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ANALYSIS: EXPLOSIVES METHOD NO.: 8330A

ARDL Report(s) #: 006616 006617 MATRIX: SEAWEED (LIMU)

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	By:	Date:
Package Preparation	JAA	04/08/14
Analytical Review	[illegible]	4/17/14
Final Review	[illegible]	4/29/14
QA Review	[illegible]	4/29/14

Rev. 1.1

Organic Package Review Checklist

Rev. 1.1

ORGANIC PACKAGE REVIEW CHECKLIST

METHOD: 8330A

	Initial	Date
Case Narrative and/or Nonconformance Reports		
Case Narrative / Analyst Comment Sheets	JO	4/17/14
Nonconformance / Noncompliance Reports (if applicable)	NA	
Sample Receipt Information		
Copies of Original Chain-of-Custody Forms	JO	4/17/14
Cooler Receipt Form and Airbills		
Phone Messages (If applicable)		
Field Sample Results		
QC Summary Forms		
Surrogate Summary, if applicable	NA	
Spike Blank and/or MS Summary	JO	4/17/14
Blank Results & Blank Summary, if applicable		
ISTD Area Summary, if applicable	NA	
Sample Preparation Information (if applicable)		
Total Solids Determination (If applicable)	NA	
Extraction Log (If applicable)	JO	4/17/14
Extraction Notebook Pages (If applicable)		
Spiking Solutions Notebook Pages		
MS/MSD's		
Surrogate/ISTDs		
Spiking Solutions Certificates Of Analyses		
MS/MSD's		
Surrogates/ISTDs		
Certificates of Analysis (Vendor)		
Standard Preparation Information		
Instrument Logs/Analysis Notebook Pages	JO	4/17/14
Certificates of Analysis (Vendor)		
Analytical Run Number 1		
Calibration Information		
Tune Data		
Initial Calibration		
Continuing Calibration		
Instrument Logs/Analysis Notebook Pages		
Blank/Sample/Field QC Data		
Analytical Run Number 2 (if required)		
Calibration Information		
Tune Data		
Initial Calibration		
Continuing Calibration		
Instrument Logs/Analysis Notebook Pages		
Blank/Sample/Field QC Data		

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ORGANIC PACKAGE REVIEW CHECKLIST (Continued)

METHOD: 8330A

	Initial	Date
Analytical Run Number 3 (if required)		
Calibration Information	N/A	
Tune Data		
Initial Calibration		
Continuing Calibration		
Instrument Logs/Analysis Notebook Pages		
Blank/Sample/Field QC Data		
Analytical Run Number 4 (if required)		
Calibration Information		
Tune Data		
Initial Calibration		
Continuing Calibration		
Instrument Logs/Analysis Notebook Pages		
Blank/Sample/Field QC Data		
Analytical Run Number 5 (if required)		
Calibration Information		
Tune Data		
Initial Calibration		
Continuing Calibration		
Instrument Logs/Analysis Notebook Pages		
Blank/Sample/Field QC Data		
Analytical Run Number 6 (if required)		
Calibration Information		
Tune Data		
Initial Calibration		
Continuing Calibration		
Instrument Logs/Analysis Notebook Pages		
Blank/Sample/Field QC Data		
Example Calculation		
Example Calculation Sheet	JO	4/17/14
Miscellaneous Additional Data (if applicable)	NA	

NA = Not Applicable

I have checked this package for completeness and verify the following:

1. Pencils, whiteout, whiteout tape, and dark highlighters were not used. ✓
2. All notebook pages are signed. ✓
3. All corrections contain the original data "struck through" with initials and date. ✓
4. All comments found throughout the data are defined as required. ✓
5. All pages are legible. ✓
6. Manual integrations, if applicable, are printed out and include an explanation with signature of the analyst and date. ✓

Package Completeness Checked By/Date: JO 4/17/14

Rev. 1.1

Case Narrative and/or Nonconformance Reports

Rev. 1.1

ORGANIC ANALYSIS CASE NARRATIVE

Corps of Engineers – ERDC, Vicksburg **Date: 04/08/14**

ARDL Report No.: 6616, 6617 **Lab Name: ARDL, Inc.**

Project Name: MAKAU MILITARY RESERVATION OAHU (LIMU)

Samples Received at ARDL: 03/14/2014

Lab ID No.	Sample ID No.	Date Collected	Date Extracted	Analysis Requested
006616-01	MAK120L	01/31/2014	03/24/2014	Explosives
006616-02	MAK121L	01/31/2014	03/24/2014	Explosives
006616-03	MAK122L	01/31/2014	03/24/2014	Explosives
006616-04	MAK123L	01/31/2014	03/24/2014	Explosives
006616-05	MAK124L	01/31/2014	03/24/2014	Explosives
006616-06	MAK126L	01/31/2014	03/24/2014	Explosives
006616-07	MAK127L	02/11/2014	03/24/2014	Explosives
006616-08	MAK128L	02/11/2014	03/24/2014	Explosives
006617-01	MAK116L	01/31/2014	04/01/2014	Explosives
006617-02	MAK117L	01/31/2014	04/01/2014	Explosives
006617-03	MAK118L	01/31/2014	04/01/2014	Explosives

EXPLOSIVES FRACTION – METHOD 8330A

Eleven (11) tissue (LIMU) samples were received by ARDL, Inc. on March 14, 2014, for 8330A analysis.

This project required analysis for only three target analytes (2,4-Dinitrotoluene, RDX and Nitroglycerine). HPLC analysis for Nitroglycerine required a modification in the standard method UV wavelength of 254 nm. to 205 nm. The samples were not dried prior to extraction. The HPLC analyses of the subject sample extracts all exhibited a large chromatographic interferent peak close to the retention time of the analyte, 2,4-Dinitrotoluene. This also masked the resolution of 2,4-DNT in the batch matrix spike/matrix spike duplicate analyses. Consequently, only RDX and Nitroglycerine are reported herein.

INITIAL CALIBRATION

The initial calibration was performed using five calibration points and passed method criteria.

CONTINUING CALIBRATIONS

Continuing calibration was performed after the analysis of 10 samples or less. All calibration criteria were met.

SURROGATE

All samples passed surrogate recovery criteria.

INTERNAL STANDARD

Not applicable.

LCS

The LCS analyses met the recovery limits.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

The MS/MSD analysis was performed on sample MAK123L and met recovery criteria for RDX and nitroglycerine only. (See discussion above).

ORGANIC ANALYSIS CASE NARRATIVE

Corps of Engineers – ERDC, Vicksburg **Date: 04/08/14**

ARDL Report No.: 6616, 6617 **Lab Name: ARDL, Inc.**

Project Name: MAKAU MILITARY RESERVATION OAHU (LIMU)

Samples Received at ARDL: 03/14/2014

METHOD BLANKS

No target analytes were detected in the method blanks above the reporting limit.

ORGANIC DATA REPORTING QUALIFIERS

The following organic data reporting qualifiers are used as required.

ND- Indicates compound was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.

J - Indicates an estimated value. This flag is used when estimating a concentration of a compound that meets identification criteria but the result is less than the quantitation or reporting limit but greater than the method detection limit.

P - This flag is used for any two column confirmation methodology when there is greater than 40% difference for detected concentrations between the two columns. The primary column value is reported on the Form 1 and flagged with a "P".

B - This flag is used when the analyte is found above the reporting limit in the blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Release of the data contained in this package has been authorized by the Technical Services Manager or his designee as verified by the following signature.

Dean S. Dickerson
Technical Services Manager

Sample Receipt Information

Rev. 1.1

ARDL, Inc

P.O. Box 1566, 400 Aviation Drive, Mount Vernon, Illinois 62864
Phone (618) 244-3235, Fax (618) 244-1149

CHAIN OF CUSTODY RECORD

Project
ARDL / Makau Military Reservation Oahu, Hawaii Project

SAMPLERS (Signature)

SAMPLE NUMBER	DATE	TIME	Comp	Grab	# of Containers	Purgeable Organics 8260B	Explosives 8330	OCPs 8081	SVCOs 8270C									ARDL, Inc Remarks or Sample Location	PRESERVATION ICED	PRESERVATION Specify Chemicals added and final pH if known
MAK111C	1/31/2014	1000		x	1	x	x	x	x									Mokuleia Site - Sea Cucumber	x	
MAK113C	1/31/2014	1120		x	1	x	x	x	x									Mokuleia Site - Sea Cucumber	x	
MAK114C	1/31/2014	1155		x	1	x	x	x	x									Mokuleia Site - Sea Cucumber	x	
MAK115C	1/31/2014	1300		x	1	x	x	x	x									Mokuleia Site - Sea Cucumber	x	
MAK116C	1/31/2014	1330		x	1	x	x	x	x									Mokuleia Site - Sea Cucumber	x	
MAK117C	1/31/2014	1435		x	1	x	x	x	x									Mokuleia Site - Sea Cucumber	x	
MAK118C	1/31/2014	1605		x	1	x	x	x	x									Mokuleia Site - Sea Cucumber	x	
MAK120C	2/11/2014	1030		x	1	x	x	x	x									Mokuleia Site - Sea Cucumber	x	
MAK120L	1/31/2014	1040		x	1	x	x	x	x									Mokuleia Site - Limu	x	
MAK121L	1/31/2014	1130		x	1	x	x	x	x									Mokuleia Site - Limu	x	
MAK122L	1/31/2014	1405		x	1	x	x	x	x									Mokuleia Site - Limu	x	
MAK123L	1/31/2014	1455		x	1	x	x	x	x									Mokuleia Site - Limu	x	
MAK124L	1/31/2014	1540		x	1	x	x	x	x									Mokuleia Site - Limu	x	
MAK126L	1/31/2014	1615		x	1	x	x	x	x									Mokuleia Site - Limu	x	
MAK127L	2/11/2014	1304		x	1	x	x	x	x									Mokuleia Site - Limu	x	
MAK128L	2/11/2014	1415		x	1	x	x	x	x									Mokuleia Site - Limu	x	
MAK116L	1/31/2014	820		x	1	x	x	x	x									Maena Point Site - Limu	x	
MAK117L	1/31/2014	835		x	1	x	x	x	x									Maena Point Site - Limu	x	
MAK118L	1/31/2014	910		x	1	x	x	x	x									Maena Point Site - Limu	x	

Relinquished by: (Signature)	Date 3/13/14	Time 1600	Relinquished by: (Signature)	REMARKS / SPECIAL INSTRUCTIONS:
Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Project Samples. Please treat each matrix separately.
Received for Laboratory by: (Signature)	Date 3/14/14	Time 0915	Shipping Ticket No.	Please send level 4 hardcopy report and excel edd to: Dean Dickerson, c/o ARDL, Inc. 400 Aviation Drive, Mount Vernon, IL 62864. Email questons to ddickerson@ardlinc.com.

COOLER RECEIPT REPORT
ARDL, INC.

ARDL #: 6615-6617

Cooler # 660
Number of Coolers in Shipment: 1

Project: MAKAU MILITARY RESERVATION OAHU

Date Received: 3-14-14

A. **PRELIMINARY EXAMINATION PHASE:** Date cooler was opened: 3-14-14 (Signature) D S Cochrum

1. Did cooler come with a shipping slip (airbill, etc.)? ..... (YES) NO

   If YES, enter carrier name and airbill number here: Fed-ex 9325 1888 1273

2. Were custody seals on outside of cooler? ..... YES NO N/A

   How many and where? 1 (front), Seal Date: 3-13-14, Seal Name: ? Can't read

3. Were custody seals unbroken and intact at the date and time of arrival? ..... (YES) NO
4. Did you screen samples for radioactivity using a Geiger Counter? ..... (YES) NO
5. Were custody papers sealed in a plastic bag ~~and taped inside to the lid~~? dlc 3/14/14 ..... (YES) NO
6. Were custody papers filled out properly (ink, signed, etc.)? ..... (YES) NO N/A
7. Were custody papers signed in appropriate place by ARDL personnel? ..... (YES) NO N/A
8. Was project identifiable from custody papers? If YES, enter project name at the top of this form ..... (YES) NO N/A
9. Was a separate container provided for measuring temperature? YES____ NO ✓ Cooler Temp. 1.4 C

B. **LOG-IN PHASE:** Date samples were logged-in: 3-14-14 (Signature) D S Cochrum

10. Describe type of packing in cooler: bubble pack / bubble bags
11. Were all bottles sealed in separate plastic bags? Not sealed ..... YES NO N/A
12. Did all bottles arrive unbroken and were labels in good condition? ..... YES (NO)
13. Were bottle labels complete? ..... (YES) NO
14. Did all bottle labels agree with custody papers? ..... (YES) NO
15. Were correct containers used for the tests indicated? ..... (YES) NO
16. Was pH correct on preserved water samples? ..... YES NO (N/A)
17. Was a sufficient amount of sample sent for tests indicated? ..... (YES) NO
18. Were bubbles absent in VOA samples? If NO, list by sample #: _____ YES NO (N/A)
19. Was the ARDL project coordinator notified of any deficiencies? ..... (YES) NO N/A

Comments and/or Corrective Action:
12) MAK 114C - lid leaken / seal intact
MAK 137L - lid leaken / seal not intact.
MAK 116L - lid leaken / seal intact
MAK 117C - lid leaken / seal intact
MAK 122L - lid leaken / seal intact
(By: Signature) dlc Date: 3-14-14

Sample Transfer	
Fraction: All	Fraction:
Area #: freezer	Area #:
By: dlc	By:
On: 3-14-14	On:

M:\ADMIN\FORMS\COOLER RECEIPT REPORT.doc Rev. 05/07/07

ORIGIN ID:GRBA (920) 469-2436
SHIPPING
PACE ANALYTICAL
1241 BELLEVUE

GREEN BAY, WI 54302
UNITED STATES US

SHIP DATE: 13MAR14
ACTWGT: 42.0 LB MAN
CAD: 255289/CAFE2704

DRY ICE: 2.3 KGS
BILL THIRD PARTY

TO DONNA COCKRUM
ARDL
400 AVIATION DRIVE
P.O BOX 1566
MOUNT VERNON IL 62864
(618) 244-3235 REF:
INV:
PO: DEPT:

518C1/CC4F/6F03

FedEx Express

J131130523012 6

FRI - 14 MAR AA
STANDARD OVERNIGHT

TRK# 0201 9325 1888 1273

ICE

NA MVNA

62864
IL-US STL

Part # 156148-434 R1T2 03/12

Field Sample Results

Rev. 1.1

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006616 Report Date: 04/01/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK120L	ARDL Lab No.:	006616-01
Desc/Location:	MAKAU MILITARY RES OAHU	Lab Filename:	
Sample Date:	01/31/2014	Received Date:	03/14/2014
Sample Time:	1040	Prep. Date:	03/24/2014
Matrix:	TISSUE	Analysis Date:	03/25/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10173
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	86%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006616-01, 8330, EXPLOSIVES

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006616 Report Date: 04/01/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK121L	ARDL Lab No.:	006616-02
Desc/Location:	MAKAU MILITARY RES OAHU	Lab Filename:	
Sample Date:	01/31/2014	Received Date:	03/14/2014
Sample Time:	1130	Prep. Date:	03/24/2014
Matrix:	TISSUE	Analysis Date:	03/25/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10173
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	82%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006616-02, 8330, EXPLOSIVES

Page 1 of 1

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006616 Report Date: 04/01/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK122L	ARDL Lab No.:	006616-03
Desc/Location:	MAKAU MILITARY RES OAHU	Lab Filename:	
Sample Date:	01/31/2014	Received Date:	03/14/2014
Sample Time:	1405	Prep. Date:	03/24/2014
Matrix:	TISSUE	Analysis Date:	03/25/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10173
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	84%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006616-03, 8330, EXPLOSIVES

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006616 Report Date: 04/01/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK123L	ARDL Lab No.:	006616-04
Desc/Location:	MAKAU MILITARY RES OAHU	Lab Filename:	
Sample Date:	01/31/2014	Received Date:	03/14/2014
Sample Time:	1455	Prep. Date:	03/24/2014
Matrix:	TISSUE	Analysis Date:	03/25/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10173
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	85%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006616-04, 8330, EXPLOSIVES

Page 1 of 1

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006616 Report Date: 04/01/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK124L	ARDL Lab No.:	006616-05
Desc/Location:	MAKAU MILITARY RES OAHU	Lab Filename:	
Sample Date:	01/31/2014	Received Date:	03/14/2014
Sample Time:	1540	Prep. Date:	03/24/2014
Matrix:	TISSUE	Analysis Date:	03/25/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10173
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	88%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006616-05, 8330, EXPLOSIVES

Page 1 of 1

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006616 Report Date: 04/01/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK126L	ARDL Lab No.:	006616-06
Desc/Location:	MAKAU MILITARY RES OAHU	Lab Filename:	
Sample Date:	01/31/2014	Received Date:	03/14/2014
Sample Time:	1615	Prep. Date:	03/24/2014
Matrix:	TISSUE	Analysis Date:	03/25/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10173
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	89%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006616-06, 8330, EXPLOSIVES

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006616 Report Date: 04/01/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK127L	ARDL Lab No.:	006616-07
Desc/Location:	MAKAU MILITARY RES OAHU	Lab Filename:	
Sample Date:	02/11/2014	Received Date:	03/14/2014
Sample Time:	1304	Prep. Date:	03/24/2014
Matrix:	TISSUE	Analysis Date:	03/25/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10173
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	77%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006616-07, 8330, EXPLOSIVES Page 1 of 1

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006616 Report Date: 04/01/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK128L	ARDL Lab No.:	006616-08
Desc/Location:	MAKAU MILITARY RES OAHU	Lab Filename:	
Sample Date:	02/11/2014	Received Date:	03/14/2014
Sample Time:	1415	Prep. Date:	03/24/2014
Matrix:	TISSUE	Analysis Date:	03/25/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10173
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	76%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006616-08, 8330, EXPLOSIVES

Page 1 of 1

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006617 Report Date: 04/08/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK116L	ARDL Lab No.:	006617-01
Desc/Location:	MAKAU MILITARY RES OAHU	Lab Filename:	
Sample Date:	01/31/2014	Received Date:	03/14/2014
Sample Time:	0820	Prep. Date:	04/01/2014
Matrix:	TISSUE	Analysis Date:	04/03/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B6706
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	113%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006617-01, 8330, EXPLOSIVES

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006617 Report Date: 04/08/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK117L	ARDL Lab No.:	006617-02
Desc/Location:	MAKAU MILITARY RES OAHU	Lab Filename:	
Sample Date:	01/31/2014	Received Date:	03/14/2014
Sample Time:	0835	Prep. Date:	04/01/2014
Matrix:	TISSUE	Analysis Date:	04/03/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B6706
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	107%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006617-02, 8330, EXPLOSIVES Page 1 of 1

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006617 Report Date: 04/08/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK118L	ARDL Lab No.:	006617-03
Desc/Location:	MAKAU MILITARY RES OAHU	Lab Filename:	
Sample Date:	01/31/2014	Received Date:	03/14/2014
Sample Time:	0910	Prep. Date:	04/01/2014
Matrix:	TISSUE	Analysis Date:	04/03/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B6706
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	105%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006617-03, 8330, EXPLOSIVES

Page 1 of 1

QC Summary Forms

Surrogate Summary, if applicable

Spike Blank and/or MS Summary

Blank Results & Blank Summary, if applicable

ISTD Area Summary, if applicable

Rev. 1.1

BLANK SPIKE/SPIKE DUPLICATE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 006613 Report Date: 04/01/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES Analytical Method: 8330
Project No.: Prep Method: METHOD

Matrix: QC Material QC Batch: B10173 Prep. Date: 03/24/2014
Amount Used: 2 g Level: LOW Analysis Date: 03/25/2014

Parameter	Spike Result	Spike Level	Spike % Rec	Duplicate Result	Duplicate Level	Duplicate % Rec	Recovery Limits	RPD	RPD Limit
Hexahydro-trinitro-triazine (RDX)	3750	4000	94	--	--	--	44-123	--	--
Nitroglycerine	4100	4000	103	--	--	--	50-150	--	--

SURROGATE RECOVERIES:	Spike %R	Duplicate %R	%R Limits
1,4-Dinitrobenzene	95	--	50-150

'*' indicates a recovery outside of standard limits.

Spike Blanks for 006613-01, 8330, EXPLOSIVES

MATRIX SPIKE/SPIKE DUPLICATE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 006616 Report Date: 04/01/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES Analytical Method: 8330
Project No.: Prep Method: METHOD

Field ID:	MAK123L	Prep. Date:	03/24/2014	ARDL Lab No.:	006616-04
Desc/Location:	MAKAU MILITARY RES OAHU	Amount Used:	2 g	Lab Filename:	
Sample Date:	01/31/2014	% Moisture:	No Moisture Present	Received Date:	03/14/2014
Sample Time:	1455	QC Batch:	B10173	Analysis Date:	03/25/2014
Matrix:	TISSUE	Level:	LOW		

Parameter	Sample Result	MS Result	MS Level	MS % Rec	MSD Result	MSD Level	MSD % Rec	% Rec Limits	RPD	RPD Limit
Hexahydro-trinitro-triazine (RDX)	ND	3630	4000	90.8	3900	4000	97.5	63-133	7.1	25
Nitroglycerine	ND	3530	4000	88.3	3360	4000	84	50-150	5	25

SURROGATE RECOVERIES:	MS %R	MSD %R	%R Limits
1,4-Dinitrobenzene	86	84	50-150

'nc' indicates sample >4X spike level.

'*' indicates a recovery outside of standard limits.

Matrix Spikes for 006616-04, 8330, EXPLOSIVES

BLANK SPIKE/SPIKE DUPLICATE REPORT

ARDL, INC. 400 Aviation Drive; P.O. Box 1566 Mt. Vernon, IL 62864

Lab Report No: 006617 Report Date: 04/08/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES Analytical Method: 8330
Project No.: Prep Method: METHOD

Matrix: QC Material QC Batch: B6706 Prep. Date: 04/01/2014
Amount Used: 2 g Level: LOW Analysis Date: 04/03/2014

Parameter	Spike Result	Spike Level	Spike % Rec	Duplicate Result	Duplicate Level	Duplicate % Rec	Recovery Limits	RPD	RPD Limit
Hexahydro-trinitro-triazine (RDX)	4060	4000	101	--	--	--	44-123	--	--
Nitroglycerine	4200	4000	105	--	--	--	50-150	--	--

SURROGATE RECOVERIES:	Spike %R	Duplicate %R	%R Limits
1,4-Dinitrobenzene	93.1	--	50-150

'*' indicates a recovery outside of standard limits.

Spike Blanks for 006617-01, 8330, EXPLOSIVES

METHOD BLANK REPORT
ARDL, Inc. 400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006613 Report Date: 04/01/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	NA	ARDL Lab No.:	006613-01B1
Desc/Location:	NA	Lab Filename:	
Sample Date:	NA	Received Date:	NA
Sample Time:	NA	Prep. Date:	03/24/2014
Matrix:	QC Material	Analysis Date:	03/25/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10173
% Moisture:	NA	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG
Nitroglycerine	300	500	ND		UG/KG

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	102%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Blank for Run B10173, 8330, EXPLOSIVES

Page 1 of 1

METHOD BLANK REPORT
ARDL, Inc. 400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006617 Report Date: 04/08/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	NA	ARDL Lab No.:	006617-01B1
Desc/Location:	NA	Lab Filename:	
Sample Date:	NA	Received Date:	NA
Sample Time:	NA	Prep. Date:	04/01/2014
Matrix:	QC Material	Analysis Date:	04/03/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B6706
% Moisture:	NA	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG
Nitroglycerine	300	500	ND		UG/KG

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	97%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Blank for Run B6706, 8330, EXPLOSIVES

Sample Preparation Information

(Not Applicable for VOA Purge and Trap Method)

Rev. 1.1

SW 846
8330 EXPLOSIVES
TISSUES

DATE : 03 / 24 / 2014 **BATCH # B10173**

CUST: Makau Military Reservation Oahu **ARDL # 6613, 6616**

SAMPLES: BLK; SP BLK; 6613-1 thru 8; 6616-1 thru 8 3 Limu
QC SAMPLE: 6613-1ms/msd; 6616-4ms/msd

SOLVENT USED: ACETONITRILE_# 091099
REAGENT USED: CALCIUM CHLORIDE SOL'N # 1217

SURROGATE # 1008174 CONC 16 PPM __X__ AMOUNT 500 uL __X__
SPIKE # 1008171 CONC 16 PPM __X__ AMOUNT 500 uL __X__

EXTRACTION METHOD: SONICATION_____X____SEP. FUNNEL _____ DILUTION_____

FINAL VOLUME 10 mL

EXTRACTION PERSONNEL SMN, JAD

SPIKER: SMN **WITNESS: JAD**

SAMPLE #	WEIGHT / g	Vf	DIL		SAMPLE #	WEIGHT / g	Vf	DIL
BLK	2.00 g	10 mL	2X		6616-3	2.00 g	10 mL	2X
SP BLK	"	"	"		6616-4	"	"	"
6613-1	"	"	"		6616-4ms	"	"	"
6613-1ms	"	"	"		6616-4msd	"	"	"
6613-1msd	"	"	"		6616-5	"	"	"
6613-2	"	"	"		6616-6	"	"	"
6613-3	"	"	"		6616-7	"	"	"
6613-4	"	"	"		6616-8	"	"	"
6613-5	"	"	"					
6613-6	"	"	"					
6613-7	"	"	"					
6613-8	"	"	"					
6616-1	"	"	"					
6616-2	"	"	"					

RECEIVED BY: JP
DATE: 3/25/14

DELIVERED BY: SMN
DATE: 3/25/14

B10173 8330 - Explosives - Tissues

Sample I.D.	Wt	Vf	Dil.	Date ON:	Time ON:
BlK	2.00g	10mL	2X	3/24/14	14:00
SpBlK	2.00g	10mL	2X		
6613-1(A)	2.00g	10mL	2X	Date OFF:	Time OFF:
-1ms(A)	2.00g	10mL	2X		
-1msD(A)	2.00g	10mL	2X	3/25/14	08:00
-2	2.00g	10mL	2X		
-3	2.00g	10mL	2X		
-4	2.00g	10mL	2X		
-5	2.00g	10mL	2X		
-6	2.00g	10mL	2X		
-7	2.00g	10mL	2X		
-8	2.00g	10mL	2X		
6616-1	2.00g	10mL	2X		
-2	2.00g	10mL	2X		
-3	2.00g	10mL	2X		
-4(A)	2.00g	10mL	2X		
-4ms(A)	2.00g	10mL	2X		
-4msD(A)	2.00g	10mL	2X		
-5	2.00g	10mL	2X		
-6	2.00g	10mL	2X		
-7	2.00g	10mL	2X		
-8	2.00g	10mL	2X		

All samples contain 500µl of surrogate # 1008174 (16ppm).

SpBlK, MSs, MSDs contain 500µl of spike # 1008171 (16ppm).

Solvent Used: Acetonitrile # 091099.
Reagent Used: $CaCl_2$ sol'n # 1217.

Spiker SMN Witness SMN

Continued on Page

Read and Understood By

Steve Newcomb — Signed — 3/24/14 — Date

SMN 3/24/14 — Signed — 3/24/14 — Date

SW 846
8330 EXPLOSIVES
TISSUES

DATE : 04 / 01 / 2014 **BATCH # B10181**

CUST: Makau Military Reservation Oahu **ARDL # 6617**

SAMPLES: BLK; SP BLK; 6617-1 thru 3
QC SAMPLE: 6616-4ms/msd from batch # B10173

SOLVENT USED: ACETONITRILE_# 091099
REAGENT USED: CALCIUM CHLORIDE SOL'N # 1217

SURROGATE # 1008191 CONC 16 PPM __X__ AMOUNT 500 uL __X__
SPIKE # 1008171 CONC 16 PPM __X__ AMOUNT 500 uL __X__

EXTRACTION METHOD: SONICATION_____X____SEP. FUNNEL _____ DILUTION_____

FINAL VOLUME 10 mL

EXTRACTION PERSONNEL SMN, JAD, JWM

SPIKER: SMN **WITNESS: JWM**

SAMPLE #	WEIGHT / g	Vf	DIL		SAMPLE #	WEIGHT / g	Vf	DIL
BLK	2.00 g	10 mL	2X					
SP BLK	"	"	"					
6617-1	"	"	"					
6617-2	"	"	"					
6617-3	"	"	"					

RECEIVED BY: _____ **DELIVERED BY:** SMN

DATE: 4/2/14 DATE: 4/2/14

B10181 8330 – Explosives – Tissues

Sample I.D.	W_I	V_f	Dil.	Date ON:	Time ON:
BLK	2.00g	10mL	2X	4/1/14	13:00
SpBLK *	2.00g	10mL	2X		
6617-1	2.00g	10mL	2X	Date OFF:	Time OFF:
L -2	2.00g	10mL	2X		
L -3	2.00g	10mL	2X	4/2/14	07:00

All samples contain 500µl of surrogate # ~~1008174~~ 1008191 (16ppm). SMN 4/1/14

SpBLK contains 500µl of spike # 1008171 (16ppm).

* MS/MSD on sample # 6616-4 from batch # B10173.

Solvent Used: Acetonitrile # 091099.

Reagent Used: $CaCl_2$ sol'n # 1217.

Spiker SMN Witness JWM

Continued on Page

Read and Understood By

Steve Newcomb 4/1/14 Signed Date

JWM 4/1/14 4/1/14 Signed Date

PROJECT

Continued From Page

1008168 Pest Eval

0.100 mL of 1007980 (1 ppm / 2 ppm) Std exp 06/13/14
0.900 mL Hexane
1.0 mL of 0.1 / 0.2 ppm mix
JO 3/19/14 exp 5/19/14

1008169-AB Simazine Stock

Part #: 70263
Lot #: 081513
Laboratory Use Only - See MSDS
Exp: 081516 Storage 20 °C
Simazine
CAUTION: Sonicate Before Use
1000 ug/mL in acetone
1 mL
ABSOLUTE STANDARDS, INC. • 800-368-1131
Recd 3-19-14
open 3-19-14
JO

1008170 NPD-Spike (PLCD Special)

50 µL Atrazine 1007851 (1000 ppm) exp 07/2017
50 µL Metolachlor 1007855 (1000 ppm) exp 06/2017
50 µL Simazine - 1008169-AB (1000) exp 08/2016
Acetone
5.0 mL of 10 µg/mL
JO 3/19/14 exp 6/19/14

1008171 Hawaii EXPLO Spike (RDX, 2,4 DNT + NG)

0.160 mL of 1008172 (1,000 ppm) RESTK exp 05/2018
0.160 mL 1008173 " " 04/2018
0.160 mL 1008028 NG 1,000 05/2015
QS Acetonitrile
10.0 mL Vol of 16.0 µg/mL each
JO 3/20/14 exp 9/20/14

Continued on Page

Read and Understood By

JO 3/20/14 BR 3-26-14

Signed Date Signed Date

1008172 RDX Stock

RESTEK
Catalog# 31666
RDX Standard
110 Benner Circle
Bellefonte, PA 16823
Made in USA
1000 ug/mL each in Acetonitrile
Lot# A098101 Exp. Date: 05/2018 Store: 10°C or colder

Recd 3.18.14 opend 3/20/14 GD

1008173 2,4-DNT Stock

RESTEK
Catalog# 31663
2,4-Dinitrotoluene Standard
110 Benner Circle
Bellefonte, PA 16823
Made in USA
1000 ug/mL each in Acetonitrile
Lot# A097698 Exp. Date: 04/2018 Store: 10°C or colder

Recd 3.17.14 opend 3/20/14 GD

1008174 EXPLO 5 - Surrogate

0.400 mL of 1008045 (1,000 ppm) 1,4 DNB Xp 04/2015
QS ACN
25.0 mL of 16.0 µg/mL
GD 3/20/14 xp 9/20/14

1008175-4 ocPest Calib Stds.

				Final Conc
125 µL of	1008155-4	(10 µg/mL)	exp 5/31/14 VF 5mL Hexane	= 0.250 ppm
75 µL	"	"	VF 5.0 mL	= 0.150
50 µL	"	"	"	= 0.100
200 µL of	1008175	(0.250)	VF - 1.0 mL	= 0.050
100 µL	"		VF - 1.0 mL	= 0.025
100 µL of	1008175	(0.100)	VF - 1.0 mL	= 0.010
50 µL of	1008175	(0.100)	VF - 1.0 mL	= 0.005

Hexane (JTB 4350) GD 3/20/14 exp. 5/31/14

Continued on Page

Read and Understood By

Signed	Date	Signed	Date
GD	3/20/14	PR	3-26-14

1008024 OSP Cal Stds

STOCK 1007843 10-40 ppm OSP exp 02/14/14

10-40 ug/ml x 0.5/5 ml MeCl (Baker 4556-4) = 1.0 ppm OSP
x 0.4 = 0.8
x 0.3 = 0.6
x 0.2 = 0.4
x 0.1 = 0.2

exp 02/14/14 LDT 10/17/13

1008025 EXPLOS SPIKE (HI Tissues)

0.800 mL 2,4 DNT #1008026 – 100 µg/mL
0.800 mL RDX #1008027 – 100 µg/mL
0.080 mL Nitroglycerine #1008028 – 1,000 µg/mL
} AccuStd
Acetonitrile Fisher Lot 091099
10.0 mL of 8.0 µg/mL each GD 10/21/13 exp 4/21/14

2,4-DNT STOCK

1008026 –

AccuStandard® 125 Market St. • New Haven, CT 06513 • USA
Tel. 203-786-5290 • www.accustandard.com
M-8330-02-0.1X 1 mL
2,4-Dinitrotoluene
100 µg/mL in MeOH:AcCN (1:1)
Lot: 211031352
Exp. Mar 28, 2021
HIGHLY FLAMMABLE
Opened 10/21/13 GD
FOR LABORATORY USE ONLY.
WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.
STORAGE Refrig (0-5° C)
2 Danger

1008027 RDX Stock

AccuStandard® 125 Market St. • New Haven, CT 0
Tel. 203-786-5290 • www.accusta
M-8330-05-0.1X
RDX
100 µg/mL in MeOH:AcCN (1:1)
Lot: 211111333-01
Exp. Jun 18, 2015
HIGHLY FLAMMABLE
Oped 10/21/13 GD 10/21/13

NG – Stock

1008028 –

AccuStandard® 125 Market St. • New Haven, CT 06513 • US
Tel. 203-786-5290 • www.accustandard.co
M-8330-ADD-1-10X 1 mL
Nitroglycerin
1000 µg/mL in EtOH:MeOH (97:3)
Lot: 213031341
Exp. May 9, 2015
HIGHLY FLAMMABLE
Oped 10/21/13 GD

Continued on Page

Read and Understood By

Signed	Date	Signed	Date
GD	10/21/13	GD	10/28/13
			11/12/13

PROJECT

Continued From Page

1008042 HI ICAL STDS

To 5 mL

C Blank	0 mls of 1008041	Diluent	Final µg/L
50	0.025	5.0 mL	50
100	0.050		100
200	0.100		200
400	0.200		400
800	0.400 mls	5.0	800
1,000	Not made		

JD 10/24/13 exp 10/25/13

1008043 HI EXPLOS (ICV)

250µL of 8.0 ppm # 1008025 (8.0 µg/mL) exp 4/24/14
QS Diluent 1007782
5.0 mL of 400 µg/L

JD 10/24/13 exp 10/25/13

1008044-4 Pest Cal Stds
1007982-4 0.25 ppm exp 12/12/13

0.25 ug/ml x 0.5 ml / 1.0 ml Hex (Baker 14961) = 0.125 ppm
0.25 ug/ml x 0.1 ml / 2 = 0.025 ppm
exp 12/12/13 AS 10/24/13

1,4 DNB (8330 Surr) Stock

1008045-A6

Part #: 70912 Laboratory Use Only - See MSDS
Lot #: 042910 Exp: 042915 Storage 4 °C
1,4-Dinitrobenzene
1000 ug/mL in methanol 1 mL
ABSOLUTE STANDARDS, INC. • 800-368-1131

Opened 11/1/13
Recd 11/15/13

Continued on Page

Read and Understood By

Signed	Date	Signed	Date
JD	11/1/13	BR	11-12-13

Absolute St ards, Inc.
800-368-1131
www.absolutestandards.com

ISO 9 S Registered
ISO 25 Accredited

CERTIFIED WEIGHT REPORT

Lot #

Part Number: 70912
Lot Number: 042910
Description: 1,4-Dinitrobenzene

Solvent(s): 49162 Methanol

Expiration Date: 042915

Storage: 4 °C

Nominal Concentration (µg/mL): 1000

5E-05 Balance Uncertainty

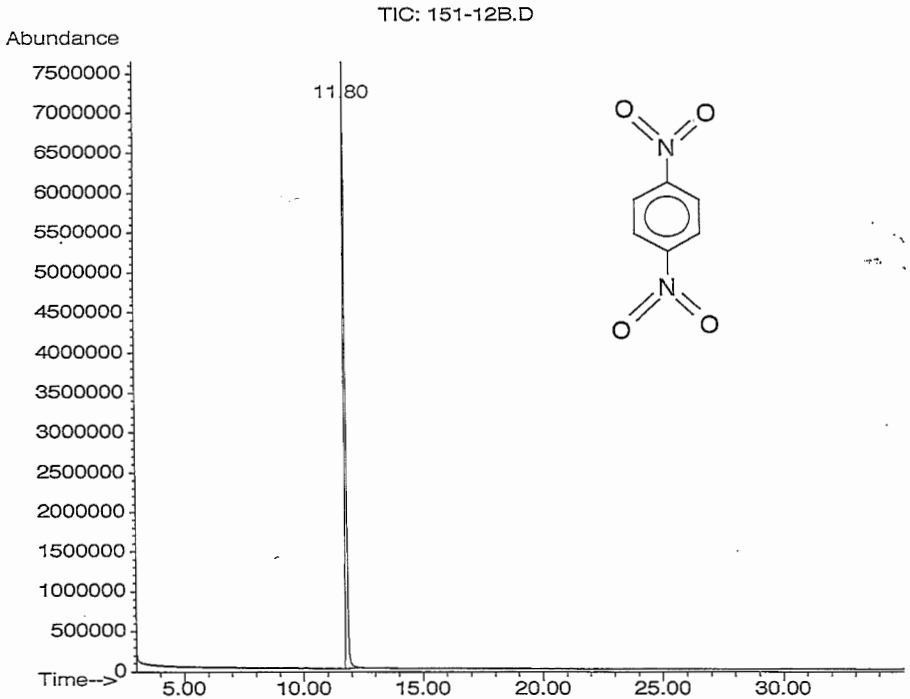
Weight(s) shown below were combined and diluted to: 100.0 0.012 Flask Uncertainty

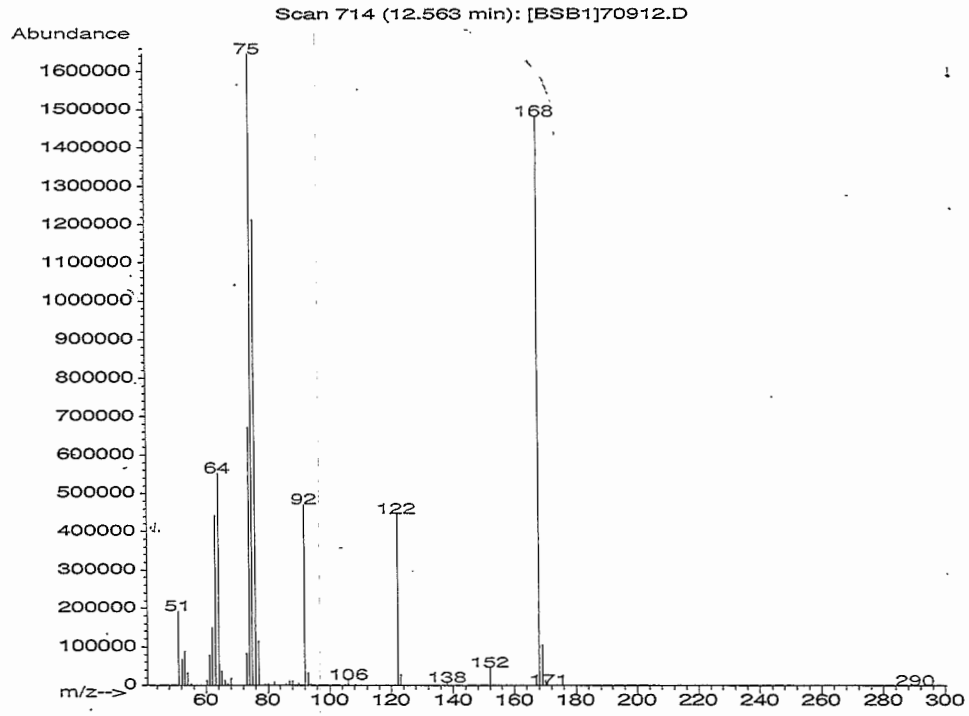
Formulated By:	Justin Dippold	042910 DATE
Reviewed By:	Pedro L. Rentas	042910 DATE

MSDS Information
(Solvent Safety Info. On Attached pg.)

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight (g)	Actual Weight (g)	Actual Conc(µg/mL)	Expanded Uncertainty	CAS#	OSHA PEL (TWA)	LD50
1. 1,4-Dinitrobenzene	912	04003AM	1000	98	0.2	0.10208	0.10245	1003.6	0.00420	00100-25-4	1mg/m3/8H (skin)	N/A

Method GC8MSD-3.M: Column: SPB-5 (30m X 0.25mm ID X 0.25µm film thickness), Temp 1 = 50°C (1min.), Temp 2 = 300°C (9 min.), Rate = 10°C/min., Injector B= 200°C, Detector B = 300°C. Analysis performed by Nicole Davis.





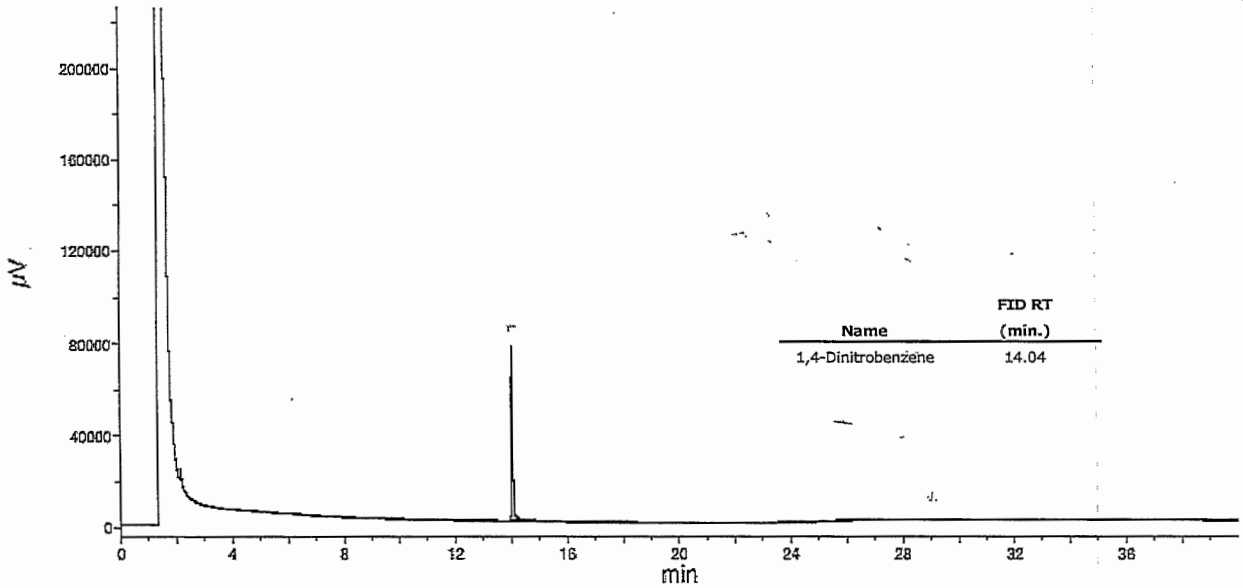
Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

ISO 9001 QS Registered
ISO 17025 Accredited

Run 48, "P70912 L042910 [1000µg/mL in MeOH]"

Run Length: 39.99 min, 23997 points at 10 points/second.
Created: Fri, Jul 30, 2010 at 3:53:13 AM.
Sampled: Sequence "072810-GC9M2", Method "GC9-M2".
Analyzed using Method "GC9-M2".

Comments
GC9M2 Analysis by Candice Warren
SPB-5 30 meter x 0.53 µm x 1.5 df
Flow Rates; Total Flow = 300 mL/min, Helium (carrier)=6mL, Helium (makeup)=25mL, Hydrogen (detector)=30, Air (detector)=360
Oven Temp 1 = 50 C (1 min), Rate = 10 C/min, Oven Temp 2 = 300 (14 min), Total Run Time=40 min.
Injector Temp = 250 C, FID Temp = 300 C, FID Signal = Edaq Channel 1
Gas Chromatograph = HP5890, Inejector = HP7673A, Standard Injection = 0.5 uL, Range = 4



Name	FID RT (min.)
1,4-Dinitrobenzene	14.04

RESTEK® CERTIFIED REFERENCE MATERIAL

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

www.restek.com

Certificate of Analysis

ACCREDITED
ISO Guide 34 Accredited Reference Material Producer Certificate #3222.01

ilac-MRA

ACCREDITED
ISO/IEC 17025 Accredited Testing Laboratory Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 31666 **Lot No.:** A098101

Description : RDX Standard

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

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

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

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	RDX		1,000.0 µg/mL	+/- 5.9397	µg/mL	Gravimetric
	CAS # 121-82-4	(Lot 080228JLM)		+/- 31.6700	µg/mL	Unstressed
	Purity 99%			+/- 44.3869	µg/mL	Stressed

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

RESTEK CERTIFIED REFERENCE MATERIAL

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

www.restek.com

Certificate of Analysis

ACCREDITED
ISO Guide 34 Accredited Reference Material Producer Certificate #3222.01

ilac-MRA

ACCREDITED
ISO/IEC 17025 Accredited Testing Laboratory Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 31663 **Lot No.:** A097698

Description : 2,4-Dinitrotoluene Standard

2, 4-Dinitrotoluene Std 1000µg/mL, Acetonitrile, 1mL/ampul

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

Expiration Date : April 30, 2018 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	2,4-Dinitrotoluene	1,006.0 µg/mL	+/- 5.9753	µg/mL	Gravimetric
	CAS # 121-14-2 (Lot MKAA0690V)		+/- 10.6787	µg/mL	Unstressed
	Purity 99%		+/- 12.4178	µg/mL	Stressed

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

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

Date Certified: May 9, 2013
Expiration: May 9, 2015
Sample Size: 1 mL
Storage Condition: Refrig (0-5° C)
Hazards: HIGHLY FLAMMABLE

		Ratio
Lot:	213031341	
Solvent:	Ethanol	97
	Methanol	3

[X] Included on ISO/IEC 17025 Scope of Accreditation
[X] Included on ISO Guide 34 Scope of Accreditation

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

AccuStandard follows U.S. conventions in reporting numerical values on both certificates and labels:

A comma (,) is used to separate units of one-thousand or greater.
A period (.) is used as a decimal place marker.

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

For use in routine laboratory analysis.

See reverse side for additional information
Refer to the MSDS for additional safety information

Certified by: R. Cooper
Russ Cooper, QC Manager

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

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

1008191 EXPLOS - Surr

0.160 mL of 1008045 (1,000 ppm) 1,4 DNB exp 04/2015
QS ACN
10.0 mL of 16 µg/mL
gm 4/1/14 exp 10/1/14

1008192 2-Nitrotoluene Stock
110 gm 4/1/14
~~120~~ mg. of Fluka 31567 (Lot SZB9286XV) Neat exp Oct 13, 2014
QS ACN
(2,200) gm 4/1/14
50.0 mL of ~~2,000~~ µg/mL
gm 4/1/14 exp 10/13/14

1008193 EXPLOS - Spike (LOD) 11 Comp + Surr

40 µL HMX Cerilliant Lot 051210-01 1,000 ppm exp 05/2015
RDX 1008063 (AB) " " 07/2015
1,3,5-TNB 1007777 1,000 ppm 01/2017
NB 1007536 (Abs) " 08/2014
TNT 1007913 (Abs) " 07/2017
2,6-DNT Cerilliant Lot ER121908-03, 1,000
40 µL 2,4-DNT #1007912 (1,000 ppm) exp 11/2015
18.2 µL 2-NT # 1008192 (2,200 µg/mL) exp 10/13/14
40 µL 4-NT 1007914 (1,000 ppm) exp 11/2015
3-NT Absolute 79077 1,000 ppm Lot 110518 exp 11/2015
1,4-DNB (Surr) 1,000 ppm #1008045 exp 04/2015
40 µL Nitroglycerine
QS Acetonitrile
5.0 mL of 8.0 µg/mL each
gm 4/1/14 exp 10/13/14

Continued on Page

Read and Understood By

Signed gm Date 4/1/14 Signed JRC Date 4/4/14

Standards Preparation Information

Rev. 1.1

PROJECT

Continued From Page

1008042 HI ICAL STDS

To 5 mL

C Blank	0 mLs of 1008041	Diluent	Final µg/L
50	0.025	5.0 mL	50
100	0.050		100
200	0.100		200
400	0.200		400
800	0.400 mLs	5.0	800
1,600	Not made		

JD 10/24/13 exp 10/25/13

1008043 HI EXPLOS (ICV)

250µL of 8.0 ppm # 1008025 (8.0 µg/mL) exp 4/21/14
QS Diluent 1007782
5.0 mL of 400 µg/L

JD 10/24/13 exp 10/25/13

1008044-4 Pest Cal Stds
1007982-4 0.25 ppm exp 12/12/13

0.25 ug/ml × 0.5 ml / 1.0 ml Hex (Baker 14961) = 0.125 ppm
0.25 ug/ml × 0.1 ml / 1 = 0.025 ppm
exp 12/12/13 AJT 10/24/13

1,4 DNB (8330 Surr) Stock

1008045-A8

Part #: 70912 Laboratory Use Only - See MSDS
Lot #: 042910 Exp: 042915 Storage 4 °C
1,4-Dinitrobenzene
1000 ug/mL in methanol 1 mL
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opened 11/1/13
Recd 11/15/12

Continued on Page

Read and Understood By

JD 11/1/13 BR 11-12-13
Signed Date Signed Date

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Analytical Reference Material ARM

ISO 9(QS Registered
ISO 17025-34-35-43 Accredited
Scopes: http://AbsoluteStandards.com

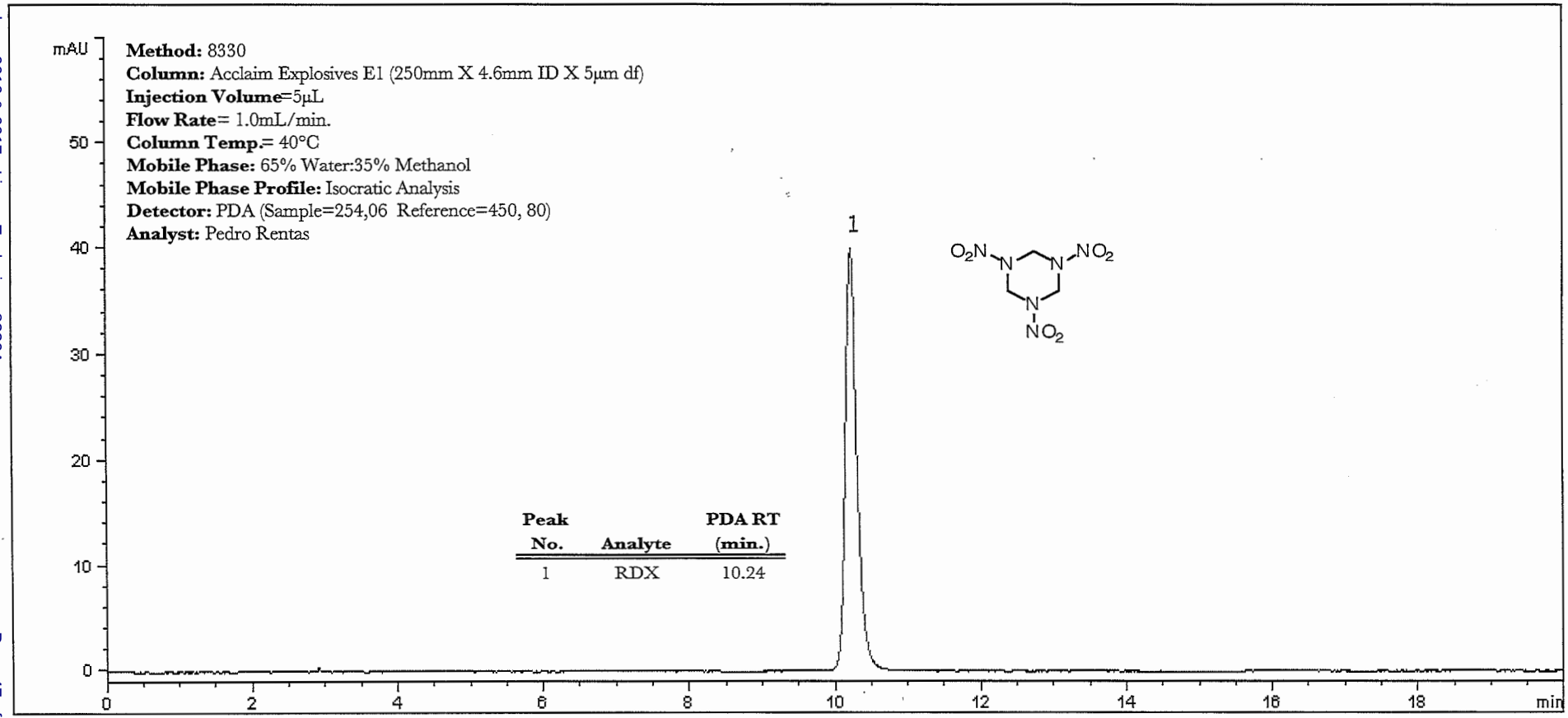
CERTIFIED WEIGHT REPORT

			Lot #	
Part Number:	79079	**Solvent(s):**	J087	Acetonitrile
Lot Number:	111408			
Description:	RDX			
Expiration Date:	111413			
		Storage:	0 °C	
Nominal Concentration (µg/mL):	1000			
			5E-05	Balance Uncertainty
Weight(s) shown below were combined and diluted to:	25.0		0.004	Flask Uncertainty

		111408
Formulated By:	Vincent K. Criscio, Jr.	DATE
		111408
Reviewed By:	Pedro L. Rentas	DATE

MSDS Information
(Solvent Safety Info. On Attached pg.)

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty	CAS#	OSHA PEL (TWA)	LD50
1. RDX	1429	ER091406-03	1000	99	0.2	0.02527	0.02532	1001.9	0.0057	00121-82-4	N/A	N/A



Method: 8330
Column: Acclaim Explosives E1 (250mm X 4.6mm ID X 5µm df)
Injection Volume=5µL
Flow Rate= 1.0mL/min.
Column Temp.= 40°C
Mobile Phase: 65% Water:35% Methanol
Mobile Phase Profile: Isocratic Analysis
Detector: PDA (Sample=254,06 Reference=450, 80)
Analyst: Pedro Rentas

Peak No.	Analyte	PDA RT (min.)
1	RDX	10.24

1008038 OCP SURROGATE STOCK

1007977 200ppm OCP surrogate exp 02/02/17

200ug/ml x 0.25ml / 5ml Hex (Baker 14961) = 10ppm OCP surrogate

exp 01/22/14 BS 10/22/13

1008039 PEST 2° STOCK (HAWAII)

1008037 10ppm PEST (HAWAII) exp 01/22/14
1008038 10ppm OCP Surrogate exp 01/22/14

10ug/ml x 0.5ml each / 5ml Hex (Baker 14961) = 1.0ppm

exp 01/22/14 BS 10/22/13

1008040 PEST CAL STDS (HAWAII)

1008039 1.0ppm PEST (HAWAII) exp 01/22/14 BS 11/20/13

1.0 ug/ml X 0.2ml / 0.8ml Hex = 0.25 ppm PST (HAWAII)
x 0.2ml / 1.0 Hex = 0.2
x 0.1ml / 0.8ml Hex = 0.125
x 0.1ml / 1.0 ml Hex = 0.1
x 0.05ml / 1.0 ml Hex = 0.05
(1008040) 0.25 ug/ml x 0.05ml / 0.5ml Hex = 0.025
+ 0.1 ug/ml x 0.05ml / 0.5ml Hex = 0.01 in Hex (Baker 14961)

exp 01/22/14 BS 10/22/13

1008041 HI Exp/OS-Cal 2° STD

50 µL RDX Absolut (1000 ppm) Lot 111408 exp 11/2013
1,4 DNB (Surr) 1,000 ppm ID No. 1007915 exp 04/2015
Nitroglycerine (1,000 ppm) ID No. 1007911-A exp 10/2017
50 µL 2,4-DNT (1,000 ppm) ID No. 1007912-AB 11/2015
0.5 Acetonitrile (Fisher 091099)
5.00 ml of 10 µg/mL each 10/24/13 Continued on Page 14 90 11/14/13

Read and Understood By exp. 11/30/2013

Signed 10/24/13 Date Signed 10/28/13 Date
11/13/13

PROJECT

Continued From Page

1007915

Part #: 70912 Laboratory Use Only - See MSDS
Lot #: 042910 Exp: 042915 Storage 4 °C
1,4-Dinitrobenzene / Surr.
1000 ug/mL in methanol 1 mL
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7/22/13

1007916 EXPLOS – "A" Spike

40 µL HMX Cert/Ht (1,000 ppm) Lot 051210-01 Exp 05/2015
40 µL RDX Abst " " 111408 " 11/2013
40 µL 1,3,5 TNB #1007777 1,000 ppm " 01/2017
40 µL NB #1007536 (Abs) 1,000 " 08/2014
2,6-DNT Cert/Ht (1,000 ppm) ER121908-03 " 12/2013
2,4-DNT #1007912 (1,000 ppm) 11/2015
2-NT Cert/Ht (1,000 ppm) ER032904-02 " 08/2013
4-NT 1007914 (1,000) " 11/2015
3-NT Abs (1000 ppm) Lot 11/05/10 XP " 11/2015
40 µL Nitroglycerin #1007911 (1,000) 12/2017
40 µL TNT #1007913 (1,000) " 07/2017
40 µL 1,4DNB (Surr) 1,000 ppm #1007915 " 04/2015
5.0 mL Vol
0.80 µg/mL 2x. 7/22/13 XP. 11/30/2013

1007917 ~~AR1221/AR1254~~ AR1221

Part #: 90124 Laboratory Use Only - See MSDS
Lot #: 081012 Exp: 081022 Storage 20 °C
Aroclor 1221
1000 ug/mL in hexane 1 mL
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opened 07/22/13

1007918 AR 1254

Part #: 90128 Laboratory Use Only - See MSDS
Lot #: 071612 Exp: 071622 Storage 20 °C
Aroclor 1254
1000 ug/mL in hexane 1 mL
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opened 07/22/13

Continued on Page

Read and Understood By

Signed 07/22/13 Date Signed 7/28/13 Date

PROJECT

Continued From Page

1008024 OSP Cal Stds

STOCK 1007843 10-40 ppm OSP exp 02/14/14

10-40 ug/ml x 0.5/5 ml MeCl (Baker 4556-4) = 1.0 ppm OSP
x 0.4 = 0.8
x 0.3 = 0.6
x 0.2 = 0.4
x 0.1 = 0.2

exp 02/14/14 BT 10/17/13

1008025 EXPLOS SPIKE (HH Tissues)

0.800 mL 2,4 DNT # 1008026 – 100 µg/mL
0.800 mL RDX # 1008027 – 100 µg/mL
0.080 mL Nitroglycerine # 1008028 – 1,000 µg/mL
} Accusto
Acetonitrile Fisher Lot 091099
10.0 mL of 8.0 µg/mL each GD 10/21/13 exp 4/21/14

2,4-DNT STOCK

1008026 –

AccuStandard® 125 Market St. • New Haven, CT 06513 • USA Tel. 203-786-5290 • www.accustandard.com
M-8330-02-0.1X 1 mL
2,4-Dinitrotoluene
100 µg/mL in MeOH:AcCN (1:1)
Lot: 211031352
Exp. Mar 28, 2021
HIGHLY FLAMMABLE
Opened 10/21/13
FOR LABORATORY USE ONLY.
WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.
STORAGE Refrig (0-5° C)
2 Danger

1008027 RDX Stock

AccuStandard® 125 Market St. • New Haven, CT 0 Tel. 203-786-5290 • www.accusta
M-8330-05-0.1X
RDX
100 µg/mL in MeOH:AcCN (1:1)
Lot: 211111333-01
Exp. Jun 18, 2015
HIGHLY FLAMMABLE
Opened 10/21/13 10/21/13

NG – Stock

1008028 –

AccuStandard® 125 Market St. • New Haven, CT 06513 • US Tel. 203-786-5290 • www.accustandard.co
M-8330-ADD-1-10X 1 mL
Nitroglycerin
1000 µg/mL in EtOH:MeOH (97:3)
Lot: 213031341
Exp. May 9, 2015
HIGHLY FLAMMABLE
Opened 10/21/13

Continued on Page

Read and Understood By

Signed 10/21/13 Date Signed 10/28/13 11/12/13 Date

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Analytical Reference Material ARM

ISO 9001:2008 Registered
ISO 17025-34-35-43 Accredited
Scopes: http://AbsoluteStandards.com

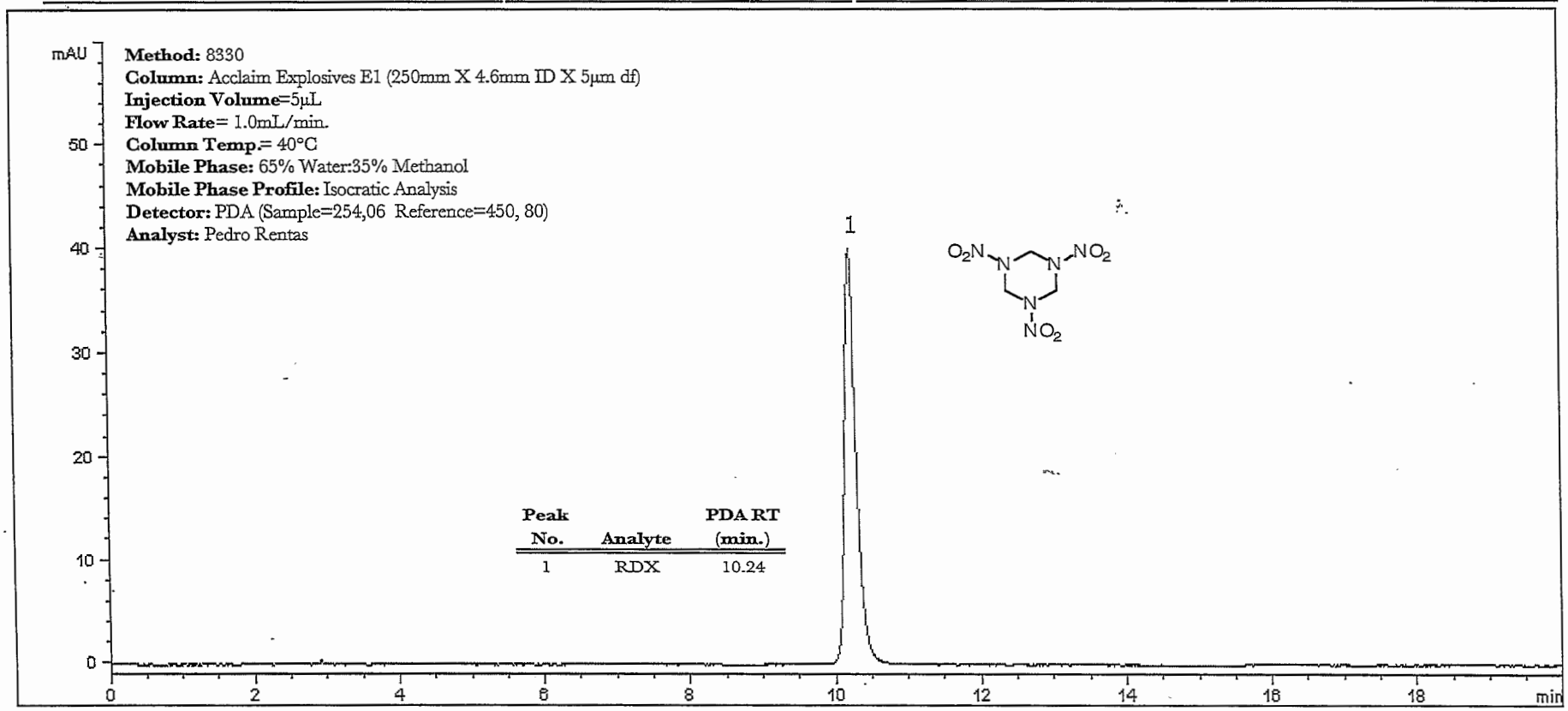
CERTIFIED WEIGHT REPORT

			Lot #	
Part Number:	79079	**Solvent(s):**	J087	Acetonitrile
Lot Number:	111408			
Description:	RDX			
Expiration Date:	111413			
		Storage:	0 °C	
Nominal Concentration (µg/mL):	1000			
			5E-05	Balance Uncertainty
Weight(s) shown below were combined and diluted to:			25.0	0.004 Flask Uncertainty

		111408
Formulated By:	Vincent K. Criscio, Jr.	DATE
		111408
Reviewed By:	Pedro L. Rentas	DATE

MSDS Information
(Solvent Safety Info. On Attached pg.)

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty	CAS#	OSHA PEL (TWA)	LD50
1. RDX	1429	ER091406-03	1000	99	0.2	0.02527	0.02532	1001.9	0.0057	00121-82-4	N/A	N/A



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Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part Number: 70912
Lot Number: 042910
Description: 1,4-Dinitrobenzene

Expiration Date: 042915

Storage: 4 °C

Nominal Concentration (µg/mL): 1000

Lot #
Solvent(s): 49162 Methanol

Formulated By: Justin Dippold — DATE 042910

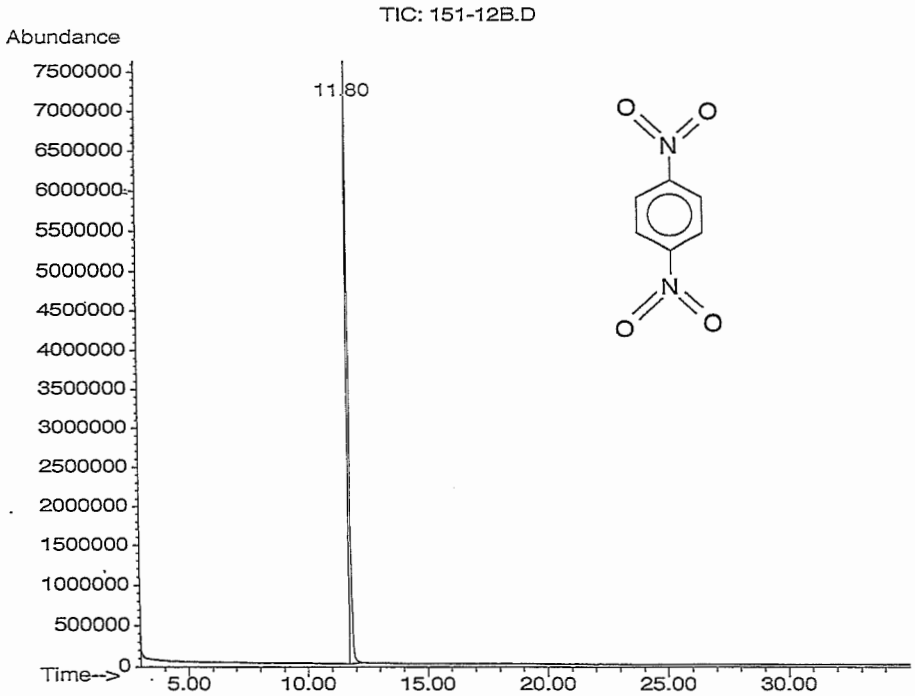
Reviewed By: Pedro L. Rentas — DATE 042910

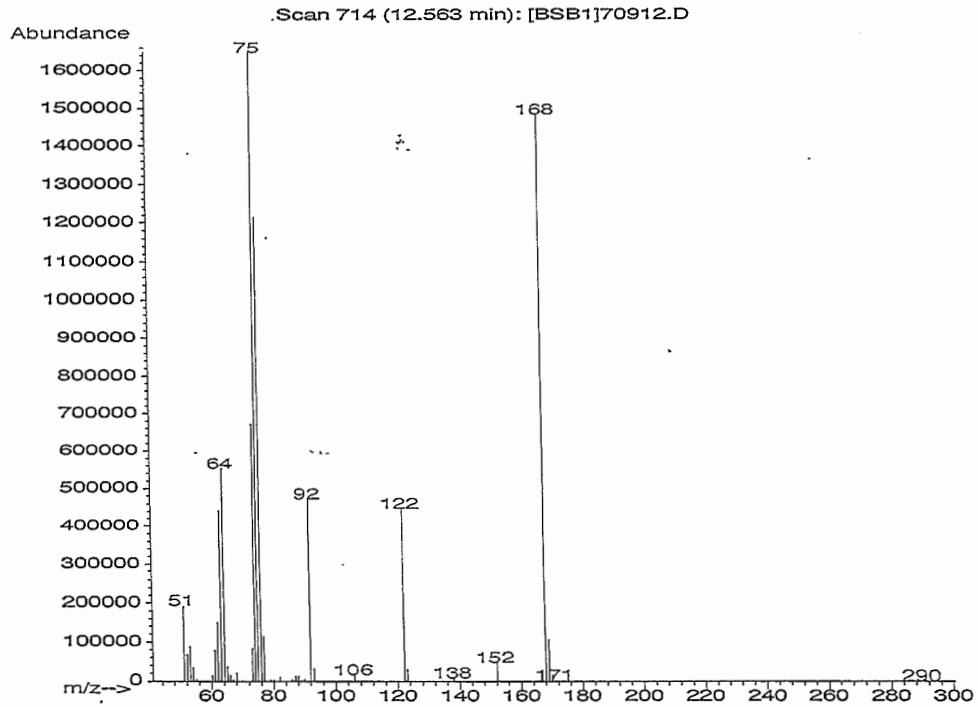
Weight(s) shown below were combined and diluted to: 100.0 0.012 Flask Uncertainty; 5E-05 Balance Uncertainty

MSDS Information
(Solvent Safety Info. On Attached pg.)

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight (g)	Actual Weight (g)	Actual Conc(µg/mL)	Expanded Uncertainty	CAS#	OSHA PEL (TWA)	LD50
1. 1,4-Dinitrobenzene	912	04003AM	1000	98	0.2	0.10208	0.10245	1003.6	0.00420	00100-25-4	1mg/m3/8H (skin)	N/A

Method GC8MSD-3.M: Column: SPB-5 (30m X 0.25mm ID X 0.25µm film thickness), Temp 1 = 50°C (1min.), Temp 2 = 300°C (9 min.), Rate = 10°C/min., Injector B= 200°C, Detector B = 300°C. Analysis performed by Nicole Davis.





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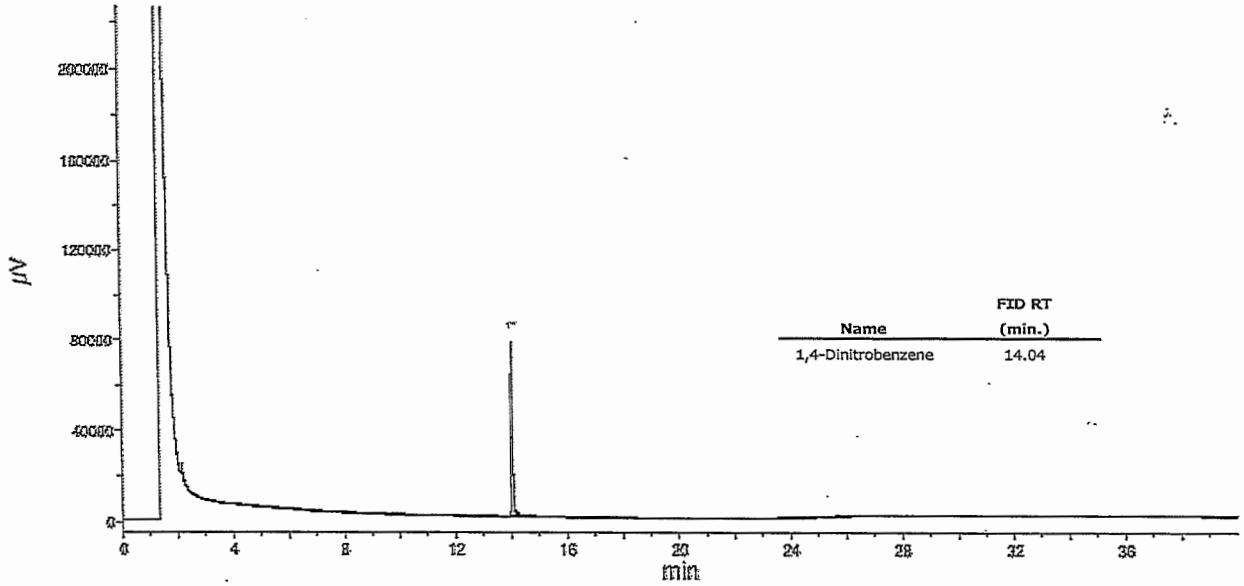
Run 48, "P70912 L042910 [1000µg/mL in MeOH]"

Run Length: 39.99 min, 23997 points at 10 points/second.
Created: Fri, Jul 30, 2010 at 3:53:13 AM.
Sampled: Sequence "072810-GC9M2", Method "GC9-M2".
Analyzed using Method "GC9-M2".

Comments
GC9M2 Analysis by Candice Warren
SPB-5 30 meter x 0.53 µm x 1.5 df
Flow Rates; Total Flow = 300 mL/min, Helium (carrier)=6mL, Helium (makeup)=25mL, Hydrogen (detector)=30, Air (detector)=360
Oven Temp 1 = 50 C (1 min), Rate = 10 C/min, Oven Temp 2 = 300 (14 min), Total Run Time=40 min.
Injector Temp = 250 C, FID Temp = 300 C, FID Signal = Edaq Channel 1
Gas Chromatograph = HP5890, Inejector = HP7673A, Standard Injection = 0.5 uL, Range = 4



Name	FID RT (min.)
1,4-Dinitrobenzene	14.04

1007911-R NG - STOCK

RESTEK
110 Benner Circle
Bellefonte, PA 16823
Made in USA
Catalog # 31498 1007911
Nitroglycerin Standard
1000 ug/mL each in Methanol
Lot# A092411 Exp. Date: 12/2017 Store: 10°C or colder
Rec'd 4/18/13

Opened 7/22/13 GO

1007912-AB 2,4 DNT Stock

Part #: 79072 Laboratory Use Only - See MSDS
Lot #: 110510 Exp: 110515 Storage 0 °C
EPA Method 8330 Analyte
2,4-Dinitrotoluene
1000 ug/mL in acetonitrile 1 mL
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GO 7/22/13

1007913-AB TNT - Stock

Part #: 79082 Laboratory Use Only - See MSDS
Lot #: 070612 Exp: 070617 Storage 0 °C
EPA Method 8330 Analyte
2,4,6-Trinitrotoluene
1000 ug/mL in acetonitrile 1 mL
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GO 7/22/13

1007914-AB 4 - NT Stock

Part #: 79078 Laboratory Use Only - See MSDS
Lot #: 110510 Exp: 110515 Storage 4 °C
EPA Method 8330 Analyte
4-Nitrotoluene
1000 ug/mL in acetonitrile 1 mL
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GO 7/22/13

Continued on Page

Read and Understood By

Signed	Date	Signed	Date
GO	7/22/13	AJ	07/26/13

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ACCREDITED
ISO/IEC 17025 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. : 31498 **Lot No.:** A092411

Description : Nitroglycerin Standard

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

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

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

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Nitroglycerin	1,000.0 µg/mL	+/- 5.8686	µg/mL	Gravimetric
	CAS # 55-63-0		+/- 32.1907	µg/mL	Unstressed
	Purity 99%		+/- 44.7599	µg/mL	Stressed

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

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Certified R[illegible]rence Material CRM

ISO 90[illegible]S Registered
ISO 17025-34[illegible]-43 Accredited
Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Lot #

Part Number: 79072 **Solvent(s):** L140AN Acetonitrile
Lot Number: 110510
Description: 2,4-Dinitrotoluene
EPA Method 8330 Analyte
Expiration Date: 110515
Storage: 0 °C
Nominal Concentration (µg/mL): 1000

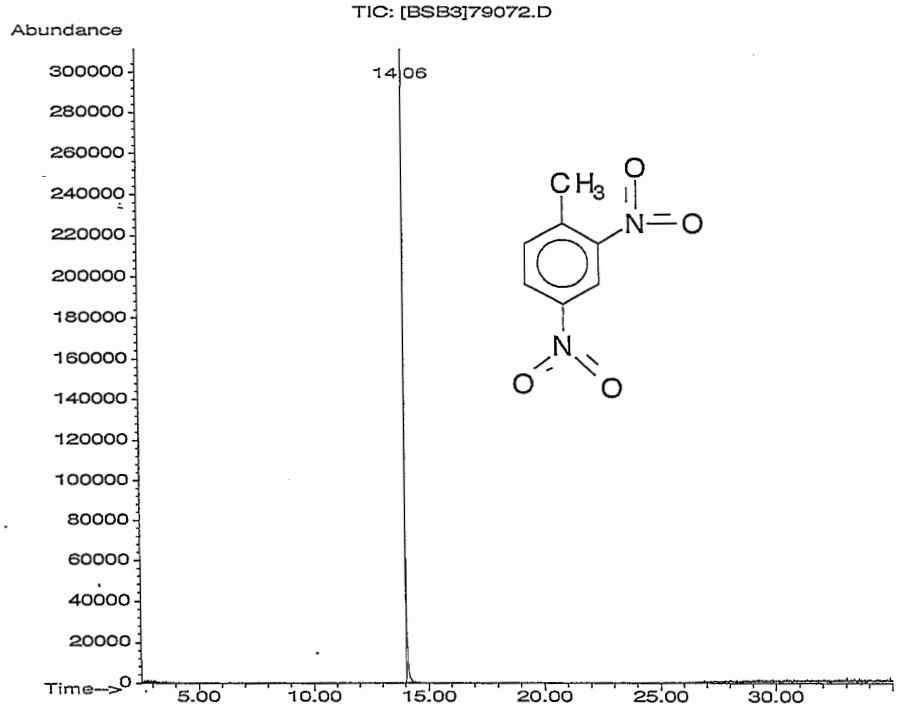
Formulated By:	Pat Scaturchio	110510 DATE
Reviewed By:	Pedro L. Rentas	110510 DATE

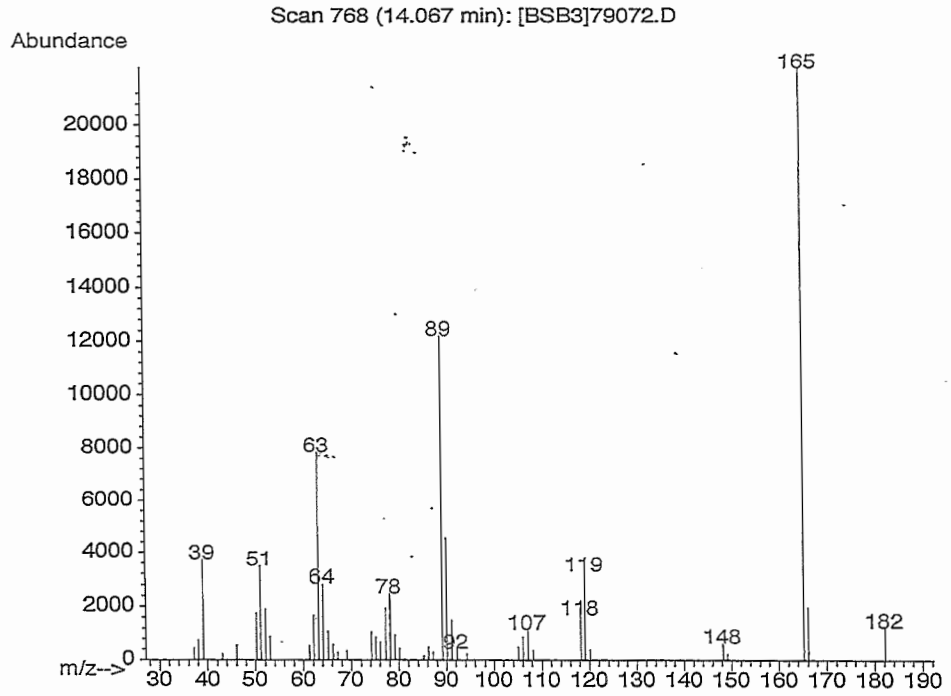
Weight(s) shown below were combined and diluted to: 100.0 0.002 Flask Uncertainty
5E-05 Balance Uncertainty

MSDS Information
(Solvent Safety Info. On Attached pg.)

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight (g)	Actual Weight (g)	Actual Conc(µg/mL)	Expanded Uncertainty	CAS#	OSHA PEL (TWA)	LD50
1. 2,4-Dinitrotoluene	160	00913MP	1000	97	0.2	0.10308	0.10318	1001.0	0.00424	00121-14-2	1.5mg/m3/8H (skin)	orl-rat 268mg/kg

Method GC8MSD-3.M: Column:SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 200°C, Detector B = 300°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by Nicole Poisson.





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Certified Reference Material CRM

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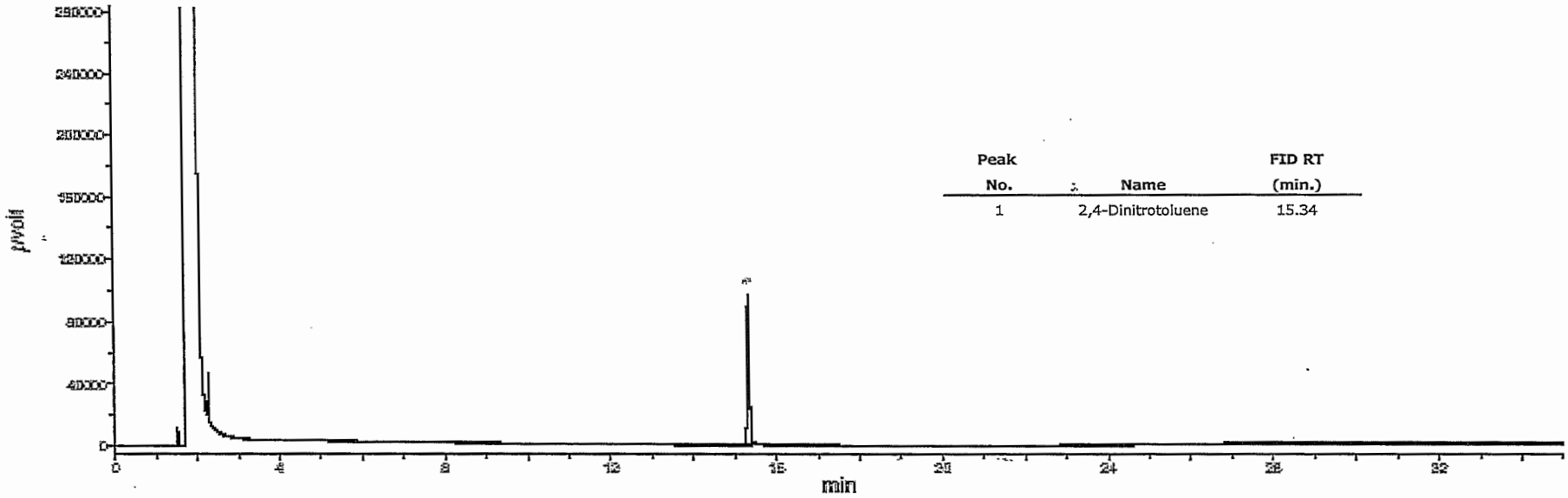
Scopes: http://AbsoluteStandards.com

Run 42, "P79072 L110510 [1000µg/mL in ACN]"

Run Length: 35.00 min, 21002 points at 10 points/second.
Created: Wed, Nov 10, 2010 at 9:17:50 PM.
Sampled: Sequence "110910-GC4M1", Method "GC4-M1".
Analyzed using Method "GC4-M1".

Comments
GC4-M1 Analysis by Melissa Stonier
Column ID SPB-5 30 meter x 0.53mm x 1.5um Film Thickness
Flow rates; Total Flow = 300 ml/min, Helium (carrier) = 6.5 mL, Helium (make-up) = 25 mL, Hydrogen (detector) = 30 mL, Air (detector) =360 mL
Oven Temp 1 = 50°C (1 min), Rate = 10°C/min, Oven Temp 2 = 300°C (9 min), Total Run Time = 35 Minutes.
Injector Temp = 200°C, FID Temp = 300°C, FID Signal = eDaq Channel 1.
Gas Chromatograph = HP 5890, Auto Sampler = HP 7673, Standard Injection = 0.5 uL, Range = 4



Peak No.	Name	FID RT (min.)
1	2,4-Dinitrotoluene	15.34

1008184 EXPLOS (2ND Stock) HIW.

50 µL 1008063(AB) RDX 1000 ppm exp 07/2015
50 µL 1007912(AB) 2,4-DNT " exp 11/2015
50 µL 1007911 Nitroglycerine " exp 12/2017
50 µL 1,4 DNB (Surr) 1,000 ppm #1008045 exp 04/2015
VF 5.0 mL of 10µg/mL each GD 3/24/14 exp 9/24/14
Diluent Acetonitrile

1008185 Explos Cal Std

0.200 mL of 1008184 (10 µg/mL) exp 9/24/14
as Diluent 1008179
5.0 mL of 400 µg/L
GD 3/24/14 exp 3/25/14

1008186

0.200 mL of 1008184 (10 ppm) 2° Std exp ~~3~~ 9/24/14
as Diluent
GD 3/25/14
5.0 mL GD 3/25/14
of 400 µg/L exp 3/26/14

1008187 4457 Pest QC

50 µL of 1008135 (10 µg/mL) exp 6/30/14
as Hexane STB 43501
5.0 mL of 0.10 ppm STD
GD 3/25/14 exp 6/25/14

Continued on Page

Read and Understood By

Signed GD Date 3/25/14 Signed PEK Date 4/1/2014

1008061 PEST Cal Std (HAWAII)

1008039 1.0 ppm PEST (HAWAII) exp 01/22/14

1.0 ug/ml x 0.2 ml / 0.8 ml Hex (Baker 1496) = 0.25 ppm
x 0.2 ml / 1.0 ml = 0.2 ppm
x 0.1 ml / 0.8 ml = 0.125 ppm
x 0.1 ml / 1.0 ml = 0.1 ppm
x 0.05 ml / 1.0 ml = 0.05 ppm
(1008061) 0.25 ug/ml x 0.05 ml / 0.5 ml = 0.025 ppm
+ 0.1 ug/ml x 0.05 ml / 0.5 ml = 0.01 ppm

exp 01/22/14 DS 11/20/13

1008062 EXPLOS 2° STOCK (HI)

50 µL of 1008063-AB. (RDX) 1,000 ppm exp 07/2015
50 µL of 1007911-R NG 1,000 " 12/2017
50 µL 1007912-AB 2,4 DNT 1000 ppm exp 11/2015
50 µL 1007915 1,3 DNB (Sum) 1,000 exp 04/2015
QS Acetonitrile, Fisher 091099

5.0 mL Volume of 10 µg/mL each
JO 11/23/13 exp 5/23/14

1008063-AB RDX - Stock soln

Part #: 79079 Laboratory Use Only - See MSDS
Lot#: 071910 Exp: 071915 Storage 0 °C
EPA Method 8330 Analyte
RDX
1000 ug/mL in acetonitrile 1 mL
ABSOLUTE STANDARDS, INC. • 800-368-1131

Recd 11.19.13

opened JO 11/23/13

Continued on Page

Read and Understood By

JO 11/23/13 DS 11/26/13
Signed Date Signed Date

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Analytical Reference Material ARM

ISO 9001 QS Registered
ISO 17025-34-35-43 Accredited
Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part Number: 79079
Lot Number: 071910
Description: RDX

Expiration Date: 071915

Nominal Concentration (µg/mL): 1000

Lot #
Solvent(s): 021310JC Acetonitrile

Storage: 0 °C

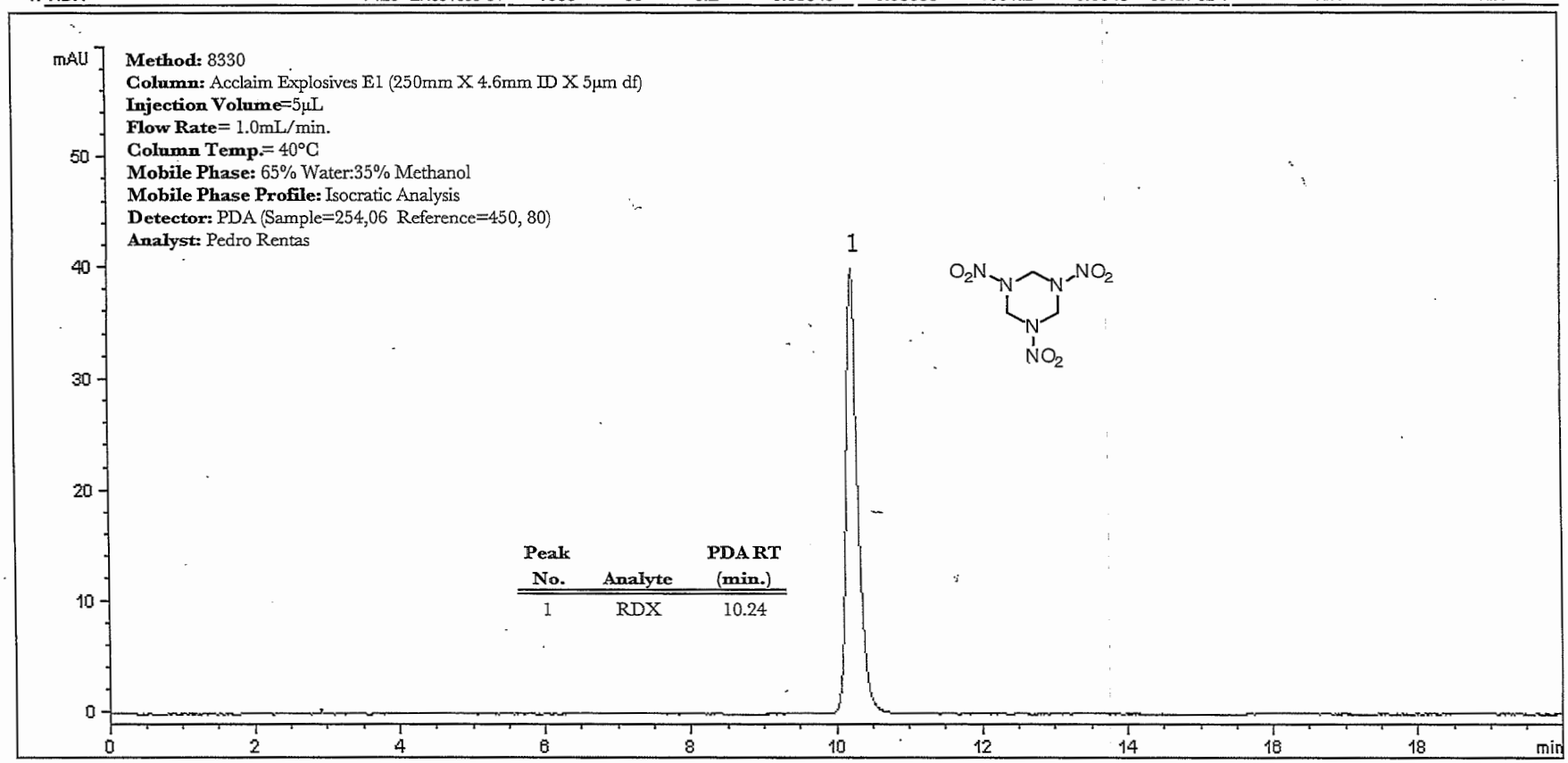
5E-05 Balance Uncertainty

Weight(s) shown below were combined and diluted to: 50.0 0.002 Flask Uncertainty

Formulated By:	Vincent K. Criscio, Jr.	071910 DATE
Reviewed By:	Pedro L. Rentas	071910 DATE

MSDS Information
(Solvent Safety Info. On Attached pg.)

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty : Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty	CAS#	OSHA PEL (TWA)	LD50
1. RDX	1429	ER091609-04	1000	99	0.2	0.05049	0.05055	1001.2	0.0045	00121-82-4	N/A	N/A



Peak No.	Analyte	PDA RT (min.)
1	RDX	10.24

1008176 Hawaii ICV

50 µL of 1008135 (10 µg/mL) Rest. exp 6/30/14
QS Hexane JT Baker 43501
5.00 mL of 0.10 µg/mL each
GO 3/20/14 exp 4/3/14

1008177 REST EVAL 2° STOCK

50 µL of Restek 32417 (100/200 ppm in MTBE) Lot A050346
Exp 11/2014
QS MTBE Sigma 74496 EJ
5.00 mL of 1/2 ppm mix
GO 3/21/14 exp 11/30/2014

1008178 REST EVAL - Bench

150 µL of 1008177 (1/2 ppm) STD exp 11/2014
QS Hexane JT Baker 43501
1,500 µL of 0.1/0.2 STD
GO 3/21/14 xp 06/21/14

1008179 EXPLOS DILUENT

100 mL of 5% CaCl2 # 1217
100 mL of MeOH Macron 44064
200 mL of 50/50 GO 3/22/14 x 3/22/15

1008180 EXPLOS Cal/Ck Std

0.200 mL of 1008062 (10 µg/mL) exp 05/23/14
Diluent
5.0 mL of 400 µg/L Std
GO 3/22/14 xp 3/23/14

Continued on Page

Read and Understood By

Signed	Date	Signed	Date
GO	3/22/14	DRC	4/1/14

1008201 Comb PEST 2° STOCK (10ppm)

0.500 mL 1008199-AB HCPD/1500PN (100 ppm) Xp 1/13/15
0.500 mL 1008099-U 100 ppm Xp 10/15/14
0.250 mL of 1008200 (200 ppm) Surr Xp. 06/20/16
QS Hexane
5.0 mL of 10 µg/mL each
JD 4/3/14 exp 10/3/14

1008202 Pest CAL STDS (U1457)/(8081)

STOCK 1008201 10ug/ml

0.250mL of 10ug/ml (1008201) / 10 mL = 0.25 ppm Pest
0.100 ml " " / 10ml = 0.10 ppm Pest
BK 4-3-14 ~~0.05 ml~~ 0.1ml of 10ug/ml (1008201) / 5mL = 0.05 ppm Pest
0.100mL of 1008202 (0.10ppm) / 1ml = 0.01 ppm Pest
0.05mL of 1008202 (0.10ppm) / 1mL = 0.005 ppm Pest
0.100ml of 0.25ppm (1008202) / 1ml = 0.25 ppm Pest
In Hexane JT Baker 62582

BK 4-3-14 exp 7-3-14

1008203 EXPLOS Cal Std

0.200 mL of 1008184 (10 ppm) exp 9/24/14
QS Diluent 1008179
5.0 mL of 400 µg/L
JD 4/3/14 exp 4/4/14

Continued on Page

Read and Understood By

JD 4/3/14 — Signed / Date
~~4/3/13~~
ORC 4/4/14 — Signed / Date

PROJECT

Continued From Page

#1215 10N - NaOH 8/2/13
Dissolved 400g of NaOH (MaCron #0000037524) into 1000 mL of DI H_2O. Exp: 8/2/14 SMW

#1216 10N - NaOH 10/3/13
Dissolved 400g of NaOH (Macron #0000037524) into 1000mL of DI H_2O. Exp: 10/3/14 SMW

#1217 $CaCl_2$ soln for Explosives 12/4/13
Dissolved 5 gram of $CaCl_2$ (Fisher #C77-500, lot #916800) into 1000mL of DI H_2O. Exp: 12/4/15 SMW

#1218 10N - NaOH 3/20/14
Dissolved 400g of NaOH (MaCron #0000037524) into 1000mL of DI H_2O. Exp: 3/20/15 SMW

SMW 4/8/14

Continued on Page

Read and Understood By

Steve Mweon 4/8/14 Signed Date

Signed 4/8/14 Date

1008201 Comb PEST 2° Stock (10ppm)

0.500 mL 1008199-AB HCPD/ISODRN (100 ppm) xp 1/13/15
0.500 mL 1008097-U 100 ppm xp 10/15/14
0.250 mL of 1008200 (200 ppm) Surr
QS Hexane
5.0 mL of 10 µg/mL each
JD 4/3/14 exp 10/3/14

1008202 Post CAL STDS (41457)/(8081)

STOCK 1008201 10ug/ml

0.250mL of 10ug/ml (1008201) / 10 mL = 0.25 ppm Post
0.100 ml " " / 10ml = 0.10 ppm Post
BL 4-3-14 ~~0.05 m~~ 0.1ml of 10ug/ml (1008201) / 5 mL = 0.05 ppm Post
0.100mL of 1008202 (0.10ppm) / 1ml = 0.01 ppm Post
0.05mL of 1008202 (0.10ppm) / 1 mL = 0.005 ppm Post
0.100ml of 0.25ppm (1008202) / 1ml = 0.25 ppm Post
In Hexane JT Baker 62582

BL 4-3-14 exp 7-3-14

1008203 EXPLOS Cal Std

0.200 mL of 1008184 (10 ppm) exp 9/24/14
QS Diluent
5.0 mL of 400 µg/L
JD 4/3/14 exp 4/4/14

Continued on Page

Read and Understood By

Signed	Date	Signed	Date
JD	4/3/14 ~~4/3/13~~	PRC	4/4/14

Analytical Run Number 1

Calibration Information

Tune Data (If applicable)

Initial Calibration (If different than Initial Calibration in Run 1)
- Calibration Factor Summary
- Chromatogram
- Quant Report (If applicable)

Continuing Calibration
- Calibration Response Check
- Chromatogram
- Quant Report (If applicable)

Instrument Logs/Analysis Notebook Pages

Blank / Field Sample / QC Data

Sample Results
Chromatogram
Quant Report (If applicable)
Confirmation Analysis Quant Report / Chromatogram (If applicable)
Tentatively Identified Compounds (If required)

Rev. 1.1

Calibration Information

Tune Data (If applicable)

Initial Calibration (If different than Initial Calibration in Run 1)
- Calibration Factor Summary
- Chromatogram
- Quant Report (If applicable)

Continuing Calibration
- Calibration Response Check
- Chromatogram
- Quant Report (If applicable)

Rev. 1.1

Method C:\HPCHEM\1\METHODS\EXPHH2.M

Calibration Table

Calib. Data Modified : Monday, October 28, 2013 10:25:13 AM

Calculate : External Standard
Based on : Peak Area

Rel. Reference Window : 0.000 %
Abs. Reference Window : 0.500 min
Rel. Non-ref. Window : 0.000 %
Abs. Non-ref. Window : 0.500 min
Uncalibrated Peaks : not reported
Partial Calibration : No recalibration if peaks missing

Curve Type : Linear
Origin : Included
Weight : Equal

Recalibration Settings:
Average Response : Average all calibrations
Average Retention Time: Floating Average New 75%

Calibration Report Options :
Printout of recalibrations within a sequence:
Calibration Table after Recalibration
Normal Report after Recalibration
If the sequence is done with bracketing:
Results of first cycle (ending previous bracket)

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Lvl	Amount [PPB]	Area	Amt/Area	Ref	Grp	Name
8.078	2	1	50.00000	7.59689	6.58164			RDX
		2	100.00000	15.85412	6.30751			
		3	200.00000	32.88393	6.08200			
		4	400.00000	65.29810	6.12575			
		5	800.00000	130.46573	6.13188			
13.125	2	1	50.00000	22.22412	2.24981			1,4-DNB(Surr)
		2	100.00000	44.25861	2.25945			
		3	200.00000	90.42964	2.21166			
		4	400.00000	180.48079	2.21630			
		5	800.00000	361.87109	2.21073			
18.179	1	1	50.00000	12.96533	3.85644			Nitroglycerine
		2	100.00000	25.27819	3.95598			
		3	200.00000	53.49364	3.73876			
		4	400.00000	102.50692	3.90218			
		5	800.00000	207.15292	3.86188			
24.995	2	1	50.00000	24.45439	2.04462			2,4-DNT
		2	100.00000	48.33740	2.06879			
		3	200.00000	97.77531	2.04551			
		4	400.00000	194.47369	2.05683			
		5	800.00000	390.39532	2.04920			

1 CAL
4 Compds only:
RDX
1,4-DNB (Surr)
NG
2,4-DNT

Pass JD 10/28/13

Peak Sum Table

No Entries in table

==========

Calibration Curves

==========

RDX at exp. RT: 8.078
VWD1 A, Wavelength=254 nm
Correlation: 0.99998
Residual Std. Dev.: 0.33271
Formula: y = mx + b
m: 1.63484e-1
b: -2.16881e-1
x: Amount [PPB]
y: Area

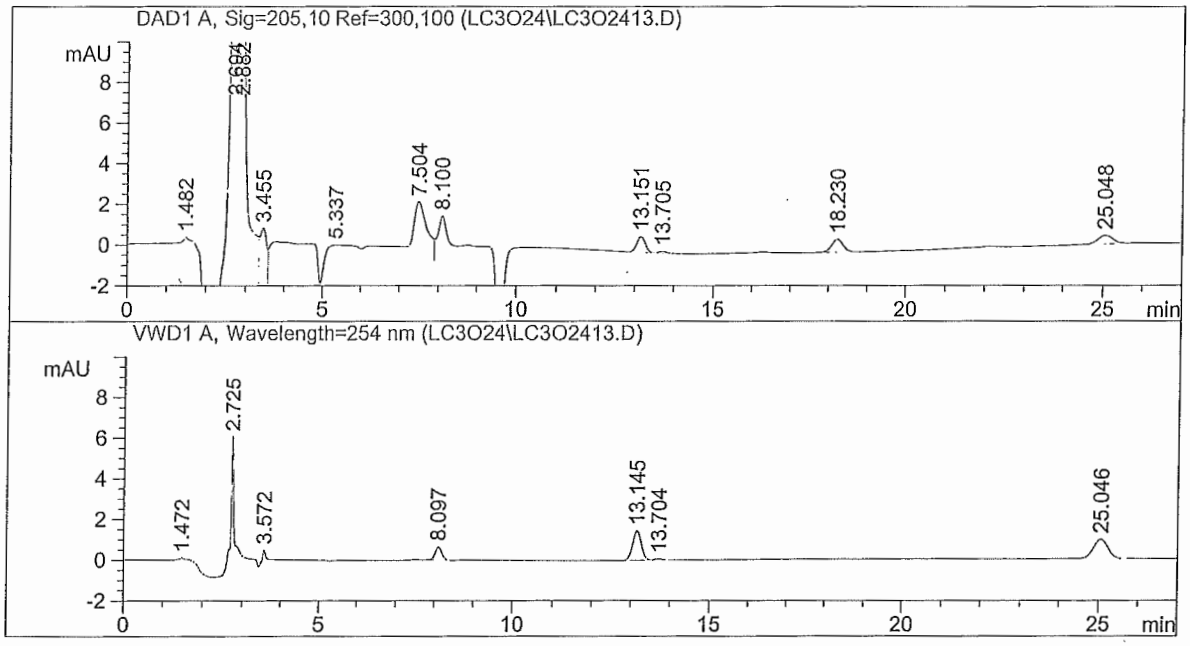
1,4-DNB(Surr) at exp. RT: 13.125
VWD1 A, Wavelength=254 nm
Correlation: 1.00000
Residual Std. Dev.: 0.40912
Formula: y = mx + b
m: 4.52724e-1
b: -4.09628e-1
x: Amount [PPB]
y: Area

Nitroglycerine at exp. RT: 18.179
DAD1 A, Sig=205,10 Ref=300,100
Correlation: 0.99993
Residual Std. Dev.: 1.04607
Formula: y = mx + b
m: 2.58593e-1
b: 9.62472e-2
x: Amount [PPB]
y: Area

2,4-DNT at exp. RT: 24.995
VWD1 A, Wavelength=254 nm
Correlation: 1.00000
Residual Std. Dev.: 0.39179
Formula: y = mx + b
m: 4.87881e-1
b: -1.29941e-1
x: Amount [PPB]
y: Area

Injection Date	: 10/24/13 7:18:27 PM	Seq. Line	: 13
Sample Name	: 50 PPB 1008042	Location	: Vial 6
Acq. Operator	: JGD	Inj	: 1
		Inj Volume	: 100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH1.M
Last changed : 10/24/13 4:43:40 PM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 10/28/13 10:15:40 AM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By	:	Retention Time
Calib. Data Modified	:	Monday, October 28, 2013 10:14:52 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
8.097	2	BP	7.59689	6.58164	50.00000		RDX
13.145	2	BV	22.22412	2.24981	50.00000		1,4-DNB(Surr)
18.230	1	BP	12.96533	3.85644	50.00000		Nitroglycerine
25.046	2	BB	24.45439	2.04462	50.00000		2,4-DNT

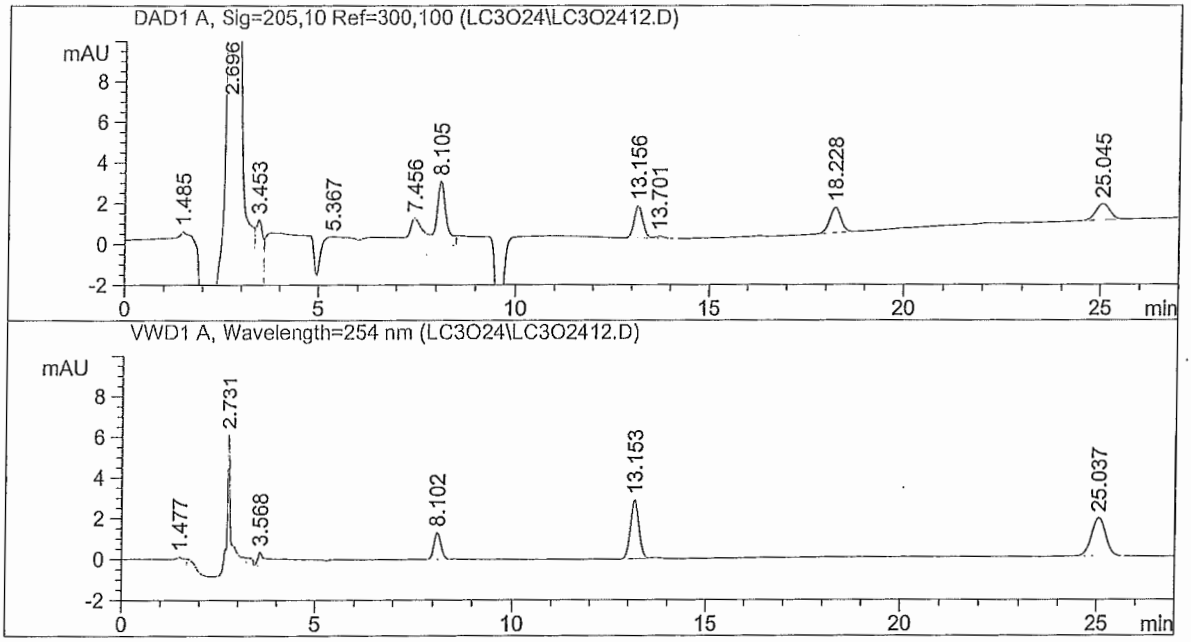
Totals : 200.00000

Results obtained with enhanced integrator!

*** End of Report ***

Injection Date	: 10/24/13 6:49:15 PM	Seq. Line	: 12
Sample Name	: 100 PPB 1008042	Location	: Vial 5
Acq. Operator	: JGD	Inj	: 1
		Inj Volume	: 100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH1.M
Last changed : 10/24/13 4:43:40 PM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 10/28/13 10:19:36 AM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By : Retention Time
Calib. Data Modified : 10/28/13 10:19:36 AM
Multiplier : 1.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

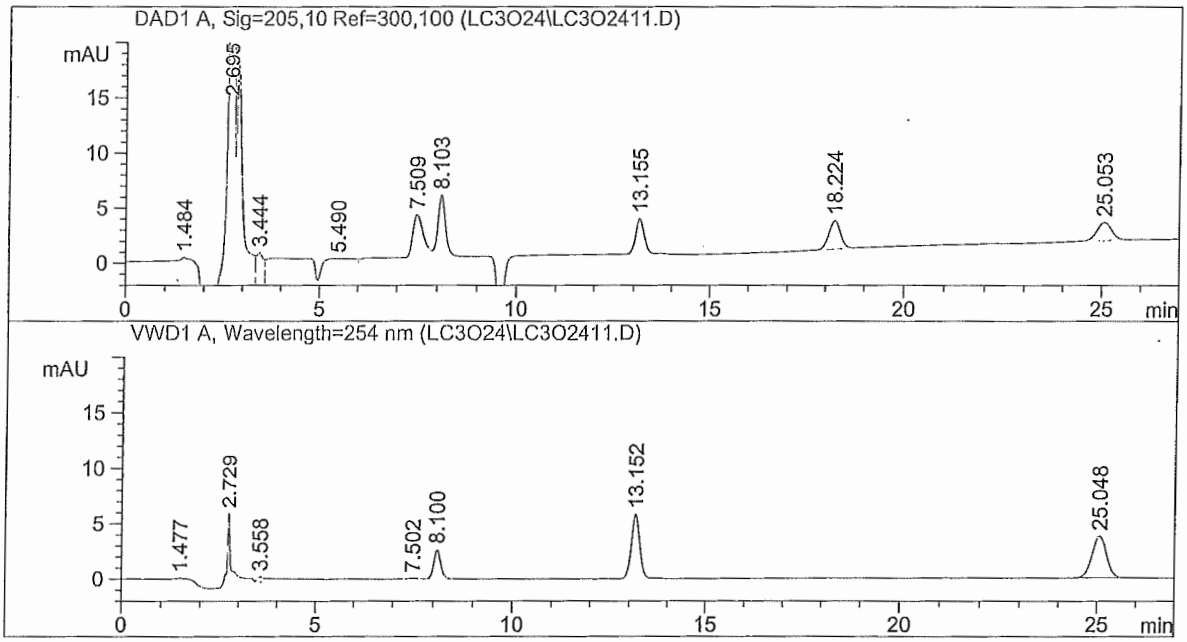
RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
8.102	2	BB	15.85412	6.35129	100.69418		RDX
13.153	2	BB	44.25861	2.25783	99.92859		1,4-DNB(Surr)
18.228	1	BP	25.27819	3.93896	99.56981		Nitroglycerine
25.037	2	BB	48.33740	2.06472	99.80299		2,4-DNT
Totals :					399.99557		

Results obtained with enhanced integrator!

*** End of Report ***

Injection Date	: 10/24/13 6:20:08 PM	Seq. Line :	11
Sample Name	: 200 PPB 1008042	Location :	Vial 4
Acq. Operator	: JGD	Inj :	1
		Inj Volume :	100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH1.M
Last changed : 10/24/13 4:43:40 PM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 10/28/13 10:21:16 AM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By : Retention Time
Calib. Data Modified : 10/28/13 10:19:36 AM
Multiplier : 1.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

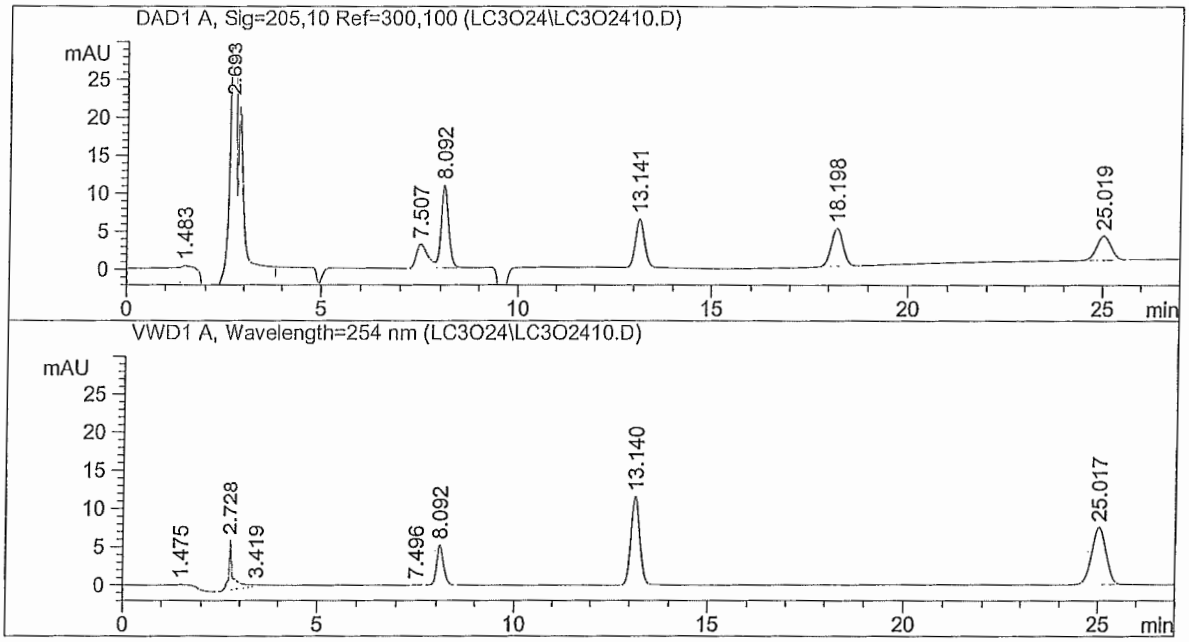
RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
8.100	2	BB	32.88393	6.32862	208.10987		RDX
13.152	2	BB	90.42964	2.25866	204.24962		1,4-DNB(Surr)
18.224	1	BB	53.49364	3.94794	211.18950		Nitroglycerine
25.048	2	BB	97.77531	2.06678	202.07972		2,4-DNT
Totals :					825.62871		

Results obtained with enhanced integrator!

*** End of Report ***

Injection Date	: 10/24/13 5:50:56 PM	Seq. Line	: 10
Sample Name	: 400 PPB 1008042	Location	: Vial 3
Acq. Operator	: JGD	Inj	: 1
		Inj Volume	: 100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH1.M
Last changed : 10/24/13 4:43:40 PM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 10/28/13 10:22:36 AM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By : Retention Time
Calib. Data Modified : Monday, October 28, 2013 10:22:14 AM
Multiplier : 1.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

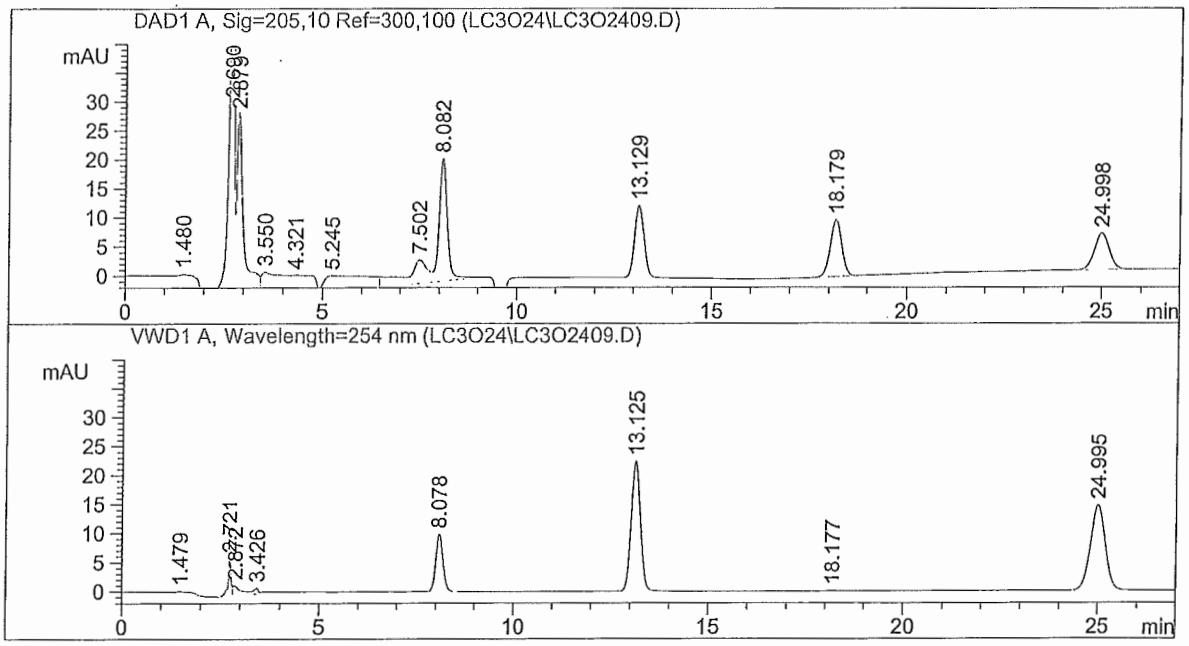
RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
8.092	2	BB	65.29810	6.08902	397.60141		RDX
13.140	2	BB	180.48079	2.21534	399.82709		1,4-DNB(Surr)
18.198	1	BP	102.50692	3.75739	385.15857		Nitroglycerine
25.017	2	BB	194.47369	2.04801	398.28454		2,4-DNT
Totals :					1580.87161		

Results obtained with enhanced integrator!

*** End of Report ***

Injection Date	: 10/24/13 5:21:49 PM	Seq. Line :	9
Sample Name	: 800 PPB 1008042	Location :	Vial 2
Acq. Operator	: JGD	Inj :	1
		Inj Volume :	100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH1.M
Last changed : 10/24/13 4:43:40 PM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 10/28/13 10:24:09 AM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By : Retention Time
Calib. Data Modified : Monday, October 28, 2013 10:23:42 AM
Multiplier : 1.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

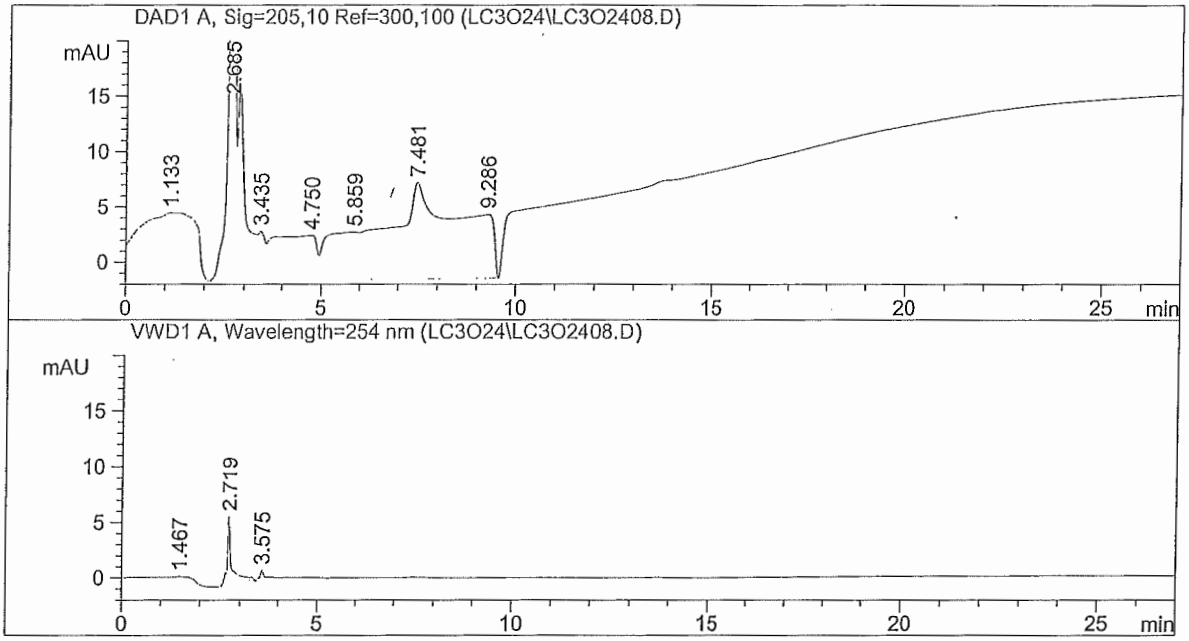
RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
8.078	2	BB	130.46573	6.10540	796.54608		RDX
13.125	2	BB	361.87109	2.21410	801.21946		1,4-DNB(Surr)
18.179	1	PB	207.15292	3.88041	803.83749		Nitroglycerine
24.995	2	BB	390.39532	2.05550	802.45750		2,4-DNT

Totals : 3204.06052

Results obtained with enhanced integrator!

*** End of Report ***

```
==================================================================
Injection Date  : 10/24/13 4:52:37 PM          Seq. Line :   8
Sample Name     : CAL BLK 1008042               Location : Vial 1
Acq. Operator   : JGD                                Inj :   1
                                               Inj Volume : 100 µl
Acq. Method     : C:\HPCHEM\1\METHODS\EXPHH1.M
Last changed    : 10/24/13 4:43:40 PM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed    : 10/28/13 10:26:04 AM by JGD
                  (modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm
==================================================================
```



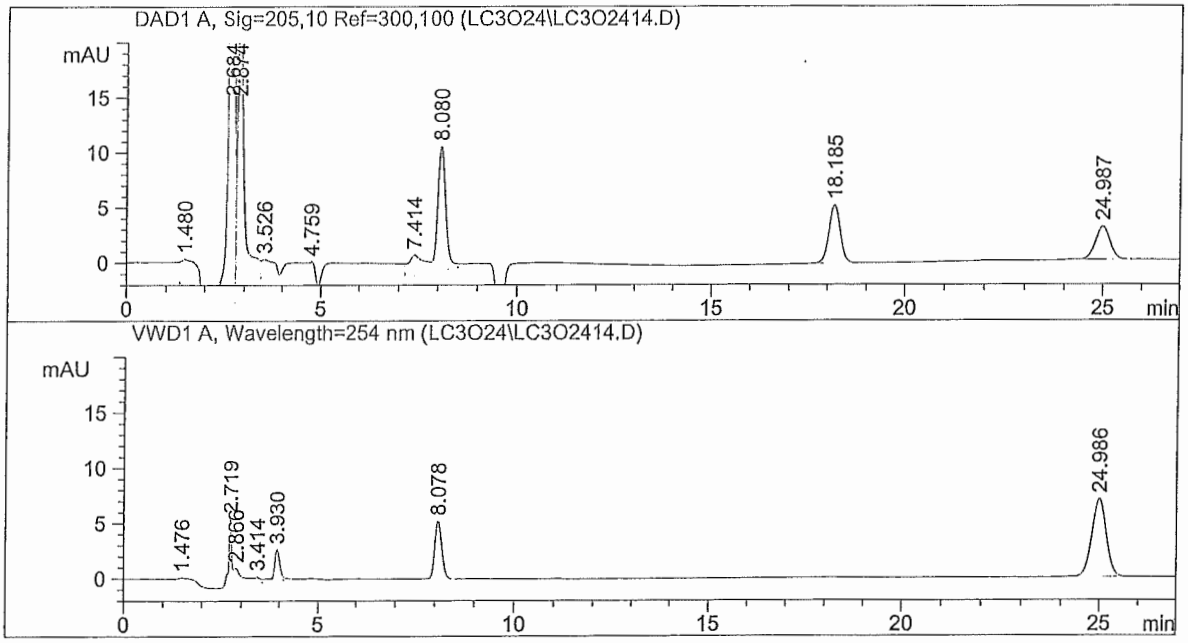

```
==================================================================
                      External Standard Report
==================================================================

Sorted By              :      Retention Time
Calib. Data Modified   :      Monday, October 28, 2013 10:25:13 AM
Multiplier             :      1.0000
Dilution               :      1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime Sig Type     Area     Amt/Area    Amount   Grp   Name
 [min]                                    [PPB]
-------|--|------|----------|----------|----------|--|---------------
  8.078  2            -          -          -         RDX
 13.125  2            -          -          -         1,4-DNB(Surr)
 18.179  1            -          -          -         Nitroglycerine
 24.995  2            -          -          -         2,4-DNT

Totals :                                   0.00000

 Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==================================================================
```

```
==================================================================
Injection Date  : 10/24/13 4:52:37 PM          Seq. Line :   8
Sample Name     : CAL BLK 1008042               Location : Vial 1
Acq. Operator   : JGD                                Inj :   1
                                               Inj Volume : 100 µl
Acq. Method     : C:\HPCHEM\1\METHODS\EXPHH1.M
Last changed    : 10/24/13 4:43:40 PM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed    : 10/28/13 10:26:04 AM by JGD
                  (modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm
==================================================================

==================================================================
                         Area Percent Report
==================================================================

Sorted By              :      Retention Time
Calib. Data Modified   :      Monday, October 28, 2013 10:25:13 AM
Multiplier             :      1.0000
Dilution               :      1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

Peak RetTime Sig  Type     Area       Area    Name
  #   [min]                            %
----|-------|---|------|----------|--------|-------------------------
   1   8.078  2            0.00000   0.0000 RDX
   2  13.125  2            0.00000   0.0000 1,4-DNB(Surr)
   3  18.179  1            0.00000   0.0000 Nitroglycerine
   4  24.995  2            0.00000   0.0000 2,4-DNT

Totals :                   0.00000

 Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==================================================================
                        *** End of Report ***
```

Injection Date : 10/24/13 7:47:35 PM
Sample Name : 400 PPB 1008043 ICV
Acq. Operator : JGD

Seq. Line : 14
Location : Vial 7
Inj : 1
Inj Volume : 100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH1.M
Last changed : 10/24/13 4:43:40 PM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 10/28/13 10:26:04 AM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By : Retention Time
Calib. Data Modified : Monday, October 28, 2013 10:25:13 AM
Multiplier : 1.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
8.078	2	BP	64.65681	6.13733	396.82007		RDX
13.125	2		-	-	-		1,4-DNB(Surr)
18.185	1	BB	109.86657	3.86369	424.49030		Nitroglycerine
24.986	2	BB	183.31058	2.05113	375.99429		2,4-DNT
Totals :					1197.30465		

± 15% = 340 – 460
PASS
gD 10/28/13

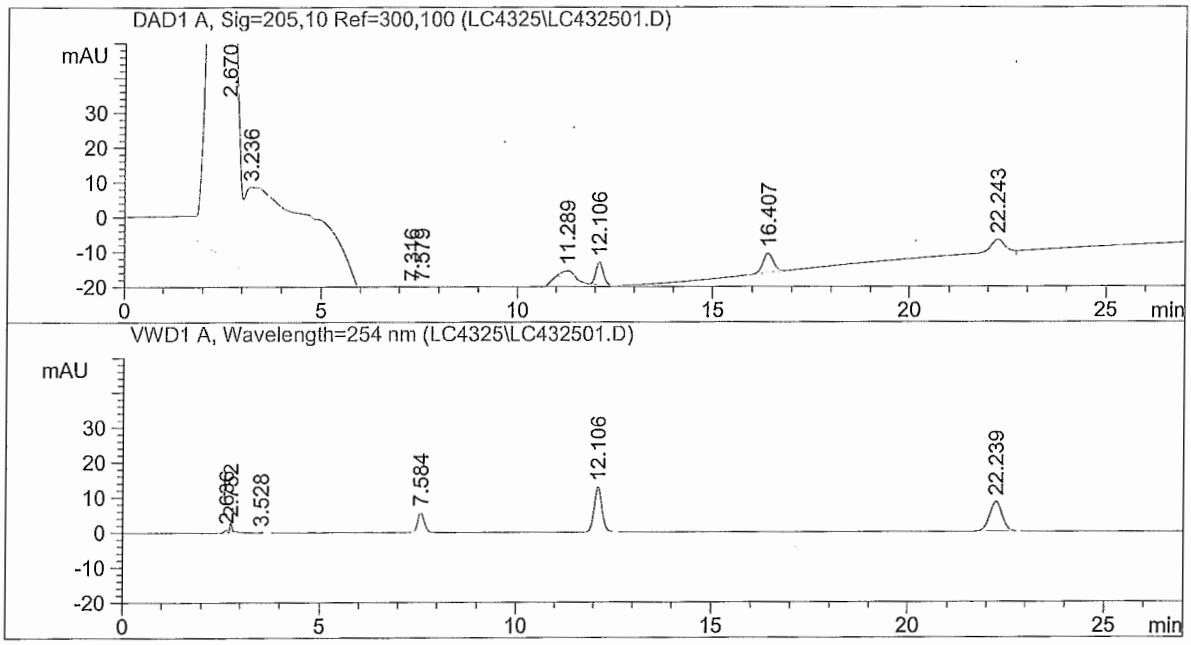
Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

*** End of Report ***

Injection Date	: 3/25/14 11:39:51 AM	Seq. Line :	1
Sample Name	: 400 PPB 1008185	Location :	Vial 1
Acq. Operator	: JGD	Inj :	1
		Inj Volume :	100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 3/25/14 11:39:57 AM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 4/1/14 8:17:09 AM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By : Retention Time
Calib. Data Modified : 4/1/14 8:17:09 AM
Multiplier : 1.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.584	2	BBA	65.11588	6.13718	399.62805		RDX
12.106	2	BBA	183.77776	2.21378	406.84265		1,4-DNB(Surr)
16.407	1	PV	104.65675	3.86352	404.34354		Nitroglycerine
22.239	2	BP	190.60435	2.05108	390.94419		2,4-DNT

Totals : 1601.75844

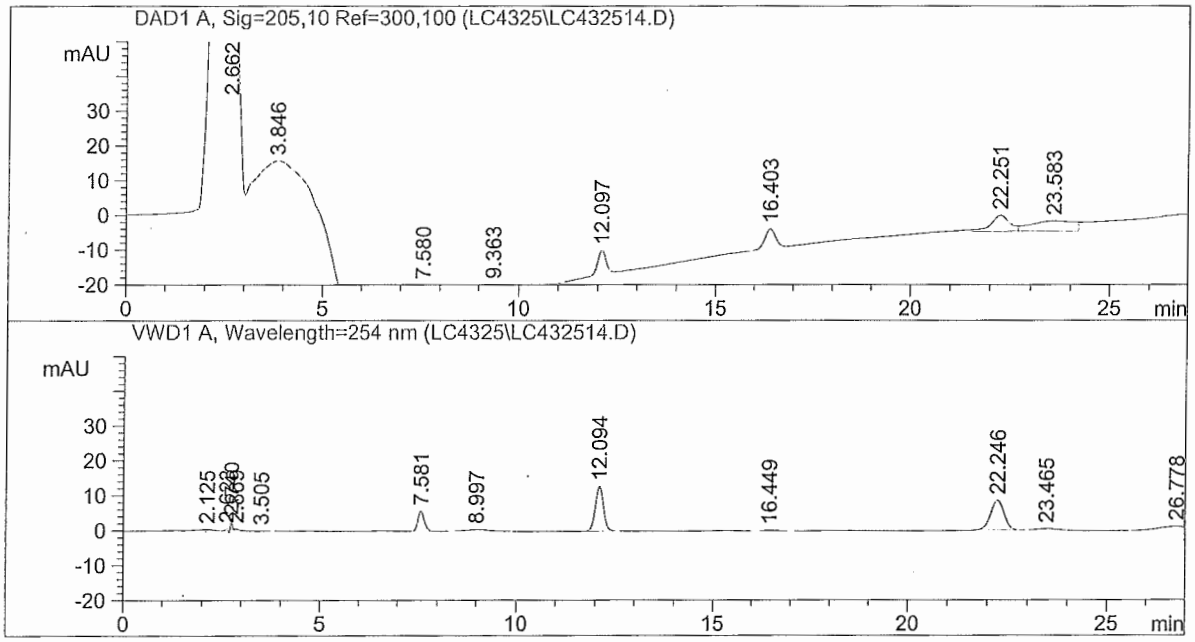
Pass 340 — 460
JD 4/1/14

Results obtained with enhanced integrator!

*** End of Report ***

Injection Date	: 3/25/14 5:59:06 PM	Seq. Line	: 14
Sample Name	: 400 PPB 1008186	Location	: Vial 1
Acq. Operator	: JGD	Inj	: 1
		Inj Volume	: 100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 3/25/14 11:39:57 AM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 4/1/14 8:20:53 AM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By : Retention Time
Calib. Data Modified : 4/1/14 8:20:53 AM
Multiplier : 1.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.581	2	BBA	64.64059	6.13733	396.72085		RDX
12.094	2	BBA	183.69548	2.21378	406.66092		1,4-DNB(Surr)
16.403	1	BV	107.05169	3.86360	413.60494		Nitroglycerine
22.246	2	BP	192.53445	2.05106	394.90028		2,4-DNT

Totals : 1611.88699

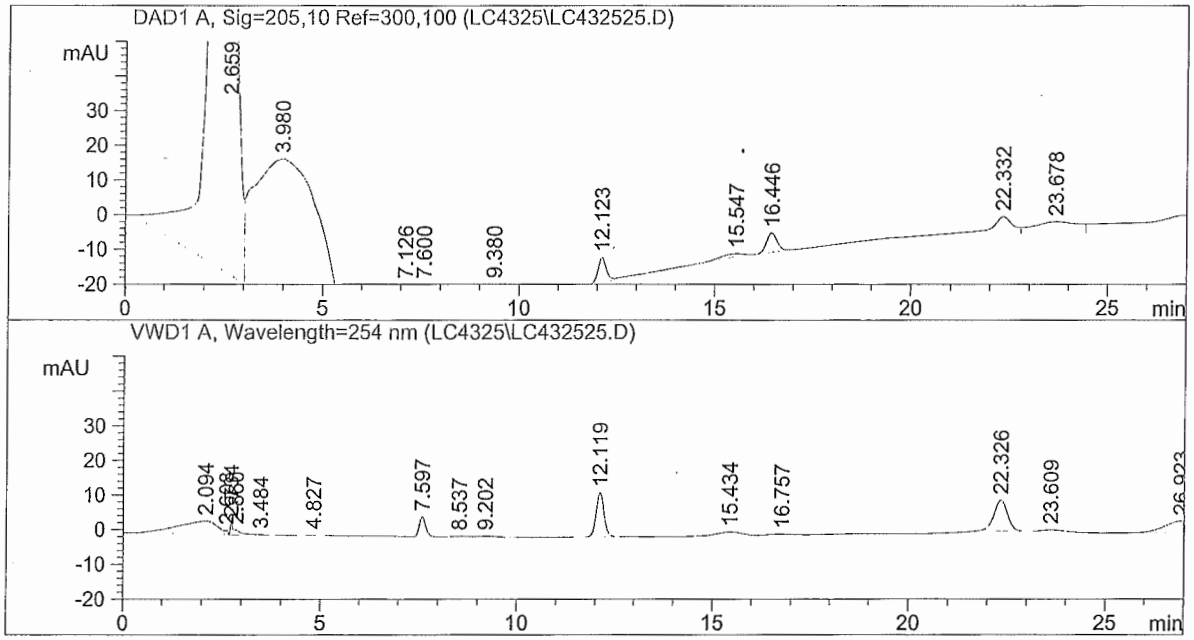
Pass 340 – 460
JP 4/1/14

Results obtained with enhanced integrator!

*** End of Report ***

Injection Date	: 3/25/14 11:19:54 PM	Seq. Line	: 25
Sample Name	: 400 PPB 1008186	Location	: Vial 1
Acq. Operator	: JGD	Inj	: 1
		Inj Volume	: 100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 3/25/14 11:39:57 AM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 4/1/14 8:20:53 AM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By : Retention Time
Calib. Data Modified : 4/1/14 8:20:53 AM
Multiplier : 1.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.597	2	BBA	64.17309	6.13748	393.86120		RDX
12.119	2	BBA	184.58371	2.21375	408.62288		1,4-DNB(Surr)
16.446	1	PV	104.23425	3.86351	402.70967		Nitroglycerine
22.326	2	BP	214.04114	2.05092	438.98209		2,4-DNT

Pass 340-460
JD 4/1/14

Totals : 1644.17584

Results obtained with enhanced integrator!

*** End of Report ***

Instrument Logs/
Analysis Notebook Pages

Rev. 1.1

1° Column. 1 CAL for HI Tissue *
Mobile Phase 3135-70
0.900 mL / min ; 100 µL Inj. Vol., 30°C
Column Ser No. 542447-2

* 3 Analytes only: RDX, NG + 2,4-DNT (+ 1,4 DNB Surr.)

Sequence: C:\HPCHEM\1\SEQUENCE\LC3024.S

Sequence Table:

Method and Injection Info Part:

Line	Location	SampleName	Method	Inj	
LC3024 1	Vial 1	CAL BLK 1008042	EXPHH1	1	DAD λ @ 214 nm
2	Vial 2	800 PPB 1008042	EXPHH1	1	
3	Vial 3	400 PPB 1008042	EXPHH1	1	
4	Vial 4	200 PPB 1008042	EXPHH1	1	
5	Vial 5	100 PPB 1008042	EXPHH1	1	
6	Vial 6	50 PPB 1008042	EXPHH1	1	
7	Vial 7	400 PPB 1008043	EXPHH1	1	
8	Vial 1	CAL BLK 1008042	EXPHH1	1	DAD λ @ 205 nm ** EXPHH2.m
9	Vial 2	800 PPB 1008042	EXPHH1	1	
10	Vial 3	400 PPB 1008042	EXPHH1	1	
11	Vial 4	200 PPB 1008042	EXPHH1	1	
12	Vial 5	100 PPB 1008042	EXPHH1	1	
13	Vial 6	50 PPB 1008042	EXPHH1	1	
LC3024 14	Vial 7	400 PPB 1008043	EXPHH1	1	

10/28/13

** NG area is better (higher) at this λ
5-point ICAL passes / Name EXPHH2.m

Continued on Page

Read and Understood By

Signed 10/28/13 Date Signed 11/14/13 Date

100
PROJECT 3/25/14 8330A EXPLOS Notebook No. 3135

Continued From Page

Tissues (Short list)

Sequence: C:\HPCHEM\1\SEQUENCE\LC4325.S

Sequence Table:

Method and Injection Info Part:

Line	Location	SampleName	Method	Inj
1.	Vial 1	400 PPB 1008185	EXPHH2	1
2	Vial 2	6613-01B1/B10173	EXPHH2	1
3	Vial 3	6613-01K1/B10173	EXPHH2	1
4	Vial 4	6613-01	EXPHH2	1
5	Vial 5	6613-01MS	EXPHH2	1
6	Vial 6	6613-01MD	EXPHH2	1
7	Vial 7	6613-02	EXPHH2	1
8	Vial 8	6613-03	EXPHH2	1
9	Vial 9	6613-04	EXPHH2	1
10	Vial 10	6613-05	EXPHH2	1
11	Vial 11	6613-06	EXPHH2	1
12	Vial 12	6613-07	EXPHH2	1
13	Vial 13	6613-08	EXPHH2	1
14	Vial 1	400 PPB 1008186	EXPHH2	1
15	Vial 14	6616-01	EXPHH2	1
16	Vial 15	6616-02	EXPHH2	1
17	Vial 16	6616-03	EXPHH2	1
18	Vial 17	6616-04	EXPHH2	1
19	Vial 18	6616-04MS	EXPHH2	1
20	Vial 19	6616-04MD	EXPHH2	1
21	Vial 20	6616-05	EXPHH2	1
22	Vial 21	6616-06	EXPHH2	1
23	Vial 22	6616-07	EXPHH2	1
24	Vial 23	6616-08	EXPHH2	1
25.	Vial 1	400 PPB 1008186	EXPHH2	1

LC4325 01

LC4325

3/27/14

Continued on Page

Read and Understood By

Signed	Date	Signed	Date
4/1/14		PEK	4/8/2014

Blank / Field Sample / QC Data

Sample Results

Chromatogram

Quant Report (If applicable)

Confirmation Analysis Quant Report / Chromatogram (If applicable)

Tentatively Identified Compounds (If required)

Rev. 1.1

METHOD BLANK REPORT
ARDL, Inc. 400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006613 Report Date: 04/01/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	NA	ARDL Lab No.:	006613-01B1
Desc/Location:	NA	Lab Filename:	
Sample Date:	NA	Received Date:	NA
Sample Time:	NA	Prep. Date:	03/24/2014
Matrix:	QC Material	Analysis Date:	03/25/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10173
% Moisture:	NA	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG
Nitroglycerine	300	500	ND		UG/KG

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	102%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Blank for Run B10173, 8330, EXPLOSIVES

Page 1 of 1

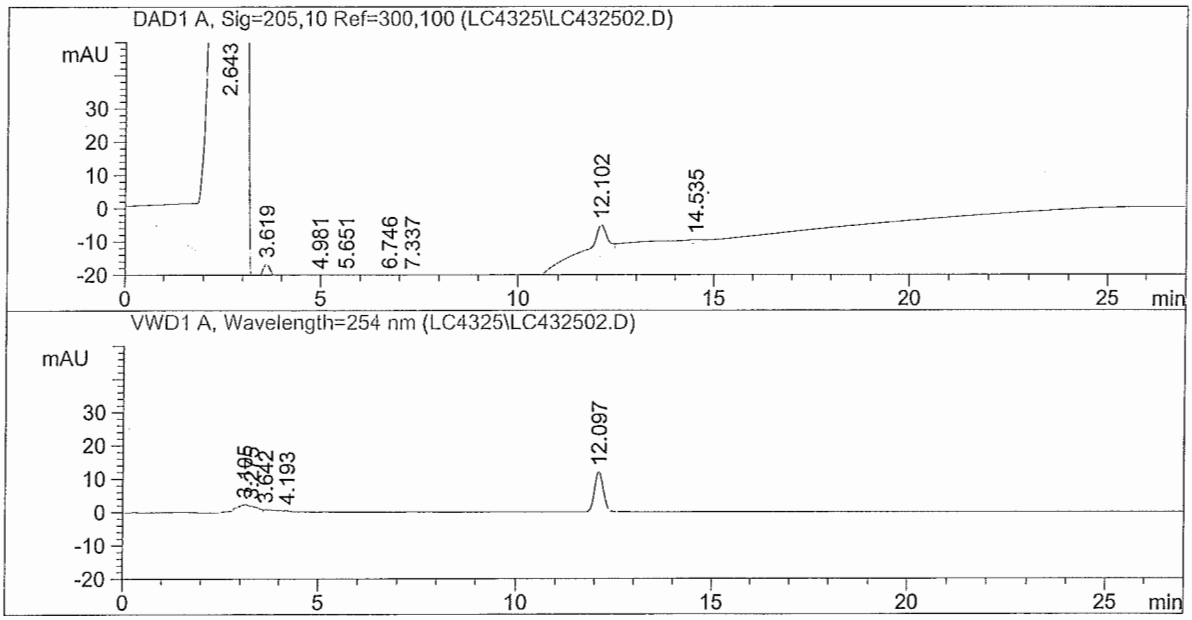
Data File C:\HPCHEM\1\DATA\LC4325\LC432502.D Sample Name: 6613-01B1/B10173
MBLK B10173

==========

Injection Date : 3/25/14 12:08:59 PM Seq. Line : 2
Sample Name : 6613-01B1/B10173 Location : Vial 2
Acq. Operator : JGD Inj : 1
Inj Volume : 100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 3/25/14 11:39:57 AM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 4/1/14 8:20:53 AM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm

==========



==========

External Standard Report

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Sorted By : Retention Time
Calib. Data Modified : 4/1/14 8:20:53 AM
Multiplier : 10.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.584	2		-	-	-		RDX
12.097	2	BB	183.81506	2.21377	4069.25057		1,4-DNB(Surr)
16.407	1		-	-	-		Nitroglycerine
22.239	2		-	-	-		2,4-DNT

Totals : 4069.25057

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006613 Report Date: 04/01/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	NA	ARDL Lab No.:	006613-01K1
Desc/Location:	NA	Lab Filename:	
Sample Date:	NA	Received Date:	NA
Sample Time:	NA	Prep. Date:	03/24/2014
Matrix:	QC Material	Analysis Date:	03/25/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10173
% Moisture:	NA	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units
Hexahydro-trinitro-triazine (RDX)	200	500	3750		UG/KG
Nitroglycerine	300	500	4100		UG/KG

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	95%

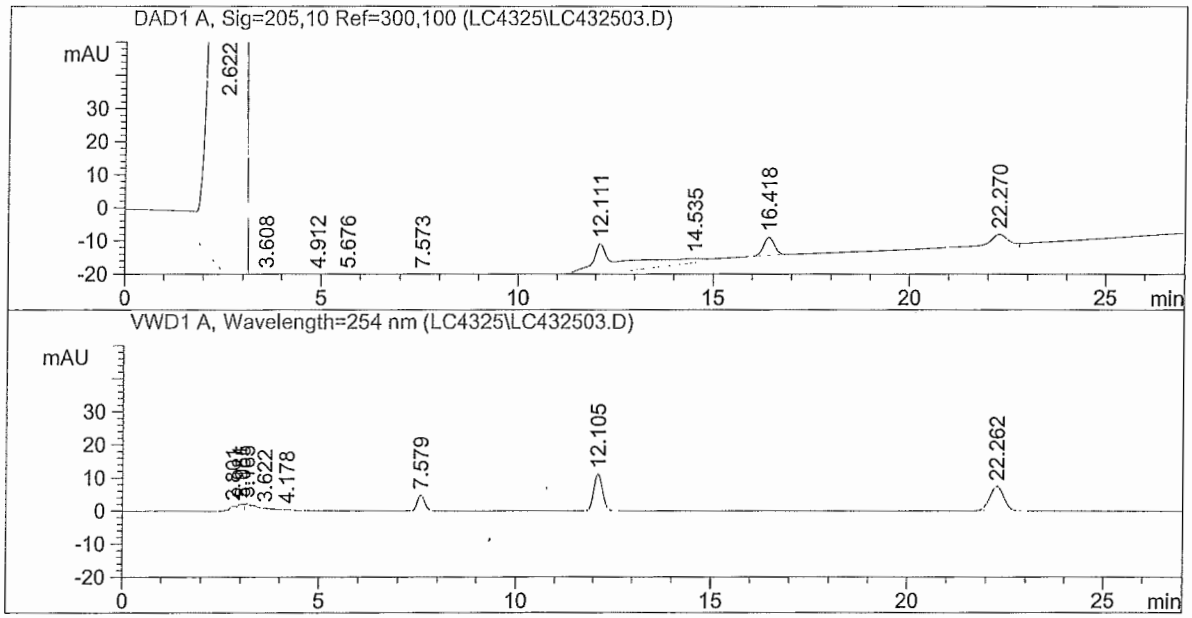
Surrogate recoveries marked with '*' indicates they are outside standard limits.

Spike Blank for Run B10173, 8330, EXPLOSIVES Page 1 of 1

LCS B10173

Injection Date	: 3/25/14 12:38:08 PM	Seq. Line :	3
Sample Name	: 6613-01K1/B10173	Location :	Vial 3
Acq. Operator	: JGD	Inj :	1
		Inj Volume :	100 µl
Acq. Method	: C:\HPCHEM\1\METHODS\EXPHH2.M		
Last changed	: 3/25/14 11:39:57 AM by JGD		
Analysis Method	: C:\HPCHEM\1\METHODS\EXPHH2.M		
Last changed	: 4/1/14 8:20:53 AM by JGD (modified after loading)		

EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By	:	Retention Time
Calib. Data Modified	:	4/1/14 8:20:53 AM
Multiplier	:	10.0000
Dilution	:	1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.579	2	BBA	61.05008	6.13854	3747.58353		RDX
12.105	2	BBA	171.56549	2.21413	3798.67565		1,4-DNB(Surr)
16.418	1	BV	106.15813	3.86357	4101.49467		Nitroglycerine
22.262	2	BP	182.40071	2.05114	3741.29352		2,4-DNT
Totals :					1.53890e4		

Results obtained with enhanced integrator!

*** End of Report ***

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006616 Report Date: 04/01/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK120L	ARDL Lab No.:	006616-01
Desc/Location:	MAKAU MILITARY RES OAHU	Lab Filename:	
Sample Date:	01/31/2014	Received Date:	03/14/2014
Sample Time:	1040	Prep. Date:	03/24/2014
Matrix:	TISSUE	Analysis Date:	03/25/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10173
% Moisture:	No Moisture Present	Level:	LOW

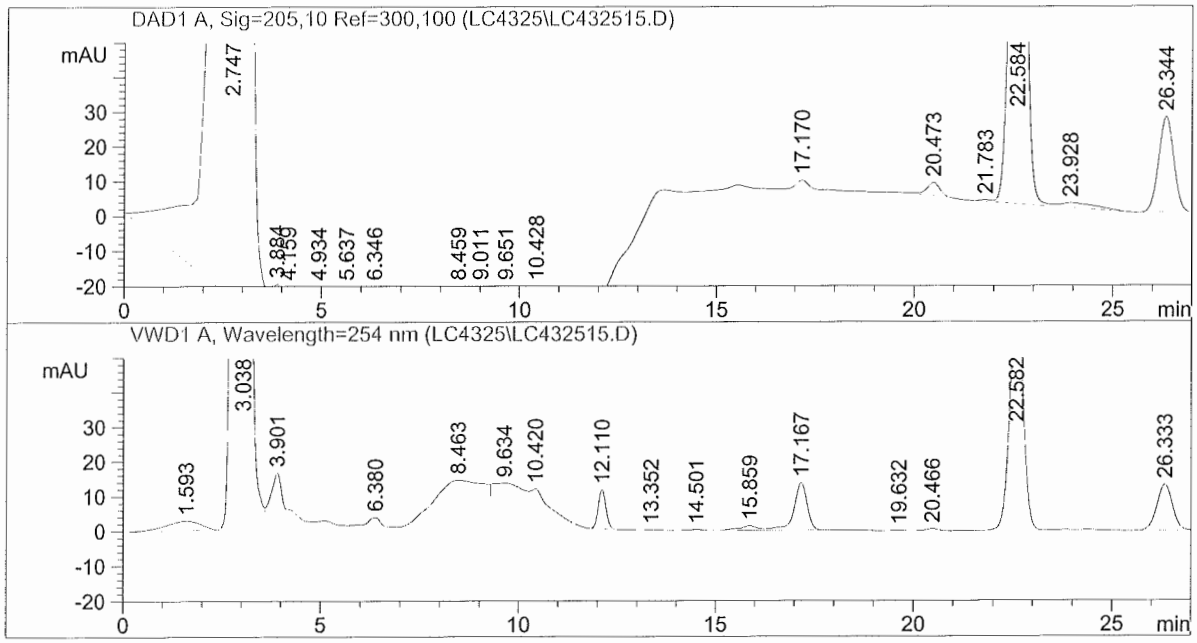
Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	86%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006616-01, 8330, EXPLOSIVES

```
==================================================================
Injection Date  : 3/25/14 6:28:17 PM          Seq. Line :  15
Sample Name     : 6616-01                      Location : Vial 14
Acq. Operator   : JGD                               Inj :  1
                                             Inj Volume : 100 µl
Acq. Method     : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed    : 3/25/14 11:39:57 AM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed    : 4/1/14 8:36:18 AM by JGD
                  (modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm
==================================================================
```




```
==================================================================
                      External Standard Report
==================================================================

Sorted By              :      Retention Time
Calib. Data Modified   :      4/1/14 8:20:53 AM
Multiplier             :     10.0000
Dilution               :      1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm
```

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.584	2		-	-	-		RDX
12.110	2	VBA	155.04036	2.21469	3433.65998		1,4-DNB(Surr)
16.407	1		-	-	-		Nitroglycerine
22.239	2		-	-	-		2,4-DNT

Totals : 3433.65998

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========
*** End of Report ***

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006616 Report Date: 04/01/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK121L	ARDL Lab No.:	006616-02
Desc/Location:	MAKAU MILITARY RES OAHU	Lab Filename:	
Sample Date:	01/31/2014	Received Date:	03/14/2014
Sample Time:	1130	Prep. Date:	03/24/2014
Matrix:	TISSUE	Analysis Date:	03/25/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10173
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

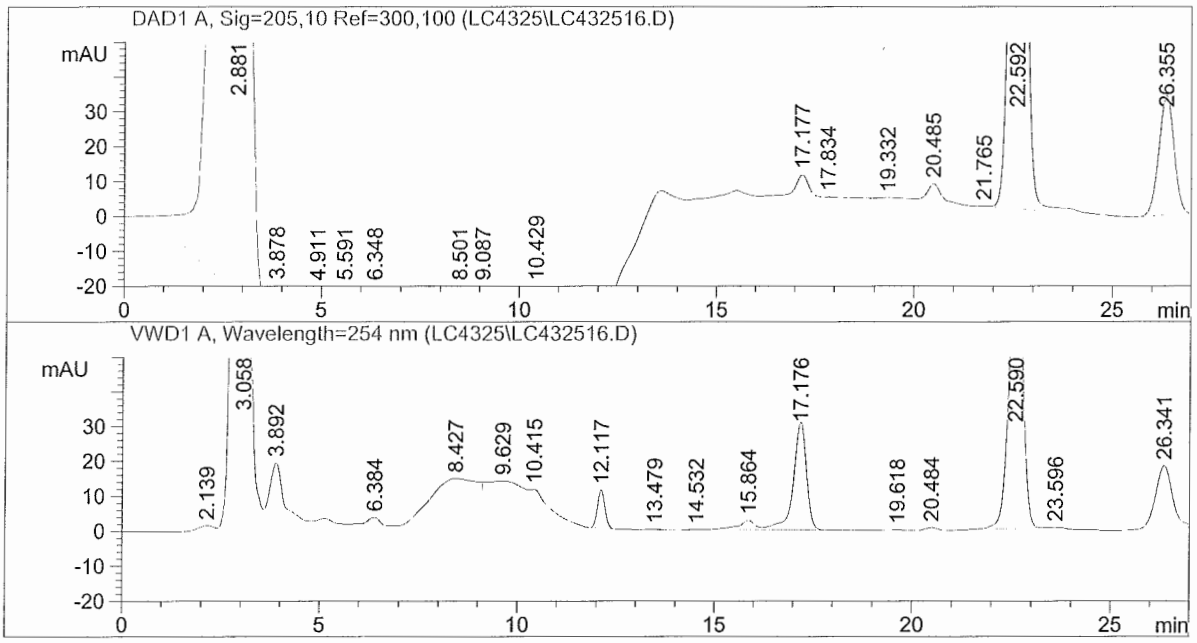
SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	82%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006616-02, 8330, EXPLOSIVES

Injection Date	: 3/25/14 6:57:26 PM	Seq. Line	: 16
Sample Name	: 6616-02	Location	: Vial 15
Acq. Operator	: JGD	Inj	: 1
		Inj Volume	: 100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 3/25/14 11:39:57 AM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 4/1/14 8:36:18 AM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By : Retention Time
Calib. Data Modified : 4/1/14 8:20:53 AM
Multiplier : 10.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.584	2		-	-	-		RDX
12.117	2	VBA	147.67473	2.21498	3270.96410		1,4-DNB(Surr)
16.407	1		-	-	-		Nitroglycerine
22.239	2		-	-	-		2,4-DNT

Totals : 3270.96410

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

*** End of Report ***

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006616 Report Date: 04/01/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK122L	ARDL Lab No.:	006616-03
Desc/Location:	MAKAU MILITARY RES OAHU	Lab Filename:	
Sample Date:	01/31/2014	Received Date:	03/14/2014
Sample Time:	1405	Prep. Date:	03/24/2014
Matrix:	TISSUE	Analysis Date:	03/25/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10173
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	84%

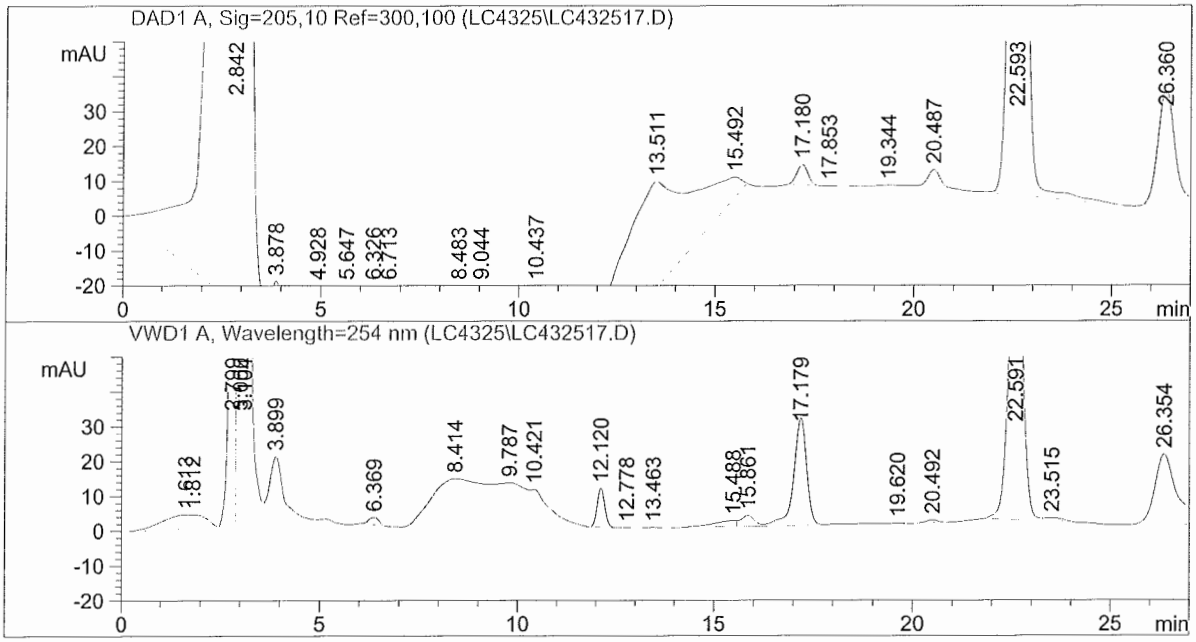
Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006616-03, 8330, EXPLOSIVES

Page 1 of 1

Injection Date	: 3/25/14 7:26:37 PM	Seq. Line :	17
Sample Name	: 6616-03	Location :	Vial 16
Acq. Operator	: JGD	Inj :	1
		Inj Volume :	100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 3/25/14 11:39:57 AM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 4/1/14 9:02:45 AM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By : Retention Time
Calib. Data Modified : 4/1/14 8:20:53 AM
Multiplier : 10.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.584	2		-	-	-		RDX
12.120	2	VP	152.26231	2.21479	3372.29706		1,4-DNB(Surr)
16.407	1		-	-	-		Nitroglycerine
22.239	2		-	-	-		2,4-DNT

Totals : 3372.29706

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

*** End of Report ***

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006616 Report Date: 04/01/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK123L	ARDL Lab No.:	006616-04
Desc/Location:	MAKAU MILITARY RES OAHU	Lab Filename:	
Sample Date:	01/31/2014	Received Date:	03/14/2014
Sample Time:	1455	Prep. Date:	03/24/2014
Matrix:	TISSUE	Analysis Date:	03/25/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10173
% Moisture:	No Moisture Present	Level:	LOW

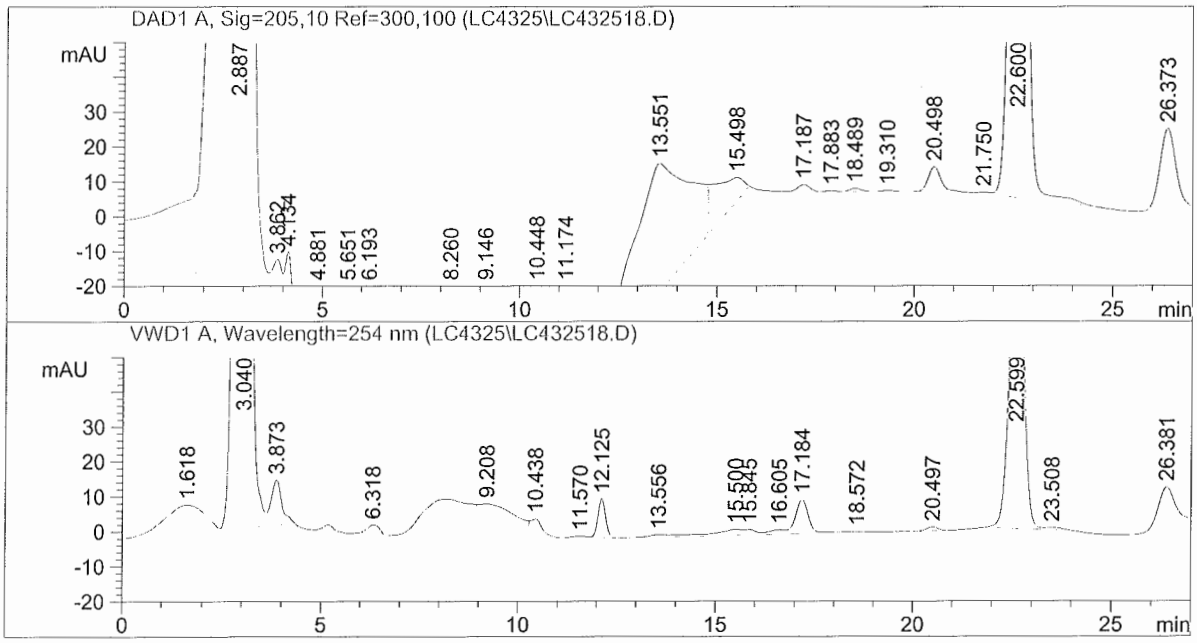
Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	85%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006616-04, 8330, EXPLOSIVES Page 1 of 1

```
==================================================================
Injection Date  : 3/25/14 7:55:46 PM          Seq. Line :  18
Sample Name     : 6616-04                      Location : Vial 17
Acq. Operator   : JGD                               Inj :   1
                                             Inj Volume : 100 µl
Acq. Method     : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed    : 3/25/14 11:39:57 AM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed    : 4/1/14 9:02:45 AM by JGD
                  (modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm
==================================================================
```




```
==================================================================
                    External Standard Report
==================================================================

Sorted By              :      Retention Time
Calib. Data Modified   :      4/1/14 8:20:53 AM
Multiplier             :     10.0000
Dilution               :      1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm
```

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.584	2		-	-	-		RDX
12.125	2	VP	153.01711	2.21476	3388.96929		1,4-DNB(Surr)
16.407	1		-	-	-		Nitroglycerine
22.239	2		-	-	-		2,4-DNT

Totals : 3388.96929

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========
*** End of Report ***

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006616 Report Date: 04/01/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK123L	ARDL Lab No.:	006616-04MS
Desc/Location:	MAKAU MILITARY RES OAHU	Lab Filename:	
Sample Date:	01/31/2014	Received Date:	03/14/2014
Sample Time:	1455	Prep. Date:	03/24/2014
Matrix:	TISSUE	Analysis Date:	03/25/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10173
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	3630		UG/KG	1
Nitroglycerine	300	500	3530		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	86%

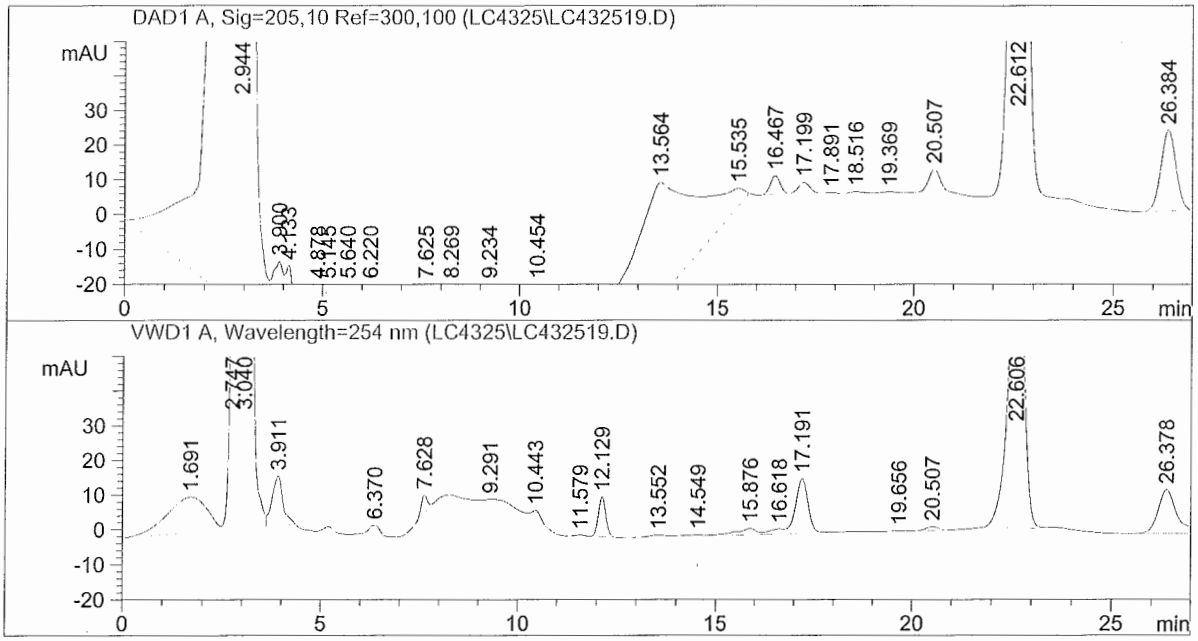
Surrogate recoveries marked with '*' indicates they are outside standard limits.

Matrix Spike for 006616-04, 8330, EXPLOSIVES

Page 1 of 1

Injection Date	: 3/25/14 8:24:54 PM	Seq. Line	: 19
Sample Name	: 6616-04MS	Location	: Vial 18
Acq. Operator	: JGD	Inj	: 1
		Inj Volume	: 100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 3/25/14 11:39:57 AM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 4/1/14 9:02:45 AM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By	:	Retention Time
Calib. Data Modified	:	4/1/14 8:20:53 AM
Multiplier	:	10.0000
Dilution	:	1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.628	2	PV	59.16352	6.13923	3632.18633		RDX
12.129	2	VP	155.45369	2.21467	3442.78983		1,4-DNB(Surr)
16.467	1	BBA	91.43055	3.86301	3531.96791		Nitroglycerine
22.239	2		-	-	-		2,4-DNT

Totals : 1.06069e4

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

*** End of Report ***

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006616 Report Date: 04/01/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK123L	ARDL Lab No.:	006616-04MD
Desc/Location:	MAKAU MILITARY RES OAHU	Lab Filename:	
Sample Date:	01/31/2014	Received Date:	03/14/2014
Sample Time:	1455	Prep. Date:	03/24/2014
Matrix:	TISSUE	Analysis Date:	03/25/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10173
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	3900		UG/KG	1
Nitroglycerine	300	500	3360		UG/KG	1

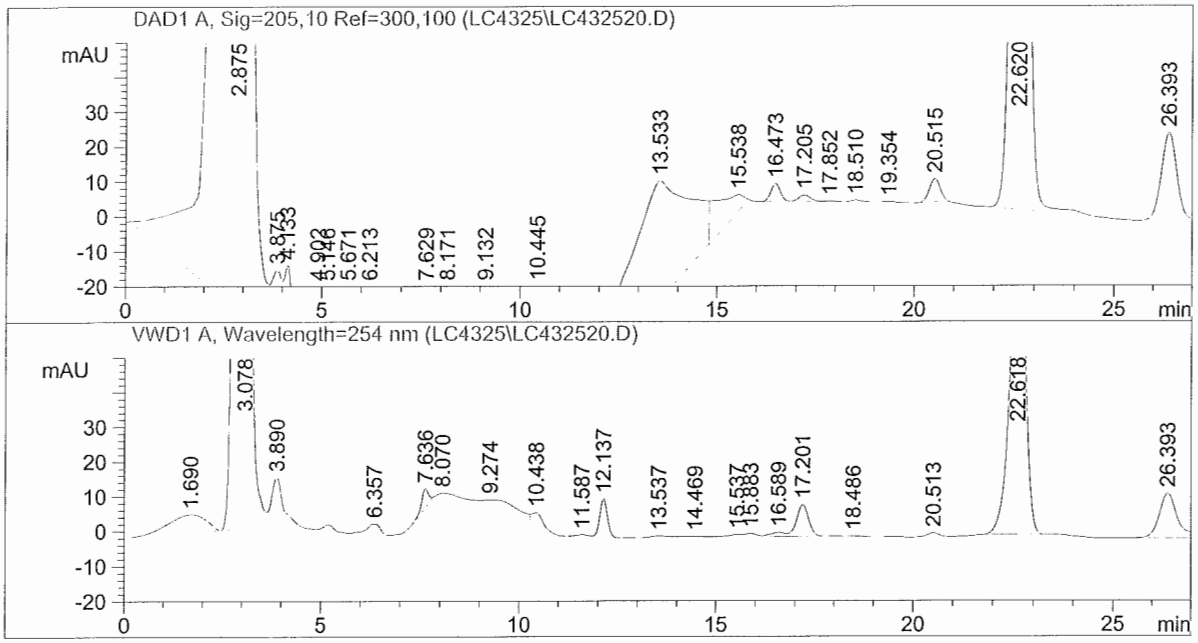
SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	84%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Matrix Spike Duplicate for 006616-04, 8330, EXPLOSIVES

Page 1 of 1

```
==================================================================
Injection Date  : 3/25/14 8:54:06 PM          Seq. Line :  20
Sample Name     : 6616-04MD                    Location : Vial 19
Acq. Operator   : JGD                               Inj :   1
                                             Inj Volume : 100 µl
Acq. Method     : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed    : 3/25/14 11:39:57 AM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed    : 4/1/14 9:02:45 AM by JGD
                  (modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm
==================================================================
```




```
==================================================================
                      External Standard Report
==================================================================

Sorted By              :      Retention Time
Calib. Data Modified   :      4/1/14 8:20:53 AM
Multiplier             :     10.0000
Dilution               :      1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm
```

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.636	2	BV	63.50371	6.13770	3897.66732		RDX
12.137	2	VP	151.48221	2.21482	3355.06569		1,4-DNB(Surr)
16.473	1	BBA	86.97652	3.86280	3359.72702		Nitroglycerine
22.239	2		-	-	-		2,4-DNT

Totals : 1.06125e4

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========
*** End of Report ***

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006616 Report Date: 04/01/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK124L	ARDL Lab No.:	006616-05
Desc/Location:	MAKAU MILITARY RES OAHU	Lab Filename:	
Sample Date:	01/31/2014	Received Date:	03/14/2014
Sample Time:	1540	Prep. Date:	03/24/2014
Matrix:	TISSUE	Analysis Date:	03/25/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10173
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	88%

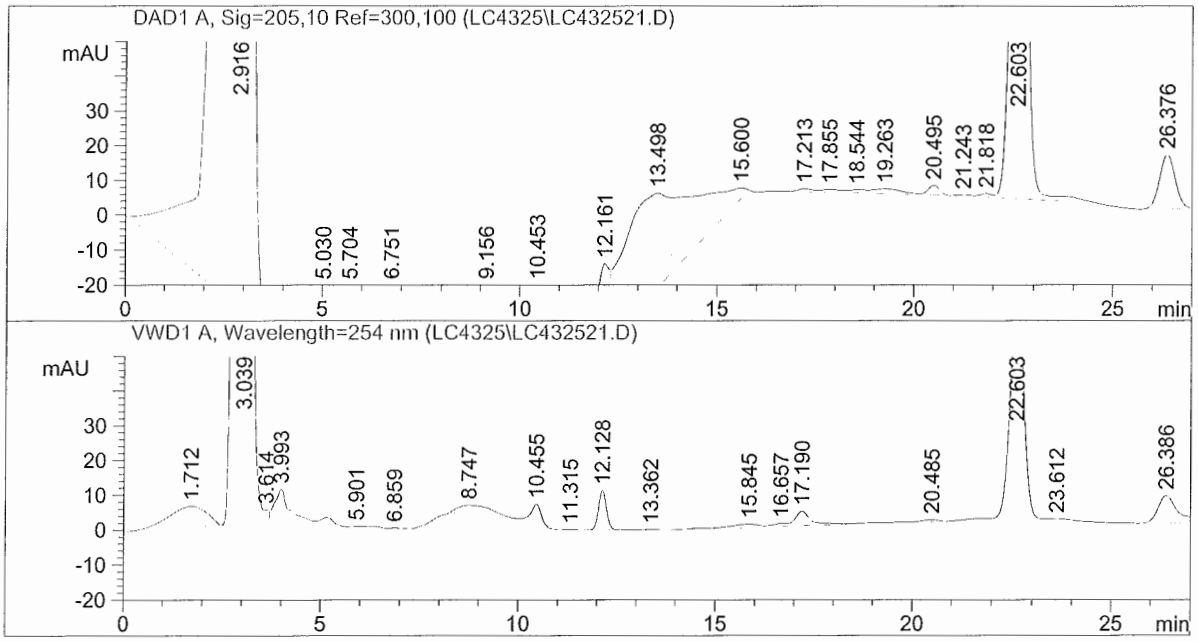
Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006616-05, 8330, EXPLOSIVES

Page 1 of 1

Injection Date	: 3/25/14 9:23:15 PM	Seq. Line	: 21
Sample Name	: 6616-05	Location	: Vial 20
Acq. Operator	: JGD	Inj	: 1
		Inj Volume	: 100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 3/25/14 11:39:57 AM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 4/1/14 9:02:45 AM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By : Retention Time
Calib. Data Modified : 4/1/14 8:20:53 AM
Multiplier : 10.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.584	2		-	-	-		RDX
12.128	2	VBA	159.52159	2.21452	3532.64375		1,4-DNB(Surr)
16.407	1		-	-	-		Nitroglycerine
22.239	2		-	-	-		2,4-DNT

Totals : 3532.64375

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

*** End of Report ***

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006616 Report Date: 04/01/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK126L	ARDL Lab No.:	006616-06
Desc/Location:	MAKAU MILITARY RES OAHU	Lab Filename:	
Sample Date:	01/31/2014	Received Date:	03/14/2014
Sample Time:	1615	Prep. Date:	03/24/2014
Matrix:	TISSUE	Analysis Date:	03/25/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10173
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

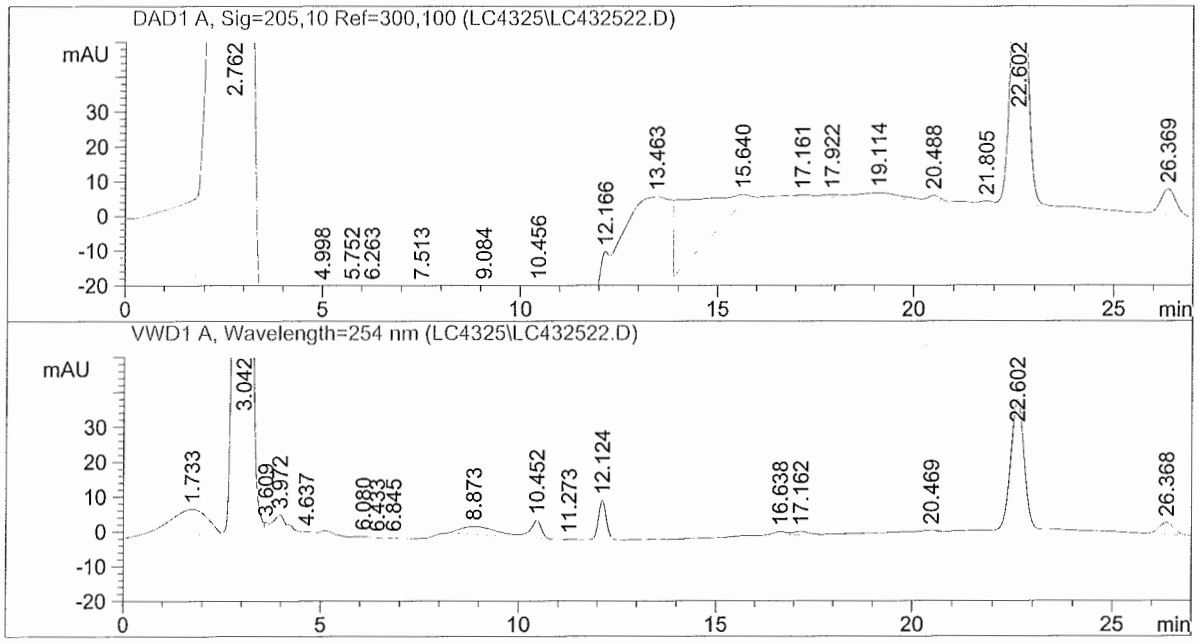
SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	89%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006616-06, 8330, EXPLOSIVES

Page 1 of 1

```
==================================================================
Injection Date  : 3/25/14 9:52:26 PM          Seq. Line :  22
Sample Name     : 6616-06                      Location : Vial 21
Acq. Operator   : JGD                               Inj :   1
                                              Inj Volume : 100 µl
Acq. Method     : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed    : 3/25/14 11:39:57 AM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed    : 4/1/14 9:02:45 AM by JGD
                  (modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm
==================================================================
```




```
==================================================================
                      External Standard Report
==================================================================

Sorted By              :      Retention Time
Calib. Data Modified   :      4/1/14 8:20:53 AM
Multiplier             :     10.0000
Dilution               :      1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm
```

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.584	2		-	-	-		RDX
12.124	2	VBA	160.76517	2.21448	3560.11250		1,4-DNB(Surr)
16.407	1		-	-	-		Nitroglycerine
22.239	2		-	-	-		2,4-DNT

Totals : 3560.11250

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========
*** End of Report ***

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006616 Report Date: 04/01/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK127L	ARDL Lab No.:	006616-07
Desc/Location:	MAKAU MILITARY RES OAHU	Lab Filename:	
Sample Date:	02/11/2014	Received Date:	03/14/2014
Sample Time:	1304	Prep. Date:	03/24/2014
Matrix:	TISSUE	Analysis Date:	03/25/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10173
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

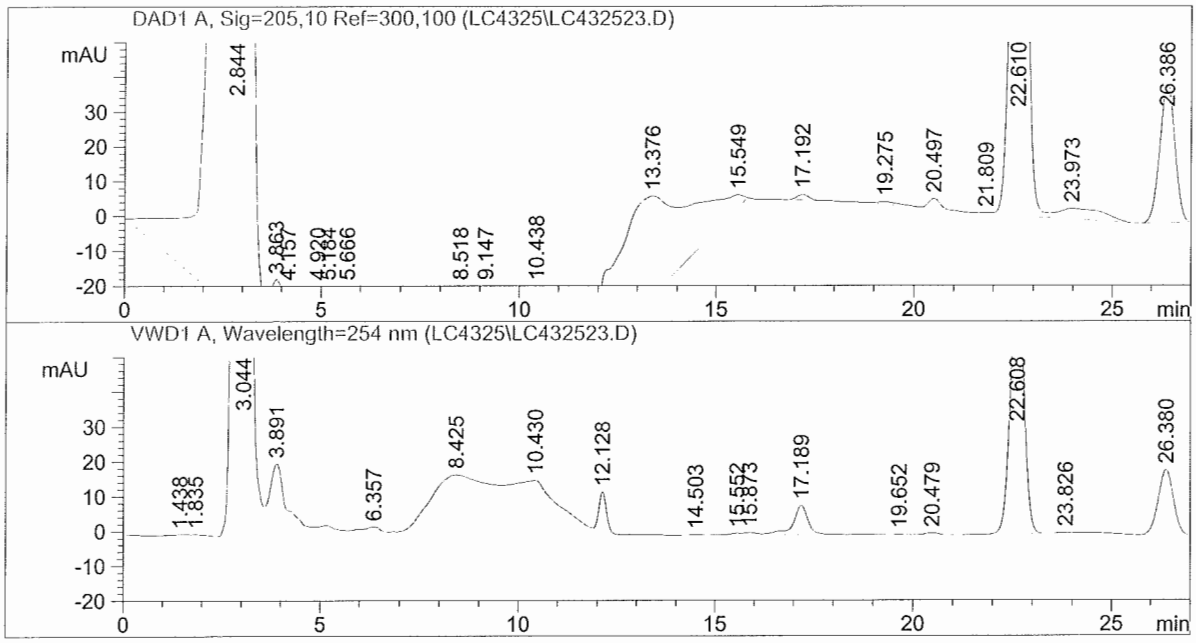
SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	77%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006616-07, 8330, EXPLOSIVES

Page 1 of 1

```
==================================================================
Injection Date  : 3/25/14 10:21:36 PM          Seq. Line :  23
Sample Name     : 6616-07                       Location : Vial 22
Acq. Operator   : JGD                                Inj :   1
                                               Inj Volume : 100 µl
Acq. Method     : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed    : 3/25/14 11:39:57 AM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed    : 4/1/14 9:02:45 AM by JGD
                  (modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm
==================================================================
```




```
==================================================================
                      External Standard Report
==================================================================

Sorted By              :      Retention Time
Calib. Data Modified   :      4/1/14 8:20:53 AM
Multiplier             :     10.0000
Dilution               :      1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm
```

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.584	2		-	-	-		RDX
12.128	2	VBA	139.72171	2.21533	3095.29370		1,4-DNB(Surr)
16.407	1		-	-	-		Nitroglycerine
22.239	2		-	-	-		2,4-DNT

Totals : 3095.29370

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==
*** End of Report ***

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006616 Report Date: 04/01/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK128L	ARDL Lab No.:	006616-08
Desc/Location:	MAKAU MILITARY RES OAHU	Lab Filename:	
Sample Date:	02/11/2014	Received Date:	03/14/2014
Sample Time:	1415	Prep. Date:	03/24/2014
Matrix:	TISSUE	Analysis Date:	03/25/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B10173
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

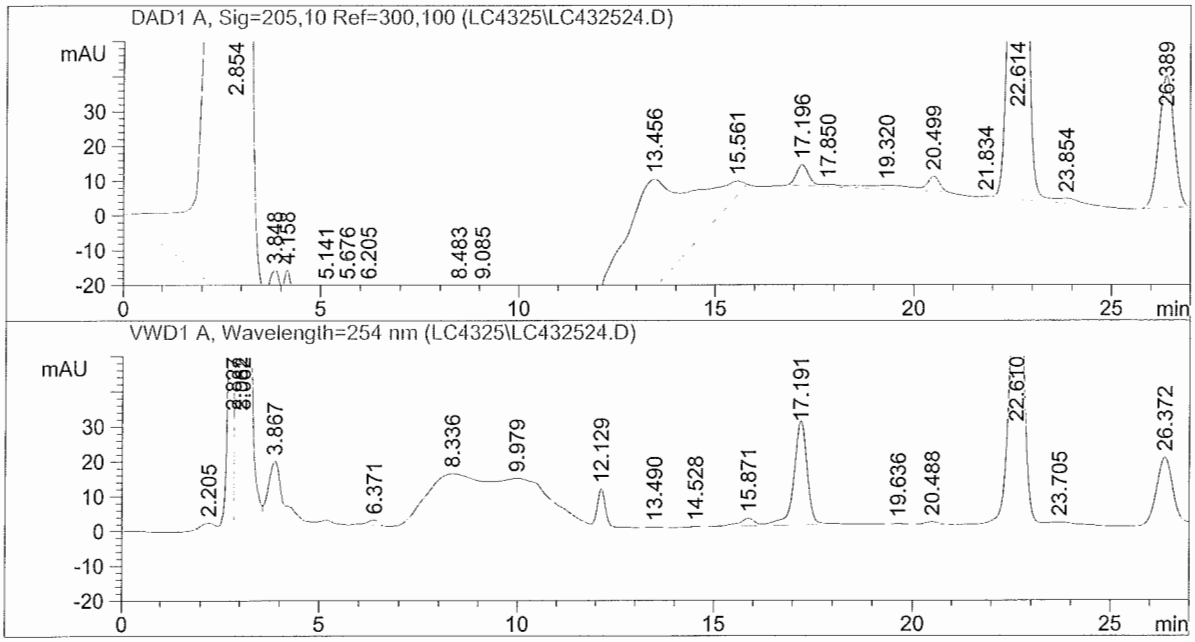
SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	76%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006616-08, 8330, EXPLOSIVES

Page 1 of 1

```
==================================================================
Injection Date  : 3/25/14 10:50:45 PM          Seq. Line :  24
Sample Name     : 6616-08                       Location : Vial 23
Acq. Operator   : JGD                                Inj :   1
                                               Inj Volume : 100 µl
Acq. Method     : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed    : 3/25/14 11:39:57 AM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed    : 4/1/14 9:02:45 AM by JGD
                  (modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm
==================================================================
```




```
==================================================================
                      External Standard Report
==================================================================

Sorted By              :      Retention Time
Calib. Data Modified   :      4/1/14 8:20:53 AM
Multiplier             :     10.0000
Dilution               :      1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm
```

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.584	2		-	-	-		RDX
12.129	2	VBA	137.49791	2.21543	3046.17324		1,4-DNB(Surr)
16.407	1		-	-	-		Nitroglycerine
22.239	2		-	-	-		2,4-DNT

Totals : 3046.17324

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========
*** End of Report ***

Analytical Run Number 2

Calibration Information

Tune Data (If applicable)

Initial Calibration (If different than Initial Calibration in Run 1)
- Calibration Factor Summary
- Chromatogram
- Quant Report (If applicable)

Continuing Calibration
- Calibration Response Check
- Chromatogram
- Quant Report (If applicable)

Instrument Logs/Analysis Notebook Pages

Blank / Field Sample / QC Data

Sample Results
Chromatogram
Quant Report (If applicable)
Confirmation Analysis Quant Report / Chromatogram (If applicable)
Tentatively Identified Compounds (If required)

Rev. 1.1

Calibration Information

Tune Data (If applicable)

Initial Calibration (If different than Initial Calibration in Run 1)
- Calibration Factor Summary
- Chromatogram
- Quant Report (If applicable)

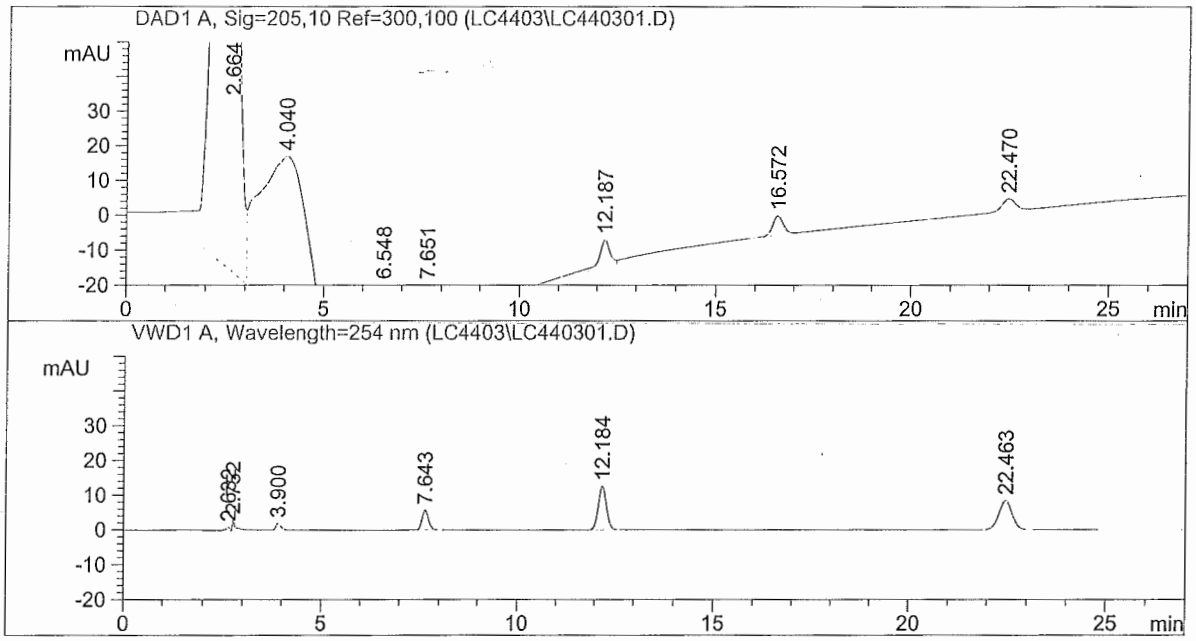
Continuing Calibration
- Calibration Response Check
- Chromatogram
- Quant Report (If applicable)

Rev. 1.1

Data File C:\HPCHEM\1\DATA\LC4403\LC440301.D Sample Name: 400 PPB 1008203

Injection Date	: 4/3/14 1:18:24 PM	Seq. Line :	1
Sample Name	: 400 PPB 1008203	Location :	Vial 1
Acq. Operator	: JGD	Inj :	1
		Inj Volume :	100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 4/3/14 1:16:22 PM by JGD
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 4/7/14 12:30:24 PM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By : Retention Time
Calib. Data Modified : 4/4/14 8:00:45 AM
Multiplier : 1.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.643	2	BB	67.15576	6.13656	412.10565		RDX
12.184	2	BBA	181.17581	2.21385	401.09534		1,4-DNB(Surr)
16.572	1	BV	110.60246	3.86371	427.33603		Nitroglycerine
22.463	2	BB	196.50285	2.05103	403.03422		2,4-DNT

Totals : 1643.57125

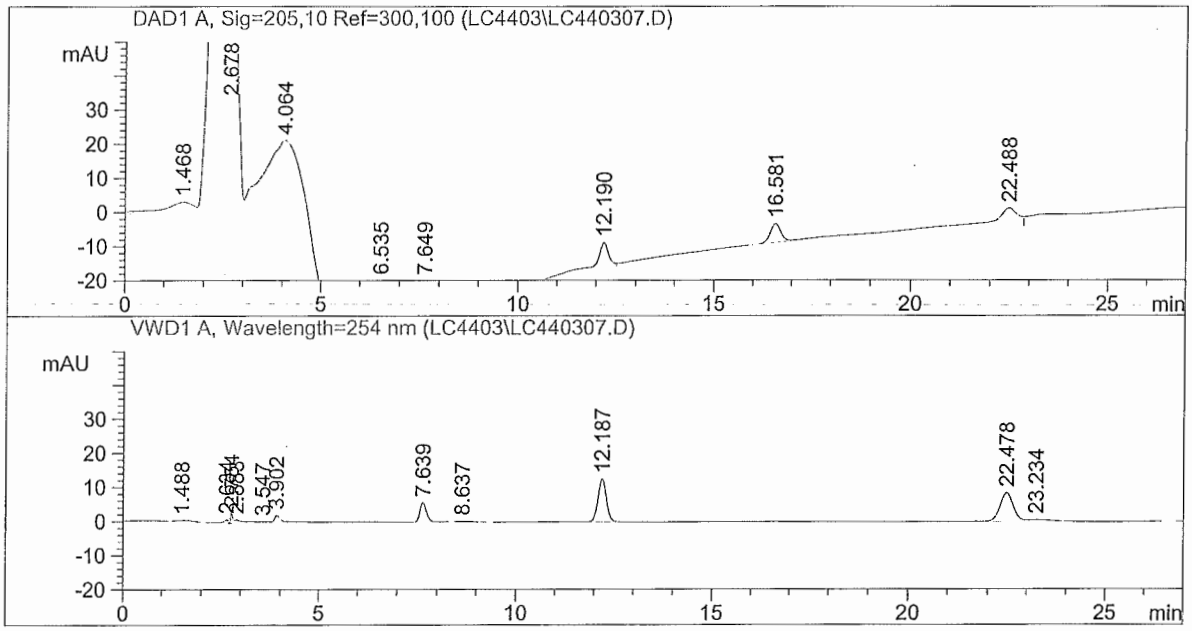
Pass 340—460 JD 4/7/14

Results obtained with enhanced integrator!

*** End of Report ***

Injection Date	: 4/3/14 4:19:10 PM	Seq. Line :	7
Sample Name	: 400 PPB 1008203	Location :	Vial 1
Acq. Operator	: JGD	Inj :	1
		Inj Volume :	100 µl
Acq. Method	: C:\HPCHEM\1\METHODS\EXPHH2.M		
Last changed	: 4/3/14 4:17:14 PM by JGD (modified after loading)		
Analysis Method	: C:\HPCHEM\1\METHODS\EXPHH2.M		
Last changed	: 4/7/14 12:33:37 PM by JGD (modified after loading)		

EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By	:	Retention Time
Calib. Data Modified	:	4/7/14 12:33:12 PM
Multiplier	:	1.0000
Dilution	:	1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.639	2	BB	67.09746	6.13658	411.74902		RDX
12.187	2	BBA	180.95540	2.21385	400.60848		1,4-DNB(Surr)
16.581	1	BV	107.54937	3.86362	415.52951		Nitroglycerine
22.478	2	BV	198.84146	2.05102	407.82762		2,4-DNT
Totals :					1635.71463		

RSD 340 — 460
JD 4/7/14

Results obtained with enhanced integrator!

*** End of Report ***

Instrument Logs/
Analysis Notebook Pages

Rev. 1.1

Sequence: C:\HPCHEM\1\SEQUENCE\LC4403.S

Sequence Table:

Method and Injection Info Part:

Line	Location	SampleName	Method	Inj	SampleType	InjV
LC4403 1.	Vial 1	400 PPB 1008203 pass	EXPHH2	1	Sample	
2	Vial 2	6611-04B1 / B/0181	EXPHH2	1	Sample	
3	Vial 3	6611-04K1 / B/0181	EXPHH2	1	Sample	
4	Vial 4	6617-01	EXPHH2	1	Sample	
5	Vial 5	6617-02 Report	EXPHH2	1	Sample	
6	Vial 6	6617-03	EXPHH2	1	Sample	
4307.	Vial 1	400 PPB 1008203 pass	EXPHH2	1	Sample	

2 Corrects: 6617 / B/0181 BLK + K (mislabeled
gp 4/7/14

gp
4/7/14

Continued on Page

Read and Understood By

gp 4/7/14 PEK 4/8/2014

Signed Date Signed Date

Blank / Field Sample / QC Data

Sample Results

Chromatogram

Quant Report (If applicable)

Confirmation Analysis Quant Report / Chromatogram (If applicable)

Tentatively Identified Compounds (If required)

Rev. 1.1

METHOD BLANK REPORT
ARDL, Inc. 400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006617 Report Date: 04/08/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	NA	ARDL Lab No.:	006617-01B1
Desc/Location:	NA	Lab Filename:	
Sample Date:	NA	Received Date:	NA
Sample Time:	NA	Prep. Date:	04/01/2014
Matrix:	QC Material	Analysis Date:	04/03/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B6706
% Moisture:	NA	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG
Nitroglycerine	300	500	ND		UG/KG

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	97%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Blank for Run B6706, 8330, EXPLOSIVES

Data File C:\HPCHEM\1\DATA\LC4403\LC440302.D Sample Name: 6611-04B1

MBLK B10181

==========

Injection Date : 4/3/14 1:48:33 PM Seq. Line : 2

Sample Name : ~~6611-04B1~~ 6617-01B1 Location : Vial 2

Acq. Operator : JGD 904/7/14 Inj : 1

Inj Volume : 100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH2.M

Last changed : 4/3/14 1:16:22 PM by JGD

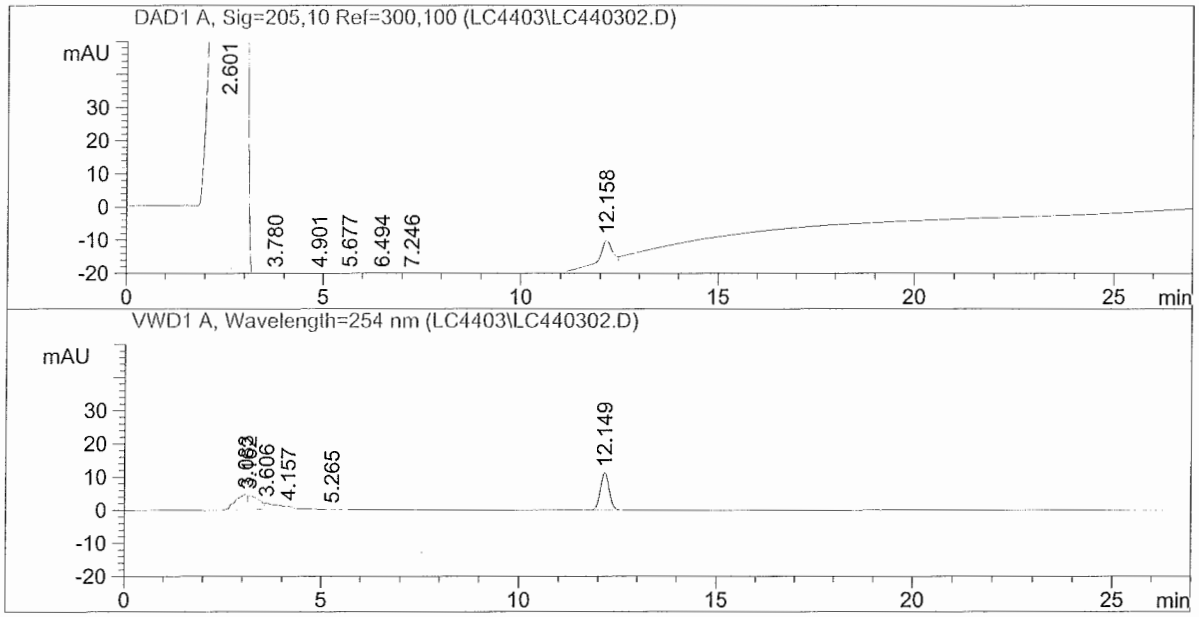
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M

Last changed : 4/7/14 12:33:37 PM by JGD

(modified after loading)

EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm

==========



==========

External Standard Report

==========

Sorted By : Retention Time

Calib. Data Modified : 4/7/14 12:33:12 PM

Multiplier : 10.0000

Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100

Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.643	2		-	-	-		RDX
12.149	2	BBA	174.56302	2.21404	3864.88661		1,4-DNB(Surr)
16.572	1		-	-	-		Nitroglycerine
22.463	2		-	-	-		2,4-DNT

Totals : 3864.88661

Results obtained with enhanced integrator!

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006617 Report Date: 04/08/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	NA	ARDL Lab No.:	006617-01K1
Desc/Location:	NA	Lab Filename:	
Sample Date:	NA	Received Date:	NA
Sample Time:	NA	Prep. Date:	04/01/2014
Matrix:	QC Material	Analysis Date:	04/03/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B6706
% Moisture:	NA	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units
Hexahydro-trinitro-triazine (RDX)	200	500	4060		UG/KG
Nitroglycerine	300	500	4200		UG/KG

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	93%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Spike Blank for Run B6706, 8330, EXPLOSIVES Page 1 of 1

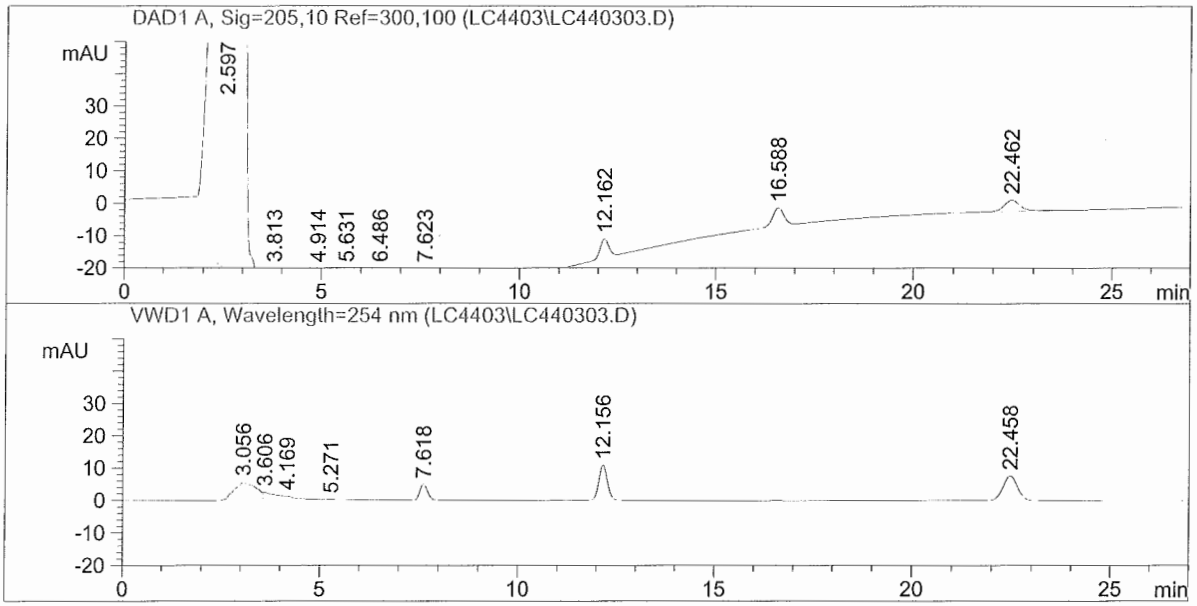
Data File C:\HPCHEM\1\DATA\LC4403\LC440303.D Sample Name: 6611-04K1
LCS B10181

==========

Injection Date : 4/3/14 2:18:41 PM Seq. Line : 3
Sample Name : 6611-04K1 Location : Vial 3
Acq. Operator : JGD 17 01 gd 4/7/14 Inj : 1
Inj Volume : 100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 4/3/14 2:30:44 PM by JGD
(modified after loading)
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 4/7/14 12:37:14 PM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm

==========



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External Standard Report

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Sorted By : Retention Time
Calib. Data Modified : 4/7/14 12:33:12 PM
Multiplier : 10.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.618	2	BP	66.07149	6.13689	4054.73352		RDX
12.156	2	BBA	168.14734	2.21423	3723.17374		1,4-DNB(Surr)
16.588	1	BBA	108.61470	3.86365	4196.49227		Nitroglycerine
22.458	2	BB	194.99232	2.05105	3999.38125		2,4-DNT

Totals : 1.59738e4

Results obtained with enhanced integrator!

==========

*** End of Report ***

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006617 Report Date: 04/08/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK116L	ARDL Lab No.:	006617-01
Desc/Location:	MAKAU MILITARY RES OAHU	Lab Filename:	
Sample Date:	01/31/2014	Received Date:	03/14/2014
Sample Time:	0820	Prep. Date:	04/01/2014
Matrix:	TISSUE	Analysis Date:	04/03/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B6706
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	113%

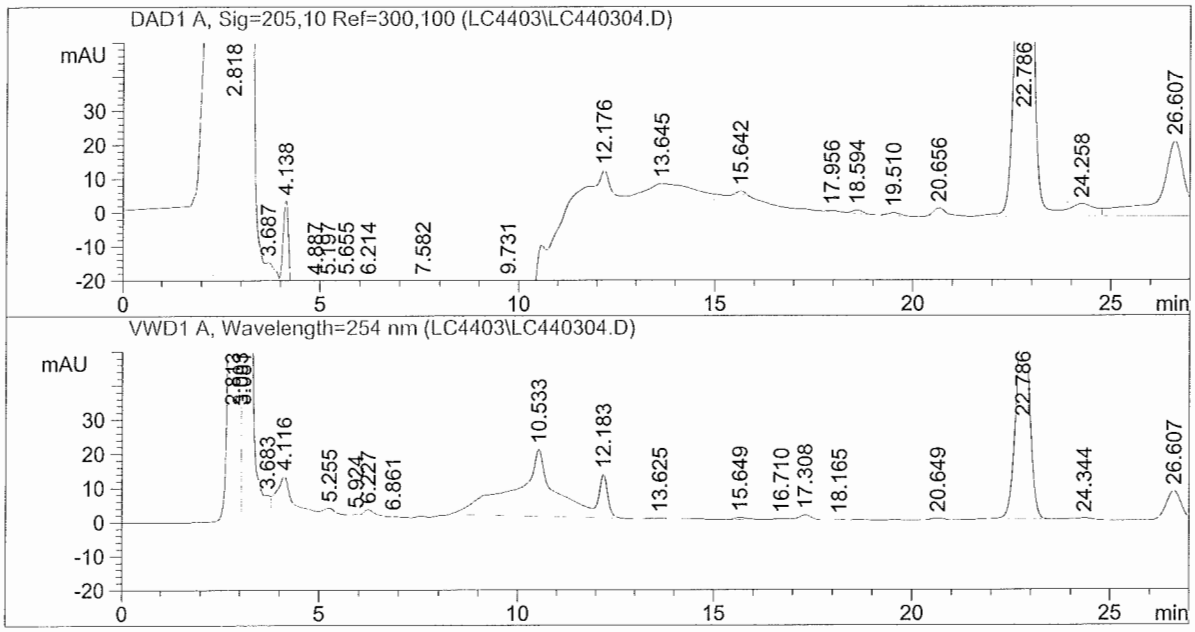
Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006617-01, 8330, EXPLOSIVES

Page 1 of 1

Injection Date	: 4/3/14 2:48:47 PM	Seq. Line :	4
Sample Name	: 6617-01	Location :	Vial 4
Acq. Operator	: JGD	Inj :	1
		Inj Volume :	100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 4/3/14 2:46:49 PM by JGD
(modified after loading)
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 4/7/14 12:40:49 PM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By : Retention Time
Calib. Data Modified : 4/7/14 12:33:12 PM
Multiplier : 10.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.643	2		-	-	-		RDX
12.183	2	VBA	203.93134	2.21329	4513.58923		1,4-DNB(Surr)
16.572	1		-	-	-		Nitroglycerine
22.463	2		-	-	-		2,4-DNT

Totals : 4513.58923

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

*** End of Report ***

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006617 Report Date: 04/08/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK117L	ARDL Lab No.:	006617-02
Desc/Location:	MAKAU MILITARY RES OAHU	Lab Filename:	
Sample Date:	01/31/2014	Received Date:	03/14/2014
Sample Time:	0835	Prep. Date:	04/01/2014
Matrix:	TISSUE	Analysis Date:	04/03/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B6706
% Moisture:	No Moisture Present	Level:	LOW

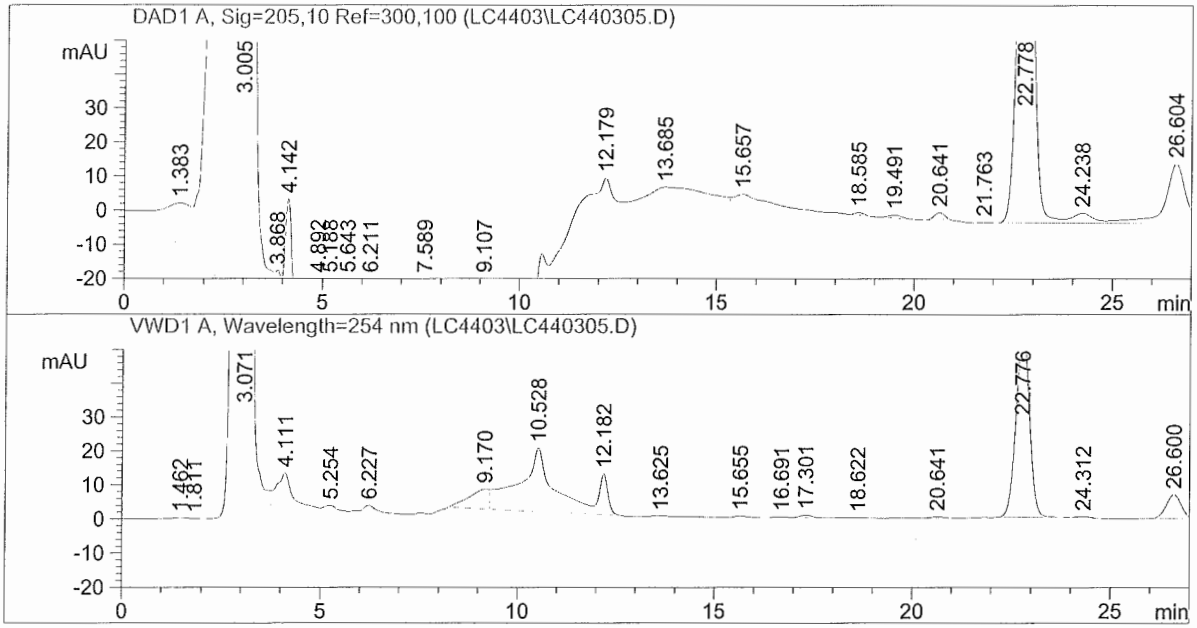
Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	107%

Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006617-02, 8330, EXPLOSIVES

```
==================================================================
Injection Date  : 4/3/14 3:18:56 PM          Seq. Line :   5
Sample Name     : 6617-02                     Location : Vial 5
Acq. Operator   : JGD                              Inj :   1
                                            Inj Volume : 100 µl
Acq. Method     : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed    : 4/3/14 3:16:55 PM by JGD
                  (modified after loading)
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed    : 4/7/14 12:40:49 PM by JGD
                  (modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm
==================================================================
```




```
==================================================================
                      External Standard Report
==================================================================

Sorted By              :      Retention Time
Calib. Data Modified   :      4/7/14 12:33:12 PM
Multiplier             :     10.0000
Dilution               :      1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm
```

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.643	2		-	-	-		RDX
12.182	2	VBA	193.21648	2.21353	4276.91386		1,4-DNB(Surr)
16.572	1		-	-	-		Nitroglycerine
22.463	2		-	-	-		2,4-DNT

Totals : 4276.91386

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========
*** End of Report ***

ARDL, INC.
400 Aviation Drive; P.O. Box 1566
Mt. Vernon, Illinois 62864

Lab Report No: 006617 Report Date: 04/08/2014

Project Name: MAKAU MILITARY RES O Analysis: 8330, EXPLOSIVES
Project No.: Analytical Method: 8330
NELAC Certified - IL100308 Prep Method: METHOD

Field ID:	MAK118L	ARDL Lab No.:	006617-03
Desc/Location:	MAKAU MILITARY RES OAHU	Lab Filename:	
Sample Date:	01/31/2014	Received Date:	03/14/2014
Sample Time:	0910	Prep. Date:	04/01/2014
Matrix:	TISSUE	Analysis Date:	04/03/2014
Amount Used:	2 g	Instrument ID:	
Final Volume:	10 mL	QC Batch:	B6706
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Hexahydro-trinitro-triazine (RDX)	200	500	ND		UG/KG	1
Nitroglycerine	300	500	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
1,4-Dinitrobenzene	50-150	105%

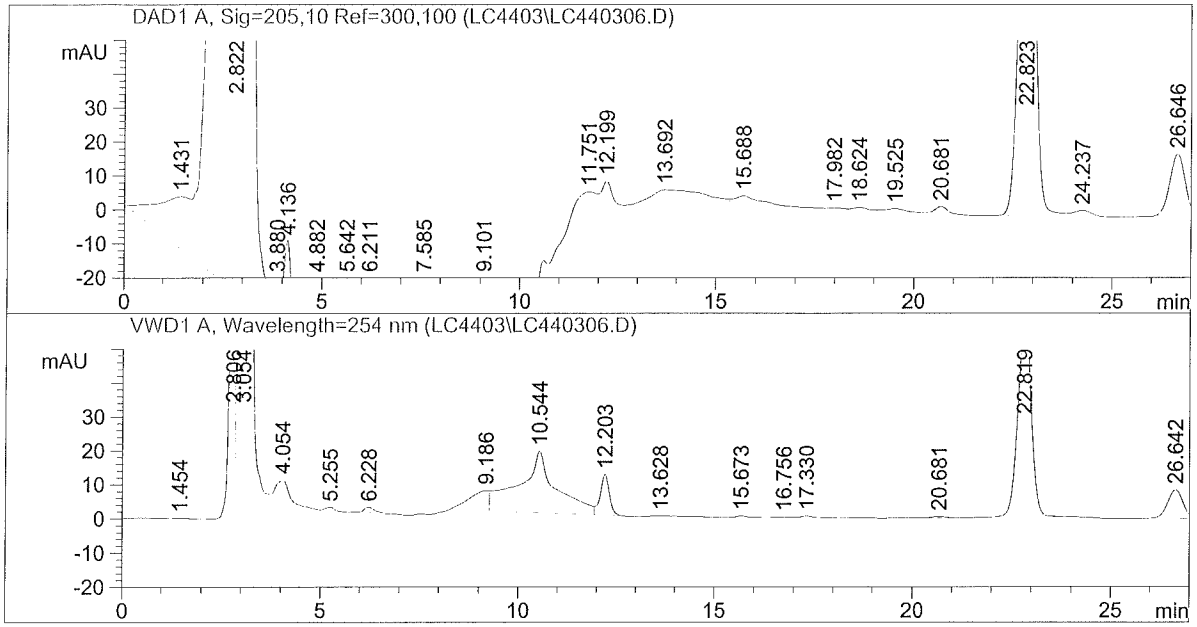
Surrogate recoveries marked with '*' indicates they are outside standard limits.

Sample 006617-03, 8330, EXPLOSIVES

Page 1 of 1

Injection Date	: 4/3/14 3:49:02 PM	Seq. Line :	6
Sample Name	: 6617-03	Location :	Vial 6
Acq. Operator	: JGD	Inj :	1
		Inj Volume :	100 µl

Acq. Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 4/3/14 4:13:12 PM by JGD
(modified after loading)
Analysis Method : C:\HPCHEM\1\METHODS\EXPHH2.M
Last changed : 4/7/14 12:40:49 PM by JGD
(modified after loading)
EXPLOSIVES PRIMARY/HYDRO C18 250 X 4.6mm



External Standard Report

Sorted By : Retention Time
Calib. Data Modified : 4/7/14 12:33:12 PM
Multiplier : 10.0000
Dilution : 1.0000

Signal 1: DAD1 A, Sig=205,10 Ref=300,100
Signal 2: VWD1 A, Wavelength=254 nm

RetTime [min]	Sig	Type	Area	Amt/Area	Amount [PPB]	Grp	Name
7.643	2		-	-	-		RDX
12.203	2	VBA	189.40419	2.21363	4192.70610		1,4-DNB(Surr)
16.572	1		-	-	-		Nitroglycerine
22.463	2		-	-	-		2,4-DNT

Totals : 4192.70610

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

*** End of Report ***

Example Calculation

Rev. 1.1

EXAMPLE CALCULATIONS
(Explosives) 6616-04MS

As appropriate for each analyte, use the values either for the average calibration factor (CF) or the linear regression equation from the full initial calibration. Calculate the apparent concentration in the sample using the relationship given below:

$$\text{ug analyte/mL} = \frac{\text{Peak Area}}{\text{Average CF}}$$

$$\text{ug analyte/L} = \frac{\text{Peak Area - b}}{\text{m}} = \frac{91.43 - (0.00962)}{0.25859} = 353$$

Nitroglycerine

where: m is the slope of the initial calibration curve, and b is the zero intercept of that curve

Sample Calculations

$$\text{Concentration of analyte} = \frac{(A)\ (Vt)\ (Df)}{(Vi)}$$

Water:

Where:
- A = Concentration of the analyte in the sample extract (ug/L)
- Vi = Initial sample volume (L)
- Vt = Volume of final extract (L)
- Df = Dilution Factor

Soil:

Where:
- A = Concentration of the analyte in the sample extract (ug/L)
- Vi = Initial sample weight (kg)
- Vt = Volume of final extract (L)
- Df = Dilution Factor (2x DL per method)

Example Sample Calculation

$$\text{Water Result} = \frac{(____)(____)(____)}{(____)} = (____)\ \text{ug/L}$$

$$\text{Soil Result} = \frac{(353\ \text{ug/L})(0.010\ \text{L})(2X)}{(0.002\ \text{kg})} = (3{,}530)\ \text{ug/kg}$$

Example Calculations
Performed By: _____ Date: 4/17/14

Miscellaneous Additional Data

(If applicable)

☑ **None** _____

Rev. 1.1