ANALYTICAL REPORT

Job Number: 280-90848-1

Job Description: Ravenna, OH - Erie Burning Grounds

For:
Cardno TEC, Inc
1658 Cole Boulevard
Suite 190
Golden, CO 80401

Attention: Ms. Heather Miner

Approved for release.
Stephanie K Rothmeyer
Project Manager I
12/8/2016 2:20 PM

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12/08/2016

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

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

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Qualifiers

HPLC/IC

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
M	Manual integrated compound.
J	Estimated: The analyte was positively identified; the quantitation is an estimation

General Chemistry

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

CASE NARRATIVE

Client: Cardno TEC, Inc

Project: Ravenna, OH - Erie Burning Grounds

Report Number: 280-90848-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

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

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

RECEIPT

The samples were received on 11/11/2016 at 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.1° C.

EXPLOSIVES

Samples EBGmw-128-111016-GW (280-90848-1), EBGmw-126-111016-GW (280-90848-2), EBGmw-131-111016-GW (280-90848-3) and EBGmw-125-111016-GW (280-90848-4) were analyzed for Explosives in accordance with 8330B. The samples were prepared on 11/17/2016 and analyzed on 11/30/2016 and 12/04/2016.

Nitroglycerin was detected in method blank MB 280-351958/1-A at a level that was above the method detection limit but below one half the reporting limit. The value should be considered an estimate, and has been flagged.

The laboratory control sample (LCS) and/or laboratory control sample duplicate (LCSD) for preparation batch 280-351958 and analytical batch 280-354108 recovered outside control limits for 2,4,6-Trinitrotoluene on the confirmation column. This analyte was biased high in the LCS and was not detected in the associated samples on the primary column; therefore, the data have been reported.

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

CYANIDE, TOTAL AND/OR AMENABLE

Samples EBGmw-128-111016-GW (280-90848-1), EBGmw-126-111016-GW (280-90848-2), EBGmw-131-111016-GW (280-90848-3) and EBGmw-125-111016-GW (280-90848-4) were analyzed for Cyanide, Total and/or Amenable in accordance with 9012B. The samples were prepared on 11/18/2016 and analyzed on 11/19/2016.

Cyanide, Total was detected in method blank MB 280-352264/4-A at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

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

Detection Summary

Client: Cardno TEC, Inc
Project/Site: Ravenna, OH - Erie Burning Grounds

TestAmerica Job ID: 280-90848-1

Client Sample ID: EBGmw-128-111016-GW — Lab Sample ID: 280-90848-1

No Detections.

Client Sample ID: EBGmw-126-111016-GW — Lab Sample ID: 280-90848-2

No Detections.

Client Sample ID: EBGmw-131-111016-GW — Lab Sample ID: 280-90848-3

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	3.9	J	10	2.0	ug/L	1		9012B	Total/NA

Client Sample ID: EBGmw-125-111016-GW — Lab Sample ID: 280-90848-4

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	11		10	2.0	ug/L	1		9012B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: EBGmw-128-111016-GW

Lab Sample ID: 280-90848-1

Date Collected: 11/10/16 10:47

Matrix: Water

Date Received: 11/11/16 09:30

Method: 8330B - Nitroaromatics and Nitramines (HPLC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.43	U	1.1	0.22	ug/L		11/17/16 11:31	11/30/16 14:16	1
1,3-Dinitrobenzene	0.22	U	0.43	0.096	ug/L		11/17/16 11:31	11/30/16 14:16	1
2,4,6-Trinitrotoluene	0.22	U	0.43	0.079	ug/L		11/17/16 11:31	11/30/16 14:16	1
2,4-Dinitrotoluene	0.22	U	0.43	0.091	ug/L		11/17/16 11:31	11/30/16 14:16	1
2,6-Dinitrotoluene	0.22	U	0.22	0.070	ug/L		11/17/16 11:31	11/30/16 14:16	1
2-Amino-4,6-dinitrotoluene	0.13	U	0.22	0.055	ug/L		11/17/16 11:31	11/30/16 14:16	1
2-Nitrotoluene	0.22	U	0.43	0.093	ug/L		11/17/16 11:31	11/30/16 14:16	1
3-Nitrotoluene	0.22	U	0.43	0.091	ug/L		11/17/16 11:31	11/30/16 14:16	1
4-Amino-2,6-dinitrotoluene	0.13	U	0.22	0.063	ug/L		11/17/16 11:31	11/30/16 14:16	1
4-Nitrotoluene	0.43	U	1.1	0.22	ug/L		11/17/16 11:31	11/30/16 14:16	1
HMX	0.22	U	0.43	0.095	ug/L		11/17/16 11:31	11/30/16 14:16	1
Nitrobenzene	0.22	U	0.43	0.099	ug/L		11/17/16 11:31	11/30/16 14:16	1
Nitroglycerin	2.2	U	3.3	1.0	ug/L		11/17/16 11:31	11/30/16 14:16	1
PETN	1.3	U	2.2	0.45	ug/L		11/17/16 11:31	11/30/16 14:16	1
RDX	0.13	U	0.22	0.057	ug/L		11/17/16 11:31	11/30/16 14:16	1
Tetryl	0.22	U	0.26	0.086	ug/L		11/17/16 11:31	11/30/16 14:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dinitrobenzene	*99*		*83 - 119*	*11/17/16 11:31*	*11/30/16 14:16*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	5.0	U	10	2.0	ug/L		11/18/16 09:14	11/19/16 09:20	1

Client Sample ID: EBGmw-126-111016-GW

Lab Sample ID: 280-90848-2

Date Collected: 11/10/16 12:53

Matrix: Water

Date Received: 11/11/16 09:30

Method: 8330B - Nitroaromatics and Nitramines (HPLC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.46	U	1.2	0.23	ug/L		11/17/16 11:31	11/30/16 14:40	1
1,3-Dinitrobenzene	0.23	U	0.46	0.10	ug/L		11/17/16 11:31	11/30/16 14:40	1
2,4,6-Trinitrotoluene	0.23	U	0.46	0.084	ug/L		11/17/16 11:31	11/30/16 14:40	1
2,4-Dinitrotoluene	0.23	U	0.46	0.097	ug/L		11/17/16 11:31	11/30/16 14:40	1
2,6-Dinitrotoluene	0.23	U	0.23	0.075	ug/L		11/17/16 11:31	11/30/16 14:40	1
2-Amino-4,6-dinitrotoluene	0.14	U	0.23	0.059	ug/L		11/17/16 11:31	11/30/16 14:40	1
2-Nitrotoluene	0.23	U	0.46	0.099	ug/L		11/17/16 11:31	11/30/16 14:40	1
3-Nitrotoluene	0.23	U	0.46	0.097	ug/L		11/17/16 11:31	11/30/16 14:40	1
4-Amino-2,6-dinitrotoluene	0.14	U	0.23	0.067	ug/L		11/17/16 11:31	11/30/16 14:40	1
4-Nitrotoluene	0.46	U	1.2	0.23	ug/L		11/17/16 11:31	11/30/16 14:40	1
HMX	0.23	U	0.46	0.10	ug/L		11/17/16 11:31	11/30/16 14:40	1
Nitrobenzene	0.23	U	0.46	0.11	ug/L		11/17/16 11:31	11/30/16 14:40	1
Nitroglycerin	2.3	U	3.5	1.1	ug/L		11/17/16 11:31	11/30/16 14:40	1
PETN	1.4	U	2.3	0.48	ug/L		11/17/16 11:31	11/30/16 14:40	1
RDX	0.14	U	0.23	0.061	ug/L		11/17/16 11:31	11/30/16 14:40	1
Tetryl	0.23	U	0.28	0.092	ug/L		11/17/16 11:31	11/30/16 14:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dinitrobenzene	*88*	*M*	*83 - 119*	*11/17/16 11:31*	*11/30/16 14:40*	*1*

Client Sample ID: EBGmw-126-111016-GW

Lab Sample ID: 280-90848-2

Date Collected: 11/10/16 12:53
Matrix: Water
Date Received: 11/11/16 09:30

General Chemistry

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	5.0	U	10	2.0	ug/L		11/18/16 09:14	11/19/16 09:21	1

Client Sample ID: EBGmw-131-111016-GW

Lab Sample ID: 280-90848-3

Date Collected: 11/10/16 14:06
Matrix: Water
Date Received: 11/11/16 09:30

Method: 8330B - Nitroaromatics and Nitramines (HPLC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.42	U	1.0	0.21	ug/L		11/17/16 11:31	11/30/16 15:03	1
1,3-Dinitrobenzene	0.21	U	0.42	0.093	ug/L		11/17/16 11:31	11/30/16 15:03	1
2,4,6-Trinitrotoluene	0.21	U	0.42	0.076	ug/L		11/17/16 11:31	11/30/16 15:03	1
2,4-Dinitrotoluene	0.21	U	0.42	0.088	ug/L		11/17/16 11:31	11/30/16 15:03	1
2,6-Dinitrotoluene	0.21	U	0.21	0.068	ug/L		11/17/16 11:31	11/30/16 15:03	1
2-Amino-4,6-dinitrotoluene	0.13	U	0.21	0.053	ug/L		11/17/16 11:31	11/30/16 15:03	1
2-Nitrotoluene	0.21	U	0.42	0.090	ug/L		11/17/16 11:31	11/30/16 15:03	1
3-Nitrotoluene	0.21	U	0.42	0.087	ug/L		11/17/16 11:31	11/30/16 15:03	1
4-Amino-2,6-dinitrotoluene	0.13	U	0.21	0.061	ug/L		11/17/16 11:31	11/30/16 15:03	1
4-Nitrotoluene	0.42	U	1.0	0.21	ug/L		11/17/16 11:31	11/30/16 15:03	1
HMX	0.21	U	0.42	0.092	ug/L		11/17/16 11:31	11/30/16 15:03	1
Nitrobenzene	0.21	U	0.42	0.095	ug/L		11/17/16 11:31	11/30/16 15:03	1
Nitroglycerin	2.1	U	3.1	0.97	ug/L		11/17/16 11:31	11/30/16 15:03	1
PETN	1.3	U	2.1	0.44	ug/L		11/17/16 11:31	11/30/16 15:03	1
RDX	0.13	U	0.21	0.055	ug/L		11/17/16 11:31	11/30/16 15:03	1
Tetryl	0.21	U	0.25	0.083	ug/L		11/17/16 11:31	11/30/16 15:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dinitrobenzene	*98*		*83 - 119*	*11/17/16 11:31*	*11/30/16 15:03*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	**3.9**	**J**	10	2.0	ug/L		11/18/16 09:14	11/19/16 09:23	1

Client Sample ID: EBGmw-125-111016-GW

Lab Sample ID: 280-90848-4

Date Collected: 11/10/16 14:50
Matrix: Water
Date Received: 11/11/16 09:30

Method: 8330B - Nitroaromatics and Nitramines (HPLC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.43	U	1.1	0.21	ug/L		11/17/16 11:31	11/30/16 15:26	1
1,3-Dinitrobenzene	0.21	U	0.43	0.095	ug/L		11/17/16 11:31	11/30/16 15:26	1
2,4,6-Trinitrotoluene	0.21	U	0.43	0.077	ug/L		11/17/16 11:31	11/30/16 15:26	1
2,4-Dinitrotoluene	0.21	U	0.43	0.089	ug/L		11/17/16 11:31	11/30/16 15:26	1
2,6-Dinitrotoluene	0.21	U	0.21	0.069	ug/L		11/17/16 11:31	11/30/16 15:26	1
2-Amino-4,6-dinitrotoluene	0.13	U	0.21	0.054	ug/L		11/17/16 11:31	11/30/16 15:26	1
2-Nitrotoluene	0.21	U	0.43	0.091	ug/L		11/17/16 11:31	11/30/16 15:26	1
3-Nitrotoluene	0.21	U	0.43	0.089	ug/L		11/17/16 11:31	11/30/16 15:26	1
4-Amino-2,6-dinitrotoluene	0.13	U	0.21	0.061	ug/L		11/17/16 11:31	11/30/16 15:26	1
4-Nitrotoluene	0.43	U	1.1	0.21	ug/L		11/17/16 11:31	11/30/16 15:26	1
HMX	0.21	U	0.43	0.093	ug/L		11/17/16 11:31	12/04/16 03:43	1
Nitrobenzene	0.21	U	0.43	0.097	ug/L		11/17/16 11:31	11/30/16 15:26	1

Client Sample ID: EBGmw-125-111016-GW
Lab Sample ID: 280-90848-4

Date Collected: 11/10/16 14:50
Matrix: Water
Date Received: 11/11/16 09:30

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

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Nitroglycerin	2.1	U	3.2	0.98	ug/L		11/17/16 11:31	11/30/16 15:26	1
PETN	1.3	U	2.1	0.44	ug/L		11/17/16 11:31	11/30/16 15:26	1
RDX	0.13	U	0.21	0.056	ug/L		11/17/16 11:31	12/04/16 03:43	1
Tetryl	0.21	U	0.26	0.084	ug/L		11/17/16 11:31	11/30/16 15:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dinitrobenzene	*101*		*83 - 119*	*11/17/16 11:31*	*11/30/16 15:26*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	**11**		10	2.0	ug/L		11/18/16 09:14	11/19/16 09:24	1

Default Detection Limits

Client: Cardno TEC, Inc
Project/Site: Ravenna, OH - Erie Burning Grounds

TestAmerica Job ID: 280-90848-1

Method: 8330B - Nitroaromatics and Nitramines (HPLC)

Prep: 3535

Analyte	LOQ	DL	Units	Method
1,3,5-Trinitrobenzene	1.0	0.20	ug/L	8330B
1,3-Dinitrobenzene	0.40	0.089	ug/L	8330B
2,4,6-Trinitrotoluene	0.40	0.072	ug/L	8330B
2,4-Dinitrotoluene	0.40	0.084	ug/L	8330B
2,6-Dinitrotoluene	0.20	0.065	ug/L	8330B
2-Amino-4,6-dinitrotoluene	0.20	0.051	ug/L	8330B
2-Nitrotoluene	0.40	0.086	ug/L	8330B
3-Nitrotoluene	0.40	0.083	ug/L	8330B
4-Amino-2,6-dinitrotoluene	0.20	0.058	ug/L	8330B
4-Nitrotoluene	1.0	0.20	ug/L	8330B
HMX	0.40	0.088	ug/L	8330B
Nitrobenzene	0.40	0.091	ug/L	8330B
Nitroglycerin	3.0	0.92	ug/L	8330B
PETN	2.0	0.42	ug/L	8330B
RDX	0.20	0.052	ug/L	8330B
Tetryl	0.24	0.079	ug/L	8330B

General Chemistry

Prep: 9012B

Analyte	LOQ	DL	Units	Method
Cyanide, Total	10	2.0	ug/L	9012B

Surrogate Summary

Client: Cardno TEC, Inc
Project/Site: Ravenna, OH - Erie Burning Grounds

TestAmerica Job ID: 280-90848-1

Method: 8330B - Nitroaromatics and Nitramines (HPLC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	12DNB1 (83-119)								
280-90848-1	EBGmw-128-111016-GW	99								
280-90848-2	EBGmw-126-111016-GW	88 M								
280-90848-3	EBGmw-131-111016-GW	98								
280-90848-4	EBGmw-125-111016-GW	101								
LCS 280-351958/2-A	Lab Control Sample	97								
LCSD 280-351958/3-A	Lab Control Sample Dup	96								
MB 280-351958/1-A	Method Blank	104								

Surrogate Legend

12DNB = 1,2-Dinitrobenzene

Method: 8330B - Nitroaromatics and Nitramines (HPLC)

Lab Sample ID: MB 280-351958/1-A
Matrix: Water
Analysis Batch: 353517

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 351958

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.40	U	1.0	0.20	ug/L		11/17/16 11:31	11/30/16 08:04	1
1,3-Dinitrobenzene	0.20	U	0.40	0.089	ug/L		11/17/16 11:31	11/30/16 08:04	1
2,4,6-Trinitrotoluene	0.20	U	0.40	0.072	ug/L		11/17/16 11:31	11/30/16 08:04	1
2,4-Dinitrotoluene	0.20	U	0.40	0.084	ug/L		11/17/16 11:31	11/30/16 08:04	1
2,6-Dinitrotoluene	0.20	U	0.20	0.065	ug/L		11/17/16 11:31	11/30/16 08:04	1
2-Amino-4,6-dinitrotoluene	0.12	U	0.20	0.051	ug/L		11/17/16 11:31	11/30/16 08:04	1
2-Nitrotoluene	0.20	U	0.40	0.086	ug/L		11/17/16 11:31	11/30/16 08:04	1
3-Nitrotoluene	0.20	U	0.40	0.083	ug/L		11/17/16 11:31	11/30/16 08:04	1
4-Amino-2,6-dinitrotoluene	0.12	U	0.20	0.058	ug/L		11/17/16 11:31	11/30/16 08:04	1
4-Nitrotoluene	0.40	U	1.0	0.20	ug/L		11/17/16 11:31	11/30/16 08:04	1
HMX	0.20	U	0.40	0.088	ug/L		11/17/16 11:31	11/30/16 08:04	1
Nitrobenzene	0.20	U	0.40	0.091	ug/L		11/17/16 11:31	11/30/16 08:04	1
Nitroglycerin	1.29	J	3.0	0.92	ug/L		11/17/16 11:31	11/30/16 08:04	1
PETN	1.2	U	2.0	0.42	ug/L		11/17/16 11:31	11/30/16 08:04	1
RDX	0.12	U	0.20	0.052	ug/L		11/17/16 11:31	11/30/16 08:04	1
Tetryl	0.20	U	0.24	0.079	ug/L		11/17/16 11:31	11/30/16 08:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dinitrobenzene	*104*		*83 - 119*	*11/17/16 11:31*	*11/30/16 08:04*	*1*

Lab Sample ID: LCS 280-351958/2-A
Matrix: Water
Analysis Batch: 353517

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 351958

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,3,5-Trinitrobenzene			2.00	1.94		ug/L		97	73 - 125		
1,3-Dinitrobenzene			2.00	2.00		ug/L		100	78 - 120		
2,4,6-Trinitrotoluene			2.00	2.09		ug/L		105	71 - 123		
2,4-Dinitrotoluene			2.00	1.90		ug/L		95	78 - 120		
2,6-Dinitrotoluene			2.00	1.81		ug/L		90	77 - 127		
2-Amino-4,6-dinitrotoluene			2.00	1.73		ug/L		87	79 - 120		
2-Nitrotoluene			2.00	1.67		ug/L		84	70 - 127		
3-Nitrotoluene			2.00	1.76		ug/L		88	73 - 125		
4-Amino-2,6-dinitrotoluene			2.00	1.64		ug/L		82	76 - 125		
4-Nitrotoluene			2.00	1.74		ug/L		87	71 - 127		
HMX			2.00	1.79		ug/L		90	65 - 135		
Nitrobenzene			2.00	1.82		ug/L		91	65 - 134		
Nitroglycerin			20.0	19.6		ug/L		98	74 - 127		
PETN			20.0	19.2		ug/L		96	73 - 127		
RDX			2.00	1.93		ug/L		96	68 - 130		
Tetryl			2.00	1.88		ug/L		94	64 - 128		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dinitrobenzene	*97*		*83 - 119*

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

Lab Sample ID: LCSD 280-351958/3-A
Matrix: Water
Analysis Batch: 353517

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 351958

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3,5-Trinitrobenzene			2.00	1.93		ug/L		97	73 - 125	0	20
1,3-Dinitrobenzene			2.00	1.96		ug/L		98	78 - 120	2	20
2,4,6-Trinitrotoluene			2.00	2.07		ug/L		103	71 - 123	1	20
2,4-Dinitrotoluene			2.00	1.84		ug/L		92	78 - 120	3	20
2,6-Dinitrotoluene			2.00	1.82		ug/L		91	77 - 127	1	20
2-Amino-4,6-dinitrotoluene			2.00	1.66		ug/L		83	79 - 120	4	20
2-Nitrotoluene			2.00	1.58		ug/L		79	70 - 127	6	20
3-Nitrotoluene			2.00	1.59		ug/L		80	73 - 125	10	20
4-Amino-2,6-dinitrotoluene			2.00	1.59		ug/L		80	76 - 125	3	20
4-Nitrotoluene			2.00	1.62		ug/L		81	71 - 127	7	20
HMX			2.00	1.78		ug/L		89	65 - 135	1	20
Nitrobenzene			2.00	1.69		ug/L		85	65 - 134	7	20
Nitroglycerin			20.0	20.6		ug/L		103	74 - 127	5	20
PETN			20.0	19.4		ug/L		97	73 - 127	1	20
RDX			2.00	1.94		ug/L		97	68 - 130	1	20
Tetryl			2.00	1.92		ug/L		96	64 - 128	2	20

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

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

Lab Sample ID: MB 280-352144/4-A
Matrix: Water
Analysis Batch: 352272

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 352144

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	5.0	U	10	2.0	ug/L		11/18/16 09:14	11/19/16 08:56	1

Lab Sample ID: HLCS 280-352144/1-A
Matrix: Water
Analysis Batch: 352272

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 352144

Analyte			Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Cyanide, Total			400	387		ug/L		97	90 - 110		

Lab Sample ID: LCS 280-352144/3-A
Matrix: Water
Analysis Batch: 352272

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 352144

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Cyanide, Total			100	98.2		ug/L		98	83 - 116		

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

Lab Sample ID: LLCS 280-352144/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 352272 — **Prep Batch: 352144**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	100	102		ug/L		102	44 - 167

Lab Sample ID: 280-90848-4 MS — **Client Sample ID: EBGmw-125-111016-GW**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 352272 — **Prep Batch: 352144**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	11		100	110		ug/L		99	83 - 116

Lab Sample ID: 280-90848-4 MSD — **Client Sample ID: EBGmw-125-111016-GW**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 352272 — **Prep Batch: 352144**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	11		100	97.4		ug/L		87	83 - 116	12	20

Lab Sample ID: MB 280-352264/4-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 352310 — **Prep Batch: 352264**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	4.42	J	10	2.0	ug/L		11/19/16 09:41	11/19/16 14:01	1

Lab Sample ID: HLCS 280-352264/1-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 352310 — **Prep Batch: 352264**

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	400	378		ug/L		95	90 - 110

Lab Sample ID: LCS 280-352264/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 352310 — **Prep Batch: 352264**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	100	95.0		ug/L		95	83 - 116

Lab Sample ID: LLCS 280-352264/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 352310 — **Prep Batch: 352264**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	100	93.1		ug/L		93	44 - 167

HPLC/IC

Prep Batch: 351958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90848-1	EBGmw-128-111016-GW	Total/NA	Water	3535	
280-90848-2	EBGmw-126-111016-GW	Total/NA	Water	3535	
280-90848-3	EBGmw-131-111016-GW	Total/NA	Water	3535	
280-90848-4	EBGmw-125-111016-GW	Total/NA	Water	3535	
MB 280-351958/1-A	Method Blank	Total/NA	Water	3535	
LCS 280-351958/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 280-351958/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 353517

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90848-1	EBGmw-128-111016-GW	Total/NA	Water	8330B	351958
280-90848-2	EBGmw-126-111016-GW	Total/NA	Water	8330B	351958
280-90848-3	EBGmw-131-111016-GW	Total/NA	Water	8330B	351958
280-90848-4	EBGmw-125-111016-GW	Total/NA	Water	8330B	351958
MB 280-351958/1-A	Method Blank	Total/NA	Water	8330B	351958
LCS 280-351958/2-A	Lab Control Sample	Total/NA	Water	8330B	351958
LCSD 280-351958/3-A	Lab Control Sample Dup	Total/NA	Water	8330B	351958

Analysis Batch: 354108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90848-4	EBGmw-125-111016-GW	Total/NA	Water	8330B	351958

General Chemistry

Prep Batch: 352144

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90848-1	EBGmw-128-111016-GW	Total/NA	Water	9012B	
280-90848-2	EBGmw-126-111016-GW	Total/NA	Water	9012B	
280-90848-3	EBGmw-131-111016-GW	Total/NA	Water	9012B	
280-90848-4	EBGmw-125-111016-GW	Total/NA	Water	9012B	
MB 280-352144/4-A	Method Blank	Total/NA	Water	9012B	
HLCS 280-352144/1-A	Lab Control Sample	Total/NA	Water	9012B	
LCS 280-352144/3-A	Lab Control Sample	Total/NA	Water	9012B	
LLCS 280-352144/2-A	Lab Control Sample	Total/NA	Water	9012B	
280-90848-4 MS	EBGmw-125-111016-GW	Total/NA	Water	9012B	
280-90848-4 MSD	EBGmw-125-111016-GW	Total/NA	Water	9012B	

Prep Batch: 352264

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-352264/4-A	Method Blank	Total/NA	Water	9012B	
HLCS 280-352264/1-A	Lab Control Sample	Total/NA	Water	9012B	
LCS 280-352264/3-A	Lab Control Sample	Total/NA	Water	9012B	
LLCS 280-352264/2-A	Lab Control Sample	Total/NA	Water	9012B	

Analysis Batch: 352272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90848-1	EBGmw-128-111016-GW	Total/NA	Water	9012B	352144
280-90848-2	EBGmw-126-111016-GW	Total/NA	Water	9012B	352144
280-90848-3	EBGmw-131-111016-GW	Total/NA	Water	9012B	352144
280-90848-4	EBGmw-125-111016-GW	Total/NA	Water	9012B	352144

General Chemistry (Continued)

Analysis Batch: 352272 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-352144/4-A	Method Blank	Total/NA	Water	9012B	352144
HLCS 280-352144/1-A	Lab Control Sample	Total/NA	Water	9012B	352144
LCS 280-352144/3-A	Lab Control Sample	Total/NA	Water	9012B	352144
LLCS 280-352144/2-A	Lab Control Sample	Total/NA	Water	9012B	352144
280-90848-4 MS	EBGmw-125-111016-GW	Total/NA	Water	9012B	352144
280-90848-4 MSD	EBGmw-125-111016-GW	Total/NA	Water	9012B	352144

Analysis Batch: 352310

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-352264/4-A	Method Blank	Total/NA	Water	9012B	352264
HLCS 280-352264/1-A	Lab Control Sample	Total/NA	Water	9012B	352264
LCS 280-352264/3-A	Lab Control Sample	Total/NA	Water	9012B	352264
LLCS 280-352264/2-A	Lab Control Sample	Total/NA	Water	9012B	352264

Lab Chronicle

Client: Cardno TEC, Inc
Project/Site: Ravenna, OH - Erie Burning Grounds

TestAmerica Job ID: 280-90848-1

Client Sample ID: EBGmw-128-111016-GW
Lab Sample ID: 280-90848-1
Date Collected: 11/10/16 10:47
Matrix: Water
Date Received: 11/11/16 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			460.3 mL	5 mL	351958	11/17/16 11:31	CDC	TAL DEN
Total/NA	Analysis	8330B		1	1 mL	1.0 mL	353517	11/30/16 14:16	DMJ	TAL DEN
Total/NA	Prep	9012B			50 mL	50 mL	352144	11/18/16 09:14	ALS	TAL DEN
Total/NA	Analysis	9012B		1	50 mL	50 mL	352272	11/19/16 09:20	JML	TAL DEN

Client Sample ID: EBGmw-126-111016-GW
Lab Sample ID: 280-90848-2
Date Collected: 11/10/16 12:53
Matrix: Water
Date Received: 11/11/16 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			431.1 mL	5 mL	351958	11/17/16 11:31	CDC	TAL DEN
Total/NA	Analysis	8330B		1	1 mL	1.0 mL	353517	11/30/16 14:40	DMJ	TAL DEN
Total/NA	Prep	9012B			50 mL	50 mL	352144	11/18/16 09:14	ALS	TAL DEN
Total/NA	Analysis	9012B		1	50 mL	50 mL	352272	11/19/16 09:21	JML	TAL DEN

Client Sample ID: EBGmw-131-111016-GW
Lab Sample ID: 280-90848-3
Date Collected: 11/10/16 14:06
Matrix: Water
Date Received: 11/11/16 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			476.8 mL	5 mL	351958	11/17/16 11:31	CDC	TAL DEN
Total/NA	Analysis	8330B		1	1 mL	1.0 mL	353517	11/30/16 15:03	DMJ	TAL DEN
Total/NA	Prep	9012B			50 mL	50 mL	352144	11/18/16 09:14	ALS	TAL DEN
Total/NA	Analysis	9012B		1	50 mL	50 mL	352272	11/19/16 09:23	JML	TAL DEN

Client Sample ID: EBGmw-125-111016-GW
Lab Sample ID: 280-90848-4
Date Collected: 11/10/16 14:50
Matrix: Water
Date Received: 11/11/16 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			469.3 mL	5 mL	351958	11/17/16 11:31	CDC	TAL DEN
Total/NA	Analysis	8330B		1			354108	12/04/16 03:43	DMJ	TAL DEN
Total/NA	Prep	3535			469.3 mL	5 mL	351958	11/17/16 11:31	CDC	TAL DEN
Total/NA	Analysis	8330B		1	1 mL	1.0 mL	353517	11/30/16 15:26	DMJ	TAL DEN
Total/NA	Prep	9012B			50 mL	50 mL	352144	11/18/16 09:14	ALS	TAL DEN
Total/NA	Analysis	9012B		1	50 mL	50 mL	352272	11/19/16 09:24	JML	TAL DEN

Laboratory References:

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

Certification Summary

Client: Cardno TEC, Inc
TestAmerica Job ID: 280-90848-1
Project/Site: Ravenna, OH - Erie Burning Grounds

Laboratory: TestAmerica Denver

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

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17

Analysis Method	Prep Method	Matrix	Analyte

Method Summary

Client: Cardno TEC, Inc
Project/Site: Ravenna, OH - Erie Burning Grounds

TestAmerica Job ID: 280-90848-1

Method	Method Description	Protocol	Laboratory
8330B	Nitroaromatics and Nitramines (HPLC)	EPA	TAL DEN
9012B	Cyanide, Total and/or Amenable	EPA	TAL DEN

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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

Sample Summary

Client: Cardno TEC, Inc
Project/Site: Ravenna, OH - Erie Burning Grounds

TestAmerica Job ID: 280-90848-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-90848-1	EBGmw-128-111016-GW	Water	11/10/16 10:47	11/11/16 09:30
280-90848-2	EBGmw-126-111016-GW	Water	11/10/16 12:53	11/11/16 09:30
280-90848-3	EBGmw-131-111016-GW	Water	11/10/16 14:06	11/11/16 09:30
280-90848-4	EBGmw-125-111016-GW	Water	11/10/16 14:50	11/11/16 09:30

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Instrument ID: CHHPLC_X3 Analysis Batch Number: 348785

Lab Sample ID: IC 280-348785/17 Client Sample ID:

Date Analyzed: 10/28/16 20:21 Lab File ID: 070-1701.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Picric acid	8.19	Split Peak	freya	10/29/16 09:35
Nitroglycerin	11.07	Baseline Smoothing	freya	10/29/16 09:29
2-Amino-4,6-dinitrotoluene	12.01	Split Peak	freya	10/29/16 09:25
2,6-Dinitrotoluene	12.16	Split Peak	freya	10/29/16 09:25
PETN	15.46	Incomplete Integration	freya	10/29/16 09:25

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Instrument ID: CHHPLC_X3 Analysis Batch Number: 353517

Lab Sample ID: CCV 280-353517/42 Client Sample ID:

Date Analyzed: 11/30/16 04:58 Lab File ID: 11291642.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
3-Nitrotoluene	14.38	Incomplete Integration	jonsrudd	12/02/16 19:56

Lab Sample ID: 280-90848-2 Client Sample ID: EBGmw-126-111016-GW

Date Analyzed: 11/30/16 14:40 Lab File ID: 11291667.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,2-Dinitrobenzene	8.93	Peak Tail	jonsrudd	12/02/16 20:10

Lab Sample ID: 280-90848-4 Client Sample ID: EBGmw-125-111016-GW

Date Analyzed: 11/30/16 15:26 Lab File ID: 11291669.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
HMX	6.78	Peak Tail	jonsrudd	12/02/16 20:11

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
8330 LCS_00071	02/16/17	08/16/16	Acetonitrile, Lot ACN_00192	100 mL	8330 LCSMix2_00091	1 mL	2,6-Dinitrotoluene	10 ug/mL
							2-Amino-4,6-dinitrotoluene	10 ug/mL
							2-Nitrotoluene	10 ug/mL
							3-Nitrotoluene	10 ug/mL
							4-Amino-2,6-dinitrotoluene	10 ug/mL
							4-Nitrotoluene	10 ug/mL
							Tetryl	10 ug/mL
					8330_NG_Stk_00046	1 mL	Nitroglycerin	100 ug/mL
					8330_NG_Stk_00048	1 mL	Nitroglycerin	100 ug/mL
					8330_PETN_Stk_00042	1 mL	PETN	100 ug/mL
					8330_PETN_Stk_00050	1 mL	PETN	100 ug/mL
					8330LCSMix1_00089	1 mL	1,3,5-Trinitrobenzene	10 ug/mL
							1,3-Dinitrobenzene	10 ug/mL
							2,4,6-Trinitrotoluene	10 ug/mL
							2,4-Dinitrotoluene	10 ug/mL
							HMX	10 ug/mL
							Nitrobenzene	10 ug/mL
							RDX	10 ug/mL
.8330 LCSMix2_00091	08/31/20		Restek, Lot A0113065		(Purchased Reagent)		2,6-Dinitrotoluene	1000 ug/mL
							2-Amino-4,6-dinitrotoluene	1000 ug/mL
							2-Nitrotoluene	1000 ug/mL
							3-Nitrotoluene	1000 ug/mL
							4-Amino-2,6-dinitrotoluene	1000 ug/mL
							4-Nitrotoluene	1000 ug/mL
							Tetryl	1000 ug/mL
.8330_NG_Stk_00046	07/31/19		Restek, Lot A0120172		(Purchased Reagent)		Nitroglycerin	5000 ug/mL
.8330_NG_Stk_00048	07/31/19		Restek, Lot A0120172		(Purchased Reagent)		Nitroglycerin	5000 ug/mL
.8330_PETN_Stk_00042	06/30/19		Restek, Lot A0120082		(Purchased Reagent)		PETN	5000 ug/mL
.8330_PETN_Stk_00050	06/30/19		Restek, Lot A0120082		(Purchased Reagent)		PETN	5000 ug/mL
.8330LCSMix1_00089	08/31/20		Restek, Lot A094176		(Purchased Reagent)		1,3,5-Trinitrobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							2,4,6-Trinitrotoluene	1000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							HMX	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							RDX	1000 ug/mL
8330 LCS_00072	03/02/17	09/14/16	Acetonitrile, Lot ACN_00182	100 mL	8330 LCSMix2_00088	1 mL	2,6-Dinitrotoluene	10 ug/mL
							2-Amino-4,6-dinitrotoluene	10 ug/mL
							2-Nitrotoluene	10 ug/mL
							3-Nitrotoluene	10 ug/mL
							4-Amino-2,6-dinitrotoluene	10 ug/mL
							4-Nitrotoluene	10 ug/mL
							Tetryl	10 ug/mL
					8330_NG_Stk_00032	1 mL	Nitroglycerin	100 ug/mL
					8330_NG_Stk_00033	1 mL	Nitroglycerin	100 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					8330_PETN_Stk_00037	1 mL	PETN	100 ug/mL
					8330_PETN_Stk_00038	1 mL	PETN	100 ug/mL
					8330LCSMix1_00090	1 mL	1,3,5-Trinitrobenzene	10 ug/mL
							1,3-Dinitrobenzene	10 ug/mL
							2,4,6-Trinitrotoluene	10 ug/mL
							2,4-Dinitrotoluene	10 ug/mL
							HMX	10 ug/mL
							Nitrobenzene	10 ug/mL
							RDX	10 ug/mL
					8330MNXStckPS_00014	0.95 mL	MNX	10.0532 ug/mL
					PicricARestek_00074	1 mL	2,4,6-Trinitrophenol	10 ug/mL
.8330 LCSMix2_00088	03/31/17		Restek, Lot A087152		(Purchased Reagent)		2,6-Dinitrotoluene	1000 ug/mL
							2-Amino-4,6-dinitrotoluene	1000 ug/mL
							2-Nitrotoluene	1000 ug/mL
							3-Nitrotoluene	1000 ug/mL
							4-Amino-2,6-dinitrotoluene	1000 ug/mL
							4-Nitrotoluene	1000 ug/mL
							Tetryl	1000 ug/mL
.8330_NG_Stk_00032	07/03/18		Restek, Lot A0112817		(Purchased Reagent)		Nitroglycerin	5000 ug/mL
.8330_NG_Stk_00033	07/03/18		Restek, Lot A0112817		(Purchased Reagent)		Nitroglycerin	5000 ug/mL
.8330_PETN_Stk_00037	08/31/18		Restek, Lot A0113079		(Purchased Reagent)		PETN	5000 ug/mL
.8330_PETN_Stk_00038	08/31/18		Restek, Lot A0113079		(Purchased Reagent)		PETN	5000 ug/mL
.8330LCSMix1_00090	08/31/20		Restek, Lot A094176		(Purchased Reagent)		1,3,5-Trinitrobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							2,4,6-Trinitrotoluene	1000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							HMX	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							RDX	1000 ug/mL
.8330MNXStckPS_00014	03/02/17	03/04/16	Acetonitrile, Lot ACN_00178	10 mL	8330MNXNeatPS_00014	10.7 mg	MNX	1058.23 ug/mL
..8330MNXNeatPS_00014	03/03/17		SRI International, Lot 05282007		(Purchased Reagent)		MNX	98.9 %
.PicricARestek_00074	09/27/19		Restek, Lot A0105913		(Purchased Reagent)		2,4,6-Trinitrophenol	1000 ug/mL
8330IntermStk_00041	03/02/17	09/21/16	Acetonitrile, Lot ACN_00178	5 mL	8330ICALStock_00022	1 mL	1,3,5-Trinitrobenzene	20 ug/mL
							1,3-Dinitrobenzene	20 ug/mL
							2,4,6-Trinitrotoluene	20 ug/mL
							2,4-Dinitrotoluene	20 ug/mL
							2,6-Dinitrotoluene	20 ug/mL
							2-Amino-4,6-dinitrotoluene	20 ug/mL
							2-Nitrotoluene	20 ug/mL
							3-Nitrotoluene	20 ug/mL
							4-Amino-2,6-dinitrotoluene	20 ug/mL
							4-Nitrotoluene	20 ug/mL
							HMX	20 ug/mL
							Nitrobenzene	20 ug/mL
							RDX	20 ug/mL
							Tetryl	20 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2-Dinitrobenzene	20 ug/mL
					8330NG_PS_00011	1 mL	Nitroglycerin	200 ug/mL
					8330PAStkPS_00041	1 mL	2,4,6-Trinitrophenol	20 ug/mL
					8330PETN_PS_00011	1 mL	PETN	200 ug/mL
.8330ICALStock_00022	03/02/17	05/11/16	Acetonitrile, Lot ACN_00178	10 mL	8330 Stock_TS_00005	1 mL	1,3,5-Trinitrobenzene	100 ug/mL
							1,3-Dinitrobenzene	100 ug/mL
							2,4,6-Trinitrotoluene	100 ug/mL
							2,4-Dinitrotoluene	100 ug/mL
							2,6-Dinitrotoluene	100 ug/mL
							2-Amino-4,6-dinitrotoluene	100 ug/mL
							2-Nitrotoluene	100 ug/mL
							3-Nitrotoluene	100 ug/mL
							4-Amino-2,6-dinitrotoluene	100 ug/mL
							4-Nitrotoluene	100 ug/mL
							HMX	100 ug/mL
							Nitrobenzene	100 ug/mL
							RDX	100 ug/mL
							Tetryl	100 ug/mL
					8330SurrStock_00159	1 mL	1,2-Dinitrobenzene	100 ug/mL
..8330 Stock_TS_00005	04/30/18	Ultra Scientific, Lot CM-1321			(Purchased Reagent)		1,3,5-Trinitrobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							2,4,6-Trinitrotoluene	1000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Amino-4,6-dinitrotoluene	1000 ug/mL
							2-Nitrotoluene	1000 ug/mL
							3-Nitrotoluene	1000 ug/mL
							4-Amino-2,6-dinitrotoluene	1000 ug/mL
							4-Nitrotoluene	1000 ug/mL
							HMX	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							RDX	1000 ug/mL
							Tetryl	1000 ug/mL
..8330SurrStock_00159	08/15/24	AccuStandard, Lot 214081391			(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
.8330NG_PS_00011	12/03/17	Accustandard, Lot 215121015			(Purchased Reagent)		Nitroglycerin	1000 ug/mL
.8330PAStkPS_00041	12/01/17	AccuStandard, Lot 214121302			(Purchased Reagent)		2,4,6-Trinitrophenol	100 ug/mL
.8330PETN_PS_00011	06/16/17	Accustandard, Lot 215061294			(Purchased Reagent)		PETN	1000 ug/mL
8330Surrogate_00089	12/07/16	06/07/16	Acetonitrile, Lot ACN_00182	500 mL	8330SurrStkSS_00095	1 mL	1,2-Dinitrobenzene	10 ug/mL
					8330SurrStkSS_00096	1 mL	1,2-Dinitrobenzene	10 ug/mL
					8330SurrStkSS_00097	1 mL	1,2-Dinitrobenzene	10 ug/mL
					8330SurrStkSS_00099	1 mL	1,2-Dinitrobenzene	10 ug/mL
					8330SurrStkSS_00100	1 mL	1,2-Dinitrobenzene	10 ug/mL
.8330SurrStkSS_00095	11/30/19	Restek, Lot A0107162			(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
.8330SurrStkSS_00096	11/30/19	Restek, Lot A0107162			(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
.8330SurrStkSS_00097	11/30/19	Restek, Lot A0107162			(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
.8330SurrStkSS_00099	03/27/20	Restek, Lot A0109837			(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.8330SurrStkSS_00100	03/27/20		Restek, Lot A0109837		(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
8330Surrogate_00090	03/14/17	09/14/16	Acetonitrile, Lot ACN_00193	500 mL	8330SurrStkSS_00101	1 mL	1,2-Dinitrobenzene	10 ug/mL
					8330SurrStkSS_00102	1 mL	1,2-Dinitrobenzene	10 ug/mL
					8330SurrStkSS_00109	1 mL	1,2-Dinitrobenzene	10 ug/mL
					8330SurrStkSS_00111	1 mL	1,2-Dinitrobenzene	10 ug/mL
					8330SurrStkSS_00113	1 mL	1,2-Dinitrobenzene	10 ug/mL
.8330SurrStkSS_00101	03/27/20		Restek, Lot A0109837		(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
.8330SurrStkSS_00102	03/27/20		Restek, Lot A0109837		(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
.8330SurrStkSS_00109	08/31/20		Restek, Lot A0109837		(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
.8330SurrStkSS_00111	08/31/20		Restek, Lot A0109837		(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
.8330SurrStkSS_00113	08/31/20		Restek, Lot A0109837		(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
CN 10ppm_00229	11/22/16	11/15/16	2% NaOH, Lot 1% NaOH_00078	100 mg/L	CN CAL Std_00052	1 mL	Cyanide, Amenable	10 mg/L
							Cyanide, Free	10 mg/L
							Cyanide, Non-amenable	10 mg/L
							Cyanide, Total	10 mg/L
							Cyanide, Weak Acid Dissociable	10 mg/L
.CN CAL Std_00052	03/31/17		Ricca, Lot 2609C92		(Purchased Reagent)		Cyanide, Amenable	1000 mg/L
							Cyanide, Free	1000 mg/L
							Cyanide, Non-amenable	1000 mg/L
							Cyanide, Total	1000 mg/L
							Cyanide, Weak Acid Dissociable	1000 mg/L
CN CAL 1 ppm_01178	11/19/16	11/18/16	1% NaOH, Lot N/A	100 mL	CN 10ppm_00229	10 mL	Cyanide, Total	1 mg/L
.CN 10ppm_00229	11/22/16	11/15/16	2% NaOH, Lot 1% NaOH_00078	100 mg/L	CN CAL Std_00052	1 mL	Cyanide, Total	10 mg/L
..CN CAL Std_00052	03/31/17		Ricca, Lot 2609C92		(Purchased Reagent)		Cyanide, Total	1000 mg/L
CN ICV Daily_00942	11/19/16	11/18/16	1% HNO3, Lot N/A	100 mL	CN ICV Int_00408	1 mL	Cyanide, Total	0.1 mg/L
.CN ICV Int_00408	11/22/16	11/15/16	1% NaOH, Lot 1% NaOH_00078	100 mL	CN ICV Std_00038	1 mL	Cyanide, Total	10 mg/L
..CN ICV Std_00038	04/16/18		CPI, Lot 1097445		(Purchased Reagent)		Cyanide, Total	1000 mg/L
CN ICV Int_00408	11/22/16	11/15/16	1% NaOH, Lot 1% NaOH_00078	100 mL	CN ICV Std_00038	1 mL	Cyanide, Amenable	10 mg/L
							Cyanide, Free	10 mg/L
							Cyanide, Non-amenable	0 mg/L
							Cyanide, Total	10 mg/L
							Cyanide, Weak Acid Dissociable	10 mg/L
.CN ICV Std_00038	04/16/18		CPI, Lot 1097445		(Purchased Reagent)		Cyanide, Amenable	1000 mg/L
							Cyanide, Free	1000 mg/L
							Cyanide, Non-amenable	0 mg/L
							Cyanide, Total	1000 mg/L
							Cyanide, Weak Acid Dissociable	1000 mg/L

Reagent

8330 LCS_00071

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Reagent ID: 8330 LCS_00071

Description:	10+100 ug/mL KEEP IN FREEZER	Expiration Date:	02/16/2017
No. of Bottles:	2	Laboratory:	TestAmerica Denver
Storage Location:	Explosives Prep	Prepared By:	Choi, Yu J
Reagent Volume:	100.000 mL	Solvent:	Acetonitrile
Creation Date:	08/16/2016	Solvent Lot:	ACN_00192
Open Date:			
Container(s):	4062585, 4062586		
Comment:	Take 1mL 8330 LCSMix1, 1mL 8330 LCSMix2, 1mL PicricARestek, 2 x1 mL 8330_NG_Stk, 2 x1mL 8330_PETN_Stk, and correct mL MNXStckPS to get 10 ug/mL, dilute to 100mL in Acetonitrile. 6 month exp date. Store frozen, do not take out of freezer. Aliquot Amt needed for extraction batch stock bottle.		

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
2,6-Dinitrotoluene	8330 LCSMix2_00091	08/31/2020	1000.00000	ug/mL	10.00000	ug/mL
2-Amino-4,6-dinitrotoluene	8330 LCSMix2_00091	08/31/2020	1000.00000	ug/mL	10.00000	ug/mL
4-Amino-2,6-dinitrotoluene	8330 LCSMix2_00091	08/31/2020	1000.00000	ug/mL	10.00000	ug/mL
m-Nitrotoluene	8330 LCSMix2_00091	08/31/2020	1000.00000	ug/mL	10.00000	ug/mL
o-Nitrotoluene	8330 LCSMix2_00091	08/31/2020	1000.00000	ug/mL	10.00000	ug/mL
p-Nitrotoluene	8330 LCSMix2_00091	08/31/2020	1000.00000	ug/mL	10.00000	ug/mL
Tetryl	8330 LCSMix2_00091	08/31/2020	1000.00000	ug/mL	10.00000	ug/mL
Nitroglycerin	8330_NG_Stk_00046	07/31/2019	5000.00000	ug/mL	100.00000	ug/mL
Nitroglycerin	8330_NG_Stk_00048	07/31/2019	5000.00000	ug/mL	100.00000	ug/mL
PETN	8330_PETN_Stk_00042	06/30/2019	5000.00000	ug/mL	100.00000	ug/mL
PETN	8330_PETN_Stk_00050	06/30/2019	5000.00000	ug/mL	100.00000	ug/mL
1,3,5-Trinitrobenzene	8330LCSMix1_00089	08/31/2020	1000.00000	ug/mL	10.00000	ug/mL
1,3-Dinitrobenzene	8330LCSMix1_00089	08/31/2020	1000.00000	ug/mL	10.00000	ug/mL
2,4,6-Trinitrotoluene	8330LCSMix1_00089	08/31/2020	1000.00000	ug/mL	10.00000	ug/mL
2,4-Dinitrotoluene	8330LCSMix1_00089	08/31/2020	1000.00000	ug/mL	10.00000	ug/mL
HMX	8330LCSMix1_00089	08/31/2020	1000.00000	ug/mL	10.00000	ug/mL
Nitrobenzene	8330LCSMix1_00089	08/31/2020	1000.00000	ug/mL	10.00000	ug/mL
RDX	8330LCSMix1_00089	08/31/2020	1000.00000	ug/mL	10.00000	ug/mL

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

8330 LCS _ 00071

Reagent ID: 8330 LCS_00071

		Expiration Date:	02/16/2017
Description:	10+100 ug/mL KEEP IN FREEZER	Laboratory:	TestAmerica Denver
No. of Bottles:	2	Prepared By:	Choi, Yu J
Storage Location:	Explosives Prep	Solvent:	Acetonitrile
Reagent Volume:	100.000 mL	Solvent Lot:	ACN_00192
Creation Date:	08/16/2016		
Open Date:			
Container(s):	4062585, 4062586		
Comment:	Take 1mL 8330 LCSMix1, 1mL 8330 LCSMix2, 1mL PicricARestek, 2 x1 mL 8330_NG_Stk, 2 x1mL 8330_PETN_Stk, and correct mL MNXStckPS to get 10 ug/mL, dilute to 100mL in Acetonitrile. 6 month exp date. Store frozen, do not take out of freezer. Aliquot Amt needed for extraction batch stock bottle.		

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
MNX	8330MNXStckPS_00014	03/02/2017	1058.23000	ug/mL	10.05319	ug/mL
2,4,6-Trinitrophenol	PicricARestek_00075	09/27/2019	1000.00000	ug/mL	10.00000	ug/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
8330 LCSMix2_00091	31451 1000ug/mL 8330 Calibration Mix#2	ASTD	08/31/20	Restek	A0113065	31451	1.00000	mL
8330_NG_Stk_00046	Cat#568871 5,000ug/mL	ASTD	07/31/19	Restek	A0120172	568871	1.00000	mL
8330_NG_Stk_00048	Cat#568871 5,000ug/mL	ASTD	07/31/19	Restek	A0120172	568871	1.00000	mL
8330_PETN_Stk_00042	Cat#568872 5,000ug/mL	ASTD	06/30/19	Restek	A0120082	568872	1.00000	mL
8330_PETN_Stk_00050	Cat#568872 5,000ug/mL	ASTD	06/30/19	Restek	A0120082	568872	1.00000	mL
8330LCSMix1_00089	Cat#31450, 1000ug/mL Restek	ASTD	08/31/20	Restek	A094176	31450	1.00000	mL
8330MNXStckPS_00014	8330 MNX Stock PS @ 1070 ug/mL		03/02/17				0.95000	mL
PicricARestek_00075	Cat# 31499	ASTD	09/27/19	Restek	A0105913	31499	1.00000	mL

Report Date: 18-Aug-2016 10:28:34 Chrom Revision: 2.2 04-Mar-2016 14:36:24

Pass! 11

Preliminary Report

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\X4_C18\20160817-49980.b\003-0901.D
Lims ID: 8330LCS_00071 Lab Sample ID: Client 280-338334/8-A
Client ID:
Sample Type: Client
Inject. Date: 17-Aug-2016 18:49:15 ALS Bottle#: 3 Worklist Smp#: 8
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 8330LCS
Operator ID: ACF Instrument ID: CHHPLCX4_C18

Method: \\ChromNA\Denver\ChromData\X4_C18\20160817-49980.b\8330_X4.m
Limit Group: GCSV - 8330
Last Update: 18-Aug-2016 07:23:19 Calib Date: 06-Jun-2016 20:22:29
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\X4_C18\20160606-47566.b\06060024.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK034

	Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
	1 2,6-diamino-4-nitrotoluene	1		6.647			ND	
	2 HMX	1	6.778	6.778	0.000	88686	0.9123	
	3 2,4-diamino-6-nitrotoluene	1		6.827			ND	1
	4 MNX	1	7.411	7.418	-0.007	130824	0.9319	
	5 RDX	1	7.791	7.792	-0.001	102187	0.9338	
	6 2,4,6-Trinitrophenol	1	8.038	8.065	-0.027	81948	0.8955	
E	8 1,2-Dinitrobenzene	1		8.712			ND	1
	7 1,3,5-Trinitrobenzene	1	8.865	8.872	-0.007	228083	0.9194	
	9 1,3-Dinitrobenzene	1	9.485	9.485	0.000	305573	1.02	
	12 Nitrobenzene	1	9.838	9.845	-0.007	205627	0.9543	
	10 Tetryl	1	10.065	10.065	0.000	175478	0.9452	
	11 3,5-Dinitroaniline	1		10.060			ND	1
	13 Nitroglycerin	2	10.518	10.525	-0.007	691927	9.53	
	14 2,4,6-Trinitrotoluene	1	10.965	10.972	-0.007	212358	1.05	
	15 4-Amino-2,6-dinitrotoluene	1	11.111	11.118	-0.007	146087	0.8475	
	16 2-Amino-4,6-dinitrotoluene	1	11.378	11.385	-0.007	206792	0.9477	
	17 2,6-Dinitrotoluene	1	11.511	11.518	-0.007	141717	0.8916	
	18 2,4-Dinitrotoluene	1	11.698	11.705	-0.007	286736	0.9360	
	19 o-Nitrotoluene	1	12.451	12.458	-0.007	128491	0.8942	
	20 p-Nitrotoluene	1	12.851	12.858	-0.007	114225	0.9631	
	22 m-Nitrotoluene	1	13.371	13.385	-0.014	140494	0.9294	
	21 PETN	2	14.151	14.165	-0.014	776365	9.26	
	23 Ammonium Picrate	1		0.000			ND	1

QC Flag Legend

Processing Flags
1 - Missing Peaks

Reagents:

8330 LCS_00071 Amount Added: 0.10 Units: mL

Reagent

8330 LCS_00072

Report Date: 21-Oct-2016 15:09:52 Chrom Revision: 2.2 17-Oct-2016 09:27:18

Preliminary Report

TestAmerica Denver
LCS, Lab Control Sample Report

Pass! All Initially

Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161021-52147.b\001-0901.D
Lims ID: 8330_LCS_00072
Client ID:
Sample Type: LCS
Inject. Date: 18-Oct-2016 15:15:38 ALS Bottle#: 1 Worklist Smp#: 7
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: Phenyl:562555-2
Misc. Info.: 280-0051661-018
Operator ID: ACF Instrument ID: CHHPLC_G2_LUNA

Method: \\ChromNA\Denver\ChromData\G2_LUNA\20161021-52147.b\G2_8330_Luna.m
Limit Group: GCSV - 8330
Last Update: 21-Oct-2016 15:09:47 Calib Date: 19-Oct-2016 16:18:17
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\G2_LUNA\20161020-52093.b\010-1401.D

Column 1 : Luna-Phenyl hexyl (4.60 mm) Det: LC DAD1A, 254 nm
Process Host: XAWRK032

Compound	Amount Added	Amount Recovered	%Rec
5 HMX	1.00	0.9210	92.10
6 MNX	1.01	0.9610	95.59
4 2,4,6-Trinitrophenol	1.00	0.9517	95.17
7 RDX	1.00	0.9765	97.65
8 Nitrobenzene	1.00	0.9451	94.51
11 1,3-Dinitrobenzene	1.00	1.00	100.14
12 Nitroglycerin	10.0	9.60	96.01
13 o-Nitrotoluene	1.00	0.9621	96.21
14 p-Nitrotoluene	1.00	1.02	102.45
15 4-Amino-2,6-dinitrotoluene	1.00	0.9718	97.18
16 m-Nitrotoluene	1.00	0.9823	98.23
17 2-Amino-4,6-dinitrotoluene	1.00	0.9246	92.46
18 1,3,5-Trinitrobenzene	1.00	0.9541	95.41
19 2,6-Dinitrotoluene	1.00	0.9428	94.28
20 2,4-Dinitrotoluene	1.00	0.9585	95.85
21 Tetryl	1.00	0.9613	96.13
22 2,4,6-Trinitrotoluene	1.00	1.00	99.55
23 PETN	10.0	10.2	101.93

Report Date: 21-Oct-2016 15:10:18 Chrom Revision: 2.2 17-Oct-2016 09:27:18

Preliminary Report

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161021-52147.b\001-0901.D

Injection Date: 18-Oct-2016 15:15:38 Instrument ID: CHHPLC_G2_LUNA Operator ID: ACF

Lims ID: 8330_LCS_00072 Worklist Smp#: 7

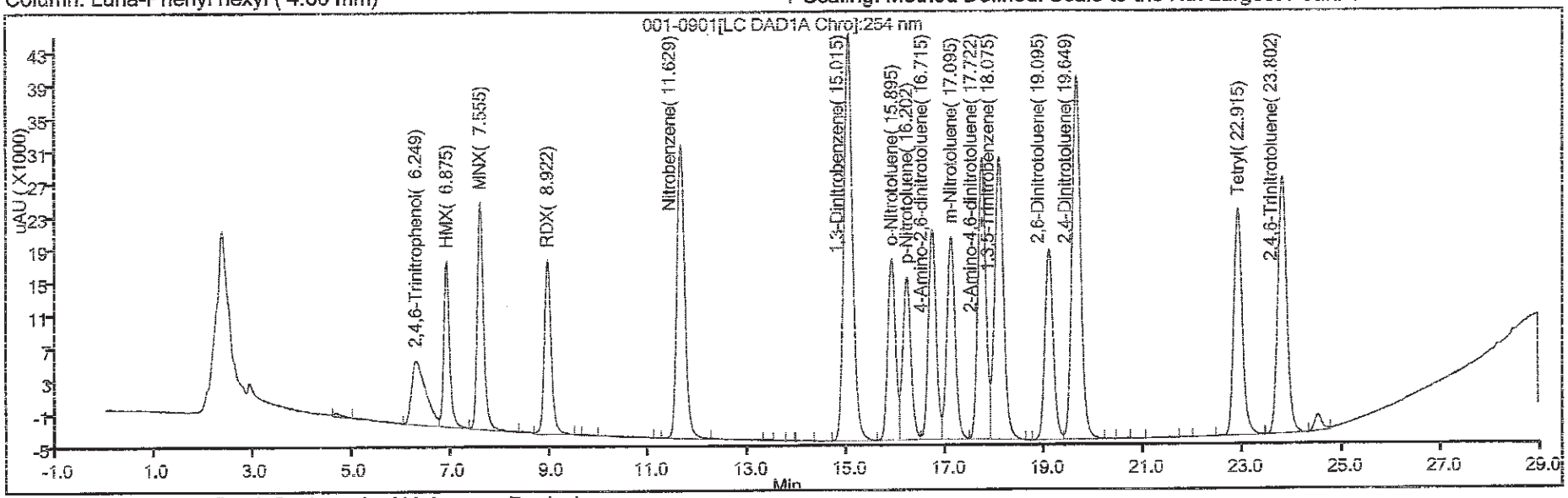
Client ID:

Injection Vol: 100.0 ul Dil. Factor: 1.0000 ALS Bottle#: 1

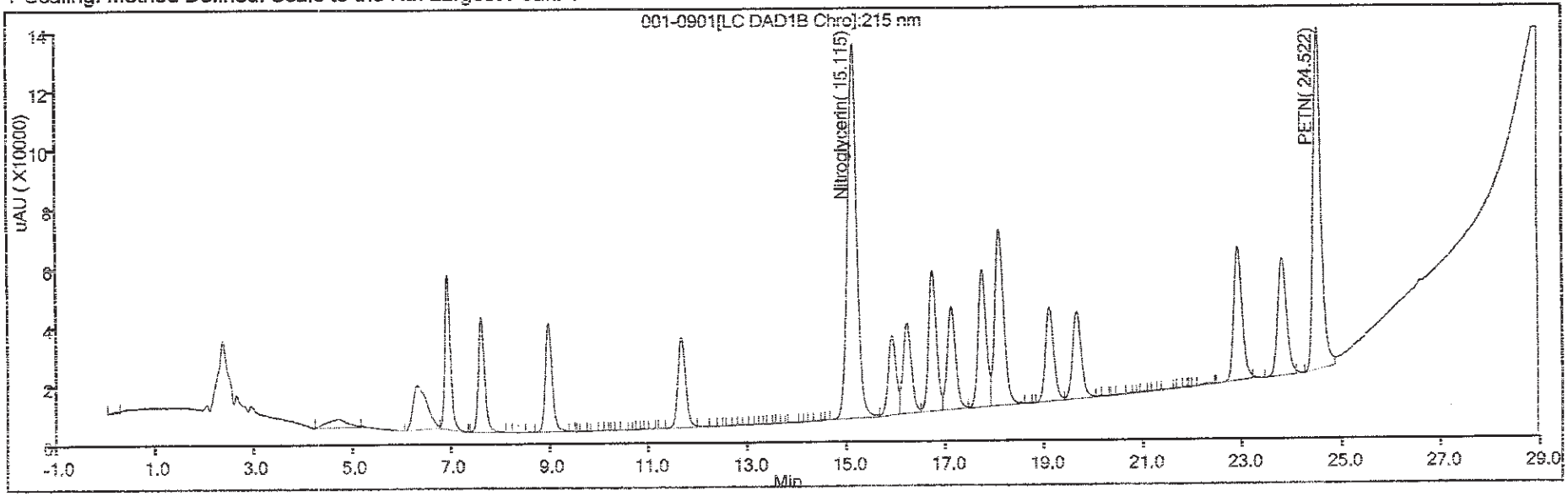
Method: G2_8330_Luna Limit Group: GCSV - 8330

Column: Luna-Phenyl hexyl (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Reagent

8330 LCSMix2_00088

RESTEK

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.Restek.com

ACCREDITED
Reference Material Producer
Certificate #3222.01

ilac-MRA

ACCREDITED
Testing Laboratory
Certificate #3222.02

Certificate of Analysis

FOR LABORATORY USE ONLY-READ MSDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31451 **Lot No.:** A087152

Description : 8330 Calibration Mix #2

8330 Calibration Std #2 1000ug/mL, Acetonitrile, 1mL/ampul *PGI BOX REQUIRED* SHIP FED EX GROUND ONLY

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 2017 **Storage:** 10°C or colder

C E R T I F I E D V A L U E S

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Tetryl	1,000.0 ug/mL	+/- 5.9397	ug/mL	Gravimetric
	CAS # 479-45-8		+/- 32.2037	ug/mL	Unstressed
	Purity 99%		+/- 44.7693	ug/mL	Stressed
2	4-Amino-2,6-dinitrotoluene	999.6 ug/mL	+/- 5.9373	ug/mL	Gravimetric
	CAS # 19406-51-0		+/- 32.1908	ug/mL	Unstressed
	Purity 98%		+/- 44.7514	ug/mL	Stressed
3	2-Amino-4,6-dinitrotoluene	1,000.0 ug/mL	+/- 5.9397	ug/mL	Gravimetric
	CAS # 35572-78-2		+/- 32.2037	ug/mL	Unstressed
	Purity 99%		+/- 44.7693	ug/mL	Stressed
4	2,6-Dinitrotoluene	1,000.0 ug/mL	+/- 5.9397	ug/mL	Gravimetric
	CAS # 606-20-2		+/- 32.2037	ug/mL	Unstressed
	Purity 99%		+/- 44.7693	ug/mL	Stressed
5	2-Nitrotoluene	1,000.0 ug/mL	+/- 5.9397	ug/mL	Gravimetric
	CAS # 88-72-2		+/- 32.2037	ug/mL	Unstressed
	Purity 99%		+/- 44.7693	ug/mL	Stressed
6	4-Nitrotoluene	1,000.0 ug/mL	+/- 5.9395	ug/mL	Gravimetric
	CAS # 99-99-0		+/- 32.2029	ug/mL	Unstressed
	Purity 97%		+/- 44.7681	ug/mL	Stressed
7	3-Nitrotoluene	1,000.0 ug/mL	+/- 5.9395	ug/mL	Gravimetric
	CAS # 99-08-1		+/- 32.2029	ug/mL	Unstressed
	Purity 97%		+/- 44.7681	ug/mL	Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

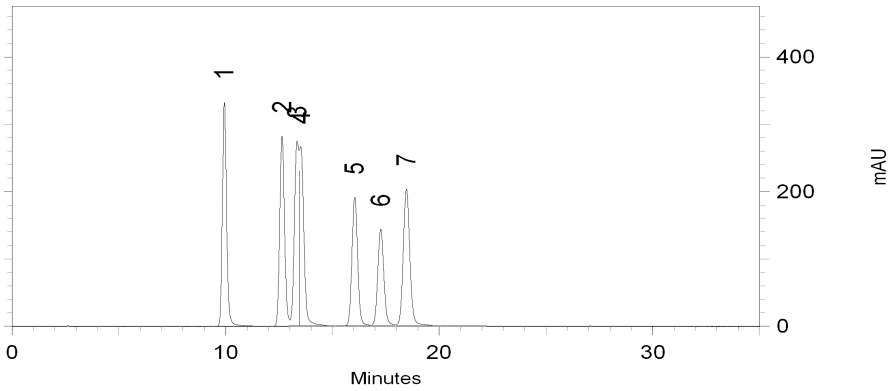
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

Mobile Phase B:

Mobile Phase Comp

Det. Type:
Wavelength: 210 nm



Valerie N. Walters - QA Analyst

Date Passed: 06-Apr-2012 **Balance:** 1128342314

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date of the unopened ampul stored at the recommended storage condition is the last day of the month listed in the expiration date field.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31840, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330 LCSMix2_00091

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31451 **Lot No.:** A0113065

Description : 8330 Calibration Mix #2

8330 Calibration Std #2 1000µg/mL, Acetonitrile, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2020 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Tetryl **CAS #** 479-45-8 (Lot 091120JLM) **Purity** 99%	1,002.0 µg/mL	+/- 5.9516 +/- 53.8797 +/- 58.5858	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
2	4-Amino-2,6-dinitrotoluene **CAS #** 19406-51-0 (Lot ER070908-01) **Purity** 99%	1,004.0 µg/mL	+/- 5.9635 +/- 53.9873 +/- 58.7028	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
3	2-Amino-4,6-dinitrotoluene **CAS #** 35572-78-2 (Lot 29550-55) **Purity** 99%	1,002.0 µg/mL	+/- 5.9516 +/- 53.8797 +/- 58.5858	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
4	2,6-Dinitrotoluene **CAS #** 606-20-2 (Lot 1437483V) **Purity** 99%	1,001.0 µg/mL	+/- 5.9456 +/- 53.8260 +/- 58.5274	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
5	2-Nitrotoluene **CAS #** 88-72-2 (Lot GA01) **Purity** 99%	1,000.0 µg/mL	+/- 5.9397 +/- 53.7722 +/- 58.4689	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
6	4-Nitrotoluene **CAS #** 99-99-0 (Lot 15417TR) **Purity** 99%	1,006.0 µg/mL	+/- 5.9753 +/- 54.0948 +/- 58.8197	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
7	3-Nitrotoluene **CAS #** 99-08-1 (Lot 07329LG) **Purity** 99%	1,000.0 µg/mL	+/- 5.9397 +/- 53.7722 +/- 58.4689	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
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  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

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0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330 Stock_TS_00005

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

ISO Guide 34 Reference Material

Product Number: NAIM-833E
Lot Number: CM-1321

Lot Issue Date: 18-Mar 2015
Expiration Date: 30-Apr 2018

Product Name: Combined Stock Solution

Description:
This Reference Material (RM) was gravimetrically prepared in accordance with ISO Guide 34 and under ULTRA Scientific's ISO 9001 registered quality system. The neat materials used for this product have been verified by ULTRA's ISO 17025 laboratory and under ULTRA's ISO Guide 34 accreditation. The analyte concentrations were verified by ULTRA's ISO 17025 accredited laboratory. For each analyte, the true value, with its uncertainty value calculated at the 95% confidence level, is reported below.

Analyte	CAS#	Analyte Lot	Calculated Value	True Value	Traceability & Method
HMX	002691-41-0	RM06237	999.9 µg/mL	1006 ± 4.1 µg/mL	CJ-4135A; LC/DAD
RDX	000121-82-4	RM05682	1000 µg/mL	998.9 ± 4.4 µg/mL	CJ-4135A; LC/DAD
1,3,5-trinitrobenzene	000099-35-4	RM06608	1000 µg/mL	969.3 ± 4.2 µg/mL	CJ-4135A; LC/DAD
m-dinitrobenzene	000099-65-0	RM04448	1001 µg/mL	932.5 ± 3.6 µg/mL	CJ-4135A; LC/DAD
nitrobenzene	000098-95-3	RM01293	1003 µg/mL	1001 ± 4.2 µg/mL	CJ-4135A; LC/DAD
2,4,6-trinitrotoluene	000118-96-7	RM06889	1003 µg/mL	1007 ± 3.4 µg/mL	CJ-4135A; LC/DAD
2,4-dinitrotoluene	000121-14-2	RM01209	1003 µg/mL	1001 ± 3.2 µg/mL	CJ-4135A; LC/DAD
tetryl	000479-45-8	RM06942	1000 µg/mL	998.3 ± 3.9 µg/mL	CK-2749; LC/DAD
2,6-dinitrotoluene	000606-20-2	NT00450	1003 µg/mL	999.0 ± 3.8 µg/mL	CK-2749; LC/DAD
2-nitrotoluene	000088-72-2	NT01996	1004 µg/mL	1003 ± 4.0 µg/mL	CK-2749; LC/DAD
3-nitrotoluene	000099-08-1	NT02212	1004 µg/mL	1003 ± 3.4 µg/mL	CK-2749; LC/DAD
4-nitrotoluene	000099-99-0	NT02096	1001 µg/mL	997.3 ± 4.0 µg/mL	CK-2749; LC/DAD
2-amino-4,6-dinitrotoluene	035572-78-2	RM04229	1002 µg/mL	982.9 ± 4.0 µg/mL	CK-2749; LC/DAD
4-amino-2,6-dinitrotoluene	019406-51-0	RM04226	1003 µg/mL	982.9 ± 4.0 µg/mL	CK-2749; LC/DAD

Solvent: acetonitrile

Storage: Store at Room Temperature (15° - 30°C)

Traceability:
Traceability has been established through an unbroken chain of comparisons, each having stated uncertainties. Comparisons are based on appropriate physical or chemical measurements, including gravimetric or volumetric dilution, where the mass or volume of a solution before and after dilution is measured. The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1, ISO 9001, ISO 17025, and ISO Guide 34. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 819.

Estimation of Uncertainties:
The true value is reported, with its uncertainty value calculated at the 95% confidence level.

3843528
ID: 8330 Stock_TS_00005
Exp: 04/30/18 Prpd: ACF
NAIM-833E Combined Stock

3843529
ID: 8330 Stock_TS_00006
Exp: 04/30/18 Prpd: ACF
NAIM-833E Combined Stock

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER
ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

ISO 9001 Registered Quality System – TUV USA

250 SMITH STREET • NORTH KINGSTOWN, RHODE ISLAND 02852 • WWW.ULTRASCI.COM

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

ISO Guide 34 Reference Material

Product Number: NAIM-833E
Lot Number: CM-1321

Lot Issue Date: 18-Mar 2015
Expiration Date: 30-Apr 2018

Homogeneity:
This RM was formulated and unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:
This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods and continuing calibration verification.

Instructions for Use:
Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening and should be processed without delay for the true value to be valid within the stated uncertainties. Each unit contains slightly more than the stated labeled volume to facilitate transfer of the material for testing.

Should crystallization occur after refrigeration, gentle warming (<40°C) and shaking of the container is usually sufficient to re-dissolve the material. If this is unsuccessful, an ultrasonic bath may be used. Solutions containing volatile components (such as gases) should be chilled prior to opening to minimize headspace problems.

Hazards:
Refer to the Safety Data Sheet for information regarding this RM.

Expiration of Certification:
The certification of this RM is valid, within the measurement uncertainty specified, until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

Maintenance of Certification:
The real-time, long term stability of the RM may be monitored over the lifetime of the certification. If substantive changes occur that affect the certification before the expiration of this certificate, ULTRA Scientific will notify the purchaser.

Peter A. King, Ph.D.
VP, Technical Operations

Daniel J. Lamendola
Director of QA/RA

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

ANAB ACCREDITED ISO 17025 TESTING LABORATORY

ISO 9001 Registered Quality System – TUV USA

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Reagent

8330_NG_Stk_00032

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

Certificate of Composition

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 568871 **Lot No.:** A0112817

Description : Custom Nitroglycerin Standard

Custom Nitroglycerin Standard 5000 µg/mL, Acetonitrile, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2018 **Storage:** 10°C or colder

C E R T I F I E D V A L U E S

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Nitroglycerin	5,016.0 µg/mL	+/- 46.6461 µg/mL	Gravimetric
	CAS # 55-63-0 (Lot 150612JLM)		+/- 272.0989 µg/mL	Unstressed
	Purity 99%		+/- 295.4680 µg/mL	Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

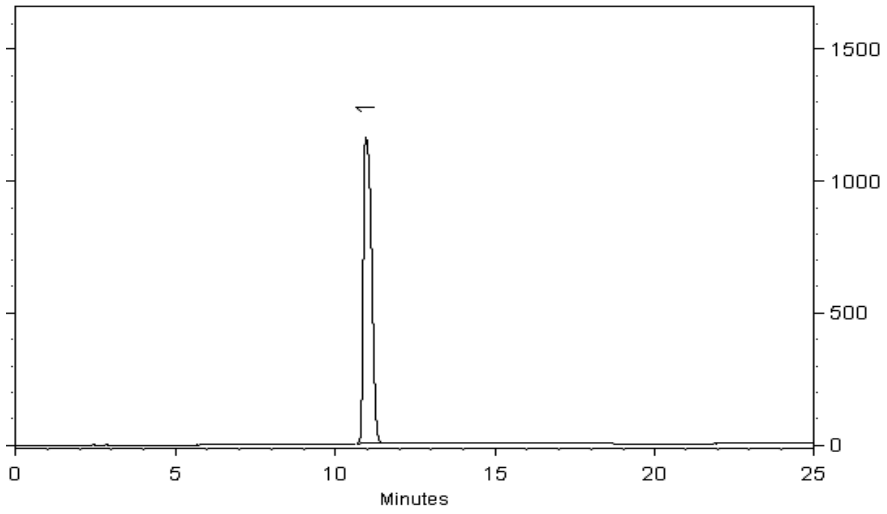
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

Mobile Phase B:

Mobile Phase Composition:

Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cathleen Soltis - Mix Technician

Date Mixed: 24-Jul-2015 **Balance:** 1128360905

Jennifer L. Pollino - QC Analyst

Date Passed: 29-Jul-2015

REVIEWED
By Amanda Miller at 8:29 am, Jul 29, 2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
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Manufacturing Notes:

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Reagent

8330_NG_Stk_00033

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Bellefonte, PA 16823-8812
Tel: (800)356-1688
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www.restek.com

CERTIFIED REFERENCE MATERIAL

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Reference Material Producer
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Catalog No. : 568871 **Lot No.:** A0112817

Description : Custom Nitroglycerin Standard

Custom Nitroglycerin Standard 5000 µg/mL, Acetonitrile, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2018 **Storage:** 10°C or colder

C E R T I F I E D V A L U E S

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
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	Purity 99%		+/- 295.4680 µg/mL	Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

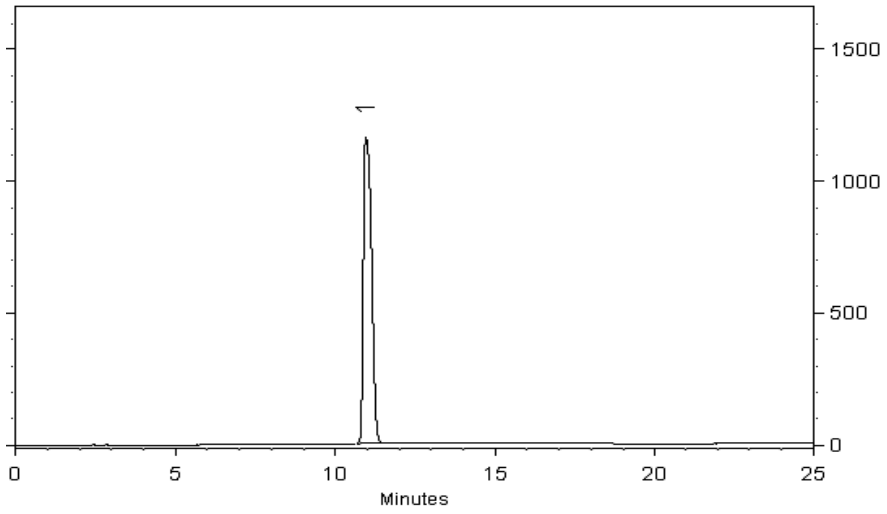
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

Mobile Phase B:

Mobile Phase Composition:

Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cathleen Soltis - Mix Technician

Date Mixed: 24-Jul-2015 **Balance:** 1128360905

Jennifer L. Pollino - QC Analyst

Date Passed: 29-Jul-2015

REVIEWED
By Amanda Miller at 8:29 am, Jul 29, 2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

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- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330_NG_Stk_00046

RESTEK
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Fax: (814)353-1309

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Testing Laboratory
Certificate #3222.02

Certificate of Composition

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 568871 **Lot No.:** A0120172

Description : Custom Nitroglycerin Standard

Custom Nitroglycerin Standard 5,000µg/mL, Acetonitrile, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2019 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Nitroglycerin	5,016.0 µg/mL	+/- 46.6461	µg/mL	Gravimetric
	CAS # 55-63-0 (Lot 150612JLM)		+/- 277.1256	µg/mL	Unstressed
	Purity 99%		+/- 322.4378	µg/mL	Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

7-15-16
YJC

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330_NG_Stk_00048

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Certificate of Composition

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 568871 **Lot No.:** A0120172

Description : Custom Nitroglycerin Standard

Custom Nitroglycerin Standard 5,000µg/mL, Acetonitrile, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2019 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Nitroglycerin	5,016.0 µg/mL	+/- 46.6461	µg/mL	Gravimetric
	CAS # 55-63-0 (Lot 150612JLM)		+/- 277.1256	µg/mL	Unstressed
	Purity 99%		+/- 322.4378	µg/mL	Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

7-15-16
YJC

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
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0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

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Handling Notes:

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- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330_PETN_Stk_00037

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CERTIFIED REFERENCE MATERIAL

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Certificate of Composition

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 568872 **Lot No.:** A0113079

Description : Custom PETN Standard

Custom PETN Standard 5,000µg/mL, Acetonitrile, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2018 **Storage:** 10°C or colder

C E R T I F I E D V A L U E S

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	PETN	5,020.0 µg/mL	+/- 46.6833 µg/mL	Gravimetric
	CAS # 78-11-5 (Lot 051108JLM)		+/- 272.3159 µg/mL	Unstressed
	Purity 99%		+/- 295.7036 µg/mL	Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

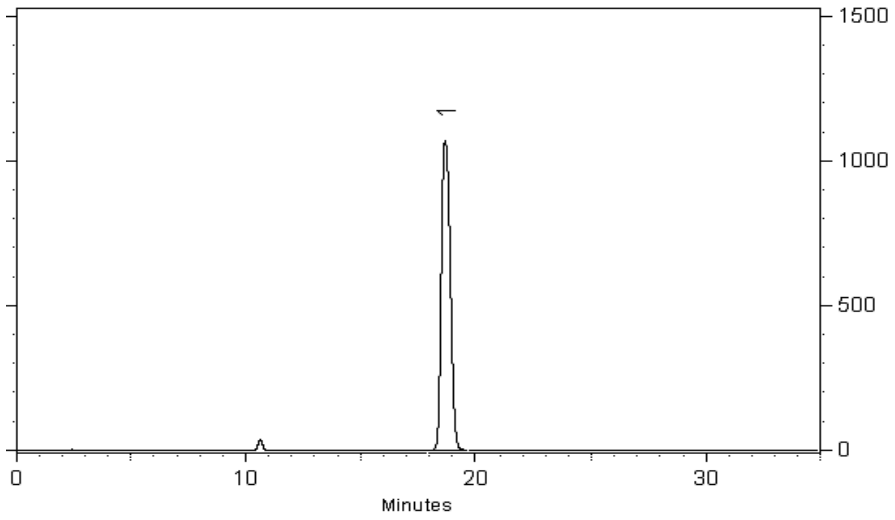
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

Mobile Phase B:

Mobile Phase Composition:

Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cheryl Graham - Mix Technician

Date Mixed: 05-Aug-2015 **Balance:** B345965662

Diane Shaffer - QA Analyst

Date Passed: 10-Aug-2015

REVIEWED
By jbreon at 1:48 pm, Aug 10, 2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
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0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330_PETN_Stk_00038

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Fax: (814)353-1309

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CERTIFIED REFERENCE MATERIAL

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Certificate #3222.01

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Testing Laboratory
Certificate #3222.02

Certificate of Composition

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 568872 **Lot No.:** A0113079

Description : Custom PETN Standard

Custom PETN Standard 5,000µg/mL, Acetonitrile, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2018 **Storage:** 10°C or colder

C E R T I F I E D V A L U E S

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	PETN	5,020.0 µg/mL	+/- 46.6833 µg/mL	Gravimetric
	CAS # 78-11-5 (Lot 051108JLM)		+/- 272.3159 µg/mL	Unstressed
	Purity 99%		+/- 295.7036 µg/mL	Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

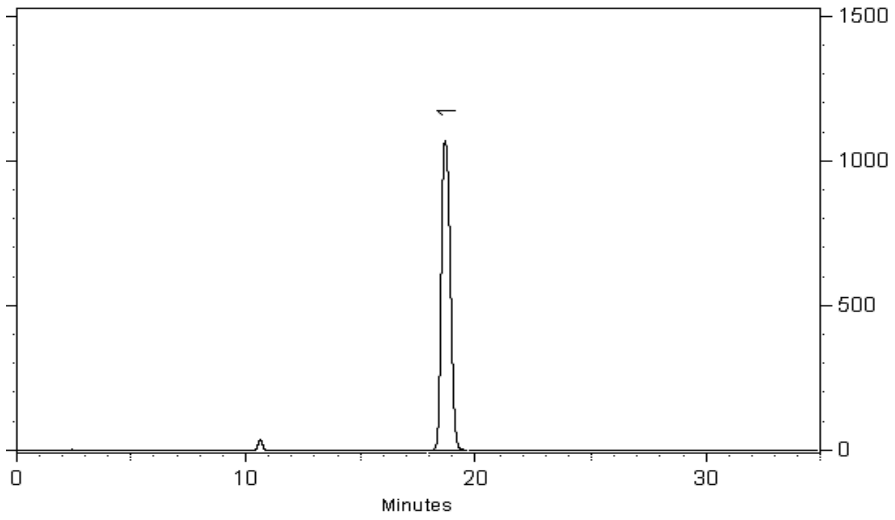
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

Mobile Phase B:

Mobile Phase Composition:

Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cheryl Graham - Mix Technician

Date Mixed: 05-Aug-2015 **Balance:** B345965662

Diane Shaffer - QAAnalyst

Date Passed: 10-Aug-2015

REVIEWED
By jbreon at 1:48 pm, Aug 10, 2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
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0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330_PETN_Stk_00042

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Certificate of Composition

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 568872 **Lot No.:** A0120082

Description : Custom PETN Standard

Custom PETN Standard 5,000µg/mL, Acetonitrile, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : June 30, 2019 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)		Expanded Uncertainty (95% C.L.; K=2)			
1	PETN		5,044.0	µg/mL	+/- 46.9065	µg/mL	Gravimetric
	CAS # 78-11-5	(Lot 051108JLM)			+/- 278.6726	µg/mL	Unstressed
	Purity 99%				+/- 324.2377	µg/mL	Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

7-6-16
YJC

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
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- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

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- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
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- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330_PETN_Stk_00050

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Certificate of Composition

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Catalog No. : 568872 **Lot No.:** A0120082

Description : Custom PETN Standard

Custom PETN Standard 5,000µg/mL, Acetonitrile, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : June 30, 2019 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	PETN	5,044.0 µg/mL	+/- 46.9065	µg/mL	Gravimetric
	CAS # 78-11-5 (Lot 051108JLM)		+/- 278.6726	µg/mL	Unstressed
	Purity 99%		+/- 324.2377	µg/mL	Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

7-6-16
YJC

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

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- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330LCSMix1_00089

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ilac-MRA

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31450 **Lot No.:** A0113652

Description : 8330 Calibration Mix #1

8330 Calibration Std #1 1000µg/mL, Acetonitrile, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2020 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	HMX		1,004.5 µg/mL	+/- 5.9664	µg/mL	Gravimetric
	CAS # 2691-41-0	(Lot 111005JLM)		+/- 54.0142	µg/mL	Unstressed
	Purity 98%			+/- 58.7320	µg/mL	Stressed
2	RDX		1,001.0 µg/mL	+/- 5.9456	µg/mL	Gravimetric
	CAS # 121-82-4	(Lot 080228JLM)		+/- 53.8260	µg/mL	Unstressed
	Purity 99%			+/- 58.5274	µg/mL	Stressed
3	1,3,5-Trinitrobenzene		1,004.0 µg/mL	+/- 5.9635	µg/mL	Gravimetric
	CAS # 99-35-4	(Lot UNVVB)		+/- 53.9873	µg/mL	Unstressed
	Purity 99%			+/- 58.7028	µg/mL	Stressed
4	1,3-Dinitrobenzene		1,002.0 µg/mL	+/- 5.9516	µg/mL	Gravimetric
	CAS # 99-65-0	(Lot BCBB1436V)		+/- 53.8797	µg/mL	Unstressed
	Purity 99%			+/- 58.5858	µg/mL	Stressed
5	Nitrobenzene		1,002.0 µg/mL	+/- 5.9516	µg/mL	Gravimetric
	CAS # 98-95-3	(Lot SHBF2348V)		+/- 53.8797	µg/mL	Unstressed
	Purity 99%			+/- 58.5858	µg/mL	Stressed
6	2,4,6-Trinitrotoluene		1,002.0 µg/mL	+/- 5.9516	µg/mL	Gravimetric
	CAS # 118-96-7	(Lot 2554100)		+/- 53.8797	µg/mL	Unstressed
	Purity 99%			+/- 58.5858	µg/mL	Stressed
7	2,4-Dinitrotoluene		1,002.0 µg/mL	+/- 5.9516	µg/mL	Gravimetric
	CAS # 121-14-2	(Lot MKAA0690V)		+/- 53.8797	µg/mL	Unstressed
	Purity 99%			+/- 58.5858	µg/mL	Stressed

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

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25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
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- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330LCSMix1_00090

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31450 **Lot No.:** A0113652

Description : 8330 Calibration Mix #1

8330 Calibration Std #1 1000µg/mL, Acetonitrile, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2020 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	HMX		1,004.5 µg/mL	+/- 5.9664	µg/mL	Gravimetric
	CAS # 2691-41-0	(Lot 111005JLM)		+/- 54.0142	µg/mL	Unstressed
	Purity 98%			+/- 58.7320	µg/mL	Stressed
2	RDX		1,001.0 µg/mL	+/- 5.9456	µg/mL	Gravimetric
	CAS # 121-82-4	(Lot 080228JLM)		+/- 53.8260	µg/mL	Unstressed
	Purity 99%			+/- 58.5274	µg/mL	Stressed
3	1,3,5-Trinitrobenzene		1,004.0 µg/mL	+/- 5.9635	µg/mL	Gravimetric
	CAS # 99-35-4	(Lot UNVVB)		+/- 53.9873	µg/mL	Unstressed
	Purity 99%			+/- 58.7028	µg/mL	Stressed
4	1,3-Dinitrobenzene		1,002.0 µg/mL	+/- 5.9516	µg/mL	Gravimetric
	CAS # 99-65-0	(Lot BCBB1436V)		+/- 53.8797	µg/mL	Unstressed
	Purity 99%			+/- 58.5858	µg/mL	Stressed
5	Nitrobenzene		1,002.0 µg/mL	+/- 5.9516	µg/mL	Gravimetric
	CAS # 98-95-3	(Lot SHBF2348V)		+/- 53.8797	µg/mL	Unstressed
	Purity 99%			+/- 58.5858	µg/mL	Stressed
6	2,4,6-Trinitrotoluene		1,002.0 µg/mL	+/- 5.9516	µg/mL	Gravimetric
	CAS # 118-96-7	(Lot 2554100)		+/- 53.8797	µg/mL	Unstressed
	Purity 99%			+/- 58.5858	µg/mL	Stressed
7	2,4-Dinitrotoluene		1,002.0 µg/mL	+/- 5.9516	µg/mL	Gravimetric
	CAS # 121-14-2	(Lot MKAA0690V)		+/- 53.8797	µg/mL	Unstressed
	Purity 99%			+/- 58.5858	µg/mL	Stressed

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
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Manufacturing Notes:

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Handling Notes:

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- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330MNXNeatPS_00014

TestAmerica Denver
4955Yarrow Street
Arvada, CO 80002

March 10, 2015

Att'n: LC/MS

Dear LC/MS

Enclosed please find one (1) 10-mg sample of 1-nitroso=3,5-dinitro-1,3,5-triazacyclohexane (MNX) as requested viae-mail under Purchase Order 2601686. This material is 98.9% pure with 0.49% RDX based on chromatographic analysis. I hope this information helps you.

If you have any questions regarding this material, please don't hesitate to contact me.

Sincerely,

Ronald Spanggord

Ronald J. Spanggord, Ph.D.
Assoc. Dept. Director
Chemical Sciences and Technology Department
(650) 859-3822 (phone)
(650) 859-4321 (Fax)

Reagent

8330NG_PS_00011

125 Market Street
New Haven, CT 06513
USA

AccuStandard®, Inc.

Tel (203)786-5290
Fax (203)786-5287
www.AccuStandard.com

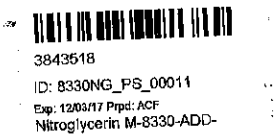
CERTIFICATE OF ANALYSIS

Catalog No: M-8330-ADD-1-10X
Description: Nitroglycerin
Lot: 215121015
Solvent: Ethanol (97%)
Methanol (3%)
Hazards: **HIGHLY FLAMMABLE** - *Refer to SDS for safety info*

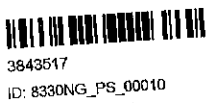
Danger 2

Date Certified: Dec 3, 2015
Expiration: Dec 3, 2017
Sample Size: 1 mL
Components: 1
Storage Condition: Refrig (0-5 °C)
Included on ISO/IEC 17025 Scope of Accreditation: Yes
Included on ISO Guide 34 Scope of Accreditation: Yes

Component	CAS #	Purity % (HPLC)	Prepared Concentration[1] (µg/mL)	Certified Analyte Concentration[2] (µg/mL)
Nitroglycerin	55-63-0	99.4	1003	997



3843518
ID: 8330NG_PS_00011
Exp: 12/03/17 Prpd: ACF
Nitroglycerin M-8330-ADD-



3843517
ID: 8330NG_PS_00010
Exp: 12/03/17 Prpd: ACF
Nitroglycerin M-8330-ADD-

A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

[1] All weights are traceable through NIST, Test No. 822-275872-11

[2] Certified Analyte Concentration = Purity x Prepared Concentration. The Uncertainty associated with the gravimetric values reported on this certificate is ±0.24%. The CRM Uncertainty calculated for this product is ±5%. These values are the expanded uncertainty and represent an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Labels and certificates follow U.S. Conventions in reporting numerical values: A comma (,) is used to separate units of one-thousand or greater. A period (.) is used as a decimal place marker.

See reverse side for additional information

Certified By: _____
Larry Decker, Organic QC Manager

For use in routine laboratory analysis.

AccuStandard is accredited to ISO Guide 34, ISO/IEC 17025 and certified to ISO 9001

Reagent

8330PAStkPS_00041

125 Market Street
New Haven, CT 06513
USA

AccuStandard® Inc.

Tel (203)786-5290
Fax (203)786-5287
www.AccuStandard.com

CERTIFICATE OF ANALYSIS

Catalog No: M-8330-ADD-3
Description: Picric acid
Lot: 214121302-01
Solvent: Acetonitrile (50%)
Methanol (50%)
Hazards: **HIGHLY FLAMMABLE** - *Refer to SDS for safety info*

Danger 2

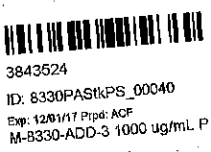
Date Certified: Dec 1, 2015
Expiration: Dec 1, 2017
Sample Size: 1 mL
Components: 1

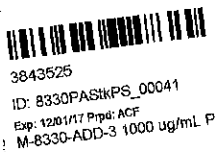
Storage Condition: Ambient (>5 °C)

Included on ISO/IEC 17025 Scope of Accreditation: Yes

Included on ISO Guide 34 Scope of Accreditation: Yes

Component	CAS #	Purity % (HPLC)	Prepared Concentration[1] (µg/mL)	Certified Analyte Concentration[2] (µg/mL)
Picric acid	88-89-1	99.1	100.1	99.2





A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

[1] All weights are traceable through NIST, Test No. 822-275872-11

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See reverse side for additional information

Certified By: Larry Decker, Organic QC Manager

Page 1 of 1

For use in routine laboratory analysis.

AccuStandard is accredited to ISO Guide 34, ISO/IEC 17025 and certified to ISO 9001

OR-ORG/INO-001
Rev. 7/11

Reagent

8330PETN_PS_00011

125 Market Street
New Haven, CT 06513
USA

AccuStandard® Inc.

Tel (203)786-5290
Fax (203)786-5287
www.AccuStandard.com

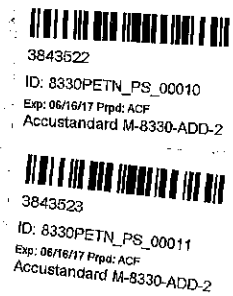
CERTIFICATE OF ANALYSIS

Catalog No: M-8330-ADD-2-10X
Description: PETN in Methanol
Lot: 215061294
Solvent: Methanol
Hazards: **HIGHLY FLAMMABLE** - *Refer to SDS for safety info*

Danger 2

Date Certified: Jun 16, 2015
Expiration: Jun 16, 2017
Sample Size: 1 mL
Components: 1
Storage Condition: Refrig (0-5 °C)
Included on ISO/IEC 17025 Scope of Accreditation: Yes
Included on ISO Guide 34 Scope of Accreditation: Yes

Component	CAS #	Purity % (HPLC)	Prepared Concentration[1] (µg/mL)	Certified Analyte Concentration[2] (µg/mL)
PETN	78-11-5	99.4	1001	995



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A period (.) is used as a decimal place marker.

See reverse side for additional information

Certified By: _____
Larry Decker, Organic QC Manager

For use in routine laboratory analysis.

Reagent

8330Surrogate_00089

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

8330Surrogate_00089

Reagent ID: 8330Surrogate_00089

		Expiration Date:	12/07/2016
Description:	10ug/mL 1,2-Dinitrobenzene	Laboratory:	TestAmerica Denver
No. of Bottles:	2	Prepared By:	Knaub, Gentry L
Storage Location:	Explosives Prep	Solvent:	Acetonitrile
Reagent Volume:	500.000 mL	Solvent Lot:	ACN_00182
Creation Date:	06/07/2016		
Open Date:			
Container(s):	3934804, 3934805		
Comment:	Stored Frozen. 6 month expiration date. Take 1mL of 1,2 Dinitrobenzene (8330SurrStock) and Dilute to 100 mL in ACN. Mulitply recipe as needed.		

Reagent Analyte Information

Analyte	Source ID	Source Exp. Date	Source Conc.	Source Conc. Units	Final Conc.	Final Conc. Units
1,2-Dinitrobenzene	8330SurrStkSS_00095	11/30/2019	1000.00000	ug/mL	10.00000	ug/mL
1,2-Dinitrobenzene	8330SurrStkSS_00096	11/30/2019	1000.00000	ug/mL	10.00000	ug/mL
1,2-Dinitrobenzene	8330SurrStkSS_00097	11/30/2019	1000.00000	ug/mL	10.00000	ug/mL
1,2-Dinitrobenzene	8330SurrStkSS_00099	03/27/2020	1000.00000	ug/mL	10.00000	ug/mL
1,2-Dinitrobenzene	8330SurrStkSS_00100	03/27/2020	1000.00000	ug/mL	10.00000	ug/mL

Source Reagents

Reagent	Description	Type	Expiration	Vendor	Vendor Lot #	Vendor Cat Lot #	Volume Used	Volume Units
8330SurrStkSS_00095	31453, 1000ug/mL Restek 1,2-DNB SS	ASTD	11/30/19	Restek	A0107162	31453	1.00000	mL
8330SurrStkSS_00096	31453, 1000ug/mL Restek 1,2-DNB SS	ASTD	11/30/19	Restek	A0107162	31453	1.00000	mL
8330SurrStkSS_00097	31453, 1000ug/mL Restek 1,2-DNB SS	ASTD	11/30/19	Restek	A0107162	31453	1.00000	mL
8330SurrStkSS_00099	31453, 1000ug/mL Restek 1,2-DNB SS	ASTD	03/27/20	Restek	A0109837	31453	1.00000	mL
8330SurrStkSS_00100	31453, 1000ug/mL Restek 1,2-DNB SS	ASTD	03/27/20	Restek	A0109837	31453	1.00000	mL

Please Verify :)
-GK

Report Date: 09-Jun-2016 12:05:16 Chrom Revision: 2.2 04-Mar-2016 14:36:24

Preliminary Report

TestAmerica Denver
Recovery Report

Pass

Data File:	\\ChromNA\Denver\ChromData\X4_C18\20160609-47673.b\06090008.D				
Lims ID:	8330 Surrogate Verify	Lab Sample ID:	Client 280-329100/50-A		
Client ID:					
Sample Type:	Client				
Inject. Date:	09-Jun-2016 11:18:54	ALS Bottle#:	8	Worklist Smp#:	50
Injection Vol:	100.0 ul	Dil. Factor:	1.0000		
Sample Info:	8330 Surrogate V				
Misc. Info.:	280-0047673-050				
Operator ID:	ACF	Instrument ID:	CHHPLCX4_C18		
Method:	\\ChromNA\Denver\ChromData\X4_C18\20160609-47673.b\8330_X4.m				
Limit Group:	GCSV - 8330				
Last Update:	09-Jun-2016 12:04:18	Calib Date:	06-Jun-2016 20:22:29		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\X4_C18\20160606-47566.b\06060024.D				
Column 1 :	UltraCarb5uODS (20) (4.60 mm)		Det: LC DAD1B, 254 nm		
Process Host:	XAWRK013				

Compound	Amount Added	Amount Recovered	% Rec.
E 8 1,2-Dinitrobenzene	1.00	1.00	100.02

Talk to Alan

Reagent

8330Surrogate_00090

Report Date: 22-Sep-2016 11:05:52 Chrom Revision: 2.2 08-Sep-2016 14:45:52

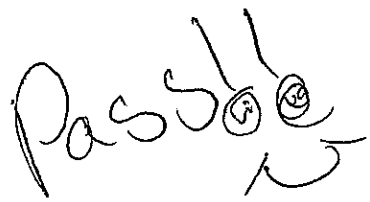
Preliminary Report

TestAmerica Denver

Recovery Report

Data File:	\\ChromNA\Denver\ChromData\X4_C18\20160921-51107.b\09210006.D				
Lims ID:	8330Surrogate00090				
Client ID:					
Sample Type:	Client				
Inject. Date:	21-Sep-2016 15:39:17	ALS Bottle#:	6	Worklist Smp#:	6
Injection Vol:	100.0 ul	Dil. Factor:	1.0000		
Sample Info:	8330Surrogate00090				
Misc. Info.:	280-0051107-006				
Operator ID:	ACF	Instrument ID:	CHHPLCX4_C18		
Method:	\\ChromNA\Denver\ChromData\X4_C18\20160921-51107.b\8330_X4.m				
Limit Group:	GCSV - 8330				
Last Update:	22-Sep-2016 10:50:53	Calib Date:	30-Aug-2016 22:16:09		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\X4_C18\20160901-50506.b\21.D				
Column 1 :	UltraCarb5uODS (20) (4.60 mm)		Det: LC DAD1B, 254 nm		
Process Host:	XAWRK047				

Compound	Amount Added	Amount Recovered	% Rec.
E 8 1,2-Dinitrobenzene	1.00	0.9839	98.39



Report Date: 22-Sep-2016 11:11:11 Chrom Revision: 2.2 06-Sep-2016 14:45:52

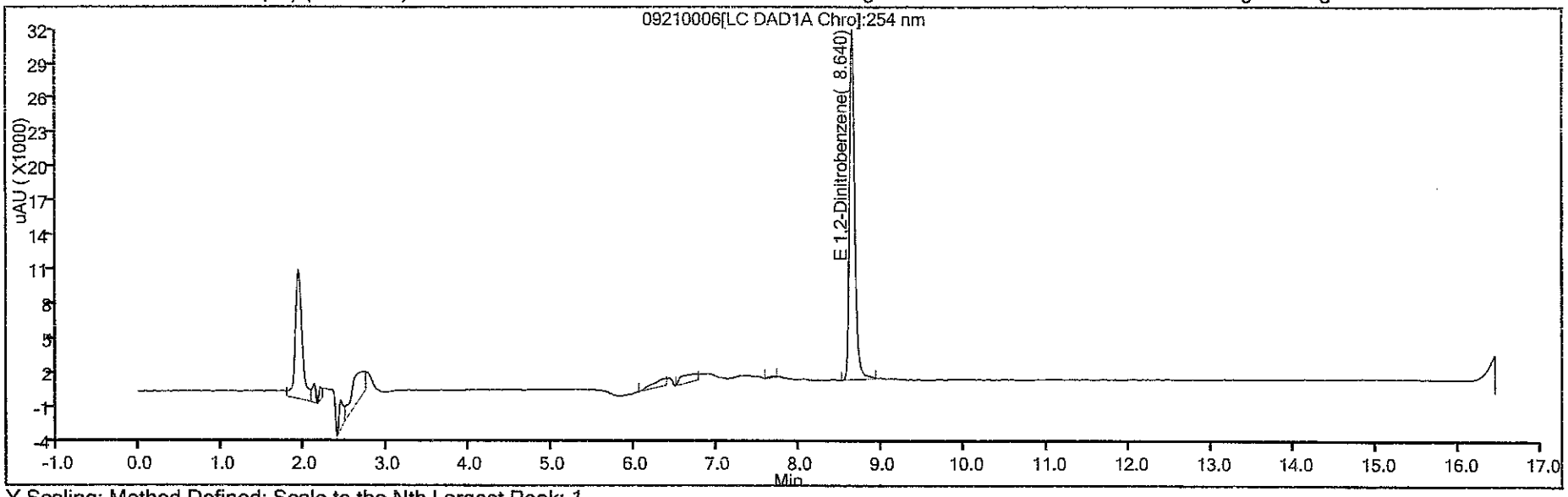
Preliminary Report

TestAmerica Denver

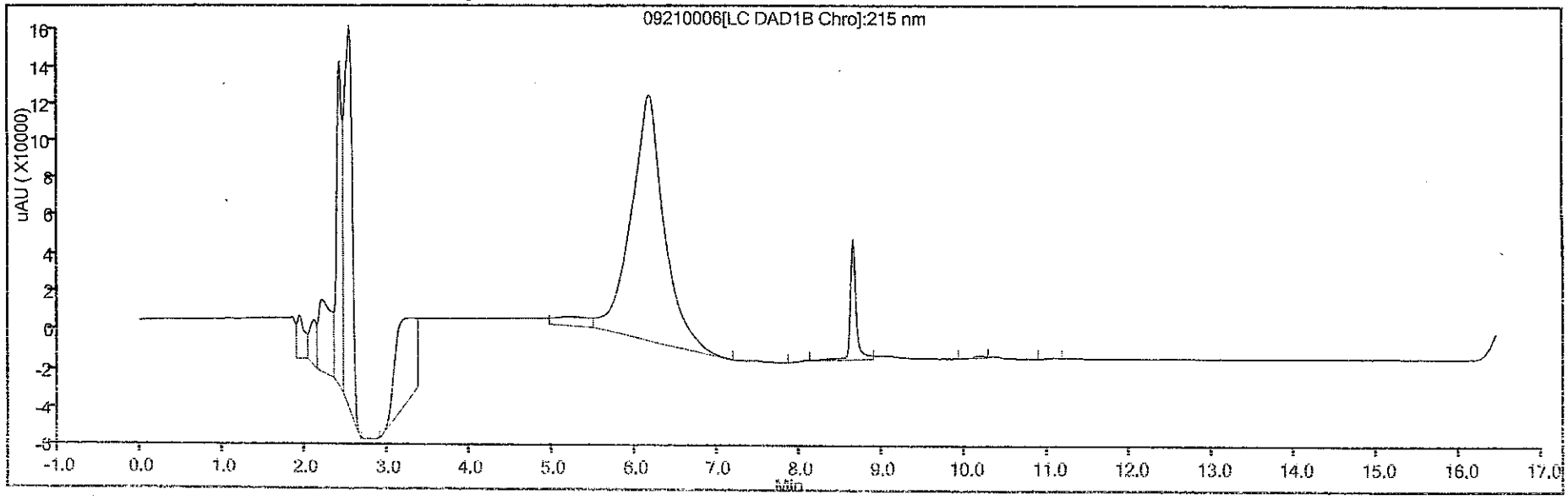
Data File:	\\ChromNA\Denver\ChromData\X4_C18\20160921-51107.b\09210006.D				
Injection Date:	21-Sep-2016 15:39:17	Instrument ID:	CHHPLCX4_C18	Operator ID:	ACF
Lims ID:	8330Surrogate00090	Lab Sample ID:	Client 280-343153/6-A	Worklist Smp#:	6
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	6
Method:	8330_X4	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



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8330SurrStkSS_00095

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31453 **Lot No.:** A0107162

Description : 8330 Surrogate Mix

8330 Surrogate Std 1, 2-Dinitrobenzene 1000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : November 30, 2019 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,2-Dinitrobenzene	1,000.0 µg/mL	+/- 5.9397	µg/mL	Gravimetric
	CAS # 528-29-0 (Lot MKBK2313V)		+/- 11.3417	µg/mL	Unstressed
	Purity 99%		+/- 13.0327	µg/mL	Stressed

Solvent: Methanol
CAS # 67-56-1
Purity 99%

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

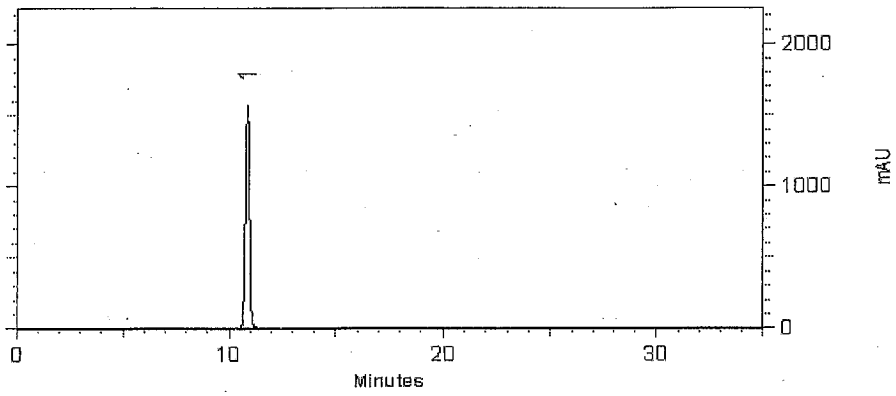
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

Mobile Phase B:

Mobile Phase Composition:

Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cathleen Soltis - Mix Technician

Date Mixed: 11-Nov-2014 **Balance:** B251644995

Diane Shaffer - QA Analyst

Date Passed: 13-Nov-2014

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31453 **Lot No.:** A0107162

Description : 8330 Surrogate Mix

8330 Surrogate Std 1, 2-Dinitrobenzene 1000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : November 30, 2019 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	1,2-Dinitrobenzene	1,000.0 µg/mL	+/- 5.9397 µg/mL	Gravimetric
	CAS # 528-29-0 (Lot MKBK2313V)		+/- 11.3417 µg/mL	Unstressed
	Purity 99%		+/- 13.0327 µg/mL	Stressed

Solvent: Methanol
CAS # 67-56-1
Purity 99%

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

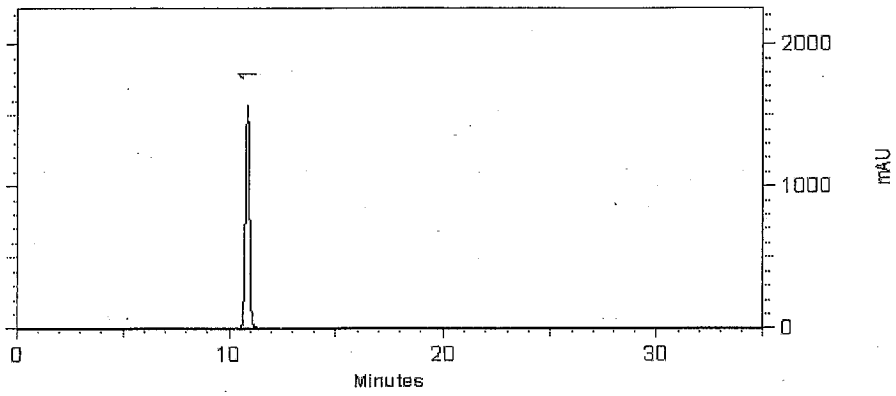
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

Mobile Phase B:

Mobile Phase Composition:

Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cathleen Soltis - Mix Technician

Date Mixed: 11-Nov-2014 **Balance:** B251644995

Diane Shaffer - QA Analyst

Date Passed: 13-Nov-2014

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

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  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
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0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31453 **Lot No.:** A0107162

Description : 8330 Surrogate Mix

8330 Surrogate Std 1, 2-Dinitrobenzene 1000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : November 30, 2019 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,2-Dinitrobenzene	1,000.0 µg/mL	+/- 5.9397	µg/mL	Gravimetric
	CAS # 528-29-0 (Lot MKBK2313V)		+/- 11.3417	µg/mL	Unstressed
	Purity 99%		+/- 13.0327	µg/mL	Stressed

Solvent: Methanol
CAS # 67-56-1
Purity 99%

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

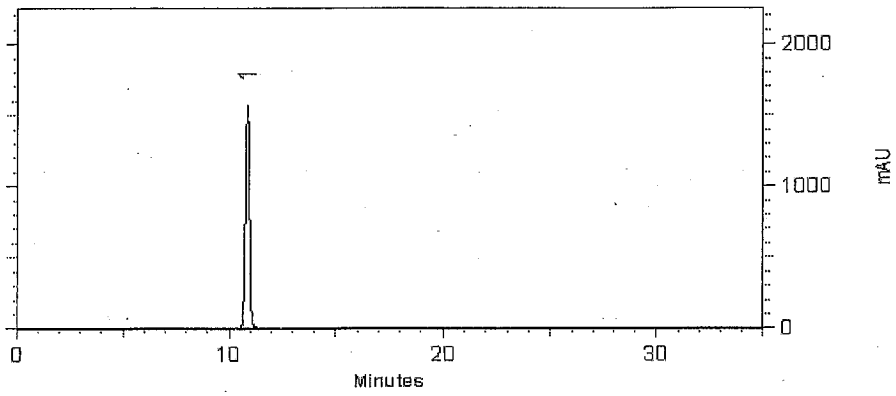
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

Mobile Phase B:

Mobile Phase Composition:

Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cathleen Soltis - Mix Technician

Date Mixed: 11-Nov-2014 **Balance:** B251644995

Diane Shaffer - QA Analyst

Date Passed: 13-Nov-2014

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

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  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
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- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
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0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

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Catalog No. : 31453 **Lot No.:** A0109837

Description : 8330 Surrogate Mix

8330 Surrogate Std 1, 2-Dinitrobenzene 1000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2020 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,2-Dinitrobenzene	1,001.0 µg/mL	+/- 5.9456	µg/mL	Gravimetric
	CAS # 528-29-0 (Lot MKBK2313V)		+/- 11.3531	µg/mL	Unstressed
	Purity 99%		+/- 13.0457	µg/mL	Stressed

Solvent: Methanol
CAS # 67-56-1
Purity 99%

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

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- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

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0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
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Reagent

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Catalog No. : 31453 **Lot No.:** A0109837

Description : 8330 Surrogate Mix

8330 Surrogate Std 1, 2-Dinitrobenzene 1000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2020 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,2-Dinitrobenzene	1,001.0 µg/mL	+/- 5.9456	µg/mL	Gravimetric
	CAS # 528-29-0 (Lot MKBK2313V)		+/- 11.3531	µg/mL	Unstressed
	Purity 99%		+/- 13.0457	µg/mL	Stressed

Solvent: Methanol
CAS # 67-56-1
Purity 99%

General Certified Reference Material Notes

Expiration Notes:

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- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330SurrStkSS_00101

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

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Certificate #3222.01

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Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31453 **Lot No.:** A0109837

Description : 8330 Surrogate Mix

8330 Surrogate Std 1, 2-Dinitrobenzene 1000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2020 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,2-Dinitrobenzene	1,001.0 µg/mL	+/- 5.9456	µg/mL	Gravimetric
	CAS # 528-29-0 (Lot MKBK2313V)		+/- 11.3531	µg/mL	Unstressed
	Purity 99%		+/- 13.0457	µg/mL	Stressed

Solvent: Methanol
CAS # 67-56-1
Purity 99%

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330SurrStkSS_00102

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

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Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31453 **Lot No.:** A0109837

Description : 8330 Surrogate Mix

8330 Surrogate Std 1, 2-Dinitrobenzene 1000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2020 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,2-Dinitrobenzene	1,001.0 µg/mL	+/- 5.9456	µg/mL	Gravimetric
	CAS # 528-29-0 (Lot MKBK2313V)		+/- 11.3531	µg/mL	Unstressed
	Purity 99%		+/- 13.0457	µg/mL	Stressed

Solvent: Methanol
CAS # 67-56-1
Purity 99%

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330SurrStkSS_00109

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Certificate of Analysis

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31453 **Lot No.:** A0113066

Description : 8330 Surrogate Mix

8330 Surrogate Std 1, 2-Dinitrobenzene 1000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2020 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,2-Dinitrobenzene **CAS #** 528-29-0 **Purity** 99% (Lot MKBK2313V)	1,002.0 µg/mL	+/- 5.9516 +/- 11.3644 +/- 13.0587	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: Methanol
CAS # 67-56-1
Purity 99%

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
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0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330SurrStkSS_00111

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Certificate of Analysis

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31453 **Lot No.:** A0113066

Description : 8330 Surrogate Mix

8330 Surrogate Std 1, 2-Dinitrobenzene 1000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2020 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,2-Dinitrobenzene **CAS #** 528-29-0 (Lot MKBK2313V) **Purity** 99%	1,002.0 µg/mL	+/- 5.9516	µg/mL	Gravimetric
			+/- 11.3644	µg/mL	Unstressed
			+/- 13.0587	µg/mL	Stressed

Solvent: Methanol
CAS # 67-56-1
Purity 99%

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

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$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
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0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

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Handling Notes:

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Reagent

8330SurrStkSS_00113

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Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31453 **Lot No.:** A0113066

Description : 8330 Surrogate Mix

8330 Surrogate Std 1, 2-Dinitrobenzene 1000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2020 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,2-Dinitrobenzene **CAS #** 528-29-0 **Purity** 99% (Lot MKBK2313V)	1,002.0 µg/mL	+/- 5.9516	µg/mL	Gravimetric
			+/- 11.3644	µg/mL	Unstressed
			+/- 13.0587	µg/mL	Stressed

Solvent: Methanol
CAS # 67-56-1
Purity 99%

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
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- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

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k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
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0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

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- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330SurrStock_00159

125 Market Street
New Haven, CT 06513
USA

AccuStandard® Inc.

Tel (203)786-5290
Fax (203)786-5287
www.AccuStandard.com

CERTIFICATE OF ANALYSIS

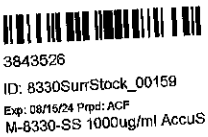
Catalog No: M-8330-SS
Description: 1,2-Dinitrobenzene Standard
Lot: 214081391
Solvent: Methanol
Hazards: HIGHLY FLAMMABLE - *Refer to SDS for safety info*

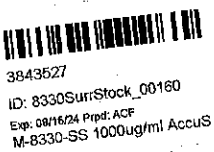
Danger 2

Date Certified: Aug 15, 2014
Expiration: Aug 15, 2024
Sample Size: 1 mL
Components: 1
Storage Condition: Ambient (>5 °C)

Included on ISO/IEC 17025 Scope of Accreditation: Yes
Included on ISO Guide 34 Scope of Accreditation: Yes

Component	CAS #	Purity % (GC/FID)	Prepared Concentration[1] (µg/mL)	Certified Analyte Concentration[2] (µg/mL)
1,2-Dinitrobenzene	528-29-0	100.0	1002	1002





A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

[1] All weights are traceable through NIST, Test No. 822-275872-11

[2] Certified Analyte Concentration = Purity X Prepared Concentration. The Uncertainty associated with the gravimetric values reported on this certificate is ±0.24%. The CRM Uncertainty calculated for this product is ±5%. These values are the expanded uncertainty and represent an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Labels and certificates follow U.S. Conventions in reporting numerical values:
A comma (,) is used to separate units of one-thousand or greater.
A period (.) is used as a decimal place marker.

See reverse side for additional information

Certified By:
Larry Decker, Organic QC Manager

For use in routine laboratory analysis.

AccuStandard is accredited to ISO Guide 34, ISO/IEC 17025 and certified to ISO 9001

Reagent

CN CAL Std_00052

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Certificate of Analysis

Cyanide Standard, 1000 ppm CN

Lot Number: 2609C92 **Product Number:** 2543

Manufacture Date: SEP 22, 2016
Expiration Date: MAR 2017

This standard is prepared using accurate volumetric techniques from material that has been assayed against Silver Nitrate solution certified traceable to NIST Standard Reference Material 999. The certified value reported is the prepared value based upon the method of preparation of the material. The uncertainty in the prepared value is the combined uncertainty based on the stability of the assayed Potassium Cyanide, and the uncertainty in the mass and volume measurements.
Use 0.16% (w/v) (0.04 N) Sodium Hydroxide or 0.225 % (w/v) (0.04 N) Potassium Hydroxide to make dilutions of this standard. Restandardize weekly if extreme accuracy is required.

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Potassium Cyanide	151-50-8	ACS
Sodium Hydroxide	1310-73-2	Reagent

Test	Specification	Result
Appearance	Colorless liquid	Passed
Cyanide (CN)	995-1005 ppm	1000 ppm

Specification	Reference
Stock Standard Cyanide Solution	APHA (4500-CN- F)
Stock Cyanide Solution	APHA (4500-CN- E)
Stock Cyanide Solution	APHA (4500-CN- K)
Stock Cyanide Solution	APHA (4500-CN- H)
Cyanide Reference Solution (1000 mg/L)	EPA (SW-846) (7.3.3.2)
Cyanide Calibration Stock Solution (1,000 mg/L CN-)	EPA (SW-846) (9213)
Stock Cyanide Solution	EPA (335.3)
Stock Cyanide Solution	EPA (335.2)
Cyanide Solution Stock	ASTM (D 4282)
Simple Cyanide Solution, Stock (1.0 g/L CN)	ASTM (D 4374)

Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
2543-4	120 mL amber poly	6 months

Recommended Storage: 2°C - 8°C (36°F - 46°F)

Katie Schnur
Quality Control Manager

This Certificate of Analysis is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."

Reagent

CN ICV Std_00038

USA

5580 Skylane Boulevard P: 707.525.5788
Santa Rosa, CA 95403 P: 800.878.7654
F: 707.545.7901

Europe

P.O. Box 2704 P: +31 20 638 05 97
1000 CS Amsterdam F: +31 20 420 28 36
The Netherlands

Certificate of Analysis

Rev 0

Comment:

Catalog No:	Lot No:	Expiration Date:	Matrix:	Description:
Z-G34-4400-IC9M	1097445	16-Apr-2018	0.179% NaOH	ISO Guide 34 - Cyanide, 100 mL 1,000 mg/L in H_2O

Additional Information:

Date Received: _____

Container: 4 oz (125 mL) Narrow Mouth, HDPE

Certified Values:

The certified value is based on gravimetric and volumetric preparation of this CRM. This CRM has been confirmed by inductively coupled plasma optical emission spectrometry (ICP-OES) using an internally developed method against an independent source which is directly traceable to the NIST SRM's listed below.
The uncertainty value is calculated for a 95% confidence interval with a *k* value of 2.

Element	Symbol	CAS No	SRM No	NIST Lot No	Source Lot No	Purity %	Concentration mg/L	Uncertainty ± mg/L
Cyanide	CN	151-50-8	N/A	N/A	363.24.3S	98	1000	3.5

CPI INTERNATIONAL

USA

5580 Skylane Boulevard P: 707.525.5788
Santa Rosa, CA 95403 P: 800.878.7654
F: 707.545.7901

Europe

P.O. Box 2704 P: +31 20 638 05 97
1000 CS Amsterdam F: +31 20 420 28 36
The Netherlands

Certificate of Analysis

Rev 0

Comment:

Catalog No:	Lot No:	Expiration Date:	Matrix:	Description:
Z-G34-4400-IC9M	1097445	16-Apr-2018	0.179% NaOH	ISO Guide 34 - Cyanide, 100 mL 1,000 mg/L in H_2O

Calculation of Uncertainty

The following equations are used to calculate the value of the expanded uncertainty:
$U=ku_c$ U=Expanded Uncertainty, k= the coverage factor at the 95% confidence level, k=2, u_c = the combined uncertainty
$u_c=\sqrt{\sum u_i^2}$ where u_i are the individual uncertainty components for raw material, transportation, homogeneity, and shelf life.

Expiration Information:

The Stability of this product is based upon rigorous short term and long term testing of the solution for the certified value. These tests include the effect of temperature and packaging on the product. This standard is guaranteed until the expiration date listed above.

Accreditation:

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) and ISO Guide 34 Reference Material Producer (RMP) Certificate number 3031.02 accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's Quality System audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number IZ391-IS4).

Manufactured By:

Carrie Bibbins
Chemist
Manufacture Date: 10/13/2016

Certified By:

Christy Lane
Chemist
Certified Date: 10/13/2016

Released By:

Mark Filla
Chemist
Original Issue Date: 10/13/2016

Reagent

PicricARestek_00074

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

Certificate of Analysis

ilac-MRA

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31499 **Lot No.:** A0105913

Description : Picric Acid Standard

1000µg/mL, Methanol, 1mL/ampul *PGI BOX REQUIRED* SHIP FED EX GROUND ONLY

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : September 30, 2019 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Picric Acid	1,002.0 µg/mL	+/- 5.9516	µg/mL	Gravimetric
	CAS # 88-89-1 (Lot 06130CU)		+/- 53.8797	µg/mL	Unstressed
	Purity 99%		+/- 58.5858	µg/mL	Stressed

Solvent: Methanol
CAS # 67-56-1
Purity 99%

Specific Reference Material Notes:
This is a derivatized analysis.

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31840, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

8330B_DOD5

Nitroaromatics and Nitramines (HPLC)

FORM II
HPLC/IC SURROGATE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): UltraCarb5u ID: 4.6 (mm)

Client Sample ID	Lab Sample ID	12DNB1 #
EBGmw-128-111016-GW	280-90848-1	99
EBGmw-126-111016-GW	280-90848-2	88 M
EBGmw-131-111016-GW	280-90848-3	98
EBGmw-125-111016-GW	280-90848-4	101
	MB 280-351958/1-A	104
	LCS 280-351958/2-A	97
	LCSD 280-351958/3-A	96

	QC LIMITS
12DNB = 1,2-Dinitrobenzene	83-119

Column to be used to flag recovery values

FORM II 8330B

FORM III
HPLC/IC LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 11291651.D

Lab ID: LCS 280-351958/2-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
1,3,5-Trinitrobenzene	2.00	1.94	97	73-125	
1,3-Dinitrobenzene	2.00	2.00	100	78-120	
2,4,6-Trinitrotoluene	2.00	2.09	105	71-123	
2,4-Dinitrotoluene	2.00	1.90	95	78-120	
2,6-Dinitrotoluene	2.00	1.81	90	77-127	
2-Amino-4,6-dinitrotoluene	2.00	1.73	87	79-120	
2-Nitrotoluene	2.00	1.67	84	70-127	
3-Nitrotoluene	2.00	1.76	88	73-125	
4-Amino-2,6-dinitrotoluene	2.00	1.64	82	76-125	
4-Nitrotoluene	2.00	1.74	87	71-127	
HMX	2.00	1.79	90	65-135	
Nitrobenzene	2.00	1.82	91	65-134	
Nitroglycerin	20.0	19.6	98	74-127	
PETN	20.0	19.2	96	73-127	
RDX	2.00	1.93	96	68-130	
Tetryl	2.00	1.88	94	64-128	

Column to be used to flag recovery and RPD values

FORM III 8330B

FORM III
HPLC/IC LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 11291652.D

Lab ID: LCSD 280-351958/3-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
1,3,5-Trinitrobenzene	2.00	1.93	97	0	20	73-125	
1,3-Dinitrobenzene	2.00	1.96	98	2	20	78-120	
2,4,6-Trinitrotoluene	2.00	2.07	103	1	20	71-123	
2,4-Dinitrotoluene	2.00	1.84	92	3	20	78-120	
2,6-Dinitrotoluene	2.00	1.82	91	1	20	77-127	
2-Amino-4,6-dinitrotoluene	2.00	1.66	83	4	20	79-120	
2-Nitrotoluene	2.00	1.58	79	6	20	70-127	
3-Nitrotoluene	2.00	1.59	80	10	20	73-125	
4-Amino-2,6-dinitrotoluene	2.00	1.59	80	3	20	76-125	
4-Nitrotoluene	2.00	1.62	81	7	20	71-127	
HMX	2.00	1.78	89	1	20	65-135	
Nitrobenzene	2.00	1.69	85	7	20	65-134	
Nitroglycerin	20.0	20.6	103	5	20	74-127	
PETN	20.0	19.4	97	1	20	73-127	
RDX	2.00	1.94	97	1	20	68-130	
Tetryl	2.00	1.92	96	2	20	64-128	

Column to be used to flag recovery and RPD values

FORM III 8330B

FORM IV
HPLC/IC METHOD BLANK SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Lab Sample ID: MB 280-351958/1-A

Matrix: Water Date Extracted: 11/17/2016 11:31

Lab File ID:(1) Lab File ID:(2) 12031628.D

Date Analyzed:(1) Date Analyzed:(2) 12/04/2016 00:14

Instrument ID:(1) CHHPLC_X3 Instrument ID:(2) CHHPLC_G2_LUNA

GC Column:(1) UltraCarb5uO ID: 4.6(mm) GC Column:(2) Luna-phenylh ID: 4.6(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
	LCS 280-351958/2-A		12/04/2016 00:48
	LCSD 280-351958/3-A		12/04/2016 01:23

FORM IV
HPLC/IC METHOD BLANK SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Lab Sample ID: MB 280-351958/1-A

Matrix: Water Date Extracted: 11/17/2016 11:31

Lab File ID:(1) 11291650.D Lab File ID:(2)

Date Analyzed:(1) 11/30/2016 08:04 Date Analyzed:(2)

Instrument ID:(1) CHHPLC_X3 Instrument ID:(2) CHHPLC_G2_LUNA

GC Column:(1) UltraCarb5uO ID: 4.6(mm) GC Column:(2) Luna-phenylh ID: 4.6(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
	LCS 280-351958/2-A	11/30/2016 08:27	
	LCSD 280-351958/3-A	11/30/2016 08:51	
EBGmw-128-111016-GW	280-90848-1	11/30/2016 14:16	
EBGmw-126-111016-GW	280-90848-2	11/30/2016 14:40	
EBGmw-131-111016-GW	280-90848-3	11/30/2016 15:03	
EBGmw-125-111016-GW	280-90848-4	11/30/2016 15:26	12/04/2016 03:43

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-90848-1

SDG No.:

Client Sample ID: EBGmw-128-111016-GW | Lab Sample ID: 280-90848-1

Matrix: Water | Lab File ID: 11291666.D

Analysis Method: 8330B | Date Collected: 11/10/2016 10:47

Extraction Method: 3535 | Date Extracted: 11/17/2016 11:31

Sample wt/vol: 460.3(mL) | Date Analyzed: 11/30/2016 14:16

Con. Extract Vol.: 5(mL) | Dilution Factor: 1

Injection Volume: 100(uL) | GC Column: UltraCarb5uODS ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 353517 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.43	U	1.1	0.43	0.22
99-65-0	1,3-Dinitrobenzene	0.22	U	0.43	0.22	0.096
118-96-7	2,4,6-Trinitrotoluene	0.22	U	0.43	0.22	0.079
121-14-2	2,4-Dinitrotoluene	0.22	U	0.43	0.22	0.091
606-20-2	2,6-Dinitrotoluene	0.22	U	0.22	0.22	0.070
35572-78-2	2-Amino-4,6-dinitrotoluene	0.13	U	0.22	0.13	0.055
88-72-2	2-Nitrotoluene	0.22	U	0.43	0.22	0.093
99-08-1	3-Nitrotoluene	0.22	U	0.43	0.22	0.091
19406-51-0	4-Amino-2,6-dinitrotoluene	0.13	U	0.22	0.13	0.063
99-99-0	4-Nitrotoluene	0.43	U	1.1	0.43	0.22
2691-41-0	HMX	0.22	U	0.43	0.22	0.095
98-95-3	Nitrobenzene	0.22	U	0.43	0.22	0.099
55-63-0	Nitroglycerin	2.2	U	3.3	2.2	1.0
78-11-5	PETN	1.3	U	2.2	1.3	0.45
121-82-4	RDX	0.13	U	0.22	0.13	0.057
479-45-8	Tetryl	0.22	U	0.26	0.22	0.086

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	99		83-119

TestAmerica Denver
Target Compound Quantitation Report

Data File:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291666.D				
Lims ID:	280-90848-B-1-A				
Client ID:	EBGmw-128-111016-GW				
Sample Type:	Client				
Inject. Date:	30-Nov-2016 14:16:44	ALS Bottle#:	61	Worklist Smp#:	66
Injection Vol:	100.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-90848-B-1-A				
Misc. Info.:	280-0053651-066				
Operator ID:	asc	Instrument ID:	CHHPLC_X3		
Method:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\8330_X3.m				
Limit Group:	GCSV - 8330				
Last Update:	02-Dec-2016 20:42:56	Calib Date:	28-Oct-2016 23:49:21		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D				
Column 1 :	UltraCarb5uODS (20) (4.60 mm)		Det: LC DAD1B, 254 nm		
Process Host:	XAWRK023				
First Level Reviewer: colleea		Date:	01-Dec-2016 12:46:17		

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
2 HMX	1		6.720			ND	
5 RDX	1		7.894			ND	
$ 7 1,2-Dinitrobenzene	1	8.927	8.954	-0.027	27941	0.1984	
8 1,3,5-Trinitrobenzene	1		9.094			ND	
9 1,3-Dinitrobenzene	1		9.780			ND	
11 Nitrobenzene	1		10.180			ND	
12 Tetryl	1		10.574			ND	
13 Nitroglycerin	2		11.087			ND	
14 2,4,6-Trinitrotoluene	1		11.534			ND	
15 4-Amino-2,6-dinitrotoluene	1		11.740			ND	
16 2-Amino-4,6-dinitrotoluene	1		12.027			ND	
17 2,6-Dinitrotoluene	1		12.174			ND	
18 2,4-Dinitrotoluene	1		12.367			ND	
19 o-Nitrotoluene	1		13.227			ND	
20 p-Nitrotoluene	1		13.680			ND	
21 m-Nitrotoluene	1		14.287			ND	
22 PETN	2		15.447			ND	

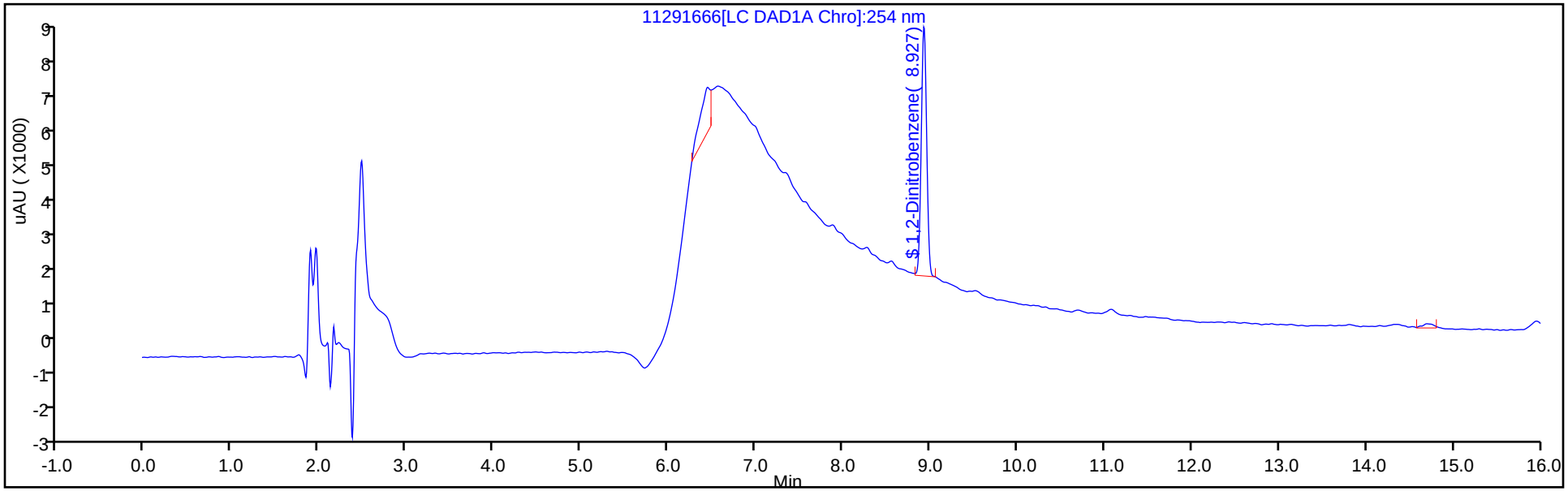
Report Date: 02-Dec-2016 20:42:57 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

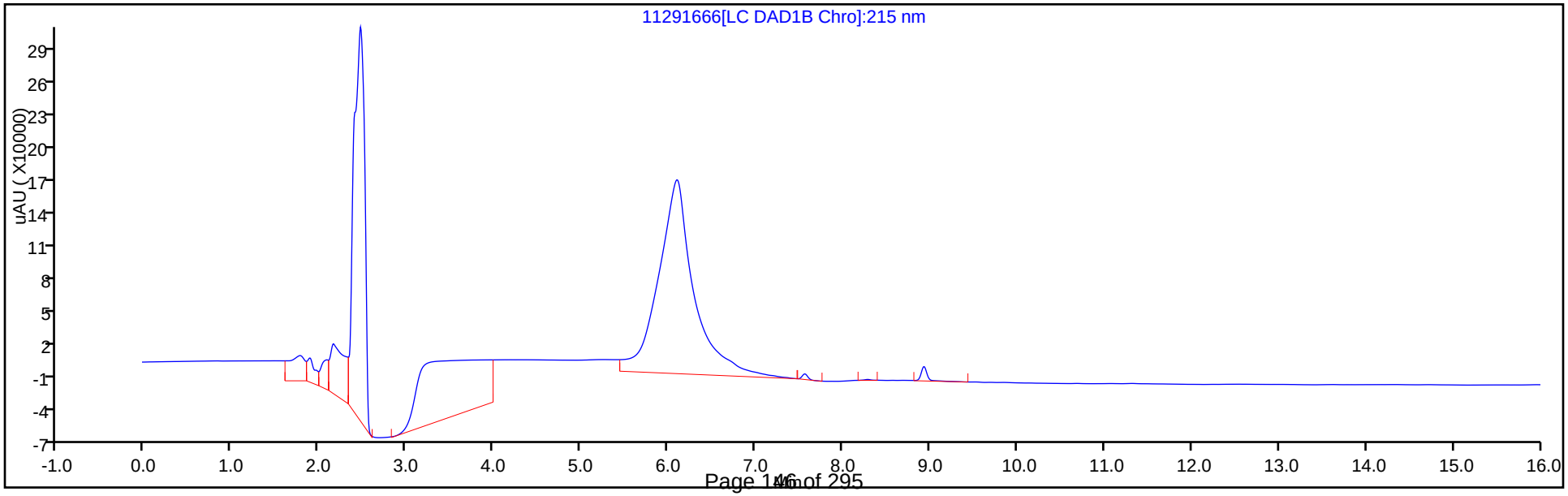
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291666.D

Injection Date:	30-Nov-2016 14:16:44	Instrument ID:	CHHPLC_X3	Operator ID:	asc
Lims ID:	280-90848-B-1-A	Lab Sample ID:	280-90848-1	Worklist Smp#:	66
Client ID:	EBGmw-128-111016-GW				
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	61
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Recovery Report

Data File:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291666.D				
Lims ID:	280-90848-B-1-A				
Client ID:	EBGmw-128-111016-GW				
Sample Type:	Client				
Inject. Date:	30-Nov-2016 14:16:44	ALS Bottle#:	61	Worklist Smp#:	66
Injection Vol:	100.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-90848-B-1-A				
Misc. Info.:	280-0053651-066				
Operator ID:	asc	Instrument ID:	CHHPLC_X3		
Method:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\8330_X3.m				
Limit Group:	GCSV - 8330				
Last Update:	02-Dec-2016 20:42:56	Calib Date:	28-Oct-2016 23:49:21		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D				
Column 1 :	UltraCarb5uODS (20) (4.60 mm)		Det: LC DAD1B, 254 nm		
Process Host:	XAWRK023				
First Level Reviewer: colleea		Date:	01-Dec-2016 12:46:17		

Compound	Amount Added	Amount Recovered	% Rec.
$ 7 1,2-Dinitrobenzene	0.2000	0.1984	99.18

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-90848-1

SDG No.:

Client Sample ID: EBGmw-126-111016-GW | Lab Sample ID: 280-90848-2

Matrix: Water | Lab File ID: 11291667.D

Analysis Method: 8330B | Date Collected: 11/10/2016 12:53

Extraction Method: 3535 | Date Extracted: 11/17/2016 11:31

Sample wt/vol: 431.1(mL) | Date Analyzed: 11/30/2016 14:40

Con. Extract Vol.: 5(mL) | Dilution Factor: 1

Injection Volume: 100(uL) | GC Column: UltraCarb5uODS ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 353517 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.46	U	1.2	0.46	0.23
99-65-0	1,3-Dinitrobenzene	0.23	U	0.46	0.23	0.10
118-96-7	2,4,6-Trinitrotoluene	0.23	U	0.46	0.23	0.084
121-14-2	2,4-Dinitrotoluene	0.23	U	0.46	0.23	0.097
606-20-2	2,6-Dinitrotoluene	0.23	U	0.23	0.23	0.075
35572-78-2	2-Amino-4,6-dinitrotoluene	0.14	U	0.23	0.14	0.059
88-72-2	2-Nitrotoluene	0.23	U	0.46	0.23	0.099
99-08-1	3-Nitrotoluene	0.23	U	0.46	0.23	0.097
19406-51-0	4-Amino-2,6-dinitrotoluene	0.14	U	0.23	0.14	0.067
99-99-0	4-Nitrotoluene	0.46	U	1.2	0.46	0.23
2691-41-0	HMX	0.23	U	0.46	0.23	0.10
98-95-3	Nitrobenzene	0.23	U	0.46	0.23	0.11
55-63-0	Nitroglycerin	2.3	U	3.5	2.3	1.1
78-11-5	PETN	1.4	U	2.3	1.4	0.48
121-82-4	RDX	0.14	U	0.23	0.14	0.061
479-45-8	Tetryl	0.23	U	0.28	0.23	0.092

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	88	M	83-119

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291667.D
Lims ID: 280-90848-A-2-A
Client ID: EBGmw-126-111016-GW
Sample Type: Client
Inject. Date: 30-Nov-2016 14:40:02 ALS Bottle#: 62 Worklist Smp#: 67
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-90848-A-2-A
Misc. Info.: 280-0053651-067
Operator ID: asc Instrument ID: CHHPLC_X3

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 02-Dec-2016 20:42:56 Calib Date: 28-Oct-2016 23:49:21
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK023

First Level Reviewer: jonsrudd Date: 02-Dec-2016 20:10:30

	Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
	2 HMX	1		6.720			ND	
	5 RDX	1		7.894			ND	
$	7 1,2-Dinitrobenzene	1	8.930	8.954	-0.024	24801	0.1759	M
	8 1,3,5-Trinitrobenzene	1		9.094			ND	
	9 1,3-Dinitrobenzene	1		9.780			ND	
	11 Nitrobenzene	1		10.180			ND	
	12 Tetryl	1		10.574			ND	
	13 Nitroglycerin	2		11.087			ND	
	14 2,4,6-Trinitrotoluene	1		11.534			ND	
	15 4-Amino-2,6-dinitrotoluene	1		11.740			ND	
	16 2-Amino-4,6-dinitrotoluene	1		12.027			ND	
	17 2,6-Dinitrotoluene	1		12.174			ND	
	18 2,4-Dinitrotoluene	1		12.367			ND	
	19 o-Nitrotoluene	1		13.227			ND	
	20 p-Nitrotoluene	1		13.680			ND	
	21 m-Nitrotoluene	1		14.287			ND	
	22 PETN	2		15.447			ND	

QC Flag Legend

Review Flags
M - Manually Integrated

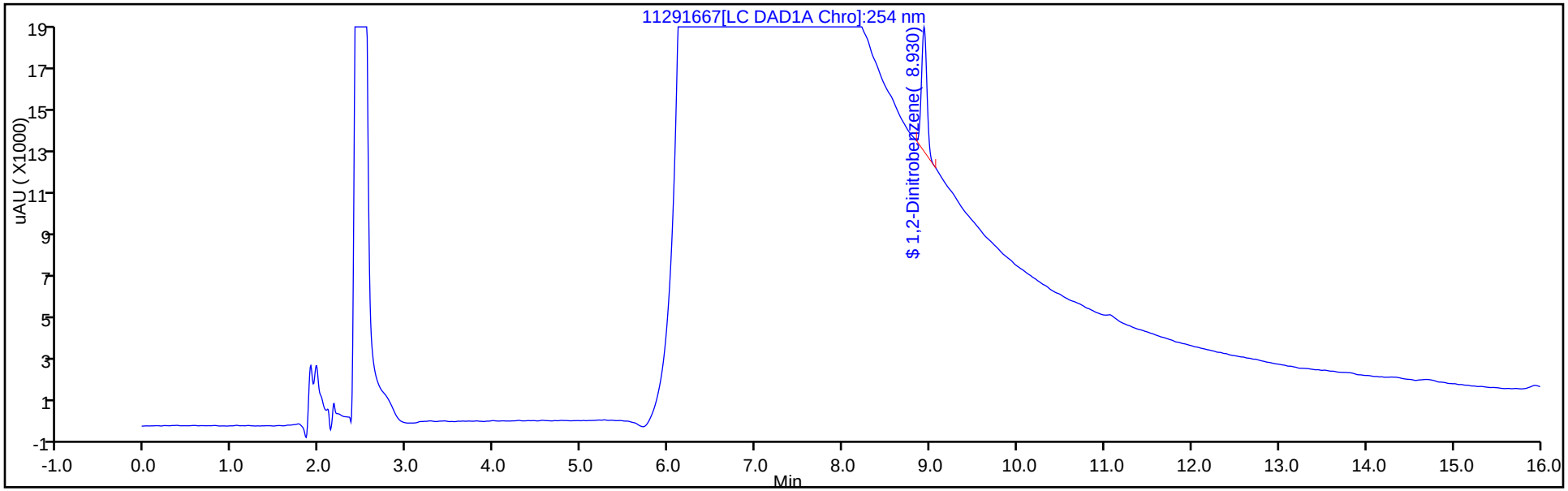
Report Date: 02-Dec-2016 20:42:58 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

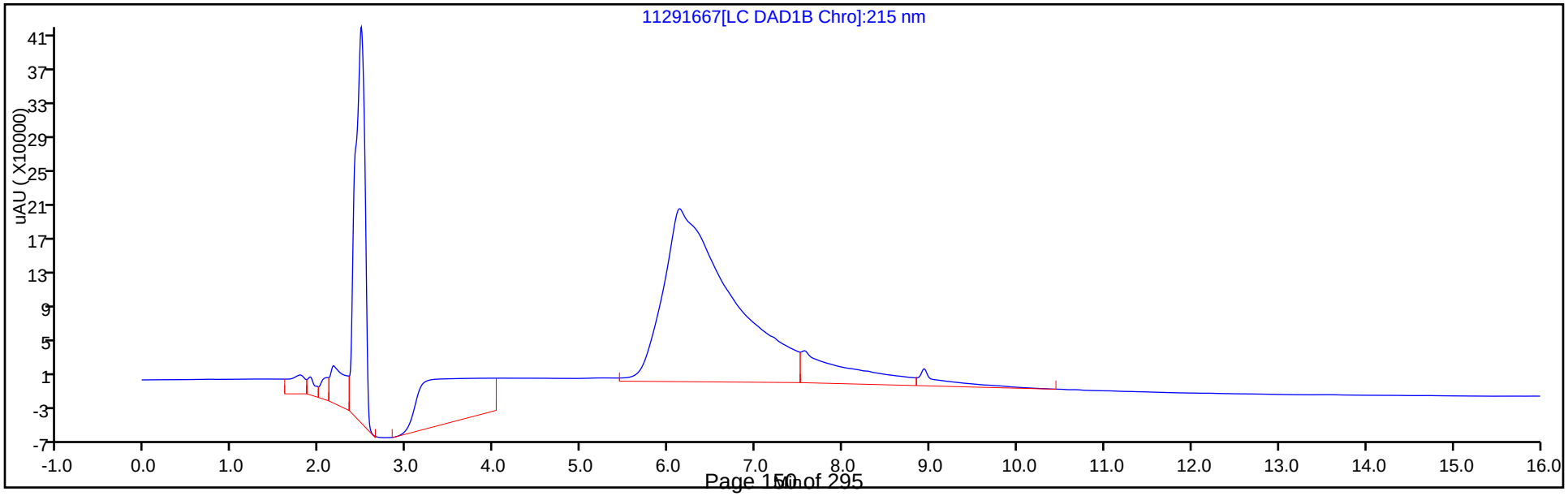
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291667.D

Injection Date:	30-Nov-2016 14:40:02	Instrument ID:	CHHPLC_X3	Operator ID:	asc
Lims ID:	280-90848-A-2-A	Lab Sample ID:	280-90848-2	Worklist Smp#:	67
Client ID:	EBGmw-126-111016-GW				
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	62
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Recovery Report

Data File:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291667.D				
Lims ID:	280-90848-A-2-A				
Client ID:	EBGmw-126-111016-GW				
Sample Type:	Client				
Inject. Date:	30-Nov-2016 14:40:02	ALS Bottle#:	62	Worklist Smp#:	67
Injection Vol:	100.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-90848-A-2-A				
Misc. Info.:	280-0053651-067				
Operator ID:	asc	Instrument ID:	CHHPLC_X3		
Method:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\8330_X3.m				
Limit Group:	GCSV - 8330				
Last Update:	02-Dec-2016 20:42:56	Calib Date:	28-Oct-2016 23:49:21		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D				
Column 1 :	UltraCarb5uODS (20) (4.60 mm)		Det: LC DAD1B, 254 nm		
Process Host:	XAWRK023				
First Level Reviewer: jonsrudd		Date:	02-Dec-2016 20:10:30		

Compound	Amount Added	Amount Recovered	% Rec.
$ 7 1,2-Dinitrobenzene	0.2000	0.1759	87.97

Manual Integration/User Assign Peak Report

TestAmerica Denver

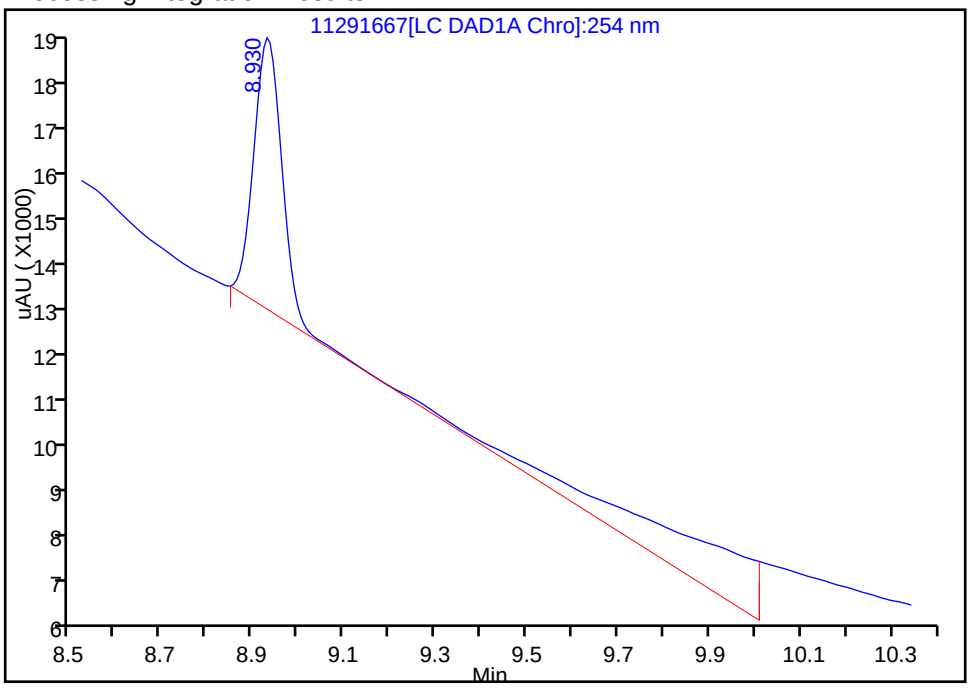
Data File:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291667.D				
Injection Date:	30-Nov-2016 14:40:02	Instrument ID:	CHHPLC_X3		
Lims ID:	280-90848-A-2-A	Lab Sample ID:	280-90848-2		
Client ID:	EBGmw-126-111016-GW				
Operator ID:	asc	ALS Bottle#:	62	Worklist Smp#:	67
Injection Vol:	100.0 ul	Dil. Factor:	1.0000		
Method:	8330_X3	Limit Group:	GCSV - 8330		
Column:	UltraCarb5uODS (20) (4.60 mm)	Detector	LC DAD1B, 254 nm		

$ 7 1,2-Dinitrobenzene, CAS: 528-29-0

Signal: 1

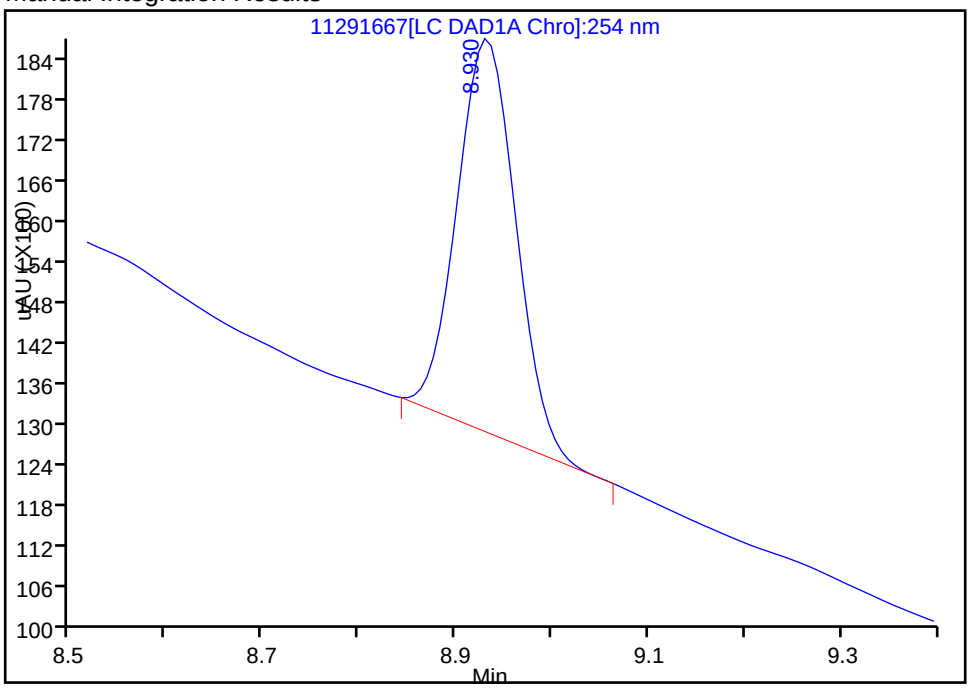
Processing Integration Results

RT: 8.93
Area: 46473
Amount: 0.330682
Amount Units: ug/mL



Manual Integration Results

RT: 8.93
Area: 24801
Amount: 0.175938
Amount Units: ug/mL



Reviewer: jonsrudd, 02-Dec-2016 20:10:30
Audit Action: Manually Integrated Audit Reason: Peak Tail

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-90848-1

SDG No.:

Client Sample ID: EBGmw-131-111016-GW | Lab Sample ID: 280-90848-3

Matrix: Water | Lab File ID: 11291668.D

Analysis Method: 8330B | Date Collected: 11/10/2016 14:06

Extraction Method: 3535 | Date Extracted: 11/17/2016 11:31

Sample wt/vol: 476.8(mL) | Date Analyzed: 11/30/2016 15:03

Con. Extract Vol.: 5(mL) | Dilution Factor: 1

Injection Volume: 100(uL) | GC Column: UltraCarb5uODS ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 353517 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.42	U	1.0	0.42	0.21
99-65-0	1,3-Dinitrobenzene	0.21	U	0.42	0.21	0.093
118-96-7	2,4,6-Trinitrotoluene	0.21	U	0.42	0.21	0.076
121-14-2	2,4-Dinitrotoluene	0.21	U	0.42	0.21	0.088
606-20-2	2,6-Dinitrotoluene	0.21	U	0.21	0.21	0.068
35572-78-2	2-Amino-4,6-dinitrotoluene	0.13	U	0.21	0.13	0.053
88-72-2	2-Nitrotoluene	0.21	U	0.42	0.21	0.090
99-08-1	3-Nitrotoluene	0.21	U	0.42	0.21	0.087
19406-51-0	4-Amino-2,6-dinitrotoluene	0.13	U	0.21	0.13	0.061
99-99-0	4-Nitrotoluene	0.42	U	1.0	0.42	0.21
2691-41-0	HMX	0.21	U	0.42	0.21	0.092
98-95-3	Nitrobenzene	0.21	U	0.42	0.21	0.095
55-63-0	Nitroglycerin	2.1	U	3.1	2.1	0.97
78-11-5	PETN	1.3	U	2.1	1.3	0.44
121-82-4	RDX	0.13	U	0.21	0.13	0.055
479-45-8	Tetryl	0.21	U	0.25	0.21	0.083

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	98		83-119

TestAmerica Denver
Target Compound Quantitation Report

Data File:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291668.D				
Lims ID:	280-90848-B-3-A				
Client ID:	EBGmw-131-111016-GW				
Sample Type:	Client				
Inject. Date:	30-Nov-2016 15:03:18	ALS Bottle#:	63	Worklist Smp#:	68
Injection Vol:	100.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-90848-B-3-A				
Misc. Info.:	280-0053651-068				
Operator ID:	asc	Instrument ID:	CHHPLC_X3		
Method:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\8330_X3.m				
Limit Group:	GCSV - 8330				
Last Update:	02-Dec-2016 20:42:56	Calib Date:	28-Oct-2016 23:49:21		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D				
Column 1 :	UltraCarb5uODS (20) (4.60 mm)		Det: LC DAD1B, 254 nm		
Process Host:	XAWRK023				
First Level Reviewer: jonsrudd		Date:	02-Dec-2016 20:10:51		

	Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
	2 HMX	1		6.720			ND	
	5 RDX	1		7.894			ND	
$	7 1,2-Dinitrobenzene	1	8.948	8.954	-0.006	27535	0.1955	
	8 1,3,5-Trinitrobenzene	1		9.094			ND	
	9 1,3-Dinitrobenzene	1		9.780			ND	
	11 Nitrobenzene	1		10.180			ND	
	12 Tetryl	1		10.574			ND	
	13 Nitroglycerin	2		11.087			ND	
	14 2,4,6-Trinitrotoluene	1		11.534			ND	
	15 4-Amino-2,6-dinitrotoluene	1		11.740			ND	
	16 2-Amino-4,6-dinitrotoluene	1		12.027			ND	
	17 2,6-Dinitrotoluene	1		12.174			ND	
	18 2,4-Dinitrotoluene	1		12.367			ND	
	19 o-Nitrotoluene	1		13.227			ND	
	20 p-Nitrotoluene	1		13.680			ND	
	21 m-Nitrotoluene	1		14.287			ND	
	22 PETN	2		15.447			ND	

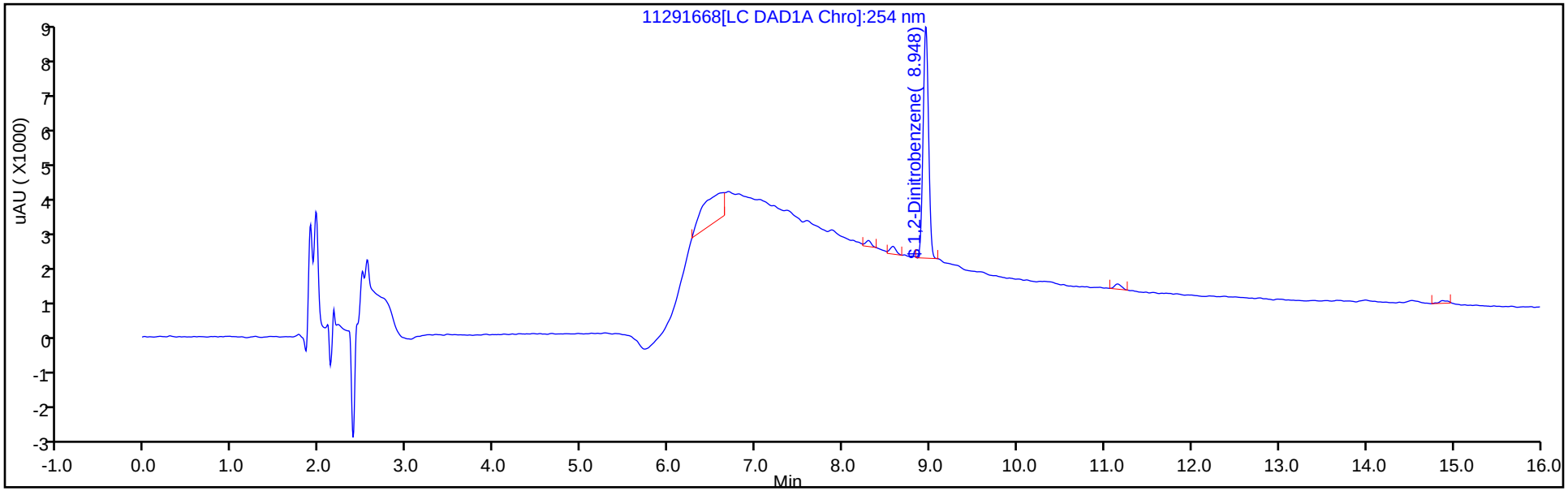
Report Date: 02-Dec-2016 20:42:59 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

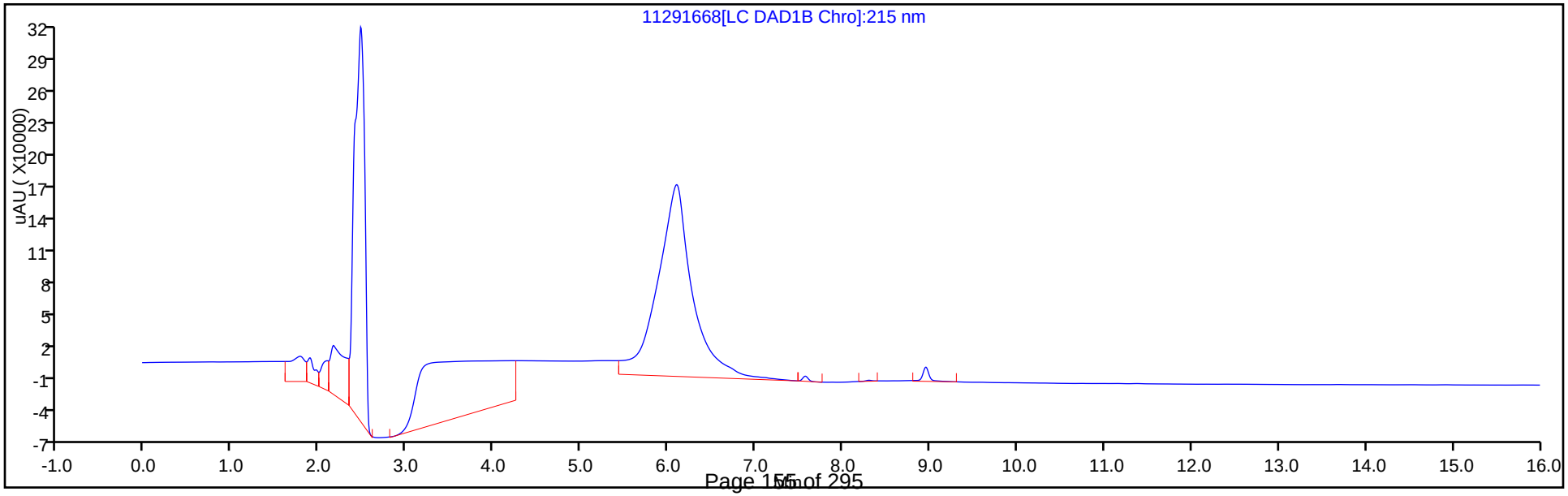
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291668.D

Injection Date:	30-Nov-2016 15:03:18	Instrument ID:	CHHPLC_X3	Operator ID:	asc
Lims ID:	280-90848-B-3-A	Lab Sample ID:	280-90848-3	Worklist Smp#:	68
Client ID:	EBGmw-131-111016-GW				
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	63
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Recovery Report

Data File:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291668.D				
Lims ID:	280-90848-B-3-A				
Client ID:	EBGmw-131-111016-GW				
Sample Type:	Client				
Inject. Date:	30-Nov-2016 15:03:18	ALS Bottle#:	63	Worklist Smp#:	68
Injection Vol:	100.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-90848-B-3-A				
Misc. Info.:	280-0053651-068				
Operator ID:	asc	Instrument ID:	CHHPLC_X3		
Method:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\8330_X3.m				
Limit Group:	GCSV - 8330				
Last Update:	02-Dec-2016 20:42:56	Calib Date:	28-Oct-2016 23:49:21		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D				
Column 1 :	UltraCarb5uODS (20) (4.60 mm)		Det: LC DAD1B, 254 nm		
Process Host:	XAWRK023				
First Level Reviewer: jonsrudd		Date:	02-Dec-2016 20:10:51		

Compound	Amount Added	Amount Recovered	% Rec.
$ 7 1,2-Dinitrobenzene	0.2000	0.1955	97.73

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-90848-1

SDG No.:

Client Sample ID: EBGmw-125-111016-GW | Lab Sample ID: 280-90848-4

Matrix: Water | Lab File ID: 11291669.D

Analysis Method: 8330B | Date Collected: 11/10/2016 14:50

Extraction Method: 3535 | Date Extracted: 11/17/2016 11:31

Sample wt/vol: 469.3(mL) | Date Analyzed: 11/30/2016 15:26

Con. Extract Vol.: 5(mL) | Dilution Factor: 1

Injection Volume: 100(uL) | GC Column: UltraCarb5uODS ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 353517 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.43	U	1.1	0.43	0.21
99-65-0	1,3-Dinitrobenzene	0.21	U	0.43	0.21	0.095
118-96-7	2,4,6-Trinitrotoluene	0.21	U	0.43	0.21	0.077
121-14-2	2,4-Dinitrotoluene	0.21	U	0.43	0.21	0.089
606-20-2	2,6-Dinitrotoluene	0.21	U	0.21	0.21	0.069
35572-78-2	2-Amino-4,6-dinitrotoluene	0.13	U	0.21	0.13	0.054
88-72-2	2-Nitrotoluene	0.21	U	0.43	0.21	0.091
99-08-1	3-Nitrotoluene	0.21	U	0.43	0.21	0.089
19406-51-0	4-Amino-2,6-dinitrotoluene	0.13	U	0.21	0.13	0.061
99-99-0	4-Nitrotoluene	0.43	U	1.1	0.43	0.21
98-95-3	Nitrobenzene	0.21	U	0.43	0.21	0.097
55-63-0	Nitroglycerin	2.1	U	3.2	2.1	0.98
78-11-5	PETN	1.3	U	2.1	1.3	0.44
479-45-8	Tetryl	0.21	U	0.26	0.21	0.084

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	101		83-119

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291669.D
Lims ID: 280-90848-A-4-A
Client ID: EBGmw-125-111016-GW
Sample Type: Client
Inject. Date: 30-Nov-2016 15:26:30 ALS Bottle#: 64 Worklist Smp#: 69
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-90848-A-4-A
Misc. Info.: 280-0053651-069
Operator ID: asc Instrument ID: CHHPLC_X3

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 02-Dec-2016 20:42:56 Calib Date: 28-Oct-2016 23:49:21
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK023

First Level Reviewer: jonsrudd Date: 02-Dec-2016 20:11:45

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
2 HMX	1	6.782	6.720	0.062	8599	0.0925	M
5 RDX	1	7.895	7.894	0.001	2350	0.0204	
$ 7 1,2-Dinitrobenzene	1	8.982	8.954	0.028	28386	0.2015	
8 1,3,5-Trinitrobenzene	1		9.094			ND	
9 1,3-Dinitrobenzene	1		9.780			ND	
11 Nitrobenzene	1		10.180			ND	
12 Tetryl	1		10.574			ND	
13 Nitroglycerin	2		11.087			ND	
14 2,4,6-Trinitrotoluene	1		11.534			ND	
15 4-Amino-2,6-dinitrotoluene	1		11.740			ND	
16 2-Amino-4,6-dinitrotoluene	1		12.027			ND	
17 2,6-Dinitrotoluene	1		12.174			ND	
18 2,4-Dinitrotoluene	1		12.367			ND	
19 o-Nitrotoluene	1		13.227			ND	
20 p-Nitrotoluene	1		13.680			ND	
21 m-Nitrotoluene	1		14.287			ND	
22 PETN	2		15.447			ND	

QC Flag Legend

Review Flags
M - Manually Integrated

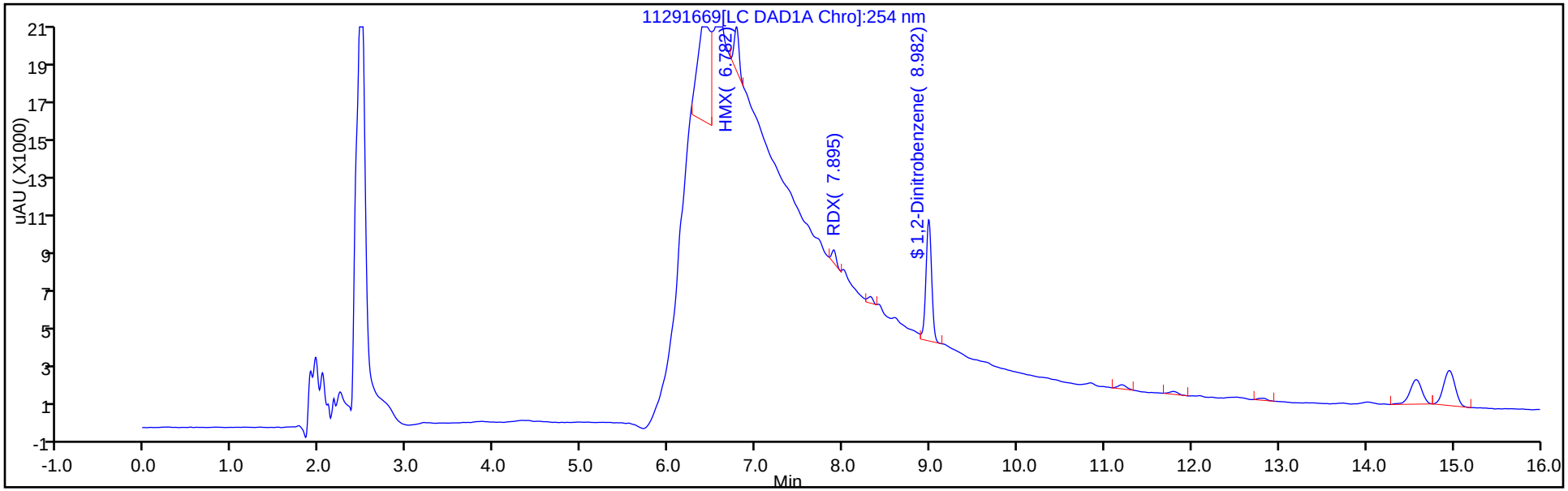
Report Date: 02-Dec-2016 20:43:00 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

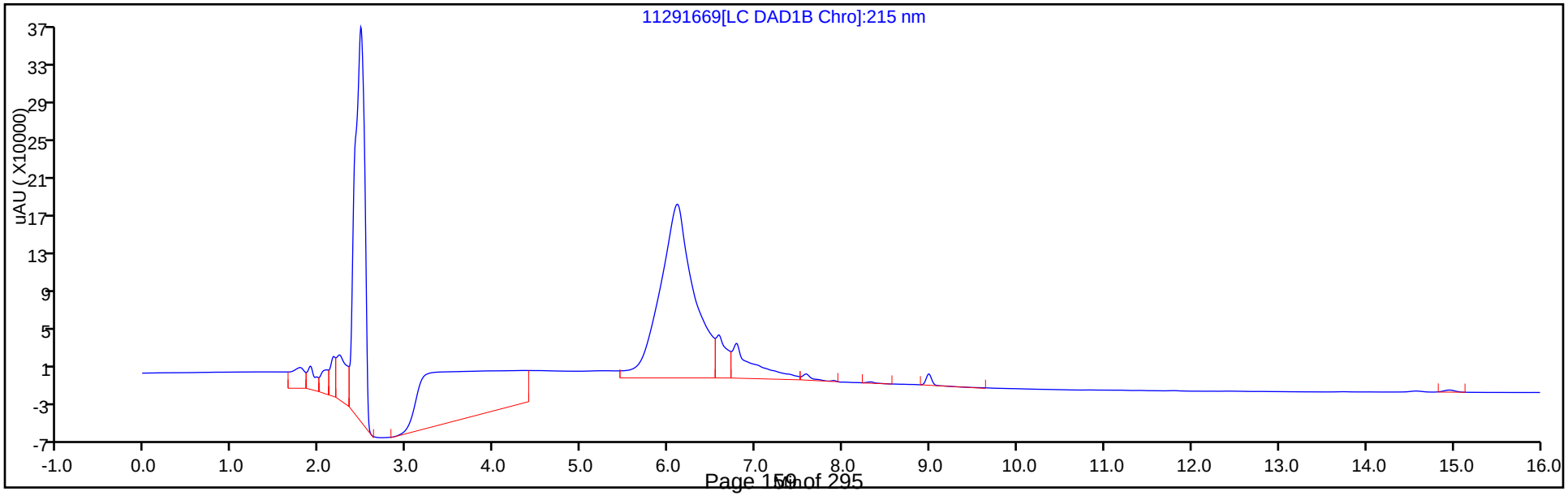
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291669.D

Injection Date:	30-Nov-2016 15:26:30	Instrument ID:	CHHPLC_X3	Operator ID:	asc
Lims ID:	280-90848-A-4-A	Lab Sample ID:	280-90848-4	Worklist Smp#:	69
Client ID:	EBGmw-125-111016-GW				
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	64
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Recovery Report

Data File:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291669.D				
Lims ID:	280-90848-A-4-A				
Client ID:	EBGmw-125-111016-GW				
Sample Type:	Client				
Inject. Date:	30-Nov-2016 15:26:30	ALS Bottle#:	64	Worklist Smp#:	69
Injection Vol:	100.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-90848-A-4-A				
Misc. Info.:	280-0053651-069				
Operator ID:	asc	Instrument ID:	CHHPLC_X3		
Method:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\8330_X3.m				
Limit Group:	GCSV - 8330				
Last Update:	02-Dec-2016 20:42:56	Calib Date:	28-Oct-2016 23:49:21		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D				
Column 1 :	UltraCarb5uODS (20) (4.60 mm)		Det: LC DAD1B, 254 nm		
Process Host:	XAWRK023				
First Level Reviewer: jonsrudd		Date:	02-Dec-2016 20:11:45		

Compound	Amount Added	Amount Recovered	% Rec.
$ 7 1,2-Dinitrobenzene	0.2000	0.2015	100.77

Manual Integration/User Assign Peak Report

TestAmerica Denver

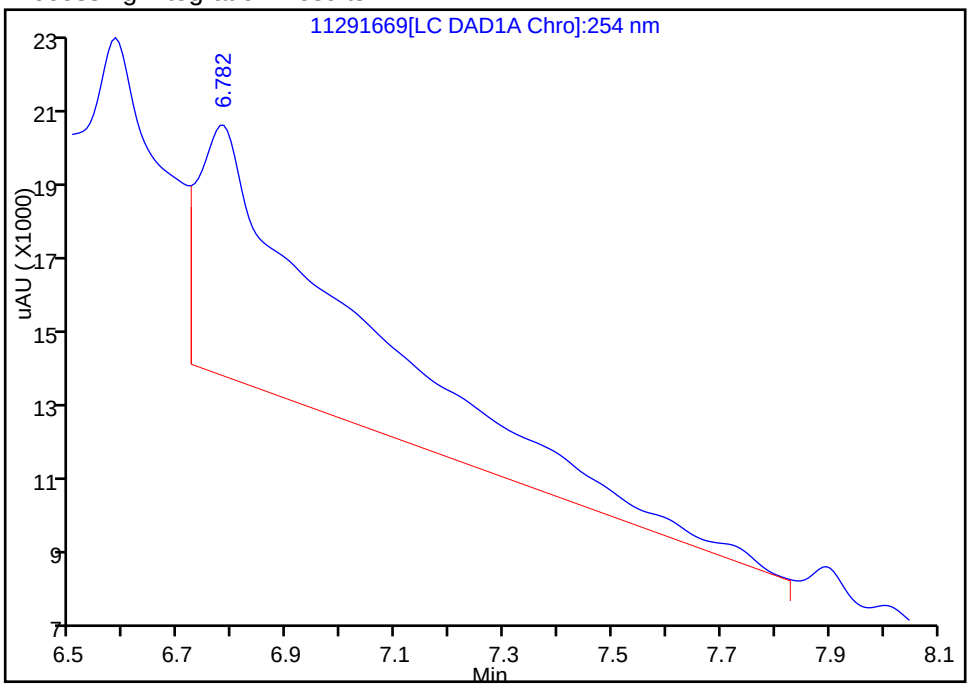
Data File:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291669.D				
Injection Date:	30-Nov-2016 15:26:30	Instrument ID:	CHHPLC_X3		
Lims ID:	280-90848-A-4-A	Lab Sample ID:	280-90848-4		
Client ID:	EBGmw-125-111016-GW				
Operator ID:	asc	ALS Bottle#:	64	Worklist Smp#:	69
Injection Vol:	100.0 ul	Dil. Factor:	1.0000		
Method:	8330_X3	Limit Group:	GCSV - 8330		
Column:	UltraCarb5uODS (20) (4.60 mm)	Detector	LC DAD1B, 254 nm		

2 HMX, CAS: 2691-41-0

Signal: 1

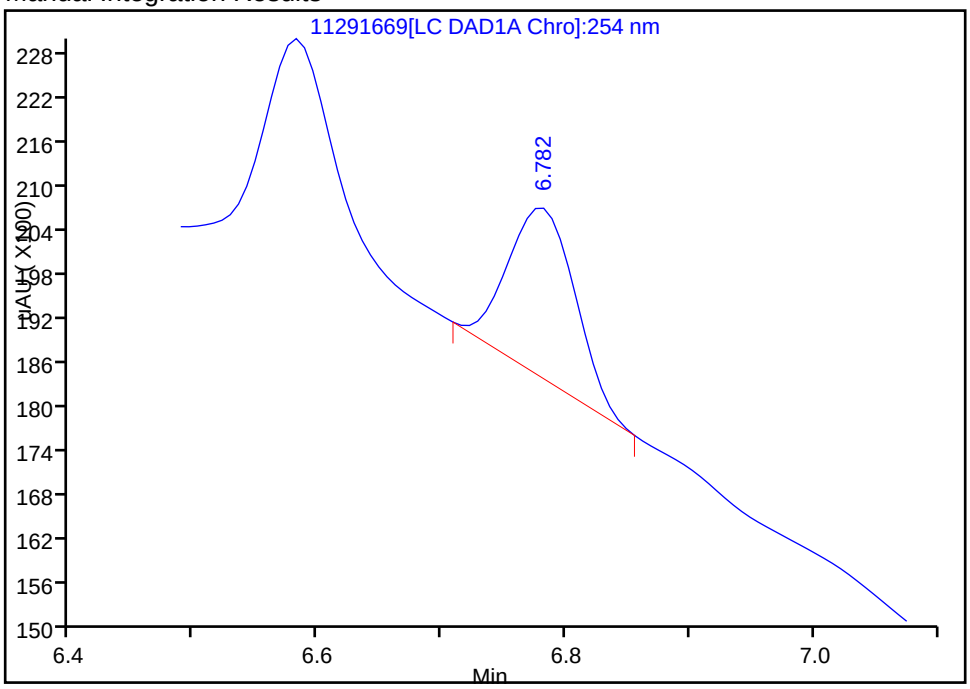
Processing Integration Results

RT: 6.78
Area: 127449
Amount: 1.378330
Amount Units: ug/mL



Manual Integration Results

RT: 6.78
Area: 8599
Amount: 0.092484
Amount Units: ug/mL



Reviewer: jonsrudd, 02-Dec-2016 20:11:45

Audit Action: Manually Integrated Audit Reason: Peak Tail

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-90848-1

SDG No.:

Client Sample ID: EBGmw-125-111016-GW | Lab Sample ID: 280-90848-4

Matrix: Water | Lab File ID: 12031634.D

Analysis Method: 8330B | Date Collected: 11/10/2016 14:50

Extraction Method: 3535 | Date Extracted: 11/17/2016 11:31

Sample wt/vol: 469.3(mL) | Date Analyzed: 12/04/2016 03:43

Con. Extract Vol.: 5(mL) | Dilution Factor: 1

Injection Volume: 100(uL) | GC Column: Luna-phenylhex ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 354108 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
2691-41-0	HMX	0.21	U	0.43	0.21	0.093
121-82-4	RDX	0.13	U	0.21	0.13	0.056

TestAmerica Denver
Target Compound Quantitation Report

Data File:	\\ChromNA\Denver\ChromData\G2_LUNA\20161203-53805.b\12031634.D				
Lims ID:	280-90848-A-4-A				
Client ID:	EBGmw-125-111016-GW				
Sample Type:	Client				
Inject. Date:	04-Dec-2016 03:43:59	ALS Bottle#:	29	Worklist Smp#:	34
Injection Vol:	100.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-90848-A-4-A				
Misc. Info.:	280-0053805-034				
Operator ID:	dmj	Instrument ID:	CHHPLC_G2_LUNA		
Method:	\\ChromNA\Denver\ChromData\G2_LUNA\20161203-53805.b\G2_8330_Luna.m				
Limit Group:	GCSV - 8330				
Last Update:	04-Dec-2016 06:24:04	Calib Date:	19-Oct-2016 16:18:17		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\G2_LUNA\20161020-52093.b\010-1401.D				
Column 1 :	Luna-Phenyl hexyl (4.60 mm)		Det: LC DAD1A, 254 nm		
Process Host:	XAWRK022				
First Level Reviewer: jonsrudd		Date:	04-Dec-2016 05:24:41		

	Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/ml	Flags
	5 HMX	1		6.667			ND	
	7 RDX	1		8.660			ND	
	8 Nitrobenzene	1		11.360			ND	
$	9 1,2-Dinitrobenzene	1	12.311	12.334	-0.023	52141	0.1893	
	11 1,3-Dinitrobenzene	1		14.660			ND	
	12 Nitroglycerin	2		14.727			ND	
	13 o-Nitrotoluene	1	15.477	15.514	-0.037	27241	0.1085	
	14 p-Nitrotoluene	1		15.807			ND	
	15 4-Amino-2,6-dinitrotoluene	1		16.294			ND	
	16 m-Nitrotoluene	1		16.700			ND	
	17 2-Amino-4,6-dinitrotoluene	1		17.274			ND	
	18 1,3,5-Trinitrobenzene	1		17.687			ND	
	19 2,6-Dinitrotoluene	1		18.674			ND	
	20 2,4-Dinitrotoluene	1		19.200			ND	
	21 Tetryl	1		22.414			ND	
	22 2,4,6-Trinitrotoluene	1	23.231	23.340	-0.109	13389	0.0310	
	23 PETN	2		24.060			ND	

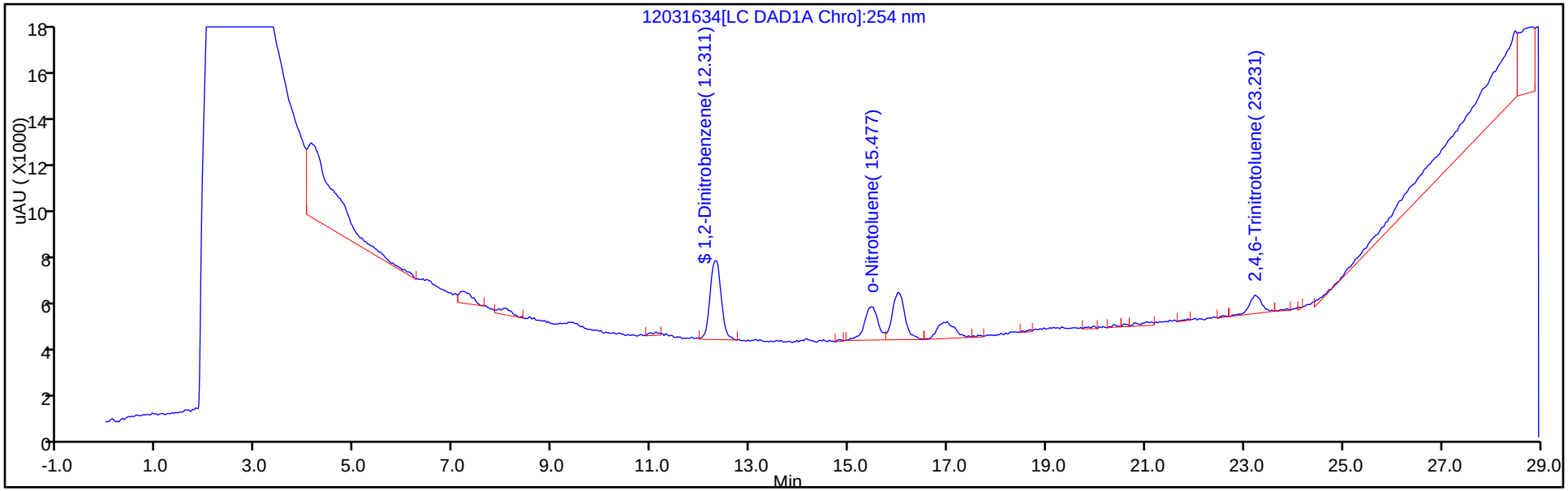
Report Date: 04-Dec-2016 06:24:12 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

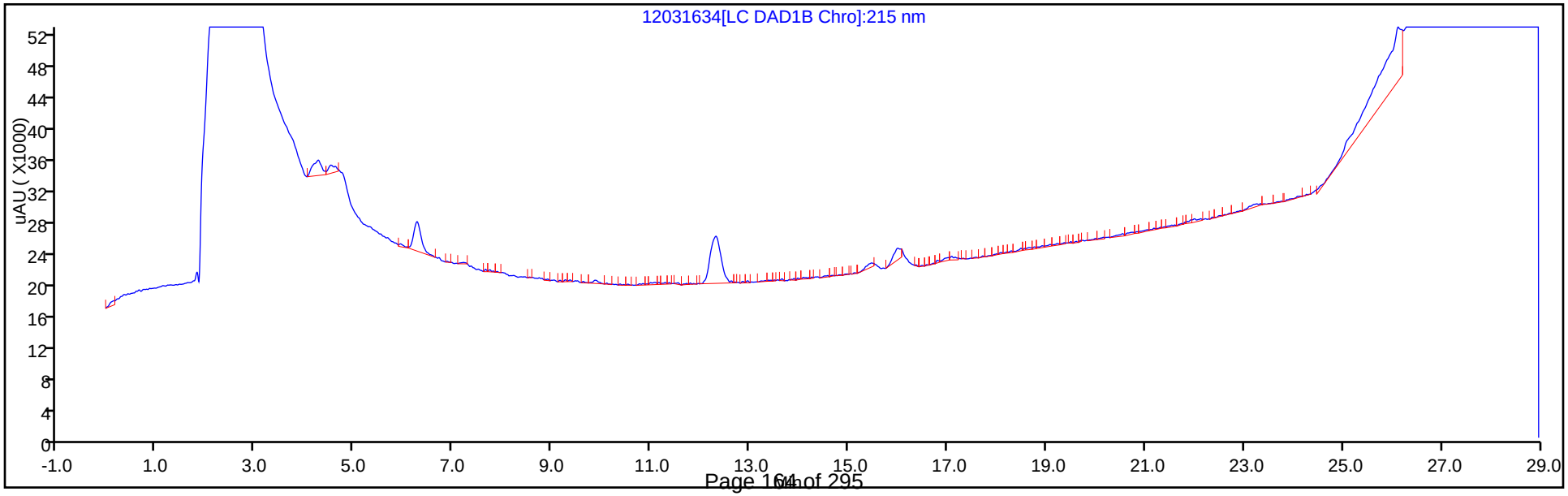
Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161203-53805.b\12031634.D

Injection Date:	04-Dec-2016 03:43:59	Instrument ID:	CHHPLC_G2_LUNA	Operator ID:	dmj
Lims ID:	280-90848-A-4-A	Lab Sample ID:	280-90848-4	Worklist Smp#:	34
Client ID:	EBGmw-125-111016-GW				
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	29
Method:	G2_8330_Luna	Limit Group:	GCSV - 8330		

Column: Luna-Phenyl hexyl (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



TestAmerica Denver
Recovery Report

Data File:	\\ChromNA\Denver\ChromData\G2_LUNA\20161203-53805.b\12031634.D				
Lims ID:	280-90848-A-4-A				
Client ID:	EBGmw-125-111016-GW				
Sample Type:	Client				
Inject. Date:	04-Dec-2016 03:43:59	ALS Bottle#:	29	Worklist Smp#:	34
Injection Vol:	100.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-90848-A-4-A				
Misc. Info.:	280-0053805-034				
Operator ID:	dmj	Instrument ID:	CHHPLC_G2_LUNA		
Method:	\\ChromNA\Denver\ChromData\G2_LUNA\20161203-53805.b\G2_8330_Luna.m				
Limit Group:	GCSV - 8330				
Last Update:	04-Dec-2016 06:24:04	Calib Date:	19-Oct-2016 16:18:17		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\G2_LUNA\20161020-52093.b\010-1401.D				
Column 1 :	Luna-Phenyl hexyl (4.60 mm)		Det: LC DAD1A, 254 nm		
Process Host:	XAWRK022				
First Level Reviewer: jonsrudd		Date:	04-Dec-2016 05:24:41		

Compound	Amount Added	Amount Recovered	% Rec.
$ 9 1,2-Dinitrobenzene	0.2000	0.1893	94.64

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90848-1 Analy Batch No.: 348785

SDG No.:

Instrument ID: CHHPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/28/2016 17:40 Calibration End Date: 10/28/2016 20:21 Calibration ID: 27419

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-348785/17	070-1701.D
Level 2	IC 280-348785/16	069-1601.D
Level 3	IC 280-348785/15	068-1501.D
Level 4	IC 280-348785/14	067-1401.D
Level 5	IC 280-348785/13	066-1301.D
Level 6	IC 280-348785/12	065-1201.D
Level 7	IC 280-348785/11	064-1101.D
Level 8	IC 280-348785/10	063-1001.D

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7	LVL 8			RT WINDOW	AVG RT
HMX	6.704	6.703	6.707	6.709	6.704	6.705	6.700	6.708			6.609 - 6.809	6.705
RDX	7.870	7.863	7.867	7.869	7.857	7.872	7.853	7.875			7.769 - 7.969	7.866
Picric acid	8.190	8.170	8.174	8.169	8.144	8.145	8.113	8.095			8.069 - 8.269	8.150
1,3,5-Trinitrobenzene	9.077	9.063	9.067	9.069	9.044	9.072	9.046	9.068			8.969 - 9.169	9.063
1,3-Dinitrobenzene	9.764	9.743	9.747	9.755	9.724	9.758	9.726	9.755			9.655 - 9.855	9.747
Nitrobenzene	10.164	10.143	10.147	10.148	10.117	10.151	10.119	10.155			10.048 - 10.248	10.143
Tetryl	10.550	10.523	10.527	10.542	10.491	10.545	10.499	10.541			10.442 - 10.642	10.527
Nitroglycerin	11.070	11.043	11.047	11.055	11.004	11.058	11.006	11.055			10.955 - 11.155	11.042
2,4,6-Trinitrotoluene	11.517	11.483	11.487	11.495	11.444	11.498	11.446	11.501			11.395 - 11.595	11.484
4-Amino-2,6-dinitrotoluene	11.730	11.697	11.694	11.708	11.651	11.711	11.646	11.715			11.608 - 11.808	11.694
2-Amino-4,6-dinitrotoluene	12.010	11.977	11.981	11.995	11.931	11.998	11.926	11.995			11.895 - 12.095	11.977
2,6-Dinitrotoluene	12.157	12.117	12.121	12.135	12.071	12.138	12.073	12.141			12.035 - 12.235	12.119
2,4-Dinitrotoluene	12.344	12.303	12.307	12.322	12.257	12.325	12.253	12.328			12.222 - 12.422	12.305
2-Nitrotoluene	13.197	13.157	13.154	13.175	13.104	13.185	13.099	13.181			13.075 - 13.275	13.157
4-Nitrotoluene	13.650	13.610	13.607	13.628	13.551	13.631	13.539	13.628			13.528 - 13.728	13.606
3-Nitrotoluene	14.270	14.217	14.214	14.235	14.157	14.245	14.146	14.241			14.135 - 14.335	14.216
PETN	15.464	15.403	15.407	15.435	15.344	15.438	15.319	15.441			15.335 - 15.535	15.406
1,2-Dinitrobenzene	8.930	8.917	8.921	8.929	8.904	8.925	8.900	8.928			8.829 - 9.029	8.919

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Denver Job No.: 280-90848-1 Analy Batch No.: 348785

SDG No.:

Instrument ID: CHHPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/28/2016 17:40 Calibration End Date: 10/28/2016 20:21 Calibration ID: 27419

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-348785/17	070-1701.D
Level 2	IC 280-348785/16	069-1601.D
Level 3	IC 280-348785/15	068-1501.D
Level 4	IC 280-348785/14	067-1401.D
Level 5	IC 280-348785/13	066-1301.D
Level 6	IC 280-348785/12	065-1201.D
Level 7	IC 280-348785/11	064-1101.D
Level 8	IC 280-348785/10	063-1001.D

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
HMX	96300 91435	99300 91860	94250 92245	91440 89676	Lin2	50.7463896	92429.4473							0.9990		0.9900
RDX	122100 106668	116900 106126	111610 106661	108152 103371	Lin2	161.652312	107383.079							0.9990		0.9900
Picric acid	94300 84115	86660 83977	85120 84886	84844 82398	Lin2	104.855908	83961.3899							1.0000		0.9900
1,3,5-Trinitrobenzene	237300 226413	247800 230046	236750 229302	228516 223825	Lin2	97.2993763	230799.354							0.9990		0.9900
1,3-Dinitrobenzene	286600 290983	305300 291383	298510 292916	293328 285722	Lin2	-44.554461	293868.583							0.9990		0.9900
Nitrobenzene	193500 200278	198720 202374	205800 203479	203600 198357	Lin2	-86.760341	202274.473							1.0000		0.9900
Tetryl	184200 175170	187380 179663	181090 179879	175856 173397	Lin2	74.7274008	178277.924							0.9990		0.9900
Nitroglycerin	77470 70851	79846 70510	73823 70620	70996 67740	Lin2	750.782671	71424.5144							0.9980		0.9900
2,4,6-Trinitrotoluene	247800 199690	222460 200471	211230 201419	201424 197610	Lin2	483.722079	201838.565							0.9990		0.9900
4-Amino-2,6-dinitrotoluene	196400 153763	173120 151763	162860 152057	155944 148057	Lin2	448.395085	153936.164							0.9990		0.9900
2-Amino-4,6-dinitrotoluene	235000 208683	236360 209903	218440 213727	211612 207799	Lin2	252.623405	213290.687							0.9980		0.9900
2,6-Dinitrotoluene	155600 148418	154160 149294	155320 145859	149552 142883	Lin2	81.9555152	148708.355							0.9990		0.9900
2,4-Dinitrotoluene	309800 284148	305640 285213	297220 287229	286856 282178	Lin2	247.765906	287970.311							0.9990		0.9900
2-Nitrotoluene	137000 128460	132160 128954	135970 129607	130272 126531	Lin2	79.1356947	129741.078							1.0000		0.9900

Note: The m1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Denver Job No.: 280-90848-1 Analy Batch No.: 348785

SDG No.:

Instrument ID: CHHPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/28/2016 17:40 Calibration End Date: 10/28/2016 20:21 Calibration ID: 27419

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
4-Nitrotoluene	108800 110620	119000 110610	115450 110885	112060 108724	Lin2	-19.226835	112353.481							0.9990		0.9900
3-Nitrotoluene	168000 144640	159960 144946	153290 145050	147200 141684	Lin2	235.702133	146491.259							0.9990		0.9900
PETN	85170 71836	72342 72183	72482 73056	71948 70501	Lin2	1349.99266	71338.4699							1.0000		0.9900
1,2-Dinitrobenzene	154200 138160	151780 138514	145500 139797	139460 135398	Lin2	160.815233	140050.391							0.9990		0.9900

Note: The m1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 280-90848-1 Analy Batch No.: 348785

SDG No.:

Instrument ID: CHHPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/28/2016 17:40 Calibration End Date: 10/28/2016 20:21 Calibration ID: 27419

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-348785/17	070-1701.D
Level 2	IC 280-348785/16	069-1601.D
Level 3	IC 280-348785/15	068-1501.D
Level 4	IC 280-348785/14	067-1401.D
Level 5	IC 280-348785/13	066-1301.D
Level 6	IC 280-348785/12	065-1201.D
Level 7	IC 280-348785/11	064-1101.D
Level 8	IC 280-348785/10	063-1001.D

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
HMX	Lin2	963 64302	4965 92245	9425 224190	22860	36574	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
RDX	Lin2	1221 74288	5845 106661	11161 258428	27038	42667	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
Picric acid	Lin2	943 58784	4333 84886	8512 205996	21211	33646	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
1,3,5-Trinitrobenzene	Lin2	2373 161032	12390 229302	23675 559563	57129	90565	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
1,3-Dinitrobenzene	Lin2	2866 203968	15265 292916	29851 714304	73332	116393	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
Nitrobenzene	Lin2	1935 141662	9936 203479	20580 495892	50900	80111	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
Tetryl	Lin2	1842 125764	9369 179879	18109 433493	43964	70068	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
Nitroglycerin	Lin2	7747 493571	39923 706204	73823 1693493	177491	283404	0.100 7.00	0.500 10.0	1.00 25.0	2.50	4.00
2,4,6-Trinitrotoluene	Lin2	2478 140330	11123 201419	21123 494026	50356	79876	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
4-Amino-2,6-dinitrotoluene	Lin2	1964 106234	8656 152057	16286 370143	38986	61505	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2-Amino-4,6-dinitrotoluene	Lin2	2350 146932	11818 213727	21844 519497	52903	83473	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2,6-Dinitrotoluene	Lin2	1556 104506	7708 145859	15532 357207	37388	59367	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2,4-Dinitrotoluene	Lin2	3098 199649	15282 287229	29722 705445	71714	113659	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2-Nitrotoluene	Lin2	1370 90268	6608 129607	13597 316328	32568	51384	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
4-Nitrotoluene	Lin2	1088 77427	5950 110885	11545 271810	28015	44248	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 280-90848-1 Analy Batch No.: 348785

SDG No.:

Instrument ID: CHHPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/28/2016 17:40 Calibration End Date: 10/28/2016 20:21 Calibration ID: 27419

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
3-Nitrotoluene	Lin2	1680 101462	7998 145050	15329 354211	36800	57856	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
PETN	Lin2	8517 505279	36171 730560	72482 1762520	179870	287342	0.100 7.00	0.500 10.0	1.00 25.0	2.50	4.00
1,2-Dinitrobenzene	Lin2	1542 96960	7589 139797	14550 338495	34865	55264	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400

Curve Type Legend:
Lin2 = Linear 1/conc^2

Report Date: 29-Oct-2016 09:47:53 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\063-1001.D
Lims ID: IC MAIN L8
Client ID:
Sample Type: IC Calib Level: 8
Inject. Date: 28-Oct-2016 17:40:15 ALS Bottle#: 63 Worklist Smp#: 10
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 8330 Lv 8
Misc. Info.: 280-0051662-009
Operator ID: ACF Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 29-Oct-2016 09:47:52 Calib Date: 28-Oct-2016 20:21:37
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK032

First Level Reviewer: freya Date: 29-Oct-2016 07:53:51

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.708	6.709	-0.001	224190	2.50	2.42	
4 MNX	1	7.435	7.435	0.000	329218	2.49	2.40	
5 RDX	1	7.875	7.869	0.006	258428	2.50	2.41	
6 2,4,6-Trinitrophenol	1	8.095	8.169	-0.074	205996	2.50	2.45	
$ 7 1,2-Dinitrobenzene	1	8.928	8.929	-0.001	338495	2.50	2.42	
8 1,3,5-Trinitrobenzene	1	9.068	9.069	-0.001	559563	2.50	2.42	
9 1,3-Dinitrobenzene	1	9.755	9.755	0.000	714304	2.50	2.43	
11 Nitrobenzene	1	10.155	10.148	0.007	495892	2.50	2.45	
12 Tetryl	1	10.541	10.542	-0.001	433493	2.50	2.43	
13 Nitroglycerin	2	11.055	11.055	0.000	1693493	25.0	23.7	
14 2,4,6-Trinitrotoluene	1	11.501	11.495	0.006	494026	2.50	2.45	
15 4-Amino-2,6-dinitrotoluene	1	11.715	11.708	0.007	370143	2.50	2.40	
16 2-Amino-4,6-dinitrotoluene	1	11.995	11.995	0.000	519497	2.50	2.43	
17 2,6-Dinitrotoluene	1	12.141	12.135	0.006	357207	2.50	2.40	
18 2,4-Dinitrotoluene	1	12.328	12.322	0.006	705445	2.50	2.45	
19 o-Nitrotoluene	1	13.181	13.175	0.006	316328	2.50	2.44	
20 p-Nitrotoluene	1	13.628	13.628	0.000	271810	2.50	2.42	
21 m-Nitrotoluene	1	14.241	14.235	0.006	354211	2.50	2.42	
22 PETN	2	15.441	15.435	0.006	1762520	25.0	24.7	

Reagents:

8330IntermStk_00041 Amount Added: 0.13 Units: mL

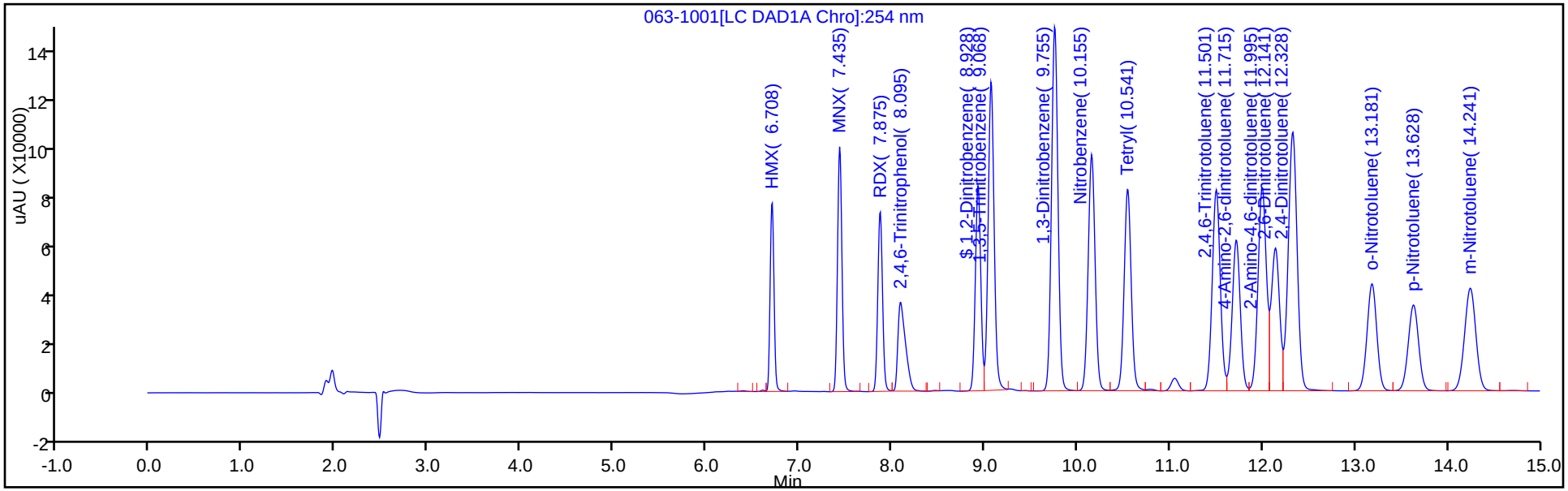
Report Date: 29-Oct-2016 09:47:53 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

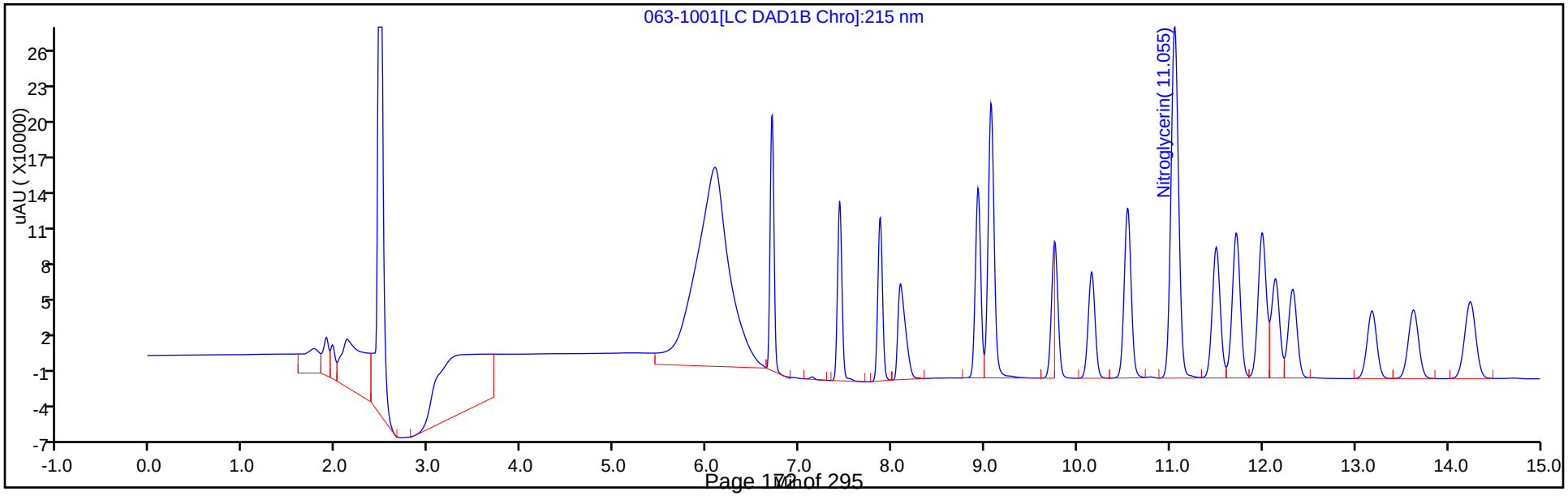
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\063-1001.D

Injection Date:	28-Oct-2016 17:40:15	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	IC MAIN L8			Worklist Smp#:	10
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	63
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Report Date: 29-Oct-2016 09:47:56 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\064-1101.D
Lims ID: IC MAIN L7
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 28-Oct-2016 18:03:18 ALS Bottle#: 64 Worklist Smp#: 11
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 8330 Lv 7
Misc. Info.: 280-0051662-010
Operator ID: ACF Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 29-Oct-2016 09:47:55 Calib Date: 28-Oct-2016 20:21:37
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK032

First Level Reviewer: freya Date: 29-Oct-2016 07:59:37

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.700	6.709	-0.009	92245	1.00	1.00	
4 MNX	1	7.420	7.435	-0.015	135605	0.99	0.99	
5 RDX	1	7.853	7.869	-0.016	106661	1.00	0.99	
6 2,4,6-Trinitrophenol	1	8.113	8.169	-0.056	84886	1.00	1.01	
$ 7 1,2-Dinitrobenzene	1	8.900	8.929	-0.029	139797	1.00	1.00	
8 1,3,5-Trinitrobenzene	1	9.046	9.069	-0.023	229302	1.00	0.99	
9 1,3-Dinitrobenzene	1	9.726	9.755	-0.029	292916	1.00	1.00	
11 Nitrobenzene	1	10.119	10.148	-0.029	203479	1.00	1.01	
12 Tetryl	1	10.499	10.542	-0.043	179879	1.00	1.01	
13 Nitroglycerin	2	11.006	11.055	-0.049	706204	10.0	9.88	
14 2,4,6-Trinitrotoluene	1	11.446	11.495	-0.049	201419	1.00	1.00	
15 4-Amino-2,6-dinitrotoluene	1	11.646	11.708	-0.062	152057	1.00	0.9849	
16 2-Amino-4,6-dinitrotoluene	1	11.926	11.995	-0.069	213727	1.00	1.00	
17 2,6-Dinitrotoluene	1	12.073	12.135	-0.062	145859	1.00	0.9803	
18 2,4-Dinitrotoluene	1	12.253	12.322	-0.069	287229	1.00	1.00	
19 o-Nitrotoluene	1	13.099	13.175	-0.076	129607	1.00	1.00	
20 p-Nitrotoluene	1	13.539	13.628	-0.089	110885	1.00	0.9871	
21 m-Nitrotoluene	1	14.146	14.235	-0.089	145050	1.00	0.9886	
22 PETN	2	15.319	15.435	-0.116	730560	10.0	10.2	

Reagents:

8330IntermStk_00041 Amount Added: 0.05 Units: mL

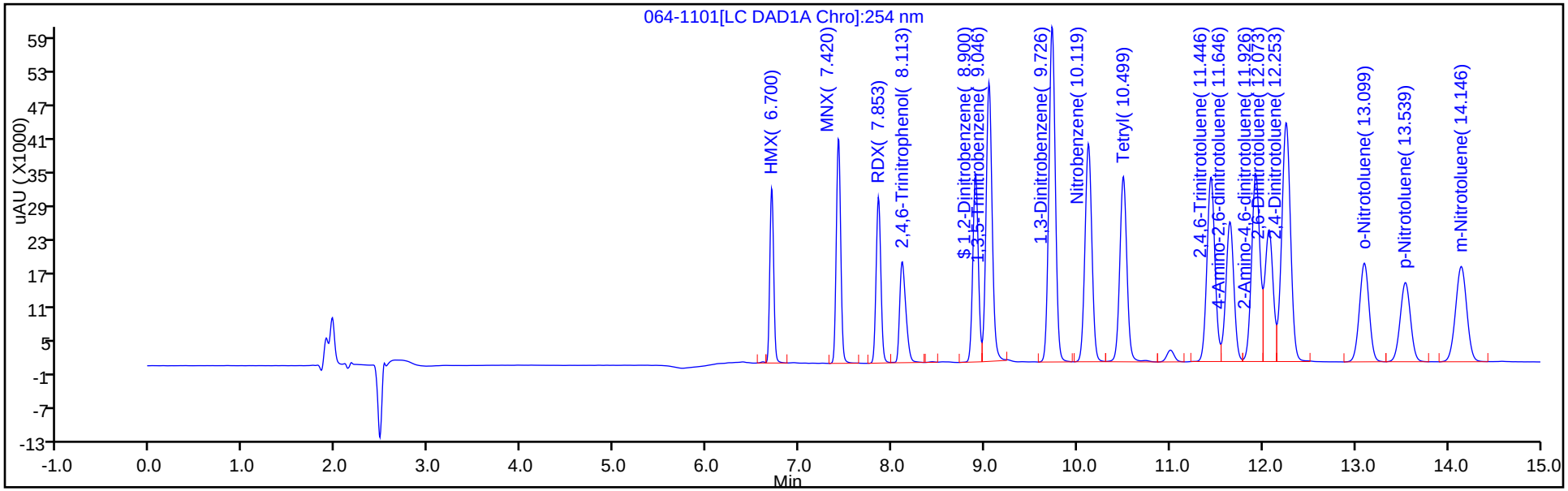
Report Date: 29-Oct-2016 09:47:56 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

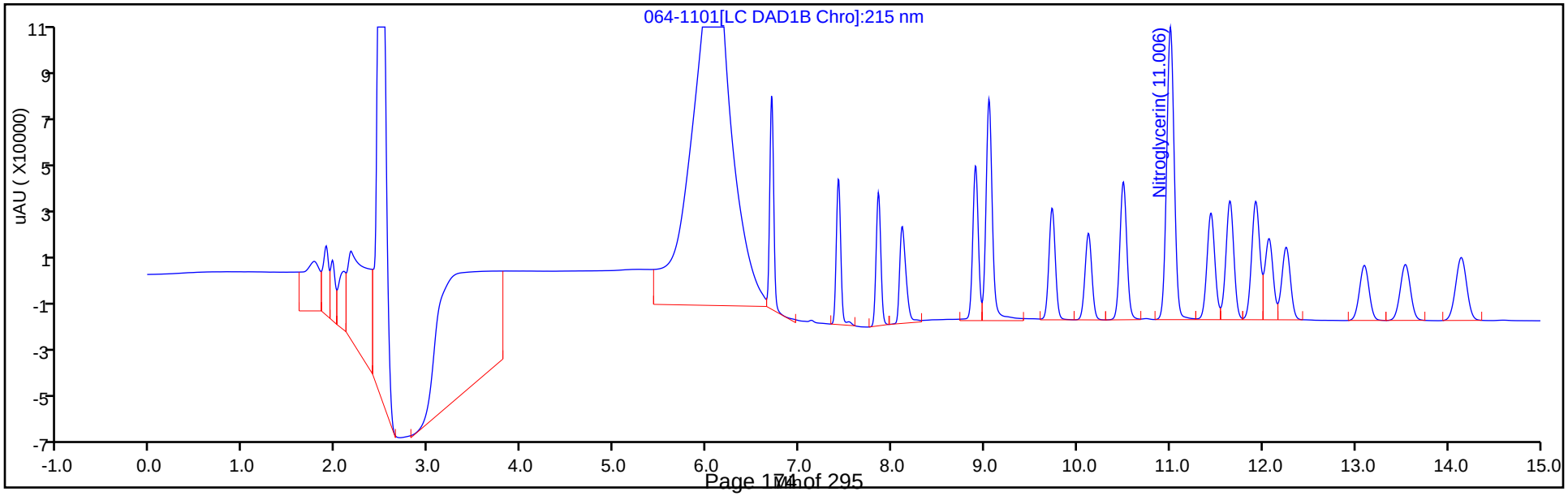
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\064-1101.D

Injection Date:	28-Oct-2016 18:03:18	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	IC MAIN L7			Worklist Smp#:	11
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	64
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Report Date: 29-Oct-2016 09:47:59 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\065-1201.D
Lims ID: IC MAIN L6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 28-Oct-2016 18:26:26 ALS Bottle#: 65 Worklist Smp#: 12
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 8330 Lv 6
Misc. Info.: 280-0051662-011
Operator ID: ACF Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 29-Oct-2016 09:47:57 Calib Date: 28-Oct-2016 20:21:37
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK032

First Level Reviewer: freya Date: 29-Oct-2016 07:59:44

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.705	6.709	-0.004	64302	0.7000	0.6951	
4 MNX	1	7.438	7.435	0.003	94315	0.6963	0.6885	
5 RDX	1	7.872	7.869	0.003	74288	0.7000	0.6903	
6 2,4,6-Trinitrophenol	1	8.145	8.169	-0.024	58784	0.7000	0.6989	
$ 7 1,2-Dinitrobenzene	1	8.925	8.929	-0.004	96960	0.7000	0.6912	
8 1,3,5-Trinitrobenzene	1	9.072	9.069	0.003	161032	0.7000	0.6973	
9 1,3-Dinitrobenzene	1	9.758	9.755	0.003	203968	0.7000	0.6942	
11 Nitrobenzene	1	10.151	10.148	0.003	141662	0.7000	0.7008	
12 Tetryl	1	10.545	10.542	0.003	125764	0.7000	0.7050	
13 Nitroglycerin	2	11.058	11.055	0.003	493571	7.00	6.90	
14 2,4,6-Trinitrotoluene	1	11.498	11.495	0.003	140330	0.7000	0.6929	
15 4-Amino-2,6-dinitrotoluene	1	11.711	11.708	0.003	106234	0.7000	0.6872	
16 2-Amino-4,6-dinitrotoluene	1	11.998	11.995	0.003	146932	0.7000	0.6877	
17 2,6-Dinitrotoluene	1	12.138	12.135	0.003	104506	0.7000	0.7022	
18 2,4-Dinitrotoluene	1	12.325	12.322	0.003	199649	0.7000	0.6924	
19 o-Nitrotoluene	1	13.185	13.175	0.010	90268	0.7000	0.6951	
20 p-Nitrotoluene	1	13.631	13.628	0.003	77427	0.7000	0.6893	
21 m-Nitrotoluene	1	14.245	14.235	0.010	101462	0.7000	0.6910	
22 PETN	2	15.438	15.435	0.003	505279	7.00	7.06	

Reagents:

8330IntermStk_00041 Amount Added: 0.04 Units: mL

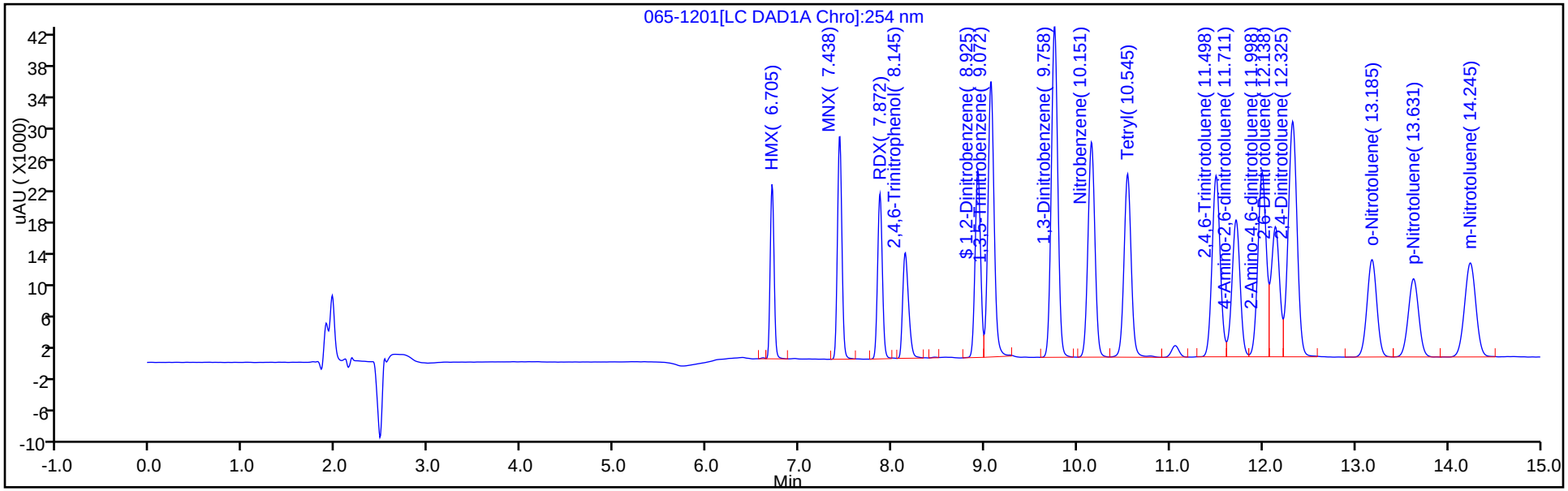
Report Date: 29-Oct-2016 09:47:59 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

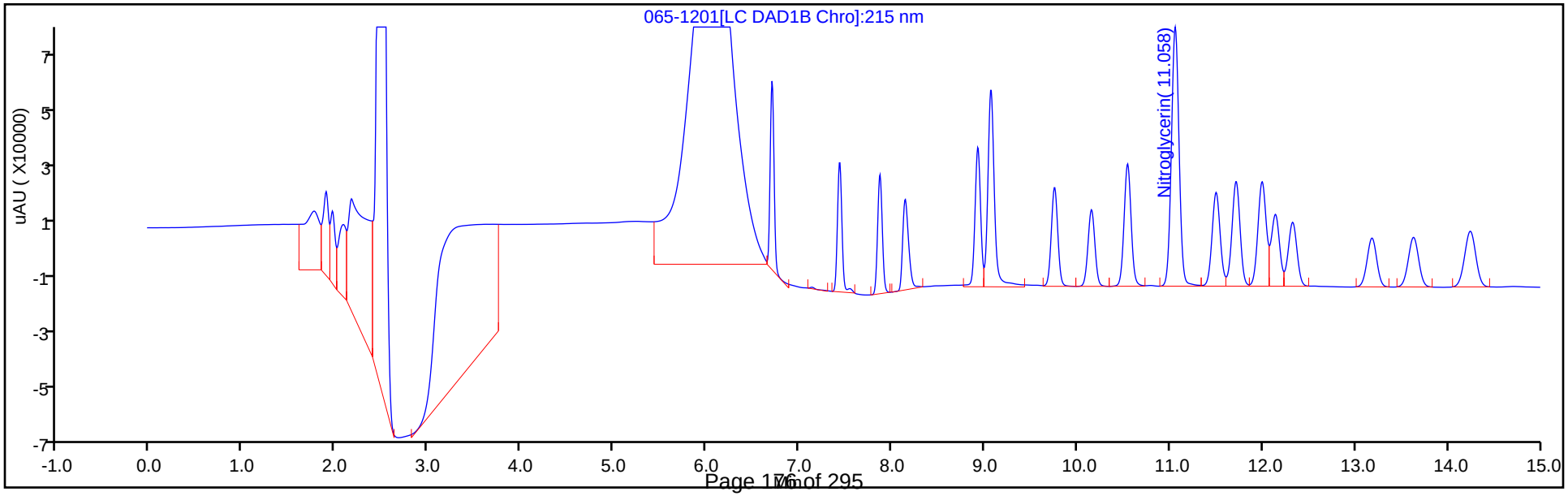
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\065-1201.D

Injection Date:	28-Oct-2016 18:26:26	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	IC MAIN L6			Worklist Smp#:	12
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	65
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\066-1301.D
Lims ID: IC MAIN L5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 28-Oct-2016 18:49:30 ALS Bottle#: 66 Worklist Smp#: 13
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 8330 Lv 5
Misc. Info.: 280-0051662-012
Operator ID: ACF Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 29-Oct-2016 09:48:01 Calib Date: 28-Oct-2016 20:21:37
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK032

First Level Reviewer: freya Date: 29-Oct-2016 07:59:49

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.704	6.709	-0.005	36574	0.4000	0.3951	
4 MNX	1	7.431	7.435	-0.004	53893	0.3979	0.3932	
5 RDX	1	7.857	7.869	-0.012	42667	0.4000	0.3958	
6 2,4,6-Trinitrophenol	1	8.144	8.169	-0.025	33646	0.4000	0.3995	
$ 7 1,2-Dinitrobenzene	1	8.904	8.929	-0.025	55264	0.4000	0.3935	
8 1,3,5-Trinitrobenzene	1	9.044	9.069	-0.025	90565	0.4000	0.3920	
9 1,3-Dinitrobenzene	1	9.724	9.755	-0.031	116393	0.4000	0.3962	
11 Nitrobenzene	1	10.117	10.148	-0.031	80111	0.4000	0.3965	
12 Tetryl	1	10.491	10.542	-0.051	70068	0.4000	0.3926	
13 Nitroglycerin	2	11.004	11.055	-0.051	283404	4.00	3.96	
14 2,4,6-Trinitrotoluene	1	11.444	11.495	-0.051	79876	0.4000	0.3933	
15 4-Amino-2,6-dinitrotoluene	1	11.651	11.708	-0.057	61505	0.4000	0.3966	
16 2-Amino-4,6-dinitrotoluene	1	11.931	11.995	-0.064	83473	0.4000	0.3902	
17 2,6-Dinitrotoluene	1	12.071	12.135	-0.064	59367	0.4000	0.3987	
18 2,4-Dinitrotoluene	1	12.257	12.322	-0.065	113659	0.4000	0.3938	
19 o-Nitrotoluene	1	13.104	13.175	-0.071	51384	0.4000	0.3954	
20 p-Nitrotoluene	1	13.551	13.628	-0.077	44248	0.4000	0.3940	
21 m-Nitrotoluene	1	14.157	14.235	-0.078	57856	0.4000	0.3933	
22 PETN	2	15.344	15.435	-0.091	287342	4.00	4.01	

Reagents:

8330IntermStk_00041 Amount Added: 0.02 Units: mL

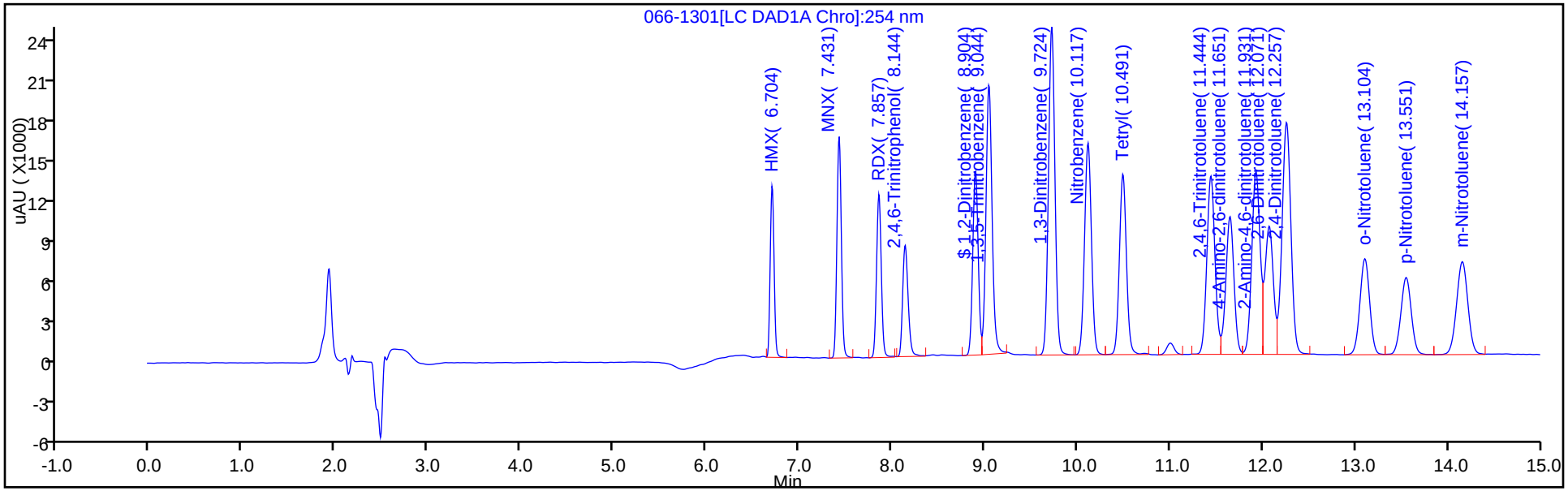
Report Date: 29-Oct-2016 09:48:03 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

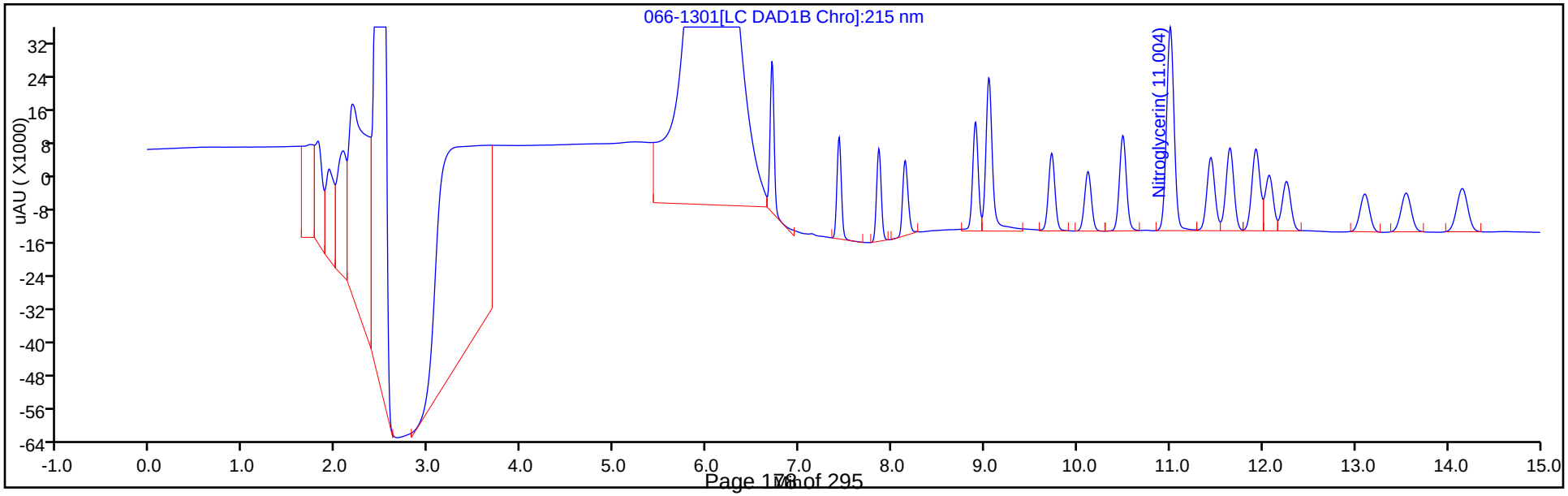
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\066-1301.D

Injection Date:	28-Oct-2016 18:49:30	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	IC MAIN L5			Worklist Smp#:	13
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	66
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\067-1401.D
Lims ID: IC MAIN L4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 28-Oct-2016 19:12:34 ALS Bottle#: 67 Worklist Smp#: 14
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 8330 Lv 4
Misc. Info.: 280-0051662-013
Operator ID: ACF Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 29-Oct-2016 09:48:05 Calib Date: 28-Oct-2016 20:21:37
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK032

First Level Reviewer: freya Date: 29-Oct-2016 07:59:53

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.709	6.709	0.000	22860	0.2500	0.2468	
4 MNX	1	7.435	7.435	0.000	33827	0.2487	0.2466	
5 RDX	1	7.869	7.869	0.000	27038	0.2500	0.2503	
6 2,4,6-Trinitrophenol	1	8.169	8.169	0.000	21211	0.2500	0.2514	
$ 7 1,2-Dinitrobenzene	1	8.929	8.929	0.000	34865	0.2500	0.2478	
8 1,3,5-Trinitrobenzene	1	9.069	9.069	0.000	57129	0.2500	0.2471	
9 1,3-Dinitrobenzene	1	9.755	9.755	0.000	73332	0.2500	0.2497	
11 Nitrobenzene	1	10.148	10.148	0.000	50900	0.2500	0.2521	
12 Tetryl	1	10.542	10.542	0.000	43964	0.2500	0.2462	
13 Nitroglycerin	2	11.055	11.055	0.000	177491	2.50	2.47	
14 2,4,6-Trinitrotoluene	1	11.495	11.495	0.000	50356	0.2500	0.2471	
15 4-Amino-2,6-dinitrotoluene	1	11.708	11.708	0.000	38986	0.2500	0.2503	
16 2-Amino-4,6-dinitrotoluene	1	11.995	11.995	0.000	52903	0.2500	0.2468	
17 2,6-Dinitrotoluene	1	12.135	12.135	0.000	37388	0.2500	0.2509	
18 2,4-Dinitrotoluene	1	12.322	12.322	0.000	71714	0.2500	0.2482	
19 o-Nitrotoluene	1	13.175	13.175	0.000	32568	0.2500	0.2504	
20 p-Nitrotoluene	1	13.628	13.628	0.000	28015	0.2500	0.2495	
21 m-Nitrotoluene	1	14.235	14.235	0.000	36800	0.2500	0.2496	
22 PETN	2	15.435	15.435	0.000	179870	2.50	2.50	

Reagents:

8330IntermStk_00041 Amount Added: 0.01 Units: mL

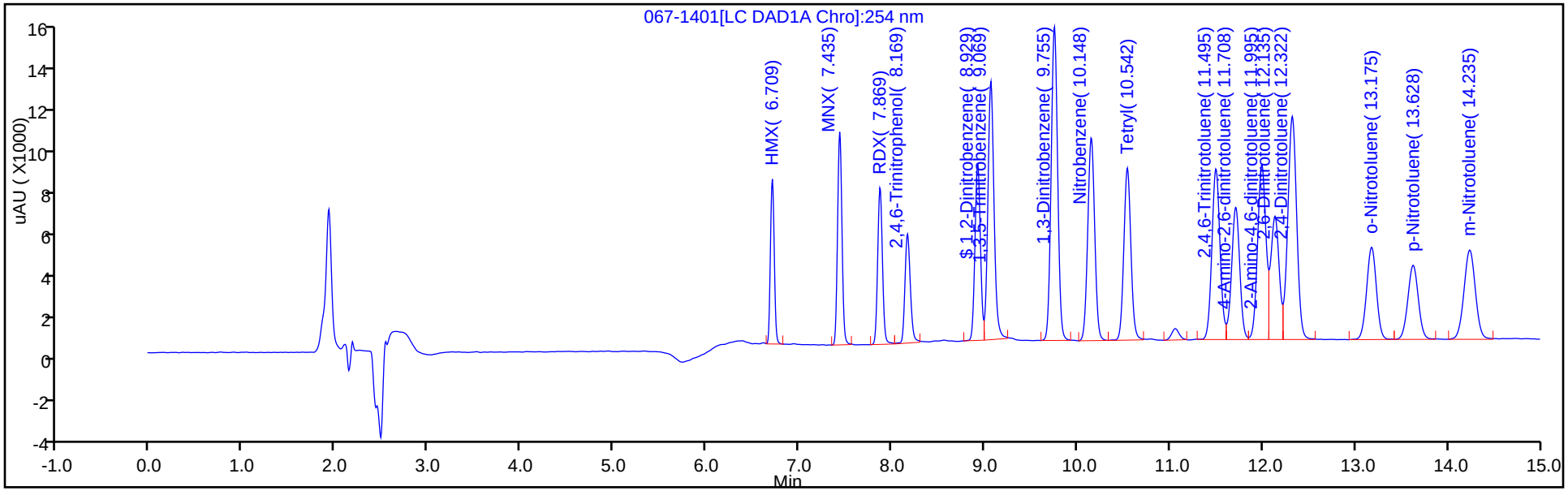
Report Date: 29-Oct-2016 09:48:05 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

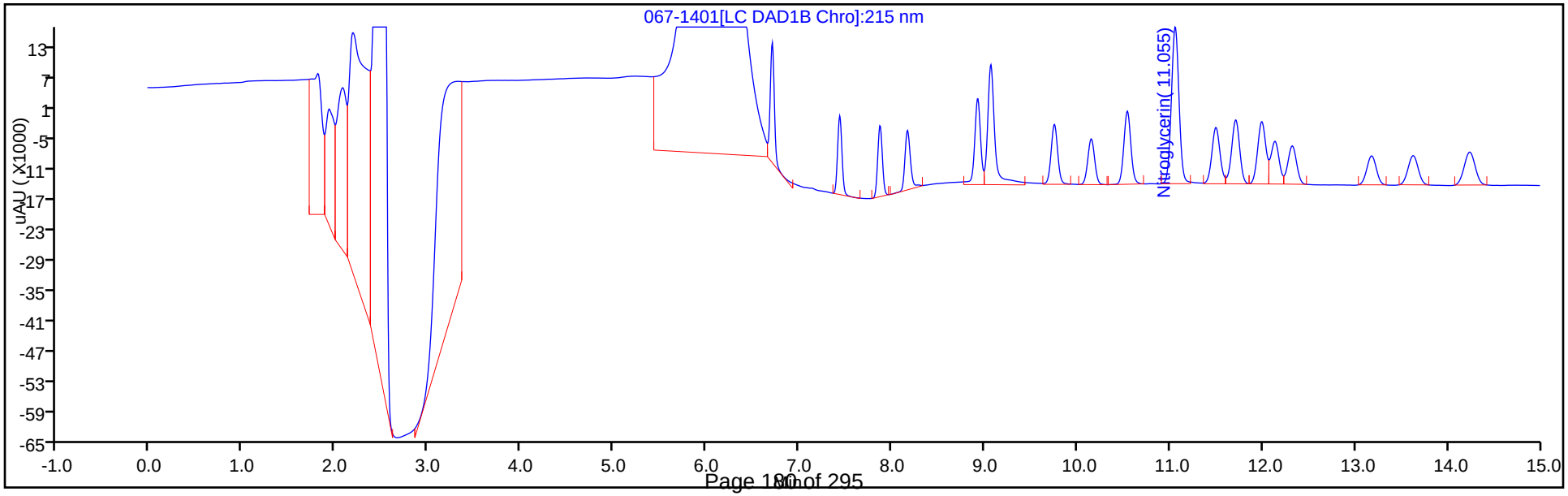
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\067-1401.D

Injection Date:	28-Oct-2016 19:12:34	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	IC MAIN L4			Worklist Smp#:	14
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	67
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\068-1501.D
Lims ID: IC MAIN L3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 28-Oct-2016 19:35:35 ALS Bottle#: 68 Worklist Smp#: 15
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 8330 Lv 3
Misc. Info.: 280-0051662-014
Operator ID: ACF Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 29-Oct-2016 09:48:06 Calib Date: 28-Oct-2016 20:21:37
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK032

First Level Reviewer: freya Date: 29-Oct-2016 08:00:00

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.707	6.709	-0.002	9425	0.1000	0.1014	
4 MNX	1	7.434	7.435	-0.001	13971	0.0995	0.1015	
5 RDX	1	7.867	7.869	-0.002	11161	0.1000	0.1024	
6 2,4,6-Trinitrophenol	1	8.174	8.169	0.005	8512	0.1000	0.1001	
$ 7 1,2-Dinitrobenzene	1	8.921	8.929	-0.008	14550	0.1000	0.1027	
8 1,3,5-Trinitrobenzene	1	9.067	9.069	-0.002	23675	0.1000	0.1022	
9 1,3-Dinitrobenzene	1	9.747	9.755	-0.008	29851	0.1000	0.1017	
11 Nitrobenzene	1	10.147	10.148	-0.001	20580	0.1000	0.1022	
12 Tetryl	1	10.527	10.542	-0.015	18109	0.1000	0.1012	
13 Nitroglycerin	2	11.047	11.055	-0.008	73823	1.00	1.02	
14 2,4,6-Trinitrotoluene	1	11.487	11.495	-0.008	21123	0.1000	0.1023	
15 4-Amino-2,6-dinitrotoluene	1	11.694	11.708	-0.014	16286	0.1000	0.1029	
16 2-Amino-4,6-dinitrotoluene	1	11.981	11.995	-0.014	21844	0.1000	0.1012	
17 2,6-Dinitrotoluene	1	12.121	12.135	-0.014	15532	0.1000	0.1039	
18 2,4-Dinitrotoluene	1	12.307	12.322	-0.015	29722	0.1000	0.1024	
19 o-Nitrotoluene	1	13.154	13.175	-0.021	13597	0.1000	0.1042	
20 p-Nitrotoluene	1	13.607	13.628	-0.021	11545	0.1000	0.1029	
21 m-Nitrotoluene	1	14.214	14.235	-0.021	15329	0.1000	0.1030	
22 PETN	2	15.407	15.435	-0.028	72482	1.00	1.00	

Reagents:

8330IntermStk_00041 Amount Added: 0.01 Units: mL

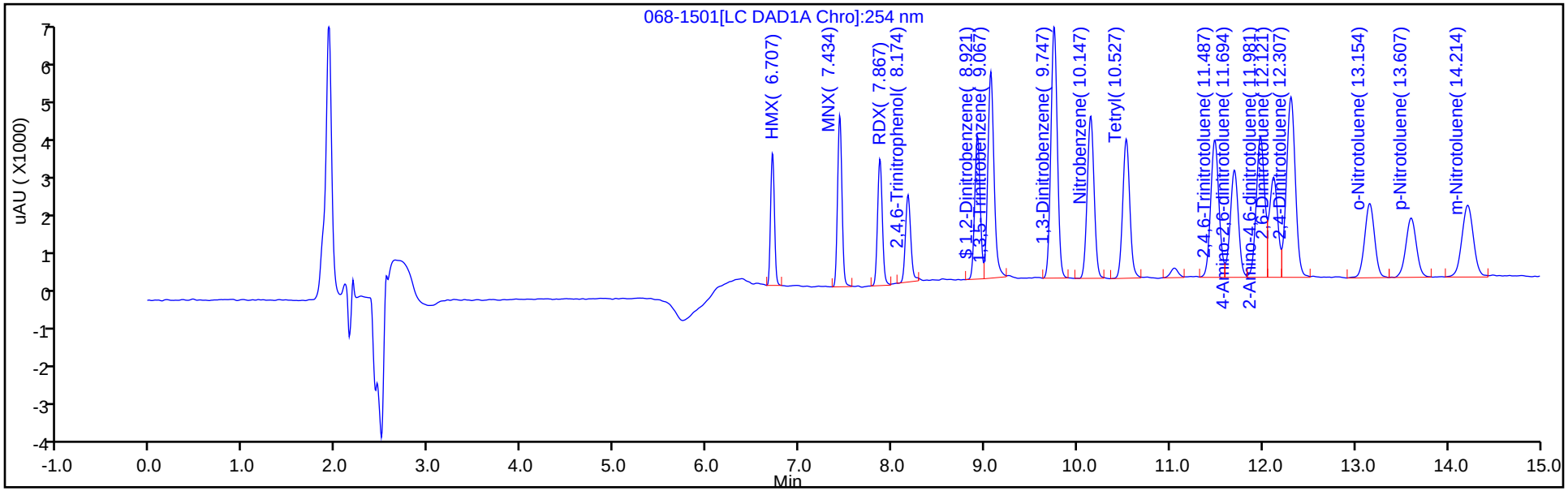
Report Date: 29-Oct-2016 09:48:07 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

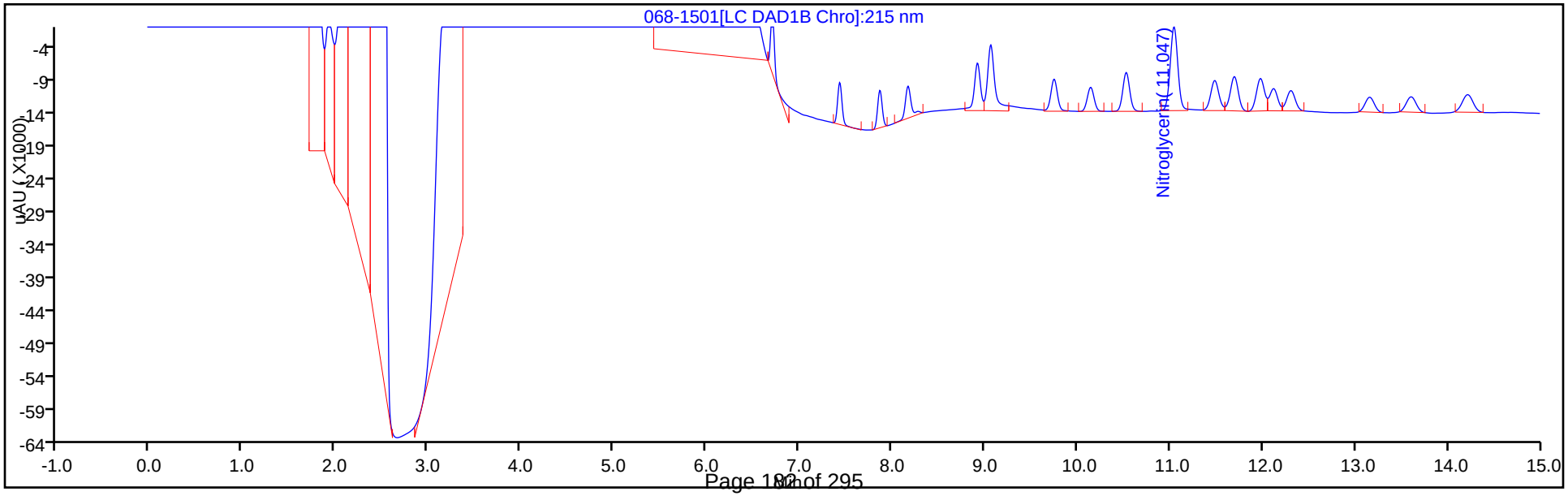
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\068-1501.D

Injection Date:	28-Oct-2016 19:35:35	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	IC MAIN L3			Worklist Smp#:	15
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	68
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\069-1601.D
Lims ID: IC MAIN L2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 28-Oct-2016 19:58:37 ALS Bottle#: 69 Worklist Smp#: 16
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 8330 Lv 2
Misc. Info.: 280-0051662-015
Operator ID: ACF Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 29-Oct-2016 09:48:08 Calib Date: 28-Oct-2016 20:21:37
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK032

First Level Reviewer: freya Date: 29-Oct-2016 08:00:06

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.703	6.709	-0.006	4965	0.0500	0.0532	
4 MNX	1	7.430	7.435	-0.005	7310	0.0497	0.0528	
5 RDX	1	7.863	7.869	-0.006	5845	0.0500	0.0529	
6 2,4,6-Trinitrophenol	1	8.170	8.169	0.001	4333	0.0500	0.0504	
$ 7 1,2-Dinitrobenzene	1	8.917	8.929	-0.012	7589	0.0500	0.0530	
8 1,3,5-Trinitrobenzene	1	9.063	9.069	-0.006	12390	0.0500	0.0533	
9 1,3-Dinitrobenzene	1	9.743	9.755	-0.012	15265	0.0500	0.0521	
11 Nitrobenzene	1	10.143	10.148	-0.005	9936	0.0500	0.0496	
12 Tetryl	1	10.523	10.542	-0.019	9369	0.0500	0.0521	
13 Nitroglycerin	2	11.043	11.055	-0.012	39923	0.5000	0.5484	
14 2,4,6-Trinitrotoluene	1	11.483	11.495	-0.012	11123	0.0500	0.0527	
15 4-Amino-2,6-dinitrotoluene	1	11.697	11.708	-0.011	8656	0.0500	0.0533	
16 2-Amino-4,6-dinitrotoluene	1	11.977	11.995	-0.018	11818	0.0500	0.0542	
17 2,6-Dinitrotoluene	1	12.117	12.135	-0.018	7708	0.0500	0.0513	
18 2,4-Dinitrotoluene	1	12.303	12.322	-0.019	15282	0.0500	0.0522	
19 o-Nitrotoluene	1	13.157	13.175	-0.018	6608	0.0500	0.0503	
20 p-Nitrotoluene	1	13.610	13.628	-0.018	5950	0.0500	0.0531	
21 m-Nitrotoluene	1	14.217	14.235	-0.018	7998	0.0500	0.0530	
22 PETN	2	15.403	15.435	-0.032	36171	0.5000	0.4881	

Reagents:

8330IntermStk_00041 Amount Added: 0.00 Units: mL

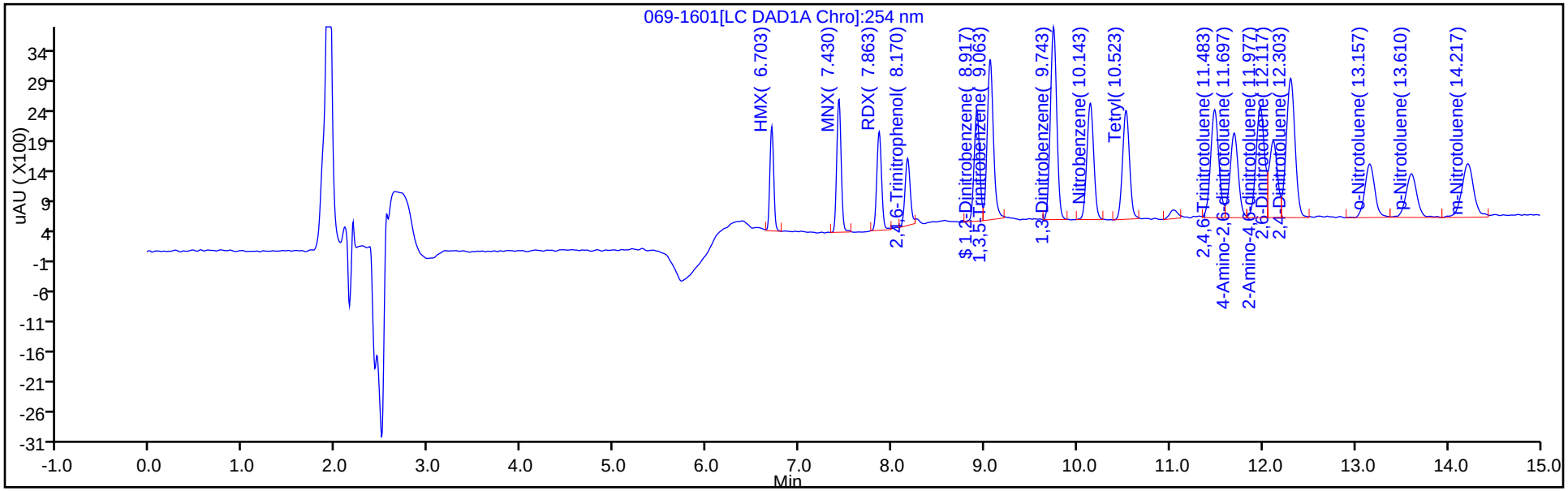
Report Date: 29-Oct-2016 09:48:09 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

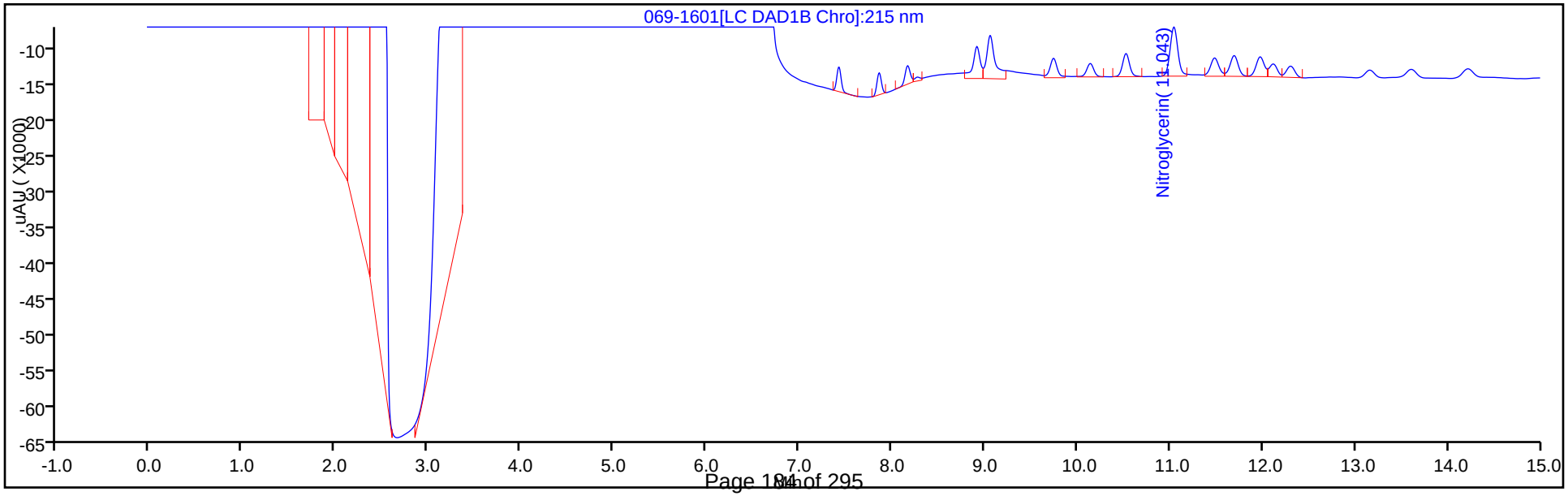
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\069-1601.D

Injection Date:	28-Oct-2016 19:58:37	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	IC MAIN L2			Worklist Smp#:	16
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	69
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D
Lims ID: IC MAIN L1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 28-Oct-2016 20:21:37 ALS Bottle#: 70 Worklist Smp#: 17
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 8330 Lv 1
Misc. Info.: 280-0051662-021
Operator ID: ACF Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 29-Oct-2016 09:48:10 Calib Date: 28-Oct-2016 20:21:37
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK032

First Level Reviewer: freya Date: 29-Oct-2016 08:03:10

	Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
	2 HMX	1	6.704	6.709	-0.005	963	0.0100	0.009870	
	4 MNX	1	7.437	7.435	0.002	1422	0.0099	0.009813	
	5 RDX	1	7.870	7.869	0.001	1221	0.0100	0.009865	
	6 2,4,6-Trinitrophenol	1	8.190	8.169	0.021	943	0.0100	0.0100	M
$	7 1,2-Dinitrobenzene	1	8.930	8.929	0.001	1542	0.0100	0.009862	
	8 1,3,5-Trinitrobenzene	1	9.077	9.069	0.008	2373	0.0100	0.009860	
	9 1,3-Dinitrobenzene	1	9.764	9.755	0.009	2866	0.0100	0.0099	
	11 Nitrobenzene	1	10.164	10.148	0.016	1935	0.0100	0.0100	
	12 Tetryl	1	10.550	10.542	0.008	1842	0.0100	0.0099	
	13 Nitroglycerin	2	11.070	11.055	0.015	7747	0.1000	0.0980	M
	14 2,4,6-Trinitrotoluene	1	11.517	11.495	0.022	2478	0.0100	0.009881	
	15 4-Amino-2,6-dinitrotoluene	1	11.730	11.708	0.022	1964	0.0100	0.009846	
	16 2-Amino-4,6-dinitrotoluene	1	12.010	11.995	0.015	2350	0.0100	0.009833	M
	17 2,6-Dinitrotoluene	1	12.157	12.135	0.022	1556	0.0100	0.0099	M
	18 2,4-Dinitrotoluene	1	12.344	12.322	0.022	3098	0.0100	0.009898	
	19 o-Nitrotoluene	1	13.197	13.175	0.022	1370	0.0100	0.0099	
	20 p-Nitrotoluene	1	13.650	13.628	0.022	1088	0.0100	0.009855	
	21 m-Nitrotoluene	1	14.270	14.235	0.035	1680	0.0100	0.009859	
	22 PETN	2	15.464	15.435	0.029	8517	0.1000	0.1005	M

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

8330IntermStk_00041 Amount Added: 0.00 Units: mL

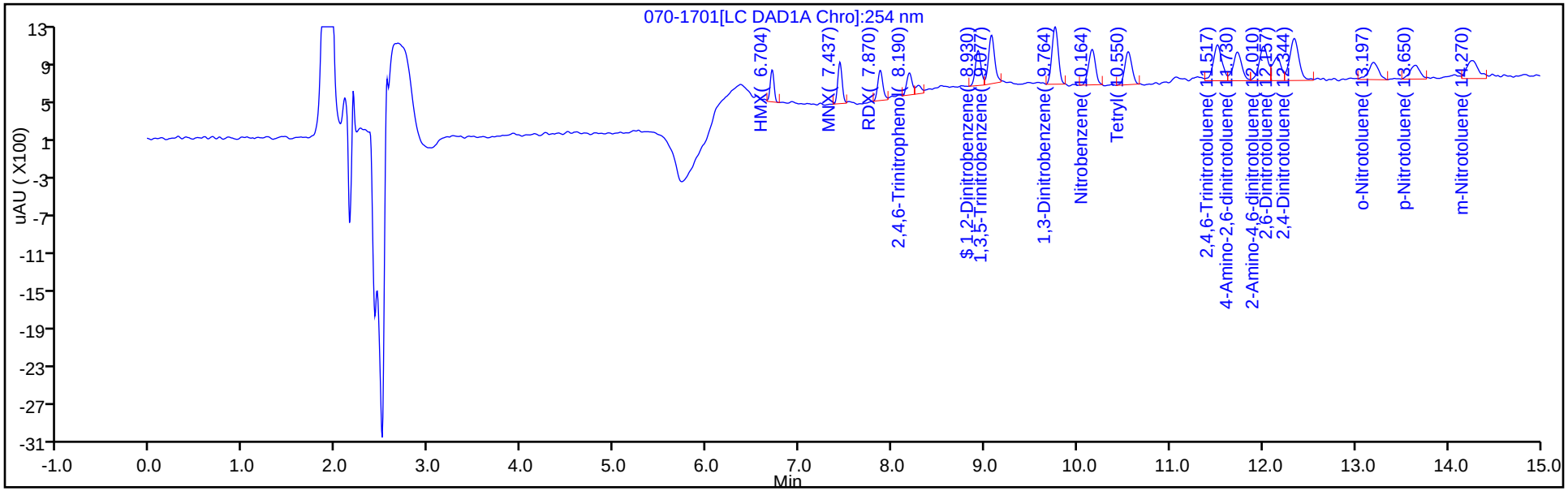
Report Date: 29-Oct-2016 09:48:11 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

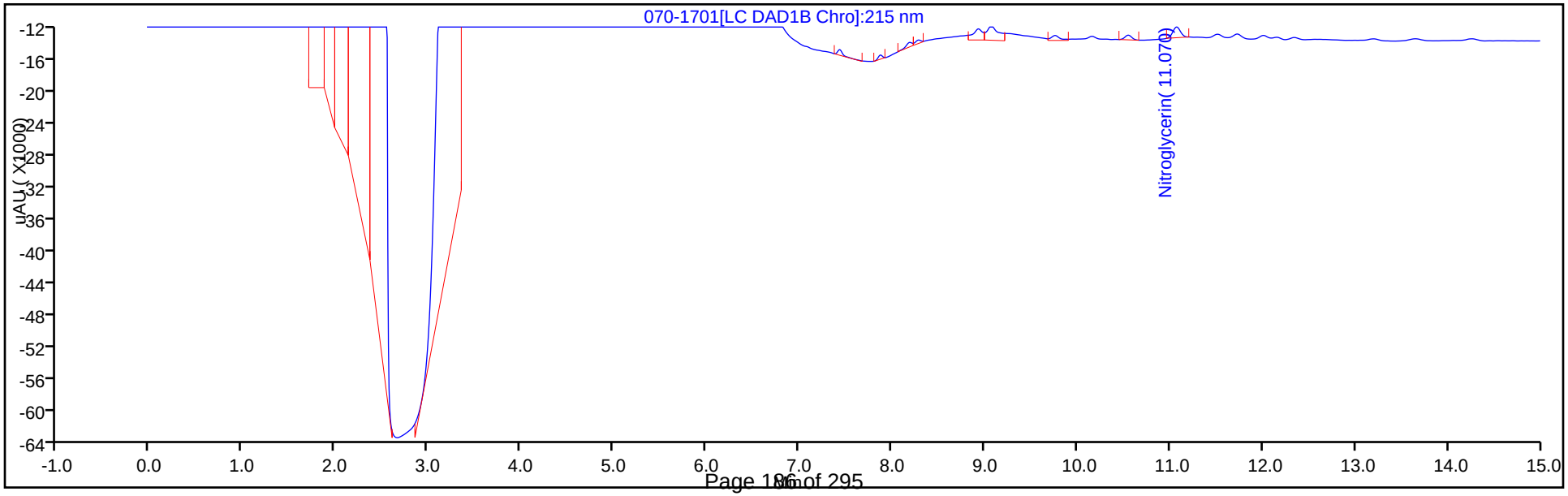
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D

Injection Date:	28-Oct-2016 20:21:37	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	IC MAIN L1			Worklist Smp#:	17
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	70
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Manual Integration/User Assign Peak Report

TestAmerica Denver

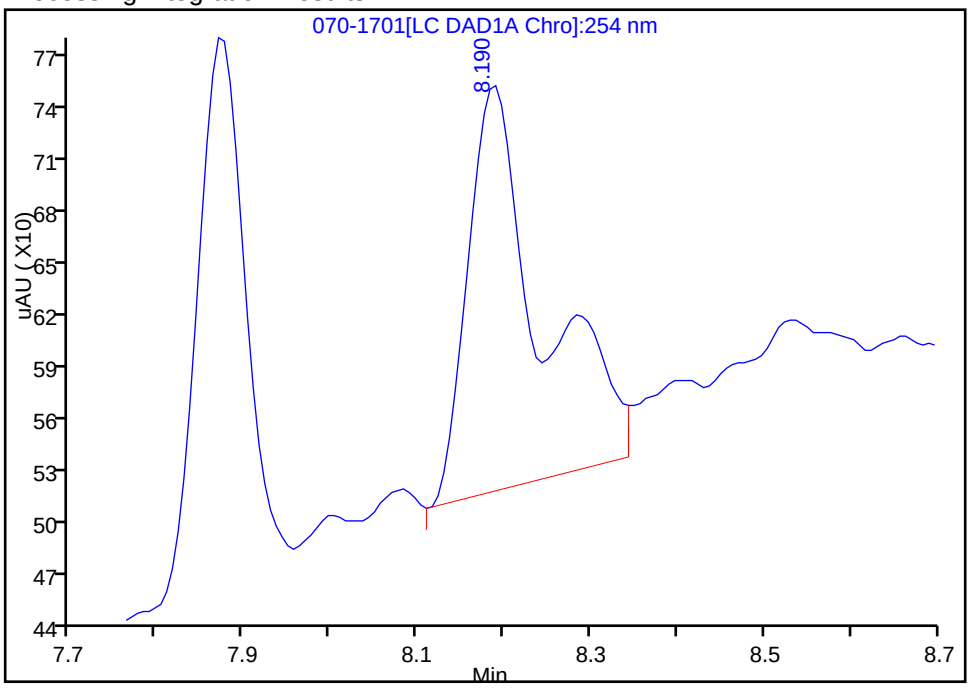
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D
Injection Date: 28-Oct-2016 20:21:37 Instrument ID: CHHPLC_X3
Lims ID: IC MAIN L1
Client ID:
Operator ID: ACF ALS Bottle#: 70 Worklist Smp#: 17
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector LC DAD1B, 254 nm

6 2,4,6-Trinitrophenol, CAS: 88-89-1

Signal: 1

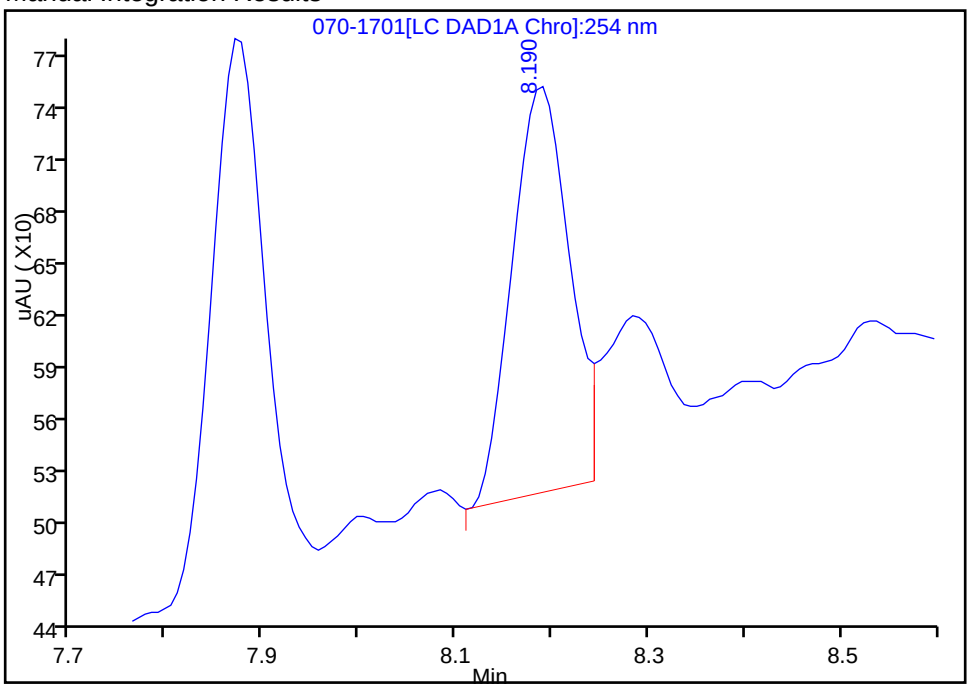
Processing Integration Results

RT: 8.19
Area: 1334
Amount: 0.010682
Amount Units: ug/mL



Manual Integration Results

RT: 8.19
Area: 943
Amount: 0.009982
Amount Units: ug/mL



Reviewer: freya, 29-Oct-2016 09:35:15
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Denver

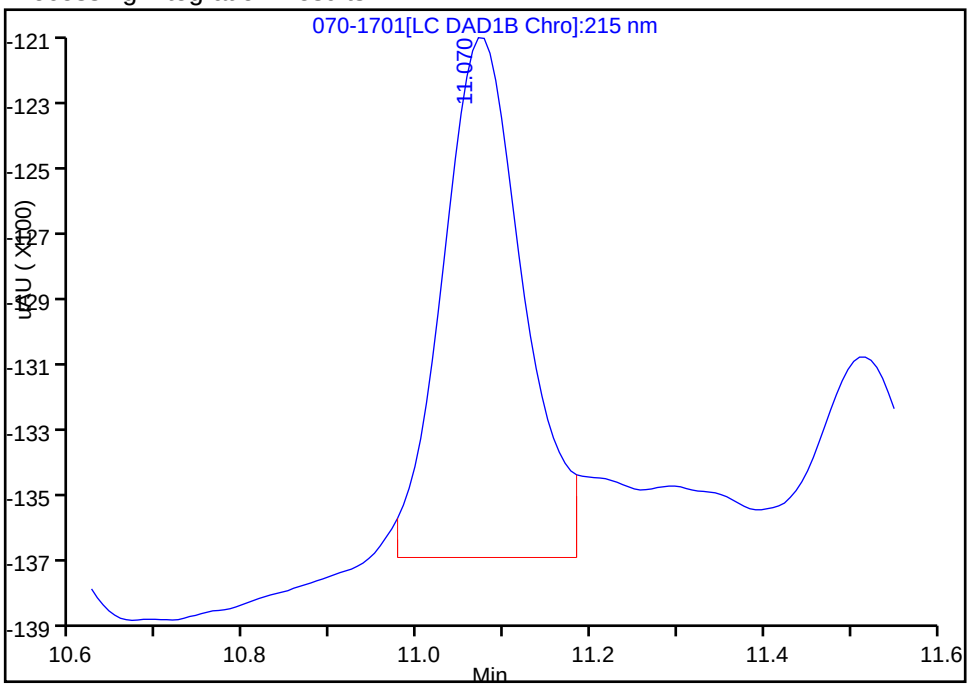
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D
Injection Date: 28-Oct-2016 20:21:37 Instrument ID: CHHPLC_X3
Lims ID: IC MAIN L1
Client ID:
Operator ID: ACF ALS Bottle#: 70 Worklist Smp#: 17
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: Detector LC DAD1C, 215 nm

13 Nitroglycerin, CAS: 55-63-0

Signal: 1

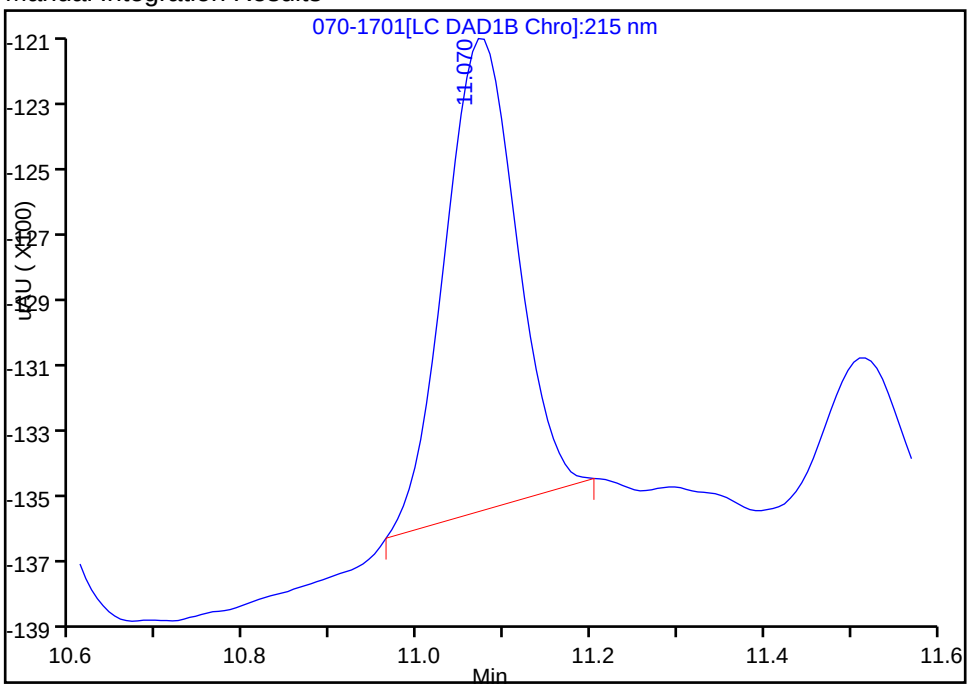
Processing Integration Results

RT: 11.07
Area: 9443
Amount: 0.122086
Amount Units: ug/mL



Manual Integration Results

RT: 11.07
Area: 7747
Amount: 0.097953
Amount Units: ug/mL



Reviewer: freya, 29-Oct-2016 09:29:26
Audit Action: Manually Integrated Audit Reason: Baseline Smoothing

Manual Integration/User Assign Peak Report

TestAmerica Denver

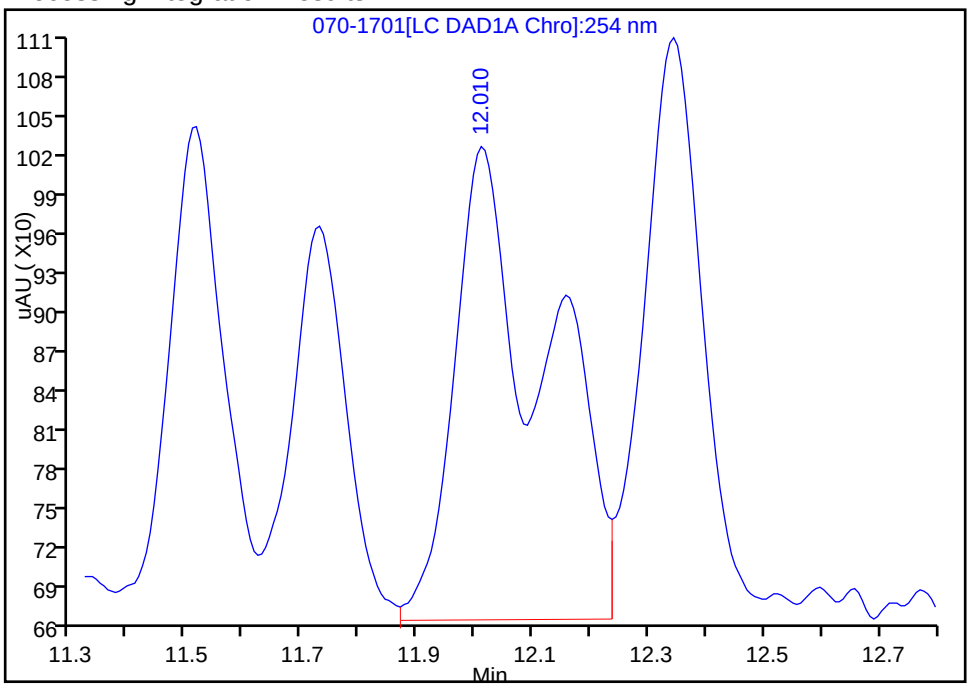
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D
Injection Date: 28-Oct-2016 20:21:37 Instrument ID: CHHPLC_X3
Lims ID: IC MAIN L1
Client ID:
Operator ID: ACF ALS Bottle#: 70 Worklist Smp#: 17
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector LC DAD1B, 254 nm

16 2-Amino-4,6-dinitrotoluene, CAS: 35572-78-2

Signal: 1

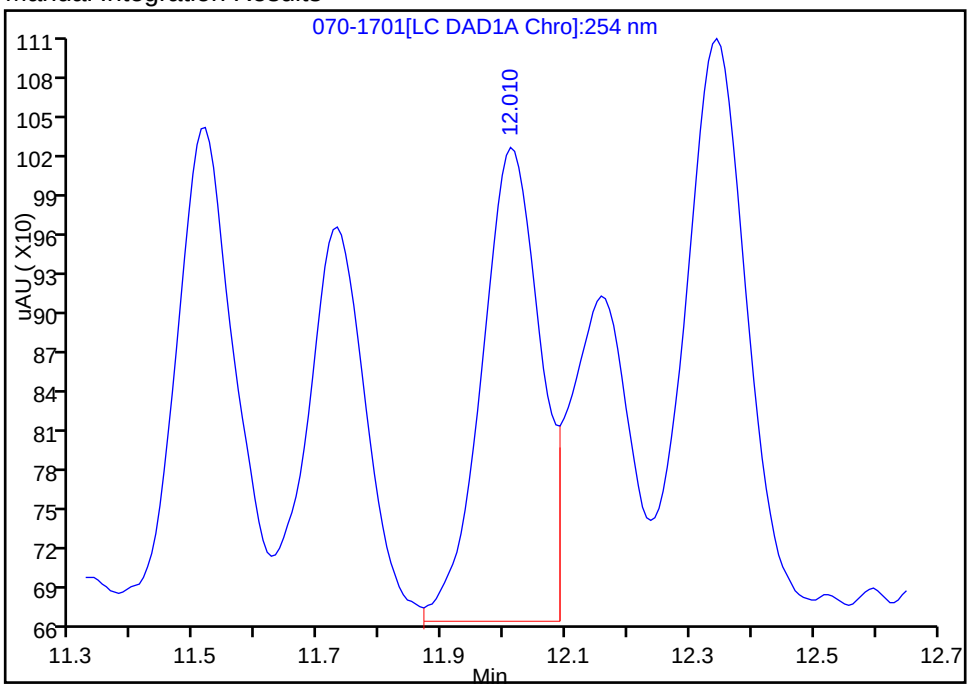
Processing Integration Results

RT: 12.01
Area: 3899
Amount: 0.015951
Amount Units: ug/mL



Manual Integration Results

RT: 12.01
Area: 2350
Amount: 0.009833
Amount Units: ug/mL



Reviewer: freya, 29-Oct-2016 09:25:51
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Denver

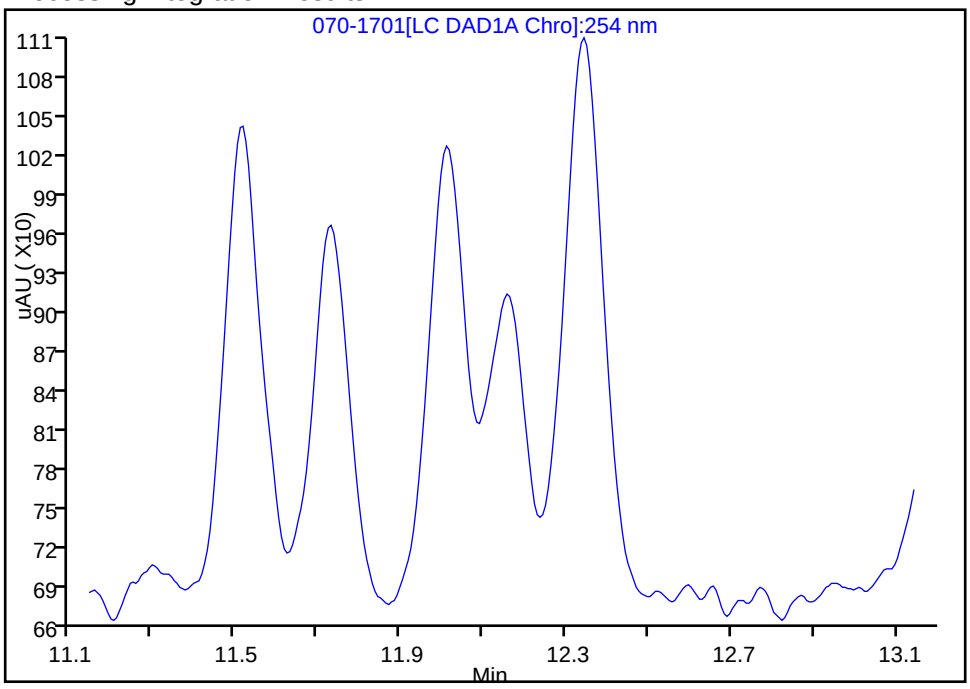
Data File:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D				
Injection Date:	28-Oct-2016 20:21:37	Instrument ID:	CHHPLC_X3		
Lims ID:	IC MAIN L1				
Client ID:					
Operator ID:	ACF	ALS Bottle#:	70	Worklist Smp#:	17
Injection Vol:	100.0 ul	Dil. Factor:	1.0000		
Method:	8330_X3	Limit Group:	GCSV - 8330		
Column:	UltraCarb5uODS (20) (4.60 mm)	Detector	LC DAD1B, 254 nm		

17 2,6-Dinitrotoluene, CAS: 606-20-2

Signal: 1

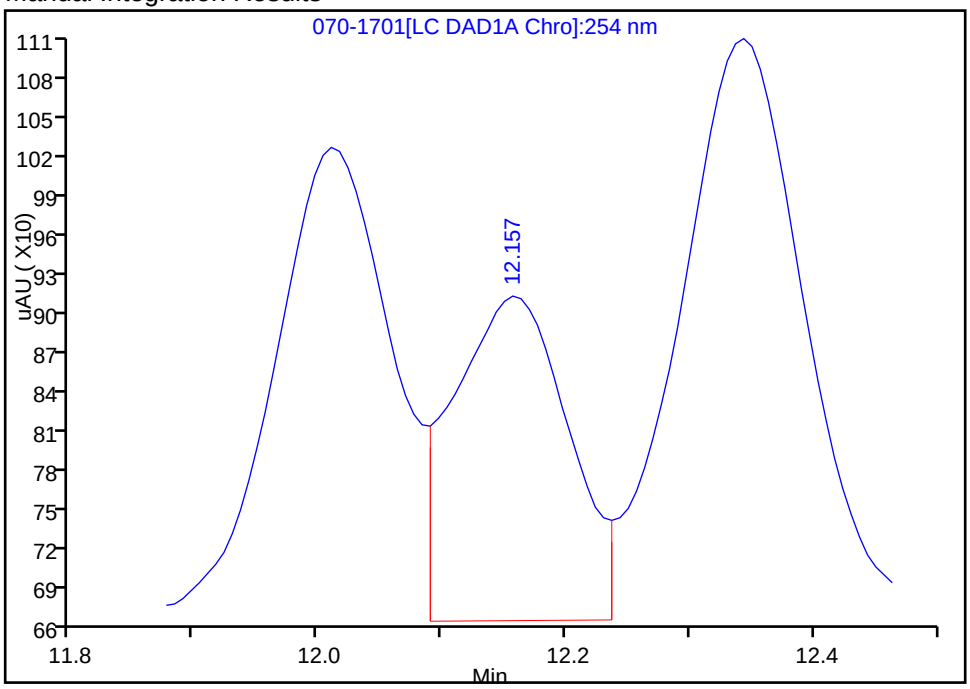
Not Detected
Expected RT: 12.14

Processing Integration Results



Manual Integration Results

RT: 12.16
Area: 1556
Amount: 0.009912
Amount Units: ug/mL



Reviewer: freya, 29-Oct-2016 09:25:51
Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Denver

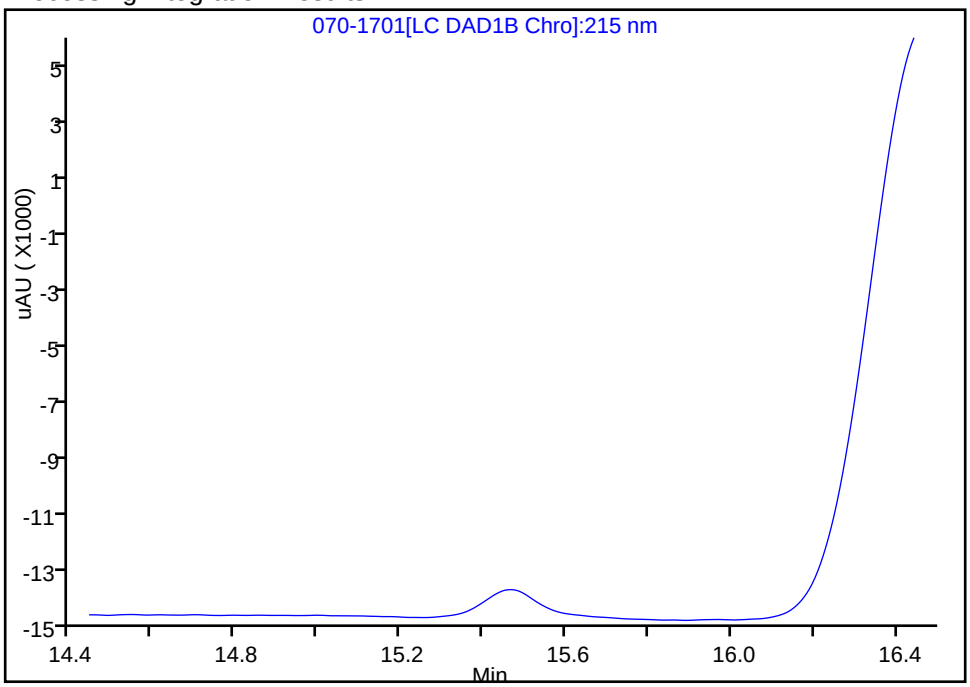
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D
Injection Date: 28-Oct-2016 20:21:37 Instrument ID: CHHPLC_X3
Lims ID: IC MAIN L1
Client ID:
Operator ID: ACF ALS Bottle#: 70 Worklist Smp#: 17
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: Detector LC DAD1C, 215 nm

22 PETN, CAS: 78-11-5

Signal: 1

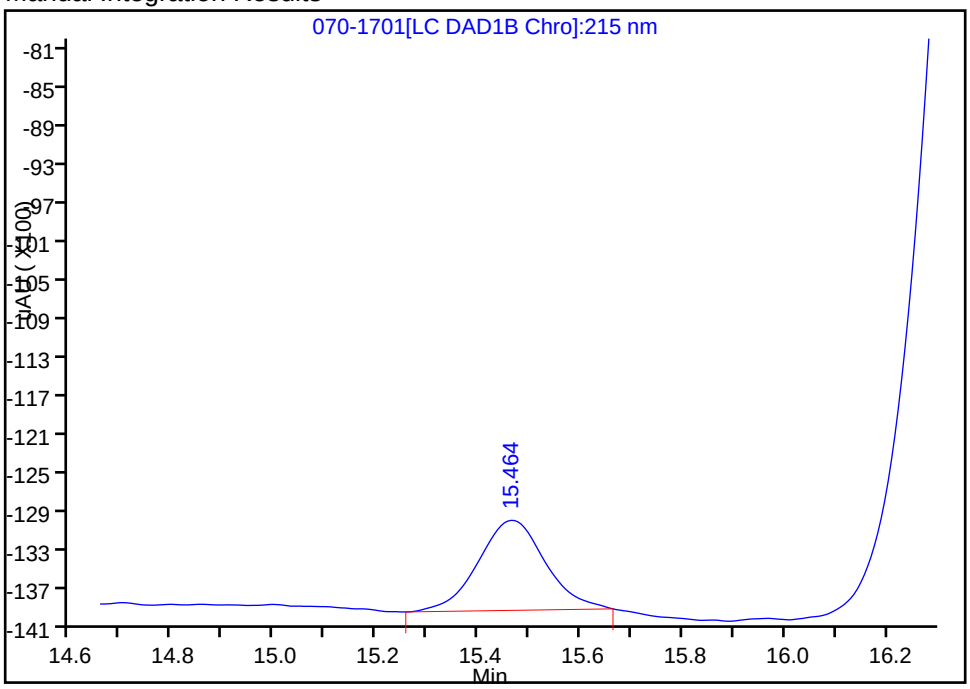
Not Detected
Expected RT: 15.44

Processing Integration Results



Manual Integration Results

RT: 15.46
Area: 8517
Amount: 0.100465
Amount Units: ug/mL



Reviewer: freya, 29-Oct-2016 09:25:51
Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Incomplete Integration

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Lab Sample ID: ICV 280-347397/16 Calibration Date: 10/19/2016 16:53

Instrument ID: CHHPLC_G2_LUNA Calib Start Date: 10/19/2016 12:13

GC Column: Luna-phenylhex ID: 4.60(mm) Calib End Date: 10/19/2016 16:18

Lab File ID: 011-1501.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Lin2		169895		0.390	0.400	-2.6	20.0
Picric acid	Lin2		167258		0.412	0.400	3.0	20.0
RDX	Lin2		208918		0.405	0.400	1.2	20.0
Nitrobenzene	Lin2		422380		0.412	0.400	3.1	20.0
3,5-Dinitroaniline	Lin2		453098		0.459	0.400	14.7	20.0
1,3-Dinitrobenzene	Lin2		639778		0.428	0.400	6.9	20.0
Nitroglycerin	Lin2		171670		4.06	4.00	1.4	20.0
2-Nitrotoluene	Lin2		247745		0.402	0.400	0.5	20.0
4-Nitrotoluene	Lin2		231880		0.419	0.400	4.7	20.0
4-Amino-2,6-dinitrotoluene	Lin2		287605		0.402	0.400	0.6	20.0
3-Nitrotoluene	Lin2		284950		0.393	0.400	-1.7	20.0
2-Amino-4,6-dinitrotoluene	Lin2		406040		0.393	0.400	-1.7	20.0
1,3,5-Trinitrobenzene	Lin2		461250		0.407	0.400	1.6	20.0
2,6-Dinitrotoluene	Lin2		285640		0.397	0.400	-0.8	20.0
2,4-Dinitrotoluene	Lin2		570750		0.405	0.400	1.1	20.0
Tetryl	Lin2		337188		0.393	0.400	-1.8	20.0
2,4,6-Trinitrotoluene	Lin2		405938		0.416	0.400	3.9	20.0
PETN	Lin2		128575		4.13	4.00	3.3	20.0
1,2-Dinitrobenzene	Lin2		274498		0.404	0.400	1.0	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Lab Sample ID: ICV 280-347397/16 Calibration Date: 10/19/2016 16:53

Instrument ID: CHHPLC_G2_LUNA Calib Start Date: 10/19/2016 12:13

GC Column: Luna-phenylhex ID: 4.60(mm) Calib End Date: 10/19/2016 16:18

Lab File ID: 011-1501.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.85	6.69	6.99
Picric acid	8.41	8.20	8.50
RDX	8.91	8.74	9.04
Nitrobenzene	11.67	11.49	11.79
3,5-Dinitroaniline	14.61	14.42	14.72
1,3-Dinitrobenzene	15.04	14.86	15.16
Nitroglycerin	15.13	14.95	15.25
2-Nitrotoluene	15.94	15.75	16.05
4-Nitrotoluene	16.24	16.06	16.36
4-Amino-2,6-dinitrotoluene	16.73	16.54	16.84
3-Nitrotoluene	17.14	16.95	17.25
2-Amino-4,6-dinitrotoluene	17.71	17.53	17.83
1,3,5-Trinitrobenzene	18.12	17.94	18.24
2,6-Dinitrotoluene	19.13	18.95	19.25
2,4-Dinitrotoluene	19.67	19.49	19.79
Tetryl	22.91	22.73	23.03
2,4,6-Trinitrotoluene	23.84	23.65	23.95
PETN	24.53	24.35	24.65
1,2-Dinitrobenzene	12.68	12.49	12.79

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161020-52093.b\011-1501.D
Lims ID: ICV FULL 8330
Client ID:
Sample Type: ICV
Inject. Date: 19-Oct-2016 16:53:14 ALS Bottle#: 11 Worklist Smp#: 16
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 8330 Full ICV
Operator ID: ACF Instrument ID: CHHPLC_G2_LUNA
Sublist: chrom-G2_8330_Luna*sub1

Method: \\ChromNA\Denver\ChromData\G2_LUNA\20161020-52093.b\G2_8330_Luna.m
Limit Group: GCSV - 8330
Last Update: 21-Oct-2016 09:25:09 Calib Date: 19-Oct-2016 16:18:17
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\G2_LUNA\20161020-52093.b\010-1401.D

Column 1 : Luna-Phenyl hexyl (4.60 mm) Det: LC DAD1A, 254 nm
Process Host: XAWRK032

First Level Reviewer: freya Date: 20-Oct-2016 11:50:13

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
2 2,6-diamino-4-nitrotoluene	1	4.286	4.296	-0.010	153911	0.4000	0.4034	
3 2,4-diamino-6-nitrotoluene	1	4.853	4.849	0.004	81776	0.4000	0.3899	
5 HMX	1	6.853	6.836	0.017	67958	0.4000	0.3897	
6 MNX	1	7.553	7.529	0.024	100170	0.4021	0.3929	
4 2,4,6-Trinitrophenol	1	8.406	8.349	0.057	66903	0.4000	0.4118	
7 RDX	1	8.913	8.889	0.024	83567	0.4000	0.4047	
8 Nitrobenzene	1	11.666	11.636	0.030	168952	0.4000	0.4125	
$ 9 1,2-Dinitrobenzene	1	12.679	12.643	0.036	109799	0.4000	0.4040	
10 3,5-Dinitroaniline	1	14.606	14.569	0.037	181239	0.4000	0.4586	
11 1,3-Dinitrobenzene	1	15.039	15.009	0.030	255911	0.4000	0.4278	
12 Nitroglycerin	2	15.126	15.096	0.030	686678	4.00	4.06	
13 o-Nitrotoluene	1	15.939	15.903	0.036	99098	0.4000	0.4022	
14 p-Nitrotoluene	1	16.239	16.209	0.030	92752	0.4000	0.4186	
15 4-Amino-2,6-dinitrotoluene	1	16.726	16.689	0.037	115042	0.4000	0.4024	
16 m-Nitrotoluene	1	17.139	17.103	0.036	113980	0.4000	0.3930	
17 2-Amino-4,6-dinitrotoluene	1	17.713	17.676	0.037	162416	0.4000	0.3934	
18 1,3,5-Trinitrobenzene	1	18.119	18.089	0.030	184500	0.4000	0.4065	
19 2,6-Dinitrotoluene	1	19.133	19.096	0.037	114256	0.4000	0.3967	
20 2,4-Dinitrotoluene	1	19.673	19.636	0.037	228300	0.4000	0.4046	
21 Tetryl	1	22.913	22.876	0.037	134875	0.4000	0.3930	
22 2,4,6-Trinitrotoluene	1	23.839	23.803	0.036	162375	0.4000	0.4156	
23 PETN	2	24.533	24.503	0.030	514298	4.00	4.13	

Reagents:

8330Surrogate_00089	Amount Added:	40.00	Units: uL
3,5-DNA LCS_00027	Amount Added:	40.00	Units: uL
8330 LCS_00071	Amount Added:	40.00	Units: uL
8330DiaminLCS_00023	Amount Added:	40.00	Units: uL

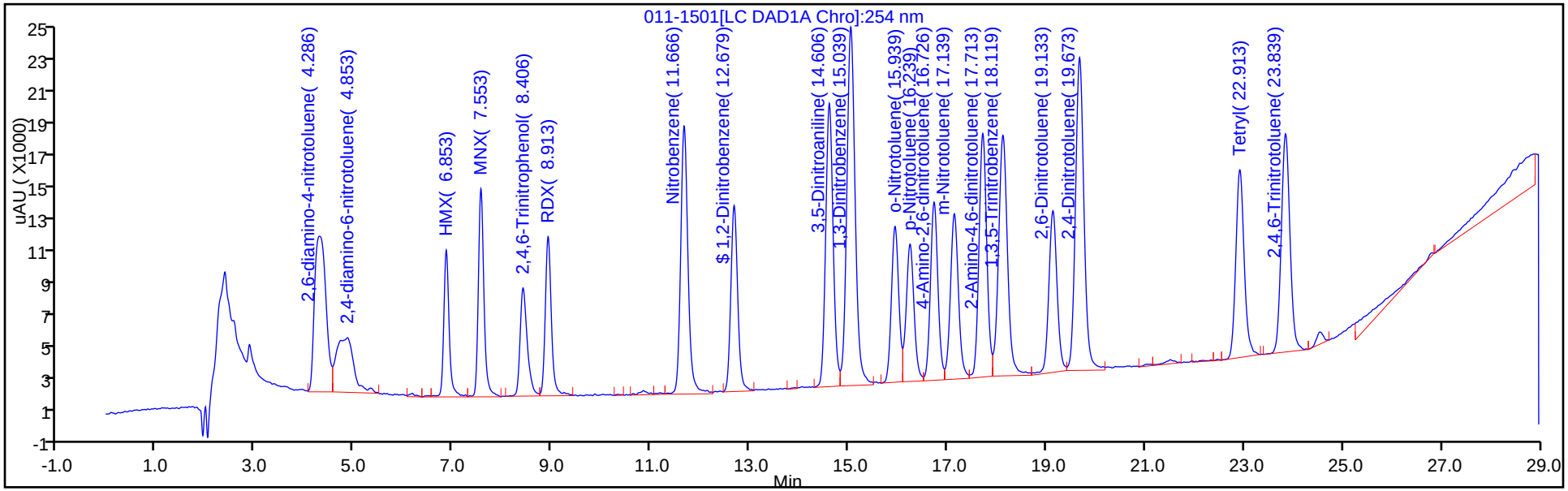
Report Date: 21-Oct-2016 09:25:12 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

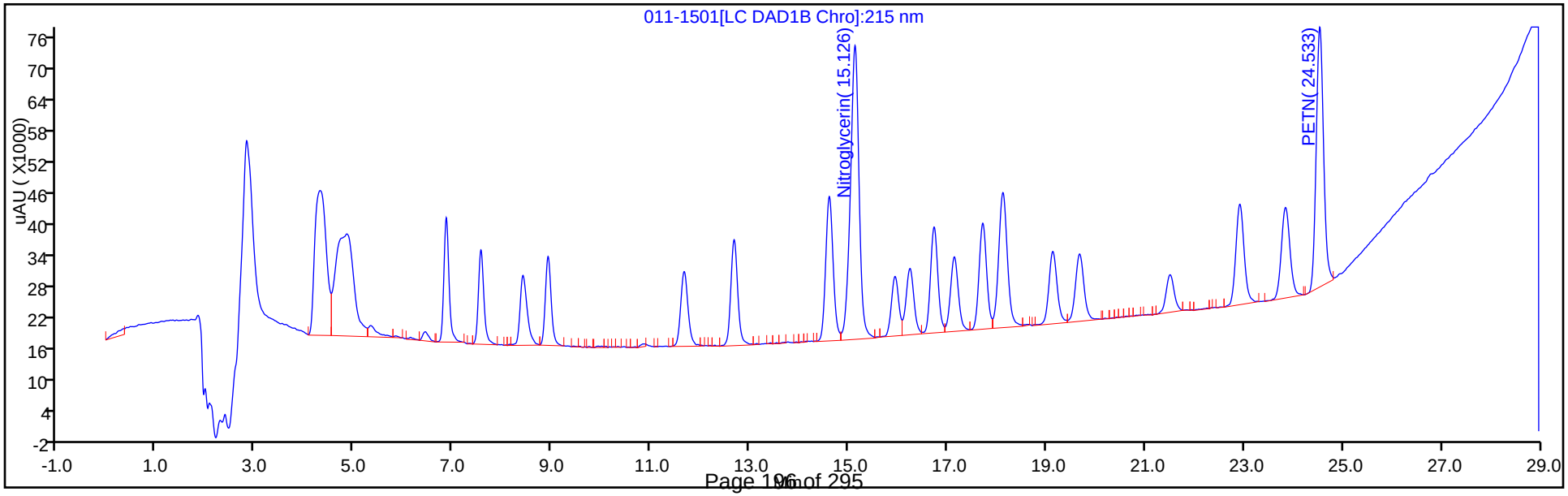
Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161020-52093.b\011-1501.D

Injection Date:	19-Oct-2016 16:53:14	Instrument ID:	CHHPLC_G2_LUNA	Operator ID:	ACF
Lims ID:	ICV FULL 8330			Worklist Smp#:	16
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	11
Method:	G2_8330_Luna	Limit Group:	GCSV - 8330		

Column: Luna-Phenyl hexyl (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Lab Sample ID: CCV 280-354108/27 Calibration Date: 12/03/2016 23:39

Instrument ID: CHHPLC_G2_LUNA Calib Start Date: 10/19/2016 12:13

GC Column: Luna-phenylhex ID: 4.60(mm) Calib End Date: 10/19/2016 16:18

Lab File ID: 12031627.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Lin2		178500		0.254	0.250	1.7	20.0
Picric acid	Lin2		164080		0.249	0.250	-0.5	20.0
RDX	Lin2		216336		0.258	0.250	3.2	20.0
Nitrobenzene	Lin2		393936		0.239	0.250	-4.4	20.0
3,5-Dinitroaniline	Lin2		398200		0.249	0.250	-0.5	20.0
1,3-Dinitrobenzene	Lin2		616564		0.256	0.250	2.3	20.0
Nitroglycerin	Lin2		171135		2.53	2.50	1.0	20.0
2-Nitrotoluene	Lin2		243232		0.246	0.250	-1.7	20.0
4-Nitrotoluene	Lin2		219632		0.244	0.250	-2.3	20.0
4-Amino-2,6-dinitrotoluene	Lin2		292824		0.253	0.250	1.2	20.0
3-Nitrotoluene	Lin2		279796		0.239	0.250	-4.5	20.0
2-Amino-4,6-dinitrotoluene	Lin2		416712		0.250	0.250	-0.0	20.0
1,3,5-Trinitrobenzene	Lin2		452736		0.248	0.250	-0.8	20.0
2,6-Dinitrotoluene	Lin2		287188		0.247	0.250	-1.3	20.0
2,4-Dinitrotoluene	Lin2		590784		0.259	0.250	3.5	20.0
Tetryl	Lin2		335632		0.241	0.250	-3.5	20.0
2,4,6-Trinitrotoluene	Lin2		387768		0.247	0.250	-1.3	20.0
PETN	Lin2		128288		2.58	2.50	3.3	20.0
1,2-Dinitrobenzene	Lin2		284224		0.260	0.250	3.9	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Lab Sample ID: CCV 280-354108/27 Calibration Date: 12/03/2016 23:39

Instrument ID: CHHPLC_G2_LUNA Calib Start Date: 10/19/2016 12:13

GC Column: Luna-phenylhex ID: 4.60(mm) Calib End Date: 10/19/2016 16:18

Lab File ID: 12031627.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.67	6.52	6.82
Picric acid	8.25	8.10	8.40
RDX	8.66	8.51	8.81
Nitrobenzene	11.36	11.21	11.51
3,5-Dinitroaniline	14.23	14.08	14.38
1,3-Dinitrobenzene	14.66	14.51	14.81
Nitroglycerin	14.73	14.58	14.88
2-Nitrotoluene	15.51	15.36	15.66
4-Nitrotoluene	15.81	15.66	15.96
4-Amino-2,6-dinitrotoluene	16.29	16.14	16.44
3-Nitrotoluene	16.70	16.55	16.85
2-Amino-4,6-dinitrotoluene	17.27	17.12	17.42
1,3,5-Trinitrobenzene	17.69	17.54	17.84
2,6-Dinitrotoluene	18.67	18.52	18.82
2,4-Dinitrotoluene	19.20	19.05	19.35
Tetryl	22.41	22.26	22.56
2,4,6-Trinitrotoluene	23.34	23.19	23.49
PETN	24.06	23.91	24.21
1,2-Dinitrobenzene	12.33	12.18	12.48

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161203-53805.b\12031627.D
Lims ID: CCV MAIN L4
Client ID:
Sample Type: CCV
Inject. Date: 03-Dec-2016 23:39:06 ALS Bottle#: 2 Worklist Smp#: 27
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: CCV MAIN L4
Misc. Info.: 280-0053805-027
Operator ID: dmj Instrument ID: CHHPLC_G2_LUNA
Sublist: chrom-G2_8330_Luna*sub1

Method: \\ChromNA\Denver\ChromData\G2_LUNA\20161203-53805.b\G2_8330_Luna.m
Limit Group: GCSV - 8330
Last Update: 04-Dec-2016 06:24:04 Calib Date: 19-Oct-2016 16:18:17
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\G2_LUNA\20161020-52093.b\010-1401.D

Column 1 : Luna-Phenyl hexyl (4.60 mm) Det: LC DAD1A, 254 nm
Process Host: XAWRK022

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
2 2,6-diamino-4-nitrotoluene	1	4.214	4.214	0.000	99828	0.2500	0.2607	
3 2,4-diamino-6-nitrotoluene	1	4.727	4.727	0.000	60637	0.2500	0.2867	
5 HMX	1	6.667	6.667	0.000	44625	0.2500	0.2542	
6 MNX	1	7.347	7.347	0.000	65513	0.2487	0.2555	
4 2,4,6-Trinitrophenol	1	8.254	8.254	0.000	41020	0.2500	0.2487	
7 RDX	1	8.660	8.660	0.000	54084	0.2500	0.2581	
8 Nitrobenzene	1	11.360	11.360	0.000	98484	0.2500	0.2389	
$ 9 1,2-Dinitrobenzene	1	12.334	12.334	0.000	71056	0.2500	0.2597	
10 3,5-Dinitroaniline	1	14.227	14.227	0.000	99550	0.2500	0.2486	
11 1,3-Dinitrobenzene	1	14.660	14.660	0.000	154141	0.2500	0.2558	
12 Nitroglycerin	2	14.727	14.727	0.000	427837	2.50	2.53	
13 o-Nitrotoluene	1	15.514	15.514	0.000	60808	0.2500	0.2457	
14 p-Nitrotoluene	1	15.807	15.807	0.000	54908	0.2500	0.2442	
15 4-Amino-2,6-dinitrotoluene	1	16.294	16.294	0.000	73206	0.2500	0.2529	
16 m-Nitrotoluene	1	16.700	16.700	0.000	69949	0.2500	0.2387	
17 2-Amino-4,6-dinitrotoluene	1	17.274	17.274	0.000	104178	0.2500	0.2499	
18 1,3,5-Trinitrobenzene	1	17.687	17.687	0.000	113184	0.2500	0.2480	
19 2,6-Dinitrotoluene	1	18.674	18.674	0.000	71797	0.2500	0.2467	
20 2,4-Dinitrotoluene	1	19.200	19.200	0.000	147696	0.2500	0.2589	
21 Tetryl	1	22.414	22.414	0.000	83908	0.2500	0.2411	
22 2,4,6-Trinitrotoluene	1	23.340	23.340	0.000	96942	0.2500	0.2467	
23 PETN	2	24.060	24.060	0.000	320721	2.50	2.58	

Reagents:

8330IntermStk_00041 Amount Added: 0.01 Units: mL
8330_ADDs_00009 Amount Added: 0.01 Units: mL

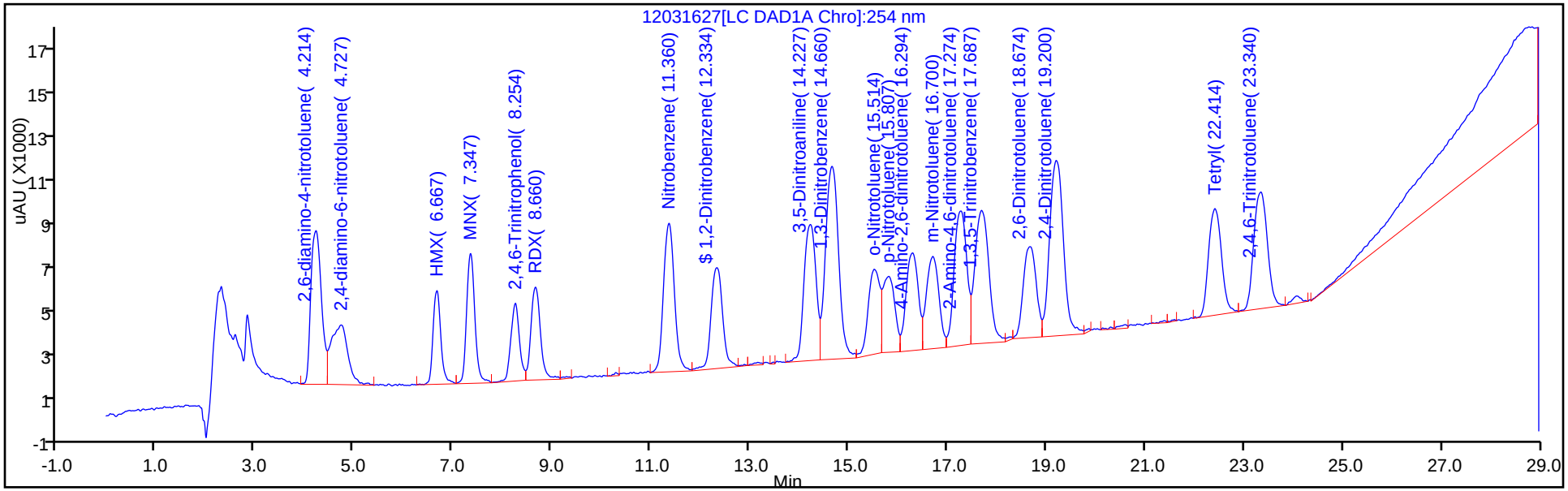
Report Date: 04-Dec-2016 06:24:04 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

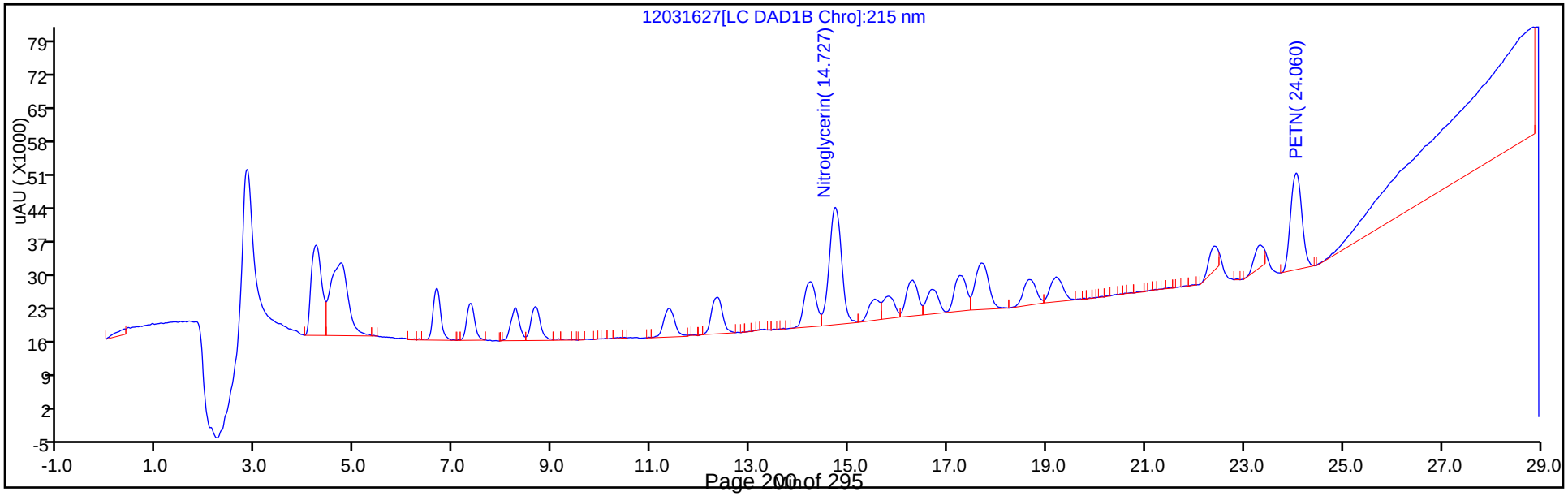
Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161203-53805.b\12031627.D

Injection Date:	03-Dec-2016 23:39:06	Instrument ID:	CHHPLC_G2_LUNA	Operator ID:	dmj
Lims ID:	CCV MAIN L4			Worklist Smp#:	27
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	2
Method:	G2_8330_Luna	Limit Group:	GCSV - 8330		

Column: Luna-Phenyl hexyl (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Lab Sample ID: CCV 280-354108/37 Calibration Date: 12/04/2016 05:28

Instrument ID: CHHPLC_G2_LUNA Calib Start Date: 10/19/2016 12:13

GC Column: Luna-phenylhex ID: 4.60(mm) Calib End Date: 10/19/2016 16:18

Lab File ID: 12031637.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Lin2		179024		0.255	0.250	2.0	20.0
Picric acid	Lin2		169328		0.257	0.250	2.8	20.0
RDX	Lin2		214840		0.256	0.250	2.5	20.0
Nitrobenzene	Lin2		396336		0.240	0.250	-3.9	20.0
3,5-Dinitroaniline	Lin2		401484		0.251	0.250	0.3	20.0
1,3-Dinitrobenzene	Lin2		611912		0.254	0.250	1.5	20.0
Nitroglycerin	Lin2		173902		2.57	2.50	2.6	20.0
2-Nitrotoluene	Lin2		245296		0.248	0.250	-0.9	20.0
4-Nitrotoluene	Lin2		221836		0.247	0.250	-1.3	20.0
4-Amino-2,6-dinitrotoluene	Lin2		294992		0.255	0.250	1.9	20.0
3-Nitrotoluene	Lin2		280072		0.239	0.250	-4.4	20.0
2-Amino-4,6-dinitrotoluene	Lin2		417420		0.250	0.250	0.1	20.0
1,3,5-Trinitrobenzene	Lin2		459848		0.252	0.250	0.8	20.0
2,6-Dinitrotoluene	Lin2		306004		0.263	0.250	5.3	20.0
2,4-Dinitrotoluene	Lin2		593480		0.260	0.250	4.0	20.0
Tetryl	Lin2		336280		0.242	0.250	-3.4	20.0
2,4,6-Trinitrotoluene	Lin2		383728		0.244	0.250	-2.4	20.0
PETN	Lin2		127306		2.56	2.50	2.5	20.0
1,2-Dinitrobenzene	Lin2		290340		0.265	0.250	6.2	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Lab Sample ID: CCV 280-354108/37 Calibration Date: 12/04/2016 05:28

Instrument ID: CHHPLC_G2_LUNA Calib Start Date: 10/19/2016 12:13

GC Column: Luna-phenylhex ID: 4.60(mm) Calib End Date: 10/19/2016 16:18

Lab File ID: 12031637.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.66	6.51	6.81
Picric acid	8.23	8.08	8.38
RDX	8.66	8.51	8.81
Nitrobenzene	11.35	11.20	11.50
3,5-Dinitroaniline	14.21	14.06	14.36
1,3-Dinitrobenzene	14.66	14.51	14.81
Nitroglycerin	14.72	14.57	14.87
2-Nitrotoluene	15.51	15.36	15.66
4-Nitrotoluene	15.81	15.66	15.96
4-Amino-2,6-dinitrotoluene	16.28	16.13	16.43
3-Nitrotoluene	16.69	16.54	16.84
2-Amino-4,6-dinitrotoluene	17.26	17.11	17.41
1,3,5-Trinitrobenzene	17.68	17.53	17.83
2,6-Dinitrotoluene	18.67	18.52	18.82
2,4-Dinitrotoluene	19.19	19.04	19.34
Tetryl	22.43	22.28	22.58
2,4,6-Trinitrotoluene	23.34	23.19	23.49
PETN	24.07	23.92	24.22
1,2-Dinitrobenzene	12.33	12.18	12.48

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161203-53805.b\12031637.D
Lims ID: CCV MAIN L4
Client ID:
Sample Type: CCV
Inject. Date: 04-Dec-2016 05:28:56 ALS Bottle#: 2 Worklist Smp#: 37
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: CCV MAIN L4
Misc. Info.: 280-0053805-037
Operator ID: dmj Instrument ID: CHHPLC_G2_LUNA
Sublist: chrom-G2_8330_Luna*sub1

Method: \\ChromNA\Denver\ChromData\G2_LUNA\20161203-53805.b\G2_8330_Luna.m
Limit Group: GCSV - 8330
Last Update: 04-Dec-2016 06:24:14 Calib Date: 19-Oct-2016 16:18:17
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\G2_LUNA\20161020-52093.b\010-1401.D

Column 1 : Luna-Phenyl hexyl (4.60 mm) Det: LC DAD1A, 254 nm
Process Host: XAWRK022

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
2 2,6-diamino-4-nitrotoluene	1	4.221	4.221	0.000	99956	0.2500	0.2610	
3 2,4-diamino-6-nitrotoluene	1	4.734	4.734	0.000	59249	0.2500	0.2799	
5 HMX	1	6.661	6.661	0.000	44756	0.2500	0.2549	
6 MNX	1	7.348	7.348	0.000	66499	0.2487	0.2594	
4 2,4,6-Trinitrophenol	1	8.234	8.234	0.000	42332	0.2500	0.2570	
7 RDX	1	8.661	8.661	0.000	53710	0.2500	0.2562	
8 Nitrobenzene	1	11.354	11.354	0.000	99084	0.2500	0.2404	
$ 9 1,2-Dinitrobenzene	1	12.327	12.327	0.000	72585	0.2500	0.2654	
10 3,5-Dinitroaniline	1	14.207	14.207	0.000	100371	0.2500	0.2508	
11 1,3-Dinitrobenzene	1	14.661	14.661	0.000	152978	0.2500	0.2539	
12 Nitroglycerin	2	14.721	14.721	0.000	434755	2.50	2.57	
13 o-Nitrotoluene	1	15.507	15.507	0.000	61324	0.2500	0.2478	
14 p-Nitrotoluene	1	15.807	15.807	0.000	55459	0.2500	0.2468	
15 4-Amino-2,6-dinitrotoluene	1	16.281	16.281	0.000	73748	0.2500	0.2549	
16 m-Nitrotoluene	1	16.694	16.694	0.000	70018	0.2500	0.2389	
17 2-Amino-4,6-dinitrotoluene	1	17.261	17.261	0.000	104355	0.2500	0.2503	
18 1,3,5-Trinitrobenzene	1	17.681	17.681	0.000	114962	0.2500	0.2520	
19 2,6-Dinitrotoluene	1	18.667	18.667	0.000	76501	0.2500	0.2634	
20 2,4-Dinitrotoluene	1	19.194	19.194	0.000	148370	0.2500	0.2601	
21 Tetryl	1	22.434	22.434	0.000	84070	0.2500	0.2416	
22 2,4,6-Trinitrotoluene	1	23.341	23.341	0.000	95932	0.2500	0.2441	
23 PETN	2	24.068	24.068	0.000	318265	2.50	2.56	

Reagents:

8330IntermStk_00041 Amount Added: 0.01 Units: mL
8330_ADDs_00009 Amount Added: 0.01 Units: mL

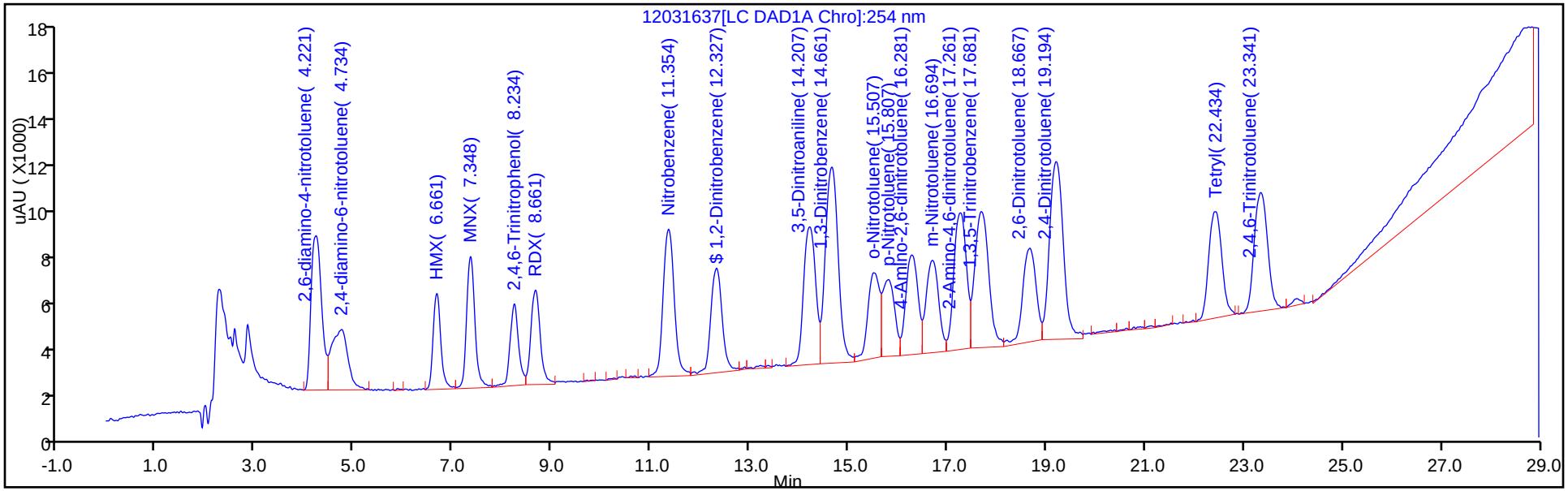
Report Date: 04-Dec-2016 06:24:15 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

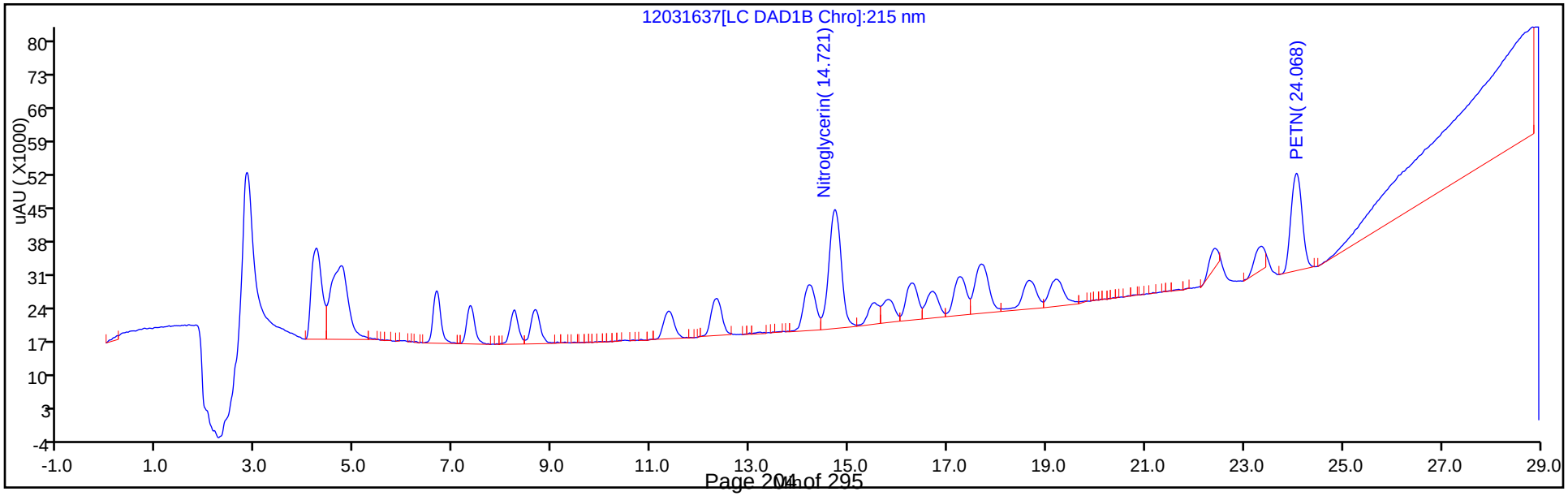
Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161203-53805.b\12031637.D

Injection Date:	04-Dec-2016 05:28:56	Instrument ID:	CHHPLC_G2_LUNA	Operator ID:	dmj
Lims ID:	CCV MAIN L4			Worklist Smp#:	37
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	2
Method:	G2_8330_Luna	Limit Group:	GCSV - 8330		

Column: Luna-Phenyl hexyl (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Lab Sample ID: ICV 280-348785/18 Calibration Date: 10/28/2016 20:44

Instrument ID: CHHPLC_X3 Calib Start Date: 10/28/2016 17:40

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 10/28/2016 20:21

Lab File ID: 071-1801.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Lin2		81940		0.354	0.400	-11.5	20.0
RDX	Lin2		103353		0.383	0.400	-4.1	20.0
Picric acid	Lin2		83220		0.395	0.400	-1.2	20.0
1,3,5-Trinitrobenzene	Lin2		227110		0.393	0.400	-1.7	20.0
1,3-Dinitrobenzene	Lin2		301395		0.410	0.400	2.6	20.0
Nitrobenzene	Lin2		198305		0.393	0.400	-1.9	20.0
Tetryl	Lin2		175620		0.394	0.400	-1.6	20.0
Nitroglycerin	Lin2		67405		3.76	4.00	-5.9	20.0
2,4,6-Trinitrotoluene	Lin2		206903		0.408	0.400	1.9	20.0
4-Amino-2,6-dinitrotoluene	Lin2		150430		0.388	0.400	-3.0	20.0
2-Amino-4,6-dinitrotoluene	Lin2		204710		0.383	0.400	-4.3	20.0
2,6-Dinitrotoluene	Lin2		140530		0.377	0.400	-5.6	20.0
2,4-Dinitrotoluene	Lin2		280453		0.389	0.400	-2.8	20.0
2-Nitrotoluene	Lin2		125093		0.385	0.400	-3.7	20.0
4-Nitrotoluene	Lin2		111648		0.398	0.400	-0.6	20.0
3-Nitrotoluene	Lin2		145758		0.396	0.400	-0.9	20.0
PETN	Lin2		69959		3.90	4.00	-2.4	20.0
1,2-Dinitrobenzene	Lin2		138960		0.396	0.400	-1.1	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Lab Sample ID: ICV 280-348785/18 Calibration Date: 10/28/2016 20:44

Instrument ID: CHHPLC_X3 Calib Start Date: 10/28/2016 17:40

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 10/28/2016 20:21

Lab File ID: 071-1801.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.72	6.62	6.82
RDX	7.88	7.78	7.98
Picric acid	8.17	8.07	8.27
1,3,5-Trinitrobenzene	9.08	8.98	9.18
1,3-Dinitrobenzene	9.78	9.68	9.88
Nitrobenzene	10.18	10.08	10.28
Tetryl	10.57	10.47	10.67
Nitroglycerin	11.09	10.99	11.19
2,4,6-Trinitrotoluene	11.54	11.44	11.64
4-Amino-2,6-dinitrotoluene	11.76	11.66	11.86
2-Amino-4,6-dinitrotoluene	12.04	11.94	12.14
2,6-Dinitrotoluene	12.18	12.08	12.28
2,4-Dinitrotoluene	12.37	12.27	12.47
2-Nitrotoluene	13.23	13.13	13.33
4-Nitrotoluene	13.68	13.58	13.78
3-Nitrotoluene	14.30	14.20	14.40
PETN	15.51	15.41	15.61
1,2-Dinitrobenzene	8.94	8.84	9.04

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\071-1801.D
Lims ID: ICV MAIN
Client ID:
Sample Type: ICV
Inject. Date: 28-Oct-2016 20:44:42 ALS Bottle#: 71 Worklist Smp#: 18
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 8330 ICV
Misc. Info.: 280-0051662-007
Operator ID: ACF Instrument ID: CHHPLC_X3
Sublist:

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 29-Oct-2016 09:48:12 Calib Date: 28-Oct-2016 20:21:37
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK032

First Level Reviewer: freya Date: 29-Oct-2016 08:08:09

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.717	6.717	0.000	32776	0.4000	0.3541	
4 MNX	1	7.451	7.451	0.000	50980	0.4021	0.3719	
5 RDX	1	7.884	7.884	0.000	41341	0.4000	0.3835	
6 2,4,6-Trinitrophenol	1	8.171	8.171	0.000	33288	0.4000	0.3952	
$ 7 1,2-Dinitrobenzene	1	8.944	8.944	0.000	55584	0.4000	0.3957	
8 1,3,5-Trinitrobenzene	1	9.084	9.084	0.000	90844	0.4000	0.3932	
9 1,3-Dinitrobenzene	1	9.777	9.777	0.000	120558	0.4000	0.4104	
11 Nitrobenzene	1	10.177	10.177	0.000	79322	0.4000	0.3926	
12 Tetryl	1	10.571	10.571	0.000	70248	0.4000	0.3936	
13 Nitroglycerin	2	11.091	11.091	0.000	269619	4.00	3.76	
14 2,4,6-Trinitrotoluene	1	11.537	11.537	0.000	82761	0.4000	0.4076	
15 4-Amino-2,6-dinitrotoluene	1	11.757	11.757	0.000	60172	0.4000	0.3880	
16 2-Amino-4,6-dinitrotoluene	1	12.037	12.037	0.000	81884	0.4000	0.3827	
17 2,6-Dinitrotoluene	1	12.184	12.184	0.000	56212	0.4000	0.3775	
18 2,4-Dinitrotoluene	1	12.371	12.371	0.000	112181	0.4000	0.3887	
19 o-Nitrotoluene	1	13.231	13.231	0.000	50037	0.4000	0.3851	
20 p-Nitrotoluene	1	13.684	13.684	0.000	44659	0.4000	0.3977	
21 m-Nitrotoluene	1	14.304	14.304	0.000	58303	0.4000	0.3964	
22 PETN	2	15.511	15.511	0.000	279835	4.00	3.90	

Reagents:

8330 LCS_00072 Amount Added: 0.04 Units: mL
8330Surrogate_00090 Amount Added: 0.04 Units: mL

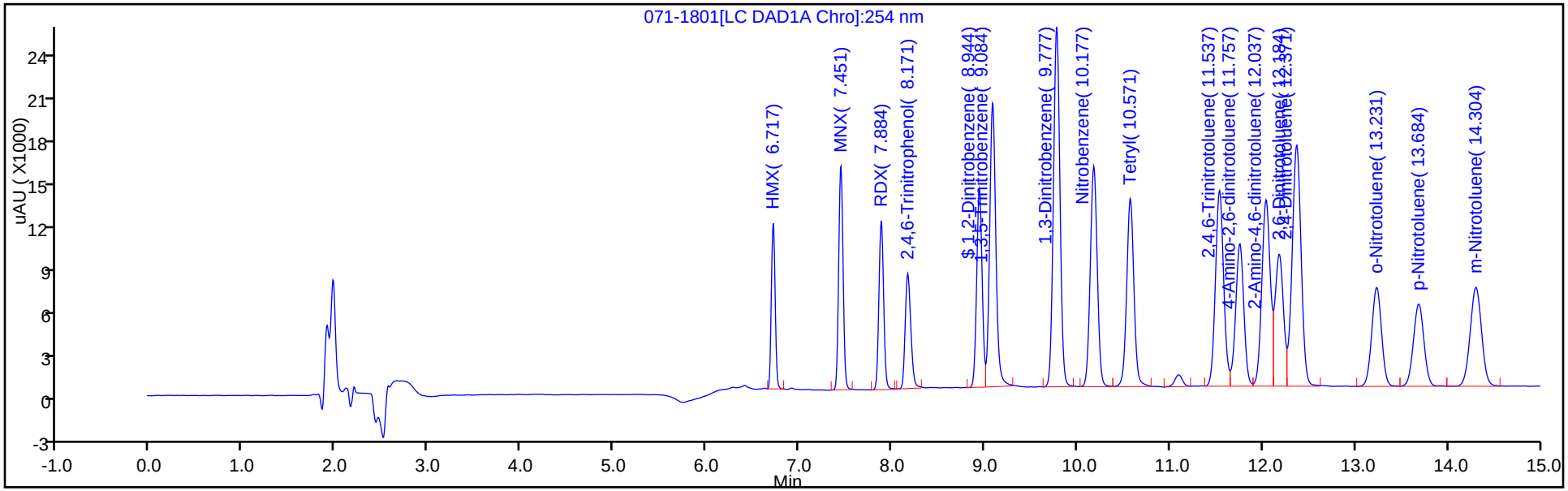
Report Date: 29-Oct-2016 09:48:12 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

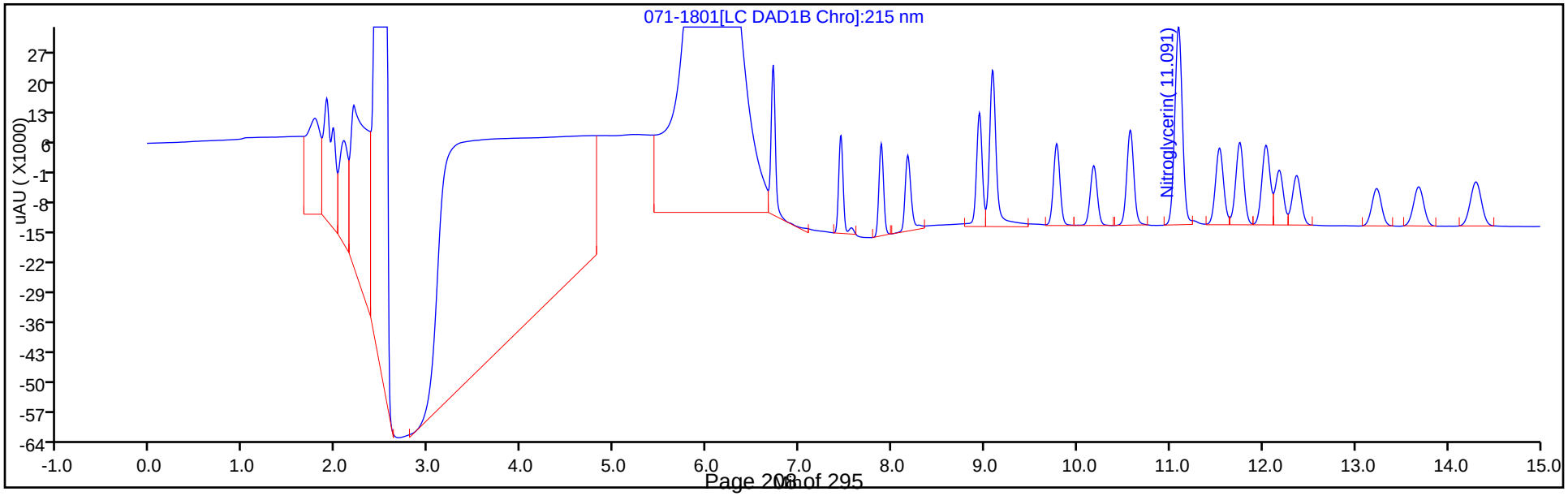
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\071-1801.D

Injection Date:	28-Oct-2016 20:44:42	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	ICV MAIN			Worklist Smp#:	18
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	71
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Lab Sample ID: CCV 280-353517/42 Calibration Date: 11/30/2016 04:58

Instrument ID: CHHPLC_X3 Calib Start Date: 10/28/2016 17:40

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 10/28/2016 20:21

Lab File ID: 11291642.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Lin2		90688		0.245	0.250	-2.1	20.0
RDX	Lin2		108496		0.251	0.250	0.4	20.0
Picric acid	Lin2		87104		0.258	0.250	3.2	20.0
1,3,5-Trinitrobenzene	Lin2		229100		0.248	0.250	-0.9	20.0
1,3-Dinitrobenzene	Lin2		292216		0.249	0.250	-0.5	20.0
Nitrobenzene	Lin2		198756		0.246	0.250	-1.6	20.0
Tetryl	Lin2		175564		0.246	0.250	-1.7	20.0
Nitroglycerin	Lin2		70204		2.45	2.50	-2.1	20.0
2,4,6-Trinitrotoluene	Lin2		200340		0.246	0.250	-1.7	20.0
4-Amino-2,6-dinitrotoluene	Lin2		155800		0.250	0.250	0.0	20.0
2-Amino-4,6-dinitrotoluene	Lin2		214412		0.250	0.250	0.0	20.0
2,6-Dinitrotoluene	Lin2		144400		0.242	0.250	-3.1	20.0
2,4-Dinitrotoluene	Lin2		290392		0.251	0.250	0.5	20.0
2-Nitrotoluene	Lin2		127696		0.245	0.250	-1.8	20.0
4-Nitrotoluene	Lin2		110572		0.246	0.250	-1.5	20.0
3-Nitrotoluene	Lin2		141264		0.239	0.250	-4.2	20.0
PETN	Lin2		69832		2.43	2.50	-2.9	20.0
1,2-Dinitrobenzene	Lin2		136564		0.243	0.250	-2.9	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Lab Sample ID: CCV 280-353517/42 Calibration Date: 11/30/2016 04:58

Instrument ID: CHHPLC_X3 Calib Start Date: 10/28/2016 17:40

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 10/28/2016 20:21

Lab File ID: 11291642.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.74	6.62	6.82
RDX	7.92	7.79	7.99
Picric acid	8.24	8.09	8.29
1,3,5-Trinitrobenzene	9.12	8.99	9.19
1,3-Dinitrobenzene	9.82	9.68	9.88
Nitrobenzene	10.22	10.08	10.28
Tetryl	10.62	10.47	10.67
Nitroglycerin	11.14	10.99	11.19
2,4,6-Trinitrotoluene	11.58	11.43	11.63
4-Amino-2,6-dinitrotoluene	11.80	11.64	11.84
2-Amino-4,6-dinitrotoluene	12.08	11.93	12.13
2,6-Dinitrotoluene	12.23	12.07	12.27
2,4-Dinitrotoluene	12.42	12.27	12.47
2-Nitrotoluene	13.28	13.13	13.33
4-Nitrotoluene	13.74	13.58	13.78
3-Nitrotoluene	14.38	14.19	14.39
PETN	15.60	15.35	15.55
1,2-Dinitrobenzene	8.99	8.85	9.05

Report Date: 02-Dec-2016 20:42:22 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291642.D
Lims ID: CCV MAIN L4
Client ID:
Sample Type: CCV
Inject. Date: 30-Nov-2016 04:58:48 ALS Bottle#: 37 Worklist Smp#: 42
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: CCV MAIN L4
Misc. Info.: 280-0053651-042
Operator ID: asc Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 02-Dec-2016 20:42:22 Calib Date: 28-Oct-2016 23:49:21
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK023

First Level Reviewer: jonsrudd Date: 02-Dec-2016 19:56:34

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.736	6.720	0.016	22672	0.2500	0.2447	
4 MNX	1	7.476	7.454	0.022	33412	0.2487	0.2435	
5 RDX	1	7.923	7.894	0.029	27124	0.2500	0.2511	
6 2,4,6-Trinitrophenol	1	8.243	8.194	0.049	21776	0.2500	0.2581	
$ 7 1,2-Dinitrobenzene	1	8.989	8.954	0.035	34141	0.2500	0.2426	
8 1,3,5-Trinitrobenzene	1	9.123	9.094	0.029	57275	0.2500	0.2477	
9 1,3-Dinitrobenzene	1	9.816	9.780	0.036	73054	0.2500	0.2487	
11 Nitrobenzene	1	10.216	10.180	0.036	49689	0.2500	0.2461	
12 Tetryl	1	10.616	10.574	0.042	43891	0.2500	0.2458	
13 Nitroglycerin	2	11.136	11.087	0.049	175511	2.50	2.45	
14 2,4,6-Trinitrotoluene	1	11.583	11.534	0.049	50085	0.2500	0.2457	
15 4-Amino-2,6-dinitrotoluene	1	11.796	11.740	0.056	38950	0.2500	0.2501	
16 2-Amino-4,6-dinitrotoluene	1	12.083	12.027	0.056	53603	0.2500	0.2501	
17 2,6-Dinitrotoluene	1	12.229	12.174	0.055	36100	0.2500	0.2422	
18 2,4-Dinitrotoluene	1	12.416	12.367	0.049	72598	0.2500	0.2512	
19 o-Nitrotoluene	1	13.283	13.227	0.056	31924	0.2500	0.2454	
20 p-Nitrotoluene	1	13.743	13.680	0.063	27643	0.2500	0.2462	
21 m-Nitrotoluene	1	14.376	14.287	0.089	35316	0.2500	0.2395	M
22 PETN	2	15.596	15.447	0.149	174581	2.50	2.43	

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

8330IntermStk_00041 Amount Added: 0.01 Units: mL

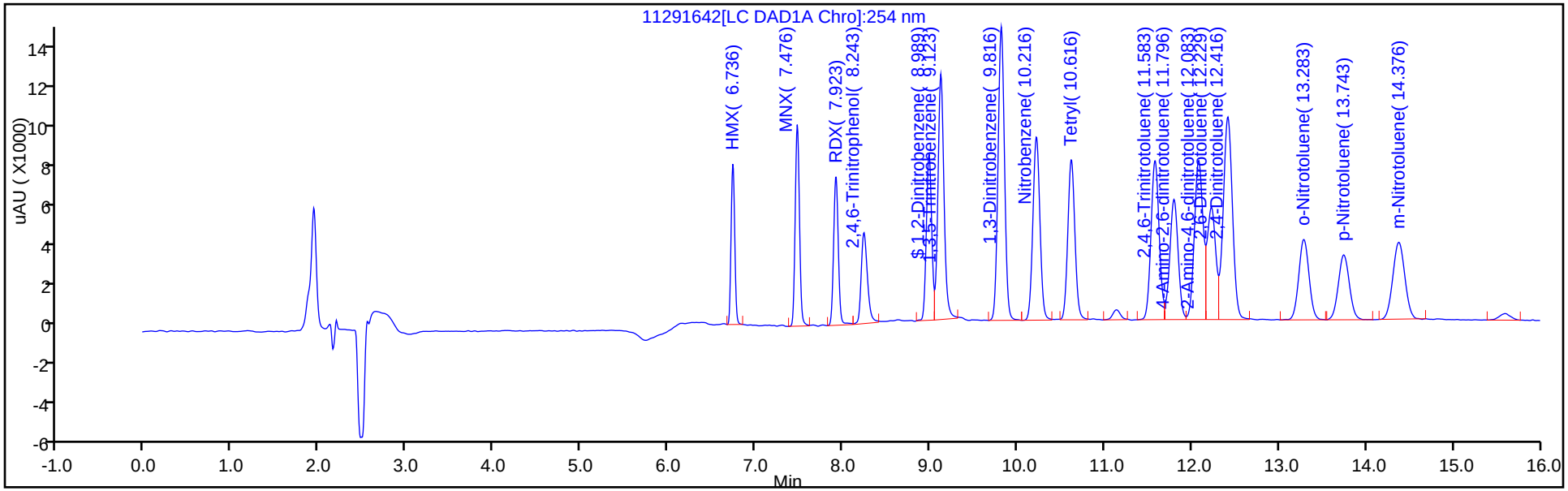
Report Date: 02-Dec-2016 20:42:22 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

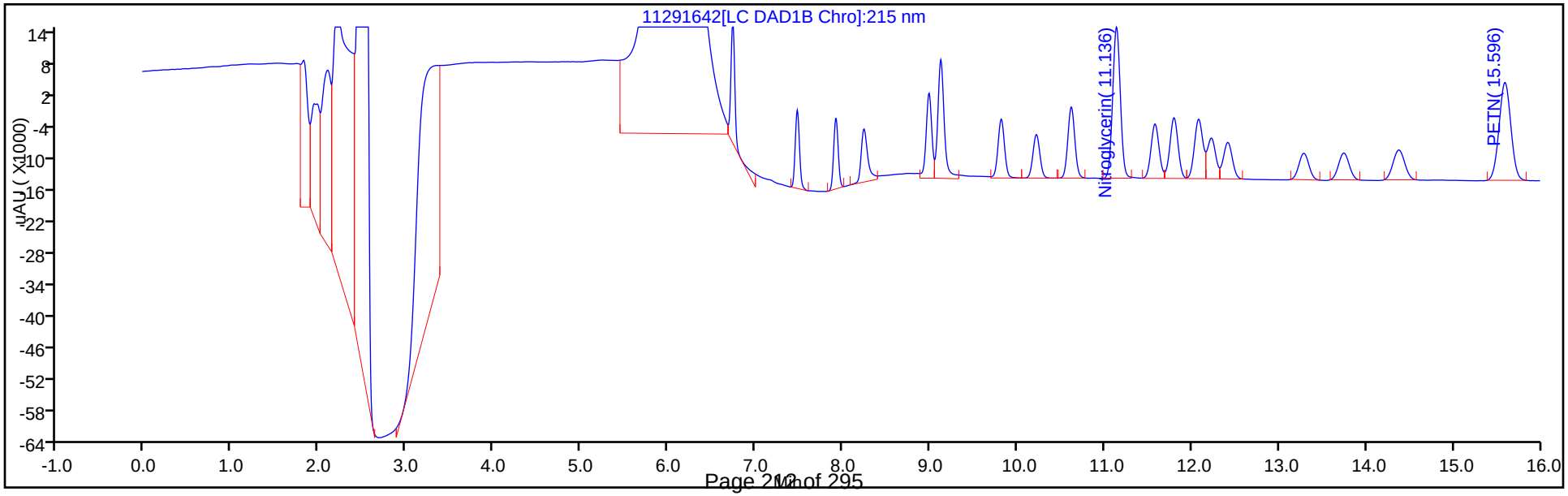
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291642.D

Injection Date:	30-Nov-2016 04:58:48	Instrument ID:	CHHPLC_X3	Operator ID:	asc
Lims ID:	CCV MAIN L4			Worklist Smp#:	42
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	37
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Manual Integration/User Assign Peak Report

TestAmerica Denver

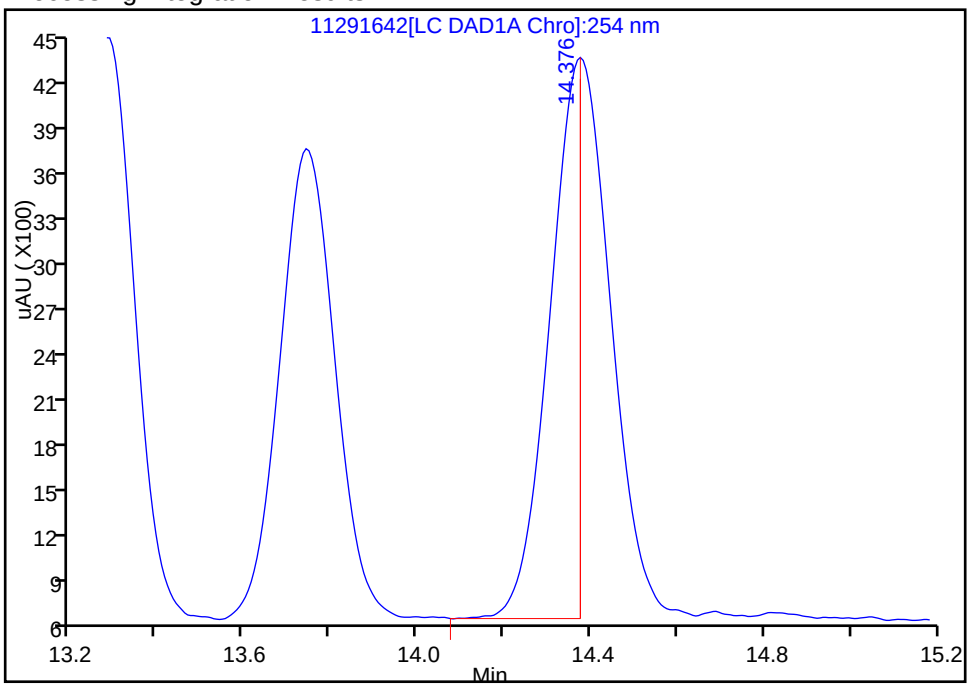
Data File:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291642.D				
Injection Date:	30-Nov-2016 04:58:48	Instrument ID:	CHHPLC_X3		
Lims ID:	CCV MAIN L4				
Client ID:					
Operator ID:	asc	ALS Bottle#:	37	Worklist Smp#:	42
Injection Vol:	100.0 ul	Dil. Factor:	1.0000		
Method:	8330_X3	Limit Group:	GCSV - 8330		
Column:	UltraCarb5uODS (20) (4.60 mm)	Detector	LC DAD1B, 254 nm		

21 m-Nitrotoluene, CAS: 99-08-1

Signal: 1

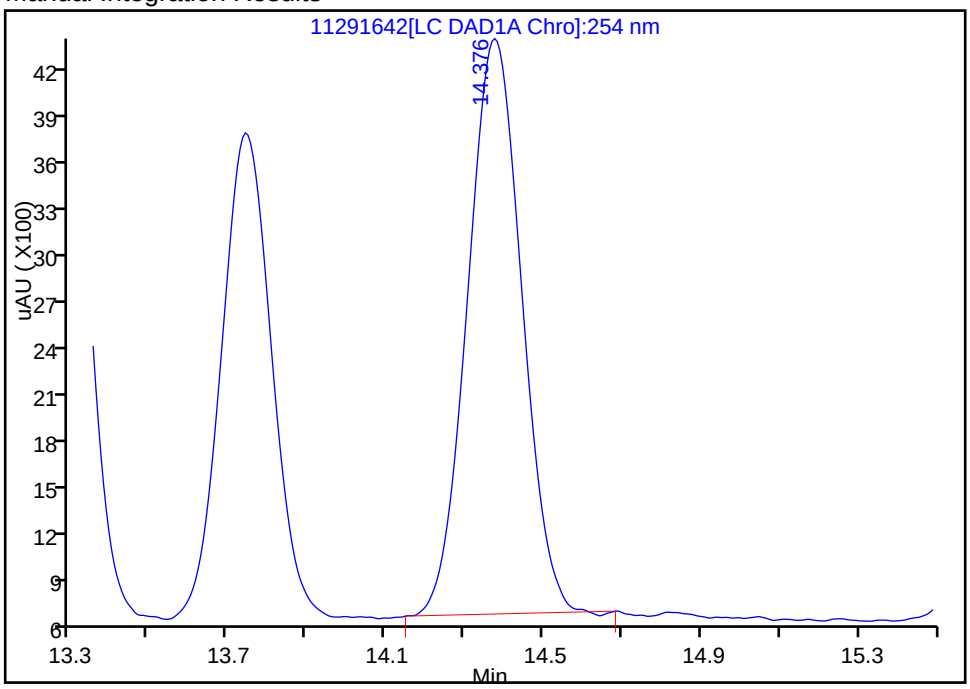
Processing Integration Results

RT: 14.38
Area: 17765
Amount: 0.119661
Amount Units: ug/mL



Manual Integration Results

RT: 14.38
Area: 35316
Amount: 0.239470
Amount Units: ug/mL



Reviewer: jonsrudd, 02-Dec-2016 19:56:34

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Lab Sample ID: CCV 280-353517/53 Calibration Date: 11/30/2016 09:14

Instrument ID: CHHPLC_X3 Calib Start Date: 10/28/2016 17:40

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 10/28/2016 20:21

Lab File ID: 11291653.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Lin2		92028		0.248	0.250	-0.7	20.0
RDX	Lin2		107344		0.248	0.250	-0.6	20.0
Picric acid	Lin2		85772		0.254	0.250	1.7	20.0
1,3,5-Trinitrobenzene	Lin2		228656		0.247	0.250	-1.1	20.0
1,3-Dinitrobenzene	Lin2		293708		0.250	0.250	0.0	20.0
Nitrobenzene	Lin2		199444		0.247	0.250	-1.2	20.0
Tetryl	Lin2		176960		0.248	0.250	-0.9	20.0
Nitroglycerin	Lin2		70539		2.46	2.50	-1.7	20.0
2,4,6-Trinitrotoluene	Lin2		200868		0.246	0.250	-1.4	20.0
4-Amino-2,6-dinitrotoluene	Lin2		155248		0.249	0.250	-0.3	20.0
2-Amino-4,6-dinitrotoluene	Lin2		211296		0.246	0.250	-1.4	20.0
2,6-Dinitrotoluene	Lin2		148972		0.250	0.250	-0.0	20.0
2,4-Dinitrotoluene	Lin2		290324		0.251	0.250	0.5	20.0
2-Nitrotoluene	Lin2		127096		0.244	0.250	-2.3	20.0
4-Nitrotoluene	Lin2		111460		0.248	0.250	-0.7	20.0
3-Nitrotoluene	Lin2		142164		0.241	0.250	-3.6	20.0
PETN	Lin2		70726		2.46	2.50	-1.6	20.0
1,2-Dinitrobenzene	Lin2		138180		0.246	0.250	-1.8	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Lab Sample ID: CCV 280-353517/53 Calibration Date: 11/30/2016 09:14

Instrument ID: CHHPLC_X3 Calib Start Date: 10/28/2016 17:40

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 10/28/2016 20:21

Lab File ID: 11291653.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.73	6.62	6.82
RDX	7.90	7.79	7.99
Picric acid	8.21	8.09	8.29
1,3,5-Trinitrobenzene	9.09	8.99	9.19
1,3-Dinitrobenzene	9.76	9.68	9.88
Nitrobenzene	10.15	10.08	10.28
Tetryl	10.53	10.47	10.67
Nitroglycerin	11.04	10.99	11.19
2,4,6-Trinitrotoluene	11.48	11.43	11.63
4-Amino-2,6-dinitrotoluene	11.68	11.64	11.84
2-Amino-4,6-dinitrotoluene	11.96	11.93	12.13
2,6-Dinitrotoluene	12.11	12.07	12.27
2,4-Dinitrotoluene	12.30	12.27	12.47
2-Nitrotoluene	13.14	13.13	13.33
4-Nitrotoluene	13.59	13.58	13.78
3-Nitrotoluene	14.19	14.19	14.39
PETN	15.33	15.35	15.55
1,2-Dinitrobenzene	8.95	8.85	9.05

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291653.D
Lims ID: CCV MAIN L4
Client ID:
Sample Type: CCV
Inject. Date: 30-Nov-2016 09:14:28 ALS Bottle#: 37 Worklist Smp#: 53
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: CCV MAIN L4
Misc. Info.: 280-0053651-053
Operator ID: asc Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 02-Dec-2016 20:42:39 Calib Date: 28-Oct-2016 23:49:21
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK023

First Level Reviewer: jonsrudd Date: 02-Dec-2016 20:01:43

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.734	6.720	0.014	23007	0.2500	0.2484	
4 MNX	1	7.467	7.454	0.013	33320	0.2487	0.2429	
5 RDX	1	7.900	7.894	0.006	26836	0.2500	0.2484	
6 2,4,6-Trinitrophenol	1	8.207	8.194	0.013	21443	0.2500	0.2541	
$ 7 1,2-Dinitrobenzene	1	8.947	8.954	-0.007	34545	0.2500	0.2455	
8 1,3,5-Trinitrobenzene	1	9.087	9.094	-0.007	57164	0.2500	0.2473	
9 1,3-Dinitrobenzene	1	9.760	9.780	-0.020	73427	0.2500	0.2500	
11 Nitrobenzene	1	10.154	10.180	-0.026	49861	0.2500	0.2469	
12 Tetryl	1	10.527	10.574	-0.047	44240	0.2500	0.2477	
13 Nitroglycerin	2	11.040	11.087	-0.047	176347	2.50	2.46	
14 2,4,6-Trinitrotoluene	1	11.480	11.534	-0.054	50217	0.2500	0.2464	
15 4-Amino-2,6-dinitrotoluene	1	11.680	11.740	-0.060	38812	0.2500	0.2492	
16 2-Amino-4,6-dinitrotoluene	1	11.960	12.027	-0.067	52824	0.2500	0.2465	
17 2,6-Dinitrotoluene	1	12.107	12.174	-0.067	37243	0.2500	0.2499	
18 2,4-Dinitrotoluene	1	12.300	12.367	-0.067	72581	0.2500	0.2512	
19 o-Nitrotoluene	1	13.140	13.227	-0.087	31774	0.2500	0.2443	
20 p-Nitrotoluene	1	13.587	13.680	-0.093	27865	0.2500	0.2482	
21 m-Nitrotoluene	1	14.187	14.287	-0.100	35541	0.2500	0.2410	
22 PETN	2	15.327	15.447	-0.120	176816	2.50	2.46	

Reagents:

8330IntermStk_00041 Amount Added: 0.01 Units: mL

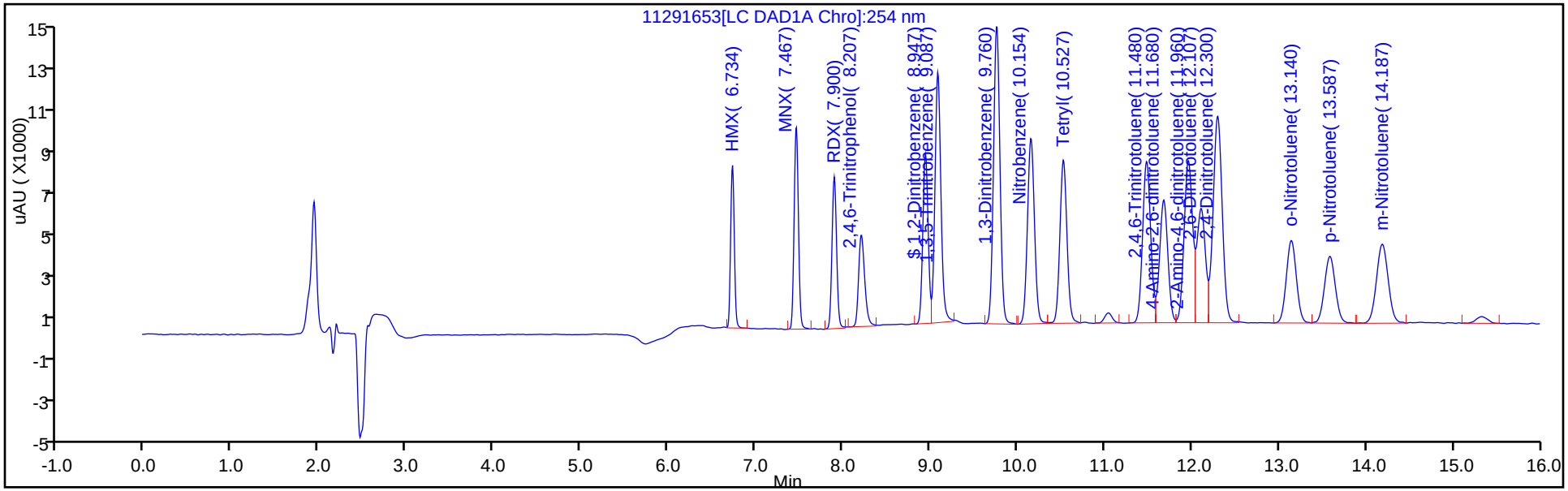
Report Date: 02-Dec-2016 20:42:39 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

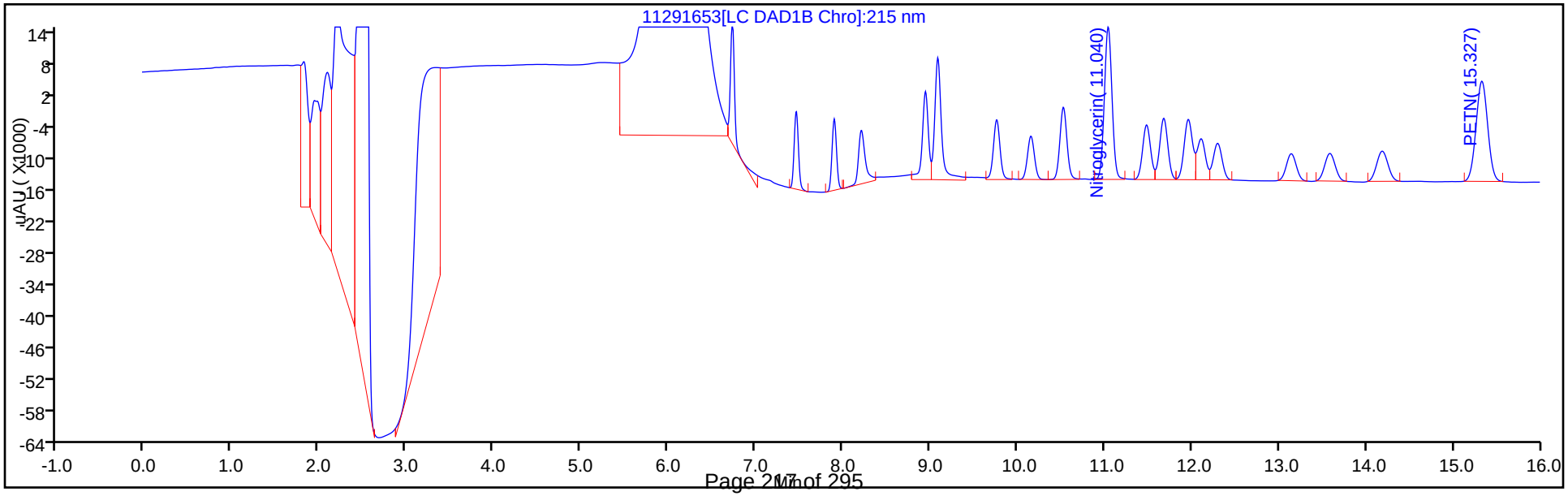
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291653.D

Injection Date:	30-Nov-2016 09:14:28	Instrument ID:	CHHPLC_X3	Operator ID:	asc
Lims ID:	CCV MAIN L4			Worklist Smp#:	53
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	37
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Lab Sample ID: CCV 280-353517/64 Calibration Date: 11/30/2016 13:30

Instrument ID: CHHPLC_X3 Calib Start Date: 10/28/2016 17:40

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 10/28/2016 20:21

Lab File ID: 11291664.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Lin2		92268		0.249	0.250	-0.4	20.0
RDX	Lin2		106404		0.246	0.250	-1.5	20.0
Picric acid	Lin2		86840		0.257	0.250	2.9	20.0
1,3,5-Trinitrobenzene	Lin2		229124		0.248	0.250	-0.9	20.0
1,3-Dinitrobenzene	Lin2		293084		0.249	0.250	-0.2	20.0
Nitrobenzene	Lin2		196800		0.244	0.250	-2.5	20.0
Tetryl	Lin2		176772		0.247	0.250	-1.0	20.0
Nitroglycerin	Lin2		71297		2.49	2.50	-0.6	20.0
2,4,6-Trinitrotoluene	Lin2		201260		0.247	0.250	-1.2	20.0
4-Amino-2,6-dinitrotoluene	Lin2		156004		0.250	0.250	0.2	20.0
2-Amino-4,6-dinitrotoluene	Lin2		215576		0.251	0.250	0.6	20.0
2,6-Dinitrotoluene	Lin2		144492		0.242	0.250	-3.1	20.0
2,4-Dinitrotoluene	Lin2		292184		0.253	0.250	1.1	20.0
2-Nitrotoluene	Lin2		128516		0.247	0.250	-1.2	20.0
4-Nitrotoluene	Lin2		110616		0.246	0.250	-1.5	20.0
3-Nitrotoluene	Lin2		141080		0.239	0.250	-4.3	20.0
PETN	Lin2		70891		2.47	2.50	-1.4	20.0
1,2-Dinitrobenzene	Lin2		138356		0.246	0.250	-1.7	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Lab Sample ID: CCV 280-353517/64 Calibration Date: 11/30/2016 13:30

Instrument ID: CHHPLC_X3 Calib Start Date: 10/28/2016 17:40

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 10/28/2016 20:21

Lab File ID: 11291664.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.73	6.62	6.82
RDX	7.89	7.79	7.99
Picric acid	8.20	8.09	8.29
1,3,5-Trinitrobenzene	9.08	8.99	9.19
1,3-Dinitrobenzene	9.75	9.68	9.88
Nitrobenzene	10.14	10.08	10.28
Tetryl	10.52	10.47	10.67
Nitroglycerin	11.03	10.99	11.19
2,4,6-Trinitrotoluene	11.47	11.43	11.63
4-Amino-2,6-dinitrotoluene	11.66	11.64	11.84
2-Amino-4,6-dinitrotoluene	11.94	11.93	12.13
2,6-Dinitrotoluene	12.09	12.07	12.27
2,4-Dinitrotoluene	12.28	12.27	12.47
2-Nitrotoluene	13.13	13.13	13.33
4-Nitrotoluene	13.58	13.58	13.78
3-Nitrotoluene	14.18	14.19	14.39
PETN	15.32	15.35	15.55
1,2-Dinitrobenzene	8.94	8.85	9.05

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291664.D
Lims ID: CCV MAIN L4
Client ID:
Sample Type: CCV
Inject. Date: 30-Nov-2016 13:30:12 ALS Bottle#: 37 Worklist Smp#: 64
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: CCV MAIN L4
Misc. Info.: 280-0053651-064
Operator ID: asc Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 02-Dec-2016 20:42:54 Calib Date: 28-Oct-2016 23:49:21
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK023

First Level Reviewer: jonsrudd Date: 02-Dec-2016 20:09:12

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.728	6.720	0.008	23067	0.2500	0.2490	
4 MNX	1	7.455	7.454	0.001	33262	0.2487	0.2424	
5 RDX	1	7.888	7.894	-0.006	26601	0.2500	0.2462	
6 2,4,6-Trinitrophenol	1	8.202	8.194	0.008	21710	0.2500	0.2573	
$ 7 1,2-Dinitrobenzene	1	8.935	8.954	-0.019	34589	0.2500	0.2458	
8 1,3,5-Trinitrobenzene	1	9.075	9.094	-0.019	57281	0.2500	0.2478	
9 1,3-Dinitrobenzene	1	9.748	9.780	-0.032	73271	0.2500	0.2495	
11 Nitrobenzene	1	10.142	10.180	-0.038	49200	0.2500	0.2437	
12 Tetryl	1	10.515	10.574	-0.059	44193	0.2500	0.2475	
13 Nitroglycerin	2	11.028	11.087	-0.059	178242	2.50	2.49	
14 2,4,6-Trinitrotoluene	1	11.468	11.534	-0.066	50315	0.2500	0.2469	
15 4-Amino-2,6-dinitrotoluene	1	11.662	11.740	-0.078	39001	0.2500	0.2504	
16 2-Amino-4,6-dinitrotoluene	1	11.942	12.027	-0.085	53894	0.2500	0.2515	
17 2,6-Dinitrotoluene	1	12.088	12.174	-0.086	36123	0.2500	0.2424	
18 2,4-Dinitrotoluene	1	12.282	12.367	-0.085	73046	0.2500	0.2528	
19 o-Nitrotoluene	1	13.128	13.227	-0.099	32129	0.2500	0.2470	
20 p-Nitrotoluene	1	13.575	13.680	-0.105	27654	0.2500	0.2463	
21 m-Nitrotoluene	1	14.175	14.287	-0.112	35270	0.2500	0.2392	
22 PETN	2	15.315	15.447	-0.132	177227	2.50	2.47	

Reagents:

8330IntermStk_00041 Amount Added: 0.01 Units: mL

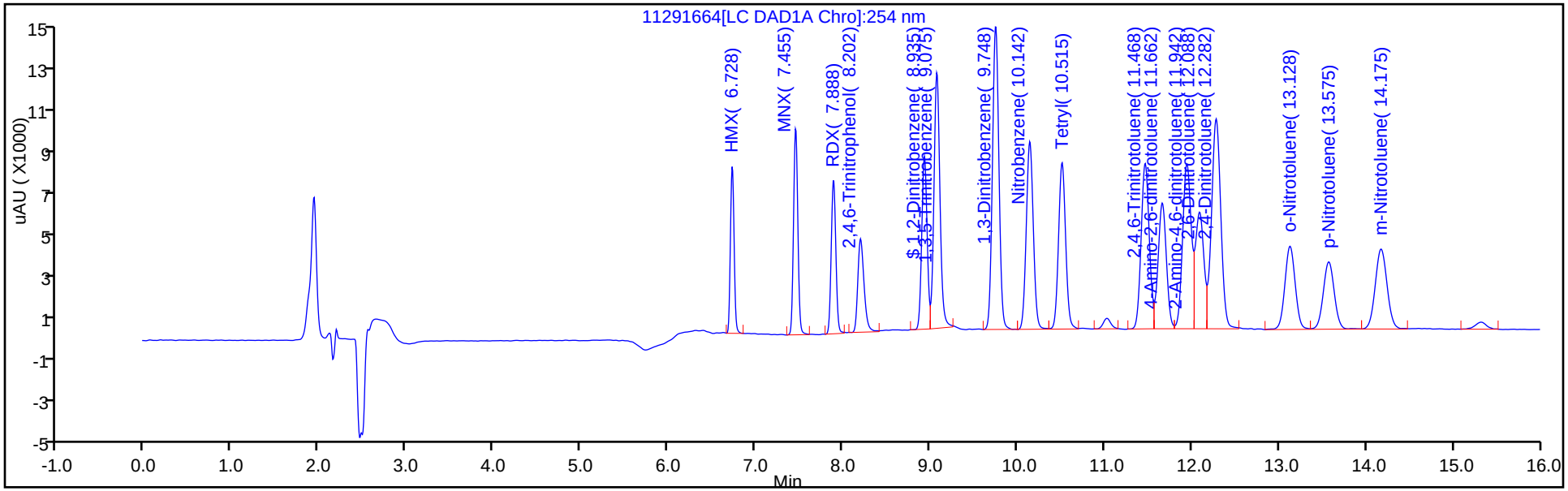
Report Date: 02-Dec-2016 20:42:55 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

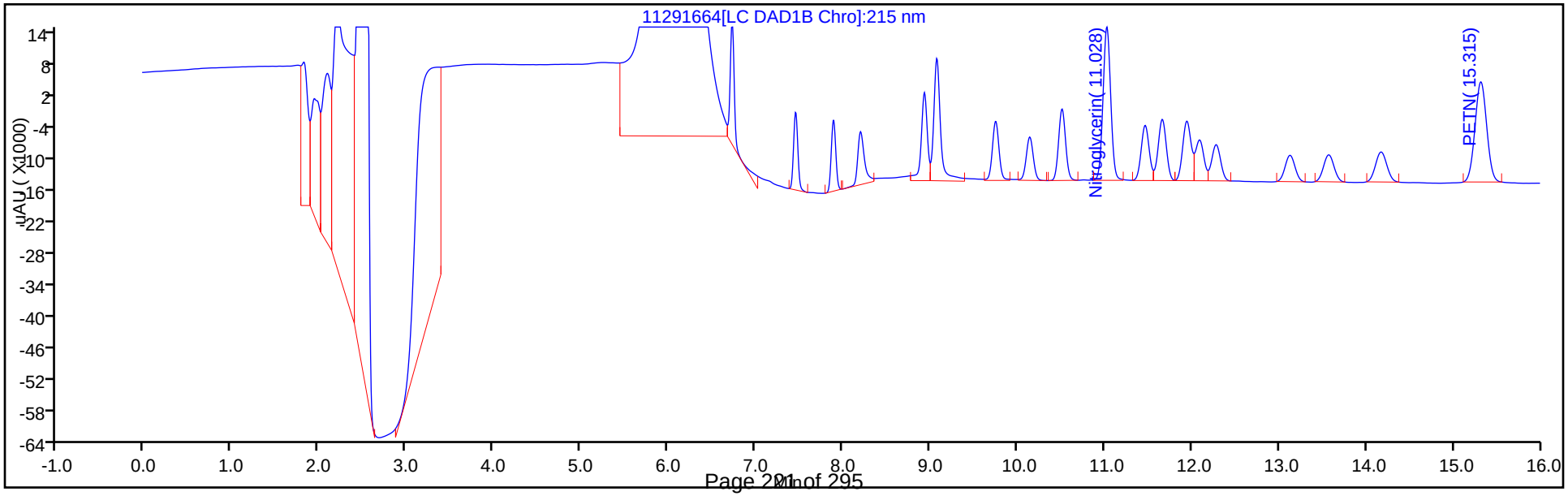
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291664.D

Injection Date:	30-Nov-2016 13:30:12	Instrument ID:	CHHPLC_X3	Operator ID:	asc
Lims ID:	CCV MAIN L4			Worklist Smp#:	64
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	37
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Lab Sample ID: CCV 280-353517/77 Calibration Date: 11/30/2016 18:32

Instrument ID: CHHPLC_X3 Calib Start Date: 10/28/2016 17:40

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 10/28/2016 20:21

Lab File ID: 11291677.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Lin2		91844		0.248	0.250	-0.9	20.0
RDX	Lin2		107456		0.249	0.250	-0.5	20.0
Picric acid	Lin2		86156		0.255	0.250	2.1	20.0
1,3,5-Trinitrobenzene	Lin2		230128		0.249	0.250	-0.5	20.0
1,3-Dinitrobenzene	Lin2		294064		0.250	0.250	0.1	20.0
Nitrobenzene	Lin2		199020		0.246	0.250	-1.4	20.0
Tetryl	Lin2		177176		0.248	0.250	-0.8	20.0
Nitroglycerin	Lin2		71394		2.49	2.50	-0.5	20.0
2,4,6-Trinitrotoluene	Lin2		202268		0.248	0.250	-0.7	20.0
4-Amino-2,6-dinitrotoluene	Lin2		154672		0.248	0.250	-0.7	20.0
2-Amino-4,6-dinitrotoluene	Lin2		212160		0.247	0.250	-1.0	20.0
2,6-Dinitrotoluene	Lin2		149852		0.251	0.250	0.5	20.0
2,4-Dinitrotoluene	Lin2		290832		0.252	0.250	0.6	20.0
2-Nitrotoluene	Lin2		128564		0.247	0.250	-1.2	20.0
4-Nitrotoluene	Lin2		110228		0.245	0.250	-1.8	20.0
3-Nitrotoluene	Lin2		142572		0.242	0.250	-3.3	20.0
PETN	Lin2		71452		2.49	2.50	-0.6	20.0
1,2-Dinitrobenzene	Lin2		138308		0.246	0.250	-1.7	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Lab Sample ID: CCV 280-353517/77 Calibration Date: 11/30/2016 18:32

Instrument ID: CHHPLC_X3 Calib Start Date: 10/28/2016 17:40

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 10/28/2016 20:21

Lab File ID: 11291677.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.72	6.62	6.82
RDX	7.89	7.79	7.99
Picric acid	8.20	8.09	8.29
1,3,5-Trinitrobenzene	9.07	8.99	9.19
1,3-Dinitrobenzene	9.75	9.68	9.88
Nitrobenzene	10.15	10.08	10.28
Tetryl	10.52	10.47	10.67
Nitroglycerin	11.03	10.99	11.19
2,4,6-Trinitrotoluene	11.47	11.43	11.63
4-Amino-2,6-dinitrotoluene	11.67	11.64	11.84
2-Amino-4,6-dinitrotoluene	11.95	11.93	12.13
2,6-Dinitrotoluene	12.10	12.07	12.27
2,4-Dinitrotoluene	12.29	12.27	12.47
2-Nitrotoluene	13.13	13.13	13.33
4-Nitrotoluene	13.58	13.58	13.78
3-Nitrotoluene	14.18	14.19	14.39
PETN	15.33	15.35	15.55
1,2-Dinitrobenzene	8.93	8.85	9.05

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291677.D
Lims ID: CCV MAIN L4
Client ID:
Sample Type: CCV
Inject. Date: 30-Nov-2016 18:32:37 ALS Bottle#: 72 Worklist Smp#: 77
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: CCV MAIN L4
Misc. Info.: 280-0053651-077
Operator ID: asc Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 02-Dec-2016 20:43:17 Calib Date: 28-Oct-2016 23:49:21
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK023

First Level Reviewer: jonsrudd Date: 02-Dec-2016 20:15:58

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.719	6.720	-0.001	22961	0.2500	0.2479	
4 MNX	1	7.446	7.454	-0.008	33007	0.2487	0.2406	
5 RDX	1	7.886	7.894	-0.008	26864	0.2500	0.2487	
6 2,4,6-Trinitrophenol	1	8.199	8.194	0.005	21539	0.2500	0.2553	
$ 7 1,2-Dinitrobenzene	1	8.932	8.954	-0.022	34577	0.2500	0.2457	
8 1,3,5-Trinitrobenzene	1	9.072	9.094	-0.022	57532	0.2500	0.2489	
9 1,3-Dinitrobenzene	1	9.752	9.780	-0.028	73516	0.2500	0.2503	
11 Nitrobenzene	1	10.145	10.180	-0.035	49755	0.2500	0.2464	
12 Tetryl	1	10.519	10.574	-0.055	44294	0.2500	0.2480	
13 Nitroglycerin	2	11.032	11.087	-0.055	178486	2.50	2.49	
14 2,4,6-Trinitrotoluene	1	11.472	11.534	-0.062	50567	0.2500	0.2481	
15 4-Amino-2,6-dinitrotoluene	1	11.672	11.740	-0.068	38668	0.2500	0.2483	
16 2-Amino-4,6-dinitrotoluene	1	11.952	12.027	-0.075	53040	0.2500	0.2475	
17 2,6-Dinitrotoluene	1	12.099	12.174	-0.075	37463	0.2500	0.2514	
18 2,4-Dinitrotoluene	1	12.285	12.367	-0.082	72708	0.2500	0.2516	
19 o-Nitrotoluene	1	13.132	13.227	-0.095	32141	0.2500	0.2471	
20 p-Nitrotoluene	1	13.579	13.680	-0.101	27557	0.2500	0.2454	
21 m-Nitrotoluene	1	14.179	14.287	-0.108	35643	0.2500	0.2417	
22 PETN	2	15.332	15.447	-0.115	178630	2.50	2.49	

Reagents:

8330IntermStk_00041 Amount Added: 0.01 Units: mL

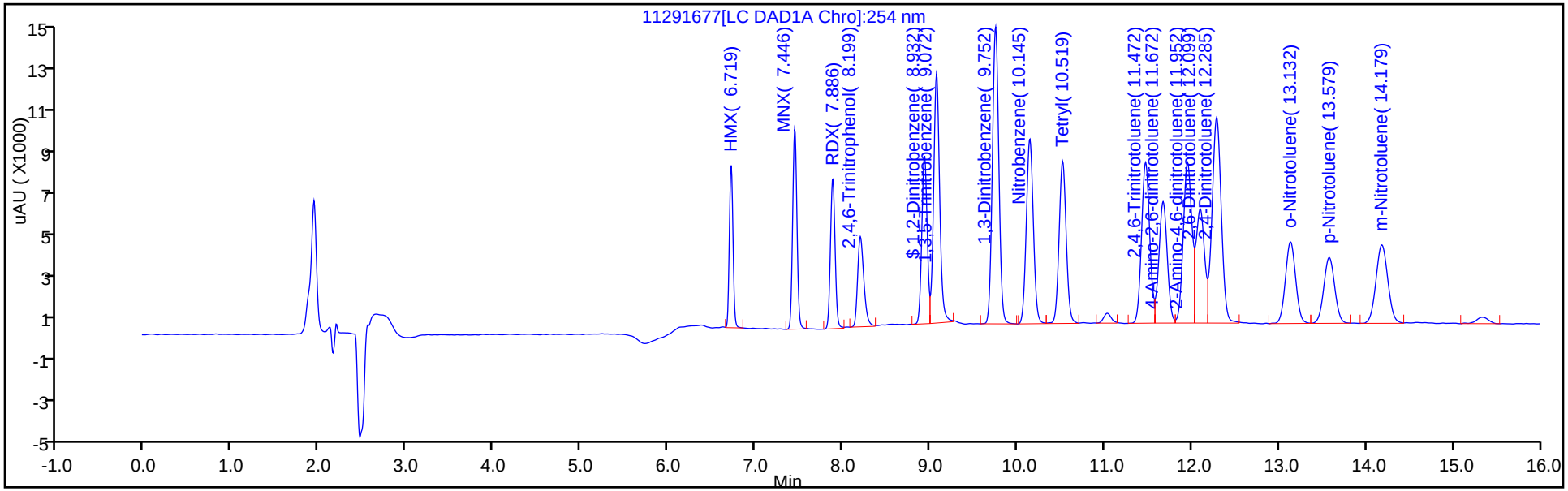
Report Date: 02-Dec-2016 20:43:18 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

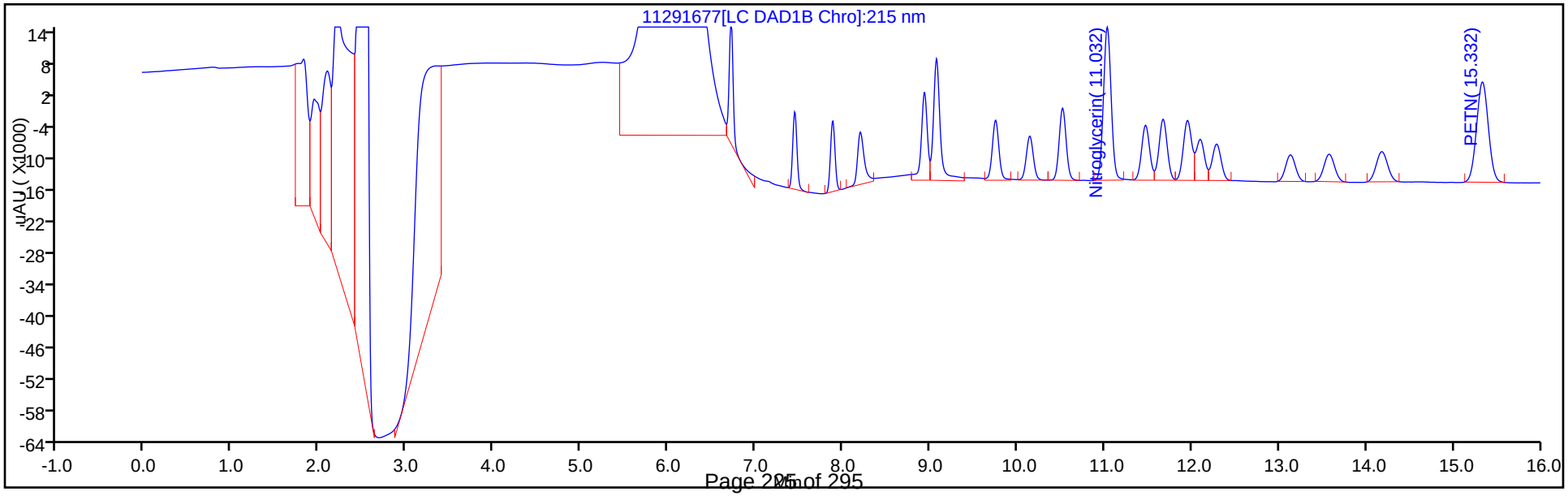
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291677.D

Injection Date:	30-Nov-2016 18:32:37	Instrument ID:	CHHPLC_X3	Operator ID:	asc
Lims ID:	CCV MAIN L4			Worklist Smp#:	77
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	72
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-90848-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 280-351958/1-A

Matrix: Water | Lab File ID: 11291650.D

Analysis Method: 8330B | Date Collected:

Extraction Method: 3535 | Date Extracted: 11/17/2016 11:31

Sample wt/vol: 500(mL) | Date Analyzed: 11/30/2016 08:04

Con. Extract Vol.: 5(mL) | Dilution Factor: 1

Injection Volume: 100(uL) | GC Column: UltraCarb5uODS ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 353517 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.40	U	1.0	0.40	0.20
99-65-0	1,3-Dinitrobenzene	0.20	U	0.40	0.20	0.089
118-96-7	2,4,6-Trinitrotoluene	0.20	U	0.40	0.20	0.072
121-14-2	2,4-Dinitrotoluene	0.20	U	0.40	0.20	0.084
606-20-2	2,6-Dinitrotoluene	0.20	U	0.20	0.20	0.065
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	U	0.20	0.12	0.051
88-72-2	2-Nitrotoluene	0.20	U	0.40	0.20	0.086
99-08-1	3-Nitrotoluene	0.20	U	0.40	0.20	0.083
19406-51-0	4-Amino-2,6-dinitrotoluene	0.12	U	0.20	0.12	0.058
99-99-0	4-Nitrotoluene	0.40	U	1.0	0.40	0.20
2691-41-0	HMX	0.20	U	0.40	0.20	0.088
98-95-3	Nitrobenzene	0.20	U	0.40	0.20	0.091
55-63-0	Nitroglycerin	1.29	J	3.0	2.0	0.92
78-11-5	PETN	1.2	U	2.0	1.2	0.42
121-82-4	RDX	0.12	U	0.20	0.12	0.052
479-45-8	Tetryl	0.20	U	0.24	0.20	0.079

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	104		83-119

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291650.D
Lims ID: MB 280-351958/1-A
Client ID:
Sample Type: MB
Inject. Date: 30-Nov-2016 08:04:42 ALS Bottle#: 45 Worklist Smp#: 50
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: MB 280-351958/1-
Misc. Info.: 280-0053651-050
Operator ID: asc Instrument ID: CHHPLC_X3

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 02-Dec-2016 20:42:23 Calib Date: 28-Oct-2016 23:49:21
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK023

First Level Reviewer: jonsrudd Date: 02-Dec-2016 20:00:23

	Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
1	2,6-diamino-4-nitrotoluene	1		6.578				ND	
2	HMX	1		6.720				ND	
3	2,4-diamino-6-nitrotoluene	1		6.778				ND	
4	MNX	1		7.454				ND	
5	RDX	1		7.894				ND	
6	2,4,6-Trinitrophenol	1		8.194				ND	
$ 7	1,2-Dinitrobenzene	1	8.952	8.954	-0.002	29185	0.2000	0.2072	
8	1,3,5-Trinitrobenzene	1		9.094				ND	
9	1,3-Dinitrobenzene	1		9.780				ND	
11	Nitrobenzene	1		10.180				ND	
10	3,5-Dinitroaniline	1		10.444				ND	
12	Tetryl	1		10.574				ND	
13	Nitroglycerin	2	11.112	11.087	0.025	9942		0.1287	
14	2,4,6-Trinitrotoluene	1		11.534				ND	
15	4-Amino-2,6-dinitrotoluene	1		11.740				ND	
16	2-Amino-4,6-dinitrotoluene	1		12.027				ND	
17	2,6-Dinitrotoluene	1		12.174				ND	
18	2,4-Dinitrotoluene	1		12.367				ND	
19	o-Nitrotoluene	1		13.227				ND	
20	p-Nitrotoluene	1		13.680				ND	
21	m-Nitrotoluene	1		14.287				ND	
22	PETN	2		15.447				ND	

Report Date: 02-Dec-2016 20:42:34 Chrom Revision: 2.2 14-Nov-2016 08:15:18

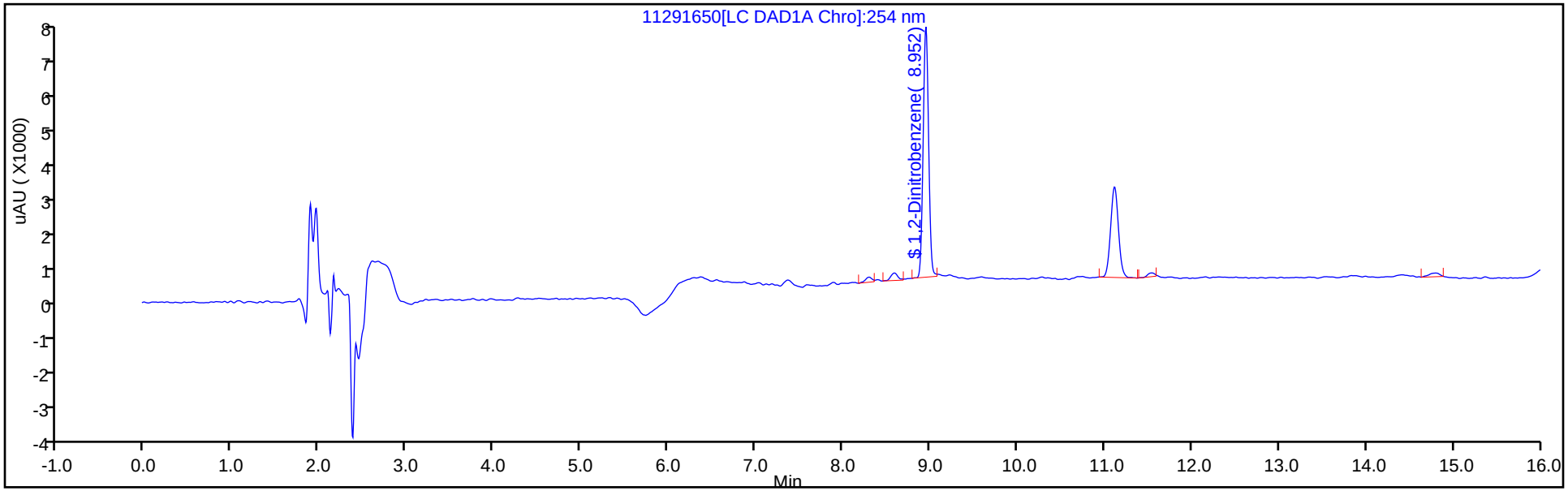
TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291650.D

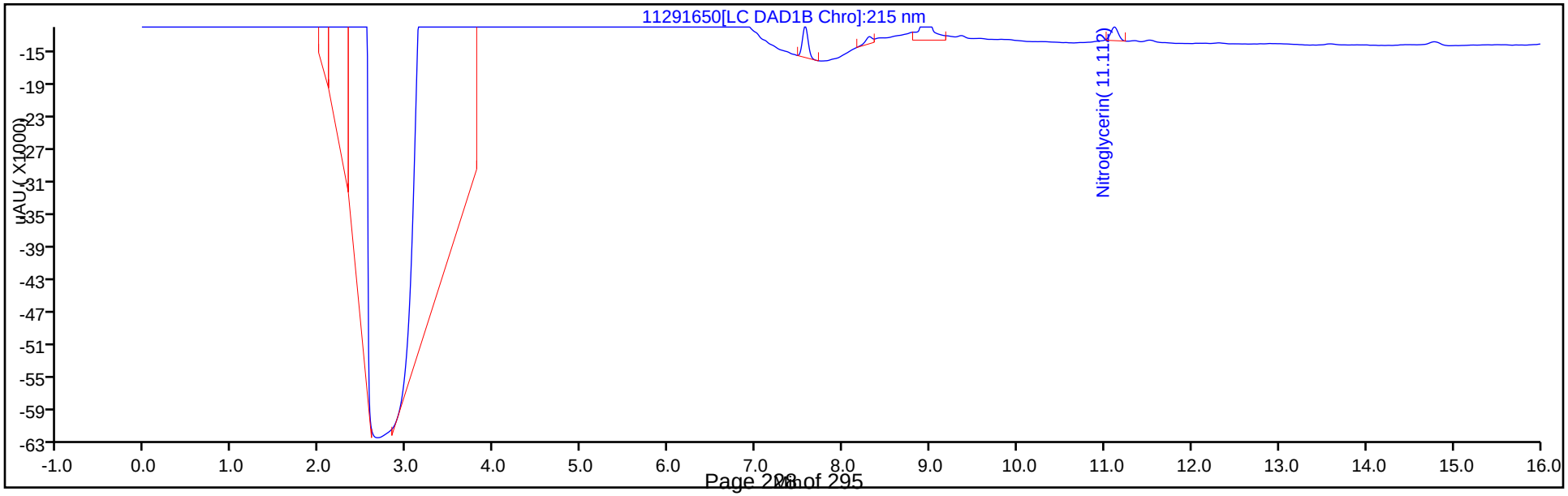
Injection Date:	30-Nov-2016 08:04:42	Instrument ID:	CHHPLC_X3	Operator ID:	asc
Lims ID:	MB 280-351958/1-A			Worklist Smp#:	50
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	45
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291650.D
Lims ID: MB 280-351958/1-A
Client ID:
Sample Type: MB
Inject. Date: 30-Nov-2016 08:04:42 ALS Bottle#: 45 Worklist Smp#: 50
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: MB 280-351958/1-
Misc. Info.: 280-0053651-050
Operator ID: asc Instrument ID: CHHPLC_X3

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 02-Dec-2016 20:42:23 Calib Date: 28-Oct-2016 23:49:21
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK023

First Level Reviewer: jonsrudd Date: 02-Dec-2016 20:00:23

Compound	Amount Added	Amount Recovered	% Rec.
$ 7 1,2-Dinitrobenzene	0.2000	0.2072	103.62

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-90848-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 280-351958/2-A

Matrix: Water | Lab File ID: 11291651.D

Analysis Method: 8330B | Date Collected:

Extraction Method: 3535 | Date Extracted: 11/17/2016 11:31

Sample wt/vol: 500(mL) | Date Analyzed: 11/30/2016 08:27

Con. Extract Vol.: 5(mL) | Dilution Factor: 1

Injection Volume: 100(uL) | GC Column: UltraCarb5uODS ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 353517 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	1.94		1.0	0.40	0.20
99-65-0	1,3-Dinitrobenzene	2.00		0.40	0.20	0.089
118-96-7	2,4,6-Trinitrotoluene	2.09		0.40	0.20	0.072
121-14-2	2,4-Dinitrotoluene	1.90		0.40	0.20	0.084
606-20-2	2,6-Dinitrotoluene	1.81		0.20	0.20	0.065
35572-78-2	2-Amino-4,6-dinitrotoluene	1.73		0.20	0.12	0.051
88-72-2	2-Nitrotoluene	1.67		0.40	0.20	0.086
99-08-1	3-Nitrotoluene	1.76		0.40	0.20	0.083
19406-51-0	4-Amino-2,6-dinitrotoluene	1.64		0.20	0.12	0.058
99-99-0	4-Nitrotoluene	1.74		1.0	0.40	0.20
2691-41-0	HMX	1.79		0.40	0.20	0.088
98-95-3	Nitrobenzene	1.82		0.40	0.20	0.091
55-63-0	Nitroglycerin	19.6		3.0	2.0	0.92
78-11-5	PETN	19.2		2.0	1.2	0.42
121-82-4	RDX	1.93		0.20	0.12	0.052
479-45-8	Tetryl	1.88		0.24	0.20	0.079

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	97		83-119

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291651.D
Lims ID: LCS 280-351958/2-A
Client ID:
Sample Type: LCS
Inject. Date: 30-Nov-2016 08:27:57 ALS Bottle#: 46 Worklist Smp#: 51
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: LCS 280-351958/2
Misc. Info.: 280-0053651-051
Operator ID: asc Instrument ID: CHHPLC_X3

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 02-Dec-2016 20:42:23 Calib Date: 28-Oct-2016 23:49:21
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK023

First Level Reviewer: jonsrudd Date: 02-Dec-2016 20:00:43

	Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
	2 HMX	1	6.726	6.720	0.006	16632	0.2000	0.1794	
	4 MNX	1	7.453	7.454	-0.001	25488	0.2011	0.1856	
	5 RDX	1	7.886	7.894	-0.008	20844	0.2000	0.1926	
	6 2,4,6-Trinitrophenol	1	8.186	8.194	-0.008	17300	0.2000	0.2048	
$	7 1,2-Dinitrobenzene	1	8.933	8.954	-0.021	27319	0.2000	0.1939	
	8 1,3,5-Trinitrobenzene	1	9.079	9.094	-0.015	44793	0.2000	0.1937	
	9 1,3-Dinitrobenzene	1	9.752	9.780	-0.028	58870	0.2000	0.2005	
	11 Nitrobenzene	1	10.146	10.180	-0.034	36689	0.2000	0.1818	
	12 Tetryl	1	10.519	10.574	-0.055	33561	0.2000	0.1878	
	13 Nitroglycerin	2	11.032	11.087	-0.055	140612	2.00	1.96	
	14 2,4,6-Trinitrotoluene	1	11.479	11.534	-0.055	42751	0.2000	0.2094	
	15 4-Amino-2,6-dinitrotoluene	1	11.672	11.740	-0.068	25643	0.2000	0.1637	
	16 2-Amino-4,6-dinitrotoluene	1	11.959	12.027	-0.068	37179	0.2000	0.1731	
	17 2,6-Dinitrotoluene	1	12.106	12.174	-0.068	26956	0.2000	0.1807	
	18 2,4-Dinitrotoluene	1	12.292	12.367	-0.075	54916	0.2000	0.1898	
	19 o-Nitrotoluene	1	13.139	13.227	-0.088	21805	0.2000	0.1675	
	20 p-Nitrotoluene	1	13.592	13.680	-0.088	19513	0.2000	0.1738	
	21 m-Nitrotoluene	1	14.192	14.287	-0.095	25969	0.2000	0.1757	
	22 PETN	2	15.346	15.447	-0.101	138193	2.00	1.92	

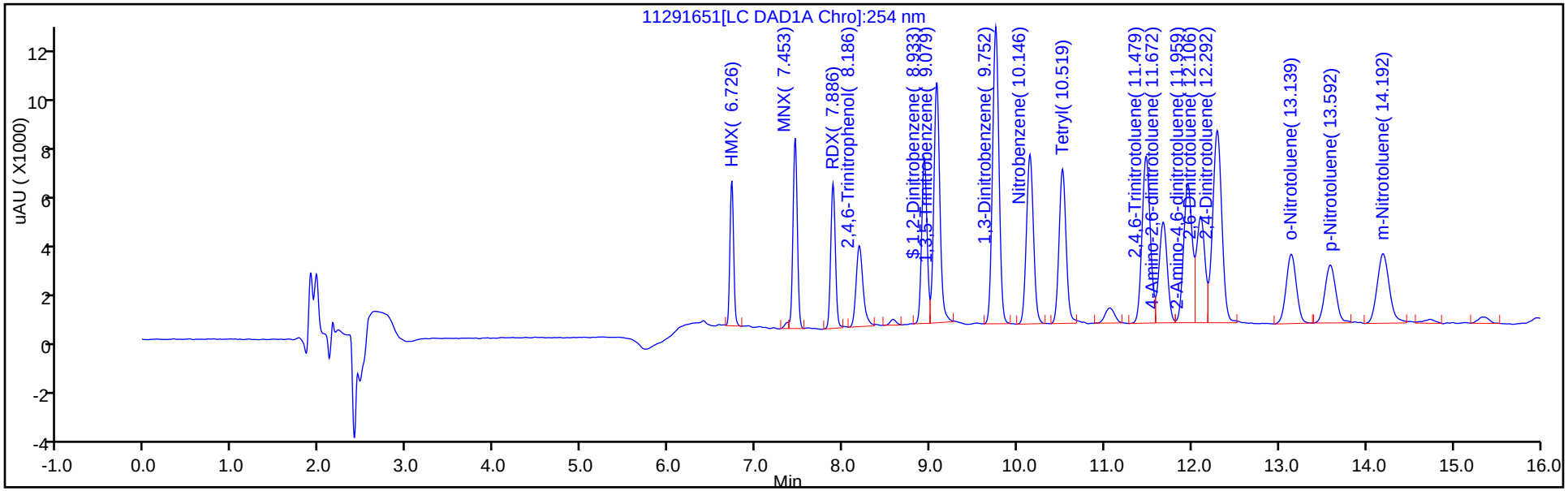
Report Date: 02-Dec-2016 20:42:36 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

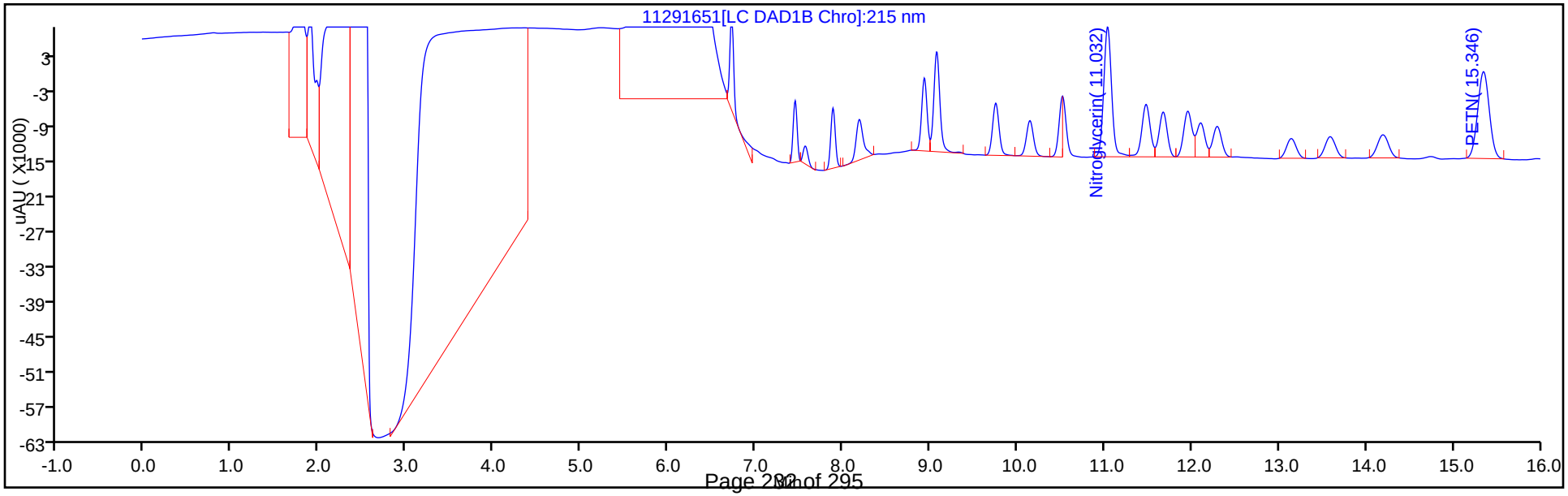
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291651.D

Injection Date:	30-Nov-2016 08:27:57	Instrument ID:	CHHPLC_X3	Operator ID:	asc
Lims ID:	LCS 280-351958/2-A			Worklist Smp#:	51
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	46
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Recovery Report

Data File:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291651.D				
Lims ID:	LCS 280-351958/2-A				
Client ID:					
Sample Type:	LCS				
Inject. Date:	30-Nov-2016 08:27:57	ALS Bottle#:	46	Worklist Smp#:	51
Injection Vol:	100.0 ul	Dil. Factor:	1.0000		
Sample Info:	LCS 280-351958/2				
Misc. Info.:	280-0053651-051				
Operator ID:	asc	Instrument ID:	CHHPLC_X3		
Method:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\8330_X3.m				
Limit Group:	GCSV - 8330				
Last Update:	02-Dec-2016 20:42:23	Calib Date:	28-Oct-2016 23:49:21		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D				
Column 1 :	UltraCarb5uODS (20) (4.60 mm)		Det: LC DAD1B, 254 nm		
Process Host:	XAWRK023				
First Level Reviewer: jonsrudd		Date:	02-Dec-2016 20:00:43		

Compound	Amount Added	Amount Recovered	% Rec.
$ 7 1,2-Dinitrobenzene	0.2000	0.1939	96.96

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-90848-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCSD 280-351958/3-A

Matrix: Water | Lab File ID: 11291652.D

Analysis Method: 8330B | Date Collected:

Extraction Method: 3535 | Date Extracted: 11/17/2016 11:31

Sample wt/vol: 500(mL) | Date Analyzed: 11/30/2016 08:51

Con. Extract Vol.: 5(mL) | Dilution Factor: 1

Injection Volume: 100(uL) | GC Column: UltraCarb5uODS ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 353517 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	1.93		1.0	0.40	0.20
99-65-0	1,3-Dinitrobenzene	1.96		0.40	0.20	0.089
118-96-7	2,4,6-Trinitrotoluene	2.07		0.40	0.20	0.072
121-14-2	2,4-Dinitrotoluene	1.84		0.40	0.20	0.084
606-20-2	2,6-Dinitrotoluene	1.82		0.20	0.20	0.065
35572-78-2	2-Amino-4,6-dinitrotoluene	1.66		0.20	0.12	0.051
88-72-2	2-Nitrotoluene	1.58		0.40	0.20	0.086
99-08-1	3-Nitrotoluene	1.59		0.40	0.20	0.083
19406-51-0	4-Amino-2,6-dinitrotoluene	1.59		0.20	0.12	0.058
99-99-0	4-Nitrotoluene	1.62		1.0	0.40	0.20
2691-41-0	HMX	1.78		0.40	0.20	0.088
98-95-3	Nitrobenzene	1.69		0.40	0.20	0.091
55-63-0	Nitroglycerin	20.6		3.0	2.0	0.92
78-11-5	PETN	19.4		2.0	1.2	0.42
121-82-4	RDX	1.94		0.20	0.12	0.052
479-45-8	Tetryl	1.92		0.24	0.20	0.079

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	96		83-119

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291652.D
Lims ID: LCSD 280-351958/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 30-Nov-2016 08:51:12 ALS Bottle#: 47 Worklist Smp#: 52
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: LCSD 280-351958/
Misc. Info.: 280-0053651-052
Operator ID: asc Instrument ID: CHHPLC_X3

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 02-Dec-2016 20:42:23 Calib Date: 28-Oct-2016 23:49:21
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK023

	Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
	2 HMX	1	6.730	6.720	0.010	16500	0.2000	0.1780	
	4 MNX	1	7.463	7.454	0.009	25115	0.2011	0.1829	
	5 RDX	1	7.903	7.894	0.009	21041	0.2000	0.1944	
	6 2,4,6-Trinitrophenol	1	8.210	8.194	0.016	17461	0.2000	0.2067	
$	7 1,2-Dinitrobenzene	1	8.963	8.954	0.009	26973	0.2000	0.1914	
	8 1,3,5-Trinitrobenzene	1	9.103	9.094	0.009	44708	0.2000	0.1933	
	9 1,3-Dinitrobenzene	1	9.783	9.780	0.003	57505	0.2000	0.1958	
	11 Nitrobenzene	1	10.176	10.180	-0.004	34152	0.2000	0.1693	
	12 Tetryl	1	10.563	10.574	-0.011	34303	0.2000	0.1920	
	13 Nitroglycerin	2	11.083	11.087	-0.004	147947	2.00	2.06	
	14 2,4,6-Trinitrotoluene	1	11.516	11.534	-0.018	42207	0.2000	0.2067	
	15 4-Amino-2,6-dinitrotoluene	1	11.716	11.740	-0.024	24929	0.2000	0.1590	
	16 2-Amino-4,6-dinitrotoluene	1	12.003	12.027	-0.024	35579	0.2000	0.1656	
	17 2,6-Dinitrotoluene	1	12.150	12.174	-0.024	27115	0.2000	0.1818	
	18 2,4-Dinitrotoluene	1	12.336	12.367	-0.031	53184	0.2000	0.1838	
	19 o-Nitrotoluene	1	13.190	13.227	-0.037	20564	0.2000	0.1579	
	20 p-Nitrotoluene	1	13.643	13.680	-0.037	18227	0.2000	0.1624	
	21 m-Nitrotoluene	1	14.250	14.287	-0.037	23558	0.2000	0.1592	
	22 PETN	2	15.403	15.447	-0.044	139828	2.00	1.94	

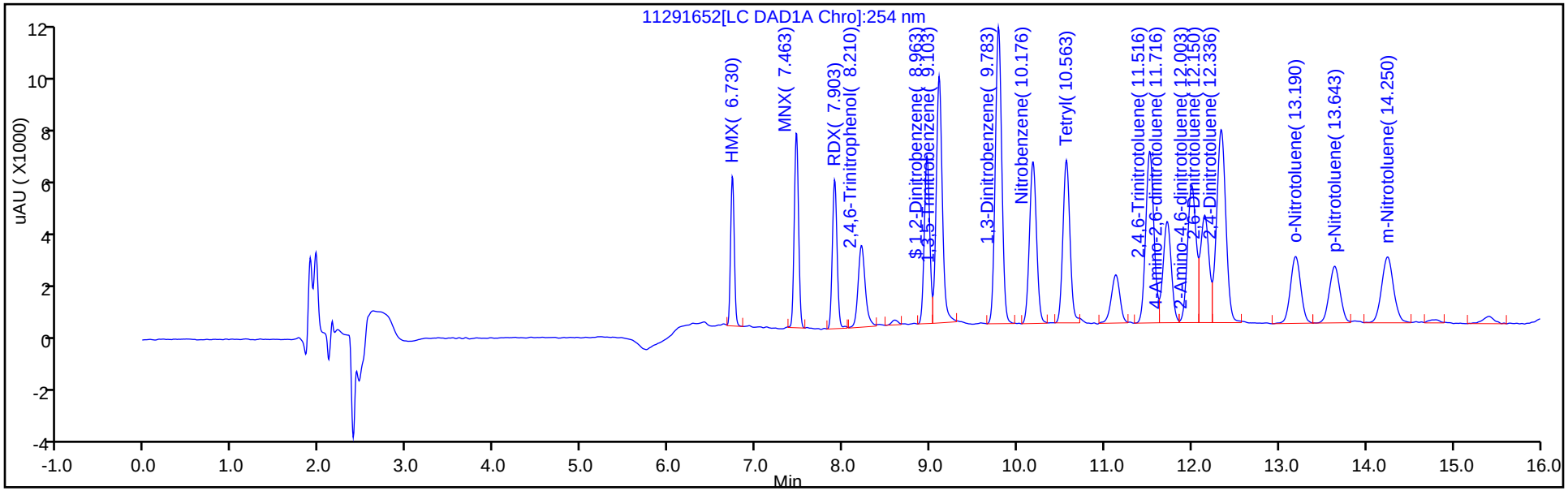
Report Date: 02-Dec-2016 20:42:37 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

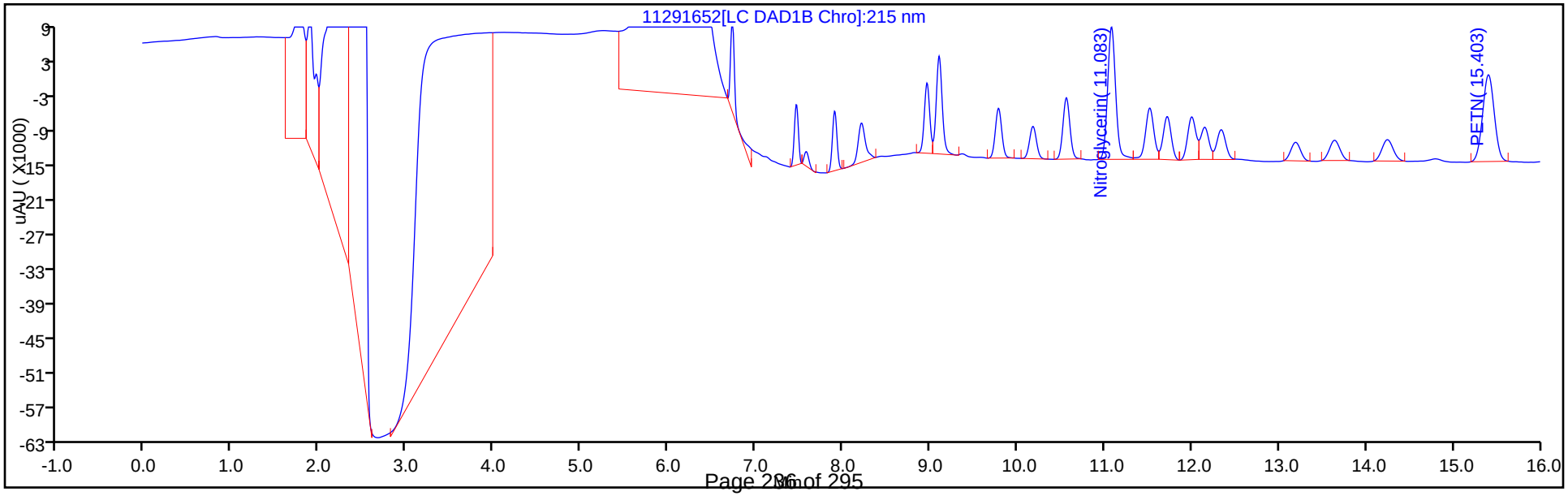
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291652.D

Injection Date:	30-Nov-2016 08:51:12	Instrument ID:	CHHPLC_X3	Operator ID:	asc
Lims ID:	LCSD 280-351958/3-A			Worklist Smp#:	52
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	47
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Recovery Report

Data File:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\11291652.D				
Lims ID:	LCSD 280-351958/3-A				
Client ID:					
Sample Type:	LCSD				
Inject. Date:	30-Nov-2016 08:51:12	ALS Bottle#:	47	Worklist Smp#:	52
Injection Vol:	100.0 ul	Dil. Factor:	1.0000		
Sample Info:	LCSD 280-351958/				
Misc. Info.:	280-0053651-052				
Operator ID:	asc	Instrument ID:	CHHPLC_X3		
Method:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161129-53651.b\8330_X3.m				
Limit Group:	GCSV - 8330				
Last Update:	02-Dec-2016 20:42:23	Calib Date:	28-Oct-2016 23:49:21		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D				
Column 1 :	UltraCarb5uODS (20) (4.60 mm)		Det: LC DAD1B, 254 nm		
Process Host:	XAWRK023				

Compound	Amount Added	Amount Recovered	% Rec.
$ 7 1,2-Dinitrobenzene	0.2000	0.1914	95.72

HPLC/IC ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Instrument ID: CHHPLC_G2_LUNA Start Date: 10/19/2016 12:13

Analysis Batch Number: 347397 End Date: 10/19/2016 16:53

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 280-347397/8		10/19/2016 12:13	1		Luna-phenylhex 4.6(mm)
IC 280-347397/9		10/19/2016 12:48	1		Luna-phenylhex 4.6(mm)
IC 280-347397/10		10/19/2016 13:23	1		Luna-phenylhex 4.6(mm)
IC 280-347397/11		10/19/2016 13:58	1		Luna-phenylhex 4.6(mm)
IC 280-347397/12		10/19/2016 14:33	1		Luna-phenylhex 4.6(mm)
IC 280-347397/13		10/19/2016 15:08	1		Luna-phenylhex 4.6(mm)
IC 280-347397/14		10/19/2016 15:43	1		Luna-phenylhex 4.6(mm)
IC 280-347397/15		10/19/2016 16:18	1		Luna-phenylhex 4.6(mm)
ICV 280-347397/16		10/19/2016 16:53	1	011-1501.D	Luna-phenylhex 4.6(mm)

HPLC/IC ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Instrument ID: CHHPLC_X3 Start Date: 10/28/2016 17:40

Analysis Batch Number: 348785 End Date: 10/29/2016 00:12

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 280-348785/10		10/28/2016 17:40	1	063-1001.D	UltraCarb5uODS 4.6(mm)
IC 280-348785/11		10/28/2016 18:03	1	064-1101.D	UltraCarb5uODS 4.6(mm)
IC 280-348785/12		10/28/2016 18:26	1	065-1201.D	UltraCarb5uODS 4.6(mm)
IC 280-348785/13		10/28/2016 18:49	1	066-1301.D	UltraCarb5uODS 4.6(mm)
IC 280-348785/14		10/28/2016 19:12	1	067-1401.D	UltraCarb5uODS 4.6(mm)
IC 280-348785/15		10/28/2016 19:35	1	068-1501.D	UltraCarb5uODS 4.6(mm)
IC 280-348785/16		10/28/2016 19:58	1	069-1601.D	UltraCarb5uODS 4.6(mm)
IC 280-348785/17		10/28/2016 20:21	1	070-1701.D	UltraCarb5uODS 4.6(mm)
ICV 280-348785/18		10/28/2016 20:44	1	071-1801.D	UltraCarb5uODS 4.6(mm)
IC 280-348785/19		10/28/2016 21:07	1		UltraCarb5uODS 4.6(mm)
IC 280-348785/20		10/28/2016 21:30	1		UltraCarb5uODS 4.6(mm)
IC 280-348785/21		10/28/2016 21:53	1		UltraCarb5uODS 4.6(mm)
IC 280-348785/22		10/28/2016 22:17	1		UltraCarb5uODS 4.6(mm)
IC 280-348785/23		10/28/2016 22:40	1		UltraCarb5uODS 4.6(mm)
IC 280-348785/24		10/28/2016 23:03	1		UltraCarb5uODS 4.6(mm)
IC 280-348785/25		10/28/2016 23:26	1		UltraCarb5uODS 4.6(mm)
IC 280-348785/26		10/28/2016 23:49	1		UltraCarb5uODS 4.6(mm)
ICV 280-348785/27		10/29/2016 00:12	1		UltraCarb5uODS 4.6(mm)

HPLC/IC ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Instrument ID: CHHPLC_X3 Start Date: 11/29/2016 15:25

Analysis Batch Number: 353517 End Date: 11/30/2016 18:32

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 280-353517/7		11/29/2016 15:25	1		UltraCarb5uODS 4.6(mm)
CCV 280-353517/8		11/29/2016 15:48	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/29/2016 16:12	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/29/2016 16:35	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/29/2016 16:58	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/29/2016 17:21	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/29/2016 17:45	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/29/2016 18:08	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/29/2016 18:31	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/29/2016 18:54	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/29/2016 19:18	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/29/2016 19:41	1		UltraCarb5uODS 4.6(mm)
CCV 280-353517/19		11/29/2016 20:04	1		UltraCarb5uODS 4.6(mm)
CCV 280-353517/20		11/29/2016 20:27	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/29/2016 20:50	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/29/2016 21:14	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/29/2016 21:37	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/29/2016 22:00	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/29/2016 22:23	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/29/2016 22:47	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/29/2016 23:10	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/29/2016 23:33	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/29/2016 23:56	1		UltraCarb5uODS 4.6(mm)
CCV 280-353517/30		11/30/2016 00:20	1		UltraCarb5uODS 4.6(mm)
CCV 280-353517/31		11/30/2016 00:43	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 01:06	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 01:29	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 01:52	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 02:16	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 02:39	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 03:02	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 03:25	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 03:49	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 04:12	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 04:35	1		UltraCarb5uODS 4.6(mm)
CCV 280-353517/42		11/30/2016 04:58	1	11291642.D	UltraCarb5uODS 4.6(mm)
CCV 280-353517/43		11/30/2016 05:22	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 05:45	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 06:08	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 06:31	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 06:55	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 07:18	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 07:41	1		UltraCarb5uODS 4.6(mm)
MB 280-351958/1-A		11/30/2016 08:04	1	11291650.D	UltraCarb5uODS 4.6(mm)
LCS 280-351958/2-A		11/30/2016 08:27	1	11291651.D	UltraCarb5uODS 4.6(mm)

8330B

HPLC/IC ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Instrument ID: CHHPLC_X3 Start Date: 11/29/2016 15:25

Analysis Batch Number: 353517 End Date: 11/30/2016 18:32

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
LCSD 280-351958/3-A		11/30/2016 08:51	1	11291652.D	UltraCarb5uODS 4.6(mm)
CCV 280-353517/53		11/30/2016 09:14	1	11291653.D	UltraCarb5uODS 4.6(mm)
CCV 280-353517/54		11/30/2016 09:37	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 10:00	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 10:24	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 10:47	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 11:10	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 11:33	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 11:57	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 12:20	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 12:43	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 13:06	1		UltraCarb5uODS 4.6(mm)
CCV 280-353517/64		11/30/2016 13:30	1	11291664.D	UltraCarb5uODS 4.6(mm)
CCV 280-353517/65		11/30/2016 13:53	1		UltraCarb5uODS 4.6(mm)
280-90848-1		11/30/2016 14:16	1	11291666.D	UltraCarb5uODS 4.6(mm)
280-90848-2		11/30/2016 14:40	1	11291667.D	UltraCarb5uODS 4.6(mm)
280-90848-3		11/30/2016 15:03	1	11291668.D	UltraCarb5uODS 4.6(mm)
280-90848-4		11/30/2016 15:26	1	11291669.D	UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 15:49	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 16:13	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 16:36	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 16:59	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 17:22	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/30/2016 17:46	1		UltraCarb5uODS 4.6(mm)
CCV 280-353517/76		11/30/2016 18:09	1		UltraCarb5uODS 4.6(mm)
CCV 280-353517/77		11/30/2016 18:32	1	11291677.D	UltraCarb5uODS 4.6(mm)

HPLC/IC ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Instrument ID: CHHPLC_G2_LUNA Start Date: 12/03/2016 11:59

Analysis Batch Number: 354108 End Date: 12/04/2016 05:28

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 280-354108/7		12/03/2016 11:59	1		Luna-phenylhex 4.6(mm)
ZZZZZ		12/03/2016 12:34	1		Luna-phenylhex 4.6(mm)
ZZZZZ		12/03/2016 13:09	1		Luna-phenylhex 4.6(mm)
ZZZZZ		12/03/2016 13:44	1		Luna-phenylhex 4.6(mm)
ZZZZZ		12/03/2016 14:19	1		Luna-phenylhex 4.6(mm)
ZZZZZ		12/03/2016 14:54	1		Luna-phenylhex 4.6(mm)
ZZZZZ		12/03/2016 15:29	1		Luna-phenylhex 4.6(mm)
ZZZZZ		12/03/2016 16:04	1		Luna-phenylhex 4.6(mm)
ZZZZZ		12/03/2016 16:39	1		Luna-phenylhex 4.6(mm)
CCV 280-354108/16		12/03/2016 17:14	1		Luna-phenylhex 4.6(mm)
ZZZZZ		12/03/2016 17:49	1		Luna-phenylhex 4.6(mm)
ZZZZZ		12/03/2016 18:24	1		Luna-phenylhex 4.6(mm)
ZZZZZ		12/03/2016 18:59	1		Luna-phenylhex 4.6(mm)
ZZZZZ		12/03/2016 19:34	1		Luna-phenylhex 4.6(mm)
ZZZZZ		12/03/2016 20:09	1		Luna-phenylhex 4.6(mm)
ZZZZZ		12/03/2016 20:44	1		Luna-phenylhex 4.6(mm)
ZZZZZ		12/03/2016 21:19	1		Luna-phenylhex 4.6(mm)
ZZZZZ		12/03/2016 21:54	1		Luna-phenylhex 4.6(mm)
ZZZZZ		12/03/2016 22:29	1		Luna-phenylhex 4.6(mm)
ZZZZZ		12/03/2016 23:04	200		Luna-phenylhex 4.6(mm)
CCV 280-354108/27		12/03/2016 23:39	1	12031627.D	Luna-phenylhex 4.6(mm)
MB 280-351958/1-A		12/04/2016 00:14	1	12031628.D	Luna-phenylhex 4.6(mm)
LCS 280-351958/2-A		12/04/2016 00:48	1	12031629.D	Luna-phenylhex 4.6(mm)
LCSD 280-351958/3-A		12/04/2016 01:23	1	12031630.D	Luna-phenylhex 4.6(mm)
ZZZZZ		12/04/2016 01:58	1		Luna-phenylhex 4.6(mm)
ZZZZZ		12/04/2016 02:33	1		Luna-phenylhex 4.6(mm)
ZZZZZ		12/04/2016 03:08	1		Luna-phenylhex 4.6(mm)
280-90848-4		12/04/2016 03:43	1	12031634.D	Luna-phenylhex 4.6(mm)
ZZZZZ		12/04/2016 04:18	1		Luna-phenylhex 4.6(mm)
ZZZZZ		12/04/2016 04:53	1		Luna-phenylhex 4.6(mm)
CCV 280-354108/37		12/04/2016 05:28	1	12031637.D	Luna-phenylhex 4.6(mm)

HPLC/IC BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Batch Number: 351958 Batch Start Date: 11/17/16 11:31 Batch Analyst: Cokley, Cheyana D

Batch Method: 3535 Batch End Date: 11/17/16 13:41

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	8330 LCS 00072	8330Surrogate 00090
MB 280-351958/1		3535, 8330B				500 mL	5 mL		0.1 mL
LCS 280-351958/2		3535, 8330B				500 mL	5 mL	0.1 mL	0.1 mL
LCSD 280-351958/3		3535, 8330B				500 mL	5 mL	0.1 mL	0.1 mL
280-90848-B-1	EBGmw-128-111016-GW	3535, 8330B	T	719.8 g	259.5 g	460.3 mL	5 mL		0.1 mL
280-90848-A-2	EBGmw-126-111016-GW	3535, 8330B	T	692.1 g	261.0 g	431.1 mL	5 mL		0.1 mL
280-90848-B-3	EBGmw-131-111016-GW	3535, 8330B	T	735.8 g	259.0 g	476.8 mL	5 mL		0.1 mL
280-90848-A-4	EBGmw-125-111016-GW	3535, 8330B	T	728.3 g	259.0 g	469.3 mL	5 mL		0.1 mL

Batch Notes	
Acid ID	0.1%AAinACN_00099
Acid Name	Acetic Acid in ACN
Balance ID	24950441
Batch Comment	Reviewer:na MeCL2-Cycl_00310, NaCl:168648; DNA is not in the analyte list
First End time	11.17.16@1243
H2O ID	ELGA
Pipette ID	Eia, EXP-1
Reagent ID	CaCL2
Reagent Lot Number	CaCL2_00050
Solvent Lot #	ACN_00199
Solvent Name	Acetonitrile
SOP Number	DV-OP-0017
SPE Cartridge Type	Sep-Pak Porapak RDX
Solid Phase Extraction Disk ID	004536216A
First Start time	11.17.16@1150

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

HPLC/IC BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Batch Number: 351958 Batch Start Date: 11/17/16 11:31 Batch Analyst: Cokley, Cheyana D

Batch Method: 3535 Batch End Date: 11/17/16 13:41

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-90848-1

SDG No.:

Project: Ravenna, OH - Erie Burning Grounds

Client Sample ID	Lab Sample ID
EBGmw-128-111016-GW	280-90848-1
EBGmw-126-111016-GW	280-90848-2
EBGmw-131-111016-GW	280-90848-3
EBGmw-125-111016-GW	280-90848-4

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: EBGmw-128-111016-GW
Lab Sample ID: 280-90848-1
Lab Name: TestAmerica Denver
Job No.: 280-90848-1
SDG ID.:
Matrix: Water
Date Sampled: 11/10/2016 10:47
Reporting Basis: WET
Date Received: 11/11/2016 09:30

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Cyanide, Total	5.0	10	5.0	2.0	ug/L	U		1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: EBGmw-126-111016-GW
Lab Sample ID: 280-90848-2
Lab Name: TestAmerica Denver
Job No.: 280-90848-1
SDG ID.:
Matrix: Water
Date Sampled: 11/10/2016 12:53
Reporting Basis: WET
Date Received: 11/11/2016 09:30

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Cyanide, Total	5.0	10	5.0	2.0	ug/L	U		1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: EBGmw-131-111016-GW
Lab Sample ID: 280-90848-3
Lab Name: TestAmerica Denver
Job No.: 280-90848-1
SDG ID.:
Matrix: Water
Date Sampled: 11/10/2016 14:06
Reporting Basis: WET
Date Received: 11/11/2016 09:30

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Cyanide, Total	3.9	10	5.0	2.0	ug/L	J		1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: EBGmw-125-111016-GW
Lab Sample ID: 280-90848-4
Lab Name: TestAmerica Denver
Job No.: 280-90848-1
SDG ID.:
Matrix: Water
Date Sampled: 11/10/2016 14:50
Reporting Basis: WET
Date Received: 11/11/2016 09:30

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Cyanide, Total	11	10	5.0	2.0	ug/L			1	9012B

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Analyst: JML Batch Start Date: 11/19/2016

Reporting Units: mg/L Analytical Batch No.: 352272

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
14	ICV	08:47	Cyanide, Total	0.0952	0.100	95	90-110		CN ICV Daily_00942
15	ICB	08:48	Cyanide, Total	0.0050				U	
29	CCV	09:09	Cyanide, Total	0.201	0.200	101	90-110		CN CAL 1 ppm_01178
30	CCB	09:11	Cyanide, Total	0.0050				U	
44	CCV	09:32	Cyanide, Total	0.192	0.200	96	90-110		CN CAL 1 ppm_01178
45	CCB	09:33	Cyanide, Total	0.0050				U	

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

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Analyst: JML Batch Start Date: 11/19/2016

Reporting Units: mg/L Analytical Batch No.: 352310

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
14	ICV	13:20	Cyanide, Total	0.0947	0.100	95	90-110		CN ICV Daily_00942
15	ICB	13:22	Cyanide, Total	0.0050				U	
29	CCV	13:43	Cyanide, Total	0.201	0.200	101	90-110		CN CAL 1 ppm_01178
30	CCB	13:44	Cyanide, Total	0.0050				U	
44	CCV	14:05	Cyanide, Total	0.197	0.200	99	90-110		CN CAL 1 ppm_01178
45	CCB	14:07	Cyanide, Total	0.0050				U	
59	CCV	14:28	Cyanide, Total	0.202	0.200	101	90-110		CN CAL 1 ppm_01178
60	CCB	14:29	Cyanide, Total	0.0050				U	
74	CCV	14:50	Cyanide, Total	0.201	0.200	101	90-110		CN CAL 1 ppm_01178
75	CCB	14:52	Cyanide, Total	0.0050				U	
83	CCV	15:04	Cyanide, Total	0.201	0.200	101	90-110		CN CAL 1 ppm_01178
84	CCB	15:05	Cyanide, Total	0.0050				U	

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

FORM II-IN

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Method	Lab Sample ID	Analyte	Result	Qual	Units	LOQ	Dil
Batch ID: 352272	Date: 11/19/2016 08:56	Prep Batch: 352144	Date: 11/18/2016 09:14				
9012B	MB 280-352144/4-A	Cyanide, Total	5.0	U	ug/L	10	1
Batch ID: 352310	Date: 11/19/2016 14:01	Prep Batch: 352264	Date: 11/19/2016 09:41				
9012B	MB 280-352264/4-A	Cyanide, Total	4.42	J	ug/L	10	1

FORM III-IN

5-IN
MATRIX SPIKE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 352272	Date: 11/19/2016 09:26		Prep Batch: 352144		Date: 11/18/2016 09:14						
9012B	280-90848-4	Cyanide, Total	11		ug/L						
9012B	280-90848-4 MS	Cyanide, Total	110		ug/L	100	99	83-116			

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

FORM V-IN

5-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 352272	Date: 11/19/2016 09:27		Prep Batch: 352144		Date: 11/18/2016 09:14						
9012B	280-90848-4 MSD	Cyanide, Total	97.4		ug/L	100	87	83-116	12	20	

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

FORM V-IN

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 352272	Date: 11/19/2016 08:54		Prep Batch: 352144			Date: 11/18/2016 09:14					
						LCS Source: CN ICV Int_00408					
9012B	LCS 280-352144/3-A	Cyanide, Total	98.2		ug/L	100	98	83-116			
Batch ID: 352310	Date: 11/19/2016 13:59		Prep Batch: 352264			Date: 11/19/2016 09:41					
						LCS Source: CN ICV Int_00408					
9012B	LCS 280-352264/3-A	Cyanide, Total	95.0		ug/L	100	95	83-116			

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

FORM VIIA-IN

7A-IN
LOW LEVEL CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 352272	Date: 11/19/2016 08:53		Prep Batch: 352144			Date: 11/18/2016 09:14					
						LCS Source: CN 10ppm_00229					
9012B	LLCS 280-352144/2-A	Cyanide, Total	102		ug/L	100	102	44-167			
Batch ID: 352310	Date: 11/19/2016 13:58		Prep Batch: 352264			Date: 11/19/2016 09:41					
						LCS Source: CN 10ppm_00229					
9012B	LLCS 280-352264/2-A	Cyanide, Total	93.1		ug/L	100	93	44-167			

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

FORM VIIA-IN

7A-IN
HIGH LEVEL CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 352272	Date: 11/19/2016 08:51		Prep Batch: 352144			Date: 11/18/2016 09:14					
						LCS Source: CN 10ppm_00229					
9012B	HLCS 280-352144/1-A	Cyanide, Total	387		ug/L	400	97	90-110			
Batch ID: 352310	Date: 11/19/2016 13:56		Prep Batch: 352264			Date: 11/19/2016 09:41					
						LCS Source: CN 10ppm_00229					
9012B	HLCS 280-352264/1-A	Cyanide, Total	378		ug/L	400	95	90-110			

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

FORM VIIA-IN

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-90848-1

SDG Number:

Matrix: Water Instrument ID: WC_Alp 1

Method: 9012B DL Date: 02/16/2014 00:00

Prep Method: 9012B

Analyte	Wavelength/ Mass	LOQ (mg/L)	DL (mg/L)
Cyanide, Total		0.01	0.002

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-90848-1

SDG Number:

Matrix: Water Instrument ID: WC_Alp 1

Method: 9012B XMDL Date: 02/16/2014 00:00

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Cyanide, Total		0.01	0.002

12-IN
PREPARATION LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Prep Method: 9012B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
HLCS 280-352144/1-A	11/18/2016 09:14	352144		50	50
LLCS 280-352144/2-A	11/18/2016 09:14	352144		50	50
LCS 280-352144/3-A	11/18/2016 09:14	352144		50	50
MB 280-352144/4-A	11/18/2016 09:14	352144		50	50
280-90848-1	11/18/2016 09:14	352144		50	50
280-90848-2	11/18/2016 09:14	352144		50	50
280-90848-3	11/18/2016 09:14	352144		50	50
280-90848-4	11/18/2016 09:14	352144		50	50
280-90848-4 MS	11/18/2016 09:14	352144		50	50
280-90848-4 MSD	11/18/2016 09:14	352144		50	50

12-IN
PREPARATION LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Prep Method: 9012B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
HLCS 280-352264/1-A	11/19/2016 09:41	352264		50	50
LLCS 280-352264/2-A	11/19/2016 09:41	352264		50	50
LCS 280-352264/3-A	11/19/2016 09:41	352264		50	50
MB 280-352264/4-A	11/19/2016 09:41	352264		50	50

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Instrument ID: WC_Alp 1 Analysis Method: 9012B

Start Date: 11/19/2016 08:27 End Date: 11/19/2016 10:00

Lab Sample Id	D/F	Type	Time	Analytes
				CN
ZZZZZZ			08:27	
ZZZZZZ			08:29	
ZZZZZZ			08:30	
ZZZZZZ			08:32	
IC 280-352272/5			08:33	X
IC 280-352272/6			08:35	X
IC 280-352272/7			08:36	X
IC 280-352272/8			08:38	X
IC 280-352272/9			08:39	X
IC 280-352272/10			08:41	X
IC 280-352272/11			08:42	X
ZZZZZZ			08:44	
ZZZZZZ			08:45	
ICV 280-352272/14	1		08:47	X
ICB 280-352272/15	1		08:48	X
ZZZZZZ			08:50	
HLCS 280-352144/1-A	2	T	08:51	X
LLCS 280-352144/2-A	1	T	08:53	X
LCS 280-352144/3-A	1	T	08:54	X
MB 280-352144/4-A	1	T	08:56	X
ZZZZZZ			08:57	
ZZZZZZ			08:59	
ZZZZZZ			09:00	
ZZZZZZ			09:02	
ZZZZZZ			09:03	
ZZZZZZ			09:05	
ZZZZZZ			09:06	
ZZZZZZ			09:08	
CCV 280-352272/29	1		09:09	X
CCB 280-352272/30	1		09:11	X
ZZZZZZ			09:12	
ZZZZZZ			09:14	
ZZZZZZ			09:15	
ZZZZZZ			09:17	
ZZZZZZ			09:18	
280-90848-1	1	T	09:20	X
280-90848-2	1	T	09:21	X
280-90848-3	1	T	09:23	X
280-90848-4	1	T	09:24	X
280-90848-4 MS	1	T	09:26	X
280-90848-4 MSD	1	T	09:27	X
ZZZZZZ			09:29	

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Instrument ID: WC_Alp 1 Analysis Method: 9012B

Start Date: 11/19/2016 08:27 End Date: 11/19/2016 10:00

Lab Sample Id	D/F	Type	Time	Analytes																								
				CN																								
ZZZZZZ			09:30																									
CCV 280-352272/44	1		09:32	X																								
CCB 280-352272/45	1		09:33	X																								
ZZZZZZ			09:35																									
ZZZZZZ			09:36																									
ZZZZZZ			09:38																									
ZZZZZZ			09:39																									
ZZZZZZ			09:41																									
ZZZZZZ			09:42																									
ZZZZZZ			09:44																									
ZZZZZZ			09:45																									
ZZZZZZ			09:47																									
ZZZZZZ			09:48																									
ZZZZZZ			09:50																									
ZZZZZZ			09:51																									
CCV 280-352272/58			09:53																									
CCB 280-352272/59			09:58																									
ZZZZZZ			10:00																									

Prep Types:
T = Total/NA

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Instrument ID: WC_Alp 1 Analysis Method: 9012B

Start Date: 11/19/2016 13:01 End Date: 11/19/2016 15:07

Lab Sample Id	D/F	Type	Time	Analytes
				CN
ZZZZZZ			13:01	
ZZZZZZ			13:02	
ZZZZZZ			13:04	
ZZZZZZ			13:05	
IC 280-352310/5			13:07	X
IC 280-352310/6			13:08	X
IC 280-352310/7			13:10	X
IC 280-352310/8			13:11	X
IC 280-352310/9			13:13	X
IC 280-352310/10			13:14	X
IC 280-352310/11			13:16	X
ZZZZZZ			13:17	
ZZZZZZ			13:19	
ICV 280-352310/14	1		13:20	X
ICB 280-352310/15	1		13:22	X
ZZZZZZ			13:23	
ZZZZZZ			13:25	
ZZZZZZ			13:26	
ZZZZZZ			13:28	
ZZZZZZ			13:29	
ZZZZZZ			13:31	
ZZZZZZ			13:32	
ZZZZZZ			13:34	
ZZZZZZ			13:35	
ZZZZZZ			13:37	
ZZZZZZ			13:38	
ZZZZZZ			13:40	
ZZZZZZ			13:41	
CCV 280-352310/29	1		13:43	X
CCB 280-352310/30	1		13:44	X
ZZZZZZ			13:46	
ZZZZZZ			13:47	
ZZZZZZ			13:49	
ZZZZZZ			13:50	
ZZZZZZ			13:52	
ZZZZZZ			13:53	
ZZZZZZ			13:55	
HLCS 280-352264/1-A	2	T	13:56	X
LLCS 280-352264/2-A	1	T	13:58	X
LCS 280-352264/3-A	1	T	13:59	X
MB 280-352264/4-A	1	T	14:01	X
ZZZZZZ			14:02	

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Instrument ID: WC_Alp 1 Analysis Method: 9012B

Start Date: 11/19/2016 13:01 End Date: 11/19/2016 15:07

Lab Sample Id	D/F	Type	Time	Analytes
				CN
ZZZZZZ			14:04	
CCV 280-352310/44	1		14:05	X
CCB 280-352310/45	1		14:07	X
ZZZZZZ			14:08	
ZZZZZZ			14:10	
ZZZZZZ			14:11	
ZZZZZZ			14:13	
ZZZZZZ			14:14	
ZZZZZZ			14:16	
ZZZZZZ			14:17	
ZZZZZZ			14:19	
ZZZZZZ			14:20	
ZZZZZZ			14:22	
ZZZZZZ			14:23	
ZZZZZZ			14:25	
ZZZZZZ			14:26	
CCV 280-352310/59	1		14:28	X
CCB 280-352310/60	1		14:29	X
ZZZZZZ			14:31	
ZZZZZZ			14:32	
ZZZZZZ			14:34	
ZZZZZZ			14:35	
ZZZZZZ			14:37	
ZZZZZZ			14:38	
ZZZZZZ			14:40	
ZZZZZZ			14:41	
ZZZZZZ			14:43	
ZZZZZZ			14:44	
ZZZZZZ			14:46	
ZZZZZZ			14:47	
ZZZZZZ			14:49	
CCV 280-352310/74	1		14:50	X
CCB 280-352310/75	1		14:52	X
ZZZZZZ			14:53	
ZZZZZZ			14:55	
ZZZZZZ			14:56	
ZZZZZZ			14:58	
ZZZZZZ			14:59	
ZZZZZZ			15:01	
ZZZZZZ			15:02	
CCV 280-352310/83	1		15:04	X
CCB 280-352310/84	1		15:05	X

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Instrument ID: WC_Alp 1 Analysis Method: 9012B

Start Date: 11/19/2016 13:01 End Date: 11/19/2016 15:07

Lab Sample Id	D/F	Type	Time	Analytes																								
				CN																								
ZZZZZZ			15:07																									

Prep Types:
T = Total/NA

FORM XIII-IN

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Batch Number: 352144 Batch Start Date: 11/18/16 09:14 Batch Analyst: Schroder, Aaron L

Batch Method: 9012B Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	DistillpHCheck	SulfideCheck	ChlorineCheck	CN 10ppm 00229
HLCS 280-352144/1		9012B, 9012B		50 mL	50 mL	>12	N	N	2 mL
LLCS 280-352144/2		9012B, 9012B		50 mL	50 mL	>12	N	N	0.5 mL
LCS 280-352144/3		9012B, 9012B		50 mL	50 mL	>12	N	N	
MB 280-352144/4		9012B, 9012B		50 mL	50 mL	>12	N	N	
280-90848-C-1	EBGmw-128-111016-GW	9012B, 9012B	T	50 mL	50 mL	>12	N	N	
280-90848-C-2	EBGmw-126-111016-GW	9012B, 9012B	T	50 mL	50 mL	>12	N	N	
280-90848-C-3	EBGmw-131-111016-GW	9012B, 9012B	T	50 mL	50 mL	>12	N	N	
280-90848-C-4	EBGmw-125-111016-GW	9012B, 9012B	T	50 mL	50 mL	>12	N	N	
280-90848-C-4 MS	EBGmw-125-111016-GW	9012B, 9012B	T	50 mL	50 mL	>12	N	N	
280-90848-C-4 MSD	EBGmw-125-111016-GW	9012B, 9012B	T	50 mL	50 mL	>12	N	N	

Lab Sample ID	Client Sample ID	Method Chain	Basis	CN ICV Int 00408					
HLCS 280-352144/1		9012B, 9012B							
LLCS 280-352144/2		9012B, 9012B							
LCS 280-352144/3		9012B, 9012B		0.5 mL					
MB 280-352144/4		9012B, 9012B							
280-90848-C-1	EBGmw-128-111016-GW	9012B, 9012B	T						
280-90848-C-2	EBGmw-126-111016-GW	9012B, 9012B	T						
280-90848-C-3	EBGmw-131-111016-GW	9012B, 9012B	T						
280-90848-C-4	EBGmw-125-111016-GW	9012B, 9012B	T						
280-90848-C-4 MS	EBGmw-125-111016-GW	9012B, 9012B	T	0.5 mL					
280-90848-C-4 MSD	EBGmw-125-111016-GW	9012B, 9012B	T	0.5 mL					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Batch Number: 352144 Batch Start Date: 11/18/16 09:14 Batch Analyst: Schroder, Aaron L

Batch Method: 9012B Batch End Date:

Batch Notes	
Balance ID	M19170
Magnesium Chloride Reagent ID Number	CN Mag Chl_00062
Sodium Hydroxide ID	2%NaOH_00256
Pipette ID	WC 5000ELJ WC 1000NXN
Sulfamic Acid ID	CN Sulf_00070
Sulfuric Acid Reagent ID Number	H2SO4_00154

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Batch Number: 352264 Batch Start Date: 11/19/16 09:41 Batch Analyst: Lehman, Jeffrey M

Batch Method: 9012B Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	DistillpHCheck	SulfideCheck	ChlorineCheck	CN 10ppm 00229
HLCS 280-352264/1		9012B, 9012B		50 mL	50 mL	>12	N	N	2 mL
LLCS 280-352264/2		9012B, 9012B		50 mL	50 mL	>12	N	N	0.5 mL
LCS 280-352264/3		9012B, 9012B		50 mL	50 mL	>12	N	N	
MB 280-352264/4		9012B, 9012B		50 mL	50 mL	>12	N	N	
280-90848-C-1	EBGmw-128-111016-GW	9012B, 9012B	T	50 mL	50 mL	>12	N	N	
280-90848-C-2	EBGmw-126-111016-GW	9012B, 9012B	T	50 mL	50 mL	>12	N	N	
280-90848-C-3	EBGmw-131-111016-GW	9012B, 9012B	T	50 mL	50 mL	>12	N	N	
280-90848-C-4	EBGmw-125-111016-GW	9012B, 9012B	T	50 mL	50 mL	>12	N	N	

Lab Sample ID	Client Sample ID	Method Chain	Basis	CN ICV Int 00408					
HLCS 280-352264/1		9012B, 9012B							
LLCS 280-352264/2		9012B, 9012B							
LCS 280-352264/3		9012B, 9012B		0.5 mL					
MB 280-352264/4		9012B, 9012B							
280-90848-C-1	EBGmw-128-111016-GW	9012B, 9012B	T						
280-90848-C-2	EBGmw-126-111016-GW	9012B, 9012B	T						
280-90848-C-3	EBGmw-131-111016-GW	9012B, 9012B	T						
280-90848-C-4	EBGmw-125-111016-GW	9012B, 9012B	T						

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Batch Number: 352264 Batch Start Date: 11/19/16 09:41 Batch Analyst: Lehman, Jeffrey M

Batch Method: 9012B Batch End Date:

Batch Notes	
Balance ID	M19170
Magnesium Chloride Reagent ID Number	CN Mag Chl_00062
Sodium Hydroxide ID	2%NaOH_00256
Pipette ID	WC 5000ELJ WC 1000NXN
Sulfamic Acid ID	CN Sulf_00070
Sulfuric Acid Reagent ID Number	H2SO4_00164 H2SO4_00165

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Batch Number: 352272 Batch Start Date: 11/19/16 08:27 Batch Analyst: Lehman, Jeffrey M

Batch Method: 9012B Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	CN CAL 1 ppm 01178	CN ICV Daily 00942		
ICV 280-352272/14		9012B		50 mL	50 mL		50 mL		
ICB 280-352272/15		9012B		50 mL	50 mL				
HLCS 280-352144/1-A		9012B		50 mL	50 mL				
LLCS 280-352144/2-A		9012B		50 mL	50 mL				
LCS 280-352144/3-A		9012B		50 mL	50 mL				
MB 280-352144/4-A		9012B		50 mL	50 mL				
CCV 280-352272/29		9012B		50 mL	50 mL	10 mL			
CCB 280-352272/30		9012B		50 mL	50 mL				
280-90848-C-1-A	EBGmw-128-111016-GW	9012B	T	50 mL	50 mL				
280-90848-C-2-A	EBGmw-126-111016-GW	9012B	T	50 mL	50 mL				
280-90848-C-3-A	EBGmw-131-111016-GW	9012B	T	50 mL	50 mL				
280-90848-C-4-A	EBGmw-125-111016-GW	9012B	T	50 mL	50 mL				
280-90848-C-4-B MS	EBGmw-125-111016-GW	9012B	T	50 mL	50 mL				
280-90848-C-4-C MSD	EBGmw-125-111016-GW	9012B	T	50 mL	50 mL				
CCV 280-352272/44		9012B		50 mL	50 mL	10 mL			
CCB 280-352272/45		9012B		50 mL	50 mL				

Batch Notes	
Buffer Reagent ID Number	CN Buffer_00087
Chloramine-T ID	CN Chloro-T_00717
Pipette ID	WC 5000ELJ WC 1000NXN
Pyridine-Barbituric Acid ID	CN Pyr/Barb_00148

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Batch Number: 352272 Batch Start Date: 11/19/16 08:27 Batch Analyst: Lehman, Jeffrey M

Batch Method: 9012B Batch End Date:

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Batch Number: 352310 Batch Start Date: 11/19/16 13:01 Batch Analyst: Lehman, Jeffrey M

Batch Method: 9012B Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	CN CAL 1 ppm 01178	CN ICV Daily 00942		
ICV 280-352310/14		9012B		50 mL	50 mL		50 mL		
ICB 280-352310/15		9012B		50 mL	50 mL				
CCV 280-352310/29		9012B		50 mL	50 mL	10 mL			
CCB 280-352310/30		9012B		50 mL	50 mL				
HLCS 280-352264/1-A		9012B		50 mL	50 mL				
LLCS 280-352264/2-A		9012B		50 mL	50 mL				
LCS 280-352264/3-A		9012B		50 mL	50 mL				
MB 280-352264/4-A		9012B		50 mL	50 mL				
CCV 280-352310/44		9012B		50 mL	50 mL	10 mL			
CCB 280-352310/45		9012B		50 mL	50 mL				
CCV 280-352310/59		9012B		50 mL	50 mL	10 mL			
CCB 280-352310/60		9012B		50 mL	50 mL				
280-90848-C-1-C	EBGmw-128-111016-GW	9012B	T	50 mL	50 mL				
280-90848-C-2-C	EBGmw-126-111016-GW	9012B	T	50 mL	50 mL				
CCV 280-352310/74		9012B		50 mL	50 mL	10 mL			
CCB 280-352310/75		9012B		50 mL	50 mL				
280-90848-C-3-C	EBGmw-131-111016-GW	9012B	T	50 mL	50 mL				
280-90848-C-4-E	EBGmw-125-111016-GW	9012B	T	50 mL	50 mL				
CCV 280-352310/83		9012B		50 mL	50 mL	10 mL			
CCB 280-352310/84		9012B		50 mL	50 mL				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-90848-1

SDG No.:

Batch Number: 352310 Batch Start Date: 11/19/16 13:01 Batch Analyst: Lehman, Jeffrey M

Batch Method: 9012B Batch End Date:

Batch Notes	
Buffer Reagent ID Number	CN Buffer_00078
Chloramine-T ID	CN Chloro-T_00717
Pipette ID	WC 5000ELJ WC 1000NXN
Pyridine-Barbituric Acid ID	CN Pyr/Barb_00148

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Run Results Report

Facility Name
Facility Location
Department
Operator Name JML
Operator ID JML
Platform FS III/IV/3100
Software Rev Code 222
Data system ID 57

Result path C:\FLOW_4\C111916.RST
Sample table path C:\FLOW_4\c111916.tbl
Method path C:\FLOW_4\cyanide.mth
Date acquired 19-Nov-16
Time acquired 10:05

				Cyanide, Total		
Date	Time	Cup	Name	Response	Calc [ppb]	Flags
19-Nov-16	08:27	107	Sync	331362	389.679	
19-Nov-16	08:29	0	Carryover	296	-0.197	LO
19-Nov-16	08:30	0	Carryover	64	-0.470	LO
19-Nov-16	08:32	0	Baseline	0	-0.545	BL
19-Nov-16	08:33	101	CAL 0.00 ppb	210	-0.298	LO
19-Nov-16	08:35	102	CAL 10.0 ppb	9145	10.224	
19-Nov-16	08:36	103	CAL 20.0 ppb	17452	20.007	
19-Nov-16	08:38	104	CAL 50.0 ppb	43301	50.448	
19-Nov-16	08:39	105	CAL 100 ppb	85521	100.167	
19-Nov-16	08:41	106	Cal 200 ppb	169538	199.110	
19-Nov-16	08:42	107	Cal 400 ppb	340416	400.341	
19-Nov-16	08:44	0	BLK	-34	-0.586	LO
19-Nov-16	08:45	0	Baseline	0	-0.545	BL
19-Nov-16	08:47	108	ICV 100 ppb	81289	95.184	
19-Nov-16	08:48	0	ICB	54	-0.482	LO
19-Nov-16	08:50	0	Baseline	0	-0.545	BL
19-Nov-16	08:51	113	hlcs 280-352144/1-a	164576	386.532	
19-Nov-16	08:53	114	llcs 280-352144/2-a	87310	102.274	
19-Nov-16	08:54	115	lcs 280-352144/3-a	83871	98.224	
19-Nov-16	08:56	116	mb 280-352144/4-a	1249	0.926	
19-Nov-16	08:57	117	280-90775-e-1-a	1749	1.514	
19-Nov-16	08:59	118	280-90775-e-1-b ms	80853	94.670	
19-Nov-16	09:00	119	280-90775-e-1-c msd	82320	96.398	
19-Nov-16	09:02	120	280-90775-e-2-a	2708	2.644	
19-Nov-16	09:03	121	280-90775-e-3-a	3011	3.001	
19-Nov-16	09:05	122	280-90775-e-4-a	2440	2.328	
19-Nov-16	09:06	0	BLK	53	-0.482	LO
19-Nov-16	09:08	0	baseline	0	-0.545	BL
19-Nov-16	09:09	109	CCV 200PPB	171458	201.370	
19-Nov-16	09:11	0	CCB	-78	-0.637	LO
19-Nov-16	09:12	0	Baseline	0	-0.545	BL
19-Nov-16	09:14	123	280-90779-h-1-a	12324	13.968	
19-Nov-16	09:15	124	280-90779-h-3-a	2333	2.202	
19-Nov-16	09:17	125	280-90781-a-1-a	5550	5.990	
19-Nov-16	09:18	126	280-90781-c-2-a	998	0.630	
19-Nov-16	09:20	127	280-90848-c-1-a	1358	1.054	
19-Nov-16	09:21	128	280-90848-c-2-a	550	0.103	
19-Nov-16	09:23	129	280-90848-c-3-a	3803	3.934	
19-Nov-16	09:24	130	280-90848-c-4-a	9645	10.814	
19-Nov-16	09:26	131	280-90848-c-4-b ms	93463	109.520	
19-Nov-16	09:27	132	280-90848-c-4-c msd	83144	97.368	
19-Nov-16	09:29	0	BLK	-95	-0.657	LO
19-Nov-16	09:30	0	baseline	0	-0.545	BL
19-Nov-16	09:32	109	CCV 200PPB	163266	191.723	
19-Nov-16	09:33	0	CCB	-60	-0.616	LO
19-Nov-16	09:35	0	Baseline	0	-0.545	BL

Result path C:\FLOW_4\C111916.RST
Sample table path C:\FLOW_4\c111916.tbl
Method path C:\FLOW_4\cyanide.mth
Date acquired 19-Nov-16
Time acquired 10:05

				Cyanide, Total		
Date	Time	Cup	Name	Response	Calc [ppb]	Flags
19-Nov-16	09:36	133	280-90850-l-1-a	2469	2.362	
19-Nov-16	09:38	134	280-90851-h-2-a	7029	7.733	
19-Nov-16	09:39	135	280-90856-j-1-a	3141	3.154	
19-Nov-16	09:41	136	280-90856-h-2-a	1738	1.502	
19-Nov-16	09:42	137	280-90856-e-6-a	3153	3.168	
19-Nov-16	09:44	138	280-90856-h-7-a	1942	1.741	
19-Nov-16	09:45	139	280-90881-q-1-a	1400	1.104	
19-Nov-16	09:47	123	280-90779-h-1-a	3859	3.999	
19-Nov-16	09:48	125	280-90781-a-1-a	2383	2.261	
19-Nov-16	09:50	0	BLK	70	-0.462	LO
19-Nov-16	09:51	0	baseline	0	-0.545	BL
19-Nov-16	09:53	109	CCV 200PPB	165393	194.228	
19-Nov-16	09:58	0	CCB	125	-0.398	LO
19-Nov-16	10:00	0	Baseline	0	-0.545	BL

Peak Table:Cyanide, Total

File name: C:\FLOW_4\C111916.RST
Date: 19-Nov-16
Operator: JML

Peak	Cup	Name	R	Type	Dil	Wt	Height	Calc. (ppb)	Flags
1	107	Sync	1	SYNC	1	1	331362	389.679260	
2	0	Carryover	1	CO	1	1	296	-0.196762	LO
3	0	Carryover	2	CO	1	1	64	-0.470283	LO
B	0	Baseline	1	RB	1	1	0	-0.545148	BL
5	101	CAL 0.00 ppb	1	C	1	1	210	-0.297538	LO
6	102	CAL 10.0 ppb	1	C	1	1	9145	10.223804	
7	103	CAL 20.0 ppb	1	C	1	1	17452	20.007395	
8	104	CAL 50.0 ppb	1	C	1	1	43301	50.448235	
9	105	CAL 100 ppb	1	C	1	1	85521	100.167061	
10	106	Cal 200 ppb	1	C	1	1	169538	199.109589	
11	107	Cal 400 ppb	1	C	1	1	340416	400.341431	
12	0	BLK	1	BLNK	1	1	-34	-0.585688	LO
B	0	Baseline	1	RB	1	1	0	-0.545148	BL
14	108	ICV 100 ppb	1	CCV	1	1	81289	95.184196	
15	0	ICB	1	U	1	1	54	-0.482049	LO
B	0	Baseline	1	RB	1	1	0	-0.545148	BL
17	113	hlcs 280-352144/1-a 1	U		2	1	164576	386.532043	
18	114	llcs 280-352144/2-a 1	U		1	1	87310	102.274307	
19	115	lcs 280-352144/3-a 1	U		1	1	83871	98.224236	
20	116	mb 280-352144/4-a 1	U		1	1	1249	0.925770	
21	117	280-90775-e-1-a 1	U		1	1	1749	1.514032	
22	118	280-90775-e-1-b ms 1	U		1	1	80853	94.670479	
23	119	280-90775-e-1-c msd 1	U		1	1	82320	96.397949	
24	120	280-90775-e-2-a 1	U		1	1	2708	2.644004	
25	121	280-90775-e-3-a 1	U		1	1	3011	3.000917	
26	122	280-90775-e-4-a 1	U		1	1	2440	2.327754	
27	0	BLK	1	BLNK	1	1	53	-0.482267	LO
B	0	baseline	1	RB	1	1	0	-0.545148	BL
29	109	CCV 200PPB	1	CCV	1	1	171458	201.370285	
30	0	CCB	1	U	1	1	-78	-0.637101	LO
B	0	Baseline	1	RB	1	1	0	-0.545148	BL
32	123	280-90779-h-1-a 1	U		1	1	12324	13.967900	
33	124	280-90779-h-3-a 1	U		1	1	2333	2.201831	
34	125	280-90781-a-1-a 1	U		1	1	5550	5.990487	
35	126	280-90781-c-2-a 1	U		1	1	998	0.630366	
36	127	280-90848-c-1-a 1	U		1	1	1358	1.053760	
37	128	280-90848-c-2-a 1	U		1	1	550	0.102530	
38	129	280-90848-c-3-a 1	U		1	1	3803	3.933789	
39	130	280-90848-c-4-a 1	U		1	1	9645	10.813723	
40	131	280-90848-c-4-b ms 1	U		1	1	93463	109.520103	
41	132	280-90848-c-4-c msd 1	U		1	1	83144	97.367836	
42	0	BLK	1	BLNK	1	1	-95	-0.656587	LO
B	0	baseline	1	RB	1	1	0	-0.545148	BL
44	109	CCV 200PPB	1	CCV	1	1	163266	191.723297	
45	0	CCB	1	U	1	1	-60	-0.615836	LO
B	0	Baseline	1	RB	1	1	0	-0.545148	BL
47	133	280-90850-l-1-a 1	U		1	1	2469	2.361897	
48	134	280-90851-h-2-a 1	U		1	1	7029	7.732793	
49	135	280-90856-j-1-a 1	U		1	1	3141	3.154187	
50	136	280-90856-h-2-a 1	U		1	1	1738	1.501512	
51	137	280-90856-e-6-a 1	U		1	1	3153	3.168494	
52	138	280-90856-h-7-a 1	U		1	1	1942	1.741388	
53	139	280-90881-q-1-a 1	U		1	1	1400	1.103548	
54	123	280-90779-h-1-a 1	U		1	1	3859	3.999048	
55	125	280-90781-a-1-a 1	U		1	1	2383	2.261285	
56	0	BLK	1	BLNK	1	1	70	-0.462171	LO
B	0	baseline	1	RB	1	1	0	-0.545148	BL
58	109	CCV 200PPB	1	CCV	1	1	165393	194.227722	
59	0	CCB	1	U	1	1	125	-0.397684	LO
B	0	Baseline	1	RB	1	1	0	-0.545148	BL

Cyanide, Total:Calibration 1: Peak 5-60

File name: C:\FLOW_4\C111916.RST
Date: 19-Nov-16
Operator: JML

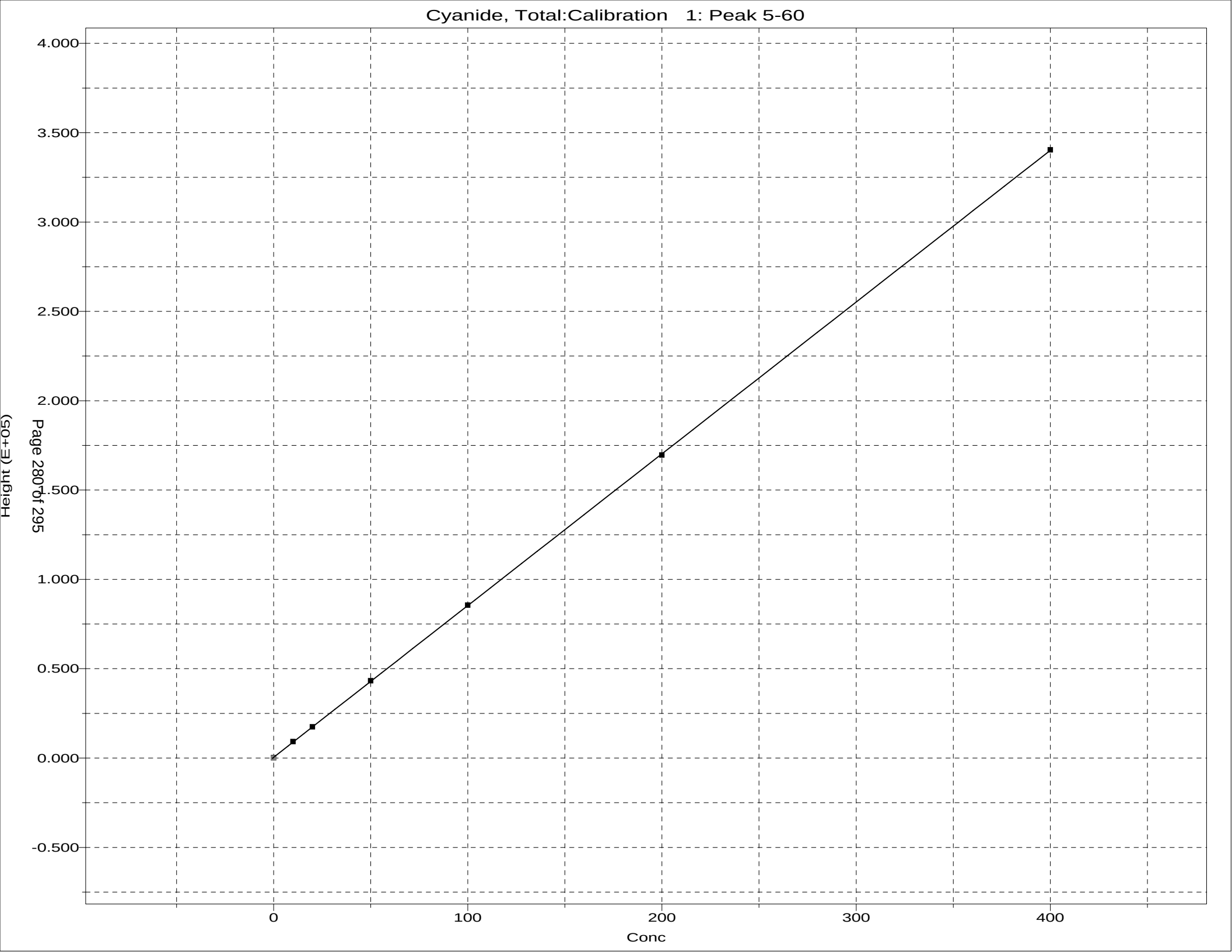
*	Name	Conc	Height
*	CAL 0.00 ppb	0.000000	210.259827
*	CAL 10.0 ppb	10.000000	9144.541992
*	CAL 20.0 ppb	20.000000	17452.357422
*	CAL 50.0 ppb	50.000000	43301.441406
*	CAL 100 ppb	100.000000	85520.578125
*	Cal 200 ppb	200.000000	169538.421875
*	Cal 400 ppb	400.000000	340416.062500

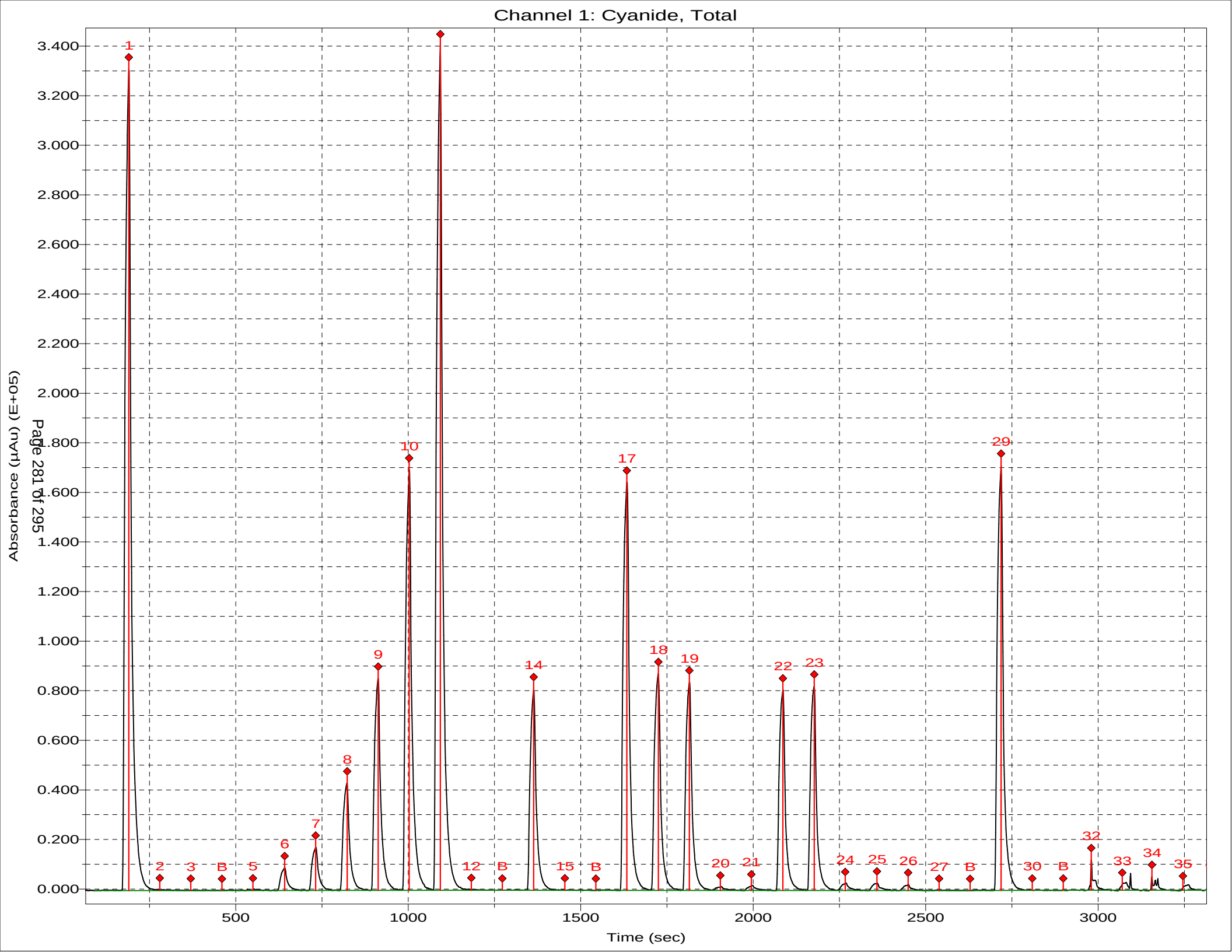
Calib Coef:
y=bx+a
a: (intercept) 4.6292e+02
b: 8.4916e+02

Corr Coef: 0.999995

Carryover: 0.0893%

No Drift Peaks


Cyanide, Total:Calibration 1: Peak 5-60
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
-0.500
Height (E+05)
0
100
200
300
400
Conc


Channel 1: Cyanide, Total
Absorbance (µAu) (E+05)
Time (sec)
Page 281 of 295
3.400
3.200
3.000
2.800
2.600
2.400
2.200
2.000
1.800
1.600
1.400
1.200
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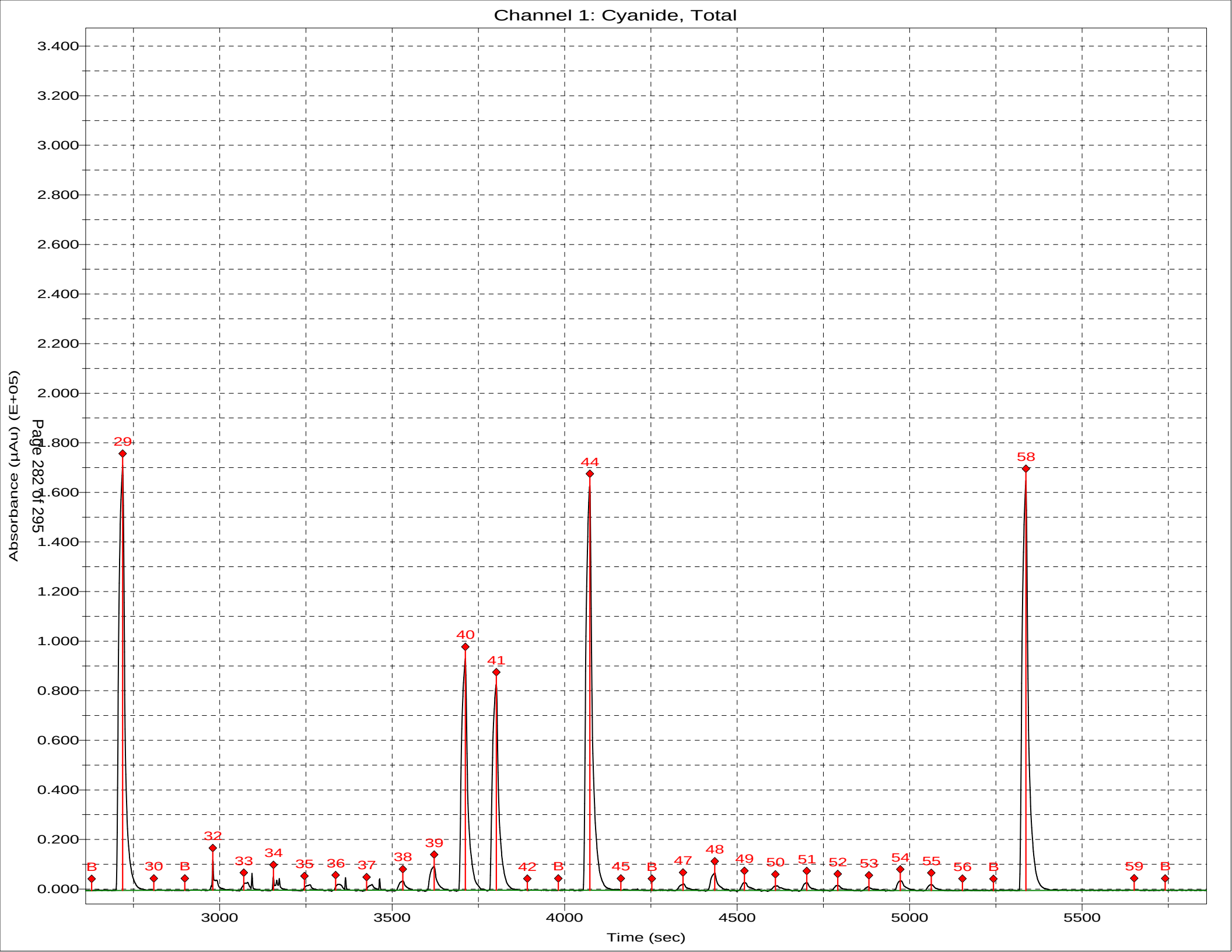
Channel 1: Cyanide, Total
Absorbance (µAu) (E+05)
Time (sec)
3.400
3.200
3.000
2.800
2.600
2.400
2.200
2.000
1.800
1.600
1.400
1.200
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Run Results Report

Facility Name
Facility Location
Department
Operator Name JML
Operator ID JML
Platform FS III/IV/3100
Software Rev Code 222
Data system ID 57

Result path C:\FLOW_4\C111916A.RST
Sample table path C:\FLOW_4\c111916a.tbl
Method path C:\FLOW_4\cyanide.mth
Date acquired 19-Nov-16
Time acquired 15:12

				Cyanide, Total		
Date	Time	Cup	Name	Response	Calc [ppb]	Flags
19-Nov-16	13:01	107	Sync	331453	398.658	
19-Nov-16	13:02	0	Carryover	155	-0.001	LO
19-Nov-16	13:04	0	Carryover	3	-0.184	LO
19-Nov-16	13:05	0	Baseline	0	-0.188	BL
19-Nov-16	13:07	101	CAL 0.00 ppb	159	0.003	
19-Nov-16	13:08	102	CAL 10.0 ppb	8498	10.038	
19-Nov-16	13:10	103	CAL 20.0 ppb	16831	20.066	
19-Nov-16	13:11	104	CAL 50.0 ppb	41838	50.157	
19-Nov-16	13:13	105	CAL 100 ppb	83056	99.756	
19-Nov-16	13:14	106	Cal 200 ppb	166268	199.886	
19-Nov-16	13:16	107	Cal 400 ppb	332647	400.094	
19-Nov-16	13:17	0	BLK	34	-0.147	LO
19-Nov-16	13:19	0	Baseline	0	-0.188	BL
19-Nov-16	13:20	108	ICV 100 ppb	78826	94.666	
19-Nov-16	13:22	0	ICB	-31	-0.225	LO
19-Nov-16	13:23	0	Baseline	0	-0.188	BL
19-Nov-16	13:25	113	hlcs 280-352249/1-a	161825	389.079	
19-Nov-16	13:26	114	llcs 280-352249/2-a	81979	98.459	
19-Nov-16	13:28	115	lcs 280-352249/3-a	84901	101.975	
19-Nov-16	13:29	116	mb 280-352249/4-a	3462	3.978	
19-Nov-16	13:31	117	280-90743-e-1-a	3563	4.100	
19-Nov-16	13:32	118	280-90743-e-1-b ms	81055	97.348	
19-Nov-16	13:34	119	280-90743-e-1-c msd	78686	94.497	
19-Nov-16	13:35	120	280-90743-e-2-a	2782	3.160	
19-Nov-16	13:37	121	280-90743-f-3-a	4717	5.489	
19-Nov-16	13:38	122	280-90743-d-4-a	3683	4.245	
19-Nov-16	13:40	0	BLK	98	-0.070	LO
19-Nov-16	13:41	0	baseline	0	-0.188	BL
19-Nov-16	13:43	109	CCV 200PPB	167241	201.057	
19-Nov-16	13:44	0	CCB	6	-0.181	LO
19-Nov-16	13:46	0	Baseline	0	-0.188	BL
19-Nov-16	13:47	123	280-90882-f-1-a	3740	4.313	
19-Nov-16	13:49	124	280-90882-f-2-a	2371	2.665	
19-Nov-16	13:50	125	280-90882-f-3-a	7084	8.337	
19-Nov-16	13:52	126	280-90882-f-4-a	1782	1.957	
19-Nov-16	13:53	127	280-90882-f-5-a	3192	3.653	
19-Nov-16	13:55	128	460-122822-f-5-a	4603	5.351	
19-Nov-16	13:56	129	hlcs 280-352264/1-a	157350	378.311	
19-Nov-16	13:58	130	llcs 280-352264/2-a	77501	93.071	
19-Nov-16	13:59	131	lcs 280-352264/3-a	79143	95.047	
19-Nov-16	14:01	132	mb 280-352264/4-a	3828	4.419	
19-Nov-16	14:02	0	BLK	87	-0.083	LO
19-Nov-16	14:04	0	baseline	0	-0.188	BL
19-Nov-16	14:05	109	CCV 200PPB	163885	197.019	
19-Nov-16	14:07	0	CCB	38	-0.142	LO
19-Nov-16	14:08	0	Baseline	0	-0.188	BL

Result path C:\FLOW_4\C111916A.RST
Sample table path C:\FLOW_4\c111916a.tbl
Method path C:\FLOW_4\cyanide.mth
Date acquired 19-Nov-16
Time acquired 15:12

				Cyanide, Total		
Date	Time	Cup	Name	Response	Calc [ppb]	Flags
19-Nov-16	14:10	133	280-90785-g-1-a	3681	4.241	
19-Nov-16	14:11	134	280-90785-g-1-b ms	79464	95.433	
19-Nov-16	14:13	135	280-90785-g-1-c msd	77186	92.692	
19-Nov-16	14:14	136	280-90785-d-2-a	3941	4.555	
19-Nov-16	14:16	137	280-90785-c-4-a	4903	5.712	
19-Nov-16	14:17	138	280-90770-n-1-a	5226	6.101	
19-Nov-16	14:19	139	280-90775-e-1-d	1618	1.760	
19-Nov-16	14:20	140	280-90775-e-2-b	1941	2.148	
19-Nov-16	14:22	141	280-90775-e-3-b	3445	3.958	
19-Nov-16	14:23	142	280-90775-e-4-b	5625	6.581	
19-Nov-16	14:25	0	BLK	15	-0.170	LO
19-Nov-16	14:26	0	baseline	0	-0.188	BL
19-Nov-16	14:28	109	CCV 200PPB	167674	201.578	
19-Nov-16	14:29	0	CCB	-81	-0.285	LO
19-Nov-16	14:31	0	Baseline	0	-0.188	BL
19-Nov-16	14:32	143	280-90779-h-1-b	2825	3.211	
19-Nov-16	14:34	144	280-90779-h-3-b	5645	6.605	
19-Nov-16	14:35	145	280-90851-l-3-b	1873	2.066	
19-Nov-16	14:37	146	280-90851-ah-1-d	2098	2.336	
19-Nov-16	14:38	147	280-90851-ah-1-e ms	77378	92.923	
19-Nov-16	14:40	148	280-90851-ah-1-f msd	77099	92.587	
19-Nov-16	14:41	149	280-90781-a-1-c	9242	10.933	
19-Nov-16	14:43	150	280-90781-c-2-c	4312	5.001	
19-Nov-16	14:44	151	280-90848-c-1-c	5747	6.727	
19-Nov-16	14:46	152	280-90848-c-2-c	3515	4.043	
19-Nov-16	14:47	0	BLK	65	-0.109	LO
19-Nov-16	14:49	0	baseline	0	-0.188	BL
19-Nov-16	14:50	109	CCV 200PPB	167325	201.158	
19-Nov-16	14:52	0	CCB	115	-0.050	LO
19-Nov-16	14:53	0	Baseline	0	-0.188	BL
19-Nov-16	14:55	153	280-90848-c-3-c	2837	3.226	
19-Nov-16	14:56	154	280-90848-c-4-e	7914	9.336	
19-Nov-16	14:58	155	280-90850-l-1-c	3121	3.567	
19-Nov-16	14:59	156	460-122822-a-5-a	15935	18.987	
19-Nov-16	15:01	0	BLK	102	-0.065	LO
19-Nov-16	15:02	0	baseline	0	-0.188	BL
19-Nov-16	15:04	109	CCV 200PPB	167561	201.442	
19-Nov-16	15:05	0	CCB	55	-0.122	LO
19-Nov-16	15:07	0	Baseline	0	-0.188	BL

Peak Table:Cyanide, Total

File name: C:\FLOW_4\C111916A.RST
Date: 19-Nov-16
Operator: JML

Peak	Cup	Name	R	Type	Dil	Wt	Height	Calc. (ppb)	Flags
1	107	Sync	1	SYNC	1	1	331453	398.657837	
2	0	Carryover	1	CO	1	1	155	-0.001258	LO
3	0	Carryover	2	CO	1	1	3	-0.184268	LO
B	0	Baseline	1	RB	1	1	0	-0.187717	BL
5	101	CAL 0.00 ppb	1	C	1	1	159	0.003151	
6	102	CAL 10.0 ppb	1	C	1	1	8498	10.038074	
7	103	CAL 20.0 ppb	1	C	1	1	16831	20.066010	
8	104	CAL 50.0 ppb	1	C	1	1	41838	50.156590	
9	105	CAL 100 ppb	1	C	1	1	83056	99.756096	
10	106	Cal 200 ppb	1	C	1	1	166268	199.885941	
11	107	Cal 400 ppb	1	C	1	1	332647	400.094147	
12	0	BLK	1	BLNK	1	1	34	-0.146802	LO
B	0	Baseline	1	RB	1	1	0	-0.187717	BL
14	108	ICV 100 ppb	1	CCV	1	1	78826	94.665649	
15	0	ICB	1	U	1	1	-31	-0.224737	LO
B	0	Baseline	1	RB	1	1	0	-0.187717	BL
17	113	hlcs 280-352249/1-a 1	U		2	1	161825	389.079498	
18	114	llcs 280-352249/2-a 1	U		1	1	81979	98.459465	
19	115	lcs 280-352249/3-a 1	U		1	1	84901	101.975441	
20	116	mb 280-352249/4-a 1	U		1	1	3462	3.978431	
21	117	280-90743-e-1-a 1	U		1	1	3563	4.100121	
22	118	280-90743-e-1-b ms 1	U		1	1	81055	97.347832	
23	119	280-90743-e-1-c msd 1	U		1	1	78686	94.496712	
24	120	280-90743-e-2-a 1	U		1	1	2782	3.160371	
25	121	280-90743-f-3-a 1	U		1	1	4717	5.488591	
26	122	280-90743-d-4-a 1	U		1	1	3683	4.244647	
27	0	BLK	1	BLNK	1	1	98	-0.069965	LO
B	0	baseline	1	RB	1	1	0	-0.187717	BL
29	109	CCV 200PPB	1	CCV	1	1	167241	201.056686	
30	0	CCB	1	U	1	1	6	-0.180576	LO
B	0	Baseline	1	RB	1	1	0	-0.187717	BL
32	123	280-90882-f-1-a 1	U		1	1	3740	4.313288	
33	124	280-90882-f-2-a 1	U		1	1	2371	2.665137	
34	125	280-90882-f-3-a 1	U		1	1	7084	8.336528	
35	126	280-90882-f-4-a 1	U		1	1	1782	1.957189	
36	127	280-90882-f-5-a 1	U		1	1	3192	3.653133	
37	128	460-122822-f-5-a 1	U		1	1	4603	5.350727	
38	129	hlcs 280-352264/1-a 1	U		2	1	157350	378.311218	
39	130	llcs 280-352264/2-a 1	U		1	1	77501	93.070679	
40	131	lcs 280-352264/3-a 1	U		1	1	79143	95.046692	
41	132	mb 280-352264/4-a 1	U		1	1	3828	4.419023	
42	0	BLK	1	BLNK	1	1	87	-0.083253	LO
B	0	baseline	1	RB	1	1	0	-0.187717	BL
44	109	CCV 200PPB	1	CCV	1	1	163885	197.018539	
45	0	CCB	1	U	1	1	38	-0.141927	LO
B	0	Baseline	1	RB	1	1	0	-0.187717	BL
47	133	280-90785-g-1-a 1	U		1	1	3681	4.241416	
48	134	280-90785-g-1-b ms 1	U		1	1	79464	95.432800	
49	135	280-90785-g-1-c msd 1	U		1	1	77186	92.691536	
50	136	280-90785-d-2-a 1	U		1	1	3941	4.554942	
51	137	280-90785-c-4-a 1	U		1	1	4903	5.711684	
52	138	280-90770-n-1-a 1	U		1	1	5226	6.101090	
53	139	280-90775-e-1-d 1	U		1	1	1618	1.759542	
54	140	280-90775-e-2-b 1	U		1	1	1941	2.148349	
55	141	280-90775-e-3-b 1	U		1	1	3445	3.957629	
56	142	280-90775-e-4-b 1	U		1	1	5625	6.580688	
57	0	BLK	1	BLNK	1	1	15	-0.169510	LO
B	0	baseline	1	RB	1	1	0	-0.187717	BL
59	109	CCV 200PPB	1	CCV	1	1	167674	201.578079	
60	0	CCB	1	U	1	1	-81	-0.285145	LO
B	0	Baseline	1	RB	1	1	0	-0.187717	BL
62	143	280-90779-h-1-b 1	U		1	1	2825	3.211323	
63	144	280-90779-h-3-b 1	U		1	1	5645	6.604861	
64	145	280-90851-l-3-b 1	U		1	1	1873	2.066335	
65	146	280-90851-ah-1-d 1	U		1	1	2098	2.336395	
66	147	280-90851-ah-1-e ms 1	U		1	1	77378	92.922508	
67	148	280-90851-ah-1-f msd 1	U		1	1	77099	92.587128	
68	149	280-90781-a-1-c 1	U		1	1	9242	10.933090	
69	150	280-90781-c-2-c 1	U		1	1	4312	5.001326	
70	151	280-90848-c-1-c 1	U		1	1	5747	6.727439	

Peak	Cup	Name	R	Type	Dil	Wt	Height	Calc. (ppb)	Flags
71	152	280-90848-c-2-c	1	U	1	1	3515	4.042510	
72	0	BLK	1	BLNK	1	1	65	-0.109036	LO
B	0	baseline	1	RB	1	1	0	-0.187717	BL
74	109	CCV 200PPB	1	CCV	1	1	167325	201.158081	
75	0	CCB	1	U	1	1	115	-0.049901	LO
B	0	Baseline	1	RB	1	1	0	-0.187717	BL
77	153	280-90848-c-3-c	1	U	1	1	2837	3.225543	
78	154	280-90848-c-4-e	1	U	1	1	7914	9.335756	
79	155	280-90850-l-1-c	1	U	1	1	3121	3.567338	
80	156	460-122822-a-5-a	1	U	1	1	15935	18.986641	
81	0	BLK	1	BLNK	1	1	102	-0.064567	LO
B	0	baseline	1	RB	1	1	0	-0.187717	BL
83	109	CCV 200PPB	1	CCV	1	1	167561	201.442429	
84	0	CCB	1	U	1	1	55	-0.121870	LO
B	0	Baseline	1	RB	1	1	0	-0.187717	BL

Cyanide, Total:Calibration 1: Peak 5-85

File name: C:\FLOW_4\C111916A.RST
Date: 19-Nov-16
Operator: JML

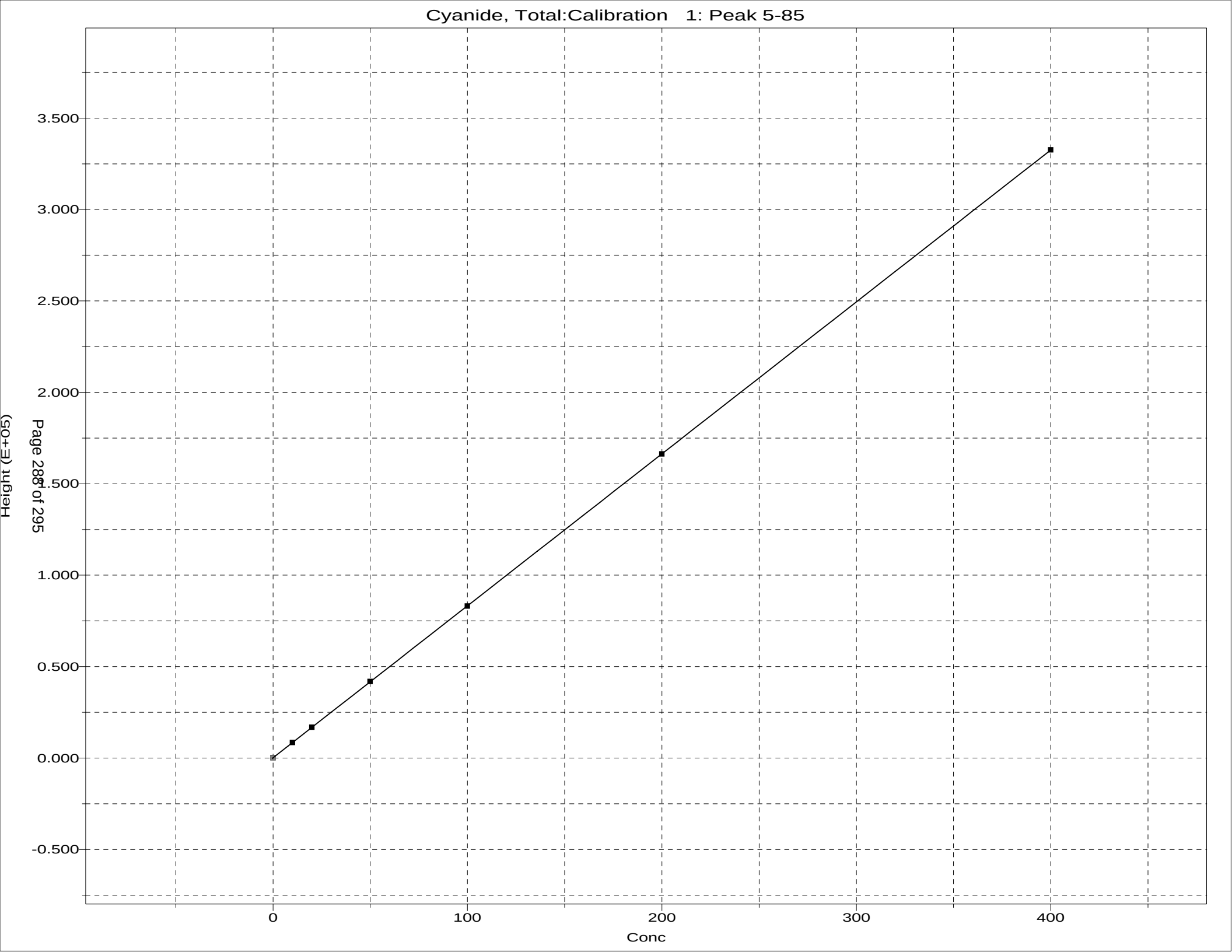
*	Name	Conc	Height
*	CAL 0.00 ppb	0.000000	158.617661
*	CAL 10.0 ppb	10.000000	8497.958008
*	CAL 20.0 ppb	20.000000	16831.492188
*	CAL 50.0 ppb	50.000000	41837.726562
*	CAL 100 ppb	100.000000	83056.492188
*	Cal 200 ppb	200.000000	166267.593750
*	Cal 400 ppb	400.000000	332647.000000

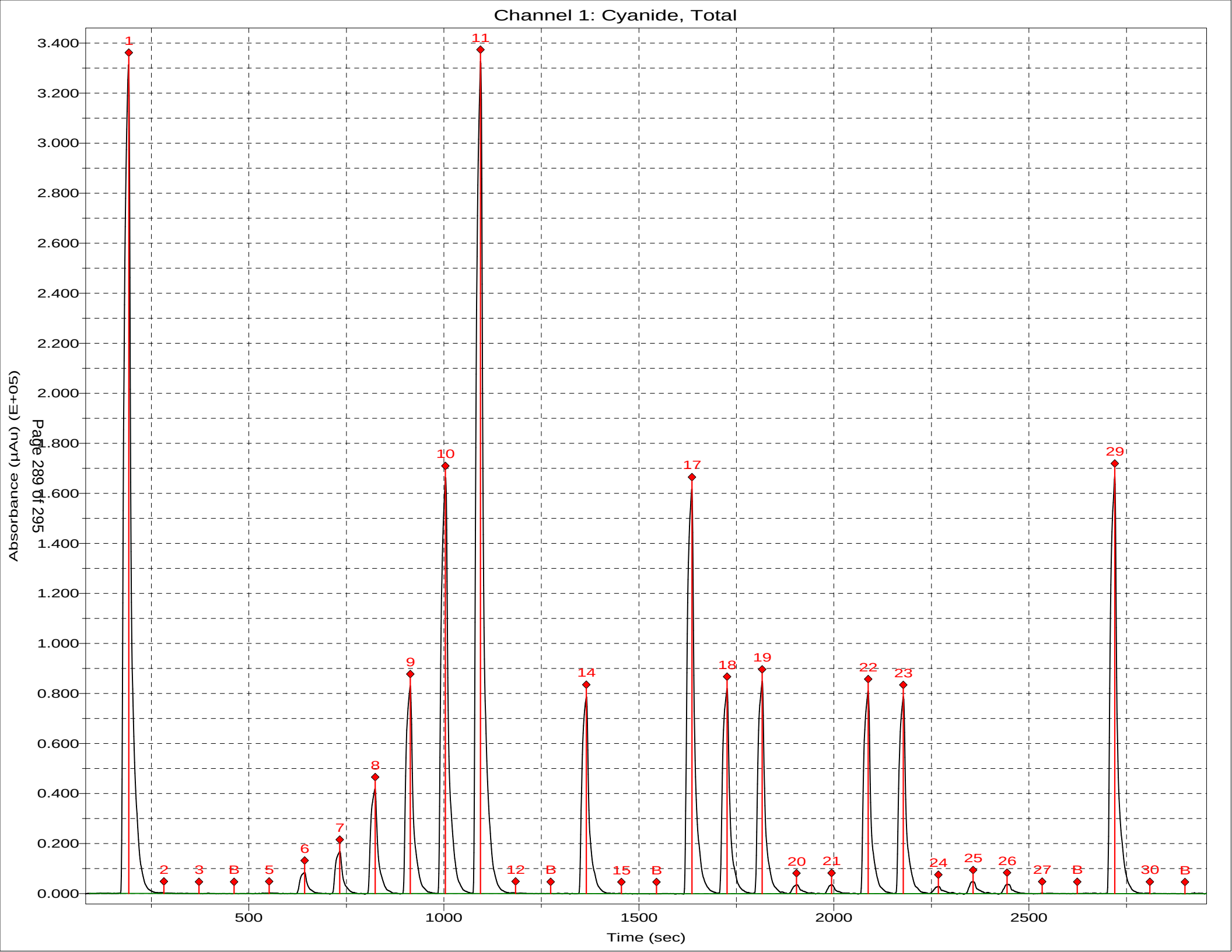
Calib Coef:
y=bx+a
a: (intercept) 1.5600e+02
b: 8.3103e+02

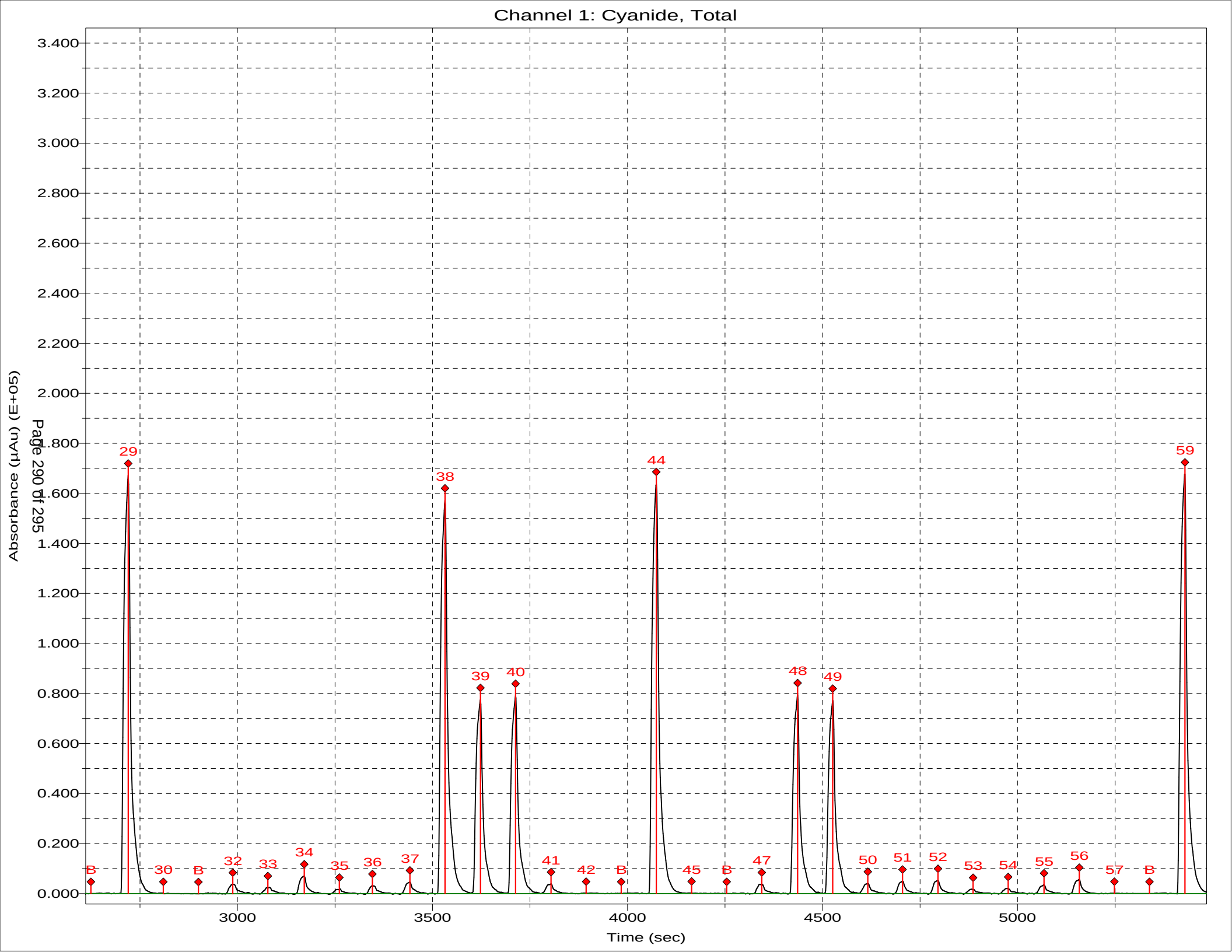
Corr Coef: 1.000000

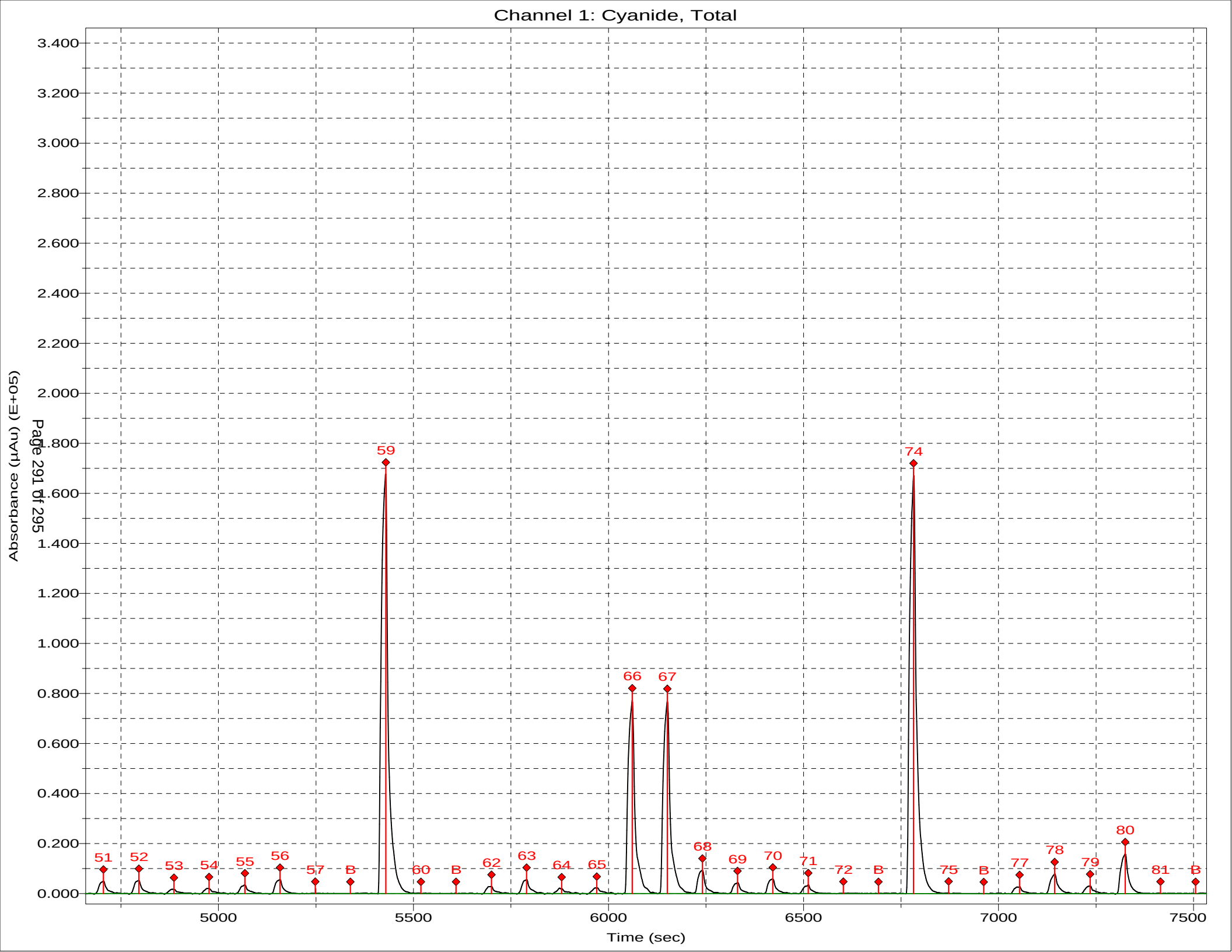
Carryover: 0.0467%

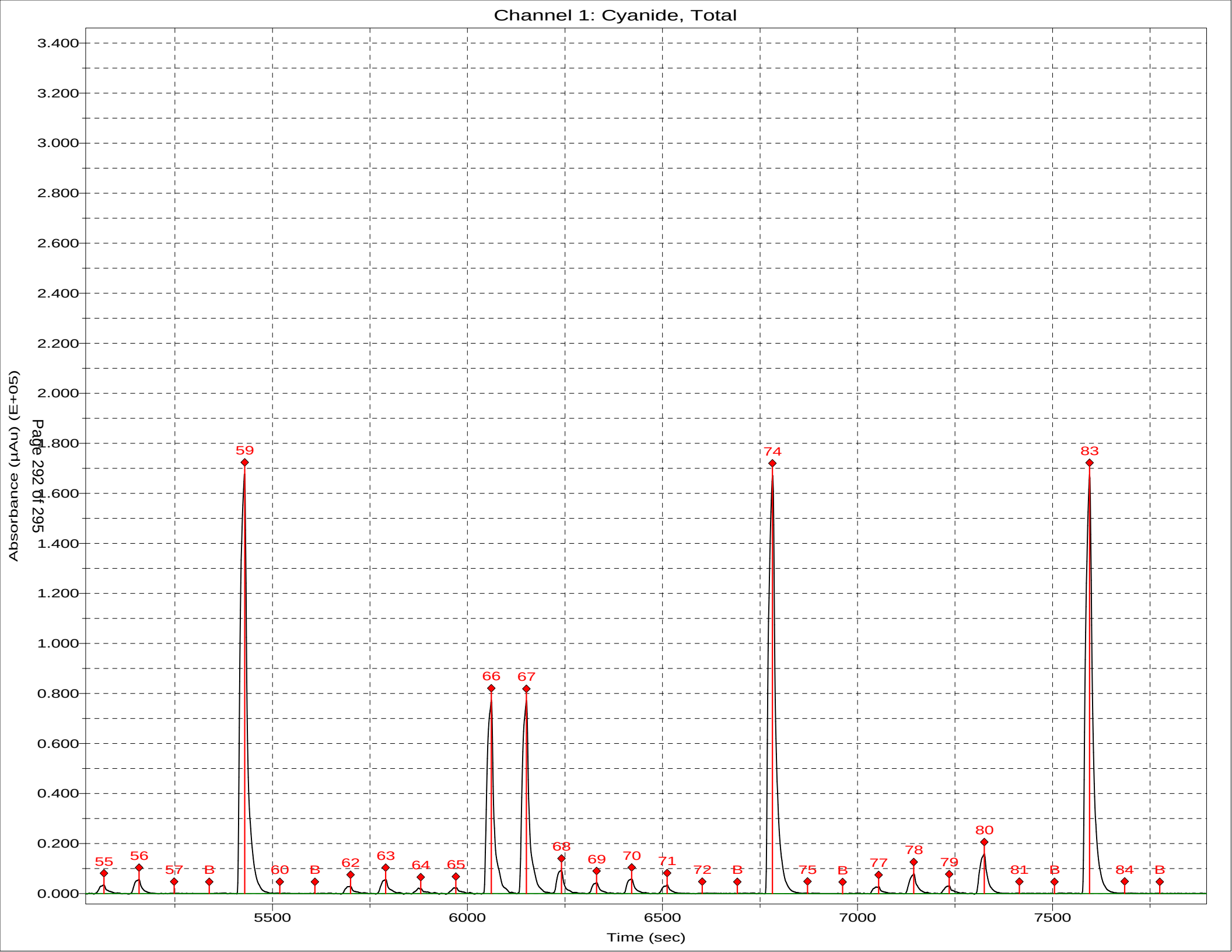
No Drift Peaks


Cyanide, Total:Calibration 1: Peak 5-85
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
-0.500
Height (E+05)
0
100
200
300
400
Conc


Channel 1: Cyanide, Total
Absorbance (µAu) (E+05)
Time (sec)
3.400
3.200
3.000
2.800
2.600
2.400
2.200
2.000
1.800
1.600
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
500
1000
1500
2000
2500
1
2
3
B
5
6
7
8
9
10
11
12
B
14
15
B
17
18
19
20
21
22
23
24
25
26
27
B
29
30
B


Channel 1: Cyanide, Total
Absorbance (µAu) (E+05)
Time (sec)
3.400
3.200
3.000
2.800
2.600
2.400
2.200
2.000
1.800
1.600
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
3000
3500
4000
4500
5000
B
29
30
B
32
33
34
35
36
37
38
39
40
41
42
B
44
45
B
47
48
49
50
51
52
53
54
55
56
57
B
59


Channel 1: Cyanide, Total
Absorbance (µAu) (E+05)
3.400
3.200
3.000
2.800
2.600
2.400
2.200
2.000
1.800
1.600
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
5000
5500
6000
6500
7000
7500
Time (sec)
51
52
53
54
55
56
57
B
59
60
B
62
63
64
65
66
67
68
69
70
71
72
B
74
75
B
77
78
79
80
81
B


Channel 1: Cyanide, Total
Absorbance (µAu) (E+05)
3.400
3.200
3.000
2.800
2.600
2.400
2.200
2.000
1.800
1.600
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
5500
6000
6500
7000
7500
Time (sec)
55
56
57
B
59
60
B
62
63
64
65
66
67
68
69
70
71
72
B
74
75
B
77
78
79
80
81
B
83
84
B

Shipping and Receiving Documents

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

810481525583 810481513700
810481513580 810481513696
810481513685 810481524431
810481523377 810481524421
810481513245 ~~810481524432~~ ~~810481524421~~

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Matt Hummell	Lab PM: McEntee, Patrick J	Carrier Tracking No(s):	COC No: 280-58548-20539.1
Client Contact: Ms. Heather Miner	Phone:	E-Mail: patrick.mcentee@testamericainc.com		Page: Page 1 of 1
Company: Cardno TEC, Inc				Job #:
Address: 1658 Cole Boulevard Suite 190	Due Date Requested:			
City: Golden	TAT Requested (days):			
State, Zip: CO, 80401				
Phone:	PO #: 0091979			
Email: heather.miner@cardno-gs.com	WO #:			
Project Name: Ravenna, OH - Erie Burning Grounds	Project #: 28014271			
Site:	SSOW#:			

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Metals 6010C_DOD5, 6020A_DOD5, 7470A_DOD5	8330B_DOD5 - Explosives	Cyanide 9012B	Total Number of containers	Special Instructions/Note:
				Preservation Code:			D	N	B		
EBGmw-128-111016-GW	11/10/16	1047	G	W	N	N		X	X	3	
EBGmw-126-111016-GW	11/10/16	1253	G	W	N	N		X	X	3	
EBGmw-131-111016-GW	11/10/16	1406	G	W	N	N		X	X	3	
EBGmw-125-111016-GW	~~1450~~ 11/10/16	1450	G	W	N	N		X	X	3	

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Inspected by Bethany Welch

280-90848 Chain of Custody

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ______ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 11-10-16 17:30	Company: ATC	Received by: FedEx	Date/Time: 11-10-16 17:30	Company
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 11/11/16 0930	Company: TAD
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2.1/0.0 IR#5 transferred by JS 11/11/16

Login Sample Receipt Checklist

Client: Cardno TEC, Inc

Job Number: 280-90848-1

Login Number: 90848
List Number: 1
Creator: True, Joshua A

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	