report

Sample Table

Sample Name 280-123051-B-2-A
 Data File Name 068SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T15:21:45-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457028 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	40.795	ppb	40.795	5.62	9074880	40000	
Be	9	1	6	0.118	ppb	0.118	22.95	50	2000	
B	11	1	6	8974.665	ppb	8974.665	1.96	102271	100	>LDR
Na	23	2	45	30326.491	ppb	30326.491	2.19	24714144	400000	
Mg	24	2	45	68292.981	ppb	68292.981	4.52	22936679	400000	
Al	27	2	45	2.229	ppb	2.229	19.73	607	400000	
K	39	2	45	5244.485	ppb	5244.485	2.39	1757933	400000	
Ca	44	2	45	137001.685	ppb	137001.685	1.45	3301436	400000	
V	51	2	72	-1.752	ppb	-1.752	-5.55	6084	2000	
Cr	52	2	72	0.169	ppb	0.169	27.89	2677	5000	
Mn	55	2	72	132.089	ppb	132.089	2.02	389279	10000	
Fe	57	2	72	29.456	ppb	29.456	5.93	4927	400000	
Co	59	2	72	0.298	ppb	0.298	14.45	9239	2000	
Ni	60	2	72	1.933	ppb	1.933	2.39	6348	5000	
Cu	63	2	72	1.629	ppb	1.629	9.74	16852	5000	
Zn	66	2	72	8.199	ppb	8.199	4.31	10153	5000	
As	75	2	72	3.637	ppb	3.637	3.82	3222	2000	
Se	78	1	72	0.175	ppb	0.175	40.84	129	2000	
Sr	88	2	45	10236.215	ppb	10236.215	1.93	35119062	2000	>LDR
Zr	90	2	72	142.926	ppb	142.926	10.24	3200	1000	
Zr	90	1	72	262.177	ppb	262.177	11.81	13449	1000	
Nb	93	2	72	-0.563	ppb	-0.563	-2.67	1080	200	
Mo	95	2	115	26.751	ppb	26.751	2.63	107359	2000	
Pd	105	2	115	0.312	ppb	0.312	21.08	2147	100	
Ag	107	2	115	0.040	ppb	0.040	8.89	597	100	
Cd	111	2	115	0.118	ppb	0.118	39.60	200	2000	
Sn	120	2	115	0.597	ppb	0.597	1.60	3607	2000	
Sb	121	2	115	0.614	ppb	0.614	6.04	2817	1000	
Ba	137	2	115	25.330	ppb	25.330	3.24	34241	5000	
W	182	2	165	0.337	ppb	0.337	9.56	5641	100	
Pt	195	2	165	-0.003	ppb	-0.003	0.00	0	100	
Tl	205	2	165	0.087	ppb	0.087	15.06	1430	2000	
Pb	208	2	165	0.128	ppb	0.128	12.88	3220	5000	
Th	232	2	165	-0.008	ppb	-0.008	-52.23	783	2000	
U	238	2	165	4.204	ppb	4.204	3.79	80992	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	938414	1.03	1092921	85.86	60	125	
Sc (IS)	45	2	HMI He	4473689	0.91	4591929	97.43	60	125	
Sc IS)	45	3	No Gas	125758313	0.52	129634638	97.01	60	120	
Ge Internal Standard	72	1	HMI H2	24745449	2.19	26305534	94.07	60	125	
Ge Internal Standard	72	2	HMI He	5172633	1.34	5205670	99.37	60	125	
In Internal standard	115	2	HMI He	16651534	1.44	16441998	101.27	60	125	
Ho-165	165	2	HMI He	38798863	1.04	37362695	103.84	60	125	

Sample Report

Sample Table

Sample Name 280-123051-B-3-A
 Data File Name 069SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T15:38:23-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457028 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	36.685	ppb	36.685	13.39	8993698	40000	
Be	9	1	6	-0.002	ppb	-0.002	-659.75	3	2000	
B	11	1	6	9225.188	ppb	9225.188	4.15	101471	100	>LDR
Na	23	2	45	29956.319	ppb	29956.319	1.27	23751878	400000	
Mg	24	2	45	67775.916	ppb	67775.916	1.69	22147559	400000	
Al	27	2	45	1.904	ppb	1.904	42.52	560	400000	
K	39	2	45	5486.738	ppb	5486.738	2.58	1784216	400000	
Ca	44	2	45	139605.767	ppb	139605.767	1.98	3272540	400000	
V	51	2	72	-1.566	ppb	-1.566	-6.97	6805	2000	
Cr	52	2	72	0.205	ppb	0.205	2.71	2837	5000	
Mn	55	2	72	127.626	ppb	127.626	3.11	365821	10000	
Fe	57	2	72	31.657	ppb	31.657	1.65	5064	400000	
Co	59	2	72	0.226	ppb	0.226	2.32	8272	2000	
Ni	60	2	72	1.865	ppb	1.865	12.12	5981	5000	
Cu	63	2	72	1.248	ppb	1.248	4.15	13522	5000	
Zn	66	2	72	7.642	ppb	7.642	7.55	9256	5000	
As	75	2	72	3.528	ppb	3.528	1.08	3046	2000	
Se	78	1	72	0.121	ppb	0.121	16.91	97	2000	
Sr	88	2	45	10083.685	ppb	10083.685	7.19	33632261	2000	>LDR
Zr	90	2	72	28.023	ppb	28.023	31.27	1003	1000	
Zr	90	1	72	26.541	ppb	26.541	19.39	3097	1000	
Nb	93	2	72	-0.580	ppb	-0.580	-2.24	940	200	
Mo	95	2	115	26.190	ppb	26.190	1.34	100558	2000	
Pd	105	2	115	0.356	ppb	0.356	9.64	2304	100	
Ag	107	2	115	0.008	ppb	0.008	54.59	207	100	
Cd	111	2	115	0.050	ppb	0.050	24.98	83	2000	
Sn	120	2	115	0.391	ppb	0.391	13.19	2467	2000	
Sb	121	2	115	0.292	ppb	0.292	9.44	1400	1000	
Ba	137	2	115	24.521	ppb	24.521	3.61	31712	5000	
W	182	2	165	0.049	ppb	0.049	111.92	3274	100	
Pt	195	2	165	-0.001	ppb	-0.001	-242.45	10	100	
Tl	205	2	165	0.027	ppb	0.027	11.89	613	2000	
Pb	208	2	165	0.014	ppb	0.014	79.93	1163	5000	
Th	232	2	165	-0.005	ppb	-0.005	-13.63	817	2000	
U	238	2	165	3.877	ppb	3.877	6.10	73248	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	906488	3.03	1092921	82.94	60	125	
Sc (IS)	45	2	HMI He	4352784	2.36	4591929	94.79	60	125	
Sc IS)	45	3	No Gas	125916437	0.95	129634638	97.13	60	120	
Ge Internal Standard	72	1	HMI H2	24990498	1.75	26305534	95.00	60	125	
Ge Internal Standard	72	2	HMI He	5033368	2.77	5205670	96.69	60	125	
In Internal standard	115	2	HMI He	15930955	3.19	16441998	96.89	60	125	
Ho-165	165	2	HMI He	38101018	3.59	37362695	101.98	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5699926
 Data File Name 070_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T15:41:54-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	85.773	ppb	14.660	154016	100	85.8	90	110	>+ -10%
Li	7	3	45	96.043	ppb	6.511	10065646	100	96.0	90	110	
Be	9	1	6	48.763	ppb	2.566	19784	50	97.5	90	110	
B	11	1	6	263.368	ppb	5.701	3550	50	526.7	90	110	>+ -10%
Na	23	2	45	1043.701	ppb	1.446	870601	1000	104.4	90	110	
Mg	24	2	45	1007.167	ppb	0.772	329124	1000	100.7	90	110	
Al	27	2	45	1005.661	ppb	1.148	93883	1000	100.6	90	110	
K	39	2	45	984.034	ppb	0.939	406946	1000	98.4	90	110	
Ca	44	2	45	977.837	ppb	3.349	23186	1000	97.8	90	110	
V	51	2	72	48.926	ppb	2.867	255717	50	97.9	90	110	
Cr	52	2	72	48.336	ppb	1.275	318064	50	96.7	90	110	
Mn	55	2	72	49.600	ppb	2.163	145348	50	99.2	90	110	
Fe	57	2	72	971.491	ppb	1.196	121384	1000	97.1	90	110	
Co	59	2	72	48.547	ppb	0.502	508169	50	97.1	90	110	
Ni	60	2	72	47.500	ppb	2.241	132778	50	95.0	90	110	
Cu	63	2	72	47.381	ppb	0.861	371239	50	94.8	90	110	
Zn	66	2	72	47.711	ppb	3.006	55249	50	95.4	90	110	
As	75	2	72	49.224	ppb	1.431	41150	50	98.4	90	110	
Se	78	1	72	52.550	ppb	3.499	31943	50	105.1	90	110	
Sr	88	2	45	104.638	ppb	1.502	349038	100	104.6	90	110	
Zr	90	2	72	86.123	ppb	5.710	2113	50	172.2	90	110	>+ -10%
Zr	90	1	72	95.000	ppb	8.612	6034	50	190.0	90	110	>+ -10%
Nb	93	2	72	94.285	ppb	4.109	634216	100	94.3	90	110	
Mo	95	2	115	46.978	ppb	2.448	183099	50	94.0	90	110	
Pd	105	2	115	49.752	ppb	3.219	280115	50	99.5	90	110	
Ag	107	2	115	49.858	ppb	2.683	566499	50	99.7	90	110	
Cd	111	2	115	50.681	ppb	3.297	82409	50	101.4	90	110	
Sn	120	2	115	50.753	ppb	0.852	245500	50	101.5	90	110	
Sb	121	2	115	50.690	ppb	2.033	207104	50	101.4	90	110	
Ba	137	2	115	49.990	ppb	2.732	65539	50	100.0	90	110	
W	182	2	165	47.602	ppb	3.662	384009	50	95.2	90	110	
Pt	195	2	165	46.257	ppb	3.165	257255	50	92.5	90	110	
Tl	205	2	165	45.634	ppb	5.041	622642	50	91.3	90	110	
Pb	208	2	165	48.151	ppb	2.502	861261	50	96.3	90	110	
Th	232	2	165	46.772	ppb	4.329	829744	50	93.5	90	110	
U	238	2	165	46.869	ppb	4.223	906576	50	93.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	983531	0.23	1092921	89.99	60	125	
Sc (IS)	45	2	HMI He	4346896	0.55	4591929	94.66	60	125	
Sc IS)	45	3	No Gas	122750338	1.72	129634638	94.69	60	120	
Ge Internal Standard	72	1	HMI H2	24550235	0.73	26305534	93.33	60	125	
Ge Internal Standard	72	2	HMI He	5138888	1.38	5205670	98.72	60	125	
In Internal standard	115	2	HMI He	16184922	2.59	16441998	98.44	60	125	
Ho-165	165	2	HMI He	39010182	2.82	37362695	104.41	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5699924
 Data File Name 071_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T15:45:24-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-18.044	ppb	-51.4	119055	0.1	
Li	7	3	45	-12.095	ppb	-63.2	7790271	0.05	
Be	9	1	6	0.029	ppb	129.6	17	0.5	
B	11	1	6	114.432	ppb	12.1	1780	0.1	>RL
Na	23	2	45	80.397	ppb	4.8	105526	25	>RL
Mg	24	2	45	8.303	ppb	3.9	2984	25	
Al	27	2	45	-0.374	ppb	-278.7	337	15	
K	39	2	45	9.303	ppb	23.4	105591	50	
Ca	44	2	45	12.152	ppb	18.6	557	25	
V	51	2	72	0.019	ppb	370.2	14263	1	
Cr	52	2	72	0.011	ppb	145.7	1567	1	
Mn	55	2	72	0.120	ppb	16.5	570	0.5	
Fe	57	2	72	2.539	ppb	66.9	1517	25	
Co	59	2	72	0.012	ppb	379.1	6004	0.5	
Ni	60	2	72	0.139	ppb	32.2	1280	1	
Cu	63	2	72	0.642	ppb	11.7	8796	1	
Zn	66	2	72	0.250	ppb	54.4	967	5	
As	75	2	72	0.055	ppb	53.7	210	1	
Se	78	1	72	0.065	ppb	46.2	63	1	
Sr	88	2	45	0.847	ppb	16.4	2914	1	
Zr	90	2	72	-7.285	ppb	-32.3	353	1	
Zr	90	1	72	-2.349	ppb	-234.5	1809	1	
Nb	93	2	72	3.142	ppb	7.2	24912	2	>RL
Mo	95	2	115	0.121	ppb	24.3	637	0.5	
Pd	105	2	115	0.003	ppb	552.3	350	1	
Ag	107	2	115	0.029	ppb	24.7	450	1	
Cd	111	2	115	0.035	ppb	59.7	60	0.5	
Sn	120	2	115	0.155	ppb	27.6	1373	1	
Sb	121	2	115	0.122	ppb	32.1	733	1	
Ba	137	2	115	0.072	ppb	99.0	230	0.5	
W	182	2	165	0.066	ppb	35.4	3474	1	
Pt	195	2	165	0.023	ppb	36.9	140	1	
Tl	205	2	165	0.022	ppb	19.5	547	0.1	
Pb	208	2	165	0.037	ppb	20.1	1600	0.5	
Th	232	2	165	0.146	ppb	8.6	3490	1	
U	238	2	165	0.047	ppb	11.4	963	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	985894	2.56	1092921	90.21	60	125	
Sc (IS)	45	2	HMI He	4203039	1.88	4591929	91.53	60	125	
Sc IS)	45	3	No Gas	124203359	0.63	129634638	95.81	60	120	
Ge Internal Standard	72	1	HMI H2	24965173	0.78	26305534	94.90	60	125	
Ge Internal Standard	72	2	HMI He	4961408	1.95	5205670	95.31	60	125	
In Internal standard	115	2	HMI He	16198051	1.52	16441998	98.52	60	125	
Ho-165	165	2	HMI He	38732979	2.81	37362695	103.67	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5699928
 Data File Name 072LCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T15:48:55-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	-6.607	ppb	-125.189	7916108	50	-13.2	70	130	> +/-30%
Be	9	1	6	0.862	ppb	13.711	353	1	86.2	70	130	
Na	23	2	45	114.160	ppb	6.238	130734	50	228.3	70	130	> +/-30%
Mg	24	2	45	55.128	ppb	5.631	17676	50	110.3	70	130	
Al	27	2	45	52.901	ppb	2.204	5104	50	105.8	70	130	
K	39	2	45	111.211	ppb	8.233	135083	100	111.2	70	130	
Ca	44	2	45	35.965	ppb	10.354	1090	50	71.9	70	130	
V	51	2	72	5.223	ppb	6.650	39211	5	104.5	70	130	
Cr	52	2	72	1.954	ppb	6.470	13922	2	97.7	70	130	
Mn	55	2	72	1.050	ppb	7.726	3214	1	105.0	70	130	
Fe	57	2	72	50.011	ppb	6.210	7218	50	100.0	70	130	
Co	59	2	72	0.959	ppb	5.651	15544	1	95.9	70	130	
Ni	60	2	72	1.427	ppb	3.147	4761	1.5	95.2	70	130	
Cu	63	2	72	1.876	ppb	7.186	18126	2	93.8	70	130	
Zn	66	2	72	9.234	ppb	0.943	10947	10	92.3	70	130	
As	75	2	72	4.614	ppb	2.662	3896	5	92.3	70	130	
Se	78	1	72	4.933	ppb	5.188	3044	5	98.7	70	130	
Sr	88	2	45	1.492	ppb	5.389	4967	1	149.2	70	130	> +/-30%
Zr	90	2	72	-11.420	ppb	-16.079	280	0.5	-2284.0	70	130	> +/-30%
Zr	90	1	72	-2.107	ppb	-219.814	1802	0.5	-421.4	70	130	> +/-30%
Nb	93	2	72	1.571	ppb	15.651	14867	2	78.6	70	130	
Mo	95	2	115	1.958	ppb	0.399	7832	2	97.9	70	130	
Pd	105	2	115	-0.022	ppb	-27.723	213	1	-2.2	70	130	> +/-30%
Ag	107	2	115	4.734	ppb	2.684	54215	5	94.7	70	130	
Cd	111	2	115	0.982	ppb	15.826	1607	1	98.2	70	130	
Sn	120	2	115	9.741	ppb	6.038	47844	10	97.4	70	130	
Sb	121	2	115	2.021	ppb	6.949	8519	2	101.0	70	130	
Ba	137	2	115	1.092	ppb	11.854	1570	1	109.2	70	130	
W	182	2	165	4.493	ppb	1.501	39428	1	449.3	70	130	> +/-30%
Pt	195	2	165	0.007	ppb	44.113	57	1	0.7	70	130	> +/-30%
Tl	205	2	165	0.861	ppb	2.928	12172	1	86.1	70	130	
Pb	208	2	165	0.935	ppb	1.476	17878	1	93.5	70	130	
Th	232	2	165	1.829	ppb	1.601	33783	2	91.5	70	130	
U	238	2	165	0.956	ppb	7.747	18772	1	95.6	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	982731	2.23	1092921	89.92	60	125	
Sc (IS)	45	2	HMI He	4185661	2.50	4591929	91.15	60	125	
Sc IS)	45	3	No Gas	124284832	1.33	129634638	95.87	60	120	
Ge Internal Standard	72	1	HMI H2	24788190	4.11	26305534	94.23	60	125	
Ge Internal Standard	72	2	HMI He	4989283	1.86	5205670	95.84	60	125	
In Internal standard	115	2	HMI He	16267908	1.74	16441998	98.94	60	125	
Ho-165	165	2	HMI He	39500727	3.77	37362695	105.72	60	125	

Blank Report

Sample Table

Sample Name MB 280-457077/1-A
 Data File Name 073_BLK.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T15:52:27-06:00
 Sample Type Blank
 Dilution 1
 Comment 457077 6020a dod5
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	1	45	-24.801	ppb	-22.17078792	116536	0.1
Li	7	3	45	-17.743	ppb	-44.09762699	7760909	0.05
Be	9	1	6	0.002	ppb	699.5227286	5	0.5
Na	23	2	45	58.904	ppb	3.421442102	92210	25
Mg	24	2	45	6.987	ppb	5.725998291	2657	25
Al	27	2	45	0.934	ppb	116.4811599	470	15
K	39	2	45	-12.158	ppb	-38.75206335	102678	50
Ca	44	2	45	8.945	ppb	40.80871265	500	25
V	51	2	72	-1.214	ppb	-8.903851138	8679	1
Cr	52	2	72	0.183	ppb	10.72182144	2747	1
Mn	55	2	72	0.465	ppb	22.65617179	1597	0.5
Fe	57	2	72	10.852	ppb	27.96046149	2590	25
Co	59	2	72	-0.044	ppb	-76.79918076	5644	0.5
Ni	60	2	72	0.005	ppb	1054.358893	953	1
Cu	63	2	72	-0.061	ppb	-44.85479622	3657	1
Zn	66	2	72	0.566	ppb	13.95087081	1363	5
As	75	2	72	-0.009	ppb	-309.8988109	164	1
Se	78	1	72	0.012	ppb	139.4896205	29	1
Sr	88	2	45	0.761	ppb	9.60447295	2727	1
Zr	90	2	72	-7.748	ppb	-7.595681433	357	1
Zr	90	1	72	1.143	ppb	482.4158687	1922	1
Nb	93	2	72	1.480	ppb	11.30737802	14733	2
Mo	95	2	115	0.033	ppb	28.50327264	293	0.5
Pd	105	2	115	-0.009	ppb	-231.8232801	283	1
Ag	107	2	115	0.048	ppb	5.223658409	670	1
Cd	111	2	115	0.004	ppb	147.8230628	10	0.5
Sn	120	2	115	0.191	ppb	24.46382641	1553	1
Sb	121	2	115	0.065	ppb	14.58064773	500	1
Ba	137	2	115	0.074	ppb	17.96313944	233	0.5
W	182	2	165	0.144	ppb	21.1882972	4097	1
Pt	195	2	165	0.004	ppb	69.09141255	37	1
Tl	205	2	165	0.002	ppb	328.0448649	277	0.1
Pb	208	2	165	0.053	ppb	19.60879675	1880	0.5
Th	232	2	165	0.475	ppb	8.392511058	9286	1
U	238	2	165	0.015	ppb	16.27664149	353	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	944957	4.60	1092921	86.46	60	125	
Sc (IS)	45	2	HMI He	4348558	1.16	4591929	94.70	60	125	
Sc IS)	45	3	No Gas	125782035	2.06	129634638	97.03	60	120	
Ge Internal Standard	72	1	HMI H2	24475628	2.19	26305534	93.04	60	125	
Ge Internal Standard	72	2	HMI He	5138117	2.92	5205670	98.70	60	125	
In Internal standard	115	2	HMI He	16271172	1.03	16441998	98.96	60	125	
Ho-165	165	2	HMI He	38775154	2.10	37362695	103.78	60	125	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name LCS 280-457077/2-A
 Data File Name 074_LCS.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T15:56:00-06:00
 Sample Type LCS
 Dilution 1
 Analyst Denver Metals
 Comment 457077 6020a dod5
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	63.752	63.752	ppb	8.694	9644183	400	15.9	80	120	> +/-20%
Be	9	1	6	39.313	39.313	ppb	2.258	15715	40	98.3	80	120	
Na	23	2	45	58.268	58.268	ppb	2.113	90601	40	145.7	80	120	> +/-20%
Mg	24	2	45	4.734	4.734	ppb	15.971	1897	40	11.8	80	120	> +/-20%
Al	27	2	45	445.825	445.825	ppb	1.901	41345	40	1114.6	80	120	> +/-20%
K	39	2	45	-2.952	-2.952	ppb	-442.716	104193	40	-7.4	80	120	> +/-20%
Ca	44	2	45	147.031	147.031	ppb	9.048	3690	40	367.6	80	120	> +/-20%
V	51	2	72	37.651	37.651	ppb	2.874	201399	40	94.1	80	120	
Cr	52	2	72	38.123	38.123	ppb	2.721	252697	40	95.3	80	120	
Mn	55	2	72	40.216	40.216	ppb	0.352	118662	40	100.5	80	120	
Fe	57	2	72	419.609	419.609	ppb	2.975	53476	40	1049.0	80	120	> +/-20%
Co	59	2	72	38.308	38.308	ppb	2.322	404712	40	95.8	80	120	
Ni	60	2	72	38.897	38.897	ppb	1.705	109608	40	97.2	80	120	
Cu	63	2	72	38.673	38.673	ppb	3.626	305581	40	96.7	80	120	
Zn	66	2	72	38.829	38.829	ppb	1.330	45393	40	97.1	80	120	
As	75	2	72	36.213	36.213	ppb	0.846	30507	40	90.5	80	120	
Se	78	1	72	37.946	37.946	ppb	2.860	23416	40	94.9	80	120	
Sr	88	2	45	42.554	42.554	ppb	2.027	140407	40	106.4	80	120	
Nb	93	2	72	0.987	0.987	ppb	11.174	11497	40	2.5	80	120	> +/-20%
Mo	95	2	115	37.650	37.650	ppb	3.069	151273	40	94.1	80	120	
Pd	105	2	115	-0.032	-0.032	ppb	-25.999	160	40	-0.1	80	120	> +/-20%
Ag	107	2	115	38.907	38.907	ppb	2.286	455687	40	97.3	80	120	
Cd	111	2	115	37.822	37.822	ppb	2.187	63425	40	94.6	80	120	
Sn	120	2	115	40.167	40.167	ppb	1.458	200356	40	100.4	80	120	
Sb	121	2	115	39.261	39.261	ppb	1.089	165382	40	98.2	80	120	
Ba	137	2	115	40.830	40.830	ppb	1.806	55220	40	102.1	80	120	
W	182	2	165	31.368	31.368	ppb	0.316	256657	40	78.4	80	120	> +/-20%
Pt	195	2	165	0.000	0.000	ppb	886.915	17	40	0.0	80	120	> +/-20%
Tl	205	2	165	36.455	36.455	ppb	3.077	502597	40	91.1	80	120	
Pb	208	2	165	37.529	37.529	ppb	2.417	678138	40	93.8	80	120	
Th	232	2	165	36.445	36.445	ppb	3.443	653351	40	91.1	80	120	
U	238	2	165	37.030	37.030	ppb	2.831	723535	40	92.6	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	969074	0.93	1092921	88.67	60	125	
Sc (IS)	45	2	HMI He	4295735	1.28	4591929	93.55	60	125	
Sc IS)	45	3	No Gas	126493310	1.93	129634638	97.58	60	120	
Ge Internal Standard	72	1	HMI H2	24909661	1.41	26305534	94.69	60	125	
Ge Internal Standard	72	2	HMI He	5171185	1.68	5205670	99.34	60	125	
In Internal standard	115	2	HMI He	16679029	1.64	16441998	101.44	60	125	
Ho-165	165	2	HMI He	39387474	1.34	37362695	105.42	60	125	

Sample Report

Sample Table

Sample Name 280-123275-C-5-D
 Data File Name 075SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T15:59:33-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457077 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-19.474	ppb	-19.474	-64.72	7807559	40000	
Be	9	1	6	0.104	ppb	0.104	32.41	45	2000	
B	11	1	6	2400.105	ppb	2400.105	3.89	27888	100	>LDR
Na	23	2	45	9649.009	ppb	9649.009	2.16	7560895	400000	
Mg	24	2	45	3504.110	ppb	3504.110	1.26	1127722	400000	
Al	27	2	45	1801.721	ppb	1801.721	1.62	165479	400000	
K	39	2	45	1335.334	ppb	1335.334	0.91	506856	400000	
Ca	44	2	45	5502.569	ppb	5502.569	1.87	127268	400000	
V	51	2	72	2.475	ppb	2.475	13.15	26811	2000	
Cr	52	2	72	2.214	ppb	2.214	0.52	16028	5000	
Mn	55	2	72	139.066	ppb	139.066	2.25	406473	10000	
Fe	57	2	72	2115.764	ppb	2115.764	3.22	262406	400000	
Co	59	2	72	1.364	ppb	1.364	2.78	20172	2000	
Ni	60	2	72	4.052	ppb	4.052	3.26	12168	5000	
Cu	63	2	72	2.345	ppb	2.345	4.53	22285	5000	
Zn	66	2	72	14.046	ppb	14.046	2.82	16755	5000	
As	75	2	72	0.832	ppb	0.832	16.79	863	2000	
Se	78	1	72	0.220	ppb	0.220	9.58	156	2000	
Sr	88	2	45	110.585	ppb	110.585	0.91	363562	2000	
Zr	90	2	72	591.631	ppb	591.631	8.97	11551	1000	
Zr	90	1	72	621.689	ppb	621.689	1.72	29004	1000	
Nb	93	2	72	0.534	ppb	0.534	40.80	8379	200	
Mo	95	2	115	0.177	ppb	0.177	20.78	857	2000	
Pd	105	2	115	-0.039	ppb	-0.039	-22.42	117	100	
Ag	107	2	115	0.028	ppb	0.028	60.43	440	100	
Cd	111	2	115	0.075	ppb	0.075	31.80	127	2000	
Sn	120	2	115	0.272	ppb	0.272	9.68	1947	2000	
Sb	121	2	115	0.864	ppb	0.864	9.97	3774	1000	
Ba	137	2	115	71.279	ppb	71.279	3.79	93805	5000	
W	182	2	165	0.137	ppb	0.137	20.23	4097	100	
Pt	195	2	165	0.004	ppb	0.004	132.36	37	100	
Tl	205	2	165	0.046	ppb	0.046	9.72	883	2000	
Pb	208	2	165	2.266	ppb	2.266	2.45	41764	5000	
Th	232	2	165	0.875	ppb	0.875	4.99	16556	2000	
U	238	2	165	0.120	ppb	0.120	7.02	2400	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	946739	0.83	1092921	86.62	60	125	
Sc (IS)	45	2	HMI He	4284703	1.77	4591929	93.31	60	125	
Sc IS)	45	3	No Gas	127170873	1.68	129634638	98.10	60	120	
Ge Internal Standard	72	1	HMI H2	24502062	2.07	26305534	93.14	60	125	
Ge Internal Standard	72	2	HMI He	5131584	2.02	5205670	98.58	60	125	
In Internal standard	115	2	HMI He	16253856	1.32	16441998	98.86	60	125	
Ho-165	165	2	HMI He	39290866	2.49	37362695	105.16	60	125	

Sample Report

Sample Table

Sample Name 280-123275-C-5-E MS
 Data File Name 076SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T16:03:03-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457077 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	69.799	ppb	69.799	17.43	9647404	40000	
Be	9	1	6	39.929	ppb	39.929	1.32	15702	2000	
B	11	1	6	3601.977	ppb	3601.977	6.36	41902	100	>LDR
Na	23	2	45	9147.874	ppb	9147.874	3.63	7274903	400000	
Mg	24	2	45	3390.452	ppb	3390.452	1.42	1106815	400000	
Al	27	2	45	2104.666	ppb	2104.666	0.78	196007	400000	
K	39	2	45	1288.998	ppb	1288.998	1.18	499961	400000	
Ca	44	2	45	5505.926	ppb	5505.926	0.97	129182	400000	
V	51	2	72	40.741	ppb	40.741	2.09	220555	2000	
Cr	52	2	72	39.118	ppb	39.118	1.87	263850	5000	
Mn	55	2	72	172.977	ppb	172.977	1.67	518512	10000	
Fe	57	2	72	2226.563	ppb	2226.563	3.57	283112	400000	
Co	59	2	72	38.272	ppb	38.272	3.32	411392	2000	
Ni	60	2	72	40.861	ppb	40.861	5.68	117023	5000	
Cu	63	2	72	40.169	ppb	40.169	2.99	322858	5000	
Zn	66	2	72	48.860	ppb	48.860	2.85	57917	5000	
As	75	2	72	35.587	ppb	35.587	2.19	30507	2000	
Se	78	1	72	38.131	ppb	38.131	1.66	22659	2000	
Sr	88	2	45	148.758	ppb	148.758	0.42	496023	2000	
Zr	90	2	72	747.348	ppb	747.348	4.60	14830	1000	
Zr	90	1	72	816.331	ppb	816.331	4.23	36720	1000	
Nb	93	2	72	0.335	ppb	0.335	46.29	7232	200	
Mo	95	2	115	39.811	ppb	39.811	2.29	152521	2000	
Pd	105	2	115	-0.041	ppb	-0.041	-11.28	103	100	
Ag	107	2	115	40.670	ppb	40.670	2.67	454101	100	
Cd	111	2	115	41.358	ppb	41.358	2.04	66095	2000	
Sn	120	2	115	24.942	ppb	24.942	1.92	118828	2000	
Sb	121	2	115	31.091	ppb	31.091	0.81	124902	1000	
Ba	137	2	115	116.068	ppb	116.068	1.87	149357	5000	
W	182	2	165	28.375	ppb	28.375	0.37	232999	100	
Pt	195	2	165	0.003	ppb	0.003	32.46	33	100	
Tl	205	2	165	37.690	ppb	37.690	3.75	520912	2000	
Pb	208	2	165	39.663	ppb	39.663	2.39	718535	5000	
Th	232	2	165	35.381	ppb	35.381	2.25	636025	2000	
U	238	2	165	36.688	ppb	36.688	2.17	718763	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	953507	3.11	1092921	87.24	60	125	
Sc (IS)	45	2	HMI He	4345893	0.51	4591929	94.64	60	125	
Sc IS)	45	3	No Gas	124762507	1.11	129634638	96.24	60	120	
Ge Internal Standard	72	1	HMI H2	23988516	0.42	26305534	91.19	60	125	
Ge Internal Standard	72	2	HMI He	5263068	2.52	5205670	101.10	60	125	
In Internal standard	115	2	HMI He	15899459	1.37	16441998	96.70	60	125	
Ho-165	165	2	HMI He	39480084	1.41	37362695	105.67	60	125	

Sample Report

Sample Table

Sample Name 280-123275-C-5-F MSD
 Data File Name 077SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T16:06:33-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457077 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	60.582	ppb	60.582	7.30	9503393	40000	
Be	9	1	6	40.706	ppb	40.706	2.79	15967	2000	
B	11	1	6	3648.080	ppb	3648.080	1.10	42380	100	>LDR
Na	23	2	45	9475.495	ppb	9475.495	2.70	7405976	400000	
Mg	24	2	45	3526.112	ppb	3526.112	4.09	1131092	400000	
Al	27	2	45	2524.141	ppb	2524.141	3.16	230980	400000	
K	39	2	45	1367.309	ppb	1367.309	4.67	514855	400000	
Ca	44	2	45	5772.322	ppb	5772.322	2.69	133131	400000	
V	51	2	72	41.012	ppb	41.012	0.51	217721	2000	
Cr	52	2	72	40.161	ppb	40.161	1.55	265721	5000	
Mn	55	2	72	182.899	ppb	182.899	1.60	537766	10000	
Fe	57	2	72	2567.697	ppb	2567.697	2.45	320152	400000	
Co	59	2	72	40.474	ppb	40.474	1.74	426527	2000	
Ni	60	2	72	43.163	ppb	43.163	2.58	121278	5000	
Cu	63	2	72	40.606	ppb	40.606	2.24	320147	5000	
Zn	66	2	72	52.664	ppb	52.664	1.64	61192	5000	
As	75	2	72	37.771	ppb	37.771	1.35	31754	2000	
Se	78	1	72	37.217	ppb	37.217	0.96	23041	2000	
Sr	88	2	45	157.638	ppb	157.638	5.32	516329	2000	
Zr	90	2	72	880.275	ppb	880.275	17.03	17069	1000	
Zr	90	1	72	790.979	ppb	790.979	2.41	37128	1000	
Nb	93	2	72	0.172	ppb	0.172	17.90	6008	200	
Mo	95	2	115	37.816	ppb	37.816	2.02	150879	2000	
Pd	105	2	115	-0.031	ppb	-0.031	-25.80	163	100	
Ag	107	2	115	38.749	ppb	38.749	3.55	450497	100	
Cd	111	2	115	39.215	ppb	39.215	1.65	65263	2000	
Sn	120	2	115	25.202	ppb	25.202	4.41	124999	2000	
Sb	121	2	115	32.194	ppb	32.194	0.95	134688	1000	
Ba	137	2	115	115.177	ppb	115.177	2.07	154353	5000	
W	182	2	165	30.432	ppb	30.432	3.05	245588	100	
Pt	195	2	165	0.002	ppb	0.002	126.36	23	100	
Tl	205	2	165	37.937	ppb	37.937	1.23	516024	2000	
Pb	208	2	165	40.967	ppb	40.967	2.98	729881	5000	
Th	232	2	165	37.559	ppb	37.559	2.01	664086	2000	
U	238	2	165	38.465	ppb	38.465	4.15	740982	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	951052	1.18	1092921	87.02	60	125	
Sc (IS)	45	2	HMI He	4275032	3.99	4591929	93.10	60	125	
Sc IS)	45	3	No Gas	125559229	0.31	129634638	96.86	60	120	
Ge Internal Standard	72	1	HMI H2	24993313	0.68	26305534	95.01	60	125	
Ge Internal Standard	72	2	HMI He	5161724	0.83	5205670	99.16	60	125	
In Internal standard	115	2	HMI He	16559996	2.11	16441998	100.72	60	125	
Ho-165	165	2	HMI He	38850355	2.53	37362695	103.98	60	125	

Sample Report

Sample Table

Sample Name 280-123281-A-1-A
 Data File Name 078SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T16:10:03-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457077 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	639.930	ppb	639.930	2.44	20619336	40000	
Be	9	1	6	0.031	ppb	0.031	29.66	13	2000	
B	11	1	6	15299.184	ppb	15299.184	0.89	143137	100	>LDR
Na	23	2	45	1075370.243	ppb	1075370.243	2.32	830239730	400000	
Mg	24	2	45	599080.117	ppb	599080.117	2.25	190958367	400000	
Al	27	2	45	7.339	ppb	7.339	16.57	1040	400000	
K	39	2	45	16467.611	ppb	16467.611	2.58	5017621	400000	
Ca	44	2	45	354993.526	ppb	354993.526	0.73	8118316	400000	
V	51	2	72	-1.306	ppb	-1.306	-12.93	7575	2000	
Cr	52	2	72	926.531	ppb	926.531	2.83	5590256	5000	
Mn	55	2	72	93.642	ppb	93.642	5.46	252440	10000	
Fe	57	2	72	81.452	ppb	81.452	7.14	10430	400000	
Co	59	2	72	0.315	ppb	0.315	15.24	8619	2000	
Ni	60	2	72	79.576	ppb	79.576	4.62	204238	5000	
Cu	63	2	72	1.847	ppb	1.847	5.98	16985	5000	
Zn	66	2	72	76.151	ppb	76.151	6.07	80782	5000	
As	75	2	72	0.767	ppb	0.767	12.57	748	2000	
Se	78	1	72	11.727	ppb	11.727	2.77	6245	2000	
Sr	88	2	45	10144.234	ppb	10144.234	2.44	33028020	2000	>LDR
Zr	90	2	72	140.281	ppb	140.281	15.09	2887	1000	
Zr	90	1	72	160.121	ppb	160.121	7.28	7766	1000	
Nb	93	2	72	0.027	ppb	0.027	170.22	4631	200	
Mo	95	2	115	0.216	ppb	0.216	2.54	913	2000	
Pd	105	2	115	0.325	ppb	0.325	10.46	1967	100	
Ag	107	2	115	0.051	ppb	0.051	16.80	640	100	
Cd	111	2	115	0.647	ppb	0.647	15.40	960	2000	
Sn	120	2	115	0.287	ppb	0.287	15.69	1827	2000	
Sb	121	2	115	0.375	ppb	0.375	3.65	1603	1000	
Ba	137	2	115	10.406	ppb	10.406	6.23	12508	5000	
W	182	2	165	0.075	ppb	0.075	20.85	3230	100	
Pt	195	2	165	0.003	ppb	0.003	210.40	27	100	
Tl	205	2	165	0.039	ppb	0.039	18.30	713	2000	
Pb	208	2	165	0.097	ppb	0.097	18.97	2417	5000	
Th	232	2	165	0.554	ppb	0.554	4.32	9733	2000	
U	238	2	165	3.038	ppb	3.038	1.65	53283	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	771594	0.23	1092921	70.60	60	125	
Sc (IS)	45	2	HMI He	4245605	1.20	4591929	92.46	60	125	
Sc IS)	45	3	No Gas	115201477	1.73	129634638	88.87	60	120	
Ge Internal Standard	72	1	HMI H2	21454495	1.13	26305534	81.56	60	125	
Ge Internal Standard	72	2	HMI He	4737271	4.18	5205670	91.00	60	125	
In Internal standard	115	2	HMI He	14727456	1.85	16441998	89.57	60	125	
Ho-165	165	2	HMI He	35308177	1.35	37362695	94.50	60	125	

Sample Report

Sample Table

Sample Name 280-123281-A-1-B MS
 Data File Name 079SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T16:13:33-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457077 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	722.739	ppb	722.739	2.03	22476394	40000	
Be	9	1	6	42.194	ppb	42.194	0.98	12993	2000	
B	11	1	6	17951.165	ppb	17951.165	1.13	162424	100	>LDR
Na	23	2	45	1145020.623	ppb	1145020.623	1.34	870147961	400000	
Mg	24	2	45	635818.783	ppb	635818.783	2.09	199508548	400000	
Al	27	2	45	426.786	ppb	426.786	0.40	38515	400000	
K	39	2	45	17445.306	ppb	17445.306	1.07	5224961	400000	
Ca	44	2	45	368096.577	ppb	368096.577	1.77	8286858	400000	
V	51	2	72	41.124	ppb	41.124	3.76	192705	2000	
Cr	52	2	72	1038.682	ppb	1038.682	3.05	6033361	5000	
Mn	55	2	72	142.575	ppb	142.575	2.81	370325	10000	
Fe	57	2	72	534.105	ppb	534.105	2.79	59689	400000	
Co	59	2	72	38.325	ppb	38.325	2.42	356952	2000	
Ni	60	2	72	126.752	ppb	126.752	5.15	312773	5000	
Cu	63	2	72	37.836	ppb	37.836	5.31	263578	5000	
Zn	66	2	72	115.073	ppb	115.073	3.50	117300	5000	
As	75	2	72	41.013	ppb	41.013	3.51	30433	2000	
Se	78	1	72	59.041	ppb	59.041	3.04	32023	2000	
Sr	88	2	45	10853.462	ppb	10853.462	2.29	34785801	2000	>LDR
Zr	90	2	72	755.792	ppb	755.792	1.02	12998	1000	
Zr	90	1	72	715.989	ppb	715.989	6.34	29586	1000	
Nb	93	2	72	-0.004	ppb	-0.004	-708.96	4264	200	
Mo	95	2	115	40.883	ppb	40.883	2.30	144619	2000	
Pd	105	2	115	0.392	ppb	0.392	4.59	2304	100	
Ag	107	2	115	36.731	ppb	36.731	4.16	378689	100	
Cd	111	2	115	39.355	ppb	39.355	2.30	58079	2000	
Sn	120	2	115	40.447	ppb	40.447	0.16	177656	2000	
Sb	121	2	115	43.429	ppb	43.429	1.69	161035	1000	
Ba	137	2	115	51.965	ppb	51.965	4.29	61835	5000	
W	182	2	165	32.601	ppb	32.601	0.81	235981	100	
Pt	195	2	165	0.003	ppb	0.003	53.83	30	100	
Tl	205	2	165	35.684	ppb	35.684	4.27	435265	2000	
Pb	208	2	165	36.581	ppb	36.581	2.64	584966	5000	
Th	232	2	165	37.985	ppb	37.985	1.73	602692	2000	
U	238	2	165	41.517	ppb	41.517	2.49	717839	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	746467	0.55	1092921	68.30	60	125	
Sc (IS)	45	2	HMI He	4179214	1.37	4591929	91.01	60	125	
Sc IS)	45	3	No Gas	115992511	1.24	129634638	89.48	60	120	
Ge Internal Standard	72	1	HMI H2	21908421	2.90	26305534	83.28	60	125	
Ge Internal Standard	72	2	HMI He	4559468	2.28	5205670	87.59	60	125	
In Internal standard	115	2	HMI He	14684882	1.69	16441998	89.31	60	125	
Ho-165	165	2	HMI He	34863805	2.75	37362695	93.31	60	125	

Sample Report

Sample Table

Sample Name 280-123281-A-1-C MSD
 Data File Name 080SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T16:17:03-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457077 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	700.327	ppb	700.327	0.42	22106603	40000	
Be	9	1	6	42.361	ppb	42.361	3.63	12616	2000	
B	11	1	6	18088.416	ppb	18088.416	1.20	158338	100	>LDR
Na	23	2	45	1103957.263	ppb	1103957.263	0.48	853520109	400000	
Mg	24	2	45	622783.606	ppb	622783.606	2.08	198819538	400000	
Al	27	2	45	415.963	ppb	415.963	2.46	38194	400000	
K	39	2	45	17286.862	ppb	17286.862	2.71	5268194	400000	
Ca	44	2	45	361698.464	ppb	361698.464	2.03	8283164	400000	
V	51	2	72	40.250	ppb	40.250	1.78	193432	2000	
Cr	52	2	72	1031.999	ppb	1031.999	2.04	6138304	5000	
Mn	55	2	72	137.998	ppb	137.998	3.82	366777	10000	
Fe	57	2	72	468.071	ppb	468.071	2.86	53700	400000	
Co	59	2	72	37.485	ppb	37.485	1.68	357600	2000	
Ni	60	2	72	122.141	ppb	122.141	2.07	308759	5000	
Cu	63	2	72	37.706	ppb	37.706	2.27	269050	5000	
Zn	66	2	72	113.198	ppb	113.198	3.93	118148	5000	
As	75	2	72	40.610	ppb	40.610	3.01	30850	2000	
Se	78	1	72	60.360	ppb	60.360	2.01	32133	2000	
Sr	88	2	45	11057.419	ppb	11057.419	3.00	36049062	2000	>LDR
Zr	90	2	72	687.029	ppb	687.029	6.74	12124	1000	
Zr	90	1	72	711.812	ppb	711.812	2.26	28907	1000	
Nb	93	2	72	-0.142	ppb	-0.142	-15.41	3530	200	
Mo	95	2	115	40.989	ppb	40.989	1.60	143694	2000	
Pd	105	2	115	0.389	ppb	0.389	16.79	2270	100	
Ag	107	2	115	37.132	ppb	37.132	2.33	379447	100	
Cd	111	2	115	38.316	ppb	38.316	2.83	56058	2000	
Sn	120	2	115	41.217	ppb	41.217	0.74	179385	2000	
Sb	121	2	115	42.967	ppb	42.967	1.43	157884	1000	
Ba	137	2	115	51.896	ppb	51.896	0.82	61192	5000	
W	182	2	165	31.776	ppb	31.776	0.67	234968	100	
Pt	195	2	165	0.003	ppb	0.003	155.37	27	100	
Tl	205	2	165	35.783	ppb	35.783	0.38	445982	2000	
Pb	208	2	165	34.899	ppb	34.899	1.84	569906	5000	
Th	232	2	165	37.048	ppb	37.048	1.45	600280	2000	
U	238	2	165	40.297	ppb	40.297	0.64	711658	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	722248	1.76	1092921	66.08	60	125	
Sc (IS)	45	2	HMI He	4251536	1.30	4591929	92.59	60	125	
Sc IS)	45	3	No Gas	116479922	0.28	129634638	89.85	60	120	
Ge Internal Standard	72	1	HMI H2	21504868	2.45	26305534	81.75	60	125	
Ge Internal Standard	72	2	HMI He	4668316	3.04	5205670	89.68	60	125	
In Internal standard	115	2	HMI He	14551483	1.43	16441998	88.50	60	125	
Ho-165	165	2	HMI He	35596880	2.91	37362695	95.27	60	125	

Sample Report

Sample Table

Sample Name 280-123281-A-2-A
 Data File Name 081SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T16:20:33-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457077 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	142.450	ppb	142.450	0.88	11302476	40000	
Be	9	1	6	0.004	ppb	0.004	370.70	5	2000	
B	11	1	6	11113.811	ppb	11113.811	2.17	107438	100	>LDR
Na	23	2	45	476081.349	ppb	476081.349	1.92	376003767	400000	
Mg	24	2	45	85577.099	ppb	85577.099	2.28	27904364	400000	
Al	27	2	45	2.856	ppb	2.856	30.89	647	400000	
K	39	2	45	4389.451	ppb	4389.451	1.15	1445591	400000	
Ca	44	2	45	108919.901	ppb	108919.901	1.16	2547986	400000	
V	51	2	72	-1.436	ppb	-1.436	-2.69	7602	2000	
Cr	52	2	72	0.660	ppb	0.660	4.50	5874	5000	
Mn	55	2	72	2.400	ppb	2.400	6.98	7268	10000	
Fe	57	2	72	27.034	ppb	27.034	3.09	4601	400000	
Co	59	2	72	-0.014	ppb	-0.014	-41.84	5961	2000	
Ni	60	2	72	2.794	ppb	2.794	7.99	8706	5000	
Cu	63	2	72	0.612	ppb	0.612	9.32	8882	5000	
Zn	66	2	72	2.179	ppb	2.179	1.42	3210	5000	
As	75	2	72	0.593	ppb	0.593	10.65	666	2000	
Se	78	1	72	1.278	ppb	1.278	2.70	773	2000	
Sr	88	2	45	5081.726	ppb	5081.726	1.34	16925025	2000	
Zr	90	2	72	110.006	ppb	110.006	18.26	2560	1000	
Zr	90	1	72	120.198	ppb	120.198	9.32	6908	1000	
Nb	93	2	72	-0.385	ppb	-0.385	-7.08	2267	200	
Mo	95	2	115	0.825	ppb	0.825	6.38	3387	2000	
Pd	105	2	115	0.133	ppb	0.133	9.56	1090	100	
Ag	107	2	115	0.027	ppb	0.027	24.35	423	100	
Cd	111	2	115	0.039	ppb	0.039	73.64	67	2000	
Sn	120	2	115	0.246	ppb	0.246	10.10	1817	2000	
Sb	121	2	115	0.137	ppb	0.137	5.16	793	1000	
Ba	137	2	115	13.370	ppb	13.370	5.84	17653	5000	
W	182	2	165	0.107	ppb	0.107	39.91	3767	100	
Pt	195	2	165	0.004	ppb	0.004	110.90	37	100	
Tl	205	2	165	0.028	ppb	0.028	30.70	630	2000	
Pb	208	2	165	0.054	ppb	0.054	25.66	1883	5000	
Th	232	2	165	0.302	ppb	0.302	5.25	6191	2000	
U	238	2	165	18.368	ppb	18.368	1.64	350300	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	796670	1.32	1092921	72.89	60	125	
Sc (IS)	45	2	HMI He	4342698	1.49	4591929	94.57	60	125	
Sc IS)	45	3	No Gas	125180853	0.82	129634638	96.56	60	120	
Ge Internal Standard	72	1	HMI H2	23764436	1.69	26305534	90.34	60	125	
Ge Internal Standard	72	2	HMI He	5142016	1.15	5205670	98.78	60	125	
In Internal standard	115	2	HMI He	16230726	4.77	16441998	98.72	60	125	
Ho-165	165	2	HMI He	38426733	1.47	37362695	102.85	60	125	

Sample Report

Sample Table

Sample Name 280-123281-A-3-A
 Data File Name 082SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T16:24:03-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457077 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	86.996	ppb	86.996	4.29	10007191	40000	
Be	9	1	6	0.004	ppb	0.004	354.69	5	2000	
B	11	1	6	5046.186	ppb	5046.186	3.36	48385	100	>LDR
Na	23	2	45	637730.812	ppb	637730.812	1.12	516313756	400000	
Mg	24	2	45	101757.349	ppb	101757.349	0.68	34018277	400000	
Al	27	2	45	7.930	ppb	7.930	3.99	1147	400000	
K	39	2	45	5347.433	ppb	5347.433	1.59	1781807	400000	
Ca	44	2	45	140259.029	ppb	140259.029	2.79	3363707	400000	
V	51	2	72	-0.986	ppb	-0.986	-8.97	9686	2000	
Cr	52	2	72	0.517	ppb	0.517	2.79	4871	5000	
Mn	55	2	72	143.655	ppb	143.655	1.67	414680	10000	
Fe	57	2	72	60.384	ppb	60.384	6.07	8602	400000	
Co	59	2	72	0.320	ppb	0.320	19.77	9269	2000	
Ni	60	2	72	4.573	ppb	4.573	4.18	13439	5000	
Cu	63	2	72	0.487	ppb	0.487	17.80	7809	5000	
Zn	66	2	72	3.411	ppb	3.411	8.63	4557	5000	
As	75	2	72	0.558	ppb	0.558	5.96	628	2000	
Se	78	1	72	0.141	ppb	0.141	3.56	104	2000	
Sr	88	2	45	6890.864	ppb	6890.864	3.83	23526564	2000	
Zr	90	2	72	48.705	ppb	48.705	5.02	1393	1000	
Zr	90	1	72	58.696	ppb	58.696	3.55	4282	1000	
Nb	93	2	72	-0.419	ppb	-0.419	-4.51	2010	200	
Mo	95	2	115	0.330	ppb	0.330	8.19	1423	2000	
Pd	105	2	115	0.210	ppb	0.210	17.09	1487	100	
Ag	107	2	115	0.014	ppb	0.014	19.59	277	100	
Cd	111	2	115	0.023	ppb	0.023	24.03	40	2000	
Sn	120	2	115	0.154	ppb	0.154	34.60	1337	2000	
Sb	121	2	115	0.083	ppb	0.083	34.11	563	1000	
Ba	137	2	115	28.024	ppb	28.024	2.80	36131	5000	
W	182	2	165	0.051	ppb	0.051	52.79	3284	100	
Pt	195	2	165	-0.001	ppb	-0.001	-78.48	7	100	
Tl	205	2	165	0.014	ppb	0.014	16.30	433	2000	
Pb	208	2	165	0.043	ppb	0.043	8.33	1667	5000	
Th	232	2	165	0.073	ppb	0.073	24.38	2157	2000	
U	238	2	165	3.842	ppb	3.842	2.78	72391	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	787155	0.24	1092921	72.02	60	125	
Sc (IS)	45	2	HMI He	4451869	0.80	4591929	96.95	60	125	
Sc IS)	45	3	No Gas	124468449	1.02	129634638	96.01	60	120	
Ge Internal Standard	72	1	HMI H2	23633780	1.53	26305534	89.84	60	125	
Ge Internal Standard	72	2	HMI He	5067915	2.32	5205670	97.35	60	125	
In Internal standard	115	2	HMI He	15882191	2.99	16441998	96.60	60	125	
Ho-165	165	2	HMI He	37963550	2.56	37362695	101.61	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5699926
 Data File Name 083_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T16:27:34-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	44.337	ppb	33.419	146880	100	44.3	90	110	>+ -10%
Li	7	3	45	55.199	ppb	7.348	9394289	100	55.2	90	110	>+ -10%
Be	9	1	6	49.276	ppb	4.213	19382	50	98.6	90	110	
B	11	1	6	285.290	ppb	12.505	3690	50	570.6	90	110	>+ -10%
Na	23	2	45	2062.743	ppb	3.165	1641469	1000	206.3	90	110	>+ -10%
Mg	24	2	45	1061.504	ppb	1.613	339746	1000	106.2	90	110	
Al	27	2	45	1048.650	ppb	2.034	95870	1000	104.9	90	110	
K	39	2	45	1040.925	ppb	1.828	415614	1000	104.1	90	110	
Ca	44	2	45	1066.963	ppb	3.783	24751	1000	106.7	90	110	
V	51	2	72	48.911	ppb	1.216	261805	50	97.8	90	110	
Cr	52	2	72	48.273	ppb	1.630	325240	50	96.5	90	110	
Mn	55	2	72	49.931	ppb	2.593	149824	50	99.9	90	110	
Fe	57	2	72	982.588	ppb	1.019	125702	1000	98.3	90	110	
Co	59	2	72	49.106	ppb	0.724	526283	50	98.2	90	110	
Ni	60	2	72	48.574	ppb	1.255	139044	50	97.1	90	110	
Cu	63	2	72	48.823	ppb	1.418	391629	50	97.6	90	110	
Zn	66	2	72	49.446	ppb	3.430	58603	50	98.9	90	110	
As	75	2	72	49.837	ppb	1.909	42657	50	99.7	90	110	
Se	78	1	72	52.523	ppb	1.932	33919	50	105.0	90	110	
Sr	88	2	45	112.248	ppb	3.796	366660	100	112.2	90	110	>+ -10%
Zr	90	2	72	87.968	ppb	1.301	2200	50	175.9	90	110	>+ -10%
Zr	90	1	72	88.744	ppb	9.440	6117	50	177.5	90	110	>+ -10%
Nb	93	2	72	95.836	ppb	3.486	660216	100	95.8	90	110	
Mo	95	2	115	48.838	ppb	3.155	196036	50	97.7	90	110	
Pd	105	2	115	50.771	ppb	1.246	294525	50	101.5	90	110	
Ag	107	2	115	50.310	ppb	0.892	588876	50	100.6	90	110	
Cd	111	2	115	51.522	ppb	1.418	86308	50	103.0	90	110	
Sn	120	2	115	51.892	ppb	0.947	258496	50	103.8	90	110	
Sb	121	2	115	52.255	ppb	1.462	219897	50	104.5	90	110	
Ba	137	2	115	52.238	ppb	2.639	70537	50	104.5	90	110	
W	182	2	165	45.723	ppb	4.401	398896	50	91.4	90	110	
Pt	195	2	165	44.194	ppb	5.382	265692	50	88.4	90	110	>+ -10%
Tl	205	2	165	46.160	ppb	8.165	680691	50	92.3	90	110	
Pb	208	2	165	46.586	ppb	4.945	900805	50	93.2	90	110	
Th	232	2	165	47.417	ppb	5.355	909568	50	94.8	90	110	
U	238	2	165	46.910	ppb	2.410	981403	50	93.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	954148	2.52	1092921	87.30	60	125	
Sc (IS)	45	2	HMI He	4258155	1.28	4591929	92.73	60	125	
Sc IS)	45	3	No Gas	125712678	0.18	129634638	96.97	60	120	
Ge Internal Standard	72	1	HMI H2	26077347	2.04	26305534	99.13	60	125	
Ge Internal Standard	72	2	HMI He	5262544	1.64	5205670	101.09	60	125	
In Internal standard	115	2	HMI He	16667082	1.36	16441998	101.37	60	125	
Ho-165	165	2	HMI He	42185440	2.88	37362695	112.91	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5699924
 Data File Name 084_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T16:31:08-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-51.316	ppb	-15.6	109275	0.1	
Li	7	3	45	-46.730	ppb	-30.4	7204992	0.05	
Be	9	1	6	0.002	ppb	621.1	5	0.5	
B	11	1	6	182.932	ppb	15.7	2437	0.1	>RL
Na	23	2	45	701.437	ppb	0.4	598389	25	>RL
Mg	24	2	45	40.525	ppb	6.4	13565	25	>RL
Al	27	2	45	-1.021	ppb	-11.6	287	15	
K	39	2	45	-8.733	ppb	-137.5	103408	50	
Ca	44	2	45	17.706	ppb	31.6	703	25	
V	51	2	72	-0.864	ppb	-2.4	10768	1	
Cr	52	2	72	0.055	ppb	6.9	1973	1	
Mn	55	2	72	0.140	ppb	17.8	670	0.5	
Fe	57	2	72	3.248	ppb	55.2	1710	25	
Co	59	2	72	-0.035	ppb	-112.3	5928	0.5	
Ni	60	2	72	0.082	ppb	59.2	1210	1	
Cu	63	2	72	0.719	ppb	6.9	10030	1	
Zn	66	2	72	0.109	ppb	87.5	870	5	
As	75	2	72	0.056	ppb	68.9	226	1	
Se	78	1	72	0.056	ppb	68.1	60	1	
Sr	88	2	45	0.638	ppb	8.2	2307	1	
Zr	90	2	72	-9.639	ppb	-63.6	333	1	
Zr	90	1	72	1.646	ppb	456.8	2069	1	>RL
Nb	93	2	72	2.924	ppb	14.0	25172	2	>RL
Mo	95	2	115	0.093	ppb	10.1	547	0.5	
Pd	105	2	115	-0.011	ppb	-113.6	283	1	
Ag	107	2	115	0.018	ppb	34.5	337	1	
Cd	111	2	115	0.028	ppb	80.9	50	0.5	
Sn	120	2	115	0.142	ppb	19.2	1367	1	
Sb	121	2	115	0.086	ppb	41.1	603	1	
Ba	137	2	115	0.045	ppb	129.6	203	0.5	
W	182	2	165	0.027	ppb	37.6	3294	1	
Pt	195	2	165	0.003	ppb	114.4	30	1	
Tl	205	2	165	0.017	ppb	4.4	510	0.1	
Pb	208	2	165	0.026	ppb	40.3	1453	0.5	
Th	232	2	165	0.141	ppb	19.7	3540	1	
U	238	2	165	0.029	ppb	5.6	650	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	922986	1.60	1092921	84.45	60	125	
Sc (IS)	45	2	HMI He	4334732	0.19	4591929	94.40	60	125	
Sc IS)	45	3	No Gas	127505138	2.54	129634638	98.36	60	120	
Ge Internal Standard	72	1	HMI H2	26018036	0.49	26305534	98.91	60	125	
Ge Internal Standard	72	2	HMI He	5312161	1.28	5205670	102.05	60	125	
In Internal standard	115	2	HMI He	16830485	3.53	16441998	102.36	60	125	
Ho-165	165	2	HMI He	40369416	2.42	37362695	108.05	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5699928
 Data File Name 085LCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T16:34:38-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	-29.338	ppb	-22.516	7340492	50	-58.7	70	130	> +/-30%
Be	9	1	6	0.878	ppb	9.707	333	1	87.8	70	130	
Na	23	2	45	634.755	ppb	2.421	528536	50	1269.5	70	130	> +/-30%
Mg	24	2	45	76.052	ppb	2.390	24333	50	152.1	70	130	> +/-30%
Al	27	2	45	48.377	ppb	5.155	4711	50	96.8	70	130	
K	39	2	45	98.886	ppb	7.016	131882	100	98.9	70	130	
Ca	44	2	45	44.577	ppb	8.097	1290	50	89.2	70	130	
V	51	2	72	4.261	ppb	7.104	35092	5	85.2	70	130	
Cr	52	2	72	1.969	ppb	3.786	14216	2	98.5	70	130	
Mn	55	2	72	1.028	ppb	7.685	3197	1	102.8	70	130	
Fe	57	2	72	50.686	ppb	5.353	7398	50	101.4	70	130	
Co	59	2	72	0.900	ppb	10.752	15147	1	90.0	70	130	
Ni	60	2	72	1.383	ppb	6.488	4701	1.5	92.2	70	130	
Cu	63	2	72	2.034	ppb	4.593	19578	2	101.7	70	130	
Zn	66	2	72	9.360	ppb	5.396	11230	10	93.6	70	130	
As	75	2	72	4.557	ppb	5.162	3900	5	91.1	70	130	
Se	78	1	72	5.002	ppb	5.638	3078	5	100.0	70	130	
Sr	88	2	45	1.652	ppb	12.804	5498	1	165.2	70	130	> +/-30%
Zr	90	2	72	-7.944	ppb	-44.520	347	0.5	-1588.8	70	130	> +/-30%
Zr	90	1	72	-7.025	ppb	-33.060	1582	0.5	-1405.0	70	130	> +/-30%
Nb	93	2	72	1.650	ppb	11.541	15581	2	82.5	70	130	
Mo	95	2	115	1.933	ppb	6.325	7782	2	96.7	70	130	
Pd	105	2	115	-0.024	ppb	-33.213	203	1	-2.4	70	130	> +/-30%
Ag	107	2	115	4.954	ppb	2.236	57078	5	99.1	70	130	
Cd	111	2	115	1.029	ppb	5.644	1697	1	102.9	70	130	
Sn	120	2	115	10.140	ppb	1.771	50116	10	101.4	70	130	
Sb	121	2	115	2.008	ppb	4.203	8529	2	100.4	70	130	
Ba	137	2	115	1.004	ppb	9.681	1467	1	100.4	70	130	
W	182	2	165	4.595	ppb	4.010	41246	1	459.5	70	130	> +/-30%
Pt	195	2	165	0.000	ppb	-763.582	13	1	0.0	70	130	> +/-30%
Tl	205	2	165	0.923	ppb	3.203	13329	1	92.3	70	130	
Pb	208	2	165	0.936	ppb	3.700	18331	1	93.6	70	130	
Th	232	2	165	1.815	ppb	3.910	34330	2	90.7	70	130	
U	238	2	165	0.941	ppb	5.043	18942	1	94.1	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	910018	1.61	1092921	83.26	60	125	
Sc (IS)	45	2	HMI He	4198541	1.94	4591929	91.43	60	125	
Sc IS)	45	3	No Gas	123071704	1.00	129634638	94.94	60	120	
Ge Internal Standard	72	1	HMI H2	24679090	0.85	26305534	93.82	60	125	
Ge Internal Standard	72	2	HMI He	5058869	3.19	5205670	97.18	60	125	
In Internal standard	115	2	HMI He	16370721	1.23	16441998	99.57	60	125	
Ho-165	165	2	HMI He	40478738	3.23	37362695	108.34	60	125	

Sample Report

Sample Table

Sample Name 280-123281-A-4-A
 Data File Name 086SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T16:38:10-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457077 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	175.611	ppb	175.611	3.69	11607327	40000	
Be	9	1	6	0.020	ppb	0.020	77.68	10	2000	
B	11	1	6	9857.925	ppb	9857.925	0.95	92523	100	>LDR
Na	23	2	45	594646.047	ppb	594646.047	2.01	460143969	400000	
Mg	24	2	45	113833.709	ppb	113833.709	3.38	36366605	400000	
Al	27	2	45	330.180	ppb	330.180	3.68	30417	400000	
K	39	2	45	5158.965	ppb	5158.965	1.90	1646594	400000	
Ca	44	2	45	176447.653	ppb	176447.653	0.21	4044874	400000	
V	51	2	72	0.655	ppb	0.655	23.53	16995	2000	
Cr	52	2	72	141.519	ppb	141.519	2.88	881391	5000	
Mn	55	2	72	15.140	ppb	15.140	2.13	42305	10000	
Fe	57	2	72	489.899	ppb	489.899	2.30	58719	400000	
Co	59	2	72	0.284	ppb	0.284	13.81	8589	2000	
Ni	60	2	72	1.943	ppb	1.943	3.83	6021	5000	
Cu	63	2	72	1.488	ppb	1.488	6.24	14873	5000	
Zn	66	2	72	6.835	ppb	6.835	5.40	8099	5000	
As	75	2	72	0.812	ppb	0.812	12.19	806	2000	
Se	78	1	72	0.187	ppb	0.187	5.80	125	2000	
Sr	88	2	45	9920.333	ppb	9920.333	1.41	32376613	2000	
Zr	90	2	72	225.658	ppb	225.658	4.31	4487	1000	
Zr	90	1	72	231.618	ppb	231.618	2.83	11051	1000	
Nb	93	2	72	2.263	ppb	2.263	8.84	18954	200	
Mo	95	2	115	0.303	ppb	0.303	9.49	1333	2000	
Pd	105	2	115	0.314	ppb	0.314	9.49	2077	100	
Ag	107	2	115	0.011	ppb	0.011	26.62	243	100	
Cd	111	2	115	0.052	ppb	0.052	21.11	87	2000	
Sn	120	2	115	0.295	ppb	0.295	8.58	2023	2000	
Sb	121	2	115	0.102	ppb	0.102	10.19	640	1000	
Ba	137	2	115	21.913	ppb	21.913	7.25	28449	5000	
W	182	2	165	0.069	ppb	0.069	43.63	3387	100	
Pt	195	2	165	0.004	ppb	0.004	127.32	37	100	
Tl	205	2	165	0.018	ppb	0.018	32.47	477	2000	
Pb	208	2	165	0.396	ppb	0.396	3.23	7718	5000	
Th	232	2	165	0.749	ppb	0.749	5.93	13683	2000	
U	238	2	165	16.423	ppb	16.423	2.88	305984	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	773058	0.43	1092921	70.73	60	125	
Sc (IS)	45	2	HMI He	4255447	1.24	4591929	92.67	60	125	
Sc IS)	45	3	No Gas	120670313	1.85	129634638	93.08	60	120	
Ge Internal Standard	72	1	HMI H2	22588641	1.94	26305534	85.87	60	125	
Ge Internal Standard	72	2	HMI He	4881514	2.17	5205670	93.77	60	125	
In Internal standard	115	2	HMI He	16003949	3.50	16441998	97.34	60	125	
Ho-165	165	2	HMI He	37556346	1.66	37362695	100.52	60	125	

Sample Report

Sample Table

Sample Name 280-123281-A-5-A
 Data File Name 087SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T16:41:43-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457077 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	293.335	ppb	293.335	3.36	14499389	40000	
Be	9	1	6	0.026	ppb	0.026	154.07	12	2000	
B	11	1	6	16565.708	ppb	16565.708	1.07	154382	100	>LDR
Na	23	2	45	847664.907	ppb	847664.907	0.81	661241632	400000	
Mg	24	2	45	174190.713	ppb	174190.713	0.53	56114193	400000	
Al	27	2	45	164.553	ppb	164.553	0.66	15477	400000	
K	39	2	45	7092.425	ppb	7092.425	2.97	2243227	400000	
Ca	44	2	45	252689.039	ppb	252689.039	1.99	5841049	400000	
V	51	2	72	-0.899	ppb	-0.899	-13.73	9830	2000	
Cr	52	2	72	1975.325	ppb	1975.325	2.94	12420894	5000	
Mn	55	2	72	64.670	ppb	64.670	4.45	181892	10000	
Fe	57	2	72	249.010	ppb	249.010	5.30	30761	400000	
Co	59	2	72	0.337	ppb	0.337	2.98	9209	2000	
Ni	60	2	72	2.446	ppb	2.446	4.68	7432	5000	
Cu	63	2	72	0.371	ppb	0.371	22.87	6721	5000	
Zn	66	2	72	3.618	ppb	3.618	2.40	4661	5000	
As	75	2	72	0.285	ppb	0.285	17.70	394	2000	
Se	78	1	72	0.963	ppb	0.963	5.64	563	2000	
Sr	88	2	45	15029.667	ppb	15029.667	0.54	49449490	2000	>LDR
Zr	90	2	72	85.502	ppb	85.502	15.43	2023	1000	
Zr	90	1	72	97.308	ppb	97.308	11.58	5677	1000	
Nb	93	2	72	1.102	ppb	1.102	12.72	11708	200	
Mo	95	2	115	0.316	ppb	0.316	8.20	1357	2000	
Pd	105	2	115	0.480	ppb	0.480	3.78	2954	100	
Ag	107	2	115	0.035	ppb	0.035	25.61	507	100	
Cd	111	2	115	0.059	ppb	0.059	42.09	97	2000	
Sn	120	2	115	0.237	ppb	0.237	5.20	1723	2000	
Sb	121	2	115	0.131	ppb	0.131	21.26	750	1000	
Ba	137	2	115	22.579	ppb	22.579	5.19	28910	5000	
W	182	2	165	-0.002	ppb	-0.002	-792.40	2847	100	
Pt	195	2	165	0.008	ppb	0.008	36.91	57	100	
Tl	205	2	165	0.022	ppb	0.022	29.28	537	2000	
Pb	208	2	165	0.649	ppb	0.649	4.68	12095	5000	
Th	232	2	165	0.175	ppb	0.175	7.08	3894	2000	
U	238	2	165	22.056	ppb	22.056	4.06	411457	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	768715	0.29	1092921	70.34	60	125	
Sc (IS)	45	2	HMI He	4289989	2.07	4591929	93.42	60	125	
Sc IS)	45	3	No Gas	123728084	1.35	129634638	95.44	60	120	
Ge Internal Standard	72	1	HMI H2	22730852	1.64	26305534	86.41	60	125	
Ge Internal Standard	72	2	HMI He	4936523	2.54	5205670	94.83	60	125	
In Internal standard	115	2	HMI He	15766204	2.13	16441998	95.89	60	125	
Ho-165	165	2	HMI He	37610523	2.21	37362695	100.66	60	125	

Sample Report

Sample Table

Sample Name 280-123281-A-6-A
 Data File Name 088SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T16:45:14-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457077 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	215.658	ppb	215.658	4.57	12500080	40000	
Be	9	1	6	0.016	ppb	0.016	156.67	8	2000	
B	11	1	6	9498.610	ppb	9498.610	1.36	87880	100	>LDR
Na	23	2	45	784012.432	ppb	784012.432	2.55	622840261	400000	
Mg	24	2	45	152520.539	ppb	152520.539	6.58	49976021	400000	
Al	27	2	45	88.912	ppb	88.912	6.09	8686	400000	
K	39	2	45	5193.425	ppb	5193.425	1.37	1701471	400000	
Ca	44	2	45	231205.674	ppb	231205.674	2.17	5443608	400000	
V	51	2	72	-1.177	ppb	-1.177	-9.12	8596	2000	
Cr	52	2	72	1.682	ppb	1.682	8.08	12148	5000	
Mn	55	2	72	230.065	ppb	230.065	1.16	651740	10000	
Fe	57	2	72	240.275	ppb	240.275	1.50	29966	400000	
Co	59	2	72	0.209	ppb	0.209	32.52	7989	2000	
Ni	60	2	72	2.631	ppb	2.631	4.45	7985	5000	
Cu	63	2	72	1.050	ppb	1.050	9.16	11861	5000	
Zn	66	2	72	4.737	ppb	4.737	10.56	5931	5000	
As	75	2	72	0.413	ppb	0.413	10.30	500	2000	
Se	78	1	72	0.134	ppb	0.134	66.79	97	2000	
Sr	88	2	45	12325.336	ppb	12325.336	1.57	41297331	2000	>LDR
Zr	90	2	72	199.435	ppb	199.435	10.83	4094	1000	
Zr	90	1	72	198.536	ppb	198.536	7.77	9886	1000	
Nb	93	2	72	0.684	ppb	0.684	7.52	9106	200	
Mo	95	2	115	0.458	ppb	0.458	1.11	1860	2000	
Pd	105	2	115	0.415	ppb	0.415	3.17	2550	100	
Ag	107	2	115	0.006	ppb	0.006	33.79	183	100	
Cd	111	2	115	0.048	ppb	0.048	78.90	77	2000	
Sn	120	2	115	0.268	ppb	0.268	14.78	1833	2000	
Sb	121	2	115	0.106	ppb	0.106	8.90	633	1000	
Ba	137	2	115	16.816	ppb	16.816	5.46	21141	5000	
W	182	2	165	0.023	ppb	0.023	31.16	3047	100	
Pt	195	2	165	0.002	ppb	0.002	272.46	23	100	
Tl	205	2	165	0.017	ppb	0.017	46.56	470	2000	
Pb	208	2	165	0.226	ppb	0.226	6.33	4830	5000	
Th	232	2	165	0.095	ppb	0.095	5.02	2534	2000	
U	238	2	165	61.007	ppb	61.007	6.05	1139191	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	762009	1.04	1092921	69.72	60	125	
Sc (IS)	45	2	HMI He	4369847	3.30	4591929	95.16	60	125	
Sc IS)	45	3	No Gas	120957134	1.28	129634638	93.31	60	120	
Ge Internal Standard	72	1	HMI H2	23003656	3.48	26305534	87.45	60	125	
Ge Internal Standard	72	2	HMI He	4973859	2.25	5205670	95.55	60	125	
In Internal standard	115	2	HMI He	15454669	1.62	16441998	94.00	60	125	
Ho-165	165	2	HMI He	37701591	4.48	37362695	100.91	60	125	

Sample Report

Sample Table

Sample Name 280-123281-a-7-a
 Data File Name 089SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T16:48:45-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457077 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	178.173	ppb	178.173	0.72	11898409	40000	
Be	9	1	6	0.015	ppb	0.015	117.65	8	2000	
B	11	1	6	10272.944	ppb	10272.944	1.93	96423	100	>LDR
Na	23	2	45	608768.752	ppb	608768.752	4.75	482878528	400000	
Mg	24	2	45	115396.333	ppb	115396.333	3.98	37807344	400000	
Al	27	2	45	357.431	ppb	357.431	10.65	33730	400000	
K	39	2	45	5181.924	ppb	5181.924	2.20	1695728	400000	
Ca	44	2	45	179529.292	ppb	179529.292	1.71	4220704	400000	
V	51	2	72	0.456	ppb	0.456	14.50	16641	2000	
Cr	52	2	72	137.099	ppb	137.099	0.58	884490	5000	
Mn	55	2	72	16.186	ppb	16.186	4.10	46823	10000	
Fe	57	2	72	512.540	ppb	512.540	1.67	63570	400000	
Co	59	2	72	0.187	ppb	0.187	18.61	7905	2000	
Ni	60	2	72	2.017	ppb	2.017	4.42	6431	5000	
Cu	63	2	72	1.376	ppb	1.376	3.85	14550	5000	
Zn	66	2	72	6.543	ppb	6.543	2.21	8062	5000	
As	75	2	72	0.808	ppb	0.808	7.88	831	2000	
Se	78	1	72	0.148	ppb	0.148	40.86	109	2000	
Sr	88	2	45	10207.388	ppb	10207.388	2.40	34161378	2000	>LDR
Zr	90	2	72	247.160	ppb	247.160	7.52	5044	1000	
Zr	90	1	72	235.463	ppb	235.463	4.85	11833	1000	
Nb	93	2	72	0.310	ppb	0.310	54.92	6795	200	
Mo	95	2	115	0.297	ppb	0.297	5.82	1273	2000	
Pd	105	2	115	0.353	ppb	0.353	5.73	2237	100	
Ag	107	2	115	0.001	ppb	0.001	159.20	130	100	
Cd	111	2	115	0.032	ppb	0.032	79.29	53	2000	
Sn	120	2	115	0.279	ppb	0.279	19.19	1903	2000	
Sb	121	2	115	0.062	ppb	0.062	20.91	467	1000	
Ba	137	2	115	21.916	ppb	21.916	3.68	27778	5000	
W	182	2	165	0.022	ppb	0.022	229.48	3110	100	
Pt	195	2	165	0.004	ppb	0.004	93.14	37	100	
Tl	205	2	165	0.021	ppb	0.021	46.18	530	2000	
Pb	208	2	165	0.394	ppb	0.394	5.57	7898	5000	
Th	232	2	165	0.138	ppb	0.138	9.43	3337	2000	
U	238	2	165	16.249	ppb	16.249	0.33	311160	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	773228	1.66	1092921	70.75	60	125	
Sc (IS)	45	2	HMI He	4365220	2.56	4591929	95.06	60	125	
Sc IS)	45	3	No Gas	123090939	1.49	129634638	94.95	60	120	
Ge Internal Standard	72	1	HMI H2	23869136	2.34	26305534	90.74	60	125	
Ge Internal Standard	72	2	HMI He	5054247	0.35	5205670	97.09	60	125	
In Internal standard	115	2	HMI He	15606560	2.22	16441998	94.92	60	125	
Ho-165	165	2	HMI He	38588689	1.42	37362695	103.28	60	125	

Sample Report

Sample Table

Sample Name 280-123281-a-8-a
 Data File Name 090SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T16:52:15-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457077 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-59.816	ppb	-59.816	-20.82	7125324	40000	
Be	9	1	6	-0.007	ppb	-0.007	-118.68	2	2000	
B	11	1	6	305.893	ppb	305.893	6.03	3737	100	
Na	23	2	45	1554.501	ppb	1554.501	1.14	1293494	400000	
Mg	24	2	45	57.111	ppb	57.111	6.25	19304	400000	
Al	27	2	45	5.081	ppb	5.081	22.08	867	400000	
K	39	2	45	36.084	ppb	36.084	15.84	119136	400000	
Ca	44	2	45	196.847	ppb	196.847	3.73	4971	400000	
V	51	2	72	-1.941	ppb	-1.941	-1.31	5344	2000	
Cr	52	2	72	0.346	ppb	0.346	13.12	3991	5000	
Mn	55	2	72	0.639	ppb	0.639	5.58	2207	10000	
Fe	57	2	72	11.955	ppb	11.955	7.41	2857	400000	
Co	59	2	72	-0.033	ppb	-0.033	-83.33	6024	2000	
Ni	60	2	72	0.047	ppb	0.047	71.92	1120	5000	
Cu	63	2	72	0.605	ppb	0.605	8.07	9223	5000	
Zn	66	2	72	2.945	ppb	2.945	5.87	4271	5000	
As	75	2	72	0.006	ppb	0.006	280.37	185	2000	
Se	78	1	72	0.030	ppb	0.030	90.65	43	2000	
Sr	88	2	45	3.653	ppb	3.653	7.02	12555	2000	
Zr	90	2	72	4.901	ppb	4.901	102.03	620	1000	
Zr	90	1	72	14.556	ppb	14.556	33.72	2613	1000	
Nb	93	2	72	-0.090	ppb	-0.090	-65.29	4424	200	
Mo	95	2	115	0.026	ppb	0.026	18.37	287	2000	
Pd	105	2	115	-0.040	ppb	-0.040	-14.71	120	100	
Ag	107	2	115	0.018	ppb	0.018	24.56	353	100	
Cd	111	2	115	0.021	ppb	0.021	73.60	40	2000	
Sn	120	2	115	0.341	ppb	0.341	2.77	2450	2000	
Sb	121	2	115	-0.010	ppb	-0.010	-93.18	207	1000	
Ba	137	2	115	0.950	ppb	0.950	25.98	1483	5000	
W	182	2	165	-0.013	ppb	-0.013	-97.86	3104	100	
Pt	195	2	165	0.000	ppb	0.000	918.60	17	100	
Tl	205	2	165	0.008	ppb	0.008	33.13	390	2000	
Pb	208	2	165	0.041	ppb	0.041	16.37	1817	5000	
Th	232	2	165	0.002	ppb	0.002	359.86	1047	2000	
U	238	2	165	0.020	ppb	0.020	13.90	487	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	906055	0.94	1092921	82.90	60	125	
Sc (IS)	45	2	HMI He	4411654	1.85	4591929	96.07	60	125	
Sc IS)	45	3	No Gas	131507864	2.35	129634638	101.45	60	120	
Ge Internal Standard	72	1	HMI H2	25512629	2.40	26305534	96.99	60	125	
Ge Internal Standard	72	2	HMI He	5373750	1.73	5205670	103.23	60	125	
In Internal standard	115	2	HMI He	17460757	2.92	16441998	106.20	60	125	
Ho-165	165	2	HMI He	42296911	2.06	37362695	113.21	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5699926
 Data File Name 091_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T16:55:47-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	52.310	ppb	17.286	142821	100	52.3	90	110	>+ -10%
Li	7	3	45	49.019	ppb	13.491	9257509	100	49.0	90	110	>+ -10%
Be	9	1	6	49.882	ppb	0.928	18525	50	99.8	90	110	
B	11	1	6	231.738	ppb	4.787	2904	50	463.5	90	110	>+ -10%
Na	23	2	45	1705.978	ppb	1.400	1380473	1000	170.6	90	110	>+ -10%
Mg	24	2	45	996.369	ppb	1.301	322433	1000	99.6	90	110	
Al	27	2	45	1015.383	ppb	1.933	93850	1000	101.5	90	110	
K	39	2	45	1001.115	ppb	1.078	408141	1000	100.1	90	110	
Ca	44	2	45	1003.503	ppb	3.677	23549	1000	100.4	90	110	
V	51	2	72	48.097	ppb	2.016	254045	50	96.2	90	110	
Cr	52	2	72	48.074	ppb	2.536	319352	50	96.1	90	110	
Mn	55	2	72	49.995	ppb	3.005	147897	50	100.0	90	110	
Fe	57	2	72	989.124	ppb	1.989	124747	1000	98.9	90	110	
Co	59	2	72	49.064	ppb	0.367	518475	50	98.1	90	110	
Ni	60	2	72	49.227	ppb	2.866	138886	50	98.5	90	110	
Cu	63	2	72	48.124	ppb	1.488	380609	50	96.2	90	110	
Zn	66	2	72	48.412	ppb	2.267	56603	50	96.8	90	110	
As	75	2	72	49.317	ppb	1.687	41619	50	98.6	90	110	
Se	78	1	72	54.186	ppb	3.572	33654	50	108.4	90	110	
Sr	88	2	45	107.470	ppb	4.638	354901	100	107.5	90	110	
Zr	90	2	72	73.475	ppb	11.319	1893	50	147.0	90	110	>+ -10%
Zr	90	1	72	91.371	ppb	8.144	6011	50	182.7	90	110	>+ -10%
Nb	93	2	72	96.778	ppb	1.919	657324	100	96.8	90	110	
Mo	95	2	115	48.123	ppb	0.897	193553	50	96.2	90	110	
Pd	105	2	115	48.901	ppb	1.917	284176	50	97.8	90	110	
Ag	107	2	115	48.873	ppb	2.600	573046	50	97.7	90	110	
Cd	111	2	115	50.164	ppb	1.038	84180	50	100.3	90	110	
Sn	120	2	115	50.203	ppb	2.845	250528	50	100.4	90	110	
Sb	121	2	115	50.183	ppb	2.315	211533	50	100.4	90	110	
Ba	137	2	115	52.100	ppb	2.095	70485	50	104.2	90	110	
W	182	2	165	46.798	ppb	4.334	398898	50	93.6	90	110	
Pt	195	2	165	44.901	ppb	3.158	263906	50	89.8	90	110	>+ -10%
Tl	205	2	165	47.152	ppb	3.446	680047	50	94.3	90	110	
Pb	208	2	165	48.457	ppb	4.544	915550	50	96.9	90	110	
Th	232	2	165	47.217	ppb	3.169	885516	50	94.4	90	110	
U	238	2	165	47.430	ppb	1.025	969944	50	94.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	900172	1.70	1092921	82.36	60	125	
Sc (IS)	45	2	HMI He	4304875	1.46	4591929	93.75	60	125	
Sc IS)	45	3	No Gas	125757398	1.73	129634638	97.01	60	120	
Ge Internal Standard	72	1	HMI H2	25096644	2.72	26305534	95.40	60	125	
Ge Internal Standard	72	2	HMI He	5188628	1.83	5205670	99.67	60	125	
In Internal standard	115	2	HMI He	16695456	0.74	16441998	101.54	60	125	
Ho-165	165	2	HMI He	41222776	2.78	37362695	110.33	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5699924
 Data File Name 092_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T16:59:17-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-40.920	ppb	-20.7	109787	0.1	
Li	7	3	45	-44.129	ppb	-3.2	7143540	0.05	
Be	9	1	6	0.020	ppb	164.9	12	0.5	
B	11	1	6	154.662	ppb	7.4	2030	0.1	>RL
Na	23	2	45	637.517	ppb	2.5	539054	25	>RL
Mg	24	2	45	12.196	ppb	6.6	4277	25	
Al	27	2	45	-0.551	ppb	-248.4	327	15	
K	39	2	45	-10.738	ppb	-26.4	101156	50	
Ca	44	2	45	1.639	ppb	115.3	323	25	
V	51	2	72	-0.674	ppb	-14.0	11227	1	
Cr	52	2	72	0.007	ppb	80.7	1583	1	
Mn	55	2	72	0.088	ppb	24.0	493	0.5	
Fe	57	2	72	2.384	ppb	69.5	1530	25	
Co	59	2	72	-0.018	ppb	-204.6	5868	0.5	
Ni	60	2	72	0.071	ppb	24.4	1127	1	
Cu	63	2	72	0.489	ppb	3.8	7839	1	
Zn	66	2	72	0.185	ppb	38.8	920	5	
As	75	2	72	0.009	ppb	117.6	178	1	
Se	78	1	72	0.057	ppb	101.5	59	1	
Sr	88	2	45	0.481	ppb	4.6	1757	1	
Zr	90	2	72	-6.747	ppb	-64.3	373	1	
Zr	90	1	72	-6.222	ppb	-80.5	1662	1	
Nb	93	2	72	3.474	ppb	11.8	27700	2	>RL
Mo	95	2	115	0.095	ppb	39.2	537	0.5	
Pd	105	2	115	-0.016	ppb	-155.5	247	1	
Ag	107	2	115	0.016	ppb	35.1	310	1	
Cd	111	2	115	0.024	ppb	80.5	43	0.5	
Sn	120	2	115	0.097	ppb	45.4	1103	1	
Sb	121	2	115	0.074	ppb	49.4	537	1	
Ba	137	2	115	0.033	ppb	50.3	180	0.5	
W	182	2	165	0.063	ppb	13.7	3547	1	
Pt	195	2	165	0.009	ppb	104.6	63	1	
Tl	205	2	165	0.020	ppb	32.5	543	0.1	
Pb	208	2	165	0.020	ppb	71.8	1337	0.5	
Th	232	2	165	0.184	ppb	9.1	4287	1	
U	238	2	165	0.035	ppb	11.0	753	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	885419	2.02	1092921	81.01	60	125	
Sc (IS)	45	2	HMI He	4265347	2.23	4591929	92.89	60	125	
Sc IS)	45	3	No Gas	125286308	2.87	129634638	96.65	60	120	
Ge Internal Standard	72	1	HMI H2	25310876	2.22	26305534	96.22	60	125	
Ge Internal Standard	72	2	HMI He	5086775	2.93	5205670	97.72	60	125	
In Internal standard	115	2	HMI He	16319973	2.05	16441998	99.26	60	125	
Ho-165	165	2	HMI He	39880861	2.25	37362695	106.74	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5699928
 Data File Name 093LCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T17:02:49-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	-29.602	ppb	-13.012	7170106	50	-59.2	70	130	> +/-30%
Be	9	1	6	0.871	ppb	21.474	320	1	87.1	70	130	
Na	23	2	45	643.107	ppb	0.477	537014	50	1286.2	70	130	> +/-30%
Mg	24	2	45	57.500	ppb	6.291	18556	50	115.0	70	130	
Al	27	2	45	46.304	ppb	8.112	4544	50	92.6	70	130	
K	39	2	45	83.878	ppb	2.216	127944	100	83.9	70	130	
Ca	44	2	45	42.084	ppb	18.749	1237	50	84.2	70	130	
V	51	2	72	4.374	ppb	1.466	34958	5	87.5	70	130	
Cr	52	2	72	1.996	ppb	4.608	14109	2	99.8	70	130	
Mn	55	2	72	1.053	ppb	10.497	3204	1	105.3	70	130	
Fe	57	2	72	50.622	ppb	2.630	7252	50	101.2	70	130	
Co	59	2	72	0.938	ppb	5.553	15250	1	93.8	70	130	
Ni	60	2	72	1.403	ppb	3.603	4667	1.5	93.5	70	130	
Cu	63	2	72	1.922	ppb	7.367	18357	2	96.1	70	130	
Zn	66	2	72	9.302	ppb	2.261	10954	10	93.0	70	130	
As	75	2	72	4.805	ppb	1.603	4027	5	96.1	70	130	
Se	78	1	72	4.923	ppb	3.442	3039	5	98.5	70	130	
Sr	88	2	45	1.416	ppb	7.196	4757	1	141.6	70	130	> +/-30%
Zr	90	2	72	-9.837	ppb	-31.996	307	0.5	-1967.3	70	130	> +/-30%
Zr	90	1	72	-4.804	ppb	-55.284	1685	0.5	-960.7	70	130	> +/-30%
Nb	93	2	72	1.787	ppb	11.446	16178	2	89.4	70	130	
Mo	95	2	115	1.964	ppb	6.077	7894	2	98.2	70	130	
Pd	105	2	115	-0.025	ppb	-23.876	197	1	-2.5	70	130	> +/-30%
Ag	107	2	115	4.851	ppb	2.336	55790	5	97.0	70	130	
Cd	111	2	115	1.031	ppb	5.907	1697	1	103.1	70	130	
Sn	120	2	115	9.963	ppb	0.796	49174	10	99.6	70	130	
Sb	121	2	115	1.952	ppb	6.115	8282	2	97.6	70	130	
Ba	137	2	115	1.042	ppb	13.040	1513	1	104.2	70	130	
W	182	2	165	4.489	ppb	1.592	40398	1	448.9	70	130	> +/-30%
Pt	195	2	165	0.003	ppb	198.163	30	1	0.3	70	130	> +/-30%
Tl	205	2	165	0.917	ppb	4.358	13253	1	91.7	70	130	
Pb	208	2	165	0.987	ppb	4.264	19289	1	98.7	70	130	
Th	232	2	165	1.876	ppb	2.033	35500	2	93.8	70	130	
U	238	2	165	0.943	ppb	1.922	19006	1	94.3	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	882556	2.55	1092921	80.75	60	125	
Sc (IS)	45	2	HMI He	4213899	0.36	4591929	91.77	60	125	
Sc IS)	45	3	No Gas	120294720	0.21	129634638	92.80	60	120	
Ge Internal Standard	72	1	HMI H2	24764035	0.81	26305534	94.14	60	125	
Ge Internal Standard	72	2	HMI He	4958958	0.42	5205670	95.26	60	125	
In Internal standard	115	2	HMI He	16342961	0.86	16441998	99.40	60	125	
Ho-165	165	2	HMI He	40490515	0.89	37362695	108.37	60	125	

Sample Report

Sample Table

Sample Name 280-123183-a-1-d
 Data File Name 094SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T17:06:20-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457077 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-27.868	ppb	-27.868	-28.72	7347168	40000	
Be	9	1	6	-0.011	ppb	-0.011	0.00	0	2000	
B	11	1	6	2849.415	ppb	2849.415	0.34	28867	100	>LDR
Na	23	2	45	11809.651	ppb	11809.651	1.63	9017320	400000	
Mg	24	2	45	28529.775	ppb	28529.775	3.12	8950801	400000	
Al	27	2	45	6.154	ppb	6.154	35.41	920	400000	
K	39	2	45	3465.805	ppb	3465.805	3.38	1119707	400000	
Ca	44	2	45	70303.633	ppb	70303.633	2.67	1582465	400000	
V	51	2	72	-1.742	ppb	-1.742	-2.71	5924	2000	
Cr	52	2	72	0.190	ppb	0.190	26.56	2720	5000	
Mn	55	2	72	98.997	ppb	98.997	0.27	282055	10000	
Fe	57	2	72	841.730	ppb	841.730	1.73	102484	400000	
Co	59	2	72	0.044	ppb	0.044	19.46	6385	2000	
Ni	60	2	72	0.103	ppb	0.103	99.96	1193	5000	
Cu	63	2	72	0.141	ppb	0.141	6.42	5084	5000	
Zn	66	2	72	0.841	ppb	0.841	9.01	1633	5000	
As	75	2	72	1.697	ppb	1.697	1.34	1543	2000	
Se	78	1	72	0.033	ppb	0.033	157.08	41	2000	
Sr	88	2	45	389.697	ppb	389.697	3.50	1248849	2000	
Zr	90	2	72	1.021	ppb	1.021	243.43	507	1000	
Zr	90	1	72	9.567	ppb	9.567	53.50	2222	1000	
Nb	93	2	72	2.111	ppb	2.111	8.93	18414	200	
Mo	95	2	115	1.425	ppb	1.425	13.12	5668	2000	
Pd	105	2	115	-0.021	ppb	-0.021	-26.51	213	100	
Ag	107	2	115	0.012	ppb	0.012	64.59	260	100	
Cd	111	2	115	0.012	ppb	0.012	73.77	23	2000	
Sn	120	2	115	0.155	ppb	0.155	11.21	1363	2000	
Sb	121	2	115	0.030	ppb	0.030	59.68	353	1000	
Ba	137	2	115	23.396	ppb	23.396	5.67	30459	5000	
W	182	2	165	0.037	ppb	0.037	83.31	3360	100	
Pt	195	2	165	0.004	ppb	0.004	183.53	37	100	
Tl	205	2	165	0.009	ppb	0.009	100.99	383	2000	
Pb	208	2	165	0.100	ppb	0.100	3.26	2817	5000	
Th	232	2	165	0.561	ppb	0.561	3.85	11188	2000	
U	238	2	165	0.104	ppb	0.104	13.32	2137	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	827229	0.57	1092921	75.69	60	125	
Sc (IS)	45	2	HMI He	4179343	1.79	4591929	91.01	60	125	
Sc IS)	45	3	No Gas	122680376	2.83	129634638	94.64	60	120	
Ge Internal Standard	72	1	HMI H2	23719049	0.69	26305534	90.17	60	125	
Ge Internal Standard	72	2	HMI He	4999545	0.91	5205670	96.04	60	125	
In Internal standard	115	2	HMI He	16047999	3.51	16441998	97.60	60	125	
Ho-165	165	2	HMI He	40153509	1.69	37362695	107.47	60	125	

Sample Report

Sample Table

Sample Name 280-123183-a-1-dSD@5
 Data File Name 095SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T17:09:51-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457077 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-35.135	ppb	-35.135	-16.06	7047778	40000	
Be	9	1	6	-0.006	ppb	-0.006	-128.03	2	2000	
B	11	1	6	700.193	ppb	700.193	7.56	7795	100	>LDR
Na	23	2	45	2793.751	ppb	2793.751	1.96	2210590	400000	
Mg	24	2	45	5973.035	ppb	5973.035	2.82	1912392	400000	
Al	27	2	45	-0.019	ppb	-0.019	-82.35	373	400000	
K	39	2	45	686.948	ppb	686.948	1.37	310090	400000	
Ca	44	2	45	13889.217	ppb	13889.217	1.67	319193	400000	
V	51	2	72	-0.982	ppb	-0.982	-2.78	9850	2000	
Cr	52	2	72	0.056	ppb	0.056	56.10	1923	5000	
Mn	55	2	72	19.816	ppb	19.816	2.71	58298	10000	
Fe	57	2	72	160.658	ppb	160.658	3.88	21146	400000	
Co	59	2	72	0.010	ppb	0.010	199.41	6218	2000	
Ni	60	2	72	0.092	ppb	0.092	103.32	1200	5000	
Cu	63	2	72	0.330	ppb	0.330	11.98	6695	5000	
Zn	66	2	72	0.153	ppb	0.153	27.30	893	5000	
As	75	2	72	0.355	ppb	0.355	12.12	469	2000	
Se	78	1	72	0.017	ppb	0.017	88.79	33	2000	
Sr	88	2	45	77.261	ppb	77.261	1.88	252847	2000	
Zr	90	2	72	-7.770	ppb	-7.770	-39.95	357	1000	
Zr	90	1	72	-1.778	ppb	-1.778	-175.25	1842	1000	
Nb	93	2	72	0.523	ppb	0.523	21.49	8342	200	
Mo	95	2	115	0.274	ppb	0.274	6.77	1257	2000	
Pd	105	2	115	-0.044	ppb	-0.044	-3.00	90	100	
Ag	107	2	115	0.002	ppb	0.002	159.50	147	100	
Cd	111	2	115	0.014	ppb	0.014	52.27	27	2000	
Sn	120	2	115	0.051	ppb	0.051	13.15	890	2000	
Sb	121	2	115	0.010	ppb	0.010	250.95	277	1000	
Ba	137	2	115	4.639	ppb	4.639	5.30	6328	5000	
W	182	2	165	-0.068	ppb	-0.068	-12.67	2580	100	
Pt	195	2	165	0.001	ppb	0.001	309.05	23	100	
Tl	205	2	165	0.004	ppb	0.004	113.06	333	2000	
Pb	208	2	165	0.011	ppb	0.011	39.65	1210	5000	
Th	232	2	165	0.009	ppb	0.009	60.65	1163	2000	
U	238	2	165	0.019	ppb	0.019	12.25	460	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	877262	2.78	1092921	80.27	60	125	
Sc (IS)	45	2	HMI He	4263198	1.18	4591929	92.84	60	125	
Sc IS)	45	3	No Gas	120231038	1.69	129634638	92.75	60	120	
Ge Internal Standard	72	1	HMI H2	25084859	0.80	26305534	95.36	60	125	
Ge Internal Standard	72	2	HMI He	5146115	1.42	5205670	98.86	60	125	
In Internal standard	115	2	HMI He	16516675	2.75	16441998	100.45	60	125	
Ho-165	165	2	HMI He	41490765	3.55	37362695	111.05	60	125	

Sample Report

Sample Table

Sample Name 280-123183-a-1-e.ms
 Data File Name 096SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T17:13:22-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457077 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	54.719	ppb	54.719	21.59	8957586	40000	
Be	9	1	6	39.947	ppb	39.947	1.99	13593	2000	
B	11	1	6	4073.922	ppb	4073.922	3.98	41000	100	>LDR
Na	23	2	45	11618.671	ppb	11618.671	3.65	8903563	400000	
Mg	24	2	45	28701.121	ppb	28701.121	3.43	9038530	400000	
Al	27	2	45	406.924	ppb	406.924	3.19	36872	400000	
K	39	2	45	3440.020	ppb	3440.020	1.83	1116536	400000	
Ca	44	2	45	71813.368	ppb	71813.368	2.34	1623140	400000	
V	51	2	72	37.980	ppb	37.980	2.69	195005	2000	
Cr	52	2	72	38.950	ppb	38.950	0.67	248015	5000	
Mn	55	2	72	137.750	ppb	137.750	1.05	389783	10000	
Fe	57	2	72	1209.613	ppb	1209.613	1.70	145805	400000	
Co	59	2	72	38.630	ppb	38.630	1.58	392074	2000	
Ni	60	2	72	38.000	ppb	38.000	1.98	102860	5000	
Cu	63	2	72	37.912	ppb	37.912	2.58	287859	5000	
Zn	66	2	72	37.119	ppb	37.119	1.89	41701	5000	
As	75	2	72	39.213	ppb	39.213	2.42	31710	2000	
Se	78	1	72	39.621	ppb	39.621	4.25	23054	2000	
Sr	88	2	45	418.325	ppb	418.325	0.76	1346207	2000	
Zr	90	2	72	502.261	ppb	502.261	9.36	9559	1000	
Zr	90	1	72	517.140	ppb	517.140	4.14	23443	1000	
Nb	93	2	72	0.825	ppb	0.825	1.22	9996	200	
Mo	95	2	115	39.992	ppb	39.992	2.95	157907	2000	
Pd	105	2	115	-0.033	ppb	-0.033	-19.22	153	100	
Ag	107	2	115	38.412	ppb	38.412	2.95	442122	100	
Cd	111	2	115	37.483	ppb	37.483	6.15	61715	2000	
Sn	120	2	115	40.140	ppb	40.140	2.57	196791	2000	
Sb	121	2	115	40.929	ppb	40.929	5.16	169349	1000	
Ba	137	2	115	66.122	ppb	66.122	4.44	87755	5000	
W	182	2	165	32.902	ppb	32.902	2.38	272546	100	
Pt	195	2	165	0.004	ppb	0.004	69.86	37	100	
Tl	205	2	165	38.188	ppb	38.188	4.58	533625	2000	
Pb	208	2	165	38.839	ppb	38.839	1.94	711036	5000	
Th	232	2	165	38.773	ppb	38.773	1.58	704327	2000	
U	238	2	165	39.915	ppb	39.915	3.73	790337	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	824953	0.73	1092921	75.48	60	125	
Sc (IS)	45	2	HMI He	4194902	1.51	4591929	91.35	60	125	
Sc IS)	45	3	No Gas	120028068	1.08	129634638	92.59	60	120	
Ge Internal Standard	72	1	HMI H2	23497126	0.95	26305534	89.32	60	125	
Ge Internal Standard	72	2	HMI He	4967233	2.25	5205670	95.42	60	125	
In Internal standard	115	2	HMI He	16393463	2.00	16441998	99.70	60	125	
Ho-165	165	2	HMI He	39902754	0.99	37362695	106.80	60	125	

Sample Report

Sample Table

Sample Name 280-123183-a-1-f msd
 Data File Name 097SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T17:16:53-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457077 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	62.810	ppb	62.810	2.34	9050586	40000	
Be	9	1	6	40.323	ppb	40.323	5.40	13844	2000	
B	11	1	6	4193.571	ppb	4193.571	3.10	42594	100	>LDR
Na	23	2	45	11694.893	ppb	11694.893	3.52	9053971	400000	
Mg	24	2	45	29040.734	ppb	29040.734	3.68	9240450	400000	
Al	27	2	45	411.666	ppb	411.666	5.61	37663	400000	
K	39	2	45	3517.304	ppb	3517.304	3.61	1150803	400000	
Ca	44	2	45	72315.330	ppb	72315.330	1.98	1651027	400000	
V	51	2	72	38.715	ppb	38.715	2.27	198096	2000	
Cr	52	2	72	40.194	ppb	40.194	1.71	255272	5000	
Mn	55	2	72	142.274	ppb	142.274	1.75	401667	10000	
Fe	57	2	72	1267.849	ppb	1267.849	3.24	152376	400000	
Co	59	2	72	38.731	ppb	38.731	2.56	392062	2000	
Ni	60	2	72	38.259	ppb	38.259	1.22	103321	5000	
Cu	63	2	72	37.830	ppb	37.830	0.85	286654	5000	
Zn	66	2	72	37.763	ppb	37.763	1.32	42319	5000	
As	75	2	72	39.767	ppb	39.767	0.80	32089	2000	
Se	78	1	72	39.173	ppb	39.173	2.56	23329	2000	
Sr	88	2	45	454.684	ppb	454.684	3.41	1478056	2000	
Zr	90	2	72	557.478	ppb	557.478	5.80	10547	1000	
Zr	90	1	72	558.948	ppb	558.948	2.64	25779	1000	
Nb	93	2	72	0.518	ppb	0.518	17.08	7995	200	
Mo	95	2	115	42.101	ppb	42.101	2.29	161404	2000	
Pd	105	2	115	-0.032	ppb	-0.032	-62.38	150	100	
Ag	107	2	115	40.178	ppb	40.178	0.98	449107	100	
Cd	111	2	115	40.702	ppb	40.702	2.75	65135	2000	
Sn	120	2	115	42.012	ppb	42.012	2.72	199911	2000	
Sb	121	2	115	42.785	ppb	42.785	1.88	171940	1000	
Ba	137	2	115	66.728	ppb	66.728	2.11	86018	5000	
W	182	2	165	32.872	ppb	32.872	3.86	271096	100	
Pt	195	2	165	0.006	ppb	0.006	114.61	47	100	
Tl	205	2	165	38.553	ppb	38.553	3.71	536177	2000	
Pb	208	2	165	40.336	ppb	40.336	4.26	735121	5000	
Th	232	2	165	39.034	ppb	39.034	2.76	705943	2000	
U	238	2	165	39.944	ppb	39.944	3.61	787239	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	832473	0.86	1092921	76.17	60	125	
Sc (IS)	45	2	HMI He	4239172	2.68	4591929	92.32	60	125	
Sc IS)	45	3	No Gas	118950350	0.42	129634638	91.76	60	120	
Ge Internal Standard	72	1	HMI H2	24047411	1.51	26305534	91.42	60	125	
Ge Internal Standard	72	2	HMI He	4955322	0.92	5205670	95.19	60	125	
In Internal standard	115	2	HMI He	15916290	1.97	16441998	96.80	60	125	
Ho-165	165	2	HMI He	39748261	2.83	37362695	106.38	60	125	

Sample Report

Sample Table

Sample Name 280-123183-a-1-d PDS
 Data File Name 098SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T17:20:25-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457077 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-20.164	ppb	-20.164	-27.86	7411511	40000	
Be	9	1	6	208.670	ppb	208.670	0.29	71324	2000	
B	11	1	6	2958.675	ppb	2958.675	4.96	30008	100	>LDR
Na	23	2	45	11551.448	ppb	11551.448	1.87	8752985	400000	
Mg	24	2	45	28288.266	ppb	28288.266	3.23	8807056	400000	
Al	27	2	45	2104.292	ppb	2104.292	1.64	187008	400000	
K	39	2	45	3439.545	ppb	3439.545	0.51	1103834	400000	
Ca	44	2	45	69257.605	ppb	69257.605	2.13	1547062	400000	
V	51	2	72	203.789	ppb	203.789	0.89	982724	2000	
Cr	52	2	72	202.295	ppb	202.295	2.14	1279191	5000	
Mn	55	2	72	306.681	ppb	306.681	0.33	865856	10000	
Fe	57	2	72	2860.112	ppb	2860.112	1.00	342367	400000	
Co	59	2	72	207.707	ppb	207.707	2.05	2077746	2000	
Ni	60	2	72	194.944	ppb	194.944	3.06	522821	5000	
Cu	63	2	72	197.700	ppb	197.700	0.52	1481718	5000	
Zn	66	2	72	201.143	ppb	201.143	0.58	222506	5000	
As	75	2	72	196.723	ppb	196.723	2.10	158124	2000	
Se	78	1	72	203.231	ppb	203.231	2.42	120688	2000	
Sr	88	2	45	380.386	ppb	380.386	1.61	1209919	2000	
Zr	90	2	72	92529.056	ppb	92529.056	1.79	1670987	1000	>LDR
Zr	90	1	72	91147.445	ppb	91147.445	0.35	3898298	1000	>LDR
Nb	93	2	72	8.328	ppb	8.328	6.51	58290	200	
Mo	95	2	115	203.829	ppb	203.829	1.27	803761	2000	
Pd	105	2	115	0.051	ppb	0.051	25.18	630	100	
Ag	107	2	115	41.739	ppb	41.739	2.96	479997	100	
Cd	111	2	115	205.610	ppb	205.610	0.40	338516	2000	
Sn	120	2	115	212.420	ppb	212.420	1.35	1037900	2000	
Sb	121	2	115	223.383	ppb	223.383	1.28	923006	1000	
Ba	137	2	115	244.639	ppb	244.639	3.08	324192	5000	
W	182	2	165	208.357	ppb	208.357	2.14	1754117	100	
Pt	195	2	165	0.101	ppb	0.101	2.82	607	100	
Tl	205	2	165	199.718	ppb	199.718	3.70	2860397	2000	
Pb	208	2	165	212.217	ppb	212.217	6.37	3979381	5000	
Th	232	2	165	1.005	ppb	1.005	6.19	19677	2000	
U	238	2	165	202.545	ppb	202.545	1.59	4113382	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	828740	0.67	1092921	75.83	60	125	
Sc (IS)	45	2	HMI He	4147322	1.89	4591929	90.32	60	125	
Sc IS)	45	3	No Gas	120924677	0.61	129634638	93.28	60	120	
Ge Internal Standard	72	1	HMI H2	23999101	1.69	26305534	91.23	60	125	
Ge Internal Standard	72	2	HMI He	4957048	0.82	5205670	95.22	60	125	
In Internal standard	115	2	HMI He	16379214	1.91	16441998	99.62	60	125	
Ho-165	165	2	HMI He	40929206	1.03	37362695	109.55	60	125	

Sample Report

Sample Table

Sample Name 280-123183-a-2-b
 Data File Name 099SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T17:23:55-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457077 6020a dod5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-45.776	ppb	-45.776	-1.87	6891929	40000	
Be	9	1	6	0.181	ppb	0.181	34.44	70	2000	
B	11	1	6	154.929	ppb	154.929	11.66	1987	100	
Na	23	2	45	403.244	ppb	403.244	4.66	350728	400000	
Mg	24	2	45	8.907	ppb	8.907	14.91	3164	400000	
Al	27	2	45	0.527	ppb	0.527	170.05	417	400000	
K	39	2	45	-14.766	ppb	-14.766	-91.28	98042	400000	
Ca	44	2	45	10.049	ppb	10.049	97.15	510	400000	
V	51	2	72	-1.688	ppb	-1.688	-1.78	6188	2000	
Cr	52	2	72	0.267	ppb	0.267	18.77	3214	5000	
Mn	55	2	72	0.078	ppb	0.078	22.59	457	10000	
Fe	57	2	72	3.343	ppb	3.343	44.05	1623	400000	
Co	59	2	72	0.008	ppb	0.008	396.37	6018	2000	
Ni	60	2	72	0.066	ppb	0.066	59.16	1093	5000	
Cu	63	2	72	-0.058	ppb	-0.058	-17.54	3584	5000	
Zn	66	2	72	0.143	ppb	0.143	143.70	857	5000	
As	75	2	72	0.010	ppb	0.010	24.93	176	2000	
Se	78	1	72	0.131	ppb	0.131	25.90	101	2000	
Sr	88	2	45	0.102	ppb	0.102	16.98	507	2000	
Zr	90	2	72	73.083	ppb	73.083	11.40	1820	1000	
Zr	90	1	72	152.383	ppb	152.383	11.36	8481	1000	
Nb	93	2	72	-0.511	ppb	-0.511	-9.18	1387	200	
Mo	95	2	115	0.192	ppb	0.192	25.50	930	2000	
Pd	105	2	115	-0.050	ppb	-0.050	-12.19	53	100	
Ag	107	2	115	0.028	ppb	0.028	15.69	453	100	
Cd	111	2	115	0.032	ppb	0.032	84.15	57	2000	
Sn	120	2	115	0.262	ppb	0.262	12.98	1927	2000	
Sb	121	2	115	0.289	ppb	0.289	16.57	1440	1000	
Ba	137	2	115	0.099	ppb	0.099	45.59	270	5000	
W	182	2	165	0.225	ppb	0.225	12.05	4931	100	
Pt	195	2	165	-0.001	ppb	-0.001	-69.18	7	100	
Tl	205	2	165	0.046	ppb	0.046	27.47	907	2000	
Pb	208	2	165	0.043	ppb	0.043	24.94	1783	5000	
Th	232	2	165	-0.011	ppb	-0.011	-50.93	753	2000	
U	238	2	165	0.073	ppb	0.073	9.74	1530	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	868732	7.36	1092921	79.49	60	125	
Sc (IS)	45	2	HMI He	4188956	4.20	4591929	91.22	60	125	
Sc IS)	45	3	No Gas	121505630	0.95	129634638	93.73	60	120	
Ge Internal Standard	72	1	HMI H2	24379713	0.96	26305534	92.68	60	125	
Ge Internal Standard	72	2	HMI He	5001163	0.41	5205670	96.07	60	125	
In Internal standard	115	2	HMI He	16497489	0.56	16441998	100.34	60	125	
Ho-165	165	2	HMI He	40368706	2.43	37362695	108.05	60	125	

Sample Report

Sample Table

Sample Name LCSD 280-457010/3-A
 Data File Name 100SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T17:27:29-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457010 200.8
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	38.284	ppb	38.284	18.34	8571382	40000	
Be	9	1	6	40.159	ppb	40.159	1.62	14943	2000	
B	11	1	6	1328.758	ppb	1328.758	2.71	14880	100	>LDR
Na	23	2	45	313.964	ppb	313.964	1.98	279723	400000	
Mg	24	2	45	7.673	ppb	7.673	10.92	2740	400000	
Al	27	2	45	410.722	ppb	410.722	1.95	36718	400000	
K	39	2	45	-11.681	ppb	-11.681	-48.37	97884	400000	
Ca	44	2	45	137.519	ppb	137.519	8.53	3347	400000	
V	51	2	72	39.242	ppb	39.242	3.52	201448	2000	
Cr	52	2	72	38.652	ppb	38.652	4.13	246540	5000	
Mn	55	2	72	40.017	ppb	40.017	3.60	113608	10000	
Fe	57	2	72	392.882	ppb	392.882	4.45	48250	400000	
Co	59	2	72	39.667	ppb	39.667	3.43	403140	2000	
Ni	60	2	72	39.431	ppb	39.431	2.67	106918	5000	
Cu	63	2	72	39.536	ppb	39.536	3.67	300622	5000	
Zn	66	2	72	40.293	ppb	40.293	3.61	45296	5000	
As	75	2	72	38.280	ppb	38.280	3.09	31025	2000	
Se	78	1	72	41.645	ppb	41.645	1.88	25176	2000	
Sr	88	2	45	44.440	ppb	44.440	2.61	141223	2000	
Zr	90	2	72	431.765	ppb	431.765	5.62	8312	1000	
Zr	90	1	72	428.849	ppb	428.849	3.23	20513	1000	
Nb	93	2	72	-0.578	ppb	-0.578	-2.82	947	200	
Mo	95	2	115	39.594	ppb	39.594	1.46	151793	2000	
Pd	105	2	115	-0.035	ppb	-0.035	-9.95	137	100	
Ag	107	2	115	41.860	ppb	41.860	2.48	467655	100	
Cd	111	2	115	41.735	ppb	41.735	1.58	66731	2000	
Sn	120	2	115	42.028	ppb	42.028	2.63	199931	2000	
Sb	121	2	115	44.104	ppb	44.104	3.37	177154	1000	
Ba	137	2	115	43.917	ppb	43.917	1.99	56637	5000	
W	182	2	165	32.803	ppb	32.803	2.13	263992	100	
Pt	195	2	165	0.002	ppb	0.002	199.62	27	100	
Tl	205	2	165	38.664	ppb	38.664	5.71	524127	2000	
Pb	208	2	165	40.506	ppb	40.506	3.09	719845	5000	
Th	232	2	165	38.740	ppb	38.740	2.67	683328	2000	
U	238	2	165	40.799	ppb	40.799	1.66	784401	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	902031	1.00	1092921	82.53	60	125	
Sc (IS)	45	2	HMI He	4139657	2.26	4591929	90.15	60	125	
Sc IS)	45	3	No Gas	119544936	1.55	129634638	92.22	60	120	
Ge Internal Standard	72	1	HMI H2	24410147	1.00	26305534	92.79	60	125	
Ge Internal Standard	72	2	HMI He	4979437	3.18	5205670	95.65	60	125	
In Internal standard	115	2	HMI He	15909366	1.26	16441998	96.76	60	125	
Ho-165	165	2	HMI He	38748136	2.19	37362695	103.71	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5699926
 Data File Name 101_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T17:31:01-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	42.091	ppb	4.521	136950	100	42.1	90	110	>+ -10%
Li	7	3	45	57.209	ppb	17.363	8992940	100	57.2	90	110	>+ -10%
Be	9	1	6	50.542	ppb	1.041	17887	50	101.1	90	110	
B	11	1	6	164.916	ppb	6.675	2073	50	329.8	90	110	>+ -10%
Na	23	2	45	1255.551	ppb	1.588	949122	1000	125.6	90	110	>+ -10%
Mg	24	2	45	1022.748	ppb	2.863	305578	1000	102.3	90	110	
Al	27	2	45	1049.474	ppb	1.847	89558	1000	104.9	90	110	
K	39	2	45	1019.264	ppb	0.969	381906	1000	101.9	90	110	
Ca	44	2	45	1008.681	ppb	1.297	21860	1000	100.9	90	110	
V	51	2	72	48.866	ppb	5.578	248371	50	97.7	90	110	
Cr	52	2	72	47.617	ppb	2.355	304810	50	95.2	90	110	
Mn	55	2	72	49.922	ppb	2.031	142355	50	99.8	90	110	
Fe	57	2	72	965.402	ppb	3.525	117351	1000	96.5	90	110	
Co	59	2	72	48.693	ppb	2.924	495725	50	97.4	90	110	
Ni	60	2	72	49.586	ppb	3.043	134849	50	99.2	90	110	
Cu	63	2	72	48.637	ppb	3.428	370675	50	97.3	90	110	
Zn	66	2	72	49.003	ppb	6.229	55189	50	98.0	90	110	
As	75	2	72	49.696	ppb	1.883	40417	50	99.4	90	110	
Se	78	1	72	53.109	ppb	2.280	32098	50	106.2	90	110	
Sr	88	2	45	112.369	ppb	1.486	342708	100	112.4	90	110	>+ -10%
Zr	90	2	72	175.420	ppb	2.278	3684	50	350.8	90	110	>+ -10%
Zr	90	1	72	258.887	ppb	10.541	13118	50	517.8	90	110	>+ -10%
Nb	93	2	72	96.087	ppb	2.259	628850	100	96.1	90	110	
Mo	95	2	115	46.920	ppb	4.481	185586	50	93.8	90	110	
Pd	105	2	115	48.305	ppb	4.089	276093	50	96.6	90	110	
Ag	107	2	115	48.817	ppb	2.459	563102	50	97.6	90	110	
Cd	111	2	115	51.503	ppb	4.826	84978	50	103.0	90	110	
Sn	120	2	115	50.728	ppb	3.528	248960	50	101.5	90	110	
Sb	121	2	115	50.561	ppb	1.628	209683	50	101.1	90	110	
Ba	137	2	115	50.699	ppb	0.993	67501	50	101.4	90	110	
W	182	2	165	48.230	ppb	0.911	387961	50	96.5	90	110	
Pt	195	2	165	47.510	ppb	2.476	263426	50	95.0	90	110	
Tl	205	2	165	49.854	ppb	4.144	678257	50	99.7	90	110	
Pb	208	2	165	51.808	ppb	0.238	923920	50	103.6	90	110	
Th	232	2	165	49.842	ppb	2.220	881707	50	99.7	90	110	
U	238	2	165	48.461	ppb	4.122	934463	50	96.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	857991	2.20	1092921	78.50	60	125	
Sc (IS)	45	2	HMI He	3974425	0.30	4591929	86.55	60	125	
Sc IS)	45	3	No Gas	119776101	0.69	129634638	92.40	60	120	
Ge Internal Standard	72	1	HMI H2	24407792	0.93	26305534	92.79	60	125	
Ge Internal Standard	72	2	HMI He	5000285	2.26	5205670	96.05	60	125	
In Internal standard	115	2	HMI He	16428512	2.54	16441998	99.92	60	125	
Ho-165	165	2	HMI He	38879487	1.58	37362695	104.06	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5699924
 Data File Name 102_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T17:34:33-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-39.975	ppb	-3.8	107594	0.1	
Li	7	3	45	-38.889	ppb	-11.7	6755330	0.05	
Be	9	1	6	0.049	ppb	18.1	22	0.5	
B	11	1	6	67.588	ppb	15.5	1087	0.1	>RL
Na	23	2	45	272.179	ppb	1.5	244693	25	>RL
Mg	24	2	45	3.692	ppb	18.1	1483	25	
Al	27	2	45	-0.177	ppb	-201.4	343	15	
K	39	2	45	-7.393	ppb	-129.6	97683	50	
Ca	44	2	45	0.320	ppb	878.6	280	25	
V	51	2	72	-0.514	ppb	-31.4	12024	1	
Cr	52	2	72	0.000	ppb	9471.3	1537	1	
Mn	55	2	72	0.090	ppb	34.0	500	0.5	
Fe	57	2	72	0.973	ppb	199.4	1360	25	
Co	59	2	72	-0.036	ppb	-42.0	5674	0.5	
Ni	60	2	72	0.049	ppb	191.6	1073	1	
Cu	63	2	72	0.412	ppb	19.9	7272	1	
Zn	66	2	72	0.148	ppb	51.9	880	5	
As	75	2	72	0.040	ppb	66.1	204	1	
Se	78	1	72	0.050	ppb	57.8	52	1	
Sr	88	2	45	0.013	ppb	62.5	217	1	
Zr	90	2	72	-7.394	ppb	-85.9	360	1	
Zr	90	1	72	-1.206	ppb	-161.8	1785	1	
Nb	93	2	72	3.007	ppb	5.9	24722	2	>RL
Mo	95	2	115	0.086	ppb	7.4	500	0.5	
Pd	105	2	115	-0.016	ppb	-70.3	243	1	
Ag	107	2	115	0.014	ppb	33.2	287	1	
Cd	111	2	115	0.012	ppb	125.7	23	0.5	
Sn	120	2	115	0.154	ppb	9.4	1377	1	
Sb	121	2	115	0.124	ppb	11.4	743	1	
Ba	137	2	115	0.046	ppb	50.1	197	0.5	
W	182	2	165	0.055	ppb	47.1	3464	1	
Pt	195	2	165	0.006	ppb	77.8	47	1	
Tl	205	2	165	0.023	ppb	44.5	577	0.1	
Pb	208	2	165	0.017	ppb	31.3	1277	0.5	
Th	232	2	165	0.213	ppb	4.1	4784	1	
U	238	2	165	0.037	ppb	4.7	793	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	873637	3.38	1092921	79.94	60	125	
Sc (IS)	45	2	HMI He	4079069	0.46	4591929	88.83	60	125	
Sc IS)	45	3	No Gas	116581157	0.82	129634638	89.93	60	120	
Ge Internal Standard	72	1	HMI H2	23969160	2.89	26305534	91.12	60	125	
Ge Internal Standard	72	2	HMI He	5094757	2.75	5205670	97.87	60	125	
In Internal standard	115	2	HMI He	16277805	1.15	16441998	99.00	60	125	
Ho-165	165	2	HMI He	39705880	2.75	37362695	106.27	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5699928
 Data File Name 103LLCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T17:38:03-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	-31.297	ppb	-13.725	6953349	50	-62.6	70	130	> +/-30%
Be	9	1	6	0.897	ppb	11.132	320	1	89.7	70	130	
Na	23	2	45	290.656	ppb	1.691	245422	50	581.3	70	130	> +/-30%
Mg	24	2	45	54.651	ppb	0.460	16234	50	109.3	70	130	
Al	27	2	45	52.942	ppb	7.472	4727	50	105.9	70	130	
K	39	2	45	101.143	ppb	2.431	122331	100	101.1	70	130	
Ca	44	2	45	35.667	ppb	25.897	1003	50	71.3	70	130	
V	51	2	72	4.275	ppb	4.492	34761	5	85.5	70	130	
Cr	52	2	72	1.765	ppb	5.200	12755	2	88.2	70	130	
Mn	55	2	72	0.961	ppb	11.413	2974	1	96.1	70	130	
Fe	57	2	72	46.880	ppb	11.449	6855	50	93.8	70	130	
Co	59	2	72	0.905	ppb	7.195	15037	1	90.5	70	130	
Ni	60	2	72	1.246	ppb	7.356	4277	1.5	83.0	70	130	
Cu	63	2	72	1.763	ppb	5.252	17319	2	88.2	70	130	
Zn	66	2	72	9.134	ppb	1.418	10857	10	91.3	70	130	
As	75	2	72	4.559	ppb	0.666	3861	5	91.2	70	130	
Se	78	1	72	5.098	ppb	1.977	2992	5	102.0	70	130	
Sr	88	2	45	1.142	ppb	5.233	3560	1	114.2	70	130	
Zr	90	2	72	-12.724	ppb	-12.946	257	0.5	-2544.8	70	130	> +/-30%
Zr	90	1	72	-2.628	ppb	-106.316	1695	0.5	-525.6	70	130	> +/-30%
Nb	93	2	72	1.531	ppb	7.955	14657	2	76.5	70	130	
Mo	95	2	115	1.980	ppb	5.315	7849	2	99.0	70	130	
Pd	105	2	115	-0.027	ppb	-20.690	183	1	-2.7	70	130	> +/-30%
Ag	107	2	115	4.989	ppb	1.833	56637	5	99.8	70	130	
Cd	111	2	115	1.094	ppb	4.462	1777	1	109.4	70	130	
Sn	120	2	115	10.050	ppb	2.557	48936	10	100.5	70	130	
Sb	121	2	115	1.959	ppb	6.744	8195	2	98.0	70	130	
Ba	137	2	115	1.085	ppb	4.715	1550	1	108.5	70	130	
W	182	2	165	4.253	ppb	1.198	38212	1	425.3	70	130	> +/-30%
Pt	195	2	165	0.003	ppb	82.628	33	1	0.3	70	130	> +/-30%
Tl	205	2	165	0.943	ppb	1.370	13553	1	94.3	70	130	
Pb	208	2	165	0.917	ppb	3.722	17888	1	91.7	70	130	
Th	232	2	165	1.926	ppb	1.849	36228	2	96.3	70	130	
U	238	2	165	0.945	ppb	1.345	18946	1	94.5	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	854226	3.56	1092921	78.16	60	125	
Sc (IS)	45	2	HMI He	3874251	0.38	4591929	84.37	60	125	
Sc IS)	45	3	No Gas	117266140	2.22	129634638	90.46	60	120	
Ge Internal Standard	72	1	HMI H2	23549882	1.23	26305534	89.52	60	125	
Ge Internal Standard	72	2	HMI He	4999823	1.75	5205670	96.05	60	125	
In Internal standard	115	2	HMI He	16129483	2.30	16441998	98.10	60	125	
Ho-165	165	2	HMI He	40264563	2.60	37362695	107.77	60	125	

Blank Report

Sample Table

Sample Name mb 280-457615/1-a
 Data File Name 104_BLK.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T17:41:34-06:00
 Sample Type Blank
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	1	45	-50.873	ppb	-14.4561813	101657	0.1
Li	7	3	45	-45.188	ppb	-6.716918781	6648850	0.05
Be	9	1	6	0.028	ppb	60.94760454	13	0.5
Na	23	2	45	223.000	ppb	2.667534693	212281	25
Mg	24	2	45	5.023	ppb	8.476679813	1930	25
Al	27	2	45	1.001	ppb	126.5354825	453	15
K	39	2	45	-31.686	ppb	-8.299932476	92521	50
Ca	44	2	45	0.790	ppb	531.1891592	297	25
V	51	2	72	-1.544	ppb	-8.694347208	6708	1
Cr	52	2	72	0.249	ppb	25.53083503	3027	1
Mn	55	2	72	0.052	ppb	60.78180633	373	0.5
Fe	57	2	72	2.677	ppb	63.31517473	1507	25
Co	59	2	72	0.003	ppb	1113.311534	5828	0.5
Ni	60	2	72	0.018	ppb	265.7937386	943	1
Cu	63	2	72	-0.023	ppb	-510.9955977	3761	1
Zn	66	2	72	0.208	ppb	26.45127283	907	5
As	75	2	72	0.021	ppb	68.55459507	180	1
Se	78	1	72	0.027	ppb	55.5980526	37	1
Sr	88	2	45	0.044	ppb	49.63886225	320	1
Zr	90	2	72	-3.960	ppb	-110.0536821	407	1
Zr	90	1	72	1.739	ppb	91.39206771	1895	1
Nb	93	2	72	1.707	ppb	12.5658437	15424	2
Mo	95	2	115	0.062	ppb	24.58045827	403	0.5
Pd	105	2	115	-0.042	ppb	-3.429561263	97	1
Ag	107	2	115	0.021	ppb	55.25982839	363	1
Cd	111	2	115	0.008	ppb	155.9821423	17	0.5
Sn	120	2	115	0.155	ppb	5.238624197	1367	1
Sb	121	2	115	0.058	ppb	43.15514645	467	1
Ba	137	2	115	0.067	ppb	55.54675269	223	0.5
W	182	2	165	0.039	ppb	106.5411839	3344	1
Pt	195	2	165	0.002	ppb	133.7241135	23	1
Tl	205	2	165	0.010	ppb	66.38150571	400	0.1
Pb	208	2	165	0.014	ppb	62.10467646	1220	0.5
Th	232	2	165	0.712	ppb	4.669819984	13823	1
U	238	2	165	0.020	ppb	1.073222116	463	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	825191	0.81	1092921	75.50	60	125	
Sc (IS)	45	2	HMI He	4159872	2.22	4591929	90.59	60	125	
Sc IS)	45	3	No Gas	117004937	0.14	129634638	90.26	60	120	
Ge Internal Standard	72	1	HMI H2	23767621	1.22	26305534	90.35	60	125	
Ge Internal Standard	72	2	HMI He	4881359	0.73	5205670	93.77	60	125	
In Internal standard	115	2	HMI He	16130812	2.95	16441998	98.11	60	125	
Ho-165	165	2	HMI He	39802940	2.11	37362695	106.53	60	125	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name lcs 280-457615/2-a
 Data File Name 105_LCS.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T17:45:07-06:00
 Sample Type LCS
 Dilution 1
 Analyst Denver Metals
 Comment 457615 6020A DOD5
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	27.281	27.281	ppb	23.127	8231037	400	6.8	80	120	> +/-20%
Be	9	1	6	40.735	40.735	ppb	5.452	14172	40	101.8	80	120	
Na	23	2	45	235.456	235.456	ppb	0.781	220415	40	588.6	80	120	> +/-20%
Mg	24	2	45	93.954	93.954	ppb	3.490	29521	40	234.9	80	120	> +/-20%
Al	27	2	45	420.757	420.757	ppb	1.274	37573	40	1051.9	80	120	> +/-20%
K	39	2	45	36.899	36.899	ppb	7.558	111883	40	92.2	80	120	
Ca	44	2	45	273.300	273.300	ppb	3.666	6365	40	683.2	80	120	> +/-20%
V	51	2	72	38.288	38.288	ppb	2.865	195807	40	95.7	80	120	
Cr	52	2	72	40.034	40.034	ppb	2.734	253959	40	100.1	80	120	
Mn	55	2	72	42.271	42.271	ppb	3.847	119330	40	105.7	80	120	
Fe	57	2	72	433.031	433.031	ppb	0.516	52794	40	1082.6	80	120	> +/-20%
Co	59	2	72	40.182	40.182	ppb	2.771	406050	40	100.5	80	120	
Ni	60	2	72	41.212	41.212	ppb	2.543	111087	40	103.0	80	120	
Cu	63	2	72	39.266	39.266	ppb	1.831	297006	40	98.2	80	120	
Zn	66	2	72	41.601	41.601	ppb	2.196	46496	40	104.0	80	120	
As	75	2	72	37.412	37.412	ppb	3.293	30156	40	93.5	80	120	
Se	78	1	72	39.617	39.617	ppb	2.321	22841	40	99.0	80	120	
Sr	88	2	45	46.665	46.665	ppb	1.756	148149	40	116.7	80	120	
Nb	93	2	72	1.090	1.090	ppb	13.627	11661	40	2.7	80	120	> +/-20%
Mo	95	2	115	38.747	38.747	ppb	5.345	151889	40	96.9	80	120	
Pd	105	2	115	-0.036	-0.036	ppb	-9.939	133	40	-0.1	80	120	> +/-20%
Ag	107	2	115	41.240	41.240	ppb	2.773	471515	40	103.1	80	120	
Cd	111	2	115	40.523	40.523	ppb	2.766	66316	40	101.3	80	120	
Sn	120	2	115	40.881	40.881	ppb	1.977	199033	40	102.2	80	120	
Sb	121	2	115	41.089	41.089	ppb	2.853	168898	40	102.7	80	120	
Ba	137	2	115	43.346	43.346	ppb	6.748	57154	40	108.4	80	120	
W	182	2	165	32.182	32.182	ppb	3.142	265714	40	80.5	80	120	
Pt	195	2	165	0.003	0.003	ppb	169.738	30	40	0.0	80	120	> +/-20%
Tl	205	2	165	38.631	38.631	ppb	5.961	537324	40	96.6	80	120	
Pb	208	2	165	39.414	39.414	ppb	3.228	718949	40	98.5	80	120	
Th	232	2	165	38.054	38.054	ppb	4.318	688543	40	95.1	80	120	
U	238	2	165	39.404	39.404	ppb	3.860	777179	40	98.5	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	844666	4.94	1092921	77.29	60	125	
Sc (IS)	45	2	HMI He	4134542	1.04	4591929	90.04	60	125	
Sc IS)	45	3	No Gas	118020536	1.05	129634638	91.04	60	120	
Ge Internal Standard	72	1	HMI H2	23280401	3.06	26305534	88.50	60	125	
Ge Internal Standard	72	2	HMI He	4950345	1.92	5205670	95.10	60	125	
In Internal standard	115	2	HMI He	16283108	2.54	16441998	99.03	60	125	
Ho-165	165	2	HMI He	39787681	3.85	37362695	106.49	60	125	

Sample Report

Sample Table

Sample Name lcsd 280-457615/3-a
 Data File Name 106SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T17:48:40-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	31.234	ppb	31.234	23.01	8260900	40000	
Be	9	1	6	41.839	ppb	41.839	1.92	14096	2000	
B	11	1	6	1339.111	ppb	1339.111	4.48	13575	100	>LDR
Na	23	2	45	196.632	ppb	196.632	3.63	187455	400000	
Mg	24	2	45	121.870	ppb	121.870	4.30	37429	400000	
Al	27	2	45	417.821	ppb	417.821	0.45	36591	400000	
K	39	2	45	-18.178	ppb	-18.178	-38.49	94003	400000	
Ca	44	2	45	338.777	ppb	338.777	3.30	7668	400000	
V	51	2	72	37.975	ppb	37.975	2.20	191196	2000	
Cr	52	2	72	39.976	ppb	39.976	1.71	249503	5000	
Mn	55	2	72	42.474	ppb	42.474	3.15	117987	10000	
Fe	57	2	72	398.918	ppb	398.918	1.83	47929	400000	
Co	59	2	72	40.402	ppb	40.402	3.66	401628	2000	
Ni	60	2	72	40.200	ppb	40.200	2.58	106616	5000	
Cu	63	2	72	39.942	ppb	39.942	4.06	297078	5000	
Zn	66	2	72	39.402	ppb	39.402	5.04	43345	5000	
As	75	2	72	37.418	ppb	37.418	2.31	29677	2000	
Se	78	1	72	39.447	ppb	39.447	3.46	23213	2000	
Sr	88	2	45	46.271	ppb	46.271	2.80	144007	2000	
Zr	90	2	72	521.992	ppb	521.992	2.38	9738	1000	
Zr	90	1	72	521.951	ppb	521.951	3.28	23911	1000	
Nb	93	2	72	0.560	ppb	0.560	12.20	8125	200	
Mo	95	2	115	39.636	ppb	39.636	4.43	153467	2000	
Pd	105	2	115	-0.040	ppb	-0.040	-6.22	110	100	
Ag	107	2	115	41.268	ppb	41.268	6.39	465735	100	
Cd	111	2	115	40.600	ppb	40.600	3.95	65587	2000	
Sn	120	2	115	41.227	ppb	41.227	6.16	198071	2000	
Sb	121	2	115	41.998	ppb	41.998	4.31	170446	1000	
Ba	137	2	115	43.680	ppb	43.680	5.34	56889	5000	
W	182	2	165	32.469	ppb	32.469	0.75	263485	100	
Pt	195	2	165	0.000	ppb	0.000	-1123.32	13	100	
Tl	205	2	165	38.632	ppb	38.632	0.32	528602	2000	
Pb	208	2	165	40.211	ppb	40.211	1.81	720929	5000	
Th	232	2	165	39.227	ppb	39.227	3.30	697772	2000	
U	238	2	165	39.514	ppb	39.514	1.17	766128	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	816643	0.32	1092921	74.72	60	125	
Sc (IS)	45	2	HMI He	4054985	2.82	4591929	88.31	60	125	
Sc IS)	45	3	No Gas	117244737	1.77	129634638	90.44	60	120	
Ge Internal Standard	72	1	HMI H2	23783361	4.83	26305534	90.41	60	125	
Ge Internal Standard	72	2	HMI He	4870234	1.92	5205670	93.56	60	125	
In Internal standard	115	2	HMI He	16082650	2.95	16441998	97.81	60	125	
Ho-165	165	2	HMI He	39081089	1.33	37362695	104.60	60	125	

Sample Report

Sample Table

Sample Name 280-123364-o-1-g
 Data File Name 107SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T17:52:12-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-48.317	ppb	-48.317	-6.29	6634292	40000	
Be	9	1	6	0.014	ppb	0.014	221.77	8	2000	
B	11	1	6	855.011	ppb	855.011	5.21	8672	100	>LDR
Na	23	2	45	26291.733	ppb	26291.733	2.84	19405550	400000	
Mg	24	2	45	11017.603	ppb	11017.603	2.55	3351163	400000	
Al	27	2	45	2.885	ppb	2.885	30.75	607	400000	
K	39	2	45	2994.118	ppb	2994.118	1.44	951309	400000	
Ca	44	2	45	19163.761	ppb	19163.761	0.70	418401	400000	
V	51	2	72	-1.358	ppb	-1.358	-4.86	7585	2000	
Cr	52	2	72	1.543	ppb	1.543	2.40	11084	5000	
Mn	55	2	72	0.508	ppb	0.508	6.36	1640	10000	
Fe	57	2	72	14.116	ppb	14.116	5.80	2854	400000	
Co	59	2	72	0.124	ppb	0.124	16.02	7018	2000	
Ni	60	2	72	0.551	ppb	0.551	25.31	2344	5000	
Cu	63	2	72	0.679	ppb	0.679	6.77	8929	5000	
Zn	66	2	72	1.877	ppb	1.877	8.24	2720	5000	
As	75	2	72	0.312	ppb	0.312	12.17	410	2000	
Se	78	1	72	1.127	ppb	1.127	9.69	680	2000	
Sr	88	2	45	112.298	ppb	112.298	1.73	349039	2000	
Zr	90	2	72	45.415	ppb	45.415	19.45	1287	1000	
Zr	90	1	72	44.384	ppb	44.384	2.66	3677	1000	
Nb	93	2	72	0.150	ppb	0.150	36.80	5551	200	
Mo	95	2	115	0.450	ppb	0.450	8.85	1893	2000	
Pd	105	2	115	-0.046	ppb	-0.046	-17.81	77	100	
Ag	107	2	115	0.012	ppb	0.012	55.62	253	100	
Cd	111	2	115	0.021	ppb	0.021	119.74	37	2000	
Sn	120	2	115	0.301	ppb	0.301	15.68	2053	2000	
Sb	121	2	115	0.691	ppb	0.691	12.25	3020	1000	
Ba	137	2	115	89.403	ppb	89.403	4.24	115784	5000	
W	182	2	165	0.055	ppb	0.055	89.26	3387	100	
Pt	195	2	165	0.000	ppb	0.000	-2283.98	13	100	
Tl	205	2	165	0.023	ppb	0.023	12.19	567	2000	
Pb	208	2	165	6.004	ppb	6.004	2.50	107677	5000	
Th	232	2	165	0.599	ppb	0.599	1.32	11488	2000	
U	238	2	165	5.561	ppb	5.561	2.82	107092	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	805841	1.60	1092921	73.73	60	125	
Sc (IS)	45	2	HMI He	4050787	0.92	4591929	88.22	60	125	
Sc IS)	45	3	No Gas	117909721	0.89	129634638	90.96	60	120	
Ge Internal Standard	72	1	HMI H2	23621934	0.82	26305534	89.80	60	125	
Ge Internal Standard	72	2	HMI He	4885612	2.20	5205670	93.85	60	125	
In Internal standard	115	2	HMI He	16000686	1.34	16441998	97.32	60	125	
Ho-165	165	2	HMI He	38810068	2.29	37362695	103.87	60	125	

Sample Report

Sample Table

Sample Name 280-123364-o-1-gSD@5
 Data File Name 108SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T17:55:42-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-48.000	ppb	-48.000	-6.87	6624448	40000	
Be	9	1	6	0.004	ppb	0.004	415.97	5	2000	
B	11	1	6	223.008	ppb	223.008	3.89	2610	100	
Na	23	2	45	5271.462	ppb	5271.462	4.27	3955863	400000	
Mg	24	2	45	2125.079	ppb	2125.079	3.77	651822	400000	
Al	27	2	45	-0.502	ppb	-0.502	-94.24	317	400000	
K	39	2	45	586.729	ppb	586.729	6.72	268186	400000	
Ca	44	2	45	3800.933	ppb	3800.933	4.16	83843	400000	
V	51	2	72	-0.650	ppb	-0.650	-11.53	11000	2000	
Cr	52	2	72	0.182	ppb	0.182	12.94	2627	5000	
Mn	55	2	72	0.102	ppb	0.102	23.08	517	10000	
Fe	57	2	72	2.825	ppb	2.825	39.10	1540	400000	
Co	59	2	72	-0.031	ppb	-0.031	-61.22	5548	2000	
Ni	60	2	72	0.158	ppb	0.158	34.61	1323	5000	
Cu	63	2	72	0.357	ppb	0.357	0.97	6621	5000	
Zn	66	2	72	0.164	ppb	0.164	36.40	867	5000	
As	75	2	72	0.063	ppb	0.063	20.44	216	2000	
Se	78	1	72	0.237	ppb	0.237	10.55	161	2000	
Sr	88	2	45	22.154	ppb	22.154	4.60	69539	2000	
Zr	90	2	72	1.080	ppb	1.080	359.15	500	1000	
Zr	90	1	72	6.500	ppb	6.500	21.79	2102	1000	
Nb	93	2	72	-0.251	ppb	-0.251	-0.81	3030	200	
Mo	95	2	115	0.107	ppb	0.107	26.17	577	2000	
Pd	105	2	115	-0.039	ppb	-0.039	-26.43	117	100	
Ag	107	2	115	0.008	ppb	0.008	46.23	213	100	
Cd	111	2	115	0.002	ppb	0.002	168.73	7	2000	
Sn	120	2	115	0.123	ppb	0.123	35.10	1213	2000	
Sb	121	2	115	0.194	ppb	0.194	14.09	1020	1000	
Ba	137	2	115	17.338	ppb	17.338	2.66	22763	5000	
W	182	2	165	-0.001	ppb	-0.001	-1926.93	2974	100	
Pt	195	2	165	0.000	ppb	0.000	-2697.00	13	100	
Tl	205	2	165	0.008	ppb	0.008	30.76	363	2000	
Pb	208	2	165	0.005	ppb	0.005	154.06	1043	5000	
Th	232	2	165	0.022	ppb	0.022	27.51	1320	2000	
U	238	2	165	1.109	ppb	1.109	3.12	21626	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	836313	0.87	1092921	76.52	60	125	
Sc (IS)	45	2	HMI He	4087178	4.80	4591929	89.01	60	125	
Sc IS)	45	3	No Gas	117603796	1.38	129634638	90.72	60	120	
Ge Internal Standard	72	1	HMI H2	23832242	1.05	26305534	90.60	60	125	
Ge Internal Standard	72	2	HMI He	4929943	2.44	5205670	94.70	60	125	
In Internal standard	115	2	HMI He	16141465	1.46	16441998	98.17	60	125	
Ho-165	165	2	HMI He	39171568	1.15	37362695	104.84	60	125	

Sample Report

Sample Table

Sample Name 280-123364-o-1-h ms
 Data File Name 109SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T17:59:52-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	22.875	ppb	22.875	12.10	8016232	40000	
Be	9	1	6	40.939	ppb	40.939	3.17	13415	2000	
B	11	1	6	2087.425	ppb	2087.425	2.90	20405	100	>LDR
Na	23	2	45	26393.142	ppb	26393.142	5.15	19236054	400000	
Mg	24	2	45	11274.305	ppb	11274.305	5.59	3386388	400000	
Al	27	2	45	425.901	ppb	425.901	5.32	36775	400000	
K	39	2	45	3059.612	ppb	3059.612	4.61	957751	400000	
Ca	44	2	45	19448.433	ppb	19448.433	1.77	419467	400000	
V	51	2	72	38.495	ppb	38.495	1.39	193821	2000	
Cr	52	2	72	39.400	ppb	39.400	1.67	246164	5000	
Mn	55	2	72	40.359	ppb	40.359	0.53	112250	10000	
Fe	57	2	72	399.921	ppb	399.921	2.59	48090	400000	
Co	59	2	72	39.212	ppb	39.212	2.62	390363	2000	
Ni	60	2	72	39.894	ppb	39.894	2.75	105913	5000	
Cu	63	2	72	37.755	ppb	37.755	1.20	281421	5000	
Zn	66	2	72	37.903	ppb	37.903	1.11	41784	5000	
As	75	2	72	37.954	ppb	37.954	2.06	30129	2000	
Se	78	1	72	39.431	ppb	39.431	2.74	22698	2000	
Sr	88	2	45	157.913	ppb	157.913	3.37	484656	2000	
Zr	90	2	72	791.667	ppb	791.667	5.29	14536	1000	
Zr	90	1	72	814.977	ppb	814.977	0.05	35523	1000	
Nb	93	2	72	-0.078	ppb	-0.078	-66.90	4097	200	
Mo	95	2	115	39.225	ppb	39.225	3.85	150630	2000	
Pd	105	2	115	-0.044	ppb	-0.044	-5.69	87	100	
Ag	107	2	115	39.581	ppb	39.581	0.98	443284	100	
Cd	111	2	115	39.403	ppb	39.403	2.40	63161	2000	
Sn	120	2	115	41.504	ppb	41.504	1.50	197909	2000	
Sb	121	2	115	42.986	ppb	42.986	3.42	173054	1000	
Ba	137	2	115	131.296	ppb	131.296	3.84	169362	5000	
W	182	2	165	32.343	ppb	32.343	0.82	259982	100	
Pt	195	2	165	0.003	ppb	0.003	167.95	30	100	
Tl	205	2	165	38.280	ppb	38.280	1.59	518682	2000	
Pb	208	2	165	39.481	ppb	39.481	2.98	700970	5000	
Th	232	2	165	37.606	ppb	37.606	2.51	662487	2000	
U	238	2	165	44.574	ppb	44.574	1.37	856034	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	794500	1.43	1092921	72.70	60	125	
Sc (IS)	45	2	HMI He	4002950	3.14	4591929	87.17	60	125	
Sc IS)	45	3	No Gas	116232927	0.95	129634638	89.66	60	120	
Ge Internal Standard	72	1	HMI H2	23243721	1.11	26305534	88.36	60	125	
Ge Internal Standard	72	2	HMI He	4874487	1.28	5205670	93.64	60	125	
In Internal standard	115	2	HMI He	15947297	2.53	16441998	96.99	60	125	
Ho-165	165	2	HMI He	38706429	1.56	37362695	103.60	60	125	

Sample Report

Sample Table

Sample Name 280-123364-o-1-i msd
 Data File Name 110SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T18:03:44-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	26.380	ppb	26.380	41.08	8078313	40000	
Be	9	1	6	41.362	ppb	41.362	1.93	13772	2000	
B	11	1	6	2009.314	ppb	2009.314	2.73	19961	100	>LDR
Na	23	2	45	26261.193	ppb	26261.193	2.43	19090157	400000	
Mg	24	2	45	11070.986	ppb	11070.986	4.55	3315678	400000	
Al	27	2	45	418.998	ppb	418.998	3.18	36090	400000	
K	39	2	45	3017.678	ppb	3017.678	3.43	943206	400000	
Ca	44	2	45	19523.489	ppb	19523.489	1.04	419752	400000	
V	51	2	72	38.206	ppb	38.206	3.76	191825	2000	
Cr	52	2	72	39.088	ppb	39.088	2.83	243410	5000	
Mn	55	2	72	40.529	ppb	40.529	4.06	112317	10000	
Fe	57	2	72	406.255	ppb	406.255	3.15	48672	400000	
Co	59	2	72	38.658	ppb	38.658	2.82	383689	2000	
Ni	60	2	72	38.569	ppb	38.569	1.64	102106	5000	
Cu	63	2	72	38.035	ppb	38.035	1.20	282548	5000	
Zn	66	2	72	38.745	ppb	38.745	2.16	42553	5000	
As	75	2	72	38.306	ppb	38.306	2.19	30308	2000	
Se	78	1	72	40.025	ppb	40.025	2.32	23164	2000	
Sr	88	2	45	157.336	ppb	157.336	2.20	481446	2000	
Zr	90	2	72	530.496	ppb	530.496	5.78	9856	1000	
Zr	90	1	72	551.050	ppb	551.050	4.11	24716	1000	
Nb	93	2	72	-0.156	ppb	-0.156	-28.28	3590	200	
Mo	95	2	115	39.872	ppb	39.872	2.24	152731	2000	
Pd	105	2	115	-0.043	ppb	-0.043	-7.99	93	100	
Ag	107	2	115	31.778	ppb	31.778	1.75	354854	100	
Cd	111	2	115	39.413	ppb	39.413	3.08	62959	2000	
Sn	120	2	115	40.995	ppb	40.995	4.65	194808	2000	
Sb	121	2	115	43.442	ppb	43.442	4.07	174317	1000	
Ba	137	2	115	131.839	ppb	131.839	2.56	169599	5000	
W	182	2	165	31.852	ppb	31.852	4.19	261517	100	
Pt	195	2	165	-0.002	ppb	-0.002	-54.80	3	100	
Tl	205	2	165	36.820	ppb	36.820	3.75	509627	2000	
Pb	208	2	165	38.481	ppb	38.481	3.62	698060	5000	
Th	232	2	165	38.060	ppb	38.060	3.93	684925	2000	
U	238	2	165	43.546	ppb	43.546	2.09	854499	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	807201	0.70	1092921	73.86	60	125	
Sc (IS)	45	2	HMI He	3989297	1.88	4591929	86.88	60	125	
Sc IS)	45	3	No Gas	116110007	1.44	129634638	89.57	60	120	
Ge Internal Standard	72	1	HMI H2	23362560	0.88	26305534	88.81	60	125	
Ge Internal Standard	72	2	HMI He	4859309	2.06	5205670	93.35	60	125	
In Internal standard	115	2	HMI He	15901542	3.06	16441998	96.71	60	125	
Ho-165	165	2	HMI He	39570666	3.89	37362695	105.91	60	125	

Sample Report

Sample Table

Sample Name 280-123364-o-1-g PDS
 Data File Name 111SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T18:07:16-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-51.745	ppb	-51.745	-3.31	6492500	40000	
Be	9	1	6	213.775	ppb	213.775	2.24	70597	2000	
B	11	1	6	853.241	ppb	853.241	5.22	8605	100	>LDR
Na	23	2	45	26310.024	ppb	26310.024	2.15	18512880	400000	
Mg	24	2	45	11026.634	ppb	11026.634	1.89	3197509	400000	
Al	27	2	45	2153.468	ppb	2153.468	2.20	178227	400000	
K	39	2	45	3067.264	ppb	3067.264	1.18	926790	400000	
Ca	44	2	45	19536.853	ppb	19536.853	0.29	406675	400000	
V	51	2	72	206.198	ppb	206.198	1.78	956650	2000	
Cr	52	2	72	201.998	ppb	201.998	3.60	1228890	5000	
Mn	55	2	72	209.008	ppb	209.008	2.67	567831	10000	
Fe	57	2	72	2057.466	ppb	2057.466	1.31	237328	400000	
Co	59	2	72	211.120	ppb	211.120	3.20	2032510	2000	
Ni	60	2	72	203.937	ppb	203.937	1.60	526399	5000	
Cu	63	2	72	207.036	ppb	207.036	1.52	1493197	5000	
Zn	66	2	72	209.617	ppb	209.617	1.52	223106	5000	
As	75	2	72	197.272	ppb	197.272	1.78	152589	2000	
Se	78	1	72	204.439	ppb	204.439	2.79	116133	2000	
Sr	88	2	45	114.131	ppb	114.131	3.05	338229	2000	
Zr	90	2	72	92007.008	ppb	92007.008	2.44	1598826	1000	>LDR
Zr	90	1	72	94119.440	ppb	94119.440	3.79	3848857	1000	>LDR
Nb	93	2	72	5.114	ppb	5.114	5.71	36206	200	
Mo	95	2	115	198.307	ppb	198.307	1.86	764043	2000	
Pd	105	2	115	0.038	ppb	0.038	32.33	543	100	
Ag	107	2	115	39.745	ppb	39.745	2.27	446591	100	
Cd	111	2	115	203.755	ppb	203.755	2.27	327714	2000	
Sn	120	2	115	211.261	ppb	211.261	2.70	1008296	2000	
Sb	121	2	115	221.187	ppb	221.187	2.73	892719	1000	
Ba	137	2	115	306.032	ppb	306.032	3.41	396051	5000	
W	182	2	165	207.260	ppb	207.260	2.61	1683781	100	
Pt	195	2	165	0.108	ppb	0.108	30.72	623	100	
Tl	205	2	165	202.215	ppb	202.215	3.36	2794074	2000	
Pb	208	2	165	201.466	ppb	201.466	2.91	3645704	5000	
Th	232	2	165	1.004	ppb	1.004	2.80	18969	2000	
U	238	2	165	204.668	ppb	204.668	4.81	4010620	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	800728	0.36	1092921	73.26	60	125	
Sc (IS)	45	2	HMI He	3861973	1.62	4591929	84.10	60	125	
Sc IS)	45	3	No Gas	116655801	1.23	129634638	89.99	60	120	
Ge Internal Standard	72	1	HMI H2	22961638	2.77	26305534	87.29	60	125	
Ge Internal Standard	72	2	HMI He	4770862	2.17	5205670	91.65	60	125	
In Internal standard	115	2	HMI He	16000435	1.61	16441998	97.31	60	125	
Ho-165	165	2	HMI He	39495584	1.90	37362695	105.71	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5699926
 Data File Name 112_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T18:10:45-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	58.949	ppb	17.285	136541	100	58.9	90	110	>+/-10%
Li	7	3	45	51.619	ppb	11.728	8606107	100	51.6	90	110	>+/-10%
Be	9	1	6	49.965	ppb	2.508	17492	50	99.9	90	110	
B	11	1	6	101.606	ppb	10.981	1403	50	203.2	90	110	>+/-10%
Na	23	2	45	1047.695	ppb	2.768	814523	1000	104.8	90	110	
Mg	24	2	45	981.735	ppb	1.271	299099	1000	98.2	90	110	
Al	27	2	45	999.340	ppb	0.963	86975	1000	99.9	90	110	
K	39	2	45	981.639	ppb	2.518	378701	1000	98.2	90	110	
Ca	44	2	45	966.645	ppb	3.403	21370	1000	96.7	90	110	
V	51	2	72	47.973	ppb	1.451	237904	50	95.9	90	110	
Cr	52	2	72	47.659	ppb	1.877	297184	50	95.3	90	110	
Mn	55	2	72	50.373	ppb	2.224	139905	50	100.7	90	110	
Fe	57	2	72	968.214	ppb	1.859	114642	1000	96.8	90	110	
Co	59	2	72	48.225	ppb	1.093	478408	50	96.5	90	110	
Ni	60	2	72	48.128	ppb	2.748	127476	50	96.3	90	110	
Cu	63	2	72	47.357	ppb	2.085	351669	50	94.7	90	110	
Zn	66	2	72	47.823	ppb	4.948	52490	50	95.6	90	110	
As	75	2	72	49.727	ppb	1.645	39390	50	99.5	90	110	
Se	78	1	72	53.917	ppb	2.296	31392	50	107.8	90	110	
Sr	88	2	45	107.583	ppb	1.258	334563	100	107.6	90	110	
Zr	90	2	72	145.990	ppb	17.414	3067	50	292.0	90	110	>+/-10%
Zr	90	1	72	273.500	ppb	16.733	13262	50	547.0	90	110	>+/-10%
Nb	93	2	72	94.364	ppb	0.997	601785	100	94.4	90	110	
Mo	95	2	115	47.796	ppb	1.705	179391	50	95.6	90	110	
Pd	105	2	115	50.407	ppb	3.839	273258	50	100.8	90	110	
Ag	107	2	115	50.134	ppb	3.856	548426	50	100.3	90	110	
Cd	111	2	115	50.157	ppb	2.374	78539	50	100.3	90	110	
Sn	120	2	115	51.367	ppb	1.200	239223	50	102.7	90	110	
Sb	121	2	115	52.614	ppb	2.092	207003	50	105.2	90	110	
Ba	137	2	115	53.804	ppb	4.149	67903	50	107.6	90	110	
W	182	2	165	47.510	ppb	2.457	377376	50	95.0	90	110	
Pt	195	2	165	46.737	ppb	1.746	255876	50	93.5	90	110	
Tl	205	2	165	49.019	ppb	1.415	658653	50	98.0	90	110	
Pb	208	2	165	49.082	ppb	2.652	863962	50	98.2	90	110	
Th	232	2	165	48.795	ppb	3.270	852107	50	97.6	90	110	
U	238	2	165	48.045	ppb	3.800	914551	50	96.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	848851	1.52	1092921	77.67	60	125	
Sc (IS)	45	2	HMI He	4052979	1.52	4591929	88.26	60	125	
Sc IS)	45	3	No Gas	116169619	1.80	129634638	89.61	60	120	
Ge Internal Standard	72	1	HMI H2	23514541	2.45	26305534	89.39	60	125	
Ge Internal Standard	72	2	HMI He	4870280	1.42	5205670	93.56	60	125	
In Internal standard	115	2	HMI He	15583386	2.05	16441998	94.78	60	125	
Ho-165	165	2	HMI He	38391382	2.71	37362695	102.75	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5699924
 Data File Name 113_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T18:14:16-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-48.397	ppb	-17.1	102696	0.1	
Li	7	3	45	-50.395	ppb	-28.0	6535822	0.05	
Be	9	1	6	0.053	ppb	70.6	22	0.5	
B	11	1	6	53.293	ppb	4.5	873	0.1	>RL
Na	23	2	45	123.035	ppb	2.6	128598	25	>RL
Mg	24	2	45	4.373	ppb	10.5	1623	25	
Al	27	2	45	-1.009	ppb	-48.9	260	15	
K	39	2	45	-11.415	ppb	-44.3	92593	50	
Ca	44	2	45	1.358	ppb	220.2	290	25	
V	51	2	72	-0.446	ppb	-21.8	11607	1	
Cr	52	2	72	0.008	ppb	222.5	1493	1	
Mn	55	2	72	0.098	ppb	20.8	490	0.5	
Fe	57	2	72	1.611	ppb	49.4	1353	25	
Co	59	2	72	-0.016	ppb	-60.4	5521	0.5	
Ni	60	2	72	0.006	ppb	656.7	890	1	
Cu	63	2	72	0.193	ppb	21.6	5231	1	
Zn	66	2	72	0.595	ppb	17.2	1300	5	
As	75	2	72	0.001	ppb	9798.8	161	1	
Se	78	1	72	0.086	ppb	7.0	73	1	
Sr	88	2	45	0.062	ppb	25.5	353	1	
Zr	90	2	72	-2.957	ppb	-197.3	417	1	
Zr	90	1	72	3.225	ppb	121.1	1975	1	>RL
Nb	93	2	72	3.252	ppb	8.7	24712	2	>RL
Mo	95	2	115	0.103	ppb	31.3	553	0.5	
Pd	105	2	115	-0.001	ppb	-865.6	323	1	
Ag	107	2	115	0.022	ppb	40.8	360	1	
Cd	111	2	115	0.030	ppb	99.8	50	0.5	
Sn	120	2	115	0.196	ppb	18.9	1537	1	
Sb	121	2	115	0.175	ppb	18.7	923	1	
Ba	137	2	115	0.020	ppb	137.8	157	0.5	
W	182	2	165	0.058	ppb	114.1	3294	1	
Pt	195	2	165	0.006	ppb	68.0	47	1	
Tl	205	2	165	0.028	ppb	12.9	617	0.1	
Pb	208	2	165	0.045	ppb	39.2	1670	0.5	
Th	232	2	165	0.187	ppb	16.4	4077	1	
U	238	2	165	0.050	ppb	16.9	997	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	817692	0.41	1092921	74.82	60	125	
Sc (IS)	45	2	HMI He	3912819	1.07	4591929	85.21	60	125	
Sc IS)	45	3	No Gas	117040550	3.37	129634638	90.28	60	120	
Ge Internal Standard	72	1	HMI H2	24015255	2.45	26305534	91.29	60	125	
Ge Internal Standard	72	2	HMI He	4781140	1.76	5205670	91.84	60	125	
In Internal standard	115	2	HMI He	15830271	2.34	16441998	96.28	60	125	
Ho-165	165	2	HMI He	37539148	3.31	37362695	100.47	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5699928
 Data File Name 114LCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T18:17:49-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	-33.870	ppb	-9.019	6765398	50	-67.7	70	130	> +/-30%
Be	9	1	6	0.835	ppb	15.886	288	1	83.5	70	130	
Na	23	2	45	165.890	ppb	3.653	160712	50	331.8	70	130	> +/-30%
Mg	24	2	45	51.826	ppb	5.984	15717	50	103.7	70	130	
Al	27	2	45	51.522	ppb	3.705	4704	50	103.0	70	130	
K	39	2	45	93.096	ppb	13.369	122593	100	93.1	70	130	
Ca	44	2	45	28.912	ppb	17.106	880	50	57.8	70	130	> +/-30%
V	51	2	72	4.525	ppb	1.621	34451	5	90.5	70	130	
Cr	52	2	72	1.900	ppb	6.942	13038	2	95.0	70	130	
Mn	55	2	72	1.011	ppb	10.732	2980	1	101.1	70	130	
Fe	57	2	72	49.418	ppb	6.637	6865	50	98.8	70	130	
Co	59	2	72	0.911	ppb	3.176	14463	1	91.1	70	130	
Ni	60	2	72	1.409	ppb	10.751	4521	1.5	93.9	70	130	
Cu	63	2	72	1.903	ppb	4.656	17596	2	95.2	70	130	
Zn	66	2	72	10.594	ppb	2.623	11954	10	105.9	70	130	
As	75	2	72	4.610	ppb	3.712	3737	5	92.2	70	130	
Se	78	1	72	5.227	ppb	10.872	2982	5	104.5	70	130	
Sr	88	2	45	1.074	ppb	3.902	3427	1	107.4	70	130	
Zr	90	2	72	-8.280	ppb	-42.269	323	0.5	-1656.0	70	130	> +/-30%
Zr	90	1	72	-0.544	ppb	-530.400	1732	0.5	-108.9	70	130	> +/-30%
Nb	93	2	72	1.428	ppb	9.163	13392	2	71.4	70	130	
Mo	95	2	115	1.874	ppb	7.740	7152	2	93.7	70	130	
Pd	105	2	115	-0.018	ppb	-67.043	223	1	-1.8	70	130	> +/-30%
Ag	107	2	115	4.937	ppb	5.305	53850	5	98.7	70	130	
Cd	111	2	115	1.092	ppb	12.517	1707	1	109.2	70	130	
Sn	120	2	115	9.994	ppb	2.681	46814	10	99.9	70	130	
Sb	121	2	115	1.962	ppb	4.070	7899	2	98.1	70	130	
Ba	137	2	115	1.066	ppb	4.995	1467	1	106.6	70	130	
W	182	2	165	4.485	ppb	5.524	38513	1	448.5	70	130	> +/-30%
Pt	195	2	165	0.002	ppb	232.563	23	1	0.2	70	130	> +/-30%
Tl	205	2	165	0.937	ppb	3.585	12926	1	93.7	70	130	
Pb	208	2	165	1.008	ppb	2.756	18775	1	100.8	70	130	
Th	232	2	165	1.695	ppb	7.016	30672	2	84.7	70	130	
U	238	2	165	0.956	ppb	3.773	18375	1	95.6	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	827803	2.17	1092921	75.74	60	125	
Sc (IS)	45	2	HMI He	3953436	1.73	4591929	86.10	60	125	
Sc IS)	45	3	No Gas	114978654	1.81	129634638	88.69	60	120	
Ge Internal Standard	72	1	HMI H2	22933821	4.80	26305534	87.18	60	125	
Ge Internal Standard	72	2	HMI He	4788921	0.49	5205670	91.99	60	125	
In Internal standard	115	2	HMI He	15515044	2.65	16441998	94.36	60	125	
Ho-165	165	2	HMI He	38651300	2.42	37362695	103.45	60	125	

Sample Report

Sample Table

Sample Name 280-123364-o-2-c
 Data File Name 115SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T18:21:22-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-50.541	ppb	-50.541	-13.01	6447291	40000	
Be	9	1	6	0.065	ppb	0.065	44.68	25	2000	
B	11	1	6	840.935	ppb	840.935	5.81	8355	100	>LDR
Na	23	2	45	26085.069	ppb	26085.069	0.63	19193158	400000	
Mg	24	2	45	10989.638	ppb	10989.638	2.81	3332095	400000	
Al	27	2	45	1.984	ppb	1.984	34.60	527	400000	
K	39	2	45	3001.222	ppb	3001.222	2.25	950244	400000	
Ca	44	2	45	19486.198	ppb	19486.198	1.73	424043	400000	
V	51	2	72	-1.207	ppb	-1.207	-9.25	8029	2000	
Cr	52	2	72	0.720	ppb	0.720	6.03	5778	5000	
Mn	55	2	72	0.949	ppb	0.949	17.22	2770	10000	
Fe	57	2	72	19.012	ppb	19.012	9.15	3317	400000	
Co	59	2	72	0.030	ppb	0.030	93.94	5908	2000	
Ni	60	2	72	0.482	ppb	0.482	19.75	2093	5000	
Cu	63	2	72	0.237	ppb	0.237	49.23	5488	5000	
Zn	66	2	72	1.164	ppb	1.164	11.76	1883	5000	
As	75	2	72	0.270	ppb	0.270	10.94	366	2000	
Se	78	1	72	1.178	ppb	1.178	6.61	695	2000	
Sr	88	2	45	113.153	ppb	113.153	1.13	350584	2000	
Zr	90	2	72	3.869	ppb	3.869	185.03	530	1000	
Zr	90	1	72	17.225	ppb	17.225	10.25	2479	1000	
Nb	93	2	72	1.851	ppb	1.851	5.43	15824	200	
Mo	95	2	115	0.301	ppb	0.301	18.21	1300	2000	
Pd	105	2	115	-0.033	ppb	-0.033	-31.21	143	100	
Ag	107	2	115	0.005	ppb	0.005	70.34	173	100	
Cd	111	2	115	0.015	ppb	0.015	23.31	27	2000	
Sn	120	2	115	0.186	ppb	0.186	22.00	1483	2000	
Sb	121	2	115	0.119	ppb	0.119	37.74	700	1000	
Ba	137	2	115	94.052	ppb	94.052	1.25	119960	5000	
W	182	2	165	0.088	ppb	0.088	37.96	3524	100	
Pt	195	2	165	0.004	ppb	0.004	122.26	33	100	
Tl	205	2	165	0.016	ppb	0.016	29.44	453	2000	
Pb	208	2	165	0.046	ppb	0.046	12.08	1690	5000	
Th	232	2	165	0.623	ppb	0.623	4.26	11501	2000	
U	238	2	165	5.812	ppb	5.812	2.35	108028	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	788683	1.95	1092921	72.16	60	125	
Sc (IS)	45	2	HMI He	4037507	0.49	4591929	87.93	60	125	
Sc IS)	45	3	No Gas	115400969	0.67	129634638	89.02	60	120	
Ge Internal Standard	72	1	HMI H2	23100941	1.46	26305534	87.82	60	125	
Ge Internal Standard	72	2	HMI He	4732032	3.15	5205670	90.90	60	125	
In Internal standard	115	2	HMI He	15754965	1.28	16441998	95.82	60	125	
Ho-165	165	2	HMI He	37462214	3.09	37362695	100.27	60	125	

Sample Report

Sample Table

Sample Name 280-123364-o-3-c
 Data File Name 116SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T18:24:55-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-54.401	ppb	-54.401	-13.75	6483883	40000	
Be	9	1	6	0.019	ppb	0.019	135.76	10	2000	
B	11	1	6	808.018	ppb	808.018	4.76	8115	100	>LDR
Na	23	2	45	25069.904	ppb	25069.904	0.81	18390113	400000	
Mg	24	2	45	10735.867	ppb	10735.867	1.55	3245446	400000	
Al	27	2	45	1.994	ppb	1.994	93.10	523	400000	
K	39	2	45	2937.605	ppb	2937.605	1.76	929172	400000	
Ca	44	2	45	18965.417	ppb	18965.417	1.92	411359	400000	
V	51	2	72	-1.397	ppb	-1.397	-5.49	7348	2000	
Cr	52	2	72	0.671	ppb	0.671	6.14	5608	5000	
Mn	55	2	72	0.603	ppb	0.603	8.11	1890	10000	
Fe	57	2	72	14.185	ppb	14.185	11.27	2837	400000	
Co	59	2	72	0.004	ppb	0.004	521.16	5794	2000	
Ni	60	2	72	0.434	ppb	0.434	13.98	2023	5000	
Cu	63	2	72	0.160	ppb	0.160	16.60	5074	5000	
Zn	66	2	72	1.373	ppb	1.373	17.71	2154	5000	
As	75	2	72	0.219	ppb	0.219	18.69	335	2000	
Se	78	1	72	1.077	ppb	1.077	10.02	635	2000	
Sr	88	2	45	110.386	ppb	110.386	1.18	340988	2000	
Zr	90	2	72	-4.537	ppb	-4.537	-54.11	393	1000	
Zr	90	1	72	0.775	ppb	0.775	575.17	1795	1000	
Nb	93	2	72	0.899	ppb	0.899	19.08	10223	200	
Mo	95	2	115	0.300	ppb	0.300	18.05	1297	2000	
Pd	105	2	115	-0.036	ppb	-0.036	-3.80	130	100	
Ag	107	2	115	0.012	ppb	0.012	17.74	247	100	
Cd	111	2	115	0.015	ppb	0.015	23.57	27	2000	
Sn	120	2	115	0.153	ppb	0.153	47.13	1327	2000	
Sb	121	2	115	0.085	ppb	0.085	23.76	567	1000	
Ba	137	2	115	88.421	ppb	88.421	3.52	113064	5000	
W	182	2	165	-0.011	ppb	-0.011	-491.90	2894	100	
Pt	195	2	165	0.004	ppb	0.004	89.51	37	100	
Tl	205	2	165	0.016	ppb	0.016	62.80	477	2000	
Pb	208	2	165	0.033	ppb	0.033	21.43	1547	5000	
Th	232	2	165	0.144	ppb	0.144	11.01	3504	2000	
U	238	2	165	5.265	ppb	5.265	3.57	102651	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	795581	0.59	1092921	72.79	60	125	
Sc (IS)	45	2	HMI He	4025200	2.24	4591929	87.66	60	125	
Sc IS)	45	3	No Gas	117539398	2.19	129634638	90.67	60	120	
Ge Internal Standard	72	1	HMI H2	23044307	2.10	26305534	87.60	60	125	
Ge Internal Standard	72	2	HMI He	4849608	2.60	5205670	93.16	60	125	
In Internal standard	115	2	HMI He	15800243	2.37	16441998	96.10	60	125	
Ho-165	165	2	HMI He	39293290	2.71	37362695	105.17	60	125	

Sample Report

Sample Table

Sample Name 280-123400-f-1-b
 Data File Name 117SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T18:28:26-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-39.465	ppb	-39.465	-23.37	6686882	40000	
Be	9	1	6	0.132	ppb	0.132	45.46	47	2000	
B	11	1	6	639.836	ppb	639.836	6.73	6488	100	>LDR
Na	23	2	45	24095.559	ppb	24095.559	1.14	17147199	400000	
Mg	24	2	45	11484.716	ppb	11484.716	1.79	3367621	400000	
Al	27	2	45	13.633	ppb	13.633	27.01	1480	400000	
K	39	2	45	1385.389	ppb	1385.389	1.78	475603	400000	
Ca	44	2	45	15358.299	ppb	15358.299	1.16	323244	400000	
V	51	2	72	-1.106	ppb	-1.106	-9.75	8412	2000	
Cr	52	2	72	0.344	ppb	0.344	32.81	3467	5000	
Mn	55	2	72	10.235	ppb	10.235	3.14	27549	10000	
Fe	57	2	72	16.335	ppb	16.335	106.31	3004	400000	
Co	59	2	72	-0.012	ppb	-0.012	-378.37	5454	2000	
Ni	60	2	72	4.884	ppb	4.884	2.79	13232	5000	
Cu	63	2	72	-0.007	ppb	-0.007	-241.35	3727	5000	
Zn	66	2	72	1.293	ppb	1.293	15.29	2000	5000	
As	75	2	72	0.502	ppb	0.502	14.67	538	2000	
Se	78	1	72	0.093	ppb	0.093	17.31	73	2000	
Sr	88	2	45	76.947	ppb	76.947	2.09	230616	2000	
Zr	90	2	72	-2.994	ppb	-2.994	-223.17	407	1000	
Zr	90	1	72	6.310	ppb	6.310	43.87	1995	1000	
Nb	93	2	72	0.505	ppb	0.505	1.38	7492	200	
Mo	95	2	115	0.107	ppb	0.107	15.78	577	2000	
Pd	105	2	115	-0.040	ppb	-0.040	-4.02	107	100	
Ag	107	2	115	0.000	ppb	0.000	1522.30	123	100	
Cd	111	2	115	0.008	ppb	0.008	153.48	17	2000	
Sn	120	2	115	0.107	ppb	0.107	23.75	1133	2000	
Sb	121	2	115	0.018	ppb	0.018	82.36	307	1000	
Ba	137	2	115	621.003	ppb	621.003	4.13	806911	5000	
W	182	2	165	-0.027	ppb	-0.027	-13.45	2767	100	
Pt	195	2	165	-0.001	ppb	-0.001	-153.25	7	100	
Tl	205	2	165	0.009	ppb	0.009	99.97	377	2000	
Pb	208	2	165	0.029	ppb	0.029	49.53	1477	5000	
Th	232	2	165	0.048	ppb	0.048	36.12	1787	2000	
U	238	2	165	0.122	ppb	0.122	14.07	2434	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	794533	2.59	1092921	72.70	60	125	
Sc (IS)	45	2	HMI He	3904453	0.99	4591929	85.03	60	125	
Sc IS)	45	3	No Gas	115605637	1.41	129634638	89.18	60	120	
Ge Internal Standard	72	1	HMI H2	22714035	1.34	26305534	86.35	60	125	
Ge Internal Standard	72	2	HMI He	4691799	2.70	5205670	90.13	60	125	
In Internal standard	115	2	HMI He	16077642	3.28	16441998	97.78	60	125	
Ho-165	165	2	HMI He	39266218	2.16	37362695	105.09	60	125	

Sample Report

Sample Table

Sample Name 280-123400-f-2-b
 Data File Name 118SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T18:31:56-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-48.462	ppb	-48.462	-8.74	6592944	40000	
Be	9	1	6	0.020	ppb	0.020	205.19	10	2000	
B	11	1	6	791.512	ppb	791.512	3.77	7842	100	>LDR
Na	23	2	45	23692.640	ppb	23692.640	3.31	17216445	400000	
Mg	24	2	45	14433.255	ppb	14433.255	3.16	4320618	400000	
Al	27	2	45	1.677	ppb	1.677	35.55	493	400000	
K	39	2	45	1239.113	ppb	1239.113	3.08	444638	400000	
Ca	44	2	45	43104.013	ppb	43104.013	1.74	925912	400000	
V	51	2	72	-0.581	ppb	-0.581	-4.39	11094	2000	
Cr	52	2	72	0.355	ppb	0.355	9.07	3637	5000	
Mn	55	2	72	0.098	ppb	0.098	52.20	497	10000	
Fe	57	2	72	12.835	ppb	12.835	12.90	2670	400000	
Co	59	2	72	-0.051	ppb	-0.051	-53.29	5234	2000	
Ni	60	2	72	0.443	ppb	0.443	11.02	2040	5000	
Cu	63	2	72	-0.143	ppb	-0.143	-22.46	2837	5000	
Zn	66	2	72	0.667	ppb	0.667	9.90	1390	5000	
As	75	2	72	1.351	ppb	1.351	2.22	1218	2000	
Se	78	1	72	0.518	ppb	0.518	11.64	313	2000	
Sr	88	2	45	86.960	ppb	86.960	2.23	266057	2000	
Zr	90	2	72	-2.529	ppb	-2.529	-68.20	427	1000	
Zr	90	1	72	-1.111	ppb	-1.111	-486.61	1698	1000	
Nb	93	2	72	0.150	ppb	0.150	47.09	5481	200	
Mo	95	2	115	0.101	ppb	0.101	17.24	550	2000	
Pd	105	2	115	-0.046	ppb	-0.046	-7.73	73	100	
Ag	107	2	115	0.002	ppb	0.002	282.34	137	100	
Cd	111	2	115	0.013	ppb	0.013	30.32	23	2000	
Sn	120	2	115	0.089	ppb	0.089	41.98	1040	2000	
Sb	121	2	115	0.021	ppb	0.021	68.73	313	1000	
Ba	137	2	115	776.385	ppb	776.385	2.21	1001037	5000	
W	182	2	165	-0.013	ppb	-0.013	-114.67	2897	100	
Pt	195	2	165	-0.001	ppb	-0.001	-240.15	10	100	
Tl	205	2	165	0.004	ppb	0.004	144.38	313	2000	
Pb	208	2	165	0.002	ppb	0.002	198.88	1000	5000	
Th	232	2	165	0.021	ppb	0.021	23.63	1323	2000	
U	238	2	165	0.389	ppb	0.389	1.48	7675	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	784219	1.11	1092921	71.75	60	125	
Sc (IS)	45	2	HMI He	3987061	1.15	4591929	86.83	60	125	
Sc IS)	45	3	No Gas	117231186	1.90	129634638	90.43	60	120	
Ge Internal Standard	72	1	HMI H2	22785180	1.84	26305534	86.62	60	125	
Ge Internal Standard	72	2	HMI He	4826057	1.28	5205670	92.71	60	125	
In Internal standard	115	2	HMI He	15943770	1.55	16441998	96.97	60	125	
Ho-165	165	2	HMI He	39404570	3.62	37362695	105.47	60	125	

Sample Report

Sample Table

Sample Name 280-123400-f-3-b
 Data File Name 119SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T18:35:28-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-39.864	ppb	-39.864	-3.52	6647613	40000	
Be	9	1	6	-0.001	ppb	-0.001	-1059.30	3	2000	
B	11	1	6	1104.933	ppb	1104.933	2.46	10943	100	>LDR
Na	23	2	45	14386.119	ppb	14386.119	1.46	10504241	400000	
Mg	24	2	45	18842.663	ppb	18842.663	3.46	5657581	400000	
Al	27	2	45	3.192	ppb	3.192	48.29	627	400000	
K	39	2	45	1218.734	ppb	1218.734	3.33	440303	400000	
Ca	44	2	45	36790.952	ppb	36790.952	1.68	792923	400000	
V	51	2	72	1.410	ppb	1.410	24.27	20032	2000	
Cr	52	2	72	0.460	ppb	0.460	1.85	4237	5000	
Mn	55	2	72	0.154	ppb	0.154	23.31	643	10000	
Fe	57	2	72	13.568	ppb	13.568	33.41	2710	400000	
Co	59	2	72	-0.005	ppb	-0.005	-407.87	5614	2000	
Ni	60	2	72	0.124	ppb	0.124	20.58	1193	5000	
Cu	63	2	72	-0.073	ppb	-0.073	-43.35	3307	5000	
Zn	66	2	72	0.545	ppb	0.545	30.91	1243	5000	
As	75	2	72	2.213	ppb	2.213	3.22	1871	2000	
Se	78	1	72	0.620	ppb	0.620	10.01	376	2000	
Sr	88	2	45	96.465	ppb	96.465	2.26	296045	2000	
Zr	90	2	72	-7.248	ppb	-7.248	-9.75	340	1000	
Zr	90	1	72	0.905	ppb	0.905	239.89	1805	1000	
Nb	93	2	72	-0.018	ppb	-0.018	-122.38	4377	200	
Mo	95	2	115	0.477	ppb	0.477	2.42	1987	2000	
Pd	105	2	115	-0.043	ppb	-0.043	-16.46	93	100	
Ag	107	2	115	0.000	ppb	0.000	1198.41	123	100	
Cd	111	2	115	0.004	ppb	0.004	144.78	10	2000	
Sn	120	2	115	0.109	ppb	0.109	25.31	1133	2000	
Sb	121	2	115	0.010	ppb	0.010	197.89	267	1000	
Ba	137	2	115	753.856	ppb	753.856	2.75	969245	5000	
W	182	2	165	-0.008	ppb	-0.008	-98.89	2924	100	
Pt	195	2	165	0.003	ppb	0.003	62.64	33	100	
Tl	205	2	165	0.005	ppb	0.005	103.45	320	2000	
Pb	208	2	165	0.015	ppb	0.015	40.70	1213	5000	
Th	232	2	165	0.009	ppb	0.009	75.06	1100	2000	
U	238	2	165	0.754	ppb	0.754	2.07	14731	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	793454	1.39	1092921	72.60	60	125	
Sc (IS)	45	2	HMI He	4000156	2.07	4591929	87.11	60	125	
Sc IS)	45	3	No Gas	115060142	0.61	129634638	88.76	60	120	
Ge Internal Standard	72	1	HMI H2	23088048	2.01	26305534	87.77	60	125	
Ge Internal Standard	72	2	HMI He	4768659	3.17	5205670	91.61	60	125	
In Internal standard	115	2	HMI He	15900638	1.98	16441998	96.71	60	125	
Ho-165	165	2	HMI He	39225881	2.56	37362695	104.99	60	125	

Sample Report

Sample Table

Sample Name 280-123330-b-1-c
 Data File Name 120SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T18:38:59-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-13.817	ppb	-13.817	-20.98	7133664	40000	
Be	9	1	6	0.093	ppb	0.093	92.46	33	2000	
B	11	1	6	1388.589	ppb	1388.589	5.81	13432	100	>LDR
Na	23	2	45	25776.731	ppb	25776.731	2.40	18949422	400000	
Mg	24	2	45	45211.466	ppb	45211.466	1.53	13696160	400000	
Al	27	2	45	2131.411	ppb	2131.411	1.21	184207	400000	
K	39	2	45	2421.146	ppb	2421.146	1.42	784834	400000	
Ca	44	2	45	48533.197	ppb	48533.197	2.79	1054429	400000	
V	51	2	72	1.549	ppb	1.549	3.71	20512	2000	
Cr	52	2	72	3.071	ppb	3.071	0.70	19918	5000	
Mn	55	2	72	116.311	ppb	116.311	1.55	313212	10000	
Fe	57	2	72	4973.067	ppb	4973.067	3.35	566544	400000	
Co	59	2	72	1.960	ppb	1.960	6.36	24247	2000	
Ni	60	2	72	4.283	ppb	4.283	1.56	11797	5000	
Cu	63	2	72	2.598	ppb	2.598	1.62	22315	5000	
Zn	66	2	72	9.260	ppb	9.260	6.36	10400	5000	
As	75	2	72	21.943	ppb	21.943	3.14	16953	2000	
Se	78	1	72	0.073	ppb	0.073	21.20	63	2000	
Sr	88	2	45	291.115	ppb	291.115	2.14	900957	2000	
Zr	90	2	72	345.659	ppb	345.659	4.43	6415	1000	
Zr	90	1	72	339.282	ppb	339.282	6.08	15727	1000	
Nb	93	2	72	-0.018	ppb	-0.018	-378.84	4331	200	
Mo	95	2	115	2.815	ppb	2.815	1.12	10784	2000	
Pd	105	2	115	-0.042	ppb	-0.042	-7.12	97	100	
Ag	107	2	115	0.011	ppb	0.011	79.83	240	100	
Cd	111	2	115	0.017	ppb	0.017	37.20	30	2000	
Sn	120	2	115	0.087	ppb	0.087	5.17	1013	2000	
Sb	121	2	115	0.038	ppb	0.038	36.90	373	1000	
Ba	137	2	115	37.371	ppb	37.371	3.56	47504	5000	
W	182	2	165	-0.021	ppb	-0.021	-115.06	2817	100	
Pt	195	2	165	0.000	ppb	0.000	480.09	17	100	
Tl	205	2	165	0.041	ppb	0.041	6.21	823	2000	
Pb	208	2	165	1.727	ppb	1.727	3.25	31941	5000	
Th	232	2	165	0.739	ppb	0.739	3.60	14080	2000	
U	238	2	165	2.830	ppb	2.830	3.55	55029	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	779952	1.01	1092921	71.36	60	125	
Sc (IS)	45	2	HMI He	4033595	1.71	4591929	87.84	60	125	
Sc IS)	45	3	No Gas	114285375	0.45	129634638	88.16	60	120	
Ge Internal Standard	72	1	HMI H2	23109357	2.46	26305534	87.85	60	125	
Ge Internal Standard	72	2	HMI He	4726223	1.61	5205670	90.79	60	125	
In Internal standard	115	2	HMI He	15679409	1.39	16441998	95.36	60	125	
Ho-165	165	2	HMI He	39163131	3.58	37362695	104.82	60	125	

Sample Report

Sample Table

Sample Name 280-123330-a-2-c
 Data File Name 121SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T18:42:32-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-49.253	ppb	-49.253	-7.61	6533358	40000	
Be	9	1	6	0.020	ppb	0.020	154.69	10	2000	
B	11	1	6	577.487	ppb	577.487	4.44	5768	100	>LDR
Na	23	2	45	3275.078	ppb	3275.078	1.72	2421365	400000	
Mg	24	2	45	15235.438	ppb	15235.438	4.12	4569779	400000	
Al	27	2	45	9.384	ppb	9.384	6.00	1153	400000	
K	39	2	45	642.771	ppb	642.771	2.47	278238	400000	
Ca	44	2	45	42970.097	ppb	42970.097	2.15	924989	400000	
V	51	2	72	-1.605	ppb	-1.605	-4.88	6355	2000	
Cr	52	2	72	0.295	ppb	0.295	8.33	3277	5000	
Mn	55	2	72	683.008	ppb	683.008	4.48	1878570	10000	
Fe	57	2	72	23.114	ppb	23.114	7.18	3870	400000	
Co	59	2	72	0.002	ppb	0.002	1074.13	5751	2000	
Ni	60	2	72	0.570	ppb	0.570	13.30	2370	5000	
Cu	63	2	72	-0.060	ppb	-0.060	-36.87	3450	5000	
Zn	66	2	72	0.631	ppb	0.631	14.43	1353	5000	
As	75	2	72	0.046	ppb	0.046	100.17	197	2000	
Se	78	1	72	0.211	ppb	0.211	17.66	143	2000	
Sr	88	2	45	102.290	ppb	102.290	1.87	313652	2000	
Zr	90	2	72	24.799	ppb	24.799	23.08	907	1000	
Zr	90	1	72	42.127	ppb	42.127	4.47	3524	1000	
Nb	93	2	72	-0.226	ppb	-0.226	-24.09	3124	200	
Mo	95	2	115	0.146	ppb	0.146	28.36	733	2000	
Pd	105	2	115	-0.039	ppb	-0.039	-17.55	117	100	
Ag	107	2	115	0.003	ppb	0.003	181.24	160	100	
Cd	111	2	115	0.031	ppb	0.031	23.21	53	2000	
Sn	120	2	115	0.061	ppb	0.061	27.66	923	2000	
Sb	121	2	115	0.013	ppb	0.013	92.57	287	1000	
Ba	137	2	115	8.752	ppb	8.752	2.87	11628	5000	
W	182	2	165	0.024	ppb	0.024	154.10	3187	100	
Pt	195	2	165	-0.001	ppb	-0.001	-74.20	7	100	
Tl	205	2	165	0.010	ppb	0.010	56.69	393	2000	
Pb	208	2	165	0.013	ppb	0.013	8.98	1180	5000	
Th	232	2	165	0.012	ppb	0.012	19.93	1143	2000	
U	238	2	165	1.196	ppb	1.196	1.08	23359	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	778343	0.72	1092921	71.22	60	125	
Sc (IS)	45	2	HMI He	3996646	2.81	4591929	87.04	60	125	
Sc IS)	45	3	No Gas	116461229	0.65	129634638	89.84	60	120	
Ge Internal Standard	72	1	HMI H2	23233275	0.60	26305534	88.32	60	125	
Ge Internal Standard	72	2	HMI He	4832405	2.66	5205670	92.83	60	125	
In Internal standard	115	2	HMI He	16233967	0.41	16441998	98.73	60	125	
Ho-165	165	2	HMI He	39249905	1.91	37362695	105.05	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5699926
 Data File Name 122_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T18:46:03-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	57.213	ppb	8.414	134603	100	57.2	90	110	>+ -10%
Li	7	3	45	46.945	ppb	5.005	8411171	100	46.9	90	110	>+ -10%
Be	9	1	6	50.613	ppb	3.253	17400	50	101.2	90	110	
B	11	1	6	108.503	ppb	9.883	1447	50	217.0	90	110	>+ -10%
Na	23	2	45	1014.589	ppb	2.822	786491	1000	101.5	90	110	
Mg	24	2	45	973.198	ppb	2.375	295109	1000	97.3	90	110	
Al	27	2	45	995.007	ppb	4.514	86164	1000	99.5	90	110	
K	39	2	45	963.035	ppb	3.072	371649	1000	96.3	90	110	
Ca	44	2	45	959.315	ppb	6.446	21099	1000	95.9	90	110	
V	51	2	72	48.941	ppb	3.190	235971	50	97.9	90	110	
Cr	52	2	72	48.548	ppb	1.730	294654	50	97.1	90	110	
Mn	55	2	72	51.350	ppb	1.972	138806	50	102.7	90	110	
Fe	57	2	72	983.741	ppb	2.349	113374	1000	98.4	90	110	
Co	59	2	72	49.611	ppb	2.279	478903	50	99.2	90	110	
Ni	60	2	72	49.266	ppb	1.720	127013	50	98.5	90	110	
Cu	63	2	72	48.910	ppb	1.023	353393	50	97.8	90	110	
Zn	66	2	72	48.888	ppb	0.790	52216	50	97.8	90	110	
As	75	2	72	49.697	ppb	1.570	38322	50	99.4	90	110	
Se	78	1	72	52.447	ppb	3.446	30749	50	104.9	90	110	
Sr	88	2	45	103.592	ppb	2.759	320624	100	103.6	90	110	
Zr	90	2	72	55.240	ppb	34.149	1417	50	110.5	90	110	>+ -10%
Zr	90	1	72	75.231	ppb	11.873	4986	50	150.5	90	110	>+ -10%
Nb	93	2	72	95.518	ppb	2.565	592749	100	95.5	90	110	
Mo	95	2	115	48.178	ppb	3.527	179417	50	96.4	90	110	
Pd	105	2	115	49.752	ppb	3.757	267609	50	99.5	90	110	
Ag	107	2	115	50.587	ppb	4.389	548943	50	101.2	90	110	
Cd	111	2	115	51.613	ppb	4.433	80153	50	103.2	90	110	
Sn	120	2	115	51.984	ppb	6.476	239907	50	104.0	90	110	
Sb	121	2	115	51.082	ppb	5.416	199218	50	102.2	90	110	
Ba	137	2	115	52.789	ppb	4.688	66086	50	105.6	90	110	
W	182	2	165	47.618	ppb	2.291	373452	50	95.2	90	110	
Pt	195	2	165	45.954	ppb	5.246	248343	50	91.9	90	110	
Tl	205	2	165	48.180	ppb	3.522	639158	50	96.4	90	110	
Pb	208	2	165	50.503	ppb	2.456	878035	50	101.0	90	110	
Th	232	2	165	48.920	ppb	5.398	843289	50	97.8	90	110	
U	238	2	165	48.977	ppb	5.110	920525	50	98.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	833518	0.72	1092921	76.27	60	125	
Sc (IS)	45	2	HMI He	4034856	2.26	4591929	87.87	60	125	
Sc IS)	45	3	No Gas	114825367	1.85	129634638	88.58	60	120	
Ge Internal Standard	72	1	HMI H2	23675953	1.20	26305534	90.00	60	125	
Ge Internal Standard	72	2	HMI He	4740045	0.54	5205670	91.06	60	125	
In Internal standard	115	2	HMI He	15471404	4.66	16441998	94.10	60	125	
Ho-165	165	2	HMI He	37922259	3.36	37362695	101.50	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5699924
 Data File Name 123_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T18:49:35-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-39.148	ppb	-26.9	101519	0.1	
Li	7	3	45	-42.579	ppb	-9.5	6458766	0.05	
Be	9	1	6	0.044	ppb	86.3	18	0.5	
B	11	1	6	35.771	ppb	9.9	693	0.1	>RL
Na	23	2	45	89.611	ppb	3.4	104734	25	>RL
Mg	24	2	45	6.712	ppb	15.4	2307	25	
Al	27	2	45	-0.956	ppb	-68.6	263	15	
K	39	2	45	-5.442	ppb	-90.5	94170	50	
Ca	44	2	45	-0.364	ppb	-805.3	253	25	
V	51	2	72	-0.417	ppb	-35.0	12041	1	
Cr	52	2	72	0.008	ppb	433.8	1530	1	
Mn	55	2	72	0.155	ppb	22.8	660	0.5	
Fe	57	2	72	0.523	ppb	250.1	1260	25	
Co	59	2	72	-0.059	ppb	-94.6	5244	0.5	
Ni	60	2	72	0.001	ppb	3826.7	900	1	
Cu	63	2	72	0.159	ppb	8.8	5121	1	
Zn	66	2	72	0.478	ppb	10.8	1207	5	
As	75	2	72	-0.014	ppb	-162.7	154	1	
Se	78	1	72	0.033	ppb	43.2	40	1	
Sr	88	2	45	0.070	ppb	49.1	377	1	
Zr	90	2	72	-10.221	ppb	-10.6	297	1	
Zr	90	1	72	-0.384	ppb	-803.0	1752	1	
Nb	93	2	72	2.982	ppb	11.7	23610	2	>RL
Mo	95	2	115	0.075	ppb	11.0	447	0.5	
Pd	105	2	115	-0.010	ppb	-166.3	273	1	
Ag	107	2	115	0.026	ppb	21.1	410	1	
Cd	111	2	115	0.013	ppb	103.8	23	0.5	
Sn	120	2	115	0.126	ppb	15.1	1203	1	
Sb	121	2	115	0.106	ppb	13.5	650	1	
Ba	137	2	115	0.038	ppb	61.6	180	0.5	
W	182	2	165	0.019	ppb	163.6	3040	1	
Pt	195	2	165	0.018	ppb	39.9	110	1	
Tl	205	2	165	0.038	ppb	39.3	763	0.1	
Pb	208	2	165	0.031	ppb	60.1	1450	0.5	
Th	232	2	165	0.192	ppb	5.0	4227	1	
U	238	2	165	0.044	ppb	17.1	893	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	810074	0.89	1092921	74.12	60	125	
Sc (IS)	45	2	HMI He	3910040	1.81	4591929	85.15	60	125	
Sc IS)	45	3	No Gas	112745102	1.03	129634638	86.97	60	120	
Ge Internal Standard	72	1	HMI H2	23054999	1.55	26305534	87.64	60	125	
Ge Internal Standard	72	2	HMI He	4905289	1.33	5205670	94.23	60	125	
In Internal standard	115	2	HMI He	15787530	1.61	16441998	96.02	60	125	
Ho-165	165	2	HMI He	38003213	4.73	37362695	101.71	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5699928
 Data File Name 124LCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T18:53:05-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	-31.020	ppb	-12.014	6611245	50	-62.0	70	130	> +/-30%
Be	9	1	6	0.997	ppb	12.543	340	1	99.7	70	130	
Na	23	2	45	139.290	ppb	0.630	136856	50	278.6	70	130	> +/-30%
Mg	24	2	45	51.747	ppb	3.092	15173	50	103.5	70	130	
Al	27	2	45	50.768	ppb	2.380	4484	50	101.5	70	130	
K	39	2	45	94.907	ppb	1.377	118951	100	94.9	70	130	
Ca	44	2	45	34.397	ppb	8.885	963	50	68.8	70	130	> +/-30%
V	51	2	72	4.612	ppb	5.951	33823	5	92.2	70	130	
Cr	52	2	72	1.824	ppb	3.129	12211	2	91.2	70	130	
Mn	55	2	72	1.148	ppb	0.410	3257	1	114.8	70	130	
Fe	57	2	72	50.013	ppb	7.635	6725	50	100.0	70	130	
Co	59	2	72	0.995	ppb	4.757	14826	1	99.5	70	130	
Ni	60	2	72	1.402	ppb	6.695	4374	1.5	93.4	70	130	
Cu	63	2	72	1.993	ppb	6.510	17699	2	99.6	70	130	
Zn	66	2	72	10.599	ppb	5.528	11604	10	106.0	70	130	
As	75	2	72	4.701	ppb	1.473	3696	5	94.0	70	130	
Se	78	1	72	5.207	ppb	5.933	3023	5	104.1	70	130	
Sr	88	2	45	1.078	ppb	0.778	3324	1	107.8	70	130	
Zr	90	2	72	-12.762	ppb	-48.366	237	0.5	-2552.4	70	130	> +/-30%
Zr	90	1	72	-5.541	ppb	-71.429	1555	0.5	-1108.3	70	130	> +/-30%
Nb	93	2	72	1.532	ppb	12.375	13626	2	76.6	70	130	
Mo	95	2	115	1.911	ppb	1.931	7205	2	95.5	70	130	
Pd	105	2	115	-0.022	ppb	-70.573	200	1	-2.2	70	130	> +/-30%
Ag	107	2	115	5.049	ppb	1.321	54446	5	101.0	70	130	
Cd	111	2	115	0.998	ppb	7.685	1540	1	99.8	70	130	
Sn	120	2	115	9.935	ppb	2.516	45968	10	99.3	70	130	
Sb	121	2	115	2.053	ppb	6.096	8155	2	102.7	70	130	
Ba	137	2	115	1.014	ppb	8.147	1383	1	101.4	70	130	
W	182	2	165	4.438	ppb	2.095	37714	1	443.8	70	130	> +/-30%
Pt	195	2	165	0.010	ppb	27.023	67	1	1.0	70	130	> +/-30%
Tl	205	2	165	0.941	ppb	3.002	12832	1	94.1	70	130	
Pb	208	2	165	0.977	ppb	3.160	18031	1	97.7	70	130	
Th	232	2	165	1.717	ppb	3.819	30736	2	85.8	70	130	
U	238	2	165	0.969	ppb	2.257	18442	1	96.9	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	817115	1.41	1092921	74.76	60	125	
Sc (IS)	45	2	HMI He	3820182	0.55	4591929	83.19	60	125	
Sc IS)	45	3	No Gas	111404923	1.76	129634638	85.94	60	120	
Ge Internal Standard	72	1	HMI H2	23292817	0.99	26305534	88.55	60	125	
Ge Internal Standard	72	2	HMI He	4648655	1.89	5205670	89.30	60	125	
In Internal standard	115	2	HMI He	15324663	2.30	16441998	93.20	60	125	
Ho-165	165	2	HMI He	38209752	1.76	37362695	102.27	60	125	

Sample Report

Sample Table

Sample Name 280-123330-b-6-e
 Data File Name 125SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T18:56:38-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	450.351	ppb	450.351	3.67	16166748	40000	
Be	9	1	6	-0.011	ppb	-0.011	0.00	0	2000	
B	11	1	6	2811.186	ppb	2811.186	3.72	24303	100	>LDR
Na	23	2	45	37507.648	ppb	37507.648	1.56	28815551	400000	
Mg	24	2	45	322408.551	ppb	322408.551	3.08	102116955	400000	
Al	27	2	45	10.979	ppb	10.979	23.52	1360	400000	
K	39	2	45	56136.825	ppb	56136.825	1.64	16743286	400000	
Ca	44	2	45	798503.036	ppb	798503.036	2.35	18145698	400000	
V	51	2	72	-2.122	ppb	-2.122	-2.80	3900	2000	
Cr	52	2	72	0.282	ppb	0.282	4.17	3147	5000	
Mn	55	2	72	2859.015	ppb	2859.015	2.03	7747697	10000	
Fe	57	2	72	160.918	ppb	160.918	2.07	19595	400000	
Co	59	2	72	10.850	ppb	10.850	1.33	109555	2000	
Ni	60	2	72	15.262	ppb	15.262	1.90	40107	5000	
Cu	63	2	72	1.019	ppb	1.019	4.59	11140	5000	
Zn	66	2	72	6.299	ppb	6.299	5.28	7338	5000	
As	75	2	72	0.556	ppb	0.556	6.65	588	2000	
Se	78	1	72	0.054	ppb	0.054	54.46	48	2000	
Sr	88	2	45	3163.097	ppb	3163.097	3.63	10233851	2000	
Zr	90	2	72	69.061	ppb	69.061	18.06	1660	1000	
Zr	90	1	72	91.713	ppb	91.713	4.12	5093	1000	
Nb	93	2	72	2.084	ppb	2.084	11.75	17366	200	
Mo	95	2	115	0.222	ppb	0.222	19.16	980	2000	
Pd	105	2	115	0.073	ppb	0.073	15.97	713	100	
Ag	107	2	115	0.010	ppb	0.010	75.85	220	100	
Cd	111	2	115	0.123	ppb	0.123	24.86	193	2000	
Sn	120	2	115	0.142	ppb	0.142	25.51	1247	2000	
Sb	121	2	115	0.051	ppb	0.051	37.71	420	1000	
Ba	137	2	115	276.399	ppb	276.399	1.29	344983	5000	
W	182	2	165	0.039	ppb	0.039	101.98	3130	100	
Pt	195	2	165	0.001	ppb	0.001	627.38	17	100	
Tl	205	2	165	0.686	ppb	0.686	6.76	9163	2000	
Pb	208	2	165	0.196	ppb	0.196	8.22	4237	5000	
Th	232	2	165	0.557	ppb	0.557	6.12	10290	2000	
U	238	2	165	25.268	ppb	25.268	2.35	466132	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	705765	0.48	1092921	64.58	60	125	
Sc (IS)	45	2	HMI He	4218885	1.22	4591929	91.88	60	125	
Sc IS)	45	3	No Gas	111342069	0.83	129634638	85.89	60	120	
Ge Internal Standard	72	1	HMI H2	21228540	3.82	26305534	80.70	60	125	
Ge Internal Standard	72	2	HMI He	4759491	2.20	5205670	91.43	60	125	
In Internal standard	115	2	HMI He	15428249	1.15	16441998	93.83	60	125	
Ho-165	165	2	HMI He	37198712	3.45	37362695	99.56	60	125	

Sample Report

Sample Table

Sample Name 280-123330-d-7-c
Data File Name 126SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
Acq Date Time 2019-05-13T19:00:08-06:00
Analyst Denver Metals
Sample Type Sample
Dilution 1
Comment 457615 6020A DOD5
ISTD Ref FileName 025CALB.d
Sample QC Pass/Fail Fail
ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	6.858	ppb	6.858	90.60	7477549	40000	
Be	9	1	6	0.005	ppb	0.005	311.87	5	2000	
B	11	1	6	2393.231	ppb	2393.231	4.81	21903	100	>LDR
Na	23	2	45	22483.161	ppb	22483.161	1.39	17034263	400000	
Mg	24	2	45	71634.799	ppb	71634.799	1.34	22354511	400000	
Al	27	2	45	42.882	ppb	42.882	16.13	4177	400000	
K	39	2	45	3280.545	ppb	3280.545	0.14	1059680	400000	
Ca	44	2	45	107347.938	ppb	107347.938	3.36	2403363	400000	
V	51	2	72	-1.808	ppb	-1.808	-3.62	5498	2000	
Cr	52	2	72	0.411	ppb	0.411	11.44	4044	5000	
Mn	55	2	72	105.995	ppb	105.995	1.10	295998	10000	
Fe	57	2	72	775.399	ppb	775.399	2.47	92636	400000	
Co	59	2	72	1.266	ppb	1.266	5.64	18300	2000	
Ni	60	2	72	1.358	ppb	1.358	6.08	4494	5000	
Cu	63	2	72	1.296	ppb	1.296	6.42	13522	5000	
Zn	66	2	72	4.687	ppb	4.687	5.42	5794	5000	
As	75	2	72	11.543	ppb	11.543	1.42	9327	2000	
Se	78	1	72	-0.011	ppb	-0.011	-266.27	15	2000	
Sr	88	2	45	355.832	ppb	355.832	0.81	1134332	2000	
Zr	90	2	72	21.003	ppb	21.003	27.35	853	1000	
Zr	90	1	72	23.934	ppb	23.934	14.14	2746	1000	
Nb	93	2	72	1.117	ppb	1.117	12.80	11721	200	
Mo	95	2	115	2.718	ppb	2.718	2.15	10287	2000	
Pd	105	2	115	-0.023	ppb	-0.023	-16.31	197	100	
Ag	107	2	115	0.001	ppb	0.001	394.16	130	100	
Cd	111	2	115	0.030	ppb	0.030	21.40	50	2000	
Sn	120	2	115	0.099	ppb	0.099	60.33	1053	2000	
Sb	121	2	115	0.032	ppb	0.032	34.08	347	1000	
Ba	137	2	115	27.553	ppb	27.553	2.92	34625	5000	
W	182	2	165	-0.018	ppb	-0.018	-94.97	2894	100	
Pt	195	2	165	0.000	ppb	0.000	577.78	17	100	
Tl	205	2	165	0.034	ppb	0.034	23.08	733	2000	
Pb	208	2	165	0.319	ppb	0.319	2.80	6807	5000	
Th	232	2	165	0.137	ppb	0.137	7.99	3447	2000	
U	238	2	165	3.595	ppb	3.595	0.81	71289	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	745813	0.86	1092921	68.24	60	125	
Sc (IS)	45	2	HMI He	4155746	0.41	4591929	90.50	60	125	
Sc IS)	45	3	No Gas	113116071	1.08	129634638	87.26	60	120	
Ge Internal Standard	72	1	HMI H2	23041291	1.64	26305534	87.59	60	125	
Ge Internal Standard	72	2	HMI He	4900235	0.84	5205670	94.13	60	125	
In Internal standard	115	2	HMI He	15481662	0.66	16441998	94.16	60	125	
Ho-165	165	2	HMI He	39937479	0.62	37362695	106.89	60	125	

Sample Report

Sample Table

Sample Name 280-123330-c-8-c
 Data File Name 127SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T19:03:39-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-49.023	ppb	-49.023	-1.06	6452794	40000	
Be	9	1	6	0.021	ppb	0.021	131.96	10	2000	
B	11	1	6	834.314	ppb	834.314	0.86	7992	100	>LDR
Na	23	2	45	6973.398	ppb	6973.398	4.20	5178951	400000	
Mg	24	2	45	13676.049	ppb	13676.049	6.13	4159240	400000	
Al	27	2	45	170.923	ppb	170.923	7.92	15167	400000	
K	39	2	45	689.793	ppb	689.793	5.47	295466	400000	
Ca	44	2	45	19087.156	ppb	19087.156	0.43	417032	400000	
V	51	2	72	-1.323	ppb	-1.323	-8.37	7785	2000	
Cr	52	2	72	0.789	ppb	0.789	2.25	6415	5000	
Mn	55	2	72	589.939	ppb	589.939	1.69	1648566	10000	
Fe	57	2	72	2677.319	ppb	2677.319	1.95	317308	400000	
Co	59	2	72	4.418	ppb	4.418	2.17	49457	2000	
Ni	60	2	72	3.069	ppb	3.069	6.32	9032	5000	
Cu	63	2	72	0.155	ppb	0.155	34.30	5091	5000	
Zn	66	2	72	2.255	ppb	2.255	1.19	3147	5000	
As	75	2	72	2.119	ppb	2.119	7.28	1849	2000	
Se	78	1	72	0.039	ppb	0.039	47.93	44	2000	
Sr	88	2	45	67.020	ppb	67.020	4.24	208375	2000	
Zr	90	2	72	56.755	ppb	56.755	24.18	1493	1000	
Zr	90	1	72	75.109	ppb	75.109	15.49	4902	1000	
Nb	93	2	72	0.640	ppb	0.640	18.61	8696	200	
Mo	95	2	115	0.067	ppb	0.067	19.81	413	2000	
Pd	105	2	115	-0.043	ppb	-0.043	-12.73	93	100	
Ag	107	2	115	0.006	ppb	0.006	145.31	190	100	
Cd	111	2	115	0.046	ppb	0.046	27.41	77	2000	
Sn	120	2	115	0.180	ppb	0.180	32.37	1457	2000	
Sb	121	2	115	-0.009	ppb	-0.009	-166.72	190	1000	
Ba	137	2	115	16.530	ppb	16.530	4.41	21228	5000	
W	182	2	165	1.333	ppb	1.333	3.82	13713	100	
Pt	195	2	165	0.000	ppb	0.000	-2090.46	13	100	
Tl	205	2	165	0.013	ppb	0.013	61.80	430	2000	
Pb	208	2	165	0.156	ppb	0.156	2.27	3754	5000	
Th	232	2	165	0.113	ppb	0.113	8.02	2947	2000	
U	238	2	165	0.026	ppb	0.026	12.76	570	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	759962	1.31	1092921	69.53	60	125	
Sc (IS)	45	2	HMI He	4053452	2.71	4591929	88.27	60	125	
Sc IS)	45	3	No Gas	114939607	0.44	129634638	88.66	60	120	
Ge Internal Standard	72	1	HMI H2	23303879	0.68	26305534	88.59	60	125	
Ge Internal Standard	72	2	HMI He	4907077	0.80	5205670	94.26	60	125	
In Internal standard	115	2	HMI He	15784990	1.00	16441998	96.00	60	125	
Ho-165	165	2	HMI He	39240794	3.90	37362695	105.03	60	125	

Sample Report

Sample Table

Sample Name 280-123330-c-9-c
 Data File Name 128SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T19:07:10-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-56.724	ppb	-56.724	-3.06	6339478	40000	
Be	9	1	6	0.021	ppb	0.021	265.20	10	2000	
B	11	1	6	843.914	ppb	843.914	2.44	8159	100	>LDR
Na	23	2	45	9004.568	ppb	9004.568	0.88	6581731	400000	
Mg	24	2	45	21223.913	ppb	21223.913	1.37	6365478	400000	
Al	27	2	45	122.317	ppb	122.317	9.78	10804	400000	
K	39	2	45	897.044	ppb	897.044	2.53	349455	400000	
Ca	44	2	45	55869.627	ppb	55869.627	1.55	1202152	400000	
V	51	2	72	-1.547	ppb	-1.547	-0.32	6598	2000	
Cr	52	2	72	0.385	ppb	0.385	7.13	3810	5000	
Mn	55	2	72	36.731	ppb	36.731	1.13	100787	10000	
Fe	57	2	72	269.847	ppb	269.847	2.92	32387	400000	
Co	59	2	72	0.179	ppb	0.179	25.22	7448	2000	
Ni	60	2	72	0.916	ppb	0.916	10.18	3257	5000	
Cu	63	2	72	0.944	ppb	0.944	3.95	10707	5000	
Zn	66	2	72	1.711	ppb	1.711	7.18	2500	5000	
As	75	2	72	0.359	ppb	0.359	17.53	441	2000	
Se	78	1	72	0.150	ppb	0.150	32.55	105	2000	
Sr	88	2	45	206.160	ppb	206.160	0.94	631714	2000	
Zr	90	2	72	44.228	ppb	44.228	7.89	1243	1000	
Zr	90	1	72	40.102	ppb	40.102	14.01	3370	1000	
Nb	93	2	72	0.321	ppb	0.321	31.73	6525	200	
Mo	95	2	115	0.666	ppb	0.666	3.37	2677	2000	
Pd	105	2	115	-0.033	ppb	-0.033	-12.37	143	100	
Ag	107	2	115	0.010	ppb	0.010	32.13	230	100	
Cd	111	2	115	0.017	ppb	0.017	64.70	30	2000	
Sn	120	2	115	0.175	ppb	0.175	16.67	1427	2000	
Sb	121	2	115	0.043	ppb	0.043	54.78	397	1000	
Ba	137	2	115	18.009	ppb	18.009	3.30	22987	5000	
W	182	2	165	-0.033	ppb	-0.033	-79.06	2764	100	
Pt	195	2	165	0.001	ppb	0.001	384.74	20	100	
Tl	205	2	165	0.017	ppb	0.017	61.13	500	2000	
Pb	208	2	165	0.160	ppb	0.160	10.74	3890	5000	
Th	232	2	165	0.051	ppb	0.051	34.91	1863	2000	
U	238	2	165	0.933	ppb	0.933	4.65	18502	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	767342	0.74	1092921	70.21	60	125	
Sc (IS)	45	2	HMI He	3994325	1.49	4591929	86.99	60	125	
Sc IS)	45	3	No Gas	115752566	0.07	129634638	89.29	60	120	
Ge Internal Standard	72	1	HMI H2	22772440	1.94	26305534	86.57	60	125	
Ge Internal Standard	72	2	HMI He	4808814	2.32	5205670	92.38	60	125	
In Internal standard	115	2	HMI He	15696261	1.40	16441998	95.46	60	125	
Ho-165	165	2	HMI He	39877745	3.34	37362695	106.73	60	125	

Sample Report

Sample Table

Sample Name 280-123330-a-10-c
 Data File Name 129SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T19:10:41-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-40.612	ppb	-40.612	-18.74	6449050	40000	
Be	9	1	6	0.016	ppb	0.016	58.87	8	2000	
B	11	1	6	3709.172	ppb	3709.172	2.03	33658	100	>LDR
Na	23	2	45	10985.269	ppb	10985.269	4.42	7982183	400000	
Mg	24	2	45	63034.225	ppb	63034.225	4.17	18816887	400000	
Al	27	2	45	26.628	ppb	26.628	6.39	2620	400000	
K	39	2	45	2882.226	ppb	2882.226	4.35	902497	400000	
Ca	44	2	45	113473.115	ppb	113473.115	1.55	2432273	400000	
V	51	2	72	-1.815	ppb	-1.815	-3.33	5344	2000	
Cr	52	2	72	1.315	ppb	1.315	0.31	9479	5000	
Mn	55	2	72	843.984	ppb	843.984	3.38	2303232	10000	
Fe	57	2	72	87.588	ppb	87.588	1.36	11274	400000	
Co	59	2	72	0.143	ppb	0.143	30.46	7075	2000	
Ni	60	2	72	10.269	ppb	10.269	5.95	27449	5000	
Cu	63	2	72	28.159	ppb	28.159	3.75	207338	5000	
Zn	66	2	72	392.675	ppb	392.675	2.81	419328	5000	
As	75	2	72	0.119	ppb	0.119	57.73	254	2000	
Se	78	1	72	0.016	ppb	0.016	127.37	29	2000	
Sr	88	2	45	642.291	ppb	642.291	3.75	1958886	2000	
Zr	90	2	72	25.175	ppb	25.175	23.89	907	1000	
Zr	90	1	72	35.288	ppb	35.288	22.00	3117	1000	
Nb	93	2	72	0.055	ppb	0.055	74.03	4857	200	
Mo	95	2	115	2.333	ppb	2.333	11.16	8802	2000	
Pd	105	2	115	-0.030	ppb	-0.030	-23.06	157	100	
Ag	107	2	115	0.004	ppb	0.004	78.60	160	100	
Cd	111	2	115	0.112	ppb	0.112	16.68	177	2000	
Sn	120	2	115	0.103	ppb	0.103	11.23	1070	2000	
Sb	121	2	115	0.181	ppb	0.181	20.62	923	1000	
Ba	137	2	115	59.429	ppb	59.429	2.23	74323	5000	
W	182	2	165	-0.014	ppb	-0.014	-139.19	2820	100	
Pt	195	2	165	0.000	ppb	0.000	-682.45	13	100	
Tl	205	2	165	0.005	ppb	0.005	67.57	323	2000	
Pb	208	2	165	8.285	ppb	8.285	1.25	147092	5000	
Th	232	2	165	0.009	ppb	0.009	44.92	1070	2000	
U	238	2	165	0.005	ppb	0.005	5.27	167	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	742953	1.18	1092921	67.98	60	125	
Sc (IS)	45	2	HMI He	3980987	5.11	4591929	86.70	60	125	
Sc IS)	45	3	No Gas	111884474	0.47	129634638	86.31	60	120	
Ge Internal Standard	72	1	HMI H2	22348161	1.49	26305534	84.96	60	125	
Ge Internal Standard	72	2	HMI He	4794469	2.35	5205670	92.10	60	125	
In Internal standard	115	2	HMI He	15439258	4.33	16441998	93.90	60	125	
Ho-165	165	2	HMI He	38495492	0.90	37362695	103.03	60	125	

Sample Report

Sample Table

Sample Name 280-123467-a-1-b
 Data File Name 130SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T19:14:11-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-57.748	ppb	-57.748	-8.39	6130783	40000	
Be	9	1	6	-0.011	ppb	-0.011	0.00	0	2000	
B	11	1	6	563.137	ppb	563.137	4.83	5464	100	>LDR
Na	23	2	45	4805.369	ppb	4805.369	3.52	3530376	400000	
Mg	24	2	45	10240.872	ppb	10240.872	1.93	3069921	400000	
Al	27	2	45	4.868	ppb	4.868	28.72	767	400000	
K	39	2	45	732.893	ppb	732.893	5.43	303167	400000	
Ca	44	2	45	38870.363	ppb	38870.363	1.30	836355	400000	
V	51	2	72	-1.776	ppb	-1.776	-3.91	5464	2000	
Cr	52	2	72	0.577	ppb	0.577	4.44	4921	5000	
Mn	55	2	72	120.191	ppb	120.191	1.73	324919	10000	
Fe	57	2	72	1462.295	ppb	1462.295	2.10	168128	400000	
Co	59	2	72	-0.002	ppb	-0.002	-967.17	5611	2000	
Ni	60	2	72	0.072	ppb	0.072	16.29	1053	5000	
Cu	63	2	72	-0.090	ppb	-0.090	-34.97	3174	5000	
Zn	66	2	72	0.759	ppb	0.759	8.75	1463	5000	
As	75	2	72	4.899	ppb	4.899	3.08	3925	2000	
Se	78	1	72	0.017	ppb	0.017	308.67	29	2000	
Sr	88	2	45	101.441	ppb	101.441	2.20	310776	2000	
Zr	90	2	72	6.766	ppb	6.766	43.80	580	1000	
Zr	90	1	72	11.653	ppb	11.653	24.30	2169	1000	
Nb	93	2	72	-0.054	ppb	-0.054	-168.94	4134	200	
Mo	95	2	115	0.526	ppb	0.526	8.25	2127	2000	
Pd	105	2	115	-0.037	ppb	-0.037	-28.50	123	100	
Ag	107	2	115	0.000	ppb	0.000	-329.35	113	100	
Cd	111	2	115	0.000	ppb	0.000	2182.69	3	2000	
Sn	120	2	115	0.084	ppb	0.084	29.32	990	2000	
Sb	121	2	115	-0.003	ppb	-0.003	-87.94	210	1000	
Ba	137	2	115	53.959	ppb	53.959	2.71	67992	5000	
W	182	2	165	-0.037	ppb	-0.037	-90.48	2710	100	
Pt	195	2	165	0.000	ppb	0.000	775.53	17	100	
Tl	205	2	165	0.008	ppb	0.008	60.50	363	2000	
Pb	208	2	165	0.070	ppb	0.070	10.28	2237	5000	
Th	232	2	165	-0.001	ppb	-0.001	-136.33	923	2000	
U	238	2	165	0.066	ppb	0.066	13.00	1360	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	755127	0.60	1092921	69.09	60	125	
Sc (IS)	45	2	HMI He	3992635	2.12	4591929	86.95	60	125	
Sc IS)	45	3	No Gas	112320342	1.13	129634638	86.64	60	120	
Ge Internal Standard	72	1	HMI H2	22255016	2.51	26305534	84.60	60	125	
Ge Internal Standard	72	2	HMI He	4744544	0.91	5205670	91.14	60	125	
In Internal standard	115	2	HMI He	15556493	2.26	16441998	94.61	60	125	
Ho-165	165	2	HMI He	39528856	3.10	37362695	105.80	60	125	

Sample Report

Sample Table

Sample Name 280-123467-c-2-b
 Data File Name 131SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T19:17:41-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-37.989	ppb	-37.989	-6.42	6439559	40000	
Be	9	1	6	0.000	ppb	0.000	-4407.71	3	2000	
B	11	1	6	742.668	ppb	742.668	5.84	7118	100	>LDR
Na	23	2	45	13122.247	ppb	13122.247	3.08	9511531	400000	
Mg	24	2	45	25714.151	ppb	25714.151	3.16	7663347	400000	
Al	27	2	45	2.957	ppb	2.957	65.71	600	400000	
K	39	2	45	1189.232	ppb	1189.232	1.42	428688	400000	
Ca	44	2	45	53137.217	ppb	53137.217	2.25	1135980	400000	
V	51	2	72	-1.722	ppb	-1.722	-2.28	5631	2000	
Cr	52	2	72	0.367	ppb	0.367	10.49	3597	5000	
Mn	55	2	72	36.442	ppb	36.442	2.04	97250	10000	
Fe	57	2	72	15.148	ppb	15.148	7.51	2847	400000	
Co	59	2	72	0.025	ppb	0.025	189.36	5788	2000	
Ni	60	2	72	0.137	ppb	0.137	31.84	1203	5000	
Cu	63	2	72	-0.029	ppb	-0.029	-57.10	3554	5000	
Zn	66	2	72	0.373	ppb	0.373	41.35	1040	5000	
As	75	2	72	0.171	ppb	0.171	16.32	286	2000	
Se	78	1	72	0.033	ppb	0.033	113.23	39	2000	
Sr	88	2	45	205.972	ppb	205.972	1.39	627078	2000	
Zr	90	2	72	-6.459	ppb	-6.459	-30.16	347	1000	
Zr	90	1	72	0.607	ppb	0.607	772.26	1732	1000	
Nb	93	2	72	-0.165	ppb	-0.165	-46.80	3397	200	
Mo	95	2	115	2.184	ppb	2.184	5.94	8362	2000	
Pd	105	2	115	-0.043	ppb	-0.043	-16.96	90	100	
Ag	107	2	115	-0.003	ppb	-0.003	-73.22	83	100	
Cd	111	2	115	0.017	ppb	0.017	111.40	30	2000	
Sn	120	2	115	0.069	ppb	0.069	59.40	923	2000	
Sb	121	2	115	-0.007	ppb	-0.007	-152.21	197	1000	
Ba	137	2	115	50.734	ppb	50.734	2.92	64180	5000	
W	182	2	165	-0.023	ppb	-0.023	-28.11	2747	100	
Pt	195	2	165	-0.001	ppb	-0.001	-161.95	7	100	
Tl	205	2	165	0.013	ppb	0.013	88.20	423	2000	
Pb	208	2	165	0.010	ppb	0.010	73.77	1117	5000	
Th	232	2	165	-0.011	ppb	-0.011	-41.24	727	2000	
U	238	2	165	1.951	ppb	1.951	4.52	37311	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	756759	0.61	1092921	69.24	60	125	
Sc (IS)	45	2	HMI He	3968207	0.61	4591929	86.42	60	125	
Sc IS)	45	3	No Gas	110814809	1.13	129634638	85.48	60	120	
Ge Internal Standard	72	1	HMI H2	22291434	1.63	26305534	84.74	60	125	
Ge Internal Standard	72	2	HMI He	4676474	0.90	5205670	89.83	60	125	
In Internal standard	115	2	HMI He	15610041	0.65	16441998	94.94	60	125	
Ho-165	165	2	HMI He	38508550	2.11	37362695	103.07	60	125	

Sample Report

Sample Table

Sample Name 280-123467-c-5-b
 Data File Name 132SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-13T19:21:14-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	18.198	ppb	18.198	48.64	7393732	40000	
Be	9	1	6	0.098	ppb	0.098	50.76	33	2000	
B	11	1	6	447.218	ppb	447.218	3.50	4317	100	
Na	23	2	45	14094.140	ppb	14094.140	1.84	10144806	400000	
Mg	24	2	45	35473.416	ppb	35473.416	1.69	10502684	400000	
Al	27	2	45	1527.926	ppb	1527.926	1.55	129174	400000	
K	39	2	45	24182.055	ppb	24182.055	1.07	6796824	400000	
Ca	44	2	45	46709.485	ppb	46709.485	1.43	992182	400000	
V	51	2	72	1.184	ppb	1.184	6.57	18300	2000	
Cr	52	2	72	2.806	ppb	2.806	1.06	17786	5000	
Mn	55	2	72	359.305	ppb	359.305	3.09	938554	10000	
Fe	57	2	72	5180.272	ppb	5180.272	3.13	572798	400000	
Co	59	2	72	2.604	ppb	2.604	2.63	29489	2000	
Ni	60	2	72	6.037	ppb	6.037	1.72	15794	5000	
Cu	63	2	72	3.980	ppb	3.980	2.36	31212	5000	
Zn	66	2	72	9.300	ppb	9.300	6.43	10133	5000	
As	75	2	72	4.180	ppb	4.180	1.02	3260	2000	
Se	78	1	72	0.031	ppb	0.031	141.94	37	2000	
Sr	88	2	45	788.666	ppb	788.666	0.98	2384908	2000	
Zr	90	2	72	440.891	ppb	440.891	5.03	7812	1000	
Zr	90	1	72	453.264	ppb	453.264	4.34	19595	1000	
Nb	93	2	72	-0.022	ppb	-0.022	-371.31	4184	200	
Mo	95	2	115	0.693	ppb	0.693	9.40	2647	2000	
Pd	105	2	115	-0.018	ppb	-0.018	-38.64	213	100	
Ag	107	2	115	0.000	ppb	0.000	930.24	117	100	
Cd	111	2	115	0.036	ppb	0.036	22.22	57	2000	
Sn	120	2	115	0.204	ppb	0.204	12.78	1487	2000	
Sb	121	2	115	0.158	ppb	0.158	34.30	810	1000	
Ba	137	2	115	144.314	ppb	144.314	1.80	174952	5000	
W	182	2	165	0.053	ppb	0.053	78.47	3327	100	
Pt	195	2	165	-0.001	ppb	-0.001	-264.53	10	100	
Tl	205	2	165	0.044	ppb	0.044	38.60	843	2000	
Pb	208	2	165	2.175	ppb	2.175	7.33	39068	5000	
Th	232	2	165	0.737	ppb	0.737	4.09	13740	2000	
U	238	2	165	0.160	ppb	0.160	5.44	3107	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	740104	0.78	1092921	67.72	60	125	
Sc (IS)	45	2	HMI He	3942892	2.15	4591929	85.87	60	125	
Sc IS)	45	3	No Gas	108534356	0.84	129634638	83.72	60	120	
Ge Internal Standard	72	1	HMI H2	22171225	1.45	26305534	84.28	60	125	
Ge Internal Standard	72	2	HMI He	4586357	0.94	5205670	88.10	60	125	
In Internal standard	115	2	HMI He	14984194	3.17	16441998	91.13	60	125	
Ho-165	165	2	HMI He	38310102	2.51	37362695	102.54	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5699926
 Data File Name 133_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T07:28:44-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	8.512	ppb	167.990	111817	100	8.5	90	110	>+ -10%
Li	7	3	45	35.896	ppb	7.059	7127030	100	35.9	90	110	>+ -10%
Be	9	1	6	53.242	ppb	3.174	14873	50	106.5	90	110	
B	11	1	6	48.800	ppb	28.476	687	50	97.6	90	110	
Na	23	2	45	894.600	ppb	3.143	619768	1000	89.5	90	110	>+ -10%
Mg	24	2	45	979.628	ppb	2.559	263587	1000	98.0	90	110	
Al	27	2	45	1029.298	ppb	2.528	79109	1000	102.9	90	110	
K	39	2	45	949.590	ppb	2.406	326432	1000	95.0	90	110	
Ca	44	2	45	958.802	ppb	3.384	18740	1000	95.9	90	110	
V	51	2	72	49.271	ppb	2.045	215170	50	98.5	90	110	
Cr	52	2	72	47.074	ppb	0.617	258939	50	94.1	90	110	
Mn	55	2	72	50.637	ppb	2.868	124041	50	101.3	90	110	
Fe	57	2	72	950.886	ppb	3.561	99327	1000	95.1	90	110	
Co	59	2	72	48.085	ppb	1.325	420724	50	96.2	90	110	
Ni	60	2	72	48.196	ppb	2.099	112600	50	96.4	90	110	
Cu	63	2	72	47.856	ppb	2.185	313385	50	95.7	90	110	
Zn	66	2	72	47.441	ppb	1.596	45931	50	94.9	90	110	
As	75	2	72	48.311	ppb	1.967	33759	50	96.6	90	110	
Se	78	1	72	50.505	ppb	1.502	26439	50	101.0	90	110	
Sr	88	2	45	104.825	ppb	4.103	287826	100	104.8	90	110	
Zr	90	2	72	85.342	ppb	18.598	1753	50	170.7	90	110	>+ -10%
Zr	90	1	72	138.040	ppb	5.805	6818	50	276.1	90	110	>+ -10%
Nb	93	2	72	93.722	ppb	3.684	527069	100	93.7	90	110	
Mo	95	2	115	49.268	ppb	2.627	154356	50	98.5	90	110	
Pd	105	2	115	49.910	ppb	2.519	225909	50	99.8	90	110	
Ag	107	2	115	49.738	ppb	1.233	454347	50	99.5	90	110	
Cd	111	2	115	51.564	ppb	2.572	67399	50	103.1	90	110	
Sn	120	2	115	52.411	ppb	2.806	203766	50	104.8	90	110	
Sb	121	2	115	51.715	ppb	1.466	169829	50	103.4	90	110	
Ba	137	2	115	51.837	ppb	1.157	54637	50	103.7	90	110	
W	182	2	165	48.740	ppb	5.526	311018	50	97.5	90	110	
Pt	195	2	165	46.598	ppb	5.139	205048	50	93.2	90	110	
Tl	205	2	165	43.940	ppb	3.124	474760	50	87.9	90	110	>+ -10%
Pb	208	2	165	45.254	ppb	5.482	640368	50	90.5	90	110	
Th	232	2	165	51.196	ppb	5.906	718608	50	102.4	90	110	
U	238	2	165	49.865	ppb	5.646	763400	50	99.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	677224	0.22	1092921	61.96	60	125	
Sc (IS)	45	2	HMI He	3580521	2.53	4591929	77.97	60	125	
Sc IS)	45	3	No Gas	99977803	0.19	129634638	77.12	60	120	
Ge Internal Standard	72	1	HMI H2	21142564	2.91	26305534	80.37	60	125	
Ge Internal Standard	72	2	HMI He	4295376	0.94	5205670	82.51	60	125	
In Internal standard	115	2	HMI He	13005834	0.91	16441998	79.10	60	125	
Ho-165	165	2	HMI He	30884305	3.51	37362695	82.66	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5699924
 Data File Name 134_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T07:32:18-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-68.188	ppb	-6.2	85277	0.1	
Li	7	3	45	-50.115	ppb	-11.5	5493800	0.05	
Be	9	1	6	0.074	ppb	74.6	23	0.5	
B	11	1	6	-2.102	ppb	-435.0	267	0.1	
Na	23	2	45	-4.158	ppb	-20.0	34437	25	
Mg	24	2	45	1.976	ppb	12.4	830	25	
Al	27	2	45	-0.063	ppb	-876.5	307	15	
K	39	2	45	-2.263	ppb	-627.0	85928	50	
Ca	44	2	45	-1.388	ppb	-326.9	210	25	
V	51	2	72	-0.328	ppb	-50.6	10523	1	
Cr	52	2	72	0.036	ppb	43.9	1440	1	
Mn	55	2	72	0.129	ppb	30.0	497	0.5	
Fe	57	2	72	7.123	ppb	22.1	1720	25	
Co	59	2	72	-0.022	ppb	-0.7	4744	0.5	
Ni	60	2	72	0.031	ppb	10.2	830	1	
Cu	63	2	72	0.186	ppb	13.4	4494	1	
Zn	66	2	72	0.656	ppb	22.7	1183	5	
As	75	2	72	0.051	ppb	40.1	174	1	
Se	78	1	72	0.025	ppb	96.9	31	1	
Sr	88	2	45	0.072	ppb	41.9	347	1	
Zr	90	2	72	-5.148	ppb	-39.8	327	1	
Zr	90	1	72	11.771	ppb	44.3	1972	1	>RL
Nb	93	2	72	3.795	ppb	3.1	24358	2	>RL
Mo	95	2	115	0.089	ppb	53.9	410	0.5	
Pd	105	2	115	-0.016	ppb	-128.1	197	1	
Ag	107	2	115	0.040	ppb	29.7	457	1	
Cd	111	2	115	0.006	ppb	135.6	10	0.5	
Sn	120	2	115	0.154	ppb	18.2	1100	1	
Sb	121	2	115	0.083	ppb	4.9	460	1	
Ba	137	2	115	0.062	ppb	31.0	173	0.5	
W	182	2	165	0.373	ppb	11.6	4761	1	
Pt	195	2	165	0.016	ppb	55.8	83	1	
Tl	205	2	165	0.015	ppb	64.2	370	0.1	
Pb	208	2	165	0.014	ppb	67.5	957	0.5	
Th	232	2	165	0.248	ppb	13.7	4261	1	
U	238	2	165	0.053	ppb	16.8	870	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	670339	2.79	1092921	61.33	60	125	
Sc (IS)	45	2	HMI He	3535907	1.38	4591929	77.00	60	125	
Sc IS)	45	3	No Gas	98210977	1.44	129634638	75.76	60	120	
Ge Internal Standard	72	1	HMI H2	20205170	1.28	26305534	76.81	60	125	
Ge Internal Standard	72	2	HMI He	4147589	3.38	5205670	79.67	60	125	
In Internal standard	115	2	HMI He	13022942	2.86	16441998	79.21	60	125	
Ho-165	165	2	HMI He	31199454	1.88	37362695	83.50	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5699928
 Data File Name 135LLCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T07:35:50-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 025CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	-52.476	ppb	-8.663	5566717	50	-105.0	70	130	> +/-30%
Be	9	1	6	1.058	ppb	28.999	295	1	105.8	70	130	
Na	23	2	45	46.754	ppb	6.914	66533	50	93.5	70	130	
Mg	24	2	45	52.299	ppb	4.554	14056	50	104.6	70	130	
Al	27	2	45	49.232	ppb	0.445	3997	50	98.5	70	130	
K	39	2	45	100.945	ppb	3.886	110568	100	100.9	70	130	
Ca	44	2	45	34.041	ppb	12.609	877	50	68.1	70	130	> +/-30%
V	51	2	72	4.604	ppb	2.591	31439	5	92.1	70	130	
Cr	52	2	72	1.953	ppb	5.849	12064	2	97.6	70	130	
Mn	55	2	72	1.098	ppb	12.170	2907	1	109.8	70	130	
Fe	57	2	72	53.634	ppb	5.569	6635	50	107.3	70	130	
Co	59	2	72	0.931	ppb	1.174	13242	1	93.1	70	130	
Ni	60	2	72	1.254	ppb	3.365	3724	1.5	83.6	70	130	
Cu	63	2	72	1.859	ppb	2.233	15601	2	93.0	70	130	
Zn	66	2	72	10.067	ppb	2.192	10293	10	100.7	70	130	
As	75	2	72	4.509	ppb	2.253	3304	5	90.2	70	130	
Se	78	1	72	4.971	ppb	8.756	2543	5	99.4	70	130	
Sr	88	2	45	1.102	ppb	13.806	3107	1	110.2	70	130	
Zr	90	2	72	-6.999	ppb	-142.463	310	0.5	-1399.8	70	130	> +/-30%
Zr	90	1	72	3.059	ppb	213.680	1685	0.5	611.8	70	130	> +/-30%
Nb	93	2	72	1.739	ppb	9.713	13833	2	87.0	70	130	
Mo	95	2	115	2.051	ppb	6.629	6628	2	102.5	70	130	
Pd	105	2	115	-0.044	ppb	-17.471	70	1	-4.4	70	130	> +/-30%
Ag	107	2	115	4.963	ppb	1.901	45977	5	99.3	70	130	
Cd	111	2	115	0.989	ppb	7.246	1313	1	98.9	70	130	
Sn	120	2	115	10.157	ppb	2.922	40377	10	101.6	70	130	
Sb	121	2	115	1.964	ppb	4.144	6708	2	98.2	70	130	
Ba	137	2	115	1.006	ppb	15.836	1183	1	100.6	70	130	
W	182	2	165	4.799	ppb	2.758	33778	1	479.9	70	130	> +/-30%
Pt	195	2	165	0.008	ppb	70.532	47	1	0.8	70	130	> +/-30%
Tl	205	2	165	0.834	ppb	3.396	9500	1	83.4	70	130	
Pb	208	2	165	0.884	ppb	7.601	13653	1	88.4	70	130	
Th	232	2	165	1.884	ppb	7.606	28000	2	94.2	70	130	
U	238	2	165	0.991	ppb	8.753	15685	1	99.1	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	669535	0.26	1092921	61.26	60	125	
Sc (IS)	45	2	HMI He	3503629	2.13	4591929	76.30	60	125	
Sc IS)	45	3	No Gas	100250958	1.22	129634638	77.33	60	120	
Ge Internal Standard	72	1	HMI H2	20511870	1.03	26305534	77.98	60	125	
Ge Internal Standard	72	2	HMI He	4325485	2.29	5205670	83.09	60	125	
In Internal standard	115	2	HMI He	13169312	2.42	16441998	80.10	60	125	
Ho-165	165	2	HMI He	31839625	2.76	37362695	85.22	60	125	

Sample Report

Sample Table

Sample Name rinse-5626316
 Data File Name 136SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T07:39:21-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment PA
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-63.660	ppb	-63.660	-3.91	5444783	40000	
Be	9	1	6	0.019	ppb	0.019	145.65	8	2000	
B	11	1	6	13.925	ppb	13.925	123.38	397	100	
Na	23	2	45	-3.871	ppb	-3.871	-37.13	35572	400000	
Mg	24	2	45	3.658	ppb	3.658	13.06	1313	400000	
Al	27	2	45	3.445	ppb	3.445	39.20	587	400000	
K	39	2	45	-2.453	ppb	-2.453	-91.04	88277	400000	
Ca	44	2	45	-2.186	ppb	-2.186	-86.60	200	400000	
V	51	2	72	-0.093	ppb	-0.093	-32.42	11654	2000	
Cr	52	2	72	-0.019	ppb	-0.019	-133.66	1170	5000	
Mn	55	2	72	0.235	ppb	0.235	20.37	760	10000	
Fe	57	2	72	24.368	ppb	24.368	10.54	3500	400000	
Co	59	2	72	-0.002	ppb	-0.002	-1157.49	4987	2000	
Ni	60	2	72	-0.023	ppb	-0.023	-71.03	720	5000	
Cu	63	2	72	0.158	ppb	0.158	35.43	4391	5000	
Zn	66	2	72	0.675	ppb	0.675	40.96	1220	5000	
As	75	2	72	0.027	ppb	0.027	194.12	159	2000	
Se	78	1	72	-0.010	ppb	-0.010	-163.15	13	2000	
Sr	88	2	45	0.048	ppb	0.048	88.14	290	2000	
Zr	90	2	72	-9.649	ppb	-9.649	-26.27	263	1000	
Zr	90	1	72	2.309	ppb	2.309	192.49	1638	1000	
Nb	93	2	72	1.159	ppb	1.159	9.00	10307	200	
Mo	95	2	115	0.009	ppb	0.009	105.81	163	2000	
Pd	105	2	115	-0.044	ppb	-0.044	-16.93	70	100	
Ag	107	2	115	0.003	ppb	0.003	84.42	130	100	
Cd	111	2	115	0.006	ppb	0.006	135.42	10	2000	
Sn	120	2	115	0.098	ppb	0.098	15.62	900	2000	
Sb	121	2	115	-0.011	ppb	-0.011	-64.57	153	1000	
Ba	137	2	115	0.043	ppb	0.043	55.69	157	5000	
W	182	2	165	0.120	ppb	0.120	26.04	3127	100	
Pt	195	2	165	0.006	ppb	0.006	116.14	37	100	
Tl	205	2	165	0.005	ppb	0.005	108.89	257	2000	
Pb	208	2	165	-0.001	ppb	-0.001	-151.82	733	5000	
Th	232	2	165	0.172	ppb	0.172	10.65	3160	2000	
U	238	2	165	0.005	ppb	0.005	45.74	130	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	669088	2.35	1092921	61.22	60	125	
Sc (IS)	45	2	HMI He	3633631	1.97	4591929	79.13	60	125	
Sc IS)	45	3	No Gas	101722415	1.71	129634638	78.47	60	120	
Ge Internal Standard	72	1	HMI H2	20296916	0.99	26305534	77.16	60	125	
Ge Internal Standard	72	2	HMI He	4213138	1.24	5205670	80.93	60	125	
In Internal standard	115	2	HMI He	13253645	0.99	16441998	80.61	60	125	
Ho-165	165	2	HMI He	30990543	4.46	37362695	82.95	60	125	

Sample Report

Sample Table

Sample Name rinse-5626316
 Data File Name 137SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T07:42:55-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment PA
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-57.337	ppb	-57.337	-3.59	5425629	40000	
Be	9	1	6	0.001	ppb	0.001	1923.87	3	2000	
B	11	1	6	5.050	ppb	5.050	47.40	327	100	
Na	23	2	45	-3.163	ppb	-3.163	-63.26	35181	400000	
Mg	24	2	45	4.329	ppb	4.329	19.98	1460	400000	
Al	27	2	45	5.812	ppb	5.812	6.48	753	400000	
K	39	2	45	-4.654	ppb	-4.654	-268.45	85613	400000	
Ca	44	2	45	1.683	ppb	1.683	89.78	270	400000	
V	51	2	72	-0.354	ppb	-0.354	-31.48	11237	2000	
Cr	52	2	72	-0.022	ppb	-0.022	-130.41	1223	5000	
Mn	55	2	72	0.244	ppb	0.244	18.55	830	10000	
Fe	57	2	72	19.456	ppb	19.456	13.36	3177	400000	
Co	59	2	72	-0.039	ppb	-0.039	-26.99	4957	2000	
Ni	60	2	72	0.012	ppb	0.012	521.23	847	5000	
Cu	63	2	72	0.116	ppb	0.116	25.38	4367	5000	
Zn	66	2	72	0.549	ppb	0.549	21.58	1167	5000	
As	75	2	72	-0.021	ppb	-0.021	-107.10	135	2000	
Se	78	1	72	-0.008	ppb	-0.008	-243.73	15	2000	
Sr	88	2	45	0.026	ppb	0.026	99.43	223	2000	
Zr	90	2	72	-9.581	ppb	-9.581	-20.32	280	1000	
Zr	90	1	72	1.083	ppb	1.083	483.93	1605	1000	
Nb	93	2	72	0.520	ppb	0.520	20.20	7215	200	
Mo	95	2	115	0.020	ppb	0.020	110.91	200	2000	
Pd	105	2	115	-0.045	ppb	-0.045	-7.11	67	100	
Ag	107	2	115	0.001	ppb	0.001	697.67	107	100	
Cd	111	2	115	0.001	ppb	0.001	818.75	3	2000	
Sn	120	2	115	0.057	ppb	0.057	56.60	740	2000	
Sb	121	2	115	-0.027	ppb	-0.027	-41.14	100	1000	
Ba	137	2	115	0.082	ppb	0.082	61.91	200	5000	
W	182	2	165	0.058	ppb	0.058	42.61	2834	100	
Pt	195	2	165	0.001	ppb	0.001	323.26	17	100	
Tl	205	2	165	0.003	ppb	0.003	105.12	240	2000	
Pb	208	2	165	-0.011	ppb	-0.011	-19.39	623	5000	
Th	232	2	165	0.063	ppb	0.063	14.35	1687	2000	
U	238	2	165	0.003	ppb	0.003	38.96	103	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	674146	1.14	1092921	61.68	60	125	
Sc (IS)	45	2	HMI He	3548229	2.71	4591929	77.27	60	125	
Sc IS)	45	3	No Gas	99268421	0.90	129634638	76.58	60	120	
Ge Internal Standard	72	1	HMI H2	20456005	1.89	26305534	77.76	60	125	
Ge Internal Standard	72	2	HMI He	4467323	2.82	5205670	85.82	60	125	
In Internal standard	115	2	HMI He	13304791	2.85	16441998	80.92	60	125	
Ho-165	165	2	HMI He	32212051	2.30	37362695	86.21	60	125	

Sample Report

Sample Table

Sample Name rinse-5620980
 Data File Name 138SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T07:46:28-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment TUNE
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-56.801	ppb	-56.801	-6.63	5456504	40000	
Be	9	1	6	-0.005	ppb	-0.005	-213.24	2	2000	
B	11	1	6	16.736	ppb	16.736	33.81	420	100	
Na	23	2	45	-5.082	ppb	-5.082	-46.08	34584	400000	
Mg	24	2	45	3.310	ppb	3.310	30.41	1210	400000	
Al	27	2	45	5.561	ppb	5.561	31.98	747	400000	
K	39	2	45	-4.282	ppb	-4.282	-247.04	87282	400000	
Ca	44	2	45	-1.466	ppb	-1.466	-139.19	213	400000	
V	51	2	72	-0.279	ppb	-0.279	-2.19	11067	2000	
Cr	52	2	72	0.010	ppb	0.010	372.53	1343	5000	
Mn	55	2	72	0.242	ppb	0.242	19.94	790	10000	
Fe	57	2	72	22.627	ppb	22.627	10.31	3374	400000	
Co	59	2	72	-0.016	ppb	-0.016	-422.89	4944	2000	
Ni	60	2	72	0.081	ppb	0.081	46.39	970	5000	
Cu	63	2	72	0.165	ppb	0.165	27.18	4501	5000	
Zn	66	2	72	0.480	ppb	0.480	28.82	1053	5000	
As	75	2	72	-0.016	ppb	-0.016	-201.41	133	2000	
Se	78	1	72	0.015	ppb	0.015	110.63	27	2000	
Sr	88	2	45	0.042	ppb	0.042	63.68	270	2000	
Zr	90	2	72	-7.760	ppb	-7.760	-46.72	297	1000	
Zr	90	1	72	2.186	ppb	2.186	95.71	1678	1000	
Nb	93	2	72	0.198	ppb	0.198	48.58	5128	200	
Mo	95	2	115	0.028	ppb	0.028	59.79	223	2000	
Pd	105	2	115	-0.042	ppb	-0.042	-21.82	80	100	
Ag	107	2	115	0.000	ppb	0.000	606.25	103	100	
Cd	111	2	115	-0.002	ppb	-0.002	0.00	0	2000	
Sn	120	2	115	0.047	ppb	0.047	19.11	697	2000	
Sb	121	2	115	-0.033	ppb	-0.033	-14.35	80	1000	
Ba	137	2	115	0.096	ppb	0.096	86.68	213	5000	
W	182	2	165	0.037	ppb	0.037	39.00	2614	100	
Pt	195	2	165	0.000	ppb	0.000	-711.49	10	100	
Tl	205	2	165	0.000	ppb	0.000	-209.95	200	2000	
Pb	208	2	165	-0.001	ppb	-0.001	-948.89	750	5000	
Th	232	2	165	0.024	ppb	0.024	54.92	1090	2000	
U	238	2	165	0.003	ppb	0.003	13.60	93	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	671092	1.46	1092921	61.40	60	125	
Sc (IS)	45	2	HMI He	3612141	0.84	4591929	78.66	60	125	
Sc IS)	45	3	No Gas	99673456	2.37	129634638	76.89	60	120	
Ge Internal Standard	72	1	HMI H2	20847819	0.68	26305534	79.25	60	125	
Ge Internal Standard	72	2	HMI He	4277008	0.48	5205670	82.16	60	125	
In Internal standard	115	2	HMI He	13251548	2.09	16441998	80.60	60	125	
Ho-165	165	2	HMI He	31242130	0.72	37362695	83.62	60	125	

Sample Report

Sample Table

Sample Name rinse-5620980
 Data File Name 139SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T07:50:00-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment TUNE
 ISTD Ref FileName 025CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-59.479	ppb	-59.479	-5.03	5423101	40000	
Be	9	1	6	0.007	ppb	0.007	259.42	5	2000	
B	11	1	6	2.632	ppb	2.632	211.75	307	100	
Na	23	2	45	-4.112	ppb	-4.112	-60.34	34951	400000	
Mg	24	2	45	3.337	ppb	3.337	33.93	1207	400000	
Al	27	2	45	4.531	ppb	4.531	4.78	663	400000	
K	39	2	45	-7.223	ppb	-7.223	-232.75	85905	400000	
Ca	44	2	45	-0.532	ppb	-0.532	-480.07	230	400000	
V	51	2	72	-0.320	ppb	-0.320	-17.91	11347	2000	
Cr	52	2	72	-0.025	ppb	-0.025	-133.16	1203	5000	
Mn	55	2	72	0.262	ppb	0.262	34.16	873	10000	
Fe	57	2	72	19.787	ppb	19.787	5.45	3207	400000	
Co	59	2	72	-0.098	ppb	-0.098	-42.69	4407	2000	
Ni	60	2	72	0.004	ppb	0.004	1341.71	827	5000	
Cu	63	2	72	0.139	ppb	0.139	6.45	4514	5000	
Zn	66	2	72	0.646	ppb	0.646	40.35	1263	5000	
As	75	2	72	-0.028	ppb	-0.028	-46.44	129	2000	
Se	78	1	72	0.008	ppb	0.008	406.03	23	2000	
Sr	88	2	45	0.018	ppb	0.018	46.13	203	2000	
Zr	90	2	72	-9.739	ppb	-9.739	-41.00	277	1000	
Zr	90	1	72	4.656	ppb	4.656	17.15	1732	1000	
Nb	93	2	72	-0.015	ppb	-0.015	-167.47	4104	200	
Mo	95	2	115	0.030	ppb	0.030	54.99	233	2000	
Pd	105	2	115	-0.041	ppb	-0.041	-16.49	87	100	
Ag	107	2	115	-0.002	ppb	-0.002	-173.48	80	100	
Cd	111	2	115	0.010	ppb	0.010	40.00	17	2000	
Sn	120	2	115	0.037	ppb	0.037	68.87	667	2000	
Sb	121	2	115	-0.026	ppb	-0.026	-81.66	107	1000	
Ba	137	2	115	0.011	ppb	0.011	385.03	123	5000	
W	182	2	165	0.055	ppb	0.055	104.18	2834	100	
Pt	195	2	165	0.002	ppb	0.002	280.74	23	100	
Tl	205	2	165	0.002	ppb	0.002	253.48	233	2000	
Pb	208	2	165	0.003	ppb	0.003	224.46	830	5000	
Th	232	2	165	0.010	ppb	0.010	23.08	920	2000	
U	238	2	165	0.002	ppb	0.002	299.68	77	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	672712	1.69	1092921	61.55	60	125	
Sc (IS)	45	2	HMI He	3587914	2.47	4591929	78.14	60	125	
Sc IS)	45	3	No Gas	99919062	0.56	129634638	77.08	60	120	
Ge Internal Standard	72	1	HMI H2	20398862	2.07	26305534	77.55	60	125	
Ge Internal Standard	72	2	HMI He	4451067	1.32	5205670	85.50	60	125	
In Internal standard	115	2	HMI He	13471431	3.34	16441998	81.93	60	125	
Ho-165	165	2	HMI He	32377559	1.19	37362695	86.66	60	125	

Calibration Blank Report

Sample Table

Sample Name2 ICIS-5699924
Data File Name 140CALB.d
Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
Method
Acq Date Time 2019-05-14T07:53:33-06:00
Sample Type CalBlk
Level 1
Dilution 1
Comment

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Li	7	45	1	HMI H2	85568	0.00
Li	7	45	3	No Gas	5384227	0.00
Be	9	6	1	HMI H2	7	1718.47
B	11	6	1	HMI H2	303	8.01
Na	23	45	2	HMI He	33522	0.00
Mg	24	45	2	HMI He	1007	0.97
Al	27	45	2	HMI He	477	3.74
K	39	45	2	HMI He	86431	0.00
Ca	44	45	2	HMI He	170	9.16
V	51	72	2	HMI He	12251	0.02
Cr	52	72	2	HMI He	1313	1.36
Mn	55	72	2	HMI He	293	8.88
Fe	57	72	2	HMI He	1660	1.01
Co	59	72	2	HMI He	4914	0.17
Ni	60	72	2	HMI He	793	1.92
Cu	63	72	2	HMI He	2850	0.20
Zn	66	72	2	HMI He	787	2.87
As	75	72	2	HMI He	120	22.65
Se	78	72	1	HMI H2	16	156.25
Sr	88	45	2	HMI He	207	11.07
Zr	90	72	2	HMI He	287	10.63
Zr	90	72	1	HMI H2	1358	0.21
Nb	93	72	2	HMI He	2727	0.42
Mo	95	115	2	HMI He	153	17.19
Pd	105	115	2	HMI He	40	108.25
Ag	107	115	2	HMI He	83	8.31
Cd	111	115	2	HMI He	17	415.69
Sn	120	115	2	HMI He	543	2.40
Sb	121	115	2	HMI He	90	44.51
Ba	137	115	2	HMI He	97	54.92
W	182	165	2	HMI He	2660	0.23
Tl	205	165	2	HMI He	183	7.49
Pb	208	165	2	HMI He	640	0.88
Th	232	165	2	HMI He	1250	1.34
U	238	165	2	HMI He	97	16.35

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li-6 Internal Standard	6	1	HMI H2	661091	0.65
Sc (IS)	45	2	HMI He	3655967	0.94
Sc IS)	45	3	No Gas	100875794	0.41
Ge Internal Standard	72	1	HMI H2	20569859	3.48
Ge Internal Standard	72	2	HMI He	4348567	2.26
In Internal standard	115	2	HMI He	13519075	1.83
Ho-165	165	2	HMI He	30887613	1.23

Calibration Standard Report

Sample Table

Sample Name IC-5699925
 Data File Name 141CAL.S.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 method
 Acq Date Time 2019-05-14T07:57:07-06:00
 Sample Type CalStd
 Level 2
 Dilution 1
 Comment
 ISTD Ref File Name 140CALB.d
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Li	7	45	1	HMI H2	137959	0.00
Li	7	45	3	No Gas	8695097	0.00
Be	9	6	1	HMI H2	30287	0.00
B	11	6	1	HMI H2	1230	1.40
Na	23	45	2	HMI He	1315762	0.00
Mg	24	45	2	HMI He	542624	0.00
Al	27	45	2	HMI He	164041	0.00
K	39	45	2	HMI He	600197	0.00
Ca	44	45	2	HMI He	39772	0.01
V	51	72	2	HMI He	442967	0.00
Cr	52	72	2	HMI He	550037	0.00
Mn	55	72	2	HMI He	257456	0.00
Fe	57	72	2	HMI He	214386	0.00
Co	59	72	2	HMI He	877622	0.00
Ni	60	72	2	HMI He	233134	0.00
Cu	63	72	2	HMI He	652921	0.00
Zn	66	72	2	HMI He	99744	0.00
As	75	72	2	HMI He	71363	0.00
Se	78	72	1	HMI H2	54854	0.00
Sr	88	45	2	HMI He	616685	0.00
Zr	90	72	2	HMI He	1603	0.66
Zr	90	72	1	HMI H2	4862	0.16
Nb	93	72	2	HMI He	1182057	0.00
Mo	95	115	2	HMI He	331894	0.00
Pd	105	115	2	HMI He	467198	0.00
Ag	107	115	2	HMI He	966449	0.00
Cd	111	115	2	HMI He	140879	0.00
Sn	120	115	2	HMI He	429915	0.00
Sb	121	115	2	HMI He	370958	0.00
Ba	137	115	2	HMI He	119191	0.00
W	182	165	2	HMI He	651332	0.00
Pt	195	165	2	HMI He	426363	0.00
Tl	205	165	2	HMI He	1060237	0.00
Pb	208	165	2	HMI He	1442415	0.00
Th	232	165	2	HMI He	1483774	0.00
U	238	165	2	HMI He	1570992	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	664337	0.37	661091	100.49	60	125	
Sc (IS)	45	2	HMI He	3578859	1.10	3655967	97.89	60	125	
Sc IS)	45	3	No Gas	98322175	1.52	100875794	97.47	60	120	
Ge Internal Standard	72	1	HMI H2	20712040	2.13	20569859	100.69	60	125	
Ge Internal Standard	72	2	HMI He	4415426	0.21	4348567	101.54	60	125	
In Internal standard	115	2	HMI He	13562766	0.81	13519075	100.32	60	125	
Ho-165	165	2	HMI He	31370001	4.85	30887613	101.56	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5699926
 Data File Name 142_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T08:00:39-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	108.600	ppb	11.929	111860	100	108.6	90	110	
Li	7	3	45	113.399	ppb	2.811	7146600	100	113.4	90	110	>+ -10%
Be	9	1	6	49.439	ppb	2.072	14898	50	98.9	90	110	
B	11	1	6	59.868	ppb	19.473	853	50	119.7	90	110	>+ -10%
Na	23	2	45	956.314	ppb	4.259	636048	1000	95.6	90	110	
Mg	24	2	45	1006.983	ppb	3.597	269401	1000	100.7	90	110	
Al	27	2	45	1008.705	ppb	2.202	81690	1000	100.9	90	110	
K	39	2	45	1002.453	ppb	5.124	337635	1000	100.2	90	110	
Ca	44	2	45	993.976	ppb	2.591	19561	1000	99.4	90	110	
V	51	2	72	48.091	ppb	1.793	219193	50	96.2	90	110	
Cr	52	2	72	48.618	ppb	1.054	267771	50	97.2	90	110	
Mn	55	2	72	49.730	ppb	1.113	128026	50	99.5	90	110	
Fe	57	2	72	983.789	ppb	2.813	106172	1000	98.4	90	110	
Co	59	2	72	49.702	ppb	1.843	438154	50	99.4	90	110	
Ni	60	2	72	50.614	ppb	1.903	118247	50	101.2	90	110	
Cu	63	2	72	49.231	ppb	0.154	322493	50	98.5	90	110	
Zn	66	2	72	48.557	ppb	0.098	48783	50	97.1	90	110	
As	75	2	72	49.635	ppb	0.868	35436	50	99.3	90	110	
Se	78	1	72	50.436	ppb	2.503	27908	50	100.9	90	110	
Sr	88	2	45	99.935	ppb	2.800	303439	100	99.9	90	110	
Zr	90	2	72	38.899	ppb	3.014	800	50	77.8	90	110	>+ -10%
Zr	90	1	72	33.016	ppb	29.547	2536	50	66.0	90	110	>+ -10%
Nb	93	2	72	106.793	ppb	1.384	631658	100	106.8	90	110	
Mo	95	2	115	48.531	ppb	1.549	160935	50	97.1	90	110	
Pd	105	2	115	51.042	ppb	1.790	238146	50	102.1	90	110	
Ag	107	2	115	49.833	ppb	2.412	480891	50	99.7	90	110	
Cd	111	2	115	49.976	ppb	2.093	70311	50	100.0	90	110	
Sn	120	2	115	48.961	ppb	1.990	210465	50	97.9	90	110	
Sb	121	2	115	48.314	ppb	3.506	178973	50	96.6	90	110	
Ba	137	2	115	48.561	ppb	1.642	57853	50	97.1	90	110	
W	182	2	165	48.285	ppb	2.604	320204	50	96.6	90	110	
Pt	195	2	165	50.617	ppb	1.440	218876	50	101.2	90	110	
Tl	205	2	165	46.486	ppb	3.796	499327	50	93.0	90	110	
Pb	208	2	165	46.785	ppb	7.280	684272	50	93.6	90	110	
Th	232	2	165	50.343	ppb	4.305	757561	50	100.7	90	110	
U	238	2	165	49.976	ppb	5.463	795585	50	100.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	660731	1.00	661091	99.95	60	125	
Sc (IS)	45	2	HMI He	3525320	3.58	3655967	96.43	60	125	
Sc IS)	45	3	No Gas	97555025	1.61	100875794	96.71	60	120	
Ge Internal Standard	72	1	HMI H2	20887668	2.81	20569859	101.55	60	125	
Ge Internal Standard	72	2	HMI He	4409817	0.63	4348567	101.41	60	125	
In Internal standard	115	2	HMI He	13547375	2.07	13519075	100.21	60	125	
Ho-165	165	2	HMI He	31776253	2.93	30887613	102.88	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5699924
 Data File Name 143_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T08:04:11-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-14.150	ppb	-29.3	82718	0.1	
Li	7	3	45	9.119	ppb	27.4	5445423	0.05	>RL
Be	9	1	6	0.060	ppb	70.8	25	0.5	
B	11	1	6	1.057	ppb	710.7	313	0.1	>RL
Na	23	2	45	1.847	ppb	89.7	34333	25	
Mg	24	2	45	0.248	ppb	63.1	1063	25	
Al	27	2	45	-0.650	ppb	-141.9	417	15	
K	39	2	45	1.749	ppb	227.1	85915	50	
Ca	44	2	45	2.242	ppb	124.0	213	25	
V	51	2	72	-0.144	ppb	-69.7	11584	1	
Cr	52	2	72	0.026	ppb	20.0	1447	1	
Mn	55	2	72	0.063	ppb	22.2	450	0.5	
Fe	57	2	72	2.704	ppb	28.4	1937	25	
Co	59	2	72	0.053	ppb	35.1	5344	0.5	
Ni	60	2	72	0.061	ppb	64.1	930	1	
Cu	63	2	72	0.292	ppb	17.0	4694	1	
Zn	66	2	72	0.449	ppb	56.9	1220	5	
As	75	2	72	0.065	ppb	41.0	164	1	
Se	78	1	72	0.077	ppb	28.0	59	1	
Sr	88	2	45	0.078	ppb	27.8	447	1	
Zr	90	2	72	-2.138	ppb	-237.2	257	1	
Zr	90	1	72	3.845	ppb	139.9	1505	1	>RL
Nb	93	2	72	7.086	ppb	7.2	43630	2	>RL
Mo	95	2	115	0.143	ppb	8.3	637	0.5	
Pd	105	2	115	0.080	ppb	5.6	420	1	
Ag	107	2	115	0.045	ppb	26.4	523	1	
Cd	111	2	115	0.014	ppb	125.0	37	0.5	
Sn	120	2	115	0.230	ppb	2.3	1553	1	
Sb	121	2	115	0.178	ppb	24.8	760	1	
Ba	137	2	115	0.076	ppb	77.6	190	0.5	
W	182	2	165	0.172	ppb	14.7	3837	1	
Pt	195	2	165	0.037	ppb	39.3	160	1	
Tl	205	2	165	0.046	ppb	48.3	677	0.1	
Pb	208	2	165	0.054	ppb	18.7	1433	0.5	
Th	232	2	165	0.248	ppb	4.6	4968	1	
U	238	2	165	0.078	ppb	5.8	1330	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	661788	1.10	661091	100.11	60	125	
Sc (IS)	45	2	HMI He	3614748	1.28	3655967	98.87	60	125	
Sc IS)	45	3	No Gas	99055081	1.23	100875794	98.20	60	120	
Ge Internal Standard	72	1	HMI H2	20729457	1.69	20569859	100.78	60	125	
Ge Internal Standard	72	2	HMI He	4323790	0.10	4348567	99.43	60	125	
In Internal standard	115	2	HMI He	13745270	2.46	13519075	101.67	60	125	
Ho-165	165	2	HMI He	31470924	2.58	30887613	101.89	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5699928
 Data File Name 144LCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T08:07:44-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	13.745	ppb	41.280	5612833	50	27.5	70	130	> +/-30%
Be	9	1	6	0.925	ppb	38.150	287	1	92.5	70	130	
Na	23	2	45	46.170	ppb	3.824	63991	50	92.3	70	130	
Mg	24	2	45	46.817	ppb	3.465	14002	50	93.6	70	130	
Al	27	2	45	46.457	ppb	14.477	4364	50	92.9	70	130	
K	39	2	45	94.942	ppb	11.276	111802	100	94.9	70	130	
Ca	44	2	45	39.089	ppb	6.394	963	50	78.2	70	130	
V	51	2	72	4.506	ppb	8.094	30630	5	90.1	70	130	
Cr	52	2	72	2.001	ppb	3.206	11851	2	100.1	70	130	
Mn	55	2	72	1.096	ppb	7.843	2997	1	109.6	70	130	
Fe	57	2	72	54.709	ppb	6.743	7228	50	109.4	70	130	
Co	59	2	72	1.091	ppb	0.934	13966	1	109.1	70	130	
Ni	60	2	72	1.557	ppb	6.801	4261	1.5	103.8	70	130	
Cu	63	2	72	2.125	ppb	13.083	16066	2	106.2	70	130	
Zn	66	2	72	10.729	ppb	2.075	10984	10	107.3	70	130	
As	75	2	72	4.810	ppb	1.209	3414	5	96.2	70	130	
Se	78	1	72	4.848	ppb	6.524	2612	5	97.0	70	130	
Sr	88	2	45	0.968	ppb	8.084	3264	1	96.8	70	130	
Zr	90	2	72	4.556	ppb	40.836	337	0.5	911.3	70	130	> +/-30%
Zr	90	1	72	5.672	ppb	102.870	1528	0.5	1134.5	70	130	> +/-30%
Nb	93	2	72	4.113	ppb	6.531	25990	2	205.7	70	130	> +/-30%
Mo	95	2	115	1.923	ppb	8.293	6595	2	96.1	70	130	
Pd	105	2	115	0.042	ppb	25.401	237	1	4.2	70	130	> +/-30%
Ag	107	2	115	4.784	ppb	3.600	46772	5	95.7	70	130	
Cd	111	2	115	0.937	ppb	8.741	1350	1	93.7	70	130	
Sn	120	2	115	9.295	ppb	3.766	40858	10	93.0	70	130	
Sb	121	2	115	1.908	ppb	5.444	7238	2	95.4	70	130	
Ba	137	2	115	0.872	ppb	7.729	1147	1	87.2	70	130	
W	182	2	165	4.697	ppb	3.064	34045	1	469.7	70	130	> +/-30%
Pt	195	2	165	0.021	ppb	71.764	93	1	2.1	70	130	> +/-30%
Tl	205	2	165	0.930	ppb	4.899	10297	1	93.0	70	130	
Pb	208	2	165	0.915	ppb	0.607	14216	1	91.5	70	130	
Th	232	2	165	1.793	ppb	1.780	28585	2	89.6	70	130	
U	238	2	165	0.989	ppb	1.920	16049	1	98.9	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	664893	0.52	661091	100.58	60	125	
Sc (IS)	45	2	HMI He	3669148	2.63	3655967	100.36	60	125	
Sc IS)	45	3	No Gas	100631856	1.37	100875794	99.76	60	120	
Ge Internal Standard	72	1	HMI H2	20207448	1.35	20569859	98.24	60	125	
Ge Internal Standard	72	2	HMI He	4248579	1.46	4348567	97.70	60	125	
In Internal standard	115	2	HMI He	13700328	0.83	13519075	101.34	60	125	
Ho-165	165	2	HMI He	32165011	1.39	30887613	104.14	60	125	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name ICSA-5695552
 Data File Name 145ICSA.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T08:11:18-06:00
 Sample Type ICSA
 Dilution 1
 Comment
 ISTD Ref File Name 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-9.246	ppb	-69.6	79741	10	
Li	7	3	45	9.072	ppb	66.9	5360177	10	
Be	9	1	6	0.018	ppb	197.5	12	1	
B	11	1	6	16.462	ppb	35.8	433	10	>RL or LOD
Na	23	2	45	88136.433	ppb	0.5	57029653	100000	
Mg	24	2	45	91734.585	ppb	1.3	25045168	100000	
Al	27	2	45	92510.768	ppb	3.8	7629576	100000	
K	39	2	45	92316.331	ppb	3.0	24081661	100000	
V	51	2	72	-0.157	ppb	-118.8	11384	1	
Cr	52	2	72	1.315	ppb	1.6	8272	1	>RL or LOD
Mn	55	2	72	0.538	ppb	10.7	1627	1	
Co	59	2	72	0.257	ppb	22.7	6998	1	
Ni	60	2	72	0.229	ppb	40.0	1297	1	
Cu	63	2	72	0.302	ppb	17.5	4701	1	
Zn	66	2	72	0.785	ppb	7.5	1527	1	
As	75	2	72	0.123	ppb	19.8	202	1	
Se	78	1	72	0.111	ppb	39.2	73	1	
Sr	88	2	45	1.681	ppb	7.4	5428	1	>RL or LOD
Nb	93	2	72	19.992	ppb	4.9	116697	1	>RL or LOD
Mo	95	2	115	1989.260	ppb	2.8	6286700	2000	
Pd	105	2	115	0.033	ppb	61.0	183	1	
Ag	107	2	115	0.049	ppb	18.5	530	1	
Cd	111	2	115	0.719	ppb	9.1	980	1	
Sn	120	2	115	0.164	ppb	35.1	1190	1	
Sb	121	2	115	0.148	ppb	9.3	610	1	
Ba	137	2	115	0.814	ppb	11.5	1017	1	
W	182	2	165	0.379	ppb	22.5	5208	1	
Pt	195	2	165	0.026	ppb	19.1	113	1	
Tl	205	2	165	0.012	ppb	11.8	317	1	
Pb	208	2	165	0.279	ppb	7.6	4720	1	
Th	232	2	165	0.567	ppb	6.2	9770	1	
U	238	2	165	0.032	ppb	26.4	607	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	630255	0.67	661091	95.34	60	125	
Sc (IS)	45	2	HMI He	3607528	0.80	3655967	98.68	60	125	
Sc IS)	45	3	No Gas	97525897	0.63	100875794	96.68	60	120	
Ge Internal Standard	72	1	HMI H2	19710995	0.68	20569859	95.82	60	125	
Ge Internal Standard	72	2	HMI He	4271600	0.80	4348567	98.23	60	125	
In Internal standard	115	2	HMI He	12925489	2.17	13519075	95.61	60	125	
Ho-165	165	2	HMI He	31665355	2.56	30887613	102.52	60	125	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name ICSAB-5695553
 Data File Name 146ICSB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T08:14:48-06:00
 Sample Type ICSB
 Dilution 1
 Comment
 ISTD Ref File Name 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	1	45	181.282	ppb	0.717	132857	100	181.3	80	120	>+ -20%
Li	7	3	45	195.063	ppb	3.456	8438399	100	195.1	80	120	>+ -20%
Be	9	1	6	92.510	ppb	2.923	27609	100	92.5	80	120	
B	11	1	6	34.833	ppb	26.362	617	100	34.8	80	120	>+ -20%
V	51	2	72	98.427	ppb	2.468	430530	100	98.4	80	120	
Cr	52	2	72	97.756	ppb	1.945	530808	100	97.8	80	120	
Mn	55	2	72	99.598	ppb	1.751	253124	100	99.6	80	120	
Co	59	2	72	95.436	ppb	2.509	826964	100	95.4	80	120	
Ni	60	2	72	93.059	ppb	3.587	214164	100	93.1	80	120	
Cu	63	2	72	91.825	ppb	0.918	592108	100	91.8	80	120	
Zn	66	2	72	95.391	ppb	1.481	93985	100	95.4	80	120	
As	75	2	72	101.874	ppb	1.692	71769	100	101.9	80	120	
Se	78	1	72	95.449	ppb	2.492	52594	100	95.4	80	120	
Sr	88	2	45	194.035	ppb	0.582	625808	100	194.0	80	120	>+ -20%
Zr	90	2	72	149.194	ppb	6.692	2220	100	149.2	80	120	>+ -20%
Zr	90	1	72	133.166	ppb	5.218	6041	100	133.2	80	120	>+ -20%
Nb	93	2	72	256.901	ppb	2.785	1497972	100	256.9	80	120	
Mo	95	2	115	2023.385	ppb	0.693	6673799	100	2023.4	80	120	>+ -20%
Pd	105	2	115	92.783	ppb	1.353	430898	100	92.8	80	120	
Ag	107	2	115	96.117	ppb	3.794	923155	100	96.1	80	120	
Cd	111	2	115	96.818	ppb	2.682	135574	100	96.8	80	120	
Sn	120	2	115	97.659	ppb	2.460	417335	100	97.7	80	120	
Sb	121	2	115	103.300	ppb	0.424	380975	100	103.3	80	120	
Ba	137	2	115	98.493	ppb	0.323	116719	100	98.5	80	120	
W	182	2	165	95.135	ppb	2.059	645391	100	95.1	80	120	
Pt	195	2	165	92.194	ppb	2.180	409371	100	92.2	80	120	
Tl	205	2	165	93.883	ppb	2.415	1036045	100	93.9	80	120	
Pb	208	2	165	91.687	ppb	3.075	1377670	100	91.7	80	120	
Th	232	2	165	97.443	ppb	2.759	1505524	100	97.4	80	120	
U	238	2	165	95.996	ppb	4.401	1570359	100	96.0	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	654430	1.61	661091	98.99	60	125	
Sc (IS)	45	2	HMI He	3743418	0.76	3655967	102.39	60	125	
Sc (IS)	45	3	No Gas	96350207	0.50	100875794	95.51	60	120	
Ge Internal Standard	72	1	HMI H2	20796615	0.96	20569859	101.10	60	125	
Ge Internal Standard	72	2	HMI He	4359507	1.90	4348567	100.25	60	125	
In Internal standard	115	2	HMI He	13484672	1.47	13519075	99.75	60	125	
Ho-165	165	2	HMI He	32631605	1.12	30887613	105.65	60	125	

Sample Report

Sample Table

Sample Name RINSE
Data File Name 147SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
Acq Date Time 2019-05-14T08:18:18-06:00
Analyst Denver Metals
Sample Type Sample
Dilution 1
Comment
ISTD Ref FileName 140CALB.d
Sample QC Pass/Fail Pass
ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	16.825	ppb	16.825	35.53	5489555	40000	
Be	9	1	6	0.086	ppb	0.086	89.32	33	2000	
B	11	1	6	-3.819	ppb	-3.819	-160.63	273	100	
Na	23	2	45	113.699	ppb	113.699	9.01	109795	400000	
Mg	24	2	45	68.141	ppb	68.141	6.04	20185	400000	
Al	27	2	45	76.600	ppb	76.600	3.83	6995	400000	
K	39	2	45	79.356	ppb	79.356	17.96	109203	400000	
Ca	44	2	45	53.795	ppb	53.795	6.42	1280	400000	
V	51	2	72	-0.131	ppb	-0.131	-104.66	11944	2000	
Cr	52	2	72	0.106	ppb	0.106	3.80	1930	5000	
Mn	55	2	72	0.088	ppb	0.088	38.49	527	10000	
Fe	57	2	72	88.526	ppb	88.526	6.95	11164	400000	
Co	59	2	72	0.026	ppb	0.026	218.24	5254	2000	
Ni	60	2	72	1.093	ppb	1.093	5.00	3364	5000	
Cu	63	2	72	0.152	ppb	0.152	18.70	3900	5000	
Zn	66	2	72	0.047	ppb	0.047	248.99	853	5000	
As	75	2	72	0.148	ppb	0.148	9.79	227	2000	
Se	78	1	72	0.069	ppb	0.069	52.14	53	2000	
Sr	88	2	45	0.093	ppb	0.093	59.23	503	2000	
Zr	90	2	72	-1.878	ppb	-1.878	-150.05	267	1000	
Zr	90	1	72	2.776	ppb	2.776	158.91	1452	1000	
Nb	93	2	72	0.095	ppb	0.095	78.69	3344	200	
Mo	95	2	115	4.247	ppb	4.247	3.71	14777	2000	
Pd	105	2	115	0.100	ppb	0.100	22.01	523	100	
Ag	107	2	115	0.069	ppb	0.069	12.06	780	100	
Cd	111	2	115	0.061	ppb	0.061	27.98	107	2000	
Sn	120	2	115	0.090	ppb	0.090	22.15	967	2000	
Sb	121	2	115	0.092	ppb	0.092	3.45	447	1000	
Ba	137	2	115	0.051	ppb	0.051	21.83	163	5000	
W	182	2	165	0.071	ppb	0.071	49.76	3260	100	
Pt	195	2	165	0.050	ppb	0.050	37.17	220	100	
Tl	205	2	165	0.109	ppb	0.109	16.61	1377	2000	
Pb	208	2	165	0.081	ppb	0.081	9.78	1867	5000	
Th	232	2	165	0.028	ppb	0.028	29.49	1743	2000	
U	238	2	165	0.094	ppb	0.094	13.63	1620	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	675392	0.97	661091	102.16	60	125	
Sc (IS)	45	2	HMI He	3723375	5.32	3655967	101.84	60	125	
Sc IS)	45	3	No Gas	97486084	2.30	100875794	96.64	60	120	
Ge Internal Standard	72	1	HMI H2	20504670	3.10	20569859	99.68	60	125	
Ge Internal Standard	72	2	HMI He	4437353	0.84	4348567	102.04	60	125	
In Internal standard	115	2	HMI He	14072156	1.49	13519075	104.09	60	125	
Ho-165	165	2	HMI He	32306288	1.90	30887613	104.59	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5699926
 Data File Name 148_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T08:21:51-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	97.935	ppb	10.688	111850	100	97.9	90	110	
Li	7	3	45	105.361	ppb	2.818	7018332	100	105.4	90	110	
Be	9	1	6	48.025	ppb	1.533	14833	50	96.0	90	110	
B	11	1	6	53.724	ppb	34.569	817	50	107.4	90	110	
Na	23	2	45	933.301	ppb	1.655	677935	1000	93.3	90	110	
Mg	24	2	45	946.486	ppb	2.979	276200	1000	94.6	90	110	
Al	27	2	45	963.855	ppb	1.110	85132	1000	96.4	90	110	
K	39	2	45	938.832	ppb	0.932	350673	1000	93.9	90	110	
Ca	44	2	45	932.847	ppb	1.948	20008	1000	93.3	90	110	
V	51	2	72	48.474	ppb	1.975	222362	50	96.9	90	110	
Cr	52	2	72	49.456	ppb	1.078	274145	50	98.9	90	110	
Mn	55	2	72	49.615	ppb	2.014	128548	50	99.2	90	110	
Fe	57	2	72	1013.925	ppb	2.781	110089	1000	101.4	90	110	
Co	59	2	72	49.394	ppb	2.824	438235	50	98.8	90	110	
Ni	60	2	72	49.590	ppb	2.378	116681	50	99.2	90	110	
Cu	63	2	72	49.401	ppb	0.989	325721	50	98.8	90	110	
Zn	66	2	72	48.583	ppb	0.996	49130	50	97.2	90	110	
As	75	2	72	50.137	ppb	0.217	36034	50	100.3	90	110	
Se	78	1	72	49.233	ppb	3.092	26911	50	98.5	90	110	
Sr	88	2	45	95.130	ppb	2.465	314977	100	95.1	90	110	
Zr	90	2	72	25.565	ppb	16.943	630	50	51.1	90	110	>+/-10%
Zr	90	1	72	18.968	ppb	6.613	2022	50	37.9	90	110	>+/-10%
Nb	93	2	72	92.452	ppb	1.313	550810	100	92.5	90	110	
Mo	95	2	115	48.300	ppb	3.125	167872	50	96.6	90	110	
Pd	105	2	115	49.848	ppb	3.026	243730	50	99.7	90	110	
Ag	107	2	115	48.222	ppb	2.112	487684	50	96.4	90	110	
Cd	111	2	115	48.868	ppb	0.731	72065	50	97.7	90	110	
Sn	120	2	115	48.700	ppb	1.554	219412	50	97.4	90	110	
Sb	121	2	115	47.869	ppb	1.834	185883	50	95.7	90	110	
Ba	137	2	115	47.976	ppb	1.375	59898	50	96.0	90	110	
W	182	2	165	48.085	ppb	1.645	327245	50	96.2	90	110	
Pt	195	2	165	49.089	ppb	2.819	217685	50	98.2	90	110	
Tl	205	2	165	49.572	ppb	4.604	546278	50	99.1	90	110	
Pb	208	2	165	49.123	ppb	5.475	737126	50	98.2	90	110	
Th	232	2	165	49.403	ppb	2.919	762951	50	98.8	90	110	
U	238	2	165	50.054	ppb	3.448	817762	50	100.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	677230	0.92	661091	102.44	60	125	
Sc (IS)	45	2	HMI He	3841858	0.70	3655967	105.08	60	125	
Sc IS)	45	3	No Gas	97682093	1.10	100875794	96.83	60	120	
Ge Internal Standard	72	1	HMI H2	20629264	1.86	20569859	100.29	60	125	
Ge Internal Standard	72	2	HMI He	4439310	1.94	4348567	102.09	60	125	
In Internal standard	115	2	HMI He	14196129	1.59	13519075	105.01	60	125	
Ho-165	165	2	HMI He	32601382	2.95	30887613	105.55	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5699924
 Data File Name 149_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T08:25:23-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-1.426	ppb	-635.6	86399	0.1	
Li	7	3	45	12.166	ppb	33.8	5439856	0.05	>RL
Be	9	1	6	0.016	ppb	61.1	12	0.5	
B	11	1	6	-4.306	ppb	-93.0	267	0.1	
Na	23	2	45	27.421	ppb	6.5	52143	25	>RL
Mg	24	2	45	2.509	ppb	23.3	1723	25	
Al	27	2	45	-0.530	ppb	-235.6	437	15	
K	39	2	45	2.430	ppb	436.1	88173	50	
Ca	44	2	45	2.508	ppb	63.0	223	25	
V	51	2	72	-0.216	ppb	-27.0	11684	1	
Cr	52	2	72	-0.001	ppb	-2297.0	1350	1	
Mn	55	2	72	0.054	ppb	61.8	443	0.5	
Fe	57	2	72	5.130	ppb	36.1	2267	25	
Co	59	2	72	0.032	ppb	102.0	5348	0.5	
Ni	60	2	72	0.074	ppb	27.4	993	1	
Cu	63	2	72	0.295	ppb	15.5	4884	1	
Zn	66	2	72	0.378	ppb	46.8	1193	5	
As	75	2	72	0.104	ppb	61.2	197	1	
Se	78	1	72	0.085	ppb	28.0	63	1	
Sr	88	2	45	0.021	ppb	90.7	277	1	
Zr	90	2	72	0.190	ppb	2638.0	297	1	
Zr	90	1	72	4.545	ppb	73.6	1515	1	>RL
Nb	93	2	72	3.793	ppb	4.6	25513	2	>RL
Mo	95	2	115	0.381	ppb	5.8	1440	0.5	
Pd	105	2	115	0.099	ppb	18.9	510	1	
Ag	107	2	115	0.035	ppb	25.5	430	1	
Cd	111	2	115	0.026	ppb	80.2	53	0.5	
Sn	120	2	115	0.151	ppb	28.9	1210	1	
Sb	121	2	115	0.123	ppb	21.2	553	1	
Ba	137	2	115	0.059	ppb	70.3	170	0.5	
W	182	2	165	0.115	ppb	5.4	3514	1	
Pt	195	2	165	0.034	ppb	11.2	150	1	
Tl	205	2	165	0.052	ppb	45.8	753	0.1	
Pb	208	2	165	0.060	ppb	1.4	1553	0.5	
Th	232	2	165	0.184	ppb	16.8	4074	1	
U	238	2	165	0.056	ppb	3.5	993	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	669132	0.99	661091	101.22	60	125	
Sc (IS)	45	2	HMI He	3702701	1.23	3655967	101.28	60	125	
Sc IS)	45	3	No Gas	98007485	0.81	100875794	97.16	60	120	
Ge Internal Standard	72	1	HMI H2	20569813	3.14	20569859	100.00	60	125	
Ge Internal Standard	72	2	HMI He	4480482	1.49	4348567	103.03	60	125	
In Internal standard	115	2	HMI He	13790885	2.08	13519075	102.01	60	125	
Ho-165	165	2	HMI He	31985008	4.79	30887613	103.55	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5699928
 Data File Name 150LCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T08:28:55-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	22.098	ppb	22.214	5529773	50	44.2	70	130	> +/-30%
Be	9	1	6	1.075	ppb	3.831	335	1	107.5	70	130	
Na	23	2	45	72.625	ppb	2.422	81130	50	145.3	70	130	> +/-30%
Mg	24	2	45	49.972	ppb	3.830	14836	50	99.9	70	130	
Al	27	2	45	50.045	ppb	7.833	4661	50	100.1	70	130	
K	39	2	45	100.869	ppb	10.115	113006	100	100.9	70	130	
Ca	44	2	45	38.768	ppb	20.347	953	50	77.5	70	130	
V	51	2	72	4.631	ppb	5.935	32904	5	92.6	70	130	
Cr	52	2	72	1.953	ppb	5.889	12244	2	97.7	70	130	
Mn	55	2	72	1.090	ppb	5.657	3154	1	109.0	70	130	
Fe	57	2	72	48.776	ppb	3.075	6988	50	97.6	70	130	
Co	59	2	72	0.927	ppb	6.758	13299	1	92.7	70	130	
Ni	60	2	72	1.527	ppb	8.141	4427	1.5	101.8	70	130	
Cu	63	2	72	1.928	ppb	6.408	15671	2	96.4	70	130	
Zn	66	2	72	9.848	ppb	4.265	10720	10	98.5	70	130	
As	75	2	72	4.555	ppb	1.532	3421	5	91.1	70	130	
Se	78	1	72	4.503	ppb	6.440	2478	5	90.1	70	130	
Sr	88	2	45	0.973	ppb	8.259	3270	1	97.3	70	130	
Zr	90	2	72	0.439	ppb	2118.185	300	0.5	87.8	70	130	
Zr	90	1	72	3.517	ppb	66.005	1488	0.5	703.5	70	130	> +/-30%
Nb	93	2	72	2.002	ppb	5.182	14817	2	100.1	70	130	
Mo	95	2	115	2.091	ppb	7.433	7325	2	104.6	70	130	
Pd	105	2	115	0.027	ppb	76.741	170	1	2.7	70	130	> +/-30%
Ag	107	2	115	4.656	ppb	3.162	46566	5	93.1	70	130	
Cd	111	2	115	0.932	ppb	4.487	1373	1	93.2	70	130	
Sn	120	2	115	9.111	ppb	1.674	41003	10	91.1	70	130	
Sb	121	2	115	1.756	ppb	10.143	6828	2	87.8	70	130	
Ba	137	2	115	0.991	ppb	6.237	1320	1	99.1	70	130	
W	182	2	165	4.706	ppb	1.895	34420	1	470.6	70	130	> +/-30%
Pt	195	2	165	0.007	ppb	64.813	30	1	0.7	70	130	> +/-30%
Tl	205	2	165	0.949	ppb	5.795	10604	1	94.9	70	130	
Pb	208	2	165	1.006	ppb	5.229	15687	1	100.6	70	130	
Th	232	2	165	1.743	ppb	4.940	28060	2	87.1	70	130	
U	238	2	165	1.001	ppb	5.265	16406	1	100.1	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	670146	0.24	661091	101.37	60	125	
Sc (IS)	45	2	HMI He	3656511	0.98	3655967	100.01	60	125	
Sc IS)	45	3	No Gas	96599850	1.23	100875794	95.76	60	120	
Ge Internal Standard	72	1	HMI H2	20653436	2.35	20569859	100.41	60	125	
Ge Internal Standard	72	2	HMI He	4487509	1.48	4348567	103.20	60	125	
In Internal standard	115	2	HMI He	14019095	1.98	13519075	103.70	60	125	
Ho-165	165	2	HMI He	32458546	2.36	30887613	105.09	60	125	

Blank Report

Sample Table

Sample Name mb 280-457081/1-a
 Data File Name 151_BLK.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T08:32:27-06:00
 Sample Type Blank
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref File Name 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	1	45	-3.679	ppb	-161.1056622	81871	0.1
Li	7	3	45	1.274	ppb	259.3507844	5095843	0.05
Be	9	1	6	0.018	ppb	146.147707	12	0.5
Na	23	2	45	26.447	ppb	12.30772108	50555	25
Mg	24	2	45	2.164	ppb	20.87466525	1600	25
Al	27	2	45	6.555	ppb	38.63897012	1013	15
K	39	2	45	-16.161	ppb	-114.4894579	81652	50
Ca	44	2	45	9.823	ppb	12.2037491	367	25
V	51	2	72	-1.402	ppb	-4.663465066	6408	1
Cr	52	2	72	0.224	ppb	19.0416465	2560	1
Mn	55	2	72	0.066	ppb	94.4121168	467	0.5
Fe	57	2	72	7.916	ppb	5.543610981	2530	25
Co	59	2	72	0.035	ppb	93.80055889	5298	0.5
Ni	60	2	72	0.007	ppb	244.2688561	823	1
Cu	63	2	72	-0.042	ppb	-94.91861972	2624	1
Zn	66	2	72	0.214	ppb	27.23835072	1013	5
As	75	2	72	0.026	ppb	66.76363764	139	1
Se	78	1	72	0.040	ppb	135.8318662	36	1
Sr	88	2	45	0.010	ppb	105.3485826	237	1
Zr	90	2	72	4.337	ppb	48.65304328	347	1
Zr	90	1	72	7.901	ppb	26.77496382	1562	1
Nb	93	2	72	2.214	ppb	9.814130865	15818	2
Mo	95	2	115	0.211	ppb	16.12309751	873	0.5
Pd	105	2	115	0.021	ppb	53.99769387	143	1
Ag	107	2	115	0.008	ppb	39.69604913	167	1
Cd	111	2	115	0.007	ppb	119.911145	27	0.5
Sn	120	2	115	0.114	ppb	14.25027206	1057	1
Sb	121	2	115	0.050	ppb	13.30626569	280	1
Ba	137	2	115	0.114	ppb	71.6959554	237	0.5
W	182	2	165	0.036	ppb	39.79702788	3054	1
Pt	195	2	165	0.007	ppb	89.37918678	30	1
Tl	205	2	165	0.011	ppb	17.84361201	320	0.1
Pb	208	2	165	0.040	ppb	21.91076498	1273	0.5
Th	232	2	165	0.511	ppb	11.98369139	9193	1
U	238	2	165	0.014	ppb	20.17476254	333	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	631427	1.22	661091	95.51	60	125	
Sc (IS)	45	2	HMI He	3638817	4.45	3655967	99.53	60	125	
Sc IS)	45	3	No Gas	95080138	0.92	100875794	94.25	60	120	
Ge Internal Standard	72	1	HMI H2	19672363	1.50	20569859	95.64	60	125	
Ge Internal Standard	72	2	HMI He	4412529	1.39	4348567	101.47	60	125	
In Internal standard	115	2	HMI He	13890435	3.12	13519075	102.75	60	125	
Ho-165	165	2	HMI He	32631899	2.71	30887613	105.65	60	125	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name lcs 280-457081/2-a
 Data File Name 152_LCS.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T08:36:00-06:00
 Sample Type LCS
 Dilution 1
 Analyst Denver Metals
 Comment 457081 6020A DOD5
 ISTD Ref File Name 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	74.322	74.322	ppb	13.950	6164666	400	18.6	80	120	> +/-20%
Be	9	1	6	38.789	38.789	ppb	1.239	11037	40	97.0	80	120	
Na	23	2	45	21.558	21.558	ppb	15.502	46611	40	53.9	80	120	> +/-20%
Mg	24	2	45	1.576	1.576	ppb	20.494	1413	40	3.9	80	120	> +/-20%
Al	27	2	45	392.961	392.961	ppb	2.094	32597	40	982.4	80	120	> +/-20%
K	39	2	45	-24.698	-24.698	ppb	-43.045	78200	40	-61.7	80	120	> +/-20%
Ca	44	2	45	143.301	143.301	ppb	5.287	3004	40	358.3	80	120	> +/-20%
V	51	2	72	35.826	35.826	ppb	3.656	166217	40	89.6	80	120	
Cr	52	2	72	39.051	39.051	ppb	4.756	214979	40	97.6	80	120	
Mn	55	2	72	39.147	39.147	ppb	0.957	100734	40	97.9	80	120	
Fe	57	2	72	390.135	390.135	ppb	3.140	43074	40	975.3	80	120	> +/-20%
Co	59	2	72	38.738	38.738	ppb	5.715	341935	40	96.8	80	120	
Ni	60	2	72	39.049	39.049	ppb	5.856	91233	40	97.6	80	120	
Cu	63	2	72	37.648	37.648	ppb	2.422	246972	40	94.1	80	120	
Zn	66	2	72	36.677	36.677	ppb	4.557	36983	40	91.7	80	120	
As	75	2	72	35.694	35.694	ppb	2.787	25482	40	89.2	80	120	
Se	78	1	72	36.350	36.350	ppb	1.957	19296	40	90.9	80	120	
Sr	88	2	45	40.439	40.439	ppb	4.221	124791	40	101.1	80	120	
Nb	93	2	72	1.428	1.428	ppb	1.124	11167	40	3.6	80	120	> +/-20%
Mo	95	2	115	38.460	38.460	ppb	1.871	127959	40	96.1	80	120	
Pd	105	2	115	0.024	0.024	ppb	50.791	150	40	0.1	80	120	> +/-20%
Ag	107	2	115	38.999	38.999	ppb	1.334	377567	40	97.5	80	120	
Cd	111	2	115	38.621	38.621	ppb	4.060	54511	40	96.6	80	120	
Sn	120	2	115	38.834	38.834	ppb	0.467	167568	40	97.1	80	120	
Sb	121	2	115	38.242	38.242	ppb	0.498	142154	40	95.6	80	120	
Ba	137	2	115	39.510	39.510	ppb	0.857	47232	40	98.8	80	120	
W	182	2	165	32.581	32.581	ppb	4.056	217414	40	81.5	80	120	
Pt	195	2	165	0.002	0.002	ppb	86.839	7	40	0.0	80	120	> +/-20%
Tl	205	2	165	39.544	39.544	ppb	7.187	425366	40	98.9	80	120	
Pb	208	2	165	36.910	36.910	ppb	6.529	540985	40	92.3	80	120	
Th	232	2	165	38.748	38.748	ppb	6.836	584254	40	96.9	80	120	
U	238	2	165	41.068	41.068	ppb	8.333	654485	40	102.7	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	623892	0.21	661091	94.37	60	125	
Sc (IS)	45	2	HMI He	3578759	2.51	3655967	97.89	60	125	
Sc IS)	45	3	No Gas	92840746	0.70	100875794	92.03	60	120	
Ge Internal Standard	72	1	HMI H2	20024249	0.34	20569859	97.35	60	125	
Ge Internal Standard	72	2	HMI He	4405981	2.87	4348567	101.32	60	125	
In Internal standard	115	2	HMI He	13586071	0.24	13519075	100.50	60	125	
Ho-165	165	2	HMI He	31871217	5.10	30887613	103.18	60	125	

Sample Report

Sample Table

Sample Name lcsd 280-457081/3-a
 Data File Name 153SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T08:39:34-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	74.952	ppb	74.952	10.20	6204116	40000	
Be	9	1	6	37.553	ppb	37.553	3.07	10600	2000	
B	11	1	6	1180.551	ppb	1180.551	5.48	10456	100	>LDR
Na	23	2	45	24.032	ppb	24.032	3.95	47784	400000	
Mg	24	2	45	2.971	ppb	2.971	28.46	1773	400000	
Al	27	2	45	411.881	ppb	411.881	3.21	33839	400000	
K	39	2	45	-16.159	ppb	-16.159	-10.70	79700	400000	
Ca	44	2	45	152.845	ppb	152.845	5.24	3164	400000	
V	51	2	72	35.976	ppb	35.976	3.45	165618	2000	
Cr	52	2	72	38.359	ppb	38.359	2.93	209665	5000	
Mn	55	2	72	39.189	ppb	39.189	0.84	100073	10000	
Fe	57	2	72	383.725	ppb	383.725	2.63	42071	400000	
Co	59	2	72	38.910	ppb	38.910	0.35	341138	2000	
Ni	60	2	72	39.485	ppb	39.485	0.69	91628	5000	
Cu	63	2	72	38.806	ppb	38.806	2.06	252595	5000	
Zn	66	2	72	37.325	ppb	37.325	3.73	37351	5000	
As	75	2	72	35.886	ppb	35.886	4.08	25424	2000	
Se	78	1	72	35.082	ppb	35.082	2.76	18700	2000	
Sr	88	2	45	40.500	ppb	40.500	3.46	123857	2000	
Zr	90	2	72	640.366	ppb	640.366	4.49	8609	1000	
Zr	90	1	72	560.396	ppb	560.396	7.22	20303	1000	
Nb	93	2	72	0.947	ppb	0.947	14.84	8282	200	
Mo	95	2	115	37.676	ppb	37.676	0.46	127775	2000	
Pd	105	2	115	0.025	ppb	0.025	50.34	160	100	
Ag	107	2	115	38.001	ppb	38.001	1.29	375014	100	
Cd	111	2	115	37.903	ppb	37.903	1.94	54527	2000	
Sn	120	2	115	37.775	ppb	37.775	0.70	166163	2000	
Sb	121	2	115	37.686	ppb	37.686	0.47	142793	1000	
Ba	137	2	115	37.660	ppb	37.660	0.75	45895	5000	
W	182	2	165	33.170	ppb	33.170	0.76	219700	100	
Pt	195	2	165	0.003	ppb	0.003	114.81	13	100	
Tl	205	2	165	37.726	ppb	37.726	3.45	403386	2000	
Pb	208	2	165	36.334	ppb	36.334	2.03	529190	5000	
Th	232	2	165	39.558	ppb	39.558	3.94	592626	2000	
U	238	2	165	41.474	ppb	41.474	4.62	657053	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	618804	0.72	661091	93.60	60	125	
Sc (IS)	45	2	HMI He	3545607	0.77	3655967	96.98	60	125	
Sc IS)	45	3	No Gas	93288428	1.66	100875794	92.48	60	120	
Ge Internal Standard	72	1	HMI H2	20113426	1.92	20569859	97.78	60	125	
Ge Internal Standard	72	2	HMI He	4372004	1.74	4348567	100.54	60	125	
In Internal standard	115	2	HMI He	13848505	0.87	13519075	102.44	60	125	
Ho-165	165	2	HMI He	31600043	0.72	30887613	102.31	60	125	

Sample Report

Sample Table

Sample Name 280-123159-a-3-b
 Data File Name 154SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T08:43:06-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	52.997	ppb	52.997	16.42	5728368	40000	
Be	9	1	6	0.033	ppb	0.033	54.08	15	2000	
B	11	1	6	956.164	ppb	956.164	6.40	8222	100	>LDR
Na	23	2	45	28596.190	ppb	28596.190	3.97	17643900	400000	
Mg	24	2	45	14892.070	ppb	14892.070	5.73	3871820	400000	
Al	27	2	45	43.356	ppb	43.356	8.81	3850	400000	
K	39	2	45	1873.090	ppb	1873.090	3.31	544981	400000	
Ca	44	2	45	13136.615	ppb	13136.615	2.25	249991	400000	
V	51	2	72	-1.412	ppb	-1.412	-5.22	6088	2000	
Cr	52	2	72	1.350	ppb	1.350	6.70	8359	5000	
Mn	55	2	72	25.655	ppb	25.655	2.54	63372	10000	
Fe	57	2	72	98.162	ppb	98.162	0.75	11601	400000	
Co	59	2	72	0.361	ppb	0.361	6.10	7795	2000	
Ni	60	2	72	1.614	ppb	1.614	10.63	4361	5000	
Cu	63	2	72	0.265	ppb	0.265	23.51	4417	5000	
Zn	66	2	72	1.883	ppb	1.883	18.28	2547	5000	
As	75	2	72	0.328	ppb	0.328	14.07	339	2000	
Se	78	1	72	1.988	ppb	1.988	6.44	1063	2000	
Sr	88	2	45	181.374	ppb	181.374	2.49	537166	2000	
Zr	90	2	72	66.584	ppb	66.584	10.85	1113	1000	
Zr	90	1	72	61.309	ppb	61.309	9.02	3364	1000	
Nb	93	2	72	0.558	ppb	0.558	5.49	5794	200	
Mo	95	2	115	0.500	ppb	0.500	8.49	1807	2000	
Pd	105	2	115	0.005	ppb	0.005	61.34	63	100	
Ag	107	2	115	0.032	ppb	0.032	29.31	393	100	
Cd	111	2	115	0.112	ppb	0.112	18.02	173	2000	
Sn	120	2	115	0.250	ppb	0.250	13.44	1613	2000	
Sb	121	2	115	0.646	ppb	0.646	1.30	2480	1000	
Ba	137	2	115	53.752	ppb	53.752	4.32	63923	5000	
W	182	2	165	0.087	ppb	0.087	47.99	3337	100	
Pt	195	2	165	0.002	ppb	0.002	173.21	10	100	
Tl	205	2	165	0.064	ppb	0.064	13.60	887	2000	
Pb	208	2	165	0.114	ppb	0.114	4.14	2353	5000	
Th	232	2	165	0.581	ppb	0.581	3.76	10117	2000	
U	238	2	165	0.157	ppb	0.157	4.09	2624	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	596762	1.13	661091	90.27	60	125	
Sc (IS)	45	2	HMI He	3438255	2.66	3655967	94.05	60	125	
Sc IS)	45	3	No Gas	91414914	0.88	100875794	90.62	60	120	
Ge Internal Standard	72	1	HMI H2	19868530	2.65	20569859	96.59	60	125	
Ge Internal Standard	72	2	HMI He	4222723	0.81	4348567	97.11	60	125	
In Internal standard	115	2	HMI He	13527717	1.74	13519075	100.06	60	125	
Ho-165	165	2	HMI He	32130632	5.83	30887613	104.02	60	125	

Sample Report

Sample Table

Sample Name 280-123159-a-10-b
 Data File Name 155SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T08:46:37-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	21.843	ppb	21.843	17.11	5342910	40000	
Be	9	1	6	0.039	ppb	0.039	150.96	17	2000	
B	11	1	6	520.842	ppb	520.842	3.84	4624	100	>LDR
Na	23	2	45	21288.414	ppb	21288.414	3.15	13344026	400000	
Mg	24	2	45	7067.702	ppb	7067.702	0.91	1866778	400000	
Al	27	2	45	27.963	ppb	27.963	23.91	2684	400000	
K	39	2	45	1265.988	ppb	1265.988	0.84	400656	400000	
Ca	44	2	45	5454.793	ppb	5454.793	2.07	105464	400000	
V	51	2	72	-1.341	ppb	-1.341	-2.53	6455	2000	
Cr	52	2	72	15.160	ppb	15.160	2.56	81707	5000	
Mn	55	2	72	5.245	ppb	5.245	4.70	13329	10000	
Fe	57	2	72	191.672	ppb	191.672	1.60	21340	400000	
Co	59	2	72	0.141	ppb	0.141	16.90	6018	2000	
Ni	60	2	72	11.632	ppb	11.632	4.04	26904	5000	
Cu	63	2	72	0.396	ppb	0.396	20.68	5284	5000	
Zn	66	2	72	3.466	ppb	3.466	5.45	4091	5000	
As	75	2	72	0.257	ppb	0.257	3.60	294	2000	
Se	78	1	72	3.960	ppb	3.960	6.46	2040	2000	
Sr	88	2	45	77.887	ppb	77.887	1.98	234211	2000	
Zr	90	2	72	24.899	ppb	24.899	31.59	597	1000	
Zr	90	1	72	33.780	ppb	33.780	25.89	2373	1000	
Nb	93	2	72	0.309	ppb	0.309	23.03	4441	200	
Mo	95	2	115	0.412	ppb	0.412	10.05	1500	2000	
Pd	105	2	115	0.005	ppb	0.005	198.79	63	100	
Ag	107	2	115	0.004	ppb	0.004	162.72	123	100	
Cd	111	2	115	0.151	ppb	0.151	35.83	227	2000	
Sn	120	2	115	0.118	ppb	0.118	21.28	1040	2000	
Sb	121	2	115	0.218	ppb	0.218	16.43	887	1000	
Ba	137	2	115	14.917	ppb	14.917	2.45	17627	5000	
W	182	2	165	0.039	ppb	0.039	100.06	2944	100	
Pt	195	2	165	0.005	ppb	0.005	100.19	20	100	
Tl	205	2	165	0.045	ppb	0.045	21.08	663	2000	
Pb	208	2	165	0.075	ppb	0.075	12.37	1730	5000	
Th	232	2	165	0.136	ppb	0.136	25.13	3280	2000	
U	238	2	165	0.071	ppb	0.071	9.04	1207	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	599699	1.29	661091	90.71	60	125	
Sc (IS)	45	2	HMI He	3488557	0.31	3655967	95.42	60	125	
Sc IS)	45	3	No Gas	93405008	0.94	100875794	92.59	60	120	
Ge Internal Standard	72	1	HMI H2	19296318	0.99	20569859	93.81	60	125	
Ge Internal Standard	72	2	HMI He	4268688	0.42	4348567	98.16	60	125	
In Internal standard	115	2	HMI He	13385367	0.70	13519075	99.01	60	125	
Ho-165	165	2	HMI He	31243672	0.86	30887613	101.15	60	125	

Sample Report

Sample Table

Sample Name 280-123159-a-20-d
 Data File Name 156SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T08:50:10-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	11.694	ppb	11.694	22.69	5077584	40000	
Be	9	1	6	0.071	ppb	0.071	70.71	25	2000	
B	11	1	6	578.733	ppb	578.733	0.99	5034	100	>LDR
Na	23	2	45	36802.671	ppb	36802.671	1.41	23323730	400000	
Mg	24	2	45	25000.094	ppb	25000.094	2.20	6679581	400000	
Al	27	2	45	33.717	ppb	33.717	8.46	3184	400000	
K	39	2	45	724.564	ppb	724.564	3.78	267721	400000	
Ca	44	2	45	26997.623	ppb	26997.623	1.99	527552	400000	
V	51	2	72	-1.434	ppb	-1.434	-5.36	5981	2000	
Cr	52	2	72	1.142	ppb	1.142	12.67	7238	5000	
Mn	55	2	72	11.385	ppb	11.385	4.46	28170	10000	
Fe	57	2	72	83.451	ppb	83.451	5.47	10063	400000	
Co	59	2	72	0.126	ppb	0.126	33.89	5804	2000	
Ni	60	2	72	5.853	ppb	5.853	7.03	13712	5000	
Cu	63	2	72	1.227	ppb	1.227	6.11	10360	5000	
Zn	66	2	72	5.779	ppb	5.779	8.35	6211	5000	
As	75	2	72	0.167	ppb	0.167	26.24	228	2000	
Se	78	1	72	0.467	ppb	0.467	12.38	248	2000	
Sr	88	2	45	160.799	ppb	160.799	1.51	489162	2000	
Zr	90	2	72	31.966	ppb	31.966	13.82	677	1000	
Zr	90	1	72	40.875	ppb	40.875	12.09	2543	1000	
Nb	93	2	72	0.193	ppb	0.193	50.45	3730	200	
Mo	95	2	115	0.115	ppb	0.115	44.63	530	2000	
Pd	105	2	115	0.021	ppb	0.021	24.97	137	100	
Ag	107	2	115	0.002	ppb	0.002	159.39	107	100	
Cd	111	2	115	0.146	ppb	0.146	20.98	220	2000	
Sn	120	2	115	0.186	ppb	0.186	5.56	1330	2000	
Sb	121	2	115	0.120	ppb	0.120	25.95	530	1000	
Ba	137	2	115	75.382	ppb	75.382	2.98	88971	5000	
W	182	2	165	-0.012	ppb	-0.012	-340.66	2694	100	
Pt	195	2	165	0.004	ppb	0.004	91.04	17	100	
Tl	205	2	165	0.018	ppb	0.018	98.12	390	2000	
Pb	208	2	165	0.185	ppb	0.185	5.82	3407	5000	
Th	232	2	165	0.055	ppb	0.055	9.55	2147	2000	
U	238	2	165	0.058	ppb	0.058	5.24	1030	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	590876	1.02	661091	89.38	60	125	
Sc (IS)	45	2	HMI He	3531137	1.94	3655967	96.59	60	125	
Sc IS)	45	3	No Gas	91615597	0.84	100875794	90.82	60	120	
Ge Internal Standard	72	1	HMI H2	18843562	0.81	20569859	91.61	60	125	
Ge Internal Standard	72	2	HMI He	4206266	1.86	4348567	96.73	60	125	
In Internal standard	115	2	HMI He	13426381	0.74	13519075	99.31	60	125	
Ho-165	165	2	HMI He	32213351	1.44	30887613	104.29	60	125	

Sample Report

Sample Table

Sample Name 280-123159-a-20-dSD@5
 Data File Name 157SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T08:53:43-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 140CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	9.469	ppb	9.469	39.08	5122548	40000	
Be	9	1	6	0.001	ppb	0.001	2445.52	7	2000	
B	11	1	6	140.460	ppb	140.460	11.16	1503	100	
Na	23	2	45	7838.013	ppb	7838.013	1.56	4941481	400000	
Mg	24	2	45	5358.262	ppb	5358.262	2.07	1418004	400000	
Al	27	2	45	4.744	ppb	4.744	22.00	833	400000	
K	39	2	45	140.076	ppb	140.076	7.73	117864	400000	
Ca	44	2	45	5598.547	ppb	5598.547	2.01	108409	400000	
V	51	2	72	-0.613	ppb	-0.613	-14.60	9446	2000	
Cr	52	2	72	0.267	ppb	0.267	22.35	2697	5000	
Mn	55	2	72	2.290	ppb	2.290	8.17	5958	10000	
Fe	57	2	72	14.584	ppb	14.584	38.05	3120	400000	
Co	59	2	72	0.057	ppb	0.057	62.44	5294	2000	
Ni	60	2	72	1.381	ppb	1.381	2.01	3867	5000	
Cu	63	2	72	0.684	ppb	0.684	8.56	7072	5000	
Zn	66	2	72	1.684	ppb	1.684	8.45	2377	5000	
As	75	2	72	0.070	ppb	0.070	29.71	165	2000	
Se	78	1	72	0.105	ppb	0.105	19.82	72	2000	
Sr	88	2	45	33.242	ppb	33.242	2.32	100232	2000	
Zr	90	2	72	3.474	ppb	3.474	114.99	323	1000	
Zr	90	1	72	0.682	ppb	0.682	559.55	1358	1000	
Nb	93	2	72	-0.084	ppb	-0.084	-67.86	2194	200	
Mo	95	2	115	0.048	ppb	0.048	28.06	310	2000	
Pd	105	2	115	0.028	ppb	0.028	42.21	170	100	
Ag	107	2	115	0.008	ppb	0.008	55.40	157	100	
Cd	111	2	115	0.038	ppb	0.038	49.24	70	2000	
Sn	120	2	115	0.058	ppb	0.058	39.20	783	2000	
Sb	121	2	115	0.050	ppb	0.050	49.63	273	1000	
Ba	137	2	115	15.306	ppb	15.306	1.16	18114	5000	
W	182	2	165	-0.057	ppb	-0.057	-93.69	2330	100	
Pt	195	2	165	0.001	ppb	0.001	173.21	7	100	
Tl	205	2	165	0.013	ppb	0.013	14.09	320	2000	
Pb	208	2	165	0.044	ppb	0.044	23.91	1297	5000	
Th	232	2	165	-0.047	ppb	-0.047	-14.21	580	2000	
U	238	2	165	0.023	ppb	0.023	37.17	457	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	623003	1.43	661091	94.24	60	125	
Sc (IS)	45	2	HMI He	3494531	1.40	3655967	95.58	60	125	
Sc IS)	45	3	No Gas	93088727	1.50	100875794	92.28	60	120	
Ge Internal Standard	72	1	HMI H2	20200478	1.96	20569859	98.20	60	125	
Ge Internal Standard	72	2	HMI He	4252862	0.42	4348567	97.80	60	125	
In Internal standard	115	2	HMI He	13405930	0.64	13519075	99.16	60	125	
Ho-165	165	2	HMI He	31454298	4.37	30887613	101.83	60	125	

Sample Report

Sample Table

Sample Name 280-123159-a-20-e.ms
 Data File Name 158SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T08:57:14-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	78.738	ppb	78.738	14.58	6195051	40000	
Be	9	1	6	39.464	ppb	39.464	1.47	10518	2000	
B	11	1	6	1668.981	ppb	1668.981	1.20	13852	100	>LDR
Na	23	2	45	35284.019	ppb	35284.019	1.55	22045172	400000	
Mg	24	2	45	23773.625	ppb	23773.625	3.96	6261169	400000	
Al	27	2	45	405.858	ppb	405.858	2.51	32740	400000	
K	39	2	45	709.840	ppb	709.840	4.24	260227	400000	
Ca	44	2	45	26674.350	ppb	26674.350	0.63	513934	400000	
V	51	2	72	36.278	ppb	36.278	3.77	158674	2000	
Cr	52	2	72	38.721	ppb	38.721	2.74	201190	5000	
Mn	55	2	72	48.867	ppb	48.867	3.44	118522	10000	
Fe	57	2	72	465.802	ppb	465.802	6.30	48194	400000	
Co	59	2	72	38.901	ppb	38.901	2.44	324171	2000	
Ni	60	2	72	44.102	ppb	44.102	3.34	97171	5000	
Cu	63	2	72	37.485	ppb	37.485	1.66	232056	5000	
Zn	66	2	72	39.267	ppb	39.267	1.18	37324	5000	
As	75	2	72	36.713	ppb	36.713	0.78	24734	2000	
Se	78	1	72	35.671	ppb	35.671	0.72	17836	2000	
Sr	88	2	45	198.449	ppb	198.449	3.25	594980	2000	
Zr	90	2	72	629.720	ppb	629.720	4.12	8055	1000	
Zr	90	1	72	550.302	ppb	550.302	2.62	18729	1000	
Nb	93	2	72	0.061	ppb	0.061	76.14	2944	200	
Mo	95	2	115	37.752	ppb	37.752	3.53	121680	2000	
Pd	105	2	115	0.010	ppb	0.010	82.08	87	100	
Ag	107	2	115	37.929	ppb	37.929	4.09	355675	100	
Cd	111	2	115	37.097	ppb	37.097	1.95	50735	2000	
Sn	120	2	115	36.487	ppb	36.487	2.43	152583	2000	
Sb	121	2	115	38.203	ppb	38.203	4.17	137602	1000	
Ba	137	2	115	112.267	ppb	112.267	3.71	129847	5000	
W	182	2	165	33.095	ppb	33.095	2.04	209878	100	
Pt	195	2	165	0.002	ppb	0.002	86.61	7	100	
Tl	205	2	165	36.781	ppb	36.781	4.09	376480	2000	
Pb	208	2	165	34.004	ppb	34.004	4.47	474139	5000	
Th	232	2	165	37.962	ppb	37.962	3.07	544589	2000	
U	238	2	165	39.903	ppb	39.903	2.78	605402	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	584364	0.80	661091	88.39	60	125	
Sc (IS)	45	2	HMI He	3481107	2.14	3655967	95.22	60	125	
Sc IS)	45	3	No Gas	92244589	1.82	100875794	91.44	60	120	
Ge Internal Standard	72	1	HMI H2	18861378	1.86	20569859	91.69	60	125	
Ge Internal Standard	72	2	HMI He	4156311	1.78	4348567	95.58	60	125	
In Internal standard	115	2	HMI He	13169963	3.08	13519075	97.42	60	125	
Ho-165	165	2	HMI He	30256656	0.88	30887613	97.96	60	125	

Sample Report

Sample Table

Sample Name 280-123159-a-20-f msd
 Data File Name 159SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T09:00:46-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	85.872	ppb	85.872	16.09	6198069	40000	
Be	9	1	6	40.231	ppb	40.231	2.19	10780	2000	
B	11	1	6	1777.780	ppb	1777.780	0.75	14816	100	>LDR
Na	23	2	45	38134.224	ppb	38134.224	1.79	23734954	400000	
Mg	24	2	45	25875.849	ppb	25875.849	3.45	6788141	400000	
Al	27	2	45	434.801	ppb	434.801	4.56	34891	400000	
K	39	2	45	759.110	ppb	759.110	2.72	271598	400000	
Ca	44	2	45	28240.998	ppb	28240.998	1.67	542025	400000	
V	51	2	72	36.797	ppb	36.797	5.75	164373	2000	
Cr	52	2	72	39.475	ppb	39.475	4.05	209726	5000	
Mn	55	2	72	50.093	ppb	50.093	4.95	124225	10000	
Fe	57	2	72	483.782	ppb	483.782	5.16	51135	400000	
Co	59	2	72	38.176	ppb	38.176	3.31	325475	2000	
Ni	60	2	72	43.213	ppb	43.213	4.82	97375	5000	
Cu	63	2	72	37.793	ppb	37.793	3.96	239214	5000	
Zn	66	2	72	39.175	ppb	39.175	1.64	38096	5000	
As	75	2	72	36.455	ppb	36.455	3.54	25113	2000	
Se	78	1	72	37.333	ppb	37.333	2.92	19035	2000	
Sr	88	2	45	205.467	ppb	205.467	4.82	613397	2000	
Zr	90	2	72	4303.937	ppb	4303.937	4.34	54667	1000	
Zr	90	1	72	3809.191	ppb	3809.191	1.26	124713	1000	
Nb	93	2	72	-0.013	ppb	-0.013	-575.84	2590	200	
Mo	95	2	115	38.714	ppb	38.714	1.81	125245	2000	
Pd	105	2	115	0.008	ppb	0.008	69.39	77	100	
Ag	107	2	115	36.391	ppb	36.391	2.13	342635	100	
Cd	111	2	115	38.335	ppb	38.335	2.44	52608	2000	
Sn	120	2	115	39.517	ppb	39.517	3.36	165754	2000	
Sb	121	2	115	39.706	ppb	39.706	3.12	143527	1000	
Ba	137	2	115	118.551	ppb	118.551	1.66	137644	5000	
W	182	2	165	33.343	ppb	33.343	0.31	217041	100	
Pt	195	2	165	0.002	ppb	0.002	99.21	10	100	
Tl	205	2	165	37.281	ppb	37.281	3.33	391578	2000	
Pb	208	2	165	34.173	ppb	34.173	1.48	489274	5000	
Th	232	2	165	38.676	ppb	38.676	2.22	569520	2000	
U	238	2	165	41.186	ppb	41.186	2.30	641326	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	587477	0.71	661091	88.86	60	125	
Sc (IS)	45	2	HMI He	3468757	3.34	3655967	94.88	60	125	
Sc IS)	45	3	No Gas	90587839	1.04	100875794	89.80	60	120	
Ge Internal Standard	72	1	HMI H2	19235313	0.99	20569859	93.51	60	125	
Ge Internal Standard	72	2	HMI He	4253248	3.63	4348567	97.81	60	125	
In Internal standard	115	2	HMI He	13214006	2.18	13519075	97.74	60	125	
Ho-165	165	2	HMI He	31056255	1.53	30887613	100.55	60	125	

Sample Report

Sample Table

Sample Name 280-123159-a-20-d PDS
 Data File Name 160SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T09:04:18-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	18.086	ppb	18.086	49.98	5119999	40000	
Be	9	1	6	224.197	ppb	224.197	1.90	59308	2000	
B	11	1	6	580.717	ppb	580.717	8.58	4957	100	>LDR
Na	23	2	45	35863.462	ppb	35863.462	4.15	22520895	400000	
Mg	24	2	45	24169.823	ppb	24169.823	5.77	6396548	400000	
Al	27	2	45	2027.742	ppb	2027.742	4.53	162554	400000	
K	39	2	45	746.000	ppb	746.000	6.23	270705	400000	
Ca	44	2	45	26447.341	ppb	26447.341	1.27	512373	400000	
V	51	2	72	215.705	ppb	215.705	1.53	898352	2000	
Cr	52	2	72	219.031	ppb	219.031	2.29	1148563	5000	
Mn	55	2	72	233.224	ppb	233.224	2.24	572914	10000	
Fe	57	2	72	2144.729	ppb	2144.729	1.96	219393	400000	
Co	59	2	72	225.703	ppb	225.703	3.68	1884477	2000	
Ni	60	2	72	218.884	ppb	218.884	2.40	486196	5000	
Cu	63	2	72	213.288	ppb	213.288	2.11	1326285	5000	
Zn	66	2	72	220.890	ppb	220.890	1.55	209418	5000	
As	75	2	72	208.521	ppb	208.521	2.38	141919	2000	
Se	78	1	72	199.514	ppb	199.514	1.64	101508	2000	
Sr	88	2	45	163.139	ppb	163.139	4.19	491680	2000	
Zr	90	2	72	113394.872	ppb	113394.872	4.77	1421060	1000	>LDR
Zr	90	1	72	99791.113	ppb	99791.113	2.20	3230035	1000	>LDR
Nb	93	2	72	4.410	ppb	4.410	2.97	27479	200	
Mo	95	2	115	197.365	ppb	197.365	0.81	645527	2000	
Pd	105	2	115	0.096	ppb	0.096	15.93	480	100	
Ag	107	2	115	41.761	ppb	41.761	1.33	397761	100	
Cd	111	2	115	213.861	ppb	213.861	1.10	296900	2000	
Sn	120	2	115	201.797	ppb	201.797	1.91	854333	2000	
Sb	121	2	115	206.784	ppb	206.784	2.90	755769	1000	
Ba	137	2	115	294.972	ppb	294.972	1.17	346313	5000	
W	182	2	165	213.763	ppb	213.763	4.34	1343896	100	
Pt	195	2	165	0.124	ppb	0.124	11.14	510	100	
Tl	205	2	165	229.976	ppb	229.976	3.63	2357808	2000	
Pb	208	2	165	209.206	ppb	209.206	4.51	2919373	5000	
Th	232	2	165	1.077	ppb	1.077	2.42	16673	2000	
U	238	2	165	230.489	ppb	230.489	4.61	3502044	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	580387	1.99	661091	87.79	60	125	
Sc (IS)	45	2	HMI He	3500921	3.16	3655967	95.76	60	125	
Sc IS)	45	3	No Gas	90567180	1.30	100875794	89.78	60	120	
Ge Internal Standard	72	1	HMI H2	19207234	1.45	20569859	93.38	60	125	
Ge Internal Standard	72	2	HMI He	4215850	1.99	4348567	96.95	60	125	
In Internal standard	115	2	HMI He	13368601	2.03	13519075	98.89	60	125	
Ho-165	165	2	HMI He	30313169	1.07	30887613	98.14	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5699926
 Data File Name 161_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T09:07:47-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	90.197	ppb	15.949	106877	100	90.2	90	110	
Li	7	3	45	95.970	ppb	0.621	6821006	100	96.0	90	110	
Be	9	1	6	48.922	ppb	0.446	14239	50	97.8	90	110	
B	11	1	6	75.719	ppb	17.717	967	50	151.4	90	110	>+ -10%
Na	23	2	45	973.963	ppb	2.067	659777	1000	97.4	90	110	
Mg	24	2	45	970.072	ppb	2.050	264561	1000	97.0	90	110	
Al	27	2	45	977.855	ppb	0.922	80726	1000	97.8	90	110	
K	39	2	45	944.817	ppb	2.445	329300	1000	94.5	90	110	
Ca	44	2	45	996.667	ppb	7.493	19985	1000	99.7	90	110	
V	51	2	72	47.210	ppb	2.890	215639	50	94.4	90	110	
Cr	52	2	72	48.256	ppb	4.651	265922	50	96.5	90	110	
Mn	55	2	72	49.743	ppb	3.803	128159	50	99.5	90	110	
Fe	57	2	72	963.979	ppb	5.538	104110	1000	96.4	90	110	
Co	59	2	72	48.167	ppb	2.828	425207	50	96.3	90	110	
Ni	60	2	72	48.608	ppb	2.403	113741	50	97.2	90	110	
Cu	63	2	72	48.506	ppb	4.851	317946	50	97.0	90	110	
Zn	66	2	72	47.209	ppb	1.811	47516	50	94.4	90	110	
As	75	2	72	48.928	ppb	3.184	34967	50	97.9	90	110	
Se	78	1	72	49.264	ppb	3.786	26001	50	98.5	90	110	
Sr	88	2	45	98.326	ppb	1.858	304277	100	98.3	90	110	
Zr	90	2	72	183.783	ppb	7.130	2700	50	367.6	90	110	>+ -10%
Zr	90	1	72	351.726	ppb	12.283	13112	50	703.5	90	110	>+ -10%
Nb	93	2	72	90.980	ppb	6.247	538646	100	91.0	90	110	
Mo	95	2	115	47.525	ppb	1.612	158513	50	95.1	90	110	
Pd	105	2	115	49.493	ppb	1.878	232252	50	99.0	90	110	
Ag	107	2	115	48.487	ppb	1.919	470677	50	97.0	90	110	
Cd	111	2	115	49.592	ppb	1.875	70180	50	99.2	90	110	
Sn	120	2	115	49.378	ppb	0.721	213518	50	98.8	90	110	
Sb	121	2	115	48.601	ppb	2.913	181100	50	97.2	90	110	
Ba	137	2	115	49.073	ppb	4.858	58775	50	98.1	90	110	
W	182	2	165	49.810	ppb	3.891	318423	50	99.6	90	110	
Pt	195	2	165	50.685	ppb	5.505	211143	50	101.4	90	110	
Tl	205	2	165	50.590	ppb	7.214	523650	50	101.2	90	110	
Pb	208	2	165	43.186	ppb	5.783	609088	50	86.4	90	110	>+ -10%
Th	232	2	165	49.858	ppb	3.073	723958	50	99.7	90	110	
U	238	2	165	51.754	ppb	3.191	794832	50	103.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	638245	1.35	661091	96.54	60	125	
Sc (IS)	45	2	HMI He	3591123	1.51	3655967	98.23	60	125	
Sc IS)	45	3	No Gas	97157023	1.47	100875794	96.31	60	120	
Ge Internal Standard	72	1	HMI H2	19921980	1.53	20569859	96.85	60	125	
Ge Internal Standard	72	2	HMI He	4417337	3.85	4348567	101.58	60	125	
In Internal standard	115	2	HMI He	13625959	2.09	13519075	100.79	60	125	
Ho-165	165	2	HMI He	30654697	4.16	30887613	99.25	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5699924
 Data File Name 162_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T09:11:20-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-6.719	ppb	-118.1	82818	0.1	
Li	7	3	45	9.233	ppb	70.0	5345992	0.05	>RL
Be	9	1	6	0.069	ppb	51.1	27	0.5	
B	11	1	6	27.229	ppb	39.2	540	0.1	>RL
Na	23	2	45	31.916	ppb	11.5	53858	25	>RL
Mg	24	2	45	5.390	ppb	13.1	2474	25	
Al	27	2	45	-1.273	ppb	-66.8	367	15	
K	39	2	45	-9.845	ppb	-97.2	82951	50	
Ca	44	2	45	4.234	ppb	35.7	253	25	
V	51	2	72	-0.228	ppb	-65.4	11477	1	
Cr	52	2	72	0.009	ppb	402.2	1390	1	
Mn	55	2	72	0.130	ppb	9.5	633	0.5	
Fe	57	2	72	2.138	ppb	11.2	1920	25	
Co	59	2	72	0.049	ppb	80.6	5431	0.5	
Ni	60	2	72	0.035	ppb	32.5	890	1	
Cu	63	2	72	0.297	ppb	16.0	4831	1	
Zn	66	2	72	0.451	ppb	26.7	1250	5	
As	75	2	72	0.059	ppb	20.7	163	1	
Se	78	1	72	0.079	ppb	45.0	59	1	
Sr	88	2	45	0.053	ppb	29.5	370	1	
Zr	90	2	72	4.758	ppb	38.4	353	1	>RL
Zr	90	1	72	27.444	ppb	23.8	2286	1	>RL
Nb	93	2	72	3.570	ppb	9.8	23834	2	>RL
Mo	95	2	115	0.192	ppb	25.2	787	0.5	
Pd	105	2	115	0.052	ppb	18.5	283	1	
Ag	107	2	115	0.062	ppb	20.3	683	1	
Cd	111	2	115	0.031	ppb	21.3	60	0.5	
Sn	120	2	115	0.228	ppb	24.7	1517	1	
Sb	121	2	115	0.184	ppb	6.1	770	1	
Ba	137	2	115	0.130	ppb	31.7	250	0.5	
W	182	2	165	0.156	ppb	26.8	3731	1	
Pt	195	2	165	0.027	ppb	27.2	117	1	
Tl	205	2	165	0.049	ppb	19.6	713	0.1	
Pb	208	2	165	0.049	ppb	24.0	1370	0.5	
Th	232	2	165	0.206	ppb	9.3	4347	1	
U	238	2	165	0.090	ppb	16.4	1523	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	643992	1.64	661091	97.41	60	125	
Sc (IS)	45	2	HMI He	3617914	1.89	3655967	98.96	60	125	
Sc IS)	45	3	No Gas	97211637	1.38	100875794	96.37	60	120	
Ge Internal Standard	72	1	HMI H2	20372199	1.63	20569859	99.04	60	125	
Ge Internal Standard	72	2	HMI He	4420819	1.67	4348567	101.66	60	125	
In Internal standard	115	2	HMI He	13511455	1.44	13519075	99.94	60	125	
Ho-165	165	2	HMI He	31515193	1.66	30887613	102.03	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5699928
 Data File Name 163LCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T09:14:53-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	17.306	ppb	9.572	5380761	50	34.6	70	130	> +/-30%
Be	9	1	6	1.043	ppb	10.499	312	1	104.3	70	130	
Na	23	2	45	72.813	ppb	1.533	79489	50	145.6	70	130	> +/-30%
Mg	24	2	45	50.401	ppb	5.189	14619	50	100.8	70	130	
Al	27	2	45	47.667	ppb	4.875	4361	50	95.3	70	130	
K	39	2	45	89.802	ppb	14.629	107674	100	89.8	70	130	
Ca	44	2	45	33.769	ppb	24.531	833	50	67.5	70	130	> +/-30%
V	51	2	72	4.409	ppb	3.479	30841	5	88.2	70	130	
Cr	52	2	72	1.835	ppb	3.082	11194	2	91.8	70	130	
Mn	55	2	72	1.028	ppb	3.928	2887	1	102.8	70	130	
Fe	57	2	72	47.922	ppb	5.127	6658	50	95.8	70	130	
Co	59	2	72	0.959	ppb	0.544	13115	1	95.9	70	130	
Ni	60	2	72	1.528	ppb	12.530	4277	1.5	101.8	70	130	
Cu	63	2	72	2.041	ppb	3.548	15864	2	102.1	70	130	
Zn	66	2	72	9.895	ppb	5.295	10390	10	98.9	70	130	
As	75	2	72	4.644	ppb	5.269	3364	5	92.9	70	130	
Se	78	1	72	4.842	ppb	4.767	2598	5	96.8	70	130	
Sr	88	2	45	0.989	ppb	6.991	3247	1	98.9	70	130	
Zr	90	2	72	5.328	ppb	89.380	353	0.5	1065.6	70	130	> +/-30%
Zr	90	1	72	8.326	ppb	50.527	1615	0.5	1665.3	70	130	> +/-30%
Nb	93	2	72	1.763	ppb	6.145	12925	2	88.2	70	130	
Mo	95	2	115	2.112	ppb	4.035	7055	2	105.6	70	130	
Pd	105	2	115	0.021	ppb	47.541	137	1	2.1	70	130	> +/-30%
Ag	107	2	115	4.936	ppb	0.588	47067	5	98.7	70	130	
Cd	111	2	115	0.906	ppb	8.870	1273	1	90.6	70	130	
Sn	120	2	115	9.366	ppb	2.578	40157	10	93.7	70	130	
Sb	121	2	115	1.855	ppb	6.265	6865	2	92.7	70	130	
Ba	137	2	115	1.132	ppb	7.087	1423	1	113.2	70	130	
W	182	2	165	4.591	ppb	3.798	32185	1	459.1	70	130	> +/-30%
Pt	195	2	165	0.006	ppb	96.560	27	1	0.6	70	130	> +/-30%
Tl	205	2	165	0.862	ppb	6.827	9230	1	86.2	70	130	
Pb	208	2	165	0.819	ppb	3.757	12346	1	81.9	70	130	
Th	232	2	165	1.725	ppb	5.812	26588	2	86.3	70	130	
U	238	2	165	1.013	ppb	6.574	15859	1	101.3	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	641992	0.71	661091	97.11	60	125	
Sc (IS)	45	2	HMI He	3577341	2.38	3655967	97.85	60	125	
Sc IS)	45	3	No Gas	95387853	0.66	100875794	94.56	60	120	
Ge Internal Standard	72	1	HMI H2	20147628	3.42	20569859	97.95	60	125	
Ge Internal Standard	72	2	HMI He	4332650	1.02	4348567	99.63	60	125	
In Internal standard	115	2	HMI He	13361885	0.41	13519075	98.84	60	125	
Ho-165	165	2	HMI He	31076882	3.93	30887613	100.61	60	125	

Sample Report

Sample Table

Sample Name 280-123205-a-5-d
 Data File Name 164SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T09:18:27-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-3.211	ppb	-3.211	-123.20	4950424	40000	
Be	9	1	6	0.027	ppb	0.027	39.43	13	2000	
B	11	1	6	1806.557	ppb	1806.557	3.25	15233	100	>LDR
Na	23	2	45	27474.728	ppb	27474.728	0.59	17634305	400000	
Mg	24	2	45	27294.398	ppb	27294.398	1.45	7382406	400000	
Al	27	2	45	46.876	ppb	46.876	2.17	4294	400000	
K	39	2	45	348.532	ppb	348.532	0.77	174238	400000	
Ca	44	2	45	56368.826	ppb	56368.826	0.28	1114920	400000	
V	51	2	72	-0.857	ppb	-0.857	-14.01	8392	2000	
Cr	52	2	72	17.619	ppb	17.619	5.82	93875	5000	
Mn	55	2	72	3.620	ppb	3.620	9.81	9196	10000	
Fe	57	2	72	197.133	ppb	197.133	2.78	21737	400000	
Co	59	2	72	0.183	ppb	0.183	14.81	6328	2000	
Ni	60	2	72	4.470	ppb	4.470	3.50	10727	5000	
Cu	63	2	72	0.497	ppb	0.497	14.42	5871	5000	
Zn	66	2	72	0.703	ppb	0.703	11.69	1437	5000	
As	75	2	72	0.216	ppb	0.216	15.42	263	2000	
Se	78	1	72	0.223	ppb	0.223	19.37	131	2000	
Sr	88	2	45	158.644	ppb	158.644	1.33	488522	2000	
Zr	90	2	72	55.938	ppb	55.938	12.00	983	1000	
Zr	90	1	72	46.867	ppb	46.867	11.69	2833	1000	
Nb	93	2	72	2.283	ppb	2.283	10.32	15551	200	
Mo	95	2	115	2.890	ppb	2.890	4.00	9593	2000	
Pd	105	2	115	0.019	ppb	0.019	25.18	127	100	
Ag	107	2	115	0.022	ppb	0.022	14.46	293	100	
Cd	111	2	115	-0.007	ppb	-0.007	-121.31	7	2000	
Sn	120	2	115	0.152	ppb	0.152	3.95	1180	2000	
Sb	121	2	115	0.132	ppb	0.132	22.91	573	1000	
Ba	137	2	115	43.292	ppb	43.292	3.73	50850	5000	
W	182	2	165	0.055	ppb	0.055	62.63	2987	100	
Pt	195	2	165	0.008	ppb	0.008	62.84	33	100	
Tl	205	2	165	0.033	ppb	0.033	24.36	527	2000	
Pb	208	2	165	0.069	ppb	0.069	15.90	1610	5000	
Th	232	2	165	0.559	ppb	0.559	6.31	9335	2000	
U	238	2	165	6.553	ppb	6.553	3.54	100584	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	594596	0.93	661091	89.94	60	125	
Sc (IS)	45	2	HMI He	3573931	1.26	3655967	97.76	60	125	
Sc IS)	45	3	No Gas	93734800	1.56	100875794	92.92	60	120	
Ge Internal Standard	72	1	HMI H2	19536105	0.52	20569859	94.97	60	125	
Ge Internal Standard	72	2	HMI He	4234403	3.40	4348567	97.37	60	125	
In Internal standard	115	2	HMI He	13356589	1.63	13519075	98.80	60	125	
Ho-165	165	2	HMI He	30599793	1.95	30887613	99.07	60	125	

Sample Report

Sample Table

Sample Name 280-123205-a-5-e.ms
 Data File Name 165SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T09:21:59-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	60.955	ppb	60.955	6.65	6132767	40000	
Be	9	1	6	39.762	ppb	39.762	0.87	10783	2000	
B	11	1	6	2984.784	ppb	2984.784	1.63	24994	100	>LDR
Na	23	2	45	27178.749	ppb	27178.749	1.05	17579597	400000	
Mg	24	2	45	26808.290	ppb	26808.290	0.63	7307813	400000	
Al	27	2	45	417.404	ppb	417.404	3.48	34821	400000	
K	39	2	45	339.671	ppb	339.671	1.35	173289	400000	
Ca	44	2	45	56093.661	ppb	56093.661	0.46	1118142	400000	
V	51	2	72	36.835	ppb	36.835	2.65	168933	2000	
Cr	52	2	72	55.021	ppb	55.021	1.35	299545	5000	
Mn	55	2	72	41.100	ppb	41.100	2.46	104681	10000	
Fe	57	2	72	552.828	ppb	552.828	2.61	59736	400000	
Co	59	2	72	37.001	ppb	37.001	1.19	323887	2000	
Ni	60	2	72	40.986	ppb	40.986	2.43	94842	5000	
Cu	63	2	72	36.727	ppb	36.727	1.79	238649	5000	
Zn	66	2	72	36.100	ppb	36.100	2.50	36068	5000	
As	75	2	72	35.849	ppb	35.849	3.45	25342	2000	
Se	78	1	72	34.349	ppb	34.349	2.36	17752	2000	
Sr	88	2	45	195.575	ppb	195.575	1.15	606857	2000	
Zr	90	2	72	626.208	ppb	626.208	5.32	8406	1000	
Zr	90	1	72	587.788	ppb	587.788	4.93	20604	1000	
Nb	93	2	72	1.286	ppb	1.286	8.98	10237	200	
Mo	95	2	115	41.216	ppb	41.216	2.54	134240	2000	
Pd	105	2	115	0.013	ppb	0.013	59.40	100	100	
Ag	107	2	115	37.724	ppb	37.724	3.10	357450	100	
Cd	111	2	115	38.029	ppb	38.029	4.53	52531	2000	
Sn	120	2	115	37.741	ppb	37.741	3.38	159444	2000	
Sb	121	2	115	38.145	ppb	38.145	1.50	138813	1000	
Ba	137	2	115	80.954	ppb	80.954	1.65	94651	5000	
W	182	2	165	31.512	ppb	31.512	5.51	204153	100	
Pt	195	2	165	0.000	ppb	0.000	#DIV/0!	0	100	
Tl	205	2	165	35.555	ppb	35.555	4.14	372330	2000	
Pb	208	2	165	30.973	ppb	30.973	4.36	441191	5000	
Th	232	2	165	36.434	ppb	36.434	4.19	533912	2000	
U	238	2	165	45.373	ppb	45.373	4.97	702914	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	594631	1.34	661091	89.95	60	125	
Sc (IS)	45	2	HMI He	3601883	1.48	3655967	98.52	60	125	
Sc IS)	45	3	No Gas	95735767	1.18	100875794	94.90	60	120	
Ge Internal Standard	72	1	HMI H2	19498610	1.52	20569859	94.79	60	125	
Ge Internal Standard	72	2	HMI He	4361742	1.35	4348567	100.30	60	125	
In Internal standard	115	2	HMI He	13299826	1.11	13519075	98.38	60	125	
Ho-165	165	2	HMI He	30938308	4.66	30887613	100.16	60	125	

Sample Report

Sample Table

Sample Name 280-123205-a-5-f msd
 Data File Name 166SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T09:25:31-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	70.652	ppb	70.652	9.59	6232368	40000	
Be	9	1	6	39.857	ppb	39.857	3.77	10830	2000	
B	11	1	6	3192.570	ppb	3192.570	2.35	26773	100	>LDR
Na	23	2	45	27693.115	ppb	27693.115	2.74	18300071	400000	
Mg	24	2	45	26900.605	ppb	26900.605	2.84	7491458	400000	
Al	27	2	45	439.368	ppb	439.368	4.54	37423	400000	
K	39	2	45	353.416	ppb	353.416	3.97	180688	400000	
Ca	44	2	45	56038.996	ppb	56038.996	1.98	1141221	400000	
V	51	2	72	35.983	ppb	35.983	1.78	171342	2000	
Cr	52	2	72	52.654	ppb	52.654	4.38	296987	5000	
Mn	55	2	72	40.497	ppb	40.497	3.00	106893	10000	
Fe	57	2	72	529.215	ppb	529.215	1.14	59385	400000	
Co	59	2	72	36.605	ppb	36.605	2.62	332077	2000	
Ni	60	2	72	40.809	ppb	40.809	2.12	97894	5000	
Cu	63	2	72	35.426	ppb	35.426	0.90	238774	5000	
Zn	66	2	72	34.540	ppb	34.540	1.32	35827	5000	
As	75	2	72	35.855	ppb	35.855	2.83	26270	2000	
Se	78	1	72	34.414	ppb	34.414	5.27	18234	2000	
Sr	88	2	45	199.700	ppb	199.700	2.00	633213	2000	
Zr	90	2	72	671.209	ppb	671.209	2.63	9326	1000	
Zr	90	1	72	711.722	ppb	711.722	25.73	25241	1000	
Nb	93	2	72	0.742	ppb	0.742	8.71	7318	200	
Mo	95	2	115	42.024	ppb	42.024	1.47	138730	2000	
Pd	105	2	115	0.014	ppb	0.014	80.30	103	100	
Ag	107	2	115	37.173	ppb	37.173	3.01	357108	100	
Cd	111	2	115	37.013	ppb	37.013	1.47	51839	2000	
Sn	120	2	115	37.640	ppb	37.640	1.19	161191	2000	
Sb	121	2	115	38.437	ppb	38.437	1.18	141784	1000	
Ba	137	2	115	79.393	ppb	79.393	3.50	94110	5000	
W	182	2	165	31.467	ppb	31.467	0.93	208384	100	
Pt	195	2	165	0.004	ppb	0.004	92.25	17	100	
Tl	205	2	165	35.202	ppb	35.202	4.04	375879	2000	
Pb	208	2	165	31.767	ppb	31.767	1.98	462447	5000	
Th	232	2	165	36.657	ppb	36.657	0.54	548937	2000	
U	238	2	165	45.164	ppb	45.164	1.09	714974	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	595877	0.98	661091	90.14	60	125	
Sc (IS)	45	2	HMI He	3680351	1.27	3655967	100.67	60	125	
Sc IS)	45	3	No Gas	94765033	1.58	100875794	93.94	60	120	
Ge Internal Standard	72	1	HMI H2	20008341	3.13	20569859	97.27	60	125	
Ge Internal Standard	72	2	HMI He	4522025	3.11	4348567	103.99	60	125	
In Internal standard	115	2	HMI He	13482923	1.02	13519075	99.73	60	125	
Ho-165	165	2	HMI He	31573734	1.64	30887613	102.22	60	125	

Sample Report

Sample Table

Sample Name 280-123205-a-13-b
 Data File Name 167SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T09:29:02-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	73.310	ppb	73.310	7.39	6222289	40000	
Be	9	1	6	0.057	ppb	0.057	48.73	22	2000	
B	11	1	6	1232.331	ppb	1232.331	0.22	10543	100	>LDR
Na	23	2	45	52571.708	ppb	52571.708	1.27	33859303	400000	
Mg	24	2	45	27173.458	ppb	27173.458	0.68	7382665	400000	
Al	27	2	45	28.275	ppb	28.275	17.11	2784	400000	
K	39	2	45	2204.806	ppb	2204.806	2.87	654910	400000	
Ca	44	2	45	23910.757	ppb	23910.757	2.18	475037	400000	
V	51	2	72	-1.042	ppb	-1.042	-8.00	7915	2000	
Cr	52	2	72	6.383	ppb	6.383	4.29	36151	5000	
Mn	55	2	72	89.139	ppb	89.139	3.18	228183	10000	
Fe	57	2	72	119.396	ppb	119.396	3.04	14303	400000	
Co	59	2	72	0.448	ppb	0.448	7.60	8856	2000	
Ni	60	2	72	9.821	ppb	9.821	2.31	23489	5000	
Cu	63	2	72	0.397	ppb	0.397	5.47	5444	5000	
Zn	66	2	72	2.487	ppb	2.487	5.66	3244	5000	
As	75	2	72	0.324	ppb	0.324	11.73	350	2000	
Se	78	1	72	3.549	ppb	3.549	9.84	1859	2000	
Sr	88	2	45	242.611	ppb	242.611	2.25	750152	2000	
Zr	90	2	72	32.297	ppb	32.297	25.03	710	1000	
Zr	90	1	72	35.372	ppb	35.372	11.92	2463	1000	
Nb	93	2	72	0.324	ppb	0.324	7.26	4654	200	
Mo	95	2	115	1.316	ppb	1.316	6.78	4414	2000	
Pd	105	2	115	0.013	ppb	0.013	9.18	97	100	
Ag	107	2	115	0.034	ppb	0.034	16.50	407	100	
Cd	111	2	115	0.056	ppb	0.056	71.18	93	2000	
Sn	120	2	115	0.227	ppb	0.227	18.07	1490	2000	
Sb	121	2	115	0.584	ppb	0.584	5.61	2207	1000	
Ba	137	2	115	30.141	ppb	30.141	1.88	35177	5000	
W	182	2	165	0.026	ppb	0.026	125.74	2804	100	
Pt	195	2	165	0.002	ppb	0.002	173.21	10	100	
Tl	205	2	165	0.136	ppb	0.136	5.82	1593	2000	
Pb	208	2	165	0.100	ppb	0.100	16.85	2047	5000	
Th	232	2	165	0.475	ppb	0.475	7.52	8136	2000	
U	238	2	165	0.160	ppb	0.160	3.67	2557	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	598273	0.23	661091	90.50	60	125	
Sc (IS)	45	2	HMI He	3589891	1.67	3655967	98.19	60	125	
Sc IS)	45	3	No Gas	93940363	0.90	100875794	93.12	60	120	
Ge Internal Standard	72	1	HMI H2	19612726	2.43	20569859	95.35	60	125	
Ge Internal Standard	72	2	HMI He	4390078	1.15	4348567	100.95	60	125	
In Internal standard	115	2	HMI He	13256665	2.59	13519075	98.06	60	125	
Ho-165	165	2	HMI He	30640149	0.82	30887613	99.20	60	125	

Sample Report

Sample Table

Sample Name 280-123221-e-2-b
 Data File Name 168SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T09:32:34-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	10.083	ppb	10.083	23.57	5148198	40000	
Be	9	1	6	0.002	ppb	0.002	1272.08	7	2000	
B	11	1	6	710.617	ppb	710.617	9.10	6181	100	>LDR
Na	23	2	45	5828.231	ppb	5828.231	7.53	3847763	400000	
Mg	24	2	45	20013.651	ppb	20013.651	7.45	5530096	400000	
Al	27	2	45	31.496	ppb	31.496	4.81	3110	400000	
K	39	2	45	1214.071	ppb	1214.071	6.05	405860	400000	
Ca	44	2	45	52738.265	ppb	52738.265	3.50	1066420	400000	
V	51	2	72	-1.537	ppb	-1.537	-3.12	5918	2000	
Cr	52	2	72	0.279	ppb	0.279	20.82	2910	5000	
Mn	55	2	72	331.477	ppb	331.477	1.67	865128	10000	
Fe	57	2	72	974.473	ppb	974.473	2.18	106854	400000	
Co	59	2	72	0.003	ppb	0.003	525.81	5097	2000	
Ni	60	2	72	0.069	ppb	0.069	177.05	983	5000	
Cu	63	2	72	-0.031	ppb	-0.031	-24.42	2734	5000	
Zn	66	2	72	0.468	ppb	0.468	32.10	1283	5000	
As	75	2	72	5.963	ppb	5.963	3.27	4433	2000	
Se	78	1	72	0.007	ppb	0.007	184.39	19	2000	
Sr	88	2	45	132.952	ppb	132.952	4.69	418486	2000	
Zr	90	2	72	37.222	ppb	37.222	12.57	790	1000	
Zr	90	1	72	33.827	ppb	33.827	19.14	2406	1000	
Nb	93	2	72	0.119	ppb	0.119	77.79	3520	200	
Mo	95	2	115	1.535	ppb	1.535	6.86	5244	2000	
Pd	105	2	115	0.010	ppb	0.010	14.73	87	100	
Ag	107	2	115	0.013	ppb	0.013	42.73	207	100	
Cd	111	2	115	0.010	ppb	0.010	196.59	30	2000	
Sn	120	2	115	0.134	ppb	0.134	12.58	1120	2000	
Sb	121	2	115	0.190	ppb	0.190	2.08	797	1000	
Ba	137	2	115	82.765	ppb	82.765	4.08	98685	5000	
W	182	2	165	-0.007	ppb	-0.007	-536.03	2640	100	
Pt	195	2	165	0.000	ppb	0.000	#DIV/0!	0	100	
Tl	205	2	165	0.012	ppb	0.012	26.25	310	2000	
Pb	208	2	165	0.085	ppb	0.085	12.44	1860	5000	
Th	232	2	165	0.129	ppb	0.129	9.72	3164	2000	
U	238	2	165	0.988	ppb	0.988	3.10	15552	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	596291	1.65	661091	90.20	60	125	
Sc (IS)	45	2	HMI He	3656497	3.25	3655967	100.01	60	125	
Sc IS)	45	3	No Gas	93364206	0.81	100875794	92.55	60	120	
Ge Internal Standard	72	1	HMI H2	19558292	0.87	20569859	95.08	60	125	
Ge Internal Standard	72	2	HMI He	4480082	1.03	4348567	103.02	60	125	
In Internal standard	115	2	HMI He	13574455	2.50	13519075	100.41	60	125	
Ho-165	165	2	HMI He	31204079	3.53	30887613	101.02	60	125	

Sample Report

Sample Table

Sample Name 280-123221-j-4-b
 Data File Name 169SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T09:36:06-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	10.042	ppb	10.042	49.98	5149328	40000	
Be	9	1	6	-0.004	ppb	-0.004	-865.75	5	2000	
B	11	1	6	873.375	ppb	873.375	4.59	7525	100	>LDR
Na	23	2	45	10451.385	ppb	10451.385	1.53	6909874	400000	
Mg	24	2	45	30993.176	ppb	30993.176	1.33	8608144	400000	
Al	27	2	45	4.503	ppb	4.503	39.45	857	400000	
K	39	2	45	1653.737	ppb	1653.737	2.51	523869	400000	
Ca	44	2	45	55962.315	ppb	55962.315	2.14	1136335	400000	
V	51	2	72	-1.605	ppb	-1.605	-2.97	5514	2000	
Cr	52	2	72	0.277	ppb	0.277	8.67	2844	5000	
Mn	55	2	72	242.268	ppb	242.268	2.17	620505	10000	
Fe	57	2	72	1884.079	ppb	1884.079	0.32	201189	400000	
Co	59	2	72	0.287	ppb	0.287	24.30	7472	2000	
Ni	60	2	72	0.066	ppb	0.066	95.15	957	5000	
Cu	63	2	72	-0.035	ppb	-0.035	-89.51	2657	5000	
Zn	66	2	72	1.410	ppb	1.410	11.89	2187	5000	
As	75	2	72	9.190	ppb	9.190	1.15	6639	2000	
Se	78	1	72	0.014	ppb	0.014	120.73	23	2000	
Sr	88	2	45	139.800	ppb	139.800	1.22	442047	2000	
Zr	90	2	72	860.837	ppb	860.837	3.26	11547	1000	
Zr	90	1	72	797.083	ppb	797.083	2.12	27890	1000	
Nb	93	2	72	0.004	ppb	0.004	647.37	2780	200	
Mo	95	2	115	0.816	ppb	0.816	4.98	2814	2000	
Pd	105	2	115	0.005	ppb	0.005	126.98	63	100	
Ag	107	2	115	0.005	ppb	0.005	64.35	133	100	
Cd	111	2	115	0.010	ppb	0.010	263.87	30	2000	
Sn	120	2	115	0.097	ppb	0.097	27.11	947	2000	
Sb	121	2	115	0.080	ppb	0.080	48.26	380	1000	
Ba	137	2	115	42.524	ppb	42.524	0.88	49928	5000	
W	182	2	165	-0.016	ppb	-0.016	-119.07	2600	100	
Pt	195	2	165	0.002	ppb	0.002	173.21	7	100	
Tl	205	2	165	0.014	ppb	0.014	27.00	333	2000	
Pb	208	2	165	0.039	ppb	0.039	23.46	1207	5000	
Th	232	2	165	0.018	ppb	0.018	66.67	1530	2000	
U	238	2	165	0.902	ppb	0.902	3.91	14257	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	596260	0.80	661091	90.19	60	125	
Sc (IS)	45	2	HMI He	3670050	2.04	3655967	100.39	60	125	
Sc IS)	45	3	No Gas	93397500	1.10	100875794	92.59	60	120	
Ge Internal Standard	72	1	HMI H2	19797017	4.37	20569859	96.24	60	125	
Ge Internal Standard	72	2	HMI He	4396473	1.43	4348567	101.10	60	125	
In Internal standard	115	2	HMI He	13344959	0.49	13519075	98.71	60	125	
Ho-165	165	2	HMI He	31360788	4.57	30887613	101.53	60	125	

Sample Report

Sample Table

Sample Name 280-123221-f-5-b
 Data File Name 170SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T09:39:37-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	13.166	ppb	13.166	23.89	5135421	40000	
Be	9	1	6	-0.016	ppb	-0.016	-66.98	2	2000	
B	11	1	6	820.155	ppb	820.155	4.33	6988	100	>LDR
Na	23	2	45	10316.626	ppb	10316.626	1.33	6767707	400000	
Mg	24	2	45	30467.935	ppb	30467.935	2.56	8396012	400000	
Al	27	2	45	1.918	ppb	1.918	55.66	633	400000	
K	39	2	45	1646.521	ppb	1646.521	1.67	518043	400000	
Ca	44	2	45	55133.605	ppb	55133.605	2.25	1111036	400000	
V	51	2	72	-1.602	ppb	-1.602	-7.27	5504	2000	
Cr	52	2	72	0.211	ppb	0.211	13.93	2474	5000	
Mn	55	2	72	239.791	ppb	239.791	2.53	611960	10000	
Fe	57	2	72	1808.588	ppb	1808.588	0.51	192465	400000	
Co	59	2	72	0.243	ppb	0.243	15.23	7065	2000	
Ni	60	2	72	0.109	ppb	0.109	150.26	1053	5000	
Cu	63	2	72	-0.041	ppb	-0.041	-15.42	2607	5000	
Zn	66	2	72	0.354	ppb	0.354	42.73	1143	5000	
As	75	2	72	9.261	ppb	9.261	2.59	6664	2000	
Se	78	1	72	0.020	ppb	0.020	194.81	25	2000	
Sr	88	2	45	138.033	ppb	138.033	4.80	432977	2000	
Zr	90	2	72	105.590	ppb	105.590	8.70	1663	1000	
Zr	90	1	72	115.076	ppb	115.076	7.53	5046	1000	
Nb	93	2	72	-0.053	ppb	-0.053	-20.75	2440	200	
Mo	95	2	115	0.810	ppb	0.810	3.99	2870	2000	
Pd	105	2	115	0.015	ppb	0.015	80.96	110	100	
Ag	107	2	115	0.009	ppb	0.009	42.38	170	100	
Cd	111	2	115	0.002	ppb	0.002	624.79	20	2000	
Sn	120	2	115	0.071	ppb	0.071	57.20	857	2000	
Sb	121	2	115	0.077	ppb	0.077	10.97	380	1000	
Ba	137	2	115	42.075	ppb	42.075	1.69	50727	5000	
W	182	2	165	-0.025	ppb	-0.025	-202.56	2504	100	
Pt	195	2	165	0.002	ppb	0.002	86.77	7	100	
Tl	205	2	165	0.011	ppb	0.011	48.39	300	2000	
Pb	208	2	165	0.015	ppb	0.015	80.20	857	5000	
Th	232	2	165	-0.007	ppb	-0.007	-137.93	1157	2000	
U	238	2	165	0.900	ppb	0.900	8.02	14090	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	588193	0.65	661091	88.97	60	125	
Sc (IS)	45	2	HMI He	3641941	1.47	3655967	99.62	60	125	
Sc IS)	45	3	No Gas	92232869	1.38	100875794	91.43	60	120	
Ge Internal Standard	72	1	HMI H2	19399157	2.41	20569859	94.31	60	125	
Ge Internal Standard	72	2	HMI He	4379708	0.63	4348567	100.72	60	125	
In Internal standard	115	2	HMI He	13699995	2.28	13519075	101.34	60	125	
Ho-165	165	2	HMI He	31085872	5.23	30887613	100.64	60	125	

Sample Report

Sample Table

Sample Name 280-123221-j-7-b
 Data File Name 171SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T09:43:10-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-7.475	ppb	-7.475	-93.05	4957559	40000	
Be	9	1	6	0.002	ppb	0.002	1257.51	7	2000	
B	11	1	6	1744.067	ppb	1744.067	3.56	14856	100	>LDR
Na	23	2	45	2019.468	ppb	2019.468	4.25	1352981	400000	
Mg	24	2	45	24075.161	ppb	24075.161	3.25	6642893	400000	
Al	27	2	45	1.711	ppb	1.711	67.29	617	400000	
K	39	2	45	1095.601	ppb	1095.601	0.35	374074	400000	
Ca	44	2	45	83465.737	ppb	83465.737	1.27	1684335	400000	
V	51	2	72	-1.572	ppb	-1.572	-4.41	5618	2000	
Cr	52	2	72	0.549	ppb	0.549	6.50	4301	5000	
Mn	55	2	72	0.634	ppb	0.634	9.65	1910	10000	
Fe	57	2	72	20.348	ppb	20.348	13.95	3814	400000	
Co	59	2	72	0.035	ppb	0.035	36.47	5248	2000	
Ni	60	2	72	0.138	ppb	0.138	44.01	1117	5000	
Cu	63	2	72	1.488	ppb	1.488	4.67	12428	5000	
Zn	66	2	72	14.359	ppb	14.359	2.08	14847	5000	
As	75	2	72	0.177	ppb	0.177	35.11	244	2000	
Se	78	1	72	0.048	ppb	0.048	71.72	40	2000	
Sr	88	2	45	253.649	ppb	253.649	3.16	796636	2000	
Zr	90	2	72	75.001	ppb	75.001	16.12	1260	1000	
Zr	90	1	72	63.183	ppb	63.183	19.93	3387	1000	
Nb	93	2	72	-0.093	ppb	-0.093	-38.89	2204	200	
Mo	95	2	115	0.166	ppb	0.166	9.14	697	2000	
Pd	105	2	115	0.022	ppb	0.022	38.46	140	100	
Ag	107	2	115	0.009	ppb	0.009	17.44	170	100	
Cd	111	2	115	0.064	ppb	0.064	32.48	107	2000	
Sn	120	2	115	0.105	ppb	0.105	17.65	987	2000	
Sb	121	2	115	0.262	ppb	0.262	15.55	1053	1000	
Ba	137	2	115	57.735	ppb	57.735	2.34	68233	5000	
W	182	2	165	-0.027	ppb	-0.027	-116.95	2517	100	
Pt	195	2	165	0.000	ppb	0.000	#DIV/0!	0	100	
Tl	205	2	165	0.006	ppb	0.006	122.39	247	2000	
Pb	208	2	165	0.079	ppb	0.079	3.88	1787	5000	
Th	232	2	165	-0.023	ppb	-0.023	-50.22	930	2000	
U	238	2	165	2.015	ppb	2.015	6.62	31688	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	600228	0.27	661091	90.79	60	125	
Sc (IS)	45	2	HMI He	3647027	1.88	3655967	99.76	60	125	
Sc IS)	45	3	No Gas	95229298	1.02	100875794	94.40	60	120	
Ge Internal Standard	72	1	HMI H2	19617126	1.55	20569859	95.37	60	125	
Ge Internal Standard	72	2	HMI He	4368290	1.42	4348567	100.45	60	125	
In Internal standard	115	2	HMI He	13441939	1.22	13519075	99.43	60	125	
Ho-165	165	2	HMI He	31262029	2.54	30887613	101.21	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5699926
 Data File Name 172_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T09:46:41-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	86.146	ppb	9.947	107575	100	86.1	90	110	>+ -10%
Li	7	3	45	98.337	ppb	5.180	6902253	100	98.3	90	110	
Be	9	1	6	48.841	ppb	1.519	14397	50	97.7	90	110	
B	11	1	6	103.354	ppb	8.403	1227	50	206.7	90	110	>+ -10%
Na	23	2	45	952.236	ppb	1.641	657653	1000	95.2	90	110	
Mg	24	2	45	993.236	ppb	3.889	275755	1000	99.3	90	110	
Al	27	2	45	981.541	ppb	3.607	82480	1000	98.2	90	110	
K	39	2	45	987.914	ppb	2.788	346671	1000	98.8	90	110	
Ca	44	2	45	1021.027	ppb	4.355	20833	1000	102.1	90	110	
V	51	2	72	47.384	ppb	3.880	219873	50	94.8	90	110	
Cr	52	2	72	48.043	ppb	2.926	269169	50	96.1	90	110	
Mn	55	2	72	49.266	ppb	4.253	128982	50	98.5	90	110	
Fe	57	2	72	966.461	ppb	3.774	106125	1000	96.6	90	110	
Co	59	2	72	48.703	ppb	2.346	436914	50	97.4	90	110	
Ni	60	2	72	48.651	ppb	1.578	115711	50	97.3	90	110	
Cu	63	2	72	48.495	ppb	3.958	323143	50	97.0	90	110	
Zn	66	2	72	47.244	ppb	2.644	48308	50	94.5	90	110	
As	75	2	72	49.109	ppb	3.155	35667	50	98.2	90	110	
Se	78	1	72	47.841	ppb	1.176	26530	50	95.7	90	110	
Sr	88	2	45	98.831	ppb	4.895	311319	100	98.8	90	110	
Zr	90	2	72	150.410	ppb	13.738	2297	50	300.8	90	110	>+ -10%
Zr	90	1	72	147.186	ppb	4.128	6571	50	294.4	90	110	>+ -10%
Nb	93	2	72	89.986	ppb	1.222	542091	100	90.0	90	110	>+ -10%
Mo	95	2	115	48.514	ppb	3.665	162648	50	97.0	90	110	
Pd	105	2	115	49.584	ppb	1.191	233937	50	99.2	90	110	
Ag	107	2	115	48.305	ppb	1.973	471404	50	96.6	90	110	
Cd	111	2	115	48.904	ppb	2.528	69567	50	97.8	90	110	
Sn	120	2	115	48.956	ppb	1.014	212802	50	97.9	90	110	
Sb	121	2	115	47.918	ppb	2.653	179513	50	95.8	90	110	
Ba	137	2	115	47.032	ppb	1.413	56658	50	94.1	90	110	
W	182	2	165	47.684	ppb	2.195	315568	50	95.4	90	110	
Pt	195	2	165	48.218	ppb	5.239	207839	50	96.4	90	110	
Tl	205	2	165	47.796	ppb	6.477	511941	50	95.6	90	110	
Pb	208	2	165	41.473	ppb	0.876	605887	50	82.9	90	110	>+ -10%
Th	232	2	165	46.559	ppb	4.385	699105	50	93.1	90	110	
U	238	2	165	48.706	ppb	4.985	773556	50	97.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	646421	0.36	661091	97.78	60	125	
Sc (IS)	45	2	HMI He	3657099	1.95	3655967	100.03	60	125	
Sc IS)	45	3	No Gas	97754427	2.18	100875794	96.91	60	120	
Ge Internal Standard	72	1	HMI H2	20923547	0.29	20569859	101.72	60	125	
Ge Internal Standard	72	2	HMI He	4488649	3.24	4348567	103.22	60	125	
In Internal standard	115	2	HMI He	13696250	0.94	13519075	101.31	60	125	
Ho-165	165	2	HMI He	31705936	3.14	30887613	102.65	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5699924
 Data File Name 173_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T09:50:15-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-14.358	ppb	-107.2	83385	0.1	
Li	7	3	45	10.041	ppb	52.7	5328448	0.05	>RL
Be	9	1	6	0.046	ppb	74.9	20	0.5	
B	11	1	6	38.637	ppb	32.2	643	0.1	>RL
Na	23	2	45	27.251	ppb	5.3	51775	25	>RL
Mg	24	2	45	6.712	ppb	16.1	2884	25	
Al	27	2	45	-1.622	ppb	-27.7	343	15	
K	39	2	45	8.204	ppb	124.2	89265	50	
Ca	44	2	45	8.619	ppb	28.9	347	25	
V	51	2	72	-0.125	ppb	-13.4	11944	1	
Cr	52	2	72	0.003	ppb	753.2	1360	1	
Mn	55	2	72	0.089	ppb	52.6	527	0.5	
Fe	57	2	72	2.372	ppb	89.0	1947	25	
Co	59	2	72	0.000	ppb	13394.3	5011	0.5	
Ni	60	2	72	0.016	ppb	81.1	847	1	
Cu	63	2	72	0.291	ppb	7.3	4797	1	
Zn	66	2	72	0.444	ppb	16.9	1243	5	
As	75	2	72	0.084	ppb	33.6	181	1	
Se	78	1	72	0.075	ppb	33.9	57	1	
Sr	88	2	45	0.074	ppb	57.0	443	1	
Zr	90	2	72	6.748	ppb	28.6	380	1	>RL
Zr	90	1	72	3.323	ppb	255.6	1485	1	>RL
Nb	93	2	72	3.479	ppb	4.0	23343	2	>RL
Mo	95	2	115	0.112	ppb	31.7	543	0.5	
Pd	105	2	115	0.047	ppb	13.6	270	1	
Ag	107	2	115	0.060	ppb	28.1	683	1	
Cd	111	2	115	0.032	ppb	52.1	63	0.5	
Sn	120	2	115	0.126	ppb	19.4	1123	1	
Sb	121	2	115	0.150	ppb	32.9	667	1	
Ba	137	2	115	0.082	ppb	162.5	200	0.5	
W	182	2	165	0.017	ppb	309.1	2840	1	
Pt	195	2	165	0.043	ppb	27.9	187	1	
Tl	205	2	165	0.037	ppb	5.9	580	0.1	
Pb	208	2	165	0.035	ppb	15.8	1170	0.5	
Th	232	2	165	0.185	ppb	10.1	4054	1	
U	238	2	165	0.047	ppb	10.7	847	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	645815	0.62	661091	97.69	60	125	
Sc (IS)	45	2	HMI He	3684506	1.56	3655967	100.78	60	125	
Sc IS)	45	3	No Gas	96664333	1.98	100875794	95.83	60	120	
Ge Internal Standard	72	1	HMI H2	20723655	0.36	20569859	100.75	60	125	
Ge Internal Standard	72	2	HMI He	4429356	2.27	4348567	101.86	60	125	
In Internal standard	115	2	HMI He	14030276	1.87	13519075	103.78	60	125	
Ho-165	165	2	HMI He	31690243	1.80	30887613	102.60	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5699928
 Data File Name 174LLCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T09:53:46-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	11.832	ppb	7.589	5455875	50	23.7	70	130	> +/-30%
Be	9	1	6	0.970	ppb	18.434	295	1	97.0	70	130	
Na	23	2	45	72.872	ppb	6.192	81307	50	145.7	70	130	> +/-30%
Mg	24	2	45	51.555	ppb	6.146	15270	50	103.1	70	130	
Al	27	2	45	47.696	ppb	7.267	4464	50	95.4	70	130	
K	39	2	45	100.799	ppb	20.400	113000	100	100.8	70	130	
Ca	44	2	45	40.445	ppb	16.231	987	50	80.9	70	130	
V	51	2	72	4.519	ppb	4.888	31946	5	90.4	70	130	
Cr	52	2	72	1.726	ppb	2.269	10827	2	86.3	70	130	
Mn	55	2	72	1.010	ppb	2.305	2900	1	101.0	70	130	
Fe	57	2	72	49.184	ppb	16.201	6928	50	98.4	70	130	
Co	59	2	72	0.963	ppb	6.536	13419	1	96.3	70	130	
Ni	60	2	72	1.427	ppb	14.409	4127	1.5	95.1	70	130	
Cu	63	2	72	1.968	ppb	3.764	15711	2	98.4	70	130	
Zn	66	2	72	10.289	ppb	0.863	11000	10	102.9	70	130	
As	75	2	72	4.625	ppb	4.803	3419	5	92.5	70	130	
Se	78	1	72	4.694	ppb	4.211	2519	5	93.9	70	130	
Sr	88	2	45	0.975	ppb	4.072	3277	1	97.5	70	130	
Zr	90	2	72	-1.552	ppb	-142.566	270	0.5	-310.5	70	130	> +/-30%
Zr	90	1	72	0.246	ppb	2436.885	1338	0.5	49.3	70	130	> +/-30%
Nb	93	2	72	1.817	ppb	6.843	13506	2	90.9	70	130	
Mo	95	2	115	1.901	ppb	4.005	6535	2	95.0	70	130	
Pd	105	2	115	0.023	ppb	20.741	150	1	2.3	70	130	> +/-30%
Ag	107	2	115	4.713	ppb	4.832	46144	5	94.3	70	130	
Cd	111	2	115	1.108	ppb	2.724	1597	1	110.8	70	130	
Sn	120	2	115	9.298	ppb	4.315	40932	10	93.0	70	130	
Sb	121	2	115	1.854	ppb	8.863	7048	2	92.7	70	130	
Ba	137	2	115	0.902	ppb	10.266	1183	1	90.2	70	130	
W	182	2	165	4.485	ppb	1.525	33301	1	448.5	70	130	> +/-30%
Pt	195	2	165	0.007	ppb	64.938	30	1	0.7	70	130	> +/-30%
Tl	205	2	165	0.926	ppb	1.102	10474	1	92.6	70	130	
Pb	208	2	165	0.785	ppb	3.844	12532	1	78.5	70	130	
Th	232	2	165	1.679	ppb	8.831	27386	2	84.0	70	130	
U	238	2	165	0.919	ppb	2.989	15228	1	91.9	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	652599	0.37	661091	98.72	60	125	
Sc (IS)	45	2	HMI He	3660064	3.27	3655967	100.11	60	125	
Sc IS)	45	3	No Gas	98393595	1.87	100875794	97.54	60	120	
Ge Internal Standard	72	1	HMI H2	20137489	1.49	20569859	97.90	60	125	
Ge Internal Standard	72	2	HMI He	4422791	2.76	4348567	101.71	60	125	
In Internal standard	115	2	HMI He	13732450	3.43	13519075	101.58	60	125	
Ho-165	165	2	HMI He	32829638	3.14	30887613	106.29	60	125	

Sample Report

Sample Table

Sample Name 280-123221-c-8-b
 Data File Name 175SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T09:57:19-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	19.415	ppb	19.415	68.33	5370480	40000	
Be	9	1	6	-0.010	ppb	-0.010	-107.36	3	2000	
B	11	1	6	1982.373	ppb	1982.373	4.28	16671	100	>LDR
Na	23	2	45	9229.378	ppb	9229.378	2.65	5988169	400000	
Mg	24	2	45	60814.094	ppb	60814.094	3.13	16565513	400000	
Al	27	2	45	37.023	ppb	37.023	14.86	3517	400000	
K	39	2	45	2193.524	ppb	2193.524	1.50	653993	400000	
Ca	44	2	45	83915.370	ppb	83915.370	1.52	1671758	400000	
V	51	2	72	-1.466	ppb	-1.466	-2.27	5901	2000	
Cr	52	2	72	0.508	ppb	0.508	2.32	3964	5000	
Mn	55	2	72	126.577	ppb	126.577	1.10	313269	10000	
Fe	57	2	72	185.986	ppb	185.986	4.28	20649	400000	
Co	59	2	72	0.419	ppb	0.419	7.76	8322	2000	
Ni	60	2	72	1.155	ppb	1.155	3.08	3357	5000	
Cu	63	2	72	0.253	ppb	0.253	26.48	4371	5000	
Zn	66	2	72	2.698	ppb	2.698	6.53	3337	5000	
As	75	2	72	0.289	ppb	0.289	9.22	314	2000	
Se	78	1	72	0.058	ppb	0.058	94.20	45	2000	
Sr	88	2	45	225.275	ppb	225.275	1.93	698643	2000	
Zr	90	2	72	34.944	ppb	34.944	10.40	720	1000	
Zr	90	1	72	30.972	ppb	30.972	8.13	2323	1000	
Nb	93	2	72	2.200	ppb	2.200	8.01	15137	200	
Mo	95	2	115	0.398	ppb	0.398	14.76	1450	2000	
Pd	105	2	115	0.016	ppb	0.016	17.53	113	100	
Ag	107	2	115	0.005	ppb	0.005	36.66	127	100	
Cd	111	2	115	0.036	ppb	0.036	25.40	67	2000	
Sn	120	2	115	0.314	ppb	0.314	14.68	1863	2000	
Sb	121	2	115	0.043	ppb	0.043	62.55	247	1000	
Ba	137	2	115	20.220	ppb	20.220	1.56	23822	5000	
W	182	2	165	0.014	ppb	0.014	61.01	2834	100	
Pt	195	2	165	0.002	ppb	0.002	101.82	10	100	
Tl	205	2	165	0.045	ppb	0.045	16.99	670	2000	
Pb	208	2	165	0.092	ppb	0.092	18.45	2013	5000	
Th	232	2	165	0.549	ppb	0.549	4.69	9550	2000	
U	238	2	165	1.985	ppb	1.985	4.27	31741	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	593795	0.93	661091	89.82	60	125	
Sc (IS)	45	2	HMI He	3600192	1.17	3655967	98.47	60	125	
Sc IS)	45	3	No Gas	94631565	1.86	100875794	93.81	60	120	
Ge Internal Standard	72	1	HMI H2	19647914	2.12	20569859	95.52	60	125	
Ge Internal Standard	72	2	HMI He	4245790	0.82	4348567	97.64	60	125	
In Internal standard	115	2	HMI He	13365254	1.76	13519075	98.86	60	125	
Ho-165	165	2	HMI He	31801037	2.71	30887613	102.96	60	125	

Sample Report

Sample Table

Sample Name 280-123221-c-9-b
 Data File Name 176SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T10:00:50-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 140CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-2.389	ppb	-2.389	-257.31	4978058	40000	
Be	9	1	6	0.082	ppb	0.082	79.01	28	2000	
B	11	1	6	316.415	ppb	316.415	7.01	2904	100	
Na	23	2	45	3571.290	ppb	3571.290	1.19	2326095	400000	
Mg	24	2	45	9721.659	ppb	9721.659	0.78	2636350	400000	
Al	27	2	45	11.497	ppb	11.497	11.49	1407	400000	
K	39	2	45	734.060	ppb	734.060	1.92	274110	400000	
Ca	44	2	45	18984.534	ppb	18984.534	0.69	376471	400000	
V	51	2	72	-1.436	ppb	-1.436	-4.41	6145	2000	
Cr	52	2	72	0.184	ppb	0.184	22.17	2300	5000	
Mn	55	2	72	217.581	ppb	217.581	1.03	548799	10000	
Fe	57	2	72	3317.764	ppb	3317.764	1.20	347550	400000	
Co	59	2	72	0.375	ppb	0.375	19.28	8109	2000	
Ni	60	2	72	2.206	ppb	2.206	11.78	5814	5000	
Cu	63	2	72	0.219	ppb	0.219	15.22	4234	5000	
Zn	66	2	72	1.262	ppb	1.262	11.86	2010	5000	
As	75	2	72	1.215	ppb	1.215	8.05	967	2000	
Se	78	1	72	-0.001	ppb	-0.001	-1378.56	15	2000	
Sr	88	2	45	37.843	ppb	37.843	0.37	116961	2000	
Zr	90	2	72	7.684	ppb	7.684	71.59	383	1000	
Zr	90	1	72	15.620	ppb	15.620	32.02	1822	1000	
Nb	93	2	72	1.228	ppb	1.228	8.25	9813	200	
Mo	95	2	115	0.130	ppb	0.130	36.60	587	2000	
Pd	105	2	115	0.006	ppb	0.006	60.23	67	100	
Ag	107	2	115	0.005	ppb	0.005	33.30	133	100	
Cd	111	2	115	0.005	ppb	0.005	229.78	23	2000	
Sn	120	2	115	0.128	ppb	0.128	33.98	1100	2000	
Sb	121	2	115	0.031	ppb	0.031	42.78	207	1000	
Ba	137	2	115	14.870	ppb	14.870	4.22	17897	5000	
W	182	2	165	-0.002	ppb	-0.002	-442.42	2754	100	
Pt	195	2	165	0.000	ppb	0.000	#DIV/0!	0	100	
Tl	205	2	165	0.014	ppb	0.014	66.43	347	2000	
Pb	208	2	165	0.074	ppb	0.074	14.00	1753	5000	
Th	232	2	165	0.090	ppb	0.090	12.35	2674	2000	
U	238	2	165	0.007	ppb	0.007	50.12	210	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	597013	1.13	661091	90.31	60	125	
Sc (IS)	45	2	HMI He	3582427	1.80	3655967	97.99	60	125	
Sc IS)	45	3	No Gas	94003239	0.42	100875794	93.19	60	120	
Ge Internal Standard	72	1	HMI H2	19721658	0.97	20569859	95.88	60	125	
Ge Internal Standard	72	2	HMI He	4328520	0.23	4348567	99.54	60	125	
In Internal standard	115	2	HMI He	13633396	1.66	13519075	100.85	60	125	
Ho-165	165	2	HMI He	32146583	1.77	30887613	104.08	60	125	

Sample Report

Sample Table

Sample Name 280-123221-c-10-b
 Data File Name 177SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T10:04:21-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	11.233	ppb	11.233	113.80	5248695	40000	
Be	9	1	6	-0.016	ppb	-0.016	-67.60	2	2000	
B	11	1	6	2067.366	ppb	2067.366	1.02	17318	100	>LDR
Na	23	2	45	5034.935	ppb	5034.935	2.60	3384205	400000	
Mg	24	2	45	24803.545	ppb	24803.545	2.20	6968669	400000	
Al	27	2	45	26.719	ppb	26.719	10.29	2750	400000	
K	39	2	45	752.783	ppb	752.783	1.48	289100	400000	
Ca	44	2	45	49332.408	ppb	49332.408	0.86	1013579	400000	
V	51	2	72	-1.518	ppb	-1.518	-7.02	5864	2000	
Cr	52	2	72	0.226	ppb	0.226	11.78	2550	5000	
Mn	55	2	72	99.324	ppb	99.324	4.18	253321	10000	
Fe	57	2	72	61.179	ppb	61.179	3.67	8122	400000	
Co	59	2	72	0.286	ppb	0.286	0.89	7425	2000	
Ni	60	2	72	0.329	ppb	0.329	24.83	1557	5000	
Cu	63	2	72	0.167	ppb	0.167	13.89	3947	5000	
Zn	66	2	72	0.519	ppb	0.519	65.48	1303	5000	
As	75	2	72	0.093	ppb	0.093	6.83	186	2000	
Se	78	1	72	0.051	ppb	0.051	52.32	43	2000	
Sr	88	2	45	112.466	ppb	112.466	1.06	359815	2000	
Zr	90	2	72	21.171	ppb	21.171	11.50	563	1000	
Zr	90	1	72	17.514	ppb	17.514	16.55	1915	1000	
Nb	93	2	72	0.834	ppb	0.834	13.17	7629	200	
Mo	95	2	115	1.454	ppb	1.454	3.55	5091	2000	
Pd	105	2	115	0.014	ppb	0.014	79.91	110	100	
Ag	107	2	115	0.005	ppb	0.005	52.59	133	100	
Cd	111	2	115	0.025	ppb	0.025	115.90	53	2000	
Sn	120	2	115	0.067	ppb	0.067	54.67	850	2000	
Sb	121	2	115	0.040	ppb	0.040	52.70	243	1000	
Ba	137	2	115	20.518	ppb	20.518	0.94	25094	5000	
W	182	2	165	-0.035	ppb	-0.035	-116.50	2530	100	
Pt	195	2	165	0.004	ppb	0.004	93.06	17	100	
Tl	205	2	165	0.017	ppb	0.017	7.88	370	2000	
Pb	208	2	165	0.075	ppb	0.075	20.80	1767	5000	
Th	232	2	165	0.035	ppb	0.035	48.71	1823	2000	
U	238	2	165	0.858	ppb	0.858	0.81	13873	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	591997	0.83	661091	89.55	60	125	
Sc (IS)	45	2	HMI He	3712644	1.20	3655967	101.55	60	125	
Sc IS)	45	3	No Gas	94877886	1.83	100875794	94.05	60	120	
Ge Internal Standard	72	1	HMI H2	20037896	0.46	20569859	97.41	60	125	
Ge Internal Standard	72	2	HMI He	4375948	1.56	4348567	100.63	60	125	
In Internal standard	115	2	HMI He	13872399	1.09	13519075	102.61	60	125	
Ho-165	165	2	HMI He	31995105	3.62	30887613	103.59	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5699926
 Data File Name 178_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T10:07:52-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	85.341	ppb	10.216	107880	100	85.3	90	110	>+ -10%
Li	7	3	45	102.415	ppb	2.277	6910113	100	102.4	90	110	
Be	9	1	6	50.397	ppb	4.017	14623	50	100.8	90	110	
B	11	1	6	85.555	ppb	13.814	1050	50	171.1	90	110	>+ -10%
Na	23	2	45	918.405	ppb	2.505	656782	1000	91.8	90	110	
Mg	24	2	45	958.408	ppb	1.944	275139	1000	95.8	90	110	
Al	27	2	45	945.091	ppb	1.616	82135	1000	94.5	90	110	
K	39	2	45	939.949	ppb	3.178	345255	1000	94.0	90	110	
Ca	44	2	45	968.951	ppb	3.253	20442	1000	96.9	90	110	
V	51	2	72	47.000	ppb	0.651	217802	50	94.0	90	110	
Cr	52	2	72	48.485	ppb	0.291	271117	50	97.0	90	110	
Mn	55	2	72	49.336	ppb	1.228	128951	50	98.7	90	110	
Fe	57	2	72	971.999	ppb	1.744	106525	1000	97.2	90	110	
Co	59	2	72	47.889	ppb	1.874	428817	50	95.8	90	110	
Ni	60	2	72	49.122	ppb	2.009	116533	50	98.2	90	110	
Cu	63	2	72	48.144	ppb	3.333	320238	50	96.3	90	110	
Zn	66	2	72	47.652	ppb	0.788	48619	50	95.3	90	110	
As	75	2	72	49.763	ppb	1.326	36072	50	99.5	90	110	
Se	78	1	72	49.308	ppb	2.066	26809	50	98.6	90	110	
Sr	88	2	45	94.595	ppb	2.801	308077	100	94.6	90	110	
Zr	90	2	72	69.781	ppb	0.878	1223	50	139.6	90	110	>+ -10%
Zr	90	1	72	60.701	ppb	15.457	3454	50	121.4	90	110	>+ -10%
Nb	93	2	72	91.866	ppb	2.050	552053	100	91.9	90	110	
Mo	95	2	115	46.722	ppb	3.414	159668	50	93.4	90	110	
Pd	105	2	115	48.145	ppb	0.112	231526	50	96.3	90	110	
Ag	107	2	115	47.291	ppb	0.517	470402	50	94.6	90	110	
Cd	111	2	115	48.267	ppb	3.618	69971	50	96.5	90	110	
Sn	120	2	115	48.180	ppb	1.938	213443	50	96.4	90	110	
Sb	121	2	115	47.395	ppb	2.570	180981	50	94.8	90	110	
Ba	137	2	115	47.849	ppb	1.914	58745	50	95.7	90	110	
W	182	2	165	45.080	ppb	2.230	311698	50	90.2	90	110	
Pt	195	2	165	44.818	ppb	4.103	201810	50	89.6	90	110	>+ -10%
Tl	205	2	165	46.540	ppb	4.439	520783	50	93.1	90	110	
Pb	208	2	165	41.855	ppb	4.740	637996	50	83.7	90	110	>+ -10%
Th	232	2	165	45.717	ppb	4.233	716845	50	91.4	90	110	
U	238	2	165	46.584	ppb	5.408	772452	50	93.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	636237	0.77	661091	96.24	60	125	
Sc (IS)	45	2	HMI He	3780467	2.56	3655967	103.41	60	125	
Sc IS)	45	3	No Gas	96869526	0.61	100875794	96.03	60	120	
Ge Internal Standard	72	1	HMI H2	20514163	0.31	20569859	99.73	60	125	
Ge Internal Standard	72	2	HMI He	4477308	0.85	4348567	102.96	60	125	
In Internal standard	115	2	HMI He	13960147	1.46	13519075	103.26	60	125	
Ho-165	165	2	HMI He	33113059	3.82	30887613	107.20	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5699924
 Data File Name 179_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T10:11:24-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-7.700	ppb	-67.7	83247	0.1	
Li	7	3	45	7.539	ppb	66.6	5366021	0.05	>RL
Be	9	1	6	0.034	ppb	158.7	17	0.5	
B	11	1	6	34.732	ppb	15.6	610	0.1	>RL
Na	23	2	45	19.498	ppb	10.5	46657	25	
Mg	24	2	45	5.142	ppb	26.5	2447	25	
Al	27	2	45	-0.957	ppb	-54.2	400	15	
K	39	2	45	8.058	ppb	82.5	89242	50	
Ca	44	2	45	7.156	ppb	37.4	317	25	
V	51	2	72	-0.147	ppb	-101.4	11807	1	
Cr	52	2	72	0.010	ppb	236.3	1393	1	
Mn	55	2	72	0.131	ppb	36.5	637	0.5	
Fe	57	2	72	3.055	ppb	32.4	2013	25	
Co	59	2	72	0.036	ppb	68.2	5311	0.5	
Ni	60	2	72	0.035	ppb	99.1	890	1	
Cu	63	2	72	0.264	ppb	13.9	4611	1	
Zn	66	2	72	0.393	ppb	54.6	1193	5	
As	75	2	72	0.087	ppb	38.5	183	1	
Se	78	1	72	0.044	ppb	91.1	40	1	
Sr	88	2	45	0.074	ppb	41.8	443	1	
Zr	90	2	72	3.290	ppb	30.2	333	1	>RL
Zr	90	1	72	3.614	ppb	184.4	1468	1	>RL
Nb	93	2	72	3.853	ppb	3.6	25493	2	>RL
Mo	95	2	115	0.104	ppb	33.7	500	0.5	
Pd	105	2	115	0.056	ppb	47.1	300	1	
Ag	107	2	115	0.047	ppb	31.8	540	1	
Cd	111	2	115	0.021	ppb	152.8	47	0.5	
Sn	120	2	115	0.129	ppb	2.6	1107	1	
Sb	121	2	115	0.110	ppb	31.7	503	1	
Ba	137	2	115	0.047	ppb	86.9	153	0.5	
W	182	2	165	0.019	ppb	278.2	2924	1	
Pt	195	2	165	0.032	ppb	37.6	140	1	
Tl	205	2	165	0.041	ppb	34.5	643	0.1	
Pb	208	2	165	0.043	ppb	26.0	1317	0.5	
Th	232	2	165	0.167	ppb	11.5	3884	1	
U	238	2	165	0.046	ppb	15.8	850	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	647268	1.39	661091	97.91	60	125	
Sc (IS)	45	2	HMI He	3685065	1.98	3655967	100.80	60	125	
Sc IS)	45	3	No Gas	98116427	1.39	100875794	97.26	60	120	
Ge Internal Standard	72	1	HMI H2	20351472	1.43	20569859	98.94	60	125	
Ge Internal Standard	72	2	HMI He	4414724	2.52	4348567	101.52	60	125	
In Internal standard	115	2	HMI He	13672435	2.92	13519075	101.13	60	125	
Ho-165	165	2	HMI He	32430870	0.86	30887613	105.00	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5699928
 Data File Name 180LCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T10:14:56-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 140CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	6.309	ppb	17.771	5354813	50	12.6	70	130	> +/-30%
Be	9	1	6	0.957	ppb	3.548	287	1	95.7	70	130	
Na	23	2	45	63.136	ppb	6.046	74662	50	126.3	70	130	
Mg	24	2	45	49.748	ppb	6.103	14726	50	99.5	70	130	
Al	27	2	45	46.027	ppb	5.961	4314	50	92.1	70	130	
K	39	2	45	101.495	ppb	14.392	112808	100	101.5	70	130	
Ca	44	2	45	38.148	ppb	21.325	940	50	76.3	70	130	
V	51	2	72	4.305	ppb	10.906	31492	5	86.1	70	130	
Cr	52	2	72	1.782	ppb	6.086	11300	2	89.1	70	130	
Mn	55	2	72	1.041	ppb	3.491	3027	1	104.1	70	130	
Fe	57	2	72	48.788	ppb	9.053	6992	50	97.6	70	130	
Co	59	2	72	0.856	ppb	15.121	12665	1	85.6	70	130	
Ni	60	2	72	1.384	ppb	10.897	4101	1.5	92.3	70	130	
Cu	63	2	72	2.016	ppb	4.381	16298	2	100.8	70	130	
Zn	66	2	72	9.529	ppb	3.521	10407	10	95.3	70	130	
As	75	2	72	4.531	ppb	4.281	3406	5	90.6	70	130	
Se	78	1	72	4.644	ppb	2.960	2499	5	92.9	70	130	
Sr	88	2	45	0.898	ppb	4.778	3024	1	89.8	70	130	
Zr	90	2	72	0.027	ppb	12536.808	297	0.5	5.4	70	130	> +/-30%
Zr	90	1	72	4.145	ppb	138.165	1475	0.5	829.0	70	130	> +/-30%
Nb	93	2	72	1.910	ppb	9.264	14280	2	95.5	70	130	
Mo	95	2	115	1.986	ppb	8.103	6895	2	99.3	70	130	
Pd	105	2	115	0.032	ppb	19.180	197	1	3.2	70	130	> +/-30%
Ag	107	2	115	4.540	ppb	3.694	45001	5	90.8	70	130	
Cd	111	2	115	0.967	ppb	17.572	1407	1	96.7	70	130	
Sn	120	2	115	9.090	ppb	3.959	40517	10	90.9	70	130	
Sb	121	2	115	1.855	ppb	6.858	7132	2	92.7	70	130	
Ba	137	2	115	0.901	ppb	6.326	1197	1	90.1	70	130	
W	182	2	165	4.392	ppb	3.330	32192	1	439.2	70	130	> +/-30%
Pt	195	2	165	0.008	ppb	57.460	37	1	0.8	70	130	> +/-30%
Tl	205	2	165	0.852	ppb	2.387	9527	1	85.2	70	130	
Pb	208	2	165	0.833	ppb	1.470	13082	1	83.3	70	130	
Th	232	2	165	1.620	ppb	2.157	26107	2	81.0	70	130	
U	238	2	165	0.947	ppb	4.263	15468	1	94.7	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	642686	1.17	661091	97.22	60	125	
Sc (IS)	45	2	HMI He	3646167	2.32	3655967	99.73	60	125	
Sc IS)	45	3	No Gas	98289667	1.69	100875794	97.44	60	120	
Ge Internal Standard	72	1	HMI H2	20187416	0.75	20569859	98.14	60	125	
Ge Internal Standard	72	2	HMI He	4494165	3.36	4348567	103.35	60	125	
In Internal standard	115	2	HMI He	13901438	4.72	13519075	102.83	60	125	
Ho-165	165	2	HMI He	32370164	4.41	30887613	104.80	60	125	

Sample Report

Sample Table

Sample Name rinse-5620980
 Data File Name 181SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T10:18:29-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment TUNE
 ISTD Ref FileName 140CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-0.015	ppb	-0.015	-35925.63	5188128	40000	
Be	9	1	6	-0.011	ppb	-0.011	-92.12	3	2000	
B	11	1	6	20.481	ppb	20.481	36.97	477	100	
Na	23	2	45	18.520	ppb	18.520	8.96	45060	400000	
Mg	24	2	45	3.902	ppb	3.902	18.79	2057	400000	
Al	27	2	45	4.689	ppb	4.689	6.76	857	400000	
K	39	2	45	-1.666	ppb	-1.666	-898.27	84847	400000	
Ca	44	2	45	3.691	ppb	3.691	156.61	243	400000	
V	51	2	72	-0.076	ppb	-0.076	-138.78	12164	2000	
Cr	52	2	72	0.006	ppb	0.006	377.22	1373	5000	
Mn	55	2	72	0.173	ppb	0.173	20.40	747	10000	
Fe	57	2	72	14.191	ppb	14.191	10.65	3210	400000	
Co	59	2	72	-0.014	ppb	-0.014	-331.77	4887	2000	
Ni	60	2	72	0.001	ppb	0.001	2085.79	813	5000	
Cu	63	2	72	0.281	ppb	0.281	10.46	4737	5000	
Zn	66	2	72	0.473	ppb	0.473	16.17	1273	5000	
As	75	2	72	0.070	ppb	0.070	23.71	171	2000	
Se	78	1	72	0.032	ppb	0.032	50.59	33	2000	
Sr	88	2	45	-0.004	ppb	-0.004	-326.70	190	2000	
Zr	90	2	72	-8.190	ppb	-8.190	-18.34	183	1000	
Zr	90	1	72	6.411	ppb	6.411	94.59	1582	1000	
Nb	93	2	72	1.504	ppb	1.504	19.77	11664	200	
Mo	95	2	115	0.022	ppb	0.022	82.25	230	2000	
Pd	105	2	115	0.041	ppb	0.041	33.01	237	100	
Ag	107	2	115	0.010	ppb	0.010	14.41	187	100	
Cd	111	2	115	-0.007	ppb	-0.007	-114.57	7	2000	
Sn	120	2	115	0.062	ppb	0.062	54.91	823	2000	
Sb	121	2	115	0.023	ppb	0.023	25.37	177	1000	
Ba	137	2	115	0.032	ppb	0.032	142.76	137	5000	
W	182	2	165	-0.064	ppb	-0.064	-34.62	2337	100	
Pt	195	2	165	0.008	ppb	0.008	44.21	33	100	
Tl	205	2	165	0.001	ppb	0.001	458.63	197	2000	
Pb	208	2	165	0.013	ppb	0.013	31.90	860	5000	
Th	232	2	165	0.074	ppb	0.074	13.54	2430	2000	
U	238	2	165	0.004	ppb	0.004	144.12	163	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	640470	1.12	661091	96.88	60	125	
Sc (IS)	45	2	HMI He	3609390	2.71	3655967	98.73	60	125	
Sc IS)	45	3	No Gas	97202208	0.61	100875794	96.36	60	120	
Ge Internal Standard	72	1	HMI H2	20566951	2.32	20569859	99.99	60	125	
Ge Internal Standard	72	2	HMI He	4429833	0.94	4348567	101.87	60	125	
In Internal standard	115	2	HMI He	13742720	0.70	13519075	101.65	60	125	
Ho-165	165	2	HMI He	32104929	3.19	30887613	103.94	60	125	

Sample Report

Sample Table

Sample Name rinse-5620980
 Data File Name 182SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T10:22:00-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment TUNE
 ISTD Ref FileName 140CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	0.928	ppb	0.928	404.04	5214854	40000	
Be	9	1	6	-0.017	ppb	-0.017	-59.22	2	2000	
B	11	1	6	24.421	ppb	24.421	27.41	517	100	
Na	23	2	45	17.071	ppb	17.071	10.38	44826	400000	
Mg	24	2	45	3.261	ppb	3.261	15.14	1913	400000	
Al	27	2	45	3.187	ppb	3.187	72.27	743	400000	
K	39	2	45	5.896	ppb	5.896	263.29	88196	400000	
Ca	44	2	45	2.008	ppb	2.008	273.50	210	400000	
V	51	2	72	-0.216	ppb	-0.216	-44.74	11654	2000	
Cr	52	2	72	-0.011	ppb	-0.011	-359.06	1293	5000	
Mn	55	2	72	0.226	ppb	0.226	3.59	890	10000	
Fe	57	2	72	16.670	ppb	16.670	12.67	3504	400000	
Co	59	2	72	0.010	ppb	0.010	322.32	5144	2000	
Ni	60	2	72	-0.013	ppb	-0.013	-673.30	787	5000	
Cu	63	2	72	0.239	ppb	0.239	15.03	4507	5000	
Zn	66	2	72	0.404	ppb	0.404	14.58	1217	5000	
As	75	2	72	0.047	ppb	0.047	53.50	156	2000	
Se	78	1	72	0.005	ppb	0.005	490.68	19	2000	
Sr	88	2	45	0.001	ppb	0.001	1416.79	210	2000	
Zr	90	2	72	-6.581	ppb	-6.581	-69.88	207	1000	
Zr	90	1	72	7.168	ppb	7.168	47.02	1598	1000	
Nb	93	2	72	0.941	ppb	0.941	21.02	8429	200	
Mo	95	2	115	0.012	ppb	0.012	164.42	200	2000	
Pd	105	2	115	0.025	ppb	0.025	40.21	163	100	
Ag	107	2	115	0.003	ppb	0.003	39.35	113	100	
Cd	111	2	115	0.000	ppb	0.000	-3468.59	17	2000	
Sn	120	2	115	0.061	ppb	0.061	45.75	833	2000	
Sb	121	2	115	0.016	ppb	0.016	51.41	153	1000	
Ba	137	2	115	0.051	ppb	0.051	102.67	163	5000	
W	182	2	165	-0.077	ppb	-0.077	-45.93	2234	100	
Pt	195	2	165	0.001	ppb	0.001	173.21	7	100	
Tl	205	2	165	0.004	ppb	0.004	223.69	230	2000	
Pb	208	2	165	0.003	ppb	0.003	59.95	703	5000	
Th	232	2	165	0.003	ppb	0.003	73.21	1330	2000	
U	238	2	165	0.000	ppb	0.000	936.12	107	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	646644	1.00	661091	97.81	60	125	
Sc (IS)	45	2	HMI He	3666612	1.90	3655967	100.29	60	125	
Sc IS)	45	3	No Gas	97412900	0.93	100875794	96.57	60	120	
Ge Internal Standard	72	1	HMI H2	20444588	2.21	20569859	99.39	60	125	
Ge Internal Standard	72	2	HMI He	4469265	1.58	4348567	102.78	60	125	
In Internal standard	115	2	HMI He	14044786	1.12	13519075	103.89	60	125	
Ho-165	165	2	HMI He	31884034	2.80	30887613	103.23	60	125	

Calibration Blank Report

Sample Table

Sample Name2 ICIS-5699924
Data File Name 183CALB.d
Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
Method
Acq Date Time 2019-05-14T10:25:32-06:00
Sample Type CalBlk
Level 1
Dilution 1
Comment

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Li	7	45	1	HMI H2	81942	0.00
Li	7	45	3	No Gas	5232825	0.00
B	11	6	1	HMI H2	460	6.67
Na	23	45	2	HMI He	43533	0.00
Mg	24	45	2	HMI He	1630	0.67
Al	27	45	2	HMI He	423	3.27
K	39	45	2	HMI He	85838	0.00
Ca	44	45	2	HMI He	210	13.79
V	51	72	2	HMI He	12305	0.03
Cr	52	72	2	HMI He	1290	0.42
Mn	55	72	2	HMI He	360	2.67
Fe	57	72	2	HMI He	1817	0.96
Co	59	72	2	HMI He	4767	0.02
Ni	60	72	2	HMI He	923	1.42
Cu	63	72	2	HMI He	3084	0.36
Zn	66	72	2	HMI He	857	1.24
As	75	72	2	HMI He	157	0.80
Se	78	72	1	HMI H2	31	201.00
Sr	88	45	2	HMI He	177	13.34
Zr	90	72	2	HMI He	310	10.03
Zr	90	72	1	HMI H2	1535	1.53
Nb	93	72	2	HMI He	5321	0.20
Mo	95	115	2	HMI He	197	21.99
Pd	105	115	2	HMI He	70	53.99
Ag	107	115	2	HMI He	173	1.92
Cd	111	115	2	HMI He	13	859.23
Sn	120	115	2	HMI He	633	1.04
Sb	121	115	2	HMI He	100	30.00
Ba	137	115	2	HMI He	110	46.01
W	182	165	2	HMI He	2280	0.24
Pt	195	165	2	HMI He	7	1299.04
Tl	205	165	2	HMI He	267	5.32
Pb	208	165	2	HMI He	777	1.74
Th	232	165	2	HMI He	1333	0.82
U	238	165	2	HMI He	77	19.65

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li-6 Internal Standard	6	1	HMI H2	640661	0.66
Sc (IS)	45	2	HMI He	3683202	1.30
Sc IS)	45	3	No Gas	97710586	1.01
Ge Internal Standard	72	1	HMI H2	20068360	2.26
Ge Internal Standard	72	2	HMI He	4425118	4.58
In Internal standard	115	2	HMI He	13821071	0.54
Ho-165	165	2	HMI He	32625871	2.08

Calibration Standard Report

Sample Table

Sample Name IC-5699925
 Data File Name 184CAL.S.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 method
 Acq Date Time 2019-05-14T10:29:03-06:00
 Sample Type CalStd
 Level 2
 Dilution 1
 Comment
 ISTD Ref File Name 183CALB.d
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Li	7	45	1	HMI H2	133086	0.00
Li	7	45	3	No Gas	8530278	0.00
Be	9	6	1	HMI H2	28788	0.00
B	11	6	1	HMI H2	1430	0.43
Na	23	45	2	HMI He	1310837	0.00
Mg	24	45	2	HMI He	549501	0.00
Al	27	45	2	HMI He	163134	0.00
K	39	45	2	HMI He	609857	0.00
Ca	44	45	2	HMI He	40794	0.00
V	51	72	2	HMI He	436290	0.00
Cr	52	72	2	HMI He	543582	0.00
Mn	55	72	2	HMI He	256023	0.00
Fe	57	72	2	HMI He	207552	0.00
Co	59	72	2	HMI He	859239	0.00
Ni	60	72	2	HMI He	228789	0.00
Cu	63	72	2	HMI He	647933	0.00
Zn	66	72	2	HMI He	97813	0.00
As	75	72	2	HMI He	71255	0.00
Se	78	72	1	HMI H2	52191	0.00
Sr	88	45	2	HMI He	627213	0.00
Zr	90	72	2	HMI He	1670	0.82
Zr	90	72	1	HMI H2	4762	0.09
Nb	93	72	2	HMI He	1187766	0.00
Mo	95	115	2	HMI He	326465	0.00
Pd	105	115	2	HMI He	452363	0.00
Ag	107	115	2	HMI He	960887	0.00
Cd	111	115	2	HMI He	141884	0.00
Sn	120	115	2	HMI He	428948	0.00
Sb	121	115	2	HMI He	364866	0.00
Ba	137	115	2	HMI He	119747	0.00
W	182	165	2	HMI He	637556	0.00
Pt	195	165	2	HMI He	425714	0.00
Tl	205	165	2	HMI He	1074945	0.00
Pb	208	165	2	HMI He	1419800	0.00
Th	232	165	2	HMI He	1506331	0.00
U	238	165	2	HMI He	1577098	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	642330	0.27	640661	100.26	60	125	
Sc (IS)	45	2	HMI He	3744049	1.34	3683202	101.65	60	125	
Sc IS)	45	3	No Gas	96758262	1.62	97710586	99.03	60	120	
Ge Internal Standard	72	1	HMI H2	20344704	1.59	20068360	101.38	60	125	
Ge Internal Standard	72	2	HMI He	4388769	1.83	4425118	99.18	60	125	
In Internal standard	115	2	HMI He	13971377	1.56	13821071	101.09	60	125	
Ho-165	165	2	HMI He	32846751	3.16	32625871	100.68	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5699926
 Data File Name 185_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T10:32:34-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	100.817	ppb	7.663	107239	100	100.8	90	110	
Li	7	3	45	99.068	ppb	15.747	6883717	100	99.1	90	110	
Be	9	1	6	48.613	ppb	1.155	14187	50	97.2	90	110	
B	11	1	6	36.522	ppb	13.068	827	50	73.0	90	110	>+/-10%
Na	23	2	45	960.405	ppb	3.387	632908	1000	96.0	90	110	
Mg	24	2	45	993.876	ppb	2.593	265658	1000	99.4	90	110	
Al	27	2	45	1001.905	ppb	3.671	79453	1000	100.2	90	110	
K	39	2	45	1028.116	ppb	4.996	345154	1000	102.8	90	110	
Ca	44	2	45	969.547	ppb	4.242	19284	1000	97.0	90	110	
V	51	2	72	46.499	ppb	5.478	216409	50	93.0	90	110	
Cr	52	2	72	47.911	ppb	2.943	269903	50	95.8	90	110	
Mn	55	2	72	47.909	ppb	1.570	127031	50	95.8	90	110	
Fe	57	2	72	961.691	ppb	2.220	104144	1000	96.2	90	110	
Co	59	2	72	47.230	ppb	2.667	422141	50	94.5	90	110	
Ni	60	2	72	47.226	ppb	3.775	112184	50	94.5	90	110	
Cu	63	2	72	46.712	ppb	2.695	314591	50	93.4	90	110	
Zn	66	2	72	46.382	ppb	4.456	47355	50	92.8	90	110	
As	75	2	72	47.764	ppb	1.925	35269	50	95.5	90	110	
Se	78	1	72	50.959	ppb	0.580	26550	50	101.9	90	110	
Sr	88	2	45	100.184	ppb	2.351	304786	100	100.2	90	110	
Zr	90	2	72	27.083	ppb	36.643	700	50	54.2	90	110	>+/-10%
Zr	90	1	72	23.518	ppb	20.252	2309	50	47.0	90	110	>+/-10%
Nb	93	2	72	101.815	ppb	2.424	627664	100	101.8	90	110	
Mo	95	2	115	47.276	ppb	4.464	157941	50	94.6	90	110	
Pd	105	2	115	49.812	ppb	3.181	230495	50	99.6	90	110	
Ag	107	2	115	47.108	ppb	2.578	463098	50	94.2	90	110	
Cd	111	2	115	47.552	ppb	3.211	69005	50	95.1	90	110	
Sn	120	2	115	47.896	ppb	3.512	210474	50	95.8	90	110	
Sb	121	2	115	47.924	ppb	2.361	178902	50	95.8	90	110	
Ba	137	2	115	47.689	ppb	2.202	58470	50	95.4	90	110	
W	182	2	165	48.475	ppb	1.699	316829	50	97.0	90	110	
Pt	195	2	165	47.763	ppb	2.124	207804	50	95.5	90	110	
Tl	205	2	165	47.487	ppb	2.401	522169	50	95.0	90	110	
Pb	208	2	165	48.315	ppb	3.659	700441	50	96.6	90	110	
Th	232	2	165	48.824	ppb	1.826	751740	50	97.6	90	110	
U	238	2	165	48.264	ppb	1.669	778446	50	96.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	651129	0.97	640661	101.63	60	125	
Sc (IS)	45	2	HMI He	3631625	1.84	3683202	98.60	60	125	
Sc IS)	45	3	No Gas	97370750	0.92	97710586	99.65	60	120	
Ge Internal Standard	72	1	HMI H2	20295531	1.11	20068360	101.13	60	125	
Ge Internal Standard	72	2	HMI He	4536940	1.59	4425118	102.53	60	125	
In Internal standard	115	2	HMI He	14291393	2.38	13821071	103.40	60	125	
Ho-165	165	2	HMI He	33544406	1.90	32625871	102.82	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5699924
 Data File Name 186_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T10:36:04-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	10.261	ppb	30.9	84393	0.1	>RL
Li	7	3	45	2.815	ppb	318.7	5259584	0.05	>RL
Be	9	1	6	0.103	ppb	45.1	30	0.5	
B	11	1	6	-9.486	ppb	-77.1	373	0.1	
Na	23	2	45	-0.074	ppb	-5567.2	44405	25	
Mg	24	2	45	-0.836	ppb	-24.8	1437	25	
Al	27	2	45	0.078	ppb	1086.1	440	15	
K	39	2	45	8.127	ppb	151.5	89861	50	
Ca	44	2	45	0.506	ppb	858.5	223	25	
V	51	2	72	-0.186	ppb	-22.0	11797	1	
Cr	52	2	72	0.049	ppb	21.2	1597	1	
Mn	55	2	72	0.110	ppb	52.3	660	0.5	
Fe	57	2	72	3.720	ppb	14.6	2247	25	
Co	59	2	72	0.023	ppb	78.3	5084	0.5	
Ni	60	2	72	0.138	ppb	53.3	1273	1	
Cu	63	2	72	0.680	ppb	13.3	7678	1	
Zn	66	2	72	-0.095	ppb	-88.3	780	5	
As	75	2	72	0.002	ppb	284.3	162	1	
Se	78	1	72	0.051	ppb	29.1	57	1	
Sr	88	2	45	0.075	ppb	32.0	417	1	
Zr	90	2	72	1.278	ppb	237.6	337	1	>RL
Zr	90	1	72	-5.288	ppb	-83.4	1381	1	
Nb	93	2	72	5.325	ppb	5.5	37946	2	>RL
Mo	95	2	115	0.150	ppb	12.4	690	0.5	
Pd	105	2	115	0.089	ppb	28.4	473	1	
Ag	107	2	115	0.032	ppb	17.6	487	1	
Cd	111	2	115	0.038	ppb	13.7	67	0.5	
Sn	120	2	115	0.156	ppb	7.3	1310	1	
Sb	121	2	115	0.127	ppb	17.6	563	1	
Ba	137	2	115	0.094	ppb	76.8	223	0.5	
W	182	2	165	0.114	ppb	6.9	3100	1	
Pt	195	2	165	0.039	ppb	12.8	177	1	
Tl	205	2	165	0.044	ppb	5.6	763	0.1	
Pb	208	2	165	0.044	ppb	20.9	1440	0.5	
Th	232	2	165	0.148	ppb	14.0	3654	1	
U	238	2	165	0.065	ppb	4.6	1130	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	649463	1.51	640661	101.37	60	125	
Sc (IS)	45	2	HMI He	3765181	2.80	3683202	102.23	60	125	
Sc IS)	45	3	No Gas	97312697	0.51	97710586	99.59	60	120	
Ge Internal Standard	72	1	HMI H2	20198509	1.27	20068360	100.65	60	125	
Ge Internal Standard	72	2	HMI He	4527834	1.24	4425118	102.32	60	125	
In Internal standard	115	2	HMI He	13995310	2.84	13821071	101.26	60	125	
Ho-165	165	2	HMI He	33654421	2.22	32625871	103.15	60	125	

Blank Report

Sample Table

Sample Name mb 280-457759/1-a
 Data File Name 187_BLK.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T10:39:50-06:00
 Sample Type Blank
 Dilution 1
 Comment 457759 200.8
 ISTD Ref File Name 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	1	45	6.528	ppb	30.49379886	83689	0.1
Li	7	3	45	-0.483	ppb	-857.8041047	5199070	0.05
Be	9	1	6	0.052	ppb	88.11076549	15	0.5
Na	23	2	45	1.438	ppb	126.4503411	44235	25
Mg	24	2	45	0.022	ppb	4899.222442	1627	25
Al	27	2	45	-0.171	ppb	-561.1541096	407	15
K	39	2	45	14.739	ppb	83.68843974	89238	50
Ca	44	2	45	4.943	ppb	21.04665535	307	25
V	51	2	72	0.260	ppb	32.85928873	13535	1
Cr	52	2	72	0.041	ppb	20.53714275	1527	1
Mn	55	2	72	0.278	ppb	8.378473296	1087	0.5
Fe	57	2	72	12.995	ppb	13.26336063	3184	25
Co	59	2	72	-0.013	ppb	-114.5822569	4694	0.5
Ni	60	2	72	-0.079	ppb	-23.21741353	750	1
Cu	63	2	72	-0.037	ppb	-30.24829369	2864	1
Zn	66	2	72	0.438	ppb	16.50042084	1293	5
As	75	2	72	-0.037	ppb	-42.73948949	131	1
Se	78	1	72	-0.018	ppb	-68.76272061	21	1
Sr	88	2	45	0.012	ppb	90.86417138	213	1
Zr	90	2	72	-3.178	ppb	-85.20528025	270	1
Zr	90	1	72	1.866	ppb	239.4498028	1625	1
Nb	93	2	72	2.971	ppb	11.47960057	23206	2
Mo	95	2	115	0.006	ppb	313.9856561	223	0.5
Pd	105	2	115	0.042	ppb	25.37425313	263	1
Ag	107	2	115	-0.002	ppb	-412.6514521	160	1
Cd	111	2	115	0.002	ppb	703.3585262	17	0.5
Sn	120	2	115	0.128	ppb	25.01539656	1210	1
Sb	121	2	115	0.046	ppb	50.88645298	273	1
Ba	137	2	115	0.092	ppb	113.2335833	223	0.5
W	182	2	165	0.023	ppb	46.23816868	2434	1
Pt	195	2	165	0.007	ppb	75.9702905	37	1
Tl	205	2	165	0.004	ppb	77.79716807	310	0.1
Pb	208	2	165	0.015	ppb	97.35491477	983	0.5
Th	232	2	165	0.095	ppb	15.32949518	2754	1
U	238	2	165	0.010	ppb	16.71074313	240	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	648718	0.70	640661	101.26	60	125	
Sc (IS)	45	2	HMI He	3667787	2.42	3683202	99.58	60	125	
Sc IS)	45	3	No Gas	97232280	0.36	97710586	99.51	60	120	
Ge Internal Standard	72	1	HMI H2	20403816	3.27	20068360	101.67	60	125	
Ge Internal Standard	72	2	HMI He	4458802	0.87	4425118	100.76	60	125	
In Internal standard	115	2	HMI He	14193094	2.49	13821071	102.69	60	125	
Ho-165	165	2	HMI He	32741949	4.49	32625871	100.36	60	125	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name lcs 280-457759/2-a
 Data File Name 188_LCS.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T10:43:26-06:00
 Sample Type LCS
 Dilution 1
 Analyst Denver Metals
 Comment 457759 200.8
 ISTD Ref File Name 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	62.634	62.634	ppb	13.397	6231472	400	15.7	80	120	>+/-20%
Be	9	1	6	30.597	30.597	ppb	2.417	8794	40	76.5	80	120	>+/-20%
Na	23	2	45	6.327	6.327	ppb	34.102	47079	40	15.8	80	120	>+/-20%
Mg	24	2	45	-0.353	-0.353	ppb	-137.156	1523	40	-0.9	80	120	>+/-20%
Al	27	2	45	306.392	306.392	ppb	3.645	24737	40	766.0	80	120	>+/-20%
K	39	2	45	-1.674	-1.674	ppb	-186.788	84743	40	-4.2	80	120	>+/-20%
Ca	44	2	45	103.171	103.171	ppb	4.157	2250	40	257.9	80	120	>+/-20%
V	51	2	72	29.709	29.709	ppb	3.486	140034	40	74.3	80	120	>+/-20%
Cr	52	2	72	30.287	30.287	ppb	1.801	167738	40	75.7	80	120	>+/-20%
Mn	55	2	72	30.721	30.721	ppb	3.271	79980	40	76.8	80	120	>+/-20%
Fe	57	2	72	336.148	336.148	ppb	0.923	36873	40	840.4	80	120	>+/-20%
Co	59	2	72	30.552	30.552	ppb	1.336	269409	40	76.4	80	120	>+/-20%
Ni	60	2	72	30.362	30.362	ppb	1.056	71046	40	75.9	80	120	>+/-20%
Cu	63	2	72	29.821	29.821	ppb	1.639	197992	40	74.6	80	120	>+/-20%
Zn	66	2	72	30.400	30.400	ppb	3.776	30724	40	76.0	80	120	>+/-20%
As	75	2	72	29.043	29.043	ppb	1.820	21084	40	72.6	80	120	>+/-20%
Se	78	1	72	30.482	30.482	ppb	4.598	15817	40	76.2	80	120	>+/-20%
Sr	88	2	45	31.055	31.055	ppb	3.762	95163	40	77.6	80	120	>+/-20%
Nb	93	2	72	2.324	2.324	ppb	10.399	19274	40	5.8	80	120	>+/-20%
Mo	95	2	115	29.418	29.418	ppb	2.789	97068	40	73.5	80	120	>+/-20%
Pd	105	2	115	0.031	0.031	ppb	57.951	213	40	0.1	80	120	>+/-20%
Ag	107	2	115	30.558	30.558	ppb	2.047	296497	40	76.4	80	120	>+/-20%
Cd	111	2	115	29.418	29.418	ppb	4.218	42124	40	73.5	80	120	>+/-20%
Sn	120	2	115	29.838	29.838	ppb	0.684	129688	40	74.6	80	120	>+/-20%
Sb	121	2	115	32.086	32.086	ppb	1.572	118224	40	80.2	80	120	>+/-20%
Ba	137	2	115	29.653	29.653	ppb	1.177	35918	40	74.1	80	120	>+/-20%
W	182	2	165	15.479	15.479	ppb	0.898	98235	40	38.7	80	120	>+/-20%
Pt	195	2	165	0.002	0.002	ppb	87.986	13	40	0.0	80	120	>+/-20%
Tl	205	2	165	29.881	29.881	ppb	4.051	313878	40	74.7	80	120	>+/-20%
Pb	208	2	165	29.717	29.717	ppb	2.724	412129	40	74.3	80	120	>+/-20%
Th	232	2	165	29.454	29.454	ppb	4.194	433975	40	73.6	80	120	>+/-20%
U	238	2	165	31.684	31.684	ppb	1.211	488453	40	79.2	80	120	>+/-20%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	641165	1.37	640661	100.08	60	125	
Sc (IS)	45	2	HMI He	3653230	1.25	3683202	99.19	60	125	
Sc IS)	45	3	No Gas	96790641	1.68	97710586	99.06	60	120	
Ge Internal Standard	72	1	HMI H2	20193201	1.14	20068360	100.62	60	125	
Ge Internal Standard	72	2	HMI He	4446983	1.20	4425118	100.49	60	125	
In Internal standard	115	2	HMI He	14100338	1.92	13821071	102.02	60	125	
Ho-165	165	2	HMI He	32058443	1.89	32625871	98.26	60	125	

Sample Report

Sample Table

Sample Name 280-123521-a-5-a
 Data File Name 189SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T10:46:59-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457759 200.8
 ISTD Ref FileName 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	3.658	ppb	3.658	125.16	5147504	40000	
Be	9	1	6	0.147	ppb	0.147	48.91	42	2000	
B	11	1	6	822.600	ppb	822.600	5.59	8285	100	>LDR
Na	23	2	45	58550.866	ppb	58550.866	2.22	35447386	400000	
Mg	24	2	45	8947.767	ppb	8947.767	0.49	2341042	400000	
Al	27	2	45	231.330	ppb	231.330	3.73	18370	400000	
K	39	2	45	1570.815	ppb	1570.815	1.12	475085	400000	
Ca	44	2	45	13419.347	ppb	13419.347	2.66	260030	400000	
V	51	2	72	1.364	ppb	1.364	11.79	18180	2000	
Cr	52	2	72	0.456	ppb	0.456	10.32	3794	5000	
Mn	55	2	72	236.307	ppb	236.307	2.75	610453	10000	
Fe	57	2	72	582.620	ppb	582.620	5.20	62315	400000	
Co	59	2	72	0.571	ppb	0.571	5.63	9706	2000	
Ni	60	2	72	1.277	ppb	1.277	9.81	3864	5000	
Cu	63	2	72	1.773	ppb	1.773	5.49	14626	5000	
Zn	66	2	72	8.868	ppb	8.868	4.82	9546	5000	
As	75	2	72	1.380	ppb	1.380	2.43	1148	2000	
Se	78	1	72	0.309	ppb	0.309	39.34	187	2000	
Sr	88	2	45	64.059	ppb	64.059	2.08	191835	2000	
Zr	90	2	72	127.239	ppb	127.239	7.09	2060	1000	
Zr	90	1	72	143.655	ppb	143.655	41.80	5990	1000	
Nb	93	2	72	1.462	ppb	1.462	19.42	14046	200	
Mo	95	2	115	5.480	ppb	5.480	5.45	17720	2000	
Pd	105	2	115	0.035	ppb	0.035	23.23	227	100	
Ag	107	2	115	0.018	ppb	0.018	70.32	347	100	
Cd	111	2	115	0.053	ppb	0.053	25.60	87	2000	
Sn	120	2	115	0.142	ppb	0.142	23.02	1227	2000	
Sb	121	2	115	0.173	ppb	0.173	11.48	717	1000	
Ba	137	2	115	19.916	ppb	19.916	1.95	23471	5000	
W	182	2	165	0.048	ppb	0.048	28.79	2547	100	
Pt	195	2	165	-0.001	ppb	-0.001	-176.83	3	100	
Tl	205	2	165	0.053	ppb	0.053	26.97	817	2000	
Pb	208	2	165	0.691	ppb	0.691	1.54	10358	5000	
Th	232	2	165	0.616	ppb	0.616	6.04	10384	2000	
U	238	2	165	0.582	ppb	0.582	1.20	9076	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	631373	0.96	640661	98.55	60	125	
Sc (IS)	45	2	HMI He	3573114	1.15	3683202	97.01	60	125	
Sc IS)	45	3	No Gas	94992183	0.05	97710586	97.22	60	120	
Ge Internal Standard	72	1	HMI H2	19788740	0.48	20068360	98.61	60	125	
Ge Internal Standard	72	2	HMI He	4431960	2.64	4425118	100.15	60	125	
In Internal standard	115	2	HMI He	13699739	2.53	13821071	99.12	60	125	
Ho-165	165	2	HMI He	32140020	1.31	32625871	98.51	60	125	

Sample Report

Sample Table

Sample Name 280-123521-a-6-a
 Data File Name 190SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T10:50:32-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457759 200.8
 ISTD Ref FileName 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	0.586	ppb	0.586	925.98	5185973	40000	
Be	9	1	6	0.076	ppb	0.076	27.10	22	2000	
B	11	1	6	826.138	ppb	826.138	1.38	8339	100	>LDR
Na	23	2	45	59096.466	ppb	59096.466	4.06	35903005	400000	
Mg	24	2	45	8932.252	ppb	8932.252	4.08	2345293	400000	
Al	27	2	45	344.539	ppb	344.539	5.65	27245	400000	
K	39	2	45	1573.115	ppb	1573.115	6.27	477183	400000	
Ca	44	2	45	13302.925	ppb	13302.925	3.86	258743	400000	
V	51	2	72	1.317	ppb	1.317	10.98	17856	2000	
Cr	52	2	72	0.518	ppb	0.518	4.36	4104	5000	
Mn	55	2	72	194.146	ppb	194.146	2.22	498056	10000	
Fe	57	2	72	689.144	ppb	689.144	0.87	72883	400000	
Co	59	2	72	0.583	ppb	0.583	8.29	9743	2000	
Ni	60	2	72	1.411	ppb	1.411	11.48	4144	5000	
Cu	63	2	72	1.681	ppb	1.681	2.50	13929	5000	
Zn	66	2	72	8.460	ppb	8.460	4.89	9076	5000	
As	75	2	72	1.404	ppb	1.404	10.73	1156	2000	
Se	78	1	72	0.302	ppb	0.302	24.34	184	2000	
Sr	88	2	45	64.578	ppb	64.578	3.90	194109	2000	
Zr	90	2	72	119.910	ppb	119.910	3.24	1944	1000	
Zr	90	1	72	123.966	ppb	123.966	14.12	5417	1000	
Nb	93	2	72	1.008	ppb	1.008	15.35	11269	200	
Mo	95	2	115	5.621	ppb	5.621	1.76	17993	2000	
Pd	105	2	115	0.030	ppb	0.030	45.93	200	100	
Ag	107	2	115	0.004	ppb	0.004	70.68	207	100	
Cd	111	2	115	0.022	ppb	0.022	138.71	43	2000	
Sn	120	2	115	0.036	ppb	0.036	80.23	770	2000	
Sb	121	2	115	0.139	ppb	0.139	20.12	590	1000	
Ba	137	2	115	19.997	ppb	19.997	3.59	23308	5000	
W	182	2	165	-0.037	ppb	-0.037	-66.09	2037	100	
Pt	195	2	165	0.001	ppb	0.001	283.41	10	100	
Tl	205	2	165	0.015	ppb	0.015	45.03	427	2000	
Pb	208	2	165	0.632	ppb	0.632	6.46	9628	5000	
Th	232	2	165	0.211	ppb	0.211	6.86	4461	2000	
U	238	2	165	0.575	ppb	0.575	0.75	9050	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	633023	0.80	640661	98.81	60	125	
Sc (IS)	45	2	HMI He	3590221	4.74	3683202	97.48	60	125	
Sc IS)	45	3	No Gas	96661299	1.08	97710586	98.93	60	120	
Ge Internal Standard	72	1	HMI H2	19901087	1.80	20068360	99.17	60	125	
Ge Internal Standard	72	2	HMI He	4398862	0.89	4425118	99.41	60	125	
In Internal standard	115	2	HMI He	13554459	3.07	13821071	98.07	60	125	
Ho-165	165	2	HMI He	32454354	2.46	32625871	99.47	60	125	

Sample Report

Sample Table

Sample Name 280-123521-a-9-a
 Data File Name 191SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T10:54:05-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457759 200.8
 ISTD Ref FileName 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-2.096	ppb	-2.096	-420.97	5143633	40000	
Be	9	1	6	0.017	ppb	0.017	98.78	5	2000	
B	11	1	6	742.191	ppb	742.191	2.59	7522	100	>LDR
Na	23	2	45	48611.717	ppb	48611.717	2.81	29569078	400000	
Mg	24	2	45	13465.091	ppb	13465.091	4.83	3536981	400000	
Al	27	2	45	44.956	ppb	44.956	5.46	3917	400000	
K	39	2	45	1484.767	ppb	1484.767	2.22	455780	400000	
Ca	44	2	45	18711.252	ppb	18711.252	1.99	364257	400000	
V	51	2	72	0.610	ppb	0.610	21.79	14776	2000	
Cr	52	2	72	0.349	ppb	0.349	13.16	3174	5000	
Mn	55	2	72	56.419	ppb	56.419	2.02	144348	10000	
Fe	57	2	72	265.883	ppb	265.883	1.63	29095	400000	
Co	59	2	72	0.227	ppb	0.227	17.88	6668	2000	
Ni	60	2	72	1.747	ppb	1.747	8.74	4887	5000	
Cu	63	2	72	1.719	ppb	1.719	0.74	14118	5000	
Zn	66	2	72	19.369	ppb	19.369	5.45	19585	5000	
As	75	2	72	0.546	ppb	0.546	3.18	543	2000	
Se	78	1	72	0.149	ppb	0.149	45.21	108	2000	
Sr	88	2	45	93.264	ppb	93.264	1.87	280570	2000	
Zr	90	2	72	47.748	ppb	47.748	50.32	953	1000	
Zr	90	1	72	27.037	ppb	27.037	23.39	2419	1000	
Nb	93	2	72	0.558	ppb	0.558	24.50	8559	200	
Mo	95	2	115	2.637	ppb	2.637	2.82	8719	2000	
Pd	105	2	115	0.018	ppb	0.018	65.14	150	100	
Ag	107	2	115	-0.005	ppb	-0.005	-81.80	127	100	
Cd	111	2	115	0.007	ppb	0.007	56.08	23	2000	
Sn	120	2	115	0.056	ppb	0.056	79.98	873	2000	
Sb	121	2	115	0.248	ppb	0.248	20.31	997	1000	
Ba	137	2	115	21.888	ppb	21.888	2.75	26045	5000	
W	182	2	165	-0.040	ppb	-0.040	-5.34	1993	100	
Pt	195	2	165	0.002	ppb	0.002	333.88	13	100	
Tl	205	2	165	0.001	ppb	0.001	903.25	270	2000	
Pb	208	2	165	0.236	ppb	0.236	10.35	4020	5000	
Th	232	2	165	0.092	ppb	0.092	6.76	2657	2000	
U	238	2	165	4.595	ppb	4.595	3.06	70797	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	631910	2.46	640661	98.63	60	125	
Sc (IS)	45	2	HMI He	3590894	2.50	3683202	97.49	60	125	
Sc IS)	45	3	No Gas	96761028	3.53	97710586	99.03	60	120	
Ge Internal Standard	72	1	HMI H2	20283377	0.84	20068360	101.07	60	125	
Ge Internal Standard	72	2	HMI He	4379785	1.33	4425118	98.98	60	125	
In Internal standard	115	2	HMI He	13835777	0.60	13821071	100.11	60	125	
Ho-165	165	2	HMI He	32016254	2.51	32625871	98.13	60	125	

Sample Report

Sample Table

Sample Name 280-123521-a-13-a
 Data File Name 192SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T10:57:37-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457759 200.8
 ISTD Ref FileName 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	4.994	ppb	4.994	167.74	5225754	40000	
Be	9	1	6	0.018	ppb	0.018	99.57	5	2000	
B	11	1	6	1855.295	ppb	1855.295	2.70	17896	100	>LDR
Na	23	2	45	44393.735	ppb	44393.735	1.79	27750126	400000	
Mg	24	2	45	21062.174	ppb	21062.174	3.18	5685138	400000	
Al	27	2	45	4.500	ppb	4.500	35.96	783	400000	
K	39	2	45	4396.367	ppb	4396.367	1.43	1218067	400000	
Ca	44	2	45	26318.804	ppb	26318.804	1.73	526299	400000	
V	51	2	72	0.497	ppb	0.497	23.98	14103	2000	
Cr	52	2	72	0.228	ppb	0.228	8.01	2480	5000	
Mn	55	2	72	2.364	ppb	2.364	1.37	6301	10000	
Fe	57	2	72	29.729	ppb	29.729	11.61	4774	400000	
Co	59	2	72	0.246	ppb	0.246	4.14	6728	2000	
Ni	60	2	72	2.489	ppb	2.489	9.82	6481	5000	
Cu	63	2	72	1.233	ppb	1.233	5.50	10830	5000	
Zn	66	2	72	16.442	ppb	16.442	4.70	16518	5000	
As	75	2	72	0.314	ppb	0.314	4.51	373	2000	
Se	78	1	72	0.487	ppb	0.487	8.90	283	2000	
Sr	88	2	45	183.510	ppb	183.510	1.18	567050	2000	
Zr	90	2	72	31.125	ppb	31.125	19.72	720	1000	
Zr	90	1	72	22.724	ppb	22.724	23.82	2269	1000	
Nb	93	2	72	0.389	ppb	0.389	18.32	7462	200	
Mo	95	2	115	22.557	ppb	22.557	0.83	71829	2000	
Pd	105	2	115	0.024	ppb	0.024	41.21	173	100	
Ag	107	2	115	-0.008	ppb	-0.008	-30.35	93	100	
Cd	111	2	115	0.027	ppb	0.027	48.92	50	2000	
Sn	120	2	115	0.116	ppb	0.116	25.85	1107	2000	
Sb	121	2	115	0.159	ppb	0.159	26.37	663	1000	
Ba	137	2	115	16.357	ppb	16.357	3.98	19162	5000	
W	182	2	165	0.011	ppb	0.011	231.91	2300	100	
Pt	195	2	165	0.004	ppb	0.004	94.45	23	100	
Tl	205	2	165	0.001	ppb	0.001	217.88	273	2000	
Pb	208	2	165	0.031	ppb	0.031	8.75	1187	5000	
Th	232	2	165	0.044	ppb	0.044	37.62	1940	2000	
U	238	2	165	0.936	ppb	0.936	2.94	14417	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	623863	0.65	640661	97.38	60	125	
Sc (IS)	45	2	HMI He	3688618	1.34	3683202	100.15	60	125	
Sc IS)	45	3	No Gas	96029872	0.31	97710586	98.28	60	120	
Ge Internal Standard	72	1	HMI H2	20170567	1.81	20068360	100.51	60	125	
Ge Internal Standard	72	2	HMI He	4318181	1.14	4425118	97.58	60	125	
In Internal standard	115	2	HMI He	13595033	1.71	13821071	98.36	60	125	
Ho-165	165	2	HMI He	31894980	3.32	32625871	97.76	60	125	

Sample Report

Sample Table

Sample Name 280-123521-a-13-b.ms
 Data File Name 193SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T11:01:10-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457759 200.8
 ISTD Ref FileName 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	69.186	ppb	69.186	4.38	6212275	40000	
Be	9	1	6	32.160	ppb	32.160	1.17	8892	2000	
B	11	1	6	2791.195	ppb	2791.195	1.30	26403	100	>LDR
Na	23	2	45	45999.690	ppb	45999.690	2.07	28141531	400000	
Mg	24	2	45	21112.123	ppb	21112.123	2.45	5578219	400000	
Al	27	2	45	315.184	ppb	315.184	2.90	25138	400000	
K	39	2	45	4570.248	ppb	4570.248	2.99	1235768	400000	
Ca	44	2	45	27099.992	ppb	27099.992	1.87	530387	400000	
V	51	2	72	30.676	ppb	30.676	2.16	142291	2000	
Cr	52	2	72	30.073	ppb	30.073	1.38	164365	5000	
Mn	55	2	72	32.493	ppb	32.493	3.48	83443	10000	
Fe	57	2	72	336.335	ppb	336.335	1.07	36398	400000	
Co	59	2	72	30.920	ppb	30.920	0.41	268978	2000	
Ni	60	2	72	33.069	ppb	33.069	2.23	76268	5000	
Cu	63	2	72	30.734	ppb	30.734	1.31	201259	5000	
Zn	66	2	72	46.263	ppb	46.263	1.93	45701	5000	
As	75	2	72	30.294	ppb	30.294	0.77	21695	2000	
Se	78	1	72	31.819	ppb	31.819	4.55	16405	2000	
Sr	88	2	45	220.944	ppb	220.944	1.60	668095	2000	
Zr	90	2	72	87.152	ppb	87.152	5.00	1493	1000	
Zr	90	1	72	79.600	ppb	79.600	9.63	4055	1000	
Nb	93	2	72	0.331	ppb	0.331	45.48	7238	200	
Mo	95	2	115	53.824	ppb	53.824	2.25	172531	2000	
Pd	105	2	115	0.030	ppb	0.030	56.04	203	100	
Ag	107	2	115	31.317	ppb	31.317	1.10	295478	100	
Cd	111	2	115	30.968	ppb	30.968	3.74	43120	2000	
Sn	120	2	115	31.273	ppb	31.273	1.47	132097	2000	
Sb	121	2	115	33.360	ppb	33.360	3.99	119485	1000	
Ba	137	2	115	47.895	ppb	47.895	3.17	56328	5000	
W	182	2	165	16.431	ppb	16.431	4.15	100454	100	
Pt	195	2	165	0.009	ppb	0.009	88.79	43	100	
Tl	205	2	165	30.126	ppb	30.126	2.57	305416	2000	
Pb	208	2	165	28.858	ppb	28.858	2.70	386155	5000	
Th	232	2	165	27.262	ppb	27.262	3.18	387682	2000	
U	238	2	165	34.444	ppb	34.444	3.74	512220	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	616950	0.41	640661	96.30	60	125	
Sc (IS)	45	2	HMI He	3609805	0.32	3683202	98.01	60	125	
Sc IS)	45	3	No Gas	94803572	1.00	97710586	97.02	60	120	
Ge Internal Standard	72	1	HMI H2	20080423	1.83	20068360	100.06	60	125	
Ge Internal Standard	72	2	HMI He	4387736	0.47	4425118	99.16	60	125	
In Internal standard	115	2	HMI He	13709372	1.60	13821071	99.19	60	125	
Ho-165	165	2	HMI He	30937978	2.57	32625871	94.83	60	125	

Sample Report

Sample Table

Sample Name 280-123521-a-13-c msd
 Data File Name 194SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T11:04:42-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457759 200.8
 ISTD Ref FileName 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	58.856	ppb	58.856	19.80	6226961	40000	
Be	9	1	6	34.196	ppb	34.196	2.51	9536	2000	
B	11	1	6	2927.508	ppb	2927.508	3.88	27885	100	>LDR
Na	23	2	45	47746.827	ppb	47746.827	3.15	29210646	400000	
Mg	24	2	45	22721.143	ppb	22721.143	3.94	6003096	400000	
Al	27	2	45	347.734	ppb	347.734	4.94	27705	400000	
K	39	2	45	4890.723	ppb	4890.723	4.56	1316570	400000	
Ca	44	2	45	28394.738	ppb	28394.738	1.13	555904	400000	
V	51	2	72	32.273	ppb	32.273	2.99	150849	2000	
Cr	52	2	72	32.586	ppb	32.586	5.03	180033	5000	
Mn	55	2	72	34.318	ppb	34.318	4.21	89148	10000	
Fe	57	2	72	364.466	ppb	364.466	3.09	39759	400000	
Co	59	2	72	31.992	ppb	31.992	3.29	281467	2000	
Ni	60	2	72	34.652	ppb	34.652	1.65	80851	5000	
Cu	63	2	72	33.031	ppb	33.031	4.63	218575	5000	
Zn	66	2	72	49.021	ppb	49.021	3.62	48946	5000	
As	75	2	72	31.639	ppb	31.639	3.16	22919	2000	
Se	78	1	72	33.268	ppb	33.268	2.84	17289	2000	
Sr	88	2	45	232.806	ppb	232.806	2.09	704126	2000	
Zr	90	2	72	84.493	ppb	84.493	13.96	1477	1000	
Zr	90	1	72	87.657	ppb	87.657	8.43	4345	1000	
Nb	93	2	72	0.090	ppb	0.090	134.72	5904	200	
Mo	95	2	115	57.204	ppb	57.204	3.30	182057	2000	
Pd	105	2	115	0.018	ppb	0.018	89.38	150	100	
Ag	107	2	115	32.953	ppb	32.953	1.56	308618	100	
Cd	111	2	115	32.934	ppb	32.934	2.48	45534	2000	
Sn	120	2	115	33.058	ppb	33.058	2.11	138582	2000	
Sb	121	2	115	35.558	ppb	35.558	2.63	126451	1000	
Ba	137	2	115	50.682	ppb	50.682	1.89	59176	5000	
W	182	2	165	17.760	ppb	17.760	4.75	110750	100	
Pt	195	2	165	0.006	ppb	0.006	112.21	30	100	
Tl	205	2	165	31.837	ppb	31.837	1.16	329701	2000	
Pb	208	2	165	29.613	ppb	29.613	3.46	404766	5000	
Th	232	2	165	28.846	ppb	28.846	0.41	418895	2000	
U	238	2	165	35.225	ppb	35.225	1.89	535172	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	622024	1.81	640661	97.09	60	125	
Sc (IS)	45	2	HMI He	3611124	1.61	3683202	98.04	60	125	
Sc IS)	45	3	No Gas	97725087	2.01	97710586	100.01	60	120	
Ge Internal Standard	72	1	HMI H2	20237420	1.99	20068360	100.84	60	125	
Ge Internal Standard	72	2	HMI He	4442515	3.12	4425118	100.39	60	125	
In Internal standard	115	2	HMI He	13608734	0.83	13821071	98.46	60	125	
Ho-165	165	2	HMI He	31591192	0.28	32625871	96.83	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5699926
 Data File Name 195_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T11:08:13-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	96.792	ppb	16.399	107232	100	96.8	90	110	
Li	7	3	45	93.673	ppb	8.759	6765132	100	93.7	90	110	
Be	9	1	6	48.274	ppb	1.852	13879	50	96.5	90	110	
B	11	1	6	131.691	ppb	16.015	1733	50	263.4	90	110	>+ -10%
Na	23	2	45	1000.344	ppb	2.130	673870	1000	100.0	90	110	
Mg	24	2	45	975.326	ppb	2.562	267214	1000	97.5	90	110	
Al	27	2	45	972.952	ppb	3.515	79088	1000	97.3	90	110	
K	39	2	45	973.663	ppb	3.380	339633	1000	97.4	90	110	
Ca	44	2	45	1010.053	ppb	5.447	20582	1000	101.0	90	110	
V	51	2	72	46.332	ppb	2.979	212042	50	92.7	90	110	
Cr	52	2	72	47.669	ppb	3.263	263971	50	95.3	90	110	
Mn	55	2	72	47.532	ppb	5.580	123808	50	95.1	90	110	
Fe	57	2	72	958.800	ppb	3.828	102041	1000	95.9	90	110	
Co	59	2	72	47.897	ppb	1.415	420813	50	95.8	90	110	
Ni	60	2	72	48.437	ppb	1.487	113103	50	96.9	90	110	
Cu	63	2	72	47.010	ppb	3.101	311135	50	94.0	90	110	
Zn	66	2	72	46.737	ppb	1.316	46914	50	93.5	90	110	
As	75	2	72	48.749	ppb	3.024	35373	50	97.5	90	110	
Se	78	1	72	50.537	ppb	1.561	26426	50	101.1	90	110	
Sr	88	2	45	98.244	ppb	2.324	306324	100	98.2	90	110	
Zr	90	2	72	65.112	ppb	4.361	1213	50	130.2	90	110	>+ -10%
Zr	90	1	72	44.006	ppb	15.471	2977	50	88.0	90	110	>+ -10%
Nb	93	2	72	90.117	ppb	5.798	546387	100	90.1	90	110	
Mo	95	2	115	47.928	ppb	2.976	158232	50	95.9	90	110	
Pd	105	2	115	50.288	ppb	3.653	229900	50	100.6	90	110	
Ag	107	2	115	47.380	ppb	4.038	460132	50	94.8	90	110	
Cd	111	2	115	47.143	ppb	2.351	67613	50	94.3	90	110	
Sn	120	2	115	47.747	ppb	2.509	207347	50	95.5	90	110	
Sb	121	2	115	47.943	ppb	0.408	176878	50	95.9	90	110	
Ba	137	2	115	48.365	ppb	2.628	58584	50	96.7	90	110	
W	182	2	165	49.388	ppb	3.541	307457	50	98.8	90	110	
Pt	195	2	165	49.450	ppb	3.818	204925	50	98.9	90	110	
Tl	205	2	165	49.847	ppb	3.244	521981	50	99.7	90	110	
Pb	208	2	165	46.012	ppb	4.259	635561	50	92.0	90	110	
Th	232	2	165	48.803	ppb	3.602	715847	50	97.6	90	110	
U	238	2	165	49.448	ppb	1.893	759912	50	98.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	641512	1.07	640661	100.13	60	125	
Sc (IS)	45	2	HMI He	3721971	2.15	3683202	101.05	60	125	
Sc (IS)	45	3	No Gas	96971216	0.91	97710586	99.24	60	120	
Ge Internal Standard	72	1	HMI H2	20373875	2.37	20068360	101.52	60	125	
Ge Internal Standard	72	2	HMI He	4460312	2.62	4425118	100.80	60	125	
In Internal standard	115	2	HMI He	14120287	2.04	13821071	102.16	60	125	
Ho-165	165	2	HMI He	31964691	2.19	32625871	97.97	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5699924
 Data File Name 196_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T11:11:46-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	6.204	ppb	59.3	83261	0.1	>RL
Li	7	3	45	-0.652	ppb	-863.7	5209255	0.05	
Be	9	1	6	0.098	ppb	90.2	28	0.5	
B	11	1	6	24.091	ppb	39.7	697	0.1	>RL
Na	23	2	45	23.121	ppb	13.7	59001	25	
Mg	24	2	45	1.994	ppb	20.3	2210	25	
Al	27	2	45	0.882	ppb	85.6	503	15	
K	39	2	45	8.162	ppb	87.0	89580	50	
Ca	44	2	45	0.850	ppb	383.0	230	25	
V	51	2	72	-0.186	ppb	-10.3	11644	1	
Cr	52	2	72	0.031	ppb	29.5	1480	1	
Mn	55	2	72	0.076	ppb	49.6	563	0.5	
Fe	57	2	72	3.103	ppb	58.6	2154	25	
Co	59	2	72	0.018	ppb	71.3	4981	0.5	
Ni	60	2	72	0.097	ppb	37.0	1160	1	
Cu	63	2	72	0.624	ppb	12.4	7208	1	
Zn	66	2	72	-0.085	ppb	-213.2	780	5	
As	75	2	72	0.068	ppb	48.2	208	1	
Se	78	1	72	0.042	ppb	98.7	52	1	
Sr	88	2	45	0.064	ppb	17.2	380	1	
Zr	90	2	72	16.511	ppb	27.5	543	1	>RL
Zr	90	1	72	10.495	ppb	59.1	1885	1	>RL
Nb	93	2	72	3.259	ppb	3.8	25005	2	>RL
Mo	95	2	115	0.118	ppb	27.7	583	0.5	
Pd	105	2	115	0.049	ppb	17.4	290	1	
Ag	107	2	115	0.027	ppb	21.9	437	1	
Cd	111	2	115	0.031	ppb	74.7	57	0.5	
Sn	120	2	115	0.097	ppb	81.6	1057	1	
Sb	121	2	115	0.133	ppb	19.9	587	1	
Ba	137	2	115	0.068	ppb	111.2	193	0.5	
W	182	2	165	0.118	ppb	43.1	2980	1	
Pt	195	2	165	0.020	ppb	40.4	90	1	
Tl	205	2	165	0.040	ppb	19.8	687	0.1	
Pb	208	2	165	0.046	ppb	8.7	1407	0.5	
Th	232	2	165	0.185	ppb	12.5	4031	1	
U	238	2	165	0.059	ppb	4.2	993	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	643815	0.85	640661	100.49	60	125	
Sc (IS)	45	2	HMI He	3751012	1.97	3683202	101.84	60	125	
Sc IS)	45	3	No Gas	97482043	0.74	97710586	99.77	60	120	
Ge Internal Standard	72	1	HMI H2	20196402	1.19	20068360	100.64	60	125	
Ge Internal Standard	72	2	HMI He	4468556	0.40	4425118	100.98	60	125	
In Internal standard	115	2	HMI He	13960143	0.88	13821071	101.01	60	125	
Ho-165	165	2	HMI He	32173619	4.15	32625871	98.61	60	125	

Sample Report

Sample Table

Sample Name 280-123521-a-16-a
 Data File Name 197SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T11:15:19-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457759 200.8
 ISTD Ref FileName 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	2.203	ppb	2.203	134.41	5195412	40000	
Be	9	1	6	0.036	ppb	0.036	51.10	10	2000	
B	11	1	6	888.524	ppb	888.524	1.84	8796	100	>LDR
Na	23	2	45	30728.045	ppb	30728.045	1.07	19210785	400000	
Mg	24	2	45	15795.485	ppb	15795.485	2.54	4261663	400000	
Al	27	2	45	285.501	ppb	285.501	4.14	23290	400000	
K	39	2	45	1943.897	ppb	1943.897	0.83	586185	400000	
Ca	44	2	45	19442.805	ppb	19442.805	1.85	388614	400000	
V	51	2	72	0.921	ppb	0.921	23.43	16218	2000	
Cr	52	2	72	0.841	ppb	0.841	4.57	5878	5000	
Mn	55	2	72	172.293	ppb	172.293	2.12	443595	10000	
Fe	57	2	72	459.837	ppb	459.837	3.59	49420	400000	
Co	59	2	72	0.790	ppb	0.790	9.95	11561	2000	
Ni	60	2	72	1.795	ppb	1.795	4.87	5037	5000	
Cu	63	2	72	1.197	ppb	1.197	1.96	10844	5000	
Zn	66	2	72	17.486	ppb	17.486	1.67	17909	5000	
As	75	2	72	0.901	ppb	0.901	4.54	801	2000	
Se	78	1	72	0.180	ppb	0.180	10.67	123	2000	
Sr	88	2	45	112.223	ppb	112.223	2.23	346598	2000	
Zr	90	2	72	105.791	ppb	105.791	6.06	1757	1000	
Zr	90	1	72	146.864	ppb	146.864	56.30	6131	1000	
Nb	93	2	72	1.890	ppb	1.890	13.98	16565	200	
Mo	95	2	115	2.162	ppb	2.162	10.25	7092	2000	
Pd	105	2	115	0.032	ppb	0.032	49.73	210	100	
Ag	107	2	115	0.001	ppb	0.001	314.41	180	100	
Cd	111	2	115	0.039	ppb	0.039	9.53	67	2000	
Sn	120	2	115	0.173	ppb	0.173	22.32	1350	2000	
Sb	121	2	115	0.219	ppb	0.219	15.99	880	1000	
Ba	137	2	115	29.592	ppb	29.592	5.59	34722	5000	
W	182	2	165	0.023	ppb	0.023	231.36	2370	100	
Pt	195	2	165	0.003	ppb	0.003	126.11	20	100	
Tl	205	2	165	0.035	ppb	0.035	35.61	627	2000	
Pb	208	2	165	0.552	ppb	0.552	5.95	8378	5000	
Th	232	2	165	0.279	ppb	0.279	6.91	5398	2000	
U	238	2	165	3.356	ppb	3.356	2.33	51617	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	623113	1.56	640661	97.26	60	125	
Sc (IS)	45	2	HMI He	3686325	1.14	3683202	100.08	60	125	
Sc IS)	45	3	No Gas	96323528	0.41	97710586	98.58	60	120	
Ge Internal Standard	72	1	HMI H2	20020080	1.93	20068360	99.76	60	125	
Ge Internal Standard	72	2	HMI He	4414779	1.18	4425118	99.77	60	125	
In Internal standard	115	2	HMI He	13660835	1.20	13821071	98.84	60	125	
Ho-165	165	2	HMI He	31937865	1.79	32625871	97.89	60	125	

Sample Report

Sample Table

Sample Name 280-123521-a-20-a
 Data File Name 198SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T11:18:51-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457759 200.8
 ISTD Ref FileName 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	4.591	ppb	4.591	65.58	5237688	40000	
Be	9	1	6	0.012	ppb	0.012	173.21	3	2000	
B	11	1	6	900.671	ppb	900.671	7.76	8976	100	>LDR
Na	23	2	45	31745.747	ppb	31745.747	4.86	19718360	400000	
Mg	24	2	45	14342.420	ppb	14342.420	4.39	3845534	400000	
Al	27	2	45	128.042	ppb	128.042	6.66	10623	400000	
K	39	2	45	1668.104	ppb	1668.104	3.09	512071	400000	
Ca	44	2	45	19239.792	ppb	19239.792	1.70	382343	400000	
V	51	2	72	0.484	ppb	0.484	27.02	14376	2000	
Cr	52	2	72	0.371	ppb	0.371	15.07	3317	5000	
Mn	55	2	72	159.658	ppb	159.658	0.89	411701	10000	
Fe	57	2	72	285.120	ppb	285.120	1.23	31362	400000	
Co	59	2	72	0.589	ppb	0.589	11.19	9836	2000	
Ni	60	2	72	1.212	ppb	1.212	7.51	3710	5000	
Cu	63	2	72	0.929	ppb	0.929	5.02	9116	5000	
Zn	66	2	72	15.816	ppb	15.816	4.41	16301	5000	
As	75	2	72	0.570	ppb	0.570	7.05	565	2000	
Se	78	1	72	0.164	ppb	0.164	23.28	113	2000	
Sr	88	2	45	101.817	ppb	101.817	4.84	312448	2000	
Zr	90	2	72	119.949	ppb	119.949	91.86	1948	1000	
Zr	90	1	72	65.843	ppb	65.843	9.64	3564	1000	
Nb	93	2	72	1.001	ppb	1.001	26.96	11267	200	
Mo	95	2	115	1.882	ppb	1.882	9.55	6361	2000	
Pd	105	2	115	0.011	ppb	0.011	58.19	120	100	
Ag	107	2	115	-0.006	ppb	-0.006	-67.81	120	100	
Cd	111	2	115	0.009	ppb	0.009	193.44	27	2000	
Sn	120	2	115	0.057	ppb	0.057	63.21	887	2000	
Sb	121	2	115	0.177	ppb	0.177	7.01	750	1000	
Ba	137	2	115	26.270	ppb	26.270	4.40	31619	5000	
W	182	2	165	0.003	ppb	0.003	742.62	2314	100	
Pt	195	2	165	0.002	ppb	0.002	230.38	13	100	
Tl	205	2	165	0.005	ppb	0.005	84.99	317	2000	
Pb	208	2	165	0.221	ppb	0.221	4.82	3907	5000	
Th	232	2	165	0.109	ppb	0.109	7.22	2970	2000	
U	238	2	165	1.616	ppb	1.616	7.58	25482	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	627933	0.33	640661	98.01	60	125	
Sc (IS)	45	2	HMI He	3665895	3.14	3683202	99.53	60	125	
Sc IS)	45	3	No Gas	96370836	0.58	97710586	98.63	60	120	
Ge Internal Standard	72	1	HMI H2	19756337	0.27	20068360	98.45	60	125	
Ge Internal Standard	72	2	HMI He	4420912	1.93	4425118	99.90	60	125	
In Internal standard	115	2	HMI He	14011730	2.35	13821071	101.38	60	125	
Ho-165	165	2	HMI He	32746192	3.33	32625871	100.37	60	125	

Sample Report

Sample Table

Sample Name 280-123521-a-20-b.ms
 Data File Name 199SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T11:22:25-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457759 200.8
 ISTD Ref FileName 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	59.758	ppb	59.758	10.40	6191062	40000	
Be	9	1	6	32.397	ppb	32.397	3.76	9016	2000	
B	11	1	6	1743.569	ppb	1743.569	5.36	16765	100	>LDR
Na	23	2	45	32612.386	ppb	32612.386	2.88	20252976	400000	
Mg	24	2	45	14476.668	ppb	14476.668	1.57	3882113	400000	
Al	27	2	45	452.068	ppb	452.068	1.97	36401	400000	
K	39	2	45	1690.714	ppb	1690.714	2.81	517563	400000	
Ca	44	2	45	19537.007	ppb	19537.007	2.09	387964	400000	
V	51	2	72	30.794	ppb	30.794	2.30	143511	2000	
Cr	52	2	72	30.770	ppb	30.770	2.02	168977	5000	
Mn	55	2	72	194.258	ppb	194.258	3.05	499541	10000	
Fe	57	2	72	626.788	ppb	626.788	1.67	66610	400000	
Co	59	2	72	30.838	ppb	30.838	2.41	269608	2000	
Ni	60	2	72	31.211	ppb	31.211	1.19	72398	5000	
Cu	63	2	72	30.825	ppb	30.825	0.92	202873	5000	
Zn	66	2	72	46.851	ppb	46.851	2.34	46513	5000	
As	75	2	72	30.063	ppb	30.063	1.16	21640	2000	
Se	78	1	72	31.176	ppb	31.176	1.02	16052	2000	
Sr	88	2	45	136.792	ppb	136.792	2.50	419811	2000	
Zr	90	2	72	125.989	ppb	125.989	10.74	2030	1000	
Zr	90	1	72	136.269	ppb	136.269	8.56	5834	1000	
Nb	93	2	72	0.643	ppb	0.643	24.22	9129	200	
Mo	95	2	115	33.029	ppb	33.029	2.51	106143	2000	
Pd	105	2	115	0.025	ppb	0.025	13.83	180	100	
Ag	107	2	115	31.424	ppb	31.424	3.54	296945	100	
Cd	111	2	115	31.403	ppb	31.403	0.48	43823	2000	
Sn	120	2	115	31.092	ppb	31.092	0.97	131610	2000	
Sb	121	2	115	32.784	ppb	32.784	2.34	117699	1000	
Ba	137	2	115	56.603	ppb	56.603	4.24	66665	5000	
W	182	2	165	15.707	ppb	15.707	1.76	100019	100	
Pt	195	2	165	0.006	ppb	0.006	84.26	33	100	
Tl	205	2	165	28.775	ppb	28.775	7.61	303307	2000	
Pb	208	2	165	29.016	ppb	29.016	4.80	403831	5000	
Th	232	2	165	28.458	ppb	28.458	1.75	421116	2000	
U	238	2	165	33.598	ppb	33.598	5.04	520062	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	620902	0.35	640661	96.92	60	125	
Sc (IS)	45	2	HMI He	3662958	1.95	3683202	99.45	60	125	
Sc IS)	45	3	No Gas	96876729	1.50	97710586	99.15	60	120	
Ge Internal Standard	72	1	HMI H2	20040574	1.05	20068360	99.86	60	125	
Ge Internal Standard	72	2	HMI He	4410018	1.08	4425118	99.66	60	125	
In Internal standard	115	2	HMI He	13735319	1.77	13821071	99.38	60	125	
Ho-165	165	2	HMI He	32185396	2.09	32625871	98.65	60	125	

Sample Report

Sample Table

Sample Name 280-123521-a-20-c msd
 Data File Name 200SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T11:26:17-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457759 200.8
 ISTD Ref FileName 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	57.872	ppb	57.872	4.11	6116822	40000	
Be	9	1	6	31.491	ppb	31.491	2.16	8927	2000	
B	11	1	6	1685.213	ppb	1685.213	1.35	16521	100	>LDR
Na	23	2	45	33218.929	ppb	33218.929	3.94	20223001	400000	
Mg	24	2	45	14961.464	ppb	14961.464	2.23	3933222	400000	
Al	27	2	45	481.478	ppb	481.478	4.41	37971	400000	
K	39	2	45	1740.073	ppb	1740.073	3.57	519891	400000	
Ca	44	2	45	19932.754	ppb	19932.754	1.71	388196	400000	
V	51	2	72	29.788	ppb	29.788	2.90	142140	2000	
Cr	52	2	72	29.390	ppb	29.390	4.11	164811	5000	
Mn	55	2	72	189.238	ppb	189.238	3.88	496780	10000	
Fe	57	2	72	615.972	ppb	615.972	5.94	66825	400000	
Co	59	2	72	29.717	ppb	29.717	2.95	265416	2000	
Ni	60	2	72	29.698	ppb	29.698	1.40	70399	5000	
Cu	63	2	72	29.114	ppb	29.114	3.11	195770	5000	
Zn	66	2	72	44.259	ppb	44.259	2.49	44898	5000	
As	75	2	72	28.481	ppb	28.481	2.83	20936	2000	
Se	78	1	72	30.011	ppb	30.011	3.41	15591	2000	
Sr	88	2	45	136.001	ppb	136.001	2.71	409269	2000	
Zr	90	2	72	146.962	ppb	146.962	24.15	2360	1000	
Zr	90	1	72	118.426	ppb	118.426	14.70	5313	1000	
Nb	93	2	72	0.315	ppb	0.315	4.81	7332	200	
Mo	95	2	115	32.544	ppb	32.544	1.26	105097	2000	
Pd	105	2	115	0.016	ppb	0.016	76.66	140	100	
Ag	107	2	115	30.761	ppb	30.761	1.14	292132	100	
Cd	111	2	115	29.252	ppb	29.252	3.98	41004	2000	
Sn	120	2	115	29.840	ppb	29.840	2.61	126928	2000	
Sb	121	2	115	31.134	ppb	31.134	1.17	112294	1000	
Ba	137	2	115	55.662	ppb	55.662	1.94	65897	5000	
W	182	2	165	14.915	ppb	14.915	1.51	96745	100	
Pt	195	2	165	0.006	ppb	0.006	114.77	33	100	
Tl	205	2	165	28.648	ppb	28.648	1.68	307513	2000	
Pb	208	2	165	27.509	ppb	27.509	4.50	389842	5000	
Th	232	2	165	27.928	ppb	27.928	2.96	420306	2000	
U	238	2	165	32.095	ppb	32.095	1.55	505359	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	632479	0.86	640661	98.72	60	125	
Sc (IS)	45	2	HMI He	3592642	2.94	3683202	97.54	60	125	
Sc IS)	45	3	No Gas	96219397	1.05	97710586	98.47	60	120	
Ge Internal Standard	72	1	HMI H2	20219371	2.58	20068360	100.75	60	125	
Ge Internal Standard	72	2	HMI He	4503950	2.69	4425118	101.78	60	125	
In Internal standard	115	2	HMI He	13799178	0.85	13821071	99.84	60	125	
Ho-165	165	2	HMI He	32740198	0.72	32625871	100.35	60	125	

Sample Report

Sample Table

Sample Name 280-123521-a-23-a
 Data File Name 201SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T11:29:50-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457759 200.8
 ISTD Ref FileName 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	10.923	ppb	10.923	61.17	4913769	40000	
Be	9	1	6	0.115	ppb	0.115	33.68	30	2000	
B	11	1	6	1286.268	ppb	1286.268	3.79	11721	100	>LDR
Na	23	2	45	34035.326	ppb	34035.326	2.36	19479019	400000	
Mg	24	2	45	18069.833	ppb	18069.833	1.63	4464281	400000	
Al	27	2	45	23.723	ppb	23.723	5.68	2127	400000	
K	39	2	45	2052.671	ppb	2052.671	1.85	562328	400000	
Ca	44	2	45	23498.611	ppb	23498.611	1.25	430060	400000	
V	51	2	72	0.667	ppb	0.667	43.03	14169	2000	
Cr	52	2	72	1.286	ppb	1.286	2.70	7775	5000	
Mn	55	2	72	148.366	ppb	148.366	0.94	357735	10000	
Fe	57	2	72	374.282	ppb	374.282	0.96	37965	400000	
Co	59	2	72	0.350	ppb	0.350	10.15	7275	2000	
Ni	60	2	72	1.031	ppb	1.031	3.09	3077	5000	
Cu	63	2	72	1.736	ppb	1.736	6.82	13419	5000	
Zn	66	2	72	42.754	ppb	42.754	3.25	39839	5000	
As	75	2	72	0.719	ppb	0.719	14.62	628	2000	
Se	78	1	72	0.591	ppb	0.591	18.58	309	2000	
Sr	88	2	45	139.298	ppb	139.298	0.48	393958	2000	
Zr	90	2	72	12.926	ppb	12.926	12.88	457	1000	
Zr	90	1	72	22.556	ppb	22.556	34.80	2082	1000	
Nb	93	2	72	0.049	ppb	0.049	172.65	5251	200	
Mo	95	2	115	3.105	ppb	3.105	5.92	9506	2000	
Pd	105	2	115	0.016	ppb	0.016	56.20	130	100	
Ag	107	2	115	0.026	ppb	0.026	43.46	387	100	
Cd	111	2	115	0.098	ppb	0.098	14.91	140	2000	
Sn	120	2	115	0.088	ppb	0.088	69.79	933	2000	
Sb	121	2	115	0.442	ppb	0.442	12.22	1577	1000	
Ba	137	2	115	25.276	ppb	25.276	1.57	27949	5000	
W	182	2	165	0.037	ppb	0.037	52.53	2324	100	
Pt	195	2	165	0.002	ppb	0.002	214.21	13	100	
Tl	205	2	165	0.072	ppb	0.072	38.38	953	2000	
Pb	208	2	165	0.355	ppb	0.355	2.83	5327	5000	
Th	232	2	165	0.673	ppb	0.673	4.90	10527	2000	
U	238	2	165	2.312	ppb	2.312	3.19	33512	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	582939	0.59	640661	90.99	60	125	
Sc (IS)	45	2	HMI He	3375589	1.49	3683202	91.65	60	125	
Sc IS)	45	3	No Gas	88629825	1.14	97710586	90.71	60	120	
Ge Internal Standard	72	1	HMI H2	18573064	1.98	20068360	92.55	60	125	
Ge Internal Standard	72	2	HMI He	4133459	1.12	4425118	93.41	60	125	
In Internal standard	115	2	HMI He	12866130	2.69	13821071	93.09	60	125	
Ho-165	165	2	HMI He	30102388	3.25	32625871	92.27	60	125	

Sample Report

Sample Table

Sample Name LCSD 280-457010/3-A
 Data File Name 202SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T11:33:21-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457010 200.8
 ISTD Ref FileName 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	75.263	ppb	75.263	5.37	5991454	40000	
Be	9	1	6	42.137	ppb	42.137	4.48	11152	2000	
B	11	1	6	1180.478	ppb	1180.478	3.44	10933	100	>LDR
Na	23	2	45	74.502	ppb	74.502	5.26	83608	400000	
Mg	24	2	45	20.715	ppb	20.715	8.97	6701	400000	
Al	27	2	45	442.234	ppb	442.234	4.25	33278	400000	
K	39	2	45	46.044	ppb	46.044	24.90	90796	400000	
Ca	44	2	45	179.307	ppb	179.307	7.32	3520	400000	
V	51	2	72	41.085	ppb	41.085	3.66	174894	2000	
Cr	52	2	72	41.632	ppb	41.632	3.53	213037	5000	
Mn	55	2	72	42.123	ppb	42.123	1.67	101404	10000	
Fe	57	2	72	415.282	ppb	415.282	3.17	41764	400000	
Co	59	2	72	41.830	ppb	41.830	2.23	339859	2000	
Ni	60	2	72	42.276	ppb	42.276	0.80	91279	5000	
Cu	63	2	72	40.738	ppb	40.738	1.45	249419	5000	
Zn	66	2	72	42.220	ppb	42.220	3.02	39195	5000	
As	75	2	72	39.547	ppb	39.547	1.54	26528	2000	
Se	78	1	72	41.431	ppb	41.431	1.75	20145	2000	
Sr	88	2	45	44.269	ppb	44.269	0.55	127100	2000	
Zr	90	2	72	493.141	ppb	493.141	10.91	6578	1000	
Zr	90	1	72	498.383	ppb	498.383	2.29	16304	1000	
Nb	93	2	72	-0.020	ppb	-0.020	-441.99	4847	200	
Mo	95	2	115	43.268	ppb	43.268	2.84	127714	2000	
Pd	105	2	115	0.010	ppb	0.010	93.75	103	100	
Ag	107	2	115	43.498	ppb	43.498	3.34	377663	100	
Cd	111	2	115	42.107	ppb	42.107	4.57	53962	2000	
Sn	120	2	115	43.455	ppb	43.455	0.77	168785	2000	
Sb	121	2	115	44.548	ppb	44.548	1.24	146934	1000	
Ba	137	2	115	42.985	ppb	42.985	0.94	46570	5000	
W	182	2	165	35.339	ppb	35.339	1.63	204940	100	
Pt	195	2	165	0.003	ppb	0.003	144.90	17	100	
Tl	205	2	165	39.110	ppb	39.110	3.81	380416	2000	
Pb	208	2	165	39.550	ppb	39.550	2.09	507682	5000	
Th	232	2	165	39.681	ppb	39.681	4.31	540585	2000	
U	238	2	165	43.513	ppb	43.513	1.90	620971	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	590517	0.68	640661	92.17	60	125	
Sc (IS)	45	2	HMI He	3424111	2.37	3683202	92.97	60	125	
Sc IS)	45	3	No Gas	89985780	1.21	97710586	92.09	60	120	
Ge Internal Standard	72	1	HMI H2	18936753	0.37	20068360	94.36	60	125	
Ge Internal Standard	72	2	HMI He	4117927	2.41	4425118	93.06	60	125	
In Internal standard	115	2	HMI He	12620683	1.73	13821071	91.31	60	125	
Ho-165	165	2	HMI He	29683234	2.52	32625871	90.98	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5699926
 Data File Name 203_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T11:36:56-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	98.707	ppb	8.046	100330	100	98.7	90	110	
Li	7	3	45	101.489	ppb	6.461	6437340	100	101.5	90	110	
Be	9	1	6	50.888	ppb	2.596	13784	50	101.8	90	110	
B	11	1	6	81.891	ppb	21.029	1180	50	163.8	90	110	>+ -10%
Na	23	2	45	1013.842	ppb	1.522	640789	1000	101.4	90	110	
Mg	24	2	45	1030.771	ppb	3.442	265034	1000	103.1	90	110	
Al	27	2	45	1056.666	ppb	1.946	80632	1000	105.7	90	110	
K	39	2	45	1073.413	ppb	1.879	343264	1000	107.3	90	110	
Ca	44	2	45	1037.800	ppb	2.879	19848	1000	103.8	90	110	
V	51	2	72	50.409	ppb	1.665	215790	50	100.8	90	110	
Cr	52	2	72	50.678	ppb	1.709	263666	50	101.4	90	110	
Mn	55	2	72	50.314	ppb	2.463	123197	50	100.6	90	110	
Fe	57	2	72	1035.854	ppb	0.665	103490	1000	103.6	90	110	
Co	59	2	72	52.075	ppb	1.799	429558	50	104.1	90	110	
Ni	60	2	72	51.125	ppb	2.324	112113	50	102.3	90	110	
Cu	63	2	72	49.611	ppb	1.501	308429	50	99.2	90	110	
Zn	66	2	72	51.243	ppb	3.590	48244	50	102.5	90	110	
As	75	2	72	51.412	ppb	1.602	35059	50	102.8	90	110	
Se	78	1	72	52.412	ppb	2.292	26002	50	104.8	90	110	
Sr	88	2	45	104.914	ppb	2.800	307105	100	104.9	90	110	
Zr	90	2	72	96.713	ppb	7.576	1550	50	193.4	90	110	>+ -10%
Zr	90	1	72	182.755	ppb	11.211	7045	50	365.5	90	110	>+ -10%
Nb	93	2	72	97.825	ppb	2.774	557211	100	97.8	90	110	
Mo	95	2	115	53.254	ppb	1.644	160518	50	106.5	90	110	
Pd	105	2	115	54.929	ppb	2.319	229288	50	109.9	90	110	
Ag	107	2	115	52.187	ppb	0.550	462799	50	104.4	90	110	
Cd	111	2	115	52.933	ppb	3.892	69320	50	105.9	90	110	
Sn	120	2	115	52.655	ppb	1.970	208736	50	105.3	90	110	
Sb	121	2	115	51.882	ppb	2.430	174682	50	103.8	90	110	
Ba	137	2	115	51.660	ppb	2.043	57125	50	103.3	90	110	
W	182	2	165	52.681	ppb	3.692	301157	50	105.4	90	110	
Pt	195	2	165	53.778	ppb	3.039	204751	50	107.6	90	110	
Tl	205	2	165	51.137	ppb	4.482	491923	50	102.3	90	110	
Pb	208	2	165	49.976	ppb	4.629	634158	50	100.0	90	110	
Th	232	2	165	53.409	ppb	2.930	719622	50	106.8	90	110	
U	238	2	165	54.731	ppb	1.969	772717	50	109.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	604403	0.87	640661	94.34	60	125	
Sc (IS)	45	2	HMI He	3494488	1.80	3683202	94.88	60	125	
Sc IS)	45	3	No Gas	90524771	1.49	97710586	92.65	60	120	
Ge Internal Standard	72	1	HMI H2	19328659	0.79	20068360	96.31	60	125	
Ge Internal Standard	72	2	HMI He	4190118	0.93	4425118	94.69	60	125	
In Internal standard	115	2	HMI He	12887967	0.88	13821071	93.25	60	125	
Ho-165	165	2	HMI He	29369763	3.01	32625871	90.02	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5699924
 Data File Name 204_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T11:40:29-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	3.259	ppb	211.2	77944	0.1	>RL
Li	7	3	45	9.115	ppb	36.0	4926438	0.05	>RL
Be	9	1	6	0.111	ppb	58.8	30	0.5	
B	11	1	6	21.250	ppb	63.0	623	0.1	>RL
Na	23	2	45	21.687	ppb	1.4	54129	25	
Mg	24	2	45	-0.890	ppb	-37.8	1320	25	
Al	27	2	45	1.160	ppb	123.4	490	15	
K	39	2	45	53.098	ppb	14.2	94436	50	>RL
Ca	44	2	45	1.631	ppb	271.8	230	25	
V	51	2	72	0.040	ppb	368.7	11874	1	
Cr	52	2	72	0.022	ppb	300.4	1347	1	
Mn	55	2	72	0.079	ppb	11.8	537	0.5	
Fe	57	2	72	-7.750	ppb	-18.3	957	25	
Co	59	2	72	0.065	ppb	31.1	5071	0.5	
Ni	60	2	72	0.006	ppb	964.9	893	1	
Cu	63	2	72	0.872	ppb	10.1	8315	1	
Zn	66	2	72	0.054	ppb	89.5	863	5	
As	75	2	72	0.061	ppb	22.9	191	1	
Se	78	1	72	0.081	ppb	29.0	68	1	
Sr	88	2	45	0.084	ppb	13.1	413	1	
Zr	90	2	72	-3.027	ppb	-154.5	257	1	
Zr	90	1	72	-0.554	ppb	-833.7	1442	1	
Nb	93	2	72	3.777	ppb	6.5	26468	2	>RL
Mo	95	2	115	0.122	ppb	27.0	560	0.5	
Pd	105	2	115	0.053	ppb	65.2	290	1	
Ag	107	2	115	0.040	ppb	6.9	523	1	
Cd	111	2	115	0.056	ppb	40.6	87	0.5	
Sn	120	2	115	0.115	ppb	39.2	1063	1	
Sb	121	2	115	0.124	ppb	16.8	520	1	
Ba	137	2	115	0.062	ppb	48.6	173	0.5	
W	182	2	165	0.169	ppb	18.2	3114	1	
Pt	195	2	165	0.042	ppb	30.8	170	1	
Tl	205	2	165	0.055	ppb	11.7	790	0.1	
Pb	208	2	165	0.038	ppb	18.0	1223	0.5	
Th	232	2	165	0.227	ppb	9.5	4391	1	
U	238	2	165	0.074	ppb	6.1	1153	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	598621	1.53	640661	93.44	60	125	
Sc (IS)	45	2	HMI He	3494646	1.04	3683202	94.88	60	125	
Sc IS)	45	3	No Gas	89352700	1.53	97710586	91.45	60	120	
Ge Internal Standard	72	1	HMI H2	18997280	1.54	20068360	94.66	60	125	
Ge Internal Standard	72	2	HMI He	4205881	0.38	4425118	95.05	60	125	
In Internal standard	115	2	HMI He	13096810	0.81	13821071	94.76	60	125	
Ho-165	165	2	HMI He	30324428	0.82	32625871	92.95	60	125	

Blank Report

Sample Table

Sample Name mb 280-457042/1-a
 Data File Name 205_BLK.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T11:44:04-06:00
 Sample Type Blank
 Dilution 1
 Comment 457042 200.8
 ISTD Ref File Name 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	1	45	5.632	ppb	117.225518	76641	0.1
Li	7	3	45	6.358	ppb	73.4233601	4894742	0.05
Be	9	1	6	0.044	ppb	67.02234381	12	0.5
Na	23	2	45	16.498	ppb	22.52954443	49599	25
Mg	24	2	45	0.763	ppb	117.1987091	1693	25
Al	27	2	45	1.222	ppb	32.64222819	480	15
K	39	2	45	42.659	ppb	6.129229076	89258	50
Ca	44	2	45	4.175	ppb	80.97415673	270	25
V	51	2	72	0.342	ppb	36.86267318	12872	1
Cr	52	2	72	0.029	ppb	58.13548369	1353	1
Mn	55	2	72	0.519	ppb	10.9498717	1587	0.5
Fe	57	2	72	12.659	ppb	17.59932372	2914	25
Co	59	2	72	0.042	ppb	103.7015196	4794	0.5
Ni	60	2	72	-0.087	ppb	-31.65738284	677	1
Cu	63	2	72	0.091	ppb	36.71964792	3430	1
Zn	66	2	72	0.422	ppb	9.256563868	1183	5
As	75	2	72	-0.020	ppb	-36.64314236	133	1
Se	78	1	72	-0.014	ppb	-355.7766149	21	1
Sr	88	2	45	0.036	ppb	96.52151523	267	1
Zr	90	2	72	-4.259	ppb	-63.41966582	237	1
Zr	90	1	72	3.611	ppb	77.43422842	1535	1
Nb	93	2	72	1.754	ppb	9.727111725	14740	2
Mo	95	2	115	0.020	ppb	19.0331806	247	0.5
Pd	105	2	115	0.011	ppb	56.59435548	113	1
Ag	107	2	115	-0.002	ppb	-87.15212568	143	1
Cd	111	2	115	-0.009	ppb	0	0	0.5
Sn	120	2	115	0.089	ppb	13.56190043	950	1
Sb	121	2	115	0.043	ppb	24.48309144	240	1
Ba	137	2	115	0.130	ppb	43.85968022	250	0.5
W	182	2	165	-0.001	ppb	-1979.015818	2040	1
Pt	195	2	165	0.005	ppb	119.8510421	23	1
Tl	205	2	165	0.002	ppb	275.9637861	257	0.1
Pb	208	2	165	0.015	ppb	18.09765681	880	0.5
Th	232	2	165	0.174	ppb	4.887702224	3534	1
U	238	2	165	0.015	ppb	21.94327036	277	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	598884	2.08	640661	93.48	60	125	
Sc (IS)	45	2	HMI He	3394730	0.14	3683202	92.17	60	125	
Sc IS)	45	3	No Gas	89571374	1.87	97710586	91.67	60	120	
Ge Internal Standard	72	1	HMI H2	18612898	1.71	20068360	92.75	60	125	
Ge Internal Standard	72	2	HMI He	4129915	1.30	4425118	93.33	60	125	
In Internal standard	115	2	HMI He	13016589	2.51	13821071	94.18	60	125	
Ho-165	165	2	HMI He	29286613	0.81	32625871	89.77	60	125	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name lcs 280-457042/2-a
 Data File Name 206_LCS.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T11:47:37-06:00
 Sample Type LCS
 Dilution 1
 Analyst Denver Metals
 Comment 457042 200.8
 ISTD Ref File Name 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	68.903	68.903	ppb	12.333	5874031	400	17.2	80	120	> +/-20%
Be	9	1	6	35.956	35.956	ppb	2.537	9669	40	89.9	80	120	
Na	23	2	45	17.730	17.730	ppb	14.705	49896	40	44.3	80	120	> +/-20%
Mg	24	2	45	-0.605	-0.605	ppb	-70.557	1343	40	-1.5	80	120	> +/-20%
Al	27	2	45	379.940	379.940	ppb	1.336	28202	40	949.9	80	120	> +/-20%
K	39	2	45	50.659	50.659	ppb	33.071	90391	40	126.6	80	120	> +/-20%
Ca	44	2	45	132.293	132.293	ppb	2.407	2607	40	330.7	80	120	> +/-20%
V	51	2	72	34.967	34.967	ppb	2.635	150886	40	87.4	80	120	
Cr	52	2	72	35.116	35.116	ppb	1.682	180245	40	87.8	80	120	
Mn	55	2	72	35.855	35.855	ppb	1.990	86545	40	89.6	80	120	
Fe	57	2	72	367.416	367.416	ppb	3.593	37224	40	918.5	80	120	> +/-20%
Co	59	2	72	34.798	34.798	ppb	3.043	283990	40	87.0	80	120	
Ni	60	2	72	35.078	35.078	ppb	2.738	75999	40	87.7	80	120	
Cu	63	2	72	35.206	35.206	ppb	4.855	216234	40	88.0	80	120	
Zn	66	2	72	35.284	35.284	ppb	3.994	32948	40	88.2	80	120	
As	75	2	72	33.188	33.188	ppb	2.633	22328	40	83.0	80	120	
Se	78	1	72	34.839	34.839	ppb	1.266	16633	40	87.1	80	120	
Sr	88	2	45	36.363	36.363	ppb	2.916	102696	40	90.9	80	120	
Nb	93	2	72	1.254	1.254	ppb	8.029	11934	40	3.1	80	120	> +/-20%
Mo	95	2	115	35.171	35.171	ppb	1.594	104235	40	87.9	80	120	
Pd	105	2	115	0.018	0.018	ppb	26.164	140	40	0.0	80	120	> +/-20%
Ag	107	2	115	37.045	37.045	ppb	0.526	322878	40	92.6	80	120	
Cd	111	2	115	36.439	36.439	ppb	3.461	46887	40	91.1	80	120	
Sn	120	2	115	36.089	36.089	ppb	1.391	140755	40	90.2	80	120	
Sb	121	2	115	37.862	37.862	ppb	1.624	125312	40	94.7	80	120	
Ba	137	2	115	36.624	36.624	ppb	1.224	39828	40	91.6	80	120	
W	182	2	165	17.593	17.593	ppb	2.360	105956	40	44.0	80	120	> +/-20%
Pt	195	2	165	0.000	0.000	ppb	1239.207	7	40	0.0	80	120	> +/-20%
Tl	205	2	165	33.636	33.636	ppb	4.515	336266	40	84.1	80	120	
Pb	208	2	165	32.544	32.544	ppb	2.883	429594	40	81.4	80	120	
Th	232	2	165	32.179	32.179	ppb	2.254	451070	40	80.4	80	120	
U	238	2	165	34.916	34.916	ppb	2.434	512226	40	87.3	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	600060	0.36	640661	93.66	60	125	
Sc (IS)	45	2	HMI He	3368498	2.36	3683202	91.46	60	125	
Sc IS)	45	3	No Gas	89708211	0.91	97710586	91.81	60	120	
Ge Internal Standard	72	1	HMI H2	18589327	1.41	20068360	92.63	60	125	
Ge Internal Standard	72	2	HMI He	4126217	2.30	4425118	93.25	60	125	
In Internal standard	115	2	HMI He	12664783	0.17	13821071	91.63	60	125	
Ho-165	165	2	HMI He	30509765	1.53	32625871	93.51	60	125	

Sample Report

Sample Table

Sample Name 280-123318-a-1-a
 Data File Name 207SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T11:51:12-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457042 200.8
 ISTD Ref FileName 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	28.283	ppb	28.283	25.40	5158639	40000	
Be	9	1	6	0.076	ppb	0.076	66.36	20	2000	
B	11	1	6	2673.659	ppb	2673.659	2.77	24103	100	>LDR
Na	23	2	45	83418.624	ppb	83418.624	3.78	47105398	400000	
Mg	24	2	45	5089.662	ppb	5089.662	2.17	1243679	400000	
Al	27	2	45	77.129	ppb	77.129	13.87	5961	400000	
K	39	2	45	32354.392	ppb	32354.392	3.44	7608385	400000	
Ca	44	2	45	12049.277	ppb	12049.277	3.08	217994	400000	
V	51	2	72	0.620	ppb	0.620	38.27	13752	2000	
Cr	52	2	72	1.404	ppb	1.404	8.59	8242	5000	
Mn	55	2	72	20.942	ppb	20.942	2.40	49935	10000	
Fe	57	2	72	343.852	ppb	343.852	4.23	34441	400000	
Co	59	2	72	0.265	ppb	0.265	10.46	6481	2000	
Ni	60	2	72	3.464	ppb	3.464	7.29	8162	5000	
Cu	63	2	72	89.752	ppb	89.752	0.71	539047	5000	
Zn	66	2	72	69.499	ppb	69.499	2.42	63199	5000	
As	75	2	72	0.397	ppb	0.397	16.37	406	2000	
Se	78	1	72	0.825	ppb	0.825	23.21	423	2000	
Sr	88	2	45	106.078	ppb	106.078	3.83	296345	2000	
Zr	90	2	72	115.784	ppb	115.784	3.05	1743	1000	
Zr	90	1	72	100.159	ppb	100.159	12.88	4375	1000	
Nb	93	2	72	1.641	ppb	1.641	15.63	13883	200	
Mo	95	2	115	2.633	ppb	2.633	7.20	7879	2000	
Pd	105	2	115	0.026	ppb	0.026	89.09	167	100	
Ag	107	2	115	0.132	ppb	0.132	8.75	1293	100	
Cd	111	2	115	0.088	ppb	0.088	55.02	123	2000	
Sn	120	2	115	0.757	ppb	0.757	11.36	3477	2000	
Sb	121	2	115	0.887	ppb	0.887	3.34	2994	1000	
Ba	137	2	115	18.929	ppb	18.929	1.39	20404	5000	
W	182	2	165	0.376	ppb	0.376	18.33	4247	100	
Pt	195	2	165	0.006	ppb	0.006	71.67	30	100	
Tl	205	2	165	0.039	ppb	0.039	34.67	627	2000	
Pb	208	2	165	0.527	ppb	0.527	12.66	7454	5000	
Th	232	2	165	0.924	ppb	0.924	4.05	13790	2000	
U	238	2	165	0.069	ppb	0.069	5.43	1050	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	587503	0.71	640661	91.70	60	125	
Sc (IS)	45	2	HMI He	3336377	2.94	3683202	90.58	60	125	
Sc IS)	45	3	No Gas	88265324	1.78	97710586	90.33	60	120	
Ge Internal Standard	72	1	HMI H2	18669194	1.69	20068360	93.03	60	125	
Ge Internal Standard	72	2	HMI He	4064566	0.91	4425118	91.85	60	125	
In Internal standard	115	2	HMI He	12525016	1.53	13821071	90.62	60	125	
Ho-165	165	2	HMI He	29713544	2.65	32625871	91.07	60	125	

Sample Report

Sample Table

Sample Name 280-123318-a-1-b.ms
 Data File Name 208SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T11:54:45-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457042 200.8
 ISTD Ref FileName 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	113.562	ppb	113.562	4.24	6418378	40000	
Be	9	1	6	40.523	ppb	40.523	1.95	10545	2000	
B	11	1	6	4112.700	ppb	4112.700	2.45	36413	100	>LDR
Na	23	2	45	91370.975	ppb	91370.975	5.32	52166662	400000	
Mg	24	2	45	5689.550	ppb	5689.550	5.82	1404836	400000	
Al	27	2	45	483.017	ppb	483.017	4.97	35776	400000	
K	39	2	45	35100.664	ppb	35100.664	3.32	8343064	400000	
Ca	44	2	45	13235.324	ppb	13235.324	2.36	242175	400000	
V	51	2	72	39.636	ppb	39.636	1.43	164416	2000	
Cr	52	2	72	39.535	ppb	39.535	2.81	196680	5000	
Mn	55	2	72	63.218	ppb	63.218	1.57	147739	10000	
Fe	57	2	72	788.403	ppb	788.403	1.05	75607	400000	
Co	59	2	72	39.074	ppb	39.074	0.16	308828	2000	
Ni	60	2	72	42.604	ppb	42.604	1.14	89363	5000	
Cu	63	2	72	138.213	ppb	138.213	0.77	815603	5000	
Zn	66	2	72	115.533	ppb	115.533	1.19	102912	5000	
As	75	2	72	37.652	ppb	37.652	0.82	24553	2000	
Se	78	1	72	36.724	ppb	36.724	1.95	17556	2000	
Sr	88	2	45	157.453	ppb	157.453	3.29	444888	2000	
Zr	90	2	72	92.913	ppb	92.913	9.59	1433	1000	
Zr	90	1	72	80.659	ppb	80.659	6.74	3791	1000	
Nb	93	2	72	1.213	ppb	1.213	15.34	11357	200	
Mo	95	2	115	40.077	ppb	40.077	0.91	117934	2000	
Pd	105	2	115	0.019	ppb	0.019	57.01	140	100	
Ag	107	2	115	38.040	ppb	38.040	3.02	329199	100	
Cd	111	2	115	37.809	ppb	37.809	0.30	48322	2000	
Sn	120	2	115	23.765	ppb	23.765	1.99	92268	2000	
Sb	121	2	115	40.200	ppb	40.200	0.95	132148	1000	
Ba	137	2	115	60.053	ppb	60.053	1.90	64795	5000	
W	182	2	165	19.803	ppb	19.803	3.38	114471	100	
Pt	195	2	165	0.000	ppb	0.000	770.79	7	100	
Tl	205	2	165	39.919	ppb	39.919	1.64	384073	2000	
Pb	208	2	165	38.194	ppb	38.194	5.08	484712	5000	
Th	232	2	165	9.015	ppb	9.015	3.65	122447	2000	
U	238	2	165	39.473	ppb	39.473	1.22	557242	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	580587	0.28	640661	90.62	60	125	
Sc (IS)	45	2	HMI He	3375188	3.46	3683202	91.64	60	125	
Sc IS)	45	3	No Gas	87679908	1.79	97710586	89.73	60	120	
Ge Internal Standard	72	1	HMI H2	18616037	1.81	20068360	92.76	60	125	
Ge Internal Standard	72	2	HMI He	4001143	0.53	4425118	90.42	60	125	
In Internal standard	115	2	HMI He	12579010	1.78	13821071	91.01	60	125	
Ho-165	165	2	HMI He	29353881	1.20	32625871	89.97	60	125	

Sample Report

Sample Table

Sample Name 280-123318-a-1-c msd
 Data File Name 209SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T11:58:17-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457042 200.8
 ISTD Ref FileName 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	100.308	ppb	100.308	2.57	6190219	40000	
Be	9	1	6	36.581	ppb	36.581	2.04	9604	2000	
B	11	1	6	3632.666	ppb	3632.666	0.96	32503	100	>LDR
Na	23	2	45	82149.746	ppb	82149.746	2.42	47423988	400000	
Mg	24	2	45	5090.393	ppb	5090.393	1.87	1271253	400000	
Al	27	2	45	457.443	ppb	457.443	4.19	34266	400000	
K	39	2	45	32812.505	ppb	32812.505	0.87	7890772	400000	
Ca	44	2	45	12090.941	ppb	12090.941	1.65	223586	400000	
V	51	2	72	35.467	ppb	35.467	2.60	155686	2000	
Cr	52	2	72	35.542	ppb	35.542	2.06	185762	5000	
Mn	55	2	72	55.798	ppb	55.798	5.19	136869	10000	
Fe	57	2	72	679.169	ppb	679.169	3.55	68595	400000	
Co	59	2	72	34.671	ppb	34.671	4.43	288082	2000	
Ni	60	2	72	37.294	ppb	37.294	5.46	82188	5000	
Cu	63	2	72	119.598	ppb	119.598	3.53	741119	5000	
Zn	66	2	72	101.869	ppb	101.869	2.44	95376	5000	
As	75	2	72	34.433	ppb	34.433	1.82	23588	2000	
Se	78	1	72	35.966	ppb	35.966	3.16	17073	2000	
Sr	88	2	45	142.113	ppb	142.113	1.39	405895	2000	
Zr	90	2	72	79.655	ppb	79.655	17.69	1333	1000	
Zr	90	1	72	68.721	ppb	68.721	6.06	3417	1000	
Nb	93	2	72	0.513	ppb	0.513	9.93	7959	200	
Mo	95	2	115	37.449	ppb	37.449	4.66	112830	2000	
Pd	105	2	115	0.020	ppb	0.020	25.64	150	100	
Ag	107	2	115	34.765	ppb	34.765	2.73	308274	100	
Cd	111	2	115	34.967	ppb	34.967	5.53	45737	2000	
Sn	120	2	115	22.474	ppb	22.474	3.69	89366	2000	
Sb	121	2	115	36.782	ppb	36.782	1.99	123853	1000	
Ba	137	2	115	54.145	ppb	54.145	2.06	59852	5000	
W	182	2	165	18.482	ppb	18.482	5.44	107275	100	
Pt	195	2	165	0.001	ppb	0.001	243.87	10	100	
Tl	205	2	165	35.643	ppb	35.643	2.12	344018	2000	
Pb	208	2	165	35.596	ppb	35.596	4.29	453321	5000	
Th	232	2	165	9.344	ppb	9.344	17.54	126930	2000	
U	238	2	165	36.412	ppb	36.412	2.54	515624	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	585862	1.17	640661	91.45	60	125	
Sc (IS)	45	2	HMI He	3409831	2.67	3683202	92.58	60	125	
Sc IS)	45	3	No Gas	87287639	1.95	97710586	89.33	60	120	
Ge Internal Standard	72	1	HMI H2	18487088	1.63	20068360	92.12	60	125	
Ge Internal Standard	72	2	HMI He	4201798	2.52	4425118	94.95	60	125	
In Internal standard	115	2	HMI He	12889207	3.19	13821071	93.26	60	125	
Ho-165	165	2	HMI He	29456397	2.85	32625871	90.29	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5699926
 Data File Name 210_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T12:01:47-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	105.156	ppb	12.317	100910	100	105.2	90	110	
Li	7	3	45	107.743	ppb	5.666	6410987	100	107.7	90	110	
Be	9	1	6	53.676	ppb	0.841	14249	50	107.4	90	110	
B	11	1	6	149.566	ppb	17.288	1760	50	299.1	90	110	>+ -10%
Na	23	2	45	1120.651	ppb	2.806	709343	1000	112.1	90	110	>+ -10%
Mg	24	2	45	1036.679	ppb	4.020	268613	1000	103.7	90	110	
Al	27	2	45	1065.133	ppb	3.290	81901	1000	106.5	90	110	
K	39	2	45	1113.419	ppb	3.292	355763	1000	111.3	90	110	>+ -10%
Ca	44	2	45	1019.362	ppb	1.048	19658	1000	101.9	90	110	
V	51	2	72	50.036	ppb	1.273	218048	50	100.1	90	110	
Cr	52	2	72	50.577	ppb	1.794	267741	50	101.2	90	110	
Mn	55	2	72	51.020	ppb	1.497	127115	50	102.0	90	110	
Fe	57	2	72	1013.658	ppb	0.820	103081	1000	101.4	90	110	
Co	59	2	72	50.393	ppb	0.673	423092	50	100.8	90	110	
Ni	60	2	72	50.380	ppb	1.908	112466	50	100.8	90	110	
Cu	63	2	72	49.771	ppb	1.843	314916	50	99.5	90	110	
Zn	66	2	72	50.992	ppb	0.579	48863	50	102.0	90	110	
As	75	2	72	52.114	ppb	1.713	36152	50	104.2	90	110	
Se	78	1	72	52.972	ppb	3.146	25968	50	105.9	90	110	
Sr	88	2	45	105.524	ppb	1.820	311375	100	105.5	90	110	
Zr	90	2	72	29.399	ppb	52.664	687	50	58.8	90	110	>+ -10%
Zr	90	1	72	27.914	ppb	32.001	2306	50	55.8	90	110	>+ -10%
Nb	93	2	72	95.003	ppb	3.172	550790	100	95.0	90	110	
Mo	95	2	115	51.446	ppb	7.197	159167	50	102.9	90	110	
Pd	105	2	115	53.690	ppb	4.083	230240	50	107.4	90	110	
Ag	107	2	115	50.736	ppb	3.998	462118	50	101.5	90	110	
Cd	111	2	115	52.969	ppb	3.666	71248	50	105.9	90	110	
Sn	120	2	115	52.279	ppb	4.482	212814	50	104.6	90	110	
Sb	121	2	115	52.300	ppb	6.551	180760	50	104.6	90	110	
Ba	137	2	115	51.904	ppb	4.377	58961	50	103.8	90	110	
W	182	2	165	52.896	ppb	5.463	314254	50	105.8	90	110	
Pt	195	2	165	51.606	ppb	3.941	204280	50	103.2	90	110	
Tl	205	2	165	49.949	ppb	3.060	499783	50	99.9	90	110	
Pb	208	2	165	51.211	ppb	4.270	675618	50	102.4	90	110	
Th	232	2	165	52.611	ppb	5.241	736718	50	105.2	90	110	
U	238	2	165	53.521	ppb	4.921	785245	50	107.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	592368	1.97	640661	92.46	60	125	
Sc (IS)	45	2	HMI He	3522426	2.36	3683202	95.63	60	125	
Sc IS)	45	3	No Gas	88797466	1.13	97710586	90.88	60	120	
Ge Internal Standard	72	1	HMI H2	19097780	0.80	20068360	95.16	60	125	
Ge Internal Standard	72	2	HMI He	4263710	1.32	4425118	96.35	60	125	
In Internal standard	115	2	HMI He	13250476	3.95	13821071	95.87	60	125	
Ho-165	165	2	HMI He	30550935	4.30	32625871	93.64	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5699924
 Data File Name 212_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051319.b
 Acq Date Time 2019-05-14T12:12:24-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-8.127	ppb	-99.1	76886	0.1	
Li	7	3	45	3.156	ppb	109.1	4955234	0.05	>RL
Be	9	1	6	0.082	ppb	48.4	22	0.5	
B	11	1	6	48.457	ppb	28.0	857	0.1	>RL
Na	23	2	45	17.028	ppb	2.9	52393	25	
Mg	24	2	45	-2.383	ppb	-21.7	957	25	
Al	27	2	45	0.273	ppb	285.9	430	15	
K	39	2	45	16.882	ppb	13.6	87292	50	
Ca	44	2	45	6.439	ppb	69.3	327	25	
V	51	2	72	-0.016	ppb	-553.5	12385	1	
Cr	52	2	72	-0.041	ppb	-40.2	1080	1	
Mn	55	2	72	0.044	ppb	13.2	480	0.5	
Fe	57	2	72	-8.640	ppb	-2.5	923	25	
Co	59	2	72	0.011	ppb	356.1	4914	0.5	
Ni	60	2	72	0.040	ppb	136.4	1027	1	
Cu	63	2	72	0.943	ppb	15.1	9303	1	
Zn	66	2	72	0.207	ppb	50.0	1070	5	
As	75	2	72	0.204	ppb	19.0	307	1	
Se	78	1	72	-0.033	ppb	-75.5	13	1	
Sr	88	2	45	-0.005	ppb	-484.9	157	1	
Zr	90	2	72	-0.557	ppb	-657.0	307	1	
Zr	90	1	72	1.882	ppb	351.0	1582	1	>RL
Nb	93	2	72	0.925	ppb	19.3	10947	2	
Mo	95	2	115	0.012	ppb	194.3	250	0.5	
Pd	105	2	115	0.019	ppb	17.6	163	1	
Ag	107	2	115	-0.005	ppb	-31.5	130	1	
Cd	111	2	115	-0.003	ppb	-418.7	10	0.5	
Sn	120	2	115	0.022	ppb	126.9	777	1	
Sb	121	2	115	0.024	ppb	45.8	200	1	
Ba	137	2	115	0.029	ppb	152.8	153	0.5	
W	182	2	165	-0.039	ppb	-54.3	2270	1	
Pt	195	2	165	0.009	ppb	39.6	50	1	
Tl	205	2	165	-0.001	ppb	-191.8	290	0.1	
Pb	208	2	165	0.007	ppb	269.1	980	0.5	
Th	232	2	165	0.009	ppb	14.8	1637	1	
U	238	2	165	0.005	ppb	40.0	170	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	590872	0.65	640661	92.23	60	125	
Sc (IS)	45	2	HMI He	3563931	1.18	3683202	96.76	60	125	
Sc IS)	45	3	No Gas	91594621	2.06	97710586	93.74	60	120	
Ge Internal Standard	72	1	HMI H2	19861668	1.40	20068360	98.97	60	125	
Ge Internal Standard	72	2	HMI He	4472562	2.04	4425118	101.07	60	125	
In Internal standard	115	2	HMI He	14722360	0.39	13821071	106.52	60	125	
Ho-165	165	2	HMI He	36424191	1.29	32625871	111.64	60	125	

Current Signal

Operator Name Denver Metals
 Acq. Date-Time 2019-05-14 1:24:26 PM
 Instrument Name G3281A JP12422099
 Batch Folder D:\Agilent\ICPMH\1\DATA\051419.b

[No Gas]

Sensitivity



Ch	Mass	Range	Count	Avg Count	RSD%
1	7	50000	27667	28082	2.086
2	59	100000	46858	45816	3.215
3	63	10000	33777	33352	1.804
4	70	5000	2301	2245	3.501
5	80	5000000	2236593	2222466	0.899
6	89	100000	76033	77228	2.188
7	115	100000	70094	70651	1.114
8	118	1000	630	604	6.089
9	137	10000	8396	8366	0.518
10	140	100000	69634	69678	0.089
11	205	50000	39875	40491	2.148
12	6	5000	4418	4296	4.026
13	70/140	5	3.304 %	3.222 %	3.590
14	156/140	2	1.500 %	1.534 %	3.155

Integration Time [sec] 0.1

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	1.03 L/min	Dilution Gas	0.00 L/min
RF Power	1550 W	Option Gas	0.0 %	Auxiliary Gas	0.90 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Q1 Entrance	---	Cell Exit	-50 V
Extract 2	-195.0 V	Q1 Exit	---	Deflect	14.3 V
Omega Bias	-80 V	Cell Focus	---	Plate Bias	-40 V
Omega Lens	9.3 V	Cell Entrance	-30 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Axial Acceleration	---
He Flow	0.0 mL/min	4th Gas Flow	---	OctP RF	180 V
H2 Flow	0.0 mL/min	OctP Bias	-8.0 V	Energy Discrimination	3.0 V

QP Parameters

Mass Gain	140	Axis Gain	1.0017	QP Bias	-5.0 V
Mass Offset	135	Axis Offset	-0.06		

Torch

Current Signal

Torch H	-0.4 mm	Torch V	1.0 mm		
EM					
Discriminator	4.5 mV	Analog HV	1758 V	Pulse HV	1292 V

Meter

Name	Value	Unit
IF/BK Press	1.63E+2	Pa
Water RF/WC/IF	1.37	L/min
Water Temp	22.2	°C
Reflected Power	5	W
Forward Power	1549	W

Current Signal

Operator Name Denver Metals
 Acq. Date-Time 2019-05-14 1:24:57 PM
 Instrument Name G3281A JP12422099
 Batch Folder D:\Agilent\ICPMH\1\DATA\051419.b

[HMI He]

Sensitivity



Ch	Mass	Range	Count	Avg Count	RSD%
1	7	50	17	20	31.678
2	9	200	141	144	13.694
3	25	500	1074	1053	4.786
4	51	1000	876	846	3.642
5	70	1000	482	488	5.469
6	75	20	9	10	48.028
7	78	20	8	3	75.089
8	59	20000	13401	13233	3.874
9	118	200	127	138	8.935
10	137	5000	1899	1872	2.566
11	140	50000	28963	29265	2.606
12	205	20000	21182	20544	2.347
13	238	50000	25876	26063	2.898
14	70/140	5	1.664 %	1.668 %	7.285
15	156/140	1	0.380 %	0.350 %	13.023

Integration Time [sec] 0.1

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.75 L/min	Dilution Gas	0.28 L/min
RF Power	1550 W	Option Gas	0.0 %	Auxiliary Gas	0.90 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Q1 Entrance	---	Cell Exit	-60 V
Extract 2	-195.0 V	Q1 Exit	---	Deflect	-0.5 V
Omega Bias	-80 V	Cell Focus	---	Plate Bias	-60 V
Omega Lens	9.3 V	Cell Entrance	-40 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Axial Acceleration	---
He Flow	5.0 mL/min	4th Gas Flow	---	OctP RF	200 V
H2 Flow	0.0 mL/min	OctP Bias	-18.0 V	Energy Discrimination	3.0 V

QP Parameters

Mass Gain	140	Axis Gain	1.0017	QP Bias	-15.0 V
Mass Offset	135	Axis Offset	-0.06		

Current Signal

Torch

Torch H -0.4 mm

Torch V 1.0 mm

EM

Discriminator 4.5 mV

Analog HV 1758 V

Pulse HV 1292 V

Meter

Name	Value	Unit
IF/BK Press	1.64E+2	Pa
Water RF/WC/IF	1.37	L/min
Water Temp	22.2	°C
Reflected Power	5	W
Forward Power	1550	W

Current Signal

Operator Name Denver Metals
Acq. Date-Time 2019-05-14 1:25:12 PM
Instrument Name G3281A JP12422099
Batch Folder D:\Agilent\ICPMH\1\DATA\051419.b

[HMI H2]

Sensitivity



Ch	Mass	Range	Count	Avg Count	RSD%
1	7	1000	486	376	33.434
2	9	5000	2305	1831	28.726
3	59	20000	13559	11825	17.087
4	63	2000	5120	4400	19.616
5	70	2000	1468	1269	16.365
6	78	20	39	28	53.333
7	89	100000	59905	59388	3.355
8	115	100000	59920	59032	1.672
9	118	500	441	414	6.097
10	137	10000	6851	6877	1.418
11	140	100000	60835	60656	3.696
12	205	50000	26680	25837	3.328
13	238	50000	27804	26325	8.828
14	70/140	5	2.412 %	2.089 %	14.618
15	156/140	2	1.153 %	1.086 %	5.629

Integration Time [sec] 0.1

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.75 L/min	Dilution Gas	0.28 L/min
RF Power	1550 W	Option Gas	0.0 %	Auxiliary Gas	0.90 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Q1 Entrance	---	Cell Exit	-60 V
Extract 2	-195.0 V	Q1 Exit	---	Deflect	-0.5 V
Omega Bias	-80 V	Cell Focus	---	Plate Bias	-60 V
Omega Lens	9.3 V	Cell Entrance	-40 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Axial Acceleration	---
He Flow	0.0 mL/min	4th Gas Flow	---	OctP RF	200 V
H2 Flow	4.0 mL/min	OctP Bias	-18.0 V	Energy Discrimination	3.0 V

QP Parameters

Mass Gain	140	Axis Gain	1.0017	QP Bias	-15.0 V
Mass Offset	135	Axis Offset	-0.06		

Current Signal

Torch

Torch H -0.4 mm

Torch V 1.0 mm

EM

Discriminator 4.5 mV

Analog HV 1758 V

Pulse HV 1292 V

Meter

Name	Value	Unit
IF/BK Press	1.72E+2	Pa
Water RF/WC/IF	1.37	L/min
Water Temp	22.2	°C
Reflected Power	5	W
Forward Power	1549	W

US EPA Tune Check Report

Operator Name Denver Metals
Acq/Data Batch D:\Agilent\ICPMH\1\DATA\051419.b
Acq. Date-Time 2019-05-14 1:33:09 PM
Report Comment ---
Instrument Name G3281A JP12422099

[HMI H2]

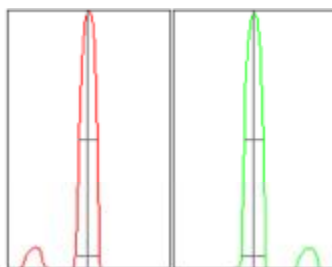
Sensitivity

Mass	Conc. [ug/l]	Count	CPS	RSD%	RSD% (Required)	RSD% (Flag)
7		140	1399.66	1.773	5.000	
9		645	6445.38	0.813	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	138	138	138	141	144
9	648	645	651	640	639

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	440.70	7.00	6.90 - 7.10	
9	1912.96	9.00	8.90 - 9.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
7	0.32	0.438	0.750	
9	0.34	0.443	0.750	

Integration Time [sec] 0.1

Acquisition Time [sec] 51.09

Y Axis Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas		Dilution Gas	0.28 L/min
RF Power	1550 W	Option Gas	0.0 %	Auxiliary Gas	0.90 L/min
RF Matching		Nebulizer Pump		Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	9.3 V	Deflect	-0.5 V
-----------	-------	------------	-------	---------	--------

US EPA Tune Check Report

Extract 2 -195.0 V Cell Entrance -40 V Plate Bias -60 V
Omega Bias -80 V Cell Exit -60 V

Cell Parameters

Use Gas Yes 3rd Gas Flow --- Energy Discrimination 0.0 V
He Flow 0.0 mL/min OctP Bias -18.0 V
H2 Flow 4.0 mL/min OctP RF 200 V

QP Parameters

Mass Gain 140 Axis Gain 1.0017 QP Bias -15.0 V
Mass Offset 135 Axis Offset -0.06

Hardware Settings

EM

Discriminator 4.5 mV Analog HV 1758 V Pulse HV 1292 V

Torch

Torch H -0.4 mm Torch V 1.0 mm

[HMI He]

Sensitivity

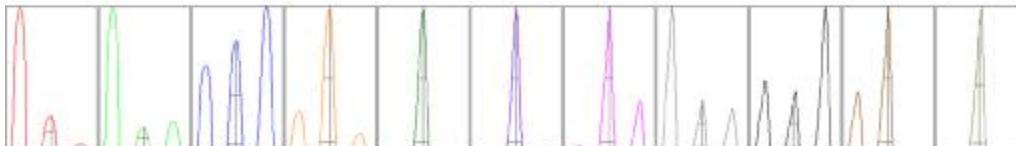
Mass	Conc. [ug/l]	Count	CPS	RSD%	RSD% (Required)	RSD% (Flag)
24		2136	21358.75	1.870	5.000	
25		316	3164.60	2.505	5.000	
26		408	4078.24	2.625	5.000	
59		4212	42120.68	1.336	5.000	
103		9149	91490.51	1.041	5.000	
115		3297	32967.98	1.039	5.000	
205		4669	46691.04	1.246	5.000	
206		1620	16203.71	2.138	5.000	
207		1365	13647.79	2.378	5.000	
208		3331	33313.07	3.710	5.000	
238		6500	65002.54	2.163	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
24	2182	2147	2156	2117	2078
25	330	311	316	316	310
26	417	412	415	403	391
59	4274	4142	4260	4211	4173
103	9165	9275	9181	9108	9017
115	3274	3257	3336	3328	3289
205	4757	4670	4686	4612	4621
206	1672	1576	1624	1608	1621
207	1399	1313	1384	1364	1364
208	3473	3198	3450	3290	3245
238	6711	6394	6562	6471	6363

US EPA Tune Check Report

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
24	6036.68	24.00	23.90 - 24.10	
25	876.07	25.00	24.90 - 25.10	
26	1133.26	25.95	25.90 - 26.10	
59	12379.62	59.00	58.90 - 59.10	
103	32036.89	103.00	102.90 - 103.10	
115	12587.05	115.00	114.90 - 115.10	
205	17771.17	205.00	204.90 - 205.10	
206	6168.82	206.00	205.90 - 206.10	
207	4488.69	206.95	206.90 - 207.10	
208	12633.53	208.00	207.90 - 208.10	
238	21749.24	237.95	237.90 - 238.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
24	0.36	0.489	0.750	
25	0.37	0.488	0.750	
26	0.36	0.491	0.750	
59	0.35	0.515	0.750	
103	0.28	0.473	0.750	
115	0.25	0.463	0.750	
205	0.25	0.480	0.750	
206	0.26	0.455	0.750	
207	0.29	0.463	0.750	
208	0.26	0.462	0.750	
238	0.29	0.505	0.750	

Integration Time [sec] 0.1

Acquisition Time [sec] 235.339999999997

Y Axis Linear

Tune Parameters

Plasma Parameters

Plasma Mode ---

Nebulizer Gas

Dilution Gas 0.28 L/min

US EPA Tune Check Report

RF Power	1550 W	Option Gas	0.0 %	Auxiliary Gas	0.90 L/min
RF Matching		Nebulizer Pump		Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	9.3 V	Deflect	-0.5 V
Extract 2	-195.0 V	Cell Entrance	-40 V	Plate Bias	-60 V
Omega Bias	-80 V	Cell Exit	-60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	0.0 V
He Flow	5.0 mL/min	OctP Bias	-18.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	140	Axis Gain	1.0017	QP Bias	-15.0 V
Mass Offset	135	Axis Offset	-0.06		

Hardware Settings

EM

Discriminator	4.5 mV	Analog HV	1758 V	Pulse HV	1292 V
---------------	--------	-----------	--------	----------	--------

Torch

Torch H	-0.4 mm	Torch V	1.0 mm
---------	---------	---------	--------

[No Gas]

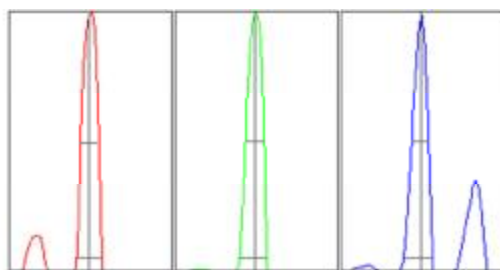
Sensitivity

Mass	Conc. [ug/l]	Count	CPS	RSD%	RSD% (Required)	RSD% (Flag)
7	10.00	8655	86548.91	0.304	5.000	
89		24557	245572.72	0.518	5.000	
205		10546	105461.26	1.107	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	8682	8615	8669	8665	8644
89	24647	24714	24395	24481	24548
205	10360	10653	10549	10531	10637

Integration Time [sec] 0.1

Resolution/Axis



US EPA Tune Check Report

Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	27281.33	7.00	6.90 - 7.10	
89	72959.10	89.00	88.90 - 89.10	
205	34407.01	205.00	204.90 - 205.10	
Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
7	0.32	0.479	0.750	
89	0.34	0.490	0.750	
205	0.31	0.525	0.750	

Integration Time [sec] 0.1
 Acquisition Time [sec] 92.3700000000001
 Y Axis Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas		Dilution Gas	0.00 L/min
RF Power	1550 W	Option Gas	0.0 %	Auxiliary Gas	0.90 L/min
RF Matching		Nebulizer Pump		Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp			

Lens Parameters

Extract 1	0.0 V	Omega Lens	9.3 V	Deflect	14.3 V
Extract 2	-195.0 V	Cell Entrance	-30 V	Plate Bias	-40 V
Omega Bias	-80 V	Cell Exit	-50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	0.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	180 V		

QP Parameters

Mass Gain	140	Axis Gain	1.0017	QP Bias	-5.0 V
Mass Offset	135	Axis Offset	-0.06		

Hardware Settings

EM

Discriminator	4.5 mV	Analog HV	1758 V	Pulse HV	1292 V
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Torch

Torch H	-0.4 mm	Torch V	1.0 mm
---------	---------	---------	--------

	Mass (Custom Setting)	Element Name	Current Value	Retain Mass for Startup
	6		0.089746	☒
	9		0.103305	☒
	23		0.115752	☒
	24		0.120870	☒
	27		0.124633	☒
	39		0.126693	☒
	45		0.127714	☒
	48		0.127099	☒
	51		0.129621	☒
	52		0.132776	☒
	55		0.135483	☒
	59		0.138777	☒
	60		0.135092	☒
	63		0.136507	☒
	66		0.137027	☒
	72		0.136640	☒
	75		0.140776	☒
	88		0.143572	☒
	98		0.142500	☒
	102		0.144764	☒
	106		0.147517	☒
	114		0.149615	☒
	115		0.150346	☒
	118		0.148013	☒
	121		0.149038	☒

	Mass (Custom Setting)	Element Name	Current Value	Retain Mass for Startup
	138		0.149616	☒
	175		0.155136	☒
	193		0.155610	☒
	205		0.153754	☒
	208		0.157315	☒
	209		0.157285	☒
	232		0.154481	☒
	238		0.155482	☒

Sample Report

Sample Table

Sample Name	rinse-5699932
Data File Name	001SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\051419.b
Acq Date Time	2019-05-14T13:47:11-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	IS
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-5699932
Data File Name	002SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\051419.b
Acq Date Time	2019-05-14T13:50:45-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	IS
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-5701472
Data File Name	003SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\051419.b
Acq Date Time	2019-05-14T13:54:17-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	PA
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-5701472
Data File Name	004SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\051419.b
Acq Date Time	2019-05-14T13:57:50-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	PA
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-5620980
Data File Name	005SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\051419.b
Acq Date Time	2019-05-14T14:01:23-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	TUNE
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Sample Report

Sample Table

Sample Name	rinse-5620980
Data File Name	006SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\051419.b
Acq Date Time	2019-05-14T14:04:56-06:00
Analyst	Denver Metals
Sample Type	Sample
Dilution	1
Comment	TUNE
ISTD Ref FileName	
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

Calibration Blank Report

Sample Table

Sample Name2 ICIS-5701457
Data File Name 007CALB.d
Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
Method
Acq Date Time 2019-05-14T14:08:27-06:00
Sample Type CalBlk
Level 1
Dilution 1
Comment

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Li	7	45	1	HMI H2	119822	0.00
Li	7	45	3	No Gas	7305112	0.00
Be	9	6	1	HMI H2	22	325.39
B	11	6	1	HMI H2	427	3.49
Na	23	45	2	HMI He	85198	0.00
Mg	24	45	2	HMI He	663	1.12
Al	27	45	2	HMI He	363	3.42
K	39	45	2	HMI He	151821	0.00
Ca	44	45	2	HMI He	447	9.70
V	51	72	2	HMI He	10863	0.04
Cr	52	72	2	HMI He	1490	1.23
Mn	55	72	2	HMI He	523	1.12
Fe	57	72	2	HMI He	677	2.97
Co	59	72	2	HMI He	6518	0.13
Ni	60	72	2	HMI He	517	3.03
Cu	63	72	2	HMI He	5614	0.07
Zn	66	72	2	HMI He	2424	0.06
As	75	72	2	HMI He	211	2.99
Se	78	72	1	HMI H2	64	42.57
Sr	88	45	2	HMI He	223	12.09
Zr	90	72	2	HMI He	573	1.27
Zr	90	72	1	HMI H2	2366	0.13
Nb	93	72	2	HMI He	447	2.52
Mo	95	115	2	HMI He	473	2.87
Pd	105	115	2	HMI He	207	13.31
Ag	107	115	2	HMI He	73	65.30
Cd	111	115	2	HMI He	40	62.50
Sn	120	115	2	HMI He	813	1.14
Sb	121	115	2	HMI He	323	7.73
Ba	137	115	2	HMI He	193	7.72
W	182	165	2	HMI He	2957	0.20
Pt	195	165	2	HMI He	7	1299.04
Tl	205	165	2	HMI He	767	0.94
Pb	208	165	2	HMI He	1640	1.26
Th	232	165	2	HMI He	2504	0.12
U	238	165	2	HMI He	610	3.79

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li-6 Internal Standard	6	1	HMI H2	928504	2.60
Sc (IS)	45	2	HMI He	4755435	0.57
Sc IS)	45	3	No Gas	129597379	2.40
Ge Internal Standard	72	1	HMI H2	26580672	2.57
Ge Internal Standard	72	2	HMI He	5368285	1.34
In Internal standard	115	2	HMI He	16139116	3.91
Ho-165	165	2	HMI He	40836889	4.48

Calibration Standard Report

Sample Table

Sample Name IC-5701466
 Data File Name 008CAL.S.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 method
 Acq Date Time 2019-05-14T14:11:58-06:00
 Sample Type CalStd
 Level 2
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Li	7	45	1	HMI H2	195487	0.00
Li	7	45	3	No Gas	11946689	0.00
Be	9	6	1	HMI H2	43003	0.01
B	11	6	1	HMI H2	3284	0.11
Na	23	45	2	HMI He	1839887	0.00
Mg	24	45	2	HMI He	730189	0.00
Al	27	45	2	HMI He	212093	0.00
K	39	45	2	HMI He	854679	0.00
Ca	44	45	2	HMI He	52442	0.00
V	51	72	2	HMI He	560510	0.00
Cr	52	72	2	HMI He	710964	0.00
Mn	55	72	2	HMI He	323878	0.00
Fe	57	72	2	HMI He	271923	0.00
Co	59	72	2	HMI He	1143514	0.00
Ni	60	72	2	HMI He	296726	0.00
Cu	63	72	2	HMI He	824133	0.00
Zn	66	72	2	HMI He	123066	0.00
As	75	72	2	HMI He	90480	0.00
Se	78	72	1	HMI H2	69536	0.00
Sr	88	45	2	HMI He	744742	0.00
Zr	90	72	2	HMI He	2764	0.49
Zr	90	72	1	HMI H2	7650	0.06
Nb	93	72	2	HMI He	1445256	0.00
Mo	95	115	2	HMI He	388364	0.00
Pd	105	115	2	HMI He	575827	0.00
Ag	107	115	2	HMI He	1189886	0.00
Cd	111	115	2	HMI He	169114	0.00
Sn	120	115	2	HMI He	504665	0.00
Sb	121	115	2	HMI He	437616	0.00
Ba	137	115	2	HMI He	144027	0.00
W	182	165	2	HMI He	823113	0.00
Pt	195	165	2	HMI He	583322	0.00
Tl	205	165	2	HMI He	1611186	0.00
Pb	208	165	2	HMI He	2112042	0.00
Th	232	165	2	HMI He	2130206	0.00
U	238	165	2	HMI He	2237400	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	946511	4.02	928504	101.94	60	125	
Sc (IS)	45	2	HMI He	4565559	0.72	4755435	96.01	60	125	
Sc IS)	45	3	No Gas	128305586	2.11	129597379	99.00	60	120	
Ge Internal Standard	72	1	HMI H2	26357048	2.45	26580672	99.16	60	125	
Ge Internal Standard	72	2	HMI He	5462082	0.49	5368285	101.75	60	125	
In Internal standard	115	2	HMI He	16480370	2.10	16139116	102.11	60	125	
Ho-165	165	2	HMI He	41152941	2.87	40836889	100.77	60	125	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name ICV-5701468
 Data File Name 009_ICV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T14:15:27-06:00
 Sample Type ICV
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	1	45	74.056	ppb	30.538	148984	80	92.6	90	110	
Li	7	3	45	77.437	ppb	3.784	9369262	80	96.8	90	110	
Be	9	1	6	39.980	ppb	5.681	17453	40	100.0	90	110	
B	11	1	6	35.474	ppb	13.390	1467	40	88.7	90	110	>+ -10%
Na	23	2	45	776.503	ppb	3.828	765715	800	97.1	90	110	
Mg	24	2	45	793.259	ppb	3.242	290517	800	99.2	90	110	
Al	27	2	45	786.957	ppb	0.118	83827	800	98.4	90	110	
K	39	2	45	823.374	ppb	3.509	438343	800	102.9	90	110	
Ca	44	2	45	831.693	ppb	2.562	22094	800	104.0	90	110	
V	51	2	72	39.187	ppb	0.831	224070	40	98.0	90	110	
Cr	52	2	72	40.797	ppb	2.435	287981	40	102.0	90	110	
Mn	55	2	72	40.550	ppb	3.028	130298	40	101.4	90	110	
Fe	57	2	72	793.094	ppb	4.607	107136	800	99.1	90	110	
Co	59	2	72	39.216	ppb	0.517	447909	40	98.0	90	110	
Ni	60	2	72	40.311	ppb	4.218	118695	40	100.8	90	110	
Cu	63	2	72	40.898	ppb	4.108	336945	40	102.2	90	110	
Zn	66	2	72	40.832	ppb	0.413	51186	40	102.1	90	110	
As	75	2	72	40.953	ppb	0.714	36802	40	102.4	90	110	
Se	78	1	72	40.710	ppb	3.910	28613	40	101.8	90	110	
Sr	88	2	45	78.401	ppb	4.203	292502	80	98.0	90	110	
Zr	90	2	72	38.603	ppb	22.441	1410	40	96.5	90	110	
Zr	90	1	72	38.706	ppb	6.147	4442	40	96.8	90	110	
Nb	93	2	72	88.996	ppb	0.582	636844	80	111.2	90	110	>+ -10%
Mo	95	2	115	39.202	ppb	4.462	156830	40	98.0	90	110	
Pd	105	2	115	39.268	ppb	3.120	232552	40	98.2	90	110	
Ag	107	2	115	38.940	ppb	2.298	476247	40	97.3	90	110	
Cd	111	2	115	39.393	ppb	1.454	68549	40	98.5	90	110	
Sn	120	2	115	39.620	ppb	3.554	206062	40	99.1	90	110	
Sb	121	2	115	39.535	ppb	5.192	178068	40	98.8	90	110	
Ba	137	2	115	40.090	ppb	3.749	59464	40	100.2	90	110	
W	182	2	165	40.144	ppb	4.252	337017	40	100.4	90	110	
Pt	195	2	165	39.151	ppb	5.854	231578	40	97.9	90	110	
Tl	205	2	165	37.835	ppb	6.783	619164	40	94.6	90	110	
Pb	208	2	165	38.393	ppb	0.924	824395	40	96.0	90	110	
Th	232	2	165	37.710	ppb	2.715	817184	40	94.3	90	110	
U	238	2	165	37.463	ppb	3.017	850706	40	93.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	962033	5.02	928504	103.61	60	125	
Sc (IS)	45	2	HMI He	4574660	2.15	4755435	96.20	60	125	
Sc IS)	45	3	No Gas	132690921	0.57	129597379	102.39	60	120	
Ge Internal Standard	72	1	HMI H2	26610657	2.58	26580672	100.11	60	125	
Ge Internal Standard	72	2	HMI He	5406716	0.68	5368285	100.72	60	125	
In Internal standard	115	2	HMI He	16949065	2.42	16139116	105.02	60	125	
Ho-165	165	2	HMI He	41780965	3.04	40836889	102.31	60	125	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name ICB-5701457
 Data File Name 010_ICB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T14:18:57-06:00
 Sample Type ICB
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	8.796	ppb	24.6	119557	0.1	>RL
Li	7	3	-0.211	ppb	-1017.5	7621932	0.05	
Be	9	1	0.037	ppb	172.2	38	0.5	
B	11	1	-2.873	ppb	-182.7	357	0.1	
Na	23	2	-0.381	ppb	-1029.0	82292	25	
Mg	24	2	0.438	ppb	44.8	807	25	
Al	27	2	-0.133	ppb	-781.7	337	15	
K	39	2	6.726	ppb	262.0	149653	50	
Ca	44	2	-3.023	ppb	-9.4	353	25	
V	51	2	0.150	ppb	61.1	11911	1	
Cr	52	2	0.021	ppb	82.1	1673	1	
Mn	55	2	0.035	ppb	132.7	650	0.5	
Fe	57	2	0.666	ppb	59.1	783	25	
Co	59	2	-0.003	ppb	-431.5	6628	0.5	
Ni	60	2	0.010	ppb	183.9	560	1	
Cu	63	2	-0.016	ppb	-119.8	5601	1	
Zn	66	2	-0.262	ppb	-78.6	2153	5	
As	75	2	-0.014	ppb	-279.7	202	1	
Se	78	1	0.026	ppb	35.6	77	1	
Sr	88	2	0.013	ppb	93.6	267	1	
Zr	90	2	2.905	ppb	128.7	650	1	>RL
Zr	90	1	3.412	ppb	109.9	2399	1	>RL
Nb	93	2	5.419	ppb	5.8	39710	2	>RL
Mo	95	2	0.095	ppb	47.3	860	0.5	
Pd	105	2	0.040	ppb	45.5	450	1	
Ag	107	2	0.015	ppb	45.8	250	1	
Cd	111	2	0.007	ppb	291.3	53	0.5	
Sn	120	2	0.136	ppb	22.8	1527	1	
Sb	121	2	0.339	ppb	7.9	1827	1	
Ba	137	2	0.016	ppb	206.6	223	0.5	
W	182	2	0.145	ppb	16.7	4321	1	
Pt	195	2	0.013	ppb	14.9	87	1	
Tl	205	2	0.011	ppb	75.4	980	0.1	
Pb	208	2	0.027	ppb	16.6	2287	0.5	
Th	232	2	0.173	ppb	11.0	6405	1	
U	238	2	0.026	ppb	10.3	1230	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	956696	0.94	928504	103.04	60	125	
Sc (IS)	45	2	HMI He	4615275	2.68	4755435	97.05	60	125	
Sc IS)	45	3	No Gas	135280326	0.32	129597379	104.39	60	120	
Ge Internal Standard	72	1	HMI H2	25042766	2.59	26580672	94.21	60	125	
Ge Internal Standard	72	2	HMI He	5481525	2.97	5368285	102.11	60	125	
In Internal standard	115	2	HMI He	16616330	2.30	16139116	102.96	60	125	
Ho-165	165	2	HMI He	42514070	1.98	40836889	104.11	60	125	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name ICVL-5701469
 Data File Name 011LICV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T14:25:34-06:00
 Sample Type LLICV
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	1	6	0.969	ppb	6.079	440	1	96.9	70	130	
Na	23	2	45	37.523	ppb	9.436	118879	50	75.0	70	130	
Mg	24	2	45	47.154	ppb	2.280	18473	50	94.3	70	130	
Al	27	2	45	45.241	ppb	4.743	5321	50	90.5	70	130	
K	39	2	45	90.233	ppb	7.128	184081	100	90.2	70	130	
Ca	44	2	45	34.278	ppb	4.791	1367	50	68.6	70	130	> +/-30%
V	51	2	72	5.360	ppb	3.585	39809	5	107.2	70	130	
Cr	52	2	72	2.053	ppb	0.606	15814	2	102.7	70	130	
Mn	55	2	72	0.967	ppb	11.017	3594	1	96.7	70	130	
Fe	57	2	72	54.454	ppb	3.003	7939	50	108.9	70	130	
Co	59	2	72	0.977	ppb	6.335	17436	1	97.7	70	130	
Ni	60	2	72	1.539	ppb	3.360	4997	1.5	102.6	70	130	
Cu	63	2	72	2.066	ppb	2.669	22241	2	103.3	70	130	
Zn	66	2	72	9.439	ppb	1.757	13616	10	94.4	70	130	
As	75	2	72	4.710	ppb	2.080	4390	5	94.2	70	130	
Se	78	1	72	4.711	ppb	11.321	3338	5	94.2	70	130	
Sr	88	2	45	0.943	ppb	3.606	3857	1	94.3	70	130	
Zr	90	2	72	4.836	ppb	30.728	677	0.5	967.1	70	130	> +/-30%
Zr	90	1	72	7.621	ppb	64.583	2753	0.5	1524.2	70	130	> +/-30%
Nb	93	2	72	2.643	ppb	6.043	19211	2	132.1	70	130	> +/-30%
Mo	95	2	115	1.964	ppb	8.423	8229	2	98.2	70	130	
Pd	105	2	115	0.015	ppb	83.020	307	1	1.5	70	130	> +/-30%
Ag	107	2	115	4.842	ppb	4.872	58603	5	96.8	70	130	
Cd	111	2	115	1.034	ppb	20.758	1813	1	103.4	70	130	
Sn	120	2	115	9.332	ppb	6.808	48609	10	93.3	70	130	
Sb	121	2	115	1.882	ppb	7.414	8696	2	94.1	70	130	
Ba	137	2	115	1.077	ppb	10.581	1773	1	107.7	70	130	
W	182	2	165	4.861	ppb	2.321	43190	1	486.1	70	130	> +/-30%
Pt	195	2	165	0.003	ppb	125.085	23	1	0.3	70	130	> +/-30%
Tl	205	2	165	0.856	ppb	5.047	14677	1	85.6	70	130	
Pb	208	2	165	0.842	ppb	9.354	19545	1	84.2	70	130	
Th	232	2	165	1.620	ppb	5.366	37266	2	81.0	70	130	
U	238	2	165	0.932	ppb	6.788	21596	1	93.2	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	951020	2.91	928504	102.43	60	125	
Sc (IS)	45	2	HMI He	4728926	1.60	4755435	99.44	60	125	
Sc (IS)	45	3	No Gas	131394725	1.78	129597379	101.39	60	120	
Ge Internal Standard	72	1	HMI H2	26373309	1.77	26580672	99.22	60	125	
Ge Internal Standard	72	2	HMI He	5370017	1.60	5368285	100.03	60	125	
In Internal standard	115	2	HMI He	16774367	4.66	16139116	103.94	60	125	
Ho-165	165	2	HMI He	41499421	4.27	40836889	101.62	60	125	

CRI Report

Sample Table

Sample Name CRI-5701470
 Data File Name 012RLST.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T14:29:05-06:00
 Sample Type CRI
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	14.748	ppb	52.305	7792951	10	147.5	50	150	
Be	9	1	6	1.110	ppb	6.706	507	1	111.0	80	120	
Na	23	2	45	10.816	ppb	34.902	92826	100	10.8	80	120	>+ -20%
Mg	24	2	45	19.565	ppb	8.680	7902	100	19.6	80	120	>+ -20%
Al	27	2	45	19.339	ppb	14.471	2430	20	96.7	80	120	
K	39	2	45	17.054	ppb	137.826	154256	20	85.3	80	120	
Ca	44	2	45	25.380	ppb	27.171	1103	20	126.9	80	120	>+ -20%
V	51	2	72	1.534	ppb	7.147	19137	1	153.4	80	120	>+ -20%
Cr	52	2	72	1.055	ppb	6.227	8846	1	105.5	80	120	
Mn	55	2	72	0.990	ppb	12.356	3670	1	99.0	80	120	
Fe	57	2	72	24.863	ppb	8.015	3994	20	124.3	80	120	>+ -20%
Co	59	2	72	0.960	ppb	8.458	17249	1	96.0	80	120	
Ni	60	2	72	1.173	ppb	0.640	3931	1	117.3	80	120	
Cu	63	2	72	1.019	ppb	6.112	13819	1	101.9	80	120	
Zn	66	2	72	0.549	ppb	40.693	3074	1	54.9	80	120	>+ -20%
As	75	2	72	0.898	ppb	2.718	1007	1	89.8	80	120	
Se	78	1	72	1.004	ppb	7.353	764	1	100.4	80	120	
Sr	88	2	45	2.049	ppb	4.811	7969	2	102.4	80	120	
Nb	93	2	72	4.013	ppb	1.386	28942	2	200.7	80	120	>+ -20%
Mo	95	2	115	1.037	ppb	8.386	4467	1	103.7	80	120	
Pd	105	2	115	1.036	ppb	6.104	6131	1	103.6	80	120	
Ag	107	2	115	0.993	ppb	4.800	11794	1	99.3	80	120	
Cd	111	2	115	1.061	ppb	4.795	1820	1	106.1	80	120	
Sn	120	2	115	1.026	ppb	7.014	5961	1	102.6	80	120	
Sb	121	2	115	1.071	ppb	4.720	4971	1	107.1	80	120	
Ba	137	2	115	0.950	ppb	6.770	1553	1	95.0	80	120	
W	182	2	165	0.943	ppb	5.033	10791	1	94.3	80	120	
Pt	195	2	165	0.994	ppb	4.855	5841	1	99.4	80	120	
Tl	205	2	165	0.899	ppb	1.886	15352	1	89.9	80	120	
Pb	208	2	165	0.851	ppb	4.882	19735	1	85.1	80	120	
Th	232	2	165	0.937	ppb	1.719	22607	1	93.7	80	120	
U	238	2	165	0.881	ppb	5.941	20454	1	88.1	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	960477	2.04	928504	103.44	60	125	
Sc (IS)	45	2	HMI He	4645683	3.94	4755435	97.69	60	125	
Sc IS)	45	3	No Gas	131962892	3.98	129597379	101.83	60	120	
Ge Internal Standard	72	1	HMI H2	26457272	1.35	26580672	99.54	60	125	
Ge Internal Standard	72	2	HMI He	5368058	1.95	5368285	100.00	60	125	
In Internal standard	115	2	HMI He	16356861	2.36	16139116	101.35	60	125	
Ho-165	165	2	HMI He	41403767	0.17	40836889	101.39	60	125	

CRI Report

Sample Table

Sample Name CRI-
 Data File Name 013RLST.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T14:34:22-06:00
 Sample Type CRI
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	3	45	2.750	ppb	148.704	7677044	10	27.5	50	150	>+ -20%
Be	9	1	6	-0.010	ppb	-177.325	18	1	-1.0	80	120	>+ -20%
Na	23	2	45	-17.026	ppb	-5.746	70555	100	-17.0	80	120	>+ -20%
Mg	24	2	45	-0.143	ppb	-176.238	617	100	-0.1	80	120	>+ -20%
Al	27	2	45	-1.361	ppb	-75.696	217	20	-6.8	80	120	>+ -20%
K	39	2	45	8.594	ppb	90.432	157094	20	43.0	80	120	>+ -20%
Ca	44	2	45	-1.918	ppb	-207.642	400	20	-9.6	80	120	>+ -20%
V	51	2	72	4.551	ppb	1.129	36411	1	455.1	80	120	>+ -20%
Cr	52	2	72	-0.025	ppb	-79.147	1353	1	-2.5	80	120	>+ -20%
Mn	55	2	72	-0.042	ppb	-32.950	400	1	-4.2	80	120	>+ -20%
Fe	57	2	72	-0.704	ppb	-55.821	600	20	-3.5	80	120	>+ -20%
Co	59	2	72	-0.016	ppb	-253.371	6525	1	-1.6	80	120	>+ -20%
Ni	60	2	72	-0.001	ppb	-6249.282	530	1	-0.1	80	120	>+ -20%
Cu	63	2	72	-0.032	ppb	-54.145	5501	1	-3.2	80	120	>+ -20%
Zn	66	2	72	8.318	ppb	8.690	12615	1	831.8	80	120	>+ -20%
As	75	2	72	-0.034	ppb	-41.811	186	1	-3.4	80	120	>+ -20%
Se	78	1	72	-0.051	ppb	-16.169	29	1	-5.1	80	120	>+ -20%
Sr	88	2	45	0.003	ppb	1054.598	237	2	0.1	80	120	>+ -20%
Nb	93	2	72	1.049	ppb	9.618	8112	2	52.5	80	120	>+ -20%
Mo	95	2	115	-0.054	ppb	-23.202	267	1	-5.4	80	120	>+ -20%
Pd	105	2	115	-0.013	ppb	-67.860	137	1	-1.3	80	120	>+ -20%
Ag	107	2	115	0.004	ppb	92.878	120	1	0.4	80	120	>+ -20%
Cd	111	2	115	-0.006	ppb	-175.207	30	1	-0.6	80	120	>+ -20%
Sn	120	2	115	-0.025	ppb	-51.925	700	1	-2.5	80	120	>+ -20%
Sb	121	2	115	-0.023	ppb	-47.249	227	1	-2.3	80	120	>+ -20%
Ba	137	2	115	-0.015	ppb	-235.203	173	1	-1.5	80	120	>+ -20%
W	182	2	165	-0.049	ppb	-26.599	2640	1	-4.9	80	120	>+ -20%
Pt	195	2	165	-0.001	ppb	-165.997	3	1	-0.1	80	120	>+ -20%
Tl	205	2	165	-0.019	ppb	-52.185	480	1	-1.9	80	120	>+ -20%
Pb	208	2	165	-0.023	ppb	-26.460	1190	1	-2.3	80	120	>+ -20%
Th	232	2	165	-0.047	ppb	-28.871	1560	1	-4.7	80	120	>+ -20%
U	238	2	165	-0.015	ppb	-12.371	293	1	-1.5	80	120	>+ -20%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	966354	2.77	928504	104.08	60	125	
Sc (IS)	45	2	HMI He	4820292	0.84	4755435	101.36	60	125	
Sc IS)	45	3	No Gas	134960800	1.69	129597379	104.14	60	120	
Ge Internal Standard	72	1	HMI H2	27378594	2.86	26580672	103.00	60	125	
Ge Internal Standard	72	2	HMI He	5515429	1.49	5368285	102.74	60	125	
In Internal standard	115	2	HMI He	16288698	3.52	16139116	100.93	60	125	
Ho-165	165	2	HMI He	41974489	0.56	40836889	102.79	60	125	

CRI Report

Sample Table

Sample Name CRI5701471
 Data File Name 014_CRI.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T14:37:53-06:00
 Sample Type AFCRI
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	6	0.173	ppb	11.016	95	0.2	86.3	80	120	
Na	23	2	45	-6.719	ppb	-26.855	80202	20	-33.6	80	120	AFCRI Main CR1 Failed
Mg	24	1	45	4.513	ppb	1.398	23459	20	22.6	80	120	AFCRI Main CR1 Failed
Mg	24	2	45	4.241	ppb	8.233	2307	20	21.2	80	120	AFCRI Main CR1 Failed
Al	27	2	45	3.053	ppb	6.068	710	20	15.3	80	120	AFCRI Main CR1 Failed
K	39	2	45	8.622	ppb	55.937	157292	20	43.1	80	120	AFCRI Main CR1 Failed
Ca	44	2	45	6.901	ppb	58.707	643	20	34.5	80	120	AFCRI Main CR1 Failed
V	51	2	72	0.460	ppb	23.960	13625	0.2	230.2	80	120	AFCRI Main CR1 Failed
Cr	52	2	72	0.246	ppb	18.152	3264	0.2	122.8	80	120	AFCRI Main CR1 Failed
(Cr)	53	2	72	-0.051	ppb	-359.074	4711	0.2	-25.5	80	120	AFCRI Main CR1 Failed
Mn	55	2	72	0.217	ppb	10.191	1237	0.2	108.4	80	120	
Fe	57	2	72	3.000	ppb	40.957	1097	20	15.0	80	120	AFCRI Main CR1 Failed
Co	59	2	72	0.216	ppb	16.408	9119	0.2	107.9	80	120	
Ni	60	2	72	0.230	ppb	2.582	1213	0.2	115.1	80	120	
Cu	63	2	72	1.228	ppb	8.019	15817	0.2	614.2	80	120	AFCRI Main CR1 Failed
Zn	66	2	72	-0.531	ppb	-21.155	1830	0.2	-265.4	80	120	AFCRI Main CR1 Failed
As	75	2	72	0.182	ppb	11.971	381	0.2	91.1	80	120	
Se	78	1	72	0.150	ppb	9.718	168	0.2	75.2	80	120	AFCRI Main CR1 Failed
(Se)	82	1	72	0.462	ppb	66.058	1707	0.2	231.1	80	120	AFCRI Main CR1 Failed
Sr	88	2	45	0.435	ppb	5.153	1937	0.2	217.4	80	120	AFCRI Main CR1 Failed
Nb	93	2	72	1.439	ppb	7.498	10890	0.4	359.9	80	120	AFCRI Main CR1 Failed
Mo	95	2	115	0.184	ppb	5.523	1210	0.2	92.1	80	120	
Pd	105	2	115	0.177	ppb	4.980	1247	0.2	88.6	80	120	
Ag	107	2	115	0.213	ppb	7.861	2640	0.2	106.7	80	120	
Cd	111	2	115	0.180	ppb	19.195	350	0.2	90.2	80	120	
(Cd)	114	2	115	0.217	ppb	14.039	1017	0.2	108.5	80	120	
Sn	120	2	115	0.181	ppb	24.260	1763	0.2	90.5	80	120	
Sb	121	2	115	0.188	ppb	22.650	1160	0.2	93.8	80	120	
Ba	137	2	115	0.164	ppb	37.537	440	0.2	82.1	80	120	
W	182	2	165	0.115	ppb	27.939	3984	0.2	57.6	80	120	AFCRI Main CR1 Failed
Pt	195	2	165	0.180	ppb	3.438	1070	0.2	90.0	80	120	
Tl	205	2	165	0.165	ppb	5.171	3474	0.2	82.5	80	120	
(Pb)	206	2	165	0.197	ppb	5.904	1417	0.2	98.4	80	120	
(Pb)	207	2	165	0.154	ppb	15.858	1130	0.2	76.9	80	120	AFCRI Main CR1 Failed
Pb	208	2	165	0.156	ppb	7.752	5000	0.2	78.0	80	120	AFCRI Main CR1 Failed
Th	232	2	165	0.156	ppb	11.651	5918	0.2	78.1	80	120	AFCRI Main CR1 Failed
U	238	2	165	0.185	ppb	4.647	4814	0.2	92.5	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	934614	1.37	928504	100.66	60	125	
Sc (IS)	45	2	HMI He	4825593	1.54	4755435	101.48	60	125	
Sc (IS)	45	3	No Gas	133474795	2.02	129597379	102.99	60	120	
Ge Internal Standard	72	1	HMI H2	26392737	2.74	26580672	99.29	60	125	
Ge Internal Standard	72	2	HMI He	5486872	4.92	5368285	102.21	60	125	
In Internal standard	115	2	HMI He	16662902	1.40	16139116	103.25	60	125	
Ho-165	165	2	HMI He	41669014	2.04	40836889	102.04	60	125	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name ICSA-5695552
 Data File Name 015ICSA.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T14:41:24-06:00
 Sample Type ICSA
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-2.008	ppb	-405.4	111106	10	
Li	7	3	45	1.547	ppb	437.6	7240646	10	
Be	9	1	6	-0.009	ppb	-212.9	17	1	
B	11	1	6	5.294	ppb	64.8	543	10	
Na	23	2	45	92645.777	ppb	0.3	81984413	100000	
Mg	24	2	45	92658.739	ppb	2.4	33979691	100000	
Al	27	2	45	95091.954	ppb	0.7	10122300	100000	
K	39	2	45	98397.882	ppb	1.7	35212120	100000	
V	51	2	72	1.061	ppb	22.0	15917	1	>RL or LOD
Cr	52	2	72	1.393	ppb	7.0	10750	1	>RL or LOD
Mn	55	2	72	0.507	ppb	7.4	2047	1	
Co	59	2	72	0.218	ppb	24.2	8602	1	
Ni	60	2	72	0.271	ppb	19.0	1253	1	
Cu	63	2	72	0.587	ppb	9.5	9916	1	
Zn	66	2	72	-0.344	ppb	-92.0	1930	1	
As	75	2	72	0.036	ppb	108.8	234	1	
Se	78	1	72	-0.012	ppb	-94.1	51	1	
Sr	88	2	45	1.611	ppb	3.8	6245	1	>RL or LOD
Nb	93	2	72	13.584	ppb	9.8	92899	1	>RL or LOD
Mo	95	2	115	2139.730	ppb	0.7	7617064	2000	>RL or LOD
Pd	105	2	115	0.010	ppb	157.6	250	1	
Ag	107	2	115	0.041	ppb	5.8	517	1	
Cd	111	2	115	0.762	ppb	7.7	1220	1	
Sn	120	2	115	0.066	ppb	33.0	1067	1	
Sb	121	2	115	0.072	ppb	42.6	590	1	
Ba	137	2	115	0.761	ppb	23.9	1183	1	
W	182	2	165	0.339	ppb	18.1	5698	1	
Pt	195	2	165	0.024	ppb	28.3	143	1	
Tl	205	2	165	-0.011	ppb	-64.4	597	1	
Pb	208	2	165	0.218	ppb	5.9	6177	1	
Th	232	2	165	0.573	ppb	1.5	14557	1	
U	238	2	165	0.002	ppb	218.9	647	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	875237	2.37	928504	94.26	60	125	
Sc (IS)	45	2	HMI He	4590396	0.97	4755435	96.53	60	125	
Sc IS)	45	3	No Gas	127766849	0.79	129597379	98.59	60	120	
Ge Internal Standard	72	1	HMI H2	24490853	3.60	26580672	92.14	60	125	
Ge Internal Standard	72	2	HMI He	5155932	2.67	5368285	96.04	60	125	
In Internal standard	115	2	HMI He	15119201	2.15	16139116	93.68	60	125	
Ho-165	165	2	HMI He	40670021	1.89	40836889	99.59	60	125	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name ICSAB-5695553
 Data File Name 016ICSB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T14:44:53-06:00
 Sample Type ICSB
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	1	45	191.596	ppb	2.256	178813	100	191.6	80	120	>+ -20%
Li	7	3	45	192.135	ppb	5.272	11572027	100	192.1	80	120	>+ -20%
Be	9	1	6	97.907	ppb	5.029	39226	100	97.9	80	120	
B	11	1	6	4.206	ppb	120.675	520	100	4.2	80	120	>+ -20%
V	51	2	72	103.369	ppb	0.219	537733	100	103.4	80	120	
Cr	52	2	72	102.217	ppb	1.258	674851	100	102.2	80	120	
Mn	55	2	72	104.783	ppb	3.255	315094	100	104.8	80	120	
Co	59	2	72	98.200	ppb	1.964	1042883	100	98.2	80	120	
Ni	60	2	72	99.944	ppb	2.731	275389	100	99.9	80	120	
Cu	63	2	72	97.730	ppb	2.572	747999	100	97.7	80	120	
Zn	66	2	72	95.590	ppb	3.014	109345	100	95.6	80	120	
As	75	2	72	105.727	ppb	2.812	88815	100	105.7	80	120	
Se	78	1	72	100.678	ppb	2.878	64924	100	100.7	80	120	
Sr	88	2	45	193.482	ppb	1.534	716363	100	193.5	80	120	>+ -20%
Zr	90	2	72	100.273	ppb	13.715	2574	100	100.3	80	120	>+ -20%
Zr	90	1	72	78.460	ppb	3.505	6037	100	78.5	80	120	>+ -20%
Nb	93	2	72	262.419	ppb	4.181	1760716	100	262.4	80	120	>+ -20%
Mo	95	2	115	2288.389	ppb	6.231	8191227	100	2288.4	80	120	>+ -20%
Pd	105	2	115	98.789	ppb	4.555	524847	100	98.8	80	120	
Ag	107	2	115	101.113	ppb	4.411	1109859	100	101.1	80	120	
Cd	111	2	115	104.288	ppb	3.325	162826	100	104.3	80	120	
Sn	120	2	115	104.627	ppb	4.827	487195	100	104.6	80	120	
Sb	121	2	115	107.414	ppb	5.527	433805	100	107.4	80	120	
Ba	137	2	115	106.991	ppb	2.768	142208	100	107.0	80	120	
W	182	2	165	100.608	ppb	4.990	805338	100	100.6	80	120	
Pt	195	2	165	95.052	ppb	5.654	539237	100	95.1	80	120	
Tl	205	2	165	94.167	ppb	2.041	1477601	100	94.2	80	120	
Pb	208	2	165	86.882	ppb	5.652	1786015	100	86.9	80	120	
Th	232	2	165	100.878	ppb	3.299	2091167	100	100.9	80	120	
U	238	2	165	98.035	ppb	6.005	2132519	100	98.0	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	882556	3.19	928504	95.05	60	125	
Sc (IS)	45	2	HMI He	4539518	0.50	4755435	95.46	60	125	
Sc (IS)	45	3	No Gas	126247851	3.29	129597379	97.42	60	120	
Ge Internal Standard	72	1	HMI H2	24442638	2.01	26580672	91.96	60	125	
Ge Internal Standard	72	2	HMI He	5072486	0.65	5368285	94.49	60	125	
In Internal standard	115	2	HMI He	15219371	2.85	16139116	94.30	60	125	
Ho-165	165	2	HMI He	40051644	2.13	40836889	98.08	60	125	

Sample Report

Sample Table

Sample Name RINSE
 Data File Name 017SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T14:48:22-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	9.095	ppb	9.095	166.86	7771850	40000	
Be	9	1	6	0.038	ppb	0.038	54.86	38	2000	
B	11	1	6	-3.217	ppb	-3.217	-187.17	340	100	
Na	23	2	45	76.936	ppb	76.936	6.09	152601	400000	
Mg	24	2	45	35.721	ppb	35.721	4.44	13949	400000	
Al	27	2	45	34.932	ppb	34.932	9.16	4137	400000	
K	39	2	45	22.001	ppb	22.001	33.31	156784	400000	
Ca	44	2	45	22.127	ppb	22.127	23.78	1023	400000	
V	51	2	72	0.550	ppb	0.550	23.71	13989	2000	
Cr	52	2	72	0.072	ppb	0.072	16.85	2017	5000	
Mn	55	2	72	0.017	ppb	0.017	232.64	583	10000	
Fe	57	2	72	43.187	ppb	43.187	2.46	6511	400000	
Co	59	2	72	0.035	ppb	0.035	34.83	6998	2000	
Ni	60	2	72	0.037	ppb	0.037	72.19	633	5000	
Cu	63	2	72	0.084	ppb	0.084	65.00	6365	5000	
Zn	66	2	72	-0.218	ppb	-0.218	-70.31	2194	5000	
As	75	2	72	0.015	ppb	0.015	33.13	227	2000	
Se	78	1	72	0.004	ppb	0.004	489.88	65	2000	
Sr	88	2	45	0.044	ppb	0.044	42.93	387	2000	
Zr	90	2	72	2.788	ppb	2.788	131.77	640	1000	
Zr	90	1	72	1.070	ppb	1.070	272.05	2376	1000	
Nb	93	2	72	0.424	ppb	0.424	5.76	3500	200	
Mo	95	2	115	2.832	ppb	2.832	4.14	11688	2000	
Pd	105	2	115	0.090	ppb	0.090	4.92	743	100	
Ag	107	2	115	0.040	ppb	0.040	15.78	557	100	
Cd	111	2	115	0.028	ppb	0.028	102.75	90	2000	
Sn	120	2	115	0.072	ppb	0.072	45.06	1217	2000	
Sb	121	2	115	0.046	ppb	0.046	23.04	540	1000	
Ba	137	2	115	-0.017	ppb	-0.017	-218.83	177	5000	
W	182	2	165	0.045	ppb	0.045	29.24	3394	100	
Pt	195	2	165	0.029	ppb	0.029	24.08	177	100	
Tl	205	2	165	0.044	ppb	0.044	23.50	1493	2000	
Pb	208	2	165	0.024	ppb	0.024	27.17	2170	5000	
Th	232	2	165	-0.041	ppb	-0.041	-5.11	1677	2000	
U	238	2	165	0.045	ppb	0.045	4.39	1653	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	949754	3.84	928504	102.29	60	125	
Sc (IS)	45	2	HMI He	4662425	2.01	4755435	98.04	60	125	
Sc IS)	45	3	No Gas	133885681	0.61	129597379	103.31	60	120	
Ge Internal Standard	72	1	HMI H2	26067860	0.55	26580672	98.07	60	125	
Ge Internal Standard	72	2	HMI He	5431080	1.79	5368285	101.17	60	125	
In Internal standard	115	2	HMI He	16785020	1.65	16139116	104.00	60	125	
Ho-165	165	2	HMI He	41585022	0.35	40836889	101.83	60	125	

Linear Range Sample (LRS) Report

Sample Table

Sample Name LRA-5680342
 Data File Name 018_LR.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T14:51:54-06:00
 Sample Type LR
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	1	6	1948.061	ppb	1.886	829141	2000	97.4	90	110	
V	51	2	72	2086.096	ppb	2.245	10958141	2000	104.3	90	110	
Cr	52	2	72	5219.962	ppb	2.593	35375450	5000	104.4	90	110	
(Cr)	53	2	72	5418.715	ppb	1.373	4474669	5000	108.4	90	110	
Mn	55	2	72	10603.414	ppb	4.131	32749563	10000	106.0	90	110	
Co	59	2	72	1980.870	ppb	1.308	21510291	2000	99.0	90	110	
Ni	60	2	72	4998.934	ppb	1.753	14139089	5000	100.0	90	110	
Cu	63	2	72	4832.539	ppb	1.180	37769011	5000	96.7	90	110	
Zn	66	2	72	4889.193	ppb	1.585	5633987	5000	97.8	90	110	
As	75	2	72	2081.517	ppb	3.480	1794741	2000	104.1	90	110	
Se	78	1	72	2105.601	ppb	3.656	1430874	2000	105.3	90	110	
(Se)	82	1	72	1790.857	ppb	5.173	572670	2000	89.5	90	110	LRS Main CR1 Failed
Mo	95	2	115	2122.435	ppb	2.614	7978932	2000	106.1	90	110	
Cd	111	2	115	2071.714	ppb	3.864	3394260	2000	103.6	90	110	
(Cd)	114	2	115	2093.548	ppb	4.344	8613979	2000	104.7	90	110	
Sn	120	2	115	2047.105	ppb	2.498	9993309	2000	102.4	90	110	
Sb	121	2	115	1033.541	ppb	1.736	4380536	1000	103.4	90	110	
Ba	137	2	115	5049.903	ppb	1.973	7035718	5000	101.0	90	110	
Tl	205	2	165	958.960	ppb	7.150	15202222	1000	95.9	90	110	
(Pb)	206	2	165	5051.543	ppb	3.855	25267417	5000	101.0	90	110	
(Pb)	207	2	165	5113.949	ppb	4.881	23133975	5000	102.3	90	110	
Pb	208	2	165	5139.392	ppb	3.743	106799619	5000	102.8	90	110	
Th	232	2	165	932.675	ppb	5.416	19535345	1000	93.3	90	110	
U	238	2	165	1901.948	ppb	3.310	41877709	2000	95.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	937551	2.15	928504	100.97	60	125	
Sc (IS)	45	2	HMI He	4573697	3.79	4755435	96.18	60	125	
Sc IS)	45	3	No Gas	127855494	0.96	129597379	98.66	60	120	
Ge Internal Standard	72	1	HMI H2	25772286	2.09	26580672	96.96	60	125	
Ge Internal Standard	72	2	HMI He	5215962	1.53	5368285	97.16	60	125	
In Internal standard	115	2	HMI He	15966410	0.57	16139116	98.93	60	125	
Ho-165	165	2	HMI He	40552909	4.25	40836889	99.30	60	125	

Sample Report

Sample Table

Sample Name RINSE
Data File Name 019SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
Acq Date Time 2019-05-14T14:55:18-06:00
Analyst Denver Metals
Sample Type Sample
Dilution 1
Comment
ISTD Ref FileName 007CALB.d
Sample QC Pass/Fail Pass
ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	11.161	ppb	11.161	49.29	7464438	40000	
Be	9	1	6	0.807	ppb	0.807	13.35	365	2000	
B	11	1	6	-5.142	ppb	-5.142	-82.80	287	100	
Na	23	2	45	1.310	ppb	1.310	71.45	82848	400000	
Mg	24	2	45	2.509	ppb	2.509	4.41	1550	400000	
Al	27	2	45	1.026	ppb	1.026	55.69	457	400000	
K	39	2	45	-24.897	ppb	-24.897	-7.78	136765	400000	
Ca	44	2	45	1.733	ppb	1.733	467.39	473	400000	
V	51	2	72	0.825	ppb	0.825	23.66	14666	2000	
Cr	52	2	72	1.268	ppb	1.268	2.97	9900	5000	
Mn	55	2	72	2.807	ppb	2.807	10.04	9036	10000	
Fe	57	2	72	3.605	ppb	3.605	30.76	1107	400000	
Co	59	2	72	0.556	ppb	0.556	5.94	12204	2000	
Ni	60	2	72	1.338	ppb	1.338	5.49	4227	5000	
Cu	63	2	72	1.474	ppb	1.474	3.12	16753	5000	
Zn	66	2	72	1.635	ppb	1.635	11.43	4191	5000	
As	75	2	72	0.693	ppb	0.693	11.62	791	2000	
Se	78	1	72	1.193	ppb	1.193	6.75	873	2000	
Sr	88	2	45	-0.012	ppb	-0.012	-176.10	170	2000	
Zr	90	2	72	3.279	ppb	3.279	47.74	617	1000	
Zr	90	1	72	1.502	ppb	1.502	366.57	2373	1000	
Nb	93	2	72	0.098	ppb	0.098	4.27	1097	200	
Mo	95	2	115	3.551	ppb	3.551	2.05	13879	2000	
Pd	105	2	115	-0.001	ppb	-0.001	-205.37	200	100	
Ag	107	2	115	0.006	ppb	0.006	50.03	147	100	
Cd	111	2	115	0.476	ppb	0.476	4.78	823	2000	
Sn	120	2	115	4.029	ppb	4.029	7.08	20576	2000	
Sb	121	2	115	7.596	ppb	7.596	0.32	32666	1000	
Ba	137	2	115	1.166	ppb	1.166	10.29	1823	5000	
W	182	2	165	-0.002	ppb	-0.002	-938.20	2894	100	
Pt	195	2	165	0.001	ppb	0.001	477.21	10	100	
Tl	205	2	165	0.356	ppb	0.356	6.81	6335	2000	
Pb	208	2	165	1.820	ppb	1.820	13.08	38943	5000	
Th	232	2	165	1.657	ppb	1.657	4.30	36779	2000	
U	238	2	165	1.033	ppb	1.033	2.50	23081	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	939600	4.80	928504	101.20	60	125	
Sc (IS)	45	2	HMI He	4559960	0.83	4755435	95.89	60	125	
Sc IS)	45	3	No Gas	127746745	1.21	129597379	98.57	60	120	
Ge Internal Standard	72	1	HMI H2	25794414	0.95	26580672	97.04	60	125	
Ge Internal Standard	72	2	HMI He	5148656	4.68	5368285	95.91	60	125	
In Internal standard	115	2	HMI He	16042709	1.66	16139116	99.40	60	125	
Ho-165	165	2	HMI He	40057922	2.04	40836889	98.09	60	125	

Sample Report

Sample Table

Sample Name RINSE
 Data File Name 020SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T14:58:51-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	4.507	ppb	4.507	243.84	7604556	40000	
Be	9	1	6	0.286	ppb	0.286	17.66	148	2000	
B	11	1	6	-5.177	ppb	-5.177	-3.28	293	100	
Na	23	2	45	-1.777	ppb	-1.777	-97.82	80554	400000	
Mg	24	2	45	1.104	ppb	1.104	36.71	1043	400000	
Al	27	2	45	0.692	ppb	0.692	169.46	423	400000	
K	39	2	45	-12.731	ppb	-12.731	-36.00	141809	400000	
Ca	44	2	45	-3.064	ppb	-3.064	-97.27	350	400000	
V	51	2	72	0.579	ppb	0.579	16.78	13545	2000	
Cr	52	2	72	0.293	ppb	0.293	19.64	3420	5000	
Mn	55	2	72	0.592	ppb	0.592	12.20	2330	10000	
Fe	57	2	72	2.403	ppb	2.403	48.05	967	400000	
Co	59	2	72	0.107	ppb	0.107	38.78	7472	2000	
Ni	60	2	72	0.308	ppb	0.308	5.01	1370	5000	
Cu	63	2	72	0.420	ppb	0.420	23.53	8699	5000	
Zn	66	2	72	0.278	ppb	0.278	106.48	2664	5000	
As	75	2	72	0.136	ppb	0.136	41.45	322	2000	
Se	78	1	72	0.233	ppb	0.233	25.29	224	2000	
Sr	88	2	45	0.010	ppb	0.010	207.73	250	2000	
Zr	90	2	72	0.587	ppb	0.587	444.93	567	1000	
Zr	90	1	72	0.344	ppb	0.344	714.32	2353	1000	
Nb	93	2	72	0.048	ppb	0.048	40.47	767	200	
Mo	95	2	115	0.774	ppb	0.774	11.86	3410	2000	
Pd	105	2	115	-0.006	ppb	-0.006	-128.10	173	100	
Ag	107	2	115	0.006	ppb	0.006	57.40	143	100	
Cd	111	2	115	0.122	ppb	0.122	46.70	243	2000	
Sn	120	2	115	1.030	ppb	1.030	2.27	5884	2000	
Sb	121	2	115	2.237	ppb	2.237	8.37	9876	1000	
Ba	137	2	115	0.238	ppb	0.238	39.12	527	5000	
W	182	2	165	0.021	ppb	0.021	116.89	3077	100	
Pt	195	2	165	0.003	ppb	0.003	126.16	20	100	
Tl	205	2	165	0.059	ppb	0.059	29.05	1663	2000	
Pb	208	2	165	0.461	ppb	0.461	11.28	11032	5000	
Th	232	2	165	0.456	ppb	0.456	16.72	11848	2000	
U	238	2	165	0.197	ppb	0.197	7.03	4878	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	966712	3.56	928504	104.12	60	125	
Sc (IS)	45	2	HMI He	4584229	1.59	4755435	96.40	60	125	
Sc IS)	45	3	No Gas	132973301	1.76	129597379	102.60	60	120	
Ge Internal Standard	72	1	HMI H2	26219423	0.91	26580672	98.64	60	125	
Ge Internal Standard	72	2	HMI He	5200256	1.90	5368285	96.87	60	125	
In Internal standard	115	2	HMI He	16113293	2.73	16139116	99.84	60	125	
Ho-165	165	2	HMI He	40082275	6.13	40836889	98.15	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5701467
 Data File Name 021_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T15:02:23-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	106.550	ppb	13.355	159857	100	106.5	90	110	
Li	7	3	45	116.695	ppb	7.716	9950382	100	116.7	90	110	>+ -10%
Be	9	1	6	45.005	ppb	1.519	20288	50	90.0	90	110	
B	11	1	6	42.310	ppb	8.215	1723	50	84.6	90	110	>+ -10%
Na	23	2	45	936.754	ppb	1.867	922913	1000	93.7	90	110	
Mg	24	2	45	958.339	ppb	3.298	356885	1000	95.8	90	110	
Al	27	2	45	966.735	ppb	4.968	104592	1000	96.7	90	110	
K	39	2	45	935.141	ppb	4.420	486284	1000	93.5	90	110	
Ca	44	2	45	983.055	ppb	3.066	26487	1000	98.3	90	110	
V	51	2	72	50.520	ppb	2.295	283174	50	101.0	90	110	
Cr	52	2	72	49.586	ppb	3.545	346558	50	99.2	90	110	
Mn	55	2	72	49.658	ppb	3.439	158019	50	99.3	90	110	
Fe	57	2	72	999.670	ppb	2.726	133692	1000	100.0	90	110	
Co	59	2	72	48.930	ppb	3.876	552129	50	97.9	90	110	
Ni	60	2	72	50.077	ppb	2.343	146035	50	100.2	90	110	
Cu	63	2	72	51.239	ppb	3.887	416910	50	102.5	90	110	
Zn	66	2	72	50.054	ppb	3.605	61654	50	100.1	90	110	
As	75	2	72	50.317	ppb	1.635	44772	50	100.6	90	110	
Se	78	1	72	50.247	ppb	0.704	34153	50	100.5	90	110	
Sr	88	2	45	93.057	ppb	3.991	353210	100	93.1	90	110	
Zr	90	2	72	39.782	ppb	11.550	1423	50	79.6	90	110	>+ -10%
Zr	90	1	72	50.992	ppb	14.325	4932	50	102.0	90	110	
Nb	93	2	72	91.193	ppb	3.486	646686	100	91.2	90	110	
Mo	95	2	115	52.526	ppb	0.918	194854	50	105.1	90	110	
Pd	105	2	115	53.347	ppb	0.420	293058	50	106.7	90	110	
Ag	107	2	115	51.807	ppb	2.633	587728	50	103.6	90	110	
Cd	111	2	115	52.331	ppb	2.406	84445	50	104.7	90	110	
Sn	120	2	115	50.538	ppb	1.373	243652	50	101.1	90	110	
Sb	121	2	115	51.311	ppb	0.228	214400	50	102.6	90	110	
Ba	137	2	115	50.700	ppb	0.428	69729	50	101.4	90	110	
W	182	2	165	50.983	ppb	2.273	394421	50	102.0	90	110	
Pt	195	2	165	51.466	ppb	6.720	280663	50	102.9	90	110	
Tl	205	2	165	48.700	ppb	4.073	735127	50	97.4	90	110	
Pb	208	2	165	49.715	ppb	6.193	982917	50	99.4	90	110	
Th	232	2	165	45.937	ppb	6.646	916380	50	91.9	90	110	
U	238	2	165	45.916	ppb	6.928	960365	50	91.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	992001	3.43	928504	106.84	60	125	
Sc (IS)	45	2	HMI He	4655195	3.42	4755435	97.89	60	125	
Sc IS)	45	3	No Gas	127842026	1.36	129597379	98.65	60	120	
Ge Internal Standard	72	1	HMI H2	25729181	0.76	26580672	96.80	60	125	
Ge Internal Standard	72	2	HMI He	5360113	2.03	5368285	99.85	60	125	
In Internal standard	115	2	HMI He	15718260	1.17	16139116	97.39	60	125	
Ho-165	165	2	HMI He	38552131	4.83	40836889	94.41	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5701457
 Data File Name 022_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T15:05:55-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	1.808	ppb	576.7	119325	0.1	>RL
Li	7	3	45	-1.986	ppb	-190.1	7559338	0.05	
Be	9	1	6	0.082	ppb	51.4	58	0.5	
B	11	1	6	-4.860	ppb	-85.3	300	0.1	
Na	23	2	45	-18.771	ppb	-4.2	67273	25	
Mg	24	2	45	0.639	ppb	30.2	897	25	
Al	27	2	45	0.465	ppb	39.6	410	15	
K	39	2	45	-9.395	ppb	-50.4	146739	50	
Ca	44	2	45	-3.023	ppb	-57.0	360	25	
V	51	2	72	0.005	ppb	1988.3	11074	1	
Cr	52	2	72	0.045	ppb	87.7	1827	1	
Mn	55	2	72	0.071	ppb	92.4	757	0.5	
Fe	57	2	72	3.164	ppb	103.8	1110	25	
Co	59	2	72	0.038	ppb	118.5	7062	0.5	
Ni	60	2	72	0.057	ppb	59.8	697	1	
Cu	63	2	72	0.049	ppb	65.0	6105	1	
Zn	66	2	72	-1.144	ppb	-5.2	1087	5	
As	75	2	72	0.012	ppb	102.0	225	1	
Se	78	1	72	0.066	ppb	60.2	108	1	
Sr	88	2	45	0.038	ppb	62.4	367	1	
Zr	90	2	72	-4.647	ppb	-68.6	480	1	
Zr	90	1	72	-8.687	ppb	-49.0	1855	1	
Nb	93	2	72	3.077	ppb	7.1	22665	2	>RL
Mo	95	2	115	0.245	ppb	11.2	1413	0.5	
Pd	105	2	115	0.048	ppb	52.6	480	1	
Ag	107	2	115	0.024	ppb	8.7	357	1	
Cd	111	2	115	0.046	ppb	31.0	117	0.5	
Sn	120	2	115	0.296	ppb	17.0	2287	1	
Sb	121	2	115	0.511	ppb	9.4	2524	1	
Ba	137	2	115	0.022	ppb	317.0	227	0.5	
W	182	2	165	0.055	ppb	38.8	3284	1	
Pt	195	2	165	0.022	ppb	51.5	127	1	
Tl	205	2	165	0.042	ppb	25.6	1377	0.1	
Pb	208	2	165	0.150	ppb	3.8	4600	0.5	
Th	232	2	165	0.033	ppb	48.2	3077	1	
U	238	2	165	0.060	ppb	7.0	1877	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	957615	3.36	928504	103.14	60	125	
Sc (IS)	45	2	HMI He	4704089	1.18	4755435	98.92	60	125	
Sc IS)	45	3	No Gas	134960178	0.75	129597379	104.14	60	120	
Ge Internal Standard	72	1	HMI H2	25984214	2.47	26580672	97.76	60	125	
Ge Internal Standard	72	2	HMI He	5457237	2.75	5368285	101.66	60	125	
In Internal standard	115	2	HMI He	16232256	0.64	16139116	100.58	60	125	
Ho-165	165	2	HMI He	39291360	2.42	40836889	96.22	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5701469
 Data File Name 023LCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T15:09:25-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	8.707	ppb	74.317	7753077	50	17.4	70	130	> +/-30%
Be	9	1	6	1.014	ppb	23.907	458	1	101.4	70	130	
Na	23	2	45	33.601	ppb	2.575	111217	50	67.2	70	130	> +/-30%
Mg	24	2	45	49.810	ppb	3.330	18783	50	99.6	70	130	
Al	27	2	45	48.499	ppb	3.638	5478	50	97.0	70	130	
K	39	2	45	93.615	ppb	7.794	178750	100	93.6	70	130	
Ca	44	2	45	31.152	ppb	16.946	1237	50	62.3	70	130	> +/-30%
V	51	2	72	5.382	ppb	4.363	39238	5	107.6	70	130	
Cr	52	2	72	2.036	ppb	6.753	15407	2	101.8	70	130	
Mn	55	2	72	1.102	ppb	3.252	3954	1	110.2	70	130	
Fe	57	2	72	56.915	ppb	1.418	8122	50	113.8	70	130	
Co	59	2	72	0.930	ppb	2.986	16625	1	93.0	70	130	
Ni	60	2	72	1.638	ppb	7.745	5198	1.5	109.2	70	130	
Cu	63	2	72	2.088	ppb	5.742	22018	2	104.4	70	130	
Zn	66	2	72	9.868	ppb	2.246	13879	10	98.7	70	130	
As	75	2	72	4.783	ppb	1.948	4377	5	95.7	70	130	
Se	78	1	72	4.668	ppb	3.648	3238	5	93.4	70	130	
Sr	88	2	45	0.924	ppb	3.842	3650	1	92.4	70	130	
Zr	90	2	72	4.773	ppb	61.320	663	0.5	954.7	70	130	> +/-30%
Zr	90	1	72	1.986	ppb	150.261	2399	0.5	397.1	70	130	> +/-30%
Nb	93	2	72	2.131	ppb	8.936	15294	2	106.5	70	130	
Mo	95	2	115	2.196	ppb	5.922	8766	2	109.8	70	130	
Pd	105	2	115	0.025	ppb	68.767	347	1	2.5	70	130	> +/-30%
Ag	107	2	115	4.821	ppb	1.268	55924	5	96.4	70	130	
Cd	111	2	115	1.110	ppb	8.928	1867	1	111.0	70	130	
Sn	120	2	115	10.083	ppb	2.003	50294	10	100.8	70	130	
Sb	121	2	115	2.466	ppb	3.470	10830	2	123.3	70	130	
Ba	137	2	115	0.953	ppb	13.376	1530	1	95.3	70	130	
W	182	2	165	5.058	ppb	1.642	42629	1	505.8	70	130	> +/-30%
Pt	195	2	165	0.006	ppb	49.727	40	1	0.6	70	130	> +/-30%
Tl	205	2	165	0.933	ppb	1.041	15161	1	93.3	70	130	
Pb	208	2	165	1.017	ppb	1.193	22166	1	101.7	70	130	
Th	232	2	165	1.687	ppb	0.481	36836	2	84.3	70	130	
U	238	2	165	0.910	ppb	3.093	20094	1	91.0	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	947849	2.86	928504	102.08	60	125	
Sc (IS)	45	2	HMI He	4560442	0.84	4755435	95.90	60	125	
Sc IS)	45	3	No Gas	133756791	1.98	129597379	103.21	60	120	
Ge Internal Standard	72	1	HMI H2	25797553	0.18	26580672	97.05	60	125	
Ge Internal Standard	72	2	HMI He	5276585	2.54	5368285	98.29	60	125	
In Internal standard	115	2	HMI He	16054330	1.82	16139116	99.47	60	125	
Ho-165	165	2	HMI He	39455588	1.38	40836889	96.62	60	125	

Sample Report

Sample Table

Sample Name 280-123330-b-6-e
 Data File Name 024SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T15:12:57-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	516.789	ppb	516.789	2.34	18449450	40000	
Be	9	1	6	0.000	ppb	0.000	36816.14	18	2000	
B	11	1	6	1235.200	ppb	1235.200	0.77	29488	100	>LDR
Na	23	2	45	38362.861	ppb	38362.861	1.90	37287424	400000	
Mg	24	2	45	325854.331	ppb	325854.331	2.06	131076328	400000	
Al	27	2	45	10.071	ppb	10.071	21.85	1557	400000	
K	39	2	45	58549.345	ppb	58549.345	2.59	23049898	400000	
Ca	44	2	45	784936.078	ppb	784936.078	0.24	22518639	400000	
V	51	2	72	-0.809	ppb	-0.809	-4.10	6398	2000	
Cr	52	2	72	0.423	ppb	0.423	8.66	4374	5000	
Mn	55	2	72	2988.235	ppb	2988.235	2.47	9354651	10000	
Fe	57	2	72	178.944	ppb	178.944	5.82	24157	400000	
Co	59	2	72	11.021	ppb	11.021	1.99	127752	2000	
Ni	60	2	72	23.143	ppb	23.143	0.82	66895	5000	
Cu	63	2	72	1.572	ppb	1.572	10.74	17973	5000	
Zn	66	2	72	5.662	ppb	5.662	2.90	8999	5000	
As	75	2	72	0.583	ppb	0.583	17.36	717	2000	
Se	78	1	72	0.080	ppb	0.080	52.19	105	2000	
Sr	88	2	45	2753.745	ppb	2753.745	4.87	11299431	2000	
Zr	90	2	72	74.476	ppb	74.476	5.39	2137	1000	
Zr	90	1	72	75.987	ppb	75.987	10.13	5637	1000	
Nb	93	2	72	2.542	ppb	2.542	10.53	18210	200	
Mo	95	2	115	0.452	ppb	0.452	9.65	2023	2000	
Pd	105	2	115	0.139	ppb	0.139	11.17	917	100	
Ag	107	2	115	0.033	ppb	0.033	2.61	420	100	
Cd	111	2	115	0.159	ppb	0.159	23.24	280	2000	
Sn	120	2	115	0.370	ppb	0.370	20.73	2437	2000	
Sb	121	2	115	0.726	ppb	0.726	10.58	3170	1000	
Ba	137	2	115	283.112	ppb	283.112	1.71	368620	5000	
W	182	2	165	0.017	ppb	0.017	245.04	2894	100	
Pt	195	2	165	0.002	ppb	0.002	113.31	17	100	
Tl	205	2	165	0.745	ppb	0.745	1.85	11808	2000	
Pb	208	2	165	0.381	ppb	0.381	5.85	8944	5000	
Th	232	2	165	1.786	ppb	1.786	3.38	37454	2000	
U	238	2	165	25.089	ppb	25.089	4.25	518751	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	782306	2.63	928504	84.25	60	125	
Sc (IS)	45	2	HMI He	5036309	2.54	4755435	105.91	60	125	
Sc IS)	45	3	No Gas	121920240	1.11	129597379	94.08	60	120	
Ge Internal Standard	72	1	HMI H2	23288185	1.05	26580672	87.61	60	125	
Ge Internal Standard	72	2	HMI He	5289025	1.31	5368285	98.52	60	125	
In Internal standard	115	2	HMI He	14913216	0.37	16139116	92.40	60	125	
Ho-165	165	2	HMI He	38039898	3.26	40836889	93.15	60	125	

Sample Report

Sample Table

Sample Name 280-123330-d-7-c
Data File Name 025SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
Acq Date Time 2019-05-14T15:16:26-06:00
Analyst Denver Metals
Sample Type Sample
Dilution 1
Comment 457615 6020A DOD5
ISTD Ref FileName 007CALB.d
Sample QC Pass/Fail Fail
ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	76.924	ppb	76.924	4.83	9668250	40000	
Be	9	1	6	-0.028	ppb	-0.028	-109.30	10	2000	
B	11	1	6	969.668	ppb	969.668	7.82	28990	100	>LDR
Na	23	2	45	23105.642	ppb	23105.642	3.19	22037453	400000	
Mg	24	2	45	71827.083	ppb	71827.083	2.22	28309458	400000	
Al	27	2	45	41.482	ppb	41.482	4.62	5121	400000	
K	39	2	45	3408.513	ppb	3408.513	2.54	1463083	400000	
Ca	44	2	45	103430.125	ppb	103430.125	2.87	2907527	400000	
V	51	2	72	-0.583	ppb	-0.583	-9.87	7758	2000	
Cr	52	2	72	0.463	ppb	0.463	2.84	4751	5000	
Mn	55	2	72	116.318	ppb	116.318	0.45	372586	10000	
Fe	57	2	72	847.051	ppb	847.051	0.61	114331	400000	
Co	59	2	72	1.418	ppb	1.418	1.05	22518	2000	
Ni	60	2	72	1.598	ppb	1.598	4.97	5204	5000	
Cu	63	2	72	1.662	ppb	1.662	1.18	19104	5000	
Zn	66	2	72	3.882	ppb	3.882	3.01	7072	5000	
As	75	2	72	12.579	ppb	12.579	2.77	11442	2000	
Se	78	1	72	0.004	ppb	0.004	578.55	65	2000	
Sr	88	2	45	331.173	ppb	331.173	3.31	1332906	2000	
Zr	90	2	72	23.497	ppb	23.497	20.75	1083	1000	
Zr	90	1	72	26.728	ppb	26.728	17.15	3714	1000	
Nb	93	2	72	1.647	ppb	1.647	14.54	12221	200	
Mo	95	2	115	3.064	ppb	3.064	2.08	12481	2000	
Pd	105	2	115	0.003	ppb	0.003	245.39	230	100	
Ag	107	2	115	0.011	ppb	0.011	35.62	210	100	
Cd	111	2	115	0.021	ppb	0.021	35.10	77	2000	
Sn	120	2	115	0.230	ppb	0.230	20.21	2007	2000	
Sb	121	2	115	0.451	ppb	0.451	14.12	2320	1000	
Ba	137	2	115	25.062	ppb	25.062	1.30	36559	5000	
W	182	2	165	0.035	ppb	0.035	89.02	3260	100	
Pt	195	2	165	0.000	ppb	0.000	-41148.13	7	100	
Tl	205	2	165	0.024	ppb	0.024	28.42	1160	2000	
Pb	208	2	165	0.409	ppb	0.409	3.83	10238	5000	
Th	232	2	165	0.521	ppb	0.521	4.96	13553	2000	
U	238	2	165	3.525	ppb	3.525	4.64	79117	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	977809	2.95	928504	105.31	60	125	
Sc (IS)	45	2	HMI He	4933715	1.31	4755435	103.75	60	125	
Sc IS)	45	3	No Gas	137120421	1.29	129597379	105.80	60	120	
Ge Internal Standard	72	1	HMI H2	26004644	0.78	26580672	97.83	60	125	
Ge Internal Standard	72	2	HMI He	5403405	1.32	5368285	100.65	60	125	
In Internal standard	115	2	HMI He	16627354	1.61	16139116	103.03	60	125	
Ho-165	165	2	HMI He	40996988	1.49	40836889	100.39	60	125	

Sample Report

Sample Table

Sample Name 280-123330-c-8-c
 Data File Name 026SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T15:19:56-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	42.788	ppb	42.788	17.46	8629938	40000	
Be	9	1	6	0.032	ppb	0.032	54.06	37	2000	
B	11	1	6	332.111	ppb	332.111	5.82	10150	100	
Na	23	2	45	7392.228	ppb	7392.228	0.59	6917857	400000	
Mg	24	2	45	13718.637	ppb	13718.637	3.14	5262102	400000	
Al	27	2	45	163.714	ppb	163.714	7.70	18604	400000	
K	39	2	45	696.364	ppb	696.364	2.42	412528	400000	
Ca	44	2	45	19326.861	ppb	19326.861	2.79	528527	400000	
V	51	2	72	-0.008	ppb	-0.008	-2974.62	11187	2000	
Cr	52	2	72	0.789	ppb	0.789	7.51	7238	5000	
Mn	55	2	72	649.717	ppb	649.717	1.78	2139198	10000	
Fe	57	2	72	2847.886	ppb	2847.886	4.32	393688	400000	
Co	59	2	72	4.383	ppb	4.383	1.51	57485	2000	
Ni	60	2	72	3.305	ppb	3.305	9.80	10487	5000	
Cu	63	2	72	0.381	ppb	0.381	6.65	8989	5000	
Zn	66	2	72	1.283	ppb	1.283	2.68	4087	5000	
As	75	2	72	2.205	ppb	2.205	2.20	2245	2000	
Se	78	1	72	-0.019	ppb	-0.019	-97.67	51	2000	
Sr	88	2	45	61.390	ppb	61.390	2.85	240322	2000	
Zr	90	2	72	52.801	ppb	52.801	4.46	1767	1000	
Zr	90	1	72	70.075	ppb	70.075	39.41	6119	1000	
Nb	93	2	72	1.084	ppb	1.084	8.80	8429	200	
Mo	95	2	115	0.095	ppb	0.095	7.00	877	2000	
Pd	105	2	115	0.001	ppb	0.001	459.31	223	100	
Ag	107	2	115	0.004	ppb	0.004	112.80	127	100	
Cd	111	2	115	0.033	ppb	0.033	44.96	100	2000	
Sn	120	2	115	0.254	ppb	0.254	10.31	2174	2000	
Sb	121	2	115	0.297	ppb	0.297	5.79	1677	1000	
Ba	137	2	115	15.728	ppb	15.728	3.24	23481	5000	
W	182	2	165	1.611	ppb	1.611	2.06	16185	100	
Pt	195	2	165	0.003	ppb	0.003	77.07	27	100	
Tl	205	2	165	-0.006	ppb	-0.006	-21.92	677	2000	
Pb	208	2	165	0.187	ppb	0.187	11.56	5587	5000	
Th	232	2	165	0.236	ppb	0.236	2.99	7535	2000	
U	238	2	165	0.016	ppb	0.016	6.71	967	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	969679	1.30	928504	104.43	60	125	
Sc (IS)	45	2	HMI He	4798474	2.33	4755435	100.91	60	125	
Sc IS)	45	3	No Gas	134372605	2.00	129597379	103.68	60	120	
Ge Internal Standard	72	1	HMI H2	26549913	2.27	26580672	99.88	60	125	
Ge Internal Standard	72	2	HMI He	5562198	3.02	5368285	103.61	60	125	
In Internal standard	115	2	HMI He	16957899	0.46	16139116	105.07	60	125	
Ho-165	165	2	HMI He	41120650	1.37	40836889	100.69	60	125	

Sample Report

Sample Table

Sample Name 280-123330-c-9-c
 Data File Name 027SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T15:23:26-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	36.784	ppb	36.784	8.83	8489269	40000	
Be	9	1	6	-0.032	ppb	-0.032	-41.36	8	2000	
B	11	1	6	361.517	ppb	361.517	3.74	10860	100	
Na	23	2	45	8944.606	ppb	8944.606	10.33	8756240	400000	
Mg	24	2	45	20781.135	ppb	20781.135	6.36	8361451	400000	
Al	27	2	45	119.759	ppb	119.759	6.31	14373	400000	
K	39	2	45	848.837	ppb	848.837	5.82	492915	400000	
Ca	44	2	45	57700.577	ppb	57700.577	0.56	1658262	400000	
V	51	2	72	-0.278	ppb	-0.278	-50.40	9509	2000	
Cr	52	2	72	0.478	ppb	0.478	5.73	4901	5000	
Mn	55	2	72	38.600	ppb	38.600	3.13	125252	10000	
Fe	57	2	72	281.991	ppb	281.991	5.61	38891	400000	
Co	59	2	72	0.155	ppb	0.155	21.06	8395	2000	
Ni	60	2	72	0.984	ppb	0.984	14.31	3437	5000	
Cu	63	2	72	1.107	ppb	1.107	5.69	14763	5000	
Zn	66	2	72	0.384	ppb	0.384	48.09	2927	5000	
As	75	2	72	0.389	ppb	0.389	1.77	565	2000	
Se	78	1	72	0.095	ppb	0.095	20.61	124	2000	
Sr	88	2	45	173.822	ppb	173.822	4.26	714314	2000	
Zr	90	2	72	44.768	ppb	44.768	41.26	1553	1000	
Zr	90	1	72	43.725	ppb	43.725	5.76	4488	1000	
Nb	93	2	72	0.803	ppb	0.803	14.88	6265	200	
Mo	95	2	115	0.710	ppb	0.710	7.55	3227	2000	
Pd	105	2	115	-0.008	ppb	-0.008	-99.19	163	100	
Ag	107	2	115	0.004	ppb	0.004	90.79	123	100	
Cd	111	2	115	0.017	ppb	0.017	60.69	70	2000	
Sn	120	2	115	0.244	ppb	0.244	12.77	2060	2000	
Sb	121	2	115	0.238	ppb	0.238	11.96	1367	1000	
Ba	137	2	115	18.138	ppb	18.138	3.06	26232	5000	
W	182	2	165	0.010	ppb	0.010	91.48	3037	100	
Pt	195	2	165	0.002	ppb	0.002	55.82	17	100	
Tl	205	2	165	-0.007	ppb	-0.007	-45.47	653	2000	
Pb	208	2	165	0.177	ppb	0.177	7.07	5314	5000	
Th	232	2	165	0.076	ppb	0.076	24.58	4084	2000	
U	238	2	165	0.880	ppb	0.880	4.41	20044	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	957077	4.25	928504	103.08	60	125	
Sc (IS)	45	2	HMI He	5043368	3.67	4755435	106.05	60	125	
Sc IS)	45	3	No Gas	134445953	1.12	129597379	103.74	60	120	
Ge Internal Standard	72	1	HMI H2	25348549	3.19	26580672	95.36	60	125	
Ge Internal Standard	72	2	HMI He	5460184	2.16	5368285	101.71	60	125	
In Internal standard	115	2	HMI He	16459887	3.65	16139116	101.99	60	125	
Ho-165	165	2	HMI He	40640439	2.66	40836889	99.52	60	125	

Sample Report

Sample Table

Sample Name 280-123330-a-10-c
 Data File Name 028SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T15:26:57-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	41.305	ppb	41.305	12.37	8467321	40000	
Be	9	1	6	0.024	ppb	0.024	383.43	30	2000	
B	11	1	6	1572.639	ppb	1572.639	2.42	42557	100	>LDR
Na	23	2	45	10984.961	ppb	10984.961	6.62	10382432	400000	
Mg	24	2	45	63291.740	ppb	63291.740	6.73	24613527	400000	
Al	27	2	45	27.837	ppb	27.837	9.89	3510	400000	
K	39	2	45	2898.440	ppb	2898.440	4.15	1251537	400000	
Ca	44	2	45	112452.254	ppb	112452.254	2.70	3122964	400000	
V	51	2	72	-0.556	ppb	-0.556	-11.70	7752	2000	
Cr	52	2	72	1.365	ppb	1.365	3.43	10860	5000	
Mn	55	2	72	873.546	ppb	873.546	0.80	2738427	10000	
Fe	57	2	72	92.529	ppb	92.529	3.92	12832	400000	
Co	59	2	72	0.195	ppb	0.195	27.05	8582	2000	
Ni	60	2	72	11.590	ppb	11.590	3.60	33783	5000	
Cu	63	2	72	31.965	ppb	31.965	0.98	259101	5000	
Zn	66	2	72	420.969	ppb	420.969	0.75	494509	5000	
As	75	2	72	0.124	ppb	0.124	11.33	317	2000	
Se	78	1	72	0.006	ppb	0.006	420.23	65	2000	
Sr	88	2	45	550.122	ppb	550.122	3.08	2189084	2000	
Zr	90	2	72	30.537	ppb	30.537	29.20	1210	1000	
Zr	90	1	72	37.730	ppb	37.730	29.36	4205	1000	
Nb	93	2	72	0.606	ppb	0.606	10.50	4684	200	
Mo	95	2	115	2.497	ppb	2.497	1.41	10157	2000	
Pd	105	2	115	-0.002	ppb	-0.002	-206.38	203	100	
Ag	107	2	115	0.006	ppb	0.006	16.79	143	100	
Cd	111	2	115	0.090	ppb	0.090	19.36	193	2000	
Sn	120	2	115	0.190	ppb	0.190	4.63	1783	2000	
Sb	121	2	115	0.346	ppb	0.346	14.34	1840	1000	
Ba	137	2	115	57.997	ppb	57.997	1.17	83486	5000	
W	182	2	165	0.013	ppb	0.013	123.58	3004	100	
Pt	195	2	165	0.004	ppb	0.004	72.81	27	100	
Tl	205	2	165	-0.021	ppb	-0.021	-36.77	420	2000	
Pb	208	2	165	8.231	ppb	8.231	3.21	169874	5000	
Th	232	2	165	0.009	ppb	0.009	61.99	2630	2000	
U	238	2	165	-0.014	ppb	-0.014	-20.18	297	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	889097	0.75	928504	95.76	60	125	
Sc (IS)	45	2	HMI He	4875706	4.44	4755435	102.53	60	125	
Sc IS)	45	3	No Gas	132400723	2.73	129597379	102.16	60	120	
Ge Internal Standard	72	1	HMI H2	25501220	1.19	26580672	95.94	60	125	
Ge Internal Standard	72	2	HMI He	5294448	0.59	5368285	98.62	60	125	
In Internal standard	115	2	HMI He	16457421	1.00	16139116	101.97	60	125	
Ho-165	165	2	HMI He	39885231	3.47	40836889	97.67	60	125	

Sample Report

Sample Table

Sample Name 280-123467-a-1-b
 Data File Name 029SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T15:30:26-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	37.757	ppb	37.757	19.76	8387320	40000	
Be	9	1	6	-0.004	ppb	-0.004	-439.39	20	2000	
B	11	1	6	219.338	ppb	219.338	10.21	6575	100	
Na	23	2	45	4912.563	ppb	4912.563	3.11	4627477	400000	
Mg	24	2	45	10306.622	ppb	10306.622	3.10	3953489	400000	
Al	27	2	45	5.186	ppb	5.186	26.22	943	400000	
K	39	2	45	699.405	ppb	699.405	2.31	414031	400000	
Ca	44	2	45	38308.234	ppb	38308.234	1.27	1048009	400000	
V	51	2	72	-0.489	ppb	-0.489	-5.15	8379	2000	
Cr	52	2	72	0.554	ppb	0.554	9.66	5451	5000	
Mn	55	2	72	123.208	ppb	123.208	1.22	399544	10000	
Fe	57	2	72	1494.922	ppb	1494.922	3.68	203713	400000	
Co	59	2	72	0.030	ppb	0.030	104.77	6985	2000	
Ni	60	2	72	0.126	ppb	0.126	30.26	903	5000	
Cu	63	2	72	-0.007	ppb	-0.007	-412.67	5664	5000	
Zn	66	2	72	-0.219	ppb	-0.219	-79.15	2207	5000	
As	75	2	72	5.182	ppb	5.182	2.73	4899	2000	
Se	78	1	72	-0.036	ppb	-0.036	-8.73	37	2000	
Sr	88	2	45	89.403	ppb	89.403	1.89	350222	2000	
Zr	90	2	72	11.082	ppb	11.082	70.03	827	1000	
Zr	90	1	72	9.027	ppb	9.027	42.17	2743	1000	
Nb	93	2	72	0.492	ppb	0.492	3.76	4014	200	
Mo	95	2	115	0.514	ppb	0.514	4.18	2537	2000	
Pd	105	2	115	-0.022	ppb	-0.022	-27.19	90	100	
Ag	107	2	115	0.006	ppb	0.006	34.87	153	100	
Cd	111	2	115	-0.018	ppb	-0.018	-31.19	10	2000	
Sn	120	2	115	0.189	ppb	0.189	19.71	1827	2000	
Sb	121	2	115	0.121	ppb	0.121	9.98	877	1000	
Ba	137	2	115	49.677	ppb	49.677	2.16	73371	5000	
W	182	2	165	0.017	ppb	0.017	132.51	3190	100	
Pt	195	2	165	0.002	ppb	0.002	114.77	17	100	
Tl	205	2	165	-0.010	ppb	-0.010	-64.09	620	2000	
Pb	208	2	165	0.077	ppb	0.077	8.83	3337	5000	
Th	232	2	165	-0.035	ppb	-0.035	-23.21	1823	2000	
U	238	2	165	0.048	ppb	0.048	8.06	1730	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	930276	3.09	928504	100.19	60	125	
Sc (IS)	45	2	HMI He	4801494	2.05	4755435	100.97	60	125	
Sc IS)	45	3	No Gas	132462388	0.39	129597379	102.21	60	120	
Ge Internal Standard	72	1	HMI H2	25599381	0.72	26580672	96.31	60	125	
Ge Internal Standard	72	2	HMI He	5471196	1.65	5368285	101.92	60	125	
In Internal standard	115	2	HMI He	16880911	1.48	16139116	104.60	60	125	
Ho-165	165	2	HMI He	41918827	1.59	40836889	102.65	60	125	

Sample Report

Sample Table

Sample Name 280-123467-c-2-b
 Data File Name 030SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T15:33:57-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	55.576	ppb	55.576	12.15	8899265	40000	
Be	9	1	6	-0.028	ppb	-0.028	-74.28	10	2000	
B	11	1	6	299.451	ppb	299.451	3.02	8842	100	
Na	23	2	45	13636.635	ppb	13636.635	5.02	12809725	400000	
Mg	24	2	45	26727.903	ppb	26727.903	5.70	10345239	400000	
Al	27	2	45	2.983	ppb	2.983	14.36	707	400000	
K	39	2	45	1138.555	ppb	1138.555	4.95	582974	400000	
Ca	44	2	45	53732.242	ppb	53732.242	3.09	1483632	400000	
V	51	2	72	-0.560	ppb	-0.560	-8.55	7875	2000	
Cr	52	2	72	0.359	ppb	0.359	7.82	4014	5000	
Mn	55	2	72	36.908	ppb	36.908	2.25	118337	10000	
Fe	57	2	72	21.125	ppb	21.125	9.39	3514	400000	
Co	59	2	72	0.026	ppb	0.026	150.52	6835	2000	
Ni	60	2	72	0.140	ppb	0.140	28.64	930	5000	
Cu	63	2	72	0.047	ppb	0.047	43.67	6024	5000	
Zn	66	2	72	-0.783	ppb	-0.783	-6.54	1503	5000	
As	75	2	72	0.108	ppb	0.108	46.98	308	2000	
Se	78	1	72	-0.023	ppb	-0.023	-52.42	45	2000	
Sr	88	2	45	179.000	ppb	179.000	3.35	707409	2000	
Zr	90	2	72	0.727	ppb	0.727	739.90	590	1000	
Zr	90	1	72	0.739	ppb	0.739	795.40	2269	1000	
Nb	93	2	72	0.387	ppb	0.387	20.57	3200	200	
Mo	95	2	115	2.232	ppb	2.232	5.64	9166	2000	
Pd	105	2	115	-0.012	ppb	-0.012	-21.34	143	100	
Ag	107	2	115	-0.002	ppb	-0.002	-30.39	53	100	
Cd	111	2	115	-0.010	ppb	-0.010	-85.51	23	2000	
Sn	120	2	115	0.066	ppb	0.066	16.92	1167	2000	
Sb	121	2	115	0.078	ppb	0.078	18.95	670	1000	
Ba	137	2	115	48.949	ppb	48.949	5.08	70737	5000	
W	182	2	165	-0.005	ppb	-0.005	-182.65	2914	100	
Pt	195	2	165	-0.001	ppb	-0.001	-179.73	3	100	
Tl	205	2	165	-0.021	ppb	-0.021	-35.35	433	2000	
Pb	208	2	165	0.009	ppb	0.009	21.40	1813	5000	
Th	232	2	165	-0.051	ppb	-0.051	-7.26	1420	2000	
U	238	2	165	1.863	ppb	1.863	3.80	41815	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	932403	2.23	928504	100.42	60	125	
Sc (IS)	45	2	HMI He	4848573	3.15	4755435	101.96	60	125	
Sc IS)	45	3	No Gas	133633683	0.53	129597379	103.11	60	120	
Ge Internal Standard	72	1	HMI H2	25158702	3.89	26580672	94.65	60	125	
Ge Internal Standard	72	2	HMI He	5393561	2.06	5368285	100.47	60	125	
In Internal standard	115	2	HMI He	16517155	1.02	16139116	102.34	60	125	
Ho-165	165	2	HMI He	40700787	1.20	40836889	99.67	60	125	

Sample Report

Sample Table

Sample Name 280-123467-c-5-b
 Data File Name 031SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T15:37:27-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457615 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	119.339	ppb	119.339	2.60	10008754	40000	
Be	9	1	6	0.077	ppb	0.077	54.26	55	2000	
B	11	1	6	183.046	ppb	183.046	8.36	5638	100	
Na	23	2	45	14837.479	ppb	14837.479	2.14	13381032	400000	
Mg	24	2	45	35991.868	ppb	35991.868	1.42	13382042	400000	
Al	27	2	45	1548.821	ppb	1548.821	1.41	167444	400000	
K	39	2	45	24836.011	ppb	24836.011	0.46	9120760	400000	
Ca	44	2	45	48439.730	ppb	48439.730	2.35	1284035	400000	
V	51	2	72	2.635	ppb	2.635	9.15	25035	2000	
Cr	52	2	72	3.032	ppb	3.032	5.12	22588	5000	
Mn	55	2	72	359.804	ppb	359.804	2.92	1141572	10000	
Fe	57	2	72	5273.102	ppb	5273.102	3.98	702064	400000	
Co	59	2	72	2.685	ppb	2.685	0.80	36462	2000	
Ni	60	2	72	6.271	ppb	6.271	2.05	18744	5000	
Cu	63	2	72	4.175	ppb	4.175	2.63	39124	5000	
Zn	66	2	72	8.126	ppb	8.126	4.56	12034	5000	
As	75	2	72	4.253	ppb	4.253	3.02	3976	2000	
Se	78	1	72	-0.004	ppb	-0.004	-349.86	57	2000	
Sr	88	2	45	738.345	ppb	738.345	1.70	2802041	2000	
Zr	90	2	72	395.648	ppb	395.648	7.03	9036	1000	
Zr	90	1	72	364.963	ppb	364.963	5.34	20587	1000	
Nb	93	2	72	0.494	ppb	0.494	10.03	3947	200	
Mo	95	2	115	0.747	ppb	0.747	11.54	3247	2000	
Pd	105	2	115	0.012	ppb	0.012	131.52	270	100	
Ag	107	2	115	0.010	ppb	0.010	41.56	187	100	
Cd	111	2	115	0.025	ppb	0.025	24.67	80	2000	
Sn	120	2	115	0.219	ppb	0.219	6.76	1857	2000	
Sb	121	2	115	0.243	ppb	0.243	26.38	1333	1000	
Ba	137	2	115	139.510	ppb	139.510	1.14	192817	5000	
W	182	2	165	0.046	ppb	0.046	24.86	3300	100	
Pt	195	2	165	0.005	ppb	0.005	20.74	33	100	
Tl	205	2	165	0.019	ppb	0.019	12.99	1060	2000	
Pb	208	2	165	2.060	ppb	2.060	6.20	44219	5000	
Th	232	2	165	0.615	ppb	0.615	5.59	15308	2000	
U	238	2	165	0.140	ppb	0.140	9.34	3677	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	943501	1.94	928504	101.62	60	125	
Sc (IS)	45	2	HMI He	4653197	1.60	4755435	97.85	60	125	
Sc IS)	45	3	No Gas	127820634	2.73	129597379	98.63	60	120	
Ge Internal Standard	72	1	HMI H2	24980915	0.73	26580672	93.98	60	125	
Ge Internal Standard	72	2	HMI He	5358716	1.48	5368285	99.82	60	125	
In Internal standard	115	2	HMI He	15823011	0.41	16139116	98.04	60	125	
Ho-165	165	2	HMI He	40324184	1.34	40836889	98.74	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5701467
 Data File Name 032_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T15:40:58-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	107.130	ppb	11.167	159836	100	107.1	90	110	
Li	7	3	45	151.343	ppb	8.915	10585831	100	151.3	90	110	>+ -10%
Be	9	1	6	47.777	ppb	1.537	21505	50	95.6	90	110	
B	11	1	6	55.287	ppb	10.768	2103	50	110.6	90	110	>+ -10%
Na	23	2	45	984.795	ppb	4.730	958512	1000	98.5	90	110	
Mg	24	2	45	1014.587	ppb	4.113	374955	1000	101.5	90	110	
Al	27	2	45	1003.656	ppb	3.988	107818	1000	100.4	90	110	
K	39	2	45	952.341	ppb	3.756	489022	1000	95.2	90	110	
Ca	44	2	45	1020.319	ppb	2.919	27281	1000	102.0	90	110	
V	51	2	72	53.963	ppb	0.579	295489	50	107.9	90	110	
Cr	52	2	72	51.495	ppb	0.786	352479	50	103.0	90	110	
Mn	55	2	72	52.270	ppb	1.054	162891	50	104.5	90	110	
Fe	57	2	72	1020.001	ppb	0.523	133573	1000	102.0	90	110	
Co	59	2	72	49.437	ppb	1.108	546367	50	98.9	90	110	
Ni	60	2	72	50.638	ppb	1.542	144619	50	101.3	90	110	
Cu	63	2	72	51.248	ppb	1.463	408479	50	102.5	90	110	
Zn	66	2	72	51.207	ppb	1.631	61707	50	102.4	90	110	
As	75	2	72	51.180	ppb	0.359	44591	50	102.4	90	110	
Se	78	1	72	48.413	ppb	2.066	32874	50	96.8	90	110	
Sr	88	2	45	97.519	ppb	3.572	367471	100	97.5	90	110	
Zr	90	2	72	74.608	ppb	2.980	2123	50	149.2	90	110	>+ -10%
Zr	90	1	72	95.086	ppb	6.816	7212	50	190.2	90	110	>+ -10%
Nb	93	2	72	95.361	ppb	2.468	662260	100	95.4	90	110	
Mo	95	2	115	50.458	ppb	3.533	191663	50	100.9	90	110	
Pd	105	2	115	51.269	ppb	3.212	288381	50	102.5	90	110	
Ag	107	2	115	50.311	ppb	3.765	584394	50	100.6	90	110	
Cd	111	2	115	50.418	ppb	3.455	83319	50	100.8	90	110	
Sn	120	2	115	50.989	ppb	4.266	251667	50	102.0	90	110	
Sb	121	2	115	51.553	ppb	1.812	220659	50	103.1	90	110	
Ba	137	2	115	51.852	ppb	2.025	73046	50	103.7	90	110	
W	182	2	165	49.545	ppb	5.294	409358	50	99.1	90	110	
Pt	195	2	165	48.651	ppb	7.889	283489	50	97.3	90	110	
Tl	205	2	165	45.961	ppb	4.364	741871	50	91.9	90	110	
Pb	208	2	165	46.888	ppb	7.584	990479	50	93.8	90	110	
Th	232	2	165	42.625	ppb	3.604	910401	50	85.3	90	110	>+ -10%
U	238	2	165	45.498	ppb	5.684	1017991	50	91.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	990521	4.07	928504	106.68	60	125	
Sc (IS)	45	2	HMI He	4622264	3.76	4755435	97.20	60	125	
Sc IS)	45	3	No Gas	125802507	2.77	129597379	97.07	60	120	
Ge Internal Standard	72	1	HMI H2	25702926	0.56	26580672	96.70	60	125	
Ge Internal Standard	72	2	HMI He	5247815	0.68	5368285	97.76	60	125	
In Internal standard	115	2	HMI He	16100954	2.23	16139116	99.76	60	125	
Ho-165	165	2	HMI He	41236206	5.95	40836889	100.98	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5701457
 Data File Name 033_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T15:44:29-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-2.010	ppb	-388.4	118000	0.1	
Li	7	3	45	36.892	ppb	23.3	8267212	0.05	>RL
Be	9	1	6	0.026	ppb	264.9	33	0.5	
B	11	1	6	2.650	ppb	120.8	517	0.1	>RL
Na	23	2	45	-13.995	ppb	-20.0	72663	25	
Mg	24	2	45	3.247	ppb	8.9	1903	25	
Al	27	2	45	-1.645	ppb	-34.4	183	15	
K	39	2	45	-46.046	ppb	-22.1	135359	50	
Ca	44	2	45	-5.765	ppb	-46.7	290	25	
V	51	2	72	1.084	ppb	17.4	16668	1	>RL
Cr	52	2	72	0.043	ppb	25.3	1783	1	
Mn	55	2	72	0.011	ppb	15.2	557	0.5	
Fe	57	2	72	3.135	ppb	16.8	1093	25	
Co	59	2	72	0.011	ppb	41.3	6631	0.5	
Ni	60	2	72	0.031	ppb	198.0	607	1	
Cu	63	2	72	0.016	ppb	429.3	5734	1	
Zn	66	2	72	-1.097	ppb	-20.1	1120	5	
As	75	2	72	0.004	ppb	903.4	214	1	
Se	78	1	72	0.058	ppb	9.0	100	1	
Sr	88	2	45	0.112	ppb	56.3	657	1	
Zr	90	2	72	-1.622	ppb	-62.7	537	1	
Zr	90	1	72	-4.243	ppb	-149.0	2042	1	
Nb	93	2	72	3.382	ppb	9.1	24375	2	>RL
Mo	95	2	115	0.032	ppb	96.8	610	0.5	
Pd	105	2	115	0.013	ppb	34.5	293	1	
Ag	107	2	115	0.025	ppb	35.3	373	1	
Cd	111	2	115	0.044	ppb	111.6	117	0.5	
Sn	120	2	115	0.057	ppb	14.2	1130	1	
Sb	121	2	115	0.047	ppb	63.9	540	1	
Ba	137	2	115	-0.021	ppb	-146.1	170	0.5	
W	182	2	165	0.033	ppb	102.7	3224	1	
Pt	195	2	165	0.027	ppb	51.8	163	1	
Tl	205	2	165	0.022	ppb	30.8	1113	0.1	
Pb	208	2	165	0.057	ppb	9.9	2823	0.5	
Th	232	2	165	0.022	ppb	56.8	2950	1	
U	238	2	165	0.042	ppb	7.9	1537	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	954114	3.62	928504	102.76	60	125	
Sc (IS)	45	2	HMI He	4776260	2.44	4755435	100.44	60	125	
Sc IS)	45	3	No Gas	130923342	1.23	129597379	101.02	60	120	
Ge Internal Standard	72	1	HMI H2	25457720	3.41	26580672	95.78	60	125	
Ge Internal Standard	72	2	HMI He	5354357	1.54	5368285	99.74	60	125	
In Internal standard	115	2	HMI He	16684974	3.27	16139116	103.38	60	125	
Ho-165	165	2	HMI He	40784697	4.73	40836889	99.87	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5701469
 Data File Name 034LCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T15:48:28-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	54.069	ppb	6.237	8293964	50	108.1	70	130	
Be	9	1	6	0.896	ppb	25.594	410	1	89.6	70	130	
Na	23	2	45	31.592	ppb	11.506	109761	50	63.2	70	130	> +/-30%
Mg	24	2	45	49.475	ppb	2.753	18717	50	99.0	70	130	
Al	27	2	45	49.883	ppb	6.920	5638	50	99.8	70	130	
K	39	2	45	41.392	ppb	29.885	160705	100	41.4	70	130	> +/-30%
Ca	44	2	45	28.849	ppb	9.913	1180	50	57.7	70	130	> +/-30%
V	51	2	72	6.746	ppb	2.729	46649	5	134.9	70	130	> +/-30%
Cr	52	2	72	2.054	ppb	6.545	15584	2	102.7	70	130	
Mn	55	2	72	1.013	ppb	10.269	3687	1	101.3	70	130	
Fe	57	2	72	53.316	ppb	3.403	7678	50	106.6	70	130	
Co	59	2	72	0.915	ppb	7.312	16518	1	91.5	70	130	
Ni	60	2	72	1.485	ppb	1.358	4777	1.5	99.0	70	130	
Cu	63	2	72	1.858	ppb	7.483	20269	2	92.9	70	130	
Zn	66	2	72	9.590	ppb	6.543	13605	10	95.9	70	130	
As	75	2	72	4.698	ppb	2.878	4318	5	94.0	70	130	
Se	78	1	72	4.954	ppb	8.825	3282	5	99.1	70	130	
Sr	88	2	45	0.990	ppb	12.993	3904	1	99.0	70	130	
Zr	90	2	72	1.226	ppb	329.573	590	0.5	245.2	70	130	> +/-30%
Zr	90	1	72	10.028	ppb	80.600	2693	0.5	2005.6	70	130	> +/-30%
Nb	93	2	72	1.989	ppb	10.094	14346	2	99.4	70	130	
Mo	95	2	115	2.088	ppb	5.060	8255	2	104.4	70	130	
Pd	105	2	115	0.010	ppb	117.683	257	1	1.0	70	130	> +/-30%
Ag	107	2	115	4.971	ppb	2.426	56938	5	99.4	70	130	
Cd	111	2	115	1.044	ppb	8.107	1737	1	104.4	70	130	
Sn	120	2	115	10.000	ppb	3.594	49241	10	100.0	70	130	
Sb	121	2	115	2.018	ppb	5.813	8809	2	100.9	70	130	
Ba	137	2	115	0.891	ppb	1.290	1423	1	89.1	70	130	
W	182	2	165	4.825	ppb	5.015	42285	1	482.5	70	130	> +/-30%
Pt	195	2	165	0.002	ppb	61.587	17	1	0.2	70	130	> +/-30%
Tl	205	2	165	0.876	ppb	6.294	14801	1	87.6	70	130	
Pb	208	2	165	0.930	ppb	2.441	21159	1	93.0	70	130	
Th	232	2	165	1.523	ppb	5.730	34714	2	76.1	70	130	
U	238	2	165	0.886	ppb	5.191	20307	1	88.6	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	959447	3.92	928504	103.33	60	125	
Sc (IS)	45	2	HMI He	4574632	1.70	4755435	96.20	60	125	
Sc IS)	45	3	No Gas	125071259	1.35	129597379	96.51	60	120	
Ge Internal Standard	72	1	HMI H2	24692545	1.90	26580672	92.90	60	125	
Ge Internal Standard	72	2	HMI He	5296681	2.67	5368285	98.67	60	125	
In Internal standard	115	2	HMI He	15853716	2.54	16139116	98.23	60	125	
Ho-165	165	2	HMI He	40943561	4.17	40836889	100.26	60	125	

Blank Report

Sample Table

Sample Name mb 280-457081/1-a
 Data File Name 035_BLK.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T15:22-06:00
 Sample Type Blank
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	1	45	-13.928	ppb	-71.05157281	114205	0.1
Li	7	3	45	41.672	ppb	16.74009335	8283350	0.05
Be	9	1	6	-0.031	ppb	-83.13185899	8	0.5
Na	23	2	45	-6.828	ppb	-65.68242897	77400	25
Mg	24	2	45	2.731	ppb	14.35617274	1670	25
Al	27	2	45	12.202	ppb	4.629250894	1677	15
K	39	2	45	-55.485	ppb	-24.67357986	128800	50
Ca	44	2	45	3.109	ppb	88.21045853	520	25
V	51	2	72	-0.018	ppb	-321.0733746	10697	1
Cr	52	2	72	0.405	ppb	7.5948959	4284	1
Mn	55	2	72	0.124	ppb	32.06755562	913	0.5
Fe	57	2	72	15.162	ppb	18.07250903	2680	25
Co	59	2	72	-0.019	ppb	-76.49463552	6265	0.5
Ni	60	2	72	0.315	ppb	21.09790183	1427	1
Cu	63	2	72	0.100	ppb	53.54752538	6375	1
Zn	66	2	72	-0.538	ppb	-21.11042411	1777	5
As	75	2	72	-0.029	ppb	-181.9851307	183	1
Se	78	1	72	-0.019	ppb	-193.9950256	48	1
Sr	88	2	45	0.033	ppb	63.29699702	343	1
Zr	90	2	72	2.219	ppb	138.2744586	617	1
Zr	90	1	72	2.693	ppb	48.39532306	2376	1
Nb	93	2	72	2.267	ppb	8.008502473	16418	2
Mo	95	2	115	-0.009	ppb	-113.1454589	443	0.5
Pd	105	2	115	-0.014	ppb	-21.17000237	133	1
Ag	107	2	115	0.013	ppb	35.01856738	223	1
Cd	111	2	115	-0.022	ppb	-15.62517646	3	0.5
Sn	120	2	115	0.145	ppb	12.82456071	1550	1
Sb	121	2	115	0.046	ppb	26.27537361	523	1
Ba	137	2	115	0.073	ppb	77.27981217	300	0.5
W	182	2	165	-0.005	ppb	-486.6573921	2964	1
Pt	195	2	165	0.002	ppb	151.4066386	17	1
Tl	205	2	165	-0.009	ppb	-113.9768234	627	0.1
Pb	208	2	165	0.041	ppb	31.57657699	2523	0.5
Th	232	2	165	0.475	ppb	5.617332341	12656	1
U	238	2	165	-0.013	ppb	-9.481052232	333	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	920457	2.42	928504	99.13	60	125	
Sc (IS)	45	2	HMI He	4667968	3.67	4755435	98.16	60	125	
Sc IS)	45	3	No Gas	129396375	2.96	129597379	99.84	60	120	
Ge Internal Standard	72	1	HMI H2	25162571	1.11	26580672	94.66	60	125	
Ge Internal Standard	72	2	HMI He	5332939	2.64	5368285	99.34	60	125	
In Internal standard	115	2	HMI He	16368257	3.86	16139116	101.42	60	125	
Ho-165	165	2	HMI He	41282035	3.21	40836889	101.09	60	125	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name lcs 280-457081/2-a
 Data File Name 036_LCS.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T15:55:53-06:00
 Sample Type LCS
 Dilution 1
 Analyst Denver Metals
 Comment 457081 6020A DOD5
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	135.953	135.953	ppb	5.679	10580868	400	34.0	80	120	> +/-20%
Be	9	1	6	41.172	41.172	ppb	3.921	17522	40	102.9	80	120	
Na	23	2	45	-10.324	-10.324	ppb	-15.945	74163	40	-25.8	80	120	> +/-20%
Mg	24	2	45	1.724	1.724	ppb	19.606	1290	40	4.3	80	120	> +/-20%
Al	27	2	45	419.002	419.002	ppb	1.109	45595	40	1047.5	80	120	> +/-20%
K	39	2	45	-42.513	-42.513	ppb	-21.250	133263	40	-106.3	80	120	> +/-20%
Ca	44	2	45	145.171	145.171	ppb	14.679	4281	40	362.9	80	120	> +/-20%
V	51	2	72	41.088	41.088	ppb	2.692	229670	40	102.7	80	120	
Cr	52	2	72	42.082	42.082	ppb	0.500	291096	40	105.2	80	120	
Mn	55	2	72	43.441	43.441	ppb	2.587	136732	40	108.6	80	120	
Fe	57	2	72	420.189	420.189	ppb	1.134	55944	40	1050.5	80	120	> +/-20%
Co	59	2	72	40.584	40.584	ppb	2.405	453956	40	101.5	80	120	
Ni	60	2	72	41.733	41.733	ppb	2.743	120382	40	104.3	80	120	
Cu	63	2	72	41.826	41.826	ppb	0.923	337569	40	104.6	80	120	
Zn	66	2	72	40.755	40.755	ppb	2.514	50069	40	101.9	80	120	
As	75	2	72	39.341	39.341	ppb	2.100	34647	40	98.4	80	120	
Se	78	1	72	37.361	37.361	ppb	3.697	25037	40	93.4	80	120	
Sr	88	2	45	40.462	40.462	ppb	3.595	153820	40	101.2	80	120	
Nb	93	2	72	1.661	1.661	ppb	7.523	12074	40	4.2	80	120	> +/-20%
Mo	95	2	115	42.067	42.067	ppb	1.336	162138	40	105.2	80	120	
Pd	105	2	115	-0.017	-0.017	ppb	-32.417	113	40	0.0	80	120	> +/-20%
Ag	107	2	115	40.304	40.304	ppb	4.491	474732	40	100.8	80	120	
Cd	111	2	115	40.771	40.771	ppb	3.491	68337	40	101.9	80	120	
Sn	120	2	115	41.584	41.584	ppb	1.831	208322	40	104.0	80	120	
Sb	121	2	115	41.148	41.148	ppb	1.111	178609	40	102.9	80	120	
Ba	137	2	115	41.472	41.472	ppb	3.982	59259	40	103.7	80	120	
W	182	2	165	34.120	34.120	ppb	4.596	276758	40	85.3	80	120	
Pt	195	2	165	0.001	0.001	ppb	293.489	10	40	0.0	80	120	> +/-20%
Tl	205	2	165	38.575	38.575	ppb	3.037	608801	40	96.4	80	120	
Pb	208	2	165	38.966	38.966	ppb	1.235	806338	40	97.4	80	120	
Th	232	2	165	33.062	33.062	ppb	2.211	690938	40	82.7	80	120	
U	238	2	165	36.829	36.829	ppb	1.557	806316	40	92.1	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	936746	2.70	928504	100.89	60	125	
Sc (IS)	45	2	HMI He	4656911	2.03	4755435	97.93	60	125	
Sc IS)	45	3	No Gas	130082744	2.38	129597379	100.37	60	120	
Ge Internal Standard	72	1	HMI H2	25357680	1.06	26580672	95.40	60	125	
Ge Internal Standard	72	2	HMI He	5298701	2.22	5368285	98.70	60	125	
In Internal standard	115	2	HMI He	16321229	0.89	16139116	101.13	60	125	
Ho-165	165	2	HMI He	40266337	2.65	40836889	98.60	60	125	

Sample Report

Sample Table

Sample Name lcsd 280-457081/3-a
 Data File Name 037SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T15:59:25-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	125.545	ppb	125.545	0.57	10361679	40000	
Be	9	1	6	39.735	ppb	39.735	5.70	17095	2000	
B	11	1	6	542.573	ppb	542.573	4.82	15920	100	>LDR
Na	23	2	45	-10.663	ppb	-10.663	-4.83	74625	400000	
Mg	24	2	45	2.759	ppb	2.759	1.47	1693	400000	
Al	27	2	45	453.757	ppb	453.757	2.71	49850	400000	
K	39	2	45	-38.033	ppb	-38.033	-8.06	136293	400000	
Ca	44	2	45	151.152	ppb	151.152	14.56	4487	400000	
V	51	2	72	40.792	ppb	40.792	4.01	229760	2000	
Cr	52	2	72	42.262	ppb	42.262	2.65	294452	5000	
Mn	55	2	72	42.978	ppb	42.978	1.33	136331	10000	
Fe	57	2	72	435.988	ppb	435.988	2.40	58451	400000	
Co	59	2	72	41.957	ppb	41.957	3.01	472541	2000	
Ni	60	2	72	41.963	ppb	41.963	1.47	121987	5000	
Cu	63	2	72	45.523	ppb	45.523	3.41	369558	5000	
Zn	66	2	72	40.606	ppb	40.606	2.58	50260	5000	
As	75	2	72	39.228	ppb	39.228	1.79	34812	2000	
Se	78	1	72	38.034	ppb	38.034	1.89	25009	2000	
Sr	88	2	45	40.606	ppb	40.606	2.43	155948	2000	
Zr	90	2	72	496.344	ppb	496.344	5.46	11144	1000	
Zr	90	1	72	484.691	ppb	484.691	1.74	26511	1000	
Nb	93	2	72	1.138	ppb	1.138	11.87	8472	200	
Mo	95	2	115	41.763	ppb	41.763	1.73	162176	2000	
Pd	105	2	115	-0.005	ppb	-0.005	-41.89	183	100	
Ag	107	2	115	39.606	ppb	39.606	3.35	469966	100	
Cd	111	2	115	40.024	ppb	40.024	4.27	67555	2000	
Sn	120	2	115	41.906	ppb	41.906	0.58	211539	2000	
Sb	121	2	115	41.496	ppb	41.496	3.65	181392	1000	
Ba	137	2	115	40.932	ppb	40.932	3.95	58908	5000	
W	182	2	165	33.868	ppb	33.868	0.65	281646	100	
Pt	195	2	165	0.001	ppb	0.001	230.49	13	100	
Tl	205	2	165	37.641	ppb	37.641	1.48	609416	2000	
Pb	208	2	165	38.840	ppb	38.840	0.64	824233	5000	
Th	232	2	165	32.550	ppb	32.550	1.05	697581	2000	
U	238	2	165	35.700	ppb	35.700	0.98	801554	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	947580	3.68	928504	102.05	60	125	
Sc (IS)	45	2	HMI He	4704458	1.56	4755435	98.93	60	125	
Sc IS)	45	3	No Gas	130424975	2.07	129597379	100.64	60	120	
Ge Internal Standard	72	1	HMI H2	24880919	1.99	26580672	93.61	60	125	
Ge Internal Standard	72	2	HMI He	5338939	2.27	5368285	99.45	60	125	
In Internal standard	115	2	HMI He	16444847	1.85	16139116	101.89	60	125	
Ho-165	165	2	HMI He	41288568	1.23	40836889	101.11	60	125	

Sample Report

Sample Table

Sample Name 280-123159-a-3-b
 Data File Name 038SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T16:02:57-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	100.071	ppb	100.071	2.65	9594599	40000	
Be	9	1	6	0.061	ppb	0.061	117.54	47	2000	
B	11	1	6	470.181	ppb	470.181	4.33	13295	100	
Na	23	2	45	29647.083	ppb	29647.083	5.42	26614500	400000	
Mg	24	2	45	15179.940	ppb	15179.940	6.24	5634519	400000	
Al	27	2	45	44.146	ppb	44.146	2.43	5117	400000	
K	39	2	45	1920.097	ppb	1920.097	6.34	841055	400000	
Ca	44	2	45	13269.498	ppb	13269.498	3.61	351844	400000	
V	51	2	72	-0.126	ppb	-0.126	-80.26	10266	2000	
Cr	52	2	72	1.450	ppb	1.450	10.44	11694	5000	
Mn	55	2	72	26.943	ppb	26.943	4.04	86883	10000	
Fe	57	2	72	101.822	ppb	101.822	7.62	14369	400000	
Co	59	2	72	0.273	ppb	0.273	24.32	9649	2000	
Ni	60	2	72	1.709	ppb	1.709	12.43	5538	5000	
Cu	63	2	72	0.248	ppb	0.248	3.53	7678	5000	
Zn	66	2	72	0.854	ppb	0.854	17.09	3467	5000	
As	75	2	72	0.256	ppb	0.256	13.02	442	2000	
Se	78	1	72	2.092	ppb	2.092	9.25	1435	2000	
Sr	88	2	45	180.015	ppb	180.015	5.80	682192	2000	
Zr	90	2	72	45.996	ppb	45.996	20.58	1573	1000	
Zr	90	1	72	49.187	ppb	49.187	20.72	4695	1000	
Nb	93	2	72	0.840	ppb	0.840	15.14	6461	200	
Mo	95	2	115	0.428	ppb	0.428	18.72	2127	2000	
Pd	105	2	115	-0.011	ppb	-0.011	-80.22	150	100	
Ag	107	2	115	0.049	ppb	0.049	23.44	657	100	
Cd	111	2	115	0.176	ppb	0.176	35.15	337	2000	
Sn	120	2	115	0.305	ppb	0.305	12.70	2354	2000	
Sb	121	2	115	0.696	ppb	0.696	3.17	3360	1000	
Ba	137	2	115	58.235	ppb	58.235	3.14	83503	5000	
W	182	2	165	0.100	ppb	0.100	33.36	3757	100	
Pt	195	2	165	0.002	ppb	0.002	151.94	17	100	
Tl	205	2	165	0.052	ppb	0.052	23.29	1597	2000	
Pb	208	2	165	0.120	ppb	0.120	14.95	4124	5000	
Th	232	2	165	0.563	ppb	0.563	2.55	14320	2000	
U	238	2	165	0.143	ppb	0.143	5.99	3761	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	908128	2.04	928504	97.81	60	125	
Sc (IS)	45	2	HMI He	4654572	4.85	4755435	97.88	60	125	
Sc IS)	45	3	No Gas	128328732	0.41	129597379	99.02	60	120	
Ge Internal Standard	72	1	HMI H2	24983478	4.35	26580672	93.99	60	125	
Ge Internal Standard	72	2	HMI He	5416072	1.31	5368285	100.89	60	125	
In Internal standard	115	2	HMI He	16404698	3.45	16139116	101.65	60	125	
Ho-165	165	2	HMI He	40613953	1.48	40836889	99.45	60	125	

Sample Report

Sample Table

Sample Name 280-123159-a-10-b
 Data File Name 039SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T16:06:27-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	76.459	ppb	76.459	14.02	9022483	40000	
Be	9	1	6	-0.008	ppb	-0.008	-358.63	18	2000	
B	11	1	6	213.151	ppb	213.151	9.69	6595	100	
Na	23	2	45	23071.397	ppb	23071.397	1.12	20449242	400000	
Mg	24	2	45	7460.126	ppb	7460.126	0.45	2732957	400000	
Al	27	2	45	27.705	ppb	27.705	22.06	3294	400000	
K	39	2	45	1298.546	ppb	1298.546	3.86	608501	400000	
Ca	44	2	45	5527.899	ppb	5527.899	1.34	144771	400000	
V	51	2	72	-0.222	ppb	-0.222	-51.04	9559	2000	
Cr	52	2	72	16.080	ppb	16.080	0.90	112410	5000	
Mn	55	2	72	5.438	ppb	5.438	4.08	17612	10000	
Fe	57	2	72	196.167	ppb	196.167	1.43	26541	400000	
Co	59	2	72	0.124	ppb	0.124	10.88	7822	2000	
Ni	60	2	72	11.985	ppb	11.985	1.02	35032	5000	
Cu	63	2	72	0.365	ppb	0.365	13.18	8456	5000	
Zn	66	2	72	2.711	ppb	2.711	3.69	5578	5000	
As	75	2	72	0.198	ppb	0.198	32.28	382	2000	
Se	78	1	72	3.971	ppb	3.971	3.06	2623	2000	
Sr	88	2	45	77.816	ppb	77.816	1.54	291059	2000	
Zr	90	2	72	28.284	ppb	28.284	19.71	1167	1000	
Zr	90	1	72	34.365	ppb	34.365	93.75	3873	1000	
Nb	93	2	72	0.633	ppb	0.633	14.14	4884	200	
Mo	95	2	115	0.300	ppb	0.300	8.12	1597	2000	
Pd	105	2	115	-0.012	ppb	-0.012	-40.17	137	100	
Ag	107	2	115	0.010	ppb	0.010	70.17	190	100	
Cd	111	2	115	0.168	ppb	0.168	44.32	313	2000	
Sn	120	2	115	0.137	ppb	0.137	17.48	1477	2000	
Sb	121	2	115	0.171	ppb	0.171	8.23	1047	1000	
Ba	137	2	115	16.432	ppb	16.432	6.24	23114	5000	
W	182	2	165	0.003	ppb	0.003	1064.34	2990	100	
Pt	195	2	165	0.001	ppb	0.001	294.67	10	100	
Tl	205	2	165	0.012	ppb	0.012	41.84	967	2000	
Pb	208	2	165	0.094	ppb	0.094	22.05	3597	5000	
Th	232	2	165	0.121	ppb	0.121	9.77	5054	2000	
U	238	2	165	0.049	ppb	0.049	11.83	1697	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	959370	3.88	928504	103.32	60	125	
Sc (IS)	45	2	HMI He	4584130	0.89	4755435	96.40	60	125	
Sc IS)	45	3	No Gas	128147467	2.32	129597379	98.88	60	120	
Ge Internal Standard	72	1	HMI H2	24484666	0.38	26580672	92.11	60	125	
Ge Internal Standard	72	2	HMI He	5311263	0.37	5368285	98.94	60	125	
In Internal standard	115	2	HMI He	16000764	2.62	16139116	99.14	60	125	
Ho-165	165	2	HMI He	40857452	0.71	40836889	100.05	60	125	

Sample Report

Sample Table

Sample Name 280-123159-a-20-d
Data File Name 040SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
Acq Date Time 2019-05-14T16:09:58-06:00
Analyst Denver Metals
Sample Type Sample
Dilution 1
Comment 457081 6020A DOD5
ISTD Ref FileName 007CALB.d
Sample QC Pass/Fail Pass
ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	67.902	ppb	67.902	17.49	8446654	40000	
Be	9	1	6	0.001	ppb	0.001	1857.56	22	2000	
B	11	1	6	243.908	ppb	243.908	11.20	7118	100	
Na	23	2	45	39288.793	ppb	39288.793	0.96	34029065	400000	
Mg	24	2	45	26397.155	ppb	26397.155	1.52	9461906	400000	
Al	27	2	45	40.961	ppb	40.961	1.32	4604	400000	
K	39	2	45	763.337	ppb	763.337	0.82	409135	400000	
Ca	44	2	45	28181.570	ppb	28181.570	0.75	720641	400000	
V	51	2	72	-0.429	ppb	-0.429	-10.09	8219	2000	
Cr	52	2	72	1.172	ppb	1.172	11.03	9289	5000	
Mn	55	2	72	11.449	ppb	11.449	4.73	35483	10000	
Fe	57	2	72	91.608	ppb	91.608	1.51	12395	400000	
Co	59	2	72	0.098	ppb	0.098	31.38	7322	2000	
Ni	60	2	72	6.009	ppb	6.009	3.07	17322	5000	
Cu	63	2	72	1.225	ppb	1.225	2.22	14877	5000	
Zn	66	2	72	5.526	ppb	5.526	8.57	8629	5000	
As	75	2	72	0.145	ppb	0.145	50.21	327	2000	
Se	78	1	72	0.530	ppb	0.530	20.28	399	2000	
Sr	88	2	45	164.302	ppb	164.302	0.67	601292	2000	
Zr	90	2	72	27.281	ppb	27.281	24.42	1113	1000	
Zr	90	1	72	97.810	ppb	97.810	140.72	7038	1000	
Nb	93	2	72	0.522	ppb	0.522	7.01	3994	200	
Mo	95	2	115	0.004	ppb	0.004	739.14	497	2000	
Pd	105	2	115	-0.005	ppb	-0.005	-364.61	183	100	
Ag	107	2	115	0.002	ppb	0.002	171.11	103	100	
Cd	111	2	115	0.130	ppb	0.130	15.72	260	2000	
Sn	120	2	115	0.180	ppb	0.180	19.11	1737	2000	
Sb	121	2	115	0.113	ppb	0.113	29.82	820	1000	
Ba	137	2	115	86.301	ppb	86.301	3.61	124270	5000	
W	182	2	165	0.005	ppb	0.005	986.48	3087	100	
Pt	195	2	165	0.002	ppb	0.002	290.95	17	100	
Tl	205	2	165	-0.012	ppb	-0.012	-58.43	587	2000	
Pb	208	2	165	0.192	ppb	0.192	1.63	5811	5000	
Th	232	2	165	0.023	ppb	0.023	41.32	3074	2000	
U	238	2	165	0.026	ppb	0.026	24.66	1213	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	911400	3.97	928504	98.16	60	125	
Sc (IS)	45	2	HMI He	4486456	1.04	4755435	94.34	60	125	
Sc IS)	45	3	No Gas	122747239	2.98	129597379	94.71	60	120	
Ge Internal Standard	72	1	HMI H2	24267459	2.43	26580672	91.30	60	125	
Ge Internal Standard	72	2	HMI He	5162783	1.18	5368285	96.17	60	125	
In Internal standard	115	2	HMI He	16480053	1.27	16139116	102.11	60	125	
Ho-165	165	2	HMI He	41905558	2.88	40836889	102.62	60	125	

Sample Report

Sample Table

Sample Name 280-123159-a-20-dSD@5
 Data File Name 041SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T16:13:29-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	50.402	ppb	50.402	9.60	8013018	40000	
Be	9	1	6	-0.032	ppb	-0.032	-54.49	8	2000	
B	11	1	6	51.088	ppb	51.088	12.77	1907	100	
Na	23	2	45	8335.556	ppb	8335.556	3.58	7018113	400000	
Mg	24	2	45	5655.132	ppb	5655.132	5.09	1954218	400000	
Al	27	2	45	8.551	ppb	8.551	24.56	1187	400000	
K	39	2	45	109.545	ppb	109.545	1.36	174844	400000	
Ca	44	2	45	5901.022	ppb	5901.022	2.32	145744	400000	
V	51	2	72	0.808	ppb	0.808	0.37	14346	2000	
Cr	52	2	72	0.302	ppb	0.302	14.39	3384	5000	
Mn	55	2	72	2.491	ppb	2.491	9.05	7935	10000	
Fe	57	2	72	25.137	ppb	25.137	7.72	3790	400000	
Co	59	2	72	0.041	ppb	0.041	81.08	6575	2000	
Ni	60	2	72	1.449	ppb	1.449	13.63	4451	5000	
Cu	63	2	72	0.786	ppb	0.786	2.69	11244	5000	
Zn	66	2	72	0.581	ppb	0.581	41.93	2930	5000	
As	75	2	72	-0.003	ppb	-0.003	-518.83	196	2000	
Se	78	1	72	0.089	ppb	0.089	29.54	116	2000	
Sr	88	2	45	34.575	ppb	34.575	3.96	122090	2000	
Zr	90	2	72	1.348	ppb	1.348	220.76	567	1000	
Zr	90	1	72	6.031	ppb	6.031	67.03	2459	1000	
Nb	93	2	72	0.262	ppb	0.262	9.91	2170	200	
Mo	95	2	115	-0.026	ppb	-0.026	-85.18	373	2000	
Pd	105	2	115	-0.017	ppb	-0.017	-34.20	110	100	
Ag	107	2	115	0.010	ppb	0.010	33.72	187	100	
Cd	111	2	115	0.024	ppb	0.024	86.41	80	2000	
Sn	120	2	115	0.031	ppb	0.031	42.25	960	2000	
Sb	121	2	115	0.046	ppb	0.046	55.17	517	1000	
Ba	137	2	115	17.925	ppb	17.925	3.12	25280	5000	
W	182	2	165	-0.064	ppb	-0.064	-57.57	2474	100	
Pt	195	2	165	0.000	ppb	0.000	-19257.83	7	100	
Tl	205	2	165	-0.019	ppb	-0.019	-16.62	470	2000	
Pb	208	2	165	0.038	ppb	0.038	37.39	2467	5000	
Th	232	2	165	-0.074	ppb	-0.074	-8.22	957	2000	
U	238	2	165	-0.002	ppb	-0.002	-218.97	583	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	954751	2.84	928504	102.83	60	125	
Sc (IS)	45	2	HMI He	4324465	1.00	4755435	90.94	60	125	
Sc IS)	45	3	No Gas	122072339	1.21	129597379	94.19	60	120	
Ge Internal Standard	72	1	HMI H2	24347237	2.74	26580672	91.60	60	125	
Ge Internal Standard	72	2	HMI He	5058885	3.71	5368285	94.24	60	125	
In Internal standard	115	2	HMI He	16046094	2.92	16139116	99.42	60	125	
Ho-165	165	2	HMI He	41419252	1.13	40836889	101.43	60	125	

Sample Report

Sample Table

Sample Name 280-123159-a-20-e ms
 Data File Name 042SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T16:17:01-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	149.174	ppb	149.174	5.80	10314949	40000	
Be	9	1	6	40.627	ppb	40.627	8.45	16709	2000	
B	11	1	6	750.901	ppb	750.901	6.24	20919	100	>LDR
Na	23	2	45	39179.658	ppb	39179.658	2.28	33371365	400000	
Mg	24	2	45	25590.577	ppb	25590.577	3.22	9020903	400000	
Al	27	2	45	442.310	ppb	442.310	3.15	45612	400000	
K	39	2	45	742.371	ppb	742.371	2.80	395162	400000	
Ca	44	2	45	28088.249	ppb	28088.249	2.92	706363	400000	
V	51	2	72	41.199	ppb	41.199	2.80	217065	2000	
Cr	52	2	72	42.755	ppb	42.755	4.06	278646	5000	
Mn	55	2	72	53.186	ppb	53.186	2.80	157716	10000	
Fe	57	2	72	493.649	ppb	493.649	3.92	61833	400000	
Co	59	2	72	39.978	ppb	39.978	4.52	421470	2000	
Ni	60	2	72	46.967	ppb	46.967	4.55	127631	5000	
Cu	63	2	72	41.273	ppb	41.273	1.93	314075	5000	
Zn	66	2	72	42.352	ppb	42.352	4.40	48939	5000	
As	75	2	72	39.460	ppb	39.460	3.15	32757	2000	
Se	78	1	72	38.888	ppb	38.888	2.98	24112	2000	
Sr	88	2	45	203.836	ppb	203.836	5.52	733157	2000	
Zr	90	2	72	479.727	ppb	479.727	5.32	10100	1000	
Zr	90	1	72	438.562	ppb	438.562	1.88	22828	1000	
Nb	93	2	72	0.385	ppb	0.385	16.68	2954	200	
Mo	95	2	115	41.189	ppb	41.189	4.88	153073	2000	
Pd	105	2	115	-0.011	ppb	-0.011	-76.22	140	100	
Ag	107	2	115	39.382	ppb	39.382	1.31	447612	100	
Cd	111	2	115	41.123	ppb	41.123	1.83	66487	2000	
Sn	120	2	115	40.808	ppb	40.808	4.63	197134	2000	
Sb	121	2	115	41.567	ppb	41.567	2.03	174029	1000	
Ba	137	2	115	126.942	ppb	126.942	2.62	174562	5000	
W	182	2	165	33.308	ppb	33.308	1.10	270669	100	
Pt	195	2	165	0.002	ppb	0.002	147.27	20	100	
Tl	205	2	165	38.877	ppb	38.877	0.79	614991	2000	
Pb	208	2	165	37.945	ppb	37.945	2.38	786739	5000	
Th	232	2	165	34.557	ppb	34.557	4.53	723208	2000	
U	238	2	165	37.134	ppb	37.134	3.27	814430	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	906850	4.40	928504	97.67	60	125	
Sc (IS)	45	2	HMI He	4413208	2.06	4755435	92.80	60	125	
Sc IS)	45	3	No Gas	123120029	0.87	129597379	95.00	60	120	
Ge Internal Standard	72	1	HMI H2	23473921	3.26	26580672	88.31	60	125	
Ge Internal Standard	72	2	HMI He	4995862	2.54	5368285	93.06	60	125	
In Internal standard	115	2	HMI He	15746785	2.19	16139116	97.57	60	125	
Ho-165	165	2	HMI He	40340888	1.30	40836889	98.79	60	125	

Sample Report

Sample Table

Sample Name 280-123159-a-20-f msd
 Data File Name 043SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T16:20:31-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	159.954	ppb	159.954	4.05	10585376	40000	
Be	9	1	6	39.741	ppb	39.741	4.40	16566	2000	
B	11	1	6	778.173	ppb	778.173	5.44	21934	100	>LDR
Na	23	2	45	40489.439	ppb	40489.439	1.34	33937750	400000	
Mg	24	2	45	26972.217	ppb	26972.217	2.72	9353446	400000	
Al	27	2	45	475.569	ppb	475.569	1.87	48216	400000	
K	39	2	45	753.422	ppb	753.422	2.00	392506	400000	
Ca	44	2	45	29257.288	ppb	29257.288	0.56	723999	400000	
V	51	2	72	41.675	ppb	41.675	3.46	223087	2000	
Cr	52	2	72	42.573	ppb	42.573	3.38	282112	5000	
Mn	55	2	72	54.470	ppb	54.470	4.52	164163	10000	
Fe	57	2	72	532.895	ppb	532.895	4.29	67799	400000	
Co	59	2	72	40.680	ppb	40.680	3.67	435964	2000	
Ni	60	2	72	47.936	ppb	47.936	3.17	132460	5000	
Cu	63	2	72	41.485	ppb	41.485	3.69	320821	5000	
Zn	66	2	72	42.569	ppb	42.569	4.29	49999	5000	
As	75	2	72	40.477	ppb	40.477	1.44	34167	2000	
Se	78	1	72	39.234	ppb	39.234	3.42	24450	2000	
Sr	88	2	45	216.212	ppb	216.212	3.04	765336	2000	
Zr	90	2	72	3426.296	ppb	3426.296	3.51	69992	1000	
Zr	90	1	72	3281.219	ppb	3281.219	2.05	157835	1000	
Nb	93	2	72	0.384	ppb	0.384	11.85	3007	200	
Mo	95	2	115	41.580	ppb	41.580	3.19	159152	2000	
Pd	105	2	115	-0.013	ppb	-0.013	-13.41	133	100	
Ag	107	2	115	37.336	ppb	37.336	4.21	436720	100	
Cd	111	2	115	39.262	ppb	39.262	4.68	65326	2000	
Sn	120	2	115	41.978	ppb	41.978	3.73	208809	2000	
Sb	121	2	115	42.729	ppb	42.729	3.83	184143	1000	
Ba	137	2	115	128.052	ppb	128.052	3.47	181293	5000	
W	182	2	165	34.769	ppb	34.769	0.88	282576	100	
Pt	195	2	165	0.004	ppb	0.004	113.22	30	100	
Tl	205	2	165	40.104	ppb	40.104	1.70	634679	2000	
Pb	208	2	165	39.865	ppb	39.865	4.43	826704	5000	
Th	232	2	165	37.766	ppb	37.766	2.20	790967	2000	
U	238	2	165	39.432	ppb	39.432	1.72	865401	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	917267	3.26	928504	98.79	60	125	
Sc (IS)	45	2	HMI He	4341986	2.97	4755435	91.31	60	125	
Sc IS)	45	3	No Gas	123414528	2.08	129597379	95.23	60	120	
Ge Internal Standard	72	1	HMI H2	23568093	2.82	26580672	88.67	60	125	
Ge Internal Standard	72	2	HMI He	5079467	2.89	5368285	94.62	60	125	
In Internal standard	115	2	HMI He	16217561	3.02	16139116	100.49	60	125	
Ho-165	165	2	HMI He	40364800	1.65	40836889	98.84	60	125	

Sample Report

Sample Table

Sample Name 280-123159-a-20-d PDS
 Data File Name 044SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T16:24:03-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	61.978	ppb	61.978	8.91	8308504	40000	
Be	9	1	6	224.311	ppb	224.311	3.20	91905	2000	
B	11	1	6	238.317	ppb	238.317	9.50	6888	100	
Na	23	2	45	38405.311	ppb	38405.311	5.21	32183204	400000	
Mg	24	2	45	25681.768	ppb	25681.768	3.24	8908928	400000	
Al	27	2	45	2158.535	ppb	2158.535	1.78	217669	400000	
K	39	2	45	755.162	ppb	755.162	4.06	393174	400000	
Ca	44	2	45	27888.615	ppb	27888.615	4.25	690052	400000	
V	51	2	72	240.871	ppb	240.871	5.02	1205950	2000	
Cr	52	2	72	248.122	ppb	248.122	1.34	1592244	5000	
Mn	55	2	72	251.579	ppb	251.579	1.37	735668	10000	
Fe	57	2	72	2365.426	ppb	2365.426	2.02	290556	400000	
Co	59	2	72	243.064	ppb	243.064	3.19	2503401	2000	
Ni	60	2	72	245.202	ppb	245.202	0.83	656903	5000	
Cu	63	2	72	243.711	ppb	243.711	3.86	1807822	5000	
Zn	66	2	72	245.768	ppb	245.768	2.02	270095	5000	
As	75	2	72	226.942	ppb	226.942	0.65	185321	2000	
Se	78	1	72	217.290	ppb	217.290	1.32	135825	2000	
Sr	88	2	45	169.575	ppb	169.575	1.75	600668	2000	
Zr	90	2	72	91315.760	ppb	91315.760	3.63	1800539	1000	>LDR
Zr	90	1	72	88122.109	ppb	88122.109	1.01	4208032	1000	>LDR
Nb	93	2	72	5.252	ppb	5.252	7.20	34713	200	
Mo	95	2	115	221.533	ppb	221.533	1.55	819301	2000	
Pd	105	2	115	0.091	ppb	0.091	6.56	700	100	
Ag	107	2	115	44.829	ppb	44.829	4.58	507689	100	
Cd	111	2	115	235.306	ppb	235.306	2.96	379054	2000	
Sn	120	2	115	222.763	ppb	222.763	3.67	1069543	2000	
Sb	121	2	115	225.447	ppb	225.447	4.84	939213	1000	
Ba	137	2	115	332.705	ppb	332.705	2.73	455930	5000	
W	182	2	165	228.576	ppb	228.576	1.24	1859391	100	
Pt	195	2	165	0.110	ppb	0.110	2.53	643	100	
Tl	205	2	165	224.657	ppb	224.657	4.12	3585080	2000	
Pb	208	2	165	232.432	ppb	232.432	4.24	4856738	5000	
Th	232	2	165	1.041	ppb	1.041	4.04	24433	2000	
U	238	2	165	227.007	ppb	227.007	3.02	5024573	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	902619	2.98	928504	97.21	60	125	
Sc (IS)	45	2	HMI He	4342936	1.53	4755435	91.33	60	125	
Sc IS)	45	3	No Gas	122617217	1.16	129597379	94.61	60	120	
Ge Internal Standard	72	1	HMI H2	23693463	0.90	26580672	89.14	60	125	
Ge Internal Standard	72	2	HMI He	4936409	0.55	5368285	91.96	60	125	
In Internal standard	115	2	HMI He	15703029	2.99	16139116	97.30	60	125	
Ho-165	165	2	HMI He	40749326	2.78	40836889	99.79	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5701467
 Data File Name 045_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T16:27:31-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	103.245	ppb	13.815	151635	100	103.2	90	110	
Li	7	3	45	152.010	ppb	4.562	10444982	100	152.0	90	110	>+ -10%
Be	9	1	6	48.100	ppb	3.768	20437	50	96.2	90	110	
B	11	1	6	63.392	ppb	9.488	2220	50	126.8	90	110	>+ -10%
Na	23	2	45	1042.336	ppb	1.409	949139	1000	104.2	90	110	
Mg	24	2	45	1032.085	ppb	2.922	358524	1000	103.2	90	110	
Al	27	2	45	1024.510	ppb	2.707	103449	1000	102.5	90	110	
K	39	2	45	933.681	ppb	1.052	453253	1000	93.4	90	110	
Ca	44	2	45	1007.265	ppb	4.200	25318	1000	100.7	90	110	
V	51	2	72	52.409	ppb	2.285	274239	50	104.8	90	110	
Cr	52	2	72	50.915	ppb	1.254	332687	50	101.8	90	110	
Mn	55	2	72	50.912	ppb	0.932	151467	50	101.8	90	110	
Fe	57	2	72	1019.480	ppb	2.336	127434	1000	101.9	90	110	
Co	59	2	72	49.907	ppb	1.829	526444	50	99.8	90	110	
Ni	60	2	72	51.704	ppb	0.730	140945	50	103.4	90	110	
Cu	63	2	72	51.870	ppb	0.994	394600	50	103.7	90	110	
Zn	66	2	72	52.746	ppb	1.048	60603	50	105.5	90	110	
As	75	2	72	51.990	ppb	1.613	43236	50	104.0	90	110	
Se	78	1	72	51.513	ppb	5.105	32758	50	103.0	90	110	
Sr	88	2	45	99.206	ppb	1.826	351384	100	99.2	90	110	
Zr	90	2	72	224.731	ppb	3.710	5031	50	449.5	90	110	>+ -10%
Zr	90	1	72	371.026	ppb	9.065	20122	50	742.1	90	110	>+ -10%
Nb	93	2	72	98.010	ppb	3.573	649715	100	98.0	90	110	
Mo	95	2	115	51.609	ppb	1.449	189683	50	103.2	90	110	
Pd	105	2	115	51.832	ppb	0.815	282143	50	103.7	90	110	
Ag	107	2	115	50.986	ppb	1.239	573178	50	102.0	90	110	
Cd	111	2	115	51.882	ppb	1.015	82958	50	103.8	90	110	
Sn	120	2	115	51.967	ppb	2.171	248199	50	103.9	90	110	
Sb	121	2	115	52.128	ppb	1.854	215829	50	104.3	90	110	
Ba	137	2	115	53.297	ppb	1.751	72627	50	106.6	90	110	
W	182	2	165	51.212	ppb	2.134	410802	50	102.4	90	110	
Pt	195	2	165	51.089	ppb	4.117	289303	50	102.2	90	110	
Tl	205	2	165	48.902	ppb	3.213	766075	50	97.8	90	110	
Pb	208	2	165	49.336	ppb	3.206	1012879	50	98.7	90	110	
Th	232	2	165	46.276	ppb	3.780	958755	50	92.6	90	110	
U	238	2	165	47.803	ppb	3.936	1038401	50	95.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	935295	3.47	928504	100.73	60	125	
Sc (IS)	45	2	HMI He	4340980	0.65	4755435	91.28	60	125	
Sc IS)	45	3	No Gas	123911814	1.91	129597379	95.61	60	120	
Ge Internal Standard	72	1	HMI H2	24101607	3.52	26580672	90.67	60	125	
Ge Internal Standard	72	2	HMI He	5009685	0.75	5368285	93.32	60	125	
In Internal standard	115	2	HMI He	15573695	1.07	16139116	96.50	60	125	
Ho-165	165	2	HMI He	39988280	3.57	40836889	97.92	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5701457
 Data File Name 046_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T16:31:02-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	2.836	ppb	98.8	117319	0.1	>RL
Li	7	3	45	39.229	ppb	33.3	8127824	0.05	>RL
Be	9	1	6	0.127	ppb	72.3	75	0.5	
B	11	1	6	4.691	ppb	84.0	560	0.1	>RL
Na	23	2	45	3.272	ppb	122.7	83691	25	
Mg	24	2	45	5.756	ppb	10.2	2707	25	
Al	27	2	45	-0.679	ppb	-140.9	273	15	
K	39	2	45	-55.586	ppb	-13.9	124627	50	
Ca	44	2	45	0.141	ppb	2668.1	427	25	
V	51	2	72	0.530	ppb	13.9	12915	1	
Cr	52	2	72	0.036	ppb	101.4	1640	1	
Mn	55	2	72	0.068	ppb	54.9	697	0.5	
Fe	57	2	72	2.721	ppb	25.1	980	25	
Co	59	2	72	0.029	ppb	93.1	6445	0.5	
Ni	60	2	72	0.093	ppb	30.8	743	1	
Cu	63	2	72	0.015	ppb	116.8	5398	1	
Zn	66	2	72	-1.155	ppb	-8.8	993	5	
As	75	2	72	0.054	ppb	67.4	244	1	
Se	78	1	72	0.099	ppb	24.0	125	1	
Sr	88	2	45	0.089	ppb	34.3	537	1	
Zr	90	2	72	14.069	ppb	41.8	823	1	>RL
Zr	90	1	72	18.700	ppb	45.9	3164	1	>RL
Nb	93	2	72	3.243	ppb	5.3	22088	2	>RL
Mo	95	2	115	0.093	ppb	59.8	823	0.5	
Pd	105	2	115	0.029	ppb	30.4	370	1	
Ag	107	2	115	0.048	ppb	12.1	637	1	
Cd	111	2	115	0.084	ppb	23.6	180	0.5	
Sn	120	2	115	0.120	ppb	31.7	1397	1	
Sb	121	2	115	0.098	ppb	29.5	737	1	
Ba	137	2	115	0.140	ppb	14.4	390	0.5	
W	182	2	165	0.059	ppb	52.1	3474	1	
Pt	195	2	165	0.028	ppb	21.8	170	1	
Tl	205	2	165	0.062	ppb	14.7	1767	0.1	
Pb	208	2	165	0.096	ppb	4.8	3677	0.5	
Th	232	2	165	0.034	ppb	27.5	3240	1	
U	238	2	165	0.086	ppb	6.1	2537	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	930906	1.57	928504	100.26	60	125	
Sc (IS)	45	2	HMI He	4515390	2.48	4755435	94.95	60	125	
Sc IS)	45	3	No Gas	127911559	2.88	129597379	98.70	60	120	
Ge Internal Standard	72	1	HMI H2	24978777	1.65	26580672	93.97	60	125	
Ge Internal Standard	72	2	HMI He	5052793	1.16	5368285	94.12	60	125	
In Internal standard	115	2	HMI He	16091946	4.29	16139116	99.71	60	125	
Ho-165	165	2	HMI He	41177447	0.37	40836889	100.83	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5701469
 Data File Name 047LCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T16:34:33-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	46.516	ppb	16.722	8015611	50	93.0	70	130	
Be	9	1	6	0.951	ppb	10.097	427	1	95.1	70	130	
Na	23	2	45	43.029	ppb	5.111	113011	50	86.1	70	130	
Mg	24	2	45	49.725	ppb	4.987	17729	50	99.4	70	130	
Al	27	2	45	49.189	ppb	2.843	5248	50	98.4	70	130	
K	39	2	45	39.917	ppb	25.992	151038	100	39.9	70	130	> +/-30%
Ca	44	2	45	31.985	ppb	30.042	1187	50	64.0	70	130	> +/-30%
V	51	2	72	6.250	ppb	1.544	41800	5	125.0	70	130	
Cr	52	2	72	2.027	ppb	3.132	14640	2	101.3	70	130	
Mn	55	2	72	1.060	ppb	6.431	3647	1	106.0	70	130	
Fe	57	2	72	55.268	ppb	0.753	7538	50	110.5	70	130	
Co	59	2	72	0.947	ppb	3.248	16028	1	94.7	70	130	
Ni	60	2	72	1.584	ppb	8.070	4804	1.5	105.6	70	130	
Cu	63	2	72	1.992	ppb	5.420	20272	2	99.6	70	130	
Zn	66	2	72	9.583	ppb	7.368	12912	10	95.8	70	130	
As	75	2	72	4.740	ppb	3.739	4137	5	94.8	70	130	
Se	78	1	72	4.896	ppb	2.736	3160	5	97.9	70	130	
Sr	88	2	45	0.926	ppb	9.667	3464	1	92.6	70	130	
Zr	90	2	72	14.253	ppb	42.930	823	0.5	2850.5	70	130	> +/-30%
Zr	90	1	72	8.058	ppb	46.362	2529	0.5	1611.6	70	130	> +/-30%
Nb	93	2	72	2.083	ppb	6.450	14280	2	104.2	70	130	
Mo	95	2	115	1.967	ppb	4.253	7852	2	98.3	70	130	
Pd	105	2	115	0.013	ppb	21.262	277	1	1.3	70	130	> +/-30%
Ag	107	2	115	4.906	ppb	4.389	56539	5	98.1	70	130	
Cd	111	2	115	1.160	ppb	11.978	1937	1	116.0	70	130	
Sn	120	2	115	9.816	ppb	1.466	48685	10	98.2	70	130	
Sb	121	2	115	1.908	ppb	4.635	8399	2	95.4	70	130	
Ba	137	2	115	0.976	ppb	7.360	1550	1	97.6	70	130	
W	182	2	165	4.810	ppb	1.683	41777	1	481.0	70	130	> +/-30%
Pt	195	2	165	0.001	ppb	506.449	10	1	0.1	70	130	> +/-30%
Tl	205	2	165	0.880	ppb	3.187	14724	1	88.0	70	130	
Pb	208	2	165	1.017	ppb	4.659	22754	1	101.7	70	130	
Th	232	2	165	1.616	ppb	2.819	36347	2	80.8	70	130	
U	238	2	165	0.921	ppb	5.398	20895	1	92.1	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	939866	3.70	928504	101.22	60	125	
Sc (IS)	45	2	HMI He	4313818	2.46	4755435	90.71	60	125	
Sc IS)	45	3	No Gas	123473559	0.97	129597379	95.27	60	120	
Ge Internal Standard	72	1	HMI H2	24042365	2.43	26580672	90.45	60	125	
Ge Internal Standard	72	2	HMI He	5030085	0.68	5368285	93.70	60	125	
In Internal standard	115	2	HMI He	15957735	2.27	16139116	98.88	60	125	
Ho-165	165	2	HMI He	40518637	1.37	40836889	99.22	60	125	

Sample Report

Sample Table

Sample Name 280-123205-a-5-d
 Data File Name 048SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T16:38:05-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	37.170	ppb	37.170	4.66	7833343	40000	
Be	9	1	6	-0.039	ppb	-0.039	-0.59	5	2000	
B	11	1	6	820.268	ppb	820.268	5.86	22411	100	>LDR
Na	23	2	45	28907.110	ppb	28907.110	3.05	24646822	400000	
Mg	24	2	45	28860.781	ppb	28860.781	0.49	10178982	400000	
Al	27	2	45	57.943	ppb	57.943	2.40	6268	400000	
K	39	2	45	318.939	ppb	318.939	6.32	250153	400000	
Ca	44	2	45	60120.549	ppb	60120.549	2.32	1511710	400000	
V	51	2	72	0.156	ppb	0.156	29.54	11230	2000	
Cr	52	2	72	18.747	ppb	18.747	1.85	126856	5000	
Mn	55	2	72	3.846	ppb	3.846	3.07	12224	10000	
Fe	57	2	72	203.333	ppb	203.333	4.91	26641	400000	
Co	59	2	72	0.134	ppb	0.134	18.13	7692	2000	
Ni	60	2	72	4.586	ppb	4.586	2.83	13309	5000	
Cu	63	2	72	0.569	ppb	0.569	8.02	9776	5000	
Zn	66	2	72	0.065	ppb	0.065	313.32	2397	5000	
As	75	2	72	0.125	ppb	0.125	22.15	309	2000	
Se	78	1	72	0.124	ppb	0.124	22.24	136	2000	
Sr	88	2	45	163.615	ppb	163.615	1.82	588991	2000	
Zr	90	2	72	49.164	ppb	49.164	40.17	1560	1000	
Zr	90	1	72	40.636	ppb	40.636	6.00	4105	1000	
Nb	93	2	72	2.411	ppb	2.411	3.19	16859	200	
Mo	95	2	115	3.083	ppb	3.083	2.67	11764	2000	
Pd	105	2	115	-0.011	ppb	-0.011	-53.61	140	100	
Ag	107	2	115	0.023	ppb	0.023	9.76	333	100	
Cd	111	2	115	0.032	ppb	0.032	138.85	90	2000	
Sn	120	2	115	0.132	ppb	0.132	35.96	1410	2000	
Sb	121	2	115	0.118	ppb	0.118	25.54	800	1000	
Ba	137	2	115	49.246	ppb	49.246	5.66	67083	5000	
W	182	2	165	0.095	ppb	0.095	36.52	3731	100	
Pt	195	2	165	0.000	ppb	0.000	6750.36	7	100	
Tl	205	2	165	0.004	ppb	0.004	203.50	833	2000	
Pb	208	2	165	0.071	ppb	0.071	14.01	3117	5000	
Th	232	2	165	0.567	ppb	0.567	1.32	14444	2000	
U	238	2	165	6.096	ppb	6.096	1.81	135568	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	890196	1.86	928504	95.87	60	125	
Sc (IS)	45	2	HMI He	4414299	1.86	4755435	92.83	60	125	
Sc IS)	45	3	No Gas	123929519	0.67	129597379	95.63	60	120	
Ge Internal Standard	72	1	HMI H2	24032278	4.82	26580672	90.41	60	125	
Ge Internal Standard	72	2	HMI He	5150190	1.75	5368285	95.94	60	125	
In Internal standard	115	2	HMI He	15580350	2.34	16139116	96.54	60	125	
Ho-165	165	2	HMI He	40741085	0.48	40836889	99.77	60	125	

Sample Report

Sample Table

Sample Name 280-123205-a-5-e.ms
 Data File Name 049SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T16:41:35-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	131.886	ppb	131.886	6.02	10108533	40000	
Be	9	1	6	40.226	ppb	40.226	2.60	16484	2000	
B	11	1	6	1320.234	ppb	1320.234	2.63	36290	100	>LDR
Na	23	2	45	27937.189	ppb	27937.189	2.87	24677722	400000	
Mg	24	2	45	27963.641	ppb	27963.641	1.07	10215676	400000	
Al	27	2	45	436.498	ppb	436.498	1.41	46624	400000	
K	39	2	45	307.427	ppb	307.427	1.17	255097	400000	
Ca	44	2	45	59080.107	ppb	59080.107	2.02	1538916	400000	
V	51	2	72	40.681	ppb	40.681	1.50	216619	2000	
Cr	52	2	72	61.306	ppb	61.306	2.84	402978	5000	
Mn	55	2	72	46.470	ppb	46.470	2.36	139224	10000	
Fe	57	2	72	595.118	ppb	595.118	0.75	75182	400000	
Co	59	2	72	39.547	ppb	39.547	2.44	421320	2000	
Ni	60	2	72	47.364	ppb	47.364	1.80	130032	5000	
Cu	63	2	72	40.975	ppb	40.975	2.44	314901	5000	
Zn	66	2	72	39.393	ppb	39.393	2.02	46149	5000	
As	75	2	72	39.653	ppb	39.653	0.27	33254	2000	
Se	78	1	72	36.494	ppb	36.494	2.96	23395	2000	
Sr	88	2	45	202.968	ppb	202.968	1.24	756844	2000	
Zr	90	2	72	533.804	ppb	533.804	6.49	11284	1000	
Zr	90	1	72	476.056	ppb	476.056	8.41	25398	1000	
Nb	93	2	72	1.612	ppb	1.612	10.72	11181	200	
Mo	95	2	115	44.572	ppb	44.572	0.75	169121	2000	
Pd	105	2	115	-0.010	ppb	-0.010	-156.76	150	100	
Ag	107	2	115	38.371	ppb	38.371	1.31	445080	100	
Cd	111	2	115	39.226	ppb	39.226	4.03	64740	2000	
Sn	120	2	115	39.417	ppb	39.417	1.88	194461	2000	
Sb	121	2	115	39.611	ppb	39.611	4.04	169239	1000	
Ba	137	2	115	87.941	ppb	87.941	2.16	123503	5000	
W	182	2	165	34.379	ppb	34.379	1.94	279332	100	
Pt	195	2	165	0.000	ppb	0.000	5137.20	7	100	
Tl	205	2	165	37.433	ppb	37.433	0.75	592355	2000	
Pb	208	2	165	37.889	ppb	37.889	0.52	785840	5000	
Th	232	2	165	35.868	ppb	35.868	4.27	751041	2000	
U	238	2	165	44.818	ppb	44.818	3.06	983161	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	901564	1.33	928504	97.10	60	125	
Sc (IS)	45	2	HMI He	4572251	1.19	4755435	96.15	60	125	
Sc IS)	45	3	No Gas	125421922	1.76	129597379	96.78	60	120	
Ge Internal Standard	72	1	HMI H2	24257191	2.11	26580672	91.26	60	125	
Ge Internal Standard	72	2	HMI He	5044378	1.47	5368285	93.97	60	125	
In Internal standard	115	2	HMI He	16071040	1.53	16139116	99.58	60	125	
Ho-165	165	2	HMI He	40349975	0.94	40836889	98.81	60	125	

Sample Report

Sample Table

Sample Name 280-123205-a-5-f msd
 Data File Name 050SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T16:45:06-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	134.800	ppb	134.800	11.53	10020372	40000	
Be	9	1	6	39.820	ppb	39.820	5.23	16141	2000	
B	11	1	6	1387.986	ppb	1387.986	3.08	37743	100	>LDR
Na	23	2	45	29274.231	ppb	29274.231	1.48	26140968	400000	
Mg	24	2	45	29196.202	ppb	29196.202	1.52	10782312	400000	
Al	27	2	45	457.907	ppb	457.907	0.44	49432	400000	
K	39	2	45	323.318	ppb	323.318	1.87	263594	400000	
Ca	44	2	45	60981.036	ppb	60981.036	0.36	1606102	400000	
V	51	2	72	41.088	ppb	41.088	4.21	223648	2000	
Cr	52	2	72	59.272	ppb	59.272	1.71	398670	5000	
Mn	55	2	72	45.228	ppb	45.228	3.29	138625	10000	
Fe	57	2	72	570.483	ppb	570.483	3.14	73726	400000	
Co	59	2	72	40.244	ppb	40.244	7.98	438321	2000	
Ni	60	2	72	44.079	ppb	44.079	1.90	123836	5000	
Cu	63	2	72	39.270	ppb	39.270	1.00	308988	5000	
Zn	66	2	72	39.378	ppb	39.378	2.46	47188	5000	
As	75	2	72	38.816	ppb	38.816	1.89	33298	2000	
Se	78	1	72	37.174	ppb	37.174	2.85	23538	2000	
Sr	88	2	45	201.900	ppb	201.900	1.10	761208	2000	
Zr	90	2	72	527.025	ppb	527.025	2.75	11407	1000	
Zr	90	1	72	541.715	ppb	541.715	4.41	28272	1000	
Nb	93	2	72	1.058	ppb	1.058	6.62	7645	200	
Mo	95	2	115	44.260	ppb	44.260	5.47	166802	2000	
Pd	105	2	115	-0.013	ppb	-0.013	-67.04	133	100	
Ag	107	2	115	38.851	ppb	38.851	2.51	448005	100	
Cd	111	2	115	39.145	ppb	39.145	3.07	64194	2000	
Sn	120	2	115	41.670	ppb	41.670	5.20	204233	2000	
Sb	121	2	115	42.149	ppb	42.149	4.58	178946	1000	
Ba	137	2	115	90.719	ppb	90.719	3.40	126601	5000	
W	182	2	165	33.815	ppb	33.815	4.78	283849	100	
Pt	195	2	165	0.000	ppb	0.000	15038.27	7	100	
Tl	205	2	165	37.760	ppb	37.760	3.16	617380	2000	
Pb	208	2	165	37.913	ppb	37.913	2.01	812582	5000	
Th	232	2	165	36.072	ppb	36.072	4.75	780195	2000	
U	238	2	165	44.170	ppb	44.170	4.63	1001350	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	892793	4.07	928504	96.15	60	125	
Sc (IS)	45	2	HMI He	4622434	0.99	4755435	97.20	60	125	
Sc IS)	45	3	No Gas	123545785	2.16	129597379	95.33	60	120	
Ge Internal Standard	72	1	HMI H2	23962192	2.03	26580672	90.15	60	125	
Ge Internal Standard	72	2	HMI He	5159882	1.18	5368285	96.12	60	125	
In Internal standard	115	2	HMI He	15979818	3.35	16139116	99.01	60	125	
Ho-165	165	2	HMI He	41709732	2.68	40836889	102.14	60	125	

Sample Report

Sample Table

Sample Name 280-123205-a-13-b
 Data File Name 051SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T16:48:36-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	142.626	ppb	142.626	2.94	9896307	40000	
Be	9	1	6	0.052	ppb	0.052	82.80	42	2000	
B	11	1	6	543.381	ppb	543.381	2.84	14996	100	>LDR
Na	23	2	45	55167.567	ppb	55167.567	3.06	47540753	400000	
Mg	24	2	45	28983.002	ppb	28983.002	2.73	10345455	400000	
Al	27	2	45	34.053	ppb	34.053	12.44	3870	400000	
K	39	2	45	2266.013	ppb	2266.013	4.59	928383	400000	
Ca	44	2	45	24968.428	ppb	24968.428	2.38	635830	400000	
V	51	2	72	-0.125	ppb	-0.125	-77.49	9880	2000	
Cr	52	2	72	6.559	ppb	6.559	3.34	45827	5000	
Mn	55	2	72	92.598	ppb	92.598	1.37	286065	10000	
Fe	57	2	72	124.387	ppb	124.387	2.47	16752	400000	
Co	59	2	72	0.434	ppb	0.434	5.84	11044	2000	
Ni	60	2	72	10.305	ppb	10.305	2.48	29609	5000	
Cu	63	2	72	1.091	ppb	1.091	8.91	13959	5000	
Zn	66	2	72	1.571	ppb	1.571	12.66	4157	5000	
As	75	2	72	0.219	ppb	0.219	15.30	393	2000	
Se	78	1	72	3.814	ppb	3.814	5.67	2422	2000	
Sr	88	2	45	248.734	ppb	248.734	2.33	906363	2000	
Zr	90	2	72	21.170	ppb	21.170	5.33	997	1000	
Zr	90	1	72	23.490	ppb	23.490	39.29	3220	1000	
Nb	93	2	72	0.695	ppb	0.695	4.97	5218	200	
Mo	95	2	115	1.320	ppb	1.320	6.78	5481	2000	
Pd	105	2	115	-0.007	ppb	-0.007	-99.13	170	100	
Ag	107	2	115	0.033	ppb	0.033	8.90	457	100	
Cd	111	2	115	0.060	ppb	0.060	42.09	140	2000	
Sn	120	2	115	0.225	ppb	0.225	31.07	1920	2000	
Sb	121	2	115	0.632	ppb	0.632	12.23	3030	1000	
Ba	137	2	115	32.593	ppb	32.593	4.14	46062	5000	
W	182	2	165	0.066	ppb	0.066	16.55	3564	100	
Pt	195	2	165	0.000	ppb	0.000	11101.09	7	100	
Tl	205	2	165	0.100	ppb	0.100	19.10	2417	2000	
Pb	208	2	165	0.125	ppb	0.125	19.02	4324	5000	
Th	232	2	165	0.466	ppb	0.466	6.96	12545	2000	
U	238	2	165	0.141	ppb	0.141	13.10	3807	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	890452	0.62	928504	95.90	60	125	
Sc (IS)	45	2	HMI He	4469374	2.52	4755435	93.98	60	125	
Sc IS)	45	3	No Gas	119837295	0.89	129597379	92.47	60	120	
Ge Internal Standard	72	1	HMI H2	23542400	4.11	26580672	88.57	60	125	
Ge Internal Standard	72	2	HMI He	5209522	1.44	5368285	97.04	60	125	
In Internal standard	115	2	HMI He	16138753	2.67	16139116	100.00	60	125	
Ho-165	165	2	HMI He	41567947	3.33	40836889	101.79	60	125	

Sample Report

Sample Table

Sample Name 280-123221-e-2-b
 Data File Name 052SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T16:52:06-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	60.145	ppb	60.145	11.43	8110670	40000	
Be	9	1	6	-0.047	ppb	-0.047	-14.34	2	2000	
B	11	1	6	299.846	ppb	299.846	1.82	8589	100	
Na	23	2	45	6449.036	ppb	6449.036	4.17	5608252	400000	
Mg	24	2	45	21510.006	ppb	21510.006	4.06	7650588	400000	
Al	27	2	45	36.453	ppb	36.453	6.04	4107	400000	
K	39	2	45	1259.961	ppb	1259.961	3.70	577622	400000	
Ca	44	2	45	56918.402	ppb	56918.402	1.15	1444243	400000	
V	51	2	72	-0.563	ppb	-0.563	-11.94	7438	2000	
Cr	52	2	72	0.318	ppb	0.318	10.96	3530	5000	
Mn	55	2	72	364.195	ppb	364.195	1.22	1101337	10000	
Fe	57	2	72	1053.501	ppb	1053.501	2.09	134216	400000	
Co	59	2	72	-0.013	ppb	-0.013	-198.05	6064	2000	
Ni	60	2	72	0.162	ppb	0.162	14.71	940	5000	
Cu	63	2	72	1.727	ppb	1.727	9.82	18537	5000	
Zn	66	2	72	-0.218	ppb	-0.218	-29.69	2060	5000	
As	75	2	72	6.645	ppb	6.645	2.35	5807	2000	
Se	78	1	72	0.004	ppb	0.004	944.77	61	2000	
Sr	88	2	45	141.413	ppb	141.413	2.19	513590	2000	
Zr	90	2	72	25.372	ppb	25.372	43.97	1060	1000	
Zr	90	1	72	26.541	ppb	26.541	12.48	3464	1000	
Nb	93	2	72	0.542	ppb	0.542	3.51	4087	200	
Mo	95	2	115	1.466	ppb	1.466	4.19	6021	2000	
Pd	105	2	115	-0.019	ppb	-0.019	-63.56	100	100	
Ag	107	2	115	0.009	ppb	0.009	27.51	180	100	
Cd	111	2	115	-0.012	ppb	-0.012	-103.78	20	2000	
Sn	120	2	115	0.154	ppb	0.154	22.13	1570	2000	
Sb	121	2	115	0.156	ppb	0.156	38.91	980	1000	
Ba	137	2	115	93.413	ppb	93.413	3.77	131238	5000	
W	182	2	165	-0.016	ppb	-0.016	-226.66	2884	100	
Pt	195	2	165	0.002	ppb	0.002	1.78	20	100	
Tl	205	2	165	-0.014	ppb	-0.014	-24.01	547	2000	
Pb	208	2	165	0.070	ppb	0.070	33.91	3160	5000	
Th	232	2	165	0.103	ppb	0.103	13.03	4774	2000	
U	238	2	165	0.904	ppb	0.904	6.24	21048	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	904218	3.21	928504	97.38	60	125	
Sc (IS)	45	2	HMI He	4453539	2.05	4755435	93.65	60	125	
Sc IS)	45	3	No Gas	120280938	0.16	129597379	92.81	60	120	
Ge Internal Standard	72	1	HMI H2	24315630	0.58	26580672	91.48	60	125	
Ge Internal Standard	72	2	HMI He	5106763	1.67	5368285	95.13	60	125	
In Internal standard	115	2	HMI He	16084020	2.88	16139116	99.66	60	125	
Ho-165	165	2	HMI He	41610222	1.19	40836889	101.89	60	125	

Sample Report

Sample Table

Sample Name 280-123221-j-4-b
 Data File Name 053SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T16:56:30-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	57.442	ppb	57.442	4.94	8083357	40000	
Be	9	1	6	-0.039	ppb	-0.039	-0.50	5	2000	
B	11	1	6	385.625	ppb	385.625	4.55	10475	100	
Na	23	2	45	10984.038	ppb	10984.038	3.23	9252654	400000	
Mg	24	2	45	33075.364	ppb	33075.364	2.83	11465001	400000	
Al	27	2	45	7.663	ppb	7.663	6.77	1103	400000	
K	39	2	45	1693.669	ppb	1693.669	2.89	708915	400000	
Ca	44	2	45	60106.819	ppb	60106.819	3.22	1485463	400000	
V	51	2	72	-0.481	ppb	-0.481	-21.73	7702	2000	
Cr	52	2	72	0.330	ppb	0.330	11.84	3537	5000	
Mn	55	2	72	278.500	ppb	278.500	1.93	825330	10000	
Fe	57	2	72	2062.625	ppb	2062.625	0.31	256877	400000	
Co	59	2	72	0.323	ppb	0.323	15.45	9439	2000	
Ni	60	2	72	0.164	ppb	0.164	26.01	927	5000	
Cu	63	2	72	0.107	ppb	0.107	58.60	6034	5000	
Zn	66	2	72	0.619	ppb	0.619	47.67	2944	5000	
As	75	2	72	10.043	ppb	10.043	1.97	8500	2000	
Se	78	1	72	-0.019	ppb	-0.019	-146.83	45	2000	
Sr	88	2	45	146.934	ppb	146.934	2.13	520042	2000	
Zr	90	2	72	671.790	ppb	671.790	1.93	13956	1000	
Zr	90	1	72	666.481	ppb	666.481	1.43	33795	1000	
Nb	93	2	72	0.407	ppb	0.407	16.36	3107	200	
Mo	95	2	115	0.737	ppb	0.737	10.78	3244	2000	
Pd	105	2	115	-0.013	ppb	-0.013	-18.28	133	100	
Ag	107	2	115	0.004	ppb	0.004	68.72	117	100	
Cd	111	2	115	-0.018	ppb	-0.018	-33.78	10	2000	
Sn	120	2	115	0.087	ppb	0.087	39.85	1233	2000	
Sb	121	2	115	0.044	ppb	0.044	25.33	503	1000	
Ba	137	2	115	48.362	ppb	48.362	2.65	67688	5000	
W	182	2	165	-0.031	ppb	-0.031	-63.95	2727	100	
Pt	195	2	165	0.000	ppb	0.000	-9769.32	7	100	
Tl	205	2	165	-0.022	ppb	-0.022	-14.42	413	2000	
Pb	208	2	165	0.028	ppb	0.028	22.69	2230	5000	
Th	232	2	165	0.000	ppb	0.000	-13766.94	2514	2000	
U	238	2	165	0.884	ppb	0.884	4.22	20341	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	867125	1.52	928504	93.39	60	125	
Sc (IS)	45	2	HMI He	4339718	2.66	4755435	91.26	60	125	
Sc IS)	45	3	No Gas	120770652	1.10	129597379	93.19	60	120	
Ge Internal Standard	72	1	HMI H2	23609453	1.98	26580672	88.82	60	125	
Ge Internal Standard	72	2	HMI He	5003305	0.48	5368285	93.20	60	125	
In Internal standard	115	2	HMI He	16000112	2.28	16139116	99.14	60	125	
Ho-165	165	2	HMI He	41074651	3.00	40836889	100.58	60	125	

Sample Report

Sample Table

Sample Name 280-123221-f-5-b
 Data File Name 054SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T17:00:01-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	61.222	ppb	61.222	7.97	8201857	40000	
Be	9	1	6	-0.035	ppb	-0.035	-55.54	7	2000	
B	11	1	6	383.360	ppb	383.360	3.73	10657	100	
Na	23	2	45	11561.960	ppb	11561.960	2.24	9542592	400000	
Mg	24	2	45	34623.121	ppb	34623.121	3.48	11760568	400000	
Al	27	2	45	7.826	ppb	7.826	4.10	1097	400000	
K	39	2	45	1806.872	ppb	1806.872	2.31	732148	400000	
Ca	44	2	45	60264.959	ppb	60264.959	4.36	1460203	400000	
V	51	2	72	-0.660	ppb	-0.660	-18.04	6905	2000	
Cr	52	2	72	0.297	ppb	0.297	8.02	3370	5000	
Mn	55	2	72	258.315	ppb	258.315	3.17	776582	10000	
Fe	57	2	72	1909.371	ppb	1909.371	1.79	241298	400000	
Co	59	2	72	0.266	ppb	0.266	7.70	8982	2000	
Ni	60	2	72	0.120	ppb	0.120	30.96	820	5000	
Cu	63	2	72	-0.056	ppb	-0.056	-66.31	4884	5000	
Zn	66	2	72	-0.495	ppb	-0.495	-24.23	1737	5000	
As	75	2	72	10.047	ppb	10.047	1.41	8628	2000	
Se	78	1	72	-0.046	ppb	-0.046	-28.89	28	2000	
Sr	88	2	45	151.248	ppb	151.248	1.60	524596	2000	
Zr	90	2	72	110.573	ppb	110.573	6.44	2784	1000	
Zr	90	1	72	107.873	ppb	107.873	7.25	7242	1000	
Nb	93	2	72	0.341	ppb	0.341	22.29	2714	200	
Mo	95	2	115	0.741	ppb	0.741	4.10	3327	2000	
Pd	105	2	115	-0.009	ppb	-0.009	-46.59	160	100	
Ag	107	2	115	0.004	ppb	0.004	30.24	117	100	
Cd	111	2	115	-0.022	ppb	-0.022	-15.62	3	2000	
Sn	120	2	115	0.073	ppb	0.073	35.39	1187	2000	
Sb	121	2	115	-0.002	ppb	-0.002	-648.42	317	1000	
Ba	137	2	115	48.036	ppb	48.036	2.94	68592	5000	
W	182	2	165	-0.028	ppb	-0.028	-97.18	2817	100	
Pt	195	2	165	-0.001	ppb	-0.001	0.00	0	100	
Tl	205	2	165	-0.025	ppb	-0.025	-16.58	383	2000	
Pb	208	2	165	-0.001	ppb	-0.001	-1191.28	1657	5000	
Th	232	2	165	-0.045	ppb	-0.045	-11.67	1593	2000	
U	238	2	165	0.855	ppb	0.855	5.49	20147	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	887133	2.78	928504	95.54	60	125	
Sc (IS)	45	2	HMI He	4252187	1.31	4755435	89.42	60	125	
Sc IS)	45	3	No Gas	121283450	0.85	129597379	93.58	60	120	
Ge Internal Standard	72	1	HMI H2	23651345	1.27	26580672	88.98	60	125	
Ge Internal Standard	72	2	HMI He	5076596	1.27	5368285	94.57	60	125	
In Internal standard	115	2	HMI He	16319662	1.63	16139116	101.12	60	125	
Ho-165	165	2	HMI He	42026224	3.13	40836889	102.91	60	125	

Sample Report

Sample Table

Sample Name 280-123221-j-7-b
 Data File Name 055SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T17:03:32-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	46.934	ppb	46.934	9.94	7872042	40000	
Be	9	1	6	-0.039	ppb	-0.039	-31.54	5	2000	
B	11	1	6	797.146	ppb	797.146	1.19	21566	100	>LDR
Na	23	2	45	2140.245	ppb	2140.245	0.84	1941274	400000	
Mg	24	2	45	24998.568	ppb	24998.568	1.75	9014865	400000	
Al	27	2	45	5.741	ppb	5.741	16.67	947	400000	
K	39	2	45	1139.217	ppb	1139.217	0.93	543320	400000	
Ca	44	2	45	83454.918	ppb	83454.918	0.83	2146101	400000	
V	51	2	72	-0.703	ppb	-0.703	-9.78	6941	2000	
Cr	52	2	72	0.597	ppb	0.597	2.36	5551	5000	
Mn	55	2	72	0.660	ppb	0.660	14.74	2577	10000	
Fe	57	2	72	21.582	ppb	21.582	0.94	3490	400000	
Co	59	2	72	-0.017	ppb	-0.017	-144.70	6218	2000	
Ni	60	2	72	0.221	ppb	0.221	23.59	1140	5000	
Cu	63	2	72	1.396	ppb	1.396	11.70	16531	5000	
Zn	66	2	72	14.552	ppb	14.552	4.02	19321	5000	
As	75	2	72	0.150	ppb	0.150	2.77	338	2000	
Se	78	1	72	0.027	ppb	0.027	85.01	73	2000	
Sr	88	2	45	267.650	ppb	267.650	2.11	985514	2000	
Zr	90	2	72	63.519	ppb	63.519	10.14	1900	1000	
Zr	90	1	72	52.237	ppb	52.237	15.83	4585	1000	
Nb	93	2	72	0.280	ppb	0.280	11.81	2387	200	
Mo	95	2	115	0.114	ppb	0.114	19.82	907	2000	
Pd	105	2	115	-0.013	ppb	-0.013	-22.06	137	100	
Ag	107	2	115	0.005	ppb	0.005	20.04	137	100	
Cd	111	2	115	0.066	ppb	0.066	26.59	150	2000	
Sn	120	2	115	0.146	ppb	0.146	12.60	1543	2000	
Sb	121	2	115	0.297	ppb	0.297	15.74	1603	1000	
Ba	137	2	115	64.832	ppb	64.832	3.70	91814	5000	
W	182	2	165	-0.028	ppb	-0.028	-180.22	2817	100	
Pt	195	2	165	0.001	ppb	0.001	309.98	10	100	
Tl	205	2	165	-0.021	ppb	-0.021	-9.49	437	2000	
Pb	208	2	165	0.095	ppb	0.095	6.17	3740	5000	
Th	232	2	165	-0.055	ppb	-0.055	-22.42	1393	2000	
U	238	2	165	1.922	ppb	1.922	4.29	44549	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	880652	1.76	928504	94.85	60	125	
Sc (IS)	45	2	HMI He	4513972	1.79	4755435	94.92	60	125	
Sc IS)	45	3	No Gas	121105016	0.28	129597379	93.45	60	120	
Ge Internal Standard	72	1	HMI H2	23643670	3.32	26580672	88.95	60	125	
Ge Internal Standard	72	2	HMI He	5271298	1.28	5368285	98.19	60	125	
In Internal standard	115	2	HMI He	16203742	2.35	16139116	100.40	60	125	
Ho-165	165	2	HMI He	42068044	2.22	40836889	103.01	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5701467
 Data File Name 056_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T17:07:01-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	93.291	ppb	13.451	148400	100	93.3	90	110	
Li	7	3	45	161.407	ppb	2.418	10266017	100	161.4	90	110	>+ -10%
Be	9	1	6	47.087	ppb	2.084	19813	50	94.2	90	110	
B	11	1	6	67.497	ppb	6.626	2307	50	135.0	90	110	>+ -10%
Na	23	2	45	959.204	ppb	0.289	887269	1000	95.9	90	110	
Mg	24	2	45	1000.959	ppb	4.024	350775	1000	100.1	90	110	
Al	27	2	45	1026.319	ppb	2.596	104531	1000	102.6	90	110	
K	39	2	45	943.845	ppb	1.532	460625	1000	94.4	90	110	
Ca	44	2	45	1072.482	ppb	0.916	27158	1000	107.2	90	110	
V	51	2	72	50.276	ppb	1.896	270789	50	100.6	90	110	
Cr	52	2	72	49.441	ppb	3.371	331966	50	98.9	90	110	
Mn	55	2	72	50.808	ppb	2.164	155324	50	101.6	90	110	
Fe	57	2	72	990.401	ppb	1.105	127256	1000	99.0	90	110	
Co	59	2	72	48.918	ppb	2.634	530351	50	97.8	90	110	
Ni	60	2	72	50.533	ppb	2.439	141571	50	101.1	90	110	
Cu	63	2	72	51.113	ppb	0.553	399707	50	102.2	90	110	
Zn	66	2	72	49.568	ppb	2.593	58687	50	99.1	90	110	
As	75	2	72	51.199	ppb	1.599	43758	50	102.4	90	110	
Se	78	1	72	49.752	ppb	3.440	31452	50	99.5	90	110	
Sr	88	2	45	102.175	ppb	0.721	364988	100	102.2	90	110	
Zr	90	2	72	141.823	ppb	6.532	3464	50	283.6	90	110	>+ -10%
Zr	90	1	72	137.554	ppb	1.561	8761	50	275.1	90	110	>+ -10%
Nb	93	2	72	98.642	ppb	0.663	672116	100	98.6	90	110	
Mo	95	2	115	49.941	ppb	3.475	189055	50	99.9	90	110	
Pd	105	2	115	50.271	ppb	2.145	281807	50	100.5	90	110	
Ag	107	2	115	49.813	ppb	2.700	576643	50	99.6	90	110	
Cd	111	2	115	50.175	ppb	3.656	82596	50	100.3	90	110	
Sn	120	2	115	50.932	ppb	1.563	250575	50	101.9	90	110	
Sb	121	2	115	50.557	ppb	0.958	215607	50	101.1	90	110	
Ba	137	2	115	52.087	ppb	2.466	73085	50	104.2	90	110	
W	182	2	165	48.948	ppb	1.262	400171	50	97.9	90	110	
Pt	195	2	165	49.191	ppb	3.518	283856	50	98.4	90	110	
Tl	205	2	165	49.425	ppb	3.829	788855	50	98.8	90	110	
Pb	208	2	165	49.621	ppb	3.287	1037941	50	99.2	90	110	
Th	232	2	165	46.756	ppb	3.985	987007	50	93.5	90	110	
U	238	2	165	47.003	ppb	3.121	1040508	50	94.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	925816	4.59	928504	99.71	60	125	
Sc (IS)	45	2	HMI He	4378377	0.49	4755435	92.07	60	125	
Sc IS)	45	3	No Gas	119325998	0.77	129597379	92.07	60	120	
Ge Internal Standard	72	1	HMI H2	23930584	0.20	26580672	90.03	60	125	
Ge Internal Standard	72	2	HMI He	5148672	1.49	5368285	95.91	60	125	
In Internal standard	115	2	HMI He	16043873	2.95	16139116	99.41	60	125	
Ho-165	165	2	HMI He	40723145	1.18	40836889	99.72	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5701457
 Data File Name 057_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T17:10:32-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	1.502	ppb	308.3	112988	0.1	>RL
Li	7	3	45	54.003	ppb	8.5	8053738	0.05	>RL
Be	9	1	6	0.010	ppb	237.3	25	0.5	
B	11	1	6	9.307	ppb	40.3	663	0.1	>RL
Na	23	2	45	-11.547	ppb	-22.7	69990	25	
Mg	24	2	45	2.905	ppb	22.9	1653	25	
Al	27	2	45	-0.710	ppb	-135.8	267	15	
K	39	2	45	-43.282	ppb	-30.9	127388	50	
Ca	44	2	45	0.404	ppb	1173.0	427	25	
V	51	2	72	0.438	ppb	22.9	12965	1	
Cr	52	2	72	-0.004	ppb	-702.5	1433	1	
Mn	55	2	72	0.003	ppb	1088.0	520	0.5	
Fe	57	2	72	3.365	ppb	37.6	1107	25	
Co	59	2	72	0.035	ppb	158.6	6768	0.5	
Ni	60	2	72	0.034	ppb	61.8	607	1	
Cu	63	2	72	-0.026	ppb	-232.4	5291	1	
Zn	66	2	72	-1.108	ppb	-8.0	1090	5	
As	75	2	72	0.002	ppb	978.8	209	1	
Se	78	1	72	0.066	ppb	68.2	100	1	
Sr	88	2	45	0.102	ppb	10.9	580	1	
Zr	90	2	72	-2.126	ppb	-261.5	517	1	
Zr	90	1	72	-5.518	ppb	-41.5	1869	1	
Nb	93	2	72	3.232	ppb	5.2	22936	2	>RL
Mo	95	2	115	0.005	ppb	716.8	497	0.5	
Pd	105	2	115	0.015	ppb	73.6	300	1	
Ag	107	2	115	0.039	ppb	0.6	540	1	
Cd	111	2	115	0.083	ppb	18.1	180	0.5	
Sn	120	2	115	0.033	ppb	33.6	993	1	
Sb	121	2	115	0.027	ppb	20.7	443	1	
Ba	137	2	115	0.006	ppb	759.5	207	0.5	
W	182	2	165	0.057	ppb	52.6	3424	1	
Pt	195	2	165	0.029	ppb	14.9	173	1	
Tl	205	2	165	0.034	ppb	18.6	1303	0.1	
Pb	208	2	165	0.048	ppb	39.5	2623	0.5	
Th	232	2	165	0.043	ppb	31.9	3410	1	
U	238	2	165	0.045	ppb	27.4	1603	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	894081	4.22	928504	96.29	60	125	
Sc (IS)	45	2	HMI He	4462697	3.18	4755435	93.84	60	125	
Sc IS)	45	3	No Gas	121455858	1.43	129597379	93.72	60	120	
Ge Internal Standard	72	1	HMI H2	24010666	3.69	26580672	90.33	60	125	
Ge Internal Standard	72	2	HMI He	5266651	2.99	5368285	98.11	60	125	
In Internal standard	115	2	HMI He	16382646	1.80	16139116	101.51	60	125	
Ho-165	165	2	HMI He	40722467	3.22	40836889	99.72	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5701469
 Data File Name 058LCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T17:14:03-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	60.067	ppb	5.021	8065198	50	120.1	70	130	
Be	9	1	6	0.904	ppb	22.821	385	1	90.4	70	130	
Na	23	2	45	31.357	ppb	17.452	105106	50	62.7	70	130	> +/-30%
Mg	24	2	45	48.492	ppb	2.992	17629	50	97.0	70	130	
Al	27	2	45	52.006	ppb	9.140	5621	50	104.0	70	130	
K	39	2	45	40.162	ppb	45.150	153782	100	40.2	70	130	> +/-30%
Ca	44	2	45	29.803	ppb	21.328	1153	50	59.6	70	130	> +/-30%
V	51	2	72	6.600	ppb	1.177	42786	5	132.0	70	130	> +/-30%
Cr	52	2	72	2.016	ppb	3.780	14299	2	100.8	70	130	
Mn	55	2	72	1.125	ppb	11.003	3770	1	112.5	70	130	
Fe	57	2	72	54.535	ppb	6.090	7308	50	109.1	70	130	
Co	59	2	72	1.003	ppb	2.756	16308	1	100.3	70	130	
Ni	60	2	72	1.520	ppb	3.900	4547	1.5	101.4	70	130	
Cu	63	2	72	2.056	ppb	3.296	20379	2	102.8	70	130	
Zn	66	2	72	9.787	ppb	5.954	12898	10	97.9	70	130	
As	75	2	72	4.843	ppb	2.430	4148	5	96.9	70	130	
Se	78	1	72	4.730	ppb	6.841	3071	5	94.6	70	130	
Sr	88	2	45	0.949	ppb	1.829	3607	1	94.9	70	130	
Zr	90	2	72	10.060	ppb	45.322	727	0.5	2012.1	70	130	> +/-30%
Zr	90	1	72	1.713	ppb	99.183	2232	0.5	342.6	70	130	> +/-30%
Nb	93	2	72	2.082	ppb	6.404	14003	2	104.1	70	130	
Mo	95	2	115	1.954	ppb	3.816	7889	2	97.7	70	130	
Pd	105	2	115	0.000	ppb	-6237.358	207	1	0.0	70	130	> +/-30%
Ag	107	2	115	4.923	ppb	1.180	57389	5	98.5	70	130	
Cd	111	2	115	0.936	ppb	9.622	1590	1	93.6	70	130	
Sn	120	2	115	9.594	ppb	0.493	48124	10	95.9	70	130	
Sb	121	2	115	1.911	ppb	4.009	8506	2	95.6	70	130	
Ba	137	2	115	1.080	ppb	10.509	1713	1	108.0	70	130	
W	182	2	165	4.778	ppb	2.459	43013	1	477.8	70	130	> +/-30%
Pt	195	2	165	0.002	ppb	3.243	20	1	0.2	70	130	> +/-30%
Tl	205	2	165	0.886	ppb	3.986	15351	1	88.6	70	130	
Pb	208	2	165	0.942	ppb	4.734	21953	1	94.2	70	130	
Th	232	2	165	1.627	ppb	3.791	37898	2	81.4	70	130	
U	238	2	165	0.912	ppb	1.041	21425	1	91.2	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	893548	7.40	928504	96.24	60	125	
Sc (IS)	45	2	HMI He	4392837	4.17	4755435	92.38	60	125	
Sc IS)	45	3	No Gas	119638865	1.53	129597379	92.32	60	120	
Ge Internal Standard	72	1	HMI H2	24141330	1.49	26580672	90.82	60	125	
Ge Internal Standard	72	2	HMI He	4939326	1.68	5368285	92.01	60	125	
In Internal standard	115	2	HMI He	16128530	1.23	16139116	99.93	60	125	
Ho-165	165	2	HMI He	41972474	2.14	40836889	102.78	60	125	

Sample Report

Sample Table

Sample Name 280-123221-c-8-b
 Data File Name 059SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T17:17:34-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	78.670	ppb	78.670	4.65	8329086	40000	
Be	9	1	6	-0.016	ppb	-0.016	-247.55	13	2000	
B	11	1	6	895.740	ppb	895.740	2.24	23239	100	>LDR
Na	23	2	45	10019.964	ppb	10019.964	3.98	8542275	400000	
Mg	24	2	45	63378.022	ppb	63378.022	5.17	22199791	400000	
Al	27	2	45	48.314	ppb	48.314	6.80	5261	400000	
K	39	2	45	2244.171	ppb	2244.171	1.16	904746	400000	
Ca	44	2	45	88039.033	ppb	88039.033	2.82	2200247	400000	
V	51	2	72	-0.478	ppb	-0.478	-2.16	7662	2000	
Cr	52	2	72	0.572	ppb	0.572	12.67	5067	5000	
Mn	55	2	72	134.184	ppb	134.184	2.23	395042	10000	
Fe	57	2	72	215.222	ppb	215.222	1.54	27175	400000	
Co	59	2	72	0.374	ppb	0.374	8.95	9906	2000	
Ni	60	2	72	1.297	ppb	1.297	4.64	3974	5000	
Cu	63	2	72	0.352	ppb	0.352	19.95	7815	5000	
Zn	66	2	72	2.545	ppb	2.545	13.64	5034	5000	
As	75	2	72	0.238	ppb	0.238	10.69	390	2000	
Se	78	1	72	0.046	ppb	0.046	98.00	83	2000	
Sr	88	2	45	238.081	ppb	238.081	3.29	851625	2000	
Zr	90	2	72	34.002	ppb	34.002	53.62	1203	1000	
Zr	90	1	72	32.072	ppb	32.072	12.57	3521	1000	
Nb	93	2	72	2.579	ppb	2.579	11.20	17359	200	
Mo	95	2	115	0.348	ppb	0.348	10.43	1697	2000	
Pd	105	2	115	0.003	ppb	0.003	230.00	213	100	
Ag	107	2	115	0.011	ppb	0.011	30.68	190	100	
Cd	111	2	115	0.052	ppb	0.052	58.49	120	2000	
Sn	120	2	115	0.328	ppb	0.328	4.17	2300	2000	
Sb	121	2	115	0.028	ppb	0.028	40.03	420	1000	
Ba	137	2	115	24.185	ppb	24.185	0.99	32416	5000	
W	182	2	165	0.015	ppb	0.015	244.50	3067	100	
Pt	195	2	165	0.006	ppb	0.006	76.41	40	100	
Tl	205	2	165	0.020	ppb	0.020	59.81	1083	2000	
Pb	208	2	165	0.215	ppb	0.215	4.29	6117	5000	
Th	232	2	165	0.579	ppb	0.579	4.51	14664	2000	
U	238	2	165	1.937	ppb	1.937	1.31	43379	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	846452	3.50	928504	91.16	60	125	
Sc (IS)	45	2	HMI He	4389406	3.74	4755435	92.30	60	125	
Sc IS)	45	3	No Gas	117595581	1.82	129597379	90.74	60	120	
Ge Internal Standard	72	1	HMI H2	22919444	1.75	26580672	86.23	60	125	
Ge Internal Standard	72	2	HMI He	4967837	1.11	5368285	92.54	60	125	
In Internal standard	115	2	HMI He	15272651	1.92	16139116	94.63	60	125	
Ho-165	165	2	HMI He	40635530	2.73	40836889	99.51	60	125	

Sample Report

Sample Table

Sample Name 280-123221-c-9-b
 Data File Name 060SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T17:21:04-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	45.258	ppb	45.258	12.77	7864507	40000	
Be	9	1	6	0.016	ppb	0.016	359.63	27	2000	
B	11	1	6	137.550	ppb	137.550	4.07	4037	100	
Na	23	2	45	3675.188	ppb	3675.188	3.60	3180316	400000	
Mg	24	2	45	10028.581	ppb	10028.581	3.76	3512057	400000	
Al	27	2	45	14.525	ppb	14.525	6.73	1810	400000	
K	39	2	45	701.707	ppb	701.707	3.74	378711	400000	
Ca	44	2	45	19541.549	ppb	19541.549	0.49	488467	400000	
V	51	2	72	-0.420	ppb	-0.420	-18.49	8075	2000	
Cr	52	2	72	0.231	ppb	0.231	13.92	2914	5000	
Mn	55	2	72	239.046	ppb	239.046	1.52	714176	10000	
Fe	57	2	72	3620.744	ppb	3620.744	2.97	453972	400000	
Co	59	2	72	0.335	ppb	0.335	6.17	9643	2000	
Ni	60	2	72	2.467	ppb	2.467	5.99	7232	5000	
Cu	63	2	72	0.255	ppb	0.255	31.51	7198	5000	
Zn	66	2	72	0.310	ppb	0.310	28.64	2624	5000	
As	75	2	72	1.280	ppb	1.280	3.93	1265	2000	
Se	78	1	72	-0.040	ppb	-0.040	-34.64	32	2000	
Sr	88	2	45	39.468	ppb	39.468	5.03	141248	2000	
Zr	90	2	72	2.828	ppb	2.828	276.48	597	1000	
Zr	90	1	72	4.742	ppb	4.742	65.10	2336	1000	
Nb	93	2	72	1.529	ppb	1.529	1.88	10617	200	
Mo	95	2	115	0.055	ppb	0.055	44.21	690	2000	
Pd	105	2	115	-0.025	ppb	-0.025	-7.99	70	100	
Ag	107	2	115	0.009	ppb	0.009	17.58	180	100	
Cd	111	2	115	0.008	ppb	0.008	251.14	53	2000	
Sn	120	2	115	0.100	ppb	0.100	28.93	1323	2000	
Sb	121	2	115	-0.007	ppb	-0.007	-283.11	293	1000	
Ba	137	2	115	16.494	ppb	16.494	2.57	23744	5000	
W	182	2	165	-0.017	ppb	-0.017	-170.75	2840	100	
Pt	195	2	165	0.001	ppb	0.001	227.83	13	100	
Tl	205	2	165	-0.020	ppb	-0.020	-32.16	450	2000	
Pb	208	2	165	0.081	ppb	0.081	11.49	3347	5000	
Th	232	2	165	0.102	ppb	0.102	19.45	4674	2000	
U	238	2	165	-0.014	ppb	-0.014	-15.35	307	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	876417	0.05	928504	94.39	60	125	
Sc (IS)	45	2	HMI He	4384487	2.25	4755435	92.20	60	125	
Sc IS)	45	3	No Gas	121588675	2.07	129597379	93.82	60	120	
Ge Internal Standard	72	1	HMI H2	23720126	2.41	26580672	89.24	60	125	
Ge Internal Standard	72	2	HMI He	5043938	1.79	5368285	93.96	60	125	
In Internal standard	115	2	HMI He	16355262	1.96	16139116	101.34	60	125	
Ho-165	165	2	HMI He	40985328	0.59	40836889	100.36	60	125	

Sample Report

Sample Table

Sample Name 280-123221-c-10-b
 Data File Name 061SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T17:24:33-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	60.026	ppb	60.026	17.90	8145443	40000	
Be	9	1	6	-0.035	ppb	-0.035	-52.89	7	2000	
B	11	1	6	954.873	ppb	954.873	4.73	25495	100	>LDR
Na	23	2	45	5610.418	ppb	5610.418	0.46	4754985	400000	
Mg	24	2	45	27224.313	ppb	27224.313	0.81	9416773	400000	
Al	27	2	45	35.433	ppb	35.433	6.04	3887	400000	
K	39	2	45	779.868	ppb	779.868	3.27	400307	400000	
Ca	44	2	45	52398.844	ppb	52398.844	1.61	1292406	400000	
V	51	2	72	-0.580	ppb	-0.580	-15.30	7468	2000	
Cr	52	2	72	0.266	ppb	0.266	11.16	3230	5000	
Mn	55	2	72	108.224	ppb	108.224	2.55	333020	10000	
Fe	57	2	72	62.966	ppb	62.966	3.10	8776	400000	
Co	59	2	72	0.348	ppb	0.348	7.20	10073	2000	
Ni	60	2	72	0.405	ppb	0.405	3.50	1640	5000	
Cu	63	2	72	0.205	ppb	0.205	21.30	7018	5000	
Zn	66	2	72	-0.453	ppb	-0.453	-47.00	1820	5000	
As	75	2	72	0.050	ppb	0.050	19.74	247	2000	
Se	78	1	72	0.012	ppb	0.012	337.62	65	2000	
Sr	88	2	45	122.819	ppb	122.819	2.18	433666	2000	
Zr	90	2	72	19.083	ppb	19.083	54.75	950	1000	
Zr	90	1	72	14.091	ppb	14.091	27.39	2833	1000	
Nb	93	2	72	1.131	ppb	1.131	6.92	8205	200	
Mo	95	2	115	1.441	ppb	1.441	6.24	5974	2000	
Pd	105	2	115	-0.012	ppb	-0.012	-109.98	143	100	
Ag	107	2	115	0.001	ppb	0.001	336.17	87	100	
Cd	111	2	115	-0.004	ppb	-0.004	-477.96	33	2000	
Sn	120	2	115	0.032	ppb	0.032	34.37	973	2000	
Sb	121	2	115	-0.005	ppb	-0.005	-386.89	300	1000	
Ba	137	2	115	23.648	ppb	23.648	2.56	33649	5000	
W	182	2	165	0.005	ppb	0.005	320.22	2980	100	
Pt	195	2	165	0.000	ppb	0.000	3887.33	7	100	
Tl	205	2	165	-0.009	ppb	-0.009	-74.70	620	2000	
Pb	208	2	165	0.072	ppb	0.072	5.57	3110	5000	
Th	232	2	165	-0.002	ppb	-0.002	-380.24	2440	2000	
U	238	2	165	0.845	ppb	0.845	5.45	19186	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	872660	3.60	928504	93.99	60	125	
Sc (IS)	45	2	HMI He	4328902	1.20	4755435	91.03	60	125	
Sc IS)	45	3	No Gas	120904006	2.90	129597379	93.29	60	120	
Ge Internal Standard	72	1	HMI H2	24137659	1.26	26580672	90.81	60	125	
Ge Internal Standard	72	2	HMI He	5193344	3.56	5368285	96.74	60	125	
In Internal standard	115	2	HMI He	16214278	1.06	16139116	100.47	60	125	
Ho-165	165	2	HMI He	40482100	2.31	40836889	99.13	60	125	

Sample Report

Sample Table

Sample Name 280-123221-c-11-b
 Data File Name 062SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T17:28:03-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	47.506	ppb	47.506	11.63	7873661	40000	
Be	9	1	6	-0.013	ppb	-0.013	-297.71	15	2000	
B	11	1	6	548.278	ppb	548.278	4.53	14536	100	>LDR
Na	23	2	45	4601.407	ppb	4601.407	3.07	4034546	400000	
Mg	24	2	45	18933.811	ppb	18933.811	0.72	6754602	400000	
Al	27	2	45	11.805	ppb	11.805	29.69	1560	400000	
K	39	2	45	1294.212	ppb	1294.212	3.79	590997	400000	
Ca	44	2	45	50162.735	ppb	50162.735	2.99	1275933	400000	
V	51	2	72	-0.546	ppb	-0.546	-10.06	7638	2000	
Cr	52	2	72	0.201	ppb	0.201	4.04	2794	5000	
Mn	55	2	72	369.296	ppb	369.296	3.51	1133373	10000	
Fe	57	2	72	849.009	ppb	849.009	5.66	109880	400000	
Co	59	2	72	0.147	ppb	0.147	17.11	7882	2000	
Ni	60	2	72	0.359	ppb	0.359	19.44	1507	5000	
Cu	63	2	72	0.036	ppb	0.036	57.24	5704	5000	
Zn	66	2	72	-0.535	ppb	-0.535	-20.25	1727	5000	
As	75	2	72	6.801	ppb	6.801	1.63	6031	2000	
Se	78	1	72	-0.038	ppb	-0.038	-67.06	33	2000	
Sr	88	2	45	146.638	ppb	146.638	1.34	533900	2000	
Zr	90	2	72	10.553	ppb	10.553	83.62	770	1000	
Zr	90	1	72	10.151	ppb	10.151	90.62	2610	1000	
Nb	93	2	72	0.819	ppb	0.819	8.42	6038	200	
Mo	95	2	115	0.124	ppb	0.124	43.63	937	2000	
Pd	105	2	115	-0.008	ppb	-0.008	-285.21	163	100	
Ag	107	2	115	0.002	ppb	0.002	29.41	100	100	
Cd	111	2	115	-0.020	ppb	-0.020	-17.83	7	2000	
Sn	120	2	115	0.053	ppb	0.053	93.29	1063	2000	
Sb	121	2	115	-0.030	ppb	-0.030	-51.98	193	1000	
Ba	137	2	115	61.857	ppb	61.857	1.91	86445	5000	
W	182	2	165	-0.006	ppb	-0.006	-59.89	2984	100	
Pt	195	2	165	0.001	ppb	0.001	315.62	10	100	
Tl	205	2	165	-0.022	ppb	-0.022	-35.14	423	2000	
Pb	208	2	165	0.020	ppb	0.020	31.47	2097	5000	
Th	232	2	165	-0.043	ppb	-0.043	-20.76	1643	2000	
U	238	2	165	0.151	ppb	0.151	4.58	4051	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	855410	1.00	928504	92.13	60	125	
Sc (IS)	45	2	HMI He	4464270	1.95	4755435	93.88	60	125	
Sc IS)	45	3	No Gas	120942370	1.13	129597379	93.32	60	120	
Ge Internal Standard	72	1	HMI H2	23853216	0.46	26580672	89.74	60	125	
Ge Internal Standard	72	2	HMI He	5185096	2.50	5368285	96.59	60	125	
In Internal standard	115	2	HMI He	15983812	2.54	16139116	99.04	60	125	
Ho-165	165	2	HMI He	41790392	3.22	40836889	102.33	60	125	

Sample Report

Sample Table

Sample Name 280-123221-c-12-b
 Data File Name 063SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T17:31:33-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	57.051	ppb	57.051	2.50	7986742	40000	
Be	9	1	6	-0.047	ppb	-0.047	-16.07	2	2000	
B	11	1	6	276.316	ppb	276.316	1.84	7552	100	
Na	23	2	45	3347.225	ppb	3347.225	1.89	2948465	400000	
Mg	24	2	45	12080.896	ppb	12080.896	0.38	4297276	400000	
Al	27	2	45	16.136	ppb	16.136	10.05	2003	400000	
K	39	2	45	491.296	ppb	491.296	7.65	311681	400000	
Ca	44	2	45	32660.421	ppb	32660.421	2.91	828146	400000	
V	51	2	72	-0.546	ppb	-0.546	-7.17	7668	2000	
Cr	52	2	72	0.311	ppb	0.311	3.82	3547	5000	
Mn	55	2	72	178.508	ppb	178.508	0.79	550205	10000	
Fe	57	2	72	52.200	ppb	52.200	7.26	7405	400000	
Co	59	2	72	0.615	ppb	0.615	3.87	12985	2000	
Ni	60	2	72	2.672	ppb	2.672	3.44	8039	5000	
Cu	63	2	72	0.163	ppb	0.163	25.45	6711	5000	
Zn	66	2	72	-0.042	ppb	-0.042	-153.49	2300	5000	
As	75	2	72	0.173	ppb	0.173	10.97	353	2000	
Se	78	1	72	-0.045	ppb	-0.045	-46.42	29	2000	
Sr	88	2	45	137.134	ppb	137.134	1.81	497870	2000	
Zr	90	2	72	13.150	ppb	13.150	67.69	827	1000	
Zr	90	1	72	14.542	ppb	14.542	25.41	2846	1000	
Nb	93	2	72	0.634	ppb	0.634	16.88	4791	200	
Mo	95	2	115	0.209	ppb	0.209	9.80	1267	2000	
Pd	105	2	115	-0.014	ppb	-0.014	-89.77	127	100	
Ag	107	2	115	0.005	ppb	0.005	12.69	133	100	
Cd	111	2	115	0.000	ppb	0.000	-26690.74	40	2000	
Sn	120	2	115	0.068	ppb	0.068	19.91	1150	2000	
Sb	121	2	115	-0.002	ppb	-0.002	-815.36	313	1000	
Ba	137	2	115	29.991	ppb	29.991	4.13	42456	5000	
W	182	2	165	-0.040	ppb	-0.040	-61.39	2810	100	
Pt	195	2	165	0.000	ppb	0.000	-2389.30	7	100	
Tl	205	2	165	-0.014	ppb	-0.014	-38.99	573	2000	
Pb	208	2	165	0.035	ppb	0.035	56.04	2517	5000	
Th	232	2	165	-0.059	ppb	-0.059	-7.80	1340	2000	
U	238	2	165	0.717	ppb	0.717	1.09	17580	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	859279	1.62	928504	92.54	60	125	
Sc (IS)	45	2	HMI He	4451171	2.44	4755435	93.60	60	125	
Sc IS)	45	3	No Gas	119455127	1.49	129597379	92.17	60	120	
Ge Internal Standard	72	1	HMI H2	24075930	1.52	26580672	90.58	60	125	
Ge Internal Standard	72	2	HMI He	5202322	1.56	5368285	96.91	60	125	
In Internal standard	115	2	HMI He	16156851	1.88	16139116	100.11	60	125	
Ho-165	165	2	HMI He	43467892	1.82	40836889	106.44	60	125	

Sample Report

Sample Table

Sample Name 280-123221-c-13-b
 Data File Name 064SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T17:35:03-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	50.873	ppb	50.873	1.70	7901936	40000	
Be	9	1	6	-0.021	ppb	-0.021	-73.79	12	2000	
B	11	1	6	967.684	ppb	967.684	3.14	25218	100	>LDR
Na	23	2	45	10413.740	ppb	10413.740	2.99	8975821	400000	
Mg	24	2	45	28025.174	ppb	28025.174	4.93	9929621	400000	
Al	27	2	45	6.613	ppb	6.613	14.92	1020	400000	
K	39	2	45	2143.156	ppb	2143.156	2.60	879832	400000	
Ca	44	2	45	70959.248	ppb	70959.248	4.75	1792803	400000	
V	51	2	72	-0.715	ppb	-0.715	-0.96	6685	2000	
Cr	52	2	72	0.239	ppb	0.239	7.83	3014	5000	
Mn	55	2	72	215.322	ppb	215.322	1.62	654029	10000	
Fe	57	2	72	684.830	ppb	684.830	3.83	87778	400000	
Co	59	2	72	-0.051	ppb	-0.051	-40.78	5678	2000	
Ni	60	2	72	0.073	ppb	0.073	24.39	697	5000	
Cu	63	2	72	0.069	ppb	0.069	48.05	5891	5000	
Zn	66	2	72	0.091	ppb	0.091	89.80	2417	5000	
As	75	2	72	4.466	ppb	4.466	2.95	3983	2000	
Se	78	1	72	-0.037	ppb	-0.037	-103.80	35	2000	
Sr	88	2	45	281.478	ppb	281.478	0.34	1018896	2000	
Zr	90	2	72	57.537	ppb	57.537	11.70	1727	1000	
Zr	90	1	72	63.884	ppb	63.884	6.39	5189	1000	
Nb	93	2	72	0.526	ppb	0.526	10.63	3994	200	
Mo	95	2	115	0.417	ppb	0.417	16.78	2100	2000	
Pd	105	2	115	-0.011	ppb	-0.011	-51.81	150	100	
Ag	107	2	115	0.003	ppb	0.003	55.77	113	100	
Cd	111	2	115	-0.016	ppb	-0.016	-20.81	13	2000	
Sn	120	2	115	0.052	ppb	0.052	24.02	1093	2000	
Sb	121	2	115	-0.031	ppb	-0.031	-67.79	193	1000	
Ba	137	2	115	59.189	ppb	59.189	2.33	85452	5000	
W	182	2	165	-0.021	ppb	-0.021	-81.82	2864	100	
Pt	195	2	165	-0.001	ppb	-0.001	-161.12	3	100	
Tl	205	2	165	-0.023	ppb	-0.023	-20.50	413	2000	
Pb	208	2	165	0.018	ppb	0.018	51.17	2060	5000	
Th	232	2	165	-0.072	ppb	-0.072	-8.51	997	2000	
U	238	2	165	0.035	ppb	0.035	2.99	1427	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	851394	2.22	928504	91.70	60	125	
Sc (IS)	45	2	HMI He	4438186	2.68	4755435	93.33	60	125	
Sc IS)	45	3	No Gas	120223794	0.22	129597379	92.77	60	120	
Ge Internal Standard	72	1	HMI H2	23850123	2.20	26580672	89.73	60	125	
Ge Internal Standard	72	2	HMI He	5126646	2.22	5368285	95.50	60	125	
In Internal standard	115	2	HMI He	16511433	2.11	16139116	102.31	60	125	
Ho-165	165	2	HMI He	41839352	2.18	40836889	102.45	60	125	

Sample Report

Sample Table

Sample Name 280-123261-b-6-b
 Data File Name 065SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T17:38:33-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	87.233	ppb	87.233	4.52	8331118	40000	
Be	9	1	6	-0.007	ppb	-0.007	-298.57	17	2000	
B	11	1	6	691.819	ppb	691.819	2.52	17789	100	>LDR
Na	23	2	45	20552.154	ppb	20552.154	5.22	17863926	400000	
Mg	24	2	45	52367.079	ppb	52367.079	4.31	18804095	400000	
Al	27	2	45	519.500	ppb	519.500	4.90	54584	400000	
K	39	2	45	2261.243	ppb	2261.243	4.09	932739	400000	
Ca	44	2	45	66578.538	ppb	66578.538	0.60	1707308	400000	
V	51	2	72	0.003	ppb	0.003	7234.60	10500	2000	
Cr	52	2	72	1.079	ppb	1.079	8.52	8712	5000	
Mn	55	2	72	161.018	ppb	161.018	2.46	495069	10000	
Fe	57	2	72	1718.152	ppb	1718.152	2.18	222098	400000	
Co	59	2	72	0.752	ppb	0.752	7.30	14423	2000	
Ni	60	2	72	1.131	ppb	1.131	4.10	3684	5000	
Cu	63	2	72	0.586	ppb	0.586	12.26	9980	5000	
Zn	66	2	72	6.310	ppb	6.310	9.45	9566	5000	
As	75	2	72	9.046	ppb	9.046	0.87	7962	2000	
Se	78	1	72	-0.041	ppb	-0.041	-41.09	31	2000	
Sr	88	2	45	302.423	ppb	302.423	4.09	1108542	2000	
Zr	90	2	72	82.273	ppb	82.273	10.40	2260	1000	
Zr	90	1	72	86.671	ppb	86.671	6.97	6094	1000	
Nb	93	2	72	0.430	ppb	0.430	12.88	3380	200	
Mo	95	2	115	0.975	ppb	0.975	2.96	4001	2000	
Pd	105	2	115	0.001	ppb	0.001	1092.28	203	100	
Ag	107	2	115	0.002	ppb	0.002	170.59	93	100	
Cd	111	2	115	-0.003	ppb	-0.003	-665.09	33	2000	
Sn	120	2	115	0.108	ppb	0.108	38.29	1287	2000	
Sb	121	2	115	-0.015	ppb	-0.015	-82.26	247	1000	
Ba	137	2	115	28.557	ppb	28.557	4.28	38680	5000	
W	182	2	165	-0.021	ppb	-0.021	-227.76	2800	100	
Pt	195	2	165	0.002	ppb	0.002	206.55	17	100	
Tl	205	2	165	-0.010	ppb	-0.010	-43.36	613	2000	
Pb	208	2	165	0.382	ppb	0.382	6.03	9648	5000	
Th	232	2	165	0.093	ppb	0.093	25.17	4474	2000	
U	238	2	165	2.459	ppb	2.459	4.46	55264	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	834744	1.77	928504	89.90	60	125	
Sc (IS)	45	2	HMI He	4500377	4.83	4755435	94.64	60	125	
Sc IS)	45	3	No Gas	115056241	0.63	129597379	88.78	60	120	
Ge Internal Standard	72	1	HMI H2	23118800	0.62	26580672	86.98	60	125	
Ge Internal Standard	72	2	HMI He	5190428	2.34	5368285	96.69	60	125	
In Internal standard	115	2	HMI He	15453852	1.53	16139116	95.75	60	125	
Ho-165	165	2	HMI He	40926856	2.60	40836889	100.22	60	125	

Sample Report

Sample Table

Sample Name 280-123261-b-8-b
 Data File Name 066SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T17:42:04-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457081 6020A DOD5
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	43.216	ppb	43.216	8.60	7500851	40000	
Be	9	1	6	0.058	ppb	0.058	88.55	42	2000	
B	11	1	6	261.185	ppb	261.185	1.04	7071	100	
Na	23	2	45	5092.426	ppb	5092.426	1.12	4365548	400000	
Mg	24	2	45	12168.868	ppb	12168.868	1.89	4250250	400000	
Al	27	2	45	6.307	ppb	6.307	5.22	973	400000	
K	39	2	45	1028.386	ppb	1028.386	1.35	488598	400000	
Ca	44	2	45	24736.533	ppb	24736.533	1.27	616360	400000	
V	51	2	72	-0.424	ppb	-0.424	-6.69	8195	2000	
Cr	52	2	72	0.252	ppb	0.252	6.95	3104	5000	
Mn	55	2	72	471.420	ppb	471.420	4.77	1432369	10000	
Fe	57	2	72	8925.292	ppb	8925.292	1.45	1137903	400000	
Co	59	2	72	6.128	ppb	6.128	2.57	71684	2000	
Ni	60	2	72	8.761	ppb	8.761	2.14	24875	5000	
Cu	63	2	72	-0.109	ppb	-0.109	-25.17	4527	5000	
Zn	66	2	72	49.550	ppb	49.550	3.18	58469	5000	
As	75	2	72	1.738	ppb	1.738	4.99	1675	2000	
Se	78	1	72	-0.031	ppb	-0.031	-90.50	37	2000	
Sr	88	2	45	67.352	ppb	67.352	2.02	240253	2000	
Zr	90	2	72	10.986	ppb	10.986	52.81	773	1000	
Zr	90	1	72	15.959	ppb	15.959	47.31	2853	1000	
Nb	93	2	72	0.379	ppb	0.379	19.10	3000	200	
Mo	95	2	115	-0.028	ppb	-0.028	-84.19	363	2000	
Pd	105	2	115	-0.022	ppb	-0.022	-32.39	83	100	
Ag	107	2	115	0.004	ppb	0.004	89.41	123	100	
Cd	111	2	115	-0.008	ppb	-0.008	-191.11	27	2000	
Sn	120	2	115	0.081	ppb	0.081	12.28	1200	2000	
Sb	121	2	115	-0.034	ppb	-0.034	-29.70	173	1000	
Ba	137	2	115	21.989	ppb	21.989	3.23	30887	5000	
W	182	2	165	-0.028	ppb	-0.028	-55.90	2690	100	
Pt	195	2	165	0.002	ppb	0.002	130.87	20	100	
Tl	205	2	165	0.108	ppb	0.108	23.13	2450	2000	
Pb	208	2	165	0.010	ppb	0.010	78.15	1813	5000	
Th	232	2	165	-0.071	ppb	-0.071	-4.80	980	2000	
U	238	2	165	0.153	ppb	0.153	0.63	3947	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	848665	2.35	928504	91.40	60	125	
Sc (IS)	45	2	HMI He	4371459	1.02	4755435	91.93	60	125	
Sc IS)	45	3	No Gas	116625037	1.24	129597379	89.99	60	120	
Ge Internal Standard	72	1	HMI H2	23578405	1.45	26580672	88.71	60	125	
Ge Internal Standard	72	2	HMI He	5131841	0.58	5368285	95.60	60	125	
In Internal standard	115	2	HMI He	15998780	0.82	16139116	99.13	60	125	
Ho-165	165	2	HMI He	40150697	3.10	40836889	98.32	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5701467
 Data File Name 067_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T17:45:35-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	107.141	ppb	23.127	146125	100	107.1	90	110	
Li	7	3	45	152.448	ppb	7.982	9881407	100	152.4	90	110	>+ -10%
Be	9	1	6	47.885	ppb	4.804	19464	50	95.8	90	110	
B	11	1	6	57.686	ppb	18.562	1960	50	115.4	90	110	>+ -10%
Na	23	2	45	935.223	ppb	2.700	840128	1000	93.5	90	110	
Mg	24	2	45	999.060	ppb	4.457	339115	1000	99.9	90	110	
Al	27	2	45	1033.576	ppb	2.373	102004	1000	103.4	90	110	
K	39	2	45	940.971	ppb	2.333	445425	1000	94.1	90	110	
Ca	44	2	45	985.900	ppb	1.452	24227	1000	98.6	90	110	
V	51	2	72	50.916	ppb	2.181	267252	50	101.8	90	110	
Cr	52	2	72	49.044	ppb	2.297	321146	50	98.1	90	110	
Mn	55	2	72	52.184	ppb	2.076	155543	50	104.4	90	110	
Fe	57	2	72	1014.400	ppb	1.378	127067	1000	101.4	90	110	
Co	59	2	72	48.845	ppb	2.162	516487	50	97.7	90	110	
Ni	60	2	72	50.879	ppb	1.202	138996	50	101.8	90	110	
Cu	63	2	72	50.383	ppb	1.459	384206	50	100.8	90	110	
Zn	66	2	72	50.256	ppb	2.515	57964	50	100.5	90	110	
As	75	2	72	51.093	ppb	0.358	42584	50	102.2	90	110	
Se	78	1	72	52.020	ppb	2.292	32037	50	104.0	90	110	
Sr	88	2	45	102.804	ppb	1.433	355875	100	102.8	90	110	
Zr	90	2	72	75.832	ppb	13.563	2057	50	151.7	90	110	>+ -10%
Zr	90	1	72	74.921	ppb	6.614	5593	50	149.8	90	110	>+ -10%
Nb	93	2	72	99.173	ppb	1.108	658882	100	99.2	90	110	
Mo	95	2	115	49.789	ppb	1.118	188214	50	99.6	90	110	
Pd	105	2	115	49.047	ppb	0.782	274543	50	98.1	90	110	
Ag	107	2	115	49.248	ppb	1.314	569311	50	98.5	90	110	
Cd	111	2	115	50.810	ppb	1.714	83547	50	101.6	90	110	
Sn	120	2	115	51.309	ppb	0.790	252044	50	102.6	90	110	
Sb	121	2	115	49.485	ppb	2.400	210698	50	99.0	90	110	
Ba	137	2	115	51.725	ppb	2.641	72476	50	103.5	90	110	
W	182	2	165	48.360	ppb	1.852	400827	50	96.7	90	110	
Pt	195	2	165	47.782	ppb	2.404	279573	50	95.6	90	110	
Tl	205	2	165	48.370	ppb	0.678	783049	50	96.7	90	110	
Pb	208	2	165	48.328	ppb	5.080	1024371	50	96.7	90	110	
Th	232	2	165	46.334	ppb	2.652	991631	50	92.7	90	110	
U	238	2	165	46.617	ppb	2.616	1046234	50	93.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	894308	3.26	928504	96.32	60	125	
Sc (IS)	45	2	HMI He	4243788	2.23	4755435	89.24	60	125	
Sc IS)	45	3	No Gas	117151313	3.03	129597379	90.40	60	120	
Ge Internal Standard	72	1	HMI H2	23318413	1.18	26580672	87.73	60	125	
Ge Internal Standard	72	2	HMI He	5020166	1.23	5368285	93.52	60	125	
In Internal standard	115	2	HMI He	16015019	0.30	16139116	99.23	60	125	
Ho-165	165	2	HMI He	41295000	2.92	40836889	101.12	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5701457
 Data File Name 068_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T17:49:06-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-8.589	ppb	-6.5	109727	0.1	
Li	7	3	45	46.187	ppb	13.3	7675764	0.05	>RL
Be	9	1	6	0.012	ppb	199.8	25	0.5	
B	11	1	6	6.317	ppb	54.3	570	0.1	>RL
Na	23	2	45	-19.409	ppb	-9.6	61860	25	
Mg	24	2	45	2.157	ppb	8.8	1360	25	
Al	27	2	45	-1.072	ppb	-68.7	227	15	
K	39	2	45	-41.928	ppb	-52.9	124990	50	
Ca	44	2	45	-4.206	ppb	-66.6	303	25	
V	51	2	72	0.903	ppb	13.5	14967	1	
Cr	52	2	72	0.028	ppb	85.1	1603	1	
Mn	55	2	72	0.073	ppb	64.8	717	0.5	
Fe	57	2	72	4.494	ppb	16.1	1213	25	
Co	59	2	72	0.077	ppb	72.7	7018	0.5	
Ni	60	2	72	0.097	ppb	42.4	763	1	
Cu	63	2	72	0.143	ppb	2.4	6435	1	
Zn	66	2	72	-0.931	ppb	-18.8	1253	5	
As	75	2	72	0.014	ppb	345.7	212	1	
Se	78	1	72	0.034	ppb	23.8	79	1	
Sr	88	2	45	0.057	ppb	49.7	410	1	
Zr	90	2	72	-1.510	ppb	-399.8	513	1	
Zr	90	1	72	-3.426	ppb	-25.8	1959	1	
Nb	93	2	72	3.292	ppb	8.7	22682	2	>RL
Mo	95	2	115	0.023	ppb	49.8	557	0.5	
Pd	105	2	115	0.020	ppb	46.7	320	1	
Ag	107	2	115	0.048	ppb	32.1	627	1	
Cd	111	2	115	0.060	ppb	58.6	140	0.5	
Sn	120	2	115	0.079	ppb	49.0	1190	1	
Sb	121	2	115	0.047	ppb	104.3	517	1	
Ba	137	2	115	0.017	ppb	103.0	217	0.5	
W	182	2	165	0.068	ppb	24.4	3497	1	
Pt	195	2	165	0.034	ppb	40.8	203	1	
Tl	205	2	165	0.039	ppb	28.0	1390	0.1	
Pb	208	2	165	0.059	ppb	20.0	2853	0.5	
Th	232	2	165	0.034	ppb	27.8	3200	1	
U	238	2	165	0.052	ppb	25.0	1760	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	878817	2.42	928504	94.65	60	125	
Sc (IS)	45	2	HMI He	4365221	3.38	4755435	91.79	60	125	
Sc IS)	45	3	No Gas	118334428	0.41	129597379	91.31	60	120	
Ge Internal Standard	72	1	HMI H2	23860574	2.68	26580672	89.77	60	125	
Ge Internal Standard	72	2	HMI He	5109542	3.38	5368285	95.18	60	125	
In Internal standard	115	2	HMI He	16004938	2.88	16139116	99.17	60	125	
Ho-165	165	2	HMI He	40567835	2.32	40836889	99.34	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5701469
 Data File Name 069LCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T17:52:36-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 007CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	61.773	ppb	8.575	7730262	50	123.5	70	130	
Be	9	1	6	0.977	ppb	8.525	407	1	97.7	70	130	
Na	23	2	45	20.148	ppb	5.564	94924	50	40.3	70	130	> +/-30%
Mg	24	2	45	50.136	ppb	0.378	18053	50	100.3	70	130	
Al	27	2	45	47.573	ppb	4.718	5137	50	95.1	70	130	
K	39	2	45	38.563	ppb	10.949	152073	100	38.6	70	130	> +/-30%
Ca	44	2	45	37.559	ppb	12.946	1340	50	75.1	70	130	
V	51	2	72	6.556	ppb	3.964	43404	5	131.1	70	130	> +/-30%
Cr	52	2	72	1.998	ppb	1.693	14468	2	99.9	70	130	
Mn	55	2	72	0.992	ppb	7.014	3450	1	99.2	70	130	
Fe	57	2	72	51.247	ppb	8.473	7045	50	102.5	70	130	
Co	59	2	72	0.942	ppb	6.518	15994	1	94.2	70	130	
Ni	60	2	72	1.590	ppb	4.340	4831	1.5	106.0	70	130	
Cu	63	2	72	1.949	ppb	4.970	19972	2	97.5	70	130	
Zn	66	2	72	9.278	ppb	7.969	12591	10	92.8	70	130	
As	75	2	72	4.736	ppb	1.790	4140	5	94.7	70	130	
Se	78	1	72	4.949	ppb	5.995	3076	5	99.0	70	130	
Sr	88	2	45	1.026	ppb	3.392	3847	1	102.6	70	130	
Zr	90	2	72	4.610	ppb	73.216	630	0.5	922.0	70	130	> +/-30%
Zr	90	1	72	16.823	ppb	93.212	2837	0.5	3364.6	70	130	> +/-30%
Nb	93	2	72	2.074	ppb	6.644	14239	2	103.7	70	130	
Mo	95	2	115	1.886	ppb	5.138	7532	2	94.3	70	130	
Pd	105	2	115	0.000	ppb	-2708.078	203	1	0.0	70	130	> +/-30%
Ag	107	2	115	4.782	ppb	0.466	54985	5	95.6	70	130	
Cd	111	2	115	1.048	ppb	15.597	1750	1	104.8	70	130	
Sn	120	2	115	9.901	ppb	4.529	48973	10	99.0	70	130	
Sb	121	2	115	1.873	ppb	1.909	8229	2	93.6	70	130	
Ba	137	2	115	1.007	ppb	8.393	1590	1	100.7	70	130	
W	182	2	165	4.787	ppb	7.550	42950	1	478.7	70	130	> +/-30%
Pt	195	2	165	0.003	ppb	115.075	27	1	0.3	70	130	> +/-30%
Tl	205	2	165	0.895	ppb	6.622	15475	1	89.5	70	130	
Pb	208	2	165	0.897	ppb	4.491	20949	1	89.7	70	130	
Th	232	2	165	1.584	ppb	8.830	36835	2	79.2	70	130	
U	238	2	165	0.912	ppb	8.167	21352	1	91.2	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	872311	4.13	928504	93.95	60	125	
Sc (IS)	45	2	HMI He	4354986	0.62	4755435	91.58	60	125	
Sc IS)	45	3	No Gas	114134162	0.63	129597379	88.07	60	120	
Ge Internal Standard	72	1	HMI H2	23166470	2.44	26580672	87.16	60	125	
Ge Internal Standard	72	2	HMI He	5037209	1.35	5368285	93.83	60	125	
In Internal standard	115	2	HMI He	15912052	0.36	16139116	98.59	60	125	
Ho-165	165	2	HMI He	41923651	4.48	40836889	102.66	60	125	

Sample Report

Sample Table

Sample Name rinse-5626316
 Data File Name 070SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T17:56:09-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment PA
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	44.135	ppb	44.135	2.43	7463242	40000	
Be	9	1	6	-0.039	ppb	-0.039	-56.21	5	2000	
B	11	1	6	6.424	ppb	6.424	6.52	570	100	
Na	23	2	45	-21.828	ppb	-21.828	-10.22	57740	400000	
Mg	24	2	45	1.354	ppb	1.354	12.74	1043	400000	
Al	27	2	45	2.099	ppb	2.099	89.53	527	400000	
K	39	2	45	-48.824	ppb	-48.824	-12.26	118488	400000	
Ca	44	2	45	-3.951	ppb	-3.951	-57.21	300	400000	
V	51	2	72	1.615	ppb	1.615	13.39	18590	2000	
Cr	52	2	72	-0.009	ppb	-0.009	-381.65	1357	5000	
Mn	55	2	72	0.118	ppb	0.118	24.10	853	10000	
Fe	57	2	72	8.575	ppb	8.575	11.14	1730	400000	
Co	59	2	72	-0.034	ppb	-0.034	-39.77	5834	2000	
Ni	60	2	72	0.057	ppb	0.057	23.78	650	5000	
Cu	63	2	72	0.739	ppb	0.739	8.64	10970	5000	
Zn	66	2	72	-0.673	ppb	-0.673	-13.22	1543	5000	
As	75	2	72	-0.037	ppb	-0.037	-77.04	169	2000	
Se	78	1	72	-0.065	ppb	-0.065	-10.06	16	2000	
Sr	88	2	45	0.004	ppb	0.004	289.85	210	2000	
Zr	90	2	72	-2.417	ppb	-2.417	-335.70	493	1000	
Zr	90	1	72	-2.509	ppb	-2.509	-107.35	1952	1000	
Nb	93	2	72	1.514	ppb	1.514	9.03	10637	200	
Mo	95	2	115	-0.067	ppb	-0.067	-15.53	213	2000	
Pd	105	2	115	-0.001	ppb	-0.001	-1439.11	197	100	
Ag	107	2	115	0.006	ppb	0.006	115.72	137	100	
Cd	111	2	115	-0.004	ppb	-0.004	-257.27	33	2000	
Sn	120	2	115	0.021	ppb	0.021	68.81	897	2000	
Sb	121	2	115	-0.005	ppb	-0.005	-399.39	293	1000	
Ba	137	2	115	-0.024	ppb	-0.024	-146.48	157	5000	
W	182	2	165	-0.040	ppb	-0.040	-82.33	2597	100	
Pt	195	2	165	0.001	ppb	0.001	287.70	10	100	
Tl	205	2	165	-0.025	ppb	-0.025	-14.65	357	2000	
Pb	208	2	165	-0.012	ppb	-0.012	-48.51	1363	5000	
Th	232	2	165	0.041	ppb	0.041	32.92	3314	2000	
U	238	2	165	-0.021	ppb	-0.021	-8.73	140	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	872551	1.06	928504	93.97	60	125	
Sc (IS)	45	2	HMI He	4212472	2.57	4755435	88.58	60	125	
Sc IS)	45	3	No Gas	115726308	1.04	129597379	89.30	60	120	
Ge Internal Standard	72	1	HMI H2	23256273	0.38	26580672	87.49	60	125	
Ge Internal Standard	72	2	HMI He	5098257	1.97	5368285	94.97	60	125	
In Internal standard	115	2	HMI He	15802209	0.48	16139116	97.91	60	125	
Ho-165	165	2	HMI He	40164761	1.36	40836889	98.35	60	125	

Sample Report

Sample Table

Sample Name rinse-5626316
 Data File Name 071SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T18:15:33-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment PA
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	38.927	ppb	38.927	9.12	7387674	40000	
Be	9	1	6	-0.043	ppb	-0.043	-34.33	3	2000	
B	11	1	6	-0.093	ppb	-0.093	-553.08	400	100	
Na	23	2	45	-29.764	ppb	-29.764	-1.22	50759	400000	
Mg	24	2	45	1.716	ppb	1.716	20.01	1153	400000	
Al	27	2	45	2.086	ppb	2.086	19.36	520	400000	
K	39	2	45	-48.810	ppb	-48.810	-8.10	117188	400000	
Ca	44	2	45	-1.757	ppb	-1.757	-191.76	350	400000	
V	51	2	72	1.255	ppb	1.255	18.92	16491	2000	
Cr	52	2	72	0.007	ppb	0.007	29.86	1440	5000	
Mn	55	2	72	0.165	ppb	0.165	6.28	980	10000	
Fe	57	2	72	9.766	ppb	9.766	12.05	1847	400000	
Co	59	2	72	-0.032	ppb	-0.032	-96.72	5754	2000	
Ni	60	2	72	0.039	ppb	0.039	124.18	587	5000	
Cu	63	2	72	0.665	ppb	0.665	9.41	10233	5000	
Zn	66	2	72	-0.832	ppb	-0.832	-22.12	1340	5000	
As	75	2	72	-0.043	ppb	-0.043	-41.21	161	2000	
Se	78	1	72	-0.020	ppb	-0.020	-151.48	44	2000	
Sr	88	2	45	0.001	ppb	0.001	2162.60	200	2000	
Zr	90	2	72	-2.060	ppb	-2.060	-234.55	493	1000	
Zr	90	1	72	-0.480	ppb	-0.480	-619.03	2056	1000	
Nb	93	2	72	0.463	ppb	0.463	15.29	3494	200	
Mo	95	2	115	-0.072	ppb	-0.072	-18.25	197	2000	
Pd	105	2	115	-0.018	ppb	-0.018	-41.65	107	100	
Ag	107	2	115	0.003	ppb	0.003	93.75	103	100	
Cd	111	2	115	-0.018	ppb	-0.018	-33.79	10	2000	
Sn	120	2	115	0.002	ppb	0.002	1076.20	820	2000	
Sb	121	2	115	-0.045	ppb	-0.045	-20.00	130	1000	
Ba	137	2	115	-0.037	ppb	-0.037	-111.08	140	5000	
W	182	2	165	-0.044	ppb	-0.044	-54.32	2600	100	
Pt	195	2	165	0.001	ppb	0.001	171.79	13	100	
Tl	205	2	165	-0.030	ppb	-0.030	-6.36	283	2000	
Pb	208	2	165	-0.021	ppb	-0.021	-43.89	1193	5000	
Th	232	2	165	-0.069	ppb	-0.069	-6.79	1037	2000	
U	238	2	165	-0.024	ppb	-0.024	-11.77	70	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	875422	0.97	928504	94.28	60	125	
Sc (IS)	45	2	HMI He	4165507	1.85	4755435	87.59	60	125	
Sc IS)	45	3	No Gas	116281106	0.34	129597379	89.72	60	120	
Ge Internal Standard	72	1	HMI H2	23347958	0.11	26580672	87.84	60	125	
Ge Internal Standard	72	2	HMI He	5015852	3.01	5368285	93.43	60	125	
In Internal standard	115	2	HMI He	16091673	2.88	16139116	99.71	60	125	
Ho-165	165	2	HMI He	40682984	2.67	40836889	99.62	60	125	

Sample Report

Sample Table

Sample Name rinse-5620980
 Data File Name 072SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T18:19:05-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment TUNE
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	51.036	ppb	51.036	11.40	7538597	40000	
Be	9	1	6	-0.047	ppb	-0.047	-15.45	2	2000	
B	11	1	6	2.318	ppb	2.318	43.57	470	100	
Na	23	2	45	-31.577	ppb	-31.577	-2.29	50160	400000	
Mg	24	2	45	1.781	ppb	1.781	33.34	1193	400000	
Al	27	2	45	2.411	ppb	2.411	30.59	560	400000	
K	39	2	45	-52.963	ppb	-52.963	-14.59	117871	400000	
Ca	44	2	45	-6.973	ppb	-6.973	-44.42	230	400000	
V	51	2	72	1.394	ppb	1.394	3.67	16972	2000	
Cr	52	2	72	0.027	ppb	0.027	131.74	1547	5000	
Mn	55	2	72	0.109	ppb	0.109	67.68	803	10000	
Fe	57	2	72	10.310	ppb	10.310	4.17	1893	400000	
Co	59	2	72	-0.028	ppb	-0.028	-189.04	5728	2000	
Ni	60	2	72	0.044	ppb	0.044	93.43	597	5000	
Cu	63	2	72	0.612	ppb	0.612	10.57	9720	5000	
Zn	66	2	72	-0.649	ppb	-0.649	-9.71	1527	5000	
As	75	2	72	-0.006	ppb	-0.006	-589.79	190	2000	
Se	78	1	72	-0.038	ppb	-0.038	-66.73	32	2000	
Sr	88	2	45	0.009	ppb	0.009	26.68	230	2000	
Zr	90	2	72	-6.033	ppb	-6.033	-53.35	410	1000	
Zr	90	1	72	-3.604	ppb	-3.604	-196.43	1862	1000	
Nb	93	2	72	0.338	ppb	0.338	16.21	2624	200	
Mo	95	2	115	-0.078	ppb	-0.078	-21.99	170	2000	
Pd	105	2	115	-0.022	ppb	-0.022	-38.11	83	100	
Ag	107	2	115	0.007	ppb	0.007	37.63	150	100	
Cd	111	2	115	-0.022	ppb	-0.022	-16.18	3	2000	
Sn	120	2	115	-0.018	ppb	-0.018	-155.47	707	2000	
Sb	121	2	115	-0.043	ppb	-0.043	-35.34	133	1000	
Ba	137	2	115	0.013	ppb	0.013	113.85	207	5000	
W	182	2	165	-0.076	ppb	-0.076	-54.02	2340	100	
Pt	195	2	165	-0.001	ppb	-0.001	0.00	0	100	
Tl	205	2	165	-0.030	ppb	-0.030	-2.22	290	2000	
Pb	208	2	165	-0.016	ppb	-0.016	-18.07	1297	5000	
Th	232	2	165	-0.079	ppb	-0.079	-5.71	830	2000	
U	238	2	165	-0.024	ppb	-0.024	-3.96	87	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	888137	1.49	928504	95.65	60	125	
Sc (IS)	45	2	HMI He	4238628	2.28	4755435	89.13	60	125	
Sc IS)	45	3	No Gas	114656369	1.61	129597379	88.47	60	120	
Ge Internal Standard	72	1	HMI H2	22841987	2.56	26580672	85.93	60	125	
Ge Internal Standard	72	2	HMI He	4954166	2.40	5368285	92.29	60	125	
In Internal standard	115	2	HMI He	15727015	2.58	16139116	97.45	60	125	
Ho-165	165	2	HMI He	40738832	0.43	40836889	99.76	60	125	

Sample Report

Sample Table

Sample Name rinse-5620980
 Data File Name 073SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T18:22:37-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment TUNE
 ISTD Ref FileName 007CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	47.655	ppb	47.655	8.39	7463549	40000	
Be	9	1	6	-0.051	ppb	-0.051	0.00	0	2000	
B	11	1	6	-1.439	ppb	-1.439	-173.71	367	100	
Na	23	2	45	-31.608	ppb	-31.608	-7.31	49181	400000	
Mg	24	2	45	2.309	ppb	2.309	5.59	1347	400000	
Al	27	2	45	3.723	ppb	3.723	38.08	677	400000	
K	39	2	45	-51.917	ppb	-51.917	-3.17	116003	400000	
Ca	44	2	45	-3.651	ppb	-3.651	-115.58	303	400000	
V	51	2	72	1.304	ppb	1.304	7.63	16281	2000	
Cr	52	2	72	0.001	ppb	0.001	3425.66	1360	5000	
Mn	55	2	72	0.088	ppb	0.088	30.98	730	10000	
Fe	57	2	72	11.630	ppb	11.630	3.33	2027	400000	
Co	59	2	72	-0.007	ppb	-0.007	-505.28	5864	2000	
Ni	60	2	72	0.057	ppb	0.057	74.64	620	5000	
Cu	63	2	72	0.685	ppb	0.685	5.86	10116	5000	
Zn	66	2	72	-0.716	ppb	-0.716	-17.43	1433	5000	
As	75	2	72	-0.002	ppb	-0.002	-2228.03	190	2000	
Se	78	1	72	-0.072	ppb	-0.072	-8.83	12	2000	
Sr	88	2	45	0.012	ppb	0.012	145.50	237	2000	
Zr	90	2	72	-5.896	ppb	-5.896	-102.12	407	1000	
Zr	90	1	72	-0.124	ppb	-0.124	-6647.36	2082	1000	
Nb	93	2	72	0.333	ppb	0.333	21.21	2554	200	
Mo	95	2	115	-0.079	ppb	-0.079	-5.24	163	2000	
Pd	105	2	115	-0.020	ppb	-0.020	-23.65	93	100	
Ag	107	2	115	0.004	ppb	0.004	96.36	117	100	
Cd	111	2	115	-0.012	ppb	-0.012	-94.25	20	2000	
Sn	120	2	115	0.008	ppb	0.008	303.84	817	2000	
Sb	121	2	115	-0.043	ppb	-0.043	-32.90	133	1000	
Ba	137	2	115	0.003	ppb	0.003	1516.88	190	5000	
W	182	2	165	-0.064	ppb	-0.064	-56.33	2524	100	
Pt	195	2	165	0.001	ppb	0.001	177.30	13	100	
Tl	205	2	165	-0.028	ppb	-0.028	-15.92	333	2000	
Pb	208	2	165	-0.023	ppb	-0.023	-35.92	1190	5000	
Th	232	2	165	-0.079	ppb	-0.079	-7.58	870	2000	
U	238	2	165	-0.023	ppb	-0.023	-4.46	107	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	879420	3.02	928504	94.71	60	125	
Sc (IS)	45	2	HMI He	4158532	1.78	4755435	87.45	60	125	
Sc IS)	45	3	No Gas	114589883	2.02	129597379	88.42	60	120	
Ge Internal Standard	72	1	HMI H2	23395189	2.74	26580672	88.02	60	125	
Ge Internal Standard	72	2	HMI He	4882242	1.41	5368285	90.95	60	125	
In Internal standard	115	2	HMI He	15436120	0.52	16139116	95.64	60	125	
Ho-165	165	2	HMI He	42170077	0.57	40836889	103.26	60	125	

Calibration Blank Report

Sample Table

Sample Name2 ICIS-5699924
Data File Name 074CALB.d
Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
Method
Acq Date Time 2019-05-14T18:26:08-06:00
Sample Type CalBlk
Level 1
Dilution 1
Comment

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Li	7	45	1	HMI H2	111331	0.00
Li	7	45	3	No Gas	7368478	0.00
B	11	6	1	HMI H2	380	4.32
Na	23	45	2	HMI He	47433	0.00
Mg	24	45	2	HMI He	1440	1.17
Al	27	45	2	HMI He	573	2.03
K	39	45	2	HMI He	118107	0.00
Ca	44	45	2	HMI He	307	5.86
V	51	72	2	HMI He	15020	0.02
Cr	52	72	2	HMI He	1377	0.58
Mn	55	72	2	HMI He	457	3.19
Fe	57	72	2	HMI He	630	2.48
Co	59	72	2	HMI He	5804	0.13
Ni	60	72	2	HMI He	523	1.48
Cu	63	72	2	HMI He	4644	0.15
Zn	66	72	2	HMI He	2284	0.33
As	75	72	2	HMI He	181	8.65
Se	78	72	1	HMI H2	31	149.37
Sr	88	45	2	HMI He	183	10.45
Zr	90	72	2	HMI He	653	1.52
Zr	90	72	1	HMI H2	2296	0.29
Nb	93	72	2	HMI He	1733	0.61
Mo	95	115	2	HMI He	280	4.60
Pd	105	115	2	HMI He	73	28.40
Ag	107	115	2	HMI He	107	52.98
Cd	111	115	2	HMI He	7	2598.08
Sn	120	115	2	HMI He	853	0.35
Sb	121	115	2	HMI He	290	7.13
Ba	137	115	2	HMI He	217	17.09
W	182	165	2	HMI He	2650	0.25
Pt	195	165	2	HMI He	3	5196.15
Tl	205	165	2	HMI He	320	7.63
Pb	208	165	2	HMI He	1437	1.26
Th	232	165	2	HMI He	700	0.74
U	238	165	2	HMI He	223	8.35

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li-6 Internal Standard	6	1	HMI H2	882524	1.73
Sc (IS)	45	2	HMI He	4165833	5.32
Sc IS)	45	3	No Gas	114950556	0.70
Ge Internal Standard	72	1	HMI H2	23371239	1.45
Ge Internal Standard	72	2	HMI He	4959346	2.56
In Internal standard	115	2	HMI He	15807784	1.56
Ho-165	165	2	HMI He	41189580	2.02

Calibration Standard Report

Sample Table

Sample Name IC-5699925
 Data File Name 075CALS.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 method
 Acq Date Time 2019-05-14T18:29:41-06:00
 Sample Type CalStd
 Level 2
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Li	7	45	1	HMI H2	173615	0.00
Li	7	45	3	No Gas	12078797	0.00
Be	9	6	1	HMI H2	37926	0.00
B	11	6	1	HMI H2	3160	0.23
Na	23	45	2	HMI He	1602963	0.00
Mg	24	45	2	HMI He	661936	0.00
Al	27	45	2	HMI He	201761	0.00
K	39	45	2	HMI He	764516	0.00
Ca	44	45	2	HMI He	48942	0.01
V	51	72	2	HMI He	516647	0.00
Cr	52	72	2	HMI He	651011	0.00
Mn	55	72	2	HMI He	302785	0.00
Fe	57	72	2	HMI He	246525	0.00
Co	59	72	2	HMI He	1006764	0.00
Ni	60	72	2	HMI He	280039	0.00
Cu	63	72	2	HMI He	765162	0.00
Zn	66	72	2	HMI He	112957	0.00
As	75	72	2	HMI He	84116	0.00
Se	78	72	1	HMI H2	62949	0.00
Sr	88	45	2	HMI He	702389	0.00
Zr	90	72	2	HMI He	2897	0.17
Zr	90	72	1	HMI H2	7616	0.08
Nb	93	72	2	HMI He	1395702	0.00
Mo	95	115	2	HMI He	362707	0.00
Pd	105	115	2	HMI He	532563	0.00
Ag	107	115	2	HMI He	1124314	0.00
Cd	111	115	2	HMI He	161831	0.00
Sn	120	115	2	HMI He	501022	0.00
Sb	121	115	2	HMI He	429624	0.00
Ba	137	115	2	HMI He	143097	0.00
W	182	165	2	HMI He	832046	0.00
Pt	195	165	2	HMI He	590195	0.00
Tl	205	165	2	HMI He	1595928	0.00
Pb	208	165	2	HMI He	2123929	0.00
Th	232	165	2	HMI He	2256779	0.00
U	238	165	2	HMI He	2332337	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	852636	1.53	882524	96.61	60	125	
Sc (IS)	45	2	HMI He	4291930	0.37	4165833	103.03	60	125	
Sc IS)	45	3	No Gas	114505706	1.29	114950556	99.61	60	120	
Ge Internal Standard	72	1	HMI H2	23374212	1.53	23371239	100.01	60	125	
Ge Internal Standard	72	2	HMI He	4912607	1.58	4959346	99.06	60	125	
In Internal standard	115	2	HMI He	15520160	1.29	15807784	98.18	60	125	
Ho-165	165	2	HMI He	40817156	2.85	41189580	99.10	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5701467
 Data File Name 076_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T18:33:12-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	114.734	ppb	6.398	145726	100	114.7	90	110	>+ -10%
Li	7	3	45	100.494	ppb	4.460	9864169	100	100.5	90	110	
Be	9	1	6	47.493	ppb	1.744	18910	50	95.0	90	110	
B	11	1	6	42.116	ppb	8.422	1623	50	84.2	90	110	>+ -10%
Na	23	2	45	1012.808	ppb	0.840	818732	1000	101.3	90	110	
Mg	24	2	45	1052.362	ppb	0.837	341820	1000	105.2	90	110	
Al	27	2	45	1014.269	ppb	0.522	100489	1000	101.4	90	110	
K	39	2	45	1021.544	ppb	0.598	440837	1000	102.2	90	110	
Ca	44	2	45	977.674	ppb	3.696	23586	1000	97.8	90	110	
V	51	2	72	48.548	ppb	1.004	260861	50	97.1	90	110	
Cr	52	2	72	48.577	ppb	2.192	319839	50	97.2	90	110	
Mn	55	2	72	49.347	ppb	1.399	151037	50	98.7	90	110	
Fe	57	2	72	1012.631	ppb	1.662	126279	1000	101.3	90	110	
Co	59	2	72	49.634	ppb	3.854	507088	50	99.3	90	110	
Ni	60	2	72	48.786	ppb	3.133	138106	50	97.6	90	110	
Cu	63	2	72	49.133	ppb	0.456	381826	50	98.3	90	110	
Zn	66	2	72	49.795	ppb	2.195	57911	50	99.6	90	110	
As	75	2	72	49.703	ppb	1.788	42286	50	99.4	90	110	
Se	78	1	72	49.489	ppb	1.392	31123	50	99.0	90	110	
Sr	88	2	45	101.530	ppb	2.591	349251	100	101.5	90	110	
Zr	90	2	72	34.211	ppb	37.520	1427	50	68.4	90	110	>+ -10%
Zr	90	1	72	33.977	ppb	36.611	4098	50	68.0	90	110	>+ -10%
Nb	93	2	72	106.198	ppb	3.783	748646	100	106.2	90	110	
Mo	95	2	115	50.503	ppb	5.866	186404	50	101.0	90	110	
Pd	105	2	115	51.725	ppb	5.720	280110	50	103.5	90	110	
Ag	107	2	115	50.306	ppb	3.779	575443	50	100.6	90	110	
Cd	111	2	115	49.860	ppb	2.434	82127	50	99.7	90	110	
Sn	120	2	115	49.096	ppb	4.967	250652	50	98.2	90	110	
Sb	121	2	115	49.795	ppb	3.564	217903	50	99.6	90	110	
Ba	137	2	115	50.230	ppb	3.614	73245	50	100.5	90	110	
W	182	2	165	50.366	ppb	0.924	418631	50	100.7	90	110	
Pt	195	2	165	49.469	ppb	3.080	290648	50	98.9	90	110	
Tl	205	2	165	49.648	ppb	2.855	788840	50	99.3	90	110	
Pb	208	2	165	49.572	ppb	3.277	1049255	50	99.1	90	110	
Th	232	2	165	46.498	ppb	1.012	1044923	50	93.0	90	110	
U	238	2	165	45.465	ppb	1.587	1055428	50	90.9	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	895243	2.58	882524	101.44	60	125	
Sc (IS)	45	2	HMI He	4203329	0.86	4165833	100.90	60	125	
Sc IS)	45	3	No Gas	116184281	0.73	114950556	101.07	60	120	
Ge Internal Standard	72	1	HMI H2	23335643	0.75	23371239	99.85	60	125	
Ge Internal Standard	72	2	HMI He	4958586	2.13	4959346	99.98	60	125	
In Internal standard	115	2	HMI He	15804872	4.00	15807784	99.98	60	125	
Ho-165	165	2	HMI He	40624411	1.69	41189580	98.63	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5701457
 Data File Name 077_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T18:36:44-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-8.634	ppb	-129.6	110251	0.1	
Li	7	3	45	4.954	ppb	70.4	7509655	0.05	>RL
Be	9	1	6	0.093	ppb	7.2	37	0.5	
B	11	1	6	-1.394	ppb	-124.3	340	0.1	
Na	23	2	45	-3.811	ppb	-54.3	45391	25	
Mg	24	2	45	0.045	ppb	1299.4	1490	25	
Al	27	2	45	-2.772	ppb	-37.8	313	15	
K	39	2	45	1.136	ppb	1205.4	120701	50	
Ca	44	2	45	-2.857	ppb	-70.2	243	25	
V	51	2	72	-0.259	ppb	-62.0	14059	1	
Cr	52	2	72	0.009	ppb	158.9	1477	1	
Mn	55	2	72	0.060	ppb	69.9	657	0.5	
Fe	57	2	72	4.117	ppb	3.6	1173	25	
Co	59	2	72	0.054	ppb	99.5	6525	0.5	
Ni	60	2	72	0.048	ppb	72.0	677	1	
Cu	63	2	72	0.238	ppb	26.9	6641	1	
Zn	66	2	72	-1.015	ppb	-5.3	1183	5	
As	75	2	72	0.001	ppb	4292.6	186	1	
Se	78	1	72	0.113	ppb	36.7	103	1	
Sr	88	2	45	0.077	ppb	15.4	457	1	
Zr	90	2	72	-5.050	ppb	-58.1	553	1	
Zr	90	1	72	-6.449	ppb	-44.1	1972	1	
Nb	93	2	72	4.729	ppb	8.0	35939	2	>RL
Mo	95	2	115	0.062	ppb	40.8	513	0.5	
Pd	105	2	115	0.062	ppb	18.0	417	1	
Ag	107	2	115	0.045	ppb	17.1	630	1	
Cd	111	2	115	0.056	ppb	30.0	100	0.5	
Sn	120	2	115	0.065	ppb	31.5	1197	1	
Sb	121	2	115	0.032	ppb	71.5	437	1	
Ba	137	2	115	0.006	ppb	934.2	227	0.5	
W	182	2	165	0.109	ppb	23.6	3570	1	
Pt	195	2	165	0.029	ppb	23.3	177	1	
Tl	205	2	165	0.075	ppb	12.9	1533	0.1	
Pb	208	2	165	0.069	ppb	23.5	2920	0.5	
Th	232	2	165	0.140	ppb	14.5	3897	1	
U	238	2	165	0.077	ppb	9.2	2030	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	881908	1.23	882524	99.93	60	125	
Sc (IS)	45	2	HMI He	4238897	2.82	4165833	101.75	60	125	
Sc IS)	45	3	No Gas	115310932	1.73	114950556	100.31	60	120	
Ge Internal Standard	72	1	HMI H2	23628533	2.13	23371239	101.10	60	125	
Ge Internal Standard	72	2	HMI He	5092363	2.55	4959346	102.68	60	125	
In Internal standard	115	2	HMI He	16002633	3.50	15807784	101.23	60	125	
Ho-165	165	2	HMI He	41244007	0.50	41189580	100.13	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5701469
 Data File Name 078LCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T18:40:15-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	7.426	ppb	15.212	7756029	50	14.9	70	130	> +/-30%
Be	9	1	6	0.944	ppb	7.218	357	1	94.4	70	130	
Na	23	2	45	43.408	ppb	9.539	80628	50	86.8	70	130	
Mg	24	2	45	47.523	ppb	3.172	16765	50	95.0	70	130	
Al	27	2	45	47.969	ppb	7.620	5288	50	95.9	70	130	
K	39	2	45	96.980	ppb	7.552	149332	100	97.0	70	130	
Ca	44	2	45	31.451	ppb	15.063	1053	50	62.9	70	130	> +/-30%
V	51	2	72	5.252	ppb	2.070	41803	5	105.0	70	130	
Cr	52	2	72	2.030	ppb	7.484	14760	2	101.5	70	130	
Mn	55	2	72	0.953	ppb	11.167	3377	1	95.3	70	130	
Fe	57	2	72	53.866	ppb	5.162	7348	50	107.7	70	130	
Co	59	2	72	0.993	ppb	12.546	15901	1	99.3	70	130	
Ni	60	2	72	1.526	ppb	1.949	4851	1.5	101.7	70	130	
Cu	63	2	72	2.015	ppb	5.048	20222	2	100.8	70	130	
Zn	66	2	72	9.432	ppb	3.661	12882	10	94.3	70	130	
As	75	2	72	4.626	ppb	6.011	4117	5	92.5	70	130	
Se	78	1	72	4.927	ppb	4.390	3106	5	98.5	70	130	
Sr	88	2	45	1.058	ppb	9.463	3814	1	105.8	70	130	
Zr	90	2	72	0.849	ppb	367.340	677	0.5	169.7	70	130	> +/-30%
Zr	90	1	72	2.950	ppb	123.696	2433	0.5	590.0	70	130	> +/-30%
Nb	93	2	72	3.210	ppb	7.814	24441	2	160.5	70	130	> +/-30%
Mo	95	2	115	2.065	ppb	4.960	7985	2	103.2	70	130	
Pd	105	2	115	0.045	ppb	23.265	320	1	4.5	70	130	> +/-30%
Ag	107	2	115	4.778	ppb	5.316	55332	5	95.6	70	130	
Cd	111	2	115	1.056	ppb	9.556	1763	1	105.6	70	130	
Sn	120	2	115	9.444	ppb	3.772	49454	10	94.4	70	130	
Sb	121	2	115	1.861	ppb	9.207	8506	2	93.0	70	130	
Ba	137	2	115	1.012	ppb	20.120	1703	1	101.2	70	130	
W	182	2	165	4.702	ppb	0.569	42719	1	470.2	70	130	> +/-30%
Pt	195	2	165	0.001	ppb	170.410	7	1	0.1	70	130	> +/-30%
Tl	205	2	165	0.932	ppb	6.061	15578	1	93.2	70	130	
Pb	208	2	165	0.959	ppb	4.288	22347	1	95.9	70	130	
Th	232	2	165	1.683	ppb	1.202	39659	2	84.2	70	130	
U	238	2	165	0.927	ppb	2.476	22403	1	92.7	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	849655	1.79	882524	96.28	60	125	
Sc (IS)	45	2	HMI He	4187508	1.85	4165833	100.52	60	125	
Sc IS)	45	3	No Gas	118152616	2.26	114950556	102.79	60	120	
Ge Internal Standard	72	1	HMI H2	23200808	2.39	23371239	99.27	60	125	
Ge Internal Standard	72	2	HMI He	4981599	1.55	4959346	100.45	60	125	
In Internal standard	115	2	HMI He	15973125	2.85	15807784	101.05	60	125	
Ho-165	165	2	HMI He	41863181	2.13	41189580	101.64	60	125	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name ICSA-5695552
 Data File Name 079ICSA.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T18:43:46-06:00
 Sample Type ICSA
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-17.209	ppb	-90.6	102557	10	
Li	7	3	45	-10.560	ppb	-75.1	6780977	10	
Be	9	1	6	0.038	ppb	57.5	13	1	
B	11	1	6	8.241	ppb	30.4	557	10	
Na	23	2	45	95458.632	ppb	2.6	71039593	100000	
Mg	24	2	45	96173.215	ppb	1.5	30403464	100000	
Al	27	2	45	96882.679	ppb	1.5	9329307	100000	
K	39	2	45	98715.387	ppb	2.2	30472538	100000	
V	51	2	72	-0.165	ppb	-119.1	13622	1	
Cr	52	2	72	1.387	ppb	6.8	10060	1	>RL or LOD
Mn	55	2	72	0.538	ppb	9.0	2017	1	
Co	59	2	72	0.276	ppb	20.5	8272	1	
Ni	60	2	72	0.206	ppb	29.2	1060	1	
Cu	63	2	72	0.569	ppb	8.1	8666	1	
Zn	66	2	72	-0.402	ppb	-11.2	1767	1	
As	75	2	72	0.081	ppb	14.0	240	1	
Se	78	1	72	0.146	ppb	20.3	115	1	
Sr	88	2	45	1.852	ppb	6.8	6405	1	>RL or LOD
Nb	93	2	72	19.177	ppb	7.3	131356	1	>RL or LOD
Mo	95	2	115	2074.933	ppb	1.3	7078813	2000	>RL or LOD
Pd	105	2	115	0.046	ppb	15.4	297	1	
Ag	107	2	115	0.060	ppb	23.9	733	1	
Cd	111	2	115	0.736	ppb	10.6	1127	1	
Sn	120	2	115	0.111	ppb	39.9	1313	1	
Sb	121	2	115	0.119	ppb	13.1	750	1	
Ba	137	2	115	0.934	ppb	5.4	1457	1	
W	182	2	165	0.395	ppb	5.2	5808	1	
Pt	195	2	165	0.020	ppb	68.2	117	1	
Tl	205	2	165	0.004	ppb	71.1	377	1	
Pb	208	2	165	0.290	ppb	11.1	7454	1	
Th	232	2	165	0.653	ppb	5.2	15194	1	
U	238	2	165	0.020	ppb	18.0	667	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	793743	0.38	882524	89.94	60	125	
Sc (IS)	45	2	HMI He	4108703	2.01	4165833	98.63	60	125	
Sc IS)	45	3	No Gas	109526302	1.63	114950556	95.28	60	120	
Ge Internal Standard	72	1	HMI H2	21881004	1.63	23371239	93.62	60	125	
Ge Internal Standard	72	2	HMI He	4767301	1.75	4959346	96.13	60	125	
In Internal standard	115	2	HMI He	14609753	1.63	15807784	92.42	60	125	
Ho-165	165	2	HMI He	40155453	1.34	41189580	97.49	60	125	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name ICSAB-5695553
 Data File Name 080ICSB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T18:47:14-06:00
 Sample Type ICSB
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	1	45	172.490	ppb	6.129	155691	100	172.5	80	120	>+ -20%
Li	7	3	45	164.240	ppb	2.535	10645187	100	164.2	80	120	>+ -20%
Be	9	1	6	100.726	ppb	2.184	33791	100	100.7	80	120	
B	11	1	6	5.449	ppb	59.454	460	100	5.4	80	120	>+ -20%
V	51	2	72	99.108	ppb	3.676	489287	100	99.1	80	120	
Cr	52	2	72	96.808	ppb	2.414	602202	100	96.8	80	120	
Mn	55	2	72	101.524	ppb	1.115	293771	100	101.5	80	120	
Co	59	2	72	97.942	ppb	3.431	942285	100	97.9	80	120	
Ni	60	2	72	93.344	ppb	3.769	249764	100	93.3	80	120	
Cu	63	2	72	91.868	ppb	3.169	671937	100	91.9	80	120	
Zn	66	2	72	94.701	ppb	2.589	102353	100	94.7	80	120	
As	75	2	72	103.126	ppb	2.337	82888	100	103.1	80	120	
Se	78	1	72	104.402	ppb	1.561	60503	100	104.4	80	120	
Sr	88	2	45	209.557	ppb	1.602	701958	100	209.6	80	120	>+ -20%
Zr	90	2	72	126.589	ppb	15.607	3337	100	126.6	80	120	>+ -20%
Zr	90	1	72	100.881	ppb	13.684	7045	100	100.9	80	120	>+ -20%
Nb	93	2	72	251.715	ppb	1.343	1678425	100	251.7	80	120	
Mo	95	2	115	2207.907	ppb	3.266	7669592	100	2207.9	80	120	>+ -20%
Pd	105	2	115	97.081	ppb	3.439	495200	100	97.1	80	120	
Ag	107	2	115	98.086	ppb	4.467	1056189	100	98.1	80	120	
Cd	111	2	115	98.869	ppb	3.611	153279	100	98.9	80	120	
Sn	120	2	115	101.233	ppb	3.472	485939	100	101.2	80	120	
Sb	121	2	115	109.554	ppb	5.212	450718	100	109.6	80	120	
Ba	137	2	115	107.668	ppb	2.294	147630	100	107.7	80	120	
W	182	2	165	98.819	ppb	0.689	808898	100	98.8	80	120	
Pt	195	2	165	91.022	ppb	3.405	528212	100	91.0	80	120	
Tl	205	2	165	98.113	ppb	2.405	1539568	100	98.1	80	120	
Pb	208	2	165	94.267	ppb	3.156	1969259	100	94.3	80	120	
Th	232	2	165	101.920	ppb	3.640	2260628	100	101.9	80	120	
U	238	2	165	94.859	ppb	4.715	2173823	100	94.9	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	754139	0.51	882524	85.45	60	125	
Sc (IS)	45	2	HMI He	4093931	1.50	4165833	98.27	60	125	
Sc (IS)	45	3	No Gas	108515327	1.01	114950556	94.40	60	120	
Ge Internal Standard	72	1	HMI H2	21519209	1.74	23371239	92.08	60	125	
Ge Internal Standard	72	2	HMI He	4694907	1.72	4959346	94.67	60	125	
In Internal standard	115	2	HMI He	14874672	2.27	15807784	94.10	60	125	
Ho-165	165	2	HMI He	40130237	2.41	41189580	97.43	60	125	

Sample Report

Sample Table

Sample Name RINSE
 Data File Name 081SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T18:50:44-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-12.764	ppb	-12.764	-129.93	6923646	40000	
Be	9	1	6	0.163	ppb	0.163	9.00	58	2000	
B	11	1	6	-0.494	ppb	-0.494	-575.16	333	100	
Na	23	2	45	147.088	ppb	147.088	7.23	159028	400000	
Mg	24	2	45	76.084	ppb	76.084	12.53	25909	400000	
Al	27	2	45	72.908	ppb	72.908	8.34	7722	400000	
K	39	2	45	95.326	ppb	95.326	19.01	148617	400000	
Ca	44	2	45	51.973	ppb	51.973	19.66	1537	400000	
V	51	2	72	-0.177	ppb	-0.177	-88.70	14593	2000	
Cr	52	2	72	0.069	ppb	0.069	61.15	1890	5000	
Mn	55	2	72	0.124	ppb	0.124	35.33	860	10000	
Fe	57	2	72	77.704	ppb	77.704	9.45	10610	400000	
Co	59	2	72	0.028	ppb	0.028	68.87	6295	2000	
Ni	60	2	72	0.037	ppb	0.037	118.93	647	5000	
Cu	63	2	72	0.134	ppb	0.134	34.47	5878	5000	
Zn	66	2	72	0.054	ppb	0.054	415.23	2427	5000	
As	75	2	72	0.041	ppb	0.041	35.93	223	2000	
Se	78	1	72	0.180	ppb	0.180	6.59	143	2000	
Sr	88	2	45	0.170	ppb	0.170	33.29	767	2000	
Zr	90	2	72	3.891	ppb	3.891	273.59	763	1000	
Zr	90	1	72	10.727	ppb	10.727	137.39	2857	1000	
Nb	93	2	72	0.295	ppb	0.295	15.25	3944	200	
Mo	95	2	115	3.888	ppb	3.888	3.74	14630	2000	
Pd	105	2	115	0.148	ppb	0.148	0.27	877	100	
Ag	107	2	115	0.091	ppb	0.091	16.18	1143	100	
Cd	111	2	115	0.077	ppb	0.077	22.10	133	2000	
Sn	120	2	115	0.139	ppb	0.139	5.16	1560	2000	
Sb	121	2	115	0.108	ppb	0.108	20.03	763	1000	
Ba	137	2	115	0.026	ppb	0.026	88.23	253	5000	
W	182	2	165	0.144	ppb	0.144	8.40	3917	100	
Pt	195	2	165	0.070	ppb	0.070	30.27	423	100	
Tl	205	2	165	0.109	ppb	0.109	7.84	2110	2000	
Pb	208	2	165	0.098	ppb	0.098	8.51	3597	5000	
Th	232	2	165	0.071	ppb	0.071	14.32	2357	2000	
U	238	2	165	0.094	ppb	0.094	26.33	2457	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	802609	0.90	882524	90.94	60	125	
Sc (IS)	45	2	HMI He	4183497	2.17	4165833	100.42	60	125	
Sc IS)	45	3	No Gas	112731128	2.15	114950556	98.07	60	120	
Ge Internal Standard	72	1	HMI H2	23188477	2.55	23371239	99.22	60	125	
Ge Internal Standard	72	2	HMI He	5126069	2.44	4959346	103.36	60	125	
In Internal standard	115	2	HMI He	15815288	3.29	15807784	100.05	60	125	
Ho-165	165	2	HMI He	41813222	1.79	41189580	101.51	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5701467
 Data File Name 082_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T18:54:15-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	76.340	ppb	12.809	137170	100	76.3	90	110	>+ -10%
Li	7	3	45	85.164	ppb	9.626	9177047	100	85.2	90	110	>+ -10%
Be	9	1	6	50.174	ppb	5.808	18700	50	100.3	90	110	
B	11	1	6	43.883	ppb	18.050	1567	50	87.8	90	110	>+ -10%
Na	23	2	45	1018.953	ppb	2.173	832847	1000	101.9	90	110	
Mg	24	2	45	996.047	ppb	1.794	327335	1000	99.6	90	110	
Al	27	2	45	987.788	ppb	3.285	99007	1000	98.8	90	110	
K	39	2	45	995.092	ppb	2.501	437509	1000	99.5	90	110	
Ca	44	2	45	1017.283	ppb	2.157	24824	1000	101.7	90	110	
V	51	2	72	47.782	ppb	2.902	262615	50	95.6	90	110	
Cr	52	2	72	47.850	ppb	0.697	321981	50	95.7	90	110	
Mn	55	2	72	49.230	ppb	1.483	153968	50	98.5	90	110	
Fe	57	2	72	992.639	ppb	0.763	126508	1000	99.3	90	110	
Co	59	2	72	49.935	ppb	1.787	521466	50	99.9	90	110	
Ni	60	2	72	47.951	ppb	2.423	138752	50	95.9	90	110	
Cu	63	2	72	48.493	ppb	1.822	385074	50	97.0	90	110	
Zn	66	2	72	49.486	ppb	2.360	58834	50	99.0	90	110	
As	75	2	72	49.389	ppb	0.889	42940	50	98.8	90	110	
Se	78	1	72	49.563	ppb	2.256	32047	50	99.1	90	110	
Sr	88	2	45	102.707	ppb	1.865	357414	100	102.7	90	110	
Zr	90	2	72	22.067	ppb	7.865	1180	50	44.1	90	110	>+ -10%
Zr	90	1	72	27.907	ppb	16.534	3881	50	55.8	90	110	>+ -10%
Nb	93	2	72	90.886	ppb	1.237	655118	100	90.9	90	110	
Mo	95	2	115	50.467	ppb	3.577	188862	50	100.9	90	110	
Pd	105	2	115	51.072	ppb	3.618	280393	50	102.1	90	110	
Ag	107	2	115	49.145	ppb	3.619	569642	50	98.3	90	110	
Cd	111	2	115	48.993	ppb	2.951	81754	50	98.0	90	110	
Sn	120	2	115	49.545	ppb	3.345	256395	50	99.1	90	110	
Sb	121	2	115	49.193	ppb	3.624	218017	50	98.4	90	110	
Ba	137	2	115	50.669	ppb	0.930	74903	50	101.3	90	110	
W	182	2	165	48.898	ppb	1.279	417453	50	97.8	90	110	
Pt	195	2	165	48.211	ppb	0.969	290948	50	96.4	90	110	
Tl	205	2	165	49.096	ppb	2.888	801176	50	98.2	90	110	
Pb	208	2	165	48.882	ppb	4.123	1062345	50	97.8	90	110	
Th	232	2	165	46.929	ppb	2.300	1082865	50	93.9	90	110	
U	238	2	165	46.279	ppb	1.501	1103174	50	92.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	838528	2.91	882524	95.01	60	125	
Sc (IS)	45	2	HMI He	4252861	2.16	4165833	102.09	60	125	
Sc IS)	45	3	No Gas	112314649	2.09	114950556	97.71	60	120	
Ge Internal Standard	72	1	HMI H2	23997607	1.22	23371239	102.68	60	125	
Ge Internal Standard	72	2	HMI He	5065963	0.60	4959346	102.15	60	125	
In Internal standard	115	2	HMI He	16009020	2.55	15807784	101.27	60	125	
Ho-165	165	2	HMI He	41715776	0.98	41189580	101.28	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5701457
 Data File Name 083_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T18:57:47-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-21.367	ppb	-35.3	105600	0.1	
Li	7	3	45	-7.373	ppb	-38.0	7076495	0.05	
Be	9	1	6	0.104	ppb	61.0	38	0.5	
B	11	1	6	-0.511	ppb	-295.3	340	0.1	
Na	23	2	45	22.410	ppb	12.6	64607	25	
Mg	24	2	45	-0.494	ppb	-108.4	1293	25	
Al	27	2	45	-2.425	ppb	-35.5	340	15	
K	39	2	45	1.687	ppb	921.6	119174	50	
Ca	44	2	45	-4.949	ppb	-33.7	190	25	
V	51	2	72	-0.570	ppb	-4.2	12148	1	
Cr	52	2	72	0.045	ppb	42.9	1670	1	
Mn	55	2	72	0.055	ppb	32.5	623	0.5	
Fe	57	2	72	6.303	ppb	22.6	1417	25	
Co	59	2	72	0.067	ppb	130.0	6511	0.5	
Ni	60	2	72	0.055	ppb	18.5	680	1	
Cu	63	2	72	0.221	ppb	3.9	6355	1	
Zn	66	2	72	-1.079	ppb	-11.6	1083	5	
As	75	2	72	0.037	ppb	117.4	213	1	
Se	78	1	72	0.113	ppb	26.4	103	1	
Sr	88	2	45	0.106	ppb	19.1	547	1	
Zr	90	2	72	-9.651	ppb	-45.0	437	1	
Zr	90	1	72	-6.882	ppb	-46.6	1949	1	
Nb	93	2	72	2.928	ppb	8.1	22358	2	>RL
Mo	95	2	115	0.321	ppb	9.5	1487	0.5	
Pd	105	2	115	0.080	ppb	16.5	513	1	
Ag	107	2	115	0.043	ppb	28.4	610	1	
Cd	111	2	115	0.064	ppb	60.3	113	0.5	
Sn	120	2	115	0.029	ppb	108.5	1013	1	
Sb	121	2	115	0.006	ppb	297.9	320	1	
Ba	137	2	115	0.086	ppb	64.2	347	0.5	
W	182	2	165	0.087	ppb	45.6	3500	1	
Pt	195	2	165	0.025	ppb	12.2	157	1	
Tl	205	2	165	0.066	ppb	9.9	1430	0.1	
Pb	208	2	165	0.057	ppb	7.4	2750	0.5	
Th	232	2	165	0.088	ppb	10.1	2804	1	
U	238	2	165	0.069	ppb	8.5	1920	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	821723	1.66	882524	93.11	60	125	
Sc (IS)	45	2	HMI He	4180916	3.93	4165833	100.36	60	125	
Sc IS)	45	3	No Gas	113077866	0.92	114950556	98.37	60	120	
Ge Internal Standard	72	1	HMI H2	23583320	2.25	23371239	100.91	60	125	
Ge Internal Standard	72	2	HMI He	4966181	2.30	4959346	100.14	60	125	
In Internal standard	115	2	HMI He	16023565	1.02	15807784	101.37	60	125	
Ho-165	165	2	HMI He	42620182	1.31	41189580	103.47	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5701469
 Data File Name 084LCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T19:01:18-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	0.229	ppb	833.724	7215724	50	0.5	70	130	> +/-30%
Be	9	1	6	0.956	ppb	16.460	353	1	95.6	70	130	
Na	23	2	45	65.959	ppb	4.432	97655	50	131.9	70	130	> +/-30%
Mg	24	2	45	47.608	ppb	1.148	16782	50	95.2	70	130	
Al	27	2	45	44.804	ppb	4.747	4971	50	89.6	70	130	
K	39	2	45	88.724	ppb	12.005	146598	100	88.7	70	130	
Ca	44	2	45	33.465	ppb	2.159	1100	50	66.9	70	130	> +/-30%
V	51	2	72	4.708	ppb	1.979	38583	5	94.2	70	130	
Cr	52	2	72	1.986	ppb	4.223	14289	2	99.3	70	130	
Mn	55	2	72	0.972	ppb	19.408	3390	1	97.2	70	130	
Fe	57	2	72	56.152	ppb	2.519	7545	50	112.3	70	130	
Co	59	2	72	0.998	ppb	9.639	15774	1	99.8	70	130	
Ni	60	2	72	1.419	ppb	3.674	4494	1.5	94.6	70	130	
Cu	63	2	72	1.991	ppb	2.751	19792	2	99.5	70	130	
Zn	66	2	72	9.792	ppb	3.040	13142	10	97.9	70	130	
As	75	2	72	4.630	ppb	2.835	4074	5	92.6	70	130	
Se	78	1	72	5.085	ppb	4.007	3134	5	101.7	70	130	
Sr	88	2	45	1.075	ppb	2.272	3864	1	107.5	70	130	
Zr	90	2	72	-5.470	ppb	-37.895	527	0.5	-1093.9	70	130	> +/-30%
Zr	90	1	72	-0.350	ppb	-998.154	2209	0.5	-70.0	70	130	> +/-30%
Nb	93	2	72	1.683	ppb	8.042	13489	2	84.2	70	130	
Mo	95	2	115	2.233	ppb	3.732	8626	2	111.7	70	130	
Pd	105	2	115	0.047	ppb	17.327	333	1	4.7	70	130	> +/-30%
Ag	107	2	115	5.016	ppb	4.774	58145	5	100.3	70	130	
Cd	111	2	115	1.059	ppb	18.043	1773	1	105.9	70	130	
Sn	120	2	115	9.652	ppb	5.525	50548	10	96.5	70	130	
Sb	121	2	115	1.941	ppb	6.688	8879	2	97.0	70	130	
Ba	137	2	115	1.064	ppb	14.647	1783	1	106.4	70	130	
W	182	2	165	4.980	ppb	2.658	43765	1	498.0	70	130	> +/-30%
Pt	195	2	165	0.002	ppb	114.484	13	1	0.2	70	130	> +/-30%
Tl	205	2	165	0.982	ppb	4.076	15935	1	98.2	70	130	
Pb	208	2	165	1.013	ppb	4.133	22850	1	101.3	70	130	
Th	232	2	165	1.674	ppb	3.993	38292	2	83.7	70	130	
U	238	2	165	0.970	ppb	1.863	22747	1	97.0	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	831739	0.79	882524	94.25	60	125	
Sc (IS)	45	2	HMI He	4183851	1.57	4165833	100.43	60	125	
Sc (IS)	45	3	No Gas	112472826	0.43	114950556	97.84	60	120	
Ge Internal Standard	72	1	HMI H2	22689209	2.71	23371239	97.08	60	125	
Ge Internal Standard	72	2	HMI He	4924242	2.39	4959346	99.29	60	125	
In Internal standard	115	2	HMI He	15991326	3.62	15807784	101.16	60	125	
Ho-165	165	2	HMI He	40644532	1.86	41189580	98.68	60	125	

Blank Report

Sample Table

Sample Name mb 280-457053/1-a
 Data File Name 085_BLK.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T19:04:49-06:00
 Sample Type Blank
 Dilution 1
 Comment 457053 SOIL 6020A
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	1	45	-23.219	ppb	-41.01713312	100558	0.1
Li	7	3	45	-23.124	ppb	-34.60141055	6807517	0.05
Be	9	1	6	0.024	ppb	91.94357514	8	0.5
Na	23	2	45	99.821	ppb	7.168081041	120895	25
Mg	24	2	45	21.993	ppb	2.340078628	8372	25
Al	27	2	45	7.304	ppb	20.51307498	1270	15
K	39	2	45	-2.937	ppb	-364.4333593	115624	50
Ca	44	2	45	59.126	ppb	8.067773526	1677	25
V	51	2	72	-1.445	ppb	-5.100773347	7668	1
Cr	52	2	72	0.641	ppb	9.911257147	5558	1
Mn	55	2	72	0.652	ppb	8.738274991	2440	0.5
Fe	57	2	72	34.806	ppb	9.081911318	4927	25
Co	59	2	72	0.024	ppb	126.462269	6024	0.5
Ni	60	2	72	0.804	ppb	6.218926474	2784	1
Cu	63	2	72	2.488	ppb	2.44719894	23666	1
Zn	66	2	72	3.305	ppb	3.886632299	5964	5
As	75	2	72	-0.036	ppb	-67.09384108	149	1
Se	78	1	72	-0.016	ppb	-2.685655939	20	1
Sr	88	2	45	0.551	ppb	7.915500708	2030	1
Zr	90	2	72	3.285	ppb	20.63397587	727	1
Zr	90	1	72	13.459	ppb	31.98885085	2940	1
Nb	93	2	72	2.923	ppb	5.678406071	22245	2
Mo	95	2	115	0.430	ppb	1.706609634	1863	0.5
Pd	105	2	115	0.065	ppb	36.48849145	430	1
Ag	107	2	115	0.015	ppb	12.53176623	273	1
Cd	111	2	115	0.008	ppb	267.5432896	20	0.5
Sn	120	2	115	0.275	ppb	23.87503265	2247	1
Sb	121	2	115	0.009	ppb	61.08347957	330	1
Ba	137	2	115	0.286	ppb	5.608892599	630	0.5
W	182	2	165	0.168	ppb	28.0639045	4161	1
Pt	195	2	165	0.003	ppb	103.8238652	20	1
Tl	205	2	165	0.022	ppb	36.06674304	687	0.1
Pb	208	2	165	0.077	ppb	14.95719991	3177	0.5
Th	232	2	165	0.638	ppb	6.104734915	15665	1
U	238	2	165	0.037	ppb	5.363977627	1120	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	793338	1.04	882524	89.89	60	125	
Sc (IS)	45	2	HMI He	4104152	2.35	4165833	98.52	60	125	
Sc IS)	45	3	No Gas	114784494	1.86	114950556	99.86	60	120	
Ge Internal Standard	72	1	HMI H2	22826062	1.33	23371239	97.67	60	125	
Ge Internal Standard	72	2	HMI He	4944065	3.54	4959346	99.69	60	125	
In Internal standard	115	2	HMI He	15763296	4.34	15807784	99.72	60	125	
Ho-165	165	2	HMI He	42310865	2.04	41189580	102.72	60	125	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name lcs 280-457053/2-a
 Data File Name 086LCS.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T19:08:21-06:00
 Sample Type LCS-s
 Dilution 1
 Analyst Denver Metals
 Comment 457053 SOIL 6020A
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	368.079	368.079	ppb	1.148	16044036	2000	18.4	80	120	NewName Main CR1 Failed
Be	9	1	6	207.753	207.753	ppb	2.085	74405	200	103.9	80	120	
Na	23	2	45	92.137	92.137	ppb	6.602	118231	200	46.1	80	120	NewName Main CR1 Failed
Mg	24	1	45	22.618	22.618	ppb	2.905	90930	200	11.3	80	120	NewName Main CR1 Failed
Mg	24	2	45	21.879	21.879	ppb	4.174	8555	200000	0.0	80	120	NewName Main CR1 Failed
Al	27	2	45	2090.863	2090.863	ppb	4.958	206797	200000	1.0	80	120	NewName Main CR1 Failed
K	39	2	45	-1.616	-1.616	ppb	-543.431	119111	200000	0.0	80	120	NewName Main CR1 Failed
Ca	44	2	45	842.565	842.565	ppb	8.115	20432	200000	0.4	80	120	NewName Main CR1 Failed
V	51	2	72	201.891	201.891	ppb	0.745	1028010	200	100.9	80	120	
Cr	52	2	72	215.868	215.868	ppb	1.639	1404126	200	107.9	80	120	
(Cr)	53	2	72	199.929	199.929	ppb	1.311	167084	200	100.0	80	120	
Mn	55	2	72	207.408	207.408	ppb	1.103	627640	200	103.7	80	120	
Fe	57	2	72	2115.572	2115.572	ppb	2.507	260775	200000	1.1	80	120	NewName Main CR1 Failed
Co	59	2	72	223.294	223.294	ppb	2.471	2241159	200	111.6	80	120	
Ni	60	2	72	209.038	209.038	ppb	1.093	584928	200	104.5	80	120	
Cu	63	2	72	203.377	203.377	ppb	1.006	1551735	200	101.7	80	120	
Zn	66	2	72	200.982	200.982	ppb	2.611	224809	200	100.5	80	120	
As	75	2	72	194.091	194.091	ppb	2.031	163127	200	97.0	80	120	
Se	78	1	72	189.013	189.013	ppb	2.913	116982	200	94.5	80	120	
(Se)	82	1	72	167.170	167.170	ppb	3.155	48793	200	83.6	80	120	
Sr	88	2	45	223.128	223.128	ppb	6.146	768140	200	111.6	80	120	
Nb	93	2	72	2.071	2.071	ppb	9.207	16161	400	0.5	80	120	NewName Main CR1 Failed
Mo	95	2	115	200.330	200.330	ppb	4.470	751734	200	100.2	80	120	
Pd	105	2	115	0.036	0.036	ppb	34.552	273	200	0.0	80	120	NewName Main CR1 Failed
Ag	107	2	115	211.305	211.305	ppb	5.400	2457918	200	105.7	80	120	
Cd	111	2	115	204.302	204.302	ppb	3.114	342374	200	102.2	80	120	
(Cd)	114	2	115	203.511	203.511	ppb	1.593	851350	200	101.8	80	120	
Sn	120	2	115	206.073	206.073	ppb	4.037	1067976	200	103.0	80	120	
Sb	121	2	115	210.452	210.452	ppb	1.978	935939	200	105.2	80	110	
Ba	137	2	115	213.385	213.385	ppb	4.301	315820	200	106.7	80	120	
W	182	2	165	101.775	101.775	ppb	4.132	879109	200	50.9	80	120	NewName Main CR1 Failed
Pt	195	2	165	0.001	0.001	ppb	352.706	7	200	0.0	80	120	NewName Main CR1 Failed
Tl	205	2	165	203.041	203.041	ppb	2.119	3363055	200	101.5	80	120	
(Pb)	206	2	165	200.388	200.388	ppb	2.603	1084262	200	100.2	80	120	
(Pb)	207	2	165	205.661	205.661	ppb	3.556	996916	200	102.8	80	120	
Pb	208	2	165	206.787	206.787	ppb	1.721	4557795	200	103.4	80	120	
Th	232	2	165	186.867	186.867	ppb	2.918	4375103	200	93.4	80	120	
U	238	2	165	198.679	198.679	ppb	2.085	4807340	200	99.3	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	805123	1.14	882524	91.23	60	125	
Sc (IS)	45	2	HMI He	4213734	3.75	4165833	101.15	60	125	
Sc (S)	45	3	No Gas	114373216	0.99	114950556	99.50	60	120	
Ge Internal Standard	72	1	HMI H2	22990047	1.65	23371239	98.37	60	125	
Ge Internal Standard	72	2	HMI He	4913336	1.13	4959346	99.07	60	125	
In Internal standard	115	2	HMI He	16079435	3.66	15807784	101.72	60	125	
Ho-165	165	2	HMI He	42343274	1.15	41189580	102.80	60	125	

Sample Report

Sample Table

Sample Name 280-123032-a-1-c
 Data File Name 087SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T19:11:50-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457053 SOIL 6020A
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	98.264	ppb	98.264	9.63	9602112	40000	
Be	9	1	6	7.292	ppb	7.292	6.77	2504	2000	
B	11	1	6	287.376	ppb	287.376	0.88	7605	100	
Na	23	2	45	839.701	ppb	839.701	6.43	703368	400000	
Mg	24	2	45	15969.240	ppb	15969.240	4.57	5293389	400000	
Al	27	2	45	51092.757	ppb	51092.757	4.40	5156606	400000	
K	39	2	45	13546.250	ppb	13546.250	5.90	4487140	400000	
Ca	44	2	45	19701.344	ppb	19701.344	3.33	481121	400000	
V	51	2	72	102.320	ppb	102.320	2.92	544438	2000	
Cr	52	2	72	20.868	ppb	20.868	3.08	141153	5000	
Mn	55	2	72	2618.692	ppb	2618.692	4.89	8157592	10000	
Fe	57	2	72	145043.697	ppb	145043.697	0.35	18387797	400000	
Co	59	2	72	28.294	ppb	28.294	1.76	297910	2000	
Ni	60	2	72	17.689	ppb	17.689	1.20	51503	5000	
Cu	63	2	72	34.343	ppb	34.343	2.18	273977	5000	
Zn	66	2	72	528.793	ppb	528.793	2.85	605601	5000	
As	75	2	72	27.358	ppb	27.358	2.16	23856	2000	
Se	78	1	72	4.554	ppb	4.554	3.80	2874	2000	
Sr	88	2	45	146.997	ppb	146.997	6.05	517715	2000	
Zr	90	2	72	30806.001	ppb	30806.001	2.40	714640	1000	>LDR
Zr	90	1	72	32387.719	ppb	32387.719	0.97	1711530	1000	>LDR
Nb	93	2	72	32.726	ppb	32.726	1.00	236955	200	
Mo	95	2	115	2.669	ppb	2.669	2.35	10497	2000	
Pd	105	2	115	0.590	ppb	0.590	2.00	3390	100	
Ag	107	2	115	0.293	ppb	0.293	3.24	3587	100	
Cd	111	2	115	1.389	ppb	1.389	10.79	2380	2000	
Sn	120	2	115	9.116	ppb	9.116	2.15	48993	2000	
Sb	121	2	115	0.321	ppb	0.321	4.89	1753	1000	
Ba	137	2	115	698.425	ppb	698.425	2.59	1053036	5000	
W	182	2	165	0.888	ppb	0.888	6.14	10193	100	
Pt	195	2	165	0.022	ppb	0.022	48.35	137	100	
Tl	205	2	165	1.255	ppb	1.255	4.72	20754	2000	
Pb	208	2	165	83.842	ppb	83.842	1.41	1817736	5000	
Th	232	2	165	226.347	ppb	226.347	1.52	5210318	2000	
U	238	2	165	14.404	ppb	14.404	1.76	342812	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	771859	0.69	882524	87.46	60	125	
Sc (IS)	45	2	HMI He	4312358	5.02	4165833	103.52	60	125	
Sc IS)	45	3	No Gas	113725335	1.73	114950556	98.93	60	120	
Ge Internal Standard	72	1	HMI H2	23198396	1.75	23371239	99.26	60	125	
Ge Internal Standard	72	2	HMI He	5065097	2.56	4959346	102.13	60	125	
In Internal standard	115	2	HMI He	16376267	1.86	15807784	103.60	60	125	
Ho-165	165	2	HMI He	41639312	2.67	41189580	101.09	60	125	

Sample Report

Sample Table

Sample Name 280-123032-a-1-cSD@5
 Data File Name 088SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T19:15:17-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457053 SOIL 6020A
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	11.059	ppb	11.059	74.98	7371018	40000	
Be	9	1	6	1.307	ppb	1.307	23.85	465	2000	
B	11	1	6	59.624	ppb	59.624	6.55	1907	100	
Na	23	2	45	177.916	ppb	177.916	2.59	175830	400000	
Mg	24	2	45	3286.352	ppb	3286.352	0.45	1020818	400000	
Al	27	2	45	10563.283	ppb	10563.283	1.10	998563	400000	
K	39	2	45	2819.619	ppb	2819.619	2.59	965486	400000	
Ca	44	2	45	4053.919	ppb	4053.919	1.59	92881	400000	
V	51	2	72	20.034	ppb	20.034	4.23	115661	2000	
Cr	52	2	72	4.162	ppb	4.162	2.03	28473	5000	
Mn	55	2	72	529.639	ppb	529.639	1.94	1606124	10000	
Fe	57	2	72	29968.742	ppb	29968.742	1.95	3695237	400000	
Co	59	2	72	5.907	ppb	5.907	5.98	65012	2000	
Ni	60	2	72	3.610	ppb	3.610	5.94	10630	5000	
Cu	63	2	72	7.467	ppb	7.467	1.20	61563	5000	
Zn	66	2	72	110.327	ppb	110.327	1.36	124741	5000	
As	75	2	72	5.367	ppb	5.367	3.24	4698	2000	
Se	78	1	72	0.952	ppb	0.952	16.97	611	2000	
Sr	88	2	45	30.697	ppb	30.697	3.66	101403	2000	
Zr	90	2	72	6165.818	ppb	6165.818	1.09	139678	1000	>LDR
Zr	90	1	72	6751.936	ppb	6751.936	5.24	350792	1000	>LDR
Nb	93	2	72	6.550	ppb	6.550	4.11	47494	200	
Mo	95	2	115	0.617	ppb	0.617	3.97	2554	2000	
Pd	105	2	115	0.109	ppb	0.109	18.95	663	100	
Ag	107	2	115	0.061	ppb	0.061	19.10	803	100	
Cd	111	2	115	0.294	ppb	0.294	10.00	490	2000	
Sn	120	2	115	1.922	ppb	1.922	1.19	10627	2000	
Sb	121	2	115	0.033	ppb	0.033	49.09	433	1000	
Ba	137	2	115	142.513	ppb	142.513	2.11	207293	5000	
W	182	2	165	0.120	ppb	0.120	13.81	3734	100	
Pt	195	2	165	0.002	ppb	0.002	157.16	17	100	
Tl	205	2	165	0.219	ppb	0.219	9.71	3934	2000	
Pb	208	2	165	16.761	ppb	16.761	1.84	368556	5000	
Th	232	2	165	42.216	ppb	42.216	0.55	982783	2000	
U	238	2	165	2.812	ppb	2.812	1.04	67835	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	799483	1.04	882524	90.59	60	125	
Sc (IS)	45	2	HMI He	4031485	0.66	4165833	96.78	60	125	
Sc IS)	45	3	No Gas	111045678	1.56	114950556	96.60	60	120	
Ge Internal Standard	72	1	HMI H2	22712521	2.68	23371239	97.18	60	125	
Ge Internal Standard	72	2	HMI He	4926506	2.59	4959346	99.34	60	125	
In Internal standard	115	2	HMI He	15780761	0.58	15807784	99.83	60	125	
Ho-165	165	2	HMI He	42079365	1.68	41189580	102.16	60	125	

Sample Report

Sample Table

Sample Name 280-123032-a-1-d.ms
 Data File Name 089SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T19:18:49-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457053 SOIL 6020A
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	462.017	ppb	462.017	0.77	17697978	40000	
Be	9	1	6	219.269	ppb	219.269	1.82	72335	2000	
B	11	1	6	2826.707	ppb	2826.707	3.34	69042	100	>LDR
Na	23	2	45	1220.917	ppb	1220.917	3.68	959867	400000	
Mg	24	2	45	19777.747	ppb	19777.747	3.44	6285411	400000	
Al	27	2	45	66404.376	ppb	66404.376	2.99	6428167	400000	
K	39	2	45	16827.379	ppb	16827.379	3.01	5321041	400000	
Ca	44	2	45	27097.560	ppb	27097.560	1.56	634503	400000	
V	51	2	72	330.356	ppb	330.356	2.68	1601047	2000	
Cr	52	2	72	239.626	ppb	239.626	4.06	1490820	5000	
Mn	55	2	72	3695.320	ppb	3695.320	4.13	10690907	10000	
Fe	57	2	72	179186.453	ppb	179186.453	2.59	21090107	400000	
Co	59	2	72	250.879	ppb	250.879	5.08	2409296	2000	
Ni	60	2	72	223.538	ppb	223.538	4.70	598212	5000	
Cu	63	2	72	249.162	ppb	249.162	4.86	1817212	5000	
Zn	66	2	72	870.431	ppb	870.431	3.01	924403	5000	
As	75	2	72	213.752	ppb	213.752	2.54	171936	2000	
Se	78	1	72	190.257	ppb	190.257	2.43	109043	2000	
Sr	88	2	45	392.902	ppb	392.902	2.59	1327664	2000	
Zr	90	2	72	36150.660	ppb	36150.660	5.91	778047	1000	>LDR
Zr	90	1	72	37571.170	ppb	37571.170	1.27	1821518	1000	>LDR
Nb	93	2	72	51.885	ppb	51.885	3.60	347772	200	
Mo	95	2	115	190.993	ppb	190.993	3.32	702596	2000	
Pd	105	2	115	0.631	ppb	0.631	4.74	3484	100	
Ag	107	2	115	197.373	ppb	197.373	4.13	2250930	100	
Cd	111	2	115	201.467	ppb	201.467	2.72	330901	2000	
Sn	120	2	115	158.999	ppb	158.999	2.26	808085	2000	
Sb	121	2	115	52.190	ppb	52.190	2.65	227656	1000	
Ba	137	2	115	1098.507	ppb	1098.507	3.58	1592775	5000	
W	182	2	165	48.640	ppb	48.640	1.85	407828	100	
Pt	195	2	165	0.015	ppb	0.015	71.42	90	100	
Tl	205	2	165	200.293	ppb	200.293	3.17	3208998	2000	
Pb	208	2	165	335.072	ppb	335.072	2.54	7144686	5000	
Th	232	2	165	264.457	ppb	264.457	3.87	5988741	2000	
U	238	2	165	205.534	ppb	205.534	5.61	4809653	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	741519	0.47	882524	84.02	60	125	
Sc (IS)	45	2	HMI He	4132547	3.36	4165833	99.20	60	125	
Sc IS)	45	3	No Gas	110804300	0.43	114950556	96.39	60	120	
Ge Internal Standard	72	1	HMI H2	21289262	1.91	23371239	91.09	60	125	
Ge Internal Standard	72	2	HMI He	4705783	4.30	4959346	94.89	60	125	
In Internal standard	115	2	HMI He	15759639	4.11	15807784	99.70	60	125	
Ho-165	165	2	HMI He	40965424	0.93	41189580	99.46	60	125	

Sample Report

Sample Table

Sample Name 280-123032-a-1-e msd
 Data File Name 090SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T19:22:17-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457053 SOIL 6020A
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	458.290	ppb	458.290	4.19	17310151	40000	
Be	9	1	6	217.564	ppb	217.564	1.76	70904	2000	
B	11	1	6	2782.149	ppb	2782.149	0.81	67138	100	>LDR
Na	23	2	45	831.186	ppb	831.186	3.15	650519	400000	
Mg	24	2	45	19650.354	ppb	19650.354	4.45	6075871	400000	
Al	27	2	45	60263.332	ppb	60263.332	1.71	5675999	400000	
K	39	2	45	18641.455	ppb	18641.455	1.93	5722733	400000	
Ca	44	2	45	24416.470	ppb	24416.470	1.64	556201	400000	
V	51	2	72	308.819	ppb	308.819	3.53	1593243	2000	
Cr	52	2	72	219.401	ppb	219.401	2.12	1453453	5000	
Mn	55	2	72	2908.972	ppb	2908.972	3.90	8957436	10000	
Fe	57	2	72	152966.311	ppb	152966.311	3.81	19153878	400000	
Co	59	2	72	238.272	ppb	238.272	4.37	2434821	2000	
Ni	60	2	72	211.404	ppb	211.404	2.17	602453	5000	
Cu	63	2	72	228.304	ppb	228.304	2.29	1773608	5000	
Zn	66	2	72	748.572	ppb	748.572	2.52	846403	5000	
As	75	2	72	201.022	ppb	201.022	2.81	172061	2000	
Se	78	1	72	189.361	ppb	189.361	2.07	109416	2000	
Sr	88	2	45	352.151	ppb	352.151	3.02	1157814	2000	
Zr	90	2	72	32552.201	ppb	32552.201	2.23	746302	1000	>LDR
Zr	90	1	72	36025.091	ppb	36025.091	3.76	1760341	1000	>LDR
Nb	93	2	72	53.657	ppb	53.657	2.65	382795	200	
Mo	95	2	115	191.186	ppb	191.186	2.05	702769	2000	
Pd	105	2	115	0.744	ppb	0.744	4.70	4091	100	
Ag	107	2	115	197.362	ppb	197.362	3.67	2248331	100	
Cd	111	2	115	196.918	ppb	196.918	4.40	322850	2000	
Sn	120	2	115	164.772	ppb	164.772	3.35	836276	2000	
Sb	121	2	115	62.349	ppb	62.349	3.28	271549	1000	
Ba	137	2	115	1102.992	ppb	1102.992	5.99	1596359	5000	
W	182	2	165	53.397	ppb	53.397	0.89	445370	100	
Pt	195	2	165	0.022	ppb	0.022	14.51	133	100	
Tl	205	2	165	203.644	ppb	203.644	2.87	3247194	2000	
Pb	208	2	165	295.891	ppb	295.891	3.31	6279159	5000	
Th	232	2	165	289.911	ppb	289.911	4.85	6535159	2000	
U	238	2	165	224.067	ppb	224.067	2.06	5221250	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	732577	0.62	882524	83.01	60	125	
Sc (IS)	45	2	HMI He	4019506	1.78	4165833	96.49	60	125	
Sc IS)	45	3	No Gas	108935194	1.78	114950556	94.77	60	120	
Ge Internal Standard	72	1	HMI H2	21460786	1.46	23371239	91.83	60	125	
Ge Internal Standard	72	2	HMI He	5005903	2.58	4959346	100.94	60	125	
In Internal standard	115	2	HMI He	15742631	4.32	15807784	99.59	60	125	
Ho-165	165	2	HMI He	40780737	1.90	41189580	99.01	60	125	

Sample Report

Sample Table

Sample Name 280-123032-a-1-c PDS
 Data File Name 091SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T19:25:43-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457053 SOIL 6020A
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	76.000	ppb	76.000	4.04	8654022	40000	
Be	9	1	6	231.769	ppb	231.769	0.90	74211	2000	
B	11	1	6	299.102	ppb	299.102	2.40	7368	100	
Na	23	2	45	830.481	ppb	830.481	5.36	648939	400000	
Mg	24	2	45	15262.600	ppb	15262.600	5.12	4712317	400000	
Al	27	2	45	50770.074	ppb	50770.074	4.45	4774310	400000	
K	39	2	45	13379.858	ppb	13379.858	1.94	4135681	400000	
Ca	44	2	45	19047.765	ppb	19047.765	2.21	433528	400000	
V	51	2	72	312.498	ppb	312.498	3.51	1578255	2000	
Cr	52	2	72	225.973	ppb	225.973	0.63	1465203	5000	
Mn	55	2	72	2614.691	ppb	2614.691	1.37	7883633	10000	
Fe	57	2	72	139802.290	ppb	139802.290	0.46	17140983	400000	
Co	59	2	72	242.988	ppb	242.988	1.39	2431386	2000	
Ni	60	2	72	218.158	ppb	218.158	1.80	608561	5000	
Cu	63	2	72	230.936	ppb	230.936	3.83	1756050	5000	
Zn	66	2	72	723.910	ppb	723.910	0.78	801332	5000	
As	75	2	72	220.930	ppb	220.930	1.41	185110	2000	
Se	78	1	72	201.173	ppb	201.173	3.83	119162	2000	
Sr	88	2	45	149.178	ppb	149.178	3.06	490005	2000	
Zr	90	2	72	104958.240	ppb	104958.240	3.09	2354381	1000	>LDR
Zr	90	1	72	111024.359	ppb	111024.359	3.27	5558985	1000	>LDR
Nb	93	2	72	36.218	ppb	36.218	1.51	253467	200	
Mo	95	2	115	221.612	ppb	221.612	2.89	801796	2000	
Pd	105	2	115	0.619	ppb	0.619	5.35	3360	100	
Ag	107	2	115	47.620	ppb	47.620	4.78	534062	100	
Cd	111	2	115	212.493	ppb	212.493	4.11	343053	2000	
Sn	120	2	115	221.889	ppb	221.889	4.84	1108029	2000	
Sb	121	2	115	217.211	ppb	217.211	3.92	930601	1000	
Ba	137	2	115	908.102	ppb	908.102	4.86	1294656	5000	
W	182	2	165	216.669	ppb	216.669	4.65	1904871	100	
Pt	195	2	165	0.109	ppb	0.109	4.45	687	100	
Tl	205	2	165	206.646	ppb	206.646	1.08	3491196	2000	
Pb	208	2	165	294.796	ppb	294.796	2.95	6625181	5000	
Th	232	2	165	222.387	ppb	222.387	5.77	5307612	2000	
U	238	2	165	211.514	ppb	211.514	3.29	5218091	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	719773	1.05	882524	81.56	60	125	
Sc (IS)	45	2	HMI He	4017011	4.01	4165833	96.43	60	125	
Sc IS)	45	3	No Gas	108400327	0.42	114950556	94.30	60	120	
Ge Internal Standard	72	1	HMI H2	22012957	3.10	23371239	94.19	60	125	
Ge Internal Standard	72	2	HMI He	4898541	0.48	4959346	98.77	60	125	
In Internal standard	115	2	HMI He	15495798	3.26	15807784	98.03	60	125	
Ho-165	165	2	HMI He	43193067	1.89	41189580	104.86	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5701467
 Data File Name 092_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T19:29:09-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	79.694	ppb	9.673	129876	100	79.7	90	110	>+ -10%
Li	7	3	45	63.902	ppb	8.963	8414802	100	63.9	90	110	>+ -10%
Be	9	1	6	50.900	ppb	1.117	17575	50	101.8	90	110	
B	11	1	6	73.690	ppb	10.050	2210	50	147.4	90	110	>+ -10%
Na	23	2	45	955.082	ppb	2.420	744119	1000	95.5	90	110	
Mg	24	2	45	996.871	ppb	3.714	310955	1000	99.7	90	110	
Al	27	2	45	992.694	ppb	3.486	94450	1000	99.3	90	110	
K	39	2	45	985.605	ppb	4.066	412486	1000	98.6	90	110	
Ca	44	2	45	1005.998	ppb	1.239	23316	1000	100.6	90	110	
V	51	2	72	47.562	ppb	3.546	246081	50	95.1	90	110	
Cr	52	2	72	48.879	ppb	2.972	309552	50	97.8	90	110	
Mn	55	2	72	51.097	ppb	2.744	150411	50	102.2	90	110	
Fe	57	2	72	1058.728	ppb	3.028	126964	1000	105.9	90	110	
Co	59	2	72	50.575	ppb	1.106	497267	50	101.2	90	110	
Ni	60	2	72	49.456	ppb	2.931	134689	50	98.9	90	110	
Cu	63	2	72	50.991	ppb	0.945	381052	50	102.0	90	110	
Zn	66	2	72	49.954	ppb	1.078	55897	50	99.9	90	110	
As	75	2	72	50.430	ppb	3.569	41264	50	100.9	90	110	
Se	78	1	72	51.136	ppb	3.681	31629	50	102.3	90	110	
Sr	88	2	45	104.320	ppb	3.814	344572	100	104.3	90	110	
Zr	90	2	72	192.221	ppb	7.761	4827	50	384.4	90	110	>+ -10%
Zr	90	1	72	330.029	ppb	9.998	19484	50	660.1	90	110	>+ -10%
Nb	93	2	72	95.716	ppb	2.365	649436	100	95.7	90	110	
Mo	95	2	115	50.390	ppb	3.191	183200	50	100.8	90	110	
Pd	105	2	115	51.511	ppb	0.858	274781	50	103.0	90	110	
Ag	107	2	115	49.680	ppb	0.972	559526	50	99.4	90	110	
Cd	111	2	115	49.776	ppb	2.135	80692	50	99.6	90	110	
Sn	120	2	115	49.673	ppb	2.824	249762	50	99.3	90	110	
Sb	121	2	115	50.792	ppb	2.464	218712	50	101.6	90	110	
Ba	137	2	115	51.717	ppb	1.386	74240	50	103.4	90	110	
W	182	2	165	47.246	ppb	0.866	416053	50	94.5	90	110	
Pt	195	2	165	46.589	ppb	2.345	289899	50	93.2	90	110	
Tl	205	2	165	47.790	ppb	4.673	803857	50	95.6	90	110	
Pb	208	2	165	47.330	ppb	3.856	1060590	50	94.7	90	110	
Th	232	2	165	44.302	ppb	3.379	1053958	50	88.6	90	110	>+ -10%
U	238	2	165	44.324	ppb	3.012	1089343	50	88.6	90	110	>+ -10%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	776225	1.60	882524	87.96	60	125	
Sc (IS)	45	2	HMI He	4038616	2.93	4165833	96.95	60	125	
Sc IS)	45	3	No Gas	108816638	1.05	114950556	94.66	60	120	
Ge Internal Standard	72	1	HMI H2	22958635	1.18	23371239	98.23	60	125	
Ge Internal Standard	72	2	HMI He	4770279	2.01	4959346	96.19	60	125	
In Internal standard	115	2	HMI He	15546193	0.55	15807784	98.35	60	125	
Ho-165	165	2	HMI He	43026522	2.52	41189580	104.46	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5701457
 Data File Name 093_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T19:32:41-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-30.464	ppb	-23.5	98390	0.1	
Li	7	3	45	-22.566	ppb	-25.9	6555608	0.05	
Be	9	1	6	0.174	ppb	42.2	60	0.5	
B	11	1	6	17.302	ppb	22.3	777	0.1	>RL
Na	23	2	45	-16.371	ppb	-9.7	33929	25	
Mg	24	2	45	-0.696	ppb	-142.0	1183	25	
Al	27	2	45	1.492	ppb	72.6	697	15	
K	39	2	45	-6.527	ppb	-29.9	112238	50	
Ca	44	2	45	-0.071	ppb	-1354.7	293	25	
V	51	2	72	-0.868	ppb	-16.6	10286	1	
Cr	52	2	72	0.043	ppb	183.5	1603	1	
Mn	55	2	72	0.296	ppb	17.8	1317	0.5	
Fe	57	2	72	17.933	ppb	16.7	2767	25	
Co	59	2	72	0.062	ppb	9.1	6231	0.5	
Ni	60	2	72	0.096	ppb	27.7	770	1	
Cu	63	2	72	0.200	ppb	18.2	5991	1	
Zn	66	2	72	-0.830	ppb	-15.6	1317	5	
As	75	2	72	0.011	ppb	313.8	184	1	
Se	78	1	72	0.136	ppb	11.5	115	1	
Sr	88	2	45	0.063	ppb	50.3	387	1	
Zr	90	2	72	5.615	ppb	93.8	757	1	>RL
Zr	90	1	72	7.390	ppb	39.1	2656	1	>RL
Nb	93	2	72	2.747	ppb	5.3	20406	2	>RL
Mo	95	2	115	0.118	ppb	15.8	717	0.5	
Pd	105	2	115	0.040	ppb	16.8	290	1	
Ag	107	2	115	0.043	ppb	18.7	603	1	
Cd	111	2	115	0.079	ppb	24.9	137	0.5	
Sn	120	2	115	0.119	ppb	47.5	1463	1	
Sb	121	2	115	0.069	ppb	30.5	593	1	
Ba	137	2	115	0.080	ppb	28.3	333	0.5	
W	182	2	165	0.100	ppb	22.0	3500	1	
Pt	195	2	165	0.020	ppb	43.3	123	1	
Tl	205	2	165	0.083	ppb	11.1	1657	0.1	
Pb	208	2	165	0.135	ppb	17.8	4360	0.5	
Th	232	2	165	0.135	ppb	17.0	3787	1	
U	238	2	165	0.084	ppb	14.3	2204	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	778070	0.84	882524	88.16	60	125	
Sc (IS)	45	2	HMI He	4020711	1.16	4165833	96.52	60	125	
Sc IS)	45	3	No Gas	110305952	1.27	114950556	95.96	60	120	
Ge Internal Standard	72	1	HMI H2	23089315	1.19	23371239	98.79	60	125	
Ge Internal Standard	72	2	HMI He	4803271	0.45	4959346	96.85	60	125	
In Internal standard	115	2	HMI He	15833312	0.29	15807784	100.16	60	125	
Ho-165	165	2	HMI He	41340101	2.05	41189580	100.37	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5701469
 Data File Name 094LCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T19:36:12-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	-21.522	ppb	-6.205	6585630	50	-43.0	70	130	> +/-30%
Be	9	1	6	1.100	ppb	20.633	375	1	110.0	70	130	
Na	23	2	45	31.943	ppb	7.575	68260	50	63.9	70	130	> +/-30%
Mg	24	2	45	47.000	ppb	2.080	15747	50	94.0	70	130	
Al	27	2	45	48.529	ppb	4.679	5067	50	97.1	70	130	
K	39	2	45	88.777	ppb	17.486	139181	100	88.8	70	130	
Ca	44	2	45	31.495	ppb	11.826	1000	50	63.0	70	130	> +/-30%
V	51	2	72	4.454	ppb	6.766	36077	5	89.1	70	130	
Cr	52	2	72	1.963	ppb	2.925	13692	2	98.1	70	130	
Mn	55	2	72	1.200	ppb	3.422	3957	1	120.0	70	130	
Fe	57	2	72	63.800	ppb	6.474	8209	50	127.6	70	130	
Co	59	2	72	1.065	ppb	2.519	15921	1	106.5	70	130	
Ni	60	2	72	1.325	ppb	15.404	4091	1.5	88.3	70	130	
Cu	63	2	72	2.111	ppb	4.237	20045	2	105.6	70	130	
Zn	66	2	72	9.662	ppb	8.545	12558	10	96.6	70	130	
As	75	2	72	4.813	ppb	2.823	4090	5	96.3	70	130	
Se	78	1	72	4.868	ppb	1.230	3015	5	97.4	70	130	
Sr	88	2	45	1.059	ppb	2.225	3617	1	105.9	70	130	
Zr	90	2	72	4.116	ppb	118.097	717	0.5	823.2	70	130	> +/-30%
Zr	90	1	72	12.559	ppb	21.002	2890	0.5	2511.9	70	130	> +/-30%
Nb	93	2	72	1.673	ppb	11.349	12965	2	83.7	70	130	
Mo	95	2	115	2.201	ppb	2.064	8252	2	110.0	70	130	
Pd	105	2	115	0.022	ppb	43.631	190	1	2.2	70	130	> +/-30%
Ag	107	2	115	5.002	ppb	0.435	56352	5	100.0	70	130	
Cd	111	2	115	1.139	ppb	3.811	1850	1	113.9	70	130	
Sn	120	2	115	9.585	ppb	2.659	48792	10	95.8	70	130	
Sb	121	2	115	1.948	ppb	10.437	8649	2	97.4	70	130	
Ba	137	2	115	1.053	ppb	7.194	1717	1	105.3	70	130	
W	182	2	165	4.827	ppb	1.287	43337	1	482.7	70	130	> +/-30%
Pt	195	2	165	0.006	ppb	61.260	37	1	0.6	70	130	> +/-30%
Tl	205	2	165	0.984	ppb	1.218	16269	1	98.4	70	130	
Pb	208	2	165	1.074	ppb	2.860	24595	1	107.4	70	130	
Th	232	2	165	1.715	ppb	3.696	39993	2	85.8	70	130	
U	238	2	165	0.960	ppb	3.410	22954	1	96.0	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	766065	0.59	882524	86.80	60	125	
Sc (IS)	45	2	HMI He	3973207	2.82	4165833	95.38	60	125	
Sc IS)	45	3	No Gas	110398477	0.30	114950556	96.04	60	120	
Ge Internal Standard	72	1	HMI H2	22779286	1.78	23371239	97.47	60	125	
Ge Internal Standard	72	2	HMI He	4763762	1.99	4959346	96.06	60	125	
In Internal standard	115	2	HMI He	15523040	0.94	15807784	98.20	60	125	
Ho-165	165	2	HMI He	41438987	0.99	41189580	100.61	60	125	

Sample Report

Sample Table

Sample Name 280-123032-a-2-c
 Data File Name 095SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T19:39:46-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457053 SOIL 6020A
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	43.166	ppb	43.166	3.71	7824401	40000	
Be	9	1	6	4.815	ppb	4.815	3.53	1547	2000	
B	11	1	6	223.358	ppb	223.358	8.35	5601	100	
Na	23	2	45	574.755	ppb	574.755	4.76	455213	400000	
Mg	24	2	45	12362.883	ppb	12362.883	5.20	3750671	400000	
Al	27	2	45	40484.042	ppb	40484.042	6.62	3738665	400000	
K	39	2	45	12110.855	ppb	12110.855	2.92	3688003	400000	
Ca	44	2	45	14344.002	ppb	14344.002	3.55	320738	400000	
V	51	2	72	74.951	ppb	74.951	2.62	372475	2000	
Cr	52	2	72	20.912	ppb	20.912	4.74	130712	5000	
Mn	55	2	72	2243.940	ppb	2243.940	1.70	6465003	10000	
Fe	57	2	72	94531.283	ppb	94531.283	2.71	11074203	400000	
Co	59	2	72	23.838	ppb	23.838	3.40	232839	2000	
Ni	60	2	72	22.789	ppb	22.789	2.57	61201	5000	
Cu	63	2	72	41.944	ppb	41.944	3.70	308297	5000	
Zn	66	2	72	399.381	ppb	399.381	0.67	423443	5000	
As	75	2	72	16.892	ppb	16.892	1.37	13683	2000	
Se	78	1	72	2.714	ppb	2.714	1.59	1607	2000	
Sr	88	2	45	135.489	ppb	135.489	6.38	436910	2000	
Zr	90	2	72	21142.062	ppb	21142.062	2.91	453553	1000	>LDR
Zr	90	1	72	21675.613	ppb	21675.613	3.04	1067189	1000	>LDR
Nb	93	2	72	34.009	ppb	34.009	2.86	227509	200	
Mo	95	2	115	2.189	ppb	2.189	0.50	7969	2000	
Pd	105	2	115	0.393	ppb	0.393	2.41	2100	100	
Ag	107	2	115	0.226	ppb	0.226	6.80	2564	100	
Cd	111	2	115	1.601	ppb	1.601	5.93	2520	2000	
Sn	120	2	115	5.066	ppb	5.066	3.47	25406	2000	
Sb	121	2	115	0.236	ppb	0.236	10.57	1263	1000	
Ba	137	2	115	625.704	ppb	625.704	1.07	868210	5000	
W	182	2	165	0.816	ppb	0.816	4.05	9723	100	
Pt	195	2	165	0.009	ppb	0.009	95.87	60	100	
Tl	205	2	165	0.769	ppb	0.769	3.23	13022	2000	
Pb	208	2	165	83.864	ppb	83.864	1.66	1843316	5000	
Th	232	2	165	108.850	ppb	108.850	1.82	2540316	2000	
U	238	2	165	10.227	ppb	10.227	2.81	246806	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	721985	0.93	882524	81.81	60	125	
Sc (IS)	45	2	HMI He	3947151	4.15	4165833	94.75	60	125	
Sc IS)	45	3	No Gas	107123238	0.39	114950556	93.19	60	120	
Ge Internal Standard	72	1	HMI H2	21601688	0.82	23371239	92.43	60	125	
Ge Internal Standard	72	2	HMI He	4681312	1.33	4959346	94.39	60	125	
In Internal standard	115	2	HMI He	15067788	2.27	15807784	95.32	60	125	
Ho-165	165	2	HMI He	42214298	2.54	41189580	102.49	60	125	

Sample Report

Sample Table

Sample Name 280-123032-a-3-c
 Data File Name 096SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T19:43:17-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457053 SOIL 6020A
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	32.523	ppb	32.523	15.44	7463866	40000	
Be	9	1	6	3.714	ppb	3.714	12.96	1165	2000	
B	11	1	6	365.467	ppb	365.467	2.21	8741	100	
Na	23	2	45	1852.293	ppb	1852.293	1.99	1324157	400000	
Mg	24	2	45	25642.871	ppb	25642.871	1.80	7535527	400000	
Al	27	2	45	56054.863	ppb	56054.863	0.14	5016825	400000	
K	39	2	45	15782.638	ppb	15782.638	1.89	4620274	400000	
Ca	44	2	45	39764.907	ppb	39764.907	2.29	860553	400000	
V	51	2	72	209.329	ppb	209.329	0.66	1018554	2000	
Cr	52	2	72	65.025	ppb	65.025	0.77	405246	5000	
Mn	55	2	72	3815.759	ppb	3815.759	2.56	11030644	10000	
Fe	57	2	72	114847.165	ppb	114847.165	1.62	13503030	400000	
Co	59	2	72	40.070	ppb	40.070	3.29	388988	2000	
Ni	60	2	72	44.569	ppb	44.569	3.32	119587	5000	
Cu	63	2	72	57.998	ppb	57.998	2.27	426145	5000	
Zn	66	2	72	520.515	ppb	520.515	0.46	553147	5000	
As	75	2	72	21.652	ppb	21.652	3.83	17548	2000	
Se	78	1	72	3.188	ppb	3.188	4.78	1859	2000	
Sr	88	2	45	456.856	ppb	456.856	4.33	1427247	2000	
Zr	90	2	72	24886.007	ppb	24886.007	1.27	535716	1000	>LDR
Zr	90	1	72	26644.808	ppb	26644.808	1.60	1295164	1000	>LDR
Nb	93	2	72	20.864	ppb	20.864	0.45	140736	200	
Mo	95	2	115	3.009	ppb	3.009	3.82	10767	2000	
Pd	105	2	115	0.229	ppb	0.229	8.71	1243	100	
Ag	107	2	115	0.465	ppb	0.465	10.00	5128	100	
Cd	111	2	115	1.505	ppb	1.505	9.86	2350	2000	
Sn	120	2	115	3.848	ppb	3.848	2.11	19349	2000	
Sb	121	2	115	0.188	ppb	0.188	6.21	1050	1000	
Ba	137	2	115	942.791	ppb	942.791	1.38	1297984	5000	
W	182	2	165	0.346	ppb	0.346	5.13	5614	100	
Pt	195	2	165	0.008	ppb	0.008	29.79	53	100	
Tl	205	2	165	1.192	ppb	1.192	3.23	19730	2000	
Pb	208	2	165	193.672	ppb	193.672	2.70	4198351	5000	
Th	232	2	165	54.354	ppb	54.354	2.48	1252163	2000	
U	238	2	165	11.255	ppb	11.255	2.17	268054	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	704224	1.36	882524	79.80	60	125	
Sc (IS)	45	2	HMI He	3818643	0.16	4165833	91.67	60	125	
Sc IS)	45	3	No Gas	105378756	1.64	114950556	91.67	60	120	
Ge Internal Standard	72	1	HMI H2	21332367	0.86	23371239	91.28	60	125	
Ge Internal Standard	72	2	HMI He	4697580	1.32	4959346	94.72	60	125	
In Internal standard	115	2	HMI He	14950429	1.50	15807784	94.58	60	125	
Ho-165	165	2	HMI He	41651569	1.21	41189580	101.12	60	125	

Sample Report

Sample Table

Sample Name 280-123032-a-4-c
 Data File Name 097SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T19:46:47-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457053 SOIL 6020A
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	2.591	ppb	2.591	126.17	6860915	40000	
Be	9	1	6	1.894	ppb	1.894	16.10	593	2000	
B	11	1	6	129.189	ppb	129.189	14.49	3284	100	
Na	23	2	45	1092.670	ppb	1092.670	3.82	879111	400000	
Mg	24	2	45	13135.824	ppb	13135.824	4.45	4251015	400000	
Al	27	2	45	25998.637	ppb	25998.637	3.72	2559987	400000	
K	39	2	45	9226.653	ppb	9226.653	4.74	3024081	400000	
Ca	44	2	45	13981.738	ppb	13981.738	4.02	333212	400000	
V	51	2	72	146.190	ppb	146.190	1.97	748182	2000	
Cr	52	2	72	47.945	ppb	47.945	1.76	312839	5000	
Mn	55	2	72	1758.059	ppb	1758.059	1.87	5315098	10000	
Fe	57	2	72	70510.896	ppb	70510.896	3.98	8668486	400000	
Co	59	2	72	22.248	ppb	22.248	3.43	228470	2000	
Ni	60	2	72	26.453	ppb	26.453	1.87	74439	5000	
Cu	63	2	72	26.051	ppb	26.051	2.18	202852	5000	
Zn	66	2	72	214.817	ppb	214.817	2.38	240231	5000	
As	75	2	72	31.134	ppb	31.134	0.96	26316	2000	
Se	78	1	72	1.484	ppb	1.484	3.01	909	2000	
Sr	88	2	45	157.561	ppb	157.561	3.45	541666	2000	
Zr	90	2	72	15355.216	ppb	15355.216	0.41	346121	1000	>LDR
Zr	90	1	72	16543.399	ppb	16543.399	5.22	830994	1000	>LDR
Nb	93	2	72	12.338	ppb	12.338	2.16	87710	200	
Mo	95	2	115	2.297	ppb	2.297	6.03	9123	2000	
Pd	105	2	115	0.176	ppb	0.176	18.49	1077	100	
Ag	107	2	115	0.244	ppb	0.244	9.17	3014	100	
Cd	111	2	115	0.385	ppb	0.385	14.14	670	2000	
Sn	120	2	115	2.273	ppb	2.273	6.70	12985	2000	
Sb	121	2	115	0.098	ppb	0.098	27.10	750	1000	
Ba	137	2	115	546.272	ppb	546.272	4.25	828100	5000	
W	182	2	165	0.276	ppb	0.276	0.47	5384	100	
Pt	195	2	165	0.010	ppb	0.010	42.20	70	100	
Tl	205	2	165	0.585	ppb	0.585	2.83	10564	2000	
Pb	208	2	165	42.676	ppb	42.676	1.49	993424	5000	
Th	232	2	165	432.439	ppb	432.439	5.52	10666718	2000	
U	238	2	165	16.165	ppb	16.165	3.01	412512	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	704236	1.90	882524	79.80	60	125	
Sc (IS)	45	2	HMI He	4203797	3.68	4165833	100.91	60	125	
Sc IS)	45	3	No Gas	106135239	0.20	114950556	92.33	60	120	
Ge Internal Standard	72	1	HMI H2	22039681	2.31	23371239	94.30	60	125	
Ge Internal Standard	72	2	HMI He	4914354	5.27	4959346	99.09	60	125	
In Internal standard	115	2	HMI He	16478824	5.51	15807784	104.24	60	125	
Ho-165	165	2	HMI He	44646753	3.69	41189580	108.39	60	125	

Sample Report

Sample Table

Sample Name 280-123032-a-5-c
Data File Name 098SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
Acq Date Time 2019-05-14T19:50:20-06:00
Analyst Denver Metals
Sample Type Sample
Dilution 1
Comment 457053 SOIL 6020A
ISTD Ref FileName 074CALB.d
Sample QC Pass/Fail Fail
ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	11.958	ppb	11.958	27.05	6977181	40000	
Be	9	1	6	2.242	ppb	2.242	17.41	708	2000	
B	11	1	6	164.544	ppb	164.544	0.52	4137	100	
Na	23	2	45	2139.069	ppb	2139.069	2.69	1523656	400000	
Mg	24	2	45	16401.294	ppb	16401.294	1.67	4823916	400000	
Al	27	2	45	36351.741	ppb	36351.741	3.06	3256168	400000	
K	39	2	45	10288.200	ppb	10288.200	2.01	3051855	400000	
Ca	44	2	45	19242.592	ppb	19242.592	1.65	416880	400000	
V	51	2	72	149.889	ppb	149.889	2.49	714984	2000	
Cr	52	2	72	44.861	ppb	44.861	0.94	272980	5000	
Mn	55	2	72	3678.107	ppb	3678.107	0.78	10368675	10000	
Fe	57	2	72	83338.258	ppb	83338.258	2.66	9553200	400000	
Co	59	2	72	26.478	ppb	26.478	2.65	252459	2000	
Ni	60	2	72	30.281	ppb	30.281	0.87	79395	5000	
Cu	63	2	72	37.779	ppb	37.779	2.18	272224	5000	
Zn	66	2	72	269.410	ppb	269.410	2.21	280164	5000	
As	75	2	72	24.630	ppb	24.630	1.01	19443	2000	
Se	78	1	72	1.796	ppb	1.796	5.02	1076	2000	
Sr	88	2	45	224.613	ppb	224.613	1.05	702340	2000	
Zr	90	2	72	18027.453	ppb	18027.453	0.48	378561	1000	>LDR
Zr	90	1	72	18369.448	ppb	18369.448	2.22	907287	1000	>LDR
Nb	93	2	72	12.064	ppb	12.064	0.46	80012	200	
Mo	95	2	115	2.260	ppb	2.260	1.82	8279	2000	
Pd	105	2	115	0.180	ppb	0.180	11.68	1007	100	
Ag	107	2	115	0.225	ppb	0.225	7.06	2577	100	
Cd	111	2	115	0.618	ppb	0.618	11.54	983	2000	
Sn	120	2	115	2.015	ppb	2.015	6.63	10660	2000	
Sb	121	2	115	0.074	ppb	0.074	23.26	587	1000	
Ba	137	2	115	680.341	ppb	680.341	3.00	949999	5000	
W	182	2	165	0.256	ppb	0.256	16.57	4761	100	
Pt	195	2	165	0.005	ppb	0.005	19.18	33	100	
Tl	205	2	165	0.681	ppb	0.681	5.18	11194	2000	
Pb	208	2	165	59.809	ppb	59.809	2.13	1272831	5000	
Th	232	2	165	53.971	ppb	53.971	1.44	1219612	2000	
U	238	2	165	9.960	ppb	9.960	1.19	232708	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	710205	2.15	882524	80.47	60	125	
Sc (IS)	45	2	HMI He	3821507	0.36	4165833	91.73	60	125	
Sc IS)	45	3	No Gas	104789631	0.31	114950556	91.16	60	120	
Ge Internal Standard	72	1	HMI H2	21663797	1.52	23371239	92.69	60	125	
Ge Internal Standard	72	2	HMI He	4580117	0.95	4959346	92.35	60	125	
In Internal standard	115	2	HMI He	15168974	2.62	15807784	95.96	60	125	
Ho-165	165	2	HMI He	40857993	1.74	41189580	99.19	60	125	

Sample Report

Sample Table

Sample Name 280-123032-a-6-c
 Data File Name 099SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T19:53:50-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457053 SOIL 6020A
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-7.094	ppb	-7.094	-116.24	6783368	40000	
Be	9	1	6	1.957	ppb	1.957	1.76	615	2000	
B	11	1	6	443.378	ppb	443.378	0.83	10570	100	
Na	23	2	45	1610.657	ppb	1610.657	4.48	1145569	400000	
Mg	24	2	45	13674.560	ppb	13674.560	0.75	3980403	400000	
Al	27	2	45	28355.232	ppb	28355.232	1.81	2513158	400000	
K	39	2	45	9994.327	ppb	9994.327	4.56	2936076	400000	
Ca	44	2	45	13410.679	ppb	13410.679	1.25	287617	400000	
V	51	2	72	98.835	ppb	98.835	1.80	477367	2000	
Cr	52	2	72	33.748	ppb	33.748	2.79	206134	5000	
Mn	55	2	72	2577.000	ppb	2577.000	1.24	7282284	10000	
Fe	57	2	72	57700.569	ppb	57700.569	0.65	6631362	400000	
Co	59	2	72	19.594	ppb	19.594	1.13	188745	2000	
Ni	60	2	72	25.477	ppb	25.477	0.90	67053	5000	
Cu	63	2	72	26.719	ppb	26.719	1.55	194234	5000	
Zn	66	2	72	215.257	ppb	215.257	1.59	224817	5000	
As	75	2	72	16.158	ppb	16.158	1.73	12844	2000	
Se	78	1	72	1.234	ppb	1.234	12.70	752	2000	
Sr	88	2	45	222.549	ppb	222.549	3.69	688475	2000	
Zr	90	2	72	14041.212	ppb	14041.212	2.83	295632	1000	>LDR
Zr	90	1	72	14258.878	ppb	14258.878	1.69	709275	1000	>LDR
Nb	93	2	72	10.158	ppb	10.158	3.36	67769	200	
Mo	95	2	115	1.580	ppb	1.580	8.50	5831	2000	
Pd	105	2	115	0.116	ppb	0.116	14.11	673	100	
Ag	107	2	115	0.140	ppb	0.140	11.81	1630	100	
Cd	111	2	115	0.456	ppb	0.456	10.28	723	2000	
Sn	120	2	115	1.883	ppb	1.883	4.35	9971	2000	
Sb	121	2	115	0.065	ppb	0.065	22.99	550	1000	
Ba	137	2	115	595.156	ppb	595.156	2.14	826802	5000	
W	182	2	165	0.269	ppb	0.269	8.10	4904	100	
Pt	195	2	165	0.004	ppb	0.004	37.76	30	100	
Tl	205	2	165	0.679	ppb	0.679	1.44	11248	2000	
Pb	208	2	165	38.566	ppb	38.566	2.22	827852	5000	
Th	232	2	165	28.954	ppb	28.954	2.43	659877	2000	
U	238	2	165	6.062	ppb	6.062	1.83	142852	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	706203	0.48	882524	80.02	60	125	
Sc (IS)	45	2	HMI He	3782069	1.98	4165833	90.79	60	125	
Sc IS)	45	3	No Gas	108330029	1.94	114950556	94.24	60	120	
Ge Internal Standard	72	1	HMI H2	21798329	1.06	23371239	93.27	60	125	
Ge Internal Standard	72	2	HMI He	4591692	1.98	4959346	92.59	60	125	
In Internal standard	115	2	HMI He	15086513	1.32	15807784	95.44	60	125	
Ho-165	165	2	HMI He	41178462	0.35	41189580	99.97	60	125	

Sample Report

Sample Table

Sample Name 280-123032-a-7-c
 Data File Name 100SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T19:57:20-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457053 SOIL 6020A
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	29.020	ppb	29.020	27.48	7305588	40000	
Be	9	1	6	4.076	ppb	4.076	2.64	1223	2000	
B	11	1	6	585.318	ppb	585.318	4.86	13242	100	>LDR
Na	23	2	45	1273.226	ppb	1273.226	2.50	904178	400000	
Mg	24	2	45	26886.494	ppb	26886.494	0.78	7734508	400000	
Al	27	2	45	69137.931	ppb	69137.931	2.08	6056317	400000	
K	39	2	45	20170.100	ppb	20170.100	0.95	5750999	400000	
Ca	44	2	45	47808.008	ppb	47808.008	1.04	1012752	400000	
V	51	2	72	158.548	ppb	158.548	1.93	754906	2000	
Cr	52	2	72	69.228	ppb	69.228	1.90	420203	5000	
Mn	55	2	72	4752.820	ppb	4752.820	2.81	13385000	10000	
Fe	57	2	72	101689.373	ppb	101689.373	3.00	11645706	400000	
Co	59	2	72	37.406	ppb	37.406	1.20	354219	2000	
Ni	60	2	72	57.002	ppb	57.002	2.40	148883	5000	
Cu	63	2	72	95.353	ppb	95.353	1.89	679938	5000	
Zn	66	2	72	575.937	ppb	575.937	3.14	595889	5000	
As	75	2	72	19.942	ppb	19.942	3.19	15758	2000	
Se	78	1	72	4.546	ppb	4.546	4.14	2620	2000	
Sr	88	2	45	539.070	ppb	539.070	2.18	1648378	2000	
Zr	90	2	72	22870.073	ppb	22870.073	1.55	479687	1000	>LDR
Zr	90	1	72	24349.035	ppb	24349.035	4.01	1173424	1000	>LDR
Nb	93	2	72	25.709	ppb	25.709	3.49	168513	200	
Mo	95	2	115	5.639	ppb	5.639	3.97	19632	2000	
Pd	105	2	115	0.227	ppb	0.227	15.15	1213	100	
Ag	107	2	115	0.652	ppb	0.652	3.58	7052	100	
Cd	111	2	115	3.837	ppb	3.837	11.79	5884	2000	
Sn	120	2	115	3.286	ppb	3.286	2.18	16378	2000	
Sb	121	2	115	0.163	ppb	0.163	10.49	933	1000	
Ba	137	2	115	1167.924	ppb	1167.924	2.75	1581850	5000	
W	182	2	165	0.323	ppb	0.323	7.62	5134	100	
Pt	195	2	165	0.005	ppb	0.005	55.26	33	100	
Tl	205	2	165	1.566	ppb	1.566	7.90	24463	2000	
Pb	208	2	165	225.721	ppb	225.721	6.58	4635933	5000	
Th	232	2	165	49.852	ppb	49.852	2.91	1089236	2000	
U	238	2	165	16.894	ppb	16.894	4.70	381276	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	674792	1.00	882524	76.46	60	125	
Sc (IS)	45	2	HMI He	3738420	1.59	4165833	89.74	60	125	
Sc IS)	45	3	No Gas	104203734	0.39	114950556	90.65	60	120	
Ge Internal Standard	72	1	HMI H2	21163148	3.25	23371239	90.55	60	125	
Ge Internal Standard	72	2	HMI He	4577231	2.19	4959346	92.30	60	125	
In Internal standard	115	2	HMI He	14711479	1.58	15807784	93.06	60	125	
Ho-165	165	2	HMI He	39527869	4.15	41189580	95.97	60	125	

Sample Report

Sample Table

Sample Name 280-123032-a-8-c
 Data File Name 101SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T20:00:50-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457053 SOIL 6020A
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-1.198	ppb	-1.198	-531.19	6706700	40000	
Be	9	1	6	2.074	ppb	2.074	9.76	643	2000	
B	11	1	6	146.718	ppb	146.718	9.15	3664	100	
Na	23	2	45	1144.981	ppb	1144.981	2.92	832763	400000	
Mg	24	2	45	13062.060	ppb	13062.060	5.45	3826541	400000	
Al	27	2	45	27155.082	ppb	27155.082	6.85	2421893	400000	
K	39	2	45	8983.918	ppb	8983.918	5.66	2667784	400000	
Ca	44	2	45	12995.371	ppb	12995.371	2.62	280632	400000	
V	51	2	72	97.843	ppb	97.843	1.81	471207	2000	
Cr	52	2	72	31.180	ppb	31.180	1.59	189972	5000	
Mn	55	2	72	1429.535	ppb	1429.535	2.67	4026514	10000	
Fe	57	2	72	56903.625	ppb	56903.625	1.28	6518759	400000	
Co	59	2	72	20.815	ppb	20.815	0.84	199479	2000	
Ni	60	2	72	28.912	ppb	28.912	1.14	75772	5000	
Cu	63	2	72	26.106	ppb	26.106	1.16	189268	5000	
Zn	66	2	72	200.182	ppb	200.182	1.30	208539	5000	
As	75	2	72	32.878	ppb	32.878	1.40	25877	2000	
Se	78	1	72	1.215	ppb	1.215	11.88	732	2000	
Sr	88	2	45	151.905	ppb	151.905	1.85	473488	2000	
Zr	90	2	72	13229.518	ppb	13229.518	1.44	277733	1000	>LDR
Zr	90	1	72	13573.618	ppb	13573.618	3.89	667472	1000	>LDR
Nb	93	2	72	8.463	ppb	8.463	2.06	56558	200	
Mo	95	2	115	1.833	ppb	1.833	3.34	6738	2000	
Pd	105	2	115	0.104	ppb	0.104	21.78	607	100	
Ag	107	2	115	0.150	ppb	0.150	2.85	1740	100	
Cd	111	2	115	0.384	ppb	0.384	22.02	610	2000	
Sn	120	2	115	10.469	ppb	10.469	1.26	51832	2000	
Sb	121	2	115	0.062	ppb	0.062	64.25	537	1000	
Ba	137	2	115	409.695	ppb	409.695	3.86	570263	5000	
W	182	2	165	0.220	ppb	0.220	30.55	4554	100	
Pt	195	2	165	0.003	ppb	0.003	118.07	20	100	
Tl	205	2	165	0.568	ppb	0.568	10.62	9606	2000	
Pb	208	2	165	38.385	ppb	38.385	5.08	836424	5000	
Th	232	2	165	32.109	ppb	32.109	5.33	742867	2000	
U	238	2	165	7.431	ppb	7.431	2.89	177839	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	698265	1.93	882524	79.12	60	125	
Sc (IS)	45	2	HMI He	3809755	2.91	4165833	91.45	60	125	
Sc IS)	45	3	No Gas	105047500	1.72	114950556	91.38	60	120	
Ge Internal Standard	72	1	HMI H2	21559084	2.26	23371239	92.25	60	125	
Ge Internal Standard	72	2	HMI He	4576502	0.93	4959346	92.28	60	125	
In Internal standard	115	2	HMI He	15117942	1.72	15807784	95.64	60	125	
Ho-165	165	2	HMI He	41867226	4.71	41189580	101.65	60	125	

Sample Report

Sample Table

Sample Name 280-123032-a-9-c
 Data File Name 102SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T20:04:21-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457053 SOIL 6020A
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-12.621	ppb	-12.621	-16.52	6441098	40000	
Be	9	1	6	1.799	ppb	1.799	8.45	557	2000	
B	11	1	6	121.429	ppb	121.429	3.41	3070	100	
Na	23	2	45	1259.043	ppb	1259.043	1.96	906089	400000	
Mg	24	2	45	11087.560	ppb	11087.560	2.06	3231033	400000	
Al	27	2	45	23968.520	ppb	23968.520	1.21	2127140	400000	
K	39	2	45	7261.307	ppb	7261.307	2.51	2165317	400000	
Ca	44	2	45	10723.541	ppb	10723.541	0.15	230292	400000	
V	51	2	72	108.395	ppb	108.395	3.55	522001	2000	
Cr	52	2	72	28.485	ppb	28.485	3.05	174178	5000	
Mn	55	2	72	1606.466	ppb	1606.466	2.03	4539662	10000	
Fe	57	2	72	67022.995	ppb	67022.995	3.46	7699819	400000	
Co	59	2	72	19.541	ppb	19.541	3.07	188174	2000	
Ni	60	2	72	23.315	ppb	23.315	4.71	61352	5000	
Cu	63	2	72	25.851	ppb	25.851	3.41	187999	5000	
Zn	66	2	72	199.637	ppb	199.637	1.69	208642	5000	
As	75	2	72	28.423	ppb	28.423	3.08	22459	2000	
Se	78	1	72	1.302	ppb	1.302	15.28	788	2000	
Sr	88	2	45	145.812	ppb	145.812	1.17	451742	2000	
Zr	90	2	72	12815.769	ppb	12815.769	2.98	269856	1000	>LDR
Zr	90	1	72	12977.814	ppb	12977.814	1.58	642638	1000	>LDR
Nb	93	2	72	8.047	ppb	8.047	1.16	54040	200	
Mo	95	2	115	1.994	ppb	1.994	6.77	7215	2000	
Pd	105	2	115	0.104	ppb	0.104	26.79	603	100	
Ag	107	2	115	0.112	ppb	0.112	8.76	1307	100	
Cd	111	2	115	0.513	ppb	0.513	28.56	803	2000	
Sn	120	2	115	2.107	ppb	2.107	3.79	10940	2000	
Sb	121	2	115	0.048	ppb	0.048	46.36	470	1000	
Ba	137	2	115	426.062	ppb	426.062	1.83	585663	5000	
W	182	2	165	0.220	ppb	0.220	18.54	4464	100	
Pt	195	2	165	0.003	ppb	0.003	76.64	23	100	
Tl	205	2	165	0.469	ppb	0.469	6.93	7822	2000	
Pb	208	2	165	44.984	ppb	44.984	6.82	958666	5000	
Th	232	2	165	44.478	ppb	44.478	4.76	1006599	2000	
U	238	2	165	7.007	ppb	7.007	5.50	163974	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	695928	0.82	882524	78.86	60	125	
Sc (IS)	45	2	HMI He	3786081	1.11	4165833	90.88	60	125	
Sc IS)	45	3	No Gas	104739980	1.33	114950556	91.12	60	120	
Ge Internal Standard	72	1	HMI H2	21697923	1.83	23371239	92.84	60	125	
Ge Internal Standard	72	2	HMI He	4592133	2.73	4959346	92.60	60	125	
In Internal standard	115	2	HMI He	14922209	0.78	15807784	94.40	60	125	
Ho-165	165	2	HMI He	40942800	2.75	41189580	99.40	60	125	

Sample Report

Sample Table

Sample Name 280-123032-a-10-c
 Data File Name 103SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T20:07:52-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457053 SOIL 6020A
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	39.413	ppb	39.413	9.47	7490226	40000	
Be	9	1	6	4.153	ppb	4.153	6.50	1233	2000	
B	11	1	6	460.522	ppb	460.522	1.51	10366	100	
Na	23	2	45	1731.392	ppb	1731.392	1.93	1217356	400000	
Mg	24	2	45	33597.601	ppb	33597.601	1.42	9688552	400000	
Al	27	2	45	68830.448	ppb	68830.448	0.68	6044481	400000	
K	39	2	45	26523.136	ppb	26523.136	1.93	7545014	400000	
Ca	44	2	45	38009.732	ppb	38009.732	1.92	806986	400000	
V	51	2	72	210.941	ppb	210.941	2.59	969008	2000	
Cr	52	2	72	84.496	ppb	84.496	2.63	496819	5000	
Mn	55	2	72	4643.357	ppb	4643.357	2.20	12676260	10000	
Fe	57	2	72	126968.889	ppb	126968.889	5.07	14094051	400000	
Co	59	2	72	49.930	ppb	49.930	0.82	456553	2000	
Ni	60	2	72	69.382	ppb	69.382	0.98	175591	5000	
Cu	63	2	72	80.790	ppb	80.790	3.25	558932	5000	
Zn	66	2	72	566.433	ppb	566.433	2.32	568207	5000	
As	75	2	72	26.647	ppb	26.647	3.41	20357	2000	
Se	78	1	72	4.035	ppb	4.035	3.22	2328	2000	
Sr	88	2	45	475.892	ppb	475.892	1.82	1458989	2000	
Zr	90	2	72	24270.586	ppb	24270.586	1.43	493428	1000	>LDR
Zr	90	1	72	24396.322	ppb	24396.322	1.83	1177413	1000	>LDR
Nb	93	2	72	31.407	ppb	31.407	1.40	199244	200	
Mo	95	2	115	4.054	ppb	4.054	4.40	14303	2000	
Pd	105	2	115	0.188	ppb	0.188	13.00	1027	100	
Ag	107	2	115	0.486	ppb	0.486	6.45	5318	100	
Cd	111	2	115	2.428	ppb	2.428	11.54	3760	2000	
Sn	120	2	115	4.632	ppb	4.632	2.41	22940	2000	
Sb	121	2	115	0.159	ppb	0.159	24.24	923	1000	
Ba	137	2	115	1307.282	ppb	1307.282	1.46	1784917	5000	
W	182	2	165	0.453	ppb	0.453	8.98	6131	100	
Pt	195	2	165	0.013	ppb	0.013	75.05	73	100	
Tl	205	2	165	1.883	ppb	1.883	4.40	29131	2000	
Pb	208	2	165	169.997	ppb	169.997	1.88	3467729	5000	
Th	232	2	165	60.082	ppb	60.082	3.70	1301468	2000	
U	238	2	165	15.106	ppb	15.106	3.15	338221	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	667484	0.72	882524	75.63	60	125	
Sc (IS)	45	2	HMI He	3747266	2.33	4165833	89.95	60	125	
Sc IS)	45	3	No Gas	103650222	0.14	114950556	90.17	60	120	
Ge Internal Standard	72	1	HMI H2	21180060	1.37	23371239	90.62	60	125	
Ge Internal Standard	72	2	HMI He	4436331	1.65	4959346	89.45	60	125	
In Internal standard	115	2	HMI He	14827801	0.79	15807784	93.80	60	125	
Ho-165	165	2	HMI He	39178817	1.96	41189580	95.12	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5701467
 Data File Name 104_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T20:11:20-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	79.657	ppb	17.213	123881	100	79.7	90	110	>+ -10%
Li	7	3	45	50.216	ppb	3.796	7718389	100	50.2	90	110	>+ -10%
Be	9	1	6	49.708	ppb	4.531	16189	50	99.4	90	110	
B	11	1	6	65.847	ppb	8.224	1897	50	131.7	90	110	>+ -10%
Na	23	2	45	927.616	ppb	2.522	677370	1000	92.8	90	110	
Mg	24	2	45	983.126	ppb	1.862	287025	1000	98.3	90	110	
Al	27	2	45	998.847	ppb	1.295	88944	1000	99.9	90	110	
K	39	2	45	954.148	ppb	2.519	377077	1000	95.4	90	110	
Ca	44	2	45	994.212	ppb	2.654	21550	1000	99.4	90	110	
V	51	2	72	46.626	ppb	3.428	232705	50	93.3	90	110	
Cr	52	2	72	47.807	ppb	3.862	291694	50	95.6	90	110	
Mn	55	2	72	49.486	ppb	2.730	140372	50	99.0	90	110	
Fe	57	2	72	1066.777	ppb	3.227	123245	1000	106.7	90	110	
Co	59	2	72	49.601	ppb	4.105	469651	50	99.2	90	110	
Ni	60	2	72	48.550	ppb	4.965	127356	50	97.1	90	110	
Cu	63	2	72	50.051	ppb	3.189	360298	50	100.1	90	110	
Zn	66	2	72	50.037	ppb	4.054	53914	50	100.1	90	110	
As	75	2	72	49.431	ppb	3.768	38968	50	98.9	90	110	
Se	78	1	72	50.214	ppb	0.726	30224	50	100.4	90	110	
Sr	88	2	45	105.925	ppb	1.481	327463	100	105.9	90	110	
Zr	90	2	72	126.362	ppb	8.975	3260	50	252.7	90	110	>+ -10%
Zr	90	1	72	129.436	ppb	3.565	8771	50	258.9	90	110	>+ -10%
Nb	93	2	72	94.733	ppb	2.688	619256	100	94.7	90	110	
Mo	95	2	115	49.859	ppb	1.411	177321	50	99.7	90	110	
Pd	105	2	115	51.720	ppb	2.810	269828	50	103.4	90	110	
Ag	107	2	115	50.743	ppb	2.338	558964	50	101.5	90	110	
Cd	111	2	115	49.074	ppb	0.938	77819	50	98.1	90	110	
Sn	120	2	115	48.983	ppb	1.934	240889	50	98.0	90	110	
Sb	121	2	115	49.233	ppb	2.282	207345	50	98.5	90	110	
Ba	137	2	115	50.324	ppb	1.699	70667	50	100.6	90	110	
W	182	2	165	48.378	ppb	1.743	401297	50	96.8	90	110	
Pt	195	2	165	48.707	ppb	1.770	285619	50	97.4	90	110	
Tl	205	2	165	49.436	ppb	3.065	783709	50	98.9	90	110	
Pb	208	2	165	48.708	ppb	1.385	1028814	50	97.4	90	110	
Th	232	2	165	45.356	ppb	3.259	1016797	50	90.7	90	110	
U	238	2	165	46.195	ppb	2.939	1069718	50	92.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	732310	1.28	882524	82.98	60	125	
Sc (IS)	45	2	HMI He	3777618	1.38	4165833	90.68	60	125	
Sc IS)	45	3	No Gas	103604208	0.93	114950556	90.13	60	120	
Ge Internal Standard	72	1	HMI H2	22335863	0.87	23371239	95.57	60	125	
Ge Internal Standard	72	2	HMI He	4597176	3.30	4959346	92.70	60	125	
In Internal standard	115	2	HMI He	15205606	0.62	15807784	96.19	60	125	
Ho-165	165	2	HMI He	40540910	2.56	41189580	98.43	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5701457
 Data File Name 105_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T20:14:52-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-45.851	ppb	-12.8	91316	0.1	
Li	7	3	45	-35.388	ppb	-18.1	6031832	0.05	
Be	9	1	6	0.107	ppb	51.4	35	0.5	
B	11	1	6	6.304	ppb	31.8	467	0.1	>RL
Na	23	2	45	-21.192	ppb	-9.8	28847	25	
Mg	24	2	45	0.007	ppb	2409.1	1330	25	
Al	27	2	45	1.882	ppb	9.5	697	15	
K	39	2	45	-7.169	ppb	-191.6	106265	50	
Ca	44	2	45	0.699	ppb	549.1	297	25	
V	51	2	72	-1.175	ppb	-5.2	8492	1	
Cr	52	2	72	-0.009	ppb	-128.7	1233	1	
Mn	55	2	72	0.347	ppb	7.4	1420	0.5	
Fe	57	2	72	13.330	ppb	13.4	2140	25	
Co	59	2	72	0.039	ppb	47.2	5811	0.5	
Ni	60	2	72	0.028	ppb	99.0	563	1	
Cu	63	2	72	0.178	ppb	20.6	5631	1	
Zn	66	2	72	-0.961	ppb	-0.5	1137	5	
As	75	2	72	0.029	ppb	118.5	192	1	
Se	78	1	72	0.048	ppb	31.2	59	1	
Sr	88	2	45	0.081	ppb	30.4	423	1	
Zr	90	2	72	-0.586	ppb	-239.9	600	1	
Zr	90	1	72	-2.712	ppb	-171.5	2082	1	
Nb	93	2	72	2.605	ppb	9.7	18801	2	>RL
Mo	95	2	115	0.083	ppb	50.5	560	0.5	
Pd	105	2	115	0.054	ppb	26.9	347	1	
Ag	107	2	115	0.039	ppb	18.1	527	1	
Cd	111	2	115	0.059	ppb	3.5	100	0.5	
Sn	120	2	115	0.028	ppb	95.1	950	1	
Sb	121	2	115	0.006	ppb	434.4	300	1	
Ba	137	2	115	0.086	ppb	39.5	327	0.5	
W	182	2	165	0.068	ppb	37.0	3147	1	
Pt	195	2	165	0.028	ppb	38.5	167	1	
Tl	205	2	165	0.063	ppb	7.6	1303	0.1	
Pb	208	2	165	0.096	ppb	11.2	3414	0.5	
Th	232	2	165	0.113	ppb	18.3	3190	1	
U	238	2	165	0.066	ppb	22.3	1723	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	731899	0.61	882524	82.93	60	125	
Sc (IS)	45	2	HMI He	3815255	2.96	4165833	91.58	60	125	
Sc IS)	45	3	No Gas	106265900	2.63	114950556	92.44	60	120	
Ge Internal Standard	72	1	HMI H2	22609885	2.25	23371239	96.74	60	125	
Ge Internal Standard	72	2	HMI He	4644401	0.66	4959346	93.65	60	125	
In Internal standard	115	2	HMI He	15108353	3.35	15807784	95.58	60	125	
Ho-165	165	2	HMI He	40221997	1.21	41189580	97.65	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5701469
 Data File Name 106LCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T20:18:23-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	-28.989	ppb	-7.343	5963895	50	-58.0	70	130	> +/-30%
Be	9	1	6	0.897	ppb	6.233	293	1	89.7	70	130	
Na	23	2	45	26.500	ppb	13.418	60977	50	53.0	70	130	> +/-30%
Mg	24	2	45	47.054	ppb	4.249	14960	50	94.1	70	130	
Al	27	2	45	45.730	ppb	3.237	4557	50	91.5	70	130	
K	39	2	45	82.563	ppb	9.321	130257	100	82.6	70	130	
Ca	44	2	45	33.931	ppb	11.652	1000	50	67.9	70	130	> +/-30%
V	51	2	72	4.017	ppb	6.342	32601	5	80.3	70	130	
Cr	52	2	72	1.911	ppb	3.000	12825	2	95.6	70	130	
Mn	55	2	72	1.095	ppb	6.834	3504	1	109.5	70	130	
Fe	57	2	72	56.392	ppb	4.284	7035	50	112.8	70	130	
Co	59	2	72	1.027	ppb	5.347	14927	1	102.7	70	130	
Ni	60	2	72	1.442	ppb	3.942	4234	1.5	96.1	70	130	
Cu	63	2	72	1.925	ppb	3.754	17909	2	96.2	70	130	
Zn	66	2	72	9.279	ppb	8.343	11667	10	92.8	70	130	
As	75	2	72	4.647	ppb	4.226	3797	5	92.9	70	130	
Se	78	1	72	4.995	ppb	1.335	2996	5	99.9	70	130	
Sr	88	2	45	1.076	ppb	4.180	3480	1	107.6	70	130	
Zr	90	2	72	10.689	ppb	19.492	827	0.5	2137.8	70	130	> +/-30%
Zr	90	1	72	3.827	ppb	29.150	2359	0.5	765.4	70	130	> +/-30%
Nb	93	2	72	1.563	ppb	5.788	11741	2	78.1	70	130	
Mo	95	2	115	1.962	ppb	4.330	7112	2	98.1	70	130	
Pd	105	2	115	0.022	ppb	32.736	180	1	2.2	70	130	> +/-30%
Ag	107	2	115	4.931	ppb	2.220	53486	5	98.6	70	130	
Cd	111	2	115	1.067	ppb	10.571	1670	1	106.7	70	130	
Sn	120	2	115	9.683	ppb	1.346	47458	10	96.8	70	130	
Sb	121	2	115	1.927	ppb	5.111	8239	2	96.3	70	130	
Ba	137	2	115	1.039	ppb	3.736	1633	1	103.9	70	130	
W	182	2	165	4.782	ppb	3.981	42003	1	478.2	70	130	> +/-30%
Pt	195	2	165	0.007	ppb	10.693	47	1	0.7	70	130	> +/-30%
Tl	205	2	165	1.020	ppb	4.700	16479	1	102.0	70	130	
Pb	208	2	165	0.968	ppb	3.218	21826	1	96.8	70	130	
Th	232	2	165	1.702	ppb	3.975	38803	2	85.1	70	130	
U	238	2	165	0.949	ppb	3.484	22193	1	94.9	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	735150	0.24	882524	83.30	60	125	
Sc (IS)	45	2	HMI He	3767070	3.61	4165833	90.43	60	125	
Sc IS)	45	3	No Gas	102629110	1.16	114950556	89.28	60	120	
Ge Internal Standard	72	1	HMI H2	22068605	3.02	23371239	94.43	60	125	
Ge Internal Standard	72	2	HMI He	4572097	0.38	4959346	92.19	60	125	
In Internal standard	115	2	HMI He	14945314	0.45	15807784	94.54	60	125	
Ho-165	165	2	HMI He	40541162	2.65	41189580	98.43	60	125	

Blank Report

Sample Table

Sample Name mb 280-457758/1-a
 Data File Name 107_BLK.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T20:21:55-06:00
 Sample Type Blank
 Dilution 1
 Comment 457758 200.8
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	1	45	-33.805	ppb	-21.8775512	91520	0.1
Li	7	3	45	-34.997	ppb	-15.62295463	5838962	0.05
Be	9	1	6	0.021	ppb	114.9637453	7	0.5
Na	23	2	45	-17.338	ppb	-5.502796474	29865	25
Mg	24	2	45	-0.492	ppb	-117.5672226	1123	25
Al	27	2	45	1.068	ppb	107.3344968	590	15
K	39	2	45	-4.446	ppb	-373.6848381	101441	50
Ca	44	2	45	1.673	ppb	129.9551221	300	25
V	51	2	72	-0.288	ppb	-71.19056327	12216	1
Cr	52	2	72	0.046	ppb	52.0532764	1510	1
Mn	55	2	72	0.514	ppb	14.80164164	1827	0.5
Fe	57	2	72	12.226	ppb	11.67255404	1940	25
Co	59	2	72	0.017	ppb	364.3181542	5384	0.5
Ni	60	2	72	-0.039	ppb	-82.0510883	373	1
Cu	63	2	72	-0.037	ppb	-35.56439577	3937	1
Zn	66	2	72	0.321	ppb	91.34518449	2390	5
As	75	2	72	-0.007	ppb	-275.9070926	158	1
Se	78	1	72	-0.007	ppb	-92.96438206	24	1
Sr	88	2	45	0.020	ppb	38.50097791	220	1
Zr	90	2	72	75.464	ppb	11.07133734	2134	1
Zr	90	1	72	99.010	ppb	12.14413087	6975	1
Nb	93	2	72	1.065	ppb	12.17761347	8322	2
Mo	95	2	115	-0.018	ppb	-77.74745615	203	0.5
Pd	105	2	115	0.022	ppb	25.48402915	183	1
Ag	107	2	115	0.007	ppb	44.91907145	173	1
Cd	111	2	115	0.006	ppb	148.283056	17	0.5
Sn	120	2	115	0.038	ppb	170.0042502	997	1
Sb	121	2	115	-0.010	ppb	-64.08304996	237	1
Ba	137	2	115	-0.052	ppb	-26.27523054	133	0.5
W	182	2	165	-0.005	ppb	-577.8907779	2520	1
Pt	195	2	165	0.003	ppb	103.3606065	23	1
Tl	205	2	165	0.000	ppb	443.7502677	317	0.1
Pb	208	2	165	0.005	ppb	219.3502532	1500	0.5
Th	232	2	165	0.176	ppb	1.321875997	4561	1
U	238	2	165	0.001	ppb	305.7794065	243	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	724451	1.26	882524	82.09	60	125	
Sc (IS)	45	2	HMI He	3614152	1.84	4165833	86.76	60	125	
Sc IS)	45	3	No Gas	102696107	1.23	114950556	89.34	60	120	
Ge Internal Standard	72	1	HMI H2	21594044	2.54	23371239	92.40	60	125	
Ge Internal Standard	72	2	HMI He	4473561	2.29	4959346	90.20	60	125	
In Internal standard	115	2	HMI He	15067866	1.91	15807784	95.32	60	125	
Ho-165	165	2	HMI He	39803591	2.38	41189580	96.64	60	125	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name lcs 280-457758/2-a
 Data File Name 108_LCS.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T20:25:30-06:00
 Sample Type LCS
 Dilution 1
 Analyst Denver Metals
 Comment 457758 200.8
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	28.648	28.648	ppb	2.002	7177036	400	7.2	80	120	> +/-20%
Be	9	1	6	33.359	33.359	ppb	3.777	10928	40	83.4	80	120	
Na	23	2	45	-14.667	-14.667	ppb	-5.973	32797	40	-36.7	80	120	> +/-20%
Mg	24	2	45	-0.765	-0.765	ppb	-54.920	1087	40	-1.9	80	120	> +/-20%
Al	27	2	45	319.479	319.479	ppb	4.534	28576	40	798.7	80	120	> +/-20%
K	39	2	45	-12.595	-12.595	ppb	-81.659	102948	40	-31.5	80	120	> +/-20%
Ca	44	2	45	118.401	118.401	ppb	11.571	2787	40	296.0	80	120	> +/-20%
V	51	2	72	32.730	32.730	ppb	1.080	163135	40	81.8	80	120	
Cr	52	2	72	33.286	33.286	ppb	1.358	198208	40	83.2	80	120	
Mn	55	2	72	34.763	34.763	ppb	2.233	96151	40	86.9	80	120	
Fe	57	2	72	369.614	369.614	ppb	3.124	41964	40	924.0	80	120	> +/-20%
Co	59	2	72	34.582	34.582	ppb	2.379	320583	40	86.5	80	120	
Ni	60	2	72	33.665	33.665	ppb	0.381	86180	40	84.2	80	120	
Cu	63	2	72	34.433	34.433	ppb	1.206	242736	40	86.1	80	120	
Zn	66	2	72	34.771	34.771	ppb	1.346	37123	40	86.9	80	120	
As	75	2	72	32.274	32.274	ppb	0.862	24841	40	80.7	80	120	
Se	78	1	72	32.701	32.701	ppb	2.123	19422	40	81.8	80	120	
Sr	88	2	45	36.449	36.449	ppb	1.312	111950	40	91.1	80	120	
Nb	93	2	72	0.789	0.789	ppb	13.438	6575	40	2.0	80	120	> +/-20%
Mo	95	2	115	33.563	33.563	ppb	2.589	116926	40	83.9	80	120	
Pd	105	2	115	0.026	0.026	ppb	30.889	203	40	0.1	80	120	> +/-20%
Ag	107	2	115	33.993	33.993	ppb	1.856	366617	40	85.0	80	120	
Cd	111	2	115	33.772	33.772	ppb	4.848	52410	40	84.4	80	120	
Sn	120	2	115	33.647	33.647	ppb	3.639	162191	40	84.1	80	120	
Sb	121	2	115	35.580	35.580	ppb	1.886	146768	40	89.0	80	120	
Ba	137	2	115	35.278	35.278	ppb	3.397	48543	40	88.2	80	120	
W	182	2	165	16.804	16.804	ppb	1.228	141410	40	42.0	80	120	> +/-20%
Pt	195	2	165	-0.001	-0.001	ppb	0.000	0	40	0.0	80	120	> +/-20%
Tl	205	2	165	33.186	33.186	ppb	0.480	527524	40	83.0	80	120	
Pb	208	2	165	33.083	33.083	ppb	1.840	700713	40	82.7	80	120	
Th	232	2	165	28.263	28.263	ppb	0.652	635378	40	70.7	80	120	> +/-20%
U	238	2	165	31.794	31.794	ppb	1.894	738161	40	79.5	80	120	> +/-20%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	736349	0.15	882524	83.44	60	125	
Sc (IS)	45	2	HMI He	3749407	1.74	4165833	90.00	60	125	
Sc IS)	45	3	No Gas	102476320	0.12	114950556	89.15	60	120	
Ge Internal Standard	72	1	HMI H2	22029717	0.87	23371239	94.26	60	125	
Ge Internal Standard	72	2	HMI He	4474548	0.06	4959346	90.22	60	125	
In Internal standard	115	2	HMI He	14887623	2.09	15807784	94.18	60	125	
Ho-165	165	2	HMI He	40620772	0.91	41189580	98.62	60	125	

Sample Report

Sample Table

Sample Name 280-123500-a-1-a
 Data File Name 109SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T20:29:03-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457758 200.8
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	225.364	ppb	225.364	3.30	10779686	40000	
Be	9	1	6	0.082	ppb	0.082	66.35	22	2000	
B	11	1	6	23248.207	ppb	23248.207	2.01	451944	100	>LDR
Na	23	2	45	1470649.268	ppb	1470649.268	3.59	973479083	400000	
Mg	24	2	45	246618.977	ppb	246618.977	2.53	69390046	400000	
Al	27	2	45	18.699	ppb	18.699	11.66	2110	400000	
K	39	2	45	10319.301	ppb	10319.301	3.94	2928453	400000	
Ca	44	2	45	224075.808	ppb	224075.808	2.92	4641935	400000	
V	51	2	72	-0.401	ppb	-0.401	-28.44	10797	2000	
Cr	52	2	72	0.184	ppb	0.184	25.34	2150	5000	
Mn	55	2	72	31.669	ppb	31.669	5.58	80733	10000	
Fe	57	2	72	62.474	ppb	62.474	1.55	6978	400000	
Co	59	2	72	0.507	ppb	0.507	15.04	9086	2000	
Ni	60	2	72	4.000	ppb	4.000	5.22	9820	5000	
Cu	63	2	72	2.234	ppb	2.234	6.60	18123	5000	
Zn	66	2	72	1.687	ppb	1.687	26.13	3464	5000	
As	75	2	72	0.979	ppb	0.979	7.07	841	2000	
Se	78	1	72	65.431	ppb	65.431	0.84	32356	2000	
Sr	88	2	45	7420.900	ppb	7420.900	1.70	22202204	2000	
Zr	90	2	72	229.395	ppb	229.395	4.84	4874	1000	
Zr	90	1	72	261.837	ppb	261.837	2.75	12734	1000	
Nb	93	2	72	1.569	ppb	1.569	7.66	10634	200	
Mo	95	2	115	7.576	ppb	7.576	4.35	23583	2000	
Pd	105	2	115	0.287	ppb	0.287	14.64	1360	100	
Ag	107	2	115	0.052	ppb	0.052	13.53	583	100	
Cd	111	2	115	0.126	ppb	0.126	15.17	180	2000	
Sn	120	2	115	0.177	ppb	0.177	6.62	1467	2000	
Sb	121	2	115	0.065	ppb	0.065	65.72	480	1000	
Ba	137	2	115	5.772	ppb	5.772	6.66	7192	5000	
W	182	2	165	0.053	ppb	0.053	49.45	2637	100	
Pt	195	2	165	0.005	ppb	0.005	33.51	30	100	
Tl	205	2	165	0.047	ppb	0.047	18.99	917	2000	
Pb	208	2	165	0.102	ppb	0.102	13.29	3083	5000	
Th	232	2	165	1.106	ppb	1.106	3.20	22103	2000	
U	238	2	165	524.619	ppb	524.619	6.96	10524357	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	592640	0.87	882524	67.15	60	125	
Sc (IS)	45	2	HMI He	3658141	2.59	4165833	87.81	60	125	
Sc IS)	45	3	No Gas	97338142	0.54	114950556	84.68	60	120	
Ge Internal Standard	72	1	HMI H2	18354853	1.50	23371239	78.54	60	125	
Ge Internal Standard	72	2	HMI He	4128008	3.73	4959346	83.24	60	125	
In Internal standard	115	2	HMI He	13206374	2.93	15807784	83.54	60	125	
Ho-165	165	2	HMI He	35166225	3.47	41189580	85.38	60	125	

Sample Report

Sample Table

Sample Name 280-123500-a-2-a
 Data File Name 110SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T20:32:35-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457758 200.8
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	269.720	ppb	269.720	3.59	12277827	40000	
Be	9	1	6	0.047	ppb	0.047	115.28	13	2000	
B	11	1	6	13667.574	ppb	13667.574	1.89	287512	100	>LDR
Na	23	2	45	1287692.591	ppb	1287692.591	2.70	915892752	400000	
Mg	24	2	45	257773.154	ppb	257773.154	2.34	77929405	400000	
Al	27	2	45	76.290	ppb	76.290	7.85	7569	400000	
K	39	2	45	12281.536	ppb	12281.536	1.83	3724820	400000	
Ca	44	2	45	326843.713	ppb	326843.713	1.10	7277018	400000	
V	51	2	72	0.192	ppb	0.192	63.61	13882	2000	
Cr	52	2	72	0.234	ppb	0.234	20.19	2527	5000	
Mn	55	2	72	23.135	ppb	23.135	1.93	61686	10000	
Fe	57	2	72	158.576	ppb	158.576	4.84	17629	400000	
Co	59	2	72	0.689	ppb	0.689	15.50	11080	2000	
Ni	60	2	72	5.547	ppb	5.547	4.58	14043	5000	
Cu	63	2	72	3.351	ppb	3.351	2.26	26374	5000	
Zn	66	2	72	3.539	ppb	3.539	9.60	5418	5000	
As	75	2	72	1.644	ppb	1.644	4.46	1366	2000	
Se	78	1	72	123.676	ppb	123.676	2.49	65732	2000	
Sr	88	2	45	10115.389	ppb	10115.389	2.91	32507057	2000	>LDR
Zr	90	2	72	125.468	ppb	125.468	1.38	3040	1000	
Zr	90	1	72	120.407	ppb	120.407	1.96	7346	1000	
Nb	93	2	72	0.648	ppb	0.648	10.72	5464	200	
Mo	95	2	115	7.260	ppb	7.260	3.84	23927	2000	
Pd	105	2	115	0.401	ppb	0.401	7.44	1987	100	
Ag	107	2	115	0.041	ppb	0.041	13.12	513	100	
Cd	111	2	115	0.117	ppb	0.117	15.08	177	2000	
Sn	120	2	115	0.027	ppb	0.027	95.38	873	2000	
Sb	121	2	115	0.069	ppb	0.069	28.18	523	1000	
Ba	137	2	115	6.701	ppb	6.701	7.68	8806	5000	
W	182	2	165	-0.030	ppb	-0.030	-81.91	2114	100	
Pt	195	2	165	0.001	ppb	0.001	139.45	10	100	
Tl	205	2	165	0.095	ppb	0.095	2.24	1633	2000	
Pb	208	2	165	0.148	ppb	0.148	7.33	4064	5000	
Th	232	2	165	0.259	ppb	0.259	3.69	5828	2000	
U	238	2	165	747.985	ppb	747.985	1.88	15525216	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	640993	0.97	882524	72.63	60	125	
Sc (IS)	45	2	HMI He	3929374	1.46	4165833	94.32	60	125	
Sc IS)	45	3	No Gas	102395405	1.47	114950556	89.08	60	120	
Ge Internal Standard	72	1	HMI H2	19736585	1.01	23371239	84.45	60	125	
Ge Internal Standard	72	2	HMI He	4304666	0.95	4959346	86.80	60	125	
In Internal standard	115	2	HMI He	13966168	0.57	15807784	88.35	60	125	
Ho-165	165	2	HMI He	36327651	1.07	41189580	88.20	60	125	

Sample Report

Sample Table

Sample Name 280-123500-a-3-a
 Data File Name 111SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T20:36:05-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457758 200.8
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	210.999	ppb	210.999	2.63	10995965	40000	
Be	9	1	6	0.058	ppb	0.058	57.36	15	2000	
B	11	1	6	8627.591	ppb	8627.591	2.10	164641	100	>LDR
Na	23	2	45	1954615.842	ppb	1954615.842	1.72	1405583700	400000	
Mg	24	2	45	461839.659	ppb	461839.659	1.24	141139601	400000	
Al	27	2	45	1.891	ppb	1.891	48.44	727	400000	
K	39	2	45	11748.967	ppb	11748.967	2.96	3605792	400000	
Ca	44	2	45	616108.970	ppb	616108.970	2.48	13863451	400000	
V	51	2	72	-0.130	ppb	-0.130	-163.51	12465	2000	
Cr	52	2	72	0.284	ppb	0.284	13.34	2810	5000	
Mn	55	2	72	65.763	ppb	65.763	2.30	174736	10000	
Fe	57	2	72	109.399	ppb	109.399	7.30	12341	400000	
Co	59	2	72	0.825	ppb	0.825	13.67	12278	2000	
Ni	60	2	72	9.248	ppb	9.248	6.48	23119	5000	
Cu	63	2	72	5.162	ppb	5.162	4.59	38453	5000	
Zn	66	2	72	1.665	ppb	1.665	25.60	3607	5000	
As	75	2	72	1.858	ppb	1.858	2.50	1525	2000	
Se	78	1	72	53.806	ppb	53.806	4.00	27795	2000	
Sr	88	2	45	24060.877	ppb	24060.877	1.06	78176753	2000	>LDR
Zr	90	2	72	153.071	ppb	153.071	1.17	3587	1000	
Zr	90	1	72	158.952	ppb	158.952	1.16	8821	1000	
Nb	93	2	72	0.371	ppb	0.371	29.25	3774	200	
Mo	95	2	115	6.633	ppb	6.633	4.75	20513	2000	
Pd	105	2	115	1.006	ppb	1.006	5.67	4577	100	
Ag	107	2	115	0.065	ppb	0.065	21.68	703	100	
Cd	111	2	115	0.289	ppb	0.289	11.20	400	2000	
Sn	120	2	115	0.036	ppb	0.036	50.73	857	2000	
Sb	121	2	115	0.151	ppb	0.151	27.21	787	1000	
Ba	137	2	115	18.152	ppb	18.152	3.15	22065	5000	
W	182	2	165	0.023	ppb	0.023	150.49	2364	100	
Pt	195	2	165	0.002	ppb	0.002	141.14	13	100	
Tl	205	2	165	0.052	ppb	0.052	11.44	963	2000	
Pb	208	2	165	0.018	ppb	0.018	32.85	1507	5000	
Th	232	2	165	0.096	ppb	0.096	1.35	2400	2000	
U	238	2	165	223.977	ppb	223.977	4.98	4376811	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	581189	0.43	882524	65.86	60	125	
Sc (IS)	45	2	HMI He	3972158	1.38	4165833	95.35	60	125	
Sc IS)	45	3	No Gas	102030749	0.35	114950556	88.76	60	120	
Ge Internal Standard	72	1	HMI H2	19187417	3.81	23371239	82.10	60	125	
Ge Internal Standard	72	2	HMI He	4308220	1.67	4959346	86.87	60	125	
In Internal standard	115	2	HMI He	13096570	1.19	15807784	82.85	60	125	
Ho-165	165	2	HMI He	34250396	4.83	41189580	83.15	60	125	

Sample Report

Sample Table

Sample Name 280-123500-a-4-a
 Data File Name 112SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T20:39:35-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457758 200.8
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	200.504	ppb	200.504	1.97	10598107	40000	
Be	9	1	6	0.052	ppb	0.052	94.05	13	2000	
B	11	1	6	24409.502	ppb	24409.502	0.33	460892	100	>LDR
Na	23	2	45	2140696.139	ppb	2140696.139	5.79	1555054132	400000	>LDR
Mg	24	2	45	425959.454	ppb	425959.454	4.57	131511840	400000	
Al	27	2	45	10.143	ppb	10.143	20.56	1510	400000	
K	39	2	45	2859.116	ppb	2859.116	2.06	973099	400000	
Ca	44	2	45	374569.609	ppb	374569.609	1.37	8518256	400000	
V	51	2	72	6.071	ppb	6.071	6.21	40464	2000	
Cr	52	2	72	0.625	ppb	0.625	9.04	4841	5000	
Mn	55	2	72	109.570	ppb	109.570	1.71	296188	10000	
Fe	57	2	72	69.161	ppb	69.161	4.11	8152	400000	
Co	59	2	72	1.184	ppb	1.184	3.92	15721	2000	
Ni	60	2	72	11.841	ppb	11.841	3.72	30003	5000	
Cu	63	2	72	7.515	ppb	7.515	3.83	55128	5000	
Zn	66	2	72	1.406	ppb	1.406	22.23	3410	5000	
As	75	2	72	2.713	ppb	2.713	6.71	2192	2000	
Se	78	1	72	42.841	ppb	42.841	0.67	22152	2000	
Sr	88	2	45	17681.353	ppb	17681.353	2.50	58074224	2000	>LDR
Zr	90	2	72	165.954	ppb	165.954	1.13	3910	1000	
Zr	90	1	72	171.662	ppb	171.662	7.35	9375	1000	
Nb	93	2	72	0.228	ppb	0.228	11.13	2957	200	
Mo	95	2	115	3.352	ppb	3.352	8.21	10747	2000	
Pd	105	2	115	0.796	ppb	0.796	10.79	3720	100	
Ag	107	2	115	0.054	ppb	0.054	30.97	610	100	
Cd	111	2	115	0.190	ppb	0.190	10.51	273	2000	
Sn	120	2	115	0.082	ppb	0.082	19.41	1083	2000	
Sb	121	2	115	0.261	ppb	0.261	20.26	1210	1000	
Ba	137	2	115	9.082	ppb	9.082	2.66	11421	5000	
W	182	2	165	-0.004	ppb	-0.004	-477.24	2317	100	
Pt	195	2	165	0.001	ppb	0.001	152.55	7	100	
Tl	205	2	165	0.021	ppb	0.021	33.38	577	2000	
Pb	208	2	165	0.015	ppb	0.015	44.71	1563	5000	
Th	232	2	165	0.056	ppb	0.056	11.89	1740	2000	
U	238	2	165	474.788	ppb	474.788	2.25	9895717	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	575594	0.72	882524	65.22	60	125	
Sc (IS)	45	2	HMI He	4014360	1.47	4165833	96.36	60	125	
Sc IS)	45	3	No Gas	100365669	1.18	114950556	87.31	60	120	
Ge Internal Standard	72	1	HMI H2	19183398	1.12	23371239	82.08	60	125	
Ge Internal Standard	72	2	HMI He	4386189	1.68	4959346	88.44	60	125	
In Internal standard	115	2	HMI He	13442837	5.31	15807784	85.04	60	125	
Ho-165	165	2	HMI He	36481709	1.16	41189580	88.57	60	125	

Sample Report

Sample Table

Sample Name 280-123500-a-5-a
 Data File Name 113SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T20:43:07-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457758 200.8
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	188.179	ppb	188.179	1.29	10496211	40000	
Be	9	1	6	0.040	ppb	0.040	100.27	10	2000	
B	11	1	6	25449.007	ppb	25449.007	1.49	475048	100	>LDR
Na	23	2	45	2091866.720	ppb	2091866.720	3.16	1531562653	400000	>LDR
Mg	24	2	45	410042.973	ppb	410042.973	3.19	127585693	400000	
Al	27	2	45	16.146	ppb	16.146	4.95	2090	400000	
K	39	2	45	2790.964	ppb	2790.964	0.37	960005	400000	
Ca	44	2	45	376897.107	ppb	376897.107	2.58	8636694	400000	
V	51	2	72	6.335	ppb	6.335	2.56	40414	2000	
Cr	52	2	72	0.841	ppb	0.841	3.31	5911	5000	
Mn	55	2	72	91.505	ppb	91.505	2.18	239954	10000	
Fe	57	2	72	64.675	ppb	64.675	1.02	7428	400000	
Co	59	2	72	1.124	ppb	1.124	5.08	14723	2000	
Ni	60	2	72	10.854	ppb	10.854	3.73	26714	5000	
Cu	63	2	72	7.912	ppb	7.912	3.47	56091	5000	
Zn	66	2	72	0.728	ppb	0.728	20.66	2660	5000	
As	75	2	72	2.932	ppb	2.932	2.31	2286	2000	
Se	78	1	72	43.613	ppb	43.613	3.26	22534	2000	
Sr	88	2	45	17474.838	ppb	17474.838	3.69	57809411	2000	>LDR
Zr	90	2	72	123.741	ppb	123.741	14.59	2974	1000	
Zr	90	1	72	135.364	ppb	135.364	6.55	7790	1000	
Nb	93	2	72	0.167	ppb	0.167	26.70	2500	200	
Mo	95	2	115	3.273	ppb	3.273	6.67	10583	2000	
Pd	105	2	115	0.735	ppb	0.735	2.81	3477	100	
Ag	107	2	115	0.031	ppb	0.031	25.03	393	100	
Cd	111	2	115	0.215	ppb	0.215	10.94	310	2000	
Sn	120	2	115	0.041	ppb	0.041	34.39	910	2000	
Sb	121	2	115	0.265	ppb	0.265	5.67	1240	1000	
Ba	137	2	115	9.109	ppb	9.109	2.80	11538	5000	
W	182	2	165	0.128	ppb	0.128	9.18	3174	100	
Pt	195	2	165	0.001	ppb	0.001	240.94	10	100	
Tl	205	2	165	0.030	ppb	0.030	16.09	687	2000	
Pb	208	2	165	0.056	ppb	0.056	37.51	2247	5000	
Th	232	2	165	0.048	ppb	0.048	11.80	1523	2000	
U	238	2	165	514.257	ppb	514.257	0.62	10324745	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	569147	1.54	882524	64.49	60	125	
Sc (IS)	45	2	HMI He	4044726	1.09	4165833	97.09	60	125	
Sc IS)	45	3	No Gas	101856805	0.61	114950556	88.61	60	120	
Ge Internal Standard	72	1	HMI H2	19176770	2.64	23371239	82.05	60	125	
Ge Internal Standard	72	2	HMI He	4254251	1.21	4959346	85.78	60	125	
In Internal standard	115	2	HMI He	13537743	1.72	15807784	85.64	60	125	
Ho-165	165	2	HMI He	35137385	2.70	41189580	85.31	60	125	

Sample Report

Sample Table

Sample Name 280-123500-a-6-a
 Data File Name 114SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T20:46:38-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457758 200.8
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	204.992	ppb	204.992	3.27	10914789	40000	
Be	9	1	6	0.019	ppb	0.019	100.37	5	2000	
B	11	1	6	7715.113	ppb	7715.113	1.86	152980	100	>LDR
Na	23	2	45	1254877.298	ppb	1254877.298	2.08	873983914	400000	
Mg	24	2	45	216104.240	ppb	216104.240	1.99	63971763	400000	
Al	27	2	45	1.311	ppb	1.311	43.36	650	400000	
K	39	2	45	7503.747	ppb	7503.747	3.04	2270114	400000	
Ca	44	2	45	381934.156	ppb	381934.156	1.92	8323590	400000	
V	51	2	72	0.380	ppb	0.380	56.21	14866	2000	
Cr	52	2	72	0.385	ppb	0.385	6.93	3430	5000	
Mn	55	2	72	209.574	ppb	209.574	2.83	561937	10000	
Fe	57	2	72	72.933	ppb	72.933	7.44	8496	400000	
Co	59	2	72	0.761	ppb	0.761	6.37	11848	2000	
Ni	60	2	72	10.202	ppb	10.202	2.05	25736	5000	
Cu	63	2	72	4.666	ppb	4.666	0.89	35540	5000	
Zn	66	2	72	2.722	ppb	2.722	11.26	4677	5000	
As	75	2	72	1.538	ppb	1.538	11.62	1301	2000	
Se	78	1	72	7.974	ppb	7.974	3.82	4361	2000	
Sr	88	2	45	13220.813	ppb	13220.813	2.66	41594255	2000	>LDR
Zr	90	2	72	357.808	ppb	357.808	6.67	7702	1000	
Zr	90	1	72	366.565	ppb	366.565	3.85	18809	1000	
Nb	93	2	72	0.038	ppb	0.038	90.16	1763	200	
Mo	95	2	115	3.244	ppb	3.244	1.78	10830	2000	
Pd	105	2	115	0.501	ppb	0.501	11.22	2464	100	
Ag	107	2	115	0.009	ppb	0.009	107.94	190	100	
Cd	111	2	115	0.486	ppb	0.486	12.15	713	2000	
Sn	120	2	115	0.023	ppb	0.023	88.99	860	2000	
Sb	121	2	115	0.207	ppb	0.207	12.19	1053	1000	
Ba	137	2	115	15.070	ppb	15.070	0.58	19569	5000	
W	182	2	165	0.029	ppb	0.029	57.01	2650	100	
Pt	195	2	165	0.001	ppb	0.001	316.84	7	100	
Tl	205	2	165	0.043	ppb	0.043	5.37	930	2000	
Pb	208	2	165	0.006	ppb	0.006	66.15	1433	5000	
Th	232	2	165	0.022	ppb	0.022	34.73	1093	2000	
U	238	2	165	329.802	ppb	329.802	3.81	7105406	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	603760	0.58	882524	68.41	60	125	
Sc (IS)	45	2	HMI He	3847761	2.77	4165833	92.36	60	125	
Sc IS)	45	3	No Gas	102470265	1.47	114950556	89.14	60	120	
Ge Internal Standard	72	1	HMI H2	20187818	2.41	23371239	86.38	60	125	
Ge Internal Standard	72	2	HMI He	4355233	2.42	4959346	87.82	60	125	
In Internal standard	115	2	HMI He	13964616	1.70	15807784	88.34	60	125	
Ho-165	165	2	HMI He	37721392	1.96	41189580	91.58	60	125	

Sample Report

Sample Table

Sample Name 280-123500-a-6-b ms
 Data File Name 115SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T20:50:09-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457758 200.8
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	246.701	ppb	246.701	3.83	12027876	40000	
Be	9	1	6	37.064	ppb	37.064	3.45	9859	2000	
B	11	1	6	7984.492	ppb	7984.492	1.68	156798	100	>LDR
Na	23	2	45	1261932.974	ppb	1261932.974	0.53	893159473	400000	
Mg	24	2	45	214252.132	ppb	214252.132	3.76	64418897	400000	
Al	27	2	45	308.650	ppb	308.650	2.88	28804	400000	
K	39	2	45	7573.123	ppb	7573.123	2.59	2326534	400000	
Ca	44	2	45	394401.709	ppb	394401.709	2.24	8735060	400000	
V	51	2	72	34.973	ppb	34.973	4.57	169994	2000	
Cr	52	2	72	33.197	ppb	33.197	3.57	193850	5000	
Mn	55	2	72	245.686	ppb	245.686	2.65	663953	10000	
Fe	57	2	72	391.810	ppb	391.810	2.92	43588	400000	
Co	59	2	72	34.031	ppb	34.031	3.60	309434	2000	
Ni	60	2	72	41.377	ppb	41.377	2.69	103776	5000	
Cu	63	2	72	35.763	ppb	35.763	3.63	247046	5000	
Zn	66	2	72	32.965	ppb	32.965	5.94	34615	5000	
As	75	2	72	35.021	ppb	35.021	3.73	26416	2000	
Se	78	1	72	43.617	ppb	43.617	2.56	24189	2000	
Sr	88	2	45	13074.418	ppb	13074.418	1.39	41800314	2000	>LDR
Zr	90	2	72	177.714	ppb	177.714	5.88	4154	1000	
Zr	90	1	72	179.214	ppb	179.214	2.61	10407	1000	
Nb	93	2	72	0.043	ppb	0.043	78.04	1800	200	
Mo	95	2	115	37.604	ppb	37.604	0.62	125147	2000	
Pd	105	2	115	0.491	ppb	0.491	10.56	2460	100	
Ag	107	2	115	30.421	ppb	30.421	0.78	313461	100	
Cd	111	2	115	31.442	ppb	31.442	5.10	46639	2000	
Sn	120	2	115	33.636	ppb	33.636	0.22	154962	2000	
Sb	121	2	115	34.918	ppb	34.918	1.66	137623	1000	
Ba	137	2	115	49.930	ppb	49.930	0.90	65576	5000	
W	182	2	165	16.541	ppb	16.541	1.86	131178	100	
Pt	195	2	165	0.002	ppb	0.002	149.53	13	100	
Tl	205	2	165	30.843	ppb	30.843	1.99	461890	2000	
Pb	208	2	165	30.710	ppb	30.710	3.44	612727	5000	
Th	232	2	165	28.653	ppb	28.653	2.77	606729	2000	
U	238	2	165	368.278	ppb	368.278	1.93	8051912	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	598084	1.38	882524	67.77	60	125	
Sc (IS)	45	2	HMI He	3908974	2.16	4165833	93.83	60	125	
Sc IS)	45	3	No Gas	104457981	1.54	114950556	90.87	60	120	
Ge Internal Standard	72	1	HMI H2	20572772	1.62	23371239	88.03	60	125	
Ge Internal Standard	72	2	HMI He	4390078	2.74	4959346	88.52	60	125	
In Internal standard	115	2	HMI He	14221550	0.53	15807784	89.97	60	125	
Ho-165	165	2	HMI He	38275154	2.12	41189580	92.92	60	125	

Sample Report

Sample Table

Sample Name 280-123500-a-6-c msd
 Data File Name 116SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T20:53:40-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457758 200.8
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	242.734	ppb	242.734	2.90	11834349	40000	
Be	9	1	6	37.462	ppb	37.462	5.38	10213	2000	
B	11	1	6	7626.299	ppb	7626.299	4.23	153485	100	>LDR
Na	23	2	45	1240077.610	ppb	1240077.610	3.39	875947368	400000	
Mg	24	2	45	207865.534	ppb	207865.534	3.29	62410128	400000	
Al	27	2	45	343.203	ppb	343.203	3.32	31926	400000	
K	39	2	45	7159.796	ppb	7159.796	3.33	2202345	400000	
Ca	44	2	45	374562.696	ppb	374562.696	2.37	8280834	400000	
V	51	2	72	35.703	ppb	35.703	5.04	173313	2000	
Cr	52	2	72	34.736	ppb	34.736	4.44	202799	5000	
Mn	55	2	72	241.044	ppb	241.044	4.50	651488	10000	
Fe	57	2	72	435.981	ppb	435.981	0.30	48488	400000	
Co	59	2	72	35.335	ppb	35.335	3.66	321186	2000	
Ni	60	2	72	42.605	ppb	42.605	2.42	106891	5000	
Cu	63	2	72	36.948	ppb	36.948	3.12	255221	5000	
Zn	66	2	72	35.288	ppb	35.288	0.75	36960	5000	
As	75	2	72	36.479	ppb	36.479	2.48	27528	2000	
Se	78	1	72	45.623	ppb	45.623	3.27	25323	2000	
Sr	88	2	45	12641.625	ppb	12641.625	3.97	40339229	2000	>LDR
Zr	90	2	72	169.500	ppb	169.500	10.50	3981	1000	
Zr	90	1	72	176.063	ppb	176.063	4.70	10270	1000	
Nb	93	2	72	0.001	ppb	0.001	3523.77	1540	200	
Mo	95	2	115	39.096	ppb	39.096	0.77	127891	2000	
Pd	105	2	115	0.466	ppb	0.466	11.52	2300	100	
Ag	107	2	115	31.941	ppb	31.941	0.89	323584	100	
Cd	111	2	115	33.256	ppb	33.256	1.05	48491	2000	
Sn	120	2	115	34.713	ppb	34.713	2.98	157156	2000	
Sb	121	2	115	36.102	ppb	36.102	3.38	139842	1000	
Ba	137	2	115	51.724	ppb	51.724	1.17	66774	5000	
W	182	2	165	17.679	ppb	17.679	3.96	137984	100	
Pt	195	2	165	0.002	ppb	0.002	59.56	13	100	
Tl	205	2	165	31.883	ppb	31.883	3.30	470514	2000	
Pb	208	2	165	31.579	ppb	31.579	3.90	621018	5000	
Th	232	2	165	31.212	ppb	31.212	3.41	651376	2000	
U	238	2	165	360.461	ppb	360.461	3.63	7768649	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	612837	0.23	882524	69.44	60	125	
Sc (IS)	45	2	HMI He	3904296	3.48	4165833	93.72	60	125	
Sc IS)	45	3	No Gas	103512306	1.38	114950556	90.05	60	120	
Ge Internal Standard	72	1	HMI H2	20593916	1.40	23371239	88.12	60	125	
Ge Internal Standard	72	2	HMI He	4392493	3.25	4959346	88.57	60	125	
In Internal standard	115	2	HMI He	13980864	1.23	15807784	88.44	60	125	
Ho-165	165	2	HMI He	37735810	2.92	41189580	91.61	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5701467
 Data File Name 117_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T20:57:11-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	50.853	ppb	10.181	122441	100	50.9	90	110	>+ -10%
Li	7	3	45	28.711	ppb	18.584	7747649	100	28.7	90	110	>+ -10%
Be	9	1	6	50.092	ppb	3.926	16446	50	100.2	90	110	
B	11	1	6	347.637	ppb	4.292	8729	50	695.3	90	110	>+ -10%
Na	23	2	45	3477.668	ppb	3.267	2463796	1000	347.8	90	110	>+ -10%
Mg	24	2	45	1150.278	ppb	2.981	341479	1000	115.0	90	110	>+ -10%
Al	27	2	45	976.416	ppb	3.639	88469	1000	97.6	90	110	
K	39	2	45	1027.586	ppb	2.515	404836	1000	102.8	90	110	
Ca	44	2	45	1233.579	ppb	2.887	27141	1000	123.4	90	110	>+ -10%
V	51	2	72	45.539	ppb	2.039	237252	50	91.1	90	110	
Cr	52	2	72	47.988	ppb	3.786	305211	50	96.0	90	110	
Mn	55	2	72	48.548	ppb	1.824	143540	50	97.1	90	110	
Fe	57	2	72	968.115	ppb	0.797	116656	1000	96.8	90	110	
Co	59	2	72	50.685	ppb	1.671	500258	50	101.4	90	110	
Ni	60	2	72	48.324	ppb	3.083	132177	50	96.6	90	110	
Cu	63	2	72	49.082	ppb	1.175	368400	50	98.2	90	110	
Zn	66	2	72	48.986	ppb	1.886	55071	50	98.0	90	110	
As	75	2	72	50.117	ppb	1.350	41188	50	100.2	90	110	
Se	78	1	72	50.989	ppb	2.764	32574	50	102.0	90	110	
Sr	88	2	45	117.084	ppb	1.204	368332	100	117.1	90	110	>+ -10%
Zr	90	2	72	45.877	ppb	12.823	1637	50	91.8	90	110	
Zr	90	1	72	40.259	ppb	8.555	4498	50	80.5	90	110	>+ -10%
Nb	93	2	72	95.773	ppb	3.698	652468	100	95.8	90	110	
Mo	95	2	115	50.050	ppb	1.297	187565	50	100.1	90	110	
Pd	105	2	115	50.573	ppb	0.613	278031	50	101.1	90	110	
Ag	107	2	115	49.401	ppb	0.270	573411	50	98.8	90	110	
Cd	111	2	115	49.435	ppb	1.986	82582	50	98.9	90	110	
Sn	120	2	115	48.275	ppb	2.471	250137	50	96.6	90	110	
Sb	121	2	115	48.293	ppb	1.714	214337	50	96.6	90	110	
Ba	137	2	115	50.140	ppb	0.079	74189	50	100.3	90	110	
W	182	2	165	48.618	ppb	1.923	421566	50	97.2	90	110	
Pt	195	2	165	48.685	ppb	4.556	298193	50	97.4	90	110	
Tl	205	2	165	49.456	ppb	6.179	818824	50	98.9	90	110	
Pb	208	2	165	48.509	ppb	4.474	1070174	50	97.0	90	110	
Th	232	2	165	46.335	ppb	4.072	1085403	50	92.7	90	110	
U	238	2	165	46.549	ppb	6.970	1125471	50	93.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	738142	0.94	882524	83.64	60	125	
Sc (IS)	45	2	HMI He	3843821	0.92	4165833	92.27	60	125	
Sc (IS)	45	3	No Gas	110615630	1.08	114950556	96.23	60	120	
Ge Internal Standard	72	1	HMI H2	23711268	1.98	23371239	101.45	60	125	
Ge Internal Standard	72	2	HMI He	4789174	0.77	4959346	96.57	60	125	
In Internal standard	115	2	HMI He	16021851	1.33	15807784	101.35	60	125	
Ho-165	165	2	HMI He	42387020	4.09	41189580	102.91	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5701457
 Data File Name 118_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T21:00:43-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-51.678	ppb	-14.3	92482	0.1	
Li	7	3	45	-50.631	ppb	-18.5	5972964	0.05	
Be	9	1	6	0.111	ppb	43.5	37	0.5	
B	11	1	6	189.382	ppb	4.4	4937	0.1	>RL
Na	23	2	45	1466.594	ppb	2.6	1071812	25	>RL
Mg	24	2	45	26.054	ppb	4.0	9109	25	>RL
Al	27	2	45	-2.195	ppb	-34.8	337	15	
K	39	2	45	11.838	ppb	77.6	113379	50	
Ca	44	2	45	33.518	ppb	11.3	1020	25	>RL
V	51	2	72	-1.537	ppb	-1.4	6951	1	
Cr	52	2	72	0.017	ppb	164.9	1427	1	
Mn	55	2	72	0.070	ppb	27.9	643	0.5	
Fe	57	2	72	42.207	ppb	151.7	5659	25	>RL
Co	59	2	72	0.035	ppb	107.6	5928	0.5	
Ni	60	2	72	0.066	ppb	83.6	683	1	
Cu	63	2	72	0.315	ppb	23.4	6791	1	
Zn	66	2	72	-1.134	ppb	-7.1	980	5	
As	75	2	72	0.005	ppb	188.8	178	1	
Se	78	1	72	0.107	ppb	29.0	99	1	
Sr	88	2	45	1.401	ppb	7.7	4611	1	>RL
Zr	90	2	72	-6.499	ppb	-54.8	487	1	
Zr	90	1	72	-9.652	ppb	-35.3	1795	1	
Nb	93	2	72	2.792	ppb	5.8	20553	2	>RL
Mo	95	2	115	0.088	ppb	32.2	600	0.5	
Pd	105	2	115	0.046	ppb	55.8	323	1	
Ag	107	2	115	0.048	ppb	20.3	657	1	
Cd	111	2	115	0.041	ppb	10.3	73	0.5	
Sn	120	2	115	0.062	ppb	20.9	1163	1	
Sb	121	2	115	0.041	ppb	34.4	467	1	
Ba	137	2	115	0.027	ppb	106.4	253	0.5	
W	182	2	165	0.059	ppb	26.7	3204	1	
Pt	195	2	165	0.027	ppb	31.6	170	1	
Tl	205	2	165	0.071	ppb	24.8	1487	0.1	
Pb	208	2	165	0.054	ppb	18.8	2643	0.5	
Th	232	2	165	0.142	ppb	1.1	4001	1	
U	238	2	165	0.152	ppb	12.6	3871	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	743562	0.55	882524	84.25	60	125	
Sc (IS)	45	2	HMI He	3871322	1.69	4165833	92.93	60	125	
Sc IS)	45	3	No Gas	111384103	1.03	114950556	96.90	60	120	
Ge Internal Standard	72	1	HMI H2	23563421	1.91	23371239	100.82	60	125	
Ge Internal Standard	72	2	HMI He	4766466	0.65	4959346	96.11	60	125	
In Internal standard	115	2	HMI He	15718098	1.69	15807784	99.43	60	125	
Ho-165	165	2	HMI He	41956176	0.24	41189580	101.86	60	125	

Sample Report

Sample Table

Sample Name 280-123500-a-7-a
 Data File Name 119SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T21:04:16-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457758 200.8
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-53.378	ppb	-53.378	-3.58	5869999	40000	
Be	9	1	6	0.005	ppb	0.005	173.21	2	2000	
B	11	1	6	175.089	ppb	175.089	6.33	4467	100	
Na	23	2	45	1261.894	ppb	1261.894	1.65	917219	400000	
Mg	24	2	45	28.015	ppb	28.015	14.66	9583	400000	
Al	27	2	45	0.331	ppb	0.331	286.01	560	400000	
K	39	2	45	-0.948	ppb	-0.948	-908.74	108325	400000	
Ca	44	2	45	50.996	ppb	50.996	14.14	1387	400000	
V	51	2	72	-1.220	ppb	-1.220	-4.54	8546	2000	
Cr	52	2	72	3.884	ppb	3.884	3.15	25950	5000	
Mn	55	2	72	1.624	ppb	1.624	9.75	5228	10000	
Fe	57	2	72	4.835	ppb	4.835	25.27	1190	400000	
Co	59	2	72	0.029	ppb	0.029	30.18	5898	2000	
Ni	60	2	72	0.203	ppb	0.203	25.37	1057	5000	
Cu	63	2	72	0.259	ppb	0.259	18.19	6415	5000	
Zn	66	2	72	0.232	ppb	0.232	102.94	2460	5000	
As	75	2	72	0.085	ppb	0.085	48.86	244	2000	
Se	78	1	72	0.119	ppb	0.119	38.05	104	2000	
Sr	88	2	45	1.285	ppb	1.285	5.64	4191	2000	
Zr	90	2	72	-5.744	ppb	-5.744	-14.84	507	1000	
Zr	90	1	72	-5.805	ppb	-5.805	-69.64	1959	1000	
Nb	93	2	72	1.672	ppb	1.672	12.66	13039	200	
Mo	95	2	115	0.094	ppb	0.094	41.86	613	2000	
Pd	105	2	115	0.031	ppb	0.031	8.49	237	100	
Ag	107	2	115	0.025	ppb	0.025	14.72	380	100	
Cd	111	2	115	0.015	ppb	0.015	43.69	30	2000	
Sn	120	2	115	4.593	ppb	4.593	3.26	23751	2000	
Sb	121	2	115	-0.024	ppb	-0.024	-33.04	183	1000	
Ba	137	2	115	0.111	ppb	0.111	10.50	370	5000	
W	182	2	165	0.008	ppb	0.008	345.70	2814	100	
Pt	195	2	165	0.011	ppb	0.011	38.34	70	100	
Tl	205	2	165	0.006	ppb	0.006	55.16	427	2000	
Pb	208	2	165	0.047	ppb	0.047	26.45	2520	5000	
Th	232	2	165	0.248	ppb	0.248	13.13	6538	2000	
U	238	2	165	0.084	ppb	0.084	3.85	2280	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	724089	0.90	882524	82.05	60	125	
Sc (IS)	45	2	HMI He	3824187	1.86	4165833	91.80	60	125	
Sc IS)	45	3	No Gas	110633509	1.05	114950556	96.24	60	120	
Ge Internal Standard	72	1	HMI H2	23015634	1.59	23371239	98.48	60	125	
Ge Internal Standard	72	2	HMI He	4795919	2.49	4959346	96.70	60	125	
In Internal standard	115	2	HMI He	15473100	1.36	15807784	97.88	60	125	
Ho-165	165	2	HMI He	42493591	3.15	41189580	103.17	60	125	

Sample Report

Sample Table

Sample Name 280-123318-a-1-b.ms
 Data File Name 120SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T21:07:49-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457042 200.8
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	26.979	ppb	26.979	23.59	7399685	40000	
Be	9	1	6	34.755	ppb	34.755	3.81	11073	2000	
B	11	1	6	1626.705	ppb	1626.705	2.66	38501	100	>LDR
Na	23	2	45	75271.503	ppb	75271.503	1.65	53326903	400000	
Mg	24	2	45	4558.973	ppb	4558.973	2.47	1372963	400000	
Al	27	2	45	389.521	ppb	389.521	2.49	36237	400000	
K	39	2	45	29017.558	ppb	29017.558	2.36	8604877	400000	
Ca	44	2	45	11182.500	ppb	11182.500	0.69	248011	400000	
V	51	2	72	31.848	ppb	31.848	1.47	165011	2000	
Cr	52	2	72	32.748	ppb	32.748	1.11	202189	5000	
Mn	55	2	72	51.840	ppb	51.840	2.91	148444	10000	
Fe	57	2	72	646.515	ppb	646.515	1.13	75657	400000	
Co	59	2	72	32.616	ppb	32.616	1.41	313808	2000	
Ni	60	2	72	34.954	ppb	34.954	0.54	92758	5000	
Cu	63	2	72	117.408	ppb	117.408	1.72	847526	5000	
Zn	66	2	72	96.735	ppb	96.735	1.98	103258	5000	
As	75	2	72	31.780	ppb	31.780	1.99	25363	2000	
Se	78	1	72	32.648	ppb	32.648	1.94	19671	2000	
Sr	88	2	45	136.630	ppb	136.630	2.23	437243	2000	
Zr	90	2	72	71.045	ppb	71.045	23.49	2124	1000	
Zr	90	1	72	65.472	ppb	65.472	17.74	5523	1000	
Nb	93	2	72	2.261	ppb	2.261	12.18	16492	200	
Mo	95	2	115	34.765	ppb	34.765	2.24	122257	2000	
Pd	105	2	115	0.034	ppb	0.034	12.00	243	100	
Ag	107	2	115	33.134	ppb	33.134	2.03	360721	100	
Cd	111	2	115	33.352	ppb	33.352	2.51	52262	2000	
Sn	120	2	115	20.596	ppb	20.596	2.62	100561	2000	
Sb	121	2	115	33.628	ppb	33.628	2.26	140047	1000	
Ba	137	2	115	52.889	ppb	52.889	2.07	73379	5000	
W	182	2	165	16.130	ppb	16.130	2.33	139648	100	
Pt	195	2	165	0.002	ppb	0.002	42.20	17	100	
Tl	205	2	165	32.025	ppb	32.025	6.52	522735	2000	
Pb	208	2	165	32.257	ppb	32.257	6.02	701689	5000	
Th	232	2	165	9.443	ppb	9.443	15.92	218334	2000	
U	238	2	165	30.053	ppb	30.053	3.34	716842	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	716107	0.78	882524	81.14	60	125	
Sc (IS)	45	2	HMI He	3910080	0.71	4165833	93.86	60	125	
Sc IS)	45	3	No Gas	106189346	0.89	114950556	92.38	60	120	
Ge Internal Standard	72	1	HMI H2	22346723	1.02	23371239	95.62	60	125	
Ge Internal Standard	72	2	HMI He	4639768	2.37	4959346	93.56	60	125	
In Internal standard	115	2	HMI He	15025211	0.24	15807784	95.05	60	125	
Ho-165	165	2	HMI He	41758202	2.71	41189580	101.38	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5701467
 Data File Name 121_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T21:11:22-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	65.476	ppb	5.186	122508	100	65.5	90	110	>+ -10%
Li	7	3	45	36.897	ppb	27.349	7767638	100	36.9	90	110	>+ -10%
Be	9	1	6	50.136	ppb	3.340	16583	50	100.3	90	110	
B	11	1	6	175.025	ppb	2.015	4587	50	350.0	90	110	>+ -10%
Na	23	2	45	1902.078	ppb	1.025	1363049	1000	190.2	90	110	>+ -10%
Mg	24	2	45	975.678	ppb	1.632	288934	1000	97.6	90	110	
Al	27	2	45	960.266	ppb	4.191	86731	1000	96.0	90	110	
K	39	2	45	975.352	ppb	1.539	388564	1000	97.5	90	110	
Ca	44	2	45	1008.799	ppb	3.326	22174	1000	100.9	90	110	
V	51	2	72	46.727	ppb	2.199	236078	50	93.5	90	110	
Cr	52	2	72	48.006	ppb	1.354	296588	50	96.0	90	110	
Mn	55	2	72	48.188	ppb	1.082	138392	50	96.4	90	110	
Fe	57	2	72	974.945	ppb	2.034	114089	1000	97.5	90	110	
Co	59	2	72	50.250	ppb	1.462	481903	50	100.5	90	110	
Ni	60	2	72	49.473	ppb	2.434	131414	50	98.9	90	110	
Cu	63	2	72	50.624	ppb	3.101	368877	50	101.2	90	110	
Zn	66	2	72	49.793	ppb	2.429	54332	50	99.6	90	110	
As	75	2	72	49.510	ppb	1.255	39530	50	99.0	90	110	
Se	78	1	72	51.288	ppb	1.046	30907	50	102.6	90	110	
Sr	88	2	45	105.608	ppb	1.839	331184	100	105.6	90	110	
Zr	90	2	72	42.896	ppb	13.729	1527	50	85.8	90	110	>+ -10%
Zr	90	1	72	37.728	ppb	17.778	4118	50	75.5	90	110	>+ -10%
Nb	93	2	72	95.432	ppb	1.538	631541	100	95.4	90	110	
Mo	95	2	115	50.406	ppb	1.363	179606	50	100.8	90	110	
Pd	105	2	115	53.190	ppb	1.781	278007	50	106.4	90	110	
Ag	107	2	115	50.023	ppb	2.185	552025	50	100.0	90	110	
Cd	111	2	115	50.686	ppb	1.176	80518	50	101.4	90	110	
Sn	120	2	115	49.891	ppb	1.648	245791	50	99.8	90	110	
Sb	121	2	115	49.059	ppb	3.801	206968	50	98.1	90	110	
Ba	137	2	115	51.112	ppb	0.999	71899	50	102.2	90	110	
W	182	2	165	48.074	ppb	3.718	414874	50	96.1	90	110	
Pt	195	2	165	46.785	ppb	6.164	285204	50	93.6	90	110	
Tl	205	2	165	47.866	ppb	4.584	789377	50	95.7	90	110	
Pb	208	2	165	47.016	ppb	5.272	1032538	50	94.0	90	110	
Th	232	2	165	45.406	ppb	5.307	1058640	50	90.8	90	110	
U	238	2	165	46.331	ppb	5.471	1115964	50	92.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	743516	0.53	882524	84.25	60	125	
Sc (IS)	45	2	HMI He	3831473	1.22	4165833	91.97	60	125	
Sc IS)	45	3	No Gas	108294828	1.23	114950556	94.21	60	120	
Ge Internal Standard	72	1	HMI H2	22363816	1.37	23371239	95.69	60	125	
Ge Internal Standard	72	2	HMI He	4652071	1.49	4959346	93.80	60	125	
In Internal standard	115	2	HMI He	15233543	0.82	15807784	96.37	60	125	
Ho-165	165	2	HMI He	42210593	4.63	41189580	102.48	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5701457
 Data File Name 122_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T21:14:53-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-39.382	ppb	-8.8	93617	0.1	
Li	7	3	45	-44.947	ppb	-8.5	5922529	0.05	
Be	9	1	6	0.076	ppb	35.4	25	0.5	
B	11	1	6	96.951	ppb	6.4	2687	0.1	>RL
Na	23	2	45	863.901	ppb	2.5	656379	25	>RL
Mg	24	2	45	2.423	ppb	18.1	2093	25	
Al	27	2	45	-2.784	ppb	-36.9	287	15	
K	39	2	45	-4.945	ppb	-131.4	109656	50	
Ca	44	2	45	-5.138	ppb	-25.9	173	25	
V	51	2	72	-1.326	ppb	-2.2	7865	1	
Cr	52	2	72	0.015	ppb	92.5	1397	1	
Mn	55	2	72	0.043	ppb	38.9	557	0.5	
Fe	57	2	72	2.954	ppb	28.6	947	25	
Co	59	2	72	0.036	ppb	150.2	5841	0.5	
Ni	60	2	72	0.048	ppb	37.4	623	1	
Cu	63	2	72	0.275	ppb	14.2	6405	1	
Zn	66	2	72	-0.989	ppb	-9.9	1120	5	
As	75	2	72	0.016	ppb	64.1	184	1	
Se	78	1	72	0.111	ppb	41.5	100	1	
Sr	88	2	45	0.108	ppb	22.4	520	1	
Zr	90	2	72	-6.209	ppb	-59.0	487	1	
Zr	90	1	72	-8.964	ppb	-33.0	1805	1	
Nb	93	2	72	2.979	ppb	9.8	21494	2	>RL
Mo	95	2	115	0.082	ppb	28.6	563	0.5	
Pd	105	2	115	0.050	ppb	48.6	330	1	
Ag	107	2	115	0.033	ppb	29.5	470	1	
Cd	111	2	115	0.057	ppb	35.5	97	0.5	
Sn	120	2	115	0.032	ppb	136.9	983	1	
Sb	121	2	115	-0.001	ppb	-1352.7	277	1	
Ba	137	2	115	0.019	ppb	279.3	237	0.5	
W	182	2	165	0.064	ppb	19.3	3184	1	
Pt	195	2	165	0.015	ppb	74.6	93	1	
Tl	205	2	165	0.052	ppb	6.9	1150	0.1	
Pb	208	2	165	0.028	ppb	18.6	2037	0.5	
Th	232	2	165	0.127	ppb	5.7	3590	1	
U	238	2	165	0.068	ppb	15.4	1827	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	744458	1.23	882524	84.36	60	125	
Sc (IS)	45	2	HMI He	3912093	1.61	4165833	93.91	60	125	
Sc IS)	45	3	No Gas	108066267	0.52	114950556	94.01	60	120	
Ge Internal Standard	72	1	HMI H2	23203477	1.46	23371239	99.28	60	125	
Ge Internal Standard	72	2	HMI He	4700162	2.05	4959346	94.77	60	125	
In Internal standard	115	2	HMI He	15284968	1.96	15807784	96.69	60	125	
Ho-165	165	2	HMI He	41106536	3.72	41189580	99.80	60	125	

Blank Report

Sample Table

Sample Name mb 280-457760/1-a
 Data File Name 123_BLK.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T21:18:26-06:00
 Sample Type Blank
 Dilution 1
 Comment 457760 6020
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	1	45	-46.808	ppb	-10.54248546	87246	0.1
Li	7	3	45	-45.411	ppb	-13.76773327	5624863	0.05
Be	9	1	6	0.005	ppb	173.2050808	2	0.5
Na	23	2	45	927.293	ppb	1.703210207	668785	25
Mg	24	2	45	2.057	ppb	18.86261376	1890	25
Al	27	2	45	1.335	ppb	27.57023112	633	15
K	39	2	45	-13.228	ppb	-90.12243998	102262	50
Ca	44	2	45	4.702	ppb	82.96362375	373	25
V	51	2	72	-1.940	ppb	-2.995014428	4844	1
Cr	52	2	72	0.164	ppb	18.15533627	2294	1
Mn	55	2	72	0.429	ppb	24.43054137	1647	0.5
Fe	57	2	72	15.398	ppb	0.584981335	2374	25
Co	59	2	72	-0.041	ppb	-18.38829131	5037	0.5
Ni	60	2	72	0.050	ppb	50.44700731	620	1
Cu	63	2	72	0.118	ppb	45.0180713	5181	1
Zn	66	2	72	0.541	ppb	29.77990339	2697	5
As	75	2	72	-0.031	ppb	-38.4792993	144	1
Se	78	1	72	0.026	ppb	27.11501773	44	1
Sr	88	2	45	0.120	ppb	72.75200195	530	1
Zr	90	2	72	-6.993	ppb	-35.9933431	463	1
Zr	90	1	72	1.392	ppb	270.948144	2226	1
Nb	93	2	72	3.353	ppb	4.394486592	23667	2
Mo	95	2	115	0.029	ppb	152.5202917	367	0.5
Pd	105	2	115	0.023	ppb	67.09328195	187	1
Ag	107	2	115	0.020	ppb	34.32238968	323	1
Cd	111	2	115	0.017	ppb	113.9307632	33	0.5
Sn	120	2	115	0.230	ppb	3.130624736	1930	1
Sb	121	2	115	0.001	ppb	1281.39061	280	1
Ba	137	2	115	0.044	ppb	103.3684161	267	0.5
W	182	2	165	0.041	ppb	108.2749382	3020	1
Pt	195	2	165	0.015	ppb	48.56469149	90	1
Tl	205	2	165	0.018	ppb	14.81334776	603	0.1
Pb	208	2	165	0.043	ppb	10.86633512	2380	0.5
Th	232	2	165	0.837	ppb	6.276790271	19813	1
U	238	2	165	0.062	ppb	9.710174534	1677	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	706520	1.08	882524	80.06	60	125	
Sc (IS)	45	2	HMI He	3730879	1.91	4165833	89.56	60	125	
Sc IS)	45	3	No Gas	102827787	0.91	114950556	89.45	60	120	
Ge Internal Standard	72	1	HMI H2	21950408	1.42	23371239	93.92	60	125	
Ge Internal Standard	72	2	HMI He	4629302	2.80	4959346	93.35	60	125	
In Internal standard	115	2	HMI He	15054673	0.96	15807784	95.24	60	125	
Ho-165	165	2	HMI He	41369684	3.72	41189580	100.44	60	125	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name lcs 280-457760/2-a
 Data File Name 124_LCS.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T21:22:00-06:00
 Sample Type LCS
 Dilution 1
 Analyst Denver Metals
 Comment 457760 6020
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	25.118	25.118	ppb	18.440	7222052	400	6.3	80	120	> +/-20%
Be	9	1	6	41.645	41.645	ppb	2.457	13307	40	104.1	80	120	
Na	23	2	45	860.729	860.729	ppb	2.221	616818	40	2151.8	80	120	> +/-20%
Mg	24	2	45	0.713	0.713	ppb	24.412	1487	40	1.8	80	120	> +/-20%
Al	27	2	45	397.734	397.734	ppb	1.588	34891	40	994.3	80	120	> +/-20%
K	39	2	45	-8.046	-8.046	ppb	-61.908	102553	40	-20.1	80	120	> +/-20%
Ca	44	2	45	149.598	149.598	ppb	10.406	3394	40	374.0	80	120	> +/-20%
V	51	2	72	37.848	37.848	ppb	3.077	187793	40	94.6	80	120	
Cr	52	2	72	39.619	39.619	ppb	0.661	237381	40	99.0	80	120	
Mn	55	2	72	39.992	39.992	ppb	3.383	111287	40	100.0	80	120	
Fe	57	2	72	416.193	416.193	ppb	5.739	47468	40	1040.5	80	120	> +/-20%
Co	59	2	72	41.800	41.800	ppb	3.365	388958	40	104.5	80	120	
Ni	60	2	72	40.030	40.030	ppb	3.376	103062	40	100.1	80	120	
Cu	63	2	72	41.239	41.239	ppb	2.963	291833	40	103.1	80	120	
Zn	66	2	72	40.890	40.890	ppb	0.867	43615	40	102.2	80	120	
As	75	2	72	37.770	37.770	ppb	3.724	29233	40	94.4	80	120	
Se	78	1	72	37.360	37.360	ppb	5.115	22264	40	93.4	80	120	
Sr	88	2	45	44.798	44.798	ppb	4.648	135276	40	112.0	80	120	
Nb	93	2	72	2.202	2.202	ppb	8.205	15668	40	5.5	80	120	> +/-20%
Mo	95	2	115	41.478	41.478	ppb	2.882	144845	40	103.7	80	120	
Pd	105	2	115	0.019	0.019	ppb	61.625	167	40	0.0	80	120	> +/-20%
Ag	107	2	115	41.574	41.574	ppb	5.248	449240	40	103.9	80	120	
Cd	111	2	115	41.274	41.274	ppb	5.415	64194	40	103.2	80	120	
Sn	120	2	115	41.241	41.241	ppb	5.276	199092	40	103.1	80	120	
Sb	121	2	115	40.627	40.627	ppb	4.182	167948	40	101.6	80	120	
Ba	137	2	115	42.674	42.674	ppb	5.090	58814	40	106.7	80	120	
W	182	2	165	19.866	19.866	ppb	1.507	166530	40	49.7	80	120	> +/-20%
Pt	195	2	165	0.005	0.005	ppb	39.050	33	40	0.0	80	120	> +/-20%
Tl	205	2	165	39.392	39.392	ppb	0.999	625542	40	98.5	80	120	
Pb	208	2	165	38.282	38.282	ppb	2.334	809771	40	95.7	80	120	
Th	232	2	165	36.196	36.196	ppb	0.810	812823	40	90.5	80	120	
U	238	2	165	38.652	38.652	ppb	0.786	896469	40	96.6	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	718247	0.53	882524	81.39	60	125	
Sc (IS)	45	2	HMI He	3689342	2.20	4165833	88.56	60	125	
Sc IS)	45	3	No Gas	104213955	1.47	114950556	90.66	60	120	
Ge Internal Standard	72	1	HMI H2	22107569	0.25	23371239	94.59	60	125	
Ge Internal Standard	72	2	HMI He	4507495	3.35	4959346	90.89	60	125	
In Internal standard	115	2	HMI He	14938595	4.56	15807784	94.50	60	125	
Ho-165	165	2	HMI He	40582780	1.00	41189580	98.53	60	125	

Sample Report

Sample Table

Sample Name 280-123511-a-1-a
 Data File Name 125SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-14T21:25:34-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457760 6020
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-26.302	ppb	-26.302	-5.71	6039377	40000	
Be	9	1	6	0.060	ppb	0.060	41.52	18	2000	
B	11	1	6	654.356	ppb	654.356	4.60	14916	100	>LDR
Na	23	2	45	118152.122	ppb	118152.122	3.52	78867457	400000	
Mg	24	2	45	32326.048	ppb	32326.048	4.69	9165547	400000	
Al	27	2	45	8.732	ppb	8.732	12.46	1263	400000	
K	39	2	45	8140.469	ppb	8140.469	2.18	2350835	400000	
Ca	44	2	45	69125.591	ppb	69125.591	1.94	1443713	400000	
V	51	2	72	-0.823	ppb	-0.823	-3.57	9623	2000	
Cr	52	2	72	0.323	ppb	0.323	6.70	3097	5000	
Mn	55	2	72	10.587	ppb	10.587	5.06	29051	10000	
Fe	57	2	72	77.570	ppb	77.570	5.27	9092	400000	
Co	59	2	72	0.267	ppb	0.267	25.53	7532	2000	
Ni	60	2	72	3.733	ppb	3.733	4.91	9796	5000	
Cu	63	2	72	6.371	ppb	6.371	5.30	47452	5000	
Zn	66	2	72	14.368	ppb	14.368	4.60	16255	5000	
As	75	2	72	0.826	ppb	0.826	9.23	780	2000	
Se	78	1	72	1.341	ppb	1.341	10.92	788	2000	
Sr	88	2	45	893.203	ppb	893.203	2.89	2694677	2000	
Zr	90	2	72	30.411	ppb	30.411	21.10	1190	1000	
Zr	90	1	72	31.465	ppb	31.465	23.71	3577	1000	
Nb	93	2	72	1.622	ppb	1.622	19.59	11668	200	
Mo	95	2	115	1.645	ppb	1.645	6.93	5894	2000	
Pd	105	2	115	0.032	ppb	0.032	21.83	227	100	
Ag	107	2	115	0.023	ppb	0.023	34.37	347	100	
Cd	111	2	115	0.076	ppb	0.076	41.36	123	2000	
Sn	120	2	115	0.321	ppb	0.321	3.68	2307	2000	
Sb	121	2	115	0.838	ppb	0.838	5.60	3670	1000	
Ba	137	2	115	103.587	ppb	103.587	1.76	140001	5000	
W	182	2	165	0.076	ppb	0.076	36.68	3104	100	
Pt	195	2	165	0.029	ppb	0.029	34.30	167	100	
Tl	205	2	165	0.035	ppb	0.035	39.52	830	2000	
Pb	208	2	165	0.565	ppb	0.565	4.04	12809	5000	
Th	232	2	165	0.690	ppb	0.690	2.65	15508	2000	
U	238	2	165	16.410	ppb	16.410	1.69	365136	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	681752	0.77	882524	77.25	60	125	
Sc (IS)	45	2	HMI He	3686862	2.29	4165833	88.50	60	125	
Sc IS)	45	3	No Gas	102952651	1.42	114950556	89.56	60	120	
Ge Internal Standard	72	1	HMI H2	21074771	1.49	23371239	90.17	60	125	
Ge Internal Standard	72	2	HMI He	4397445	2.98	4959346	88.67	60	125	
In Internal standard	115	2	HMI He	14659939	1.75	15807784	92.74	60	125	
Ho-165	165	2	HMI He	38924538	2.90	41189580	94.50	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5701467
 Data File Name 126_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T07:44:36-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	41.879	ppb	25.963	104772	100	41.9	90	110	>+ -10%
Li	7	3	45	35.738	ppb	3.355	6719441	100	35.7	90	110	>+ -10%
Be	9	1	6	50.912	ppb	3.890	14189	50	101.8	90	110	
B	11	1	6	48.837	ppb	10.365	1273	50	97.7	90	110	
Na	23	2	45	967.864	ppb	0.786	628013	1000	96.8	90	110	
Mg	24	2	45	970.093	ppb	1.587	252307	1000	97.0	90	110	
Al	27	2	45	946.023	ppb	3.827	75055	1000	94.6	90	110	
K	39	2	45	948.244	ppb	1.622	334420	1000	94.8	90	110	
Ca	44	2	45	1000.212	ppb	2.115	19314	1000	100.0	90	110	
V	51	2	72	47.292	ppb	3.267	208408	50	94.6	90	110	
Cr	52	2	72	47.757	ppb	2.152	257564	50	95.5	90	110	
Mn	55	2	72	47.992	ppb	2.177	120310	50	96.0	90	110	
Fe	57	2	72	986.877	ppb	3.859	100788	1000	98.7	90	110	
Co	59	2	72	50.574	ppb	1.638	423297	50	101.1	90	110	
Ni	60	2	72	49.569	ppb	2.313	114942	50	99.1	90	110	
Cu	63	2	72	49.995	ppb	5.084	318030	50	100.0	90	110	
Zn	66	2	72	49.089	ppb	2.107	46790	50	98.2	90	110	
As	75	2	72	48.621	ppb	1.429	33888	50	97.2	90	110	
Se	78	1	72	50.775	ppb	0.529	27278	50	101.6	90	110	
Sr	88	2	45	105.390	ppb	1.337	290233	100	105.4	90	110	
Zr	90	2	72	72.561	ppb	13.785	1887	50	145.1	90	110	>+ -10%
Zr	90	1	72	89.495	ppb	0.635	6017	50	179.0	90	110	>+ -10%
Nb	93	2	72	94.740	ppb	0.325	547427	100	94.7	90	110	
Mo	95	2	115	49.992	ppb	2.232	155612	50	100.0	90	110	
Pd	105	2	115	52.140	ppb	2.251	238092	50	104.3	90	110	
Ag	107	2	115	50.316	ppb	3.819	485161	50	100.6	90	110	
Cd	111	2	115	49.135	ppb	2.534	68191	50	98.3	90	110	
Sn	120	2	115	48.715	ppb	1.601	209767	50	97.4	90	110	
Sb	121	2	115	48.245	ppb	0.788	177876	50	96.5	90	110	
Ba	137	2	115	50.350	ppb	5.944	61862	50	100.7	90	110	
W	182	2	165	49.149	ppb	1.773	371630	50	98.3	90	110	
Pt	195	2	165	48.856	ppb	4.644	260938	50	97.7	90	110	
Tl	205	2	165	49.797	ppb	5.113	719203	50	99.6	90	110	
Pb	208	2	165	49.635	ppb	4.313	954930	50	99.3	90	110	
Th	232	2	165	47.542	ppb	4.373	970999	50	95.1	90	110	
U	238	2	165	47.412	ppb	3.650	1000569	50	94.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	626532	0.64	882524	70.99	60	125	
Sc (IS)	45	2	HMI He	3364792	0.73	4165833	80.77	60	125	
Sc IS)	45	3	No Gas	93975463	0.79	114950556	81.75	60	120	
Ge Internal Standard	72	1	HMI H2	19936152	1.17	23371239	85.30	60	125	
Ge Internal Standard	72	2	HMI He	4061416	1.96	4959346	81.89	60	125	
In Internal standard	115	2	HMI He	13311564	1.97	15807784	84.21	60	125	
Ho-165	165	2	HMI He	36966457	4.42	41189580	89.75	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5701457
 Data File Name 127_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T07:48:06-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-53.946	ppb	-10.7	80559	0.1	
Li	7	3	45	-49.379	ppb	-6.2	5125595	0.05	
Be	9	1	6	0.030	ppb	34.7	8	0.5	
B	11	1	6	-1.485	ppb	-168.4	240	0.1	
Na	23	2	45	9.982	ppb	4.2	44579	25	
Mg	24	2	45	-1.535	ppb	-29.6	777	25	
Al	27	2	45	-2.663	ppb	-12.4	257	15	
K	39	2	45	-15.141	ppb	-1.9	92016	50	
Ca	44	2	45	-2.127	ppb	-91.5	207	25	
V	51	2	72	-1.185	ppb	-5.6	7578	1	
Cr	52	2	72	-0.024	ppb	-71.3	1027	1	
Mn	55	2	72	0.052	ppb	115.4	517	0.5	
Fe	57	2	72	6.089	ppb	4.5	1167	25	
Co	59	2	72	0.014	ppb	323.9	5007	0.5	
Ni	60	2	72	0.033	ppb	190.2	517	1	
Cu	63	2	72	0.171	ppb	17.3	5014	1	
Zn	66	2	72	-0.815	ppb	-14.8	1157	5	
As	75	2	72	0.024	ppb	53.5	169	1	
Se	78	1	72	0.047	ppb	118.5	52	1	
Sr	88	2	45	0.044	ppb	14.3	270	1	
Zr	90	2	72	-9.101	ppb	-26.9	377	1	
Zr	90	1	72	5.392	ppb	17.8	2239	1	>RL
Nb	93	2	72	3.015	ppb	2.5	19315	2	>RL
Mo	95	2	115	0.060	ppb	17.6	427	0.5	
Pd	105	2	115	0.045	ppb	84.3	270	1	
Ag	107	2	115	0.021	ppb	7.6	293	1	
Cd	111	2	115	0.038	ppb	79.9	60	0.5	
Sn	120	2	115	0.049	ppb	50.3	940	1	
Sb	121	2	115	-0.005	ppb	-90.7	230	1	
Ba	137	2	115	0.031	ppb	75.5	223	0.5	
W	182	2	165	0.333	ppb	4.2	4887	1	
Pt	195	2	165	0.025	ppb	12.4	137	1	
Tl	205	2	165	0.045	ppb	6.3	933	0.1	
Pb	208	2	165	0.037	ppb	30.3	1997	0.5	
Th	232	2	165	0.169	ppb	8.9	4077	1	
U	238	2	165	0.070	ppb	8.8	1673	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	627024	1.00	882524	71.05	60	125	
Sc (IS)	45	2	HMI He	3374120	1.08	4165833	81.00	60	125	
Sc IS)	45	3	No Gas	95117028	0.59	114950556	82.75	60	120	
Ge Internal Standard	72	1	HMI H2	20264169	0.17	23371239	86.71	60	125	
Ge Internal Standard	72	2	HMI He	4171922	2.03	4959346	84.12	60	125	
In Internal standard	115	2	HMI He	13502881	0.59	15807784	85.42	60	125	
Ho-165	165	2	HMI He	36967691	2.00	41189580	89.75	60	125	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name ICSA-5695552
 Data File Name 128ICSA.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T07:51:38-06:00
 Sample Type ICSA
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-68.221	ppb	-6.1	72682	10	
Li	7	3	45	-60.677	ppb	-4.7	4704700	10	
Be	9	1	6	0.039	ppb	86.6	10	1	
B	11	1	6	9.980	ppb	57.5	437	10	
Na	23	2	45	90888.057	ppb	3.3	54417560	100000	
Mg	24	2	45	92798.042	ppb	2.8	23598616	100000	
Al	27	2	45	93203.420	ppb	2.6	7219334	100000	
K	39	2	45	93868.371	ppb	2.6	23319779	100000	
V	51	2	72	-0.799	ppb	-5.2	8909	1	
Cr	52	2	72	1.280	ppb	1.3	7932	1	>RL or LOD
Mn	55	2	72	0.577	ppb	5.8	1800	1	
Co	59	2	72	0.239	ppb	26.2	6678	1	
Ni	60	2	72	0.324	ppb	18.9	1167	1	
Cu	63	2	72	0.390	ppb	2.3	6208	1	
Zn	66	2	72	-0.264	ppb	-41.0	1617	1	
As	75	2	72	0.029	ppb	96.9	167	1	
Se	78	1	72	0.058	ppb	19.2	55	1	
Sr	88	2	45	1.900	ppb	11.2	5281	1	>RL or LOD
Nb	93	2	72	9.035	ppb	6.3	53057	1	>RL or LOD
Mo	95	2	115	2070.074	ppb	3.4	6093262	2000	>RL or LOD
Pd	105	2	115	0.026	ppb	50.3	170	1	
Ag	107	2	115	0.043	ppb	46.2	473	1	
Cd	111	2	115	0.803	ppb	16.9	1063	1	
Sn	120	2	115	0.063	ppb	50.3	937	1	
Sb	121	2	115	0.041	ppb	27.4	373	1	
Ba	137	2	115	0.864	ppb	12.1	1173	1	
W	182	2	165	0.552	ppb	3.9	6348	1	
Pt	195	2	165	0.023	ppb	7.5	120	1	
Tl	205	2	165	0.011	ppb	57.8	433	1	
Pb	208	2	165	0.257	ppb	5.5	6067	1	
Th	232	2	165	0.593	ppb	1.8	12405	1	
U	238	2	165	0.025	ppb	15.9	703	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	575410	0.77	882524	65.20	60	125	
Sc (IS)	45	2	HMI He	3306259	2.28	4165833	79.37	60	125	
Sc IS)	45	3	No Gas	91271834	1.16	114950556	79.40	60	120	
Ge Internal Standard	72	1	HMI H2	18988456	0.93	23371239	81.25	60	125	
Ge Internal Standard	72	2	HMI He	4027847	2.04	4959346	81.22	60	125	
In Internal standard	115	2	HMI He	12611052	2.69	15807784	79.78	60	125	
Ho-165	165	2	HMI He	35947814	1.04	41189580	87.27	60	125	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name ICSAB-5695553
 Data File Name 129ICSB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T07:55:07-06:00
 Sample Type ICSB
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	1	45	99.563	ppb	3.002	116825	100	99.6	80	120	>+ -20%
Li	7	3	45	94.691	ppb	5.112	7651202	100	94.7	80	120	>+ -20%
Be	9	1	6	100.477	ppb	2.465	25613	100	100.5	80	120	
B	11	1	6	9.199	ppb	36.940	420	100	9.2	80	120	>+ -20%
V	51	2	72	99.568	ppb	3.218	414594	100	99.6	80	120	
Cr	52	2	72	99.106	ppb	2.764	519962	100	99.1	80	120	
Mn	55	2	72	101.155	ppb	1.103	246867	100	101.2	80	120	
Co	59	2	72	99.005	ppb	1.757	803507	100	99.0	80	120	
Ni	60	2	72	93.745	ppb	2.557	211586	100	93.7	80	120	
Cu	63	2	72	95.147	ppb	1.552	586905	100	95.1	80	120	
Zn	66	2	72	94.919	ppb	3.435	86506	100	94.9	80	120	
As	75	2	72	102.170	ppb	1.097	69276	100	102.2	80	120	
Se	78	1	72	101.131	ppb	2.527	52382	100	101.1	80	120	
Sr	88	2	45	219.600	ppb	1.454	603809	100	219.6	80	120	>+ -20%
Zr	90	2	72	110.164	ppb	14.841	2520	100	110.2	80	120	>+ -20%
Zr	90	1	72	106.964	ppb	10.775	6568	100	107.0	80	120	>+ -20%
Nb	93	2	72	259.563	ppb	2.390	1459639	100	259.6	80	120	>+ -20%
Mo	95	2	115	2221.669	ppb	0.800	6808144	100	2221.7	80	120	>+ -20%
Pd	105	2	115	97.637	ppb	3.594	439553	100	97.6	80	120	
Ag	107	2	115	98.089	ppb	2.318	932126	100	98.1	80	120	
Cd	111	2	115	99.616	ppb	1.293	136292	100	99.6	80	120	
Sn	120	2	115	99.511	ppb	3.027	421461	100	99.5	80	120	
Sb	121	2	115	105.572	ppb	3.976	383262	100	105.6	80	120	
Ba	137	2	115	107.336	ppb	3.984	129813	100	107.3	80	120	
W	182	2	165	101.911	ppb	2.097	739689	100	101.9	80	120	
Pt	195	2	165	92.379	ppb	2.431	475584	100	92.4	80	120	
Tl	205	2	165	98.087	ppb	2.070	1365351	100	98.1	80	120	
Pb	208	2	165	95.130	ppb	2.768	1763148	100	95.1	80	120	
Th	232	2	165	100.092	ppb	3.840	1969564	100	100.1	80	120	
U	238	2	165	101.065	ppb	5.856	2054513	100	101.1	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	573039	0.42	882524	64.93	60	125	
Sc (IS)	45	2	HMI He	3360667	1.51	4165833	80.67	60	125	
Sc (IS)	45	3	No Gas	91411572	0.48	114950556	79.52	60	120	
Ge Internal Standard	72	1	HMI H2	19234981	1.75	23371239	82.30	60	125	
Ge Internal Standard	72	2	HMI He	3959326	1.07	4959346	79.84	60	125	
In Internal standard	115	2	HMI He	13122127	1.94	15807784	83.01	60	125	
Ho-165	165	2	HMI He	35589877	1.03	41189580	86.41	60	125	

Sample Report

Sample Table

Sample Name RINSE
Data File Name 130SMPL.d
Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
Acq Date Time 2019-05-15T07:58:35-06:00
Analyst Denver Metals
Sample Type Sample
Dilution 1
Comment
ISTD Ref FileName 074CALB.d
Sample QC Pass/Fail Pass
ISTD Pass/Fail Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-18.118	ppb	-18.118	-33.74	9910286	40000	
Be	9	1	6	0.079	ppb	0.079	79.05	35	2000	
B	11	1	6	-5.854	ppb	-5.854	-11.28	243	100	
Na	23	2	45	97.141	ppb	97.141	98.23	148761	400000	
Mg	24	2	45	88.705	ppb	88.705	103.03	36356	400000	
Al	27	2	45	91.039	ppb	91.039	107.51	11502	400000	
K	39	2	45	-63.789	ppb	-63.789	-178.44	122216	400000	
Ca	44	2	45	58.384	ppb	58.384	108.11	2054	400000	
V	51	2	72	-1.969	ppb	-1.969	-10.67	6501	2000	
Cr	52	2	72	-0.026	ppb	-0.026	-410.72	1527	5000	
Mn	55	2	72	0.004	ppb	0.004	2062.66	597	10000	
Fe	57	2	72	108.674	ppb	108.674	101.81	17630	400000	
Co	59	2	72	0.081	ppb	0.081	76.80	8592	2000	
Ni	60	2	72	0.000	ppb	0.000	22276.64	673	5000	
Cu	63	2	72	-0.028	ppb	-0.028	-442.35	5721	5000	
Zn	66	2	72	-0.672	ppb	-0.672	-151.70	1940	5000	
As	75	2	72	0.023	ppb	0.023	553.36	254	2000	
Se	78	1	72	0.064	ppb	0.064	106.63	83	2000	
Sr	88	2	45	0.154	ppb	0.154	113.53	867	2000	
Zr	90	2	72	-7.400	ppb	-7.400	-119.64	627	1000	
Zr	90	1	72	8.466	ppb	8.466	185.41	3234	1000	
Nb	93	2	72	0.164	ppb	0.164	163.41	3667	200	
Mo	95	2	115	7.488	ppb	7.488	112.54	33987	2000	
Pd	105	2	115	0.157	ppb	0.157	124.23	1123	100	
Ag	107	2	115	0.090	ppb	0.090	108.36	1383	100	
Cd	111	2	115	0.083	ppb	0.083	76.47	177	2000	
Sn	120	2	115	0.030	ppb	0.030	446.55	1247	2000	
Sb	121	2	115	0.061	ppb	0.061	191.30	683	1000	
Ba	137	2	115	0.051	ppb	0.051	162.42	363	5000	
W	182	2	165	0.186	ppb	0.186	122.22	5708	100	
Pt	195	2	165	0.084	ppb	0.084	103.84	660	100	
Tl	205	2	165	0.175	ppb	0.175	106.31	4148	2000	
Pb	208	2	165	0.060	ppb	0.060	156.63	3637	5000	
Th	232	2	165	0.158	ppb	0.158	120.08	5656	2000	
U	238	2	165	0.168	ppb	0.168	113.20	5462	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	1015303	3.64	882524	115.05	60	125	
Sc (IS)	45	2	HMI He	5230211	4.94	4165833	125.55	60	125	IS Failed
Sc IS)	45	3	No Gas	164237725	2.87	114950556	142.88	60	120	IS Failed
Ge Internal Standard	72	1	HMI H2	27812840	5.13	23371239	119.00	60	125	
Ge Internal Standard	72	2	HMI He	6457515	8.21	4959346	130.21	60	125	IS Failed
In Internal standard	115	2	HMI He	20123536	6.95	15807784	127.30	60	125	IS Failed
Ho-165	165	2	HMI He	57150069	7.85	41189580	138.75	60	125	IS Failed

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5701467
 Data File Name 131_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T08:02:07-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	32.727	ppb	8.852	101895	100	32.7	90	110	>+ -10%
Li	7	3	45	26.637	ppb	20.156	6383224	100	26.6	90	110	>+ -10%
Be	9	1	6	49.492	ppb	3.798	13425	50	99.0	90	110	
B	11	1	6	31.900	ppb	12.141	900	50	63.8	90	110	>+ -10%
Na	23	2	45	1016.209	ppb	2.357	653146	1000	101.6	90	110	
Mg	24	2	45	990.933	ppb	0.284	256075	1000	99.1	90	110	
Al	27	2	45	998.588	ppb	5.269	78653	1000	99.9	90	110	
K	39	2	45	1006.179	ppb	2.040	346826	1000	100.6	90	110	
Ca	44	2	45	1047.518	ppb	4.436	20082	1000	104.8	90	110	
V	51	2	72	46.989	ppb	1.214	211902	50	94.0	90	110	
Cr	52	2	72	47.593	ppb	1.621	262532	50	95.2	90	110	
Mn	55	2	72	49.207	ppb	2.474	126154	50	98.4	90	110	
Fe	57	2	72	1005.704	ppb	1.342	105069	1000	100.6	90	110	
Co	59	2	72	49.371	ppb	0.604	422749	50	98.7	90	110	
Ni	60	2	72	48.605	ppb	2.538	115288	50	97.2	90	110	
Cu	63	2	72	49.359	ppb	3.665	321299	50	98.7	90	110	
Zn	66	2	72	48.871	ppb	2.211	47659	50	97.7	90	110	
As	75	2	72	48.872	ppb	1.922	34835	50	97.7	90	110	
Se	78	1	72	51.610	ppb	1.558	27686	50	103.2	90	110	
Sr	88	2	45	110.658	ppb	1.850	302749	100	110.7	90	110	>+ -10%
Zr	90	2	72	8.932	ppb	95.841	717	50	17.9	90	110	>+ -10%
Zr	90	1	72	13.495	ppb	34.217	2566	50	27.0	90	110	>+ -10%
Nb	93	2	72	95.220	ppb	1.630	562669	100	95.2	90	110	
Mo	95	2	115	52.535	ppb	1.705	162415	50	105.1	90	110	
Pd	105	2	115	52.383	ppb	2.740	237574	50	104.8	90	110	
Ag	107	2	115	51.060	ppb	1.520	488987	50	102.1	90	110	
Cd	111	2	115	51.307	ppb	2.271	70728	50	102.6	90	110	
Sn	120	2	115	50.787	ppb	1.236	217156	50	101.6	90	110	
Sb	121	2	115	50.291	ppb	2.320	184132	50	100.6	90	110	
Ba	137	2	115	51.894	ppb	1.696	63348	50	103.8	90	110	
W	182	2	165	48.874	ppb	1.874	361154	50	97.7	90	110	
Pt	195	2	165	48.720	ppb	3.602	254407	50	97.4	90	110	
Tl	205	2	165	49.564	ppb	1.418	700201	50	99.1	90	110	
Pb	208	2	165	46.268	ppb	0.987	870901	50	92.5	90	110	
Th	232	2	165	46.677	ppb	3.293	932063	50	93.4	90	110	
U	238	2	165	47.487	ppb	2.283	979712	50	95.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	609694	0.86	882524	69.09	60	125	
Sc (IS)	45	2	HMI He	3343301	1.79	4165833	80.26	60	125	
Sc IS)	45	3	No Gas	91698199	1.19	114950556	79.77	60	120	
Ge Internal Standard	72	1	HMI H2	19906850	0.32	23371239	85.18	60	125	
Ge Internal Standard	72	2	HMI He	4153330	0.92	4959346	83.75	60	125	
In Internal standard	115	2	HMI He	13221827	2.09	15807784	83.64	60	125	
Ho-165	165	2	HMI He	36115090	2.57	41189580	87.68	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5701457
 Data File Name 132_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T08:05:39-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-60.105	ppb	-10.9	76883	0.1	
Li	7	3	45	-51.389	ppb	-10.7	4905878	0.05	
Be	9	1	6	0.044	ppb	25.5	12	0.5	
B	11	1	6	-2.779	ppb	-27.4	203	0.1	
Na	23	2	45	36.042	ppb	4.3	60348	25	>RL
Mg	24	2	45	4.131	ppb	18.8	2244	25	
Al	27	2	45	2.119	ppb	12.6	633	15	
K	39	2	45	-1.760	ppb	-668.7	95149	50	
Ca	44	2	45	-0.882	ppb	-120.8	230	25	
V	51	2	72	-0.966	ppb	-11.7	8445	1	
Cr	52	2	72	0.014	ppb	211.9	1227	1	
Mn	55	2	72	-0.003	ppb	-1079.2	373	0.5	
Fe	57	2	72	10.856	ppb	14.1	1650	25	
Co	59	2	72	0.050	ppb	43.1	5271	0.5	
Ni	60	2	72	0.050	ppb	78.1	553	1	
Cu	63	2	72	0.547	ppb	16.8	7385	1	
Zn	66	2	72	-1.117	ppb	-5.7	867	5	
As	75	2	72	0.004	ppb	488.6	154	1	
Se	78	1	72	0.047	ppb	64.0	51	1	
Sr	88	2	45	0.006	ppb	107.3	167	1	
Zr	90	2	72	21.503	ppb	6.9	953	1	>RL
Zr	90	1	72	40.028	ppb	15.9	3744	1	>RL
Nb	93	2	72	2.806	ppb	13.8	17920	2	>RL
Mo	95	2	115	0.420	ppb	12.7	1563	0.5	
Pd	105	2	115	0.072	ppb	30.5	400	1	
Ag	107	2	115	0.018	ppb	45.1	270	1	
Cd	111	2	115	0.039	ppb	128.3	60	0.5	
Sn	120	2	115	0.029	ppb	123.7	853	1	
Sb	121	2	115	0.034	ppb	43.7	377	1	
Ba	137	2	115	-0.022	ppb	-281.0	157	0.5	
W	182	2	165	0.173	ppb	12.6	3497	1	
Pt	195	2	165	0.016	ppb	10.8	83	1	
Tl	205	2	165	0.043	ppb	28.0	860	0.1	
Pb	208	2	165	0.014	ppb	66.7	1480	0.5	
Th	232	2	165	0.147	ppb	9.8	3454	1	
U	238	2	165	0.043	ppb	1.7	1050	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	598125	0.64	882524	67.77	60	125	
Sc (IS)	45	2	HMI He	3366309	1.55	4165833	80.81	60	125	
Sc IS)	45	3	No Gas	91759539	1.37	114950556	79.83	60	120	
Ge Internal Standard	72	1	HMI H2	19786954	1.95	23371239	84.66	60	125	
Ge Internal Standard	72	2	HMI He	4138109	1.28	4959346	83.44	60	125	
In Internal standard	115	2	HMI He	13506654	2.85	15807784	85.44	60	125	
Ho-165	165	2	HMI He	35133427	3.73	41189580	85.30	60	125	

Sample Report

Sample Table

Sample Name 280-123511-a-1-aSD@5
 Data File Name 133SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T08:09:12-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457760 6020
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-55.991	ppb	-55.991	-10.45	4757611	40000	
Be	9	1	6	0.090	ppb	0.090	54.48	23	2000	
B	11	1	6	107.670	ppb	107.670	4.88	2304	100	
Na	23	2	45	23709.944	ppb	23709.944	3.16	14194815	400000	
Mg	24	2	45	6369.072	ppb	6369.072	1.97	1617655	400000	
Al	27	2	45	4.302	ppb	4.302	49.81	787	400000	
K	39	2	45	1562.457	ppb	1562.457	4.44	479432	400000	
Ca	44	2	45	13235.070	ppb	13235.070	2.59	247556	400000	
V	51	2	72	-0.711	ppb	-0.711	-16.19	9306	2000	
Cr	52	2	72	0.070	ppb	0.070	20.00	1497	5000	
Mn	55	2	72	2.077	ppb	2.077	6.91	5541	10000	
Fe	57	2	72	49.400	ppb	49.400	7.86	5514	400000	
Co	59	2	72	0.029	ppb	0.029	105.25	4977	2000	
Ni	60	2	72	0.674	ppb	0.674	5.46	1977	5000	
Cu	63	2	72	2.469	ppb	2.469	9.28	19248	5000	
Zn	66	2	72	2.476	ppb	2.476	1.81	4121	5000	
As	75	2	72	0.128	ppb	0.128	42.34	235	2000	
Se	78	1	72	0.253	ppb	0.253	16.87	155	2000	
Sr	88	2	45	172.960	ppb	172.960	1.88	466870	2000	
Zr	90	2	72	5.229	ppb	5.229	29.54	630	1000	
Zr	90	1	72	5.562	ppb	5.562	161.24	2112	1000	
Nb	93	2	72	1.756	ppb	1.756	6.42	11491	200	
Mo	95	2	115	0.602	ppb	0.602	4.87	2100	2000	
Pd	105	2	115	0.033	ppb	0.033	33.98	210	100	
Ag	107	2	115	0.004	ppb	0.004	145.01	130	100	
Cd	111	2	115	0.030	ppb	0.030	37.67	47	2000	
Sn	120	2	115	0.032	ppb	0.032	61.64	853	2000	
Sb	121	2	115	0.051	ppb	0.051	59.70	430	1000	
Ba	137	2	115	19.849	ppb	19.849	3.93	24429	5000	
W	182	2	165	0.087	ppb	0.087	15.31	2880	100	
Pt	195	2	165	0.010	ppb	0.010	50.68	53	100	
Tl	205	2	165	0.008	ppb	0.008	16.64	383	2000	
Pb	208	2	165	0.112	ppb	0.112	11.28	3264	5000	
Th	232	2	165	0.205	ppb	0.205	10.81	4557	2000	
U	238	2	165	3.362	ppb	3.362	0.62	67531	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	581440	0.73	882524	65.88	60	125	
Sc (IS)	45	2	HMI He	3299709	2.58	4165833	79.21	60	125	
Sc IS)	45	3	No Gas	90615489	2.22	114950556	78.83	60	120	
Ge Internal Standard	72	1	HMI H2	19056252	0.62	23371239	81.54	60	125	
Ge Internal Standard	72	2	HMI He	4043295	0.43	4959346	81.53	60	125	
In Internal standard	115	2	HMI He	13277173	3.02	15807784	83.99	60	125	
Ho-165	165	2	HMI He	35055966	0.92	41189580	85.11	60	125	

Sample Report

Sample Table

Sample Name 280-123511-a-1-b.ms
 Data File Name 134SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T08:12:45-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457760 6020
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	28.031	ppb	28.031	14.74	6126681	40000	
Be	9	1	6	44.044	ppb	44.044	4.47	10483	2000	
B	11	1	6	1082.487	ppb	1082.487	4.89	19207	100	>LDR
Na	23	2	45	108220.906	ppb	108220.906	1.52	65714108	400000	
Mg	24	2	45	29896.200	ppb	29896.200	3.08	7708158	400000	
Al	27	2	45	418.919	ppb	418.919	5.92	33331	400000	
K	39	2	45	7760.578	ppb	7760.578	0.87	2042953	400000	
Ca	44	2	45	65259.718	ppb	65259.718	1.62	1239557	400000	
V	51	2	72	39.121	ppb	39.121	2.09	172814	2000	
Cr	52	2	72	39.989	ppb	39.989	2.16	213742	5000	
Mn	55	2	72	50.565	ppb	50.565	1.43	125493	10000	
Fe	57	2	72	491.837	ppb	491.837	1.90	50019	400000	
Co	59	2	72	40.049	ppb	40.049	2.25	332921	2000	
Ni	60	2	72	41.392	ppb	41.392	2.45	95100	5000	
Cu	63	2	72	45.507	ppb	45.507	2.39	287074	5000	
Zn	66	2	72	50.611	ppb	50.611	2.79	47706	5000	
As	75	2	72	38.487	ppb	38.487	2.41	26585	2000	
Se	78	1	72	39.284	ppb	39.284	1.60	19614	2000	
Sr	88	2	45	925.731	ppb	925.731	6.68	2535105	2000	
Zr	90	2	72	93.034	ppb	93.034	16.29	2244	1000	
Zr	90	1	72	96.335	ppb	96.335	5.30	5877	1000	
Nb	93	2	72	2.257	ppb	2.257	9.31	14283	200	
Mo	95	2	115	44.219	ppb	44.219	1.58	133465	2000	
Pd	105	2	115	0.043	ppb	0.043	5.04	250	100	
Ag	107	2	115	39.735	ppb	39.735	1.27	371427	100	
Cd	111	2	115	40.406	ppb	40.406	4.15	54350	2000	
Sn	120	2	115	40.342	ppb	40.342	2.72	168438	2000	
Sb	121	2	115	42.377	ppb	42.377	2.26	151462	1000	
Ba	137	2	115	144.357	ppb	144.357	1.07	171654	5000	
W	182	2	165	20.772	ppb	20.772	2.57	147426	100	
Pt	195	2	165	0.051	ppb	0.051	47.76	257	100	
Tl	205	2	165	40.685	ppb	40.685	2.59	547478	2000	
Pb	208	2	165	41.131	ppb	41.131	2.58	737067	5000	
Th	232	2	165	36.344	ppb	36.344	2.10	691560	2000	
U	238	2	165	57.598	ppb	57.598	6.08	1130472	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	534859	0.92	882524	60.61	60	125	
Sc (IS)	45	2	HMI He	3353055	3.94	4165833	80.49	60	125	
Sc IS)	45	3	No Gas	87640970	0.49	114950556	76.24	60	120	
Ge Internal Standard	72	1	HMI H2	18519674	2.10	23371239	79.24	60	125	
Ge Internal Standard	72	2	HMI He	4020890	1.42	4959346	81.08	60	125	
In Internal standard	115	2	HMI He	12901508	0.94	15807784	81.61	60	125	
Ho-165	165	2	HMI He	34404959	4.33	41189580	83.53	60	125	

Sample Report

Sample Table

Sample Name 280-123511-a-1-c msd
 Data File Name 135SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T08:16:17-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457760 6020
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	22.411	ppb	22.411	38.26	6109886	40000	
Be	9	1	6	45.885	ppb	45.885	0.45	11030	2000	
B	11	1	6	1085.697	ppb	1085.697	4.18	19464	100	>LDR
Na	23	2	45	106805.947	ppb	106805.947	2.43	64915924	400000	
Mg	24	2	45	29154.864	ppb	29154.864	2.22	7527356	400000	
Al	27	2	45	411.771	ppb	411.771	2.82	32830	400000	
K	39	2	45	7638.258	ppb	7638.258	1.71	2013368	400000	
Ca	44	2	45	63870.027	ppb	63870.027	0.19	1214174	400000	
V	51	2	72	41.120	ppb	41.120	2.69	176416	2000	
Cr	52	2	72	40.320	ppb	40.320	2.72	209980	5000	
Mn	55	2	72	51.826	ppb	51.826	3.75	125287	10000	
Fe	57	2	72	523.121	ppb	523.121	2.85	51784	400000	
Co	59	2	72	42.172	ppb	42.172	3.35	341204	2000	
Ni	60	2	72	42.767	ppb	42.767	2.58	95736	5000	
Cu	63	2	72	46.840	ppb	46.840	1.68	287773	5000	
Zn	66	2	72	52.669	ppb	52.669	1.41	48324	5000	
As	75	2	72	40.617	ppb	40.617	4.15	27326	2000	
Se	78	1	72	39.462	ppb	39.462	1.97	19929	2000	
Sr	88	2	45	915.219	ppb	915.219	1.59	2511631	2000	
Zr	90	2	72	76.039	ppb	76.039	3.42	1880	1000	
Zr	90	1	72	78.892	ppb	78.892	8.45	5199	1000	
Nb	93	2	72	1.218	ppb	1.218	14.32	8132	200	
Mo	95	2	115	44.278	ppb	44.278	1.21	133266	2000	
Pd	105	2	115	0.039	ppb	0.039	39.30	230	100	
Ag	107	2	115	39.959	ppb	39.959	3.40	372383	100	
Cd	111	2	115	40.301	ppb	40.301	1.06	54072	2000	
Sn	120	2	115	42.306	ppb	42.306	2.50	176158	2000	
Sb	121	2	115	44.113	ppb	44.113	1.95	157222	1000	
Ba	137	2	115	141.340	ppb	141.340	4.03	167576	5000	
W	182	2	165	21.526	ppb	21.526	3.89	153250	100	
Pt	195	2	165	0.036	ppb	0.036	28.68	180	100	
Tl	205	2	165	41.044	ppb	41.044	3.19	554101	2000	
Pb	208	2	165	42.397	ppb	42.397	2.89	762464	5000	
Th	232	2	165	36.563	ppb	36.563	1.31	698306	2000	
U	238	2	165	56.599	ppb	56.599	2.17	1116308	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	540347	0.76	882524	61.23	60	125	
Sc (IS)	45	2	HMI He	3354756	1.15	4165833	80.53	60	125	
Sc IS)	45	3	No Gas	88893831	1.13	114950556	77.33	60	120	
Ge Internal Standard	72	1	HMI H2	18742310	3.06	23371239	80.19	60	125	
Ge Internal Standard	72	2	HMI He	3918496	2.21	4959346	79.01	60	125	
In Internal standard	115	2	HMI He	12865794	1.13	15807784	81.39	60	125	
Ho-165	165	2	HMI He	34525643	3.50	41189580	83.82	60	125	

Sample Report

Sample Table

Sample Name 280-123511-a-1-a PDS
 Data File Name 136SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T08:19:49-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457760 6020
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-38.939	ppb	-38.939	-5.16	4880491	40000	
Be	9	1	6	228.858	ppb	228.858	0.79	54251	2000	
B	11	1	6	622.032	ppb	622.032	8.19	11097	100	>LDR
Na	23	2	45	113775.068	ppb	113775.068	2.62	67396421	400000	
Mg	24	2	45	31193.838	ppb	31193.838	3.11	7849770	400000	
Al	27	2	45	2075.150	ppb	2075.150	1.06	159467	400000	
K	39	2	45	8245.439	ppb	8245.439	2.22	2111189	400000	
Ca	44	2	45	68966.857	ppb	68966.857	0.86	1277850	400000	
V	51	2	72	207.393	ppb	207.393	3.03	856903	2000	
Cr	52	2	72	205.025	ppb	205.025	1.24	1082516	5000	
Mn	55	2	72	215.001	ppb	215.001	1.25	528154	10000	
Fe	57	2	72	2143.159	ppb	2143.159	1.56	214440	400000	
Co	59	2	72	217.147	ppb	217.147	3.99	1769158	2000	
Ni	60	2	72	203.441	ppb	203.441	2.74	462023	5000	
Cu	63	2	72	207.529	ppb	207.529	1.59	1285237	5000	
Zn	66	2	72	225.792	ppb	225.792	0.62	204800	5000	
As	75	2	72	199.890	ppb	199.890	2.32	136368	2000	
Se	78	1	72	199.024	ppb	199.024	2.98	98758	2000	
Sr	88	2	45	933.371	ppb	933.371	1.06	2496778	2000	
Zr	90	2	72	77987.614	ppb	77987.614	3.98	1424464	1000	>LDR
Zr	90	1	72	78705.261	ppb	78705.261	4.48	3300953	1000	>LDR
Nb	93	2	72	6.042	ppb	6.042	7.63	35611	200	
Mo	95	2	115	223.564	ppb	223.564	1.74	677147	2000	
Pd	105	2	115	0.122	ppb	0.122	37.15	603	100	
Ag	107	2	115	39.063	ppb	39.063	1.22	366916	100	
Cd	111	2	115	208.128	ppb	208.128	1.87	281340	2000	
Sn	120	2	115	210.319	ppb	210.319	1.18	879614	2000	
Sb	121	2	115	219.292	ppb	219.292	1.56	786616	1000	
Ba	137	2	115	324.757	ppb	324.757	0.89	387859	5000	
W	182	2	165	222.279	ppb	222.279	3.64	1534452	100	
Pt	195	2	165	0.134	ppb	0.134	9.83	660	100	
Tl	205	2	165	209.024	ppb	209.024	0.86	2771323	2000	
Pb	208	2	165	220.865	ppb	220.865	2.79	3896287	5000	
Th	232	2	165	0.934	ppb	0.934	4.45	18068	2000	
U	238	2	165	224.746	ppb	224.746	2.68	4352977	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	532835	0.19	882524	60.38	60	125	
Sc (IS)	45	2	HMI He	3269812	0.38	4165833	78.49	60	125	
Sc IS)	45	3	No Gas	87072687	0.63	114950556	75.75	60	120	
Ge Internal Standard	72	1	HMI H2	18434799	2.30	23371239	78.88	60	125	
Ge Internal Standard	72	2	HMI He	3988749	1.29	4959346	80.43	60	125	
In Internal standard	115	2	HMI He	12964276	0.59	15807784	82.01	60	125	
Ho-165	165	2	HMI He	33895504	1.90	41189580	82.29	60	125	

Sample Report

Sample Table

Sample Name 280-123511-a-2-a
 Data File Name 137SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T08:23:19-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457760 6020
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-40.265	ppb	-40.265	-2.17	4943212	40000	
Be	9	1	6	0.370	ppb	0.370	27.94	88	2000	
B	11	1	6	616.359	ppb	616.359	1.05	11073	100	>LDR
Na	23	2	45	116112.678	ppb	116112.678	0.72	69154015	400000	
Mg	24	2	45	31967.283	ppb	31967.283	0.95	8088035	400000	
Al	27	2	45	12.951	ppb	12.951	15.34	1453	400000	
K	39	2	45	8339.045	ppb	8339.045	2.28	2145770	400000	
Ca	44	2	45	68961.073	ppb	68961.073	1.22	1284747	400000	
V	51	2	72	-0.826	ppb	-0.826	-3.73	8772	2000	
Cr	52	2	72	0.279	ppb	0.279	6.75	2594	5000	
Mn	55	2	72	10.201	ppb	10.201	2.70	25579	10000	
Fe	57	2	72	88.570	ppb	88.570	2.97	9419	400000	
Co	59	2	72	0.251	ppb	0.251	15.13	6758	2000	
Ni	60	2	72	3.683	ppb	3.683	2.60	8846	5000	
Cu	63	2	72	6.805	ppb	6.805	6.98	46038	5000	
Zn	66	2	72	13.134	ppb	13.134	2.85	13736	5000	
As	75	2	72	0.738	ppb	0.738	9.18	654	2000	
Se	78	1	72	1.397	ppb	1.397	2.14	728	2000	
Sr	88	2	45	921.744	ppb	921.744	2.45	2479121	2000	
Zr	90	2	72	111.677	ppb	111.677	0.99	2584	1000	
Zr	90	1	72	250.909	ppb	250.909	17.72	12497	1000	
Nb	93	2	72	-0.101	ppb	-0.101	-39.90	830	200	
Mo	95	2	115	2.302	ppb	2.302	1.62	7378	2000	
Pd	105	2	115	0.037	ppb	0.037	20.99	230	100	
Ag	107	2	115	0.014	ppb	0.014	41.44	220	100	
Cd	111	2	115	0.107	ppb	0.107	57.43	153	2000	
Sn	120	2	115	0.165	ppb	0.165	15.30	1423	2000	
Sb	121	2	115	0.478	ppb	0.478	1.80	2000	1000	
Ba	137	2	115	98.813	ppb	98.813	1.12	121064	5000	
W	182	2	165	0.328	ppb	0.328	7.24	4557	100	
Pt	195	2	165	0.034	ppb	0.034	34.61	173	100	
Tl	205	2	165	0.051	ppb	0.051	7.66	960	2000	
Pb	208	2	165	0.609	ppb	0.609	6.59	12219	5000	
Th	232	2	165	0.012	ppb	0.012	83.52	810	2000	
U	238	2	165	18.771	ppb	18.771	4.39	372599	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	536560	0.58	882524	60.80	60	125	
Sc (IS)	45	2	HMI He	3287773	0.42	4165833	78.92	60	125	
Sc IS)	45	3	No Gas	88626003	1.34	114950556	77.10	60	120	
Ge Internal Standard	72	1	HMI H2	18698979	1.04	23371239	80.01	60	125	
Ge Internal Standard	72	2	HMI He	4016819	2.45	4959346	80.99	60	125	
In Internal standard	115	2	HMI He	13285972	0.71	15807784	84.05	60	125	
Ho-165	165	2	HMI He	34754706	3.63	41189580	84.38	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5701467
 Data File Name 138_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T08:26:49-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	22.679	ppb	36.823	98567	100	22.7	90	110	>+ -10%
Li	7	3	45	26.466	ppb	17.309	6347954	100	26.5	90	110	>+ -10%
Be	9	1	6	51.412	ppb	2.328	13440	50	102.8	90	110	
B	11	1	6	43.721	ppb	22.753	1093	50	87.4	90	110	>+ -10%
Na	23	2	45	1053.115	ppb	0.411	696343	1000	105.3	90	110	
Mg	24	2	45	968.406	ppb	1.180	257973	1000	96.8	90	110	
Al	27	2	45	958.347	ppb	1.366	77870	1000	95.8	90	110	
K	39	2	45	926.729	ppb	1.740	336958	1000	92.7	90	110	
Ca	44	2	45	1060.722	ppb	4.486	20959	1000	106.1	90	110	
V	51	2	72	45.737	ppb	4.172	209034	50	91.5	90	110	
Cr	52	2	72	46.120	ppb	2.649	257514	50	92.2	90	110	
Mn	55	2	72	48.257	ppb	3.246	125222	50	96.5	90	110	
Fe	57	2	72	970.589	ppb	2.465	102639	1000	97.1	90	110	
Co	59	2	72	48.617	ppb	0.566	421466	50	97.2	90	110	
Ni	60	2	72	47.480	ppb	2.227	114013	50	95.0	90	110	
Cu	63	2	72	48.402	ppb	1.951	318935	50	96.8	90	110	
Zn	66	2	72	47.887	ppb	2.252	47305	50	95.8	90	110	
As	75	2	72	47.834	ppb	1.651	34514	50	95.7	90	110	
Se	78	1	72	50.901	ppb	6.240	26933	50	101.8	90	110	
Sr	88	2	45	106.609	ppb	1.766	300692	100	106.6	90	110	
Zr	90	2	72	83.820	ppb	21.322	2164	50	167.6	90	110	>+ -10%
Zr	90	1	72	78.442	ppb	9.069	5433	50	156.9	90	110	>+ -10%
Nb	93	2	72	93.777	ppb	2.655	560777	100	93.8	90	110	
Mo	95	2	115	52.318	ppb	1.471	164065	50	104.6	90	110	
Pd	105	2	115	52.768	ppb	3.813	242676	50	105.5	90	110	
Ag	107	2	115	50.337	ppb	2.627	488797	50	100.7	90	110	
Cd	111	2	115	49.746	ppb	2.138	69537	50	99.5	90	110	
Sn	120	2	115	49.478	ppb	2.376	214496	50	99.0	90	110	
Sb	121	2	115	48.979	ppb	1.114	181874	50	98.0	90	110	
Ba	137	2	115	50.941	ppb	1.909	63057	50	101.9	90	110	
W	182	2	165	49.472	ppb	3.983	354916	50	98.9	90	110	
Pt	195	2	165	48.422	ppb	5.333	245514	50	96.8	90	110	
Tl	205	2	165	50.804	ppb	3.891	696810	50	101.6	90	110	
Pb	208	2	165	51.488	ppb	6.457	939873	50	103.0	90	110	
Th	232	2	165	43.605	ppb	3.203	846016	50	87.2	90	110	>+ -10%
U	238	2	165	47.983	ppb	3.893	961406	50	96.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	587729	1.93	882524	66.60	60	125	
Sc (IS)	45	2	HMI He	3446065	0.38	4165833	82.72	60	125	
Sc IS)	45	3	No Gas	91235869	1.14	114950556	79.37	60	120	
Ge Internal Standard	72	1	HMI H2	19649920	2.02	23371239	84.08	60	125	
Ge Internal Standard	72	2	HMI He	4204576	2.24	4959346	84.78	60	125	
In Internal standard	115	2	HMI He	13407476	1.97	15807784	84.82	60	125	
Ho-165	165	2	HMI He	35095738	4.18	41189580	85.21	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5701457
 Data File Name 139_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T08:30:21-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-61.684	ppb	-10.9	76799	0.1	
Li	7	3	45	-45.245	ppb	-17.0	5009298	0.05	
Be	9	1	6	0.139	ppb	57.0	37	0.5	
B	11	1	6	5.883	ppb	43.2	370	0.1	>RL
Na	23	2	45	71.080	ppb	2.3	83320	25	>RL
Mg	24	2	45	3.544	ppb	30.2	2130	25	
Al	27	2	45	-1.851	ppb	-44.2	327	15	
K	39	2	45	-17.011	ppb	-7.6	93134	50	
Ca	44	2	45	1.612	ppb	58.9	283	25	
V	51	2	72	-1.005	ppb	-8.9	8325	1	
Cr	52	2	72	0.000	ppb	-21830.7	1153	1	
Mn	55	2	72	0.059	ppb	49.6	533	0.5	
Fe	57	2	72	6.579	ppb	25.0	1213	25	
Co	59	2	72	0.023	ppb	103.2	5064	0.5	
Ni	60	2	72	0.032	ppb	165.2	513	1	
Cu	63	2	72	0.911	ppb	5.4	9763	1	
Zn	66	2	72	-1.057	ppb	-15.2	927	5	
As	75	2	72	0.028	ppb	149.7	171	1	
Se	78	1	72	0.070	ppb	76.1	63	1	
Sr	88	2	45	0.110	ppb	20.8	460	1	
Zr	90	2	72	34.780	ppb	16.6	1210	1	>RL
Zr	90	1	72	53.115	ppb	17.2	4308	1	>RL
Nb	93	2	72	2.735	ppb	8.7	17596	2	>RL
Mo	95	2	115	0.149	ppb	13.6	697	0.5	
Pd	105	2	115	0.031	ppb	12.7	200	1	
Ag	107	2	115	0.015	ppb	56.2	230	1	
Cd	111	2	115	0.047	ppb	56.5	70	0.5	
Sn	120	2	115	0.060	ppb	42.3	973	1	
Sb	121	2	115	0.057	ppb	21.7	453	1	
Ba	137	2	115	-0.044	ppb	-11.0	127	0.5	
W	182	2	165	0.179	ppb	21.4	3607	1	
Pt	195	2	165	0.008	ppb	49.7	43	1	
Tl	205	2	165	0.044	ppb	16.4	887	0.1	
Pb	208	2	165	0.023	ppb	27.8	1683	0.5	
Th	232	2	165	0.183	ppb	11.2	4237	1	
U	238	2	165	0.047	ppb	7.4	1150	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	592512	1.19	882524	67.14	60	125	
Sc (IS)	45	2	HMI He	3432682	0.85	4165833	82.40	60	125	
Sc IS)	45	3	No Gas	91536079	1.98	114950556	79.63	60	120	
Ge Internal Standard	72	1	HMI H2	19657685	0.92	23371239	84.11	60	125	
Ge Internal Standard	72	2	HMI He	4158889	0.95	4959346	83.86	60	125	
In Internal standard	115	2	HMI He	13248931	0.40	15807784	83.81	60	125	
Ho-165	165	2	HMI He	35868848	4.24	41189580	87.08	60	125	

Sample Report

Sample Table

Sample Name 280-123564-m-1-a
 Data File Name 140SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T08:33:55-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457760 6020
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-47.494	ppb	-47.494	-16.44	4670340	40000	
Be	9	1	6	0.218	ppb	0.218	53.13	50	2000	
B	11	1	6	3526.831	ppb	3526.831	0.73	59766	100	>LDR
Na	23	2	45	262487.451	ppb	262487.451	1.42	156768422	400000	
Mg	24	2	45	38127.692	ppb	38127.692	1.24	9678302	400000	
Al	27	2	45	2.957	ppb	2.957	43.34	683	400000	
K	39	2	45	17381.076	ppb	17381.076	3.08	4383947	400000	
Ca	44	2	45	86719.204	ppb	86719.204	2.95	1620130	400000	
V	51	2	72	-1.582	ppb	-1.582	-4.54	5624	2000	
Cr	52	2	72	0.257	ppb	0.257	13.97	2457	5000	
Mn	55	2	72	100.898	ppb	100.898	1.61	247596	10000	
Fe	57	2	72	446.332	ppb	446.332	2.25	44978	400000	
Co	59	2	72	0.598	ppb	0.598	6.62	9516	2000	
Ni	60	2	72	2.927	ppb	2.927	7.72	7048	5000	
Cu	63	2	72	1.316	ppb	1.316	4.88	11844	5000	
Zn	66	2	72	2.921	ppb	2.921	10.15	4457	5000	
As	75	2	72	0.848	ppb	0.848	2.17	722	2000	
Se	78	1	72	0.127	ppb	0.127	10.14	85	2000	
Sr	88	2	45	1119.364	ppb	1119.364	2.90	3019366	2000	
Zr	90	2	72	26.253	ppb	26.253	8.28	1003	1000	
Zr	90	1	72	33.588	ppb	33.588	12.28	3160	1000	
Nb	93	2	72	3.624	ppb	3.624	7.94	21871	200	
Mo	95	2	115	1549.427	ppb	1549.427	1.93	4549227	2000	
Pd	105	2	115	0.056	ppb	0.056	18.16	300	100	
Ag	107	2	115	0.017	ppb	0.017	37.04	243	100	
Cd	111	2	115	0.529	ppb	0.529	13.87	700	2000	
Sn	120	2	115	0.326	ppb	0.326	20.52	2000	2000	
Sb	121	2	115	0.110	ppb	0.110	74.74	610	1000	
Ba	137	2	115	70.307	ppb	70.307	1.65	81563	5000	
W	182	2	165	0.227	ppb	0.227	21.86	3811	100	
Pt	195	2	165	0.011	ppb	0.011	87.48	57	100	
Tl	205	2	165	0.005	ppb	0.005	64.90	337	2000	
Pb	208	2	165	0.084	ppb	0.084	11.85	2707	5000	
Th	232	2	165	0.619	ppb	0.619	5.20	12392	2000	
U	238	2	165	5.680	ppb	5.680	3.78	112120	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	514957	0.68	882524	58.35	60	125	IS Failed
Sc (IS)	45	2	HMI He	3298816	3.00	4165833	79.19	60	125	
Sc IS)	45	3	No Gas	86065186	1.43	114950556	74.87	60	120	
Ge Internal Standard	72	1	HMI H2	18102550	1.27	23371239	77.46	60	125	
Ge Internal Standard	72	2	HMI He	3981002	0.46	4959346	80.27	60	125	
In Internal standard	115	2	HMI He	12575345	2.50	15807784	79.55	60	125	
Ho-165	165	2	HMI He	34502712	1.85	41189580	83.77	60	125	

Sample Report

Sample Table

Sample Name 280-123564-m-2-a
 Data File Name 141SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T08:37:27-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457760 6020
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-59.130	ppb	-59.130	-5.95	4599196	40000	
Be	9	1	6	0.041	ppb	0.041	86.02	10	2000	
B	11	1	6	72.990	ppb	72.990	11.13	1553	100	
Na	23	2	45	191.955	ppb	191.955	3.91	153230	400000	
Mg	24	2	45	21.911	ppb	21.911	8.35	6751	400000	
Al	27	2	45	4.299	ppb	4.299	19.93	793	400000	
K	39	2	45	-0.358	ppb	-0.358	-1903.05	94237	400000	
Ca	44	2	45	56.128	ppb	56.128	23.85	1297	400000	
V	51	2	72	-2.017	ppb	-2.017	-4.49	4041	2000	
Cr	52	2	72	0.294	ppb	0.294	13.85	2777	5000	
Mn	55	2	72	0.538	ppb	0.538	13.69	1763	10000	
Fe	57	2	72	14.024	ppb	14.024	11.46	1997	400000	
Co	59	2	72	-0.004	ppb	-0.004	-635.77	4857	2000	
Ni	60	2	72	0.089	ppb	0.089	25.57	650	5000	
Cu	63	2	72	0.944	ppb	0.944	1.45	10016	5000	
Zn	66	2	72	4.205	ppb	4.205	3.46	5884	5000	
As	75	2	72	-0.023	ppb	-0.023	-86.31	136	2000	
Se	78	1	72	-0.001	ppb	-0.001	-1156.69	24	2000	
Sr	88	2	45	0.475	ppb	0.475	6.91	1440	2000	
Zr	90	2	72	-5.880	ppb	-5.880	-87.74	440	1000	
Zr	90	1	72	0.426	ppb	0.426	1674.28	1872	1000	
Nb	93	2	72	1.103	ppb	1.103	11.03	7982	200	
Mo	95	2	115	1.655	ppb	1.655	7.11	5391	2000	
Pd	105	2	115	0.012	ppb	0.012	37.18	117	100	
Ag	107	2	115	0.008	ppb	0.008	42.45	167	100	
Cd	111	2	115	0.030	ppb	0.030	75.18	47	2000	
Sn	120	2	115	0.047	ppb	0.047	52.61	923	2000	
Sb	121	2	115	-0.010	ppb	-0.010	-264.46	207	1000	
Ba	137	2	115	0.357	ppb	0.357	7.57	620	5000	
W	182	2	165	0.088	ppb	0.088	47.06	2930	100	
Pt	195	2	165	0.005	ppb	0.005	111.19	30	100	
Tl	205	2	165	0.007	ppb	0.007	78.34	377	2000	
Pb	208	2	165	0.040	ppb	0.040	25.82	1993	5000	
Th	232	2	165	0.081	ppb	0.081	16.31	2194	2000	
U	238	2	165	0.005	ppb	0.005	53.76	287	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	549838	0.70	882524	62.30	60	125	
Sc (IS)	45	2	HMI He	3320719	2.12	4165833	79.71	60	125	
Sc IS)	45	3	No Gas	88677365	1.71	114950556	77.14	60	120	
Ge Internal Standard	72	1	HMI H2	18921994	3.20	23371239	80.96	60	125	
Ge Internal Standard	72	2	HMI He	4174915	2.90	4959346	84.18	60	125	
In Internal standard	115	2	HMI He	13335229	0.59	15807784	84.36	60	125	
Ho-165	165	2	HMI He	35558180	3.57	41189580	86.33	60	125	

Sample Report

Sample Table

Sample Name 280-123620-c-1-a
 Data File Name 142SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T09:00:42-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457760 6020
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-60.042	ppb	-60.042	-5.52	4623894	40000	
Be	9	1	6	0.007	ppb	0.007	173.21	2	2000	
B	11	1	6	193.550	ppb	193.550	9.43	3697	100	
Na	23	2	45	3891.859	ppb	3891.859	2.13	2400376	400000	
Mg	24	2	45	19185.739	ppb	19185.739	2.09	4948436	400000	
Al	27	2	45	9.420	ppb	9.420	10.27	1207	400000	
K	39	2	45	1801.103	ppb	1801.103	3.56	546972	400000	
Ca	44	2	45	81911.521	ppb	81911.521	2.72	1555214	400000	
V	51	2	72	-1.494	ppb	-1.494	-7.11	5901	2000	
Cr	52	2	72	0.382	ppb	0.382	16.27	3074	5000	
Mn	55	2	72	1.170	ppb	1.170	10.96	3187	10000	
Fe	57	2	72	33.100	ppb	33.100	5.19	3754	400000	
Co	59	2	72	0.020	ppb	0.020	109.57	4764	2000	
Ni	60	2	72	0.320	ppb	0.320	1.57	1130	5000	
Cu	63	2	72	0.790	ppb	0.790	10.54	8482	5000	
Zn	66	2	72	0.427	ppb	0.427	53.57	2190	5000	
As	75	2	72	0.236	ppb	0.236	26.05	301	2000	
Se	78	1	72	0.335	ppb	0.335	22.81	192	2000	
Sr	88	2	45	169.830	ppb	169.830	4.57	465435	2000	
Zr	90	2	72	-3.178	ppb	-3.178	-209.64	460	1000	
Zr	90	1	72	4.646	ppb	4.646	65.49	2026	1000	
Nb	93	2	72	0.298	ppb	0.298	19.03	3034	200	
Mo	95	2	115	0.216	ppb	0.216	18.49	893	2000	
Pd	105	2	115	0.007	ppb	0.007	49.64	93	100	
Ag	107	2	115	-0.002	ppb	-0.002	-159.91	70	100	
Cd	111	2	115	0.001	ppb	0.001	1037.24	7	2000	
Sn	120	2	115	0.067	ppb	0.067	45.47	993	2000	
Sb	121	2	115	-0.005	ppb	-0.005	-544.12	223	1000	
Ba	137	2	115	23.332	ppb	23.332	4.91	28356	5000	
W	182	2	165	0.146	ppb	0.146	23.19	3290	100	
Pt	195	2	165	0.003	ppb	0.003	153.00	20	100	
Tl	205	2	165	0.001	ppb	0.001	346.35	290	2000	
Pb	208	2	165	0.020	ppb	0.020	80.00	1580	5000	
Th	232	2	165	0.042	ppb	0.042	12.78	1400	2000	
U	238	2	165	0.244	ppb	0.244	9.88	5058	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	546024	1.60	882524	61.87	60	125	
Sc (IS)	45	2	HMI He	3353409	4.45	4165833	80.50	60	125	
Sc IS)	45	3	No Gas	89476702	1.24	114950556	77.84	60	120	
Ge Internal Standard	72	1	HMI H2	18618184	0.33	23371239	79.66	60	125	
Ge Internal Standard	72	2	HMI He	3927215	1.11	4959346	79.19	60	125	
In Internal standard	115	2	HMI He	13119316	0.95	15807784	82.99	60	125	
Ho-165	165	2	HMI He	34995075	1.05	41189580	84.96	60	125	

Sample Report

Sample Table

Sample Name 280-123620-c-2-a
 Data File Name 143SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T09:04:14-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457760 6020
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-21.340	ppb	-21.340	-24.79	5284815	40000	
Be	9	1	6	0.000	ppb	0.000	#DIV/0!	0	2000	
B	11	1	6	3272.272	ppb	3272.272	1.60	58598	100	>LDR
Na	23	2	45	14502.639	ppb	14502.639	3.55	8795814	400000	
Mg	24	2	45	32926.459	ppb	32926.459	3.57	8451101	400000	
Al	27	2	45	70.435	ppb	70.435	10.34	5964	400000	
K	39	2	45	7726.133	ppb	7726.133	3.98	2023845	400000	
Ca	44	2	45	81966.947	ppb	81966.947	1.23	1550068	400000	
V	51	2	72	-1.631	ppb	-1.631	-4.20	5508	2000	
Cr	52	2	72	0.647	ppb	0.647	9.33	4577	5000	
Mn	55	2	72	59.090	ppb	59.090	3.17	147373	10000	
Fe	57	2	72	1001.689	ppb	1001.689	2.54	101848	400000	
Co	59	2	72	0.060	ppb	0.060	36.36	5234	2000	
Ni	60	2	72	0.982	ppb	0.982	9.67	2684	5000	
Cu	63	2	72	1.344	ppb	1.344	2.29	12204	5000	
Zn	66	2	72	15.203	ppb	15.203	4.26	15714	5000	
As	75	2	72	0.652	ppb	0.652	9.53	597	2000	
Se	78	1	72	-0.022	ppb	-0.022	-117.64	13	2000	
Sr	88	2	45	11831.050	ppb	11831.050	4.67	32280967	2000	>LDR
Zr	90	2	72	26.355	ppb	26.355	24.88	1020	1000	
Zr	90	1	72	31.236	ppb	31.236	15.63	3180	1000	
Nb	93	2	72	0.308	ppb	0.308	8.83	3184	200	
Mo	95	2	115	0.596	ppb	0.596	7.00	2007	2000	
Pd	105	2	115	0.461	ppb	0.461	2.59	2084	100	
Ag	107	2	115	0.003	ppb	0.003	106.61	110	100	
Cd	111	2	115	0.014	ppb	0.014	86.31	23	2000	
Sn	120	2	115	0.150	ppb	0.150	30.70	1310	2000	
Sb	121	2	115	0.052	ppb	0.052	54.03	420	1000	
Ba	137	2	115	66.017	ppb	66.017	3.51	77872	5000	
W	182	2	165	0.153	ppb	0.153	23.15	3174	100	
Pt	195	2	165	0.002	ppb	0.002	135.41	10	100	
Tl	205	2	165	0.003	ppb	0.003	140.43	300	2000	
Pb	208	2	165	0.410	ppb	0.410	10.37	8248	5000	
Th	232	2	165	0.074	ppb	0.074	3.92	1923	2000	
U	238	2	165	0.304	ppb	0.304	2.70	5958	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	544023	0.36	882524	61.64	60	125	
Sc (IS)	45	2	HMI He	3337773	3.10	4165833	80.12	60	125	
Sc IS)	45	3	No Gas	88554101	1.68	114950556	77.04	60	120	
Ge Internal Standard	72	1	HMI H2	18795000	1.19	23371239	80.42	60	125	
Ge Internal Standard	72	2	HMI He	4042854	1.61	4959346	81.52	60	125	
In Internal standard	115	2	HMI He	12781890	2.35	15807784	80.86	60	125	
Ho-165	165	2	HMI He	33219923	0.56	41189580	80.65	60	125	

Sample Report

Sample Table

Sample Name 280-123620-c-3-a
 Data File Name 144SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T09:07:46-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457760 6020
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-59.019	ppb	-59.019	-16.74	4715208	40000	
Be	9	1	6	0.028	ppb	0.028	86.61	7	2000	
B	11	1	6	449.175	ppb	449.175	4.95	8165	100	
Na	23	2	45	13018.545	ppb	13018.545	1.96	8032153	400000	
Mg	24	2	45	9107.722	ppb	9107.722	3.17	2378746	400000	
Al	27	2	45	84.485	ppb	84.485	6.02	7182	400000	
K	39	2	45	580.317	ppb	580.317	8.16	243547	400000	
Ca	44	2	45	56145.443	ppb	56145.443	5.00	1078269	400000	
V	51	2	72	-1.518	ppb	-1.518	-13.33	6098	2000	
Cr	52	2	72	0.508	ppb	0.508	9.24	3920	5000	
Mn	55	2	72	16.404	ppb	16.404	0.35	42088	10000	
Fe	57	2	72	140.607	ppb	140.607	3.04	15060	400000	
Co	59	2	72	0.231	ppb	0.231	2.86	6781	2000	
Ni	60	2	72	0.265	ppb	0.265	40.98	1060	5000	
Cu	63	2	72	0.873	ppb	0.873	9.51	9453	5000	
Zn	66	2	72	1.219	ppb	1.219	38.28	3037	5000	
As	75	2	72	0.341	ppb	0.341	14.58	391	2000	
Se	78	1	72	0.322	ppb	0.322	10.46	187	2000	
Sr	88	2	45	128.580	ppb	128.580	3.03	356786	2000	
Zr	90	2	72	31.185	ppb	31.185	23.72	1133	1000	
Zr	90	1	72	33.412	ppb	33.412	3.17	3260	1000	
Nb	93	2	72	0.164	ppb	0.164	9.30	2410	200	
Mo	95	2	115	0.227	ppb	0.227	6.87	950	2000	
Pd	105	2	115	0.012	ppb	0.012	28.33	117	100	
Ag	107	2	115	0.000	ppb	0.000	-658.61	87	100	
Cd	111	2	115	0.015	ppb	0.015	145.67	27	2000	
Sn	120	2	115	0.117	ppb	0.117	17.37	1230	2000	
Sb	121	2	115	0.016	ppb	0.016	257.22	307	1000	
Ba	137	2	115	20.910	ppb	20.910	2.71	26021	5000	
W	182	2	165	0.063	ppb	0.063	53.17	2684	100	
Pt	195	2	165	0.002	ppb	0.002	53.97	13	100	
Tl	205	2	165	0.008	ppb	0.008	79.91	383	2000	
Pb	208	2	165	0.217	ppb	0.217	6.17	5144	5000	
Th	232	2	165	0.056	ppb	0.056	16.86	1663	2000	
U	238	2	165	0.180	ppb	0.180	11.32	3754	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	539006	2.07	882524	61.08	60	125	
Sc (IS)	45	2	HMI He	3392464	3.20	4165833	81.44	60	125	
Sc IS)	45	3	No Gas	90954856	4.09	114950556	79.13	60	120	
Ge Internal Standard	72	1	HMI H2	18711808	0.96	23371239	80.06	60	125	
Ge Internal Standard	72	2	HMI He	4130925	1.59	4959346	83.30	60	125	
In Internal standard	115	2	HMI He	13421404	0.92	15807784	84.90	60	125	
Ho-165	165	2	HMI He	34724684	2.51	41189580	84.30	60	125	

Sample Report

Sample Table

Sample Name 280-123620-c-4-a
 Data File Name 145SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T09:11:20-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457760 6020
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-55.870	ppb	-55.870	-13.41	4620402	40000	
Be	9	1	6	0.021	ppb	0.021	100.28	5	2000	
B	11	1	6	1434.759	ppb	1434.759	0.58	25532	100	>LDR
Na	23	2	45	7267.747	ppb	7267.747	1.97	4404338	400000	
Mg	24	2	45	39141.093	ppb	39141.093	1.21	9995671	400000	
Al	27	2	45	8.659	ppb	8.659	21.83	1133	400000	
K	39	2	45	3755.522	ppb	3755.522	1.39	1027194	400000	
Ca	44	2	45	124932.327	ppb	124932.327	0.96	2349170	400000	
V	51	2	72	-1.947	ppb	-1.947	-2.46	4121	2000	
Cr	52	2	72	0.288	ppb	0.288	22.01	2610	5000	
Mn	55	2	72	708.497	ppb	708.497	1.23	1728296	10000	
Fe	57	2	72	142.265	ppb	142.265	3.00	14613	400000	
Co	59	2	72	0.272	ppb	0.272	18.04	6838	2000	
Ni	60	2	72	0.893	ppb	0.893	22.94	2430	5000	
Cu	63	2	72	0.649	ppb	0.649	15.04	7695	5000	
Zn	66	2	72	0.326	ppb	0.326	63.17	2120	5000	
As	75	2	72	0.254	ppb	0.254	3.04	316	2000	
Se	78	1	72	-0.004	ppb	-0.004	-118.28	23	2000	
Sr	88	2	45	4781.761	ppb	4781.761	2.32	12978973	2000	
Zr	90	2	72	1.705	ppb	1.705	311.81	553	1000	
Zr	90	1	72	2.025	ppb	2.025	245.14	1945	1000	
Nb	93	2	72	0.047	ppb	0.047	86.28	1653	200	
Mo	95	2	115	0.278	ppb	0.278	9.49	1083	2000	
Pd	105	2	115	0.158	ppb	0.158	6.83	770	100	
Ag	107	2	115	-0.003	ppb	-0.003	-198.26	63	100	
Cd	111	2	115	0.006	ppb	0.006	300.44	13	2000	
Sn	120	2	115	0.020	ppb	0.020	233.29	790	2000	
Sb	121	2	115	0.002	ppb	0.002	1657.11	247	1000	
Ba	137	2	115	50.397	ppb	50.397	4.02	60956	5000	
W	182	2	165	0.062	ppb	0.062	16.77	2640	100	
Pt	195	2	165	0.001	ppb	0.001	137.01	10	100	
Tl	205	2	165	0.017	ppb	0.017	19.81	490	2000	
Pb	208	2	165	0.010	ppb	0.010	62.50	1383	5000	
Th	232	2	165	0.010	ppb	0.010	55.37	780	2000	
U	238	2	165	0.522	ppb	0.522	3.19	10410	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	537851	0.52	882524	60.94	60	125	
Sc (IS)	45	2	HMI He	3318578	1.32	4165833	79.66	60	125	
Sc IS)	45	3	No Gas	87959238	1.72	114950556	76.52	60	120	
Ge Internal Standard	72	1	HMI H2	18912879	0.58	23371239	80.92	60	125	
Ge Internal Standard	72	2	HMI He	3962728	1.00	4959346	79.90	60	125	
In Internal standard	115	2	HMI He	13096803	0.77	15807784	82.85	60	125	
Ho-165	165	2	HMI He	34296951	0.42	41189580	83.27	60	125	

Sample Report

Sample Table

Sample Name 280-123620-c-5-a
 Data File Name 146SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T09:14:52-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457760 6020
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-60.516	ppb	-60.516	-13.21	4614878	40000	
Be	9	1	6	0.028	ppb	0.028	114.57	7	2000	
B	11	1	6	565.391	ppb	565.391	1.19	10216	100	>LDR
Na	23	2	45	11386.026	ppb	11386.026	2.53	6965319	400000	
Mg	24	2	45	8342.507	ppb	8342.507	1.47	2158459	400000	
Al	27	2	45	163.563	ppb	163.563	2.26	13345	400000	
K	39	2	45	4148.519	ppb	4148.519	0.95	1139197	400000	
Ca	44	2	45	44891.683	ppb	44891.683	0.38	854975	400000	
V	51	2	72	-1.404	ppb	-1.404	-1.65	6551	2000	
Cr	52	2	72	0.369	ppb	0.369	12.26	3144	5000	
Mn	55	2	72	68.547	ppb	68.547	1.60	173739	10000	
Fe	57	2	72	215.024	ppb	215.024	2.73	22635	400000	
Co	59	2	72	0.289	ppb	0.289	19.76	7235	2000	
Ni	60	2	72	1.210	ppb	1.210	1.84	3264	5000	
Cu	63	2	72	0.911	ppb	0.911	9.10	9649	5000	
Zn	66	2	72	1.068	ppb	1.068	18.75	2884	5000	
As	75	2	72	0.493	ppb	0.493	6.65	496	2000	
Se	78	1	72	0.067	ppb	0.067	62.47	59	2000	
Sr	88	2	45	126.045	ppb	126.045	0.21	346678	2000	
Zr	90	2	72	39.217	ppb	39.217	21.73	1280	1000	
Zr	90	1	72	43.674	ppb	43.674	11.52	3754	1000	
Nb	93	2	72	0.073	ppb	0.073	22.14	1863	200	
Mo	95	2	115	0.845	ppb	0.845	13.88	2850	2000	
Pd	105	2	115	-0.003	ppb	-0.003	-306.02	50	100	
Ag	107	2	115	0.003	ppb	0.003	110.09	113	100	
Cd	111	2	115	0.003	ppb	0.003	395.41	10	2000	
Sn	120	2	115	0.056	ppb	0.056	59.24	953	2000	
Sb	121	2	115	0.008	ppb	0.008	422.09	273	1000	
Ba	137	2	115	21.730	ppb	21.730	4.84	26656	5000	
W	182	2	165	0.042	ppb	0.042	100.37	2577	100	
Pt	195	2	165	0.001	ppb	0.001	149.05	7	100	
Tl	205	2	165	0.014	ppb	0.014	42.89	473	2000	
Pb	208	2	165	0.158	ppb	0.158	10.94	4130	5000	
Th	232	2	165	0.025	ppb	0.025	29.54	1097	2000	
U	238	2	165	0.227	ppb	0.227	7.70	4764	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	538621	0.40	882524	61.03	60	125	
Sc (IS)	45	2	HMI He	3360724	1.03	4165833	80.67	60	125	
Sc IS)	45	3	No Gas	89479917	0.96	114950556	77.84	60	120	
Ge Internal Standard	72	1	HMI H2	18988259	1.84	23371239	81.25	60	125	
Ge Internal Standard	72	2	HMI He	4109690	1.59	4959346	82.87	60	125	
In Internal standard	115	2	HMI He	13239672	1.79	15807784	83.75	60	125	
Ho-165	165	2	HMI He	35302833	0.10	41189580	85.71	60	125	

Sample Report

Sample Table

Sample Name 280-123620-c-6-a
 Data File Name 147SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T09:18:25-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457760 6020
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-63.599	ppb	-63.599	-3.20	4497056	40000	
Be	9	1	6	0.021	ppb	0.021	99.41	5	2000	
B	11	1	6	2086.437	ppb	2086.437	0.98	36003	100	>LDR
Na	23	2	45	39777.833	ppb	39777.833	0.86	24231353	400000	
Mg	24	2	45	20767.995	ppb	20767.995	2.31	5367409	400000	
Al	27	2	45	63.059	ppb	63.059	8.99	5424	400000	
K	39	2	45	14958.087	ppb	14958.087	4.30	3855113	400000	
Ca	44	2	45	91583.615	ppb	91583.615	2.31	1742651	400000	
V	51	2	72	-1.696	ppb	-1.696	-4.77	5264	2000	
Cr	52	2	72	0.306	ppb	0.306	7.34	2774	5000	
Mn	55	2	72	938.570	ppb	938.570	4.85	2348054	10000	
Fe	57	2	72	172.673	ppb	172.673	3.45	18106	400000	
Co	59	2	72	0.852	ppb	0.852	3.65	11824	2000	
Ni	60	2	72	2.553	ppb	2.553	3.06	6335	5000	
Cu	63	2	72	1.130	ppb	1.130	11.18	10917	5000	
Zn	66	2	72	3.844	ppb	3.844	5.31	5398	5000	
As	75	2	72	0.532	ppb	0.532	14.45	518	2000	
Se	78	1	72	0.091	ppb	0.091	81.95	69	2000	
Sr	88	2	45	603.970	ppb	603.970	3.56	1659093	2000	
Zr	90	2	72	39.090	ppb	39.090	11.48	1263	1000	
Zr	90	1	72	41.704	ppb	41.704	15.19	3561	1000	
Nb	93	2	72	-0.009	ppb	-0.009	-480.25	1370	200	
Mo	95	2	115	0.918	ppb	0.918	10.19	3067	2000	
Pd	105	2	115	0.021	ppb	0.021	74.27	157	100	
Ag	107	2	115	-0.003	ppb	-0.003	-176.07	63	100	
Cd	111	2	115	0.035	ppb	0.035	53.23	53	2000	
Sn	120	2	115	0.039	ppb	0.039	114.80	880	2000	
Sb	121	2	115	0.082	ppb	0.082	12.58	543	1000	
Ba	137	2	115	40.125	ppb	40.125	4.14	48989	5000	
W	182	2	165	0.071	ppb	0.071	31.91	2650	100	
Pt	195	2	165	0.002	ppb	0.002	135.37	10	100	
Tl	205	2	165	0.027	ppb	0.027	26.90	610	2000	
Pb	208	2	165	0.144	ppb	0.144	5.36	3700	5000	
Th	232	2	165	0.016	ppb	0.016	54.66	863	2000	
U	238	2	165	0.652	ppb	0.652	1.72	12702	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	522995	1.20	882524	59.26	60	125	IS Failed
Sc (IS)	45	2	HMI He	3359108	1.83	4165833	80.63	60	125	
Sc IS)	45	3	No Gas	88270773	0.24	114950556	76.79	60	120	
Ge Internal Standard	72	1	HMI H2	18436588	0.36	23371239	78.89	60	125	
Ge Internal Standard	72	2	HMI He	4066870	3.05	4959346	82.00	60	125	
In Internal standard	115	2	HMI He	13212269	0.50	15807784	83.58	60	125	
Ho-165	165	2	HMI He	33589489	1.02	41189580	81.55	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5701467
 Data File Name 148_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T09:21:56-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	19.172	ppb	67.779	97756	100	19.2	90	110	>+ -10%
Li	7	3	45	19.350	ppb	37.622	6237296	100	19.4	90	110	>+ -10%
Be	9	1	6	51.863	ppb	1.601	13242	50	103.7	90	110	
B	11	1	6	82.072	ppb	17.158	1790	50	164.1	90	110	>+ -10%
Na	23	2	45	1017.434	ppb	3.683	655387	1000	101.7	90	110	
Mg	24	2	45	1006.739	ppb	4.198	260662	1000	100.7	90	110	
Al	27	2	45	996.770	ppb	2.411	78750	1000	99.7	90	110	
K	39	2	45	992.430	ppb	5.583	344055	1000	99.2	90	110	
Ca	44	2	45	1000.545	ppb	2.971	19241	1000	100.1	90	110	
V	51	2	72	47.331	ppb	0.492	210055	50	94.7	90	110	
Cr	52	2	72	48.071	ppb	2.611	261020	50	96.1	90	110	
Mn	55	2	72	49.241	ppb	3.425	124260	50	98.5	90	110	
Fe	57	2	72	996.641	ppb	2.107	102498	1000	99.7	90	110	
Co	59	2	72	49.896	ppb	2.146	420464	50	99.8	90	110	
Ni	60	2	72	48.115	ppb	3.963	112349	50	96.2	90	110	
Cu	63	2	72	49.971	ppb	1.229	320172	50	99.9	90	110	
Zn	66	2	72	49.821	ppb	2.953	47780	50	99.6	90	110	
As	75	2	72	49.849	ppb	1.358	34975	50	99.7	90	110	
Se	78	1	72	49.302	ppb	0.485	25814	50	98.6	90	110	
Sr	88	2	45	109.843	ppb	2.503	301273	100	109.8	90	110	
Zr	90	2	72	31.726	ppb	18.745	1133	50	63.5	90	110	>+ -10%
Zr	90	1	72	34.281	ppb	4.397	3424	50	68.6	90	110	>+ -10%
Nb	93	2	72	95.046	ppb	2.591	552816	100	95.0	90	110	
Mo	95	2	115	51.015	ppb	2.337	157476	50	102.0	90	110	
Pd	105	2	115	51.683	ppb	1.254	234077	50	103.4	90	110	
Ag	107	2	115	50.648	ppb	1.183	484338	50	101.3	90	110	
Cd	111	2	115	50.688	ppb	1.932	69774	50	101.4	90	110	
Sn	120	2	115	49.237	ppb	1.592	210191	50	98.5	90	110	
Sb	121	2	115	49.271	ppb	1.509	180175	50	98.5	90	110	
Ba	137	2	115	50.623	ppb	1.641	61706	50	101.2	90	110	
W	182	2	165	49.177	ppb	2.707	347030	50	98.4	90	110	
Pt	195	2	165	47.629	ppb	0.642	237625	50	95.3	90	110	
Tl	205	2	165	48.974	ppb	2.686	660611	50	97.9	90	110	
Pb	208	2	165	51.813	ppb	1.826	930890	50	103.6	90	110	
Th	232	2	165	41.574	ppb	3.495	792973	50	83.1	90	110	>+ -10%
U	238	2	165	44.852	ppb	3.821	883801	50	89.7	90	110	>+ -10%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	573856	0.82	882524	65.02	60	125	
Sc (IS)	45	2	HMI He	3352870	3.11	4165833	80.48	60	125	
Sc (IS)	45	3	No Gas	91591877	1.70	114950556	79.68	60	120	
Ge Internal Standard	72	1	HMI H2	19429513	1.49	23371239	83.13	60	125	
Ge Internal Standard	72	2	HMI He	4088819	1.46	4959346	82.45	60	125	
In Internal standard	115	2	HMI He	13200310	1.16	15807784	83.51	60	125	
Ho-165	165	2	HMI He	34485297	1.31	41189580	83.72	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5701457
 Data File Name 149_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T09:25:28-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-62.371	ppb	-20.0	73663	0.1	
Li	7	3	45	-55.898	ppb	-1.8	4844554	0.05	
Be	9	1	6	0.079	ppb	25.5	20	0.5	
B	11	1	6	23.774	ppb	20.0	690	0.1	>RL
Na	23	2	45	43.327	ppb	1.3	64633	25	>RL
Mg	24	2	45	2.132	ppb	33.2	1723	25	
Al	27	2	45	-2.426	ppb	-32.4	273	15	
K	39	2	45	-23.688	ppb	-37.2	89443	50	
Ca	44	2	45	1.846	ppb	264.2	280	25	
V	51	2	72	-1.092	ppb	-7.4	7732	1	
Cr	52	2	72	0.002	ppb	1381.6	1133	1	
Mn	55	2	72	0.084	ppb	26.3	580	0.5	
Fe	57	2	72	6.276	ppb	9.4	1150	25	
Co	59	2	72	0.054	ppb	72.2	5177	0.5	
Ni	60	2	72	0.050	ppb	121.1	543	1	
Cu	63	2	72	0.762	ppb	7.5	8562	1	
Zn	66	2	72	-1.170	ppb	-10.7	800	5	
As	75	2	72	-0.023	ppb	-145.6	132	1	
Se	78	1	72	0.027	ppb	15.0	39	1	
Sr	88	2	45	0.129	ppb	33.6	503	1	
Zr	90	2	72	26.078	ppb	6.6	1017	1	>RL
Zr	90	1	72	46.123	ppb	17.8	3858	1	>RL
Nb	93	2	72	2.860	ppb	3.4	17836	2	>RL
Mo	95	2	115	0.062	ppb	18.3	427	0.5	
Pd	105	2	115	0.035	ppb	24.9	220	1	
Ag	107	2	115	0.016	ppb	56.9	247	1	
Cd	111	2	115	0.020	ppb	53.6	33	0.5	
Sn	120	2	115	0.046	ppb	73.4	917	1	
Sb	121	2	115	0.041	ppb	49.1	397	1	
Ba	137	2	115	0.002	ppb	2722.2	183	0.5	
W	182	2	165	0.147	ppb	15.9	3224	1	
Pt	195	2	165	0.012	ppb	35.3	60	1	
Tl	205	2	165	0.029	ppb	10.5	657	0.1	
Pb	208	2	165	0.014	ppb	59.0	1437	0.5	
Th	232	2	165	0.148	ppb	9.6	3367	1	
U	238	2	165	0.042	ppb	18.2	1017	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	570202	0.63	882524	64.61	60	125	
Sc (IS)	45	2	HMI He	3358045	2.48	4165833	80.61	60	125	
Sc IS)	45	3	No Gas	92208741	0.76	114950556	80.22	60	120	
Ge Internal Standard	72	1	HMI H2	18991535	3.58	23371239	81.26	60	125	
Ge Internal Standard	72	2	HMI He	4045300	2.06	4959346	81.57	60	125	
In Internal standard	115	2	HMI He	13306760	2.41	15807784	84.18	60	125	
Ho-165	165	2	HMI He	34234909	4.92	41189580	83.12	60	125	

Sample Report

Sample Table

Sample Name 280-123620-c-7-a
 Data File Name 150SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T09:29:02-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457760 6020
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-61.860	ppb	-61.860	-11.36	4526168	40000	
Be	9	1	6	0.064	ppb	0.064	67.84	15	2000	
B	11	1	6	226.226	ppb	226.226	2.39	4157	100	
Na	23	2	45	2926.774	ppb	2926.774	1.67	1826319	400000	
Mg	24	2	45	5235.130	ppb	5235.130	3.05	1359975	400000	
Al	27	2	45	233.983	ppb	233.983	3.92	18974	400000	
K	39	2	45	1144.470	ppb	1144.470	2.28	384889	400000	
Ca	44	2	45	32057.826	ppb	32057.826	1.63	612998	400000	
V	51	2	72	-0.739	ppb	-0.739	-7.80	9199	2000	
Cr	52	2	72	0.446	ppb	0.446	3.66	3510	5000	
Mn	55	2	72	84.185	ppb	84.185	0.87	209999	10000	
Fe	57	2	72	439.869	ppb	439.869	1.15	45055	400000	
Co	59	2	72	0.299	ppb	0.299	10.31	7205	2000	
Ni	60	2	72	0.278	ppb	0.278	23.50	1067	5000	
Cu	63	2	72	1.140	ppb	1.140	4.06	10930	5000	
Zn	66	2	72	1.314	ppb	1.314	1.86	3064	5000	
As	75	2	72	0.621	ppb	0.621	6.36	576	2000	
Se	78	1	72	0.062	ppb	0.062	74.81	56	2000	
Sr	88	2	45	84.065	ppb	84.065	2.60	232140	2000	
Zr	90	2	72	35.832	ppb	35.832	21.42	1197	1000	
Zr	90	1	72	39.569	ppb	39.569	15.97	3561	1000	
Nb	93	2	72	2.716	ppb	2.716	10.07	17009	200	
Mo	95	2	115	0.211	ppb	0.211	21.73	887	2000	
Pd	105	2	115	0.019	ppb	0.019	7.88	147	100	
Ag	107	2	115	0.005	ppb	0.005	23.80	140	100	
Cd	111	2	115	0.010	ppb	0.010	71.91	20	2000	
Sn	120	2	115	0.062	ppb	0.062	72.90	980	2000	
Sb	121	2	115	0.043	ppb	0.043	35.23	400	1000	
Ba	137	2	115	18.811	ppb	18.811	6.27	23117	5000	
W	182	2	165	0.109	ppb	0.109	21.05	2990	100	
Pt	195	2	165	0.005	ppb	0.005	63.11	30	100	
Tl	205	2	165	0.019	ppb	0.019	44.53	523	2000	
Pb	208	2	165	0.432	ppb	0.432	2.02	8964	5000	
Th	232	2	165	0.637	ppb	0.637	5.95	12742	2000	
U	238	2	165	0.165	ppb	0.165	16.52	3440	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	529598	1.60	882524	60.01	60	125	
Sc (IS)	45	2	HMI He	3374262	1.39	4165833	81.00	60	125	
Sc IS)	45	3	No Gas	88252030	2.61	114950556	76.77	60	120	
Ge Internal Standard	72	1	HMI H2	18899683	2.24	23371239	80.87	60	125	
Ge Internal Standard	72	2	HMI He	4045665	0.51	4959346	81.58	60	125	
In Internal standard	115	2	HMI He	13254842	2.38	15807784	83.85	60	125	
Ho-165	165	2	HMI He	34521429	1.03	41189580	83.81	60	125	

Sample Report

Sample Table

Sample Name 280-123623-c-1-a
 Data File Name 151SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T09:32:34-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457760 6020
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-61.609	ppb	-61.609	-3.99	4428717	40000	
Be	9	1	6	0.114	ppb	0.114	38.87	27	2000	
B	11	1	6	265.941	ppb	265.941	8.09	4821	100	
Na	23	2	45	4374.427	ppb	4374.427	4.44	2672198	400000	
Mg	24	2	45	17247.821	ppb	17247.821	5.63	4414147	400000	
Al	27	2	45	532.541	ppb	532.541	4.10	41970	400000	
K	39	2	45	1221.798	ppb	1221.798	2.52	398844	400000	
Ca	44	2	45	68783.336	ppb	68783.336	0.16	1297232	400000	
V	51	2	72	-1.212	ppb	-1.212	-8.65	7348	2000	
Cr	52	2	72	0.897	ppb	0.897	10.08	6004	5000	
Mn	55	2	72	27.648	ppb	27.648	3.71	70211	10000	
Fe	57	2	72	555.874	ppb	555.874	4.95	57612	400000	
Co	59	2	72	0.245	ppb	0.245	15.22	6858	2000	
Ni	60	2	72	0.870	ppb	0.870	3.38	2464	5000	
Cu	63	2	72	0.913	ppb	0.913	0.98	9653	5000	
Zn	66	2	72	1.396	ppb	1.396	27.85	3187	5000	
As	75	2	72	0.333	ppb	0.333	21.24	383	2000	
Se	78	1	72	0.134	ppb	0.134	49.70	89	2000	
Sr	88	2	45	294.075	ppb	294.075	2.63	800580	2000	
Zr	90	2	72	94.865	ppb	94.865	28.60	2320	1000	
Zr	90	1	72	99.104	ppb	99.104	19.50	5888	1000	
Nb	93	2	72	1.557	ppb	1.557	6.67	10507	200	
Mo	95	2	115	0.138	ppb	0.138	20.86	650	2000	
Pd	105	2	115	0.016	ppb	0.016	12.93	130	100	
Ag	107	2	115	0.003	ppb	0.003	84.30	120	100	
Cd	111	2	115	0.016	ppb	0.016	26.89	27	2000	
Sn	120	2	115	0.361	ppb	0.361	9.30	2217	2000	
Sb	121	2	115	-0.014	ppb	-0.014	-96.38	190	1000	
Ba	137	2	115	16.013	ppb	16.013	1.93	19375	5000	
W	182	2	165	0.090	ppb	0.090	8.86	2850	100	
Pt	195	2	165	0.001	ppb	0.001	299.93	7	100	
Tl	205	2	165	0.012	ppb	0.012	53.97	433	2000	
Pb	208	2	165	0.302	ppb	0.302	5.30	6611	5000	
Th	232	2	165	0.271	ppb	0.271	4.00	5758	2000	
U	238	2	165	0.174	ppb	0.174	9.55	3610	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	526744	0.42	882524	59.69	60	125	IS Failed
Sc (IS)	45	2	HMI He	3328289	2.53	4165833	79.89	60	125	
Sc IS)	45	3	No Gas	86233457	0.19	114950556	75.02	60	120	
Ge Internal Standard	72	1	HMI H2	18225191	2.64	23371239	77.98	60	125	
Ge Internal Standard	72	2	HMI He	4104586	1.37	4959346	82.76	60	125	
In Internal standard	115	2	HMI He	13019501	0.85	15807784	82.36	60	125	
Ho-165	165	2	HMI He	34463160	3.12	41189580	83.67	60	125	

Sample Report

Sample Table

Sample Name 280-123623-c-2-a
 Data File Name 152SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T09:36:06-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457760 6020
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-56.973	ppb	-56.973	-18.21	4583354	40000	
Be	9	1	6	0.000	ppb	0.000	#DIV/0!	0	2000	
B	11	1	6	104.991	ppb	104.991	4.69	2007	100	
Na	23	2	45	1542.826	ppb	1542.826	4.14	1000962	400000	
Mg	24	2	45	14453.857	ppb	14453.857	3.62	3830674	400000	
Al	27	2	45	50.781	ppb	50.781	4.94	4581	400000	
K	39	2	45	1512.647	ppb	1512.647	3.82	487772	400000	
Ca	44	2	45	57075.096	ppb	57075.096	1.47	1114238	400000	
V	51	2	72	-1.389	ppb	-1.389	-12.15	6598	2000	
Cr	52	2	72	0.488	ppb	0.488	10.17	3787	5000	
Mn	55	2	72	3.306	ppb	3.306	1.02	8722	10000	
Fe	57	2	72	73.088	ppb	73.088	1.73	8025	400000	
Co	59	2	72	-0.017	ppb	-0.017	-107.34	4661	2000	
Ni	60	2	72	0.489	ppb	0.489	11.66	1573	5000	
Cu	63	2	72	2.230	ppb	2.230	1.26	18006	5000	
Zn	66	2	72	1.420	ppb	1.420	14.85	3204	5000	
As	75	2	72	0.246	ppb	0.246	12.96	322	2000	
Se	78	1	72	0.340	ppb	0.340	8.17	192	2000	
Sr	88	2	45	162.518	ppb	162.518	5.36	457746	2000	
Zr	90	2	72	13.077	ppb	13.077	39.47	787	1000	
Zr	90	1	72	26.149	ppb	26.149	23.11	2893	1000	
Nb	93	2	72	0.972	ppb	0.972	14.73	7092	200	
Mo	95	2	115	0.809	ppb	0.809	16.37	2720	2000	
Pd	105	2	115	0.004	ppb	0.004	239.64	80	100	
Ag	107	2	115	-0.003	ppb	-0.003	-111.00	63	100	
Cd	111	2	115	0.011	ppb	0.011	141.63	20	2000	
Sn	120	2	115	0.170	ppb	0.170	21.67	1437	2000	
Sb	121	2	115	0.148	ppb	0.148	23.43	787	1000	
Ba	137	2	115	66.316	ppb	66.316	3.37	80734	5000	
W	182	2	165	0.236	ppb	0.236	13.70	3904	100	
Pt	195	2	165	0.001	ppb	0.001	137.42	10	100	
Tl	205	2	165	0.021	ppb	0.021	24.60	557	2000	
Pb	208	2	165	0.100	ppb	0.100	18.14	3027	5000	
Th	232	2	165	0.083	ppb	0.083	3.58	2187	2000	
U	238	2	165	0.346	ppb	0.346	4.63	7062	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	518095	0.94	882524	58.71	60	125	IS Failed
Sc (IS)	45	2	HMI He	3445937	3.34	4165833	82.72	60	125	
Sc IS)	45	3	No Gas	87639308	1.35	114950556	76.24	60	120	
Ge Internal Standard	72	1	HMI H2	18341476	1.28	23371239	78.48	60	125	
Ge Internal Standard	72	2	HMI He	4101062	1.00	4959346	82.69	60	125	
In Internal standard	115	2	HMI He	13200216	2.90	15807784	83.50	60	125	
Ho-165	165	2	HMI He	34751238	0.87	41189580	84.37	60	125	

Sample Report

Sample Table

Sample Name 280-123623-c-3-a
 Data File Name 153SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T09:39:36-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457760 6020
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-64.973	ppb	-64.973	-0.43	4399489	40000	
Be	9	1	6	0.058	ppb	0.058	42.16	13	2000	
B	11	1	6	509.879	ppb	509.879	6.31	8769	100	>LDR
Na	23	2	45	3295.957	ppb	3295.957	2.93	1984291	400000	
Mg	24	2	45	37146.226	ppb	37146.226	2.28	9327244	400000	
Al	27	2	45	307.305	ppb	307.305	1.84	23953	400000	
K	39	2	45	2267.980	ppb	2267.980	2.53	646714	400000	
Ca	44	2	45	151977.966	ppb	151977.966	1.59	2810138	400000	
V	51	2	72	-1.367	ppb	-1.367	-7.00	6421	2000	
Cr	52	2	72	0.557	ppb	0.557	8.06	3987	5000	
Mn	55	2	72	33.830	ppb	33.830	3.09	82315	10000	
Fe	57	2	72	379.198	ppb	379.198	3.09	37858	400000	
Co	59	2	72	0.256	ppb	0.256	14.86	6671	2000	
Ni	60	2	72	1.546	ppb	1.546	6.09	3877	5000	
Cu	63	2	72	1.016	ppb	1.016	4.53	9880	5000	
Zn	66	2	72	1.743	ppb	1.743	3.56	3364	5000	
As	75	2	72	0.333	ppb	0.333	18.34	367	2000	
Se	78	1	72	0.101	ppb	0.101	22.80	72	2000	
Sr	88	2	45	2177.612	ppb	2177.612	0.38	5814219	2000	
Zr	90	2	72	82.968	ppb	82.968	19.62	2020	1000	
Zr	90	1	72	82.717	ppb	82.717	5.05	5126	1000	
Nb	93	2	72	0.772	ppb	0.772	7.90	5694	200	
Mo	95	2	115	0.364	ppb	0.364	7.90	1323	2000	
Pd	105	2	115	0.083	ppb	0.083	33.63	423	100	
Ag	107	2	115	0.000	ppb	0.000	21401.41	87	100	
Cd	111	2	115	0.036	ppb	0.036	69.54	53	2000	
Sn	120	2	115	0.048	ppb	0.048	89.92	890	2000	
Sb	121	2	115	0.022	ppb	0.022	154.34	313	1000	
Ba	137	2	115	56.087	ppb	56.087	4.64	66558	5000	
W	182	2	165	0.105	ppb	0.105	17.72	2907	100	
Pt	195	2	165	0.002	ppb	0.002	144.74	13	100	
Tl	205	2	165	0.032	ppb	0.032	30.42	690	2000	
Pb	208	2	165	0.315	ppb	0.315	6.50	6737	5000	
Th	232	2	165	0.130	ppb	0.130	9.57	3007	2000	
U	238	2	165	0.422	ppb	0.422	3.65	8352	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	511449	1.03	882524	57.95	60	125	IS Failed
Sc (IS)	45	2	HMI He	3263730	1.51	4165833	78.35	60	125	
Sc IS)	45	3	No Gas	86840966	0.61	114950556	75.55	60	120	
Ge Internal Standard	72	1	HMI H2	17900541	0.78	23371239	76.59	60	125	
Ge Internal Standard	72	2	HMI He	3938121	2.93	4959346	79.41	60	125	
In Internal standard	115	2	HMI He	12861895	2.03	15807784	81.36	60	125	
Ho-165	165	2	HMI He	33878579	2.00	41189580	82.25	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5701467
 Data File Name 154_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T09:43:06-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	22.336	ppb	12.368	95897	100	22.3	90	110	>+ -10%
Li	7	3	45	16.419	ppb	16.852	6110648	100	16.4	90	110	>+ -10%
Be	9	1	6	52.516	ppb	2.242	13267	50	105.0	90	110	
B	11	1	6	35.566	ppb	11.260	907	50	71.1	90	110	>+ -10%
Na	23	2	45	985.058	ppb	2.919	646943	1000	98.5	90	110	
Mg	24	2	45	1003.640	ppb	2.570	264480	1000	100.4	90	110	
Al	27	2	45	960.650	ppb	2.600	77227	1000	96.1	90	110	
K	39	2	45	952.145	ppb	4.657	339833	1000	95.2	90	110	
Ca	44	2	45	1046.849	ppb	6.504	20462	1000	104.7	90	110	
V	51	2	72	47.033	ppb	2.020	210581	50	94.1	90	110	
Cr	52	2	72	48.133	ppb	2.617	263602	50	96.3	90	110	
Mn	55	2	72	49.118	ppb	2.994	125030	50	98.2	90	110	
Fe	57	2	72	1004.893	ppb	2.500	104235	1000	100.5	90	110	
Co	59	2	72	50.079	ppb	1.977	425654	50	100.2	90	110	
Ni	60	2	72	47.751	ppb	0.967	112479	50	95.5	90	110	
Cu	63	2	72	49.880	ppb	2.536	322303	50	99.8	90	110	
Zn	66	2	72	49.484	ppb	2.024	47893	50	99.0	90	110	
As	75	2	72	49.539	ppb	0.884	35062	50	99.1	90	110	
Se	78	1	72	51.306	ppb	4.070	26312	50	102.6	90	110	
Sr	88	2	45	109.455	ppb	3.283	305399	100	109.5	90	110	
Zr	90	2	72	25.556	ppb	5.733	1027	50	51.1	90	110	>+ -10%
Zr	90	1	72	38.809	ppb	11.663	3551	50	77.6	90	110	>+ -10%
Nb	93	2	72	98.408	ppb	3.582	577179	100	98.4	90	110	
Mo	95	2	115	50.731	ppb	1.397	157816	50	101.5	90	110	
Pd	105	2	115	50.305	ppb	1.745	229582	50	100.6	90	110	
Ag	107	2	115	49.653	ppb	1.629	478449	50	99.3	90	110	
Cd	111	2	115	51.866	ppb	3.123	71923	50	103.7	90	110	
Sn	120	2	115	49.704	ppb	0.104	213850	50	99.4	90	110	
Sb	121	2	115	50.047	ppb	2.395	184356	50	100.1	90	110	
Ba	137	2	115	51.797	ppb	1.757	63633	50	103.6	90	110	
W	182	2	165	47.979	ppb	0.445	354790	50	96.0	90	110	
Pt	195	2	165	46.320	ppb	3.389	242122	50	92.6	90	110	
Tl	205	2	165	48.536	ppb	2.500	685963	50	97.1	90	110	
Pb	208	2	165	50.251	ppb	1.095	945978	50	100.5	90	110	
Th	232	2	165	41.457	ppb	0.392	828683	50	82.9	90	110	>+ -10%
U	238	2	165	45.158	ppb	1.080	932448	50	90.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	567858	0.52	882524	64.34	60	125	
Sc (IS)	45	2	HMI He	3410723	2.23	4165833	81.87	60	125	
Sc IS)	45	3	No Gas	90515464	1.18	114950556	78.74	60	120	
Ge Internal Standard	72	1	HMI H2	19035443	1.01	23371239	81.45	60	125	
Ge Internal Standard	72	2	HMI He	4124317	1.58	4959346	83.16	60	125	
In Internal standard	115	2	HMI He	13302784	1.84	15807784	84.15	60	125	
Ho-165	165	2	HMI He	36129762	1.02	41189580	87.72	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5701457
 Data File Name 155_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T09:46:39-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-71.974	ppb	-7.3	73278	0.1	
Li	7	3	45	-57.205	ppb	-4.6	4752352	0.05	
Be	9	1	6	0.033	ppb	34.4	8	0.5	
B	11	1	6	15.531	ppb	39.3	533	0.1	>RL
Na	23	2	45	32.890	ppb	5.1	58773	25	>RL
Mg	24	2	45	3.193	ppb	17.8	2010	25	
Al	27	2	45	-3.092	ppb	-19.3	223	15	
K	39	2	45	-35.088	ppb	-26.9	87262	50	
Ca	44	2	45	2.802	ppb	145.4	303	25	
V	51	2	72	-1.231	ppb	-5.0	7338	1	
Cr	52	2	72	-0.017	ppb	-151.9	1057	1	
Mn	55	2	72	0.010	ppb	212.9	407	0.5	
Fe	57	2	72	3.421	ppb	18.7	883	25	
Co	59	2	72	-0.020	ppb	-112.7	4691	0.5	
Ni	60	2	72	-0.024	ppb	-142.8	380	1	
Cu	63	2	72	0.591	ppb	10.6	7678	1	
Zn	66	2	72	-1.363	ppb	-8.9	640	5	
As	75	2	72	-0.009	ppb	-156.6	144	1	
Se	78	1	72	0.021	ppb	100.1	36	1	
Sr	88	2	45	0.123	ppb	9.7	490	1	
Zr	90	2	72	-8.464	ppb	-30.6	387	1	
Zr	90	1	72	-6.165	ppb	-69.7	1615	1	
Nb	93	2	72	2.851	ppb	9.8	18210	2	>RL
Mo	95	2	115	0.086	ppb	50.0	510	0.5	
Pd	105	2	115	0.052	ppb	26.9	303	1	
Ag	107	2	115	0.006	ppb	58.8	147	1	
Cd	111	2	115	0.022	ppb	38.1	37	0.5	
Sn	120	2	115	0.051	ppb	47.3	947	1	
Sb	121	2	115	0.073	ppb	34.8	520	1	
Ba	137	2	115	-0.019	ppb	-189.7	160	0.5	
W	182	2	165	0.115	ppb	50.2	3127	1	
Pt	195	2	165	0.012	ppb	38.3	63	1	
Tl	205	2	165	0.019	ppb	35.3	540	0.1	
Pb	208	2	165	0.008	ppb	59.6	1403	0.5	
Th	232	2	165	0.164	ppb	7.1	3847	1	
U	238	2	165	0.024	ppb	5.1	687	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	567484	0.72	882524	64.30	60	125	
Sc (IS)	45	2	HMI He	3386666	2.55	4165833	81.30	60	125	
Sc IS)	45	3	No Gas	90922322	1.39	114950556	79.10	60	120	
Ge Internal Standard	72	1	HMI H2	19211927	2.42	23371239	82.20	60	125	
Ge Internal Standard	72	2	HMI He	4145978	1.61	4959346	83.60	60	125	
In Internal standard	115	2	HMI He	13456556	0.70	15807784	85.13	60	125	
Ho-165	165	2	HMI He	35709511	3.21	41189580	86.70	60	125	

Blank Report

Sample Table

Sample Name mb 280-457956/1-a
 Data File Name 156_BLK.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T09:50:28-06:00
 Sample Type Blank
 Dilution 1
 Comment 457956 200.8
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	1	45	-70.288	ppb	-3.715633848	73556	0.1
Li	7	3	45	-59.713	ppb	-11.58206305	4653662	0.05
Be	9	1	6	0.033	ppb	35.04219294	8	0.5
Na	23	2	45	38.091	ppb	6.77104677	60826	25
Mg	24	2	45	2.859	ppb	17.27056842	1890	25
Al	27	2	45	-2.017	ppb	-24.29993006	303	15
K	39	2	45	-22.018	ppb	-23.96820618	88940	50
Ca	44	2	45	1.569	ppb	259.5365061	273	25
V	51	2	72	-0.882	ppb	-14.65804331	8806	1
Cr	52	2	72	0.034	ppb	97.41830537	1337	1
Mn	55	2	72	0.361	ppb	18.89515587	1303	0.5
Fe	57	2	72	8.454	ppb	13.07462448	1403	25
Co	59	2	72	-0.023	ppb	-76.89087045	4657	0.5
Ni	60	2	72	0.181	ppb	5.233640145	863	1
Cu	63	2	72	0.793	ppb	2.813498073	8962	1
Zn	66	2	72	0.230	ppb	77.23265814	2123	5
As	75	2	72	-0.021	ppb	-78.14151436	136	1
Se	78	1	72	0.005	ppb	548.0054915	28	1
Sr	88	2	45	0.088	ppb	8.705931524	387	1
Zr	90	2	72	-10.913	ppb	-44.52340548	340	1
Zr	90	1	72	-5.838	ppb	-64.46121455	1655	1
Nb	93	2	72	1.606	ppb	4.663233208	10890	2
Mo	95	2	115	-0.013	ppb	-19.0809758	197	0.5
Pd	105	2	115	0.031	ppb	15.17236299	203	1
Ag	107	2	115	0.006	ppb	60.40738261	147	1
Cd	111	2	115	0.005	ppb	152.514372	13	0.5
Sn	120	2	115	0.044	ppb	41.70012959	910	1
Sb	121	2	115	-0.003	ppb	-226.4897127	233	1
Ba	137	2	115	0.012	ppb	113.1351304	197	0.5
W	182	2	165	0.045	ppb	36.15632175	2574	1
Pt	195	2	165	0.008	ppb	61.82635502	43	1
Tl	205	2	165	0.001	ppb	472.5324175	283	0.1
Pb	208	2	165	0.005	ppb	298.4403938	1320	0.5
Th	232	2	165	0.107	ppb	11.11983755	2667	1
U	238	2	165	0.003	ppb	111.3759087	247	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	562761	0.72	882524	63.77	60	125	
Sc (IS)	45	2	HMI He	3324234	1.08	4165833	79.80	60	125	
Sc IS)	45	3	No Gas	89938605	0.86	114950556	78.24	60	120	
Ge Internal Standard	72	1	HMI H2	19465065	2.05	23371239	83.29	60	125	
Ge Internal Standard	72	2	HMI He	4140677	1.89	4959346	83.49	60	125	
In Internal standard	115	2	HMI He	13347712	2.10	15807784	84.44	60	125	
Ho-165	165	2	HMI He	34971738	1.44	41189580	84.90	60	125	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name lcs 280-457956/2-a
 Data File Name 157_LCS.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T09:54:01-06:00
 Sample Type LCS
 Dilution 1
 Analyst Denver Metals
 Comment 457956 200.8
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	-9.237	-9.237	ppb	-57.555	5655615	400	-2.3	80	120	> +/-20%
Be	9	1	6	35.250	35.250	ppb	1.294	8874	40	88.1	80	120	
Na	23	2	45	32.374	32.374	ppb	6.363	58161	40	80.9	80	120	
Mg	24	2	45	2.671	2.671	ppb	10.283	1867	40	6.7	80	120	> +/-20%
Al	27	2	45	307.994	307.994	ppb	4.342	24774	40	770.0	80	120	> +/-20%
K	39	2	45	-10.398	-10.398	ppb	-156.617	93038	40	-26.0	80	120	> +/-20%
Ca	44	2	45	121.083	121.083	ppb	8.173	2560	40	302.7	80	120	> +/-20%
V	51	2	72	29.803	29.803	ppb	3.325	137688	40	74.5	80	120	> +/-20%
Cr	52	2	72	31.007	31.007	ppb	1.825	169862	40	77.5	80	120	> +/-20%
Mn	55	2	72	33.049	33.049	ppb	3.393	84049	40	82.6	80	120	
Fe	57	2	72	331.249	331.249	ppb	3.927	34625	40	828.1	80	120	> +/-20%
Co	59	2	72	32.191	32.191	ppb	2.391	274699	40	80.5	80	120	
Ni	60	2	72	31.426	31.426	ppb	1.465	74001	40	78.6	80	120	> +/-20%
Cu	63	2	72	32.241	32.241	ppb	1.573	209242	40	80.6	80	120	
Zn	66	2	72	32.899	32.899	ppb	1.959	32414	40	82.2	80	120	
As	75	2	72	30.357	30.357	ppb	2.521	21490	40	75.9	80	120	> +/-20%
Se	78	1	72	31.665	31.665	ppb	2.086	16389	40	79.2	80	120	> +/-20%
Sr	88	2	45	36.125	36.125	ppb	3.314	99702	40	90.3	80	120	
Nb	93	2	72	1.249	1.249	ppb	7.953	8742	40	3.1	80	120	> +/-20%
Mo	95	2	115	31.640	31.640	ppb	2.980	100019	40	79.1	80	120	> +/-20%
Pd	105	2	115	0.013	0.013	ppb	34.080	123	40	0.0	80	120	> +/-20%
Ag	107	2	115	31.946	31.946	ppb	1.466	312561	40	79.9	80	120	> +/-20%
Cd	111	2	115	31.630	31.630	ppb	2.977	44544	40	79.1	80	120	> +/-20%
Sn	120	2	115	32.231	32.231	ppb	1.206	141032	40	80.6	80	120	
Sb	121	2	115	33.105	33.105	ppb	1.234	123912	40	82.8	80	120	
Ba	137	2	115	33.022	33.022	ppb	2.893	41243	40	82.6	80	120	
W	182	2	165	16.266	16.266	ppb	3.374	117659	40	40.7	80	120	> +/-20%
Pt	195	2	165	0.004	0.004	ppb	200.094	20	40	0.0	80	120	> +/-20%
Tl	205	2	165	32.320	32.320	ppb	2.367	441368	40	80.8	80	120	
Pb	208	2	165	33.379	33.379	ppb	2.594	607407	40	83.4	80	120	
Th	232	2	165	26.363	26.363	ppb	1.710	509378	40	65.9	80	120	> +/-20%
U	238	2	165	30.637	30.637	ppb	2.573	611127	40	76.6	80	120	> +/-20%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	565862	0.33	882524	64.12	60	125	
Sc (IS)	45	2	HMI He	3369173	1.44	4165833	80.88	60	125	
Sc IS)	45	3	No Gas	90950745	1.80	114950556	79.12	60	120	
Ge Internal Standard	72	1	HMI H2	19193772	0.82	23371239	82.13	60	125	
Ge Internal Standard	72	2	HMI He	4115143	2.07	4959346	82.98	60	125	
In Internal standard	115	2	HMI He	13504618	0.77	15807784	85.43	60	125	
Ho-165	165	2	HMI He	34910744	2.30	41189580	84.76	60	125	

Sample Report

Sample Table

Sample Name 280-123604-a-1-a
 Data File Name 158SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T09:57:34-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457956 200.8
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-62.352	ppb	-62.352	-7.49	4537618	40000	
Be	9	1	6	0.047	ppb	0.047	24.72	12	2000	
B	11	1	6	32875.859	ppb	32875.859	1.93	597284	100	>LDR
Na	23	2	45	137171.707	ppb	137171.707	1.78	82315276	400000	
Mg	24	2	45	263.188	ppb	263.188	2.53	68236	400000	
Al	27	2	45	17360.022	ppb	17360.022	3.78	1348020	400000	
K	39	2	45	702.566	ppb	702.566	1.91	268376	400000	
Ca	44	2	45	1225.396	ppb	1225.396	2.06	23246	400000	
V	51	2	72	4.210	ppb	4.210	10.03	29378	2000	
Cr	52	2	72	2.142	ppb	2.142	6.68	12465	5000	
Mn	55	2	72	204.367	ppb	204.367	1.97	504742	10000	
Fe	57	2	72	4928.574	ppb	4928.574	2.41	495067	400000	
Co	59	2	72	0.444	ppb	0.444	10.78	8329	2000	
Ni	60	2	72	3.291	ppb	3.291	4.97	7932	5000	
Cu	63	2	72	85.933	ppb	85.933	2.65	537146	5000	
Zn	66	2	72	8.436	ppb	8.436	1.22	9473	5000	
As	75	2	72	0.076	ppb	0.076	12.81	198	2000	
Se	78	1	72	0.032	ppb	0.032	114.28	41	2000	
Sr	88	2	45	11.252	ppb	11.252	3.95	30635	2000	
Zr	90	2	72	54.166	ppb	54.166	5.66	1523	1000	
Zr	90	1	72	54.943	ppb	54.943	17.22	4215	1000	
Nb	93	2	72	1.067	ppb	1.067	17.16	7465	200	
Mo	95	2	115	0.237	ppb	0.237	7.88	960	2000	
Pd	105	2	115	0.007	ppb	0.007	147.72	93	100	
Ag	107	2	115	0.015	ppb	0.015	39.18	233	100	
Cd	111	2	115	0.040	ppb	0.040	34.32	60	2000	
Sn	120	2	115	0.452	ppb	0.452	5.78	2627	2000	
Sb	121	2	115	0.180	ppb	0.180	16.71	897	1000	
Ba	137	2	115	3.177	ppb	3.177	3.44	4027	5000	
W	182	2	165	0.057	ppb	0.057	94.58	2717	100	
Pt	195	2	165	0.014	ppb	0.014	41.88	77	100	
Tl	205	2	165	0.018	ppb	0.018	28.44	527	2000	
Pb	208	2	165	1.257	ppb	1.257	4.11	24608	5000	
Th	232	2	165	0.867	ppb	0.867	6.50	17717	2000	
U	238	2	165	0.048	ppb	0.048	22.34	1173	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	553941	0.37	882524	62.77	60	125	
Sc (IS)	45	2	HMI He	3313772	2.12	4165833	79.55	60	125	
Sc IS)	45	3	No Gas	88627875	1.08	114950556	77.10	60	120	
Ge Internal Standard	72	1	HMI H2	18881650	2.67	23371239	80.79	60	125	
Ge Internal Standard	72	2	HMI He	4010348	1.90	4959346	80.86	60	125	
In Internal standard	115	2	HMI He	13154106	2.01	15807784	83.21	60	125	
Ho-165	165	2	HMI He	35727197	1.20	41189580	86.74	60	125	

Sample Report

Sample Table

Sample Name 280-123604-a-1-b.ms
 Data File Name 159SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T10:01:04-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457956 200.8
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-20.868	ppb	-20.868	-14.29	5411939	40000	
Be	9	1	6	34.710	ppb	34.710	6.61	8399	2000	
B	11	1	6	33901.001	ppb	33901.001	1.74	604865	100	>LDR
Na	23	2	45	132553.380	ppb	132553.380	2.32	80414779	400000	
Mg	24	2	45	257.627	ppb	257.627	4.72	67538	400000	
Al	27	2	45	16934.819	ppb	16934.819	2.83	1329523	400000	
K	39	2	45	660.754	ppb	660.754	3.68	260821	400000	
Ca	44	2	45	1271.076	ppb	1271.076	2.60	24364	400000	
V	51	2	72	35.109	ppb	35.109	1.72	162197	2000	
Cr	52	2	72	32.004	ppb	32.004	3.79	177623	5000	
Mn	55	2	72	230.360	ppb	230.360	2.85	591621	10000	
Fe	57	2	72	5121.382	ppb	5121.382	4.92	534876	400000	
Co	59	2	72	32.078	ppb	32.078	4.42	277414	2000	
Ni	60	2	72	32.737	ppb	32.737	3.18	78108	5000	
Cu	63	2	72	114.218	ppb	114.218	2.11	741399	5000	
Zn	66	2	72	38.468	ppb	38.468	2.38	38076	5000	
As	75	2	72	29.937	ppb	29.937	2.15	21487	2000	
Se	78	1	72	30.825	ppb	30.825	2.12	15867	2000	
Sr	88	2	45	47.138	ppb	47.138	1.41	129337	2000	
Zr	90	2	72	224.286	ppb	224.286	6.40	4834	1000	
Zr	90	1	72	232.358	ppb	232.358	2.97	11970	1000	
Nb	93	2	72	0.678	ppb	0.678	23.60	5461	200	
Mo	95	2	115	32.463	ppb	32.463	1.26	101843	2000	
Pd	105	2	115	0.008	ppb	0.008	59.81	97	100	
Ag	107	2	115	30.730	ppb	30.730	0.45	298402	100	
Cd	111	2	115	31.890	ppb	31.890	2.28	44571	2000	
Sn	120	2	115	32.626	ppb	32.626	1.89	141657	2000	
Sb	121	2	115	33.328	ppb	33.328	1.31	123797	1000	
Ba	137	2	115	37.056	ppb	37.056	1.18	45909	5000	
W	182	2	165	16.094	ppb	16.094	3.11	116011	100	
Pt	195	2	165	0.007	ppb	0.007	52.12	40	100	
Tl	205	2	165	32.039	ppb	32.039	1.25	435930	2000	
Pb	208	2	165	33.765	ppb	33.765	1.90	612207	5000	
Th	232	2	165	27.499	ppb	27.499	1.91	529150	2000	
U	238	2	165	30.381	ppb	30.381	3.16	603644	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	544060	1.04	882524	61.65	60	125	
Sc (IS)	45	2	HMI He	3349978	1.69	4165833	80.42	60	125	
Sc IS)	45	3	No Gas	90516968	0.36	114950556	78.74	60	120	
Ge Internal Standard	72	1	HMI H2	19094018	1.86	23371239	81.70	60	125	
Ge Internal Standard	72	2	HMI He	4171755	2.30	4959346	84.12	60	125	
In Internal standard	115	2	HMI He	13401819	0.50	15807784	84.78	60	125	
Ho-165	165	2	HMI He	34774981	1.88	41189580	84.43	60	125	

Sample Report

Sample Table

Sample Name 280-123604-a-1-c msd
 Data File Name 160SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T10:04:37-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457956 200.8
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-15.239	ppb	-15.239	-40.39	5520142	40000	
Be	9	1	6	36.627	ppb	36.627	1.95	8767	2000	
B	11	1	6	36504.724	ppb	36504.724	2.66	644021	100	>LDR
Na	23	2	45	142719.649	ppb	142719.649	2.84	87157104	400000	
Mg	24	2	45	279.283	ppb	279.283	4.06	73601	400000	
Al	27	2	45	18089.540	ppb	18089.540	4.53	1429741	400000	
K	39	2	45	708.437	ppb	708.437	5.82	274509	400000	
Ca	44	2	45	1417.320	ppb	1417.320	3.36	27315	400000	
V	51	2	72	36.237	ppb	36.237	5.80	168525	2000	
Cr	52	2	72	33.884	ppb	33.884	2.53	189885	5000	
Mn	55	2	72	240.644	ppb	240.644	4.37	623925	10000	
Fe	57	2	72	5346.482	ppb	5346.482	4.98	563821	400000	
Co	59	2	72	33.698	ppb	33.698	6.16	293911	2000	
Ni	60	2	72	35.556	ppb	35.556	4.22	85617	5000	
Cu	63	2	72	120.378	ppb	120.378	3.96	788607	5000	
Zn	66	2	72	40.736	ppb	40.736	2.30	40605	5000	
As	75	2	72	31.276	ppb	31.276	2.63	22661	2000	
Se	78	1	72	33.130	ppb	33.130	2.15	17138	2000	
Sr	88	2	45	50.169	ppb	50.169	2.48	138507	2000	
Zr	90	2	72	124.470	ppb	124.470	12.92	2950	1000	
Zr	90	1	72	132.317	ppb	132.317	9.43	7660	1000	
Nb	93	2	72	0.546	ppb	0.546	9.01	4744	200	
Mo	95	2	115	34.497	ppb	34.497	2.62	107541	2000	
Pd	105	2	115	0.006	ppb	0.006	32.63	90	100	
Ag	107	2	115	33.450	ppb	33.450	2.37	322824	100	
Cd	111	2	115	34.623	ppb	34.623	0.99	48104	2000	
Sn	120	2	115	35.280	ppb	35.280	2.31	152201	2000	
Sb	121	2	115	35.630	ppb	35.630	0.95	131560	1000	
Ba	137	2	115	40.564	ppb	40.564	2.99	49927	5000	
W	182	2	165	17.229	ppb	17.229	0.85	128501	100	
Pt	195	2	165	0.006	ppb	0.006	89.60	37	100	
Tl	205	2	165	34.080	ppb	34.080	2.39	480298	2000	
Pb	208	2	165	35.744	ppb	35.744	0.78	671173	5000	
Th	232	2	165	29.416	ppb	29.416	0.60	586364	2000	
U	238	2	165	32.214	ppb	32.214	1.58	663088	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	537977	0.94	882524	60.96	60	125	
Sc (IS)	45	2	HMI He	3372419	2.22	4165833	80.95	60	125	
Sc IS)	45	3	No Gas	90576349	1.49	114950556	78.80	60	120	
Ge Internal Standard	72	1	HMI H2	19186325	0.22	23371239	82.09	60	125	
Ge Internal Standard	72	2	HMI He	4213755	3.28	4959346	84.97	60	125	
In Internal standard	115	2	HMI He	13324379	2.19	15807784	84.29	60	125	
Ho-165	165	2	HMI He	36017693	1.06	41189580	87.44	60	125	

Sample Report

Sample Table

Sample Name 280-123549-a-3-a
 Data File Name 161SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T10:08:08-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457956 200.8
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Fail

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-60.640	ppb	-60.640	-14.20	4598264	40000	
Be	9	1	6	0.101	ppb	0.101	89.31	23	2000	
B	11	1	6	7930.407	ppb	7930.407	1.13	135649	100	>LDR
Na	23	2	45	390028.695	ppb	390028.695	4.75	243703859	400000	
Mg	24	2	45	6046.174	ppb	6046.174	6.49	1605986	400000	
Al	27	2	45	1184.586	ppb	1184.586	3.42	96292	400000	
K	39	2	45	118654.477	ppb	118654.477	4.66	30749871	400000	
Ca	44	2	45	7915.047	ppb	7915.047	2.75	155065	400000	
V	51	2	72	-0.593	ppb	-0.593	-8.95	9940	2000	
Cr	52	2	72	0.500	ppb	0.500	10.25	3850	5000	
Mn	55	2	72	6.270	ppb	6.270	3.57	16214	10000	
Fe	57	2	72	258.835	ppb	258.835	2.69	27101	400000	
Co	59	2	72	0.210	ppb	0.210	32.34	6568	2000	
Ni	60	2	72	4.162	ppb	4.162	0.74	10150	5000	
Cu	63	2	72	6.430	ppb	6.430	3.52	44691	5000	
Zn	66	2	72	19.585	ppb	19.585	2.75	19999	5000	
As	75	2	72	3.799	ppb	3.799	3.97	2813	2000	
Se	78	1	72	1.919	ppb	1.919	5.94	1003	2000	
Sr	88	2	45	112.073	ppb	112.073	4.03	316565	2000	
Zr	90	2	72	39.715	ppb	39.715	15.13	1287	1000	
Zr	90	1	72	41.233	ppb	41.233	11.50	3634	1000	
Nb	93	2	72	0.784	ppb	0.784	18.46	6001	200	
Mo	95	2	115	4.353	ppb	4.353	4.97	13646	2000	
Pd	105	2	115	0.003	ppb	0.003	321.47	77	100	
Ag	107	2	115	0.017	ppb	0.017	35.31	253	100	
Cd	111	2	115	0.035	ppb	0.035	24.62	53	2000	
Sn	120	2	115	0.497	ppb	0.497	8.76	2827	2000	
Sb	121	2	115	2.386	ppb	2.386	2.00	8949	1000	
Ba	137	2	115	86.494	ppb	86.494	2.49	105236	5000	
W	182	2	165	0.341	ppb	0.341	9.46	4804	100	
Pt	195	2	165	0.026	ppb	0.026	25.15	137	100	
Tl	205	2	165	0.026	ppb	0.026	46.00	647	2000	
Pb	208	2	165	0.668	ppb	0.668	5.02	13739	5000	
Th	232	2	165	0.800	ppb	0.800	3.85	16486	2000	
U	238	2	165	0.426	ppb	0.426	1.28	8939	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	520876	0.49	882524	59.02	60	125	IS Failed
Sc (IS)	45	2	HMI He	3453663	2.81	4165833	82.90	60	125	
Sc IS)	45	3	No Gas	89208912	1.16	114950556	77.61	60	120	
Ge Internal Standard	72	1	HMI H2	18927818	0.61	23371239	80.99	60	125	
Ge Internal Standard	72	2	HMI He	4102930	0.61	4959346	82.73	60	125	
In Internal standard	115	2	HMI He	13193640	1.21	15807784	83.46	60	125	
Ho-165	165	2	HMI He	35918792	2.16	41189580	87.20	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5701467
 Data File Name 162_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T10:11:40-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	16.840	ppb	82.143	96606	100	16.8	90	110	>+ -10%
Li	7	3	45	15.666	ppb	49.101	6192957	100	15.7	90	110	>+ -10%
Be	9	1	6	52.123	ppb	2.111	13198	50	104.2	90	110	
B	11	1	6	459.274	ppb	9.003	8822	50	918.5	90	110	>+ -10%
Na	23	2	45	1198.149	ppb	1.033	790832	1000	119.8	90	110	>+ -10%
Mg	24	2	45	977.086	ppb	2.694	261605	1000	97.7	90	110	
Al	27	2	45	961.758	ppb	2.759	78536	1000	96.2	90	110	
K	39	2	45	1019.162	ppb	2.202	362621	1000	101.9	90	110	
Ca	44	2	45	997.641	ppb	6.568	19828	1000	99.8	90	110	
V	51	2	72	47.613	ppb	0.925	218849	50	95.2	90	110	
Cr	52	2	72	48.291	ppb	3.037	271712	50	96.6	90	110	
Mn	55	2	72	50.048	ppb	2.738	130896	50	100.1	90	110	
Fe	57	2	72	1005.503	ppb	0.830	107155	1000	100.6	90	110	
Co	59	2	72	49.310	ppb	1.096	430668	50	98.6	90	110	
Ni	60	2	72	48.311	ppb	0.753	116895	50	96.6	90	110	
Cu	63	2	72	50.159	ppb	1.681	332992	50	100.3	90	110	
Zn	66	2	72	48.334	ppb	2.912	48100	50	96.7	90	110	
As	75	2	72	48.871	ppb	2.946	35531	50	97.7	90	110	
Se	78	1	72	52.619	ppb	3.469	27836	50	105.2	90	110	
Sr	88	2	45	110.793	ppb	2.932	314059	100	110.8	90	110	>+ -10%
Zr	90	2	72	17.282	ppb	113.929	893	50	34.6	90	110	>+ -10%
Zr	90	1	72	20.145	ppb	36.040	2833	50	40.3	90	110	>+ -10%
Nb	93	2	72	98.160	ppb	2.648	591551	100	98.2	90	110	
Mo	95	2	115	50.062	ppb	1.629	164959	50	100.1	90	110	
Pd	105	2	115	49.946	ppb	2.692	241413	50	99.9	90	110	
Ag	107	2	115	48.714	ppb	1.745	497183	50	97.4	90	110	
Cd	111	2	115	49.968	ppb	1.245	73413	50	99.9	90	110	
Sn	120	2	115	50.279	ppb	1.763	229066	50	100.6	90	110	
Sb	121	2	115	48.876	ppb	1.462	190763	50	97.8	90	110	
Ba	137	2	115	51.186	ppb	1.222	66587	50	102.4	90	110	
W	182	2	165	48.237	ppb	0.450	370010	50	96.5	90	110	
Pt	195	2	165	46.094	ppb	2.237	249870	50	92.2	90	110	
Tl	205	2	165	49.407	ppb	3.798	724051	50	98.8	90	110	
Pb	208	2	165	50.710	ppb	4.303	989695	50	101.4	90	110	
Th	232	2	165	44.603	ppb	2.807	924475	50	89.2	90	110	>+ -10%
U	238	2	165	46.728	ppb	2.065	1000686	50	93.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	569249	1.26	882524	64.50	60	125	
Sc (IS)	45	2	HMI He	3463771	1.26	4165833	83.15	60	125	
Sc IS)	45	3	No Gas	91961394	1.02	114950556	80.00	60	120	
Ge Internal Standard	72	1	HMI H2	19639484	1.89	23371239	84.03	60	125	
Ge Internal Standard	72	2	HMI He	4236494	0.59	4959346	85.42	60	125	
In Internal standard	115	2	HMI He	14089049	1.44	15807784	89.13	60	125	
Ho-165	165	2	HMI He	37480668	2.48	41189580	91.00	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5701457
 Data File Name 163_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T10:15:12-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-74.720	ppb	-1.6	74563	0.1	
Li	7	3	45	-63.766	ppb	-2.5	4722012	0.05	
Be	9	1	6	0.078	ppb	86.6	20	0.5	
B	11	1	6	306.898	ppb	1.9	5998	0.1	>RL
Na	23	2	45	139.354	ppb	1.1	128736	25	>RL
Mg	24	2	45	2.460	ppb	24.9	1890	25	
Al	27	2	45	-1.508	ppb	-72.8	363	15	
K	39	2	45	-2.037	ppb	-480.5	99269	50	
Ca	44	2	45	-2.384	ppb	-71.2	210	25	
V	51	2	72	-1.209	ppb	-6.2	7789	1	
Cr	52	2	72	-0.027	ppb	-85.1	1050	1	
Mn	55	2	72	0.001	ppb	1528.6	403	0.5	
Fe	57	2	72	4.910	ppb	46.3	1083	25	
Co	59	2	72	-0.041	ppb	-57.6	4731	0.5	
Ni	60	2	72	0.004	ppb	571.3	470	1	
Cu	63	2	72	0.624	ppb	9.2	8279	1	
Zn	66	2	72	-1.288	ppb	-1.1	743	5	
As	75	2	72	0.019	ppb	65.3	173	1	
Se	78	1	72	0.047	ppb	79.8	52	1	
Sr	88	2	45	0.026	ppb	159.3	230	1	
Zr	90	2	72	-10.339	ppb	-58.2	367	1	
Zr	90	1	72	-6.213	ppb	-8.5	1695	1	
Nb	93	2	72	3.065	ppb	1.0	20423	2	>RL
Mo	95	2	115	0.064	ppb	40.3	453	0.5	
Pd	105	2	115	0.056	ppb	18.8	333	1	
Ag	107	2	115	0.011	ppb	32.3	203	1	
Cd	111	2	115	0.001	ppb	1553.4	7	0.5	
Sn	120	2	115	0.034	ppb	33.8	903	1	
Sb	121	2	115	0.243	ppb	12.6	1190	1	
Ba	137	2	115	-0.052	ppb	-23.4	123	0.5	
W	182	2	165	0.090	ppb	42.6	3054	1	
Pt	195	2	165	0.016	ppb	18.6	90	1	
Tl	205	2	165	0.019	ppb	27.7	553	0.1	
Pb	208	2	165	0.007	ppb	80.1	1427	0.5	
Th	232	2	165	0.166	ppb	7.2	4007	1	
U	238	2	165	0.032	ppb	15.8	883	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	571648	1.00	882524	64.77	60	125	
Sc (IS)	45	2	HMI He	3514295	1.79	4165833	84.36	60	125	
Sc IS)	45	3	No Gas	92753151	1.47	114950556	80.69	60	120	
Ge Internal Standard	72	1	HMI H2	20154815	2.80	23371239	86.24	60	125	
Ge Internal Standard	72	2	HMI He	4345709	2.50	4959346	87.63	60	125	
In Internal standard	115	2	HMI He	13901567	0.77	15807784	87.94	60	125	
Ho-165	165	2	HMI He	36886643	2.19	41189580	89.55	60	125	

Blank Report

Sample Table

Sample Name mb 280-457963/1-a
 Data File Name 164_BLK.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T10:18:45-06:00
 Sample Type Blank
 Dilution 1
 Comment 457963 200.8
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	1	45	-74.032	ppb	-3.356688543	74208	0.1
Li	7	3	45	-62.814	ppb	-8.235858283	4798881	0.05
Be	9	1	6	0.033	ppb	91.64499223	8	0.5
Na	23	2	45	130.276	ppb	1.487068257	118866	25
Mg	24	2	45	3.814	ppb	13.26300467	2180	25
Al	27	2	45	-0.630	ppb	-63.291577	420	15
K	39	2	45	6.734	ppb	97.92495398	98202	50
Ca	44	2	45	3.147	ppb	90.31233874	310	25
V	51	2	72	-0.919	ppb	-3.509218318	8889	1
Cr	52	2	72	0.023	ppb	166.4159559	1307	1
Mn	55	2	72	0.274	ppb	8.57030343	1110	0.5
Fe	57	2	72	13.195	ppb	23.75357924	1943	25
Co	59	2	72	0.002	ppb	896.2674005	5007	0.5
Ni	60	2	72	0.020	ppb	208.9349657	497	1
Cu	63	2	72	0.706	ppb	3.936039279	8647	1
Zn	66	2	72	0.460	ppb	55.60249715	2407	5
As	75	2	72	0.016	ppb	218.0006862	166	1
Se	78	1	72	0.014	ppb	117.1418678	33	1
Sr	88	2	45	0.043	ppb	26.10413364	270	1
Zr	90	2	72	-6.393	ppb	-32.80363639	437	1
Zr	90	1	72	-8.738	ppb	-14.96217418	1552	1
Nb	93	2	72	1.700	ppb	10.53393299	11738	2
Mo	95	2	115	0.031	ppb	29.79921435	350	0.5
Pd	105	2	115	0.020	ppb	28.06197796	160	1
Ag	107	2	115	0.009	ppb	10.36010478	187	1
Cd	111	2	115	0.007	ppb	143.2881388	17	0.5
Sn	120	2	115	0.023	ppb	68.198427	867	1
Sb	121	2	115	0.173	ppb	19.02604205	933	1
Ba	137	2	115	0.021	ppb	30.97939357	220	0.5
W	182	2	165	0.026	ppb	62.71395045	2650	1
Pt	195	2	165	0.004	ppb	73.36982159	23	1
Tl	205	2	165	0.007	ppb	29.4967108	393	0.1
Pb	208	2	165	-0.003	ppb	-47.06243235	1260	0.5
Th	232	2	165	0.103	ppb	8.329342707	2807	1
U	238	2	165	0.005	ppb	127.0458005	313	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	571999	0.28	882524	64.81	60	125	
Sc (IS)	45	2	HMI He	3397284	1.13	4165833	81.55	60	125	
Sc IS)	45	3	No Gas	93902601	0.47	114950556	81.69	60	120	
Ge Internal Standard	72	1	HMI H2	19812859	1.86	23371239	84.77	60	125	
Ge Internal Standard	72	2	HMI He	4255663	2.61	4959346	85.81	60	125	
In Internal standard	115	2	HMI He	14086190	1.14	15807784	89.11	60	125	
Ho-165	165	2	HMI He	38027172	3.41	41189580	92.32	60	125	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name lcs 280-457963/2-a
 Data File Name 165_LCS.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T10:22:16-06:00
 Sample Type LCS
 Dilution 1
 Analyst Denver Metals
 Comment 457963 200.8
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	-11.787	-11.787	ppb	-18.034	5737933	400	-2.9	80	120	> +/-20%
Be	9	1	6	34.686	34.686	ppb	2.486	8891	40	86.7	80	120	
Na	23	2	45	103.744	103.744	ppb	6.341	104952	40	259.4	80	120	> +/-20%
Mg	24	2	45	2.689	2.689	ppb	14.338	1930	40	6.7	80	120	> +/-20%
Al	27	2	45	327.704	327.704	ppb	2.213	27191	40	819.3	80	120	> +/-20%
K	39	2	45	-2.375	-2.375	ppb	-103.339	98203	40	-5.9	80	120	> +/-20%
Ca	44	2	45	123.979	123.979	ppb	11.610	2694	40	309.9	80	120	> +/-20%
V	51	2	72	30.423	30.423	ppb	1.713	146775	40	76.1	80	120	> +/-20%
Cr	52	2	72	31.402	31.402	ppb	1.178	179933	40	78.5	80	120	> +/-20%
Mn	55	2	72	32.136	32.136	ppb	1.207	85526	40	80.3	80	120	
Fe	57	2	72	332.989	332.989	ppb	1.719	36418	40	832.5	80	120	> +/-20%
Co	59	2	72	32.287	32.287	ppb	1.266	288224	40	80.7	80	120	
Ni	60	2	72	31.509	31.509	ppb	1.868	77613	40	78.8	80	120	> +/-20%
Cu	63	2	72	33.035	33.035	ppb	2.237	224162	40	82.6	80	120	
Zn	66	2	72	33.349	33.349	ppb	2.808	34331	40	83.4	80	120	
As	75	2	72	29.841	29.841	ppb	2.859	22103	40	74.6	80	120	> +/-20%
Se	78	1	72	31.865	31.865	ppb	4.432	17174	40	79.7	80	120	> +/-20%
Sr	88	2	45	36.588	36.588	ppb	3.381	104225	40	91.5	80	120	
Nb	93	2	72	1.314	1.314	ppb	12.770	9533	40	3.3	80	120	> +/-20%
Mo	95	2	115	31.541	31.541	ppb	1.929	105009	40	78.9	80	120	> +/-20%
Pd	105	2	115	0.012	0.012	ppb	15.540	127	40	0.0	80	120	> +/-20%
Ag	107	2	115	32.207	32.207	ppb	2.069	331873	40	80.5	80	120	
Cd	111	2	115	31.854	31.854	ppb	2.516	47241	40	79.6	80	120	> +/-20%
Sn	120	2	115	31.873	31.873	ppb	0.850	146904	40	79.7	80	120	> +/-20%
Sb	121	2	115	33.295	33.295	ppb	1.915	131297	40	83.2	80	120	
Ba	137	2	115	33.028	33.028	ppb	3.167	43439	40	82.6	80	120	
W	182	2	165	15.745	15.745	ppb	2.677	124276	40	39.4	80	120	> +/-20%
Pt	195	2	165	0.005	0.005	ppb	64.945	30	40	0.0	80	120	> +/-20%
Tl	205	2	165	31.874	31.874	ppb	1.664	474418	40	79.7	80	120	> +/-20%
Pb	208	2	165	32.071	32.071	ppb	2.548	635999	40	80.2	80	120	
Th	232	2	165	26.397	26.397	ppb	0.799	555761	40	66.0	80	120	> +/-20%
U	238	2	165	30.007	30.007	ppb	3.281	652167	40	75.0	80	120	> +/-20%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	576058	1.35	882524	65.27	60	125	
Sc (IS)	45	2	HMI He	3479478	3.04	4165833	83.52	60	125	
Sc IS)	45	3	No Gas	93043858	0.63	114950556	80.94	60	120	
Ge Internal Standard	72	1	HMI H2	19991056	1.51	23371239	85.54	60	125	
Ge Internal Standard	72	2	HMI He	4304058	0.41	4959346	86.79	60	125	
In Internal standard	115	2	HMI He	14224760	1.73	15807784	89.99	60	125	
Ho-165	165	2	HMI He	38040302	1.80	41189580	92.35	60	125	

Sample Report

Sample Table

Sample Name 280-123647-c-1-a
 Data File Name 166SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T10:25:50-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457963 200.8
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-21.389	ppb	-21.389	-10.38	5481940	40000	
Be	9	1	6	0.075	ppb	0.075	42.43	18	2000	
B	11	1	6	2151.806	ppb	2151.806	1.92	39089	100	>LDR
Na	23	2	45	280367.982	ppb	280367.982	3.26	175396029	400000	
Mg	24	2	45	273.641	ppb	273.641	3.29	73939	400000	
Al	27	2	45	6.657	ppb	6.657	19.10	1017	400000	
K	39	2	45	1399.126	ppb	1399.126	1.91	460063	400000	
Ca	44	2	45	2573.579	ppb	2573.579	1.24	50633	400000	
V	51	2	72	-0.761	ppb	-0.761	-8.67	9339	2000	
Cr	52	2	72	0.497	ppb	0.497	9.61	3877	5000	
Mn	55	2	72	10.509	ppb	10.509	2.18	27215	10000	
Fe	57	2	72	381.409	ppb	381.409	2.08	40130	400000	
Co	59	2	72	-0.023	ppb	-0.023	-121.95	4661	2000	
Ni	60	2	72	0.923	ppb	0.923	6.47	2617	5000	
Cu	63	2	72	0.867	ppb	0.867	3.50	9463	5000	
Zn	66	2	72	1.866	ppb	1.866	10.51	3657	5000	
As	75	2	72	0.032	ppb	0.032	163.46	174	2000	
Se	78	1	72	-0.003	ppb	-0.003	-1546.53	24	2000	
Sr	88	2	45	337.569	ppb	337.569	2.23	954170	2000	
Zr	90	2	72	11.365	ppb	11.365	66.19	763	1000	
Zr	90	1	72	15.912	ppb	15.912	61.11	2613	1000	
Nb	93	2	72	1.993	ppb	1.993	9.61	13192	200	
Mo	95	2	115	0.933	ppb	0.933	4.25	3104	2000	
Pd	105	2	115	0.017	ppb	0.017	54.80	137	100	
Ag	107	2	115	0.006	ppb	0.006	108.68	150	100	
Cd	111	2	115	0.025	ppb	0.025	125.22	40	2000	
Sn	120	2	115	0.087	ppb	0.087	48.35	1080	2000	
Sb	121	2	115	0.090	ppb	0.090	26.87	570	1000	
Ba	137	2	115	254.152	ppb	254.152	3.16	308304	5000	
W	182	2	165	0.702	ppb	0.702	15.10	7445	100	
Pt	195	2	165	0.007	ppb	0.007	96.57	40	100	
Tl	205	2	165	0.023	ppb	0.023	44.63	597	2000	
Pb	208	2	165	0.346	ppb	0.346	3.28	7721	5000	
Th	232	2	165	1.107	ppb	1.107	0.70	22584	2000	
U	238	2	165	0.024	ppb	0.024	1.25	683	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	550758	1.41	882524	62.41	60	125	
Sc (IS)	45	2	HMI He	3455435	1.45	4165833	82.95	60	125	
Sc IS)	45	3	No Gas	91860218	1.41	114950556	79.91	60	120	
Ge Internal Standard	72	1	HMI H2	19466763	1.38	23371239	83.29	60	125	
Ge Internal Standard	72	2	HMI He	4148667	0.80	4959346	83.65	60	125	
In Internal standard	115	2	HMI He	13170145	2.00	15807784	83.31	60	125	
Ho-165	165	2	HMI He	35918318	0.86	41189580	87.20	60	125	

Sample Report

Sample Table

Sample Name 280-123647-c-2-a
 Data File Name 167SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T10:29:22-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457963 200.8
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-53.658	ppb	-53.658	-7.15	4829083	40000	
Be	9	1	6	0.061	ppb	0.061	32.39	15	2000	
B	11	1	6	680.238	ppb	680.238	4.94	12491	100	>LDR
Na	23	2	45	224600.884	ppb	224600.884	4.44	143137069	400000	
Mg	24	2	45	322.205	ppb	322.205	4.59	88465	400000	
Al	27	2	45	39.402	ppb	39.402	13.87	3734	400000	
K	39	2	45	1315.547	ppb	1315.547	4.95	446585	400000	
Ca	44	2	45	2005.943	ppb	2005.943	5.35	40247	400000	
V	51	2	72	-0.722	ppb	-0.722	-10.47	9649	2000	
Cr	52	2	72	5.172	ppb	5.172	4.04	29986	5000	
Mn	55	2	72	24.423	ppb	24.423	4.96	63710	10000	
Fe	57	2	72	1770.919	ppb	1770.919	2.44	187305	400000	
Co	59	2	72	0.164	ppb	0.164	35.60	6338	2000	
Ni	60	2	72	2.507	ppb	2.507	6.51	6451	5000	
Cu	63	2	72	3.221	ppb	3.221	7.04	24952	5000	
Zn	66	2	72	0.727	ppb	0.727	12.34	2634	5000	
As	75	2	72	0.219	ppb	0.219	12.81	311	2000	
Se	78	1	72	-0.017	ppb	-0.017	-92.19	16	2000	
Sr	88	2	45	216.842	ppb	216.842	3.69	624477	2000	
Zr	90	2	72	14.221	ppb	14.221	14.86	830	1000	
Zr	90	1	72	22.156	ppb	22.156	29.24	2840	1000	
Nb	93	2	72	1.311	ppb	1.311	7.84	9329	200	
Mo	95	2	115	0.913	ppb	0.913	9.09	3050	2000	
Pd	105	2	115	0.004	ppb	0.004	181.69	80	100	
Ag	107	2	115	0.003	ppb	0.003	311.39	113	100	
Cd	111	2	115	0.006	ppb	0.006	198.06	13	2000	
Sn	120	2	115	0.161	ppb	0.161	9.89	1400	2000	
Sb	121	2	115	0.081	ppb	0.081	16.55	540	1000	
Ba	137	2	115	253.341	ppb	253.341	0.90	308426	5000	
W	182	2	165	0.565	ppb	0.565	12.57	6405	100	
Pt	195	2	165	0.002	ppb	0.002	110.06	13	100	
Tl	205	2	165	0.003	ppb	0.003	136.55	320	2000	
Pb	208	2	165	0.086	ppb	0.086	12.16	2847	5000	
Th	232	2	165	0.362	ppb	0.362	2.40	7762	2000	
U	238	2	165	0.021	ppb	0.021	36.74	630	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	549578	1.00	882524	62.27	60	125	
Sc (IS)	45	2	HMI He	3522318	3.21	4165833	84.55	60	125	
Sc IS)	45	3	No Gas	91110709	0.36	114950556	79.26	60	120	
Ge Internal Standard	72	1	HMI H2	19104620	1.53	23371239	81.74	60	125	
Ge Internal Standard	72	2	HMI He	4215122	2.30	4959346	84.99	60	125	
In Internal standard	115	2	HMI He	13213667	2.72	15807784	83.59	60	125	
Ho-165	165	2	HMI He	35713674	1.23	41189580	86.71	60	125	

Sample Report

Sample Table

Sample Name 280-123688-f-1-a
 Data File Name 168SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T10:32:55-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457963 200.8
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-59.026	ppb	-59.026	-11.78	4751283	40000	
Be	9	1	6	0.083	ppb	0.083	66.48	20	2000	
B	11	1	6	11704.240	ppb	11704.240	2.00	207983	100	>LDR
Na	23	2	45	132346.116	ppb	132346.116	2.44	83020680	400000	
Mg	24	2	45	10988.276	ppb	10988.276	1.34	2929509	400000	
Al	27	2	45	54.664	ppb	54.664	3.99	4917	400000	
K	39	2	45	16675.090	ppb	16675.090	3.80	4421242	400000	
Ca	44	2	45	43937.659	ppb	43937.659	1.43	862389	400000	
V	51	2	72	1.827	ppb	1.827	9.99	20469	2000	
Cr	52	2	72	1.610	ppb	1.610	5.13	10066	5000	
Mn	55	2	72	70.325	ppb	70.325	2.13	181435	10000	
Fe	57	2	72	1481.981	ppb	1481.981	1.19	155695	400000	
Co	59	2	72	1.887	ppb	1.887	2.43	20986	2000	
Ni	60	2	72	10.746	ppb	10.746	3.41	26020	5000	
Cu	63	2	72	1.220	ppb	1.220	6.79	11821	5000	
Zn	66	2	72	2.099	ppb	2.099	5.91	3907	5000	
As	75	2	72	9.714	ppb	9.714	2.29	7098	2000	
Se	78	1	72	0.196	ppb	0.196	31.74	127	2000	
Sr	88	2	45	2369.283	ppb	2369.283	1.35	6712859	2000	
Zr	90	2	72	88.462	ppb	88.462	14.98	2244	1000	
Zr	90	1	72	93.614	ppb	93.614	16.94	6004	1000	
Nb	93	2	72	0.645	ppb	0.645	16.22	5298	200	
Mo	95	2	115	0.335	ppb	0.335	2.28	1280	2000	
Pd	105	2	115	0.107	ppb	0.107	1.81	553	100	
Ag	107	2	115	0.007	ppb	0.007	17.88	160	100	
Cd	111	2	115	0.027	ppb	0.027	56.89	43	2000	
Sn	120	2	115	0.176	ppb	0.176	6.62	1480	2000	
Sb	121	2	115	3.119	ppb	3.119	6.33	11768	1000	
Ba	137	2	115	229.196	ppb	229.196	2.16	281939	5000	
W	182	2	165	0.151	ppb	0.151	18.81	3467	100	
Pt	195	2	165	0.004	ppb	0.004	32.25	23	100	
Tl	205	2	165	-0.003	ppb	-0.003	-147.34	243	2000	
Pb	208	2	165	0.238	ppb	0.238	9.13	5791	5000	
Th	232	2	165	0.103	ppb	0.103	11.86	2694	2000	
U	238	2	165	0.113	ppb	0.113	9.06	2557	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	541399	1.46	882524	61.35	60	125	
Sc (IS)	45	2	HMI He	3463572	0.87	4165833	83.14	60	125	
Sc IS)	45	3	No Gas	91586165	1.62	114950556	79.67	60	120	
Ge Internal Standard	72	1	HMI H2	19329426	2.50	23371239	82.71	60	125	
Ge Internal Standard	72	2	HMI He	4183709	1.86	4959346	84.36	60	125	
In Internal standard	115	2	HMI He	13355116	2.20	15807784	84.48	60	125	
Ho-165	165	2	HMI He	36485398	3.37	41189580	88.58	60	125	

Sample Report

Sample Table

Sample Name 280-123688-f-1-b.ms
 Data File Name 169SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T10:36:26-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457963 200.8
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-3.040	ppb	-3.040	-199.85	5765013	40000	
Be	9	1	6	35.205	ppb	35.205	1.44	8454	2000	
B	11	1	6	12694.092	ppb	12694.092	0.78	224872	100	>LDR
Na	23	2	45	133518.435	ppb	133518.435	0.95	84668314	400000	
Mg	24	2	45	10958.932	ppb	10958.932	1.29	2953055	400000	
Al	27	2	45	362.289	ppb	362.289	4.58	30213	400000	
K	39	2	45	16316.433	ppb	16316.433	2.37	4374947	400000	
Ca	44	2	45	45007.202	ppb	45007.202	1.12	892888	400000	
V	51	2	72	31.678	ppb	31.678	4.03	147625	2000	
Cr	52	2	72	30.829	ppb	30.829	3.97	171245	5000	
Mn	55	2	72	100.202	ppb	100.202	3.50	257731	10000	
Fe	57	2	72	1802.512	ppb	1802.512	3.28	188779	400000	
Co	59	2	72	32.681	ppb	32.681	1.37	282847	2000	
Ni	60	2	72	40.021	ppb	40.021	3.70	95442	5000	
Cu	63	2	72	30.896	ppb	30.896	5.10	203434	5000	
Zn	66	2	72	31.036	ppb	31.036	5.37	31118	5000	
As	75	2	72	38.719	ppb	38.719	1.97	27764	2000	
Se	78	1	72	30.523	ppb	30.523	4.91	15823	2000	
Sr	88	2	45	2379.844	ppb	2379.844	1.24	6816032	2000	
Zr	90	2	72	149.598	ppb	149.598	5.00	3407	1000	
Zr	90	1	72	133.343	ppb	133.343	2.66	7723	1000	
Nb	93	2	72	0.533	ppb	0.533	12.32	4614	200	
Mo	95	2	115	32.346	ppb	32.346	2.17	102202	2000	
Pd	105	2	115	0.128	ppb	0.128	11.36	657	100	
Ag	107	2	115	30.131	ppb	30.131	1.81	294683	100	
Cd	111	2	115	30.910	ppb	30.910	0.99	43511	2000	
Sn	120	2	115	30.233	ppb	30.233	2.39	132272	2000	
Sb	121	2	115	35.985	ppb	35.985	1.94	134608	1000	
Ba	137	2	115	260.243	ppb	260.243	1.68	323629	5000	
W	182	2	165	15.348	ppb	15.348	2.25	117258	100	
Pt	195	2	165	0.005	ppb	0.005	90.37	27	100	
Tl	205	2	165	29.328	ppb	29.328	2.90	422480	2000	
Pb	208	2	165	30.922	ppb	30.922	2.94	593582	5000	
Th	232	2	165	22.028	ppb	22.028	4.95	448714	2000	
U	238	2	165	29.043	ppb	29.043	4.19	610870	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	539758	0.11	882524	61.16	60	125	
Sc (IS)	45	2	HMI He	3501238	1.90	4165833	84.05	60	125	
Sc IS)	45	3	No Gas	90812113	1.09	114950556	79.00	60	120	
Ge Internal Standard	72	1	HMI H2	19235330	1.97	23371239	82.30	60	125	
Ge Internal Standard	72	2	HMI He	4174444	2.40	4959346	84.17	60	125	
In Internal standard	115	2	HMI He	13498017	0.16	15807784	85.39	60	125	
Ho-165	165	2	HMI He	36828223	2.79	41189580	89.41	60	125	

Sample Report

Sample Table

Sample Name 280-123688-f-1-c msd
 Data File Name 170SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T10:39:57-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457963 200.8
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-5.918	ppb	-5.918	-59.63	5765765	40000	
Be	9	1	6	35.810	ppb	35.810	3.14	8642	2000	
B	11	1	6	12686.812	ppb	12686.812	1.71	225794	100	>LDR
Na	23	2	45	134284.299	ppb	134284.299	1.12	85409094	400000	
Mg	24	2	45	11258.941	ppb	11258.941	1.74	3043282	400000	
Al	27	2	45	359.936	ppb	359.936	3.44	30102	400000	
K	39	2	45	16642.298	ppb	16642.298	1.06	4474695	400000	
Ca	44	2	45	45477.090	ppb	45477.090	0.64	904965	400000	
V	51	2	72	33.533	ppb	33.533	2.10	155199	2000	
Cr	52	2	72	33.083	ppb	33.083	3.51	183256	5000	
Mn	55	2	72	105.766	ppb	105.766	3.72	271368	10000	
Fe	57	2	72	1868.954	ppb	1868.954	2.67	195273	400000	
Co	59	2	72	33.723	ppb	33.723	2.74	290968	2000	
Ni	60	2	72	41.589	ppb	41.589	2.83	98958	5000	
Cu	63	2	72	32.636	ppb	32.636	3.09	214230	5000	
Zn	66	2	72	33.394	ppb	33.394	1.83	33259	5000	
As	75	2	72	41.085	ppb	41.085	1.77	29383	2000	
Se	78	1	72	30.779	ppb	30.779	0.55	16272	2000	
Sr	88	2	45	2464.657	ppb	2464.657	0.95	7079756	2000	
Zr	90	2	72	128.545	ppb	128.545	9.61	3000	1000	
Zr	90	1	72	136.269	ppb	136.269	1.28	8003	1000	
Nb	93	2	72	0.363	ppb	0.363	28.40	3604	200	
Mo	95	2	115	33.381	ppb	33.381	2.12	104680	2000	
Pd	105	2	115	0.079	ppb	0.079	4.58	423	100	
Ag	107	2	115	31.613	ppb	31.613	4.43	306768	100	
Cd	111	2	115	32.200	ppb	32.200	2.82	44988	2000	
Sn	120	2	115	31.804	ppb	31.804	1.89	138059	2000	
Sb	121	2	115	37.017	ppb	37.017	0.54	137437	1000	
Ba	137	2	115	270.453	ppb	270.453	0.42	333853	5000	
W	182	2	165	15.908	ppb	15.908	1.55	121601	100	
Pt	195	2	165	0.007	ppb	0.007	26.89	40	100	
Tl	205	2	165	30.451	ppb	30.451	3.04	439152	2000	
Pb	208	2	165	31.919	ppb	31.919	2.43	613458	5000	
Th	232	2	165	22.715	ppb	22.715	0.21	463491	2000	
U	238	2	165	30.086	ppb	30.086	0.78	633797	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	542344	1.00	882524	61.45	60	125	
Sc (IS)	45	2	HMI He	3511431	0.47	4165833	84.29	60	125	
Sc IS)	45	3	No Gas	91693705	2.17	114950556	79.77	60	120	
Ge Internal Standard	72	1	HMI H2	19604646	1.47	23371239	83.88	60	125	
Ge Internal Standard	72	2	HMI He	4164403	2.27	4959346	83.97	60	125	
In Internal standard	115	2	HMI He	13398683	1.42	15807784	84.76	60	125	
Ho-165	165	2	HMI He	36858839	0.81	41189580	89.49	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5701467
 Data File Name 171_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T10:43:27-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	21.131	ppb	70.884	100012	100	21.1	90	110	>+ -10%
Li	7	3	45	19.663	ppb	17.345	6349213	100	19.7	90	110	>+ -10%
Be	9	1	6	54.123	ppb	1.152	13780	50	108.2	90	110	
B	11	1	6	410.392	ppb	4.228	7949	50	820.8	90	110	>+ -10%
Na	23	2	45	1134.000	ppb	0.999	758830	1000	113.4	90	110	>+ -10%
Mg	24	2	45	972.793	ppb	0.281	263315	1000	97.3	90	110	
Al	27	2	45	959.179	ppb	1.063	79199	1000	95.9	90	110	
K	39	2	45	992.730	ppb	0.180	359704	1000	99.3	90	110	
Ca	44	2	45	1033.610	ppb	3.964	20762	1000	103.4	90	110	
V	51	2	72	46.834	ppb	1.040	219987	50	93.7	90	110	
Cr	52	2	72	47.211	ppb	1.734	271213	50	94.4	90	110	
Mn	55	2	72	47.246	ppb	3.514	126137	50	94.5	90	110	
Fe	57	2	72	966.768	ppb	3.196	105186	1000	96.7	90	110	
Co	59	2	72	48.505	ppb	2.075	432600	50	97.0	90	110	
Ni	60	2	72	47.009	ppb	4.484	116120	50	94.0	90	110	
Cu	63	2	72	48.827	ppb	2.947	331004	50	97.7	90	110	
Zn	66	2	72	47.319	ppb	2.311	48107	50	94.6	90	110	
As	75	2	72	48.054	ppb	1.355	35672	50	96.1	90	110	
Se	78	1	72	51.870	ppb	2.752	28024	50	103.7	90	110	
Sr	88	2	45	112.654	ppb	3.429	322798	100	112.7	90	110	>+ -10%
Zr	90	2	72	10.090	ppb	20.828	770	50	20.2	90	110	>+ -10%
Zr	90	1	72	17.382	ppb	11.246	2763	50	34.8	90	110	>+ -10%
Nb	93	2	72	98.410	ppb	1.017	605501	100	98.4	90	110	
Mo	95	2	115	50.282	ppb	4.596	167088	50	100.6	90	110	
Pd	105	2	115	50.513	ppb	4.660	246268	50	101.0	90	110	
Ag	107	2	115	48.687	ppb	2.873	501334	50	97.4	90	110	
Cd	111	2	115	50.428	ppb	4.723	74722	50	100.9	90	110	
Sn	120	2	115	48.416	ppb	3.643	222544	50	96.8	90	110	
Sb	121	2	115	48.307	ppb	2.065	190220	50	96.6	90	110	
Ba	137	2	115	50.856	ppb	4.783	66739	50	101.7	90	110	
W	182	2	165	47.333	ppb	1.723	360332	50	94.7	90	110	
Pt	195	2	165	46.137	ppb	1.866	248271	50	92.3	90	110	
Tl	205	2	165	49.668	ppb	1.333	722787	50	99.3	90	110	
Pb	208	2	165	50.373	ppb	3.212	976212	50	100.7	90	110	
Th	232	2	165	44.886	ppb	3.811	923403	50	89.8	90	110	>+ -10%
U	238	2	165	46.737	ppb	2.332	993288	50	93.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	572314	1.65	882524	64.85	60	125	
Sc (IS)	45	2	HMI He	3501650	0.78	4165833	84.06	60	125	
Sc IS)	45	3	No Gas	93124831	1.00	114950556	81.01	60	120	
Ge Internal Standard	72	1	HMI H2	20053696	1.27	23371239	85.81	60	125	
Ge Internal Standard	72	2	HMI He	4325293	1.41	4959346	87.21	60	125	
In Internal standard	115	2	HMI He	14222103	3.38	15807784	89.97	60	125	
Ho-165	165	2	HMI He	37194149	0.92	41189580	90.30	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5701457
 Data File Name 172_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T10:46:59-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-67.160	ppb	-16.3	75973	0.1	
Li	7	3	45	-60.599	ppb	-13.0	4811083	0.05	
Be	9	1	6	0.032	ppb	124.5	8	0.5	
B	11	1	6	202.899	ppb	5.5	4111	0.1	>RL
Na	23	2	45	143.404	ppb	0.8	132020	25	>RL
Mg	24	2	45	2.623	ppb	13.9	1943	25	
Al	27	2	45	-3.331	ppb	-17.0	213	15	
K	39	2	45	-12.588	ppb	-31.7	97026	50	
Ca	44	2	45	0.028	ppb	9293.0	260	25	
V	51	2	72	-0.838	ppb	-12.2	9373	1	
Cr	52	2	72	-0.013	ppb	-131.0	1123	1	
Mn	55	2	72	-0.004	ppb	-450.9	387	0.5	
Fe	57	2	72	4.574	ppb	22.3	1043	25	
Co	59	2	72	-0.025	ppb	-67.5	4837	0.5	
Ni	60	2	72	0.045	ppb	49.1	567	1	
Cu	63	2	72	0.579	ppb	11.1	7912	1	
Zn	66	2	72	-1.231	ppb	-9.1	793	5	
As	75	2	72	-0.002	ppb	-1250.5	156	1	
Se	78	1	72	0.046	ppb	35.5	51	1	
Sr	88	2	45	0.331	ppb	17.9	1113	1	
Zr	90	2	72	-14.961	ppb	-22.3	273	1	
Zr	90	1	72	-7.580	ppb	-66.3	1605	1	
Nb	93	2	72	3.039	ppb	6.3	20116	2	>RL
Mo	95	2	115	0.040	ppb	26.8	387	0.5	
Pd	105	2	115	0.044	ppb	27.7	280	1	
Ag	107	2	115	0.017	ppb	30.0	273	1	
Cd	111	2	115	0.018	ppb	115.2	33	0.5	
Sn	120	2	115	0.050	ppb	64.2	1003	1	
Sb	121	2	115	0.073	ppb	20.5	550	1	
Ba	137	2	115	0.035	ppb	166.0	240	0.5	
W	182	2	165	0.100	ppb	60.3	3117	1	
Pt	195	2	165	0.007	ppb	93.3	40	1	
Tl	205	2	165	0.021	ppb	37.9	583	0.1	
Pb	208	2	165	0.002	ppb	208.5	1330	0.5	
Th	232	2	165	0.171	ppb	11.4	4091	1	
U	238	2	165	0.031	ppb	17.7	850	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	580289	0.59	882524	65.75	60	125	
Sc (IS)	45	2	HMI He	3533050	0.60	4165833	84.81	60	125	
Sc IS)	45	3	No Gas	93338497	2.04	114950556	81.20	60	120	
Ge Internal Standard	72	1	HMI H2	19844573	1.77	23371239	84.91	60	125	
Ge Internal Standard	72	2	HMI He	4315207	0.72	4959346	87.01	60	125	
In Internal standard	115	2	HMI He	14298017	3.38	15807784	90.45	60	125	
Ho-165	165	2	HMI He	36741489	1.52	41189580	89.20	60	125	

Blank Report

Sample Table

Sample Name mb 280-457380/1-c
 Data File Name 173_BLK.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T10:50:34-06:00
 Sample Type Blank
 Dilution 1
 Comment 457923 200.8
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	1	45	-63.810	ppb	-18.2966286	75363	0.1
Li	7	3	45	-63.164	ppb	-6.031743403	4769876	0.05
Be	9	1	6	0.013	ppb	86.60339747	3	0.5
Na	23	2	45	136.310	ppb	1.296283678	124550	25
Mg	24	2	45	3.156	ppb	11.97936285	2040	25
Al	27	2	45	0.404	ppb	247.1004318	510	15
K	39	2	45	-1.087	ppb	-1271.818485	97759	50
Ca	44	2	45	8.008	ppb	21.83834284	410	25
V	51	2	72	-0.559	ppb	-25.26015613	10440	1
Cr	52	2	72	0.015	ppb	132.9415819	1267	1
Mn	55	2	72	0.306	ppb	22.77939131	1190	0.5
Fe	57	2	72	9.617	ppb	15.81323111	1563	25
Co	59	2	72	0.016	ppb	134.7817604	5117	0.5
Ni	60	2	72	-0.009	ppb	-61.68150023	427	1
Cu	63	2	72	0.744	ppb	15.61135328	8879	1
Zn	66	2	72	0.183	ppb	97.06528353	2137	5
As	75	2	72	-0.049	ppb	-12.39701235	119	1
Se	78	1	72	0.017	ppb	199.988259	35	1
Sr	88	2	45	0.302	ppb	8.300686856	1007	1
Zr	90	2	72	20.717	ppb	19.87524718	963	1
Zr	90	1	72	10.425	ppb	14.30337141	2389	1
Nb	93	2	72	1.700	ppb	8.894991466	11746	2
Mo	95	2	115	0.022	ppb	94.69163273	320	0.5
Pd	105	2	115	0.017	ppb	30.41634263	147	1
Ag	107	2	115	0.006	ppb	29.77418674	160	1
Cd	111	2	115	0.000	ppb	821.1687061	7	0.5
Sn	120	2	115	0.046	ppb	110.8597477	967	1
Sb	121	2	115	0.029	ppb	58.01582948	370	1
Ba	137	2	115	0.203	ppb	20.66322242	453	0.5
W	182	2	165	0.023	ppb	84.69379812	2520	1
Pt	195	2	165	0.012	ppb	48.40494027	67	1
Tl	205	2	165	0.015	ppb	16.93925952	500	0.1
Pb	208	2	165	-0.001	ppb	-943.7855115	1260	0.5
Th	232	2	165	0.162	ppb	4.994314543	3884	1
U	238	2	165	0.007	ppb	15.60442355	340	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	581545	1.29	882524	65.90	60	125	
Sc (IS)	45	2	HMI He	3451919	0.99	4165833	82.86	60	125	
Sc IS)	45	3	No Gas	93464979	0.39	114950556	81.31	60	120	
Ge Internal Standard	72	1	HMI H2	19587568	1.85	23371239	83.81	60	125	
Ge Internal Standard	72	2	HMI He	4251699	1.48	4959346	85.73	60	125	
In Internal standard	115	2	HMI He	14019839	2.63	15807784	88.69	60	125	
Ho-165	165	2	HMI He	36461351	0.77	41189580	88.52	60	125	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name lcs 280-457380/2-c
 Data File Name 174_LCS.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T11:02:17-06:00
 Sample Type LCS
 Dilution 1
 Analyst Denver Metals
 Comment 457923 200.8
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	FinalConc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	-11.169	-11.169	ppb	-85.835	5804061	400	-2.8	80	120	> +/-20%
Be	9	1	6	34.137	34.137	ppb	4.559	8757	40	85.3	80	120	
Na	23	2	45	85.796	85.796	ppb	4.316	93356	40	214.5	80	120	> +/-20%
Mg	24	2	45	2.410	2.410	ppb	40.292	1850	40	6.0	80	120	> +/-20%
Al	27	2	45	313.944	313.944	ppb	0.681	25979	40	784.9	80	120	> +/-20%
K	39	2	45	-16.974	-16.974	ppb	-11.351	94046	40	-42.4	80	120	> +/-20%
Ca	44	2	45	111.123	111.123	ppb	7.199	2437	40	277.8	80	120	> +/-20%
V	51	2	72	30.621	30.621	ppb	3.500	145592	40	76.6	80	120	> +/-20%
Cr	52	2	72	31.081	31.081	ppb	3.924	175633	40	77.7	80	120	> +/-20%
Mn	55	2	72	34.198	34.198	ppb	2.968	89741	40	85.5	80	120	
Fe	57	2	72	316.583	316.583	ppb	2.201	34177	40	791.5	80	120	> +/-20%
Co	59	2	72	32.447	32.447	ppb	1.837	285707	40	81.1	80	120	
Ni	60	2	72	31.843	31.843	ppb	2.188	77355	40	79.6	80	120	> +/-20%
Cu	63	2	72	32.633	32.633	ppb	1.480	218499	40	81.6	80	120	
Zn	66	2	72	31.821	31.821	ppb	1.127	32411	40	79.6	80	120	> +/-20%
As	75	2	72	29.852	29.852	ppb	1.862	21811	40	74.6	80	120	> +/-20%
Se	78	1	72	32.689	32.689	ppb	3.922	17348	40	81.7	80	120	
Sr	88	2	45	36.333	36.333	ppb	3.689	103148	40	90.8	80	120	
Nb	93	2	72	0.636	0.636	ppb	9.573	5314	40	1.6	80	120	> +/-20%
Mo	95	2	115	31.326	31.326	ppb	0.810	104882	40	78.3	80	120	> +/-20%
Pd	105	2	115	0.007	0.007	ppb	157.262	100	40	0.0	80	120	> +/-20%
Ag	107	2	115	32.296	32.296	ppb	1.296	334629	40	80.7	80	120	
Cd	111	2	115	32.113	32.113	ppb	2.164	47906	40	80.3	80	120	
Sn	120	2	115	31.644	31.644	ppb	1.276	146641	40	79.1	80	120	> +/-20%
Sb	121	2	115	31.929	31.929	ppb	1.414	126565	40	79.8	80	120	> +/-20%
Ba	137	2	115	32.655	32.655	ppb	0.666	43201	40	81.6	80	120	
W	182	2	165	15.712	15.712	ppb	0.979	121888	40	39.3	80	120	> +/-20%
Pt	195	2	165	-0.001	-0.001	ppb	0.000	0	40	0.0	80	120	> +/-20%
Tl	205	2	165	31.992	31.992	ppb	2.780	468212	40	80.0	80	120	> +/-20%
Pb	208	2	165	32.717	32.717	ppb	2.096	638003	40	81.8	80	120	
Th	232	2	165	26.885	26.885	ppb	1.467	556570	40	67.2	80	120	> +/-20%
U	238	2	165	29.957	29.957	ppb	2.334	640391	40	74.9	80	120	> +/-20%

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	576662	0.70	882524	65.34	60	125	
Sc (IS)	45	2	HMI He	3466010	0.90	4165833	83.20	60	125	
Sc IS)	45	3	No Gas	93923113	0.22	114950556	81.71	60	120	
Ge Internal Standard	72	1	HMI H2	19695998	2.68	23371239	84.27	60	125	
Ge Internal Standard	72	2	HMI He	4246443	2.68	4959346	85.63	60	125	
In Internal standard	115	2	HMI He	14302183	1.39	15807784	90.48	60	125	
Ho-165	165	2	HMI He	37400215	0.58	41189580	90.80	60	125	

Sample Report

Sample Table

Sample Name 280-123469-d-1-b
 Data File Name 175SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T11:05:50-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457923 200.8
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-52.388	ppb	-52.388	-3.95	4815643	40000	
Be	9	1	6	0.027	ppb	0.027	114.67	7	2000	
B	11	1	6	165.322	ppb	165.322	1.96	3197	100	
Na	23	2	45	27103.587	ppb	27103.587	1.69	16661181	400000	
Mg	24	2	45	26078.937	ppb	26078.937	1.31	6798259	400000	
Al	27	2	45	1688.266	ppb	1688.266	2.04	134483	400000	
K	39	2	45	3164.741	ppb	3164.741	3.89	898464	400000	
Ca	44	2	45	310260.843	ppb	310260.843	2.80	5953397	400000	
V	51	2	72	-1.067	ppb	-1.067	-4.52	7802	2000	
Cr	52	2	72	0.155	ppb	0.155	14.61	1940	5000	
Mn	55	2	72	1790.078	ppb	1790.078	1.17	4433865	10000	
Fe	57	2	72	81.618	ppb	81.618	4.83	8732	400000	
Co	59	2	72	0.802	ppb	0.802	3.90	11287	2000	
Ni	60	2	72	1.058	ppb	1.058	6.38	2847	5000	
Cu	63	2	72	26.089	ppb	26.089	1.97	166306	5000	
Zn	66	2	72	1.377	ppb	1.377	22.89	3104	5000	
As	75	2	72	0.260	ppb	0.260	27.95	325	2000	
Se	78	1	72	0.293	ppb	0.293	36.14	172	2000	
Sr	88	2	45	1206.422	ppb	1206.422	1.53	3343147	2000	
Zr	90	2	72	13.526	ppb	13.526	42.92	780	1000	
Zr	90	1	72	18.491	ppb	18.491	49.30	2623	1000	
Nb	93	2	72	0.706	ppb	0.706	9.78	5441	200	
Mo	95	2	115	0.079	ppb	0.079	35.09	480	2000	
Pd	105	2	115	0.048	ppb	0.048	45.58	280	100	
Ag	107	2	115	0.033	ppb	0.033	3.66	410	100	
Cd	111	2	115	0.444	ppb	0.444	13.28	620	2000	
Sn	120	2	115	0.140	ppb	0.140	23.10	1317	2000	
Sb	121	2	115	4.288	ppb	4.288	1.99	15991	1000	
Ba	137	2	115	7.559	ppb	7.559	7.48	9423	5000	
W	182	2	165	0.074	ppb	0.074	72.83	2884	100	
Pt	195	2	165	0.001	ppb	0.001	153.51	7	100	
Tl	205	2	165	1.113	ppb	1.113	2.99	16082	2000	
Pb	208	2	165	0.085	ppb	0.085	4.58	2880	5000	
Th	232	2	165	0.975	ppb	0.975	0.77	20187	2000	
U	238	2	165	1.051	ppb	1.051	6.83	21973	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	546374	0.31	882524	61.91	60	125	
Sc (IS)	45	2	HMI He	3387999	2.23	4165833	81.33	60	125	
Sc IS)	45	3	No Gas	90413734	1.34	114950556	78.65	60	120	
Ge Internal Standard	72	1	HMI H2	18735713	2.45	23371239	80.17	60	125	
Ge Internal Standard	72	2	HMI He	4024034	0.49	4959346	81.14	60	125	
In Internal standard	115	2	HMI He	13276015	0.50	15807784	83.98	60	125	
Ho-165	165	2	HMI He	36302673	3.24	41189580	88.14	60	125	

Sample Report

Sample Table

Sample Name 280-123545-a-1-d
 Data File Name 176SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T11:16:02-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457923 200.8
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-46.230	ppb	-46.230	-4.99	5014144	40000	
Be	9	1	6	0.020	ppb	0.020	173.21	5	2000	
B	11	1	6	705.993	ppb	705.993	3.26	13462	100	>LDR
Na	23	2	45	72946.487	ppb	72946.487	3.81	45579743	400000	
Mg	24	2	45	8604.346	ppb	8604.346	2.46	2284253	400000	
Al	27	2	45	12.277	ppb	12.277	5.09	1470	400000	
K	39	2	45	2237.397	ppb	2237.397	4.65	675437	400000	
Ca	44	2	45	24635.958	ppb	24635.958	2.41	481628	400000	
V	51	2	72	0.424	ppb	0.424	9.45	14583	2000	
Cr	52	2	72	2.009	ppb	2.009	8.17	12358	5000	
Mn	55	2	72	4.335	ppb	4.335	8.08	11627	10000	
Fe	57	2	72	28.846	ppb	28.846	12.90	3577	400000	
Co	59	2	72	0.046	ppb	0.046	90.62	5328	2000	
Ni	60	2	72	1.018	ppb	1.018	5.74	2884	5000	
Cu	63	2	72	4.791	ppb	4.791	0.64	35203	5000	
Zn	66	2	72	13.755	ppb	13.755	0.92	15003	5000	
As	75	2	72	0.302	ppb	0.302	8.77	371	2000	
Se	78	1	72	1.542	ppb	1.542	14.52	851	2000	
Sr	88	2	45	387.325	ppb	387.325	2.05	1092865	2000	
Zr	90	2	72	16.972	ppb	16.972	27.14	883	1000	
Zr	90	1	72	23.004	ppb	23.004	28.13	2993	1000	
Nb	93	2	72	0.203	ppb	0.203	26.79	2690	200	
Mo	95	2	115	1.643	ppb	1.643	4.07	5454	2000	
Pd	105	2	115	0.020	ppb	0.020	58.43	157	100	
Ag	107	2	115	0.001	ppb	0.001	128.12	103	100	
Cd	111	2	115	0.024	ppb	0.024	51.16	40	2000	
Sn	120	2	115	0.075	ppb	0.075	34.85	1060	2000	
Sb	121	2	115	1.289	ppb	1.289	3.29	5094	1000	
Ba	137	2	115	22.340	ppb	22.340	2.88	28131	5000	
W	182	2	165	0.483	ppb	0.483	7.25	5821	100	
Pt	195	2	165	-0.001	ppb	-0.001	0.00	0	100	
Tl	205	2	165	0.002	ppb	0.002	397.91	300	2000	
Pb	208	2	165	0.072	ppb	0.072	19.80	2590	5000	
Th	232	2	165	0.078	ppb	0.078	20.04	2147	2000	
U	238	2	165	3.955	ppb	3.955	2.78	81057	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	571121	1.64	882524	64.71	60	125	
Sc (IS)	45	2	HMI He	3449566	1.92	4165833	82.81	60	125	
Sc IS)	45	3	No Gas	91941635	1.85	114950556	79.98	60	120	
Ge Internal Standard	72	1	HMI H2	19909670	2.22	23371239	85.19	60	125	
Ge Internal Standard	72	2	HMI He	4213572	0.70	4959346	84.96	60	125	
In Internal standard	115	2	HMI He	13587340	0.79	15807784	85.95	60	125	
Ho-165	165	2	HMI He	35793370	2.16	41189580	86.90	60	125	

Sample Report

Sample Table

Sample Name 280-123545-a-1-e.ms
 Data File Name 177SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T11:19:32-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457923 200.8
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	7.772	ppb	7.772	26.97	6052140	40000	
Be	9	1	6	34.984	ppb	34.984	1.51	9002	2000	
B	11	1	6	1098.073	ppb	1098.073	2.09	21072	100	>LDR
Na	23	2	45	73246.657	ppb	73246.657	2.59	46580871	400000	
Mg	24	2	45	8444.745	ppb	8444.745	0.68	2282294	400000	
Al	27	2	45	318.847	ppb	318.847	4.66	26700	400000	
K	39	2	45	2233.742	ppb	2233.742	2.29	686635	400000	
Ca	44	2	45	24622.331	ppb	24622.331	1.60	489909	400000	
V	51	2	72	32.344	ppb	32.344	2.01	151636	2000	
Cr	52	2	72	32.796	ppb	32.796	3.72	183474	5000	
Mn	55	2	72	35.503	ppb	35.503	3.52	92243	10000	
Fe	57	2	72	347.439	ppb	347.439	4.51	37086	400000	
Co	59	2	72	31.394	ppb	31.394	3.39	273864	2000	
Ni	60	2	72	30.498	ppb	30.498	1.14	73415	5000	
Cu	63	2	72	36.167	ppb	36.167	1.31	239426	5000	
Zn	66	2	72	44.893	ppb	44.893	1.83	44474	5000	
As	75	2	72	30.939	ppb	30.939	2.54	22381	2000	
Se	78	1	72	32.367	ppb	32.367	3.37	16984	2000	
Sr	88	2	45	426.740	ppb	426.740	4.33	1224907	2000	
Zr	90	2	72	96.038	ppb	96.038	14.98	2400	1000	
Zr	90	1	72	92.236	ppb	92.236	8.01	5994	1000	
Nb	93	2	72	0.252	ppb	0.252	20.20	2974	200	
Mo	95	2	115	33.387	ppb	33.387	3.53	108407	2000	
Pd	105	2	115	0.021	ppb	0.021	91.95	167	100	
Ag	107	2	115	30.831	ppb	30.831	2.43	309884	100	
Cd	111	2	115	32.082	ppb	32.082	2.67	46422	2000	
Sn	120	2	115	32.158	ppb	32.158	1.70	144592	2000	
Sb	121	2	115	33.941	ppb	33.941	1.84	130520	1000	
Ba	137	2	115	54.719	ppb	54.719	4.34	70066	5000	
W	182	2	165	16.376	ppb	16.376	3.09	124354	100	
Pt	195	2	165	0.000	ppb	0.000	1288.49	3	100	
Tl	205	2	165	30.986	ppb	30.986	0.85	444257	2000	
Pb	208	2	165	31.508	ppb	31.508	1.89	602033	5000	
Th	232	2	165	26.376	ppb	26.376	2.97	534854	2000	
U	238	2	165	33.943	ppb	33.943	1.64	710775	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	578475	1.19	882524	65.55	60	125	
Sc (IS)	45	2	HMI He	3511020	2.62	4165833	84.28	60	125	
Sc IS)	45	3	No Gas	92097354	0.42	114950556	80.12	60	120	
Ge Internal Standard	72	1	HMI H2	19464867	1.56	23371239	83.29	60	125	
Ge Internal Standard	72	2	HMI He	4205370	1.82	4959346	84.80	60	125	
In Internal standard	115	2	HMI He	13876820	2.08	15807784	87.78	60	125	
Ho-165	165	2	HMI He	36638507	0.36	41189580	88.95	60	125	

Sample Report

Sample Table

Sample Name 280-123545-a-1-f msd
 Data File Name 178SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T11:23:04-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457923 200.8
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	3.674	ppb	3.674	188.46	5986212	40000	
Be	9	1	6	34.732	ppb	34.732	1.30	8837	2000	
B	11	1	6	1125.344	ppb	1125.344	5.70	21340	100	>LDR
Na	23	2	45	74374.618	ppb	74374.618	2.83	45814242	400000	
Mg	24	2	45	8748.156	ppb	8748.156	1.63	2290142	400000	
Al	27	2	45	339.842	ppb	339.842	4.51	27545	400000	
K	39	2	45	2306.466	ppb	2306.466	2.37	683700	400000	
Ca	44	2	45	25668.403	ppb	25668.403	2.09	494813	400000	
V	51	2	72	31.724	ppb	31.724	6.51	150608	2000	
Cr	52	2	72	32.616	ppb	32.616	5.54	184550	5000	
Mn	55	2	72	35.374	ppb	35.374	2.15	93021	10000	
Fe	57	2	72	341.483	ppb	341.483	2.06	36906	400000	
Co	59	2	72	31.308	ppb	31.308	2.76	276385	2000	
Ni	60	2	72	31.047	ppb	31.047	1.29	75618	5000	
Cu	63	2	72	35.496	ppb	35.496	4.60	237692	5000	
Zn	66	2	72	43.198	ppb	43.198	1.33	43405	5000	
As	75	2	72	30.572	ppb	30.572	2.34	22381	2000	
Se	78	1	72	32.785	ppb	32.785	3.40	17289	2000	
Sr	88	2	45	434.700	ppb	434.700	1.57	1209526	2000	
Zr	90	2	72	91.193	ppb	91.193	11.18	2337	1000	
Zr	90	1	72	90.149	ppb	90.149	16.94	5930	1000	
Nb	93	2	72	0.139	ppb	0.139	32.69	2324	200	
Mo	95	2	115	34.088	ppb	34.088	1.18	109540	2000	
Pd	105	2	115	0.006	ppb	0.006	76.43	90	100	
Ag	107	2	115	31.055	ppb	31.055	0.94	308939	100	
Cd	111	2	115	31.887	ppb	31.887	4.79	45653	2000	
Sn	120	2	115	32.183	ppb	32.183	1.00	143169	2000	
Sb	121	2	115	34.641	ppb	34.641	0.82	131822	1000	
Ba	137	2	115	54.739	ppb	54.739	0.72	69392	5000	
W	182	2	165	16.360	ppb	16.360	2.09	124538	100	
Pt	195	2	165	0.003	ppb	0.003	149.59	17	100	
Tl	205	2	165	31.008	ppb	31.008	4.41	445409	2000	
Pb	208	2	165	31.908	ppb	31.908	2.38	611065	5000	
Th	232	2	165	27.072	ppb	27.072	4.09	550060	2000	
U	238	2	165	33.785	ppb	33.785	3.97	708848	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	571900	0.92	882524	64.80	60	125	
Sc (IS)	45	2	HMI He	3402048	4.07	4165833	81.67	60	125	
Sc IS)	45	3	No Gas	92296760	1.20	114950556	80.29	60	120	
Ge Internal Standard	72	1	HMI H2	19556324	0.48	23371239	83.68	60	125	
Ge Internal Standard	72	2	HMI He	4256377	3.36	4959346	85.83	60	125	
In Internal standard	115	2	HMI He	13730046	0.53	15807784	86.86	60	125	
Ho-165	165	2	HMI He	36742877	3.40	41189580	89.20	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5701467
 Data File Name 179_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T11:26:36-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	17.531	ppb	41.879	99036	100	17.5	90	110	>+/-10%
Li	7	3	45	20.073	ppb	15.291	6486295	100	20.1	90	110	>+/-10%
Be	9	1	6	50.914	ppb	2.089	13362	50	101.8	90	110	
B	11	1	6	104.750	ppb	9.205	2280	50	209.5	90	110	>+/-10%
Na	23	2	45	1085.526	ppb	1.853	716646	1000	108.6	90	110	
Mg	24	2	45	1005.395	ppb	0.435	267847	1000	100.5	90	110	
Al	27	2	45	1000.901	ppb	1.569	81318	1000	100.1	90	110	
K	39	2	45	1009.796	ppb	1.188	358468	1000	101.0	90	110	
Ca	44	2	45	1053.857	ppb	4.440	20829	1000	105.4	90	110	
V	51	2	72	45.786	ppb	2.763	213962	50	91.6	90	110	
Cr	52	2	72	47.275	ppb	2.609	269828	50	94.5	90	110	
Mn	55	2	72	48.577	ppb	1.613	128885	50	97.2	90	110	
Fe	57	2	72	974.747	ppb	1.776	105388	1000	97.5	90	110	
Co	59	2	72	48.777	ppb	1.749	432193	50	97.6	90	110	
Ni	60	2	72	46.745	ppb	3.440	114728	50	93.5	90	110	
Cu	63	2	72	49.216	ppb	1.398	331494	50	98.4	90	110	
Zn	66	2	72	47.956	ppb	3.642	48418	50	95.9	90	110	
As	75	2	72	48.432	ppb	2.329	35724	50	96.9	90	110	
Se	78	1	72	50.515	ppb	0.765	27223	50	101.0	90	110	
Sr	88	2	45	109.664	ppb	1.673	309339	100	109.7	90	110	
Zr	90	2	72	13.397	ppb	23.994	830	50	26.8	90	110	>+/-10%
Zr	90	1	72	23.868	ppb	5.131	3050	50	47.7	90	110	>+/-10%
Nb	93	2	72	96.481	ppb	0.622	589944	100	96.5	90	110	
Mo	95	2	115	51.248	ppb	5.441	167343	50	102.5	90	110	
Pd	105	2	115	49.659	ppb	4.374	237975	50	99.3	90	110	
Ag	107	2	115	48.151	ppb	5.069	487060	50	96.3	90	110	
Cd	111	2	115	49.742	ppb	6.195	72411	50	99.5	90	110	
Sn	120	2	115	50.536	ppb	1.323	228393	50	101.1	90	110	
Sb	121	2	115	49.003	ppb	1.990	189650	50	98.0	90	110	
Ba	137	2	115	51.625	ppb	1.725	66611	50	103.2	90	110	
W	182	2	165	47.047	ppb	1.785	357704	50	94.1	90	110	
Pt	195	2	165	45.971	ppb	3.686	246961	50	91.9	90	110	
Tl	205	2	165	49.856	ppb	4.247	724204	50	99.7	90	110	
Pb	208	2	165	49.954	ppb	2.496	966729	50	99.9	90	110	
Th	232	2	165	45.440	ppb	2.181	933613	50	90.9	90	110	
U	238	2	165	45.891	ppb	2.676	973920	50	91.8	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	589864	0.61	882524	66.84	60	125	
Sc (IS)	45	2	HMI He	3446816	0.98	4165833	82.74	60	125	
Sc IS)	45	3	No Gas	95022351	1.64	114950556	82.66	60	120	
Ge Internal Standard	72	1	HMI H2	19998170	0.67	23371239	85.57	60	125	
Ge Internal Standard	72	2	HMI He	4298134	1.69	4959346	86.67	60	125	
In Internal standard	115	2	HMI He	13978179	3.39	15807784	88.43	60	125	
Ho-165	165	2	HMI He	37151433	2.39	41189580	90.20	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5701457
 Data File Name 180_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T11:30:08-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 074CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	-67.736	ppb	-10.9	74948	0.1	
Li	7	3	45	-56.343	ppb	-7.0	4921603	0.05	
Be	9	1	6	0.076	ppb	89.7	20	0.5	
B	11	1	6	65.808	ppb	9.7	1517	0.1	>RL
Na	23	2	45	92.472	ppb	5.2	98503	25	>RL
Mg	24	2	45	3.869	ppb	15.8	2260	25	
Al	27	2	45	-2.729	ppb	-31.2	260	15	
K	39	2	45	-15.103	ppb	-102.3	95435	50	
Ca	44	2	45	0.522	ppb	501.0	267	25	
V	51	2	72	-1.153	ppb	-5.3	7935	1	
Cr	52	2	72	-0.043	ppb	-16.4	943	1	
Mn	55	2	72	0.017	ppb	71.7	440	0.5	
Fe	57	2	72	4.734	ppb	16.8	1053	25	
Co	59	2	72	-0.036	ppb	-57.6	4701	0.5	
Ni	60	2	72	0.018	ppb	168.4	497	1	
Cu	63	2	72	0.555	ppb	7.7	7705	1	
Zn	66	2	72	-1.181	ppb	-9.1	837	5	
As	75	2	72	-0.008	ppb	-240.0	150	1	
Se	78	1	72	0.053	ppb	83.5	53	1	
Sr	88	2	45	0.091	ppb	33.4	417	1	
Zr	90	2	72	-7.903	ppb	-63.2	410	1	
Zr	90	1	72	-3.848	ppb	-140.2	1752	1	
Nb	93	2	72	2.750	ppb	8.3	18213	2	>RL
Mo	95	2	115	0.051	ppb	44.3	417	0.5	
Pd	105	2	115	0.050	ppb	30.8	307	1	
Ag	107	2	115	0.011	ppb	56.1	210	1	
Cd	111	2	115	0.016	ppb	83.5	30	0.5	
Sn	120	2	115	0.042	ppb	20.7	950	1	
Sb	121	2	115	0.071	ppb	45.2	533	1	
Ba	137	2	115	-0.027	ppb	-98.3	157	0.5	
W	182	2	165	0.073	ppb	10.6	2957	1	
Pt	195	2	165	0.007	ppb	79.2	43	1	
Tl	205	2	165	0.018	ppb	19.9	550	0.1	
Pb	208	2	165	0.009	ppb	50.5	1470	0.5	
Th	232	2	165	0.206	ppb	7.3	4881	1	
U	238	2	165	0.033	ppb	16.6	910	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	585607	1.14	882524	66.36	60	125	
Sc (IS)	45	2	HMI He	3500544	1.57	4165833	84.03	60	125	
Sc IS)	45	3	No Gas	93845597	0.80	114950556	81.64	60	120	
Ge Internal Standard	72	1	HMI H2	19567518	0.98	23371239	83.72	60	125	
Ge Internal Standard	72	2	HMI He	4286757	1.56	4959346	86.44	60	125	
In Internal standard	115	2	HMI He	14066865	0.55	15807784	88.99	60	125	
Ho-165	165	2	HMI He	37294878	1.25	41189580	90.54	60	125	

Sample Report

Sample Table

Sample Name rinse-5620980
 Data File Name 181SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T11:33:41-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment TUNE
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-53.124	ppb	-53.124	-10.38	4976090	40000	
Be	9	1	6	0.045	ppb	0.045	49.65	12	2000	
B	11	1	6	67.416	ppb	67.416	9.28	1530	100	
Na	23	2	45	88.733	ppb	88.733	1.11	95943	400000	
Mg	24	2	45	4.353	ppb	4.353	4.39	2387	400000	
Al	27	2	45	0.736	ppb	0.736	80.07	543	400000	
K	39	2	45	-14.619	ppb	-14.619	-68.25	95370	400000	
Ca	44	2	45	-0.669	ppb	-0.669	-266.10	243	400000	
V	51	2	72	-0.912	ppb	-0.912	-20.73	8966	2000	
Cr	52	2	72	0.002	ppb	0.002	1166.53	1200	5000	
Mn	55	2	72	0.124	ppb	0.124	43.48	720	10000	
Fe	57	2	72	13.980	ppb	13.980	3.60	2043	400000	
Co	59	2	72	-0.033	ppb	-0.033	-83.99	4727	2000	
Ni	60	2	72	0.051	ppb	0.051	70.69	577	5000	
Cu	63	2	72	1.305	ppb	1.305	8.70	12658	5000	
Zn	66	2	72	-0.686	ppb	-0.686	-29.84	1310	5000	
As	75	2	72	-0.021	ppb	-0.021	-280.31	141	2000	
Se	78	1	72	-0.010	ppb	-0.010	-344.35	20	2000	
Sr	88	2	45	0.033	ppb	0.033	56.51	250	2000	
Zr	90	2	72	-5.012	ppb	-5.012	-29.41	467	1000	
Zr	90	1	72	-5.749	ppb	-5.749	-44.54	1645	1000	
Nb	93	2	72	1.961	ppb	1.961	5.13	13409	200	
Mo	95	2	115	0.010	ppb	0.010	235.25	273	2000	
Pd	105	2	115	0.021	ppb	0.021	53.45	160	100	
Ag	107	2	115	0.012	ppb	0.012	46.56	210	100	
Cd	111	2	115	0.015	ppb	0.015	54.17	27	2000	
Sn	120	2	115	0.069	ppb	0.069	19.49	1043	2000	
Sb	121	2	115	0.009	ppb	0.009	268.50	283	1000	
Ba	137	2	115	0.055	ppb	0.055	90.06	257	5000	
W	182	2	165	0.060	ppb	0.060	95.17	2827	100	
Pt	195	2	165	0.003	ppb	0.003	101.66	20	100	
Tl	205	2	165	0.009	ppb	0.009	31.07	413	2000	
Pb	208	2	165	0.004	ppb	0.004	131.81	1363	5000	
Th	232	2	165	0.164	ppb	0.164	3.19	3971	2000	
U	238	2	165	0.007	ppb	0.007	34.44	357	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	579455	0.62	882524	65.66	60	125	
Sc (IS)	45	2	HMI He	3492747	1.19	4165833	83.84	60	125	
Sc IS)	45	3	No Gas	93695188	0.56	114950556	81.51	60	120	
Ge Internal Standard	72	1	HMI H2	19322905	1.35	23371239	82.68	60	125	
Ge Internal Standard	72	2	HMI He	4280954	1.71	4959346	86.32	60	125	
In Internal standard	115	2	HMI He	13665844	1.34	15807784	86.45	60	125	
Ho-165	165	2	HMI He	36924587	3.08	41189580	89.65	60	125	

Sample Report

Sample Table

Sample Name rinse-5620980
 Data File Name 182SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T11:37:14-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment TUNE
 ISTD Ref FileName 074CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-57.270	ppb	-57.270	-5.24	4849856	40000	
Be	9	1	6	0.026	ppb	0.026	86.61	7	2000	
B	11	1	6	58.718	ppb	58.718	14.78	1377	100	
Na	23	2	45	88.332	ppb	88.332	8.21	93664	400000	
Mg	24	2	45	3.874	ppb	3.874	16.37	2210	400000	
Al	27	2	45	-1.016	ppb	-1.016	-102.46	393	400000	
K	39	2	45	-5.760	ppb	-5.760	-229.05	95679	400000	
Ca	44	2	45	3.595	ppb	3.595	124.10	320	400000	
V	51	2	72	-0.994	ppb	-0.994	-21.52	8579	2000	
Cr	52	2	72	-0.010	ppb	-0.010	-162.53	1127	5000	
Mn	55	2	72	0.104	ppb	0.104	28.66	667	10000	
Fe	57	2	72	16.069	ppb	16.069	7.90	2260	400000	
Co	59	2	72	-0.020	ppb	-0.020	-282.43	4821	2000	
Ni	60	2	72	0.048	ppb	0.048	18.74	567	5000	
Cu	63	2	72	1.322	ppb	1.322	4.31	12732	5000	
Zn	66	2	72	-0.550	ppb	-0.550	-43.12	1440	5000	
As	75	2	72	-0.025	ppb	-0.025	-88.35	137	2000	
Se	78	1	72	-0.009	ppb	-0.009	-46.45	21	2000	
Sr	88	2	45	0.047	ppb	0.047	73.45	283	2000	
Zr	90	2	72	-11.077	ppb	-11.077	-29.40	347	1000	
Zr	90	1	72	-3.108	ppb	-3.108	-115.39	1809	1000	
Nb	93	2	72	1.163	ppb	1.163	8.87	8536	200	
Mo	95	2	115	-0.008	ppb	-0.008	-331.89	220	2000	
Pd	105	2	115	0.007	ppb	0.007	107.07	97	100	
Ag	107	2	115	0.010	ppb	0.010	71.51	190	100	
Cd	111	2	115	0.021	ppb	0.021	68.29	37	2000	
Sn	120	2	115	-0.002	ppb	-0.002	-483.44	737	2000	
Sb	121	2	115	-0.018	ppb	-0.018	-134.09	183	1000	
Ba	137	2	115	0.019	ppb	0.019	165.61	213	5000	
W	182	2	165	0.015	ppb	0.015	248.55	2467	100	
Pt	195	2	165	0.004	ppb	0.004	102.45	23	100	
Tl	205	2	165	0.001	ppb	0.001	103.15	297	2000	
Pb	208	2	165	0.002	ppb	0.002	169.22	1320	5000	
Th	232	2	165	0.096	ppb	0.096	8.60	2567	2000	
U	238	2	165	0.004	ppb	0.004	74.31	283	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	584489	0.90	882524	66.23	60	125	
Sc (IS)	45	2	HMI He	3421426	2.79	4165833	82.13	60	125	
Sc IS)	45	3	No Gas	92816713	1.26	114950556	80.74	60	120	
Ge Internal Standard	72	1	HMI H2	19848244	0.91	23371239	84.93	60	125	
Ge Internal Standard	72	2	HMI He	4266342	1.60	4959346	86.03	60	125	
In Internal standard	115	2	HMI He	13822549	0.53	15807784	87.44	60	125	
Ho-165	165	2	HMI He	36584133	2.22	41189580	88.82	60	125	

Calibration Blank Report

Sample Table

Sample Name2 ICIS-5699924
Data File Name 183CALB.d
Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
Method
Acq Date Time 2019-05-15T11:40:46-06:00
Sample Type CalBlk
Level 1
Dilution 1
Comment

QC Analyte Table

Name	Mass	I.S	Tune Step	Tune Mode	CPS	%RSD
Li	7	45	1	HMI H2	75497	0.00
Li	7	45	3	No Gas	4880978	0.00
Be	9	6	1	HMI H2	3	2598.08
B	11	6	1	HMI H2	1243	0.13
Na	23	45	2	HMI He	83296	0.00
Mg	24	45	2	HMI He	2143	0.11
Al	27	45	2	HMI He	637	0.57
K	39	45	2	HMI He	95434	0.00
Ca	44	45	2	HMI He	223	4.17
V	51	72	2	HMI He	7598	0.08
Cr	52	72	2	HMI He	1063	0.65
Mn	55	72	2	HMI He	337	6.62
Fe	57	72	2	HMI He	873	0.87
Co	59	72	2	HMI He	4624	0.10
Ni	60	72	2	HMI He	347	1.73
Cu	63	72	2	HMI He	6835	0.03
Zn	66	72	2	HMI He	633	1.15
As	75	72	2	HMI He	125	17.25
Se	78	72	1	HMI H2	27	64.95
Sr	88	45	2	HMI He	240	1.74
Zr	90	72	2	HMI He	400	7.37
Zr	90	72	1	HMI H2	1739	0.60
Nb	93	72	2	HMI He	4814	0.32
Mo	95	115	2	HMI He	210	6.00
Pd	105	115	2	HMI He	73	56.81
Ag	107	115	2	HMI He	160	25.61
Cd	111	115	2	HMI He	10	1000.00
Sn	120	115	2	HMI He	427	4.20
Sb	121	115	2	HMI He	113	19.59
Ba	137	115	2	HMI He	183	4.54
W	182	165	2	HMI He	2214	0.64
Pt	195	165	2	HMI He	3	5196.15
Tl	205	165	2	HMI He	290	10.37
Pb	208	165	2	HMI He	950	1.72
Th	232	165	2	HMI He	1283	1.37
U	238	165	2	HMI He	237	10.15

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li-6 Internal Standard	6	1	HMI H2	587600	0.34
Sc (IS)	45	2	HMI He	3480357	1.84
Sc IS)	45	3	No Gas	91538318	2.56
Ge Internal Standard	72	1	HMI H2	19592028	0.90
Ge Internal Standard	72	2	HMI He	4230722	1.19
In Internal standard	115	2	HMI He	14034978	0.86
Ho-165	165	2	HMI He	36783004	1.97

Calibration Standard Report

Sample Table

Sample Name IC-5699925
Data File Name 184CAL.S.d
Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
method
Acq Date Time 2019-05-15T11:44:18-06:00
Sample Type CalStd
Level 2
Dilution 1
Comment
ISTD Ref File Name 183CALB.d
ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	IS	Tune Step	Tune Mode	CPS	%RSD
Li	7	45	1	HMI H2	121579	0.00
Li	7	45	3	No Gas	7894159	0.00
Be	9	6	1	HMI H2	26321	0.00
B	11	6	1	HMI H2	1753	0.86
Na	23	45	2	HMI He	1282558	0.00
Mg	24	45	2	HMI He	510758	0.00
Al	27	45	2	HMI He	155960	0.00
K	39	45	2	HMI He	601092	0.00
Ca	44	45	2	HMI He	39718	0.00
V	51	72	2	HMI He	410719	0.00
Cr	52	72	2	HMI He	515701	0.00
Mn	55	72	2	HMI He	246466	0.00
Fe	57	72	2	HMI He	203563	0.00
Co	59	72	2	HMI He	837431	0.00
Ni	60	72	2	HMI He	226166	0.00
Cu	63	72	2	HMI He	627412	0.00
Zn	66	72	2	HMI He	92514	0.00
As	75	72	2	HMI He	69705	0.00
Se	78	72	1	HMI H2	52662	0.00
Sr	88	45	2	HMI He	612918	0.00
Zr	90	72	2	HMI He	1240	0.41
Zr	90	72	1	HMI H2	3290	0.19
Nb	93	72	2	HMI He	1210140	0.00
Mo	95	115	2	HMI He	319941	0.00
Pd	105	115	2	HMI He	452206	0.00
Ag	107	115	2	HMI He	939105	0.00
Cd	111	115	2	HMI He	142712	0.00
Sn	120	115	2	HMI He	437096	0.00
Sb	121	115	2	HMI He	364975	0.00
Ba	137	115	2	HMI He	128719	0.00
W	182	165	2	HMI He	708463	0.00
Pt	195	165	2	HMI He	480625	0.00
Tl	205	165	2	HMI He	1407961	0.00
Pb	208	165	2	HMI He	1880219	0.00
Th	232	165	2	HMI He	1952770	0.00
U	238	165	2	HMI He	2046857	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	588593	1.19	587600	100.17	60	125	
Sc (IS)	45	2	HMI He	3478684	3.01	3480357	99.95	60	125	
Sc IS)	45	3	No Gas	92948837	1.05	91538318	101.54	60	120	
Ge Internal Standard	72	1	HMI H2	19709571	1.75	19592028	100.60	60	125	
Ge Internal Standard	72	2	HMI He	4167107	0.64	4230722	98.50	60	125	
In Internal standard	115	2	HMI He	13633551	2.42	14034978	97.14	60	125	
Ho-165	165	2	HMI He	36916092	3.45	36783004	100.36	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5701467
 Data File Name 185_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T11:47:50-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	94.717	ppb	11.845	97223	100	94.7	90	110	
Li	7	3	45	100.845	ppb	12.097	6358123	100	100.8	90	110	
Be	9	1	6	49.880	ppb	5.019	12891	50	99.8	90	110	
B	11	1	6	65.330	ppb	36.974	1550	50	130.7	90	110	>+/-10%
Na	23	2	45	996.321	ppb	2.214	666676	1000	99.6	90	110	
Mg	24	2	45	1036.172	ppb	0.726	260296	1000	103.6	90	110	
Al	27	2	45	1011.613	ppb	1.020	77592	1000	101.2	90	110	
K	39	2	45	1051.048	ppb	2.687	353755	1000	105.1	90	110	
Ca	44	2	45	1020.980	ppb	4.966	19958	1000	102.1	90	110	
V	51	2	72	48.478	ppb	1.348	212386	50	97.0	90	110	
Cr	52	2	72	48.443	ppb	3.108	261953	50	96.9	90	110	
Mn	55	2	72	48.821	ppb	0.349	126111	50	97.6	90	110	
Fe	57	2	72	961.931	ppb	0.734	102936	1000	96.2	90	110	
Co	59	2	72	46.952	ppb	0.897	414030	50	93.9	90	110	
Ni	60	2	72	47.457	ppb	2.877	112520	50	94.9	90	110	
Cu	63	2	72	48.558	ppb	1.419	322508	50	97.1	90	110	
Zn	66	2	72	49.267	ppb	0.772	48034	50	98.5	90	110	
As	75	2	72	48.318	ppb	1.069	35317	50	96.6	90	110	
Se	78	1	72	50.860	ppb	1.216	26404	50	101.7	90	110	
Sr	88	2	45	100.958	ppb	0.661	303156	100	101.0	90	110	
Zr	90	2	72	53.850	ppb	14.894	890	50	107.7	90	110	
Zr	90	1	72	64.086	ppb	7.993	2696	50	128.2	90	110	>+/-10%
Nb	93	2	72	102.103	ppb	2.097	648945	100	102.1	90	110	
Mo	95	2	115	48.739	ppb	3.512	156699	50	97.5	90	110	
Pd	105	2	115	52.691	ppb	2.223	239311	50	105.4	90	110	
Ag	107	2	115	51.414	ppb	3.409	485134	50	102.8	90	110	
Cd	111	2	115	49.413	ppb	2.206	70872	50	98.8	90	110	
Sn	120	2	115	49.295	ppb	2.731	216624	50	98.6	90	110	
Sb	121	2	115	50.218	ppb	1.816	184173	50	100.4	90	110	
Ba	137	2	115	49.908	ppb	3.516	64599	50	99.8	90	110	
W	182	2	165	50.352	ppb	2.144	349308	50	100.7	90	110	
Pt	195	2	165	50.812	ppb	2.961	238586	50	101.6	90	110	
Tl	205	2	165	48.934	ppb	2.604	672938	50	97.9	90	110	
Pb	208	2	165	50.908	ppb	2.751	935416	50	101.8	90	110	
Th	232	2	165	46.744	ppb	2.135	892691	50	93.5	90	110	
U	238	2	165	47.781	ppb	1.562	955156	50	95.6	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	577962	0.90	587600	98.36	60	125	
Sc (IS)	45	2	HMI He	3406329	2.24	3480357	97.87	60	125	
Sc (IS)	45	3	No Gas	91801598	0.94	91538318	100.29	60	120	
Ge Internal Standard	72	1	HMI H2	19423370	2.56	19592028	99.14	60	125	
Ge Internal Standard	72	2	HMI He	4361141	1.41	4230722	103.08	60	125	
In Internal standard	115	2	HMI He	13692672	2.34	14034978	97.56	60	125	
Ho-165	165	2	HMI He	36048765	2.70	36783004	98.00	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5701457
 Data File Name 186_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T11:51:23-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	11.230	ppb	47.8	76039	0.1	>RL
Li	7	3	45	-2.873	ppb	-278.5	4872713	0.05	
Be	9	1	6	0.078	ppb	62.2	23	0.5	
B	11	1	6	-21.681	ppb	-97.5	1107	0.1	
Na	23	2	45	-4.350	ppb	-15.1	79010	25	
Mg	24	2	45	-1.014	ppb	-111.7	1847	25	
Al	27	2	45	-4.024	ppb	-35.5	317	15	
K	39	2	45	9.454	ppb	29.3	95785	50	
Ca	44	2	45	-2.847	ppb	-47.1	163	25	
V	51	2	72	0.356	ppb	16.8	9072	1	
Cr	52	2	72	0.014	ppb	278.9	1137	1	
Mn	55	2	72	0.063	ppb	30.6	497	0.5	
Fe	57	2	72	3.591	ppb	21.5	1243	25	
Co	59	2	72	0.005	ppb	855.9	4681	0.5	
Ni	60	2	72	0.118	ppb	37.1	617	1	
Cu	63	2	72	0.197	ppb	48.2	8089	1	
Zn	66	2	72	0.339	ppb	24.9	950	5	
As	75	2	72	0.051	ppb	111.4	161	1	
Se	78	1	72	0.060	ppb	24.8	57	1	
Sr	88	2	45	0.007	ppb	101.2	257	1	
Zr	90	2	72	66.907	ppb	11.8	977	1	>RL
Zr	90	1	72	111.589	ppb	16.7	3397	1	>RL
Nb	93	2	72	3.977	ppb	7.1	29172	2	>RL
Mo	95	2	115	0.081	ppb	28.8	467	0.5	
Pd	105	2	115	0.061	ppb	2.1	350	1	
Ag	107	2	115	0.008	ppb	95.2	230	1	
Cd	111	2	115	0.030	ppb	35.8	53	0.5	
Sn	120	2	115	0.123	ppb	31.2	957	1	
Sb	121	2	115	0.120	ppb	22.4	550	1	
Ba	137	2	115	0.044	ppb	132.7	237	0.5	
W	182	2	165	0.122	ppb	37.7	2997	1	
Pt	195	2	165	0.012	ppb	18.1	60	1	
Tl	205	2	165	0.042	ppb	33.4	857	0.1	
Pb	208	2	165	0.039	ppb	10.1	1647	0.5	
Th	232	2	165	0.144	ppb	19.5	3977	1	
U	238	2	165	0.046	ppb	11.2	1143	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	574023	0.72	587600	97.69	60	125	
Sc (IS)	45	2	HMI He	3407023	0.49	3480357	97.89	60	125	
Sc IS)	45	3	No Gas	92171243	2.73	91538318	100.69	60	120	
Ge Internal Standard	72	1	HMI H2	19332293	1.97	19592028	98.67	60	125	
Ge Internal Standard	72	2	HMI He	4237952	3.06	4230722	100.17	60	125	
In Internal standard	115	2	HMI He	13747166	1.69	14034978	97.95	60	125	
Ho-165	165	2	HMI He	35860218	1.67	36783004	97.49	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5701469
 Data File Name 187LCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T11:54:54-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	8.772	ppb	29.380	4990229	50	17.5	70	130	> +/-30%
Be	9	1	6	1.067	ppb	13.507	280	1	106.7	70	130	
Na	23	2	45	43.468	ppb	10.011	104684	50	86.9	70	130	
Mg	24	2	45	50.979	ppb	1.903	14473	50	102.0	70	130	
Al	27	2	45	51.849	ppb	13.346	4474	50	103.7	70	130	
K	39	2	45	111.364	ppb	14.920	118288	100	111.4	70	130	
Ca	44	2	45	33.945	ppb	10.087	857	50	67.9	70	130	> +/-30%
V	51	2	72	5.244	ppb	2.348	28804	5	104.9	70	130	
Cr	52	2	72	2.004	ppb	5.091	11434	2	100.2	70	130	
Mn	55	2	72	1.006	ppb	4.043	2824	1	100.6	70	130	
Fe	57	2	72	58.841	ppb	8.804	6861	50	117.7	70	130	
Co	59	2	72	1.000	ppb	4.319	12952	1	100.0	70	130	
Ni	60	2	72	1.553	ppb	0.621	3870	1.5	103.5	70	130	
Cu	63	2	72	2.281	ppb	5.875	21000	2	114.0	70	130	
Zn	66	2	72	10.160	ppb	5.860	10010	10	101.6	70	130	
As	75	2	72	4.794	ppb	1.923	3478	5	95.9	70	130	
Se	78	1	72	4.914	ppb	2.437	2523	5	98.3	70	130	
Sr	88	2	45	1.028	ppb	0.669	3247	1	102.8	70	130	
Zr	90	2	72	21.672	ppb	49.664	580	0.5	4334.4	70	130	> +/-30%
Zr	90	1	72	31.621	ppb	26.731	2156	0.5	6324.2	70	130	> +/-30%
Nb	93	2	72	2.246	ppb	15.340	18354	2	112.3	70	130	
Mo	95	2	115	1.948	ppb	6.027	6528	2	97.4	70	130	
Pd	105	2	115	0.036	ppb	15.646	237	1	3.6	70	130	> +/-30%
Ag	107	2	115	5.081	ppb	2.936	48578	5	101.6	70	130	
Cd	111	2	115	0.954	ppb	17.436	1390	1	95.4	70	130	
Sn	120	2	115	9.609	ppb	2.690	43013	10	96.1	70	130	
Sb	121	2	115	1.963	ppb	5.836	7385	2	98.1	70	130	
Ba	137	2	115	1.009	ppb	2.518	1497	1	100.9	70	130	
W	182	2	165	4.929	ppb	3.685	36680	1	492.9	70	130	> +/-30%
Pt	195	2	165	0.010	ppb	57.990	50	1	1.0	70	130	> +/-30%
Tl	205	2	165	0.923	ppb	4.496	13162	1	92.3	70	130	
Pb	208	2	165	1.027	ppb	3.145	20079	1	102.7	70	130	
Th	232	2	165	1.659	ppb	5.297	33370	2	83.0	70	130	
U	238	2	165	0.939	ppb	5.730	19283	1	93.9	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	580110	1.13	587600	98.73	60	125	
Sc (IS)	45	2	HMI He	3330954	1.91	3480357	95.71	60	125	
Sc IS)	45	3	No Gas	91192378	0.64	91538318	99.62	60	120	
Ge Internal Standard	72	1	HMI H2	19019928	3.16	19592028	97.08	60	125	
Ge Internal Standard	72	2	HMI He	4190636	2.31	4230722	99.05	60	125	
In Internal standard	115	2	HMI He	13835735	2.26	14034978	98.58	60	125	
Ho-165	165	2	HMI He	36568291	1.56	36783004	99.42	60	125	

Blank Report

Sample Table

Sample Name mb 280-457053/1-a
 Data File Name 188_BLK.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T11:58:29-06:00
 Sample Type Blank
 Dilution 1
 Comment 457053 SOIL 6020A
 ISTD Ref File Name 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit
Li	7	1	45	-13.299	ppb	-37.82102116	68978	0.1
Li	7	3	45	-14.547	ppb	-20.68685381	4512803	0.05
Be	9	1	6	0.076	ppb	56.25694026	22	0.5
Na	23	2	45	54.232	ppb	4.820618448	110868	25
Mg	24	2	45	18.089	ppb	13.12516842	6458	25
Al	27	2	45	-1.196	ppb	-87.34579923	520	15
K	39	2	45	-15.890	ppb	-41.09128615	87476	50
Ca	44	2	45	45.129	ppb	13.01869772	1067	25
V	51	2	72	-0.565	ppb	-5.824191622	5141	1
Cr	52	2	72	0.594	ppb	2.165692753	4051	1
Mn	55	2	72	0.561	ppb	13.11375242	1690	0.5
Fe	57	2	72	23.016	ppb	7.332267487	3150	25
Co	59	2	72	0.013	ppb	278.7007185	4604	0.5
Ni	60	2	72	0.772	ppb	4.319463212	2057	1
Cu	63	2	72	0.966	ppb	7.946223847	12561	1
Zn	66	2	72	1.832	ppb	7.244081428	2277	5
As	75	2	72	-0.031	ppb	-96.70968715	101	1
Se	78	1	72	0.015	ppb	197.0974174	33	1
Sr	88	2	45	0.550	ppb	12.53880917	1843	1
Zr	90	2	72	53.246	ppb	2.545321425	833	1
Zr	90	1	72	48.630	ppb	28.5988081	2389	1
Nb	93	2	72	4.526	ppb	7.144051194	31593	2
Mo	95	2	115	0.181	ppb	25.47869269	790	0.5
Pd	105	2	115	0.063	ppb	13.61089431	360	1
Ag	107	2	115	0.010	ppb	23.50480695	250	1
Cd	111	2	115	0.016	ppb	21.85276668	33	0.5
Sn	120	2	115	0.293	ppb	21.39760432	1707	1
Sb	121	2	115	0.071	ppb	26.37837575	370	1
Ba	137	2	115	0.328	ppb	32.00756316	603	0.5
W	182	2	165	0.154	ppb	19.10918258	3194	1
Pt	195	2	165	0.012	ppb	3.179981608	60	1
Tl	205	2	165	0.015	ppb	2.043079049	483	0.1
Pb	208	2	165	0.107	ppb	13.14665339	2857	0.5
Th	232	2	165	1.246	ppb	7.997797746	24621	1
U	238	2	165	0.046	ppb	6.542494577	1133	0.5

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	544340	0.31	587600	92.64	60	125	
Sc (IS)	45	2	HMI He	3330387	1.27	3480357	95.69	60	125	
Sc IS)	45	3	No Gas	88433419	1.80	91538318	96.61	60	120	
Ge Internal Standard	72	1	HMI H2	18855108	1.41	19592028	96.24	60	125	
Ge Internal Standard	72	2	HMI He	4111193	1.12	4230722	97.17	60	125	
In Internal standard	115	2	HMI He	13751877	1.85	14034978	97.98	60	125	
Ho-165	165	2	HMI He	35516107	2.97	36783004	96.56	60	125	

Sample Report

Sample Table

Sample Name 280-123545-c-2-b
 Data File Name 189SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T12:02:01-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457923 200.8
 ISTD Ref FileName 183CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-6.400	ppb	-6.400	-113.97	4782003	40000	
Be	9	1	6	0.039	ppb	0.039	27.45	13	2000	
B	11	1	6	-85.537	ppb	-85.537	-59.31	790	100	
Na	23	2	45	0.216	ppb	0.216	564.10	80651	400000	
Mg	24	2	45	-0.685	ppb	-0.685	-109.30	1903	400000	
Al	27	2	45	-4.284	ppb	-4.284	-23.67	293	400000	
K	39	2	45	-13.268	ppb	-13.268	-15.53	89004	400000	
Ca	44	2	45	5.630	ppb	5.630	55.59	323	400000	
V	51	2	72	0.305	ppb	0.305	42.99	8672	2000	
Cr	52	2	72	0.034	ppb	0.034	22.19	1217	5000	
Mn	55	2	72	0.237	ppb	0.237	34.07	910	10000	
Fe	57	2	72	29.046	ppb	29.046	11.26	3784	400000	
Co	59	2	72	-0.002	ppb	-0.002	-1387.26	4514	2000	
Ni	60	2	72	0.064	ppb	0.064	34.14	483	5000	
Cu	63	2	72	0.267	ppb	0.267	5.46	8349	5000	
Zn	66	2	72	1.592	ppb	1.592	6.34	2077	5000	
As	75	2	72	0.013	ppb	0.013	157.73	132	2000	
Se	78	1	72	0.019	ppb	0.019	88.02	36	2000	
Sr	88	2	45	0.026	ppb	0.026	77.37	310	2000	
Zr	90	2	72	9.175	ppb	9.175	42.90	470	1000	
Zr	90	1	72	-2.545	ppb	-2.545	-364.64	1665	1000	
Nb	93	2	72	0.816	ppb	0.816	8.33	9610	200	
Mo	95	2	115	-0.003	ppb	-0.003	-903.13	193	2000	
Pd	105	2	115	0.012	ppb	0.012	106.93	123	100	
Ag	107	2	115	-0.003	ppb	-0.003	-98.36	127	100	
Cd	111	2	115	0.000	ppb	0.000	5414.96	10	2000	
Sn	120	2	115	0.118	ppb	0.118	15.78	927	2000	
Sb	121	2	115	0.036	ppb	0.036	29.35	240	1000	
Ba	137	2	115	0.391	ppb	0.391	18.32	677	5000	
W	182	2	165	-0.029	ppb	-0.029	-2.60	2037	100	
Pt	195	2	165	0.001	ppb	0.001	358.58	7	100	
Tl	205	2	165	-0.006	ppb	-0.006	-62.41	213	2000	
Pb	208	2	165	0.030	ppb	0.030	12.25	1527	5000	
Th	232	2	165	-0.004	ppb	-0.004	-166.48	1217	2000	
U	238	2	165	-0.003	ppb	-0.003	-79.81	180	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	573692	1.43	587600	97.63	60	125	
Sc (IS)	45	2	HMI He	3363602	0.16	3480357	96.65	60	125	
Sc IS)	45	3	No Gas	91406582	1.11	91538318	99.86	60	120	
Ge Internal Standard	72	1	HMI H2	19205906	3.22	19592028	98.03	60	125	
Ge Internal Standard	72	2	HMI He	4146616	0.68	4230722	98.01	60	125	
In Internal standard	115	2	HMI He	13554147	2.27	14034978	96.57	60	125	
Ho-165	165	2	HMI He	37166461	1.83	36783004	101.04	60	125	

Sample Report

Sample Table

Sample Name 280-123545-c-3-b
 Data File Name 190SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T12:05:33-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457923 200.8
 ISTD Ref FileName 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	15.691	ppb	15.691	18.08	5006641	40000	
Be	9	1	6	0.034	ppb	0.034	32.85	12	2000	
B	11	1	6	3780.615	ppb	3780.615	2.08	19377	100	>LDR
Na	23	2	45	77655.561	ppb	77655.561	1.22	45950255	400000	
Mg	24	2	45	11065.842	ppb	11065.842	1.69	2775001	400000	
Al	27	2	45	13.415	ppb	13.415	18.72	1653	400000	
K	39	2	45	2754.375	ppb	2754.375	1.32	780084	400000	
Ca	44	2	45	27784.172	ppb	27784.172	0.84	540700	400000	
V	51	2	72	2.876	ppb	2.876	7.71	18597	2000	
Cr	52	2	72	0.500	ppb	0.500	9.26	3527	5000	
Mn	55	2	72	9.999	ppb	9.999	3.53	24304	10000	
Fe	57	2	72	44.194	ppb	44.194	8.83	5201	400000	
Co	59	2	72	0.117	ppb	0.117	36.68	5388	2000	
Ni	60	2	72	1.154	ppb	1.154	9.87	2874	5000	
Cu	63	2	72	3.066	ppb	3.066	4.00	25102	5000	
Zn	66	2	72	13.813	ppb	13.813	1.02	12978	5000	
As	75	2	72	0.577	ppb	0.577	7.68	512	2000	
Se	78	1	72	0.647	ppb	0.647	4.74	353	2000	
Sr	88	2	45	529.285	ppb	529.285	0.82	1597134	2000	
Zr	90	2	72	79.543	ppb	79.543	7.12	1040	1000	
Zr	90	1	72	77.907	ppb	77.907	20.29	2833	1000	
Nb	93	2	72	0.695	ppb	0.695	18.38	8696	200	
Mo	95	2	115	2.167	ppb	2.167	6.77	7135	2000	
Pd	105	2	115	0.037	ppb	0.037	46.31	240	100	
Ag	107	2	115	-0.003	ppb	-0.003	-81.58	127	100	
Cd	111	2	115	0.012	ppb	0.012	123.09	27	2000	
Sn	120	2	115	0.080	ppb	0.080	47.57	763	2000	
Sb	121	2	115	0.707	ppb	0.707	13.73	2694	1000	
Ba	137	2	115	32.763	ppb	32.763	3.92	42316	5000	
W	182	2	165	0.271	ppb	0.271	0.50	3941	100	
Pt	195	2	165	0.002	ppb	0.002	114.31	13	100	
Tl	205	2	165	0.003	ppb	0.003	77.39	320	2000	
Pb	208	2	165	0.122	ppb	0.122	3.57	3080	5000	
Th	232	2	165	0.003	ppb	0.003	121.86	1283	2000	
U	238	2	165	6.285	ppb	6.285	1.10	122627	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	556763	1.25	587600	94.75	60	125	
Sc (IS)	45	2	HMI He	3424829	0.67	3480357	98.40	60	125	
Sc IS)	45	3	No Gas	89703365	0.45	91538318	98.00	60	120	
Ge Internal Standard	72	1	HMI H2	18951888	1.62	19592028	96.73	60	125	
Ge Internal Standard	72	2	HMI He	4061067	1.07	4230722	95.99	60	125	
In Internal standard	115	2	HMI He	13639994	1.55	14034978	97.19	60	125	
Ho-165	165	2	HMI He	35119904	1.03	36783004	95.48	60	125	

Sample Report

Sample Table

Sample Name 280-123545-c-4-b
 Data File Name 191SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T12:09:04-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457923 200.8
 ISTD Ref FileName 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	12.791	ppb	12.791	66.84	5016250	40000	
Be	9	1	6	0.034	ppb	0.034	149.05	12	2000	
B	11	1	6	3170.942	ppb	3170.942	3.36	16531	100	>LDR
Na	23	2	45	68650.598	ppb	68650.598	4.10	39644719	400000	
Mg	24	2	45	9678.462	ppb	9678.462	2.85	2368468	400000	
Al	27	2	45	12.309	ppb	12.309	12.24	1530	400000	
K	39	2	45	2535.963	ppb	2535.963	1.78	708180	400000	
Ca	44	2	45	23587.239	ppb	23587.239	1.24	448001	400000	
V	51	2	72	2.824	ppb	2.824	2.12	18707	2000	
Cr	52	2	72	0.531	ppb	0.531	4.29	3744	5000	
Mn	55	2	72	7.178	ppb	7.178	2.46	17829	10000	
Fe	57	2	72	36.446	ppb	36.446	4.49	4514	400000	
Co	59	2	72	0.085	ppb	0.085	41.17	5208	2000	
Ni	60	2	72	0.869	ppb	0.869	4.75	2284	5000	
Cu	63	2	72	2.767	ppb	2.767	6.09	23673	5000	
Zn	66	2	72	10.731	ppb	10.731	2.08	10387	5000	
As	75	2	72	0.572	ppb	0.572	16.44	516	2000	
Se	78	1	72	0.690	ppb	0.690	25.14	368	2000	
Sr	88	2	45	419.360	ppb	419.360	0.54	1234882	2000	
Zr	90	2	72	61.955	ppb	61.955	2.09	910	1000	
Zr	90	1	72	64.034	ppb	64.034	21.83	2586	1000	
Nb	93	2	72	0.400	ppb	0.400	52.40	7062	200	
Mo	95	2	115	1.780	ppb	1.780	7.17	5718	2000	
Pd	105	2	115	0.018	ppb	0.018	21.90	147	100	
Ag	107	2	115	0.001	ppb	0.001	1691.54	157	100	
Cd	111	2	115	0.015	ppb	0.015	83.22	30	2000	
Sn	120	2	115	0.059	ppb	0.059	40.77	653	2000	
Sb	121	2	115	0.658	ppb	0.658	10.69	2434	1000	
Ba	137	2	115	29.209	ppb	29.209	0.69	36582	5000	
W	182	2	165	0.220	ppb	0.220	15.46	3697	100	
Pt	195	2	165	0.005	ppb	0.005	26.30	27	100	
Tl	205	2	165	0.004	ppb	0.004	80.14	340	2000	
Pb	208	2	165	0.153	ppb	0.153	1.84	3740	5000	
Th	232	2	165	0.004	ppb	0.004	157.43	1340	2000	
U	238	2	165	5.002	ppb	5.002	2.01	100365	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	559675	1.03	587600	95.25	60	125	
Sc (IS)	45	2	HMI He	3342167	0.62	3480357	96.03	60	125	
Sc IS)	45	3	No Gas	90635732	1.31	91538318	99.01	60	120	
Ge Internal Standard	72	1	HMI H2	18630227	1.74	19592028	95.09	60	125	
Ge Internal Standard	72	2	HMI He	4129330	2.79	4230722	97.60	60	125	
In Internal standard	115	2	HMI He	13216977	1.58	14034978	94.17	60	125	
Ho-165	165	2	HMI He	36110977	2.71	36783004	98.17	60	125	

Sample Report

Sample Table

Sample Name 280-123545-c-5-b
 Data File Name 192SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T12:12:35-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457923 200.8
 ISTD Ref FileName 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	7.158	ppb	7.158	58.55	4885147	40000	
Be	9	1	6	0.014	ppb	0.014	219.71	7	2000	
B	11	1	6	2529.751	ppb	2529.751	3.12	13519	100	>LDR
Na	23	2	45	49132.182	ppb	49132.182	2.23	28252807	400000	
Mg	24	2	45	7059.866	ppb	7059.866	0.65	1719485	400000	
Al	27	2	45	19.859	ppb	19.859	6.79	2083	400000	
K	39	2	45	2805.030	ppb	2805.030	1.49	769700	400000	
Ca	44	2	45	18190.093	ppb	18190.093	0.35	343773	400000	
V	51	2	72	3.106	ppb	3.106	5.79	19818	2000	
Cr	52	2	72	0.567	ppb	0.567	7.36	3927	5000	
Mn	55	2	72	3.822	ppb	3.822	4.99	9649	10000	
Fe	57	2	72	48.226	ppb	48.226	8.67	5688	400000	
Co	59	2	72	0.078	ppb	0.078	38.73	5154	2000	
Ni	60	2	72	0.912	ppb	0.912	3.48	2377	5000	
Cu	63	2	72	2.892	ppb	2.892	6.76	24434	5000	
Zn	66	2	72	10.480	ppb	10.480	3.02	10163	5000	
As	75	2	72	0.709	ppb	0.709	4.16	612	2000	
Se	78	1	72	0.348	ppb	0.348	14.12	199	2000	
Sr	88	2	45	301.538	ppb	301.538	1.50	883553	2000	
Zr	90	2	72	60.970	ppb	60.970	34.08	900	1000	
Zr	90	1	72	109.965	ppb	109.965	12.09	3247	1000	
Nb	93	2	72	0.200	ppb	0.200	52.64	5888	200	
Mo	95	2	115	1.462	ppb	1.462	2.47	4831	2000	
Pd	105	2	115	0.021	ppb	0.021	45.43	163	100	
Ag	107	2	115	-0.003	ppb	-0.003	-33.79	130	100	
Cd	111	2	115	0.024	ppb	0.024	123.70	43	2000	
Sn	120	2	115	0.098	ppb	0.098	18.47	833	2000	
Sb	121	2	115	0.765	ppb	0.765	3.02	2870	1000	
Ba	137	2	115	24.101	ppb	24.101	5.06	30820	5000	
W	182	2	165	0.134	ppb	0.134	8.49	3094	100	
Pt	195	2	165	0.001	ppb	0.001	151.13	10	100	
Tl	205	2	165	0.007	ppb	0.007	84.53	377	2000	
Pb	208	2	165	0.178	ppb	0.178	4.85	4190	5000	
Th	232	2	165	-0.002	ppb	-0.002	-295.90	1213	2000	
U	238	2	165	2.642	ppb	2.642	3.51	52936	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	563531	0.72	587600	95.90	60	125	
Sc (IS)	45	2	HMI He	3325198	0.85	3480357	95.54	60	125	
Sc IS)	45	3	No Gas	89696232	0.64	91538318	97.99	60	120	
Ge Internal Standard	72	1	HMI H2	18594901	1.95	19592028	94.91	60	125	
Ge Internal Standard	72	2	HMI He	4128859	2.68	4230722	97.59	60	125	
In Internal standard	115	2	HMI He	13486792	1.57	14034978	96.09	60	125	
Ho-165	165	2	HMI He	35991835	2.56	36783004	97.85	60	125	

Sample Report

Sample Table

Sample Name 280-123545-b-6-f
 Data File Name 193SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T12:16:06-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457923 200.8
 ISTD Ref FileName 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	4.078	ppb	4.078	200.09	4874195	40000	
Be	9	1	6	0.027	ppb	0.027	127.45	10	2000	
B	11	1	6	2288.177	ppb	2288.177	2.30	12308	100	>LDR
Na	23	2	45	43991.124	ppb	43991.124	1.71	25681907	400000	
Mg	24	2	45	6300.107	ppb	6300.107	0.65	1557858	400000	
Al	27	2	45	18.495	ppb	18.495	9.48	2010	400000	
K	39	2	45	2536.375	ppb	2536.375	1.97	715136	400000	
Ca	44	2	45	16910.119	ppb	16910.119	1.73	324403	400000	
V	51	2	72	3.100	ppb	3.100	5.30	19554	2000	
Cr	52	2	72	0.555	ppb	0.555	4.32	3817	5000	
Mn	55	2	72	3.286	ppb	3.286	7.18	8229	10000	
Fe	57	2	72	44.276	ppb	44.276	8.80	5228	400000	
Co	59	2	72	0.090	ppb	0.090	19.53	5191	2000	
Ni	60	2	72	0.956	ppb	0.956	11.59	2444	5000	
Cu	63	2	72	2.889	ppb	2.889	3.12	24124	5000	
Zn	66	2	72	10.176	ppb	10.176	6.70	9750	5000	
As	75	2	72	0.571	ppb	0.571	6.51	510	2000	
Se	78	1	72	0.216	ppb	0.216	31.61	136	2000	
Sr	88	2	45	275.635	ppb	275.635	0.49	819713	2000	
Zr	90	2	72	74.697	ppb	74.697	16.41	1003	1000	
Zr	90	1	72	67.200	ppb	67.200	28.10	2686	1000	
Nb	93	2	72	0.048	ppb	0.048	264.27	4914	200	
Mo	95	2	115	1.316	ppb	1.316	8.55	4391	2000	
Pd	105	2	115	0.016	ppb	0.016	92.31	140	100	
Ag	107	2	115	-0.008	ppb	-0.008	-15.67	83	100	
Cd	111	2	115	0.003	ppb	0.003	160.75	13	2000	
Sn	120	2	115	0.075	ppb	0.075	61.25	737	2000	
Sb	121	2	115	0.728	ppb	0.728	19.48	2744	1000	
Ba	137	2	115	22.351	ppb	22.351	3.75	28729	5000	
W	182	2	165	0.184	ppb	0.184	26.65	3447	100	
Pt	195	2	165	-0.001	ppb	-0.001	0.00	0	100	
Tl	205	2	165	0.005	ppb	0.005	113.89	357	2000	
Pb	208	2	165	0.159	ppb	0.159	9.39	3850	5000	
Th	232	2	165	-0.007	ppb	-0.007	-85.78	1127	2000	
U	238	2	165	2.490	ppb	2.490	6.37	50070	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	561889	0.76	587600	95.62	60	125	
Sc (IS)	45	2	HMI He	3375212	2.33	3480357	96.98	60	125	
Sc IS)	45	3	No Gas	90311934	1.00	91538318	98.66	60	120	
Ge Internal Standard	72	1	HMI H2	19029240	1.43	19592028	97.13	60	125	
Ge Internal Standard	72	2	HMI He	4075330	1.48	4230722	96.33	60	125	
In Internal standard	115	2	HMI He	13550529	1.69	14034978	96.55	60	125	
Ho-165	165	2	HMI He	36138444	3.22	36783004	98.25	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5701467
 Data File Name 194_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T12:19:38-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	118.605	ppb	3.456	98185	100	118.6	90	110	>+/-10%
Li	7	3	45	99.690	ppb	6.565	6315435	100	99.7	90	110	
Be	9	1	6	51.938	ppb	2.747	13387	50	103.9	90	110	
B	11	1	6	30.957	ppb	165.633	1373	50	61.9	90	110	>+/-10%
Na	23	2	45	1011.233	ppb	2.076	675935	1000	101.1	90	110	
Mg	24	2	45	1013.501	ppb	0.675	254822	1000	101.4	90	110	
Al	27	2	45	1006.947	ppb	1.317	77297	1000	100.7	90	110	
K	39	2	45	997.364	ppb	2.355	340738	1000	99.7	90	110	
Ca	44	2	45	972.293	ppb	3.978	19047	1000	97.2	90	110	
V	51	2	72	50.638	ppb	2.989	212013	50	101.3	90	110	
Cr	52	2	72	50.891	ppb	0.725	263420	50	101.8	90	110	
Mn	55	2	72	50.244	ppb	2.072	124206	50	100.5	90	110	
Fe	57	2	72	992.211	ppb	1.046	101612	1000	99.2	90	110	
Co	59	2	72	49.822	ppb	0.116	420296	50	99.6	90	110	
Ni	60	2	72	48.936	ppb	2.960	111020	50	97.9	90	110	
Cu	63	2	72	49.339	ppb	1.951	313476	50	98.7	90	110	
Zn	66	2	72	49.929	ppb	4.595	46583	50	99.9	90	110	
As	75	2	72	47.926	ppb	1.318	33531	50	95.9	90	110	
Se	78	1	72	52.051	ppb	2.700	26077	50	104.1	90	110	
Sr	88	2	45	100.611	ppb	3.251	302231	100	100.6	90	110	
Zr	90	2	72	46.168	ppb	17.851	787	50	92.3	90	110	
Zr	90	1	72	55.578	ppb	8.224	2476	50	111.2	90	110	>+/-10%
Nb	93	2	72	95.470	ppb	1.501	581095	100	95.5	90	110	
Mo	95	2	115	49.666	ppb	4.233	158125	50	99.3	90	110	
Pd	105	2	115	52.045	ppb	1.987	234161	50	104.1	90	110	
Ag	107	2	115	50.618	ppb	3.325	472991	50	101.2	90	110	
Cd	111	2	115	49.003	ppb	4.894	69593	50	98.0	90	110	
Sn	120	2	115	50.141	ppb	3.829	218192	50	100.3	90	110	
Sb	121	2	115	50.236	ppb	4.579	182369	50	100.5	90	110	
Ba	137	2	115	48.474	ppb	3.877	62147	50	96.9	90	110	
W	182	2	165	50.731	ppb	5.103	362149	50	101.5	90	110	
Pt	195	2	165	50.587	ppb	4.413	244475	50	101.2	90	110	
Tl	205	2	165	49.866	ppb	1.946	706008	50	99.7	90	110	
Pb	208	2	165	48.828	ppb	2.639	923424	50	97.7	90	110	
Th	232	2	165	45.347	ppb	2.708	891473	50	90.7	90	110	
U	238	2	165	46.051	ppb	1.715	947619	50	92.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	576345	1.29	587600	98.08	60	125	
Sc (IS)	45	2	HMI He	3408484	1.48	3480357	97.93	60	125	
Sc IS)	45	3	No Gas	91420944	1.35	91538318	99.87	60	120	
Ge Internal Standard	72	1	HMI H2	18740566	0.66	19592028	95.65	60	125	
Ge Internal Standard	72	2	HMI He	4174672	1.46	4230722	98.68	60	125	
In Internal standard	115	2	HMI He	13566329	3.65	14034978	96.66	60	125	
Ho-165	165	2	HMI He	37105045	1.92	36783004	100.88	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5701457
 Data File Name 195_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T12:23:11-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	6.097	ppb	160.0	74647	0.1	>RL
Li	7	3	45	1.478	ppb	269.0	4816120	0.05	>RL
Be	9	1	6	0.064	ppb	119.6	20	0.5	
B	11	1	6	-54.678	ppb	-49.0	950	0.1	
Na	23	2	45	-3.118	ppb	-107.2	79522	25	
Mg	24	2	45	-0.006	ppb	-25183.5	2093	25	
Al	27	2	45	-5.229	ppb	-25.8	223	15	
K	39	2	45	-13.103	ppb	-19.8	89979	50	
Ca	44	2	45	4.617	ppb	35.8	307	25	
V	51	2	72	0.183	ppb	20.7	8135	1	
Cr	52	2	72	-0.012	ppb	-184.2	977	1	
Mn	55	2	72	0.075	ppb	39.9	510	0.5	
Fe	57	2	72	1.056	ppb	37.9	957	25	
Co	59	2	72	0.000	ppb	-24103.7	4504	0.5	
Ni	60	2	72	0.010	ppb	93.4	360	1	
Cu	63	2	72	0.140	ppb	71.4	7515	1	
Zn	66	2	72	0.095	ppb	101.6	703	5	
As	75	2	72	0.019	ppb	143.6	135	1	
Se	78	1	72	0.005	ppb	796.6	29	1	
Sr	88	2	45	0.033	ppb	24.5	333	1	
Zr	90	2	72	-8.057	ppb	-39.7	323	1	
Zr	90	1	72	0.374	ppb	4450.9	1712	1	
Nb	93	2	72	2.579	ppb	10.0	20042	2	>RL
Mo	95	2	115	0.061	ppb	34.9	390	0.5	
Pd	105	2	115	0.045	ppb	41.3	267	1	
Ag	107	2	115	0.002	ppb	231.1	167	1	
Cd	111	2	115	0.005	ppb	400.8	17	0.5	
Sn	120	2	115	0.108	ppb	8.9	863	1	
Sb	121	2	115	0.100	ppb	13.6	460	1	
Ba	137	2	115	0.043	ppb	161.6	227	0.5	
W	182	2	165	0.119	ppb	44.3	3040	1	
Pt	195	2	165	0.005	ppb	20.9	27	1	
Tl	205	2	165	0.013	ppb	26.4	470	0.1	
Pb	208	2	165	0.023	ppb	49.3	1383	0.5	
Th	232	2	165	0.131	ppb	11.2	3814	1	
U	238	2	165	0.021	ppb	15.7	670	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	577764	1.30	587600	98.33	60	125	
Sc (IS)	45	2	HMI He	3399226	2.22	3480357	97.67	60	125	
Sc IS)	45	3	No Gas	89913444	1.66	91538318	98.22	60	120	
Ge Internal Standard	72	1	HMI H2	19273550	1.92	19592028	98.37	60	125	
Ge Internal Standard	72	2	HMI He	4121720	1.68	4230722	97.42	60	125	
In Internal standard	115	2	HMI He	13279341	2.75	14034978	94.62	60	125	
Ho-165	165	2	HMI He	36677840	4.18	36783004	99.71	60	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name CCVL-5701469
 Data File Name 196LCCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T12:26:42-06:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	3	45	10.488	ppb	98.755	4972323	50	21.0	70	130	> +/-30%
Be	9	1	6	0.948	ppb	5.993	245	1	94.8	70	130	
Na	23	2	45	39.989	ppb	13.019	105596	50	80.0	70	130	
Mg	24	2	45	50.500	ppb	1.984	14766	50	101.0	70	130	
Al	27	2	45	45.231	ppb	3.454	4087	50	90.5	70	130	
K	39	2	45	88.165	ppb	5.333	115894	100	88.2	70	130	
Ca	44	2	45	34.095	ppb	14.338	883	50	68.2	70	130	> +/-30%
V	51	2	72	5.280	ppb	3.998	28163	5	105.6	70	130	
Cr	52	2	72	2.049	ppb	5.432	11344	2	102.5	70	130	
Mn	55	2	72	1.086	ppb	4.997	2940	1	108.6	70	130	
Fe	57	2	72	59.236	ppb	4.034	6718	50	118.5	70	130	
Co	59	2	72	1.072	ppb	4.567	13195	1	107.2	70	130	
Ni	60	2	72	1.571	ppb	11.270	3804	1.5	104.7	70	130	
Cu	63	2	72	2.300	ppb	5.849	20562	2	115.0	70	130	
Zn	66	2	72	10.634	ppb	5.630	10180	10	106.3	70	130	
As	75	2	72	4.789	ppb	2.974	3383	5	95.8	70	130	
Se	78	1	72	4.728	ppb	4.881	2480	5	94.6	70	130	
Sr	88	2	45	1.040	ppb	4.020	3374	1	104.0	70	130	
Zr	90	2	72	27.769	ppb	24.691	617	0.5	5553.7	70	130	> +/-30%
Zr	90	1	72	22.363	ppb	12.745	2066	0.5	4472.5	70	130	> +/-30%
Nb	93	2	72	1.352	ppb	12.868	12612	2	67.6	70	130	> +/-30%
Mo	95	2	115	2.032	ppb	10.342	6711	2	101.6	70	130	
Pd	105	2	115	0.025	ppb	29.418	183	1	2.5	70	130	> +/-30%
Ag	107	2	115	4.982	ppb	3.220	47074	5	99.6	70	130	
Cd	111	2	115	1.015	ppb	5.724	1463	1	101.5	70	130	
Sn	120	2	115	9.356	ppb	3.098	41386	10	93.6	70	130	
Sb	121	2	115	1.905	ppb	0.759	7082	2	95.3	70	130	
Ba	137	2	115	0.987	ppb	5.879	1450	1	98.7	70	130	
W	182	2	165	5.006	ppb	0.295	36657	1	500.6	70	130	> +/-30%
Pt	195	2	165	0.008	ppb	29.554	40	1	0.8	70	130	> +/-30%
Tl	205	2	165	0.960	ppb	2.001	13466	1	96.0	70	130	
Pb	208	2	165	1.043	ppb	1.783	20059	1	104.3	70	130	
Th	232	2	165	1.666	ppb	5.006	32980	2	83.3	70	130	
U	238	2	165	0.954	ppb	3.525	19272	1	95.4	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	570161	0.60	587600	97.03	60	125	
Sc (IS)	45	2	HMI He	3425098	1.27	3480357	98.41	60	125	
Sc (IS)	45	3	No Gas	90415225	0.57	91538318	98.77	60	120	
Ge Internal Standard	72	1	HMI H2	19446485	3.24	19592028	99.26	60	125	
Ge Internal Standard	72	2	HMI He	4079431	1.54	4230722	96.42	60	125	
In Internal standard	115	2	HMI He	13667288	2.23	14034978	97.38	60	125	
Ho-165	165	2	HMI He	36003866	2.29	36783004	97.88	60	125	

Sample Report

Sample Table

Sample Name 680-168600-b-1-c
 Data File Name 197SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T12:30:14-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment 457956 200.8
 ISTD Ref FileName 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	4.051	ppb	4.051	165.01	4539131	40000	
Be	9	1	6	0.286	ppb	0.286	14.10	65	2000	
B	11	1	6	748657.133	ppb	748657.133	2.76	3153841	100	>LDR
Na	23	2	45	966954.963	ppb	966954.963	3.91	553470564	400000	
Mg	24	2	45	40463.246	ppb	40463.246	2.94	9823858	400000	
Al	27	2	45	255.318	ppb	255.318	3.73	19528	400000	
K	39	2	45	242054.491	ppb	242054.491	3.48	58502945	400000	
Ca	44	2	45	48853.894	ppb	48853.894	2.43	920938	400000	
V	51	2	72	111.358	ppb	111.358	1.31	416500	2000	
Cr	52	2	72	49.002	ppb	49.002	3.28	230994	5000	
Mn	55	2	72	427.729	ppb	427.729	1.53	960858	10000	
Fe	57	2	72	8372.306	ppb	8372.306	2.53	775042	400000	
Co	59	2	72	56.898	ppb	56.898	3.63	436553	2000	
Ni	60	2	72	91.720	ppb	91.720	1.56	189283	5000	
Cu	63	2	72	1.655	ppb	1.655	5.42	15514	5000	
Zn	66	2	72	20.170	ppb	20.170	2.48	17479	5000	
As	75	2	72	56.665	ppb	56.665	3.81	36079	2000	
Se	78	1	72	1.707	ppb	1.707	13.25	817	2000	
Sr	88	2	45	532.231	ppb	532.231	3.57	1555606	2000	
Zr	90	2	72	26897.237	ppb	26897.237	2.18	207778	1000	>LDR
Zr	90	1	72	35136.276	ppb	35136.276	0.37	479563	1000	>LDR
Nb	93	2	72	4.658	ppb	4.658	8.58	29960	200	
Mo	95	2	115	3.514	ppb	3.514	6.47	10213	2000	
Pd	105	2	115	0.061	ppb	0.061	3.70	310	100	
Ag	107	2	115	0.019	ppb	0.019	56.45	293	100	
Cd	111	2	115	0.071	ppb	0.071	65.21	100	2000	
Sn	120	2	115	3.886	ppb	3.886	4.21	15531	2000	
Sb	121	2	115	3.082	ppb	3.082	3.37	10145	1000	
Ba	137	2	115	252.146	ppb	252.146	4.90	289619	5000	
W	182	2	165	19.944	ppb	19.944	1.86	125730	100	
Pt	195	2	165	0.032	ppb	0.032	8.94	137	100	
Tl	205	2	165	0.010	ppb	0.010	68.89	380	2000	
Pb	208	2	165	0.420	ppb	0.420	3.76	7781	5000	
Th	232	2	165	0.386	ppb	0.386	5.89	7749	2000	
U	238	2	165	2.324	ppb	2.324	0.75	42015	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	487031	0.62	587600	82.88	60	125	
Sc (IS)	45	2	HMI He	3318833	1.92	3480357	95.36	60	125	
Sc IS)	45	3	No Gas	84102561	0.52	91538318	91.88	60	120	
Ge Internal Standard	72	1	HMI H2	17404746	1.59	19592028	88.84	60	125	
Ge Internal Standard	72	2	HMI He	3802370	1.57	4230722	89.88	60	125	
In Internal standard	115	2	HMI He	12182127	2.98	14034978	86.80	60	125	
Ho-165	165	2	HMI He	32437741	0.54	36783004	88.19	60	125	

Sample Report

Sample Table

Sample Name RINSE
 Data File Name 198SMPL.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T12:33:45-06:00
 Analyst Denver Metals
 Sample Type Sample
 Dilution 1
 Comment
 ISTD Ref FileName 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	units	FinalConc	Conc %RSD	CPS	LDR	QC Flag
Li	7	3	45	-5.862	ppb	-5.862	-112.61	4706901	40000	
Be	9	1	6	0.001	ppb	0.001	3419.60	3	2000	
B	11	1	6	9537.757	ppb	9537.757	2.84	47238	100	>LDR
Na	23	2	45	490.357	ppb	490.357	7.24	376011	400000	
Mg	24	2	45	13.619	ppb	13.619	9.54	5588	400000	
Al	27	2	45	-1.816	ppb	-1.816	-22.60	493	400000	
K	39	2	45	77.408	ppb	77.408	29.55	114560	400000	
Ca	44	2	45	14.762	ppb	14.762	5.38	513	400000	
V	51	2	72	0.321	ppb	0.321	21.07	8956	2000	
Cr	52	2	72	0.037	ppb	0.037	50.55	1263	5000	
Mn	55	2	72	0.306	ppb	0.306	6.03	1107	10000	
Fe	57	2	72	15.404	ppb	15.404	14.06	2467	400000	
Co	59	2	72	0.022	ppb	0.022	132.25	4834	2000	
Ni	60	2	72	0.140	ppb	0.140	54.04	670	5000	
Cu	63	2	72	0.986	ppb	0.986	9.56	13110	5000	
Zn	66	2	72	0.699	ppb	0.699	18.70	1290	5000	
As	75	2	72	0.042	ppb	0.042	126.89	156	2000	
Se	78	1	72	0.029	ppb	0.029	80.65	41	2000	
Sr	88	2	45	0.146	ppb	0.146	10.93	683	2000	
Zr	90	2	72	35.278	ppb	35.278	22.85	707	1000	
Zr	90	1	72	49.922	ppb	49.922	21.38	2436	1000	
Nb	93	2	72	0.027	ppb	0.027	311.53	4991	200	
Mo	95	2	115	-0.004	ppb	-0.004	-522.51	193	2000	
Pd	105	2	115	0.010	ppb	0.010	110.83	117	100	
Ag	107	2	115	0.002	ppb	0.002	269.39	173	100	
Cd	111	2	115	0.000	ppb	0.000	7922.01	10	2000	
Sn	120	2	115	0.051	ppb	0.051	30.56	643	2000	
Sb	121	2	115	0.019	ppb	0.019	139.89	180	1000	
Ba	137	2	115	0.071	ppb	0.071	108.32	273	5000	
W	182	2	165	0.039	ppb	0.039	94.26	2420	100	
Pt	195	2	165	0.002	ppb	0.002	151.23	13	100	
Tl	205	2	165	0.002	ppb	0.002	273.50	307	2000	
Pb	208	2	165	0.009	ppb	0.009	34.81	1093	5000	
Th	232	2	165	-0.009	ppb	-0.009	-106.09	1070	2000	
U	238	2	165	-0.002	ppb	-0.002	-170.99	193	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	558393	0.22	587600	95.03	60	125	
Sc (IS)	45	2	HMI He	3467627	1.87	3480357	99.63	60	125	
Sc IS)	45	3	No Gas	89814960	0.31	91538318	98.12	60	120	
Ge Internal Standard	72	1	HMI H2	19095232	4.76	19592028	97.46	60	125	
Ge Internal Standard	72	2	HMI He	4248904	1.61	4230722	100.43	60	125	
In Internal standard	115	2	HMI He	13790525	0.69	14034978	98.26	60	125	
Ho-165	165	2	HMI He	35731225	1.32	36783004	97.14	60	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV-5701467
 Data File Name 199_CCV.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T12:37:17-06:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	45	106.059	ppb	1.841	97623	100	106.1	90	110	
Li	7	3	45	100.730	ppb	5.404	6328747	100	100.7	90	110	
Be	9	1	6	53.854	ppb	1.795	13650	50	107.7	90	110	
B	11	1	6	2870.972	ppb	4.571	15267	50	5741.9	90	110	>+ -10%
Na	23	2	45	1193.359	ppb	0.427	794225	1000	119.3	90	110	>+ -10%
Mg	24	2	45	1031.807	ppb	2.565	262968	1000	103.2	90	110	
Al	27	2	45	1026.613	ppb	2.807	79872	1000	102.7	90	110	
K	39	2	45	1064.851	ppb	1.677	362523	1000	106.5	90	110	
Ca	44	2	45	1001.792	ppb	1.376	19888	1000	100.2	90	110	
V	51	2	72	48.299	ppb	1.609	212935	50	96.6	90	110	
Cr	52	2	72	49.296	ppb	2.308	268194	50	98.6	90	110	
Mn	55	2	72	49.359	ppb	1.892	128286	50	98.7	90	110	
Fe	57	2	72	985.584	ppb	1.090	106109	1000	98.6	90	110	
Co	59	2	72	48.496	ppb	1.265	430091	50	97.0	90	110	
Ni	60	2	72	47.661	ppb	1.425	113714	50	95.3	90	110	
Cu	63	2	72	48.369	ppb	1.313	323173	50	96.7	90	110	
Zn	66	2	72	49.226	ppb	2.564	48305	50	98.5	90	110	
As	75	2	72	47.414	ppb	1.066	34871	50	94.8	90	110	
Se	78	1	72	51.531	ppb	1.741	26192	50	103.1	90	110	
Sr	88	2	45	102.114	ppb	1.908	311099	100	102.1	90	110	
Zr	90	2	72	135.074	ppb	7.970	1617	50	270.1	90	110	>+ -10%
Zr	90	1	72	147.633	ppb	12.268	3884	50	295.3	90	110	>+ -10%
Nb	93	2	72	94.107	ppb	2.968	602029	100	94.1	90	110	
Mo	95	2	115	50.749	ppb	3.201	166135	50	101.5	90	110	
Pd	105	2	115	52.203	ppb	2.741	241389	50	104.4	90	110	
Ag	107	2	115	51.167	ppb	3.286	491493	50	102.3	90	110	
Cd	111	2	115	50.133	ppb	3.285	73212	50	100.3	90	110	
Sn	120	2	115	49.076	ppb	1.584	219643	50	98.2	90	110	
Sb	121	2	115	50.263	ppb	1.715	187700	50	100.5	90	110	
Ba	137	2	115	50.808	ppb	3.032	66983	50	101.6	90	110	
W	182	2	165	51.185	ppb	0.432	360729	50	102.4	90	110	
Pt	195	2	165	50.741	ppb	2.444	242071	50	101.5	90	110	
Tl	205	2	165	49.617	ppb	3.908	693274	50	99.2	90	110	
Pb	208	2	165	51.033	ppb	2.289	952460	50	102.1	90	110	
Th	232	2	165	45.585	ppb	1.593	884453	50	91.2	90	110	
U	238	2	165	46.977	ppb	1.666	953926	50	94.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	566655	0.40	587600	96.44	60	125	
Sc (IS)	45	2	HMI He	3457094	3.17	3480357	99.33	60	125	
Sc IS)	45	3	No Gas	91387187	1.37	91538318	99.83	60	120	
Ge Internal Standard	72	1	HMI H2	19018092	2.19	19592028	97.07	60	125	
Ge Internal Standard	72	2	HMI He	4388134	1.86	4230722	103.72	60	125	
In Internal standard	115	2	HMI He	13943523	2.86	14034978	99.35	60	125	
Ho-165	165	2	HMI He	36610500	0.51	36783004	99.53	60	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB-5701457
 Data File Name 200_CCB.d
 Data Path Name D:\Agilent\ICPMH\1\DATA\051419.b
 Acq Date Time 2019-05-15T12:41:02-06:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 183CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Step	IS	Conc	Units	Conc %RSD	CPS	Upper Limit	QC Flag
Li	7	1	45	2.625	ppb	439.2	73884	0.1	>RL
Li	7	3	45	-7.584	ppb	-85.1	4743208	0.05	
Be	9	1	6	0.020	ppb	282.8	8	0.5	
B	11	1	6	1979.306	ppb	4.7	10903	0.1	>RL
Na	23	2	45	117.168	ppb	3.8	151505	25	>RL
Mg	24	2	45	2.759	ppb	12.6	2807	25	
Al	27	2	45	-4.146	ppb	-11.0	310	15	
K	39	2	45	34.710	ppb	8.1	102778	50	
Ca	44	2	45	0.166	ppb	1700.4	223	25	
V	51	2	72	0.001	ppb	15046.0	7587	1	
Cr	52	2	72	0.034	ppb	37.0	1240	1	
Mn	55	2	72	0.249	ppb	41.8	957	0.5	
Fe	57	2	72	3.117	ppb	39.2	1193	25	
Co	59	2	72	0.032	ppb	184.5	4884	0.5	
Ni	60	2	72	0.078	ppb	63.8	527	1	
Cu	63	2	72	0.241	ppb	9.9	8339	1	
Zn	66	2	72	0.230	ppb	29.6	847	5	
As	75	2	72	0.051	ppb	62.8	162	1	
Se	78	1	72	0.025	ppb	212.4	39	1	
Sr	88	2	45	0.015	ppb	173.7	283	1	
Zr	90	2	72	-3.113	ppb	-235.8	373	1	
Zr	90	1	72	23.125	ppb	12.6	2059	1	>RL
Nb	93	2	72	2.691	ppb	7.9	21237	2	>RL
Mo	95	2	115	0.050	ppb	52.8	373	0.5	
Pd	105	2	115	0.038	ppb	10.5	250	1	
Ag	107	2	115	0.001	ppb	558.8	167	1	
Cd	111	2	115	0.023	ppb	96.5	43	0.5	
Sn	120	2	115	0.124	ppb	24.1	977	1	
Sb	121	2	115	0.125	ppb	16.5	580	1	
Ba	137	2	115	0.001	ppb	3026.0	183	0.5	
W	182	2	165	0.097	ppb	13.1	2804	1	
Pt	195	2	165	0.003	ppb	153.1	17	1	
Tl	205	2	165	0.024	ppb	16.1	610	0.1	
Pb	208	2	165	0.043	ppb	32.9	1700	0.5	
Th	232	2	165	0.209	ppb	12.2	5154	1	
U	238	2	165	0.038	ppb	20.3	980	0.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li-6 Internal Standard	6	1	HMI H2	566909	0.43	587600	96.48	60	125	
Sc (IS)	45	2	HMI He	3431619	0.34	3480357	98.60	60	125	
Sc IS)	45	3	No Gas	90988012	0.97	91538318	99.40	60	120	
Ge Internal Standard	72	1	HMI H2	19280088	4.56	19592028	98.41	60	125	
Ge Internal Standard	72	2	HMI He	4225132	2.40	4230722	99.87	60	125	
In Internal standard	115	2	HMI He	13935143	0.93	14034978	99.29	60	125	
Ho-165	165	2	HMI He	35555963	4.28	36783004	96.66	60	125	

Report Generated By CETAC QuickTrace**Analyst:** denmet**Worksheet file:** C:\Program Files\QuickTrace\Worksheets\190513-33A.wsz**Date Started:** 5/13/2019 2:58:13 PM**Comment:**

Results

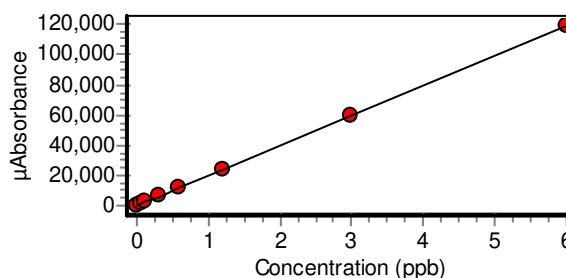
Sample Name	Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags	Wt. ODF	Vol.
IC 280-457940/1-A	STD	05/13/19 04:14:02 pm	0.000	366	4.17		1.00 1.00	1.00
IC 280-457940/2-A	STD	05/13/19 04:16:15 pm	0.060	1477	2.43		1.00 1.00	1.00
IC 280-457940/3-A	STD	05/13/19 04:18:28 pm	0.120	2621	0.98		1.00 1.00	1.00
IC 280-457940/4-A	STD	05/13/19 04:20:42 pm	0.300	6162	2.63		1.00 1.00	1.00
IC 280-457940/5-A	STD	05/13/19 04:22:56 pm	0.600	12090	0.86		1.00 1.00	1.00
IC 280-457940/6-A	STD	05/13/19 04:25:11 pm	1.200	23585	0.93		1.00 1.00	1.00
IC 280-457940/7-A	STD	05/13/19 04:27:26 pm	3.000	59333	0.88		1.00 1.00	1.00
IC 280-457940/8-A	STD	05/13/19 04:29:42 pm	6.000	118966	0.75		1.00 1.00	1.00

CalibrationEquation: $A = 199.832 + 19769.520C$

R2: 0.99998

SEE: 186.1613

Flags:



ICV 280-457940/9-A	ICV	05/13/19 04:33:00 pm	2.364	46943	0.86		1.00 1.00	1.00
% Recovery	98.52							
ICB 280-457940/10-A	ICB	05/13/19 04:35:12 pm	0.004	271	4.37		1.00 1.00	1.00

Sample Name	Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags	Wt. ODF	Vol.
CRA 280-457940/11-A % Recovery 101.92	CRDL	05/13/19 04:37:25 pm	0.122	2618	1.78		1.00 1.00	1.00
CCV 280-457940/12-A % Recovery 100.15	CCV	05/13/19 04:39:40 pm	3.005	59598	0.88		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/13/19 04:41:52 pm	0.004	272	4.65		1.00 1.00	1.00
MB 280-457904/1-A	UNK	05/13/19 04:44:04 pm	0.000	195	6.55	s	1.00 1.00	1.00
LCS 280-457904/2-A	UNK	05/13/19 04:46:17 pm	2.986	59239	1.20		1.00 1.00	1.00
LCSD 280-457904/3-A	UNK	05/13/19 04:48:29 pm	3.028	60066	0.53		1.00 1.00	1.00
280-123440-A-10-B@250	UNK	05/13/19 04:50:42 pm	6.644	131545	0.72	O	1.00 1.00	1.00
280-123440-A-13-B@100	UNK	05/13/19 04:53:25 pm	3.833	75966	0.19		1.00 1.00	1.00
280-123440-A-13-Bsd@500	UNK	05/13/19 04:57:31 pm	0.726	14549	0.28		1.00 1.00	1.00
280-123440-A-13-C MS@100	UNK	05/13/19 04:59:45 pm	3.892	77133	1.20		1.00 1.00	1.00
280-123440-A-13-D MSD@100	UNK	05/13/19 05:01:59 pm	4.408	87344	0.63		1.00 1.00	1.00
280-123440-A-13-Bpds@100	UNK	05/13/19 05:04:13 pm	6.769	134028	0.86	O	1.00 1.00	1.00
280-123440-A-10-B@500	UNK	05/13/19 05:07:01 pm	3.466	68729	0.33		1.00 1.00	1.00
CCV 280-457940/12-A % Recovery 102.97	CCV	05/13/19 05:09:17 pm	3.089	61271	0.43		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/13/19 05:11:29 pm	0.059	1366	30.80	s	1.00 1.00	1.00
MB 280-457910/1-A	UNK	05/13/19 05:13:43 pm	-0.031	-408	0.88		1.00 1.00	1.00
LCS 280-457910/2-A	UNK	05/13/19 05:15:58 pm	2.913	57780	1.04		1.00 1.00	1.00

Sample Name	Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags	Wt. ODF	Vol.
280-123318-A-1-D	UNK	05/13/19 05:18:13 pm	0.049	1176	29.09	s	1.00 1.00	1.00
280-123318-A-1-E MS	UNK	05/13/19 05:20:25 pm	3.000	59510	1.45		1.00 1.00	1.00
280-23318-A-1-F MSD	UNK	05/13/19 05:22:37 pm	2.766	54888	0.33		1.00 1.00	1.00
680-168600-B-1-B	UNK	05/13/19 05:24:49 pm	0.016	514	33.64	s	1.00 1.00	1.00
280-123213-F-1-D	UNK	05/13/19 05:27:02 pm	0.000	202	3.72		1.00 1.00	1.00
280-123256-B-1-D	UNK	05/13/19 05:29:14 pm	0.000	193	4.89		1.00 1.00	1.00
280-123529-E-2-A	UNK	05/13/19 05:31:27 pm	-0.028	-351	1.98		1.00 1.00	1.00
CCV 280-457940/12-A % Recovery 101.12	CCV	05/13/19 05:33:43 pm	3.034	60174	0.81		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/13/19 05:35:55 pm	0.045	1083	36.26	s	1.00 1.00	1.00
MB 280-457935/1-A	UNK	05/13/19 05:38:08 pm	-0.032	-434	1.33		1.00 1.00	1.00
LCS 280-457935/2-A	UNK	05/13/19 05:40:22 pm	2.885	57233	1.12		1.00 1.00	1.00
280-123155-E-1-S	UNK	05/13/19 05:42:36 pm	0.048	1147	32.59	s	1.00 1.00	1.00
280-123155-E-2-E	UNK	05/13/19 05:44:50 pm	-0.034	-468	0.76		1.00 1.00	1.00
280-123155-E-3-C	UNK	05/13/19 05:47:05 pm	-0.033	-462	1.15		1.00 1.00	1.00
280-123155-E-4-C	UNK	05/13/19 05:49:19 pm	-0.033	-461	2.06		1.00 1.00	1.00
280-123155-E-5-C	UNK	05/13/19 05:51:31 pm	-0.035	-497	0.80		1.00 1.00	1.00
280-123155-E-6-C	UNK	05/13/19 05:53:43 pm	-0.033	-460	1.21		1.00 1.00	1.00

Sample Name	Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags	Wt. ODF	Vol.
280-123155-E-7-C	UNK	05/13/19 05:55:55 pm	-0.031	-414	1.87		1.00 1.00	1.00
280-123155-E-8-C	UNK	05/13/19 05:58:08 pm	-0.033	-461	1.39		1.00 1.00	1.00
CCV 280-457940/12-A % Recovery 101.02	CCV	05/13/19 06:00:23 pm	3.030	60110	1.06		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/13/19 06:02:35 pm	0.054	1274	31.49	s	1.00 1.00	1.00
280-123155-E-9-C	UNK	05/13/19 06:04:48 pm	-0.035	-495	1.22		1.00 1.00	1.00
280-123155-E-10-C	UNK	05/13/19 06:07:01 pm	-0.032	-434	1.54		1.00 1.00	1.00
280-123155-E-11-C	UNK	05/13/19 06:09:14 pm	-0.035	-490	1.60		1.00 1.00	1.00
280-123155-E-12-C	UNK	05/13/19 06:11:28 pm	-0.033	-453	1.62		1.00 1.00	1.00
280-123155-E-12-D MS	UNK	05/13/19 06:13:42 pm	2.963	58770	0.91		1.00 1.00	1.00
280-123155-E-12-E MSD	UNK	05/13/19 06:15:56 pm	2.958	58679	0.39		1.00 1.00	1.00
280-123156-T-1-C	UNK	05/13/19 06:18:11 pm	0.046	1115	36.78	s	1.00 1.00	1.00
280-123214-E-1-C	UNK	05/13/19 06:20:31 pm	-0.113	-2037	0.25		1.00 1.00	1.00
280-123214-E-2-C	UNK	05/13/19 06:22:43 pm	-0.002	161	4.89		1.00 1.00	1.00
280-123214-E-1-C	UNK	05/13/19 06:26:35 pm	-0.001	186	2.18		1.00 1.00	1.00
CCV 280-457940/12-A % Recovery 100.63	CCV	05/13/19 06:28:51 pm	3.019	59885	0.90		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/13/19 06:31:03 pm	0.002	245	4.12		1.00 1.00	1.00
LB2 280-457229/1-C	UNK	05/13/19 06:33:15 pm	0.012	431	2.03		1.00 1.00	1.00

Sample Name	Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags	Wt. ODF	Vol.
LCS 280-457229/2-C	UNK	05/13/19 06:35:27 pm	2.967	58863	0.81		1.00 1.00	1.00
280-123326-A-1-M	UNK	05/13/19 06:37:39 pm	0.008	355	2.82		1.00 1.00	1.00
280-123326-A-1-N MS	UNK	05/13/19 06:39:52 pm	2.344	46548	1.33		1.00 1.00	1.00
280-123326-A-1-O MSD	UNK	05/13/19 06:42:05 pm	2.271	45094	1.01		1.00 1.00	1.00
CCV 280-457940/12-A % Recovery 99.44	CCV	05/13/19 06:44:21 pm	2.983	59174	0.60		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/13/19 06:46:33 pm	0.004	275	3.50		1.00 1.00	1.00
MB 280-457926/1-A	UNK	05/13/19 06:48:46 pm	-0.002	153	6.78 s		1.00 1.00	1.00
LCS 280-457926/2-A	UNK	05/13/19 06:51:00 pm	2.822	55985	0.61		1.00 1.00	1.00
LCSD 280-457926/3-A	UNK	05/13/19 06:53:14 pm	2.867	56870	0.93		1.00 1.00	1.00
280-123566-A-2-A	UNK	05/13/19 06:55:28 pm	0.020	589	0.39		1.00 1.00	1.00
280-123510-A-1-A	UNK	05/13/19 06:57:42 pm	-0.002	153	3.71		1.00 1.00	1.00
280-123510-A-1-B MS	UNK	05/13/19 06:59:57 pm	2.960	58718	0.79		1.00 1.00	1.00
CCV 280-457940/12-A % Recovery 100.63	CCV	05/13/19 07:02:13 pm	3.019	59882	0.87		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/13/19 07:04:25 pm	0.004	283	3.69		1.00 1.00	1.00
280-123510-A-1-C MSD	UNK	05/13/19 07:06:37 pm	3.052	60534	0.84		1.00 1.00	1.00
280-123510-A-2-A	UNK	05/13/19 07:08:50 pm	-0.002	165	5.06 s		1.00 1.00	1.00
280-123510-A-5-A	UNK	05/13/19 07:11:02 pm	-0.001	186	5.62 s		1.00 1.00	1.00

Sample Name	Type	Date/Time	Conc (ppb)	µAbs	%RSD	Flags	Wt. ODF	Vol.
280-122974-A-1-A	UNK	05/13/19 07:13:15 pm	-0.002	164	2.42		1.00 1.00	1.00
280-122974-A-2-A	UNK	05/13/19 07:15:27 pm	0.010	398	2.38		1.00 1.00	1.00
490-173250-A-2-C	UNK	05/13/19 07:17:40 pm	-0.001	190	6.54	s	1.00 1.00	1.00
280-123248-E-2-B	UNK	05/13/19 07:19:54 pm	-0.009	26	28.03		1.00 1.00	1.00
280-123258-E-2-B	UNK	05/13/19 07:22:08 pm	0.094	2054	1.05		1.00 1.00	1.00
280-123562-A-2-D	UNK	05/13/19 07:24:21 pm	0.052	1232	1.32		1.00 1.00	1.00
CCV 280-457940/12-A % Recovery 100.15	CCV	05/13/19 07:26:37 pm	3.004	59595	1.30		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/13/19 07:28:49 pm	0.005	300	3.35		1.00 1.00	1.00
LB 280-457530/1-B	UNK	05/13/19 07:31:03 pm	0.001	219	2.92		1.00 1.00	1.00
LCS 280-457530/2-B	UNK	05/13/19 07:33:18 pm	2.827	56095	0.73		1.00 1.00	1.00
280-123440-A-1-H@50	UNK	05/13/19 07:35:33 pm	0.004	279	4.32		1.00 1.00	1.00
280-123440-B-2-B@50	UNK	05/13/19 07:37:45 pm	0.004	288	4.55		1.00 1.00	1.00
280-123440-A-3-D@50	UNK	05/13/19 07:39:58 pm	0.006	315	3.08		1.00 1.00	1.00
280-123440-B-4-B@50	UNK	05/13/19 07:42:11 pm	0.006	325	2.06		1.00 1.00	1.00
280-123440-A-5-D@50	UNK	05/13/19 07:44:24 pm	0.079	1764	0.87		1.00 1.00	1.00
280-123440-A-6-D@50	UNK	05/13/19 07:46:37 pm	0.005	294	3.33		1.00 1.00	1.00
280-123440-A-7-D@50	UNK	05/13/19 07:48:50 pm	6.113	121048	0.99	O	1.00 1.00	1.00

Sample Name	Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags	Wt. ODF	Vol.
280-123440-A-8-D@50	UNK	05/13/19 07:52:16 pm	0.004	274	2.01		1.00 1.00	1.00
CCV 280-457940/12-A % Recovery 100.40	CCV	05/13/19 07:54:32 pm	3.012	59746	0.95		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/13/19 07:56:44 pm	0.004	281	2.76		1.00 1.00	1.00
280-123440-A-14-D@50	UNK	05/13/19 07:58:57 pm	0.015	504	3.95		1.00 1.00	1.00
280-123440-A-15-D@50	UNK	05/13/19 08:01:11 pm	0.050	1183	1.83		1.00 1.00	1.00
280-123440-A-16-D@50	UNK	05/13/19 08:03:25 pm	0.008	352	3.28		1.00 1.00	1.00
280-123440-A-19-D@50	UNK	05/13/19 08:05:40 pm	0.033	845	1.28		1.00 1.00	1.00
280-123440-A-20-D@50	UNK	05/13/19 08:07:55 pm	0.005	306	3.73		1.00 1.00	1.00
280-123440-A-21-D@50	UNK	05/13/19 08:10:08 pm	0.009	384	2.72		1.00 1.00	1.00
280-123440-A-22-D@50	UNK	05/13/19 08:12:21 pm	0.011	418	1.40		1.00 1.00	1.00
280-123440-A-23-D@50	UNK	05/13/19 08:14:34 pm	0.011	416	2.44		1.00 1.00	1.00
280-123440-A-24-D@50	UNK	05/13/19 08:16:48 pm	0.008	352	3.01		1.00 1.00	1.00
CCV 280-457940/12-A % Recovery 100.95	CCV	05/13/19 08:19:03 pm	3.028	60070	0.97		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/13/19 08:21:15 pm	0.004	277	4.15		1.00 1.00	1.00
280-123440-A-25-D@50	UNK	05/13/19 08:23:28 pm	0.006	316	1.69		1.00 1.00	1.00
280-123440-A-25-Dsd@250	UNK	05/13/19 08:25:42 pm	0.006	309	4.03		1.00 1.00	1.00
280-123440-A-25-E MS@50	UNK	05/13/19 08:27:55 pm	0.065	1488	1.33		1.00 1.00	1.00

Sample Name	Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags	Wt. ODF	Vol.
280-123440-A-25-F MSD@50	UNK	05/13/19 08:30:09 pm	0.066	1495	1.56		1.00 1.00	1.00
280-123440-A-25-Dpds@50	UNK	05/13/19 08:32:23 pm	2.894	57405	0.86		1.00 1.00	1.00
LB 280-457227/1-B	UNK	05/13/19 08:34:37 pm	0.027	741	1.75		1.00 1.00	1.00
LCS 280-457227/2-B	UNK	05/13/19 08:36:51 pm	2.983	59183	0.72		1.00 1.00	1.00
280-123294-A-19-D	UNK	05/13/19 08:39:06 pm	0.069	1573	0.99		1.00 1.00	1.00
280-123294-A-20-D	UNK	05/13/19 08:41:20 pm	0.047	1132	1.92		1.00 1.00	1.00
280-123294-A-21-D	UNK	05/13/19 08:43:33 pm	0.067	1524	1.30		1.00 1.00	1.00
CCV 280-457940/12-A % Recovery 100.26	CCV	05/13/19 08:45:49 pm	3.008	59663	0.65		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/13/19 08:48:01 pm	0.003	262	4.14		1.00 1.00	1.00
280-123294-A-22-F	UNK	05/13/19 08:50:14 pm	0.101	2191	0.97		1.00 1.00	1.00
280-123294-A-22-Fsd@5	UNK	05/13/19 08:52:28 pm	0.027	733	1.89		1.00 1.00	1.00
280-123294-A-22-G MS	UNK	05/13/19 08:54:41 pm	2.949	58509	1.14		1.00 1.00	1.00
280-123294-A-22-H MSD	UNK	05/13/19 08:56:54 pm	3.024	59977	0.64		1.00 1.00	1.00
280-123294-A-22-Fpds	UNK	05/13/19 08:59:08 pm	2.945	58427	0.85		1.00 1.00	1.00
MB 280-457916/1-A	UNK	05/13/19 09:01:22 pm	-0.003	148	3.44		1.00 1.00	1.00
LCS 280-457916/2-A	UNK	05/13/19 09:03:36 pm	2.640	52392	0.84		1.00 1.00	1.00
LCSD 280-457916/3-A	UNK	05/13/19 09:05:50 pm	2.882	57186	0.80		1.00 1.00	1.00

Sample Name	Type	Date/Time	Conc (ppb)	µAbs	%RSD	Flags	Wt. ODF	Vol.
280-123364-O-1-J	UNK	05/13/19 09:08:04 pm	-0.002	169	4.01		1.00 1.00	1.00
280-123364-O-1-J	UNK	05/13/19 09:10:19 pm	0.004	281	1.71		1.00 1.00	1.00
CCV 280-457940/12-A % Recovery 99.92	CCV	05/13/19 09:12:35 pm	2.998	59462	0.91		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/13/19 09:14:47 pm	0.004	281	3.95		1.00 1.00	1.00
280-123364-O-1-K MS	UNK	05/13/19 09:17:00 pm	2.584	51293	1.63		1.00 1.00	1.00
280-123364-O-1-L MSD	UNK	05/13/19 09:19:14 pm	2.631	52220	0.85		1.00 1.00	1.00
280-123364-O-1-J	UNK	05/13/19 09:21:28 pm	-0.001	190	3.53		1.00 1.00	1.00
280-123364-P-2-A	UNK	05/13/19 09:23:42 pm	-0.001	185	4.56		1.00 1.00	1.00
280-123364-P-3-A	UNK	05/13/19 09:25:55 pm	-0.001	184	4.58		1.00 1.00	1.00
280-123183-A-1-G	UNK	05/13/19 09:28:09 pm	-0.001	178	4.53		1.00 1.00	1.00
280-123183-A-1-H MS	UNK	05/13/19 09:30:23 pm	2.858	56699	0.87		1.00 1.00	1.00
280-123183-A-1-I MSD	UNK	05/13/19 09:32:37 pm	2.432	48278	1.03		1.00 1.00	1.00
280-123183-A-2-C	UNK	05/13/19 09:34:51 pm	-0.004	121	6.41 s		1.00 1.00	1.00
280-123221-E-2-C	UNK	05/13/19 09:37:05 pm	-0.002	159	3.99		1.00 1.00	1.00
CCV 280-457940/12-A % Recovery 99.49	CCV	05/13/19 09:39:20 pm	2.985	59207	0.87		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/13/19 09:41:32 pm	0.003	256	3.58		1.00 1.00	1.00
280-123221-J-4-C	UNK	05/13/19 09:43:47 pm	0.000	198	4.66		1.00 1.00	1.00

Sample Name	Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags	Wt. ODF	Vol.
280-123221-F-5-C	UNK	05/13/19 09:46:02 pm	-0.002	152	8.96	s	1.00 1.00	1.00
280-123221-J-7-C	UNK	05/13/19 09:48:16 pm	-0.004	118	5.85	s	1.00 1.00	1.00
280-123221-C-8-C	UNK	05/13/19 09:50:30 pm	0.000	196	5.45	s	1.00 1.00	1.00
280-123221-C-9-C	UNK	05/13/19 09:52:44 pm	-0.003	139	6.68	s	1.00 1.00	1.00
280-123221-C-10-C	UNK	05/13/19 09:54:58 pm	-0.001	171	0.61		1.00 1.00	1.00
280-123221-C-11-C	UNK	05/13/19 09:57:12 pm	-0.002	151	8.58	s	1.00 1.00	1.00
280-123221-C-12-C	UNK	05/13/19 09:59:26 pm	-0.001	175	2.94		1.00 1.00	1.00
280-123221-C-13-C	UNK	05/13/19 10:01:40 pm	0.001	228	3.66		1.00 1.00	1.00
CCV 280-457940/12-A % Recovery 99.39	CCV	05/13/19 10:03:55 pm	2.982	59144	0.91		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/13/19 10:06:07 pm	0.002	235	2.90		1.00 1.00	1.00
LB 280-457665/1-B	UNK	05/13/19 10:08:22 pm	0.001	216	3.33		1.00 1.00	1.00
LCS 280-457665/2-B	UNK	05/13/19 10:10:36 pm	2.796	55465	0.78		1.00 1.00	1.00
280-123440-A-27-B@50	UNK	05/13/19 10:12:50 pm	0.034	866	2.03		1.00 1.00	1.00
280-123440-A-29-B@50	UNK	05/13/19 10:15:04 pm	0.008	354	1.33		1.00 1.00	1.00
280-123440-A-30-D@50	UNK	05/13/19 10:17:19 pm	0.019	573	2.09		1.00 1.00	1.00
280-123440-A-30-Dsd@250	UNK	05/13/19 10:19:34 pm	0.007	339	2.35		1.00 1.00	1.00
280-123440-A-30-E MS@50	UNK	05/13/19 10:21:48 pm	0.076	1706	1.12		1.00 1.00	1.00

Sample Name	Type	Date/Time	Conc (ppb)	µAbs	%RSD	Flags	Wt. ODF	Vol.
280-123440-A-30-F MSD@50	UNK	05/13/19 10:24:03 pm	0.078	1738	1.24		1.00 1.00	1.00
280-123440-A-30-Dpds@50	UNK	05/13/19 10:26:17 pm	2.839	56324	1.18		1.00 1.00	1.00
280-123440-A-47-C@50	UNK	05/13/19 10:28:32 pm	0.006	312	2.61		1.00 1.00	1.00
CCV 280-457940/12-A % Recovery 99.49	CCV	05/13/19 10:30:47 pm	2.985	59204	0.90		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/13/19 10:32:59 pm	0.003	264	3.47		1.00 1.00	1.00
280-123440-A-48-C@50	UNK	05/13/19 10:35:14 pm	0.005	305	3.42		1.00 1.00	1.00
280-123440-A-49-C@50	UNK	05/13/19 10:37:28 pm	0.027	728	2.06		1.00 1.00	1.00
280-123440-A-50-C@50	UNK	05/13/19 10:39:43 pm	0.006	324	2.51		1.00 1.00	1.00
280-123440-A-51-C@50	UNK	05/13/19 10:41:57 pm	0.007	340	2.75		1.00 1.00	1.00
280-123440-B-52-C@50	UNK	05/13/19 10:44:12 pm	0.015	496	1.56		1.00 1.00	1.00
280-123440-B-53-C@50	UNK	05/13/19 10:46:26 pm	0.012	445	2.17		1.00 1.00	1.00
280-123440-B-54-C@50	UNK	05/13/19 10:48:41 pm	0.013	453	2.47		1.00 1.00	1.00
280-123440-A-55-G@50	UNK	05/13/19 10:50:56 pm	0.008	358	2.57		1.00 1.00	1.00
280-123440-A-55-H MS@50	UNK	05/13/19 10:53:11 pm	0.063	1436	1.42		1.00 1.00	1.00
280-123440-A-55-I MSD@50	UNK	05/13/19 10:55:25 pm	0.063	1453	1.49		1.00 1.00	1.00
CCV 280-457940/12-A % Recovery 99.11	CCV	05/13/19 10:57:41 pm	2.973	58978	1.07		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/13/19 10:59:53 pm	0.004	272	2.99		1.00 1.00	1.00

Sample Name	Type	Date/Time	Conc (ppb)	µAbs	%RSD	Flags	Wt. ODF	Vol.
280-123440-A-57-C@50	UNK	05/13/19 11:02:08 pm	0.006	319	2.45		1.00 1.00	1.00
280-123440-A-58-C@50	UNK	05/13/19 11:04:22 pm	0.015	502	2.24		1.00 1.00	1.00
280-123440-A-62-C@50	UNK	05/13/19 11:06:37 pm	0.016	523	2.41		1.00 1.00	1.00
LB 280-457682/1-B	UNK	05/13/19 11:08:52 pm	0.001	219	4.72		1.00 1.00	1.00
LCS 280-457682/2-B	UNK	05/13/19 11:11:07 pm	2.948	58472	0.73		1.00 1.00	1.00
280-123440-A-63-B@50	UNK	05/13/19 11:13:21 pm	0.011	408	6.70	s	1.00 1.00	1.00
280-123440-A-67-B@50	UNK	05/13/19 11:15:36 pm	0.006	327	2.79		1.00 1.00	1.00
280-123440-A-69-B@50	UNK	05/13/19 11:17:51 pm	0.005	301	2.50		1.00 1.00	1.00
280-123440-A-71-B@50	UNK	05/13/19 11:20:06 pm	0.008	350	3.15		1.00 1.00	1.00
280-123440-A-74-B@50	UNK	05/13/19 11:22:21 pm	0.013	452	2.57		1.00 1.00	1.00
CCV 280-457940/12-A % Recovery 98.96	CCV	05/13/19 11:24:36 pm	2.969	58893	0.92		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/13/19 11:26:48 pm	0.004	288	1.84		1.00 1.00	1.00
280-123440-A-75-B@50	UNK	05/13/19 11:29:03 pm	0.010	393	3.18		1.00 1.00	1.00
280-123440-A-76-B@50	UNK	05/13/19 11:31:18 pm	0.009	382	2.84		1.00 1.00	1.00
280-123440-A-77-B@50	UNK	05/13/19 11:33:34 pm	0.009	385	1.85		1.00 1.00	1.00
280-123440-A-78-B@50	UNK	05/13/19 11:35:49 pm	0.022	628	1.30		1.00 1.00	1.00
280-123440-A-79-B@50	UNK	05/13/19 11:38:04 pm	0.011	418	1.41		1.00 1.00	1.00

Sample Name	Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags	Wt. ODF	Vol.
280-123440-A-80-B@50	UNK	05/13/19 11:40:19 pm	0.006	310	1.27		1.00 1.00	1.00
CCV 280-457940/12-A % Recovery 98.91	CCV	05/13/19 11:42:34 pm	2.967	58864	0.93		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/13/19 11:44:46 pm	0.003	265	2.18		1.00 1.00	1.00
280-123440-A-81-D@50	UNK	05/13/19 11:47:01 pm	0.025	696	1.96		1.00 1.00	1.00
280-123440-A-81-Dsd@250	UNK	05/13/19 11:49:16 pm	0.009	373	2.30		1.00 1.00	1.00
280-123440-A-81-E MS@50	UNK	05/13/19 11:51:30 pm	0.074	1671	1.17		1.00 1.00	1.00
280-123440-A-81-F MSD@50	UNK	05/13/19 11:53:45 pm	0.072	1631	1.09		1.00 1.00	1.00
280-123440-A-81-Dpds@50	UNK	05/13/19 11:56:00 pm	2.809	55736	1.41		1.00 1.00	1.00
CCV 280-457940/12-A % Recovery 98.41	CCV	05/13/19 11:58:16 pm	2.952	58564	0.97		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/14/19 12:00:28 am	0.003	269	2.99		1.00 1.00	1.00
CCV 280-457940/12-A % Recovery 101.82	CCV	05/14/19 07:49:05 am	3.054	60586	0.83		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/14/19 07:51:17 am	0.005	289	1.46		1.00 1.00	1.00
LCS 280-457916/2-A	UNK	05/14/19 07:53:29 am	3.008	59670	0.73		1.00 1.00	1.00
280-123440-A-1-H	UNK	05/14/19 07:55:41 am	0.052	1224	0.75		1.00 1.00	1.00
280-123440-B-2-B	UNK	05/14/19 07:57:54 am	0.034	879	0.96		1.00 1.00	1.00
280-123440-A-3-D	UNK	05/14/19 08:00:06 am	0.052	1234	1.01		1.00 1.00	1.00
280-123440-B-4-B	UNK	05/14/19 08:02:20 am	0.031	809	1.47		1.00 1.00	1.00

Sample Name	Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags	Wt. ODF	Vol.
280-123440-A-5-D	UNK	05/14/19 08:04:33 am	4.155	82341	0.52		1.00 1.00	1.00
280-123440-A-6-D	UNK	05/14/19 08:06:47 am	0.018	550	1.05		1.00 1.00	1.00
280-123440-A-7-D@100	UNK	05/14/19 08:09:01 am	3.344	66310	0.85		1.00 1.00	1.00
280-123440-A-8-D	UNK	05/14/19 08:11:15 am	0.004	280	1.56		1.00 1.00	1.00
280-123440-A-14-D	UNK	05/14/19 08:13:30 am	0.572	11502	0.60		1.00 1.00	1.00
CCV 280-457940/12-A % Recovery 101.96	CCV	05/14/19 08:15:45 am	3.059	60670	0.68		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/14/19 08:17:57 am	0.004	287	2.13		1.00 1.00	1.00
280-123440-A-15-D	UNK	05/14/19 08:20:12 am	2.318	46024	0.88		1.00 1.00	1.00
280-123440-A-16-D	UNK	05/14/19 08:22:27 am	0.187	3897	0.62		1.00 1.00	1.00
280-123440-A-19-D	UNK	05/14/19 08:24:39 am	1.498	29823	0.60		1.00 1.00	1.00
280-123440-A-20-D	UNK	05/14/19 08:26:51 am	0.052	1218	0.85		1.00 1.00	1.00
280-123440-A-21-D	UNK	05/14/19 08:29:03 am	0.232	4781	0.53		1.00 1.00	1.00
280-123440-A-22-D	UNK	05/14/19 08:31:16 am	0.271	5558	0.74		1.00 1.00	1.00
280-123440-A-23-D	UNK	05/14/19 08:33:29 am	0.287	5881	1.08		1.00 1.00	1.00
280-123440-A-24-D	UNK	05/14/19 08:35:42 am	0.109	2364	1.02		1.00 1.00	1.00
280-123440-A-25-D	UNK	05/14/19 08:37:55 am	0.102	2221	0.66		1.00 1.00	1.00
280-123440-A-25-Dsd@5	UNK	05/14/19 08:40:09 am	0.017	538	1.60		1.00 1.00	1.00

Sample Name	Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags	Wt. ODF	Vol.
CCV 280-457940/12-A % Recovery 102.59	CCV	05/14/19 08:42:24 am	3.078	61043	0.66		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/14/19 08:44:36 am	0.005	298	3.00		1.00 1.00	1.00
280-123440-A-25-E MS	UNK	05/14/19 08:46:50 am	3.139	62250	0.82		1.00 1.00	1.00
280-123440-A-25-F MSD	UNK	05/14/19 08:49:04 am	3.128	62041	0.61		1.00 1.00	1.00
280-123440-A-25-Dpds	UNK	05/14/19 08:51:19 am	2.951	58533	0.65		1.00 1.00	1.00
280-123440-A-27-B	UNK	05/14/19 08:53:34 am	1.557	30978	0.83		1.00 1.00	1.00
280-123440-A-29-B	UNK	05/14/19 08:55:47 am	0.173	3623	0.64		1.00 1.00	1.00
280-123440-A-30-D	UNK	05/14/19 08:57:59 am	0.716	14353	0.61		1.00 1.00	1.00
280-123440-A-30-Dsd@5	UNK	05/14/19 09:00:11 am	0.139	2946	1.04		1.00 1.00	1.00
280-123440-A-30-E MS	UNK	05/14/19 09:02:24 am	3.685	73047	0.95		1.00 1.00	1.00
280-123440-A-30-F MSD	UNK	05/14/19 09:04:37 am	3.761	74554	0.72		1.00 1.00	1.00
280-123440-A-30-Dpds	UNK	05/14/19 09:06:50 am	3.551	70401	0.69		1.00 1.00	1.00
CCV 280-457940/12-A % Recovery 102.87	CCV	05/14/19 09:09:06 am	3.086	61209	0.78		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/14/19 09:11:18 am	0.004	272	3.68		1.00 1.00	1.00
280-123440-A-47-C	UNK	05/14/19 09:13:31 am	0.175	3652	1.25		1.00 1.00	1.00
280-123440-A-48-C	UNK	05/14/19 09:15:45 am	0.027	725	1.43		1.00 1.00	1.00
280-123440-A-49-C	UNK	05/14/19 09:17:59 am	1.221	24346	1.19		1.00 1.00	1.00

Sample Name	Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags	Wt. ODF	Vol.
280-123440-A-50-C	UNK	05/14/19 09:20:13 am	0.070	1581	0.85		1.00 1.00	1.00
280-123440-A-51-C	UNK	05/14/19 09:22:27 am	0.162	3412	0.72		1.00 1.00	1.00
280-123440-B-52-C	UNK	05/14/19 09:24:42 am	0.559	11247	0.77		1.00 1.00	1.00
280-123440-B-53-C	UNK	05/14/19 09:26:55 am	0.459	9271	0.90		1.00 1.00	1.00
280-123440-B-54-C	UNK	05/14/19 09:29:07 am	0.463	9349	0.77		1.00 1.00	1.00
280-123440-A-55-G	UNK	05/14/19 09:31:19 am	0.216	4479	1.05		1.00 1.00	1.00
280-123440-A-55-H MS	UNK	05/14/19 09:33:32 am	3.278	64996	0.74		1.00 1.00	1.00
CCV 280-457940/12-A % Recovery 103.59	CCV	05/14/19 09:35:47 am	3.108	61640	0.87		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/14/19 09:37:59 am	0.005	294	3.05		1.00 1.00	1.00
280-123440-A-55-I MSD	UNK	05/14/19 09:40:12 am	3.183	63116	0.64		1.00 1.00	1.00
280-123440-A-57-C	UNK	05/14/19 09:42:25 am	0.086	1898	1.31		1.00 1.00	1.00
280-123440-A-58-C	UNK	05/14/19 09:44:38 am	0.619	12443	0.69		1.00 1.00	1.00
280-123440-A-62-C	UNK	05/14/19 09:46:52 am	0.778	15583	0.49		1.00 1.00	1.00
280-123440-A-63-B	UNK	05/14/19 09:49:06 am	0.304	6207	0.67		1.00 1.00	1.00
280-123440-A-67-B	UNK	05/14/19 09:51:20 am	0.130	2778	0.99		1.00 1.00	1.00
280-123440-A-69-B	UNK	05/14/19 09:53:35 am	0.078	1742	1.10		1.00 1.00	1.00
280-123440-A-71-B	UNK	05/14/19 09:55:50 am	0.109	2358	0.94		1.00 1.00	1.00

Sample Name	Type	Date/Time	Conc (ppb)	µAbs	%RSD	Flags	Wt. ODF	Vol.
280-123440-A-74-B	UNK	05/14/19 09:58:02 am	0.381	7724	1.01		1.00 1.00	1.00
280-123440-A-75-B	UNK	05/14/19 10:00:15 am	0.324	6597	0.49		1.00 1.00	1.00
CCV 280-457940/12-A % Recovery 103.46	CCV	05/14/19 10:02:30 am	3.104	61558	1.08		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/14/19 10:04:42 am	0.006	315	3.36		1.00 1.00	1.00
280-123440-A-76-B	UNK	05/14/19 10:06:55 am	0.240	4940	0.58		1.00 1.00	1.00
280-123440-A-77-B	UNK	05/14/19 10:09:07 am	0.277	5682	0.50		1.00 1.00	1.00
280-123440-A-78-B	UNK	05/14/19 10:11:20 am	0.938	18751	0.65		1.00 1.00	1.00
280-123440-A-79-B	UNK	05/14/19 10:13:33 am	0.333	6786	0.65		1.00 1.00	1.00
280-123440-A-80-B	UNK	05/14/19 10:15:47 am	0.077	1721	0.79		1.00 1.00	1.00
280-123440-A-81-D	UNK	05/14/19 10:18:00 am	1.411	28090	0.78		1.00 1.00	1.00
280-123440-A-81-Dsd@5	UNK	05/14/19 10:20:14 am	0.340	6921	0.68		1.00 1.00	1.00
280-123440-A-81-E MS	UNK	05/14/19 10:22:29 am	4.557	90282	0.50		1.00 1.00	1.00
280-123440-A-81-F MSD	UNK	05/14/19 10:24:43 am	4.633	91781	0.85		1.00 1.00	1.00
280-123440-A-81-Dpds	UNK	05/14/19 10:26:58 am	4.169	82622	0.66		1.00 1.00	1.00
CCV 280-457940/12-A % Recovery 104.83	CCV	05/14/19 10:29:13 am	3.145	62374	0.79		1.00 1.00	1.00
CCB 280-457940/13-A	CCB	05/14/19 10:31:26 am	0.005	297	2.51		1.00 1.00	1.00
280-123510-A-1-Asd@5	UNK	05/14/19 11:56:38 am	-0.002	154	3.69		1.00 1.00	1.00

Sample Name	Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags	Wt. ODF	Vol.
CCV 280-457940/12-A	CCV	05/14/19 11:58:53 am	3.190	63258	0.91		1.00	1.00
% Recovery 106.32							1.00	
CCB 280-457940/13-A	CCB	05/14/19 12:01:05 pm	0.006	311	2.18		1.00	1.00
							1.00	

Analysis Parameters

Instrument M-7500 Mercury Analyzer

Conditions

Gas flow (mL/min)	Sample Uptake (s)	Rinse (s)	Read delay (s)	Replicates (#)	Replicate time (s)	Pump speed (%)	Wavelength (nm)
100	35.00	90.00	55.00	4	1.50	50	253.65
ASX Pump Rate (%)							
100							

Instrumental Zero

Zero before first sample: No

Zero periodically: Yes
Before each calibration.

Baseline Correction

#1 Start time (s)	#1 End time (s)	#2 Start time (s)	#2 End time (s)
20.00	24.00		

Standby Mode

Enabled: Yes

Standby Options: pump off, gas off, lamp off

Autodilution

Enabled: No

Condition:

Tube # range:

If no autodilution tubes remaining

Calibration

Settings

Algorithm	Through blank	Weighted fit	Cal. Type	Racalibration rate	Reslope rate	Reslope standard
Linear	No	No	Normal	0	0	N/A

Limits

Calibration slope		Reslope		Coeff. of Determination
Lower (%)	Upper (%)	Lower (%)	Upper (%)	
20	150	75	125	0.99500

Error action: Flag and continue

QC

GLP Override: Yes

QC Tests

CCB

Concentration
(ppb)
0.0600

Failure flag: Q

Error action for manually inserted QC: Stop analysis

ICB

Concentration
(ppb)
0.0600

Failure flag: Z

Error action for manually inserted QC: Stop analysis

CCV

Concentration (ppb)	Low Limit %	High Limit %
3.0000	80.0000	120.0000

Failure flag: Q

Error action for manually inserted QC: Stop analysis

ICV

Concentration (ppb)	Low Limit %	High Limit %
2.4000	94.6000	105.4000

Failure flag: Q

Error action for manually inserted QC: Stop analysis

CRDL

Concentration (ppb)	Low Limit %	High Limit %
0.1200	50.0000	150.0000

Failure flag: Y

Error action for manually inserted QC: Stop analysis

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Denver Job Number: 280-123221-1

SDG No.: _____

Project: Leidos RFP# 001088 - Ravenna AAP-66

Client Sample ID	Lab Sample ID
<u>DET-003-190401-GW</u>	<u>280-123221-4</u>
<u>DET-003-190402-GW</u>	<u>280-123221-5</u>
<u>DET-004-190401-GW</u>	<u>280-123221-7</u>

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: DET-003-190401-GW Lab Sample ID: 280-123221-4
Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG ID.:
Matrix: Water Date Sampled: 04/29/2019 10:53
Reporting Basis: WET Date Received: 05/01/2019 09:15

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Cyanide, Total	0.010	0.010	0.010	0.0050	mg/L	U		1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: DET-003-190402-GW Lab Sample ID: 280-123221-5
Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG ID.:
Matrix: Water Date Sampled: 04/29/2019 10:53
Reporting Basis: WET Date Received: 05/01/2019 09:15

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Cyanide, Total	0.010	0.010	0.010	0.0050	mg/L	U		1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: DET-004-190401-GW

Lab Sample ID: 280-123221-7

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG ID.:

Matrix: Water

Date Sampled: 04/29/2019 10:04

Reporting Basis: WET

Date Received: 05/01/2019 09:15

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Cyanide, Total	0.010	0.010	0.010	0.0050	mg/L	U		1	9012B

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Analyst: RK Batch Start Date: 05/13/2019
 Reporting Units: mg/L Analytical Batch No.: 458020

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
14	ICV	12:15	Cyanide, Total	0.0989	0.100	99	90-110		CN ICV Daily_01288
15	ICB	12:17	Cyanide, Total	0.010				U	
59	CCV	13:27	Cyanide, Total	0.211	0.200	105	90-110		CN CAL 1 ppm_01522
60	CCB	13:28	Cyanide, Total	0.010				U	
74	CCV	13:49	Cyanide, Total	0.213	0.200	107	90-110		CN CAL 1 ppm_01522
75	CCB	13:51	Cyanide, Total	0.010				U	
89	CCV	14:12	Cyanide, Total	0.215	0.200	107	90-110		CN CAL 1 ppm_01522
90	CCB	14:13	Cyanide, Total	0.010				U	
147	CCV	15:43	Cyanide, Total	0.216	0.200	108	90-110		CN CAL 1 ppm_01522
148	CCB	15:45	Cyanide, Total	0.010				U	
156	CCV	15:57	Cyanide, Total	0.217	0.200	108	90-110		CN CAL 1 ppm_01522
157	CCB	15:58	Cyanide, Total	0.010				U	

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Method	Lab Sample ID	Analyte	Result	Qual	Units	LOQ	Dil
Batch ID: 458020 Date: 05/13/2019 13:45 Prep Batch: 457850 Date: 05/12/2019 07:53							
9012B	MB 280-457850/4-A	Cyanide, Total	0.010	U	mg/L	0.010	1

5-IN
MATRIX SPIKE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 458020 Date: 05/13/2019 13:55 Prep Batch: 457850 Date: 05/12/2019 07:53											
9012B	280-123221-4	Cyanide, Total	0.010	U	mg/L						
9012B	280-123221-4	Cyanide, Total	0.0990		mg/L	0.100	99	83-116			
MS											

Calculations are performed before rounding to avoid round-off errors in calculated results.

5-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 458020 Date: 05/13/2019 13:57 Prep Batch: 457850 Date: 05/12/2019 07:53											
9012B	280-123221-4	Cyanide, Total	0.0970		mg/L	0.100	97	83-116	2	20	
MSD											

Calculations are performed before rounding to avoid round-off errors in calculated results.

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
SDG No.: _____
Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 458020 Date: 05/13/2019 15:52 Prep Batch: 457850 Date: 05/12/2019 07:53											
LCS Source: CN ICV Int_00536											
9012B	LCS 280-457850/3-A	Cyanide, Total	0.104		mg/L	0.100	104	83-116			

Calculations are performed before rounding to avoid round-off errors in calculated results.

7A-IN
LOW LEVEL CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 458020 Date: 05/13/2019 13:42 Prep Batch: 457850 Date: 05/12/2019 07:53											
LCS Source: CN 10ppm_00347											
9012B	LLCS 280-457850/2- A	Cyanide, Total	0.106		mg/L	0.100	106	44-167			

Calculations are performed before rounding to avoid round-off errors in calculated results.

7A-IN
HIGH LEVEL CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 458020 Date: 05/13/2019 13:40 Prep Batch: 457850 Date: 05/12/2019 07:53											
LCS Source: CN 10ppm_00347											
9012B	HLCS 280-457850/1-A	Cyanide, Total	0.368		mg/L	0.350	105	90-110			

Calculations are performed before rounding to avoid round-off errors in calculated results.

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Denver

Job Number: 280-123221-1

SDG Number: _____

Matrix: Water

Instrument ID: WC_Alps 1

Method: 9012B

DL Date: 02/03/2019 00:00

Prep Method: 9012B

Analyte	Wavelength/ Mass	LOQ (mg/L)	DL (mg/L)
Cyanide, Total		0.01	0.005

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Denver

Job Number: 280-123221-1

SDG Number: _____

Matrix: Water

Instrument ID: WC_Alps 1

Method: 9012B

XMDL Date: 02/03/2019 00:00

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Cyanide, Total		0.01	0.005

12-IN
PREPARATION LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Prep Method: 9012B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
HLCS 280-457850/1-A	05/12/2019 07:53	457850		50	50
LLCS 280-457850/2-A	05/12/2019 07:53	457850		50	50
LCS 280-457850/3-A	05/12/2019 07:53	457850		50	50
MB 280-457850/4-A	05/12/2019 07:53	457850		50	50
280-123221-4	05/12/2019 07:53	457850		50	50
280-123221-4 MS	05/12/2019 07:53	457850		50	50
280-123221-4 MSD	05/12/2019 07:53	457850		50	50
280-123221-5	05/12/2019 07:53	457850		50	50
280-123221-7	05/12/2019 07:53	457850		50	50

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.: _____

Instrument ID: WC_Alps 1

Analysis Method: 9012B

Start Date: 05/13/2019 11:56

End Date: 05/13/2019 16:00

Lab Sample Id	D/F	T y p e	Time	Analytes																									
				C N																									
ZZZZZZ			11:56																										
ZZZZZZ			11:57																										
ZZZZZZ			11:59																										
ZZZZZZ			12:00																										
IC 280-458020/5			12:02	X																									
IC 280-458020/6			12:03	X																									
IC 280-458020/7			12:05	X																									
IC 280-458020/8			12:06	X																									
IC 280-458020/9			12:08	X																									
IC 280-458020/10			12:09	X																									
IC 280-458020/11			12:11	X																									
ZZZZZZ			12:12																										
ZZZZZZ			12:14																										
ICV 280-458020/14	1		12:15	X																									
ICB 280-458020/15	1		12:17	X																									
ZZZZZZ			12:18																										
ZZZZZZ			12:20																										
ZZZZZZ			12:21																										
ZZZZZZ			12:23																										
ZZZZZZ			12:24																										
ZZZZZZ			12:26																										
ZZZZZZ			12:27																										
ZZZZZZ			12:29																										
ZZZZZZ			12:30																										
ZZZZZZ			12:32																										
ZZZZZZ			12:33																										
ZZZZZZ			12:35																										
ZZZZZZ			12:36																										
CCV 280-458020/29			12:38																										
CCB 280-458020/30			12:39																										
ZZZZZZ			12:41																										
ZZZZZZ			12:42																										
ZZZZZZ			12:44																										
ZZZZZZ			12:45																										
ZZZZZZ			12:47																										
ZZZZZZ			12:48																										
ZZZZZZ			12:50																										
ZZZZZZ			12:55																										
ZZZZZZ			12:57																										
ZZZZZZ			12:58																										
ZZZZZZ			13:00																										
ZZZZZZ			13:01																										

Lab Name: Eurofins TestAmerica, Denver	Job No.: 280-123221-1
SDG No.:	
Instrument ID: WC_Alp 1	Analysis Method: 9012B
Start Date: 05/13/2019 11:56	End Date: 05/13/2019 16:00

Lab Sample Id	D/F	T y p e	Time	Analytes																											
				C N																											
ZZZZZZ			13:03																												
CCV 280-458020/44			13:04																												
CCB 280-458020/45			13:06																												
ZZZZZZ			13:07																												
ZZZZZZ			13:09																												
ZZZZZZ			13:10																												
ZZZZZZ			13:12																												
ZZZZZZ			13:13																												
ZZZZZZ			13:15																												
ZZZZZZ			13:16																												
ZZZZZZ			13:18																												
ZZZZZZ			13:19																												
ZZZZZZ			13:21																												
ZZZZZZ			13:22																												
ZZZZZZ			13:24																												
ZZZZZZ			13:25																												
CCV 280-458020/59	1		13:27	X																											
CCB 280-458020/60	1		13:28	X																											
ZZZZZZ			13:30																												
ZZZZZZ			13:31																												
ZZZZZZ			13:33																												
ZZZZZZ			13:34																												
ZZZZZZ			13:36																												
ZZZZZZ			13:37																												
ZZZZZZ			13:39																												
HLCS 280-457850/1-A	1	T	13:40	X																											
LLCS 280-457850/2-A	1	T	13:42	X																											
ZZZZZZ			13:43																												
MB 280-457850/4-A	1	T	13:45	X																											
ZZZZZZ			13:46																												
ZZZZZZ			13:48																												
CCV 280-458020/74	1		13:49	X																											
CCB 280-458020/75	1		13:51	X																											
ZZZZZZ			13:52																												
280-123221-4	1	T	13:54	X																											
280-123221-4 MS	1	T	13:55	X																											
280-123221-4 MSD	1	T	13:57	X																											
ZZZZZZ			13:58																												
ZZZZZZ			14:00																												
ZZZZZZ			14:01																												
ZZZZZZ			14:03																												
ZZZZZZ			14:04																												

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Denver

Job No.: 280-123221-1

SDG No.:

Instrument ID: WC_Alp 1

Analysis Method: 9012B

Start Date: 05/13/2019 11:56

End Date: 05/13/2019 16:00

Lab Sample Id	D/F	T y p e	Time	Analytes																									
				C N																									
280-123221-5	1	T	14:06	X																									
280-123221-7	1	T	14:07	X																									
ZZZZZZ			14:09																										
ZZZZZZ			14:10																										
CCV 280-458020/89	1		14:12	X																									
CCB 280-458020/90	1		14:13	X																									
ZZZZZZ			14:15																										
ZZZZZZ			14:16																										
ZZZZZZ			14:18																										
ZZZZZZ			14:23																										
ZZZZZZ			14:25																										
ZZZZZZ			14:26																										
ZZZZZZ			14:28																										
ZZZZZZ			14:29																										
ZZZZZZ			14:31																										
ZZZZZZ			14:32																										
ZZZZZZ			14:34																										
ZZZZZZ			14:35																										
ZZZZZZ			14:37																										
CCV 280-458020/104			14:38																										
CCB 280-458020/105			14:40																										
ZZZZZZ			14:41																										
ZZZZZZ			14:43																										
ZZZZZZ			14:44																										
ZZZZZZ			14:46																										
ZZZZZZ			14:47																										
ZZZZZZ			14:49																										
ZZZZZZ			14:50																										
ZZZZZZ			14:52																										
ZZZZZZ			14:53																										
ZZZZZZ			14:55																										
ZZZZZZ			14:56																										
ZZZZZZ			14:58																										
ZZZZZZ			14:59																										
CCV 280-458020/119			15:01																										
CCB 280-458020/120			15:02																										
ZZZZZZ			15:04																										
ZZZZZZ			15:05																										
ZZZZZZ			15:07																										
ZZZZZZ			15:08																										
ZZZZZZ			15:10																										
ZZZZZZ			15:11																										

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1
 SDG No.: _____
 Instrument ID: WC_Alp 1 Analysis Method: 9012B
 Start Date: 05/13/2019 11:56 End Date: 05/13/2019 16:00

Lab Sample Id	D/F	T y p e	Time	Analytes																									
				C N																									
ZZZZZZ			15:13																										
ZZZZZZ			15:14																										
ZZZZZZ			15:16																										
ZZZZZZ			15:17																										
ZZZZZZ			15:19																										
ZZZZZZ			15:20																										
ZZZZZZ			15:22																										
CCV 280-458020/134			15:23																										
CCB 280-458020/135			15:25																										
ZZZZZZ			15:26																										
ZZZZZZ			15:28																										
ZZZZZZ			15:30																										
ZZZZZZ			15:31																										
ZZZZZZ			15:33																										
ZZZZZZ			15:34																										
ZZZZZZ			15:36																										
ZZZZZZ			15:37																										
ZZZZZZ			15:39																										
ZZZZZZ			15:40																										
ZZZZZZ			15:42																										
CCV 280-458020/147	1		15:43	X																									
CCB 280-458020/148	1		15:45	X																									
ZZZZZZ			15:46																										
ZZZZZZ			15:48																										
ZZZZZZ			15:49																										
ZZZZZZ			15:51																										
LCS 280-457850/3-A	1	T	15:52	X																									
ZZZZZZ			15:54																										
ZZZZZZ			15:55																										
CCV 280-458020/156	1		15:57	X																									
CCB 280-458020/157	1		15:58	X																									
ZZZZZZ			16:00																										

Prep Types: _____
 T = Total/NA

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 457850 Batch Start Date: 05/12/19 10:56 Batch Analyst: Kurniadi, RichardBatch Method: 9012B Batch End Date: 05/12/19 12:26

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	DistillpHCheck	CN 10ppm 00347	CN ICV Int 00536	
HLCS 280-457850/1		9012B, 9012B		50 mL	50 mL		1.75 mL		
LLCS 280-457850/2		9012B, 9012B		50 mL	50 mL		0.5 mL		
LCS 280-457850/3		9012B, 9012B		50 mL	50 mL			0.5 mL	
MB 280-457850/4		9012B, 9012B		50 mL	50 mL				
280-123221-I-4	DET-003-190401-G W	9012B, 9012B	T	50 mL	50 mL	>12			
280-123221-I-4 MS	DET-003-190401-G WMS	9012B, 9012B	T	50 mL	50 mL	>12		0.5 mL	
280-123221-I-4 MSD	DET-003-190401-G WMSD	9012B, 9012B	T	50 mL	50 mL	>12		0.5 mL	
280-123221-E-5	DET-003-190402-G W	9012B, 9012B	T	50 mL	50 mL	>12			
280-123221-I-7	DET-004-190401-G W	9012B, 9012B	T	50 mL	50 mL	>12			

Batch Notes	
Acetate Buffer ID	Acetate Buffer_00005
Balance ID	M19170
Cadmium Carbonate ID	CAD CHL CN_00004
Chlorination End Time	04/25/2019 11:45
Chlorination Start Time	04/30/2019 10:33
Distillation End Time	05/12/2019 12:26
Distillation Start Time	05/12/2019 10:56
Magnesium Chloride Reagent ID Number	CN Mag Chl_00088
Sodium Hydroxide ID	2% NaOH_00381
Pipette/Syringe/Dispenser ID	jpx1000, jpx5000
Sulfamic Acid ID	CN SULFAMIC_00100
Sulfuric Acid Reagent ID Number	H2SO4_00198

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

9012B

Page 1 of 1

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 458020 Batch Start Date: 05/13/19 11:56 Batch Analyst: Kurniadi, RichardBatch Method: 9012B Batch End Date: _____

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	CN CAL 1 ppm 01522	CN ICV Daily 01288		
ICV 280-458020/14		9012B		50 mL	50 mL		50 mL		
ICB 280-458020/15		9012B		50 mL	50 mL				
CCV 280-458020/59		9012B		50 mL	50 mL	10 mL			
CCB 280-458020/60		9012B		50 mL	50 mL				
HLCS 280-457850/1-A		9012B		50 mL	50 mL				
LLCS 280-457850/2-A		9012B		50 mL	50 mL				
MB 280-457850/4-A		9012B		50 mL	50 mL				
CCV 280-458020/74		9012B		50 mL	50 mL	10 mL			
CCB 280-458020/75		9012B		50 mL	50 mL				
280-123221-I-4-A	DET-003-190401-G W	9012B	T	50 mL	50 mL				
280-123221-I-4-B MS	DET-003-190401-G WMS	9012B	T	50 mL	50 mL				
280-123221-I-4-C MSD	DET-003-190401-G WMSD	9012B	T	50 mL	50 mL				
280-123221-E-5-A	DET-003-190402-G W	9012B	T	50 mL	50 mL				
280-123221-I-7-A	DET-004-190401-G W	9012B	T	50 mL	50 mL				
CCV 280-458020/89		9012B		50 mL	50 mL	10 mL			
CCB 280-458020/90		9012B		50 mL	50 mL				
CCV 280-458020/147		9012B		50 mL	50 mL	10 mL			
CCB 280-458020/148		9012B		50 mL	50 mL				
LCS 280-457850/3-A		9012B		50 mL	50 mL				
CCV 280-458020/156		9012B		50 mL	50 mL	10 mL			
CCB 280-458020/157		9012B		50 mL	50 mL				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

9012B

Page 1 of 2

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Denver Job No.: 280-123221-1

SDG No.: _____

Batch Number: 458020 Batch Start Date: 05/13/19 11:56 Batch Analyst: Kurniadi, RichardBatch Method: 9012B Batch End Date: _____

Batch Notes	
Buffer Reagent ID	CN Buffer_00124
Chloramine-T ID	CN Chlor-T_01073
Sodium Hydroxide ID	1% NaOH_00341
Pipette/Syringe/Dispenser ID	jpx1000, jpx5000
Pyridine-Barbituric Acid ID	CN Pyr/Barb_00212

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Run Results Report

Facility Name
Facility Location
Department
Operator Name RK
Operator ID RK
Platform FS III/IV/3100
Software Rev Code 222
Data system ID 57

Result path C:\FLOW_4\C051319.RST
Sample table path C:\FLOW_4\c051319.tbl
Method path C:\FLOW_4\cyanide.mth
Date acquired 13-May-19
Time acquired 16:05

----- Cyanide, Total -----					
Date	Time	Cup	Name	Response	Calc [ppb] Flags
13-May-19	11:56	107	Sync	328815	388.887
13-May-19	11:57	0	Carryover	540	-0.860 LO
13-May-19	11:59	0	Carryover	157	-1.315 LO
13-May-19	12:00	0	Baseline	0	-1.501 BL
13-May-19	12:02	101	CAL 0.00 ppb	111	-1.370 LO
13-May-19	12:03	102	CAL 10.0 ppb	8949	9.124
13-May-19	12:05	103	CAL 20.0 ppb	17458	19.225
13-May-19	12:06	104	CAL 50.0 ppb	43958	50.688
13-May-19	12:08	105	CAL 100 ppb	86602	101.317
13-May-19	12:09	106	Cal 200 ppb	172028	202.740
13-May-19	12:11	107	Cal 400 ppb	336723	398.275
13-May-19	12:12	0	BLK	-91	-1.609 LO
13-May-19	12:14	0	Baseline	0	-1.501 BL
13-May-19	12:15	108	ICV 100 ppb	84561	98.895
13-May-19	12:17	0	ICB	18	-1.479 LO
13-May-19	12:18	0	Baseline	0	-1.501 BL
13-May-19	12:20	113	HLCS 280-457752/1-A	293843	347.367
13-May-19	12:21	114	LLCS 280-457752/2-A	90669	106.146
13-May-19	12:23	115	LCS 280-457752/3-A	85913	100.499
13-May-19	12:24	116	MB 280-457752/4-A	1356	0.109
13-May-19	12:26	117	280-123175-Q-1-A	10429	10.881
13-May-19	12:27	118	280-123175-Q-1-B MS	46892	54.172
13-May-19	12:29	119	280-123175-Q-1-C MSD	53633	62.175
13-May-19	12:30	120	280-123155-F-4-A	6297	5.974
13-May-19	12:32	121	280-123155-F-5-A	5121	4.578
13-May-19	12:33	122	280-123155-F-6-A	2666	1.664
13-May-19	12:35	0	BLK	-8	-1.510 LO
13-May-19	12:36	0	baseline	0	-1.501 BL
13-May-19	12:38	109	CCV 200PPB	173610	204.618
13-May-19	12:39	0	CCB	-31	-1.538 LO
13-May-19	12:41	0	Baseline	0	-1.501 BL
13-May-19	12:42	123	280-123155-F-7-A	1281	0.019
13-May-19	12:44	124	280-123155-F-8-A	1181	-0.100 LO
13-May-19	12:45	125	280-123155-F-9-A	1510	0.292
13-May-19	12:47	126	280-123155-F-10-A	1423	0.188
13-May-19	12:48	127	280-123155-F-11-A	2863	1.897
13-May-19	12:50	128	280-123156-AG-1-A	2075	0.962
13-May-19	12:55	129	HLCS 280-457849/1-A	303016	358.258
13-May-19	12:57	130	LLCS 280-457849/2-A	87715	102.638
13-May-19	12:58	131	LCS 280-457849/3-A	93142	109.083 UM
13-May-19	13:00	132	MB 280-457849/4-A	1311	0.055
13-May-19	13:01	0	BLK	54	-1.437 LO
13-May-19	13:03	0	baseline	0	-1.501 BL
13-May-19	13:04	109	CCV 200PPB	177053	208.706
13-May-19	13:06	0	CCB	-4	-1.506 LO
13-May-19	13:07	0	Baseline	0	-1.501 BL

Result path C:\FLOW_4\C051319.RST
Sample table path C:\FLOW_4\c051319.tbl
Method path C:\FLOW_4\cyanide.mth
Date acquired 13-May-19
Time acquired 16:05

----- Cyanide, Total -----						
Date	Time	Cup	Name	Response	Calc [ppb]	Flags
13-May-19	13:09	133	280-123294-A-18-E	7780	7.736	
13-May-19	13:10	134	280-123294-A-18-F DU	6812	6.586	
13-May-19	13:12	135	280-123294-A-18-G MS	86519	101.220	
13-May-19	13:13	136	280-123294-A-18-H MS	105599	123.872	
13-May-19	13:15	137	280-123294-A-15-B	8468	8.553	
13-May-19	13:16	138	280-123294-A-16-B	8645	8.763	
13-May-19	13:18	139	280-123294-A-17-B	8540	8.638	
13-May-19	13:19	140	280-123294-A-19-C	8516	8.609	
13-May-19	13:21	141	280-123294-A-20-C	8577	8.682	
13-May-19	13:22	142	280-123294-A-21-C	7843	7.810	
13-May-19	13:24	0	BLK	-30	-1.537	LO
13-May-19	13:25	0	baseline	0	-1.501	BL
13-May-19	13:27	109	CCV 200PPB	178957	210.967	
13-May-19	13:28	0	CCB	11	-1.488	LO
13-May-19	13:30	0	Baseline	0	-1.501	BL
13-May-19	13:31	143	280-123294-A-22-C	7860	7.831	
13-May-19	13:33	144	280-123294-A-22-D MS	87690	102.609	
13-May-19	13:34	145	280-123294-A-22-E MS	107166	125.732	
13-May-19	13:36	146	x280-123524-A-1-A	1417510	1681.449	HI
13-May-19	13:37	147	x280-123524-A-2-A	1411583	1674.413	HI
13-May-19	13:39	148	x280-123524-A-3-A	1412351	1675.325	HI
13-May-19	13:40	149	HLCS 280-457850/1-A	311050	367.796	FL
13-May-19	13:42	150	LLCS 280-457850/2-A	90667	106.143	FL
13-May-19	13:43	151	xLCS 280-457850/3-A	101462	118.960	
13-May-19	13:45	152	MB 280-457850/4-A	1283	0.022	
13-May-19	13:46	0	BLK	74	-1.414	LO
13-May-19	13:48	0	baseline	0	-1.501	BL
13-May-19	13:49	109	CCV 200PPB	180931	213.310	
13-May-19	13:51	0	CCB	-44	-1.554	LO
13-May-19	13:52	0	Baseline	0	-1.501	BL
13-May-19	13:54	153	280-123221-I-4-A	1446	0.215	
13-May-19	13:55	154	280-123221-I-4-B MS	84634	98.981	
13-May-19	13:57	155	280-123221-I-4-C MSD	82992	97.031	
13-May-19	13:58	156	160-33957-E-2-A	3900	3.129	
13-May-19	14:00	157	280-123157-T-1-B	18687	20.685	
13-May-19	14:01	158	280-123175-Q-2-A	17642	19.444	
13-May-19	14:03	159	280-123175-L-3-A	1602	0.401	
13-May-19	14:04	160	280-123190-A-2-A	2115	1.010	
13-May-19	14:06	201	280-123221-E-5-A	1717	0.538	
13-May-19	14:07	202	280-123221-I-7-A	1839	0.682	
13-May-19	14:09	0	BLK	18	-1.480	LO
13-May-19	14:10	0	baseline	0	-1.501	BL
13-May-19	14:12	109	CCV 200PPB	182145	214.752	
13-May-19	14:13	0	CCB	-119	-1.642	LO
13-May-19	14:15	0	Baseline	0	-1.501	BL UM
13-May-19	14:16	203	280-123452-A-2-A	1340	0.090	
13-May-19	14:18	204	280-123208-G-1-A	1699	0.516	
13-May-19	14:23	205	HLCS 280-457897/1-A	318211	376.298	
13-May-19	14:25	206	LLCS 280-457897/2-A	92758	108.627	UM
13-May-19	14:26	207	LCS 280-457897/3-A	92744	108.610	
13-May-19	14:28	208	LCSD 280-457897/4-A	90302	105.711	
13-May-19	14:29	209	MB 280-457897/5-A	2411	1.361	
13-May-19	14:31	210	280-123192-E-4-A	1228	-0.044	LO
13-May-19	14:32	211	280-123192-E-4-B MS	86891	101.661	
13-May-19	14:34	212	280-123192-E-4-C MSD	85278	99.745	
13-May-19	14:35	0	BLK	-1	-1.502	LO UM
13-May-19	14:37	0	baseline	0	-1.501	BL UM

Result path C:\FLOW_4\C051319.RST
Sample table path C:\FLOW_4\c051319.tbl
Method path C:\FLOW_4\cyanide.mth
Date acquired 13-May-19
Time acquired 16:05

----- Cyanide, Total -----						
Date	Time	Cup	Name	Response	Calc [ppb]	Flags
13-May-19	14:38	109	CCV 200PPB	181916	214.481	
13-May-19	14:40	0	CCB	-115	-1.638	LO
13-May-19	14:41	0	Baseline	0	-1.501	BL
13-May-19	14:43	213	280-123192-E-3-A	13969	15.083	
13-May-19	14:44	214	280-123192-E-5-A	2171	1.076	
13-May-19	14:46	215	280-123192-E-6-A	1978	0.847	
13-May-19	14:47	216	280-123155-F-12-A	1428	0.194	
13-May-19	14:49	217	280-123208-G-2-A	1596	0.394	
13-May-19	14:50	218	280-123208-G-3-A	1596	0.393	
13-May-19	14:52	219	280-123208-G-4-A	1614	0.415	
13-May-19	14:53	220	280-123208-G-5-A	1785	0.618	
13-May-19	14:55	221	280-123208-G-5-B MS	87771	102.705	
13-May-19	14:56	222	280-123208-G-5-C MSD	88791	103.917	
13-May-19	14:58	0	BLK	72	-1.416	LO
13-May-19	14:59	0	baseline	0	-1.501	BL
13-May-19	15:01	109	CCV 200PPB	183802	216.719	
13-May-19	15:02	0	CCB	-94	-1.613	LO
13-May-19	15:04	0	Baseline	0	-1.501	BL
13-May-19	15:05	223	280-123208-G-6-A	10720	11.226	
13-May-19	15:07	224	280-123208-G-7-A	6972	6.776	
13-May-19	15:08	225	280-123208-G-8-A	7616	7.541	
13-May-19	15:10	226	280-123208-G-9-A	10547	11.020	
13-May-19	15:11	227	280-123209-F-1-A	1282	0.021	
13-May-19	15:13	228	280-123209-F-2-A	867	-0.472	LO
13-May-19	15:14	229	280-123213-I-1-A	22637	25.375	
13-May-19	15:16	230	280-123214-F-1-A	5869	5.467	
13-May-19	15:17	231	280-123214-F-2-A	4081	3.344	
13-May-19	15:19	232	280-123217-B-5-B	3265	2.375	
13-May-19	15:20	0	BLK	9	-1.490	LO
13-May-19	15:22	0	baseline	0	-1.501	BL
13-May-19	15:23	109	CCV 200PPB	182813	215.545	
13-May-19	15:25	0	CCB	-24	-1.529	LO
13-May-19	15:26	0	Baseline	0	-1.501	BL
13-May-19	15:28	233	HLCS 280-457955/1-A	295576	349.424	
13-May-19	15:30	234	LLCS 280-457955/2-A	84661	99.013	
13-May-19	15:31	235	LCS 280-457955/3-A	83165	97.237	
13-May-19	15:33	236	MB 280-457955/4-A	1976	0.845	
13-May-19	15:34	237	280-123217-B-10-B	3105	2.185	
13-May-19	15:36	238	280-123256-C-1-A	2033	0.912	
13-May-19	15:37	239	280-123256-C-1-B MS	85778	100.339	
13-May-19	15:39	240	280-123256-C-1-C MSD	89092	104.274	
13-May-19	15:40	0	BLK	28	-1.468	LO
13-May-19	15:42	0	baseline	0	-1.501	BL
13-May-19	15:43	109	CCV 200PPB	183024	215.795	
13-May-19	15:45	0	CCB	-66	-1.580	LO
13-May-19	15:46	0	Baseline	0	-1.501	BL
13-May-19	15:48	241	280-123524-A-1-A	142982	1682.557	
13-May-19	15:49	242	280-123524-A-2-A	144491	1700.471	
13-May-19	15:51	243	280-123524-A-3-A	148508	1748.164	
13-May-19	15:52	244	LCS 280-457850/3-A	88751	103.868	
13-May-19	15:54	0	BLK	5	-1.495	LO
13-May-19	15:55	0	baseline	0	-1.501	BL
13-May-19	15:57	109	CCV 200PPB	183677	216.571	
13-May-19	15:58	0	CCB	-52	-1.563	LO
13-May-19	16:00	0	Baseline	0	-1.501	BL

File name: C:\FLOW_4\C051319.RST

Date: 13-May-19

Operator: RK

Peak	Cup	Name	R	Type	Dil	Wt	Height	Calc. (ppb)	Flags
1	107	Sync	1	SYNC		1	1	328815	388.887451
2	0	Carryover	1	CO		1	1	540	-0.860433 LO
3	0	Carryover	2	CO		1	1	157	-1.315109 LO
B	0	Baseline	1	RB		1	1	0	-1.501374 BL
5	101	CAL 0.00 ppb	1	C		1	1	111	-1.369546 LO
6	102	CAL 10.0 ppb	1	C		1	1	8949	9.123765
7	103	CAL 20.0 ppb	1	C		1	1	17458	19.225235
8	104	CAL 50.0 ppb	1	C		1	1	43958	50.688225
9	105	CAL 100 ppb	1	C		1	1	86602	101.317017
10	106	Cal 200 ppb	1	C		1	1	172028	202.739944
11	107	Cal 400 ppb	1	C		1	1	336723	398.275391
12	0	BLK	1	BLNK		1	1	-91	-1.608847 LO
B	0	Baseline	1	RB		1	1	0	-1.501374 BL
14	108	ICV 100 ppb	1	CCV		1	1	84561	98.894951
15	0	ICB	1	U		1	1	18	-1.479434 LO
B	0	Baseline	1	RB		1	1	0	-1.501374 BL
17	113	HLCS 280-457752/1-A	1	U		1	1	293843	347.366516
18	114	LLCS 280-457752/2-A	1	U		1	1	90669	106.145966
19	115	LCS 280-457752/3-A	1	U		1	1	85913	100.499023
20	116	MB 280-457752/4-A	1	U		1	1	1356	0.108728
21	117	280-123175-Q-1-A	1	U		1	1	10429	10.880527
22	118	280-123175-Q-1-B	MS	1	U	1	1	46892	54.171951
23	119	280-123175-Q-1-C	MSD	1	U	1	1	53633	62.175205
24	120	280-123155-F-4-A	1	U		1	1	6297	5.974361
25	121	280-123155-F-5-A	1	U		1	1	5121	4.578081
26	122	280-123155-F-6-A	1	U		1	1	2666	1.664293
27	0	BLK	1	BLNK		1	1	-8	-1.510468 LO
B	0	baseline	1	RB		1	1	0	-1.501374 BL
29	109	CCV 200PPB	1	CCV		1	1	173610	204.618042
30	0	CCB	1	U		1	1	-31	-1.538093 LO
B	0	Baseline	1	RB		1	1	0	-1.501374 BL
32	123	280-123155-F-7-A	1	U		1	1	1281	0.019452
33	124	280-123155-F-8-A	1	U		1	1	1181	-0.099761 LO
34	125	280-123155-F-9-A	1	U		1	1	1510	0.291769
35	126	280-123155-F-10-A	1	U		1	1	1423	0.187967
36	127	280-123155-F-11-A	1	U		1	1	2863	1.897327
37	128	280-123156-AG-1-A	1	U		1	1	2075	0.961974
38	129	HLCS 280-457849/1-A	1	U		1	1	303016	358.257568
39	130	LLCS 280-457849/2-A	1	U		1	1	87715	102.638481
40	131	LCS 280-457849/3-A	1	U		1	1	93142	109.082550 UM
41	132	MB 280-457849/4-A	1	U		1	1	1311	0.055427
42	0	BLK	1	BLNK		1	1	54	-1.437492 LO
B	0	baseline	1	RB		1	1	0	-1.501374 BL
44	109	CCV 200PPB	1	CCV		1	1	177053	208.705811
45	0	CCB	1	U		1	1	-4	-1.505976 LO
B	0	Baseline	1	RB		1	1	0	-1.501374 BL
47	133	280-123294-A-18-E	1	U		1	1	7780	7.735957
48	134	280-123294-A-18-F	DU	1	U	1	1	6812	6.586243
49	135	280-123294-A-18-G	MS	1	U	1	1	86519	101.219528
50	136	280-123294-A-18-H	MS	1	U	1	1	105599	123.871971
51	137	280-123294-A-15-B	1	U		1	1	8468	8.552878
52	138	280-123294-A-16-B	1	U		1	1	8645	8.763030
53	139	280-123294-A-17-B	1	U		1	1	8540	8.637671
54	140	280-123294-A-19-C	1	U		1	1	8516	8.609127
55	141	280-123294-A-20-C	1	U		1	1	8577	8.681844
56	142	280-123294-A-21-C	1	U		1	1	7843	7.810421
57	0	BLK	1	BLNK		1	1	-30	-1.537475 LO
B	0	baseline	1	RB		1	1	0	-1.501374 BL
59	109	CCV 200PPB	1	CCV		1	1	178957	210.966949
60	0	CCB	1	U		1	1	11	-1.488250 LO
B	0	Baseline	1	RB		1	1	0	-1.501374 BL
62	143	280-123294-A-22-C	1	U		1	1	7860	7.830905
63	144	280-123294-A-22-D	MS	1	U	1	1	87690	102.609245
64	145	280-123294-A-22-E	MS	1	U	1	1	107166	125.732368
65	146	x280-123524-A-1-A	1	U		1	1	1417510	1681.449097 HI
66	147	x280-123524-A-2-A	1	U		1	1	1411583	1674.412964 HI
67	148	x280-123524-A-3-A	1	U		1	1	1412351	1675.324707 HI
68	149	HLCS 280-457850/1-A	1	U		1	1	311050	367.795685 FL
69	150	LLCS 280-457850/2-A	1	U		1	1	90667	106.143402 FL
70	151	xLCS 280-457850/3-A	1	U		1	1	101462	118.960114

Peak	Cup	Name	R	Type	Dil	Wt	Height	Calc. (ppb)	Flags
71	152	MB 280-457850/4-A	1	U		1	1	1283	0.021977
72	0	BLK	1	BLNK		1	1	74	-1.413629 L0
B	0	baseline	1	RB		1	1	0	-1.501374 BL
74	109	CCV 200PPB	1	CCV		1	1	180931	213.309952
75	0	CCB	1	U		1	1	-44	-1.554131 L0
B	0	Baseline	1	RB		1	1	0	-1.501374 BL
77	153	280-123221-I-4-A	1	U		1	1	1446	0.214921
78	154	280-123221-I-4-B	MS 1	U		1	1	84634	98.981079
79	155	280-123221-I-4-C	MSD 1	U		1	1	82992	97.031158
80	156	160-33957-E-2-A	1	U		1	1	3900	3.129179
81	157	280-123157-T-1-B	1	U		1	1	18687	20.685289
82	158	280-123175-Q-2-A	1	U		1	1	17642	19.443741
83	159	280-123175-L-3-A	1	U		1	1	1602	0.400791
84	160	280-123190-A-2-A	1	U		1	1	2115	1.010013
85	201	280-123221-E-5-A	1	U		1	1	1717	0.537722
86	202	280-123221-I-7-A	1	U		1	1	1839	0.681796
87	0	BLK	1	BLNK		1	1	18	-1.479919 L0
B	0	baseline	1	RB		1	1	0	-1.501374 BL
89	109	CCV 200PPB	1	CCV		1	1	182145	214.751785
90	0	CCB	1	U		1	1	-119	-1.642279 L0
B	0	Baseline	1	RB		1	1	0	-1.501374 BL UM
92	203	280-123452-A-2-A	1	U		1	1	1340	0.089771
93	204	280-123208-G-1-A	1	U		1	1	1699	0.515972
94	205	HLCS 280-457897/1-A	1	U		1	1	318211	376.297729
95	206	LLCS 280-457897/2-A	1	U		1	1	92758	108.626884 UM
96	207	LCS 280-457897/3-A	1	U		1	1	92744	108.610092
97	208	LCSD 280-457897/4-A	1	U		1	1	90302	105.711037
98	209	MB 280-457897/5-A	1	U		1	1	2411	1.360934
99	210	280-123192-E-4-A	1	U		1	1	1228	-0.043649 L0
100	211	280-123192-E-4-B	MS 1	U		1	1	86891	101.661232
101	212	280-123192-E-4-C	MSD 1	U		1	1	85278	99.745216
102	0	BLK	1	BLNK		1	1	-1	-1.502237 L0 UM
B	0	baseline	1	RB		1	1	0	-1.501374 BL UM
104	109	CCV 200PPB	1	CCV		1	1	181916	214.480515
105	0	CCB	1	U		1	1	-115	-1.637874 L0
B	0	Baseline	1	RB		1	1	0	-1.501374 BL
107	213	280-123192-E-3-A	1	U		1	1	13969	15.083438
108	214	280-123192-E-5-A	1	U		1	1	2171	1.075580
109	215	280-123192-E-6-A	1	U		1	1	1978	0.846874
110	216	280-123155-F-12-A	1	U		1	1	1428	0.194170
111	217	280-123208-G-2-A	1	U		1	1	1596	0.393835
112	218	280-123208-G-3-A	1	U		1	1	1596	0.393202
113	219	280-123208-G-4-A	1	U		1	1	1614	0.414596
114	220	280-123208-G-5-A	1	U		1	1	1785	0.617753
115	221	280-123208-G-5-B	MS 1	U		1	1	87771	102.705391
116	222	280-123208-G-5-C	MSD 1	U		1	1	88791	103.916809
117	0	BLK	1	BLNK		1	1	72	-1.416361 L0
B	0	baseline	1	RB		1	1	0	-1.501374 BL
119	109	CCV 200PPB	1	CCV		1	1	183802	216.719254
120	0	CCB	1	U		1	1	-94	-1.613150 L0
B	0	Baseline	1	RB		1	1	0	-1.501374 BL
122	223	280-123208-G-6-A	1	U		1	1	10720	11.225799
123	224	280-123208-G-7-A	1	U		1	1	6972	6.775618
124	225	280-123208-G-8-A	1	U		1	1	7616	7.541272
125	226	280-123208-G-9-A	1	U		1	1	10547	11.020243
126	227	280-123209-F-1-A	1	U		1	1	1282	0.020554
127	228	280-123209-F-2-A	1	U		1	1	867	-0.472434 L0
128	229	280-123213-I-1-A	1	U		1	1	22637	25.375019
129	230	280-123214-F-1-A	1	U		1	1	5869	5.466602
130	231	280-123214-F-2-A	1	U		1	1	4081	3.343721
131	232	280-123217-B-5-B	1	U		1	1	3265	2.374773
132	0	BLK	1	BLNK		1	1	9	-1.490184 L0
B	0	baseline	1	RB		1	1	0	-1.501374 BL
134	109	CCV 200PPB	1	CCV		1	1	182813	215.545425
135	0	CCB	1	U		1	1	-24	-1.529284 L0
B	0	Baseline	1	RB		1	1	0	-1.501374 BL
137	233	HLCS 280-457955/1-A	1	U		1	1	295576	349.424164
138	234	LLCS 280-457955/2-A	1	U		1	1	84661	99.012650
139	235	LCS 280-457955/3-A	1	U		1	1	83165	97.237389
140	236	MB 280-457955/4-A	1	U		1	1	1976	0.844505
141	237	280-123217-B-10-B	1	U		1	1	3105	2.185042
142	238	280-123256-C-1-A	1	U		1	1	2033	0.911838
143	239	280-123256-C-1-B	MS 1	U		1	1	85778	100.338905
144	240	280-123256-C-1-C	MSD 1	U		1	1	89092	104.274300
145	0	BLK	1	BLNK		1	1	28	-1.468145 L0

Peak	Cup	Name	R	Type	Dil	Wt	Height	Calc. (ppb)	Flags
B	0	baseline	1	RB		1	1	0	-1.501374 BL
147	109	CCV 200PPB	1	CCV		1	1	183024	215.795013
148	0	CCB	1	U		1	1	-66	-1.580074 LO
B	0	Baseline	1	RB		1	1	0	-1.501374 BL
150	241	280-123524-A-1-A	1	U		10	1	142982	1682.557495
151	242	280-123524-A-2-A	1	U		10	1	144491	1700.470947
152	243	280-123524-A-3-A	1	U		10	1	148508	1748.163818
153	244	LCS 280-457850/3-A	1	U		1	1	88751	103.868500
154	0	BLK	1	BLNK		1	1	5	-1.495046 LO
B	0	baseline	1	RB		1	1	0	-1.501374 BL
156	109	CCV 200PPB	1	CCV		1	1	183677	216.570923
157	0	CCB	1	U		1	1	-52	-1.563059 LO
B	0	Baseline	1	RB		1	1	0	-1.501374 BL

File name: C:\FLOW_4\C051319.RST

Date: 13-May-19

Operator: RK

* Name	Conc	Height
* CAL 0.00 ppb	0.000000	111.035789
* CAL 10.0 ppb	10.000000	8949.304688
* CAL 20.0 ppb	20.000000	17457.535156
* CAL 50.0 ppb	50.000000	43958.074219
* CAL 100 ppb	100.000000	86601.515625
* Cal 200 ppb	200.000000	172027.656250
* Cal 400 ppb	400.000000	336722.593750

Calib Coef:

 $y=bx+a$

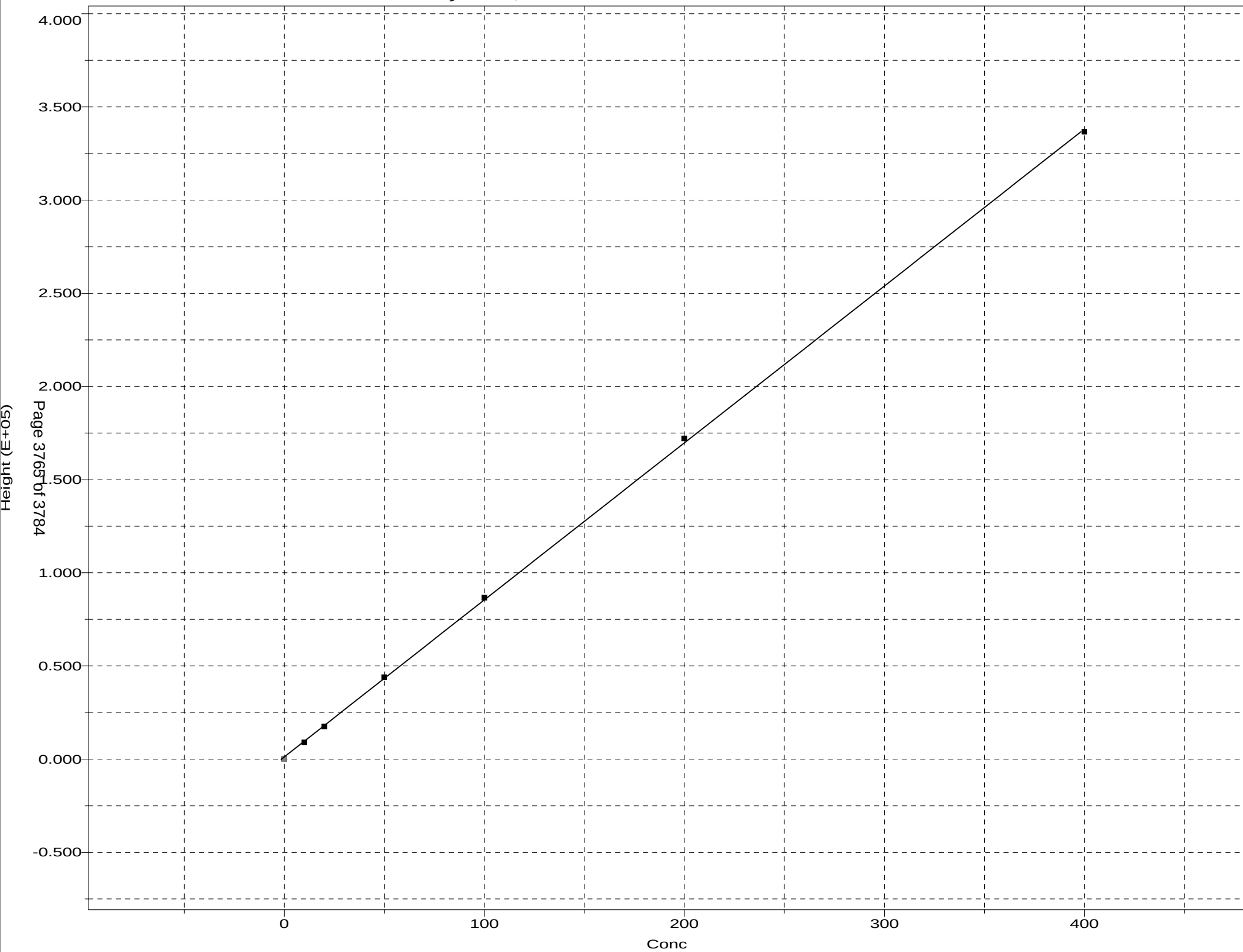
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b: 8.4228e+02

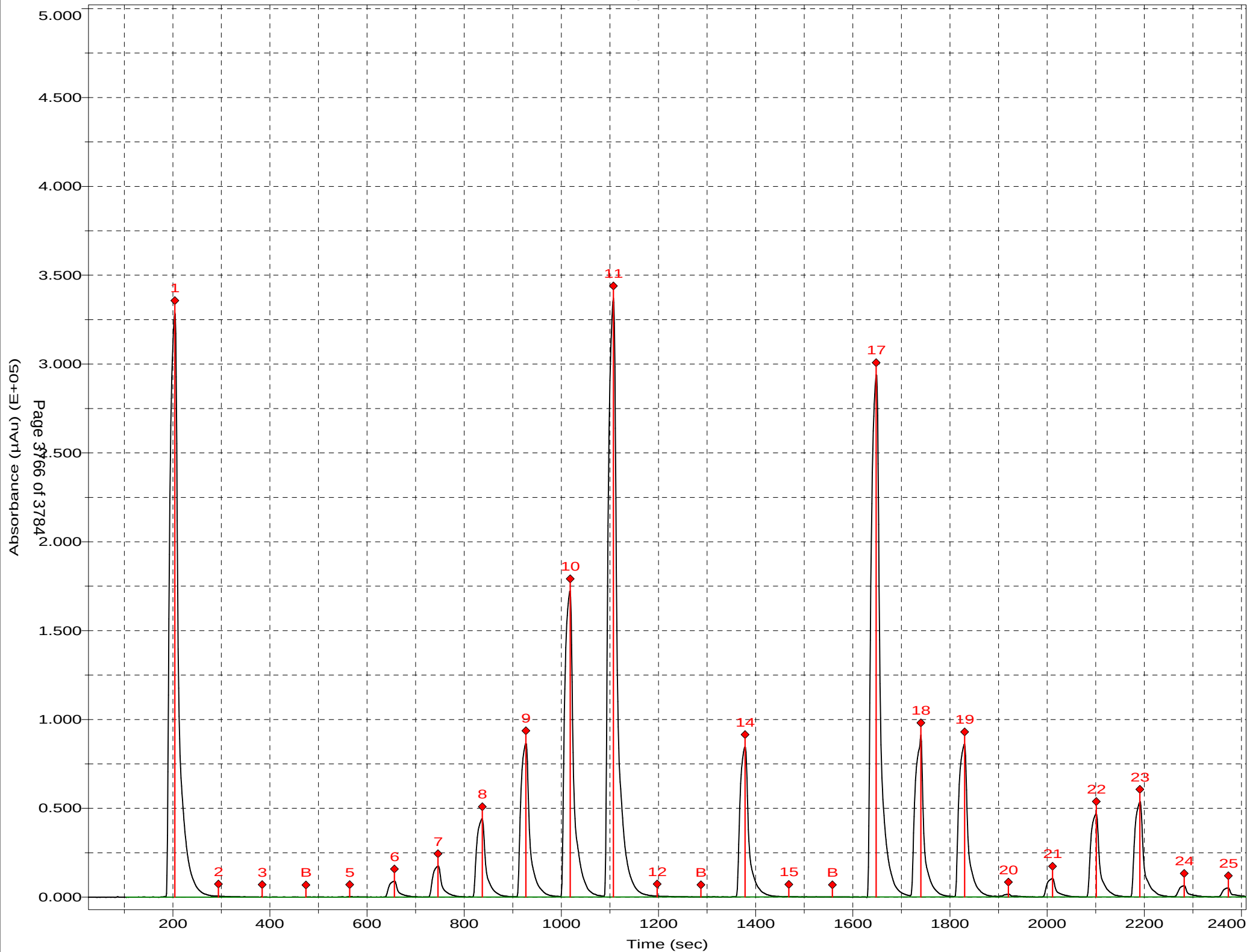
Corr Coef: 0.999937

Carryover: 0.164%

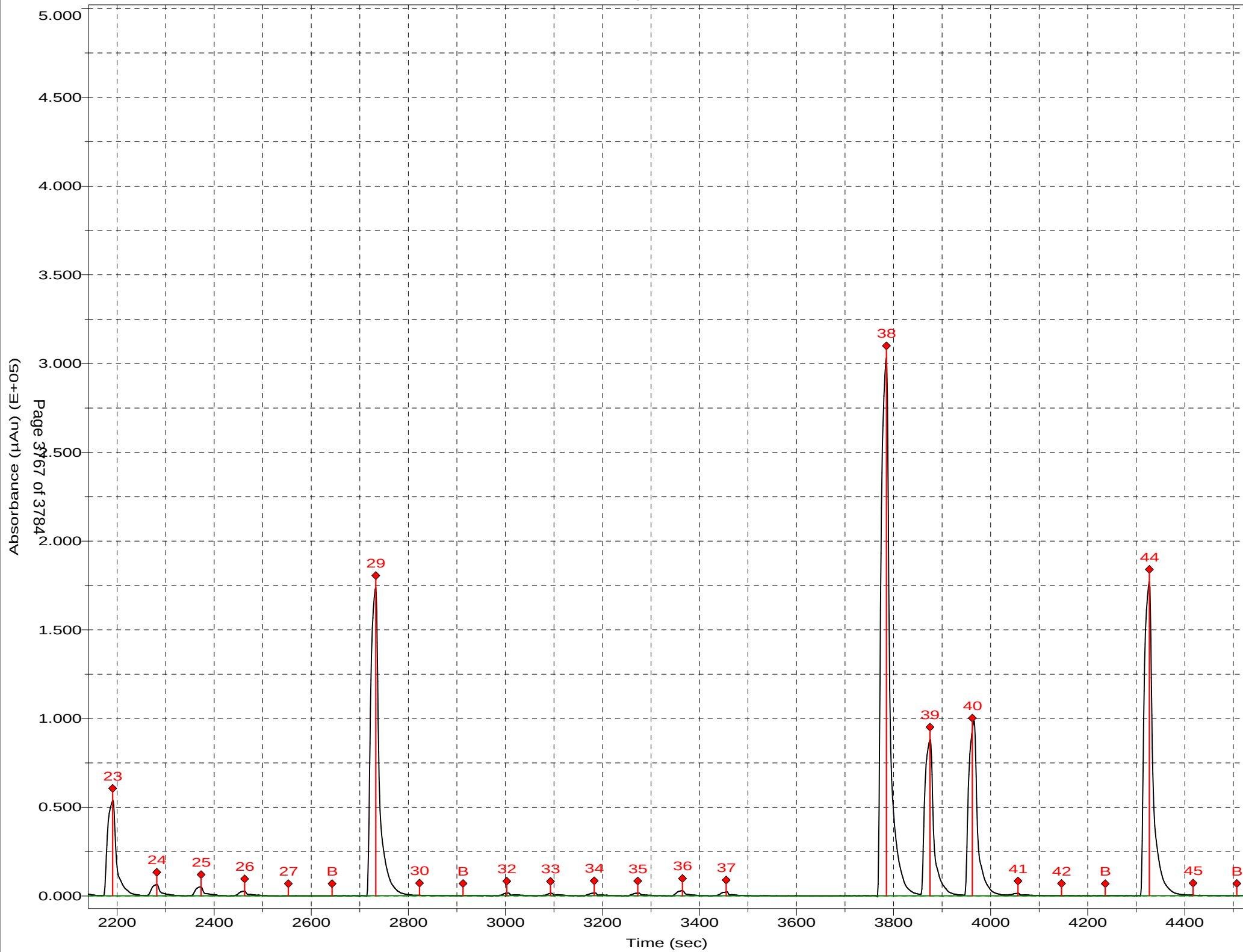
No Drift Peaks



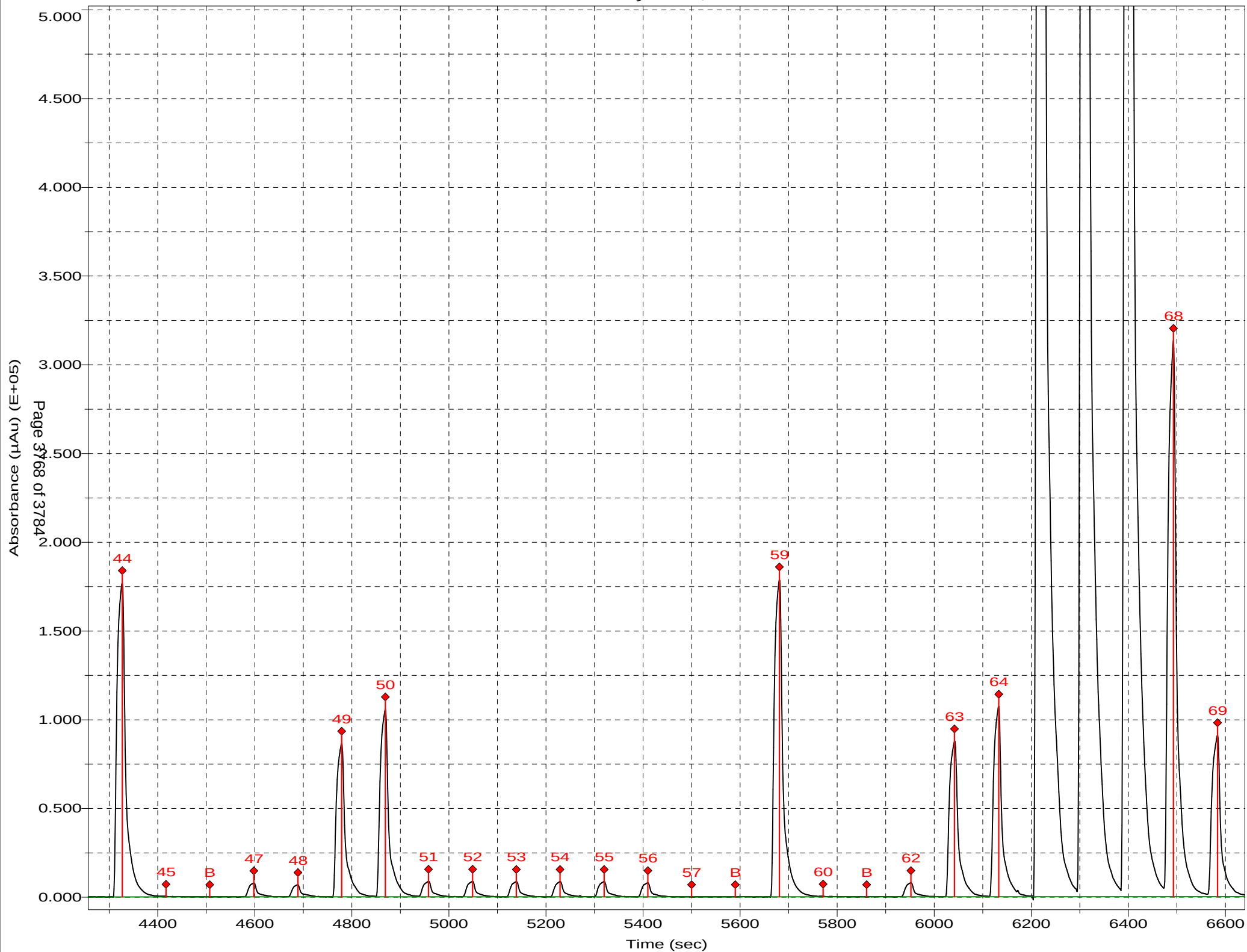
Channel 1: Cyanide, Total

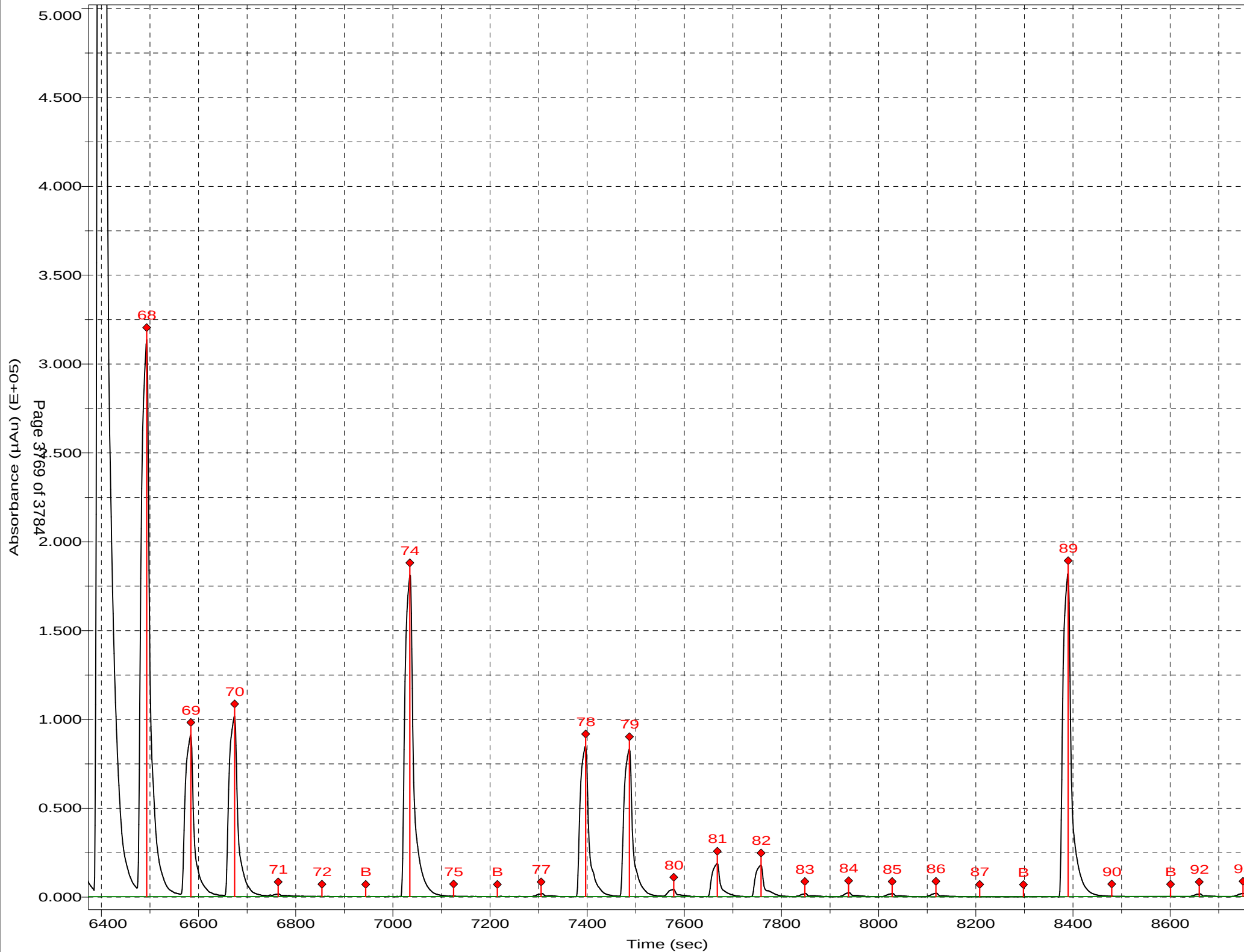


Channel 1: Cyanide, Total

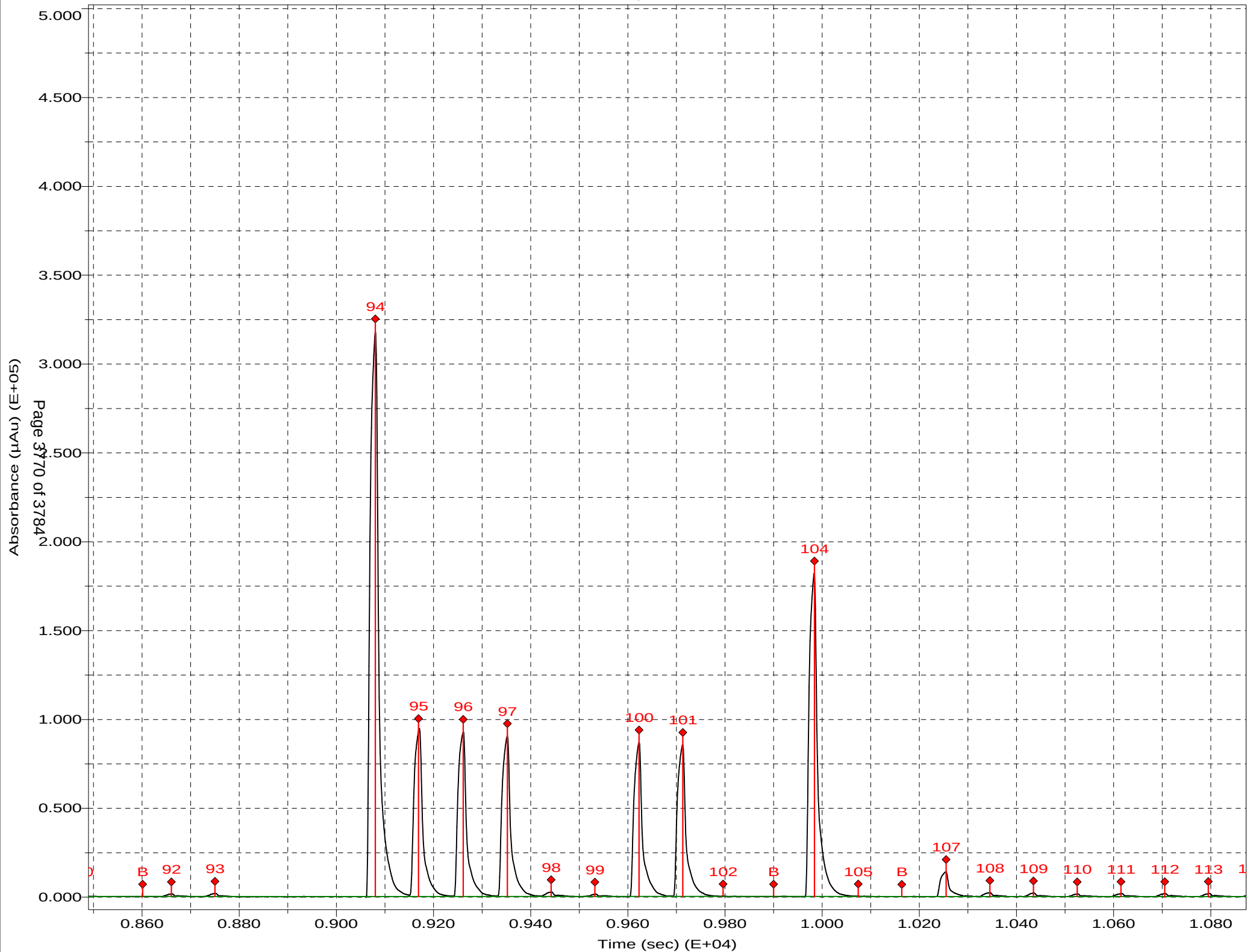


Channel 1: Cyanide, Total

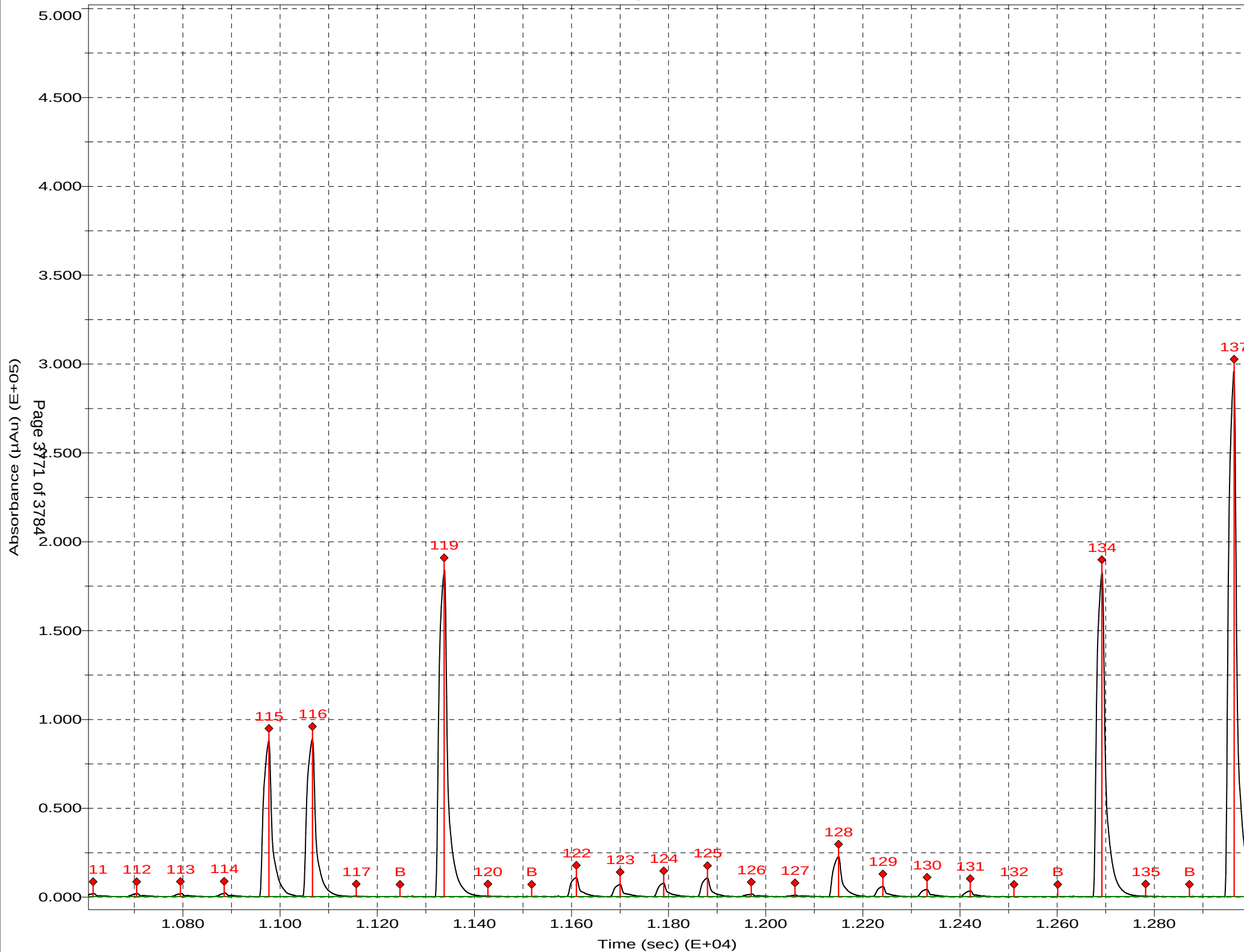




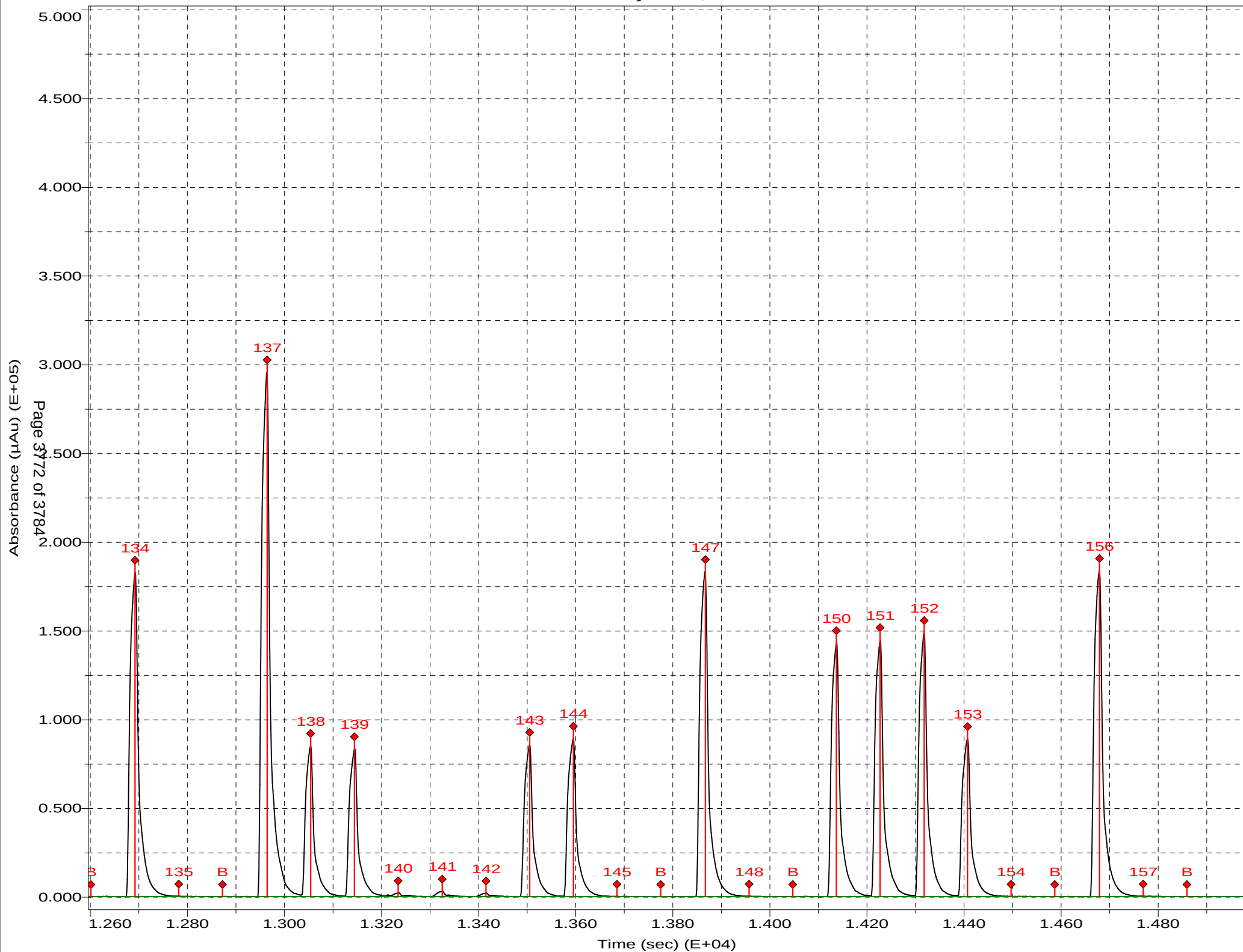
Channel 1: Cyanide, Total



Channel 1: Cyanide, Total



Channel 1: Cyanide, Total



Shipping and Receiving Documents



Chain of Custody Record

COC No.: **RVAAP-104-TA**

Date: **04/30/19**

Page of 1

Name Leidos Address: 8866 Commons Blvd., Suite 201, Twinsburg, OH 44087 Phone Number: (330) 405-5802 Project Manager: Jed Thomas Project: RVAAP FWGW Sampling Event Spring 2019 Job/P.O. No.: P010216426 Sampler (Signature) <i>Jed Thomas</i> (Printed Name) Jed Thomas				Laboratory Name: Test America - Canton Address: 4101 Shuffel St NW North Canton, OH 44720 Phone: (330) 497-9396 Fax: Contact:									
Sample ID	NTAmw-120-190401-GW	Site Type	GW	Date	04/30/19	Time	1048	Matrix	W				
Laboratory No.													
Hexachlorocyclopentadiene (2/A)				2		Temperature Blank							
Barcode				280-123221 Chain of Custody									
Requested Parameters				Total Number of Containers		2							
OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS													
Relinquished by <i>Amanda Sprinze</i> (Signature) AMANDA SPRINZE (Printed Name) Leidos Company				Date	04/30/19	Time	1505	Received by <i>Test America</i> (Signature) RE ROBINSON (Printed Name) Company	Date	4/30/19	Time	1505	Notes: A. Cool, 4C B. HCl, pH<2, Cool, 4C C. HNO3, pH<2, Cool, 4C D. NaOH, pH>12, Cool 4C 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8081B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B
Relinquished by <i>Jed Thomas</i> (Signature) JED THOMAS (Printed Name) Leidos Company				Date	4/30	Time	1615	Received by <i>Test America</i> (Signature) REED POTTS (Printed Name) Company	Date	5/1/19	Time	0915	Notes: Temperature Blank Lab: Leidos 8866 Commons Drive Twinsburg, OH 44087 (330) 405-5802

4.8, 0.0 Badly o.o Transfer 28 5/1/19



Chain of Custody Record

COC No.: **RVAAP-103-TA**

Date: **04/30/2019**

Page | of 1

Name Leidos Address: 8866 Commons Blvd. Suite 201, Twinsburg, OH 44087 Phone Number: (330) 405-5802 Project Manager: Jed Thomas Project: RVAAP FWGW Sampling Event Spring 2019 Job/P.O. No.: P010216426 Sampler (Signature) <i>Charles Spurr</i> (Printed Name) Charles Spurr				Laboratory Name: Test America - Canton Address: 4101 Shuffel St NW North Canton, OH 44720 Phone: (330) 497-9396 Fax: Contact:			
Laboratory No.	Sample ID	Site Type	Date	Time	Matrix		
	NTAmw-119-190401-GW	---	4/30/19	1045	W		
	NTAmw-119-190401-GWMSD	---	4/30/19	1045	W		
	NTAmw-119-190402-GW	---	4/30/19	1045	W		
Requested Parameters							
LL PAHs (3)(A)			2				
Explosives (6)(A)			2				
TAL Metals (7)(C)			1				
Temperature Blank							
Total Number of Containers					11		
Relinquished by <i>Amanda Spurr</i> (Signature) AMANDA SPURR (Printed Name) Leidos Company						Date 04/30/19 Time 1505	
Received by <i>TA-Dev</i> (Signature) TA-Dev (Printed Name) Leidos Company						Date 5/1/19 Time 0915	
Relinquished by <i>Reed K. Hunk</i> (Signature) Reed K. Hunk (Printed Name) Leidos Company						Date 5/1/19 Time 0915	
Notes: A. Cool, 4C B. HCl, pH<2, Cool, 4C C. HNO ₃ , pH<2, Cool, 4C D. NaOH, pH>12, Cool 4C 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8081B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B							
Shipment Method: Courier							
Temperature Blank Lab: Leidos 8866 Commons Drive Twinsburg, OH 44087 (330) 405-5802							
OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS							

4.8, 0.6 EDTA 0.0 Transfer on 5/1/19



Chain of Custody Record

COC No.: **RVAAP-101-TA**

Date: **04/30/19**

Page | of 1

Name Leidos Address: 8866 Commons Blvd, Suite 201, Twinsburg, OH 44087 Phone Number: (330) 405-5802 Project Manager: Jed Thomas Project: RVAAP FWGW Sampling Event Spring 2019 Job/P.O. No.: P010216426		Sampler (Signature) <i>[Signature]</i> (Printed Name) Ron Lamm		Requested Parameters										Laboratory Name: Test America - Canton Address: 4101 Shuffel St NW North Canton, OH 44720 Phone: (330) 497-9396 Fax: Contact:																																																																	
Laboratory No.	Sample ID	Site Type	Date	Time	Matrix	VOCs (1)(B)	Phenols (2)(A)	LL PAHs (3)(A)	PCBs (4)(A)	Pesticides (5)(A)	Explosives (6)(A)	Cyanide (8)(D)	TAL Metals (7)(C)	Temperature Blank	Total Number of Containers																																																																
	DET-003-190401-GW	---	4/24/19	10:53	W	3	2	2	2	2	2	1	1	13	41																																																																
	DET-003-190401-GWMSD	---	↓	↓	W	4		4	4	4	1			17																																																																	
	DET-003-190402-GW	---	↓	↓	W	3			2	2	1		1	9																																																																	
	FWGTB-191001-TB	---	↓	09:00	W	2								2																																																																	
Relinquished by <i>[Signature]</i> Printed Name Monica Spring Signature <i>[Signature]</i> Printed Name Antonia Sprinze Leidos Company																Received by <i>[Signature]</i> Printed Name RC Gibson Signature <i>[Signature]</i> Printed Name Rick Gibson Company																Date 04/30/19 Time 15:05																Notes: A. Cool, 4C B. HCl, pH<2, Cool, 4C C. HNO ₃ , pH<2, Cool, 4C D. NaOH, pH>12, Cool 4C 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8081B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B																Shipment Method: Courier															
Relinquished By <i>[Signature]</i> Signature Printed Name Company																Received by <i>[Signature]</i> Signature Printed Name Company																Date 4/30 Time 16:15																Temperature Blank Lab: Leidos 8866 Commons Drive Twinsburg, OH 44087 (330) 405-5802																															

0.7, 0.7, 0.6 DR# 0.0 Transfer R# 5/1/19

leidos

Date: 04/30/19

Page | of 1 b

0.6, 0.7 INH 9 0.0 Transfer 120 5/1/18



Date: 04/30/19

Page(of 1

Name Leidos Address: 8866 Commons Blvd. Suite 201, Twinsburg, OH 44087 Phone Number: (330) 405-5802 Project Manager: Jed Thomas Project: RVAAP FWGW Sampling Event Spring 2019 Job/P.O. No.: P010216426 Sampler (Signature) <i>[Signature]</i> (Printed Name) Jackie Mitchell		Laboratory Name: Test America - Canton Address: 4101 Shuffel St NW North Canton, OH 44720 Phone: (330) 497-9396 Fax: Contact:	
Requested Parameters		OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS	
Total Number of Containers		3	
Temperature Blank			
Explosives (b)(A)		2	
TAL Metals (7)(C)		1	
Notes:		A. Cool, 4C B. HCl, pH<2, Cool, 4C C. HNO ₃ , pH<2, Cool, 4C D. NaOH, pH>12, Cool 4C	
Date		4/30/19	
Time		1505	
Received by		Rick Robison	
Signature		<i>[Signature]</i>	
Printed Name		Rick Robison	
Company		Leidos	
Date		4/30	
Time		1505	
Received by		TA-Den	
Signature		<i>[Signature]</i>	
Printed Name		Leidos	
Company		Leidos	
Date		4/30	
Time		1615	
Received by		Leidos	
Signature		<i>[Signature]</i>	
Printed Name		Leidos	
Company		Leidos	

2-4 IR # 900 Transfer Rp 5/11/19



Chain of Custody Record

COC No.: **RVAAP-109-TA**

Date: **04/30/19**

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Name Leidos
Address: 8866 Commons Blvd. Suite 201, Twinsburg, OH 44087
Phone Number: (330) 405-5802
Project Manager: Jed Thomas
Project: RVAAP FWGW Sampling Event Spring 2019
Job/P.O. No.: P010216426
Sampler (Signature) *[Signature]* (Printed Name) **Rick Larson**

Laboratory No.		Sample ID	Site Type	Date	Time	Matrix	Requested Parameters										Laboratory Name: Test America - Canton	
							Explosives (b)(A)	TAL Metals (7)(C)						Temperature Blank	Address: 4101 Shuffel St NW North Canton, OH 44720 Phone: (330) 497-9396 Fax: Contact:			
															OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS			
Relinquished by <i>[Signature]</i>		W8Gmw-020-190401-GW	---	04/30/19	1150	W	2								3	Shipments Method: Courier		
Signature <i>[Signature]</i>																		
Printed Name Ammonia Science																		
Leidos																		
Relinquished by <i>[Signature]</i>				04/30/19	1505											Temperature Blank Lab: Leidos 8866 Commons Drive Twinsburg, OH 44087 (330) 405-5802		
Signature <i>[Signature]</i>																		
Printed Name Rick Larson																		
Company																		
Relinquished by <i>[Signature]</i>				04/30/19	1505											Notes: A. Cool, 4C B. HCl, pH<2, Cool, 4C C. HNO3, pH<2, Cool, 4C D. NaOH, pH>12, Cool 4C 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8081B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B		
Signature <i>[Signature]</i>																		
Printed Name TA-Den																		
Company																		
Relinquished by <i>[Signature]</i>				04/30/19	0915											Notes: A. Cool, 4C B. HCl, pH<2, Cool, 4C C. HNO3, pH<2, Cool, 4C D. NaOH, pH>12, Cool 4C 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8081B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B		
Signature <i>[Signature]</i>																		
Printed Name Leidos																		
Company																		

0.6, 0.6 IFA 9 0.0 Transfer RP 5/1/19



Chain of Custody Record

COC No.: **RVAAP-106-TA**
Date: **04/30/2019**

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Name: Leidos Address: 8866 Commons Blvd. Suite 201, Twinsburg, OH 44087 Phone Number: (330) 405-5802 Project Manager: Jed Thomas Project: RVAAP FWGW Sampling Event Spring 2019 Job/P.O. No.: P010216426 Sampler (Signature): <i>[Signature]</i> (Printed Name): Leidos		Laboratory Name: Test America - Canton Address: 4101 Shuffel St NW North Canton, OH 44720 Phone: (330) 497-9396 Fax: Contact:	
Relinquished by: <i>[Signature]</i> Signature: Amanda Spence Printed Name: Amanda Spence Leidos: Company:	Date: 4/30/19 Time: 1505	Received by: <i>[Signature]</i> Signature: Rick Robinson Printed Name: Rick Robinson Company:	Date: 4/30/19 Time: 1505
Relinquished by: <i>[Signature]</i> Signature: <i>[Signature]</i> Printed Name: <i>[Signature]</i> Leidos: Company:	Date: 4/30 Time: 1610	Received by: <i>[Signature]</i> Signature: <i>[Signature]</i> Printed Name: <i>[Signature]</i> Company:	Date: 8/1/19 Time: 0915
Requested Parameters:		Notes: A. Cool, 4C B. HCl, pH<2, Cool, 4C C. HNO ₃ , pH<2, Cool, 4C D. NaOH, pH>12, Cool 4C 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8881B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B	
Explosives (b)(A)		Notes:	
Temperature Blank		Notes:	
TAL Metals (7)(C)		Notes:	
Total Number of Containers		Notes:	
OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS		Shipment Method: Courier	

0.6.0.6 RHA 9 0.0 Transfer RP
5/1/19



Chain of Custody Record

COC No.: **RVAAP-108-TA**
Date: **04/30/2019**

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Name Leidos Address: 8866 Commons Blvd, Suite 201, Twinsburg, OH 44087 Phone Number: (330) 405-5802 Project Manager: Jed Thomas Project: RVAAP FWGW Sampling Event Spring 2019 Job/P.O. No.: P010216426 Sampler (Signature) <i>[Signature]</i>				Laboratory Name: Test America - Canton Address: 4101 Shuffel St NW North Canton, OH 44720 Phone: (330) 497-9396 Fax: Contact:																									
Laboratory No.	Sample ID	Site Type	Date	Time	Matrix	Requested Parameters																							
	WBGMW-021-190401-GW		4/30/19	0945	W	Total Number of Containers: 3																							
<i>[Handwritten: All out of date]</i>						Explosives (b)(A)		TAL Metals (7)(C)		Temperature Blank		Total Number of Containers																	
						2		1		3																			
Relinquished by <i>[Signature]</i> ANANDA SENGU Printed Name Leidos Company						Date 04/30/19 Time 1505						Received by <i>[Signature]</i> RE 1600 Printed Name RICK ROBERTSON Company						Date 4/30/19 Time 1505						Notes: A. Cool, 4C B. HCl, pH<2, Cool, 4C C. HNO3, pH<2, Cool, 4C D. NaOH, pH>12, Cool 4C 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8081B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B					
Relinquished by <i>[Signature]</i> Printed Name Leidos Company						Date 4/30/19 Time 1600						Received by +A-DEM <i>[Signature]</i> Reed Pottner Printed Name Reed Pottner Company						Date 5/1/19 Time 0945						Notes:					
Temperature Blank						Lab: Leidos 8866 Commons Drive Twinsburg, OH 44087 (330) 405-5802						Shipment Method: Courier																	

0.6, 0.6 PEA 90.0 Transfer RD 5/14/19



Date: 04/30/19

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Name Leidos Address: 8866 Commons Blvd, Suite 201, Twinsburg, OH 44087 Phone Number: (330) 405-5802 Project Manager: Jed Thomas Project: RVAAP FWGW Sampling Event Spring 2019 Job/P.O. No.: P010216426 Sampler (Signature) <i>[Signature]</i>		Laboratory Name: Test America - Canton Address: 4101 Shuffel St NW North Canton, OH 44720 Phone: (330) 497-9396 Fax: Contact:	
Requested Parameters		OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS	
Sample ID	Site Type	Depth	Matrix
WBGMW-009-190401-CW		4/30/19 053	W
Total Number of Containers: 3		Temperature Blank	
Explosives (b)(A)		TAL Metals (7)(C)	
2		1	
Date: 4/30/19		Time: 1505	
Received by: <i>[Signature]</i> Signature: <i>[Signature]</i> Printed Name: <i>[Name]</i>		Notes: Total Number of Containers: 3 A. Cool, 4C B. HCl, pH<2, Cool, 4C C. HNO3, pH<2, Cool, 4C D. NaOH, pH>12, Cool 4C	
Date: 4/30/19		Time: 1505	
Received by: <i>[Signature]</i> Signature: <i>[Signature]</i> Printed Name: <i>[Name]</i>		Notes: 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8081B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B	
Date: 4/30		Time: 1505	
Received by: <i>[Signature]</i> Signature: <i>[Signature]</i> Printed Name: <i>[Name]</i>		Notes: 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8081B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B	
Date: 4/30		Time: 1505	
Received by: <i>[Signature]</i> Signature: <i>[Signature]</i> Printed Name: <i>[Name]</i>		Notes: 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8081B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B	
Date: 4/30		Time: 1505	
Received by: <i>[Signature]</i> Signature: <i>[Signature]</i> Printed Name: <i>[Name]</i>		Notes: 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8081B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B	
Date: 4/30		Time: 1505	
Received by: <i>[Signature]</i> Signature: <i>[Signature]</i> Printed Name: <i>[Name]</i>		Notes: 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8081B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B	
Date: 4/30		Time: 1505	
Received by: <i>[Signature]</i> Signature: <i>[Signature]</i> Printed Name: <i>[Name]</i>		Notes: 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8081B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B	
Date: 4/30		Time: 1505	
Received by: <i>[Signature]</i> Signature: <i>[Signature]</i> Printed Name: <i>[Name]</i>		Notes: 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8081B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B	
Date: 4/30		Time: 1505	
Received by: <i>[Signature]</i> Signature: <i>[Signature]</i> Printed Name: <i>[Name]</i>		Notes: 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8081B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B	
Date: 4/30		Time: 1505	
Received by: <i>[Signature]</i> Signature: <i>[Signature]</i> Printed Name: <i>[Name]</i>		Notes: 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8081B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B	
Date: 4/30		Time: 1505	
Received by: <i>[Signature]</i> Signature: <i>[Signature]</i> Printed Name: <i>[Name]</i>		Notes: 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8081B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B	
Date: 4/30		Time: 1505	
Received by: <i>[Signature]</i> Signature: <i>[Signature]</i> Printed Name: <i>[Name]</i>		Notes: 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8081B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B	
Date: 4/30		Time: 1505	
Received by: <i>[Signature]</i> Signature: <i>[Signature]</i> Printed Name: <i>[Name]</i>		Notes: 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8081B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B	
Date: 4/30		Time: 1505	
Received by: <i>[Signature]</i> Signature: <i>[Signature]</i> Printed Name: <i>[Name]</i>		Notes: 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8081B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B	

0-6,0,6	Transfer	5/1/19
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Chain of Custody Record

COC No.: **RVAAP-105-TA**

Date: **04/30/2019**

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Name **Leidos**
Address: 8866 Commons Blvd, Suite 201, Twinsburg, OH 44087
Phone Number: (330) 405-5802
Project Manager: **Jed Thomas**
Project: **RVAAP FWGW Sampling Event Spring 2019**
Job/P.O. No.: **P010216426**
Sampler (Signature) *[Signature]* (Printed Name) **Lindsey Mader**

Requested Parameters		Explosives (6)(A)		TAL Metals (7)(C)		Temperature Blank		Total Number of Containers		Laboratory Name: Test America - Canton	
										Address: 4101 Shuffel St NW North Canton, OH 44720 Phone: (330) 497-9396 Fax: Contact:	
Relinquished by <i>[Signature]</i> Amara Springs Leidos Company	Date 04/30/19 Time 1505	Received by <i>[Signature]</i> RC Printed Name RICK ROBISON Company	Date 4/30/19 Time 1505	Notes: A. Cool, 4C B. HCl, pH<2, Cool, 4C C. HNO3, pH<2, Cool, 4C D. NaOH, pH>12, Cool, 4C 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8081B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B	3	3	3	3	3	3	3
Relinquished by <i>[Signature]</i> Date 4/30/19 Time 1605	Received by <i>[Signature]</i> Date 8/1/19 Time 0915	Notes: A. Cool, 4C B. HCl, pH<2, Cool, 4C C. HNO3, pH<2, Cool, 4C D. NaOH, pH>12, Cool, 4C 1. SW 8260B 2. SW 8270D 3. SW 8270D SIM 4. SW 8082A 5. SW 8081B 6. SW 8330 7. SW 6010/6020/7470 8. SW 9012B 9. SW 9034 10. SW 9056/9056A 11. SW 6860 12. EPA 353.2 13. SW 7196 14. SM2320B	3	3	3	3	3	3	3	3	3
OBSERVATIONS, COMMENTS SPECIAL INSTRUCTIONS											

0.6, 0.6 DL # 9 a.o Transfer DO 8/1/19

Login Sample Receipt Checklist

Client: Leidos, Inc.

Job Number: 280-123221-1

Login Number: 123221

List Source: Eurofins TestAmerica, Denver

List Number: 1

Creator: Paul, Ryan D

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	