TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 280-90531-1

Job Description: Ravenna, OH, MBS

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

Attention: Ms. Heather Miner

Approved for release.
Patrick J McEntee
Manager of Project Management
11/29/2016 6:37 AM

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11/29/2016

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.
Q	One or more quality control criteria failed.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
M	Manual integrated compound.

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, MBS

Report Number: 280-90531-1

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 11/4/2016 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 0.3º C, 0.4º C, 0.8º C and 2.3º C.

Receipt Exceptions

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): MBS-004-110316-GW (280-90531-2). The container labels list the sample time as 1010, while the COC lists 1110. The samples were logged per the COC and the laboratory will proceed with analysis unless instructed otherwise by the client.

EXPLOSIVES

Samples MBS-006-110316-GW (280-90531-1) and MBS-004-110316-GW (280-90531-2) were analyzed for Explosives in accordance with 8330B. The samples were prepared on 11/04/2016 and analyzed on 11/17/2016 and 11/27/2016.

2,6-Dinitrotoluene , RDX and 1,3,5-Trinitrobenzene were detected in method blank MB 280-349987/1-A at levels that were above the method detection limit but below one half the reporting limit. The values should be considered estimates, and have been flagged.

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

CYANIDE, TOTAL

Samples MBS-006-110316-GW (280-90531-1) and MBS-004-110316-GW (280-90531-2) were analyzed for Cyanide, Total in accordance with 9012B. The samples were prepared on 11/15/2016 and analyzed on 11/16/2016.

No 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, MBS

TestAmerica Job ID: 280-90531-1

Client Sample ID: MBS-006-110316-GW — Lab Sample ID: 280-90531-1

No Detections.

Client Sample ID: MBS-004-110316-GW — Lab Sample ID: 280-90531-2

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	2.5	J	10	2.0	ug/L	1		9012B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MBS-006-110316-GW

Lab Sample ID: 280-90531-1

Date Collected: 11/03/16 11:13

Matrix: Water

Date Received: 11/04/16 09:50

Method: 8330B - Nitroaromatics and Nitramines (HPLC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.45	U	1.1	0.22	ug/L		11/04/16 20:12	11/17/16 03:41	1
1,3-Dinitrobenzene	0.22	U	0.45	0.099	ug/L		11/04/16 20:12	11/17/16 03:41	1
2,4,6-Trinitrotoluene	0.22	U	0.45	0.081	ug/L		11/04/16 20:12	11/17/16 03:41	1
2,4-Dinitrotoluene	0.22	U	0.45	0.093	ug/L		11/04/16 20:12	11/17/16 03:41	1
2,6-Dinitrotoluene	0.22	U	0.22	0.072	ug/L		11/04/16 20:12	11/17/16 03:41	1
2-Amino-4,6-dinitrotoluene	0.13	U Q	0.22	0.056	ug/L		11/04/16 20:12	11/17/16 03:41	1
2-Nitrotoluene	0.22	U Q	0.45	0.095	ug/L		11/04/16 20:12	11/17/16 03:41	1
3-Nitrotoluene	0.22	U Q	0.45	0.093	ug/L		11/04/16 20:12	11/17/16 03:41	1
4-Amino-2,6-dinitrotoluene	0.13	U	0.22	0.064	ug/L		11/04/16 20:12	11/17/16 03:41	1
4-Nitrotoluene	0.45	U Q	1.1	0.22	ug/L		11/04/16 20:12	11/17/16 03:41	1
HMX	0.22	U	0.45	0.098	ug/L		11/04/16 20:12	11/17/16 03:41	1
Nitrobenzene	0.22	U	0.45	0.10	ug/L		11/04/16 20:12	11/17/16 03:41	1
Nitroglycerin	2.2	U	3.3	1.0	ug/L		11/04/16 20:12	11/17/16 03:41	1
PETN	1.3	U	2.2	0.46	ug/L		11/04/16 20:12	11/17/16 03:41	1
RDX	0.13	U	0.22	0.058	ug/L		11/04/16 20:12	11/27/16 21:39	1
Tetryl	0.22	U	0.27	0.088	ug/L		11/04/16 20:12	11/17/16 03:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dinitrobenzene	*103*		*83 - 119*	*11/04/16 20:12*	*11/17/16 03:41*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	5.0	U	10	2.0	ug/L		11/15/16 08:00	11/16/16 06:38	1

Client Sample ID: MBS-004-110316-GW

Lab Sample ID: 280-90531-2

Date Collected: 11/03/16 11:10

Matrix: Water

Date Received: 11/04/16 09:50

Method: 8330B - Nitroaromatics and Nitramines (HPLC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.44	U	1.1	0.22	ug/L		11/04/16 20:12	11/17/16 03:18	1
1,3-Dinitrobenzene	0.22	U	0.44	0.097	ug/L		11/04/16 20:12	11/17/16 03:18	1
2,4,6-Trinitrotoluene	0.22	U	0.44	0.079	ug/L		11/04/16 20:12	11/17/16 03:18	1
2,4-Dinitrotoluene	0.22	U	0.44	0.092	ug/L		11/04/16 20:12	11/17/16 03:18	1
2,6-Dinitrotoluene	0.22	U	0.22	0.071	ug/L		11/04/16 20:12	11/17/16 03:18	1
2-Amino-4,6-dinitrotoluene	0.13	U Q	0.22	0.056	ug/L		11/04/16 20:12	11/17/16 03:18	1
2-Nitrotoluene	0.22	U Q	0.44	0.094	ug/L		11/04/16 20:12	11/17/16 03:18	1
3-Nitrotoluene	0.22	U Q	0.44	0.092	ug/L		11/04/16 20:12	11/17/16 03:18	1
4-Amino-2,6-dinitrotoluene	0.13	U	0.22	0.063	ug/L		11/04/16 20:12	11/17/16 03:18	1
4-Nitrotoluene	0.44	U Q	1.1	0.22	ug/L		11/04/16 20:12	11/17/16 03:18	1
HMX	0.22	U	0.44	0.096	ug/L		11/04/16 20:12	11/17/16 03:18	1
Nitrobenzene	0.22	U	0.44	0.10	ug/L		11/04/16 20:12	11/17/16 03:18	1
Nitroglycerin	2.2	U	3.3	1.0	ug/L		11/04/16 20:12	11/17/16 03:18	1
PETN	1.3	U	2.2	0.46	ug/L		11/04/16 20:12	11/17/16 03:18	1
RDX	0.13	U	0.22	0.057	ug/L		11/04/16 20:12	11/17/16 03:18	1
Tetryl	0.22	U	0.26	0.087	ug/L		11/04/16 20:12	11/17/16 03:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dinitrobenzene	*100*		*83 - 119*	*11/04/16 20:12*	*11/17/16 03:18*	*1*

Client Sample ID: MBS-004-110316-GW

Date Collected: 11/03/16 11:10
Date Received: 11/04/16 09:50

Lab Sample ID: 280-90531-2

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	2.5	J	10	2.0	ug/L		11/15/16 08:00	11/16/16 06:42	1

Default Detection Limits

Client: Cardno TEC, Inc
Project/Site: Ravenna, OH, MBS

TestAmerica Job ID: 280-90531-1

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, MBS

TestAmerica Job ID: 280-90531-1

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)								
280-90531-1	MBS-006-110316-GW	103								
280-90531-2	MBS-004-110316-GW	100								
LCS 280-349987/2-A	Lab Control Sample	95								
LCS 280-349987/2-A	Lab Control Sample	107								
LCSD 280-349987/3-A	Lab Control Sample Dup	97								
LCSD 280-349987/3-A	Lab Control Sample Dup	104								
MB 280-349987/1-A	Method Blank	98								
MB 280-349987/1-A	Method Blank	99								

Surrogate Legend

12DNB = 1,2-Dinitrobenzene

Method: 8330B - Nitroaromatics and Nitramines (HPLC)

Lab Sample ID: MB 280-349987/1-A
Matrix: Water
Analysis Batch: 351752

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 349987

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		11/04/16 20:12	11/16/16 21:31	1
1,3-Dinitrobenzene	0.20	U	0.40	0.089	ug/L		11/04/16 20:12	11/16/16 21:31	1
2,4,6-Trinitrotoluene	0.20	U	0.40	0.072	ug/L		11/04/16 20:12	11/16/16 21:31	1
2,4-Dinitrotoluene	0.20	U	0.40	0.084	ug/L		11/04/16 20:12	11/16/16 21:31	1
2,6-Dinitrotoluene	0.20	U	0.20	0.065	ug/L		11/04/16 20:12	11/16/16 21:31	1
2-Amino-4,6-dinitrotoluene	0.12	U	0.20	0.051	ug/L		11/04/16 20:12	11/16/16 21:31	1
2-Nitrotoluene	0.20	U	0.40	0.086	ug/L		11/04/16 20:12	11/16/16 21:31	1
3-Nitrotoluene	0.20	U	0.40	0.083	ug/L		11/04/16 20:12	11/16/16 21:31	1
4-Amino-2,6-dinitrotoluene	0.12	U	0.20	0.058	ug/L		11/04/16 20:12	11/16/16 21:31	1
4-Nitrotoluene	0.40	U	1.0	0.20	ug/L		11/04/16 20:12	11/16/16 21:31	1
HMX	0.20	U	0.40	0.088	ug/L		11/04/16 20:12	11/16/16 21:31	1
Nitrobenzene	0.20	U	0.40	0.091	ug/L		11/04/16 20:12	11/16/16 21:31	1
Nitroglycerin	2.0	U	3.0	0.92	ug/L		11/04/16 20:12	11/16/16 21:31	1
PETN	1.2	U	2.0	0.42	ug/L		11/04/16 20:12	11/16/16 21:31	1
RDX	0.0606	J	0.20	0.052	ug/L		11/04/16 20:12	11/16/16 21:31	1
Tetryl	0.20	U	0.24	0.079	ug/L		11/04/16 20:12	11/16/16 21:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dinitrobenzene	*98*		*83 - 119*	*11/04/16 20:12*	*11/16/16 21:31*	*1*

Lab Sample ID: MB 280-349987/1-A
Matrix: Water
Analysis Batch: 352866

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 349987

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.335	J	1.0	0.20	ug/L		11/04/16 20:12	11/23/16 14:59	1
1,3-Dinitrobenzene	0.20	U	0.40	0.089	ug/L		11/04/16 20:12	11/23/16 14:59	1
2,4,6-Trinitrotoluene	0.20	U	0.40	0.072	ug/L		11/04/16 20:12	11/23/16 14:59	1
2,4-Dinitrotoluene	0.20	U	0.40	0.084	ug/L		11/04/16 20:12	11/23/16 14:59	1
2,6-Dinitrotoluene	0.241	M	0.20	0.065	ug/L		11/04/16 20:12	11/23/16 14:59	1
2-Amino-4,6-dinitrotoluene	0.12	U	0.20	0.051	ug/L		11/04/16 20:12	11/23/16 14:59	1
2-Nitrotoluene	0.20	U	0.40	0.086	ug/L		11/04/16 20:12	11/23/16 14:59	1
3-Nitrotoluene	0.20	U M	0.40	0.083	ug/L		11/04/16 20:12	11/23/16 14:59	1
4-Amino-2,6-dinitrotoluene	0.12	U	0.20	0.058	ug/L		11/04/16 20:12	11/23/16 14:59	1
4-Nitrotoluene	0.40	U	1.0	0.20	ug/L		11/04/16 20:12	11/23/16 14:59	1
HMX	0.20	U	0.40	0.088	ug/L		11/04/16 20:12	11/23/16 14:59	1
Nitrobenzene	0.20	U	0.40	0.091	ug/L		11/04/16 20:12	11/23/16 14:59	1
Nitroglycerin	2.0	U	3.0	0.92	ug/L		11/04/16 20:12	11/23/16 14:59	1
PETN	1.2	U	2.0	0.42	ug/L		11/04/16 20:12	11/23/16 14:59	1
RDX	0.12	U	0.20	0.052	ug/L		11/04/16 20:12	11/23/16 14:59	1
Tetryl	0.20	U	0.24	0.079	ug/L		11/04/16 20:12	11/23/16 14:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dinitrobenzene	*99*		*83 - 119*	*11/04/16 20:12*	*11/23/16 14:59*	*1*

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

Lab Sample ID: LCS 280-349987/2-A
Matrix: Water
Analysis Batch: 351752

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 349987

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trinitrobenzene	2.00	1.82		ug/L		91	73 - 125
1,3-Dinitrobenzene	2.00	1.89		ug/L		95	78 - 120
2,4,6-Trinitrotoluene	2.00	1.99		ug/L		100	71 - 123
2,4-Dinitrotoluene	2.00	1.69		ug/L		85	78 - 120
2,6-Dinitrotoluene	2.00	1.70		ug/L		85	77 - 127
2-Amino-4,6-dinitrotoluene	2.00	1.57	Q	ug/L		78	79 - 120
2-Nitrotoluene	2.00	1.21	Q	ug/L		61	70 - 127
3-Nitrotoluene	2.00	1.25	Q	ug/L		62	73 - 125
4-Amino-2,6-dinitrotoluene	2.00	1.55		ug/L		77	76 - 125
4-Nitrotoluene	2.00	1.38	Q	ug/L		69	71 - 127
HMX	2.00	1.92		ug/L		96	65 - 135
Nitrobenzene	2.00	1.47		ug/L		73	65 - 134
Nitroglycerin	20.0	20.4		ug/L		102	74 - 127
PETN	20.0	20.4		ug/L		102	73 - 127
RDX	2.00	2.12		ug/L		106	68 - 130
Tetryl	2.00	1.80		ug/L		90	64 - 128

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dinitrobenzene	*95*		*83 - 119*

Lab Sample ID: LCS 280-349987/2-A
Matrix: Water
Analysis Batch: 352866

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 349987

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trinitrobenzene	2.00	2.08		ug/L		104	73 - 125
1,3-Dinitrobenzene	2.00	1.87		ug/L		93	78 - 120
2,4,6-Trinitrotoluene	2.00	2.33		ug/L		116	71 - 123
2,4-Dinitrotoluene	2.00	1.74		ug/L		87	78 - 120
2,6-Dinitrotoluene	2.00	1.64		ug/L		82	77 - 127
2-Amino-4,6-dinitrotoluene	2.00	1.51	Q	ug/L		75	79 - 120
2-Nitrotoluene	2.00	1.27	Q	ug/L		64	70 - 127
3-Nitrotoluene	2.00	1.26	Q	ug/L		63	73 - 125
4-Amino-2,6-dinitrotoluene	2.00	1.45	Q	ug/L		73	76 - 125
4-Nitrotoluene	2.00	1.26	Q	ug/L		63	71 - 127
HMX	2.00	1.87		ug/L		94	65 - 135
Nitrobenzene	2.00	1.87		ug/L		94	65 - 134
Nitroglycerin	20.0	20.0		ug/L		100	74 - 127
PETN	20.0	21.1		ug/L		106	73 - 127
RDX	2.00	2.03		ug/L		101	68 - 130
Tetryl	2.00	1.79		ug/L		89	64 - 128

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dinitrobenzene	*107*		*83 - 119*

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

Lab Sample ID: LCSD 280-349987/3-A
Matrix: Water
Analysis Batch: 351752

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 349987

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3,5-Trinitrobenzene			2.00	1.80		ug/L		90	73 - 125	1	20
1,3-Dinitrobenzene			2.00	1.98		ug/L		99	78 - 120	5	20
2,4,6-Trinitrotoluene			2.00	1.99		ug/L		99	71 - 123	0	20
2,4-Dinitrotoluene			2.00	1.86		ug/L		93	78 - 120	9	20
2,6-Dinitrotoluene			2.00	1.76		ug/L		88	77 - 127	3	20
2-Amino-4,6-dinitrotoluene			2.00	1.68		ug/L		84	79 - 120	7	20
2-Nitrotoluene			2.00	1.56	Q	ug/L		78	70 - 127	25	20
3-Nitrotoluene			2.00	1.62	Q	ug/L		81	73 - 125	26	20
4-Amino-2,6-dinitrotoluene			2.00	1.61		ug/L		80	76 - 125	4	20
4-Nitrotoluene			2.00	1.72	Q	ug/L		86	71 - 127	22	20
HMX			2.00	1.81		ug/L		91	65 - 135	6	20
Nitrobenzene			2.00	1.74		ug/L		87	65 - 134	17	20
Nitroglycerin			20.0	20.0		ug/L		100	74 - 127	2	20
PETN			20.0	19.3		ug/L		97	73 - 127	5	20
RDX			2.00	2.04		ug/L		102	68 - 130	4	20
Tetryl			2.00	1.66		ug/L		83	64 - 128	8	20

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

Lab Sample ID: LCSD 280-349987/3-A
Matrix: Water
Analysis Batch: 352866

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 349987

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3,5-Trinitrobenzene			2.00	2.25		ug/L		113	73 - 125	8	20
1,3-Dinitrobenzene			2.00	1.95		ug/L		98	78 - 120	4	20
2,4,6-Trinitrotoluene			2.00	2.30		ug/L		115	71 - 123	1	20
2,4-Dinitrotoluene			2.00	1.98		ug/L		99	78 - 120	13	20
2,6-Dinitrotoluene			2.00	1.77		ug/L		88	77 - 127	8	20
2-Amino-4,6-dinitrotoluene			2.00	1.63		ug/L		81	79 - 120	8	20
2-Nitrotoluene			2.00	1.69	Q	ug/L		84	70 - 127	28	20
3-Nitrotoluene			2.00	1.70	Q	ug/L		85	73 - 125	29	20
4-Amino-2,6-dinitrotoluene			2.00	1.57		ug/L		78	76 - 125	7	20
4-Nitrotoluene			2.00	1.76	Q	ug/L		88	71 - 127	33	20
HMX			2.00	1.79		ug/L		90	65 - 135	4	20
Nitrobenzene			2.00	2.23		ug/L		111	65 - 134	17	20
Nitroglycerin			20.0	20.4		ug/L		102	74 - 127	2	20
PETN			20.0	20.3		ug/L		101	73 - 127	4	20
RDX			2.00	2.05		ug/L		102	68 - 130	1	20
Tetryl			2.00	1.67		ug/L		83	64 - 128	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dinitrobenzene	*104*		*83 - 119*

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

Lab Sample ID: MB 280-351503/4-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 351695 — **Prep Batch: 351503**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	5.0	U	10	2.0	ug/L		11/15/16 08:00	11/16/16 06:36	1

Lab Sample ID: HLCS 280-351503/1-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 351695 — **Prep Batch: 351503**

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 280-351503/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 351695 — **Prep Batch: 351503**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	100	94.1		ug/L		94	83 - 116

Lab Sample ID: LLCS 280-351503/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 351695 — **Prep Batch: 351503**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	100	98.9		ug/L		99	44 - 167

Lab Sample ID: 280-90531-1 MS — **Client Sample ID: MBS-006-110316-GW**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 351695 — **Prep Batch: 351503**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	5.0	U	100	94.5		ug/L		95	83 - 116

Lab Sample ID: 280-90531-1 MSD — **Client Sample ID: MBS-006-110316-GW**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 351695 — **Prep Batch: 351503**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	5.0	U	100	92.5		ug/L		92	83 - 116	2	20

HPLC/IC

Prep Batch: 349987

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90531-1	MBS-006-110316-GW	Total/NA	Water	3535	
280-90531-2	MBS-004-110316-GW	Total/NA	Water	3535	
MB 280-349987/1-A	Method Blank	Total/NA	Water	3535	
LCS 280-349987/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 280-349987/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 351752

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90531-1	MBS-006-110316-GW	Total/NA	Water	8330B	349987
280-90531-2	MBS-004-110316-GW	Total/NA	Water	8330B	349987
MB 280-349987/1-A	Method Blank	Total/NA	Water	8330B	349987
LCS 280-349987/2-A	Lab Control Sample	Total/NA	Water	8330B	349987
LCSD 280-349987/3-A	Lab Control Sample Dup	Total/NA	Water	8330B	349987

Analysis Batch: 352866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-349987/1-A	Method Blank	Total/NA	Water	8330B	349987
LCS 280-349987/2-A	Lab Control Sample	Total/NA	Water	8330B	349987
LCSD 280-349987/3-A	Lab Control Sample Dup	Total/NA	Water	8330B	349987

Analysis Batch: 353205

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90531-1	MBS-006-110316-GW	Total/NA	Water	8330B	349987

General Chemistry

Prep Batch: 351503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90531-1	MBS-006-110316-GW	Total/NA	Water	9012B	
280-90531-2	MBS-004-110316-GW	Total/NA	Water	9012B	
MB 280-351503/4-A	Method Blank	Total/NA	Water	9012B	
HLCS 280-351503/1-A	Lab Control Sample	Total/NA	Water	9012B	
LCS 280-351503/3-A	Lab Control Sample	Total/NA	Water	9012B	
LLCS 280-351503/2-A	Lab Control Sample	Total/NA	Water	9012B	
280-90531-1 MS	MBS-006-110316-GW	Total/NA	Water	9012B	
280-90531-1 MSD	MBS-006-110316-GW	Total/NA	Water	9012B	

Analysis Batch: 351695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90531-1	MBS-006-110316-GW	Total/NA	Water	9012B	351503
280-90531-2	MBS-004-110316-GW	Total/NA	Water	9012B	351503
MB 280-351503/4-A	Method Blank	Total/NA	Water	9012B	351503
HLCS 280-351503/1-A	Lab Control Sample	Total/NA	Water	9012B	351503
LCS 280-351503/3-A	Lab Control Sample	Total/NA	Water	9012B	351503
LLCS 280-351503/2-A	Lab Control Sample	Total/NA	Water	9012B	351503
280-90531-1 MS	MBS-006-110316-GW	Total/NA	Water	9012B	351503
280-90531-1 MSD	MBS-006-110316-GW	Total/NA	Water	9012B	351503

Client Sample ID: MBS-006-110316-GW

Lab Sample ID: 280-90531-1

Date Collected: 11/03/16 11:13

Matrix: Water

Date Received: 11/04/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			448.7 mL	5 mL	349987	11/04/16 20:12	CDC	TAL DEN
Total/NA	Analysis	8330B		1			353205	11/27/16 21:39	DMJ	TAL DEN
Total/NA	Prep	3535			448.7 mL	5 mL	349987	11/04/16 20:12	CDC	TAL DEN
Total/NA	Analysis	8330B		1			351752	11/17/16 03:41	DMJ	TAL DEN
Total/NA	Prep	9012B			50 mL	50 mL	351503	11/15/16 08:00	JML	TAL DEN
Total/NA	Analysis	9012B		1	50 mL	50 mL	351695	11/16/16 06:38	JML	TAL DEN

Client Sample ID: MBS-004-110316-GW

Lab Sample ID: 280-90531-2

Date Collected: 11/03/16 11:10

Matrix: Water

Date Received: 11/04/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			455.4 mL	5 mL	349987	11/04/16 20:12	CDC	TAL DEN
Total/NA	Analysis	8330B		1			351752	11/17/16 03:18	DMJ	TAL DEN
Total/NA	Prep	9012B			50 mL	50 mL	351503	11/15/16 08:00	JML	TAL DEN
Total/NA	Analysis	9012B		1	50 mL	50 mL	351695	11/16/16 06:42	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
Project/Site: Ravenna, OH, MBS

TestAmerica Job ID: 280-90531-1

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, MBS

TestAmerica Job ID: 280-90531-1

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, MBS

TestAmerica Job ID: 280-90531-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-90531-1	MBS-006-110316-GW	Water	11/03/16 11:13	11/04/16 09:50
280-90531-2	MBS-004-110316-GW	Water	11/03/16 11:10	11/04/16 09:50

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90531-1

SDG No.:

Instrument ID: CHHPLC_G2_LUNA Analysis Batch Number: 352866

Lab Sample ID: MB 280-349987/1-A Client Sample ID:

Date Analyzed: 11/23/16 14:59 Lab File ID: 11231608.D GC Column: Luna-phenylhe ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
3-Nitrotoluene	16.88	Baseline Smoothing	jonsrudd	11/24/16 18:30
2,6-Dinitrotoluene	18.94	Baseline Smoothing	jonsrudd	11/24/16 18:30

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90531-1

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.: 280-90531-1

SDG No.:

Instrument ID: CHHPLC_X3 Analysis Batch Number: 351752

Lab Sample ID: 280-90531-1 Client Sample ID: MBS-006-110316-GW

Date Analyzed: 11/17/16 03:41 Lab File ID: 043-4301.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
RDX	7.87	Baseline Smoothing	jonsrudd	11/22/16 20:53

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90531-1

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.: 280-90531-1

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.: 280-90531-1

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.: 280-90531-1

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_01177	11/16/16	11/15/16	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_00941	11/16/16	11/15/16	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

8330 LCS _ 00071

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! AF 10/21/16

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

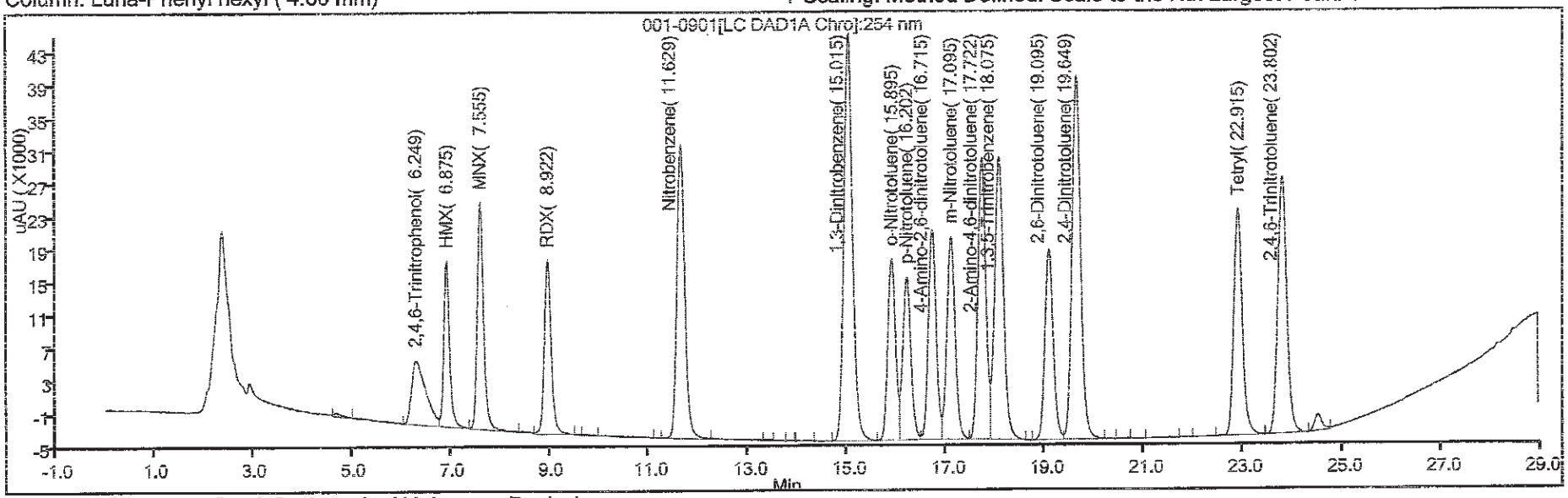
Preliminary Report

TestAmerica Denver

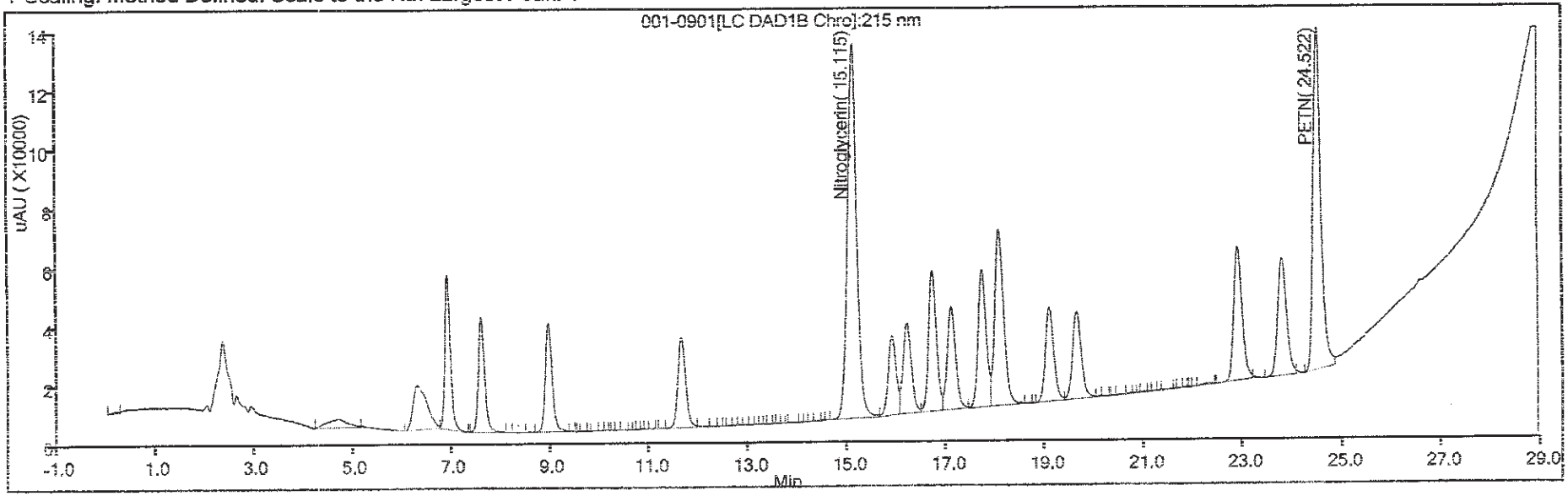
Data File:	\\ChromNA\Denver\ChromData\G2_LUNA\20161021-52147.b\001-0901.D				
Injection Date:	18-Oct-2016 15:15:38	Instrument ID:	CHHPLC_G2_LUNA	Operator ID:	ACF
Lims ID:	8330_LCS_00072			Worklist Smp#:	7
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	1
Method:	G2_8330_Luna	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)

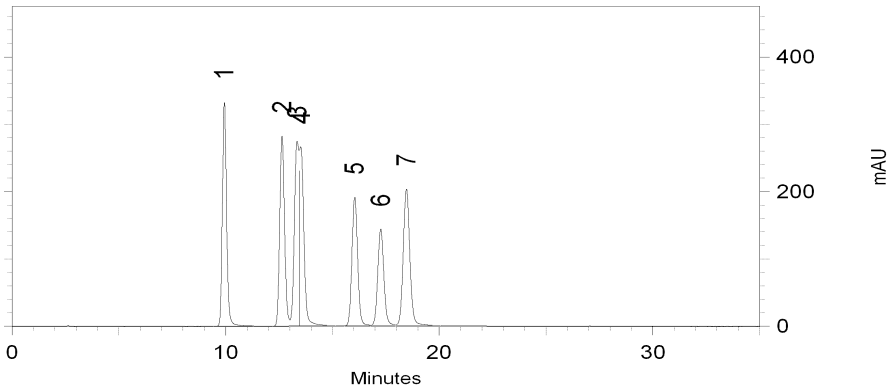
Flow Rate:
1.0 ml/min.

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

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Certificate of Analysis

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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. : 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.
- 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 Stock_TS_00005

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

TRIPLE ISO CERTIFICATION — ISO 17025 • ISO GUIDE 34 • ISO 9001

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

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ANAB ACCREDITED — TESTING LABORATORY

ISO 9001 Registered Quality System – TUV USA

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

TRIPLE ISO CERTIFICATION — ULTRA — ISO 17025 • ISO GUIDE 34 • ISO 9001

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

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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. : 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)

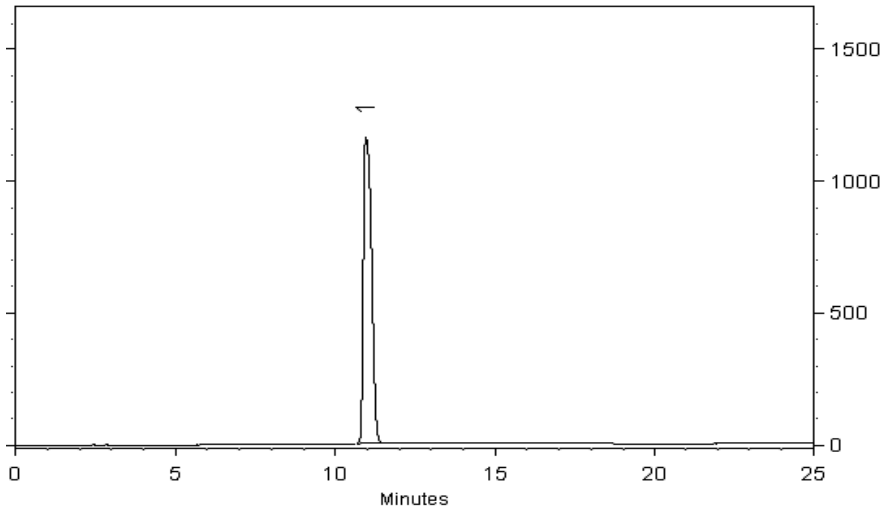
Flow Rate:
1.0 ml/min.

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.
- 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%.
- 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.
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Reagent

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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.:** 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)

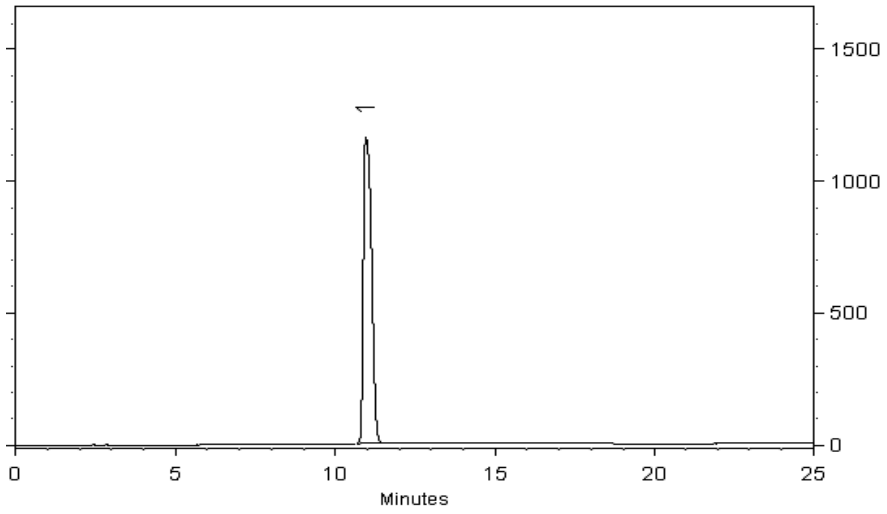
Flow Rate:
1.0 ml/min.

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.
- 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

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Manufacturing Notes:

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Handling Notes:

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Reagent

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Certificate #3222.01

Certificate of Composition

ilac-MRA

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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. : 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.
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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
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_PETN_Stk_00037

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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. : 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)

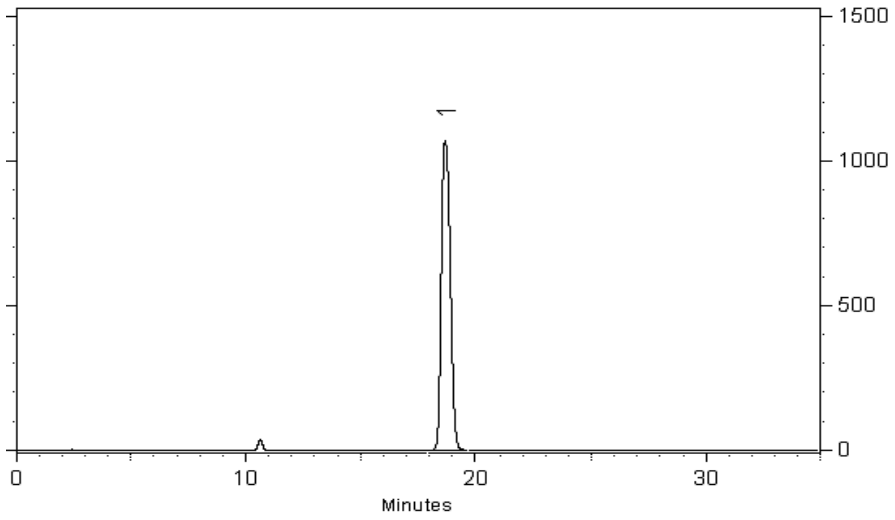
Flow Rate:
1.0 ml/min.

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
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_PETN_Stk_00038

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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. : 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)

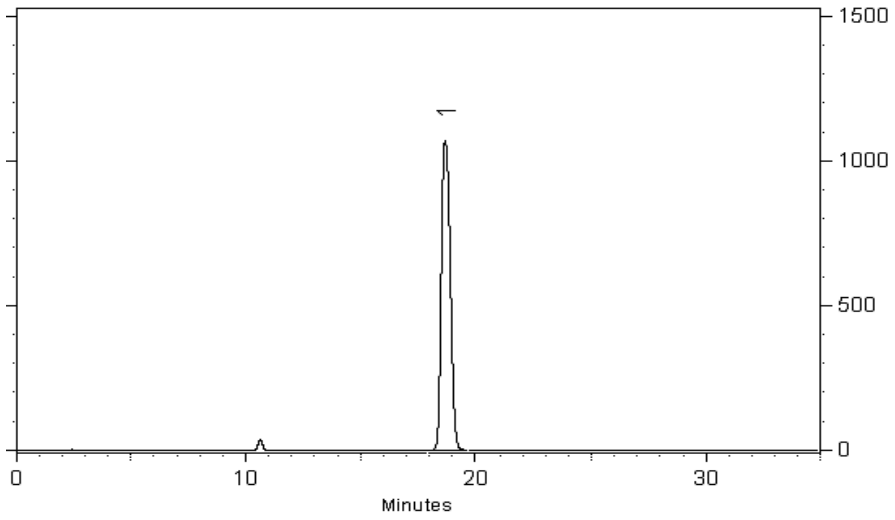
Flow Rate:
1.0 ml/min.

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:

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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.

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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.

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0°C or colder (Freezer)	< 25°C	≥ 25°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:

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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:

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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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- 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

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

Reagent

8330LCSMix1_00089

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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. : 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 **CAS #** 2691-41-0 **Purity** 98%	(Lot 111005JLM)	1,004.5 µg/mL	+/- 5.9664 +/- 54.0142 +/- 58.7320	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
2	RDX **CAS #** 121-82-4 **Purity** 99%	(Lot 080228JLM)	1,001.0 µg/mL	+/- 5.9456 +/- 53.8260 +/- 58.5274	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
3	1,3,5-Trinitrobenzene **CAS #** 99-35-4 **Purity** 99%	(Lot UNVVB)	1,004.0 µg/mL	+/- 5.9635 +/- 53.9873 +/- 58.7028	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
4	1,3-Dinitrobenzene **CAS #** 99-65-0 **Purity** 99%	(Lot BCBB1436V)	1,002.0 µg/mL	+/- 5.9516 +/- 53.8797 +/- 58.5858	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
5	Nitrobenzene **CAS #** 98-95-3 **Purity** 99%	(Lot SHBF2348V)	1,002.0 µg/mL	+/- 5.9516 +/- 53.8797 +/- 58.5858	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
6	2,4,6-Trinitrotoluene **CAS #** 118-96-7 **Purity** 99%	(Lot 2554100)	1,002.0 µg/mL	+/- 5.9516 +/- 53.8797 +/- 58.5858	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
7	2,4-Dinitrotoluene **CAS #** 121-14-2 **Purity** 99%	(Lot MKAA0690V)	1,002.0 µg/mL	+/- 5.9516 +/- 53.8797 +/- 58.5858	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.
- 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_00090

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. : 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

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0°C or colder (Freezer)	< 25°C	≥ 25°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

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

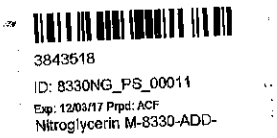
CERTIFICATE OF ANALYSIS

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*

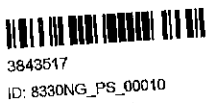
Danger 2

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

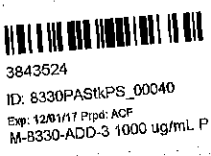
Date Certified: Dec 1, 2015
Expiration: Dec 1, 2017
Sample Size: 1 mL
Components: 1

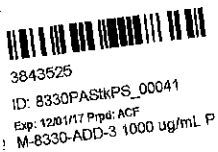
Storage Condition: Ambient (>5 °C)

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

[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.

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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

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

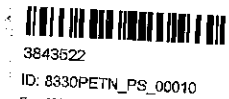
CERTIFICATE OF ANALYSIS

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

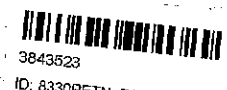
Danger 2

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



3843522
ID: 8330PETN_PS_00010
Exp: 06/16/17 Prpd: ACF
Accustandard M-8330-ADD-2



3843523
ID: 8330PETN_PS_00011
Exp: 06/16/17 Prpd: ACF
Accustandard M-8330-ADD-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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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

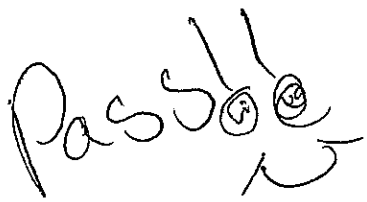
Preliminary Report

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

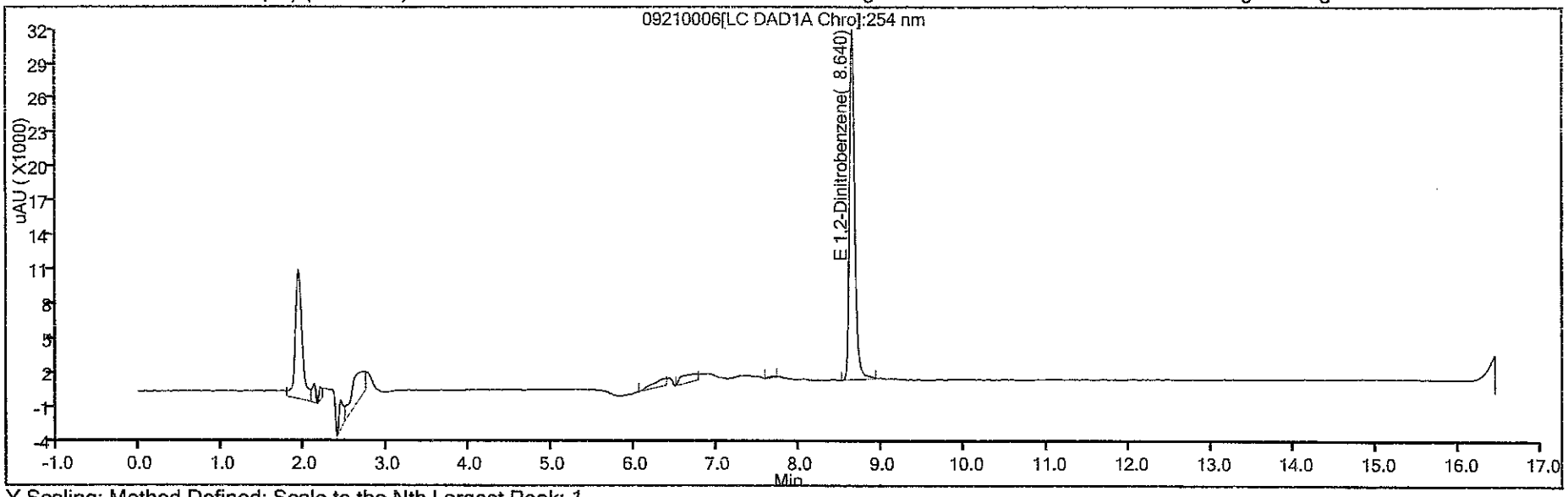
Preliminary Report

TestAmerica Denver

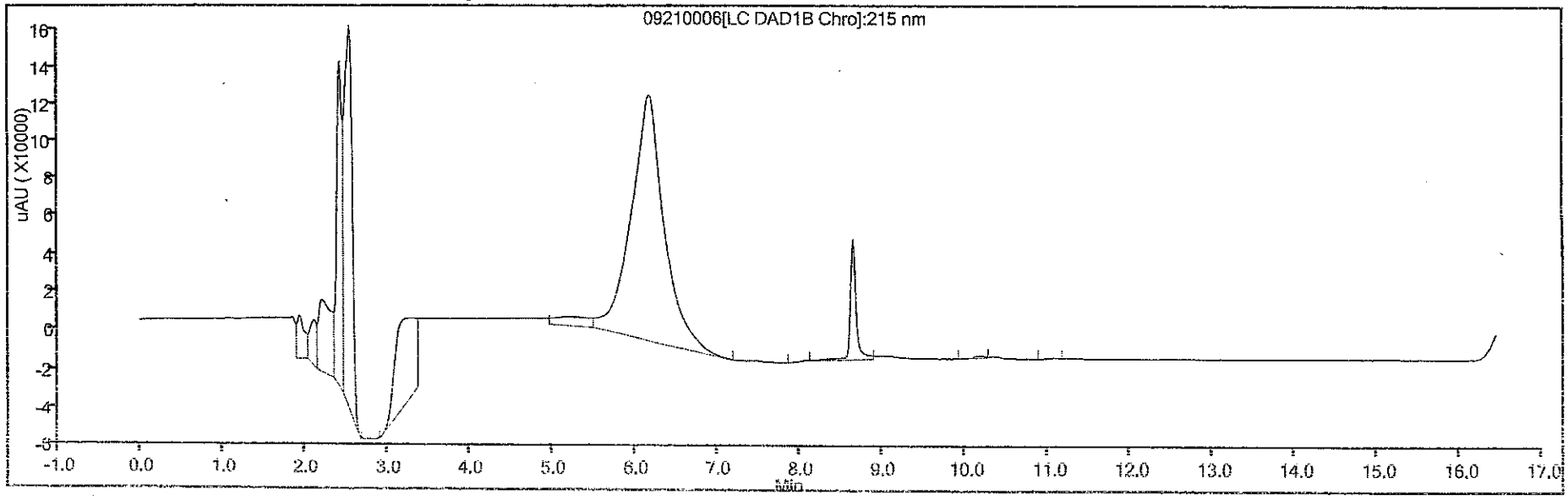
Data File:	\\ChromNA\Denver\ChromData\X4_C18\20160921-51107.b\09210006.D				
Injection Date:	21-Sep-2016 15:39:17	Instrument ID:	CHHPLCX4_C18	Operator ID:	ACF
Lims ID:	8330Surrogate00090	Lab Sample ID:	Client 280-343153/6-A	Worklist Smp#:	6
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000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



Reagent

8330SurrStkSS_00095

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. : 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)

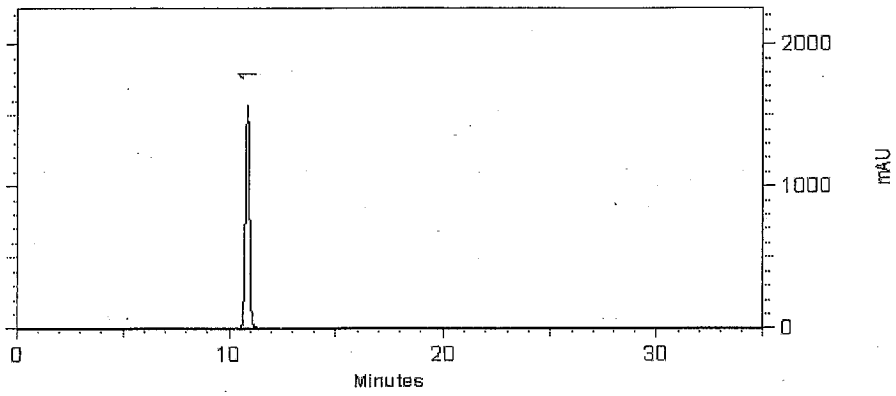
Flow Rate:
1.0 ml/min.

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
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Handling Notes:

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Reagent

8330SurrStkSS_00096

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Solvent: Methanol
CAS # 67-56-1
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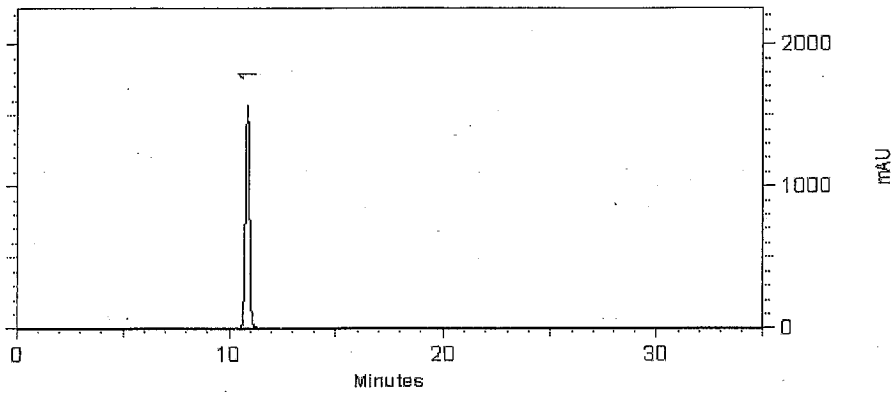
Mobile Phase B:

Mobile Phase Composition:

Det. Type:
Wavelength: 210 nm



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Diane Shaffer - QA Analyst

Date Passed: 13-Nov-2014

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Manufacturing Notes:

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Handling Notes:

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Reagent

8330SurrStkSS_00097

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

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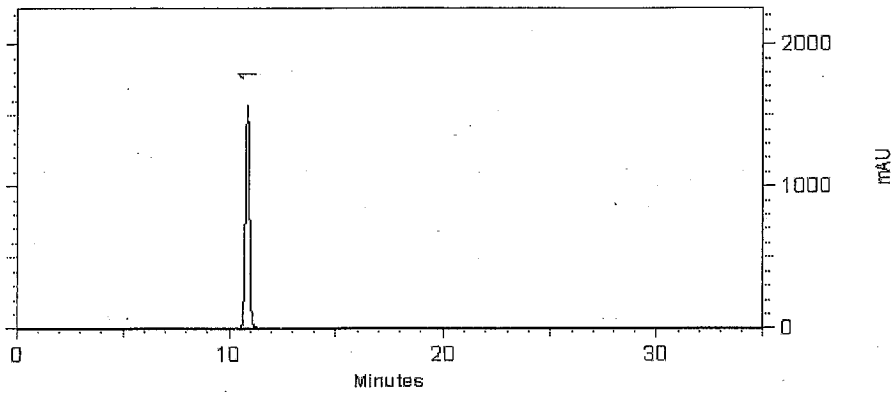
Flow Rate:
1.0 ml/min.

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

Mobile Phase B:

Mobile Phase Composition:

Det. Type:
Wavelength: 210 nm



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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:

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Manufacturing Notes:

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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

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Manufacturing 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
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

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. : 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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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. : 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 +/- 11.3644 µg/mL +/- 13.0587 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
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_00111

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Fax: (814)353-1309

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

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ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ilac-MRA

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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.:** 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:

- 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_00113

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CERTIFIED REFERENCE MATERIAL

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Certificate #3222.01

Certificate of Analysis

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ACCREDITED
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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.:** 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 +/- 11.3644 µg/mL +/- 13.0587 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.
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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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0°C or colder (Freezer)	< 25°C	≥ 25°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

8330SurrStock_00159

125 Market Street
New Haven, CT 06513
USA

AccuStandard® Inc.

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

CERTIFICATE OF ANALYSIS

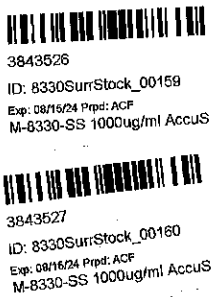
Catalog No: M-8330-SS
Description: 1,2-Dinitrobenzene Standard
Lot: 214081391
Solvent: Methanol
Hazards: HIGHLY FLAMMABLE - *Refer to SDS for safety info*

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

Page 1 of 1 - Rev. 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

CN CAL Std_00052

RICCA CHEMICAL COMPANY®

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Pocomoke City, MD 21851
Batesville, IN 47006
http://www.riccachemical.com
1-888-GO-RICCA
customerservice@riccachemical.com

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

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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.: 280-90531-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): UltraCarb5u ID: 4.6 (mm) GC Column (2): Luna-phenyl 4.6 (mm)

Client Sample ID	Lab Sample ID	12DNB1 #	12DNB2 #
MBS-006-110316-GW	280-90531-1	103	
MBS-004-110316-GW	280-90531-2	100	
	MB 280-349987/1-A		99
	MB 280-349987/1-A	98	
	LCS 280-349987/2-A		107
	LCS 280-349987/2-A	95	
	LCSD 280-349987/3-A		104
	LCSD 280-349987/3-A	97	

	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.: 280-90531-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 028-2801.D

Lab ID: LCS 280-349987/2-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
1,3,5-Trinitrobenzene	2.00	1.82	91	73-125	
1,3-Dinitrobenzene	2.00	1.89	95	78-120	
2,4,6-Trinitrotoluene	2.00	1.99	100	71-123	
2,4-Dinitrotoluene	2.00	1.69	85	78-120	
2,6-Dinitrotoluene	2.00	1.70	85	77-127	
2-Amino-4,6-dinitrotoluene	2.00	1.57	78	79-120	Q
2-Nitrotoluene	2.00	1.21	61	70-127	Q
3-Nitrotoluene	2.00	1.25	62	73-125	Q
4-Amino-2,6-dinitrotoluene	2.00	1.55	77	76-125	
4-Nitrotoluene	2.00	1.38	69	71-127	Q
HMX	2.00	1.92	96	65-135	
Nitrobenzene	2.00	1.47	73	65-134	
Nitroglycerin	20.0	20.4	102	74-127	
PETN	20.0	20.4	102	73-127	
RDX	2.00	2.12	106	68-130	
Tetryl	2.00	1.80	90	64-128	

Column to be used to flag recovery and RPD values

FORM III 8330B

FORM III
HPLC/IC LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-90531-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 11231609.D

Lab ID: LCS 280-349987/2-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
1,3,5-Trinitrobenzene	2.00	2.08	104	73-125	
1,3-Dinitrobenzene	2.00	1.87	93	78-120	
2,4,6-Trinitrotoluene	2.00	2.33	116	71-123	
2,4-Dinitrotoluene	2.00	1.74	87	78-120	
2,6-Dinitrotoluene	2.00	1.64	82	77-127	
2-Amino-4,6-dinitrotoluene	2.00	1.51	75	79-120	Q
2-Nitrotoluene	2.00	1.27	64	70-127	Q
3-Nitrotoluene	2.00	1.26	63	73-125	Q
4-Amino-2,6-dinitrotoluene	2.00	1.45	73	76-125	Q
4-Nitrotoluene	2.00	1.26	63	71-127	Q
HMX	2.00	1.87	94	65-135	
Nitrobenzene	2.00	1.87	94	65-134	
Nitroglycerin	20.0	20.0	100	74-127	
PETN	20.0	21.1	106	73-127	
RDX	2.00	2.03	101	68-130	
Tetryl	2.00	1.79	89	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.: 280-90531-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 029-2901.D

Lab ID: LCSD 280-349987/3-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	1.80	90	1	20	73-125	
1,3-Dinitrobenzene	2.00	1.98	99	5	20	78-120	
2,4,6-Trinitrotoluene	2.00	1.99	99	0	20	71-123	
2,4-Dinitrotoluene	2.00	1.86	93	9	20	78-120	
2,6-Dinitrotoluene	2.00	1.76	88	3	20	77-127	
2-Amino-4,6-dinitrotoluene	2.00	1.68	84	7	20	79-120	
2-Nitrotoluene	2.00	1.56	78	25	20	70-127	Q
3-Nitrotoluene	2.00	1.62	81	26	20	73-125	Q
4-Amino-2,6-dinitrotoluene	2.00	1.61	80	4	20	76-125	
4-Nitrotoluene	2.00	1.72	86	22	20	71-127	Q
HMX	2.00	1.81	91	6	20	65-135	
Nitrobenzene	2.00	1.74	87	17	20	65-134	
Nitroglycerin	20.0	20.0	100	2	20	74-127	
PETN	20.0	19.3	97	5	20	73-127	
RDX	2.00	2.04	102	4	20	68-130	
Tetryl	2.00	1.66	83	8	20	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.: 280-90531-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 11231610.D

Lab ID: LCSD 280-349987/3-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	2.25	113	8	20	73-125	
1,3-Dinitrobenzene	2.00	1.95	98	4	20	78-120	
2,4,6-Trinitrotoluene	2.00	2.30	115	1	20	71-123	
2,4-Dinitrotoluene	2.00	1.98	99	13	20	78-120	
2,6-Dinitrotoluene	2.00	1.77	88	8	20	77-127	
2-Amino-4,6-dinitrotoluene	2.00	1.63	81	8	20	79-120	
2-Nitrotoluene	2.00	1.69	84	28	20	70-127	Q
3-Nitrotoluene	2.00	1.70	85	29	20	73-125	Q
4-Amino-2,6-dinitrotoluene	2.00	1.57	78	7	20	76-125	
4-Nitrotoluene	2.00	1.76	88	33	20	71-127	Q
HMX	2.00	1.79	90	4	20	65-135	
Nitrobenzene	2.00	2.23	111	17	20	65-134	
Nitroglycerin	20.0	20.4	102	2	20	74-127	
PETN	20.0	20.3	101	4	20	73-127	
RDX	2.00	2.05	102	1	20	68-130	
Tetryl	2.00	1.67	83	7	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.: 280-90531-1

SDG No.:

Lab Sample ID: MB 280-349987/1-A

Matrix: Water Date Extracted: 11/04/2016 20:12

Lab File ID:(1) Lab File ID:(2) 11231608.D

Date Analyzed:(1) Date Analyzed:(2) 11/23/2016 14:59

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 280-349987/2-A		11/23/2016 15:34
	LCSD 280-349987/3-A		11/23/2016 16:09

FORM IV
HPLC/IC METHOD BLANK SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90531-1

SDG No.:

Lab Sample ID: MB 280-349987/1-A

Matrix: Water Date Extracted: 11/04/2016 20:12

Lab File ID:(1) 027-2701.D Lab File ID:(2)

Date Analyzed:(1) 11/16/2016 21:31 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 280-349987/2-A	11/16/2016 21:54	
	LCSD 280-349987/3-A	11/16/2016 22:17	
MBS-004-110316-GW	280-90531-2	11/17/2016 03:18	11/23/2016 21:24
MBS-006-110316-GW	280-90531-1	11/17/2016 03:41	11/27/2016 21:39

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-90531-1

SDG No.:

Client Sample ID: MBS-006-110316-GW | Lab Sample ID: 280-90531-1

Matrix: Water | Lab File ID: 043-4301.D

Analysis Method: 8330B | Date Collected: 11/03/2016 11:13

Extraction Method: 3535 | Date Extracted: 11/04/2016 20:12

Sample wt/vol: 448.7(mL) | Date Analyzed: 11/17/2016 03:41

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

Injection Volume: 50(uL) | GC Column: UltraCarb5uODS ID: 4.6(mm)

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

Analysis Batch No.: 351752 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.45	U	1.1	0.45	0.22
99-65-0	1,3-Dinitrobenzene	0.22	U	0.45	0.22	0.099
118-96-7	2,4,6-Trinitrotoluene	0.22	U	0.45	0.22	0.081
121-14-2	2,4-Dinitrotoluene	0.22	U	0.45	0.22	0.093
606-20-2	2,6-Dinitrotoluene	0.22	U	0.22	0.22	0.072
35572-78-2	2-Amino-4,6-dinitrotoluene	0.13	U Q	0.22	0.13	0.056
88-72-2	2-Nitrotoluene	0.22	U Q	0.45	0.22	0.095
99-08-1	3-Nitrotoluene	0.22	U Q	0.45	0.22	0.093
19406-51-0	4-Amino-2,6-dinitrotoluene	0.13	U	0.22	0.13	0.064
99-99-0	4-Nitrotoluene	0.45	U Q	1.1	0.45	0.22
2691-41-0	HMX	0.22	U	0.45	0.22	0.098
98-95-3	Nitrobenzene	0.22	U	0.45	0.22	0.10
55-63-0	Nitroglycerin	2.2	U	3.3	2.2	1.0
78-11-5	PETN	1.3	U	2.2	1.3	0.46
479-45-8	Tetryl	0.22	U	0.27	0.22	0.088

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	103		83-119

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\043-4301.D
Lims ID: 280-90531-B-1-A
Client ID: MBS-006-110316-GW
Sample Type: Client
Inject. Date: 17-Nov-2016 03:41:22 ALS Bottle#: 43 Worklist Smp#: 43
Injection Vol: 50.0 ul Dil. Factor: 1.0000
Sample Info: 280-90531-B-1-A
Misc. Info.: 280-0053110-044
Operator ID: ACF Instrument ID: CHHPLC_X3

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 22-Nov-2016 20:54:20 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: XAWRK031

First Level Reviewer: freya Date: 17-Nov-2016 11:19:31

	Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
	2 HMX	1		6.727			ND	
	5 RDX	1	7.874	7.900	-0.026	749	0.005470	M
$	7 1,2-Dinitrobenzene	1	8.941	8.967	-0.026	28886	0.2051	
	8 1,3,5-Trinitrobenzene	1		9.107			ND	
	9 1,3-Dinitrobenzene	1		9.794			ND	
	11 Nitrobenzene	1		10.187			ND	
	12 Tetryl	1		10.580			ND	
	13 Nitroglycerin	2		11.100			ND	
	14 2,4,6-Trinitrotoluene	1		11.547			ND	
	15 4-Amino-2,6-dinitrotoluene	1		11.760			ND	
	16 2-Amino-4,6-dinitrotoluene	1		12.047			ND	
	17 2,6-Dinitrotoluene	1		12.187			ND	
	18 2,4-Dinitrotoluene	1		12.380			ND	
	19 o-Nitrotoluene	1		13.240			ND	
	20 p-Nitrotoluene	1		13.700			ND	
	21 m-Nitrotoluene	1		14.314			ND	
	22 PETN	2		15.507			ND	

QC Flag Legend

Review Flags
M - Manually Integrated

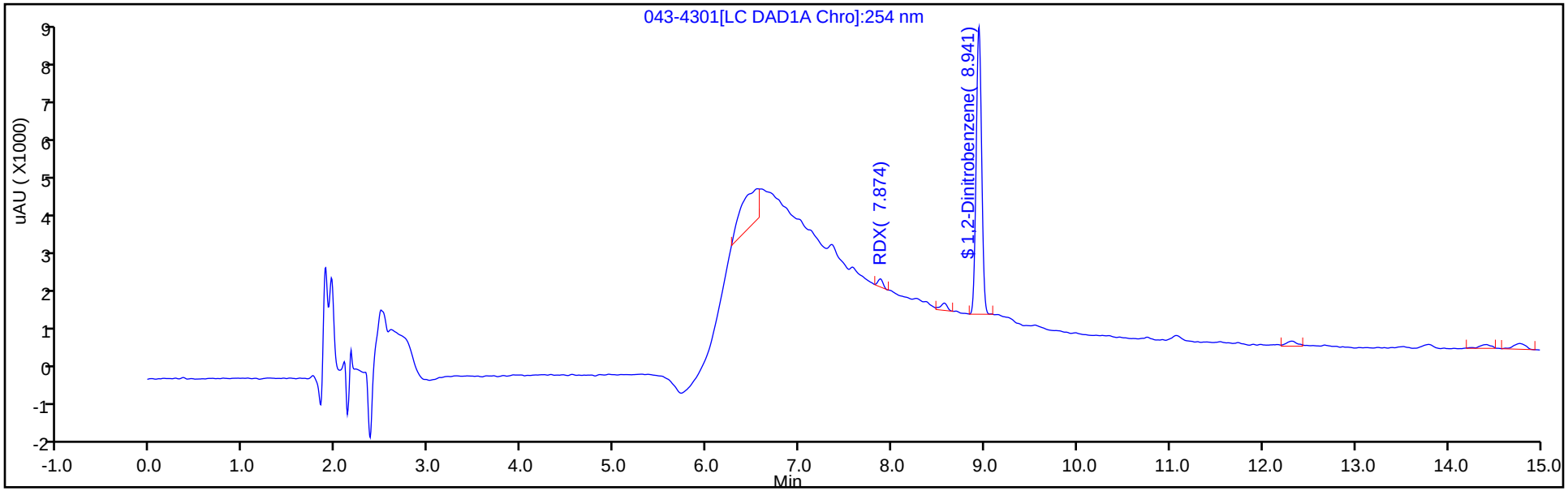
Report Date: 22-Nov-2016 20:54:30 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

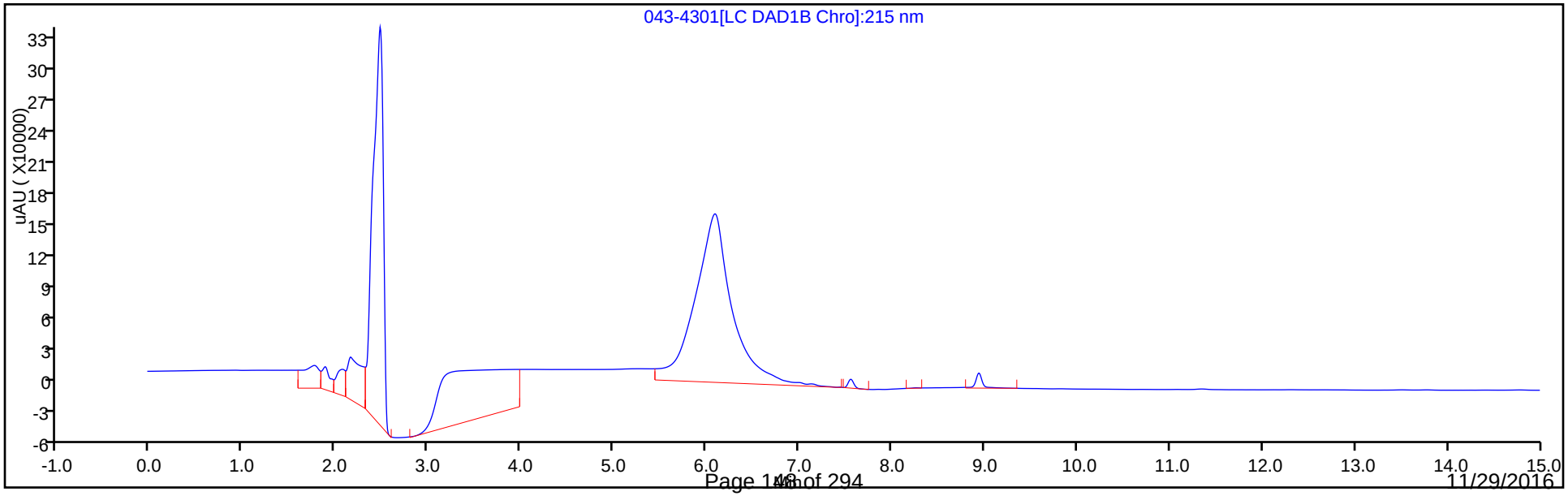
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\043-4301.D

Injection Date:	17-Nov-2016 03:41:22	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	280-90531-B-1-A	Lab Sample ID:	280-90531-1	Worklist Smp#:	43
Client ID:	MBS-006-110316-GW				
Injection Vol:	50.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	43
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\20161116-53220.b\043-4301.D				
Lims ID:	280-90531-B-1-A				
Client ID:	MBS-006-110316-GW				
Sample Type:	Client				
Inject. Date:	17-Nov-2016 03:41:22	ALS Bottle#:	43	Worklist Smp#:	43
Injection Vol:	50.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-90531-B-1-A				
Misc. Info.:	280-0053110-044				
Operator ID:	ACF	Instrument ID:	CHHPLC_X3		
Method:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\8330_X3.m				
Limit Group:	GCSV - 8330				
Last Update:	22-Nov-2016 20:54:20	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:	XAWRK031				

First Level Reviewer: freya Date: 17-Nov-2016 11:19:31

Compound	Amount Added	Amount Recovered	% Rec.
$ 7 1,2-Dinitrobenzene	0.2000	0.2051	102.55

Manual Integration/User Assign Peak Report

TestAmerica Denver

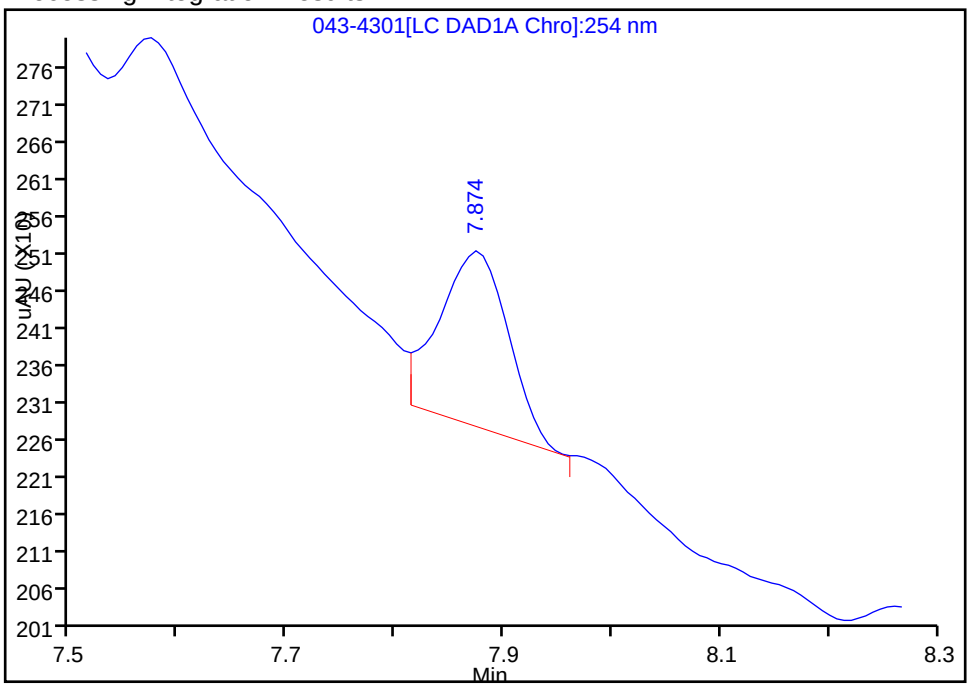
Data File:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\043-4301.D				
Injection Date:	17-Nov-2016 03:41:22	Instrument ID:	CHHPLC_X3		
Lims ID:	280-90531-B-1-A	Lab Sample ID:	280-90531-1		
Client ID:	MBS-006-110316-GW				
Operator ID:	ACF	ALS Bottle#:	43	Worklist Smp#:	43
Injection Vol:	50.0 ul	Dil. Factor:	1.0000		
Method:	8330_X3	Limit Group:	GCSV - 8330		
Column:	UltraCarb5uODS (20) (4.60 mm)	Detector	LC DAD1B, 254 nm		

5 RDX, CAS: 121-82-4

Signal: 1

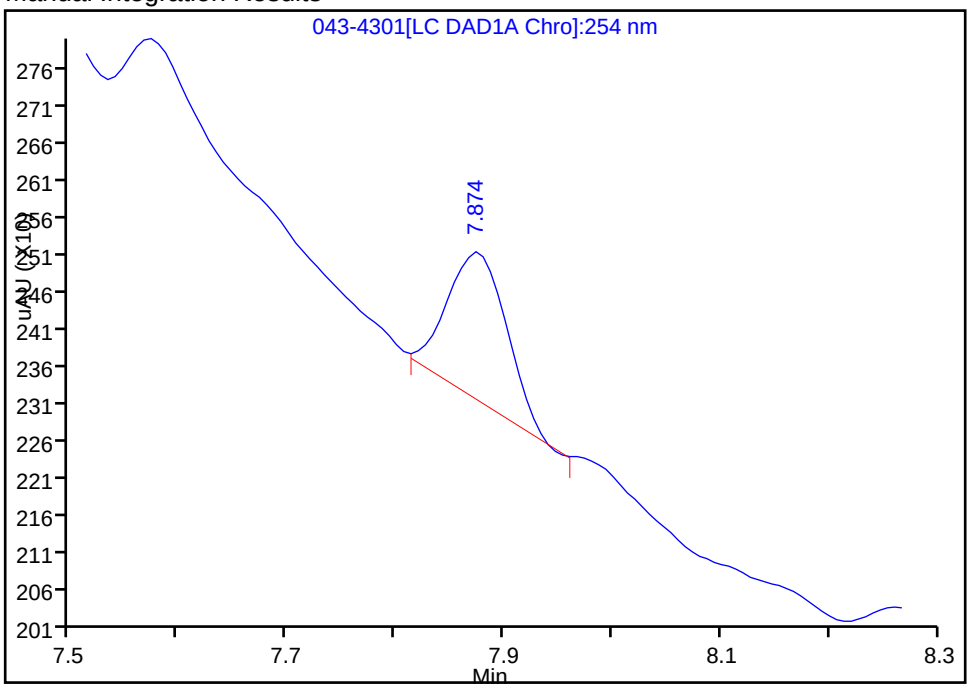
Processing Integration Results

RT: 7.87
Area: 1030
Amount: 0.008086
Amount Units: ug/mL



Manual Integration Results

RT: 7.87
Area: 749
Amount: 0.005470
Amount Units: ug/mL



Reviewer: jonsrudd, 22-Nov-2016 20:53:05

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-90531-1

SDG No.:

Client Sample ID: MBS-006-110316-GW | Lab Sample ID: 280-90531-1

Matrix: Water | Lab File ID: 11271608.D

Analysis Method: 8330B | Date Collected: 11/03/2016 11:13

Extraction Method: 3535 | Date Extracted: 11/04/2016 20:12

Sample wt/vol: 448.7(mL) | Date Analyzed: 11/27/2016 21:39

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.: 353205 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
121-82-4	RDX	0.13	U	0.22	0.13	0.058

TestAmerica Denver
Target Compound Quantitation Report

Data File:	\\ChromNA\Denver\ChromData\G2_LUNA\20161127-53578.b\11271608.D				
Lims ID:	280-90531-B-1-A				
Client ID:	MBS-006-110316-GW				
Sample Type:	Client				
Inject. Date:	27-Nov-2016 21:39:10	ALS Bottle#:	3	Worklist Smp#:	8
Injection Vol:	100.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-90531-B-1-A				
Misc. Info.:	280-0053578-008				
Operator ID:	DMJ	Instrument ID:	CHHPLC_G2_LUNA		
Method:	\\ChromNA\Denver\ChromData\G2_LUNA\20161127-53578.b\G2_8330_Luna.m				
Limit Group:	GCSV - 8330				
Last Update:	28-Nov-2016 14:55:58	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:	XAWRK004				
First Level Reviewer: jonsrudd		Date:	28-Nov-2016 14:52:18		

	Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/ml	Flags
	5 HMX	1		6.686			ND	
	7 RDX	1		8.693			ND	
	8 Nitrobenzene	1		11.419			ND	
$	9 1,2-Dinitrobenzene	1	12.400	12.399	0.001	58455	0.2128	
	11 1,3-Dinitrobenzene	1		14.733			ND	
	12 Nitroglycerin	2		14.826			ND	
	13 o-Nitrotoluene	1		15.613			ND	
	14 p-Nitrotoluene	1		15.906			ND	
	15 4-Amino-2,6-dinitrotoluene	1		16.373			ND	
	16 m-Nitrotoluene	1		16.806			ND	
	17 2-Amino-4,6-dinitrotoluene	1		17.353			ND	
	18 1,3,5-Trinitrobenzene	1		17.786			ND	
	19 2,6-Dinitrotoluene	1		18.773			ND	
	20 2,4-Dinitrotoluene	1		19.306			ND	
	21 Tetryl	1		22.520			ND	
	22 2,4,6-Trinitrotoluene	1	23.387	23.453	-0.066	28628	0.0704	
	23 PETN	2		24.193			ND	

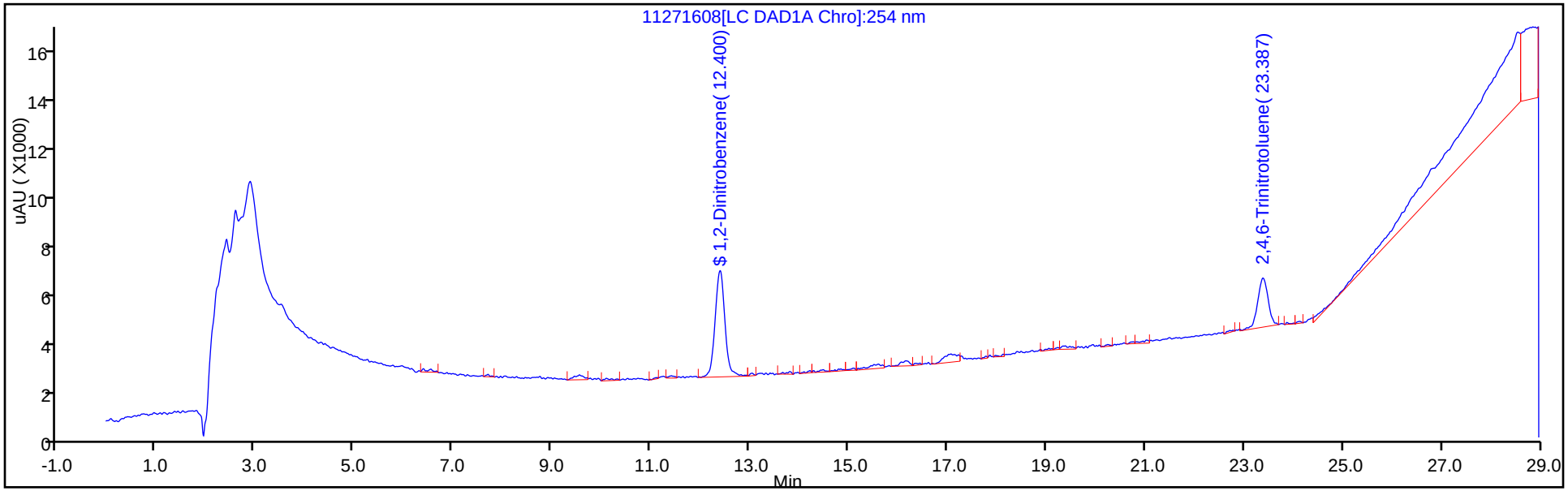
Report Date: 28-Nov-2016 14:55:59 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

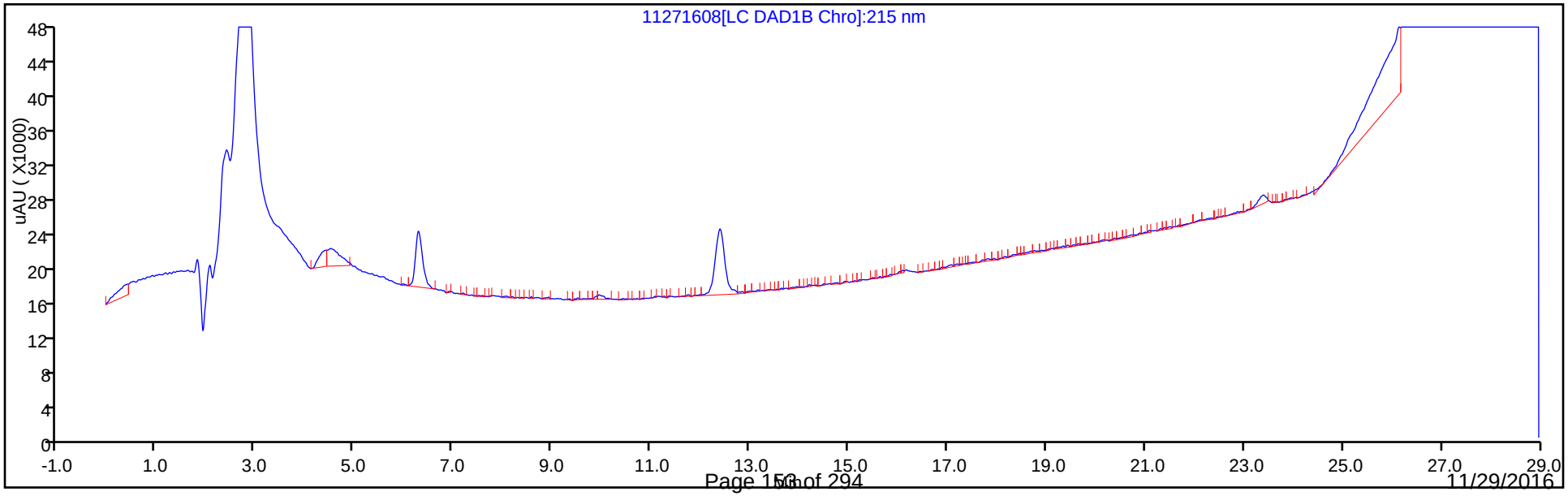
Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161127-53578.b\11271608.D

Injection Date:	27-Nov-2016 21:39:10	Instrument ID:	CHHPLC_G2_LUNA	Operator ID:	DMJ
Lims ID:	280-90531-B-1-A	Lab Sample ID:	280-90531-1	Worklist Smp#:	8
Client ID:	MBS-006-110316-GW				
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	3
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\20161127-53578.b\11271608.D				
Lims ID:	280-90531-B-1-A				
Client ID:	MBS-006-110316-GW				
Sample Type:	Client				
Inject. Date:	27-Nov-2016 21:39:10	ALS Bottle#:	3	Worklist Smp#:	8
Injection Vol:	100.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-90531-B-1-A				
Misc. Info.:	280-0053578-008				
Operator ID:	DMJ	Instrument ID:	CHHPLC_G2_LUNA		
Method:	\\ChromNA\Denver\ChromData\G2_LUNA\20161127-53578.b\G2_8330_Luna.m				
Limit Group:	GCSV - 8330				
Last Update:	28-Nov-2016 14:55:58	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:	XAWRK004				
First Level Reviewer: jonsrudd		Date:	28-Nov-2016 14:52:18		

Compound	Amount Added	Amount Recovered	% Rec.
$ 9 1,2-Dinitrobenzene	0.2000	0.2128	106.40

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-90531-1

SDG No.:

Client Sample ID: MBS-004-110316-GW | Lab Sample ID: 280-90531-2

Matrix: Water | Lab File ID: 042-4201.D

Analysis Method: 8330B | Date Collected: 11/03/2016 11:10

Extraction Method: 3535 | Date Extracted: 11/04/2016 20:12

Sample wt/vol: 455.4(mL) | Date Analyzed: 11/17/2016 03:18

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

Injection Volume: 50(uL) | GC Column: UltraCarb5uODS ID: 4.6(mm)

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

Analysis Batch No.: 351752 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.44	U	1.1	0.44	0.22
99-65-0	1,3-Dinitrobenzene	0.22	U	0.44	0.22	0.097
118-96-7	2,4,6-Trinitrotoluene	0.22	U	0.44	0.22	0.079
121-14-2	2,4-Dinitrotoluene	0.22	U	0.44	0.22	0.092
606-20-2	2,6-Dinitrotoluene	0.22	U	0.22	0.22	0.071
35572-78-2	2-Amino-4,6-dinitrotoluene	0.13	U Q	0.22	0.13	0.056
88-72-2	2-Nitrotoluene	0.22	U Q	0.44	0.22	0.094
99-08-1	3-Nitrotoluene	0.22	U Q	0.44	0.22	0.092
19406-51-0	4-Amino-2,6-dinitrotoluene	0.13	U	0.22	0.13	0.063
99-99-0	4-Nitrotoluene	0.44	U Q	1.1	0.44	0.22
2691-41-0	HMX	0.22	U	0.44	0.22	0.096
98-95-3	Nitrobenzene	0.22	U	0.44	0.22	0.10
55-63-0	Nitroglycerin	2.2	U	3.3	2.2	1.0
78-11-5	PETN	1.3	U	2.2	1.3	0.46
121-82-4	RDX	0.13	U	0.22	0.13	0.057
479-45-8	Tetryl	0.22	U	0.26	0.22	0.087

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	100		83-119

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\042-4201.D
Lims ID: 280-90531-A-2-A
Client ID: MBS-004-110316-GW
Sample Type: Client
Inject. Date: 17-Nov-2016 03:18:17 ALS Bottle#: 42 Worklist Smp#: 42
Injection Vol: 50.0 ul Dil. Factor: 1.0000
Sample Info: 280-90531-A-2-A
Misc. Info.: 280-0053110-043
Operator ID: ACF Instrument ID: CHHPLC_X3

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 22-Nov-2016 20:54:20 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: XAWRK031

First Level Reviewer: freya Date: 17-Nov-2016 11:19:21

	Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
	2 HMX	1		6.727			ND	
	5 RDX	1		7.900			ND	
$	7 1,2-Dinitrobenzene	1	8.955	8.967	-0.012	28045	0.1991	
	8 1,3,5-Trinitrobenzene	1		9.107			ND	
	9 1,3-Dinitrobenzene	1		9.794			ND	
	11 Nitrobenzene	1		10.187			ND	
	12 Tetryl	1		10.580			ND	
	13 Nitroglycerin	2		11.100			ND	
	14 2,4,6-Trinitrotoluene	1		11.547			ND	
	15 4-Amino-2,6-dinitrotoluene	1		11.760			ND	
	16 2-Amino-4,6-dinitrotoluene	1		12.047			ND	
	17 2,6-Dinitrotoluene	1		12.187			ND	
	18 2,4-Dinitrotoluene	1		12.380			ND	
	19 o-Nitrotoluene	1		13.240			ND	
	20 p-Nitrotoluene	1		13.700			ND	
	21 m-Nitrotoluene	1		14.314			ND	
	22 PETN	2		15.507			ND	

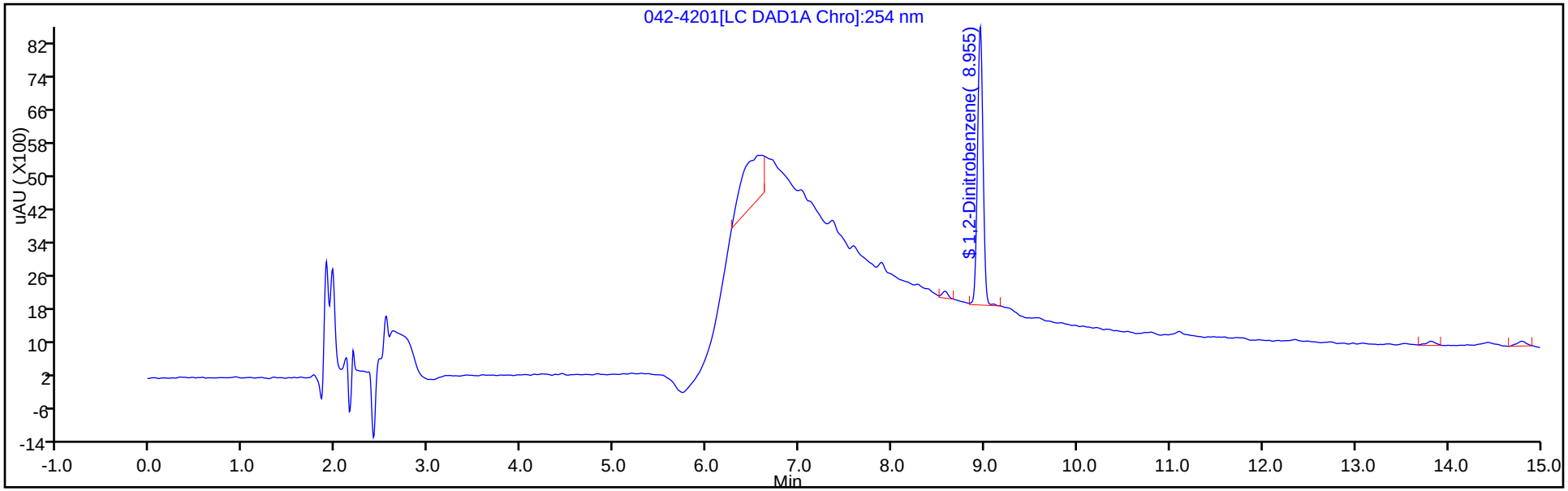
Report Date: 22-Nov-2016 20:54:29 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

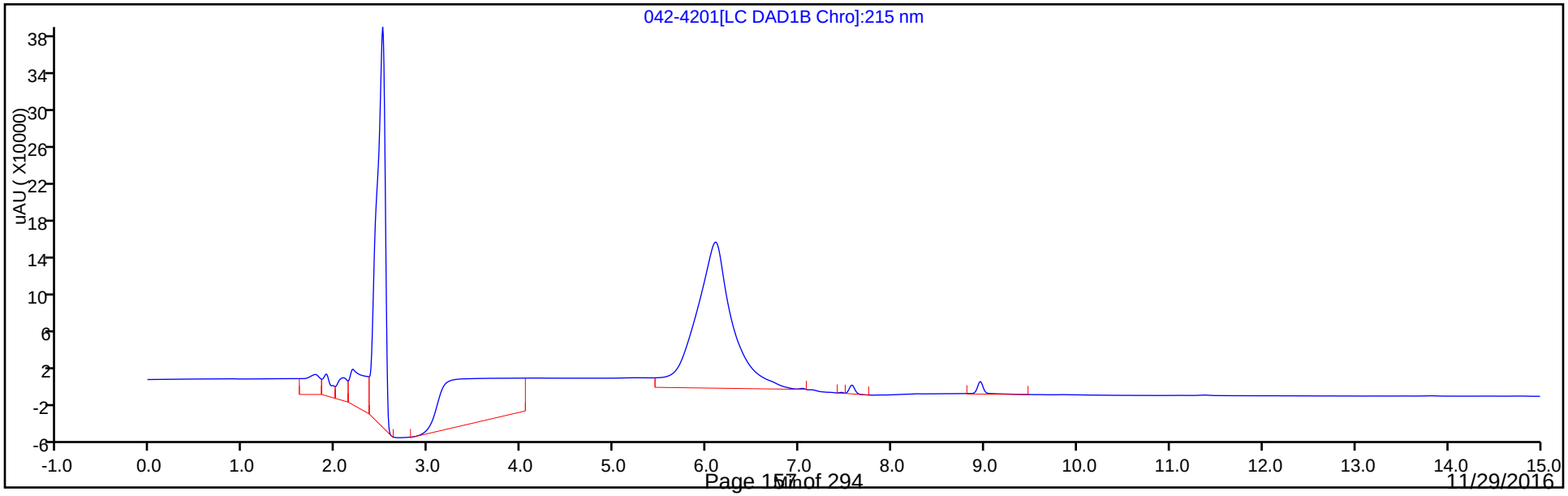
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\042-4201.D

Injection Date:	17-Nov-2016 03:18:17	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	280-90531-A-2-A	Lab Sample ID:	280-90531-2	Worklist Smp#:	42
Client ID:	MBS-004-110316-GW				
Injection Vol:	50.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	42
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\20161116-53220.b\042-4201.D				
Lims ID:	280-90531-A-2-A				
Client ID:	MBS-004-110316-GW				
Sample Type:	Client				
Inject. Date:	17-Nov-2016 03:18:17	ALS Bottle#:	42	Worklist Smp#:	42
Injection Vol:	50.0 ul	Dil. Factor:	1.0000		
Sample Info:	280-90531-A-2-A				
Misc. Info.:	280-0053110-043				
Operator ID:	ACF	Instrument ID:	CHHPLC_X3		
Method:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\8330_X3.m				
Limit Group:	GCSV - 8330				
Last Update:	22-Nov-2016 20:54:20	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:	XAWRK031				
First Level Reviewer: freya		Date:	17-Nov-2016 11:19:21		

Compound	Amount Added	Amount Recovered	% Rec.
$ 7 1,2-Dinitrobenzene	0.2000	0.1991	99.55

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

Lab Name: TestAmerica Denver Job No.: 280-90531-1 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.: 280-90531-1 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.: 280-90531-1 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.: 280-90531-1 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.: 280-90531-1 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

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

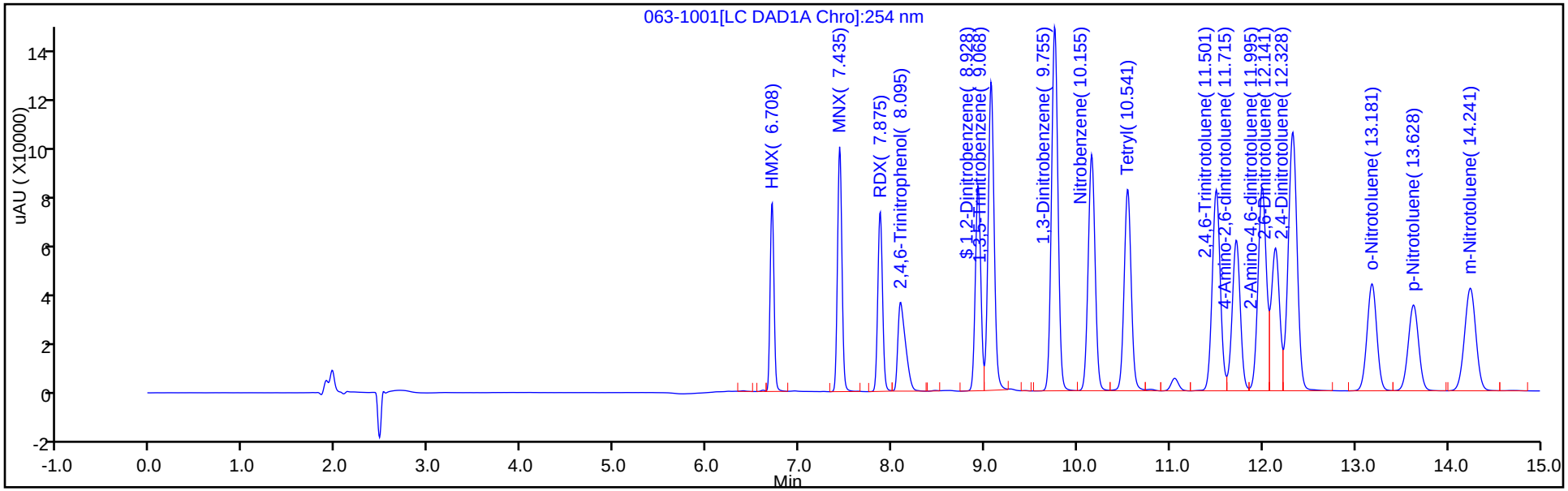
Report Date: 29-Oct-2016 09:47:53 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

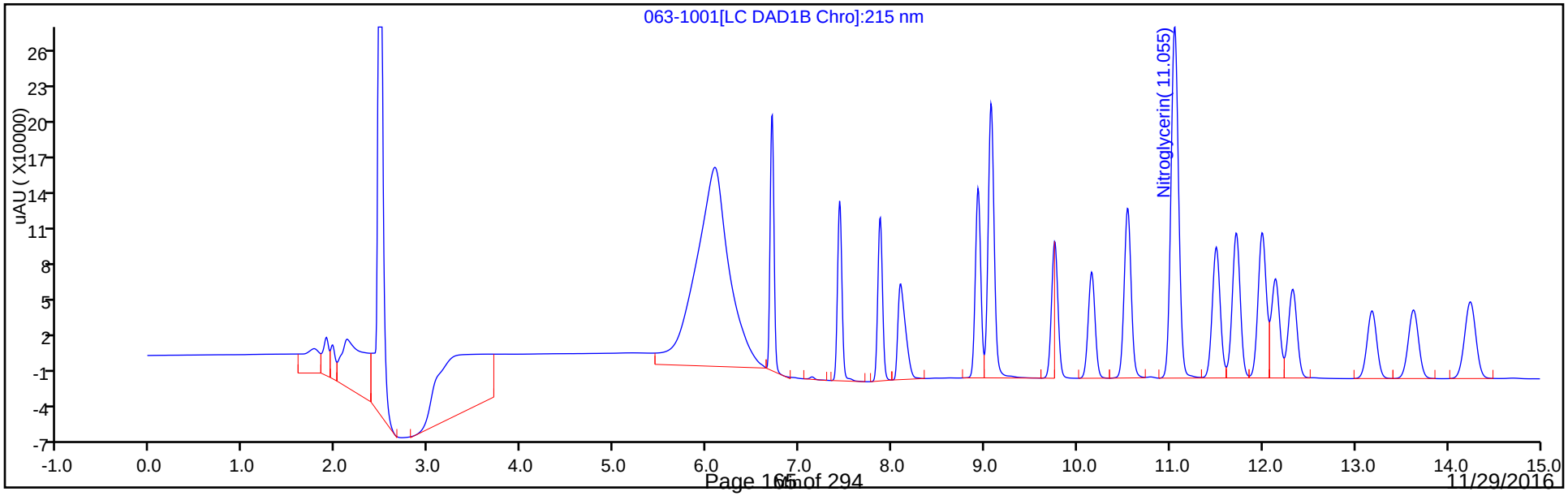
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\063-1001.D

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



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

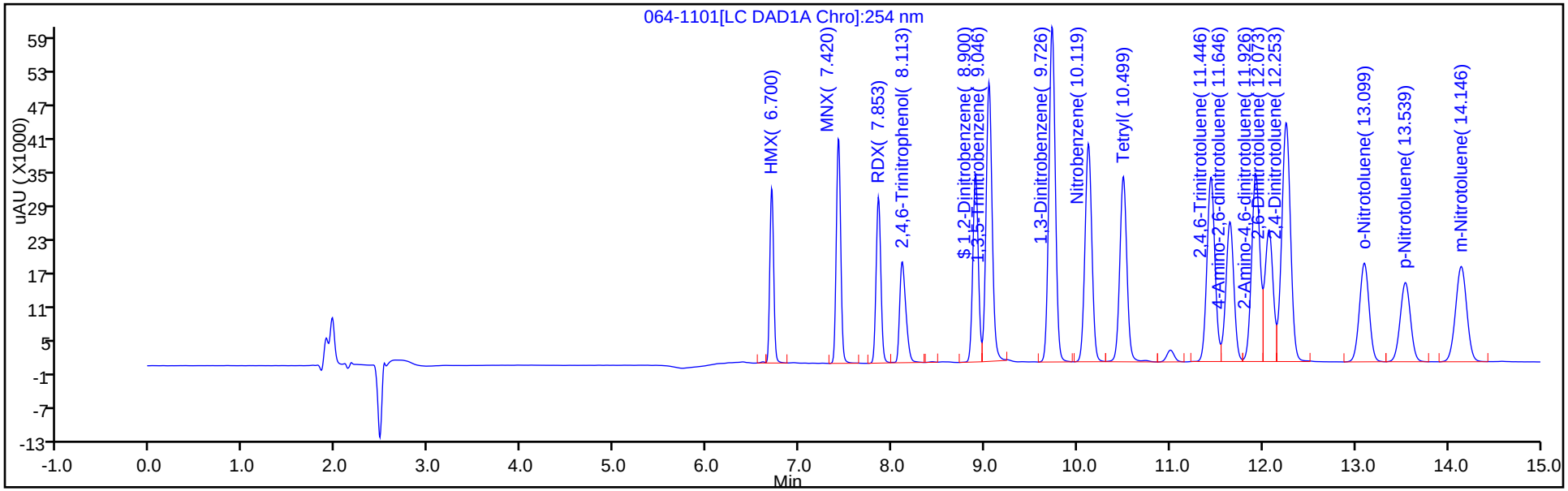
Report Date: 29-Oct-2016 09:47:56 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

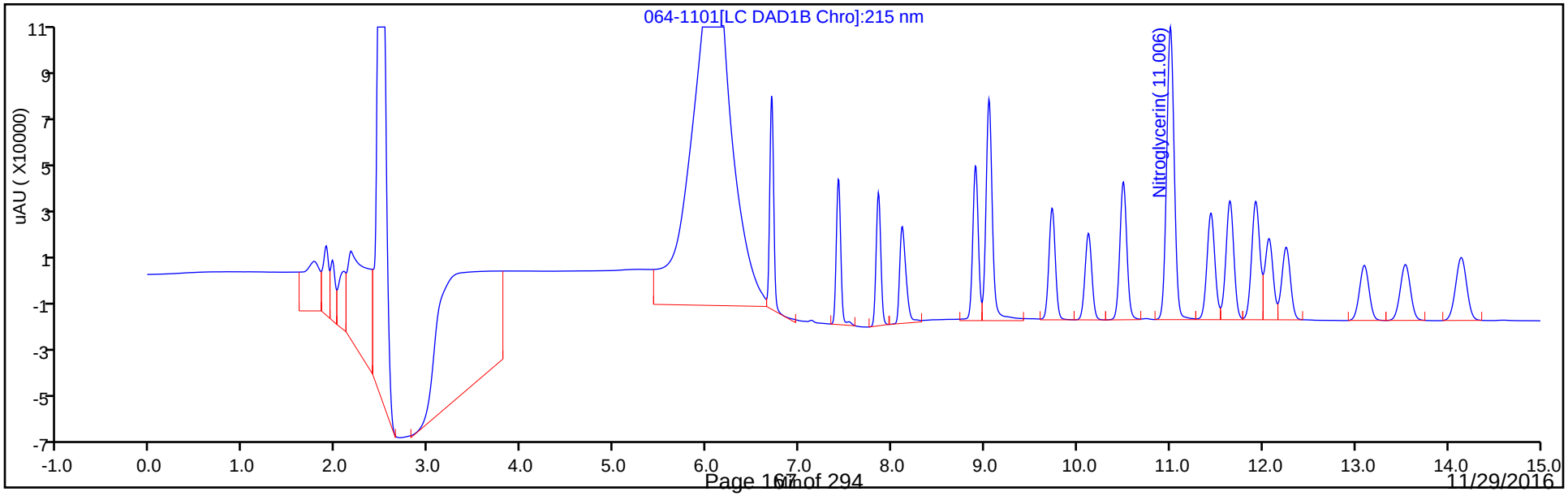
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\064-1101.D

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



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

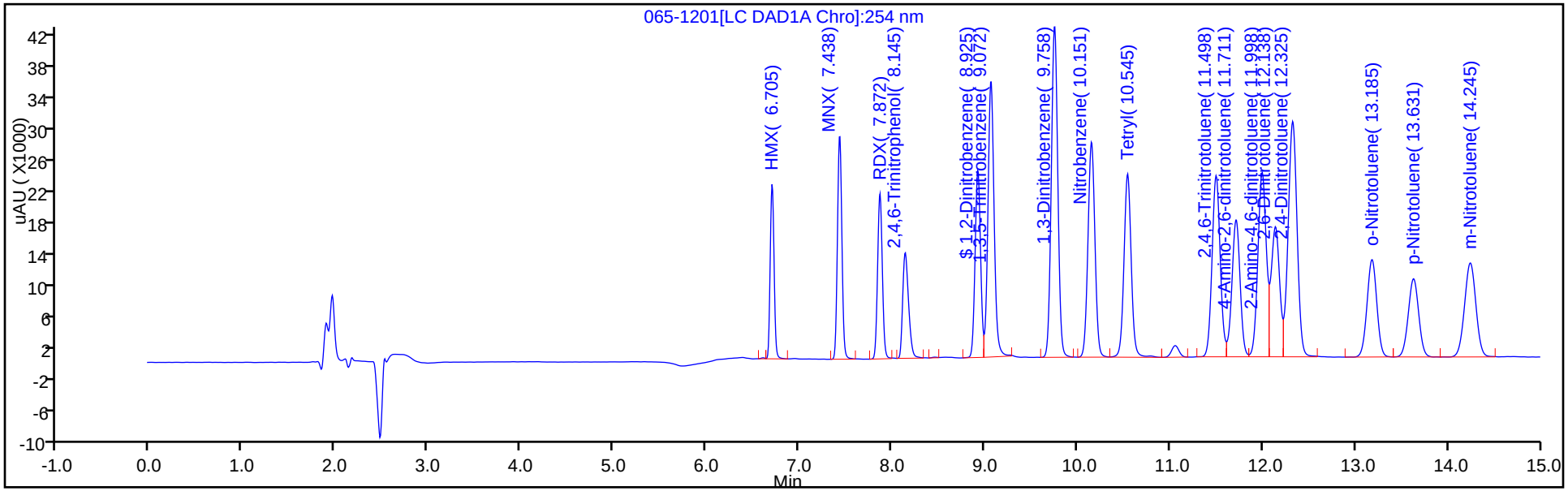
Report Date: 29-Oct-2016 09:47:59 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

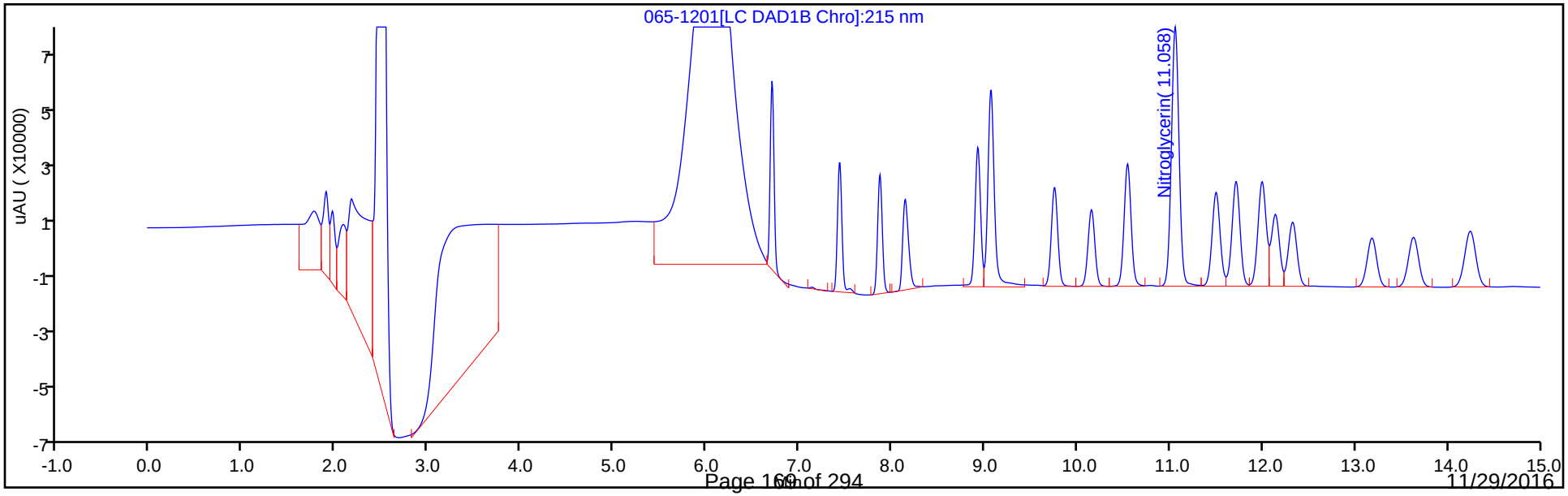
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\065-1201.D

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

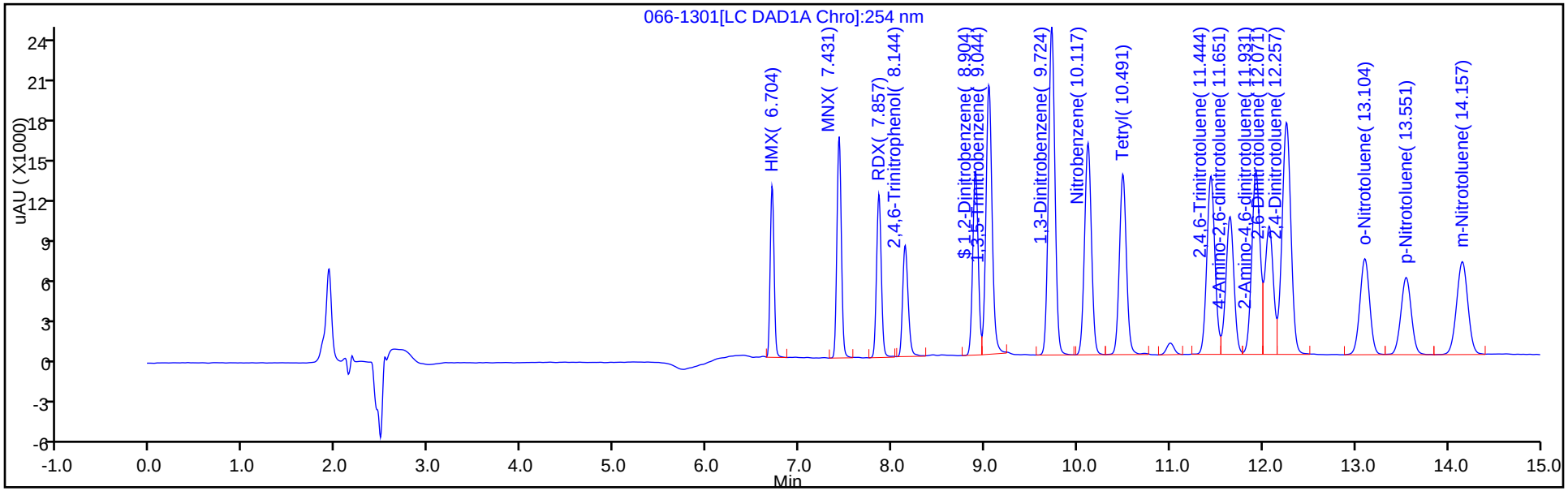
Report Date: 29-Oct-2016 09:48:03 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

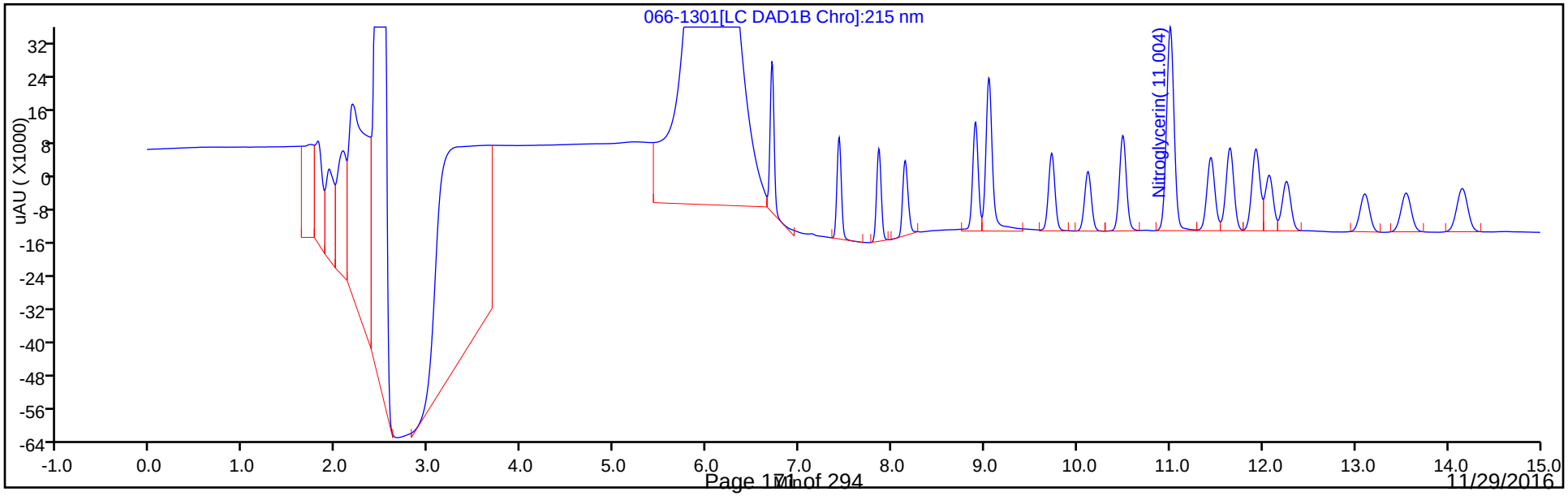
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\066-1301.D

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

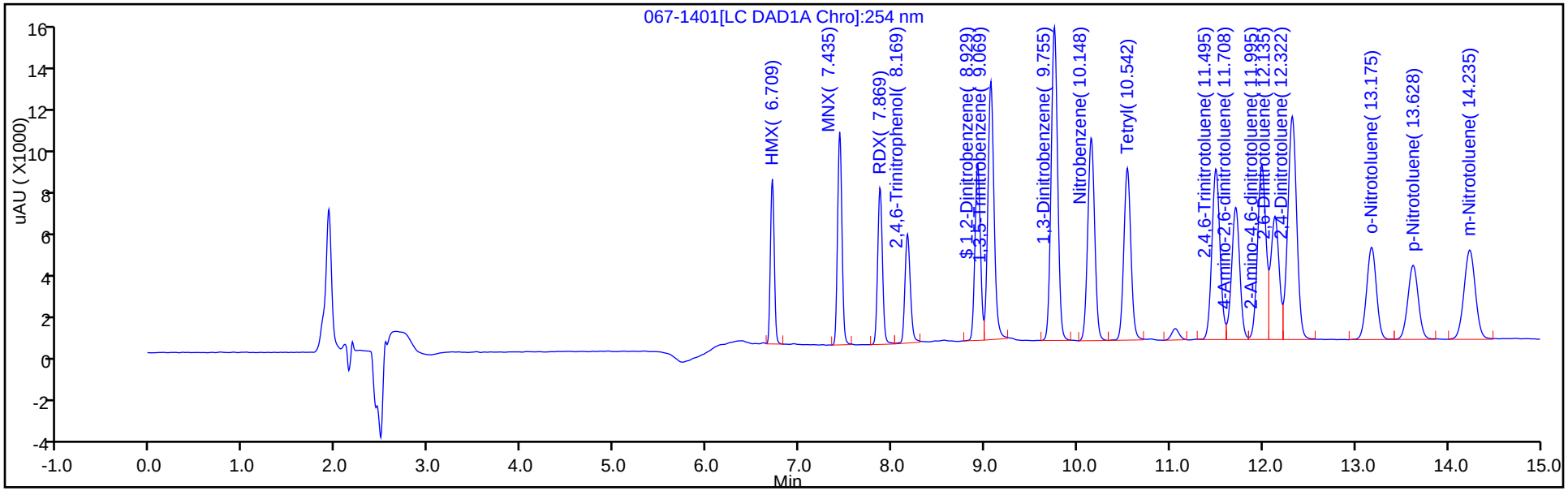
Report Date: 29-Oct-2016 09:48:05 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

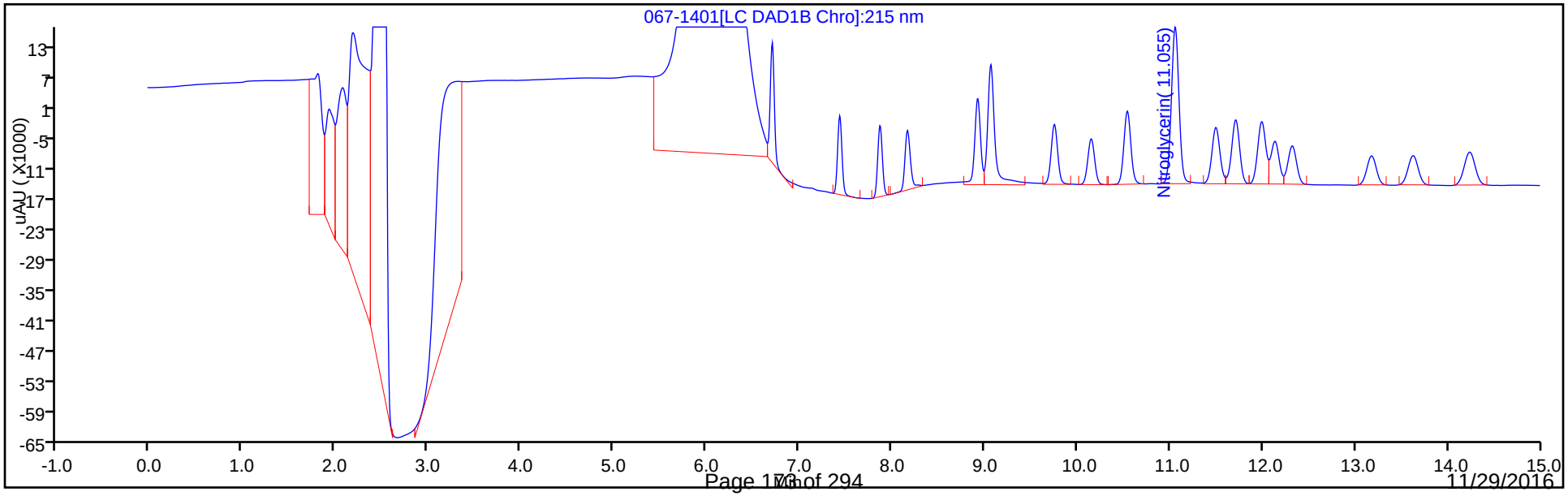
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\067-1401.D

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

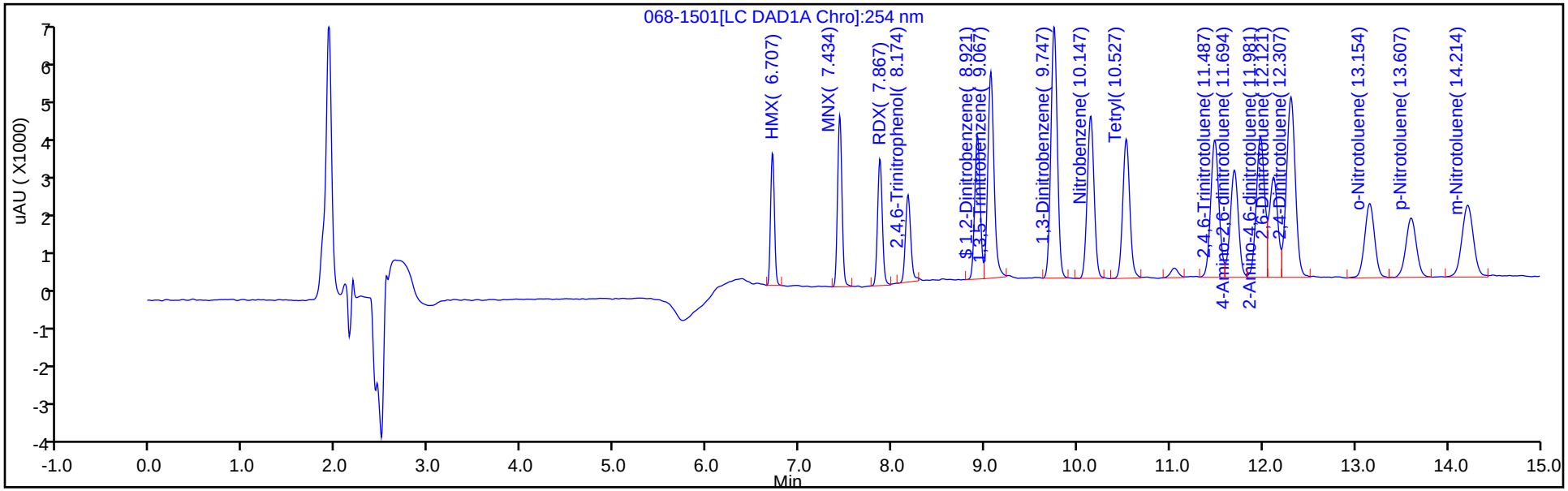
Report Date: 29-Oct-2016 09:48:07 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

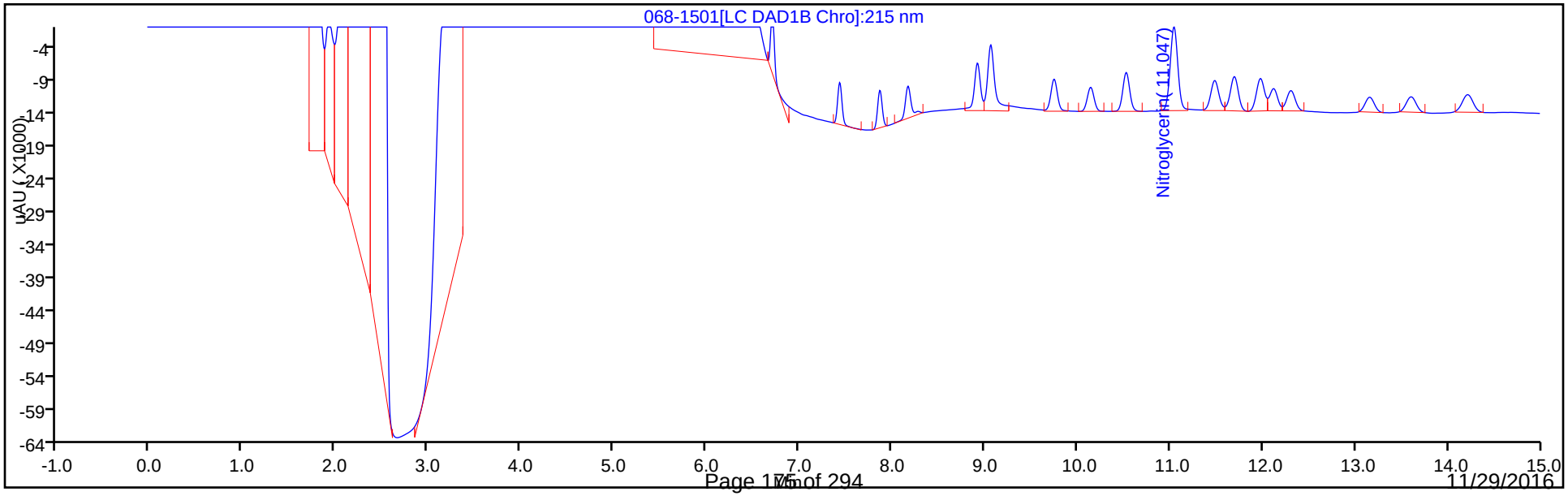
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\068-1501.D

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

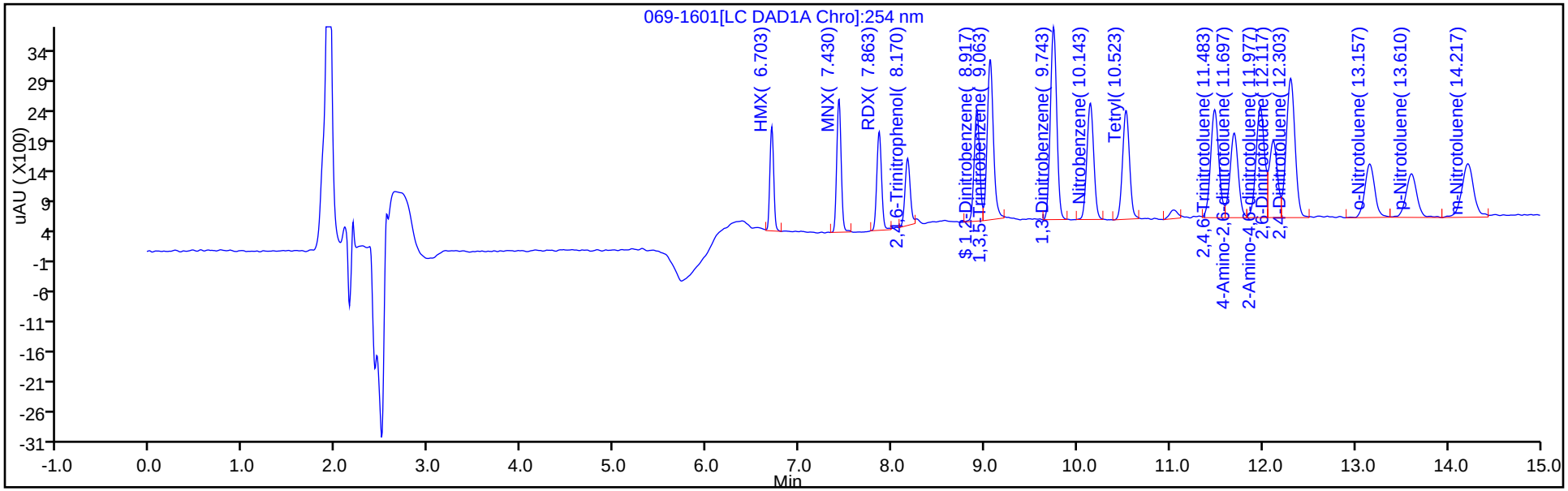
Report Date: 29-Oct-2016 09:48:09 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

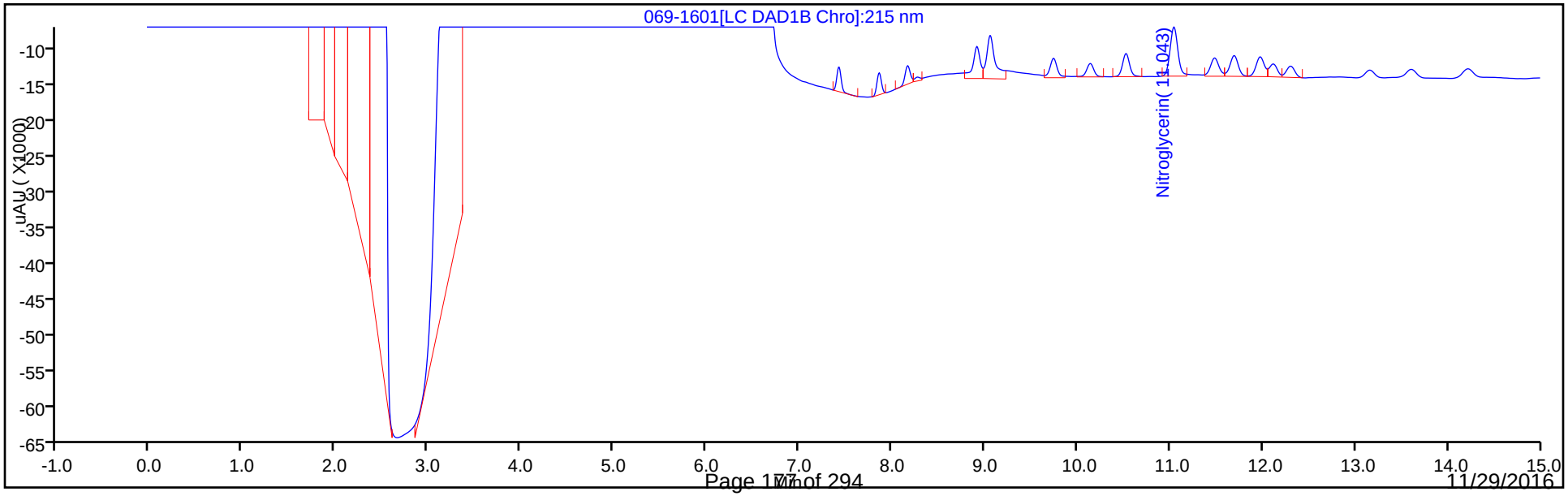
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\069-1601.D

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

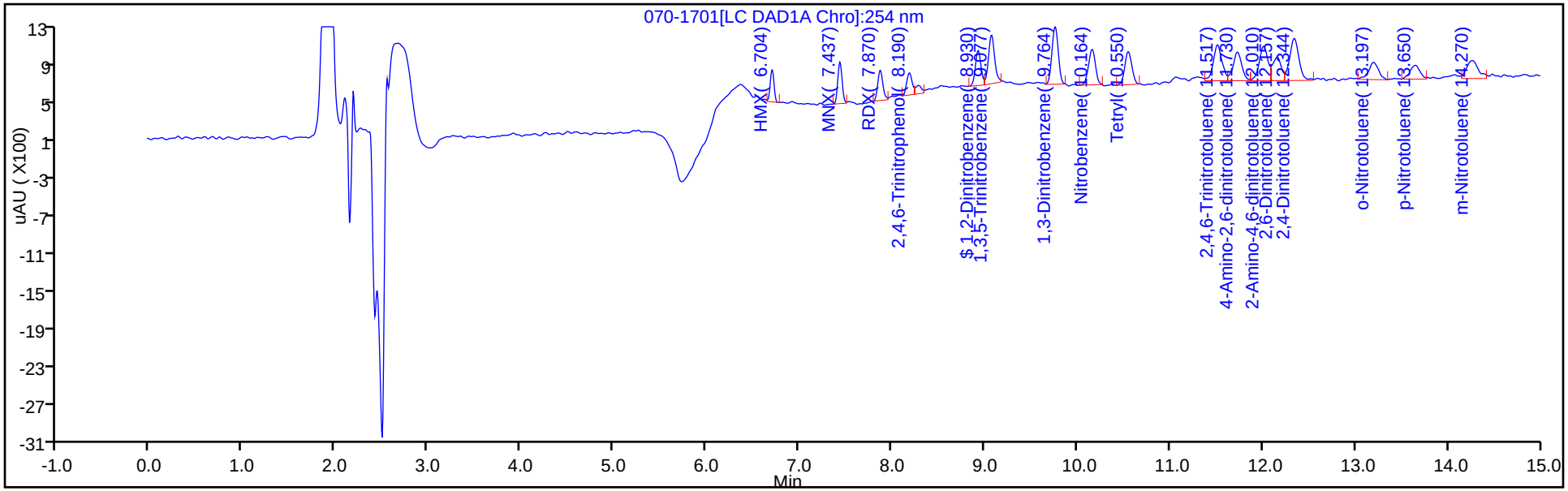
Report Date: 29-Oct-2016 09:48:11 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

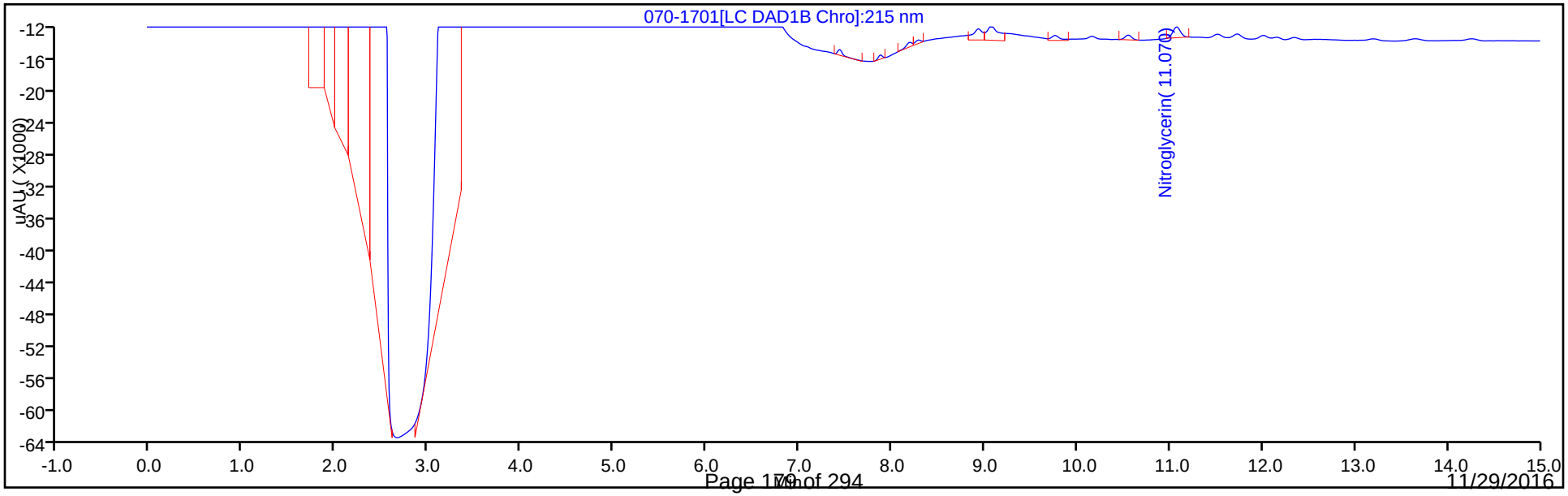
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D

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

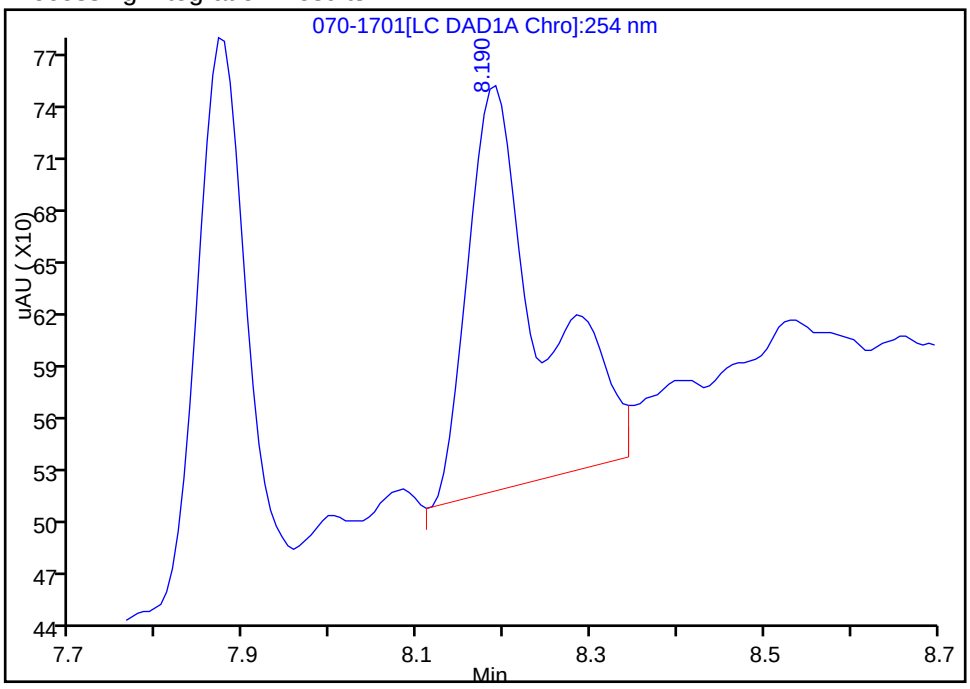
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D
Injection Date: 28-Oct-2016 20:21:37 Instrument ID: CHHPLC_X3
Lims ID: IC MAIN L1
Client ID:
Operator ID: ACF ALS Bottle#: 70 Worklist Smp#: 17
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector LC DAD1B, 254 nm

6 2,4,6-Trinitrophenol, CAS: 88-89-1

Signal: 1

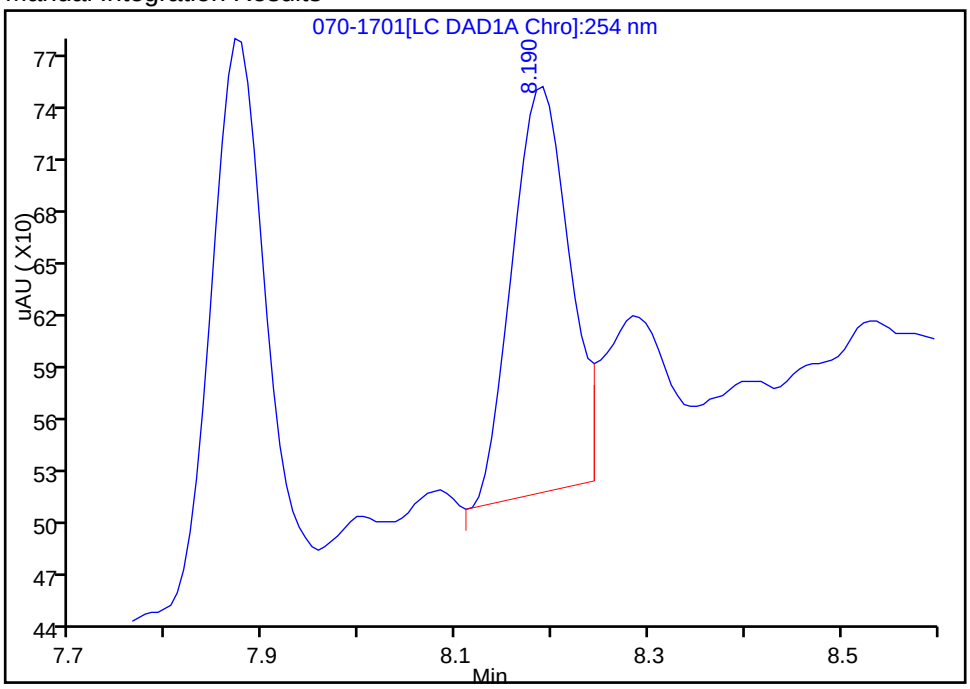
Processing Integration Results

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

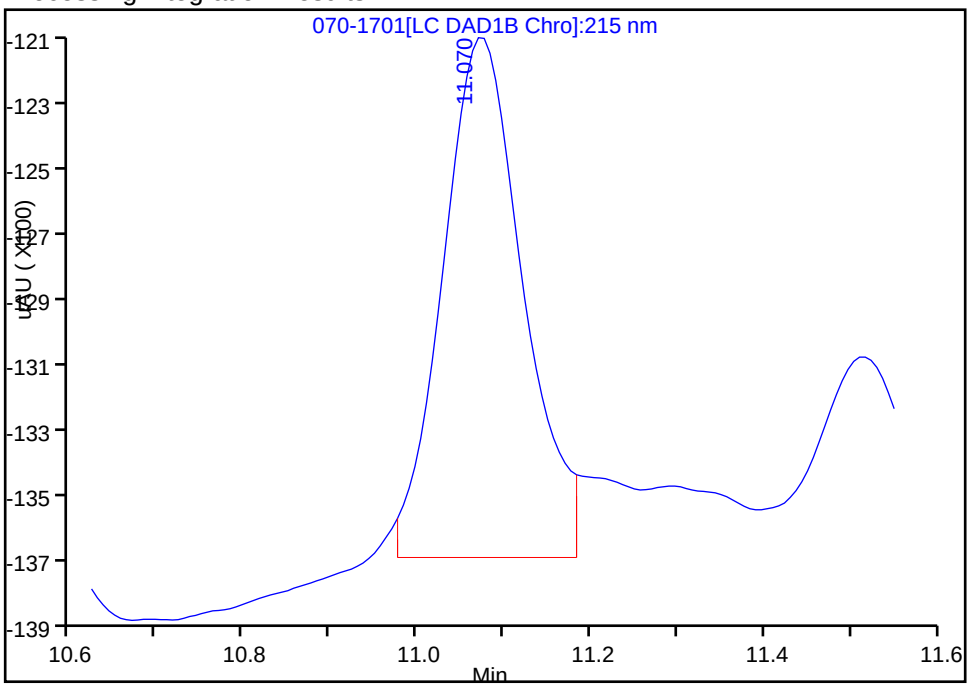
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D
Injection Date: 28-Oct-2016 20:21:37 Instrument ID: CHHPLC_X3
Lims ID: IC MAIN L1
Client ID:
Operator ID: ACF ALS Bottle#: 70 Worklist Smp#: 17
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: Detector LC DAD1C, 215 nm

13 Nitroglycerin, CAS: 55-63-0

Signal: 1

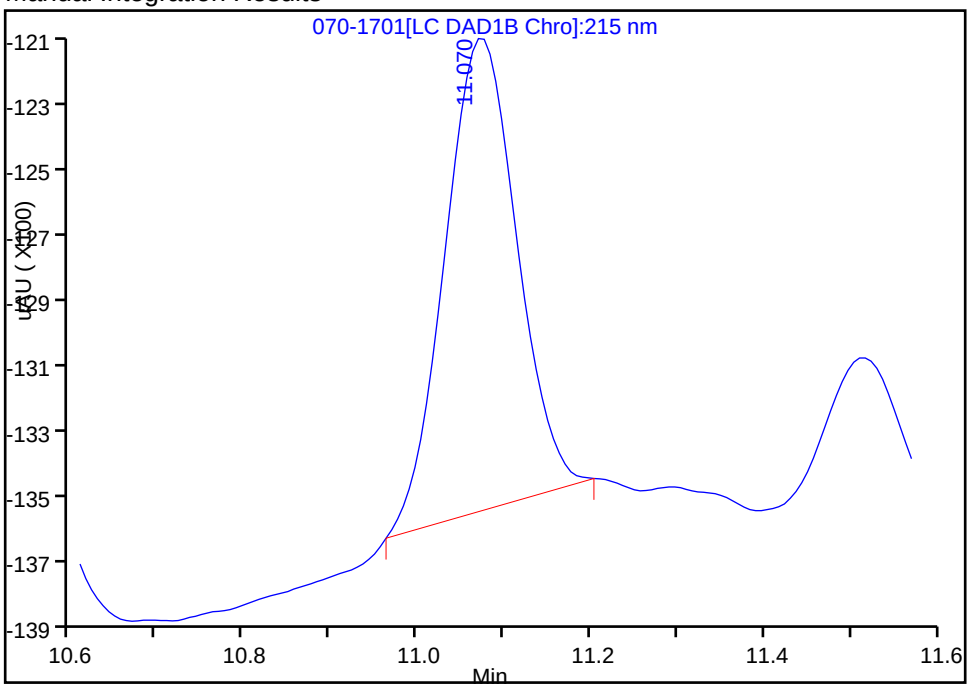
Processing Integration Results

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

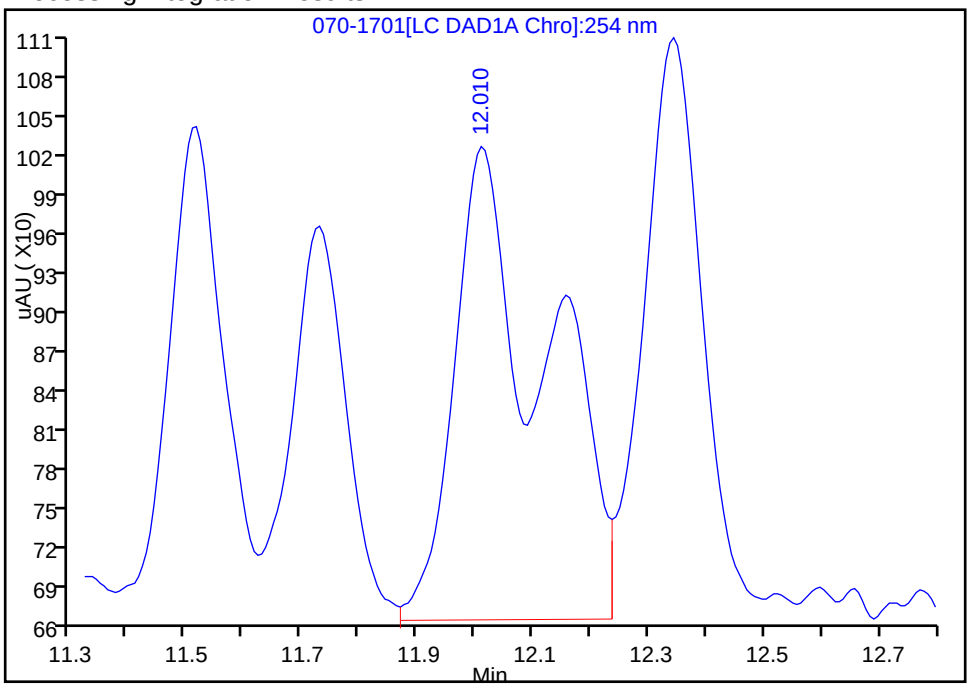
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D
Injection Date: 28-Oct-2016 20:21:37 Instrument ID: CHHPLC_X3
Lims ID: IC MAIN L1
Client ID:
Operator ID: ACF ALS Bottle#: 70 Worklist Smp#: 17
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector LC DAD1B, 254 nm

16 2-Amino-4,6-dinitrotoluene, CAS: 35572-78-2

Signal: 1

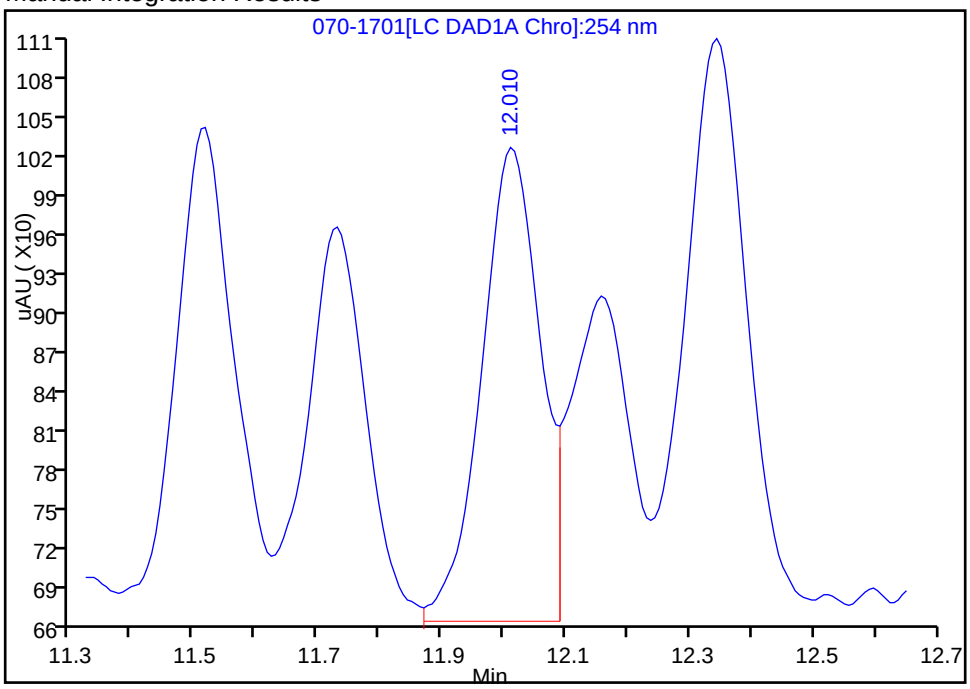
Processing Integration Results

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

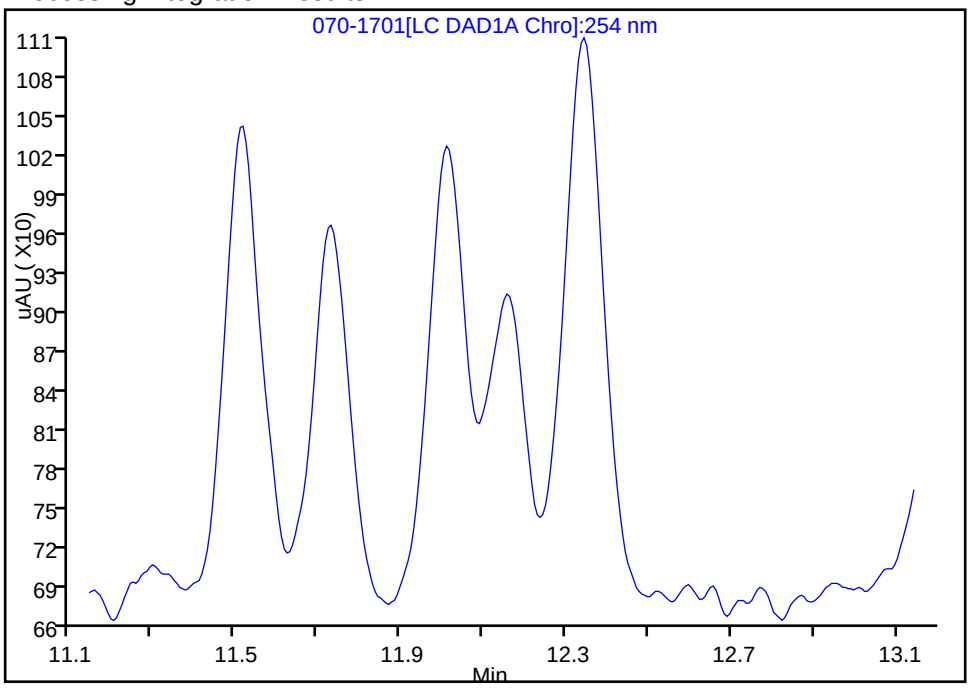
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D
Injection Date: 28-Oct-2016 20:21:37 Instrument ID: CHHPLC_X3
Lims ID: IC MAIN L1
Client ID:
Operator ID: ACF ALS Bottle#: 70 Worklist Smp#: 17
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector LC DAD1B, 254 nm

17 2,6-Dinitrotoluene, CAS: 606-20-2

Signal: 1

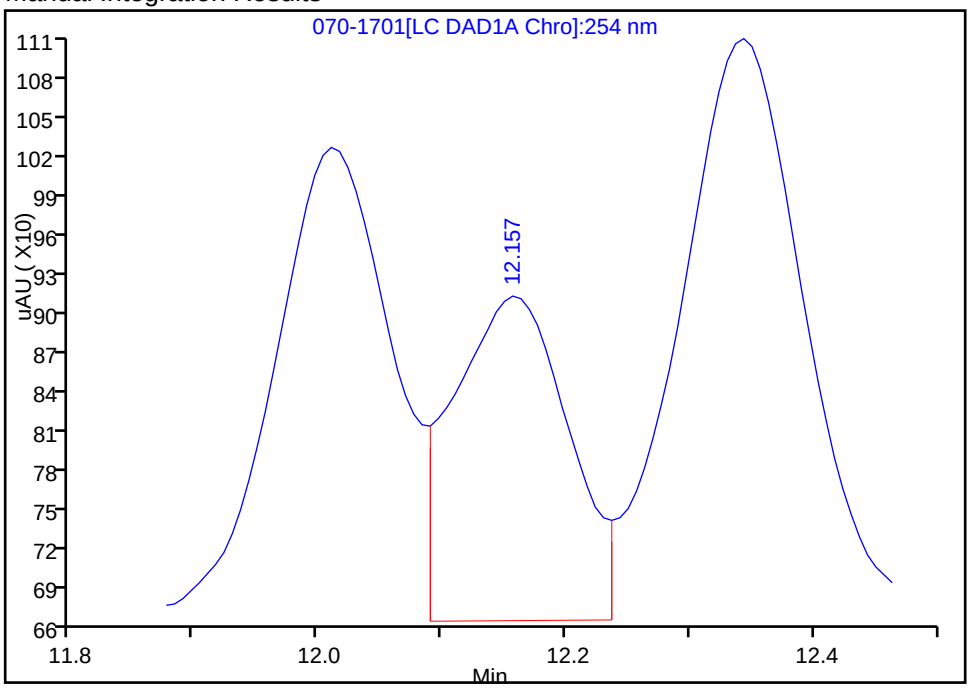
Not Detected
Expected RT: 12.14

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

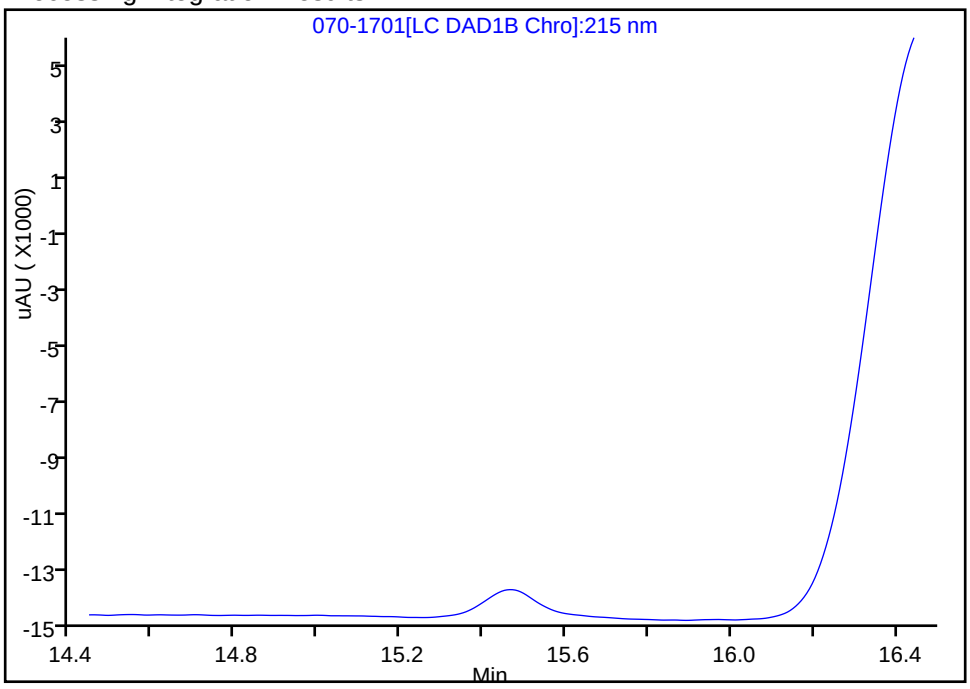
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D
Injection Date: 28-Oct-2016 20:21:37 Instrument ID: CHHPLC_X3
Lims ID: IC MAIN L1
Client ID:
Operator ID: ACF ALS Bottle#: 70 Worklist Smp#: 17
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: Detector LC DAD1C, 215 nm

22 PETN, CAS: 78-11-5

Signal: 1

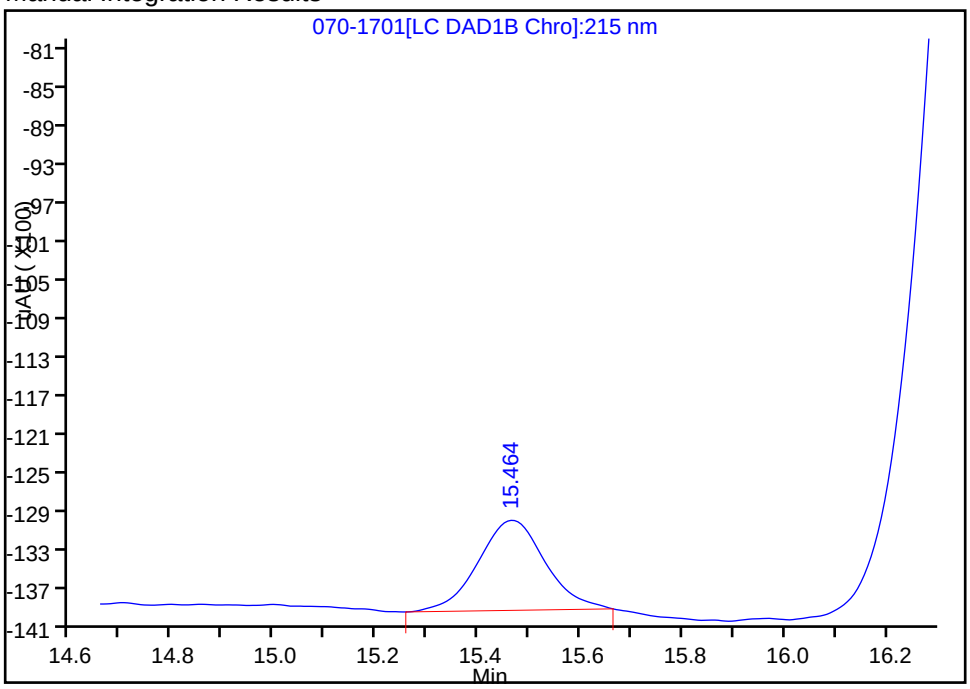
Not Detected
Expected RT: 15.44

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.: 280-90531-1

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.: 280-90531-1

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

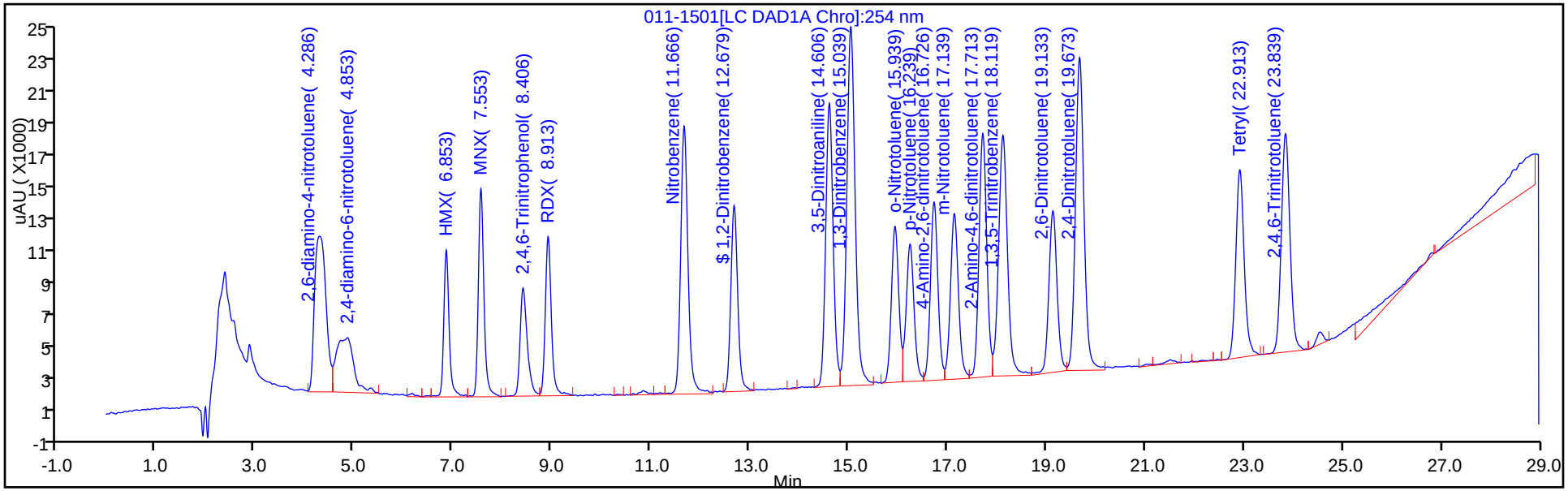
Report Date: 21-Oct-2016 09:25:12 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

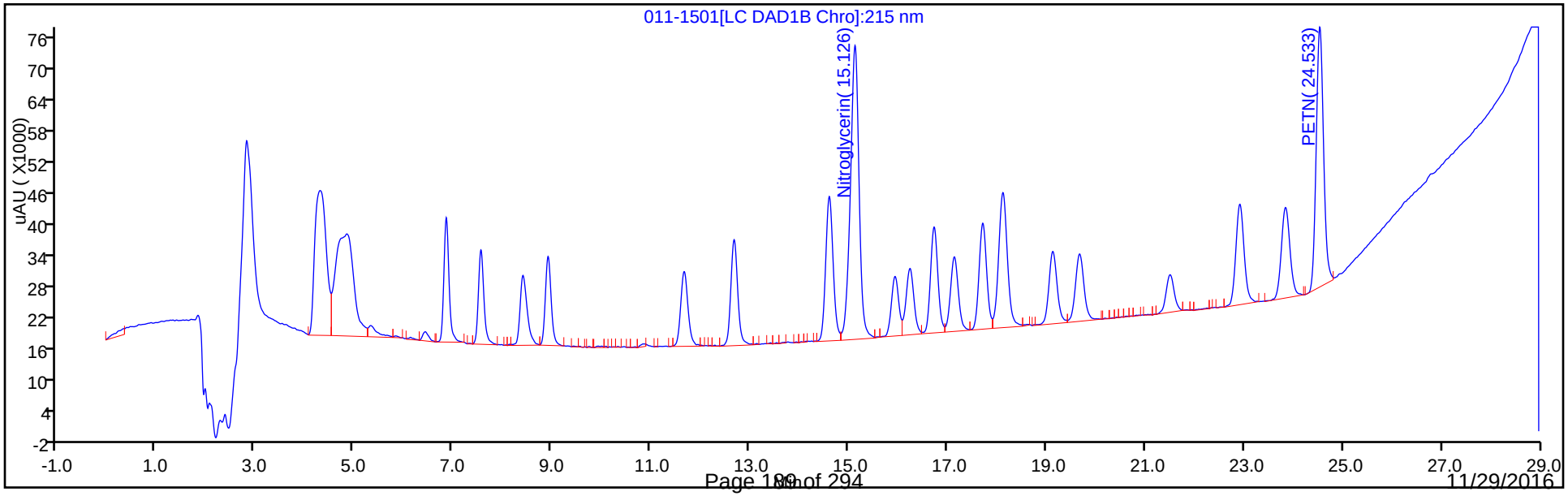
Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161020-52093.b\011-1501.D

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.: 280-90531-1

SDG No.:

Lab Sample ID: CCV 280-352866/7 Calibration Date: 11/23/2016 14:24

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: 11231607.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Lin2		178264		0.254	0.250	1.5	20.0
Picric acid	Lin2		157592		0.239	0.250	-4.6	20.0
RDX	Lin2		205036		0.244	0.250	-2.4	20.0
Nitrobenzene	Lin2		412584		0.250	0.250	0.1	20.0
3,5-Dinitroaniline	Lin2		396348		0.247	0.250	-1.0	20.0
1,3-Dinitrobenzene	Lin2		615564		0.255	0.250	2.2	20.0
Nitroglycerin	Lin2		172245		2.54	2.50	1.7	20.0
2-Nitrotoluene	Lin2		247784		0.250	0.250	0.1	20.0
4-Nitrotoluene	Lin2		223668		0.249	0.250	-0.4	20.0
4-Amino-2,6-dinitrotoluene	Lin2		289784		0.250	0.250	0.0	20.0
3-Nitrotoluene	Lin2		283708		0.242	0.250	-3.2	20.0
2-Amino-4,6-dinitrotoluene	Lin2		412944		0.248	0.250	-1.0	20.0
1,3,5-Trinitrobenzene	Lin2		452468		0.248	0.250	-0.8	20.0
2,6-Dinitrotoluene	Lin2		295544		0.254	0.250	1.6	20.0
2,4-Dinitrotoluene	Lin2		596440		0.261	0.250	4.6	20.0
Tetryl	Lin2		341372		0.245	0.250	-1.8	20.0
2,4,6-Trinitrotoluene	Lin2		393760		0.251	0.250	0.2	20.0
PETN	Lin2		131472		2.65	2.50	5.9	20.0
1,2-Dinitrobenzene	Lin2		288572		0.264	0.250	5.5	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90531-1

SDG No.:

Lab Sample ID: CCV 280-352866/7 Calibration Date: 11/23/2016 14:24

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: 11231607.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.64	6.49	6.79
Picric acid	8.17	8.02	8.32
RDX	8.64	8.49	8.79
Nitrobenzene	11.34	11.19	11.49
3,5-Dinitroaniline	14.19	14.04	14.34
1,3-Dinitrobenzene	14.64	14.49	14.79
Nitroglycerin	14.72	14.57	14.87
2-Nitrotoluene	15.50	15.35	15.65
4-Nitrotoluene	15.80	15.65	15.95
4-Amino-2,6-dinitrotoluene	16.26	16.11	16.41
3-Nitrotoluene	16.69	16.54	16.84
2-Amino-4,6-dinitrotoluene	17.24	17.09	17.39
1,3,5-Trinitrobenzene	17.68	17.53	17.83
2,6-Dinitrotoluene	18.65	18.50	18.80
2,4-Dinitrotoluene	19.19	19.04	19.34
Tetryl	22.40	22.25	22.55
2,4,6-Trinitrotoluene	23.32	23.17	23.47
PETN	24.05	23.90	24.20
1,2-Dinitrobenzene	12.31	12.16	12.46

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161123-53490.b\11231607.D
Lims ID: CCV MAIN L4
Client ID:
Sample Type: CCV
Inject. Date: 23-Nov-2016 14:24:58 ALS Bottle#: 2 Worklist Smp#: 7
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: CCV MAIN L4
Misc. Info.: 280-0053490-007
Operator ID: DMJ Instrument ID: CHHPLC_G2_LUNA
Sublist: chrom-G2_8330_Luna*sub1

Method: \\ChromNA\Denver\ChromData\G2_LUNA\20161123-53490.b\G2_8330_Luna.m
Limit Group: GCSV - 8330
Last Update: 24-Nov-2016 19:15:49 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: XAWRK004

First Level Reviewer: jonsrudd Date: 24-Nov-2016 18:28:35

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	4.209	4.209	0.000	99974	0.2500	0.2611	
3 2,4-diamino-6-nitrotoluene	1	4.729	4.729	0.000	59767	0.2500	0.2824	
5 HMX	1	6.642	6.642	0.000	44566	0.2500	0.2538	
6 MNX	1	7.322	7.322	0.000	66260	0.2487	0.2585	
4 2,4,6-Trinitrophenol	1	8.169	8.169	0.000	39398	0.2500	0.2385	
7 RDX	1	8.635	8.635	0.000	51259	0.2500	0.2440	
8 Nitrobenzene	1	11.335	11.335	0.000	103146	0.2500	0.2504	
$ 9 1,2-Dinitrobenzene	1	12.308	12.308	0.000	72143	0.2500	0.2638	
10 3,5-Dinitroaniline	1	14.188	14.188	0.000	99087	0.2500	0.2475	
11 1,3-Dinitrobenzene	1	14.635	14.635	0.000	153891	0.2500	0.2554	
12 Nitroglycerin	2	14.722	14.722	0.000	430612	2.50	2.54	
13 o-Nitrotoluene	1	15.502	15.502	0.000	61946	0.2500	0.2504	
14 p-Nitrotoluene	1	15.802	15.802	0.000	55917	0.2500	0.2489	
15 4-Amino-2,6-dinitrotoluene	1	16.262	16.262	0.000	72446	0.2500	0.2502	
16 m-Nitrotoluene	1	16.688	16.688	0.000	70927	0.2500	0.2421	
17 2-Amino-4,6-dinitrotoluene	1	17.242	17.242	0.000	103236	0.2500	0.2476	
18 1,3,5-Trinitrobenzene	1	17.675	17.675	0.000	113117	0.2500	0.2479	
19 2,6-Dinitrotoluene	1	18.648	18.648	0.000	73886	0.2500	0.2541	
20 2,4-Dinitrotoluene	1	19.188	19.188	0.000	149110	0.2500	0.2614	
21 Tetryl	1	22.395	22.395	0.000	85343	0.2500	0.2454	
22 2,4,6-Trinitrotoluene	1	23.322	23.322	0.000	98440	0.2500	0.2506	
23 PETN	2	24.049	24.049	0.000	328680	2.50	2.65	

Reagents:

8330IntermStk_00041 Amount Added: 0.01 Units: mL
8330_ADDs_00009 Amount Added: 0.01 Units: mL

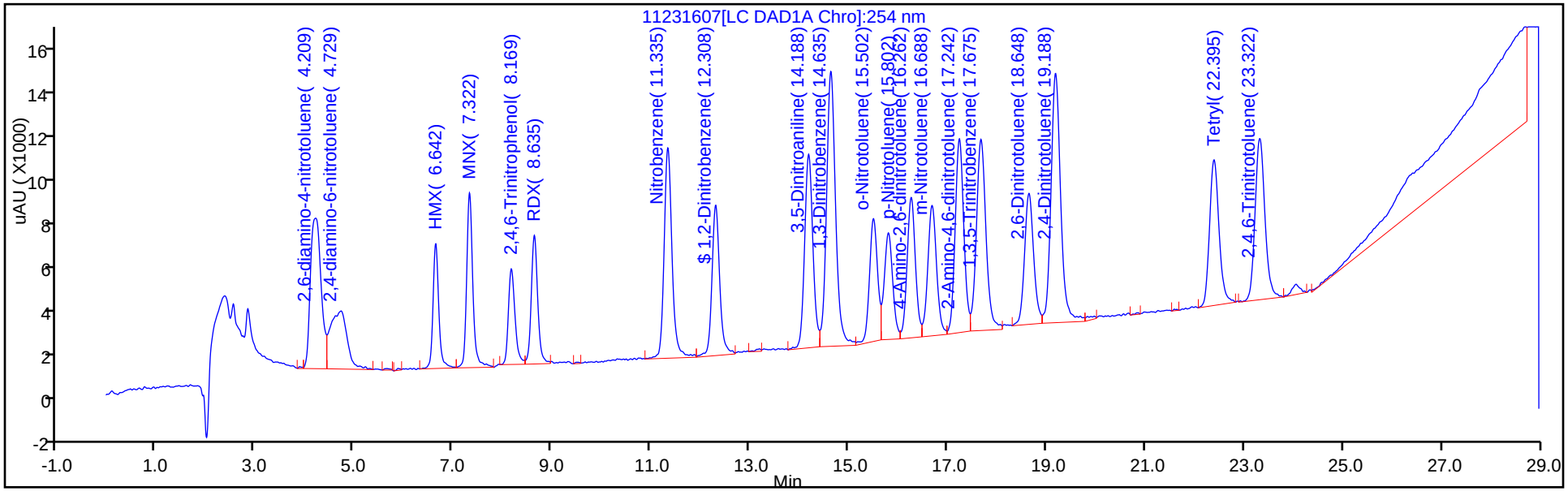
Report Date: 24-Nov-2016 19:15:51 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

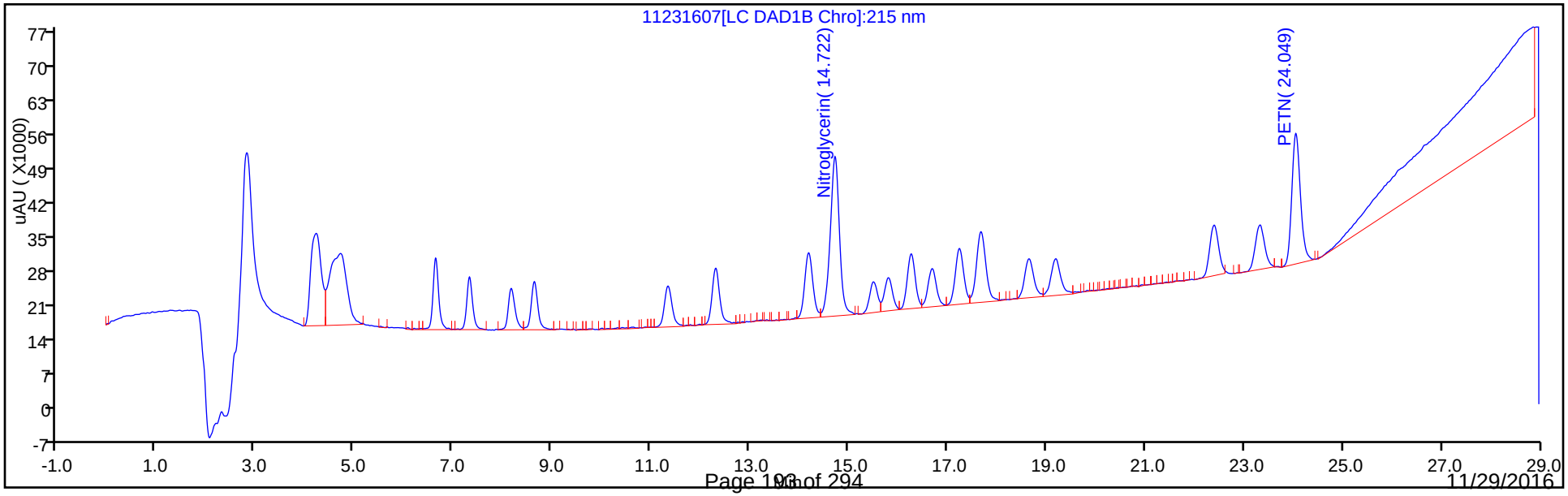
Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161123-53490.b\11231607.D

Injection Date:	23-Nov-2016 14:24:58	Instrument ID:	CHHPLC_G2_LUNA	Operator ID:	DMJ
Lims ID:	CCV MAIN L4			Worklist Smp#:	7
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.: 280-90531-1

SDG No.:

Lab Sample ID: CCV 280-352866/18 Calibration Date: 11/23/2016 20:49

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: 11231618.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Lin2		189860		0.271	0.250	8.3	20.0
Picric acid	Lin2		179060		0.272	0.250	8.9	20.0
RDX	Lin2		219468		0.262	0.250	4.8	20.0
Nitrobenzene	Lin2		405668		0.246	0.250	-1.6	20.0
3,5-Dinitroaniline	Lin2		392764		0.245	0.250	-1.9	20.0
1,3-Dinitrobenzene	Lin2		612804		0.254	0.250	1.7	20.0
Nitroglycerin	Lin2		176316		2.60	2.50	4.1	20.0
2-Nitrotoluene	Lin2		237160		0.240	0.250	-4.2	20.0
4-Nitrotoluene	Lin2		212492		0.236	0.250	-5.6	20.0
4-Amino-2,6-dinitrotoluene	Lin2		285168		0.246	0.250	-1.6	20.0
3-Nitrotoluene	Lin2		271732		0.232	0.250	-7.4	20.0
2-Amino-4,6-dinitrotoluene	Lin2		408856		0.245	0.250	-2.0	20.0
1,3,5-Trinitrobenzene	Lin2		451984		0.248	0.250	-1.0	20.0
2,6-Dinitrotoluene	Lin2		294484		0.253	0.250	1.3	20.0
2,4-Dinitrotoluene	Lin2		587900		0.258	0.250	3.0	20.0
Tetryl	Lin2		348536		0.251	0.250	0.3	20.0
2,4,6-Trinitrotoluene	Lin2		395972		0.252	0.250	0.8	20.0
PETN	Lin2		129105		2.60	2.50	4.0	20.0
1,2-Dinitrobenzene	Lin2		285028		0.260	0.250	4.2	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90531-1

SDG No.:

Lab Sample ID: CCV 280-352866/18 Calibration Date: 11/23/2016 20:49

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: 11231618.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.66	6.51	6.81
Picric acid	8.17	8.02	8.32
RDX	8.66	8.51	8.81
Nitrobenzene	11.36	11.21	11.51
3,5-Dinitroaniline	14.21	14.06	14.36
1,3-Dinitrobenzene	14.66	14.51	14.81
Nitroglycerin	14.75	14.60	14.90
2-Nitrotoluene	15.54	15.39	15.69
4-Nitrotoluene	15.84	15.69	15.99
4-Amino-2,6-dinitrotoluene	16.30	16.15	16.45
3-Nitrotoluene	16.72	16.57	16.87
2-Amino-4,6-dinitrotoluene	17.28	17.13	17.43
1,3,5-Trinitrobenzene	17.71	17.56	17.86
2,6-Dinitrotoluene	18.68	18.53	18.83
2,4-Dinitrotoluene	19.22	19.07	19.37
Tetryl	22.44	22.29	22.59
2,4,6-Trinitrotoluene	23.36	23.21	23.51
PETN	24.08	23.93	24.23
1,2-Dinitrobenzene	12.33	12.18	12.48

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161123-53490.b\11231618.D
Lims ID: CCV MAIN L4
Client ID:
Sample Type: CCV
Inject. Date: 23-Nov-2016 20:49:41 ALS Bottle#: 2 Worklist Smp#: 18
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: CCV MAIN L4
Misc. Info.: 280-0053490-018
Operator ID: DMJ Instrument ID: CHHPLC_G2_LUNA
Sublist: chrom-G2_8330_Luna*sub1

Method: \\ChromNA\Denver\ChromData\G2_LUNA\20161123-53490.b\G2_8330_Luna.m
Limit Group: GCSV - 8330
Last Update: 24-Nov-2016 19:17:24 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: XAWRK004

First Level Reviewer: jonsrudd Date: 24-Nov-2016 18:49:07

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	4.217	4.217	0.000	99852	0.2500	0.2608	
3 2,4-diamino-6-nitrotoluene	1	4.723	4.723	0.000	59061	0.2500	0.2790	
5 HMX	1	6.657	6.657	0.000	47465	0.2500	0.2707	
6 MNX	1	7.343	7.343	0.000	69825	0.2487	0.2726	
4 2,4,6-Trinitrophenol	1	8.170	8.170	0.000	44765	0.2500	0.2723	
7 RDX	1	8.657	8.657	0.000	54867	0.2500	0.2620	
8 Nitrobenzene	1	11.357	11.357	0.000	101417	0.2500	0.2461	
$ 9 1,2-Dinitrobenzene	1	12.330	12.330	0.000	71257	0.2500	0.2605	
10 3,5-Dinitroaniline	1	14.210	14.210	0.000	98191	0.2500	0.2452	
11 1,3-Dinitrobenzene	1	14.663	14.663	0.000	153201	0.2500	0.2542	
12 Nitroglycerin	2	14.750	14.750	0.000	440789	2.50	2.60	
13 o-Nitrotoluene	1	15.537	15.537	0.000	59290	0.2500	0.2395	
14 p-Nitrotoluene	1	15.837	15.837	0.000	53123	0.2500	0.2360	
15 4-Amino-2,6-dinitrotoluene	1	16.297	16.297	0.000	71292	0.2500	0.2461	
16 m-Nitrotoluene	1	16.723	16.723	0.000	67933	0.2500	0.2316	
17 2-Amino-4,6-dinitrotoluene	1	17.277	17.277	0.000	102214	0.2500	0.2451	
18 1,3,5-Trinitrobenzene	1	17.710	17.710	0.000	112996	0.2500	0.2476	
19 2,6-Dinitrotoluene	1	18.683	18.683	0.000	73621	0.2500	0.2532	
20 2,4-Dinitrotoluene	1	19.223	19.223	0.000	146975	0.2500	0.2576	
21 Tetryl	1	22.437	22.437	0.000	87134	0.2500	0.2508	
22 2,4,6-Trinitrotoluene	1	23.357	23.357	0.000	98993	0.2500	0.2520	
23 PETN	2	24.083	24.083	0.000	322763	2.50	2.60	

Reagents:

8330IntermStk_00041 Amount Added: 0.01 Units: mL
8330_ADDs_00009 Amount Added: 0.01 Units: mL

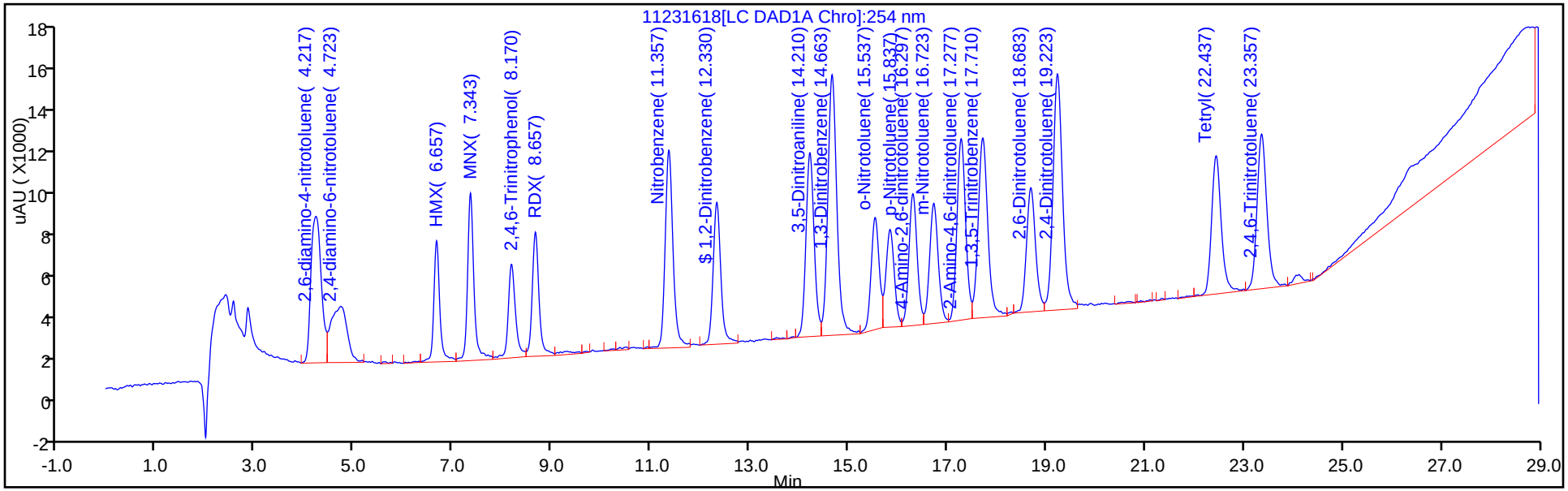
Report Date: 24-Nov-2016 19:17:25 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

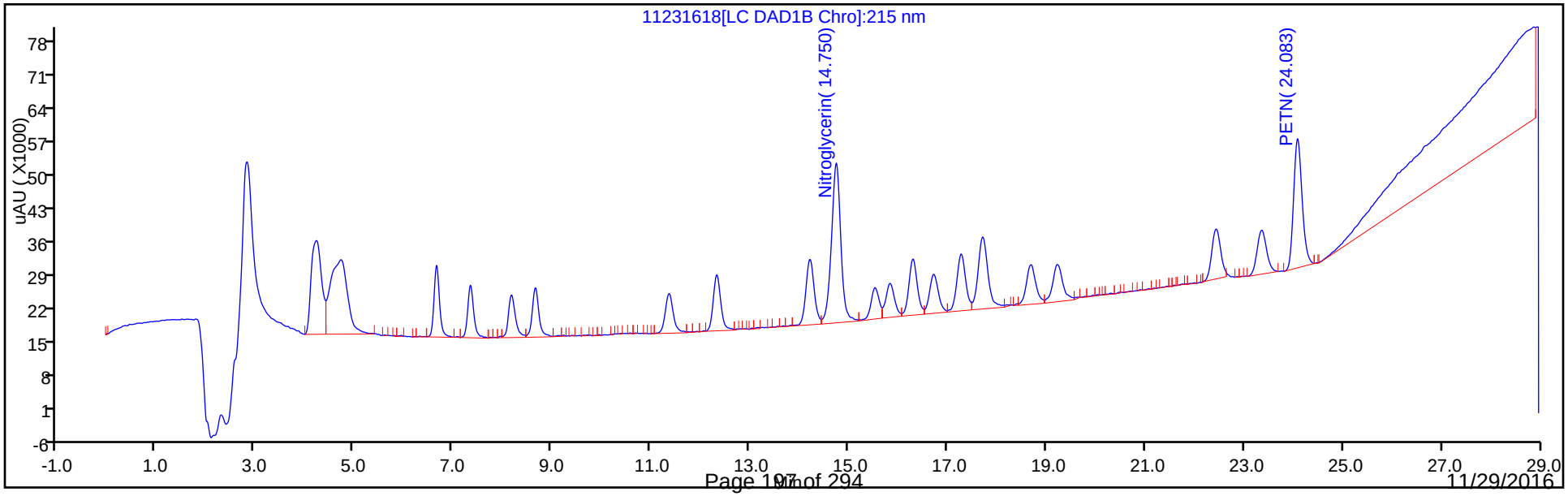
Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161123-53490.b\11231618.D

Injection Date:	23-Nov-2016 20:49:41	Instrument ID:	CHHPLC_G2_LUNA	Operator ID:	DMJ
Lims ID:	CCV MAIN L4			Worklist Smp#:	18
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.: 280-90531-1

SDG No.:

Lab Sample ID: CCV 280-352866/25 Calibration Date: 11/24/2016 00:54

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: 11231625.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Lin2		182664		0.260	0.250	4.1	20.0
Picric acid	Lin2		175616		0.267	0.250	6.8	20.0
RDX	Lin2		220360		0.263	0.250	5.2	20.0
Nitrobenzene	Lin2		395452		0.240	0.250	-4.1	20.0
3,5-Dinitroaniline	Lin2		395272		0.247	0.250	-1.3	20.0
1,3-Dinitrobenzene	Lin2		616076		0.256	0.250	2.2	20.0
Nitroglycerin	Lin2		176913		2.61	2.50	4.4	20.0
2-Nitrotoluene	Lin2		234420		0.237	0.250	-5.3	20.0
4-Nitrotoluene	Lin2		219508		0.244	0.250	-2.4	20.0
4-Amino-2,6-dinitrotoluene	Lin2		287172		0.248	0.250	-0.8	20.0
3-Nitrotoluene	Lin2		273764		0.233	0.250	-6.6	20.0
2-Amino-4,6-dinitrotoluene	Lin2		409660		0.246	0.250	-1.8	20.0
1,3,5-Trinitrobenzene	Lin2		454100		0.249	0.250	-0.5	20.0
2,6-Dinitrotoluene	Lin2		299544		0.258	0.250	3.1	20.0
2,4-Dinitrotoluene	Lin2		585292		0.256	0.250	2.6	20.0
Tetryl	Lin2		344728		0.248	0.250	-0.8	20.0
2,4,6-Trinitrotoluene	Lin2		392856		0.250	0.250	-0.0	20.0
PETN	Lin2		128208		2.58	2.50	3.2	20.0
1,2-Dinitrobenzene	Lin2		285908		0.261	0.250	4.5	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90531-1

SDG No.:

Lab Sample ID: CCV 280-352866/25 Calibration Date: 11/24/2016 00:54

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: 11231625.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.66	6.51	6.81
Picric acid	8.20	8.05	8.35
RDX	8.66	8.51	8.81
Nitrobenzene	11.37	11.22	11.52
3,5-Dinitroaniline	14.24	14.09	14.39
1,3-Dinitrobenzene	14.68	14.53	14.83
Nitroglycerin	14.77	14.62	14.92
2-Nitrotoluene	15.56	15.41	15.71
4-Nitrotoluene	15.86	15.71	16.01
4-Amino-2,6-dinitrotoluene	16.32	16.17	16.47
3-Nitrotoluene	16.74	16.59	16.89
2-Amino-4,6-dinitrotoluene	17.30	17.15	17.45
1,3,5-Trinitrobenzene	17.73	17.58	17.88
2,6-Dinitrotoluene	18.70	18.55	18.85
2,4-Dinitrotoluene	19.24	19.09	19.39
Tetryl	22.46	22.31	22.61
2,4,6-Trinitrotoluene	23.38	23.23	23.53
PETN	24.12	23.97	24.27
1,2-Dinitrobenzene	12.34	12.19	12.49

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161123-53490.b\11231625.D
Lims ID: CCV MAIN L4
Client ID:
Sample Type: CCV
Inject. Date: 24-Nov-2016 00:54:35 ALS Bottle#: 2 Worklist Smp#: 25
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: CCV MAIN L4
Misc. Info.: 280-0053490-025
Operator ID: DMJ Instrument ID: CHHPLC_G2_LUNA
Sublist: chrom-G2_8330_Luna*sub1

Method: \\ChromNA\Denver\ChromData\G2_LUNA\20161123-53490.b\G2_8330_Luna.m
Limit Group: GCSV - 8330
Last Update: 24-Nov-2016 19:17:45 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: XAWRK004

First Level Reviewer: jonsrudd Date: 24-Nov-2016 19:04:05

	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	4.202	4.202	0.000	99960	0.2500	0.2611	
	3 2,4-diamino-6-nitrotoluene	1	4.735	4.735	0.000	57343	0.2500	0.2706	
	5 HMX	1	6.662	6.662	0.000	45666	0.2500	0.2602	
	6 MNX	1	7.348	7.348	0.000	68833	0.2487	0.2687	
	4 2,4,6-Trinitrophenol	1	8.195	8.195	0.000	43904	0.2500	0.2669	
	7 RDX	1	8.662	8.662	0.000	55090	0.2500	0.2631	
	8 Nitrobenzene	1	11.368	11.368	0.000	98863	0.2500	0.2398	
$	9 1,2-Dinitrobenzene	1	12.341	12.341	0.000	71477	0.2500	0.2613	
	10 3,5-Dinitroaniline	1	14.235	14.235	0.000	98818	0.2500	0.2468	
	11 1,3-Dinitrobenzene	1	14.681	14.681	0.000	154019	0.2500	0.2556	
	12 Nitroglycerin	2	14.768	14.768	0.000	442283	2.50	2.61	
	13 o-Nitrotoluene	1	15.555	15.555	0.000	58605	0.2500	0.2367	
	14 p-Nitrotoluene	1	15.855	15.855	0.000	54877	0.2500	0.2441	
	15 4-Amino-2,6-dinitrotoluene	1	16.315	16.315	0.000	71793	0.2500	0.2479	
	16 m-Nitrotoluene	1	16.735	16.735	0.000	68441	0.2500	0.2334	
	17 2-Amino-4,6-dinitrotoluene	1	17.295	17.295	0.000	102415	0.2500	0.2456	
	18 1,3,5-Trinitrobenzene	1	17.728	17.728	0.000	113525	0.2500	0.2488	
	19 2,6-Dinitrotoluene	1	18.701	18.701	0.000	74886	0.2500	0.2576	
	20 2,4-Dinitrotoluene	1	19.241	19.241	0.000	146323	0.2500	0.2564	
	21 Tetryl	1	22.455	22.455	0.000	86182	0.2500	0.2479	
	22 2,4,6-Trinitrotoluene	1	23.382	23.382	0.000	98214	0.2500	0.2500	
	23 PETN	2	24.115	24.115	0.000	320521	2.50	2.58	

Reagents:

8330IntermStk_00041 Amount Added: 0.01 Units: mL
8330_ADDs_00009 Amount Added: 0.01 Units: mL

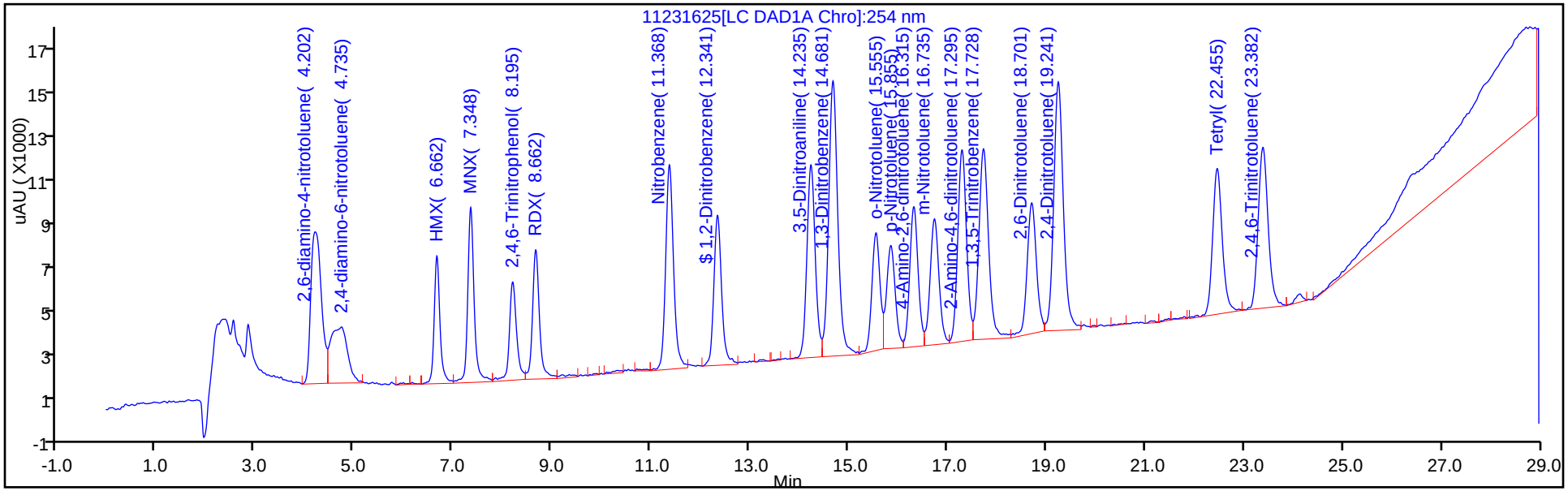
Report Date: 24-Nov-2016 19:17:45 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

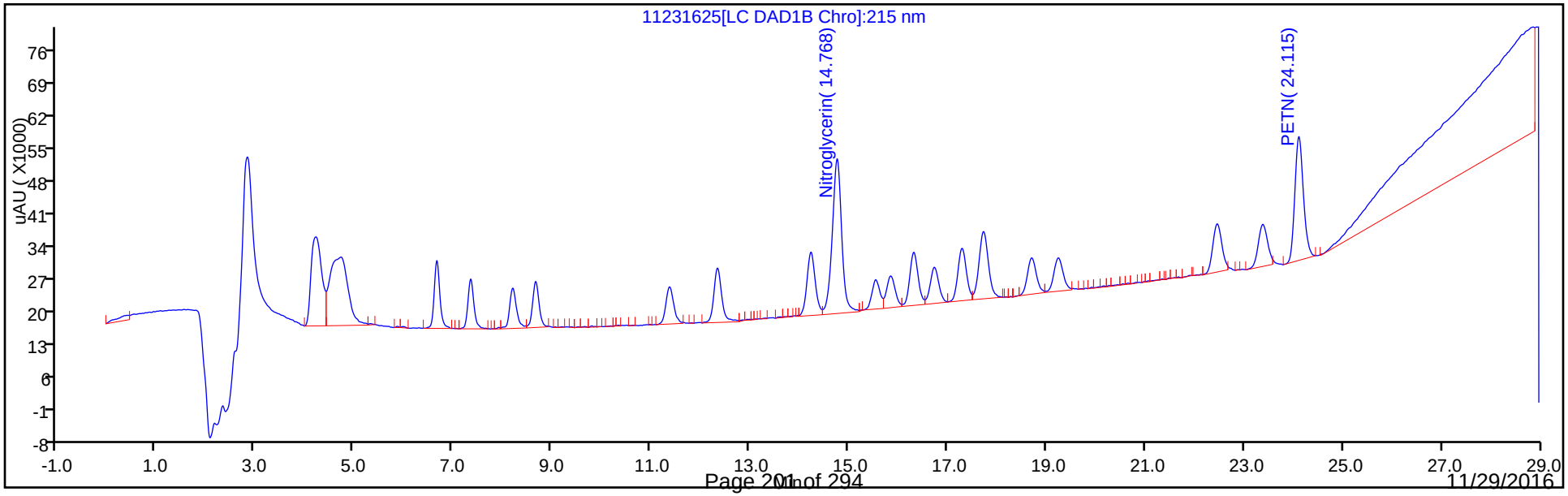
Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161123-53490.b\11231625.D

Injection Date:	24-Nov-2016 00:54:35	Instrument ID:	CHHPLC_G2_LUNA	Operator ID:	DMJ
Lims ID:	CCV MAIN L4			Worklist Smp#:	25
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.: 280-90531-1

SDG No.:

Lab Sample ID: CCV 280-353205/7 Calibration Date: 11/27/2016 21:04

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: 11271607.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Lin2		179016		0.255	0.250	2.0	20.0
Picric acid	Lin2		166928		0.253	0.250	1.3	20.0
RDX	Lin2		211964		0.253	0.250	1.1	20.0
Nitrobenzene	Lin2		410924		0.249	0.250	-0.3	20.0
3,5-Dinitroaniline	Lin2		394384		0.246	0.250	-1.5	20.0
1,3-Dinitrobenzene	Lin2		592544		0.246	0.250	-1.7	20.0
Nitroglycerin	Lin2		174248		2.57	2.50	2.9	20.0
2-Nitrotoluene	Lin2		241368		0.244	0.250	-2.5	20.0
4-Nitrotoluene	Lin2		215500		0.239	0.250	-4.2	20.0
4-Amino-2,6-dinitrotoluene	Lin2		283556		0.245	0.250	-2.1	20.0
3-Nitrotoluene	Lin2		279852		0.239	0.250	-4.5	20.0
2-Amino-4,6-dinitrotoluene	Lin2		409592		0.246	0.250	-1.8	20.0
1,3,5-Trinitrobenzene	Lin2		455120		0.249	0.250	-0.3	20.0
2,6-Dinitrotoluene	Lin2		296100		0.255	0.250	1.8	20.0
2,4-Dinitrotoluene	Lin2		582272		0.255	0.250	2.0	20.0
Tetryl	Lin2		335908		0.241	0.250	-3.5	20.0
2,4,6-Trinitrotoluene	Lin2		386444		0.246	0.250	-1.7	20.0
PETN	Lin2		126876		2.55	2.50	2.2	20.0
1,2-Dinitrobenzene	Lin2		277484		0.253	0.250	1.4	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90531-1

SDG No.:

Lab Sample ID: CCV 280-353205/7 Calibration Date: 11/27/2016 21:04

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: 11271607.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.69	6.54	6.84
Picric acid	8.17	8.02	8.32
RDX	8.69	8.54	8.84
Nitrobenzene	11.42	11.27	11.57
3,5-Dinitroaniline	14.28	14.13	14.43
1,3-Dinitrobenzene	14.73	14.58	14.88
Nitroglycerin	14.83	14.68	14.98
2-Nitrotoluene	15.61	15.46	15.76
4-Nitrotoluene	15.91	15.76	16.06
4-Amino-2,6-dinitrotoluene	16.37	16.22	16.52
3-Nitrotoluene	16.81	16.66	16.96
2-Amino-4,6-dinitrotoluene	17.35	17.20	17.50
1,3,5-Trinitrobenzene	17.79	17.64	17.94
2,6-Dinitrotoluene	18.77	18.62	18.92
2,4-Dinitrotoluene	19.31	19.16	19.46
Tetryl	22.52	22.37	22.67
2,4,6-Trinitrotoluene	23.45	23.30	23.60
PETN	24.19	24.04	24.34
1,2-Dinitrobenzene	12.40	12.25	12.55

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161127-53578.b\11271607.D
Lims ID: CCV MAIN L4
Client ID:
Sample Type: CCV
Inject. Date: 27-Nov-2016 21:04:15 ALS Bottle#: 2 Worklist Smp#: 7
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: CCV MAIN L4
Misc. Info.: 280-0053578-007
Operator ID: DMJ Instrument ID: CHHPLC_G2_LUNA
Sublist: chrom-G2_8330_Luna*sub1

Method: \\ChromNA\Denver\ChromData\G2_LUNA\20161127-53578.b\G2_8330_Luna.m
Limit Group: GCSV - 8330
Last Update: 28-Nov-2016 14:55:58 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: XAWRK004

First Level Reviewer: jonsrudd Date: 28-Nov-2016 14:51:10

	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	4.233	4.233	0.000	101273	0.2500	0.2645	
	3 2,4-diamino-6-nitrotoluene	1	4.740	4.740	0.000	59620	0.2500	0.2817	
	5 HMX	1	6.686	6.686	0.000	44754	0.2500	0.2549	
	6 MNX	1	7.373	7.373	0.000	64908	0.2487	0.2531	
	4 2,4,6-Trinitrophenol	1	8.173	8.173	0.000	41732	0.2500	0.2532	
	7 RDX	1	8.693	8.693	0.000	52991	0.2500	0.2526	
	8 Nitrobenzene	1	11.419	11.419	0.000	102731	0.2500	0.2494	
$	9 1,2-Dinitrobenzene	1	12.399	12.399	0.000	69371	0.2500	0.2534	
	10 3,5-Dinitroaniline	1	14.279	14.279	0.000	98596	0.2500	0.2462	
	11 1,3-Dinitrobenzene	1	14.733	14.733	0.000	148136	0.2500	0.2457	
	12 Nitroglycerin	2	14.826	14.826	0.000	435620	2.50	2.57	
	13 o-Nitrotoluene	1	15.613	15.613	0.000	60342	0.2500	0.2438	
	14 p-Nitrotoluene	1	15.906	15.906	0.000	53875	0.2500	0.2395	
	15 4-Amino-2,6-dinitrotoluene	1	16.373	16.373	0.000	70889	0.2500	0.2447	
	16 m-Nitrotoluene	1	16.806	16.806	0.000	69963	0.2500	0.2387	
	17 2-Amino-4,6-dinitrotoluene	1	17.353	17.353	0.000	102398	0.2500	0.2455	
	18 1,3,5-Trinitrobenzene	1	17.786	17.786	0.000	113780	0.2500	0.2494	
	19 2,6-Dinitrotoluene	1	18.773	18.773	0.000	74025	0.2500	0.2546	
	20 2,4-Dinitrotoluene	1	19.306	19.306	0.000	145568	0.2500	0.2550	
	21 Tetryl	1	22.520	22.520	0.000	83977	0.2500	0.2413	
	22 2,4,6-Trinitrotoluene	1	23.453	23.453	0.000	96611	0.2500	0.2459	
	23 PETN	2	24.193	24.193	0.000	317189	2.50	2.55	

Reagents:

8330IntermStk_00041 Amount Added: 0.01 Units: mL
8330_ADDs_00009 Amount Added: 0.01 Units: mL

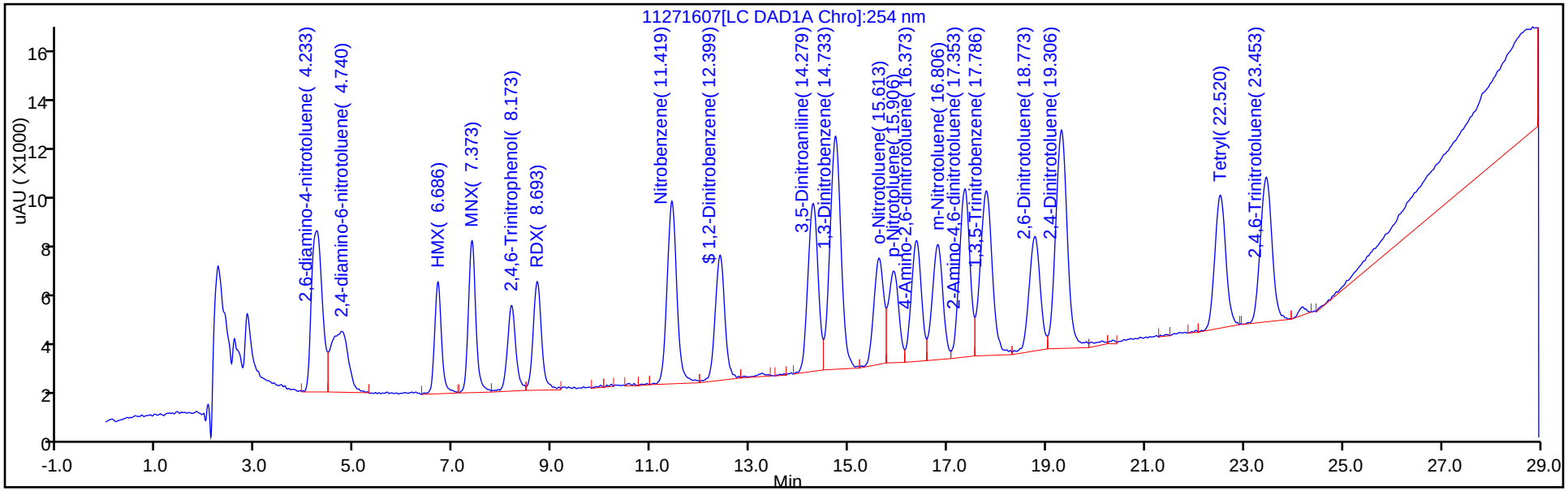
Report Date: 28-Nov-2016 14:55:59 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

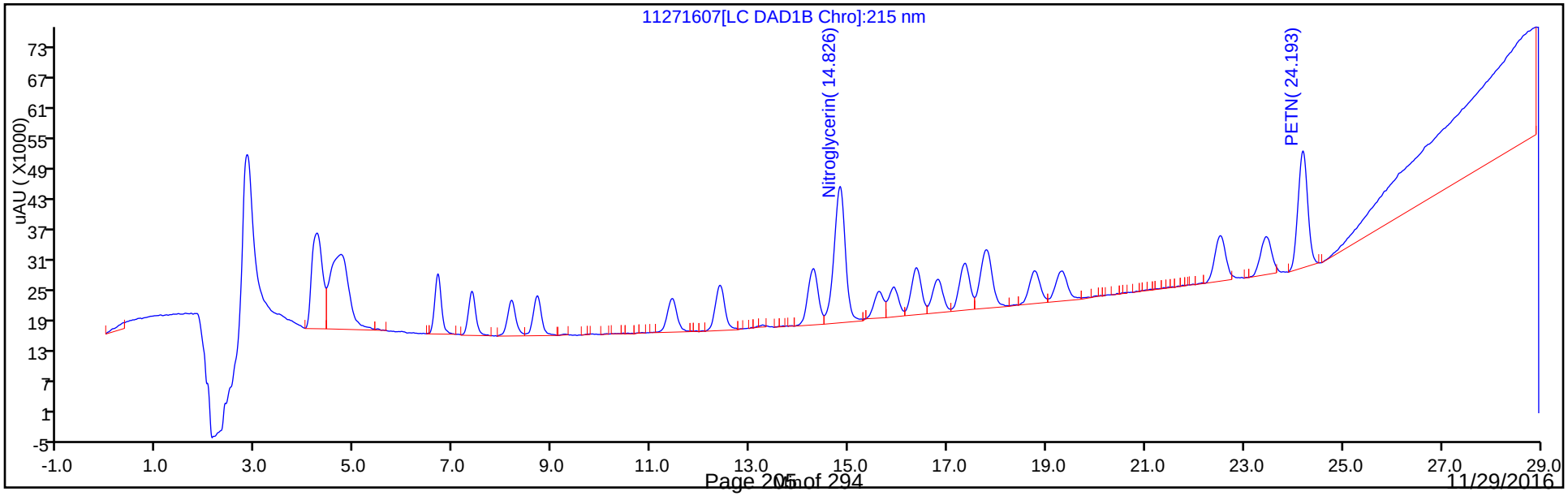
Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161127-53578.b\11271607.D

Injection Date:	27-Nov-2016 21:04:15	Instrument ID:	CHHPLC_G2_LUNA	Operator ID:	DMJ
Lims ID:	CCV MAIN L4			Worklist Smp#:	7
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.: 280-90531-1

SDG No.:

Lab Sample ID: CCV 280-353205/15 Calibration Date: 11/28/2016 01:43

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: 11271615.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Lin2		174928		0.249	0.250	-0.4	20.0
Picric acid	Lin2		165196		0.250	0.250	0.2	20.0
RDX	Lin2		214884		0.256	0.250	2.5	20.0
Nitrobenzene	Lin2		408608		0.248	0.250	-0.8	20.0
3,5-Dinitroaniline	Lin2		403844		0.252	0.250	0.9	20.0
1,3-Dinitrobenzene	Lin2		605624		0.251	0.250	0.5	20.0
Nitroglycerin	Lin2		169013		2.49	2.50	-0.2	20.0
2-Nitrotoluene	Lin2		253132		0.256	0.250	2.3	20.0
4-Nitrotoluene	Lin2		218736		0.243	0.250	-2.7	20.0
4-Amino-2,6-dinitrotoluene	Lin2		291604		0.252	0.250	0.7	20.0
3-Nitrotoluene	Lin2		288972		0.247	0.250	-1.3	20.0
2-Amino-4,6-dinitrotoluene	Lin2		417168		0.250	0.250	0.0	20.0
1,3,5-Trinitrobenzene	Lin2		459776		0.252	0.250	0.8	20.0
2,6-Dinitrotoluene	Lin2		301456		0.259	0.250	3.7	20.0
2,4-Dinitrotoluene	Lin2		581312		0.255	0.250	1.8	20.0
Tetryl	Lin2		344804		0.248	0.250	-0.8	20.0
2,4,6-Trinitrotoluene	Lin2		388136		0.247	0.250	-1.2	20.0
PETN	Lin2		128718		2.59	2.50	3.6	20.0
1,2-Dinitrobenzene	Lin2		286360		0.262	0.250	4.7	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90531-1

SDG No.:

Lab Sample ID: CCV 280-353205/15 Calibration Date: 11/28/2016 01:43

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: 11271615.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.65	6.50	6.80
Picric acid	8.14	7.99	8.29
RDX	8.65	8.50	8.80
Nitrobenzene	11.35	11.20	11.50
3,5-Dinitroaniline	14.20	14.05	14.35
1,3-Dinitrobenzene	14.65	14.50	14.80
Nitroglycerin	14.74	14.59	14.89
2-Nitrotoluene	15.52	15.37	15.67
4-Nitrotoluene	15.82	15.67	15.97
4-Amino-2,6-dinitrotoluene	16.28	16.13	16.43
3-Nitrotoluene	16.70	16.55	16.85
2-Amino-4,6-dinitrotoluene	17.25	17.10	17.40
1,3,5-Trinitrobenzene	17.69	17.54	17.84
2,6-Dinitrotoluene	18.66	18.51	18.81
2,4-Dinitrotoluene	19.20	19.05	19.35
Tetryl	22.40	22.25	22.55
2,4,6-Trinitrotoluene	23.33	23.18	23.48
PETN	24.06	23.91	24.21
1,2-Dinitrobenzene	12.32	12.17	12.47

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161127-53578.b\11271615.D
Lims ID: CCV MAIN L4
Client ID:
Sample Type: CCV
Inject. Date: 28-Nov-2016 01:43:57 ALS Bottle#: 2 Worklist Smp#: 15
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: CCV MAIN L4
Misc. Info.: 280-0053578-015
Operator ID: DMJ Instrument ID: CHHPLC_G2_LUNA
Sublist: chrom-G2_8330_Luna*sub1

Method: \\ChromNA\Denver\ChromData\G2_LUNA\20161127-53578.b\G2_8330_Luna.m
Limit Group: GCSV - 8330
Last Update: 28-Nov-2016 14:56:05 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: XAWRK004

First Level Reviewer: jonsrudd Date: 28-Nov-2016 14:55:46

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	4.211	4.211	0.000	99860	0.2500	0.2608	
3 2,4-diamino-6-nitrotoluene	1	4.718	4.718	0.000	58726	0.2500	0.2773	
5 HMX	1	6.651	6.651	0.000	43732	0.2500	0.2490	
6 MNX	1	7.338	7.338	0.000	64364	0.2487	0.2510	
4 2,4,6-Trinitrophenol	1	8.138	8.138	0.000	41299	0.2500	0.2505	
7 RDX	1	8.651	8.651	0.000	53721	0.2500	0.2563	
8 Nitrobenzene	1	11.351	11.351	0.000	102152	0.2500	0.2479	
$ 9 1,2-Dinitrobenzene	1	12.317	12.317	0.000	71590	0.2500	0.2617	
10 3,5-Dinitroaniline	1	14.204	14.204	0.000	100961	0.2500	0.2523	
11 1,3-Dinitrobenzene	1	14.651	14.651	0.000	151406	0.2500	0.2512	
12 Nitroglycerin	2	14.737	14.737	0.000	422533	2.50	2.49	
13 o-Nitrotoluene	1	15.524	15.524	0.000	63283	0.2500	0.2558	
14 p-Nitrotoluene	1	15.817	15.817	0.000	54684	0.2500	0.2432	
15 4-Amino-2,6-dinitrotoluene	1	16.277	16.277	0.000	72901	0.2500	0.2518	
16 m-Nitrotoluene	1	16.704	16.704	0.000	72243	0.2500	0.2467	
17 2-Amino-4,6-dinitrotoluene	1	17.251	17.251	0.000	104292	0.2500	0.2502	
18 1,3,5-Trinitrobenzene	1	17.691	17.691	0.000	114944	0.2500	0.2519	
19 2,6-Dinitrotoluene	1	18.664	18.664	0.000	75364	0.2500	0.2593	
20 2,4-Dinitrotoluene	1	19.197	19.197	0.000	145328	0.2500	0.2546	
21 Tetryl	1	22.404	22.404	0.000	86201	0.2500	0.2480	
22 2,4,6-Trinitrotoluene	1	23.331	23.331	0.000	97034	0.2500	0.2469	
23 PETN	2	24.064	24.064	0.000	321796	2.50	2.59	

Reagents:

8330IntermStk_00041 Amount Added: 0.01 Units: mL
8330_ADDs_00009 Amount Added: 0.01 Units: mL

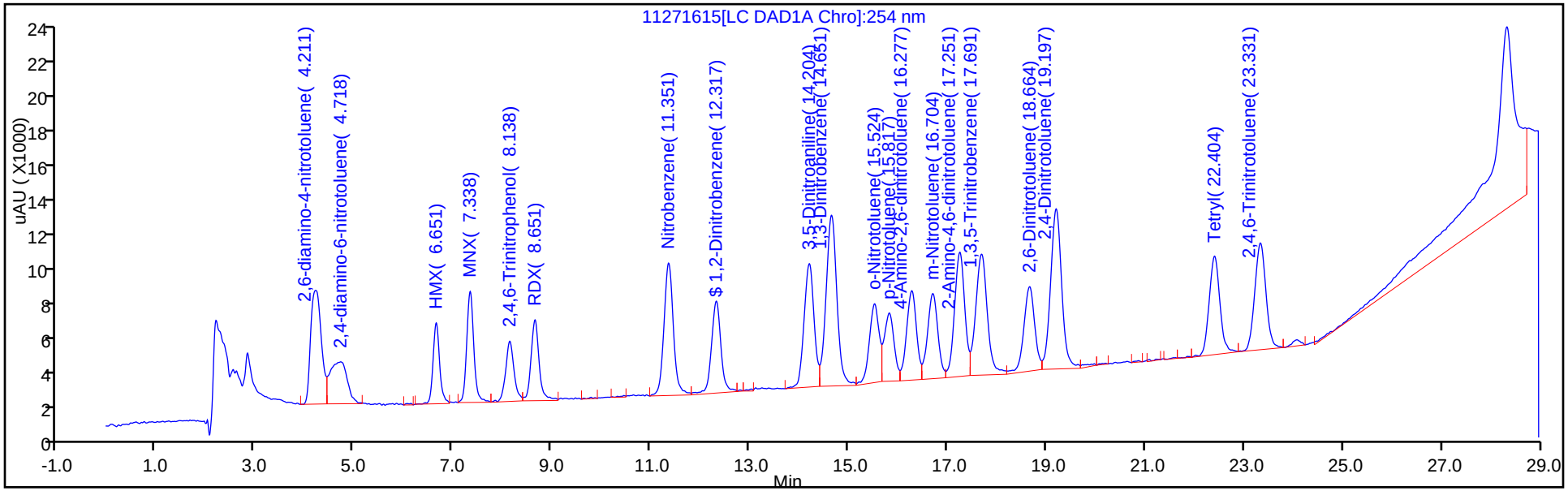
Report Date: 28-Nov-2016 14:56:06 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

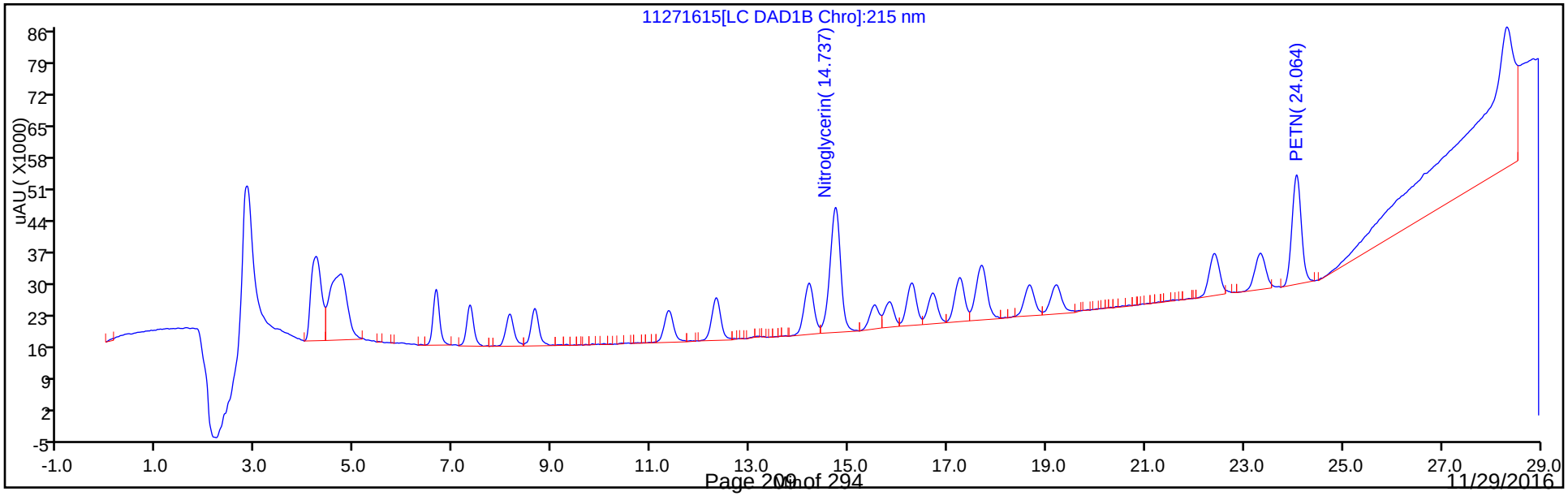
Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161127-53578.b\11271615.D

Injection Date:	28-Nov-2016 01:43:57	Instrument ID:	CHHPLC_G2_LUNA	Operator ID:	DMJ
Lims ID:	CCV MAIN L4			Worklist Smp#:	15
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.: 280-90531-1

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.: 280-90531-1

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

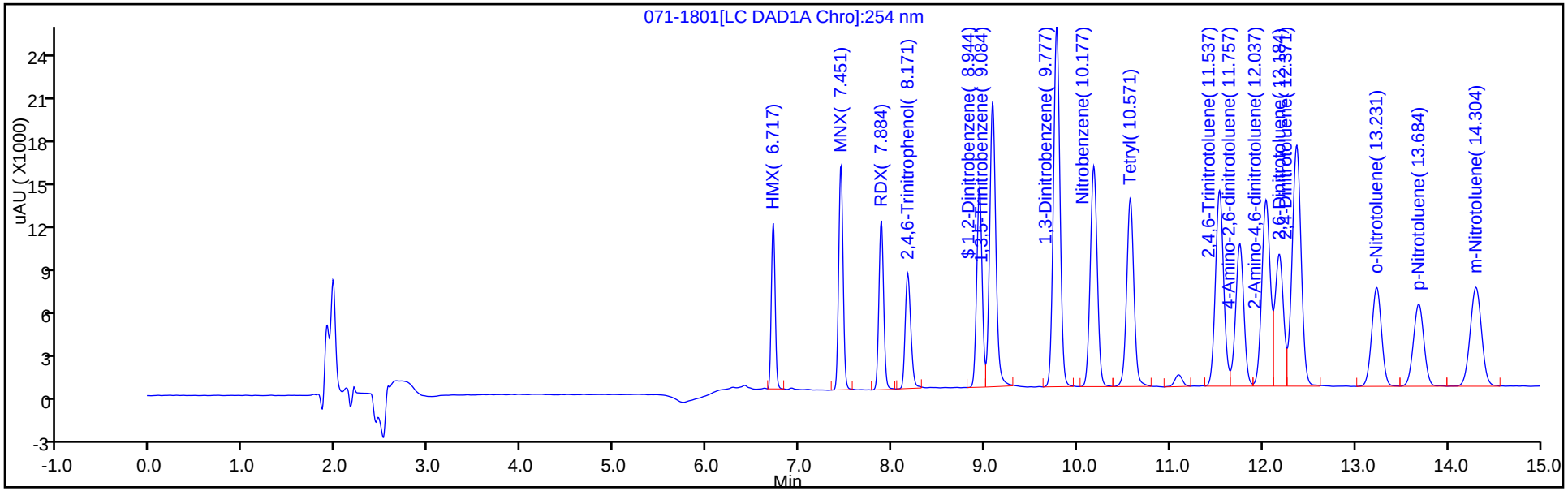
Report Date: 29-Oct-2016 09:48:12 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

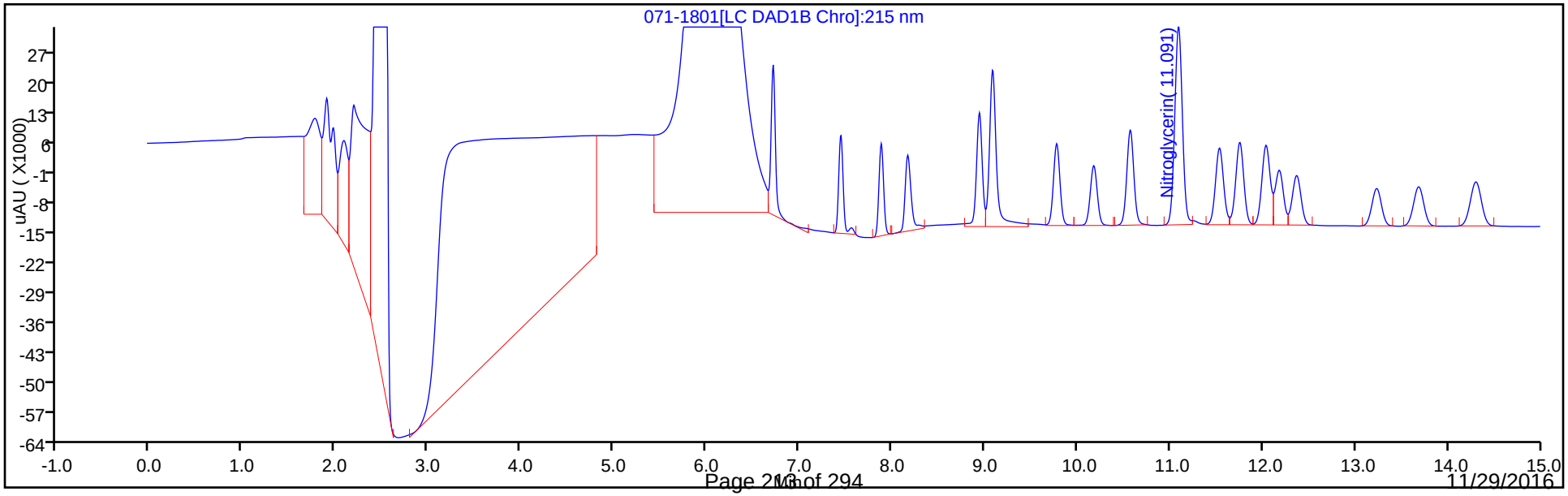
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\071-1801.D

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.: 280-90531-1

SDG No.:

Lab Sample ID: CCV 280-351752/7 Calibration Date: 11/16/2016 13:49

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: 007-0701.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Lin2		93252		0.252	0.250	0.7	20.0
RDX	Lin2		107172		0.248	0.250	-0.8	20.0
Picric acid	Lin2		85064		0.252	0.250	0.8	20.0
1,3,5-Trinitrobenzene	Lin2		232140		0.251	0.250	0.4	20.0
1,3-Dinitrobenzene	Lin2		295220		0.251	0.250	0.5	20.0
Nitrobenzene	Lin2		202888		0.251	0.250	0.5	20.0
Tetryl	Lin2		178172		0.249	0.250	-0.2	20.0
Nitroglycerin	Lin2		71428		2.49	2.50	-0.4	20.0
2,4,6-Trinitrotoluene	Lin2		203892		0.250	0.250	0.0	20.0
4-Amino-2,6-dinitrotoluene	Lin2		159496		0.256	0.250	2.4	20.0
2-Amino-4,6-dinitrotoluene	Lin2		220368		0.257	0.250	2.8	20.0
2,6-Dinitrotoluene	Lin2		145172		0.244	0.250	-2.6	20.0
2,4-Dinitrotoluene	Lin2		291184		0.252	0.250	0.8	20.0
2-Nitrotoluene	Lin2		129696		0.249	0.250	-0.3	20.0
4-Nitrotoluene	Lin2		110872		0.247	0.250	-1.3	20.0
3-Nitrotoluene	Lin2		143968		0.244	0.250	-2.4	20.0
PETN	Lin2		71540		2.49	2.50	-0.5	20.0
1,2-Dinitrobenzene	Lin2		139508		0.248	0.250	-0.8	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90531-1

SDG No.:

Lab Sample ID: CCV 280-351752/7 Calibration Date: 11/16/2016 13:49

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: 007-0701.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.71	6.61	6.81
RDX	7.88	7.78	7.98
Picric acid	8.19	8.09	8.29
1,3,5-Trinitrobenzene	9.08	8.98	9.18
1,3-Dinitrobenzene	9.77	9.67	9.87
Nitrobenzene	10.16	10.06	10.26
Tetryl	10.54	10.44	10.64
Nitroglycerin	11.05	10.95	11.15
2,4,6-Trinitrotoluene	11.49	11.39	11.59
4-Amino-2,6-dinitrotoluene	11.70	11.60	11.80
2-Amino-4,6-dinitrotoluene	11.99	11.89	12.09
2,6-Dinitrotoluene	12.13	12.03	12.23
2,4-Dinitrotoluene	12.32	12.22	12.42
2-Nitrotoluene	13.17	13.07	13.27
4-Nitrotoluene	13.61	13.51	13.71
3-Nitrotoluene	14.22	14.12	14.32
PETN	15.37	15.27	15.47
1,2-Dinitrobenzene	8.94	8.84	9.04

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\007-0701.D
Lims ID: CCV MAIN L4
Client ID:
Sample Type: CCV
Inject. Date: 16-Nov-2016 13:49:13 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 50.0 ul Dil. Factor: 1.0000
Sample Info: CCV MAIN L4
Misc. Info.: 280-0053110-019
Operator ID: ACF Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 17-Nov-2016 11:11:53 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: XAWRK030

First Level Reviewer: freya Date: 16-Nov-2016 15:31:00

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.712	6.712	0.000	23313	0.2500	0.2517	
4 MNX	1	7.445	7.445	0.000	34351	0.2487	0.2504	
5 RDX	1	7.878	7.878	0.000	26793	0.2500	0.2480	
6 2,4,6-Trinitrophenol	1	8.185	8.185	0.000	21266	0.2500	0.2520	
$ 7 1,2-Dinitrobenzene	1	8.938	8.938	0.000	34877	0.2500	0.2479	
8 1,3,5-Trinitrobenzene	1	9.078	9.078	0.000	58035	0.2500	0.2510	
9 1,3-Dinitrobenzene	1	9.765	9.765	0.000	73805	0.2500	0.2513	
11 Nitrobenzene	1	10.158	10.158	0.000	50722	0.2500	0.2512	
12 Tetryl	1	10.538	10.538	0.000	44543	0.2500	0.2494	
13 Nitroglycerin	2	11.051	11.051	0.000	178571	2.50	2.49	
14 2,4,6-Trinitrotoluene	1	11.491	11.491	0.000	50973	0.2500	0.2501	
15 4-Amino-2,6-dinitrotoluene	1	11.698	11.698	0.000	39874	0.2500	0.2561	
16 2-Amino-4,6-dinitrotoluene	1	11.985	11.985	0.000	55092	0.2500	0.2571	
17 2,6-Dinitrotoluene	1	12.131	12.131	0.000	36293	0.2500	0.2435	
18 2,4-Dinitrotoluene	1	12.318	12.318	0.000	72796	0.2500	0.2519	
19 o-Nitrotoluene	1	13.171	13.171	0.000	32424	0.2500	0.2493	
20 p-Nitrotoluene	1	13.611	13.611	0.000	27718	0.2500	0.2469	
21 m-Nitrotoluene	1	14.218	14.218	0.000	35992	0.2500	0.2441	
22 PETN	2	15.371	15.371	0.000	178850	2.50	2.49	

Reagents:

8330IntermStk_00041 Amount Added: 0.01 Units: mL

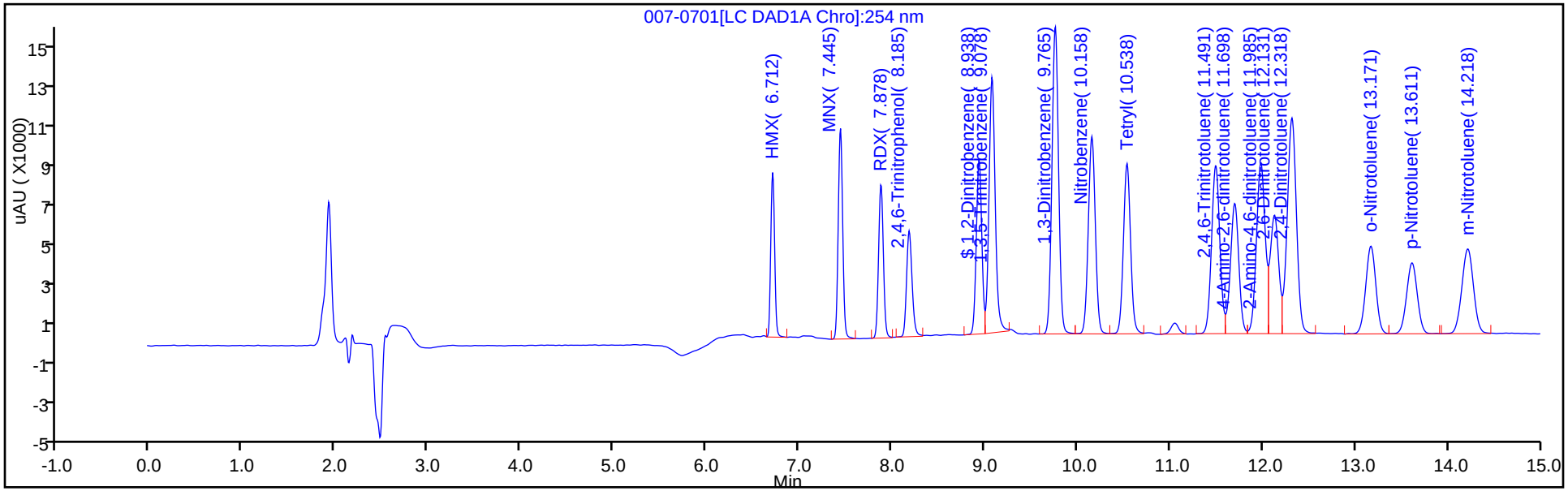
Report Date: 17-Nov-2016 11:11:54 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

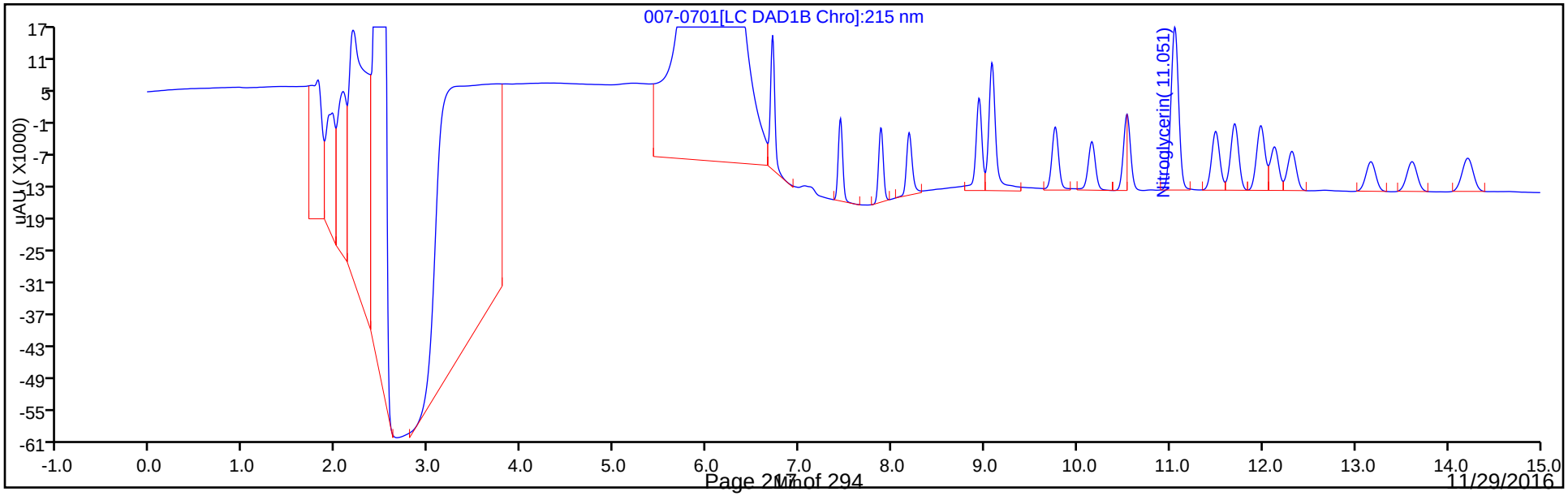
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\007-0701.D

Injection Date:	16-Nov-2016 13:49:13	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	CCV MAIN L4			Worklist Smp#:	7
Client ID:					
Injection Vol:	50.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	7
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.: 280-90531-1

SDG No.:

Lab Sample ID: CCV 280-351752/18 Calibration Date: 11/16/2016 18:03

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: 007-1801.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Lin2		92888		0.251	0.250	0.3	20.0
RDX	Lin2		107772		0.249	0.250	-0.2	20.0
Picric acid	Lin2		84776		0.251	0.250	0.5	20.0
1,3,5-Trinitrobenzene	Lin2		233580		0.253	0.250	1.0	20.0
1,3-Dinitrobenzene	Lin2		295572		0.252	0.250	0.6	20.0
Nitrobenzene	Lin2		198864		0.246	0.250	-1.5	20.0
Tetryl	Lin2		177508		0.249	0.250	-0.6	20.0
Nitroglycerin	Lin2		71572		2.49	2.50	-0.2	20.0
2,4,6-Trinitrotoluene	Lin2		202532		0.248	0.250	-0.6	20.0
4-Amino-2,6-dinitrotoluene	Lin2		157084		0.252	0.250	0.9	20.0
2-Amino-4,6-dinitrotoluene	Lin2		215576		0.251	0.250	0.6	20.0
2,6-Dinitrotoluene	Lin2		148300		0.249	0.250	-0.5	20.0
2,4-Dinitrotoluene	Lin2		288596		0.250	0.250	-0.1	20.0
2-Nitrotoluene	Lin2		126112		0.242	0.250	-3.0	20.0
4-Nitrotoluene	Lin2		108692		0.242	0.250	-3.2	20.0
3-Nitrotoluene	Lin2		141560		0.240	0.250	-4.0	20.0
PETN	Lin2		71646		2.49	2.50	-0.3	20.0
1,2-Dinitrobenzene	Lin2		138560		0.246	0.250	-1.5	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90531-1

SDG No.:

Lab Sample ID: CCV 280-351752/18 Calibration Date: 11/16/2016 18:03

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: 007-1801.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.73	6.63	6.83
RDX	7.90	7.80	8.00
Picric acid	8.20	8.10	8.30
1,3,5-Trinitrobenzene	9.09	8.99	9.19
1,3-Dinitrobenzene	9.77	9.67	9.87
Nitrobenzene	10.16	10.06	10.26
Tetryl	10.54	10.44	10.64
Nitroglycerin	11.05	10.95	11.15
2,4,6-Trinitrotoluene	11.48	11.38	11.58
4-Amino-2,6-dinitrotoluene	11.69	11.59	11.79
2-Amino-4,6-dinitrotoluene	11.97	11.87	12.07
2,6-Dinitrotoluene	12.12	12.02	12.22
2,4-Dinitrotoluene	12.31	12.21	12.41
2-Nitrotoluene	13.16	13.06	13.26
4-Nitrotoluene	13.62	13.52	13.72
3-Nitrotoluene	14.24	14.14	14.34
PETN	15.42	15.32	15.52
1,2-Dinitrobenzene	8.94	8.84	9.04

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\007-1801.D
Lims ID: CCV MAIN L4
Client ID:
Sample Type: CCV
Inject. Date: 16-Nov-2016 18:03:20 ALS Bottle#: 7 Worklist Smp#: 18
Injection Vol: 50.0 ul Dil. Factor: 1.0000
Sample Info: CCV MAIN L4
Misc. Info.: 280-0053110-019
Operator ID: ACF Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 17-Nov-2016 11:12:05 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: XAWRK030

	Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
	2 HMX	1	6.729	6.729	0.000	23222	0.2500	0.2507	
	4 MNX	1	7.456	7.456	0.000	34111	0.2487	0.2486	
	5 RDX	1	7.896	7.896	0.000	26943	0.2500	0.2494	
	6 2,4,6-Trinitrophenol	1	8.202	8.202	0.000	21194	0.2500	0.2512	
$	7 1,2-Dinitrobenzene	1	8.942	8.942	0.000	34640	0.2500	0.2462	
	8 1,3,5-Trinitrobenzene	1	9.089	9.089	0.000	58395	0.2500	0.2526	
	9 1,3-Dinitrobenzene	1	9.769	9.769	0.000	73893	0.2500	0.2516	
	11 Nitrobenzene	1	10.162	10.162	0.000	49716	0.2500	0.2462	
	12 Tetryl	1	10.536	10.536	0.000	44377	0.2500	0.2485	
	13 Nitroglycerin	2	11.049	11.049	0.000	178931	2.50	2.49	
	14 2,4,6-Trinitrotoluene	1	11.482	11.482	0.000	50633	0.2500	0.2485	
	15 4-Amino-2,6-dinitrotoluene	1	11.689	11.689	0.000	39271	0.2500	0.2522	
	16 2-Amino-4,6-dinitrotoluene	1	11.969	11.969	0.000	53894	0.2500	0.2515	
	17 2,6-Dinitrotoluene	1	12.116	12.116	0.000	37075	0.2500	0.2488	
	18 2,4-Dinitrotoluene	1	12.309	12.309	0.000	72149	0.2500	0.2497	
	19 o-Nitrotoluene	1	13.162	13.162	0.000	31528	0.2500	0.2424	
	20 p-Nitrotoluene	1	13.616	13.616	0.000	27173	0.2500	0.2420	
	21 m-Nitrotoluene	1	14.236	14.236	0.000	35390	0.2500	0.2400	
	22 PETN	2	15.422	15.422	0.000	179116	2.50	2.49	

Reagents:

8330IntermStk_00041 Amount Added: 0.01 Units: mL

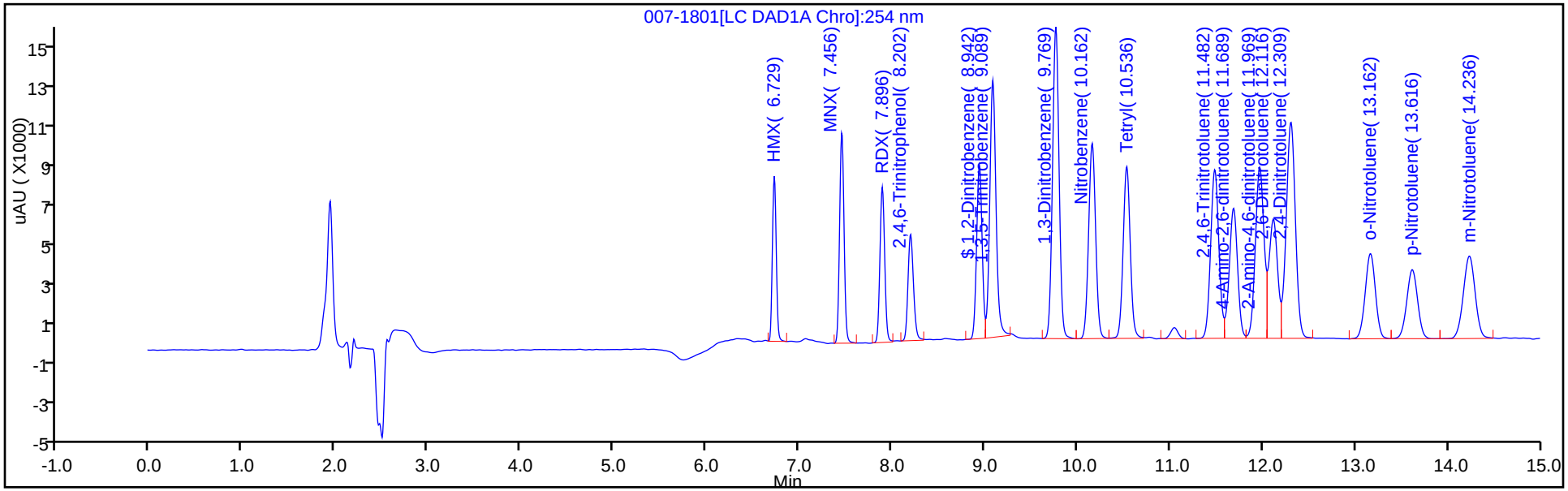
Report Date: 17-Nov-2016 11:12:06 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

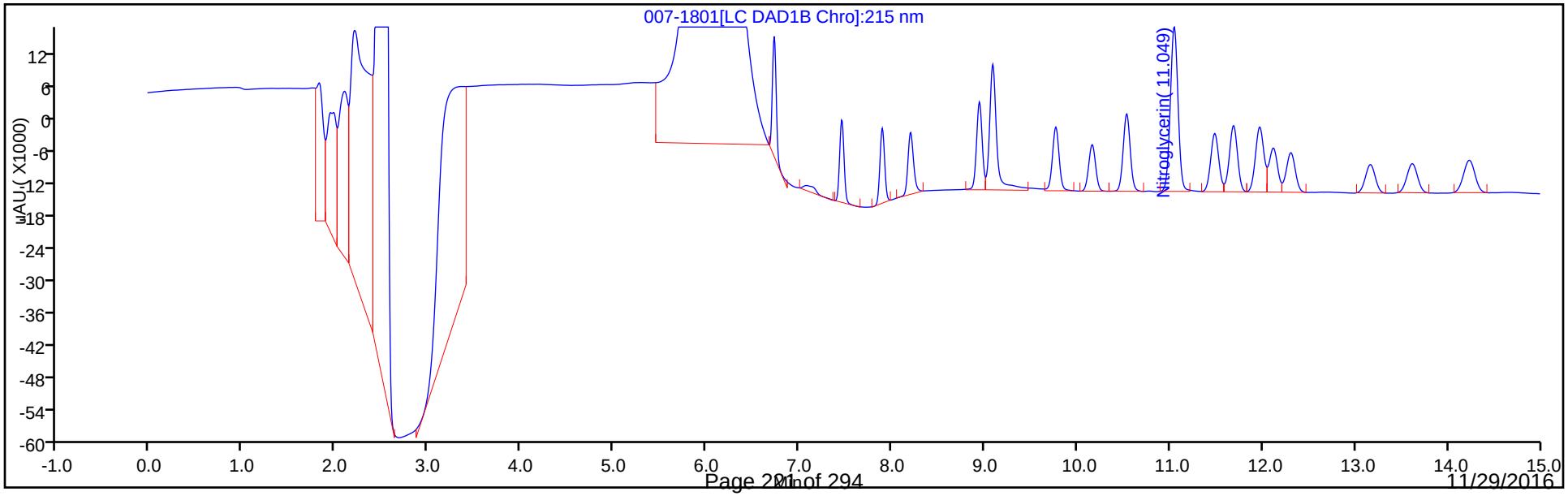
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\007-1801.D

Injection Date:	16-Nov-2016 18:03:20	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	CCV MAIN L4			Worklist Smp#:	18
Client ID:					
Injection Vol:	50.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	7
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.: 280-90531-1

SDG No.:

Lab Sample ID: CCV 280-351752/26 Calibration Date: 11/16/2016 21:08

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: 007-2601.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Lin2		93104		0.251	0.250	0.5	20.0
RDX	Lin2		108080		0.250	0.250	0.0	20.0
Picric acid	Lin2		85148		0.252	0.250	0.9	20.0
1,3,5-Trinitrobenzene	Lin2		231668		0.251	0.250	0.2	20.0
1,3-Dinitrobenzene	Lin2		294800		0.251	0.250	0.4	20.0
Nitrobenzene	Lin2		197032		0.244	0.250	-2.4	20.0
Tetryl	Lin2		177912		0.249	0.250	-0.4	20.0
Nitroglycerin	Lin2		73107		2.55	2.50	1.9	20.0
2,4,6-Trinitrotoluene	Lin2		203936		0.250	0.250	0.0	20.0
4-Amino-2,6-dinitrotoluene	Lin2		158432		0.254	0.250	1.8	20.0
2-Amino-4,6-dinitrotoluene	Lin2		216704		0.253	0.250	1.1	20.0
2,6-Dinitrotoluene	Lin2		148696		0.249	0.250	-0.2	20.0
2,4-Dinitrotoluene	Lin2		290496		0.251	0.250	0.5	20.0
2-Nitrotoluene	Lin2		125084		0.240	0.250	-3.8	20.0
4-Nitrotoluene	Lin2		109088		0.243	0.250	-2.8	20.0
3-Nitrotoluene	Lin2		141240		0.239	0.250	-4.2	20.0
PETN	Lin2		72016		2.50	2.50	0.2	20.0
1,2-Dinitrobenzene	Lin2		139948		0.249	0.250	-0.5	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90531-1

SDG No.:

Lab Sample ID: CCV 280-351752/26 Calibration Date: 11/16/2016 21:08

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: 007-2601.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.74	6.64	6.84
RDX	7.92	7.82	8.02
Picric acid	8.22	8.12	8.32
1,3,5-Trinitrobenzene	9.10	9.00	9.20
1,3-Dinitrobenzene	9.77	9.67	9.87
Nitrobenzene	10.16	10.06	10.26
Tetryl	10.53	10.43	10.63
Nitroglycerin	11.04	10.94	11.14
2,4,6-Trinitrotoluene	11.48	11.38	11.58
4-Amino-2,6-dinitrotoluene	11.68	11.58	11.78
2-Amino-4,6-dinitrotoluene	11.97	11.87	12.07
2,6-Dinitrotoluene	12.12	12.02	12.22
2,4-Dinitrotoluene	12.31	12.21	12.41
2-Nitrotoluene	13.16	13.06	13.26
4-Nitrotoluene	13.62	13.52	13.72
3-Nitrotoluene	14.22	14.12	14.32
PETN	15.39	15.29	15.49
1,2-Dinitrobenzene	8.96	8.86	9.06

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\007-2601.D
Lims ID: CCV MAIN L4
Client ID:
Sample Type: CCV
Inject. Date: 16-Nov-2016 21:08:17 ALS Bottle#: 7 Worklist Smp#: 26
Injection Vol: 50.0 ul Dil. Factor: 1.0000
Sample Info: ccv
Misc. Info.: 280-0053110-027
Operator ID: ACF Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 17-Nov-2016 11:12:14 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: XAWRK030

	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	6.736	0.000	23276	0.2500	0.2513	
	4 MNX	1	7.476	7.476	0.000	34246	0.2487	0.2496	
	5 RDX	1	7.916	7.916	0.000	27020	0.2500	0.2501	
	6 2,4,6-Trinitrophenol	1	8.222	8.222	0.000	21287	0.2500	0.2523	
$	7 1,2-Dinitrobenzene	1	8.956	8.956	0.000	34987	0.2500	0.2487	
	8 1,3,5-Trinitrobenzene	1	9.096	9.096	0.000	57917	0.2500	0.2505	
	9 1,3-Dinitrobenzene	1	9.769	9.769	0.000	73700	0.2500	0.2509	
	11 Nitrobenzene	1	10.162	10.162	0.000	49258	0.2500	0.2439	
	12 Tetryl	1	10.529	10.529	0.000	44478	0.2500	0.2491	
	13 Nitroglycerin	2	11.042	11.042	0.000	182768	2.50	2.55	
	14 2,4,6-Trinitrotoluene	1	11.482	11.482	0.000	50984	0.2500	0.2502	
	15 4-Amino-2,6-dinitrotoluene	1	11.682	11.682	0.000	39608	0.2500	0.2544	
	16 2-Amino-4,6-dinitrotoluene	1	11.969	11.969	0.000	54176	0.2500	0.2528	
	17 2,6-Dinitrotoluene	1	12.116	12.116	0.000	37174	0.2500	0.2494	
	18 2,4-Dinitrotoluene	1	12.309	12.309	0.000	72624	0.2500	0.2513	
	19 o-Nitrotoluene	1	13.162	13.162	0.000	31271	0.2500	0.2404	
	20 p-Nitrotoluene	1	13.616	13.616	0.000	27272	0.2500	0.2429	
	21 m-Nitrotoluene	1	14.222	14.222	0.000	35310	0.2500	0.2394	
	22 PETN	2	15.389	15.389	0.000	180039	2.50	2.50	

Reagents:

8330IntermStk_00041 Amount Added: 0.01 Units: mL

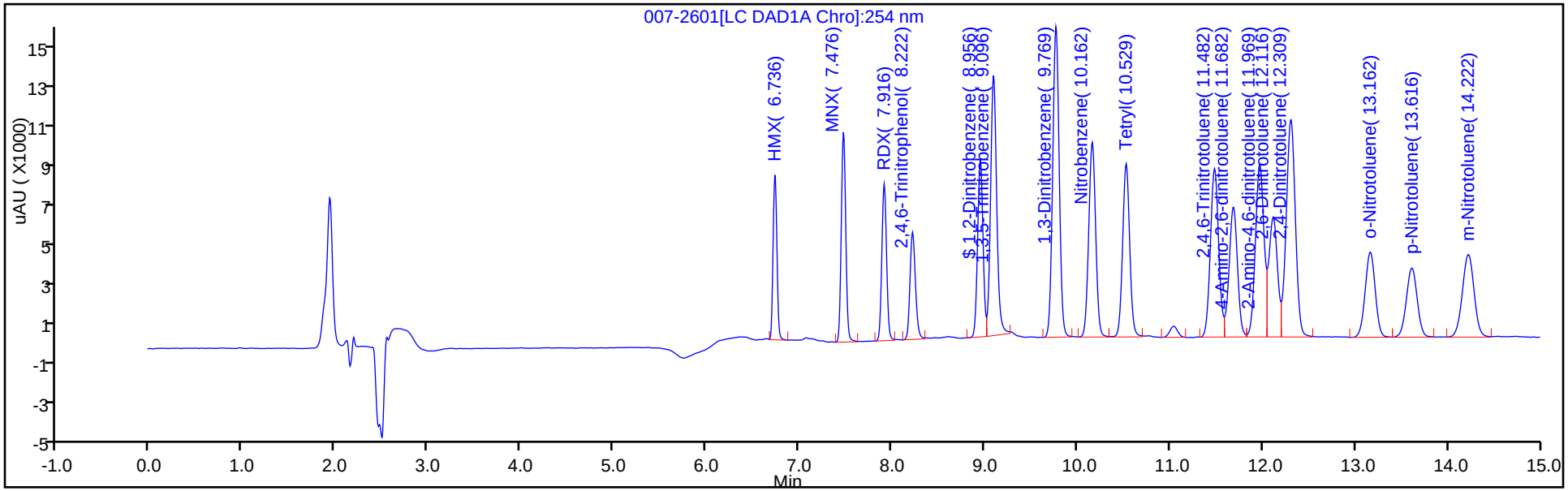
Report Date: 17-Nov-2016 11:12:15 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

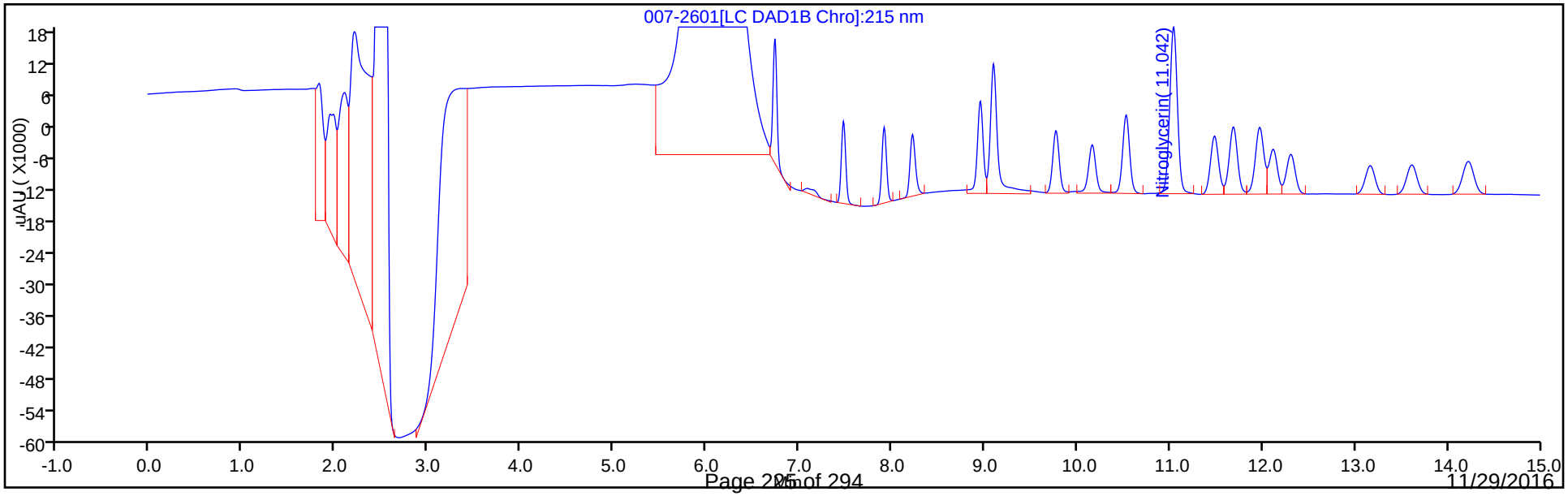
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\007-2601.D

Injection Date:	16-Nov-2016 21:08:17	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	CCV MAIN L4			Worklist Smp#:	26
Client ID:					
Injection Vol:	50.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	7
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.: 280-90531-1

SDG No.:

Lab Sample ID: CCV 280-351752/37 Calibration Date: 11/17/2016 01:22

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: 007-3701.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Lin2		93296		0.252	0.250	0.7	20.0
RDX	Lin2		108268		0.251	0.250	0.2	20.0
Picric acid	Lin2		84928		0.252	0.250	0.7	20.0
1,3,5-Trinitrobenzene	Lin2		231720		0.251	0.250	0.2	20.0
1,3-Dinitrobenzene	Lin2		294568		0.251	0.250	0.3	20.0
Nitrobenzene	Lin2		193316		0.239	0.250	-4.3	20.0
Tetryl	Lin2		177332		0.248	0.250	-0.7	20.0
Nitroglycerin	Lin2		71322		2.49	2.50	-0.6	20.0
2,4,6-Trinitrotoluene	Lin2		203320		0.249	0.250	-0.2	20.0
4-Amino-2,6-dinitrotoluene	Lin2		158732		0.255	0.250	2.0	20.0
2-Amino-4,6-dinitrotoluene	Lin2		220376		0.257	0.250	2.8	20.0
2,6-Dinitrotoluene	Lin2		146012		0.245	0.250	-2.0	20.0
2,4-Dinitrotoluene	Lin2		293012		0.254	0.250	1.4	20.0
2-Nitrotoluene	Lin2		123560		0.237	0.250	-5.0	20.0
4-Nitrotoluene	Lin2		108436		0.241	0.250	-3.4	20.0
3-Nitrotoluene	Lin2		139464		0.236	0.250	-5.4	20.0
PETN	Lin2		71515		2.49	2.50	-0.5	20.0
1,2-Dinitrobenzene	Lin2		140420		0.250	0.250	-0.2	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90531-1

SDG No.:

Lab Sample ID: CCV 280-351752/37 Calibration Date: 11/17/2016 01:22

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: 007-3701.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.73	6.63	6.83
RDX	7.90	7.80	8.00
Picric acid	8.22	8.12	8.32
1,3,5-Trinitrobenzene	9.11	9.01	9.21
1,3-Dinitrobenzene	9.79	9.69	9.89
Nitrobenzene	10.19	10.09	10.29
Tetryl	10.58	10.48	10.68
Nitroglycerin	11.10	11.00	11.20
2,4,6-Trinitrotoluene	11.55	11.45	11.65
4-Amino-2,6-dinitrotoluene	11.76	11.66	11.86
2-Amino-4,6-dinitrotoluene	12.05	11.95	12.15
2,6-Dinitrotoluene	12.19	12.09	12.29
2,4-Dinitrotoluene	12.38	12.28	12.48
2-Nitrotoluene	13.24	13.14	13.34
4-Nitrotoluene	13.70	13.60	13.80
3-Nitrotoluene	14.31	14.21	14.41
PETN	15.51	15.41	15.61
1,2-Dinitrobenzene	8.97	8.87	9.07

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\007-3701.D
Lims ID: CCV MAIN L4
Client ID:
Sample Type: CCV
Inject. Date: 17-Nov-2016 01:22:26 ALS Bottle#: 7 Worklist Smp#: 37
Injection Vol: 50.0 ul Dil. Factor: 1.0000
Sample Info: ccv
Misc. Info.: 280-0053110-038
Operator ID: ACF Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 22-Nov-2016 20:54:20 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: XAWRK031

First Level Reviewer: freya Date: 17-Nov-2016 11:17:51

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.727	6.727	0.000	23324	0.2500	0.2518	
4 MNX	1	7.460	7.460	0.000	33868	0.2487	0.2469	
5 RDX	1	7.900	7.900	0.000	27067	0.2500	0.2506	
6 2,4,6-Trinitrophenol	1	8.220	8.220	0.000	21232	0.2500	0.2516	
$ 7 1,2-Dinitrobenzene	1	8.967	8.967	0.000	35105	0.2500	0.2495	
8 1,3,5-Trinitrobenzene	1	9.107	9.107	0.000	57930	0.2500	0.2506	
9 1,3-Dinitrobenzene	1	9.794	9.794	0.000	73642	0.2500	0.2507	
11 Nitrobenzene	1	10.187	10.187	0.000	48329	0.2500	0.2394	
12 Tetryl	1	10.580	10.580	0.000	44333	0.2500	0.2483	
13 Nitroglycerin	2	11.100	11.100	0.000	178305	2.50	2.49	
14 2,4,6-Trinitrotoluene	1	11.547	11.547	0.000	50830	0.2500	0.2494	
15 4-Amino-2,6-dinitrotoluene	1	11.760	11.760	0.000	39683	0.2500	0.2549	
16 2-Amino-4,6-dinitrotoluene	1	12.047	12.047	0.000	55094	0.2500	0.2571	
17 2,6-Dinitrotoluene	1	12.187	12.187	0.000	36503	0.2500	0.2449	
18 2,4-Dinitrotoluene	1	12.380	12.380	0.000	73253	0.2500	0.2535	
19 o-Nitrotoluene	1	13.240	13.240	0.000	30890	0.2500	0.2375	
20 p-Nitrotoluene	1	13.700	13.700	0.000	27109	0.2500	0.2415	
21 m-Nitrotoluene	1	14.314	14.314	0.000	34866	0.2500	0.2364	
22 PETN	2	15.507	15.507	0.000	178787	2.50	2.49	

Reagents:

8330IntermStk_00041 Amount Added: 0.01 Units: mL

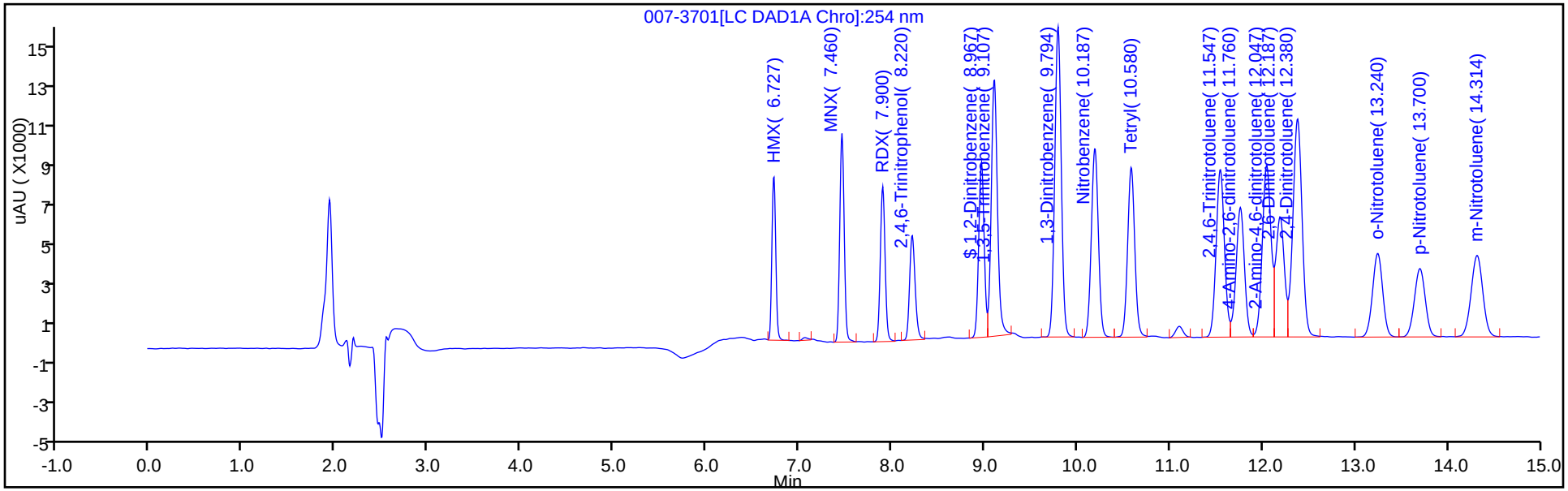
Report Date: 22-Nov-2016 20:54:22 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

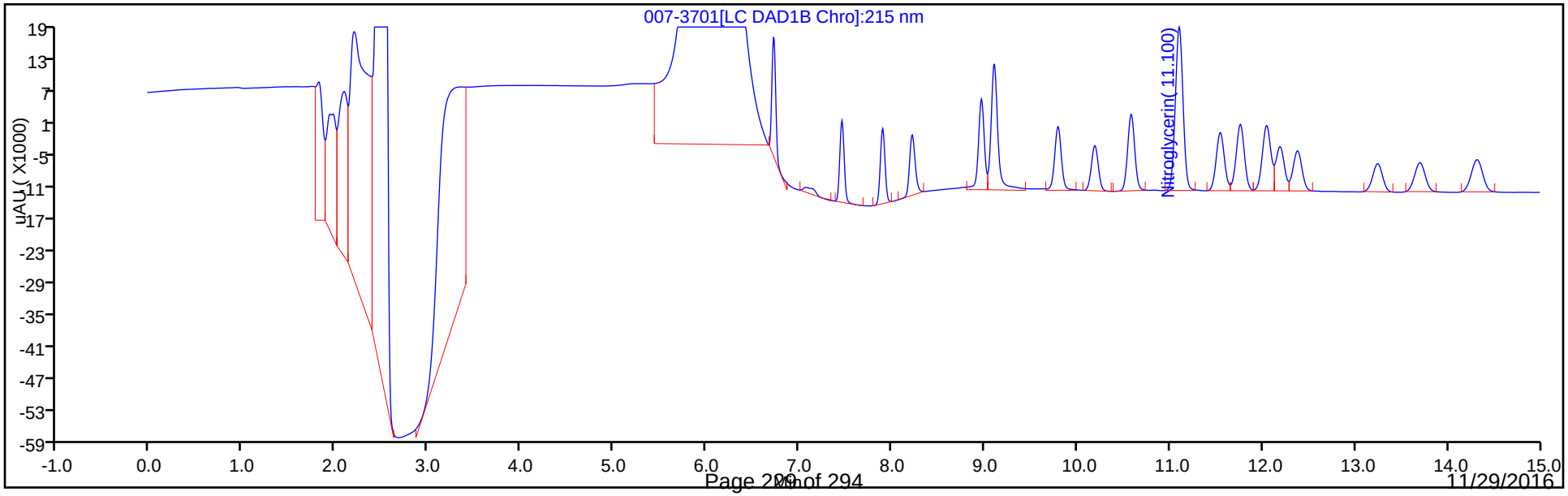
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\007-3701.D

Injection Date:	17-Nov-2016 01:22:26	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	CCV MAIN L4			Worklist Smp#:	37
Client ID:					
Injection Vol:	50.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	7
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.: 280-90531-1

SDG No.:

Lab Sample ID: CCV 280-351752/44 Calibration Date: 11/17/2016 04:04

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: 007-4401.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Lin2		92888		0.251	0.250	0.3	20.0
RDX	Lin2		107536		0.249	0.250	-0.5	20.0
Picric acid	Lin2		85660		0.254	0.250	1.5	20.0
1,3,5-Trinitrobenzene	Lin2		231280		0.250	0.250	0.0	20.0
1,3-Dinitrobenzene	Lin2		295104		0.251	0.250	0.5	20.0
Nitrobenzene	Lin2		191556		0.237	0.250	-5.1	20.0
Tetryl	Lin2		177628		0.249	0.250	-0.5	20.0
Nitroglycerin	Lin2		71582		2.50	2.50	-0.2	20.0
2,4,6-Trinitrotoluene	Lin2		204044		0.250	0.250	0.1	20.0
4-Amino-2,6-dinitrotoluene	Lin2		157976		0.254	0.250	1.5	20.0
2-Amino-4,6-dinitrotoluene	Lin2		219264		0.256	0.250	2.3	20.0
2,6-Dinitrotoluene	Lin2		146788		0.246	0.250	-1.5	20.0
2,4-Dinitrotoluene	Lin2		293420		0.254	0.250	1.5	20.0
2-Nitrotoluene	Lin2		123732		0.238	0.250	-4.9	20.0
4-Nitrotoluene	Lin2		109020		0.243	0.250	-2.9	20.0
3-Nitrotoluene	Lin2		138492		0.235	0.250	-6.1	20.0
PETN	Lin2		71928		2.50	2.50	0.0	20.0
1,2-Dinitrobenzene	Lin2		140092		0.249	0.250	-0.4	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90531-1

SDG No.:

Lab Sample ID: CCV 280-351752/44 Calibration Date: 11/17/2016 04:04

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: 007-4401.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.73	6.63	6.83
RDX	7.90	7.80	8.00
Picric acid	8.22	8.12	8.32
1,3,5-Trinitrobenzene	9.11	9.01	9.21
1,3-Dinitrobenzene	9.79	9.69	9.89
Nitrobenzene	10.19	10.09	10.29
Tetryl	10.59	10.49	10.69
Nitroglycerin	11.11	11.01	11.21
2,4,6-Trinitrotoluene	11.55	11.45	11.65
4-Amino-2,6-dinitrotoluene	11.77	11.67	11.87
2-Amino-4,6-dinitrotoluene	12.06	11.96	12.16
2,6-Dinitrotoluene	12.20	12.10	12.30
2,4-Dinitrotoluene	12.39	12.29	12.49
2-Nitrotoluene	13.26	13.16	13.36
4-Nitrotoluene	13.72	13.62	13.82
3-Nitrotoluene	14.34	14.24	14.44
PETN	15.53	15.43	15.63
1,2-Dinitrobenzene	8.97	8.87	9.07

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\007-4401.D
Lims ID: CCV MAIN L4
Client ID:
Sample Type: CCV
Inject. Date: 17-Nov-2016 04:04:30 ALS Bottle#: 7 Worklist Smp#: 44
Injection Vol: 50.0 ul Dil. Factor: 1.0000
Sample Info: ccv
Misc. Info.: 280-0053110-045
Operator ID: ACF Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 22-Nov-2016 20:54:30 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: XAWRK031

First Level Reviewer: freya Date: 17-Nov-2016 11:07:05

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.733	6.733	0.000	23222	0.2500	0.2507	
4 MNX	1	7.466	7.466	0.000	33818	0.2487	0.2465	
5 RDX	1	7.900	7.900	0.000	26884	0.2500	0.2489	
6 2,4,6-Trinitrophenol	1	8.220	8.220	0.000	21415	0.2500	0.2538	
$ 7 1,2-Dinitrobenzene	1	8.966	8.966	0.000	35023	0.2500	0.2489	
8 1,3,5-Trinitrobenzene	1	9.106	9.106	0.000	57820	0.2500	0.2501	
9 1,3-Dinitrobenzene	1	9.793	9.793	0.000	73776	0.2500	0.2512	
11 Nitrobenzene	1	10.193	10.193	0.000	47889	0.2500	0.2372	
12 Tetryl	1	10.586	10.586	0.000	44407	0.2500	0.2487	
13 Nitroglycerin	2	11.106	11.106	0.000	178955	2.50	2.50	
14 2,4,6-Trinitrotoluene	1	11.553	11.553	0.000	51011	0.2500	0.2503	
15 4-Amino-2,6-dinitrotoluene	1	11.773	11.773	0.000	39494	0.2500	0.2536	
16 2-Amino-4,6-dinitrotoluene	1	12.059	12.059	0.000	54816	0.2500	0.2558	
17 2,6-Dinitrotoluene	1	12.199	12.199	0.000	36697	0.2500	0.2462	
18 2,4-Dinitrotoluene	1	12.393	12.393	0.000	73355	0.2500	0.2539	
19 o-Nitrotoluene	1	13.259	13.259	0.000	30933	0.2500	0.2378	
20 p-Nitrotoluene	1	13.719	13.719	0.000	27255	0.2500	0.2428	
21 m-Nitrotoluene	1	14.339	14.339	0.000	34623	0.2500	0.2347	
22 PETN	2	15.533	15.533	0.000	179821	2.50	2.50	

Reagents:

8330IntermStk_00041 Amount Added: 0.01 Units: mL

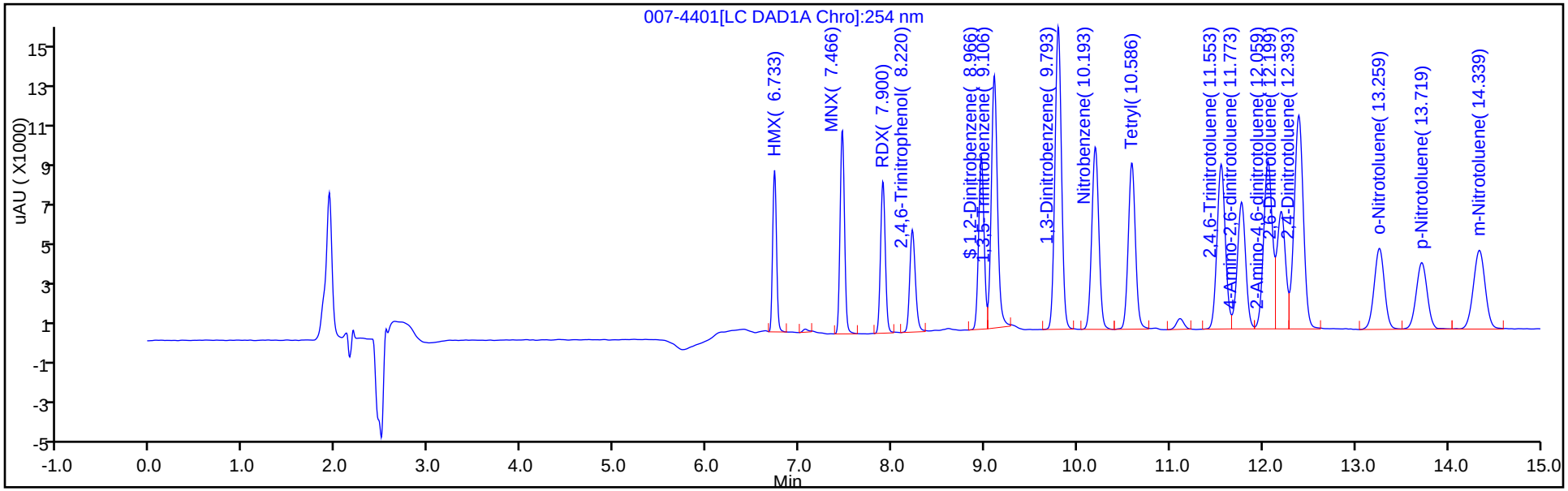
Report Date: 22-Nov-2016 20:54:31 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

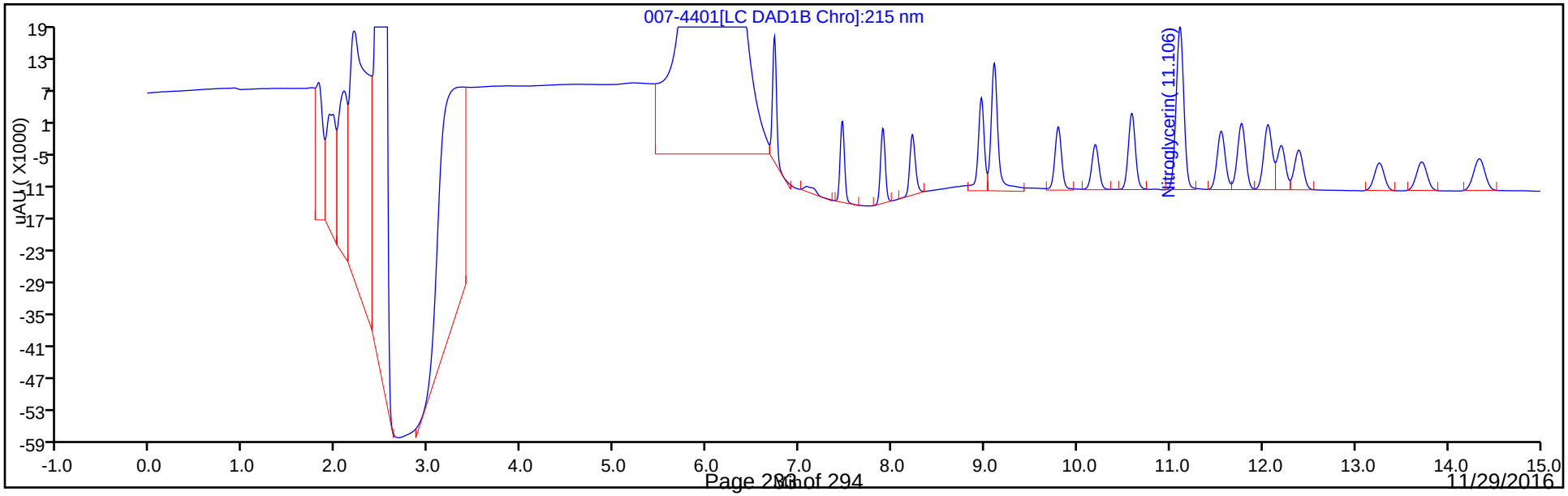
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\007-4401.D

Injection Date:	17-Nov-2016 04:04:30	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	CCV MAIN L4			Worklist Smp#:	44
Client ID:					
Injection Vol:	50.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	7
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.: 280-90531-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 280-349987/1-A

Matrix: Water | Lab File ID: 027-2701.D

Analysis Method: 8330B | Date Collected:

Extraction Method: 3535 | Date Extracted: 11/04/2016 20:12

Sample wt/vol: 500(mL) | Date Analyzed: 11/16/2016 21:31

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

Injection Volume: 50(uL) | GC Column: UltraCarb5uODS ID: 4.6(mm)

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

Analysis Batch No.: 351752 | 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	2.0	U	3.0	2.0	0.92
78-11-5	PETN	1.2	U	2.0	1.2	0.42
121-82-4	RDX	0.0606	J	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	98		83-119

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\027-2701.D
Lims ID: MB 280-349987/1-A
Client ID:
Sample Type: MB
Inject. Date: 16-Nov-2016 21:31:22 ALS Bottle#: 27 Worklist Smp#: 27
Injection Vol: 50.0 ul Dil. Factor: 1.0000
Sample Info: MB280-349987/1-A
Misc. Info.: 280-0053110-028
Operator ID: ACF Instrument ID: CHHPLC_X3

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 22-Nov-2016 20:53:38 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: XAWRK031

First Level Reviewer: freya Date: 17-Nov-2016 11:11:53

	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		6.584				ND	
	2 HMX	1		6.736				ND	
	3 2,4-diamino-6-nitrotoluene	1		6.778				ND	
	4 MNX	1		7.476				ND	
	5 RDX	1	7.915	7.916	-0.001	812		0.006056	
	6 2,4,6-Trinitrophenol	1	8.209	8.222	-0.013	2816		0.0323	
$	7 1,2-Dinitrobenzene	1	8.955	8.956	-0.001	27690	0.2000	0.1966	
	8 1,3,5-Trinitrobenzene	1		9.096				ND	
	9 1,3-Dinitrobenzene	1		9.769				ND	
	11 Nitrobenzene	1		10.162				ND	
	10 3,5-Dinitroaniline	1		10.457				ND	
	12 Tetryl	1		10.529				ND	
	13 Nitroglycerin	2		11.042				ND	
	14 2,4,6-Trinitrotoluene	1		11.482				ND	
	15 4-Amino-2,6-dinitrotoluene	1		11.682				ND	
	16 2-Amino-4,6-dinitrotoluene	1		11.969				ND	
	17 2,6-Dinitrotoluene	1		12.116				ND	
	18 2,4-Dinitrotoluene	1		12.309				ND	
	19 o-Nitrotoluene	1		13.162				ND	
	20 p-Nitrotoluene	1		13.616				ND	
	21 m-Nitrotoluene	1		14.222				ND	
	22 PETN	2		15.389				ND	

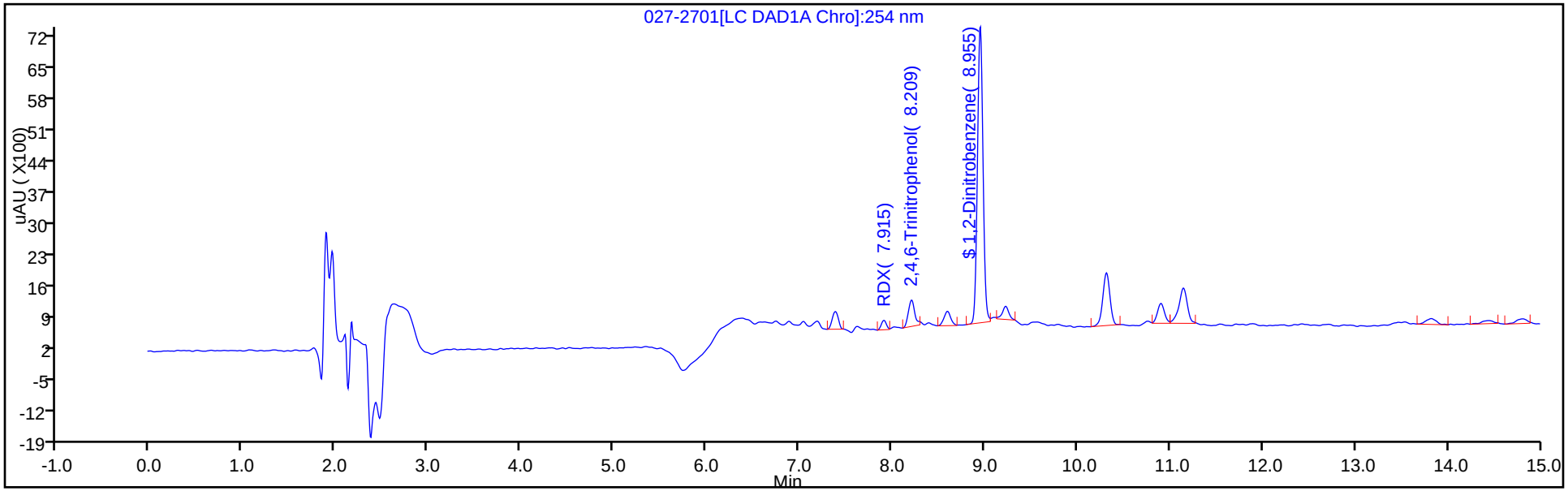
Report Date: 22-Nov-2016 20:53:55 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

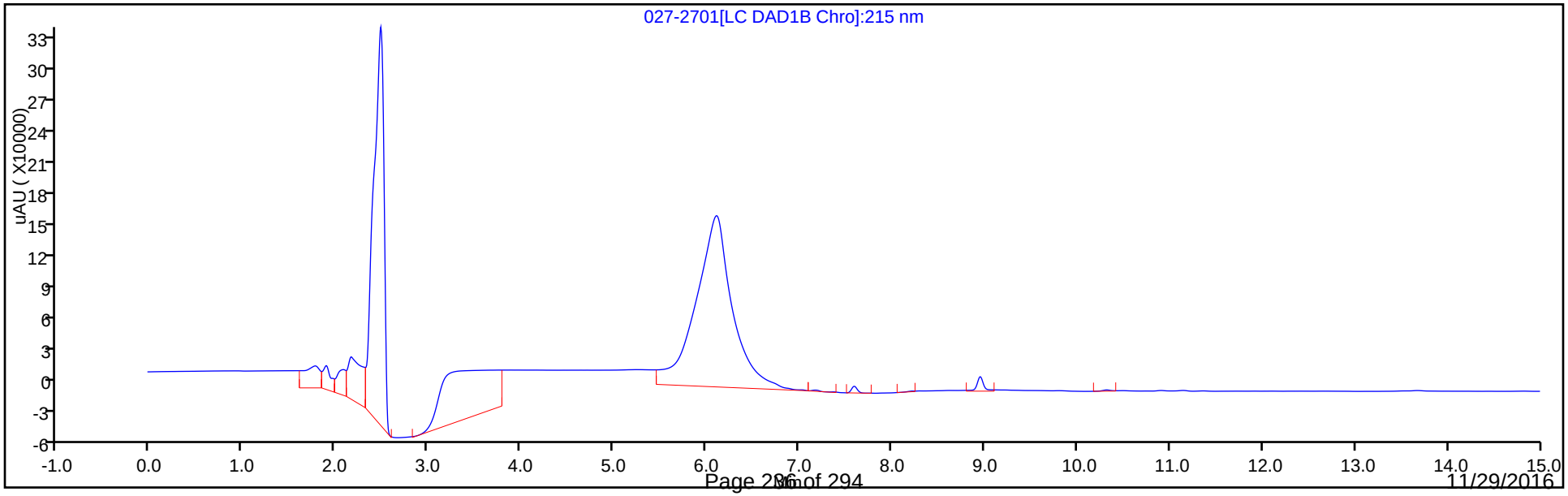
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\027-2701.D

Injection Date:	16-Nov-2016 21:31:22	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	MB 280-349987/1-A			Worklist Smp#:	27
Client ID:					
Injection Vol:	50.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	27
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\20161116-53220.b\027-2701.D				
Lims ID:	MB 280-349987/1-A				
Client ID:					
Sample Type:	MB				
Inject. Date:	16-Nov-2016 21:31:22	ALS Bottle#:	27	Worklist Smp#:	27
Injection Vol:	50.0 ul	Dil. Factor:	1.0000		
Sample Info:	MB280-349987/1-A				
Misc. Info.:	280-0053110-028				
Operator ID:	ACF	Instrument ID:	CHHPLC_X3		
Method:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\8330_X3.m				
Limit Group:	GCSV - 8330				
Last Update:	22-Nov-2016 20:53:38	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:	XAWRK031				
First Level Reviewer: freya		Date:	17-Nov-2016 11:11:53		

Compound	Amount Added	Amount Recovered	% Rec.
$ 7 1,2-Dinitrobenzene	0.2000	0.1966	98.28

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-90531-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 280-349987/1-A

Matrix: Water | Lab File ID: 11231608.D

Analysis Method: 8330B | Date Collected:

Extraction Method: 3535 | Date Extracted: 11/04/2016 20:12

Sample wt/vol: 500(mL) | Date Analyzed: 11/23/2016 14:59

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.: 352866 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.335	J	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	0.241	M	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 M	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	2.0	U	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	99		83-119

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161123-53490.b\11231608.D
Lims ID: MB 280-349987/1-A
Client ID:
Sample Type: MB
Inject. Date: 23-Nov-2016 14:59:59 ALS Bottle#: 3 Worklist Smp#: 8
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: MB 280-349987/1-
Misc. Info.: 280-0053490-008
Operator ID: DMJ Instrument ID: CHHPLC_G2_LUNA

Method: \\ChromNA\Denver\ChromData\G2_LUNA\20161123-53490.b\G2_8330_Luna.m
Limit Group: GCSV - 8330
Last Update: 24-Nov-2016 19:15:49 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: XAWRK004

First Level Reviewer: jonsrudd Date: 24-Nov-2016 18:30:36

	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		4.209				ND	
	3 2,4-diamino-6-nitrotoluene	1		4.729				ND	
	5 HMX	1		6.642				ND	
	6 MNX	1		7.322				ND	
	4 2,4,6-Trinitrophenol	1		8.169				ND	
	7 RDX	1		8.635				ND	
	8 Nitrobenzene	1		11.335				ND	
$	9 1,2-Dinitrobenzene	1	12.284	12.308	-0.024	54742	0.2000	0.1990	
	10 3,5-Dinitroaniline	1		14.188				ND	
	11 1,3-Dinitrobenzene	1		14.635				ND	
	12 Nitroglycerin	2		14.722				ND	
	13 o-Nitrotoluene	1		15.502				ND	
	14 p-Nitrotoluene	1		15.802				ND	
	15 4-Amino-2,6-dinitrotoluene	1		16.262				ND	
	16 m-Nitrotoluene	1	16.877	16.688	0.189	1375		-0.001664	7M
	17 2-Amino-4,6-dinitrotoluene	1		17.242				ND	
	18 1,3,5-Trinitrobenzene	1	17.744	17.675	0.069	16659		0.0335	
	19 2,6-Dinitrotoluene	1	18.944	18.648	0.296	8739		0.0241	M
	20 2,4-Dinitrotoluene	1		19.188				ND	
	21 Tetryl	1		22.395				ND	
	22 2,4,6-Trinitrotoluene	1		23.322				ND	
	23 PETN	2		24.049				ND	
	1 Ammonium Picrate	1		0.000				ND	

QC Flag Legend

Processing Flags

7 - Failed Limit of Detection

Review Flags

M - Manually Integrated

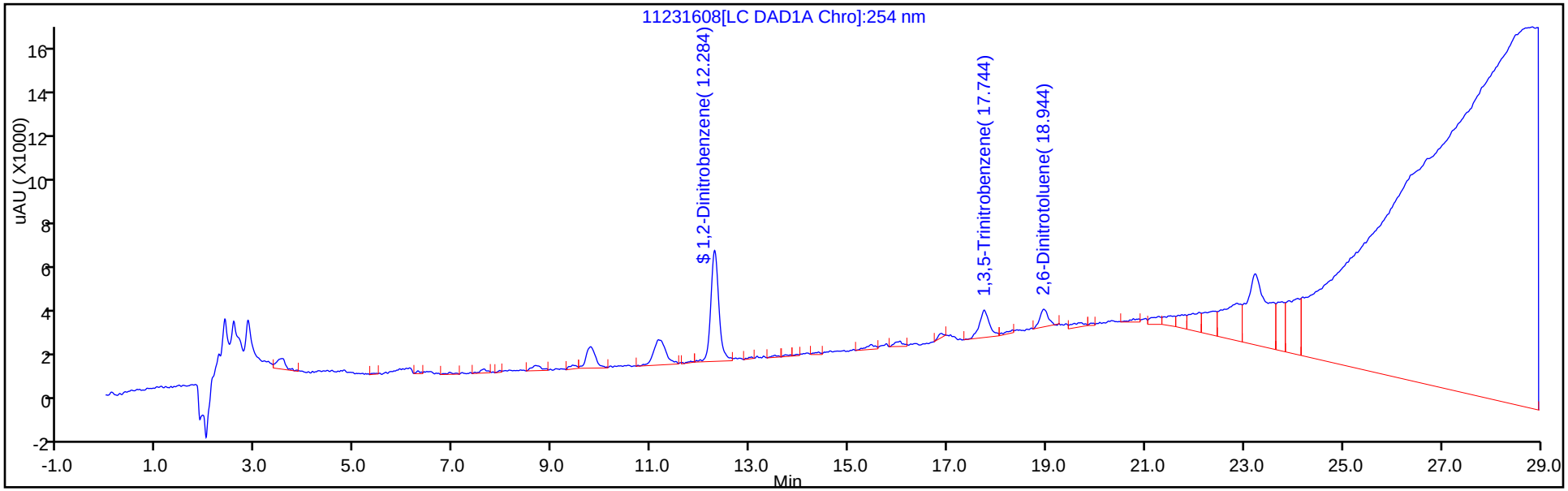
Report Date: 24-Nov-2016 19:16:03 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

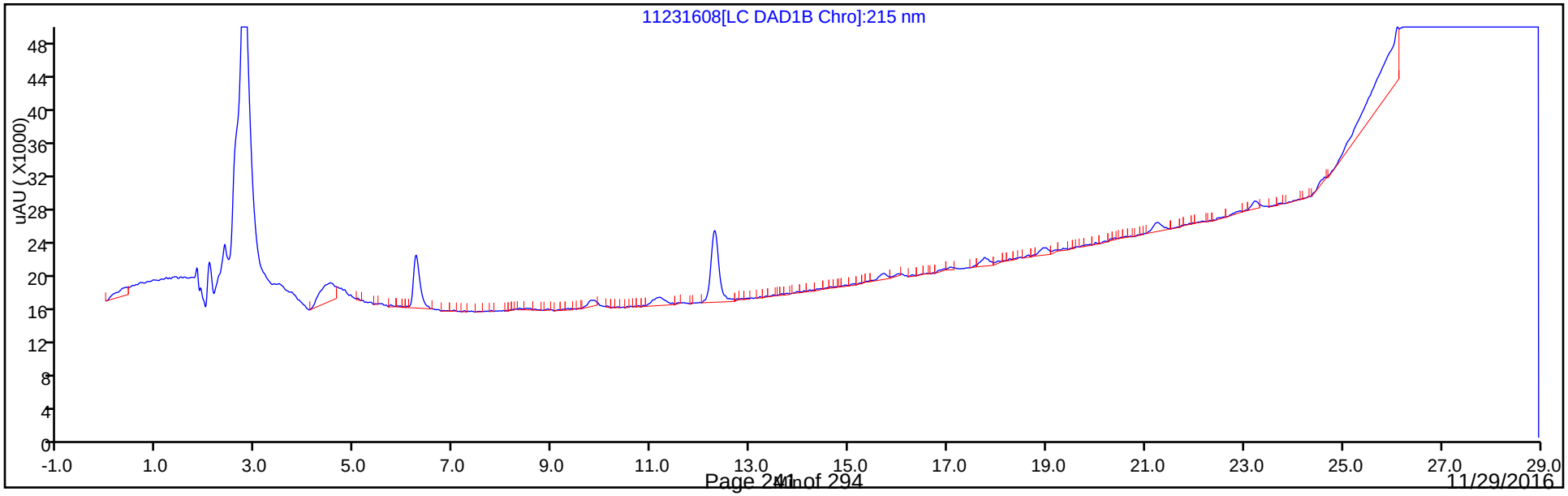
Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161123-53490.b\11231608.D

Injection Date:	23-Nov-2016 14:59:59	Instrument ID:	CHHPLC_G2_LUNA	Operator ID:	DMJ
Lims ID:	MB 280-349987/1-A			Worklist Smp#:	8
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	3
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\20161123-53490.b\11231608.D
Lims ID: MB 280-349987/1-A
Client ID:
Sample Type: MB
Inject. Date: 23-Nov-2016 14:59:59 ALS Bottle#: 3 Worklist Smp#: 8
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: MB 280-349987/1-
Misc. Info.: 280-0053490-008
Operator ID: DMJ Instrument ID: CHHPLC_G2_LUNA

Method: \\ChromNA\Denver\ChromData\G2_LUNA\20161123-53490.b\G2_8330_Luna.m
Limit Group: GCSV - 8330
Last Update: 24-Nov-2016 19:15:49 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: XAWRK004

First Level Reviewer: jonsrudd Date: 24-Nov-2016 18:30:36

Compound	Amount Added	Amount Recovered	% Rec.
$ 9 1,2-Dinitrobenzene	0.2000	0.1990	99.48

Manual Integration/User Assign Peak Report

TestAmerica Denver

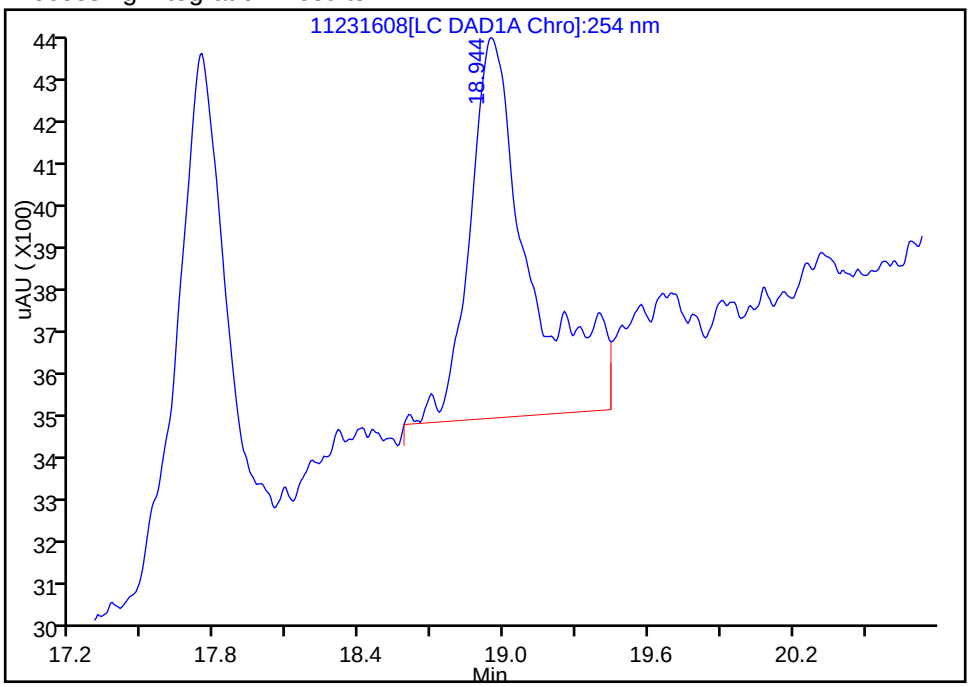
Data File:	\\ChromNA\Denver\ChromData\G2_LUNA\20161123-53490.b\11231608.D				
Injection Date:	23-Nov-2016 14:59:59	Instrument ID:	CHHPLC_G2_LUNA		
Lims ID:	MB 280-349987/1-A				
Client ID:					
Operator ID:	DMJ	ALS Bottle#:	3	Worklist Smp#:	8
Injection Vol:	100.0 ul	Dil. Factor:	1.0000		
Method:	G2_8330_Luna	Limit Group:	GCSV - 8330		
Column:	Luna-Phenyl hexyl (4.60 mm)	Detector	LC DAD1A, 254 nm		

19 2,6-Dinitrotoluene, CAS: 606-20-2

Signal: 1

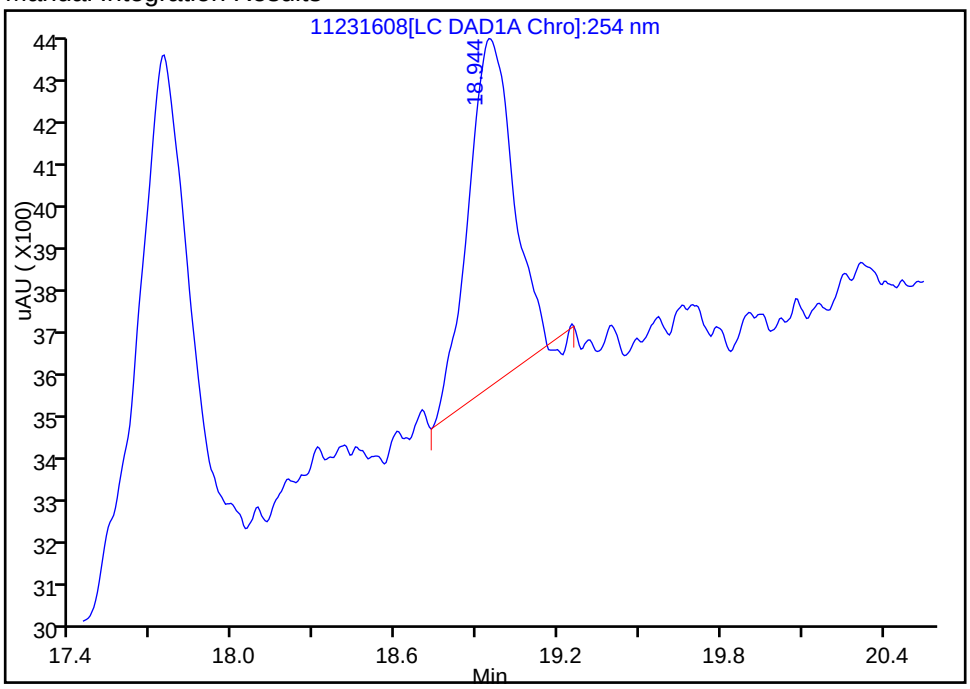
Processing Integration Results

RT: 18.94
Area: 14994
Amount: 0.046150
Amount Units: ug/ml



Manual Integration Results

RT: 18.94
Area: 8739
Amount: 0.024062
Amount Units: ug/ml



Reviewer: jonsrudd, 24-Nov-2016 18:30:36

Audit Action: Manually Integrated Audit Reason: Baseline Smoothing

Manual Integration/User Assign Peak Report

TestAmerica Denver

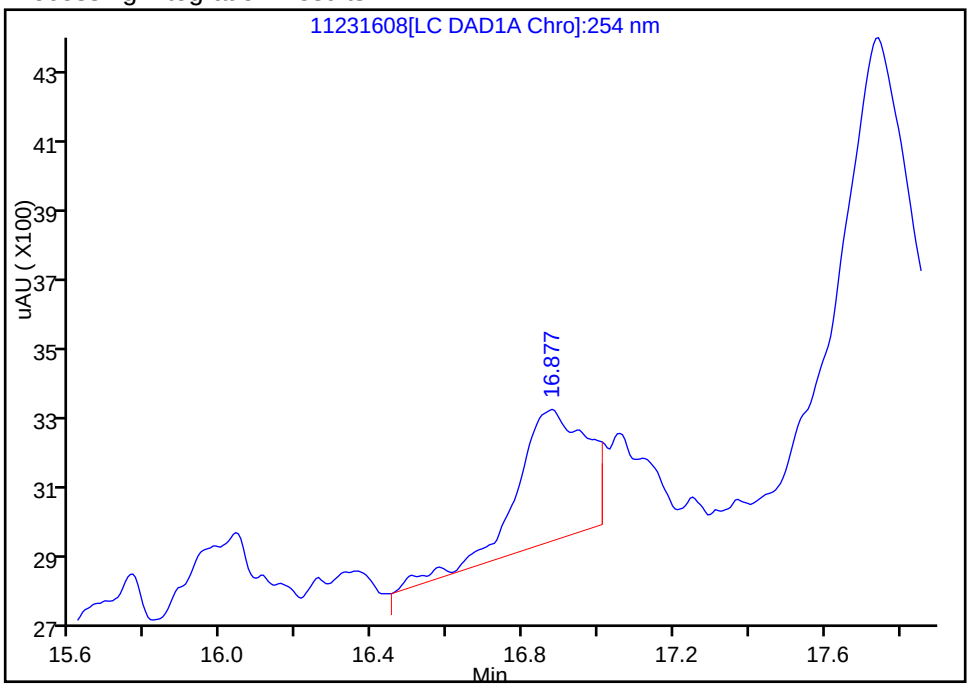
Data File:	\\ChromNA\Denver\ChromData\G2_LUNA\20161123-53490.b\11231608.D				
Injection Date:	23-Nov-2016 14:59:59	Instrument ID:	CHHPLC_G2_LUNA		
Lims ID:	MB 280-349987/1-A				
Client ID:					
Operator ID:	DMJ	ALS Bottle#:	3	Worklist Smp#:	8
Injection Vol:	100.0 ul	Dil. Factor:	1.0000		
Method:	G2_8330_Luna	Limit Group:	GCSV - 8330		
Column:	Luna-Phenyl hexyl (4.60 mm)	Detector	LC DAD1A, 254 nm		

16 m-Nitrotoluene, CAS: 99-08-1

Signal: 1

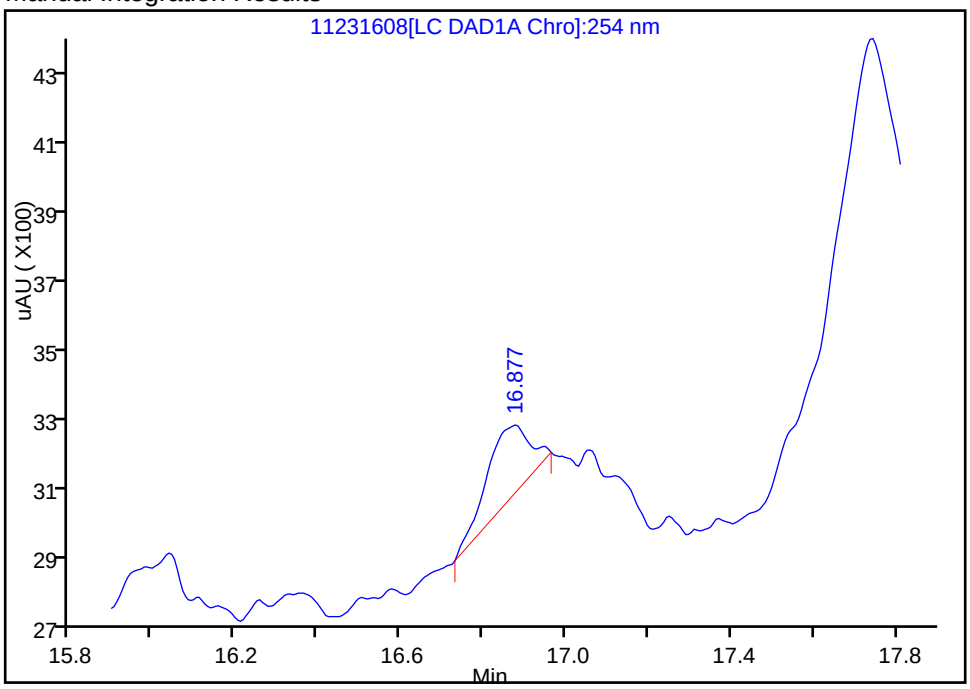
Processing Integration Results

RT: 16.88
Area: 4598
Amount: 0.009633
Amount Units: ug/ml



Manual Integration Results

RT: 16.88
Area: 1375
Amount: -0.001664
Amount Units: ug/ml



Reviewer: jonsrudd, 24-Nov-2016 18:30:36

Audit Action: Manually Integrated Audit Reason: Baseline Smoothing

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-90531-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 280-349987/2-A

Matrix: Water | Lab File ID: 028-2801.D

Analysis Method: 8330B | Date Collected:

Extraction Method: 3535 | Date Extracted: 11/04/2016 20:12

Sample wt/vol: 500(mL) | Date Analyzed: 11/16/2016 21:54

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

Injection Volume: 50(uL) | GC Column: UltraCarb5uODS ID: 4.6(mm)

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

Analysis Batch No.: 351752 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	1.82		1.0	0.40	0.20
99-65-0	1,3-Dinitrobenzene	1.89		0.40	0.20	0.089
118-96-7	2,4,6-Trinitrotoluene	1.99		0.40	0.20	0.072
121-14-2	2,4-Dinitrotoluene	1.69		0.40	0.20	0.084
606-20-2	2,6-Dinitrotoluene	1.70		0.20	0.20	0.065
35572-78-2	2-Amino-4,6-dinitrotoluene	1.57	Q	0.20	0.12	0.051
88-72-2	2-Nitrotoluene	1.21	Q	0.40	0.20	0.086
99-08-1	3-Nitrotoluene	1.25	Q	0.40	0.20	0.083
19406-51-0	4-Amino-2,6-dinitrotoluene	1.55		0.20	0.12	0.058
99-99-0	4-Nitrotoluene	1.38	Q	1.0	0.40	0.20
2691-41-0	HMX	1.92		0.40	0.20	0.088
98-95-3	Nitrobenzene	1.47		0.40	0.20	0.091
55-63-0	Nitroglycerin	20.4		3.0	2.0	0.92
78-11-5	PETN	20.4		2.0	1.2	0.42
121-82-4	RDX	2.12		0.20	0.12	0.052
479-45-8	Tetryl	1.80		0.24	0.20	0.079

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	95		83-119

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\028-2801.D
Lims ID: LCS 280-349987/2-A
Client ID:
Sample Type: LCS
Inject. Date: 16-Nov-2016 21:54:27 ALS Bottle#: 28 Worklist Smp#: 28
Injection Vol: 50.0 ul Dil. Factor: 1.0000
Sample Info: LCS280-349987/2-
Misc. Info.: 280-0053110-029
Operator ID: ACF Instrument ID: CHHPLC_X3

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 22-Nov-2016 20:53:38 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: XAWRK031

First Level Reviewer: freya Date: 17-Nov-2016 11:13:07

	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	6.736	-0.010	17815	0.2000	0.1922	
	4 MNX	1	7.459	7.476	-0.017	27248	0.2011	0.1985	
	5 RDX	1	7.899	7.916	-0.017	22874	0.2000	0.2115	
	6 2,4,6-Trinitrophenol	1	8.199	8.222	-0.023	48413	0.2000	0.5754	
$	7 1,2-Dinitrobenzene	1	8.972	8.956	0.016	26677	0.2000	0.1893	
	8 1,3,5-Trinitrobenzene	1	9.112	9.096	0.016	42022	0.2000	0.1816	
	9 1,3-Dinitrobenzene	1	9.806	9.769	0.037	55554	0.2000	0.1892	
	11 Nitrobenzene	1	10.212	10.162	0.050	29614	0.2000	0.1468	
	12 Tetryl	1	10.619	10.529	0.090	32235	0.2000	0.1804	
	13 Nitroglycerin	2	11.139	11.042	0.097	146484	2.00	2.04	
	14 2,4,6-Trinitrotoluene	1	11.586	11.482	0.104	40666	0.2000	0.1991	
	15 4-Amino-2,6-dinitrotoluene	1	11.812	11.682	0.130	24267	0.2000	0.1547	
	16 2-Amino-4,6-dinitrotoluene	1	12.099	11.969	0.130	33641	0.2000	0.1565	
	17 2,6-Dinitrotoluene	1	12.246	12.116	0.130	25386	0.2000	0.1702	
	18 2,4-Dinitrotoluene	1	12.432	12.309	0.123	49005	0.2000	0.1693	
	19 o-Nitrotoluene	1	13.312	13.162	0.150	15800	0.2000	0.1212	
	20 p-Nitrotoluene	1	13.772	13.616	0.156	15482	0.2000	0.1380	
	21 m-Nitrotoluene	1	14.399	14.222	0.177	18531	0.2000	0.1249	
	22 PETN	2	15.612	15.389	0.223	146554	2.00	2.04	

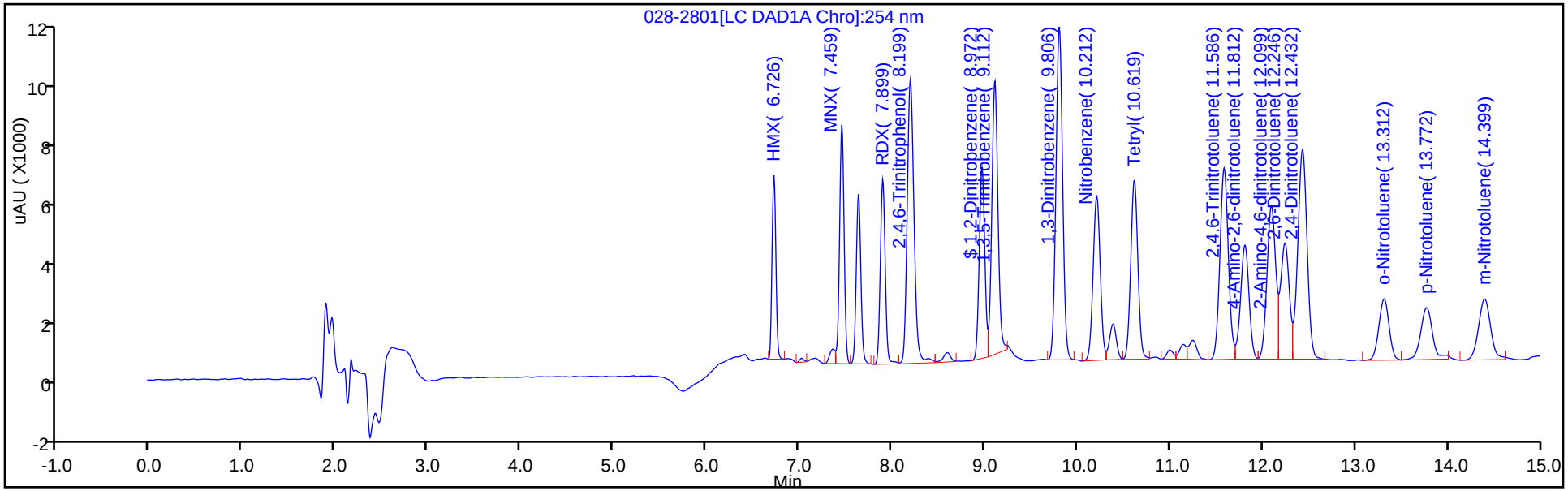
Report Date: 22-Nov-2016 20:53:58 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

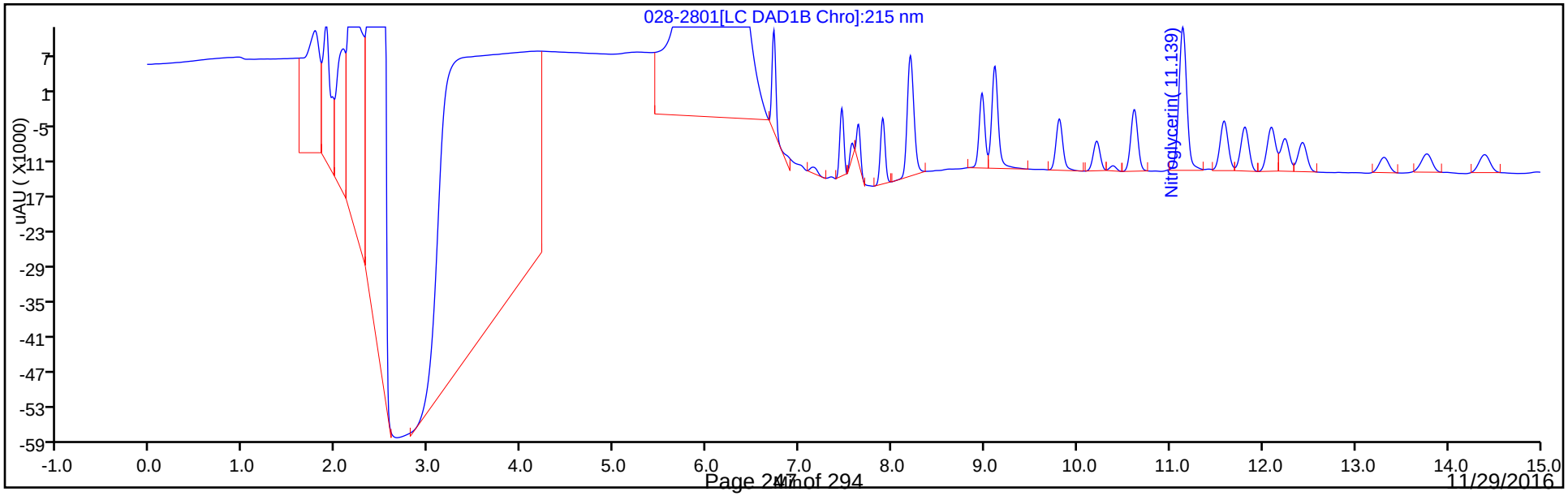
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\028-2801.D

Injection Date:	16-Nov-2016 21:54:27	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	LCS 280-349987/2-A			Worklist Smp#:	28
Client ID:					
Injection Vol:	50.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	28
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\20161116-53220.b\028-2801.D				
Lims ID:	LCS 280-349987/2-A				
Client ID:					
Sample Type:	LCS				
Inject. Date:	16-Nov-2016 21:54:27	ALS Bottle#:	28	Worklist Smp#:	28
Injection Vol:	50.0 ul	Dil. Factor:	1.0000		
Sample Info:	LCS280-349987/2-				
Misc. Info.:	280-0053110-029				
Operator ID:	ACF	Instrument ID:	CHHPLC_X3		
Method:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\8330_X3.m				
Limit Group:	GCSV - 8330				
Last Update:	22-Nov-2016 20:53:38	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:	XAWRK031				
First Level Reviewer: freya		Date:	17-Nov-2016 11:13:07		

Compound	Amount Added	Amount Recovered	% Rec.
$ 7 1,2-Dinitrobenzene	0.2000	0.1893	94.67

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-90531-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 280-349987/2-A

Matrix: Water | Lab File ID: 11231609.D

Analysis Method: 8330B | Date Collected:

Extraction Method: 3535 | Date Extracted: 11/04/2016 20:12

Sample wt/vol: 500(mL) | Date Analyzed: 11/23/2016 15:34

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.: 352866 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	2.08		1.0	0.40	0.20
99-65-0	1,3-Dinitrobenzene	1.87		0.40	0.20	0.089
118-96-7	2,4,6-Trinitrotoluene	2.33		0.40	0.20	0.072
121-14-2	2,4-Dinitrotoluene	1.74		0.40	0.20	0.084
606-20-2	2,6-Dinitrotoluene	1.64		0.20	0.20	0.065
35572-78-2	2-Amino-4,6-dinitrotoluene	1.51	Q	0.20	0.12	0.051
88-72-2	2-Nitrotoluene	1.27	Q	0.40	0.20	0.086
99-08-1	3-Nitrotoluene	1.26	Q	0.40	0.20	0.083
19406-51-0	4-Amino-2,6-dinitrotoluene	1.45	Q	0.20	0.12	0.058
99-99-0	4-Nitrotoluene	1.26	Q	1.0	0.40	0.20
2691-41-0	HMX	1.87		0.40	0.20	0.088
98-95-3	Nitrobenzene	1.87		0.40	0.20	0.091
55-63-0	Nitroglycerin	20.0		3.0	2.0	0.92
78-11-5	PETN	21.1		2.0	1.2	0.42
121-82-4	RDX	2.03		0.20	0.12	0.052
479-45-8	Tetryl	1.79		0.24	0.20	0.079

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	107		83-119

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161123-53490.b\11231609.D
Lims ID: LCS 280-349987/2-A
Client ID:
Sample Type: LCS
Inject. Date: 23-Nov-2016 15:34:54 ALS Bottle#: 4 Worklist Smp#: 9
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: LCS 280-349987/2
Misc. Info.: 280-0053490-009
Operator ID: DMJ Instrument ID: CHHPLC_G2_LUNA

Method: \\ChromNA\Denver\ChromData\G2_LUNA\20161123-53490.b\G2_8330_Luna.m
Limit Group: GCSV - 8330
Last Update: 24-Nov-2016 19:15:49 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: XAWRK004

First Level Reviewer: jonsrudd Date: 24-Nov-2016 18:32:36

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
5 HMX	1	6.624	6.642	-0.018	33084	0.2000	0.1871	
6 MNX	1	7.298	7.322	-0.024	49097	0.2011	0.1904	
4 2,4,6-Trinitrophenol	1	8.044	8.169	-0.125	80273	0.2000	0.4961	
7 RDX	1	8.611	8.635	-0.024	42954	0.2000	0.2027	
8 Nitrobenzene	1	11.304	11.335	-0.031	77592	0.2000	0.1874	
$ 9 1,2-Dinitrobenzene	1	12.284	12.308	-0.024	58717	0.2000	0.2138	
11 1,3-Dinitrobenzene	1	14.618	14.635	-0.017	113190	0.2000	0.1866	
12 Nitroglycerin	2	14.718	14.722	-0.004	339422	2.00	2.00	
13 o-Nitrotoluene	1	15.484	15.502	-0.018	31807	0.2000	0.1272	
14 p-Nitrotoluene	1	15.784	15.802	-0.018	29265	0.2000	0.1261	
15 4-Amino-2,6-dinitrotoluene	1	16.244	16.262	-0.018	43062	0.2000	0.1453	
16 m-Nitrotoluene	1	16.671	16.688	-0.017	37813	0.2000	0.1260	
17 2-Amino-4,6-dinitrotoluene	1	17.218	17.242	-0.024	63910	0.2000	0.1507	
18 1,3,5-Trinitrobenzene	1	17.671	17.675	-0.004	95202	0.2000	0.2081	
19 2,6-Dinitrotoluene	1	18.631	18.648	-0.017	48257	0.2000	0.1636	
20 2,4-Dinitrotoluene	1	19.171	19.188	-0.017	100540	0.2000	0.1736	
21 Tetryl	1	22.391	22.395	-0.004	63014	0.2000	0.1789	
22 2,4,6-Trinitrotoluene	1	23.311	23.322	-0.011	91468	0.2000	0.2326	
23 PETN	2	24.058	24.049	0.009	262002	2.00	2.11	

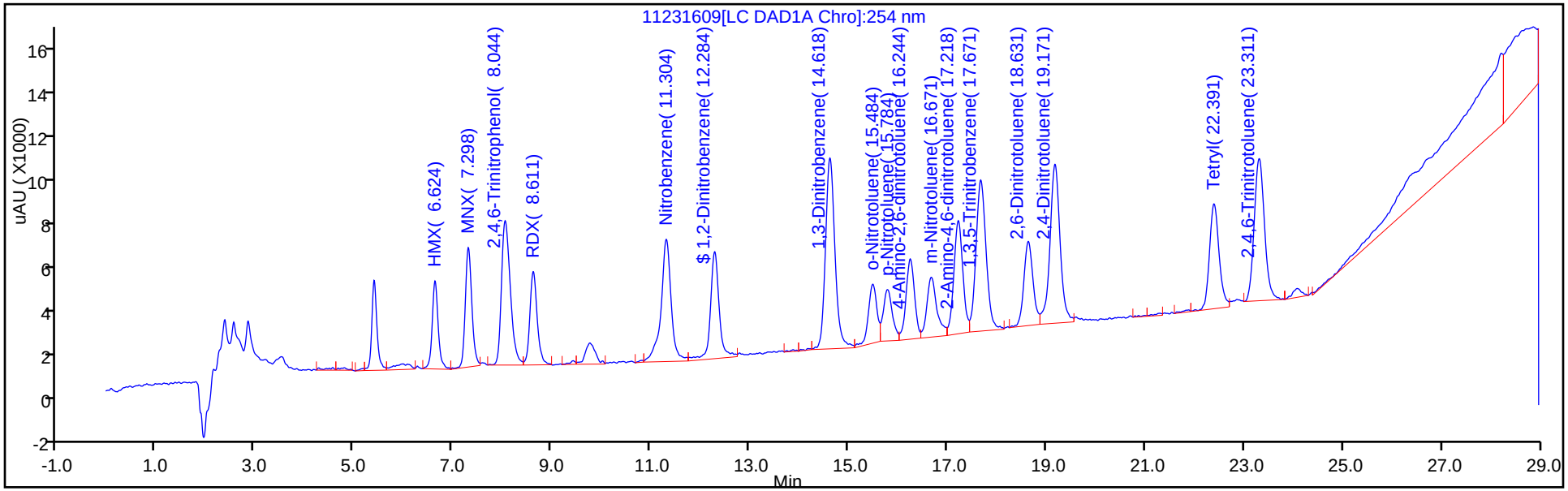
Report Date: 24-Nov-2016 19:16:11 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

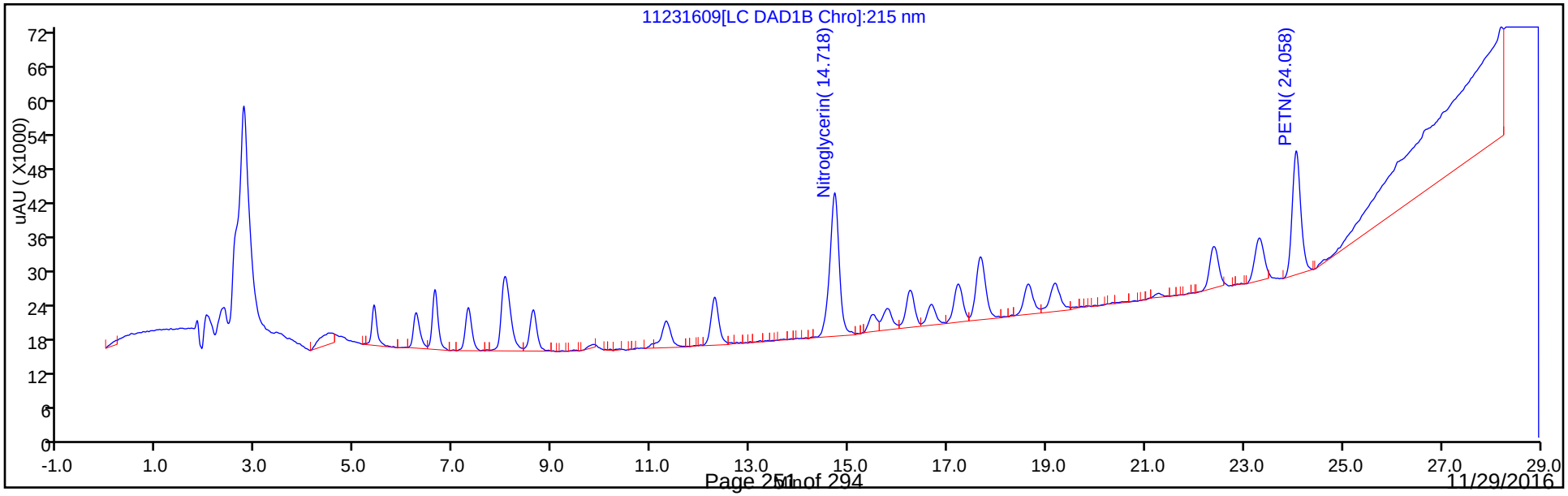
Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161123-53490.b\11231609.D

Injection Date:	23-Nov-2016 15:34:54	Instrument ID:	CHHPLC_G2_LUNA	Operator ID:	DMJ
Lims ID:	LCS 280-349987/2-A			Worklist Smp#:	9
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	4
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\20161123-53490.b\11231609.D				
Lims ID:	LCS 280-349987/2-A				
Client ID:					
Sample Type:	LCS				
Inject. Date:	23-Nov-2016 15:34:54	ALS Bottle#:	4	Worklist Smp#:	9
Injection Vol:	100.0 ul	Dil. Factor:	1.0000		
Sample Info:	LCS 280-349987/2				
Misc. Info.:	280-0053490-009				
Operator ID:	DMJ	Instrument ID:	CHHPLC_G2_LUNA		
Method:	\\ChromNA\Denver\ChromData\G2_LUNA\20161123-53490.b\G2_8330_Luna.m				
Limit Group:	GCSV - 8330				
Last Update:	24-Nov-2016 19:15:49	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:	XAWRK004				
First Level Reviewer: jonsrudd		Date:	24-Nov-2016 18:32:36		

Compound	Amount Added	Amount Recovered	% Rec.
$ 9 1,2-Dinitrobenzene	0.2000	0.2138	106.88

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-90531-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCSD 280-349987/3-A

Matrix: Water | Lab File ID: 029-2901.D

Analysis Method: 8330B | Date Collected:

Extraction Method: 3535 | Date Extracted: 11/04/2016 20:12

Sample wt/vol: 500(mL) | Date Analyzed: 11/16/2016 22:17

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

Injection Volume: 50(uL) | GC Column: UltraCarb5uODS ID: 4.6(mm)

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

Analysis Batch No.: 351752 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	1.80		1.0	0.40	0.20
99-65-0	1,3-Dinitrobenzene	1.98		0.40	0.20	0.089
118-96-7	2,4,6-Trinitrotoluene	1.99		0.40	0.20	0.072
121-14-2	2,4-Dinitrotoluene	1.86		0.40	0.20	0.084
606-20-2	2,6-Dinitrotoluene	1.76		0.20	0.20	0.065
35572-78-2	2-Amino-4,6-dinitrotoluene	1.68		0.20	0.12	0.051
88-72-2	2-Nitrotoluene	1.56	Q	0.40	0.20	0.086
99-08-1	3-Nitrotoluene	1.62	Q	0.40	0.20	0.083
19406-51-0	4-Amino-2,6-dinitrotoluene	1.61		0.20	0.12	0.058
99-99-0	4-Nitrotoluene	1.72	Q	1.0	0.40	0.20
2691-41-0	HMX	1.81		0.40	0.20	0.088
98-95-3	Nitrobenzene	1.74		0.40	0.20	0.091
55-63-0	Nitroglycerin	20.0		3.0	2.0	0.92
78-11-5	PETN	19.3		2.0	1.2	0.42
121-82-4	RDX	2.04		0.20	0.12	0.052
479-45-8	Tetryl	1.66		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\20161116-53220.b\029-2901.D
Lims ID: LCSD 280-349987/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 16-Nov-2016 22:17:33 ALS Bottle#: 29 Worklist Smp#: 29
Injection Vol: 50.0 ul Dil. Factor: 1.0000
Sample Info: LCSD280-349987/3
Misc. Info.: 280-0053110-030
Operator ID: ACF Instrument ID: CHHPLC_X3

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 22-Nov-2016 20:53:38 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: XAWRK031

First Level Reviewer: jonsrudd Date: 22-Nov-2016 20:43:00

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.731	6.736	-0.005	16812	0.2000	0.1813	
4 MNX	1	7.464	7.476	-0.012	26181	0.2011	0.1907	
5 RDX	1	7.911	7.916	-0.005	22074	0.2000	0.2041	
6 2,4,6-Trinitrophenol	1	8.217	8.222	-0.005	22249	0.2000	0.2637	
$ 7 1,2-Dinitrobenzene	1	8.984	8.956	0.028	27266	0.2000	0.1935	
8 1,3,5-Trinitrobenzene	1	9.124	9.096	0.028	41600	0.2000	0.1798	
9 1,3-Dinitrobenzene	1	9.817	9.769	0.048	58158	0.2000	0.1981	
11 Nitrobenzene	1	10.217	10.162	0.055	35156	0.2000	0.1742	
12 Tetryl	1	10.617	10.529	0.088	29614	0.2000	0.1657	
13 Nitroglycerin	2	11.144	11.042	0.102	143504	2.00	2.00	
14 2,4,6-Trinitrotoluene	1	11.584	11.482	0.102	40578	0.2000	0.1986	
15 4-Amino-2,6-dinitrotoluene	1	11.804	11.682	0.122	25172	0.2000	0.1606	
16 2-Amino-4,6-dinitrotoluene	1	12.090	11.969	0.121	36073	0.2000	0.1679	
17 2,6-Dinitrotoluene	1	12.237	12.116	0.121	26257	0.2000	0.1760	
18 2,4-Dinitrotoluene	1	12.424	12.309	0.115	53720	0.2000	0.1857	
19 o-Nitrotoluene	1	13.297	13.162	0.135	20278	0.2000	0.1557	
20 p-Nitrotoluene	1	13.750	13.616	0.134	19307	0.2000	0.1720	
21 m-Nitrotoluene	1	14.357	14.222	0.135	23942	0.2000	0.1618	
22 PETN	2	15.530	15.389	0.141	139168	2.00	1.93	

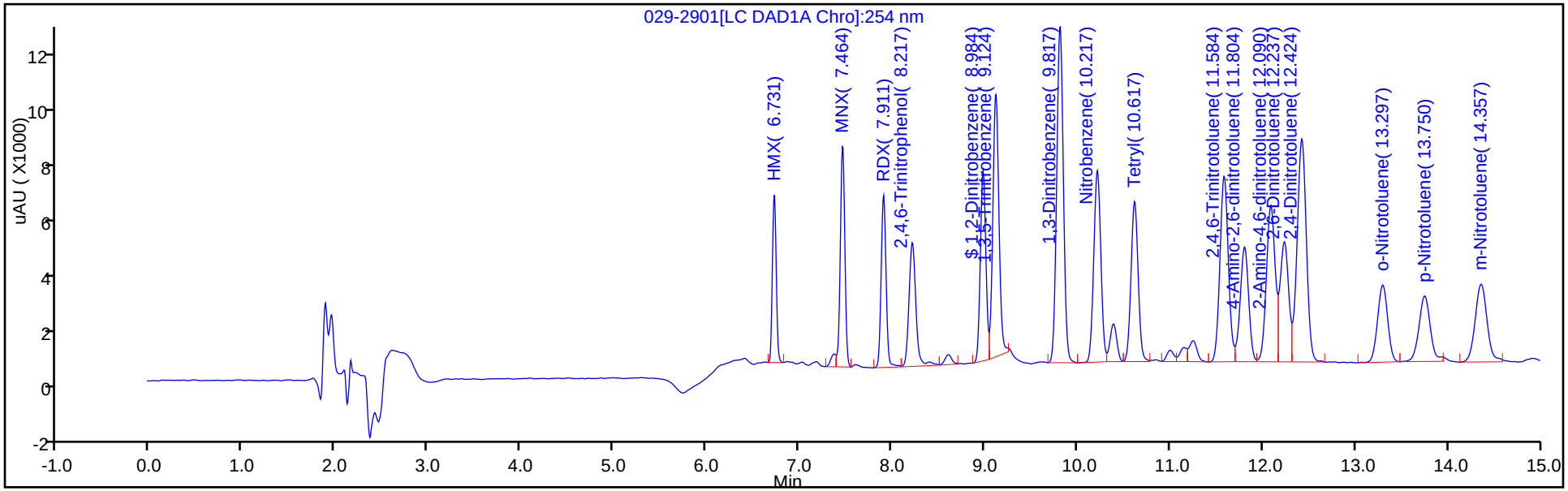
Report Date: 22-Nov-2016 20:54:00 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

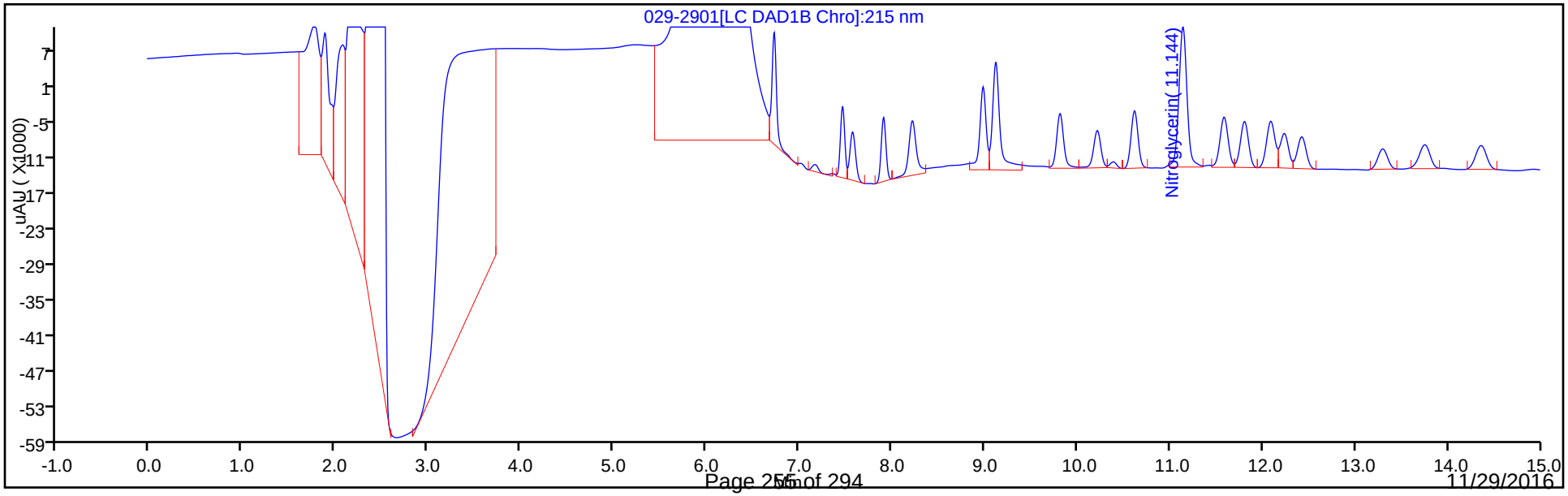
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\029-2901.D

Injection Date:	16-Nov-2016 22:17:33	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	LCSD 280-349987/3-A			Worklist Smp#:	29
Client ID:					
Injection Vol:	50.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	29
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\20161116-53220.b\029-2901.D				
Lims ID:	LCSD 280-349987/3-A				
Client ID:					
Sample Type:	LCSD				
Inject. Date:	16-Nov-2016 22:17:33	ALS Bottle#:	29	Worklist Smp#:	29
Injection Vol:	50.0 ul	Dil. Factor:	1.0000		
Sample Info:	LCSD280-349987/3				
Misc. Info.:	280-0053110-030				
Operator ID:	ACF	Instrument ID:	CHHPLC_X3		
Method:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161116-53220.b\8330_X3.m				
Limit Group:	GCSV - 8330				
Last Update:	22-Nov-2016 20:53:38	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:	XAWRK031				

First Level Reviewer: jonsrudd Date: 22-Nov-2016 20:43:00

Compound	Amount Added	Amount Recovered	% Rec.
$ 7 1,2-Dinitrobenzene	0.2000	0.1935	96.77

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-90531-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCSD 280-349987/3-A

Matrix: Water | Lab File ID: 11231610.D

Analysis Method: 8330B | Date Collected:

Extraction Method: 3535 | Date Extracted: 11/04/2016 20:12

Sample wt/vol: 500(mL) | Date Analyzed: 11/23/2016 16:09

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.: 352866 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	2.25		1.0	0.40	0.20
99-65-0	1,3-Dinitrobenzene	1.95		0.40	0.20	0.089
118-96-7	2,4,6-Trinitrotoluene	2.30		0.40	0.20	0.072
121-14-2	2,4-Dinitrotoluene	1.98		0.40	0.20	0.084
606-20-2	2,6-Dinitrotoluene	1.77		0.20	0.20	0.065
35572-78-2	2-Amino-4,6-dinitrotoluene	1.63		0.20	0.12	0.051
88-72-2	2-Nitrotoluene	1.69	Q	0.40	0.20	0.086
99-08-1	3-Nitrotoluene	1.70	Q	0.40	0.20	0.083
19406-51-0	4-Amino-2,6-dinitrotoluene	1.57		0.20	0.12	0.058
99-99-0	4-Nitrotoluene	1.76	Q	1.0	0.40	0.20
2691-41-0	HMX	1.79		0.40	0.20	0.088
98-95-3	Nitrobenzene	2.23		0.40	0.20	0.091
55-63-0	Nitroglycerin	20.4		3.0	2.0	0.92
78-11-5	PETN	20.3		2.0	1.2	0.42
121-82-4	RDX	2.05		0.20	0.12	0.052
479-45-8	Tetryl	1.67		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\G2_LUNA\20161123-53490.b\11231610.D
Lims ID: LCSD 280-349987/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 23-Nov-2016 16:09:54 ALS Bottle#: 5 Worklist Smp#: 10
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: LCSD 280-349987/
Misc. Info.: 280-0053490-010
Operator ID: DMJ Instrument ID: CHHPLC_G2_LUNA

Method: \\ChromNA\Denver\ChromData\G2_LUNA\20161123-53490.b\G2_8330_Luna.m
Limit Group: GCSV - 8330
Last Update: 24-Nov-2016 19:15:49 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: XAWRK004

First Level Reviewer: jonsrudd Date: 24-Nov-2016 18:33:20

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
5 HMX	1	6.631	6.642	-0.011	31751	0.2000	0.1794	
6 MNX	1	7.305	7.322	-0.017	50939	0.2011	0.1977	
4 2,4,6-Trinitrophenol	1	8.071	8.169	-0.098	34651	0.2000	0.2086	
7 RDX	1	8.625	8.635	-0.010	43373	0.2000	0.2048	
8 Nitrobenzene	1	11.318	11.335	-0.017	91881	0.2000	0.2226	
$ 9 1,2-Dinitrobenzene	1	12.291	12.308	-0.017	56982	0.2000	0.2073	
11 1,3-Dinitrobenzene	1	14.625	14.635	-0.010	118184	0.2000	0.1951	
12 Nitroglycerin	2	14.725	14.722	0.003	345566	2.00	2.04	
13 o-Nitrotoluene	1	15.491	15.502	-0.011	42029	0.2000	0.1690	
14 p-Nitrotoluene	1	15.791	15.802	-0.011	40101	0.2000	0.1760	
15 4-Amino-2,6-dinitrotoluene	1	16.251	16.262	-0.011	46224	0.2000	0.1565	
16 m-Nitrotoluene	1	16.678	16.688	-0.010	50257	0.2000	0.1697	
17 2-Amino-4,6-dinitrotoluene	1	17.231	17.242	-0.011	68849	0.2000	0.1629	
18 1,3,5-Trinitrobenzene	1	17.685	17.675	0.010	102911	0.2000	0.2252	
19 2,6-Dinitrotoluene	1	18.645	18.648	-0.003	51997	0.2000	0.1768	
20 2,4-Dinitrotoluene	1	19.185	19.188	-0.003	114053	0.2000	0.1980	
21 Tetryl	1	22.398	22.395	0.003	58894	0.2000	0.1666	
22 2,4,6-Trinitrotoluene	1	23.311	23.322	-0.011	90544	0.2000	0.2302	
23 PETN	2	24.058	24.049	0.009	251401	2.00	2.03	

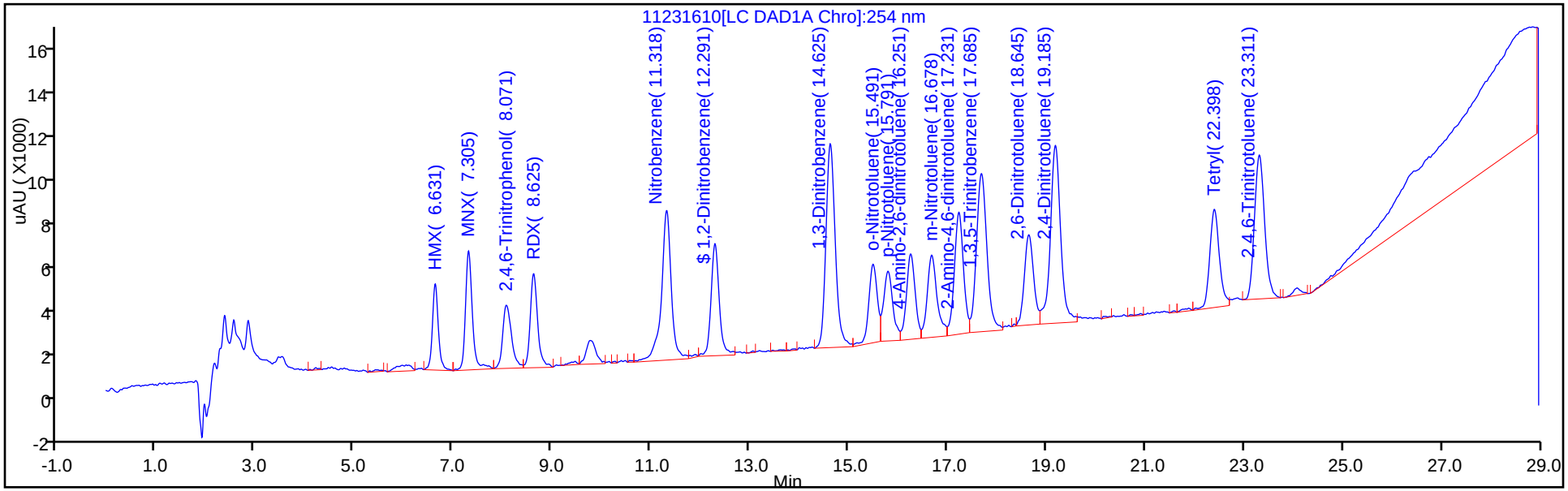
Report Date: 24-Nov-2016 19:16:20 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

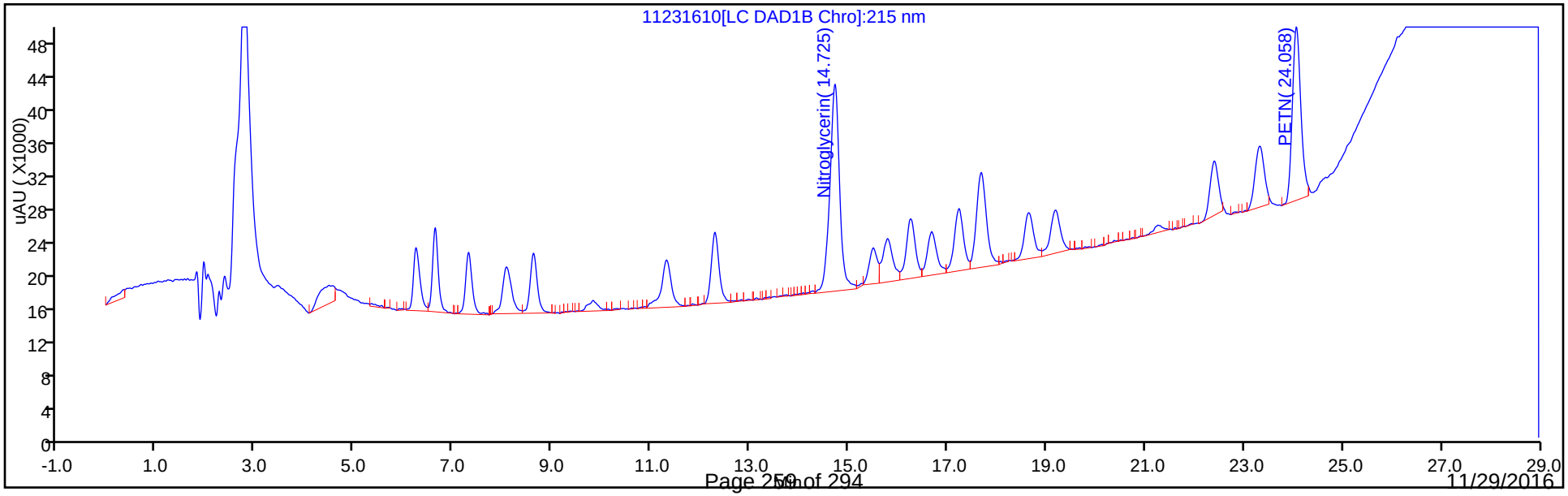
Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161123-53490.b\11231610.D

Injection Date:	23-Nov-2016 16:09:54	Instrument ID:	CHHPLC_G2_LUNA	Operator ID:	DMJ
Lims ID:	LCSD 280-349987/3-A			Worklist Smp#:	10
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	5
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\20161123-53490.b\11231610.D				
Lims ID:	LCSD 280-349987/3-A				
Client ID:					
Sample Type:	LCSD				
Inject. Date:	23-Nov-2016 16:09:54	ALS Bottle#:	5	Worklist Smp#:	10
Injection Vol:	100.0 ul	Dil. Factor:	1.0000		
Sample Info:	LCSD 280-349987/				
Misc. Info.:	280-0053490-010				
Operator ID:	DMJ	Instrument ID:	CHHPLC_G2_LUNA		
Method:	\\ChromNA\Denver\ChromData\G2_LUNA\20161123-53490.b\G2_8330_Luna.m				
Limit Group:	GCSV - 8330				
Last Update:	24-Nov-2016 19:15:49	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:	XAWRK004				
First Level Reviewer: jonsrudd		Date:	24-Nov-2016 18:33:20		

Compound	Amount Added	Amount Recovered	% Rec.
$ 9 1,2-Dinitrobenzene	0.2000	0.2073	103.65

HPLC/IC ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-90531-1

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.: 280-90531-1

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.: 280-90531-1

SDG No.:

Instrument ID: CHHPLC_X3 Start Date: 11/16/2016 13:49

Analysis Batch Number: 351752 End Date: 11/17/2016 04:04

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 280-351752/7		11/16/2016 13:49	1	007-0701.D	UltraCarb5uODS 4.6(mm)
CCV 280-351752/18		11/16/2016 18:03	1	007-1801.D	UltraCarb5uODS 4.6(mm)
CCV 280-351752/26		11/16/2016 21:08	1	007-2601.D	UltraCarb5uODS 4.6(mm)
MB 280-349987/1-A		11/16/2016 21:31	1	027-2701.D	UltraCarb5uODS 4.6(mm)
LCS 280-349987/2-A		11/16/2016 21:54	1	028-2801.D	UltraCarb5uODS 4.6(mm)
LCSD 280-349987/3-A		11/16/2016 22:17	1	029-2901.D	UltraCarb5uODS 4.6(mm)
ZZZZZ		11/16/2016 22:40	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/16/2016 23:03	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/16/2016 23:26	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/16/2016 23:50	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/17/2016 00:13	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/17/2016 00:36	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/17/2016 00:59	1		UltraCarb5uODS 4.6(mm)
CCV 280-351752/37		11/17/2016 01:22	1	007-3701.D	UltraCarb5uODS 4.6(mm)
ZZZZZ		11/17/2016 01:45	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/17/2016 02:08	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/17/2016 02:31	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/17/2016 02:55	1		UltraCarb5uODS 4.6(mm)
280-90531-2		11/17/2016 03:18	1	042-4201.D	UltraCarb5uODS 4.6(mm)
280-90531-1		11/17/2016 03:41	1	043-4301.D	UltraCarb5uODS 4.6(mm)
CCV 280-351752/44		11/17/2016 04:04	1	007-4401.D	UltraCarb5uODS 4.6(mm)

HPLC/IC ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-90531-1

SDG No.:

Instrument ID: CHHPLC_G2_LUNA Start Date: 11/23/2016 14:24

Analysis Batch Number: 352866 End Date: 11/24/2016 06:44

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 280-352866/7		11/23/2016 14:24	1	11231607.D	Luna-phenylhex 4.6(mm)
MB 280-349987/1-A		11/23/2016 14:59	1	11231608.D	Luna-phenylhex 4.6(mm)
LCS 280-349987/2-A		11/23/2016 15:34	1	11231609.D	Luna-phenylhex 4.6(mm)
LCSD 280-349987/3-A		11/23/2016 16:09	1	11231610.D	Luna-phenylhex 4.6(mm)
ZZZZZ		11/23/2016 16:44	1		Luna-phenylhex 4.6(mm)
ZZZZZ		11/23/2016 17:19	1		Luna-phenylhex 4.6(mm)
ZZZZZ		11/23/2016 17:54	1		Luna-phenylhex 4.6(mm)
ZZZZZ		11/23/2016 18:29	1		Luna-phenylhex 4.6(mm)
ZZZZZ		11/23/2016 19:04	1		Luna-phenylhex 4.6(mm)
ZZZZZ		11/23/2016 19:39	1		Luna-phenylhex 4.6(mm)
ZZZZZ		11/23/2016 20:14	1		Luna-phenylhex 4.6(mm)
CCV 280-352866/18		11/23/2016 20:49	1	11231618.D	Luna-phenylhex 4.6(mm)
280-90531-2		11/23/2016 21:24	1	11231619.D	Luna-phenylhex 4.6(mm)
ZZZZZ		11/23/2016 21:59	1		Luna-phenylhex 4.6(mm)
ZZZZZ		11/23/2016 22:34	1		Luna-phenylhex 4.6(mm)
ZZZZZ		11/23/2016 23:09	5		Luna-phenylhex 4.6(mm)
ZZZZZ		11/23/2016 23:44	5		Luna-phenylhex 4.6(mm)
ZZZZZ		11/24/2016 00:19	5		Luna-phenylhex 4.6(mm)
CCV 280-352866/25		11/24/2016 00:54	1	11231625.D	Luna-phenylhex 4.6(mm)
ZZZZZ		11/24/2016 01:29	1		Luna-phenylhex 4.6(mm)
ZZZZZ		11/24/2016 02:04	1		Luna-phenylhex 4.6(mm)
ZZZZZ		11/24/2016 02:39	1		Luna-phenylhex 4.6(mm)
ZZZZZ		11/24/2016 03:14	1		Luna-phenylhex 4.6(mm)
ZZZZZ		11/24/2016 03:49	5		Luna-phenylhex 4.6(mm)
ZZZZZ		11/24/2016 04:24	5		Luna-phenylhex 4.6(mm)
ZZZZZ		11/24/2016 04:59	5		Luna-phenylhex 4.6(mm)
ZZZZZ		11/24/2016 05:34	5		Luna-phenylhex 4.6(mm)
ZZZZZ		11/24/2016 06:09	5		Luna-phenylhex 4.6(mm)
ZZZZZ		11/24/2016 06:44	1		Luna-phenylhex 4.6(mm)

HPLC/IC ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-90531-1

SDG No.:

Instrument ID: CHHPLC_G2_LUNA Start Date: 11/27/2016 21:04

Analysis Batch Number: 353205 End Date: 11/28/2016 01:43

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 280-353205/7		11/27/2016 21:04	1	11271607.D	Luna-phenylhex 4.6(mm)
280-90531-1		11/27/2016 21:39	1	11271608.D	Luna-phenylhex 4.6(mm)
ZZZZZ		11/27/2016 22:14	1		Luna-phenylhex 4.6(mm)
ZZZZZ		11/27/2016 22:49	1		Luna-phenylhex 4.6(mm)
ZZZZZ		11/27/2016 23:24	1		Luna-phenylhex 4.6(mm)
ZZZZZ		11/27/2016 23:58	1		Luna-phenylhex 4.6(mm)
ZZZZZ		11/28/2016 00:33	1		Luna-phenylhex 4.6(mm)
ZZZZZ		11/28/2016 01:08	1		Luna-phenylhex 4.6(mm)
CCV 280-353205/15		11/28/2016 01:43	1	11271615.D	Luna-phenylhex 4.6(mm)

HPLC/IC BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-90531-1

SDG No.:

Batch Number: 349987 Batch Start Date: 11/04/16 20:12 Batch Analyst: Cokley, Cheyana D

Batch Method: 3535 Batch End Date: 11/04/16 23:11

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	8330 LCS 00072	8330Surrogate 00090
MB 280-349987/1		3535, 8330B				500 mL	5 mL		0.1 mL
LCS 280-349987/2		3535, 8330B				500 mL	5 mL	0.1 mL	0.1 mL
LCSD 280-349987/3		3535, 8330B				500 mL	5 mL	0.1 mL	0.1 mL
280-90531-A-2	MBS-004-110316-GW	3535, 8330B	T	711.9 g	256.5 g	455.4 mL	5 mL		0.1 mL
280-90531-B-1	MBS-006-110316-GW	3535, 8330B	T	710.0 g	261.3 g	448.7 mL	5 mL		0.1 mL

Lab Sample ID	Client Sample ID	Method Chain	Basis	AnalysisComment					
MB 280-349987/1		3535, 8330B							
LCS 280-349987/2		3535, 8330B							
LCSD 280-349987/3		3535, 8330B							
280-90531-A-2	MBS-004-110316-GW	3535, 8330B	T	login status as of 11.4.16@1902					
280-90531-B-1	MBS-006-110316-GW	3535, 8330B	T	login status as of 11.4.16@1902					

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.: 280-90531-1

SDG No.:

Batch Number: 349987 Batch Start Date: 11/04/16 20:12 Batch Analyst: Cokley, Cheyana D

Batch Method: 3535 Batch End Date: 11/04/16 23:11

Batch Notes	
Acid ID	0.1%AAinACN_00098
Acid Name	Acetic Acid in ACN
Balance ID	24950441
Batch Comment	Reviewer: n/a ; DNA is not in the analyte list(11.4.16) MeCL2-Cycl 00308, NaCl:164935
First End time	11.4.16@2133
H2O ID	ELGA
Pipette ID	EIA, EXP-1
Reagent ID	CaCL2
Reagent Lot Number	CaCL2_00049
Solvent Lot #	ACN_00
Solvent Name	Acetonitrile
SOP Number	DV-OP-0017
SPE Cartridge Type	Sep-Pak Porapak RDX
Solid Phase Extraction Disk ID	004436152A
First Start time	11.4.16@2023

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: 280-90531-1

SDG No.:

Project: Ravenna, OH, MBS

Client Sample ID	Lab Sample ID
MBS-006-110316-GW	280-90531-1
MBS-004-110316-GW	280-90531-2

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: MBS-006-110316-GW
Lab Sample ID: 280-90531-1
Lab Name: TestAmerica Denver
Job No.: 280-90531-1
SDG ID.:
Matrix: Water
Date Sampled: 11/03/2016 11:13
Reporting Basis: WET
Date Received: 11/04/2016 09:50

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: MBS-004-110316-GW
Lab Sample ID: 280-90531-2
Lab Name: TestAmerica Denver
Job No.: 280-90531-1
SDG ID.:
Matrix: Water
Date Sampled: 11/03/2016 11:10
Reporting Basis: WET
Date Received: 11/04/2016 09:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Cyanide, Total	2.5	10	5.0	2.0	ug/L	J		1	9012B

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90531-1

SDG No.:

Analyst: JML Batch Start Date: 11/16/2016

Reporting Units: mg/L Analytical Batch No.: 351695

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
14	ICV	06:27	Cyanide, Total	0.0967	0.100	97	90-110		CN ICV Daily_00941
15	ICB	06:29	Cyanide, Total	0.0050				U	
29	CCV	06:50	Cyanide, Total	0.199	0.200	99	90-110		CN CAL 1 ppm_01177
30	CCB	06:52	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.: 280-90531-1

SDG No.:

Method	Lab Sample ID	Analyte	Result	Qual	Units	LOQ	Dil
Batch ID: 351695	Date: 11/16/2016 06:36	Prep Batch: 351503	Date: 11/15/2016 08:00				
9012B	MB 280-351503/4-A	Cyanide, Total	5.0	U	ug/L	10	1

FORM III-IN

5-IN
MATRIX SPIKE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90531-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 351695	Date: 11/16/2016 06:39		Prep Batch: 351503		Date: 11/15/2016 08:00						
9012B	280-90531-1	Cyanide, Total	5.0	U	ug/L						
9012B	280-90531-1 MS	Cyanide, Total	94.5		ug/L	100	95	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.: 280-90531-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 351695	Date: 11/16/2016 06:41		Prep Batch: 351503		Date: 11/15/2016 08:00						
9012B	280-90531-1 MSD	Cyanide, Total	92.5		ug/L	100	92	83-116	2	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.: 280-90531-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 351695	Date: 11/16/2016 06:35		Prep Batch: 351503			Date: 11/15/2016 08:00					
						LCS Source: CN ICV Int_00408					
9012B	LCS 280-351503/3-A	Cyanide, Total	94.1		ug/L	100	94	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.: 280-90531-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 351695	Date: 11/16/2016 06:33		Prep Batch: 351503			Date: 11/15/2016 08:00					
						LCS Source: CN 10ppm_00229					
9012B	LLCS 280-351503/2-A	Cyanide, Total	98.9		ug/L	100	99	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.: 280-90531-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 351695	Date: 11/16/2016 06:32		Prep Batch: 351503			Date: 11/15/2016 08:00					
						LCS Source: CN 10ppm_00229					
9012B	HLCS 280-351503/1-A	Cyanide, Total	387		ug/L	400	97	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: 280-90531-1

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: 280-90531-1

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.: 280-90531-1

SDG No.:

Prep Method: 9012B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
HLCS 280-351503/1-A	11/15/2016 08:00	351503		50	50
LLCS 280-351503/2-A	11/15/2016 08:00	351503		50	50
LCS 280-351503/3-A	11/15/2016 08:00	351503		50	50
MB 280-351503/4-A	11/15/2016 08:00	351503		50	50
280-90531-1	11/15/2016 08:00	351503		50	50
280-90531-1 MS	11/15/2016 08:00	351503		50	50
280-90531-1 MSD	11/15/2016 08:00	351503		50	50
280-90531-2	11/15/2016 08:00	351503		50	50

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90531-1

SDG No.:

Instrument ID: WC_Alp 1 Analysis Method: 9012B

Start Date: 11/16/2016 06:08 End Date: 11/16/2016 07:16

Lab Sample Id	D/F	Type	Time	Analytes
				CN
ZZZZZZ			06:08	
ZZZZZZ			06:09	
ZZZZZZ			06:11	
ZZZZZZ			06:12	
IC 280-351695/5			06:14	X
IC 280-351695/6			06:15	X
IC 280-351695/7			06:17	X
IC 280-351695/8			06:18	X
IC 280-351695/9			06:20	X
IC 280-351695/10			06:21	X
IC 280-351695/11			06:23	X
ZZZZZZ			06:24	
ZZZZZZ			06:26	
ICV 280-351695/14	1		06:27	X
ICB 280-351695/15	1		06:29	X
ZZZZZZ			06:30	
HLCS 280-351503/1-A	2	T	06:32	X
LLCS 280-351503/2-A	1	T	06:33	X
LCS 280-351503/3-A	1	T	06:35	X
MB 280-351503/4-A	1	T	06:36	X
280-90531-1	1	T	06:38	X
280-90531-1 MS	1	T	06:39	X
280-90531-1 MSD	1	T	06:41	X
280-90531-2	1	T	06:42	X
ZZZZZZ			06:44	
ZZZZZZ			06:46	
ZZZZZZ			06:47	
ZZZZZZ			06:49	
CCV 280-351695/29	1		06:50	X
CCB 280-351695/30	1		06:52	X
ZZZZZZ			06:53	
ZZZZZZ			06:55	
ZZZZZZ			06:56	
ZZZZZZ			06:58	
ZZZZZZ			06:59	
ZZZZZZ			07:01	
ZZZZZZ			07:02	
ZZZZZZ			07:04	
ZZZZZZ			07:05	
ZZZZZZ			07:07	
ZZZZZZ			07:08	
ZZZZZZ			07:10	

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90531-1

SDG No.:

Instrument ID: WC_Alp 1 Analysis Method: 9012B

Start Date: 11/16/2016 06:08 End Date: 11/16/2016 07:16

Lab Sample Id	D/F	Type	Time	Analytes																								
				CN																								
ZZZZZZ			07:11																									
CCV 280-351695/44			07:13																									
CCB 280-351695/45			07:14																									
ZZZZZZ			07:16																									

Prep Types:
T = Total/NA

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-90531-1

SDG No.:

Batch Number: 351503 Batch Start Date: 11/15/16 08:00 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 280-351503/1		9012B, 9012B		50 mL	50 mL	>12	N	N	2 mL
LLCS 280-351503/2		9012B, 9012B		50 mL	50 mL	>12	N	N	0.5 mL
LCS 280-351503/3		9012B, 9012B		50 mL	50 mL	>12	N	N	
MB 280-351503/4		9012B, 9012B		50 mL	50 mL	>12	N	N	
280-90531-C-1	MBS-006-110316-GW	9012B, 9012B	T	50 mL	50 mL	>12	N	N	
280-90531-C-1 MS	MBS-006-110316-GW	9012B, 9012B	T	50 mL	50 mL	>12	N	N	
280-90531-C-1 MSD	MBS-006-110316-GW	9012B, 9012B	T	50 mL	50 mL	>12	N	N	
280-90531-C-2	MBS-004-110316-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 280-351503/1		9012B, 9012B							
LLCS 280-351503/2		9012B, 9012B							
LCS 280-351503/3		9012B, 9012B		0.5 mL					
MB 280-351503/4		9012B, 9012B							
280-90531-C-1	MBS-006-110316-GW	9012B, 9012B	T						
280-90531-C-1 MS	MBS-006-110316-GW	9012B, 9012B	T	0.5 mL					
280-90531-C-1 MSD	MBS-006-110316-GW	9012B, 9012B	T	0.5 mL					
280-90531-C-2	MBS-004-110316-GW	9012B, 9012B	T						

Batch Notes	

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.: 280-90531-1

SDG No.:

Batch Number: 351503 Batch Start Date: 11/15/16 08:00 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.: 280-90531-1

SDG No.:

Batch Number: 351695 Batch Start Date: 11/16/16 06:08 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 01177	CN ICV Daily 00941		
ICV 280-351695/14		9012B		50 mL	50 mL		50 mL		
ICB 280-351695/15		9012B		50 mL	50 mL				
HLCS 280-351503/1-A		9012B		50 mL	50 mL				
LLCS 280-351503/2-A		9012B		50 mL	50 mL				
LCS 280-351503/3-A		9012B		50 mL	50 mL				
MB 280-351503/4-A		9012B		50 mL	50 mL				
280-90531-C-1-A	MBS-006-110316-GW	9012B	T	50 mL	50 mL				
280-90531-C-1-BMS	MBS-006-110316-GW	9012B	T	50 mL	50 mL				
280-90531-C-1-CMSD	MBS-006-110316-GW	9012B	T	50 mL	50 mL				
280-90531-C-2-A	MBS-004-110316-GW	9012B	T	50 mL	50 mL				
CCV 280-351695/29		9012B		50 mL	50 mL	10 mL			
CCB 280-351695/30		9012B		50 mL	50 mL				

Batch Notes	
Buffer Reagent ID Number	CN Buffer_00087
Chloramine-T ID	CN Chloro-T_00716
Pipette ID	WC 5000ELJ WC 1000NXN
Pyridine-Barbituric Acid ID	CN Pyr/Bar_00147

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\C111616.RST
Sample table path C:\FLOW_4\c111616.tbl
Method path C:\FLOW_4\cyanide.mth
Date acquired 16-Nov-16
Time acquired 07:21

				Cyanide, Total		
Date	Time	Cup	Name	Response	Calc [ppb]	Flags
16-Nov-16	06:08	107	Sync	299978	394.431	
16-Nov-16	06:09	0	Carryover	238	-1.826	LO
16-Nov-16	06:11	0	Carryover	102	-2.006	LO
16-Nov-16	06:12	0	Baseline	0	-2.141	BL
16-Nov-16	06:14	101	CAL 0.00 ppb	181	-1.901	LO
16-Nov-16	06:15	102	CAL 10.0 ppb	8264	8.785	
16-Nov-16	06:17	103	CAL 20.0 ppb	15792	18.737	
16-Nov-16	06:18	104	CAL 50.0 ppb	39754	50.414	
16-Nov-16	06:20	105	CAL 100 ppb	78784	102.012	
16-Nov-16	06:21	106	Cal 200 ppb	156558	204.829	
16-Nov-16	06:23	107	Cal 400 ppb	302015	397.124	
16-Nov-16	06:24	0	BLK	97	-2.013	LO
16-Nov-16	06:26	0	Baseline	0	-2.141	BL
16-Nov-16	06:27	108	ICV 100 ppb	74788	96.729	
16-Nov-16	06:29	0	ICB	33	-2.097	LO
16-Nov-16	06:30	0	Baseline	0	-2.141	BL
16-Nov-16	06:32	113	hlcs 280-351503/1-a	147799	386.500	
16-Nov-16	06:33	114	llcs 280-351503/2-a	76437	98.909	
16-Nov-16	06:35	115	lcs 280-351503/3-a	72798	94.099	
16-Nov-16	06:36	116	mb 280-351503/4-a	2024	0.534	
16-Nov-16	06:38	117	280-90531-c-1-a	2542	1.219	
16-Nov-16	06:39	118	280-90531-c-1-b ms	73116	94.519	
16-Nov-16	06:41	119	280-90531-c-1-c msd	71569	92.474	
16-Nov-16	06:42	120	280-90531-c-2-a	3523	2.517	
16-Nov-16	06:44	121	280-90501-a-2-a	5894	5.651	
16-Nov-16	06:46	122	280-90481-c-12-a	1039	-0.767	LO
16-Nov-16	06:47	0	BLK	56	-2.066	LO
16-Nov-16	06:49	0	baseline	0	-2.141	BL
16-Nov-16	06:50	109	CCV 200PPB	152047	198.866	
16-Nov-16	06:52	0	CCB	31	-2.099	LO
16-Nov-16	06:53	0	Baseline	0	-2.141	BL
16-Nov-16	06:55	123	280-90562-f-1-a	4092	3.268	
16-Nov-16	06:56	124	280-90562-f-2-a	5127	4.637	
16-Nov-16	06:58	125	280-90528-n-1-a	5448	5.062	
16-Nov-16	06:59	126	280-90529-m-2-a	15124	17.853	
16-Nov-16	07:01	127	280-90532-g-1-a	29295	36.587	
16-Nov-16	07:02	128	280-90532-g-2-a	2278	0.871	
16-Nov-16	07:04	129	280-90532-i-3-a	1172	-0.591	LO
16-Nov-16	07:05	130	280-90532-g-5-a	1930	0.411	
16-Nov-16	07:07	131	280-90532-g-5-b ms	74327	96.119	
16-Nov-16	07:08	132	280-90532-g-5-c msd	71273	92.082	
16-Nov-16	07:10	0	BLK	54	-2.070	LO
16-Nov-16	07:11	0	baseline	0	-2.141	BL
16-Nov-16	07:13	109	CCV 200PPB	156535	204.799	
16-Nov-16	07:14	0	CCB	42	-2.085	LO
16-Nov-16	07:16	0	Baseline	0	-2.141	BL

Peak Table:Cyanide, Total

File name: C:\FLOW_4\C111616.RST
Date: 16-Nov-16
Operator: JML

Peak	Cup	Name	R	Type	Dil	Wt	Height	Calc. (ppb)	Flags
1	107	Sync	1	SYNC	1	1	299978	394.431458	
2	0	Carryover	1	CO	1	1	238	-1.825908	LO
3	0	Carryover	2	CO	1	1	102	-2.005545	LO
B	0	Baseline	1	RB	1	1	0	-2.140649	BL
5	101	CAL 0.00 ppb	1	C	1	1	181	-1.901181	LO
6	102	CAL 10.0 ppb	1	C	1	1	8264	8.784775	
7	103	CAL 20.0 ppb	1	C	1	1	15792	18.736956	
8	104	CAL 50.0 ppb	1	C	1	1	39754	50.414062	
9	105	CAL 100 ppb	1	C	1	1	78784	102.012291	
10	106	Cal 200 ppb	1	C	1	1	156558	204.828827	
11	107	Cal 400 ppb	1	C	1	1	302015	397.124268	
12	0	BLK	1	BLNK	1	1	97	-2.013035	LO
B	0	Baseline	1	RB	1	1	0	-2.140649	BL
14	108	ICV 100 ppb	1	CCV	1	1	74788	96.729340	
15	0	ICB	1	U	1	1	33	-2.096924	LO
B	0	Baseline	1	RB	1	1	0	-2.140649	BL
17	113	hlcs 280-351503/1-a 1		U	2	1	147799	386.500366	
18	114	llcs 280-351503/2-a 1		U	1	1	76437	98.909462	
19	115	lcs 280-351503/3-a 1		U	1	1	72798	94.099083	
20	116	mb 280-351503/4-a 1		U	1	1	2024	0.534470	
21	117	280-90531-c-1-a 1		U	1	1	2542	1.219349	
22	118	280-90531-c-1-b ms 1		U	1	1	73116	94.519287	
23	119	280-90531-c-1-c msd 1		U	1	1	71569	92.473732	
24	120	280-90531-c-2-a 1		U	1	1	3523	2.517395	
25	121	280-90501-a-2-a 1		U	1	1	5894	5.650771	
26	122	280-90481-c-12-a 1		U	1	1	1039	-0.766897	LO
27	0	BLK	1	BLNK	1	1	56	-2.066001	LO
B	0	baseline	1	RB	1	1	0	-2.140649	BL
29	109	CCV 200PPB	1	CCV	1	1	152047	198.866257	
30	0	CCB	1	U	1	1	31	-2.099192	LO
B	0	Baseline	1	RB	1	1	0	-2.140649	BL
32	123	280-90562-f-1-a 1		U	1	1	4092	3.268367	
33	124	280-90562-f-2-a 1		U	1	1	5127	4.636727	
34	125	280-90528-n-1-a 1		U	1	1	5448	5.062199	
35	126	280-90529-m-2-a 1		U	1	1	15124	17.852869	
36	127	280-90532-g-1-a 1		U	1	1	29295	36.586987	
37	128	280-90532-g-2-a 1		U	1	1	2278	0.870660	
38	129	280-90532-i-3-a 1		U	1	1	1172	-0.590715	LO
39	130	280-90532-g-5-a 1		U	1	1	1930	0.410669	
40	131	280-90532-g-5-b ms 1		U	1	1	74327	96.119240	
41	132	280-90532-g-5-c msd 1		U	1	1	71273	92.082016	
42	0	BLK	1	BLNK	1	1	54	-2.069601	LO
B	0	baseline	1	RB	1	1	0	-2.140649	BL
44	109	CCV 200PPB	1	CCV	1	1	156535	204.798660	
45	0	CCB	1	U	1	1	42	-2.085456	LO
B	0	Baseline	1	RB	1	1	0	-2.140649	BL

Cyanide, Total:Calibration 1: Peak 5-46

File name: C:\FLOW_4\C111616.RST
Date: 16-Nov-16
Operator: JML

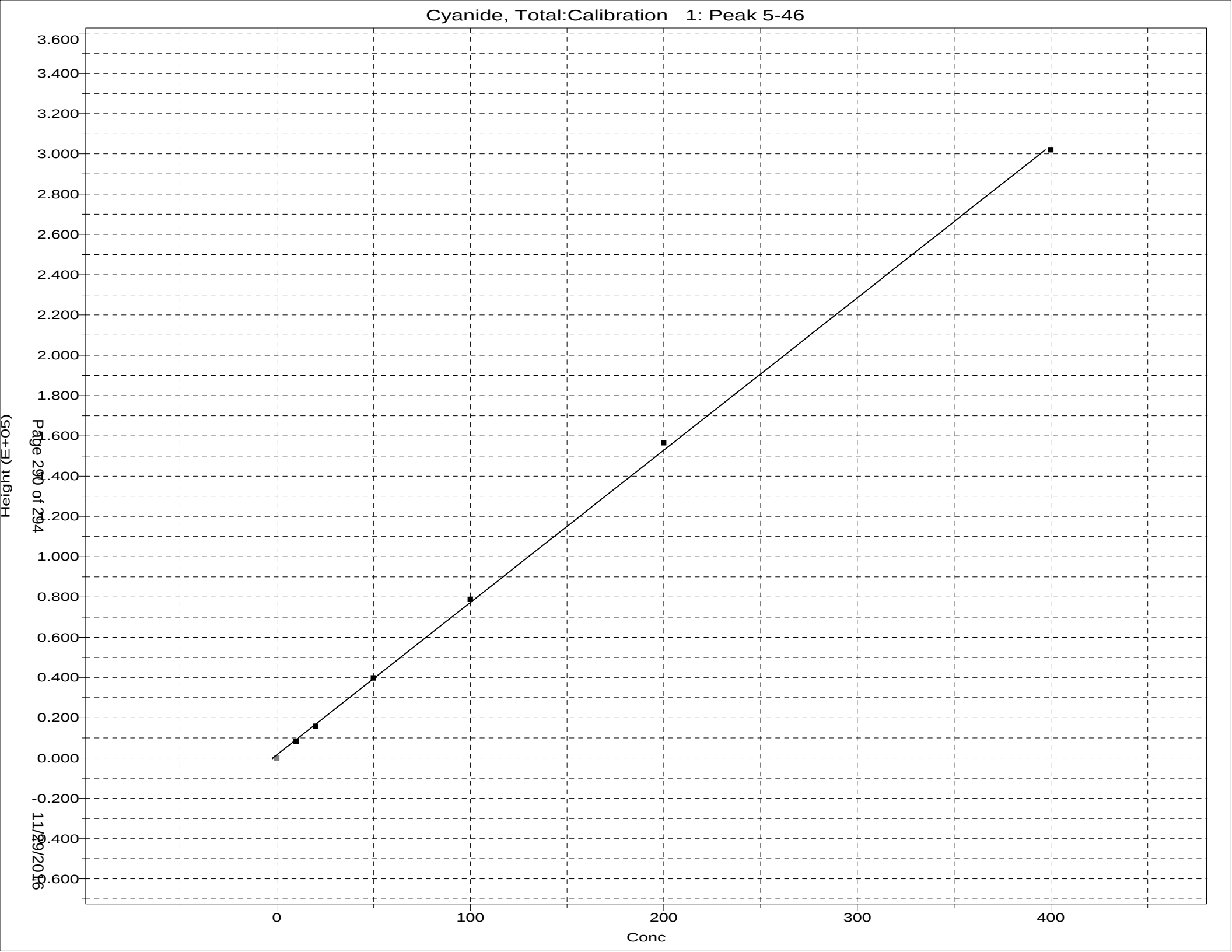
*	Name	Conc	Height
*	CAL 0.00 ppb	0.000000	181.140152
*	CAL 10.0 ppb	10.000000	8264.297852
*	CAL 20.0 ppb	20.000000	15792.406250
*	CAL 50.0 ppb	50.000000	39753.863281
*	CAL 100 ppb	100.000000	78784.210938
*	Cal 200 ppb	200.000000	156557.531250
*	Cal 400 ppb	400.000000	302015.218750

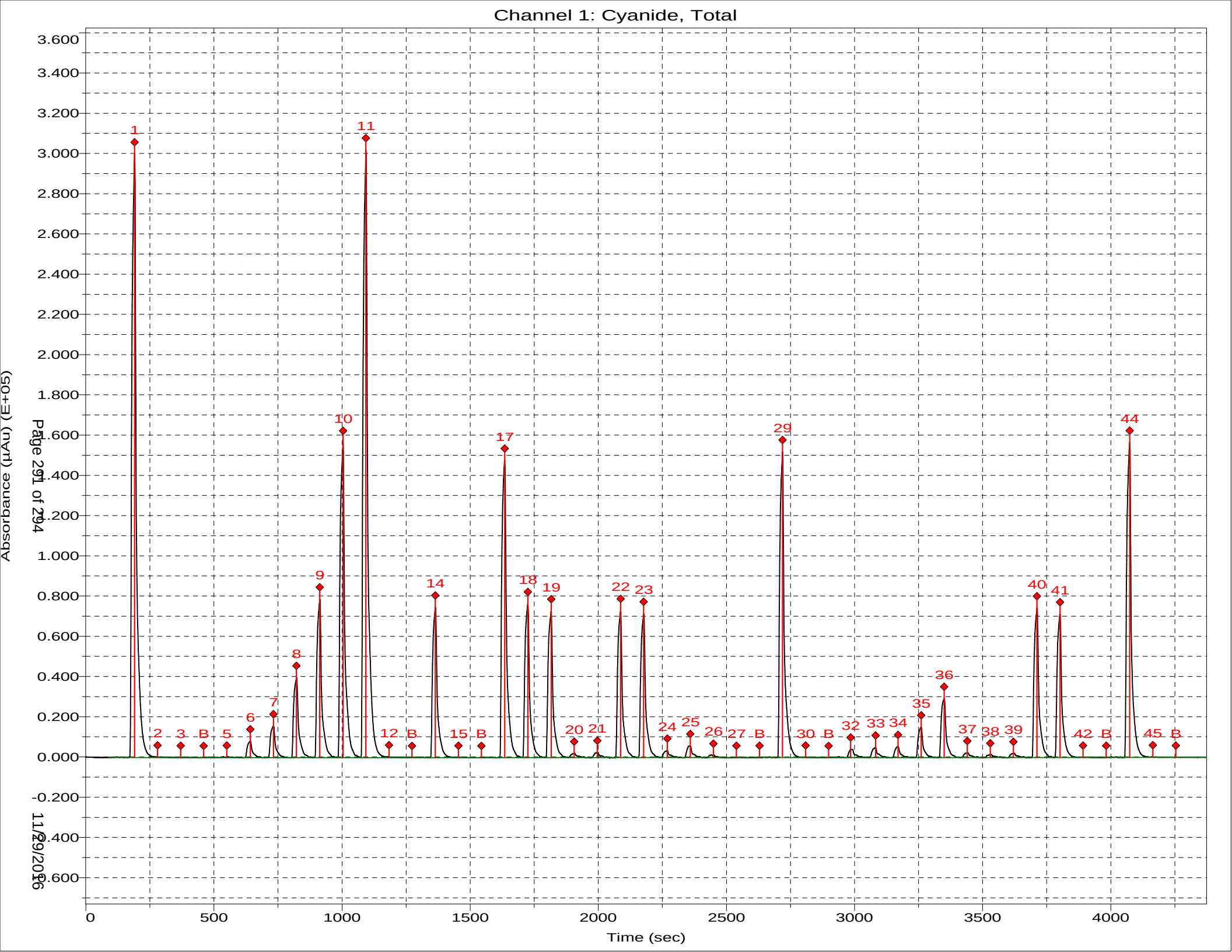
Calib Coef:
y=bx+a
a: (intercept) 1.6192e+03
b: 7.5643e+02

Corr Coef: 0.999832

Carryover: 0.0794%

No Drift Peaks


Cyanide, Total:Calibration 1: Peak 5-46
Height (E+05)
3.600
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
-0.200
-0.400
-0.600
0
100
200
300
400
Conc
Page 290 of 294
11/29/2016


Channel 1: Cyanide, Total
Absorbance (µAu) (E+05)
Time (sec)
3.600
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
-0.200
-0.400
-0.600
0
500
1000
1500
2000
2500
3000
3500
4000
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 32 33 34 35 36 37 38 39 40 41 42 B 44 45 B
Page 291 of 294
11/29/2016

Shipping and Receiving Documents

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

810481521959

Client Information	Sampler: Andy Opstnick	Lab PM: McEntee, Patrick J	Carrier Tracking No(s): 810481521960 810481521970	COC No: 280-58808-20624.1
Client Contact: Ms. Heather Miner	Phone: 440 6069 8504	E-Mail: patrick.mcentee@testamericainc.com		Page: Page:
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 - Suspected Mustard Agent Burial Site	Project #: 28014271			
Site: MBS	SSOW#:			

Analysis Requested

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:

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)	8330B_DOD5 - Explosives	Cyanide 9012B	Total Number of containers	Special Instructions/Note:
			Preservation Code				N	B		
MBS-006-110316-gw	11.03.16	1113	G	W			X	X	3	Inspected by PSL
MBS-004-110316-gw	11.03.16	1110	G	W			X	X	3	

280-90531 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:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	11/03/16 1730	ATL	Fed Ex	11/03/16 1730	
2	Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 11-4-16 0950	Company TAD
3	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: 0.7, 0.8, 2.3, 0.3 IRS Cf 0.0 transferred SAV 11-4-16

11/29/2016

Login Sample Receipt Checklist

Client: Cardno TEC, Inc

Job Number: 280-90531-1

Login Number: 90531
List Number: 1
Creator: Woodworth, Sean P

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.	False	TIMEs on containers do not match the COC. Logged in per COC.
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	