Table Of Contents

ANALYSIS: BNA METHOD NO.: 8270

ARDL Report(s) #: 006620 MATRIX: SEA WEED (LIMU)

	PAGE
Organic Package Review Checklist	2
Case Narrative and/or Nonconformance Reports	5
Sample Receipt Information	8
Field Sample Results	12
QC Summary Forms	18
Sample Preparation Information	40
Standard Preparation Information	41
Analytical Run Data	61
Example Calculation	132
Miscellaneous Additional Data	134

	By:	Date:
Package Preparation	JAA	06/03/14
Analytical Review	PEK	6/3/2014
Final Review	BND	6/05/14
QA Review	DDS	6/5/14

Rev. 1.1

Organic Package Review Checklist

Rev. 1.1

ORGANIC PACKAGE REVIEW CHECKLIST

METHOD: 8270

	Initial	Date
Case Narrative and/or Nonconformance Reports		
Case Narrative / Analyst Comment Sheets	PEK	6/3/14
Nonconformance / Noncompliance Reports (if applicable)	↓	↓
Sample Receipt Information		
Copies of Original Chain-of-Custody Forms	PEK	6/3/14
Cooler Receipt Form and Airbills	↓	↓
Phone Messages (If applicable)	↓	↓
Field Sample Results	PEK	6/3/14
QC Summary Forms		
Surrogate Summary, if applicable	PEK	6/3/14
Spike Blank and/or MS Summary	↓	↓
Blank Results & Blank Summary, if applicable	↓	↓
ISTD Area Summary, if applicable	↓	↓
Sample Preparation Information (if applicable)		
Total Solids Determination (If applicable)	PEK	6/3/14
Extraction Log (If applicable)	↓	↓
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	PEK	6/3/14
Certificates of Analysis (Vendor)	↓	↓
Analytical Run Number 1		
Calibration Information	PEK	6/3/14
Tune Data	↓	↓
Initial Calibration	↓	↓
Continuing Calibration	↓	↓
Instrument Logs/Analysis Notebook Pages	↓	↓
Blank/Sample/Field QC Data	↓	↓
Analytical Run Number 2 (if required)		
Calibration Information	PEK	6/3/14
Tune Data	↓	↓
Initial Calibration	↓	↓
Continuing Calibration	↓	↓
Instrument Logs/Analysis Notebook Pages	↓	↓
Blank/Sample/Field QC Data	↓	↓

Rev. 1.1

ORGANIC PACKAGE REVIEW CHECKLIST (Continued)

METHOD: 8270

	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	N/A	
Tune Data		
Initial Calibration		
Continuing Calibration		
Instrument Logs/Analysis Notebook Pages		
Blank/Sample/Field QC Data		
Analytical Run Number 5 (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 6 (if required)		
Calibration Information	N/A	
Tune Data		
Initial Calibration		
Continuing Calibration		
Instrument Logs/Analysis Notebook Pages		
Blank/Sample/Field QC Data		
Example Calculation		
Example Calculation Sheet	PEK	6/3/2014
Miscellaneous Additional Data (if applicable)	PEK	6/3/14

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: PEK 6/3/2014

Rev. 1.1

Case Narrative and/or Nonconformance Reports

Rev. 1.1

ORGANIC ANALYSIS CASE NARRATIVE

Corps of Engineers – ERDC, Vicksburg **Date: 6/04/14**

ARDL Report No.: 6620 **Lab Name: ARDL, Inc.**

Project Name: MAKAU MILITARY RESERVATION OAHU (LIMU)

Samples Received at ARDL: 04/29/2014

Lab ID No.	Sample ID No.	Date Collected	Date Extracted	Analysis Requested
006620-01	MAK130L	03/27/2014	05/23/2014	BNA
006620-02	MAK132L	03/28/2014	05/23/2014	BNA
006620-03	MAK134L	03/28/2014	05/23/2014	BNA
006620-04	MAK135L	03/28/2014	05/23/2014	BNA
006620-05	MAK138L	03/28/2014	05/23/2014	BNA

SEMIVOLATILE FRACTION – METHOD 8270C

Five (05) tissue (limu) samples were received by ARDL, Inc. on April 29, 2014, for 8270C analysis.

Due to specific project requirements and the unusual nature of the subject samples, some changes were made to standard method protocol. Since the requested analyte list was limited to five Phthalate Esters and Pyrene, only the three Base/Neutral surrogate compounds were used and evaluated in all calibrations, QC and sample analyses. A sample weight of 5 grams was used for extraction resulting in a 1,000 ug/Kg reporting limit. All extractions were performed with methylene chloride as the only solvent in order to avoid probable matrix interferences.

INITIAL CALIBRATION

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

CONTINUING CALIBRATION

All continuing calibrations met criteria.

SURROGATES

All QC and samples met surrogate recovery criteria.

INTERNAL STANDARD

All Internal standard recoveries were acceptable for all analyses.

LCS

The LCS analysis met the recovery criteria.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

The MS/MSD analysis was performed on sample MAK130L. All compounds met criteria.

METHOD BLANKS

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

ORGANIC ANALYSIS CASE NARRATIVE

Corps of Engineers – ERDC, Vicksburg **Date: 6/04/14**

ARDL Report No.: 6620 **Lab Name: ARDL, Inc.**

Project Name: MAKAU MILITARY RESERVATION OAHU (LIMU)

Samples Received at ARDL: 04/29/2014

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
MAK109O	1/31/2014	10:45		x	1	x	x	x	x									Octopus	x	
MAK110O	3/28/2014	8:38		x	1	x	x	x	x									Octopus	x	
MAK111O	3/28/2014	9:20		x	~~1~~ 3	x	x	x	x									Octopus	x	
MAK112O	3/28/2014	10:00		x	1	x	x	x	x									Octopus	x	
MAK113O	3/28/2014	10:35		x	1	x	x	x	x									Octopus	x	
MAK114O	3/28/2014	11:32		x	1	x	x	x	x									Octopus	x	
MAK115O	3/28/2014	13:01		x	1	x	x	x	x									Octopus	x	
MAK116O	3/28/2014	14:58		x	1	x	x	x	x									Octopus	x	
MAK117O	3/28/2014	16:43		x	1	x	x	x	x									Octopus	x	
MAK118O	3/27/2014	8:50		x	1	x	x	x	x									Octopus	x	
MAK119O	3/27/2014	9:20		x	1	x	x	x	x									Octopus	x	
MAK120O	3/27/2014	11:23		x	1	x	x	x	x									Octopus	x	
MAK121O	3/27/2014	12:05		x	1	x	x	x	x									Octopus	x	
MAK122O	3/27/2014	13:05		x	1	x	x	x	x									Octopus	x	
MAK123O	3/27/2014	15:08		x	1	x	x	x	x									Octopus	x	
MAK124O	3/28/2014	12:25		x	1	x	x	x	x									Octopus	x	
MAK130L	3/27/2014	8:20		x	~~1~~ 2	x	x	x	x									Limu (Sea Weed)	x	
MAK132L	3/28/2014	8:38		x	1	x	x	x	x									Limu (Sea Weed)	x	
MAK134L	3/28/2014	9:20		x	1	x	x	x	x									Limu (Sea Weed)	x	
MAK135L	3/28/2014	10:00		x	1	x	x	x	x									Limu (Sea Weed)	x	
MAK138L	3/28/2014	11:32		x	1	x	x	x	x									Limu (Sea Weed)	x	

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
[signature]	4-28	1600	
Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
Received for Laboratory by: (Signature)	Date	Time	Shipping Ticket No.
[signature]	4/29/14	0930	

REMARKS / SPECIAL INSTRUCTIONS:

Project Samples. Please treat each matrix separately.

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 #: ~~6620, 6621~~ dly 4-29-14, 6619, 6620

Cooler # NA

Number of Coolers in Shipment: 2

Project: Makaw. Military Res. Oahu

Date Received: 04/29/14

A. **PRELIMINARY EXAMINATION PHASE:** Date cooler was opened: 04/29/14 (Signature) LA Stevens

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

   If YES, enter carrier name and airbill number here: FED-EX ~~AIR~~# 9225 1888 3037

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

   How many and where? 1 front, Seal Date: 04/28/14, Seal Name: K ? can not 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~~? Dan 4/29/14 ..... (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. -28.9 C

B. **LOG-IN PHASE:** Date samples were logged-in: 04-29-14 (Signature) LA Stevens

10. Describe type of packing in cooler: bubble pack, cardboard box

11. Were all bottles sealed in separate plastic bags? ..... 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:
(By: Signature) Date:

Sample Transfer	
Fraction: all	Fraction
Area #: freezer	Area #
By: lax	By
On: 04-29-14	On

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

Original in box 1
dlc
4-29-14

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

GREEN BAY, WI 54302
UNITED STATES US

SHIP DATE: 28APR14
ACTWGT: 30.4 LB
CAD: 255289/CAFE2704

DRY ICE: 1.1 KGS
BILL THIRD PARTY

TO DEAN DICKERSON
ARDL
400 AVIATION DRIVE
P.O BOX 1566
MOUNT VERNON IL 62864
(618) 244-3235
DEPT: INTRNL BILL REF#1301-9501

518C1/78D9/6F03

FedEx Express

J131113052301 26

TRK# 0201 9325 1888 3037

TUE - 29 APR AA
STANDARD OVERNIGHT
ICE

NA MVNA

62864
IL-US STL

Part # 156148-434 RITA 03/12

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

GREEN BAY, WI 54302
UNITED STATES US

SHIP DATE: 28APR14
ACTWGT: 18.3 LB
CAD: 255289/CAFE2704

DRY ICE: 1.1 KGS
BILL THIRD PARTY

TO DEAN DICKERSON
ARDL
400 AVIATION DRIVE
P.O BOX 1566
MOUNT VERNON IL 62864
(618) 244-3235
DEPT: INTRNL BILL REF#1301-9501

518C1/78D9/6F03

FedEx Express

J131113052301 26

TRK# 0201 9325 1888 3059

TUE - 29 APR AA
STANDARD OVERNIGHT
ICE

NA MVNA

62864
IL-US STL

Part # 156148-434 RITA 03/12

Field Sample Results

Rev. 1.1

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

Lab Report No: 006620 Report Date: 05/30/2014

Project Name: MAKAU MILITARY RESER Analysis: BNA'S (METHOD 8270)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3550A

Field ID:	MAK130L	ARDL Lab No.:	006620-01
Desc/Location:	MAKAU MILITARY RESERVATION	Lab Filename:	E0528412
Sample Date:	03/27/2014	Received Date:	04/29/2014
Sample Time:	0820	Prep. Date:	05/23/2014
Matrix:	TISSUE	Analysis Date:	05/28/2014
Amount Used:	5 g	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B10211
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Dimethylphthalate	200	1000	ND		UG/KG	1
Diethylphthalate	200	1000	ND		UG/KG	1
Di-n-butylphthalate	200	1000	ND		UG/KG	1
Pyrene	200	1000	ND		UG/KG	1
bis(2-Ethylhexyl)phthalate	200	1000	ND		UG/KG	1
Di-n-octylphthalate	200	1000	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Nitrobenzene-d5	30-130	73%
2-Fluorobiphenyl	30-130	79%
Terphenyl-d14	30-130	80%

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

Sample 006620-01, BNA'S (METHOD 8270) Page 1 of 1

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

Lab Report No: 006620 Report Date: 05/30/2014

Project Name: MAKAU MILITARY RESER Analysis: BNA'S (METHOD 8270)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3550A

Field ID:	MAK132L	ARDL Lab No.:	006620-02
Desc/Location:	MAKAU MILITARY RESERVATION	Lab Filename:	E0528415
Sample Date:	03/28/2014	Received Date:	04/29/2014
Sample Time:	0838	Prep. Date:	05/23/2014
Matrix:	TISSUE	Analysis Date:	05/28/2014
Amount Used:	5 g	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B10211
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Dimethylphthalate	200	1000	ND		UG/KG	1
Diethylphthalate	200	1000	ND		UG/KG	1
Di-n-butylphthalate	200	1000	ND		UG/KG	1
Pyrene	200	1000	ND		UG/KG	1
bis(2-Ethylhexyl)phthalate	200	1000	ND		UG/KG	1
Di-n-octylphthalate	200	1000	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Nitrobenzene-d5	30-130	68%
2-Fluorobiphenyl	30-130	68%
Terphenyl-d14	30-130	78%

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

Sample 006620-02, BNA'S (METHOD 8270) Page 1 of 1

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

Lab Report No: 006620 Report Date: 05/30/2014

Project Name: MAKAU MILITARY RESER Analysis: BNA'S (METHOD 8270)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3550A

Field ID:	MAK134L	ARDL Lab No.:	006620-03
Desc/Location:	MAKAU MILITARY RESERVATION	Lab Filename:	E0528416
Sample Date:	03/28/2014	Received Date:	04/29/2014
Sample Time:	0920	Prep. Date:	05/23/2014
Matrix:	TISSUE	Analysis Date:	05/28/2014
Amount Used:	5 g	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B10211
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Dimethylphthalate	200	1000	ND		UG/KG	1
Diethylphthalate	200	1000	ND		UG/KG	1
Di-n-butylphthalate	200	1000	ND		UG/KG	1
Pyrene	200	1000	ND		UG/KG	1
bis(2-Ethylhexyl)phthalate	200	1000	ND		UG/KG	1
Di-n-octylphthalate	200	1000	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Nitrobenzene-d5	30-130	65%
2-Fluorobiphenyl	30-130	53%
Terphenyl-d14	30-130	81%

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

Sample 006620-03, BNA'S (METHOD 8270) Page 1 of 1

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

Lab Report No: 006620 Report Date: 05/30/2014

Project Name: MAKAU MILITARY RESER Analysis: BNA'S (METHOD 8270)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3550A

Field ID:	MAK135L	ARDL Lab No.:	006620-04
Desc/Location:	MAKAU MILITARY RESERVATION	Lab Filename:	E0529405
Sample Date:	03/28/2014	Received Date:	04/29/2014
Sample Time:	1000	Prep. Date:	05/23/2014
Matrix:	TISSUE	Analysis Date:	05/29/2014
Amount Used:	5 g	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B10211
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Dimethylphthalate	200	1000	ND		UG/KG	1
Diethylphthalate	200	1000	ND		UG/KG	1
Di-n-butylphthalate	200	1000	ND		UG/KG	1
Pyrene	200	1000	ND		UG/KG	1
bis(2-Ethylhexyl)phthalate	200	1000	ND		UG/KG	1
Di-n-octylphthalate	200	1000	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Nitrobenzene-d5	30-130	65%
2-Fluorobiphenyl	30-130	57%
Terphenyl-d14	30-130	82%

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

Sample 006620-04, BNA'S (METHOD 8270) Page 1 of 1

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

Lab Report No: 006620 Report Date: 05/30/2014

Project Name: MAKAU MILITARY RESER Analysis: BNA'S (METHOD 8270)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3550A

Field ID:	MAK138L	ARDL Lab No.:	006620-05
Desc/Location:	MAKAU MILITARY RESERVATION	Lab Filename:	E0529406
Sample Date:	03/28/2014	Received Date:	04/29/2014
Sample Time:	1132	Prep. Date:	05/23/2014
Matrix:	TISSUE	Analysis Date:	05/29/2014
Amount Used:	5 g	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B10211
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Dimethylphthalate	200	1000	ND		UG/KG	1
Diethylphthalate	200	1000	ND		UG/KG	1
Di-n-butylphthalate	200	1000	ND		UG/KG	1
Pyrene	200	1000	ND		UG/KG	1
bis(2-Ethylhexyl)phthalate	200	1000	ND		UG/KG	1
Di-n-octylphthalate	200	1000	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Nitrobenzene-d5	30-130	57%
2-Fluorobiphenyl	30-130	65%
Terphenyl-d14	30-130	84%

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

Sample 006620-05, BNA'S (METHOD 8270) 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

2C

LIMU SEMIVOLATILE SURROGATE RECOVERY

Lab Name: ARDL, INC. Contract: ---

Lab Code: --- Case No.: 006620 SAS No.: --- SDG No.: ---

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 ( ) #	S5 ( ) #	S6 ( ) #	TOT OUT
01	BLANK B10211	66	76	80				0
02	SPBK B10211	76	82	83				0
03	MAK130L	73	79	80				0
04	MAK130LMS	75	81	86				0
05	MAK130LMSD	59	72	80				0
06	MAK132L	68	68	78				0
07	MAK134L	65	53	81				0
08	MAK135L	65	57	82				0
09	MAK138L	57	65	84				0
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

		QC LIMITS
S1	Nitrobenzene-d5	(30 - 130)
S2	2-Fluorobiphenyl	(30 - 130)
S3	Terphenyl-d14	(30 - 130)
S4		(-)
S5		(-)
S6		(-)

column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

BLANK SPIKE/SPIKE DUPLICATE REPORT

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

Lab Report No: 006620 Report Date: 05/30/2014

Project Name: MAKAU MILITARY RESER Analysis: BNA'S (METHOD 8270) Analytical Method: 8270C
Project No.: Prep Method: 3550A

Matrix: QC Material QC Batch: B10211 Prep. Date: 05/23/2014
Amount Used: 5 g Level: LOW Analysis Date: 05/28/2014

Parameter	Spike Result	Spike Level	Spike % Rec	Duplicate Result	Duplicate Level	Duplicate % Rec	Recovery Limits	RPD	RPD Limit
Dimethylphthalate	3810	5000	76	--	--	--	67-104	--	--
Diethylphthalate	3890	5000	78	--	--	--	65-108	--	--
Di-n-butylphthalate	3990	5000	80	--	--	--	68-115	--	--
Pyrene	4110	5000	82	--	--	--	47-122	--	--
bis(2-Ethylhexyl)phthalate	3910	5000	78	--	--	--	52-128	--	--
Di-n-octylphthalate	3850	5000	77	--	--	--	36-150	--	--

SURROGATE RECOVERIES:	Spike %R	Duplicate %R	%R Limits
Nitrobenzene-d5	75.8	--	30-130
2-Fluorobiphenyl	81.8	--	30-130
Terphenyl-d14	83.3	--	30-130

'*' indicates a recovery outside of standard limits.

Spike Blanks for 006620-01, BNA'S (METHOD 8270)

MATRIX SPIKE/SPIKE DUPLICATE REPORT

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

Lab Report No: 006620 Report Date: 05/30/2014

Project Name: MAKAU MILITARY RESER Analysis: BNA'S (METHOD 8270) Analytical Method: 8270C
Project No.: Prep Method: 3550A

Field ID:	MAK130L	Prep. Date:	05/23/2014	ARDL Lab No.:	006620-01
Desc/Location:	MAKAU MILITARY RESERVATIO	Amount Used:	5 g	Lab Filename:	
Sample Date:	03/27/2014	% Moisture:	No Moisture Present	Received Date:	04/29/2014
Sample Time:	0820	QC Batch:	B10211	Analysis Date:	05/28/2014
Matrix:	TISSUE	Level:	LOW		

Parameter	Sample Result	MS Result	MS Level	MS % Rec	MSD Result	MSD Level	MSD % Rec	% Rec Limits	RPD	RPD Limit
Dimethylphthalate	ND	3950	5000	79	3810	5000	76.2	57-110	3.6	30
Diethylphthalate	ND	4040	5000	80.8	3890	5000	77.8	57-112	3.8	30
Di-n-butylphthalate	ND	3470	5000	69.3	3400	5000	67.9	54-118	2.1	30
Pyrene	ND	4120	5000	82.3	3910	5000	78.2	43-119	5.1	30
bis(2-Ethylhexyl)phthalate	ND	4120	5000	82.3	3950	5000	79	57-116	4.2	30
Di-n-octylphthalate	ND	4150	5000	82.9	4010	5000	80.2	32-152	3.4	30

SURROGATE RECOVERIES:	MS %R	MSD %R	%R Limits
Nitrobenzene-d5	75	59	30-130
2-Fluorobiphenyl	81	72	30-130
Terphenyl-d14	86	80	30-130

'nc' indicates sample >4X spike level.
'*' indicates a recovery outside of standard limits.
Matrix Spikes for 006620-01, BNA'S (METHOD 8270)

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

BLANK B10211

Lab Name: ARDL, INC. Contract: ---

Lab Code: --- Case No.: 006620 SAS No.: --- SDG No.: ---

Lab File ID: E0528410 Lab Sample ID: 006620-01B1

Instrument ID: AG5 Date Extracted: 05/23/14

Matrix: (soil/water) LIMU Date Analyzed: 05/28/14

Level: (low/med) --- Time Analyzed: 16:22

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	SPBK B10211	006620-01K1	E0528411	05/28/14
02	MAK130L	006620-01	E0528412	05/28/14
03	MAK130LMS	006620-01MS	E0528413	05/28/14
04	MAK130LMSD	006620-01MD	E0528414	05/28/14
05	MAK132L	006620-02	E0528415	05/28/14
06	MAK134L	006620-03	E0528416	05/28/14
07	MAK135L	006620-04	E0529405	05/29/14
08	MAK138L	006620-05	E0529406	05/29/14
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS:

METHOD BLANK REPORT

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

Lab Report No: 006620 Report Date: 05/30/2014

Project Name: MAKAU MILITARY RESER Analysis: BNA'S (METHOD 8270)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3550A

Field ID:	NA	ARDL Lab No.:	006620-01B1
Desc/Location:	NA	Lab Filename:	E0528410
Sample Date:	NA	Received Date:	NA
Sample Time:	NA	Prep. Date:	05/23/2014
Matrix:	QC Material	Analysis Date:	05/28/2014
Amount Used:	5 g	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B10211
% Moisture:	NA	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units
Dimethylphthalate	200	1000	ND		UG/KG
Diethylphthalate	200	1000	ND		UG/KG
Di-n-butylphthalate	200	1000	ND		UG/KG
Pyrene	200	1000	ND		UG/KG
bis(2-Ethylhexyl)phthalate	200	1000	ND		UG/KG
Di-n-octylphthalate	200	1000	ND		UG/KG

SURROGATE RECOVERIES:	Limits	Results
Nitrobenzene-d5	30-130	66%
2-Fluorobiphenyl	30-130	76%
Terphenyl-d14	30-130	80%

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

Blank for Run B10211, BNA'S (METHOD 8270) Page 1 of 1

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ARDL, Inc. Contract: ---

Lab Code: --- Case No.: 006620 SAS No.: --- SDG No.: ---

Lab File ID (Standard): E0528406 Date Analyzed: 05/28/14

Instrument ID: AG5 Time Analyzed: 13:19

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STANDARD	2313018	7.05	9193955	9.01	4819437	11.90
	UPPER LIMIT	4626036	7.55	18387910	9.51	9638874	12.40
	LOWER LIMIT	1156509	6.55	4596978	8.51	2409719	11.40
	EPA SAMPLE NO.						
1	BLANK 10211	2455048	7.05	9544640	9.01	5014330	11.89
2	SPBK B10211	2496655	7.05	9742187	9.00	5146626	11.89
3	MAK130L	2568468	7.05	9990406	9.00	5209139	11.89
4	MAK130LMS	2468058	7.05	9599707	9.00	5040660	11.89
5	MAK130LMSD	2413002	7.05	9400610	9.01	4874595	11.89
6	MAK132L	2417005	7.05	9188343	9.01	4816211	11.89
7	MAK134L	2579619	7.05	9767438	9.00	5145718	11.89
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard are
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +.50 minutes of internal standard RT
RT LOWER LIMIT = -.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk
* Values outside of QC limits

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ARDL, Inc. Contract: ---

Lab Code: --- Case No.: --- SAS No.:--- SDG No.: ---

Lab File ID (Standard):E0528406 Date Analyzed: 05/28/14

Instrument ID: AG5 Time Analyzed: 13:19

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STANDARD	7597694	14.44	7793304	19.71	9115539	24.78
	UPPER LIMIT	15195388	14.94	15586608	20.21	18231078	25.28
	LOWER LIMIT	3798847	13.94	3896652	19.21	4557770	24.28
	EPA SAMPLE NO.						
1	BLANK 10211	7972377	14.44	8726958	19.69	11019449	24.78
2	SPBK B10211	8179407	14.44	8658448	19.71	11680945	24.79
3	MAK130L	8268579	14.44	9483184	19.70	9284553	24.78
4	MAK130LMS	8024363	14.45	8688134	19.71	8884867	24.78
5	MAK130LMSD	7850100	14.45	8588746	19.71	8925251	24.78
6	MAK132L	7773356	14.44	9073544	19.70	8261502	24.78
7	MAK134L	8121487	14.45	9360608	19.70	8793539	24.78
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard are
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +.50 minutes of internal standard RT
RT LOWER LIMIT = -.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk
* Values outside of QC limits

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ARDL, Inc. Contract: ---

Lab Code: --- Case No.: 006620 SAS No.: --- SDG No.: ---

Lab File ID (Standard): E0528406 Date Analyzed: 05/28/14

Instrument ID: AG5 Time Analyzed: 13:19

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STANDARD	2313018	7.05	9193955	9.01	4819437	11.90
	UPPER LIMIT	4626036	7.55	18387910	9.51	9638874	12.40
	LOWER LIMIT	1156509	6.55	4596978	8.51	2409719	11.40
	EPA SAMPLE NO.						
1	MAK135L	2421526	7.05	9272374	9.00	4796721	11.89
2	MAK138L	2533389	7.05	9585842	9.00	4910308	11.89
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard are
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +.50 minutes of internal standard RT
RT LOWER LIMIT = -.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk
* Values outside of QC limits

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ARDL, Inc. Contract: ---

Lab Code: --- Case No.: 006620 SAS No.: --- SDG No.: ---

Lab File ID (Standard): E0528406 Date Analyzed: 05/28/14

Instrument ID: AG5 Time Analyzed: 13:19

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STANDARD	7597694	14.44	7793304	19.71	9115539	24.78
	UPPER LIMIT	15195388	14.94	15586608	20.21	18231078	25.28
	LOWER LIMIT	3798847	13.94	3896652	19.21	4557770	24.28
	EPA SAMPLE NO.						
1	MAK135L	7655969	14.44	8856671	19.70	6215683	24.77
2	MAK138L	7730386	14.44	8725913	19.70	6359430	24.78
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19	0						
20	0						
21	0						
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard are
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +.50 minutes of internal standard RT
RT LOWER LIMIT = -.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk
* Values outside of QC limits

Sample Preparation Information

(Not Applicable for VOA Purge and Trap Method)

Rev. 1.1

3550
8270 BNA Tissues

DATE : 05/ 23 / 2014 **BATCH # B10211**

CUST: Makau Military Reservation Oahu **ARDL # 6620**

SAMPLES: BLK; SP BLK; 6620-1 thru 5
QC SAMPLE: 6620-1ms/msd

SOLVENT USED: $MeCL_2$ # 0000075412
REAGENTS USED: Na_2SO_4 # 0000066287

SURROGATE # 20006-050613 CONC BN 1000 PPM __X__ AMOUNT 25 uL __X__

SPIKE # 16511 CONC 250 PPM __X__ AMOUNT 100 uL __X__

EXTRACTION METHOD: SONICATION __X__ MED/LEVEL_____ DILUTION ____

FINAL VOLUME 1 mL

EXTRACTION PERSONNEL: SMN, GJC

SPIKER: SMN **WITNESS: GJC**

SAMPLE #	WEIGHT/G	pH	Vf		SAMPLE #	WEIGHT/G	pH	Vf
BLK	5.00 g	-----	1 mL					
SP BLK	5.00 g	"	"					
6620-1	5.02 g	"	"					
6620-1ms	5.01 g	"	"					
6620-1msd	5.01 g	"	"					
6620-2	5.03 g	"	"					
6620-3	5.02 g	"	"					
6620-4	5.00 g	"	"					
6620-5	5.01 g	"	"					

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

DATE: 5/23/14 DATE: 5/23/14

B10211 8270-BNA-Tissues

Sample I.D.	W_I	V_f	Date:	Time:
BlK	5.00g	1mL	5/23/14	12:45
SpBlK	5.00g	1mL		
6620-1(A)	5.02g	1mL	Water Bath Temp: 92°C	
-1MS(A)	5.01g	1mL		
-1MSD(A)	5.01g	1mL		
-2	5.03g	1mL		
-3	5.02g	1mL		
-4	5.00g	1mL		
-5	5.01g	1mL		

All samples contain 25µl of surrogate # 20006-050613 (1000ppm).

SpBlK, MS, MSD contain 100µl of spike # 16511 (250ppm).

Solvent Used: $MeCl_2$ # 0000075412.

Reagent Used: Na_2SO_4 # 0000066287.

Spiker SMN Witness GJC

Continued on Page

Read and Understood By

Steve Newcom 5/23/14 Signed Date

GJC 5/23/14 Signed Date

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

Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT

Part Number:	20006	**Solvent(s):**	Lot # 28951	Methylene chloride
Lot Number:	050613			
Description:	CLP Semi-Volatiles Base/Neutral Surrogate Standard			
	SOW July'91 GC/MS Calibration - 4 components			
Expiration Date:	050618 .			
Recommended Storage:	Refrigerate (4 °C)			
Nominal Concentration (µg/mL):	1000			

Formulated By: Gabriel Helland — DATE 050613

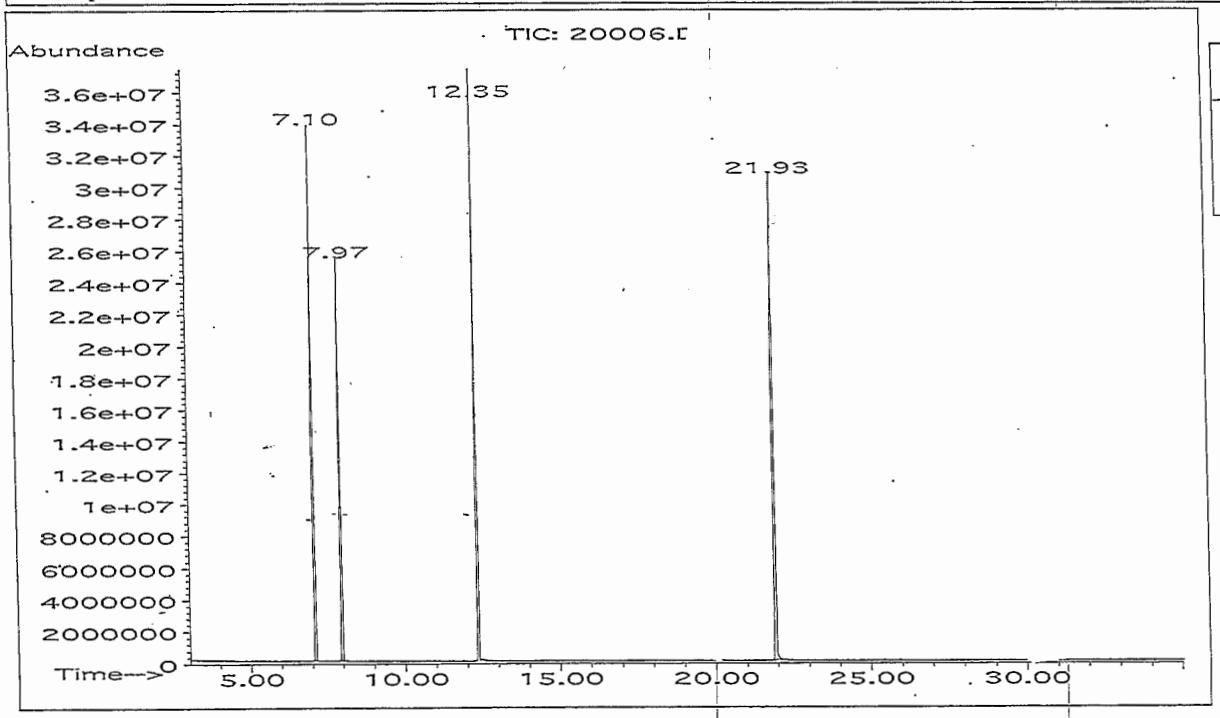
Reviewed By: Pedro L. Rentas — DATE 050613

5E-05 Balance Uncertainty

Weight(s) shown below were combined and diluted to: 200.0 0.007 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty	MSDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. 2-Fluorobiphenyl	187	MKAA3698	1000	96	0.2	0.20832	0.20852	1001.0	0.0042	00321-60-8	N/A	N/A
2. p-Terphenyl-d14	272	P-6109	1000	98	0.2	0.20407	0.20438	1001.5	0.0041	01718-51-0	1 ppm (CL)	orl-rbt 2400mg/kg
3. Nitrobenzene-d5	229	U538P20	1000	99.7	0.2	0.20059	0.20091	1001.6	0.0040	04165-60-0	1 ppm (5mg/m3/8H)(skin)	orl-rat 640mg/kg
4. 1,2-Dichlorobenzene-d4	128	PR-18653/12207DB2	1000	99	0.2	0.20201	0.20245	1002.2	0.0041	02199-69-1	50 ppm (300mg/m3) (CL)	orl-rat 500mg/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 = 275°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by: Melissa Stonier.



Peak No.	Name	MSD RT (min.)
1	1,2-Dichlorobenzene-d4	7.10
2	Nitrobenzene-d5	7.97
3	2-Fluorobiphenyl	12.35
4	p-Terphenyl-d14	21.93

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

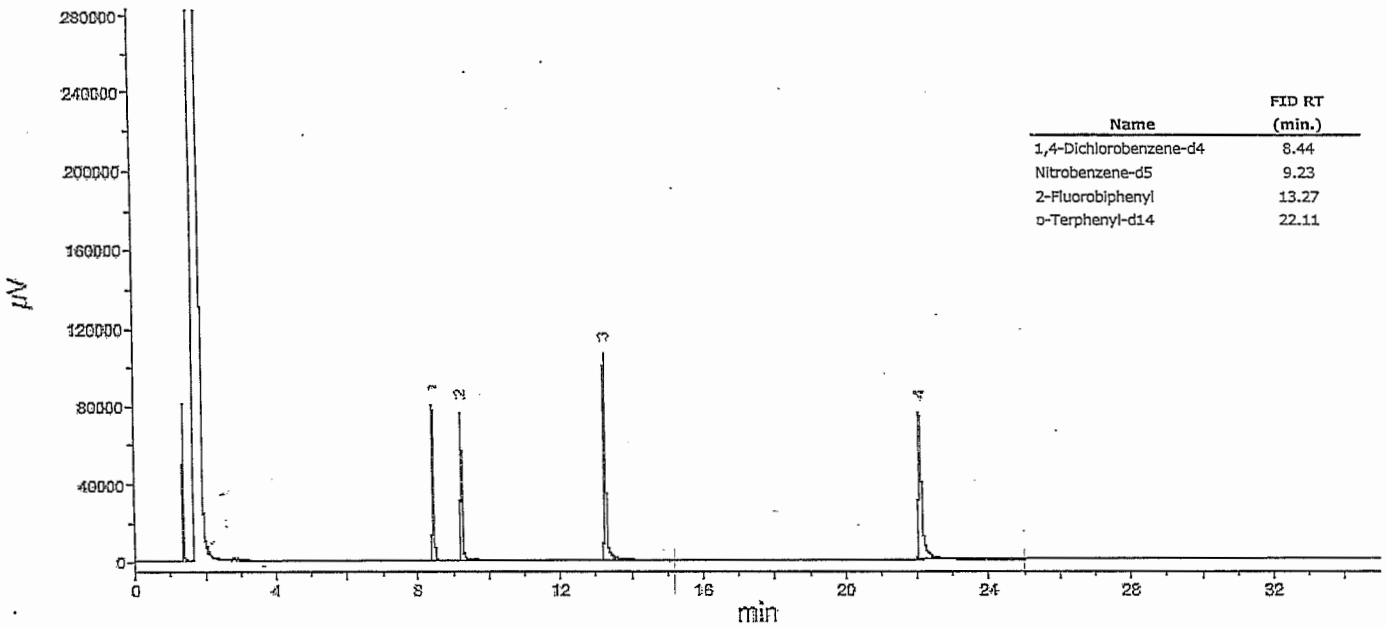
Certified Reference Material CRM

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

Run 59, "P20006 L050613 [1000µg/mL in MeCl2]"

Run Length: 35.00 min, 20998 points at 10 points/second.
Created: Thu, May 9, 2013 at 2:30:34 AM.
Sampled: Sequence "050713-GC9M1", Method "GC9-M1".
Analyzed using Method "GC9-M1".

Comments
GC9M1 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 (9 min), Total Run Time=35 min.
Injector Temp = 200 C, FID Temp = 300 C, FID Signal = Edaq Channel 1
Gas Chromatograph = HP5890, Standard Injection = 0.5 uL, Range =4



Name	FID RT (min.)
1,4-Dichlorobenzene-d4	8.44
Nitrobenzene-d5	9.23
2-Fluorobiphenyl	13.27
p-Terphenyl-d14	22.11

16508 30 PPM 8270 STD (ICV)

150 µL 9002782 (200 PPM exp 11/2016)
15 µL 16288-R Acid Surr (2000 µg/mL exp 3/7/2015)
30 µL 26006 050613 (1000 µg/mL exp 05/06/2018)
805 µL MeCl2 (0000068488)
1.0 mL 30 PPM STD w/ 20 µL ISTD 16437-S (2000 µg/mL exp 10/2016)
PEK exp
5/16/2014 5/23/2014

16509 50 PPM DFTPP

20 µL 16357-R (2500 µg/mL exp 09/2016)
980 µL MeCl2 (0000074359)
1.0 mL 50 PPM DFTPP
PEK exp
5/22/2014 5/29/2014

16510 5 PPM PNA/SIM STD

250 µL 16272 (20 µg/mL exp 6/1/2014)
750 µL MeCl2 (0000074359)
1.0 mL 5 PPM STD w/ 5 µL ISTD 16437-S (2000 µg/mL exp 10/2016)
PEK exp
5/22/2014 5/29/2014

16511 8270-BNA-Tissues Spike

500 µL 15234-AB (2000 µg/mL exp 10/9/2014)
500 µL 16087-R (2000 µg/mL exp 10/2015)
3000 µL MeCl2 (0000074359)
4.0 mL ~~7500 ppm~~ 250 PPM Spike Solution
PEK 5/23/2014
PEK exp
5/23/2014 10/9/2014

16512 8270 Tune

50 µL 16102-R (1000 µg/mL exp 01/2016)
950 µL MeCl2 (0000074359)
1.0 mL 50 PPM Tune
PEK exp
5/27/2014 6/3/2014

Continued on Page

Read and Understood By

PEK Signed 5/27/2014 Date [signature] Signed 5/28/14 Date

6/13/12 opened.

15230-AB

Part #: 71480 Laboratory Use Only - See MSDS
Lot #: 120111 Exp: 120116 Storage 4 °C
Diisopropyl methylphosphonate
1000 ug/mL in methanol 1 mL
ABSOLUTE STANDARDS, INC. • 800-368-1131

15231-AB

Part #: 71475 Laboratory Use Only - See MSDS
Lot #: 051011 Exp: 051016 Storage 4 °C
Dimethyl methylphosphonate
1000 ug/mL in methanol 1 mL
ABSOLUTE STANDARDS, INC. • 800-368-1131

NOTEBOOK INSERT LABEL

15232-S

Semi-Volatile Base-Neutral Surrogate Spike Mix 4-8935
Lot: LB80026 EXP: NOV/2013 STORAGE: REFRIGERATE 1 x 1ml
DATE RECEIVED: 6/2/11 1,000 PPM
SUPELCO Analytical
595 North Harrison Road • Bellefonte, PA 16823-0048 USA • Phone 814-359-3441

15233-AB

Part #: 70373 Laboratory Use Only - See MSDS
Lot #: 060711 Exp: 060716 Storage 4 °C
1,4-Dioxane
1000 ug/mL in methanol 1 mL
ABSOLUTE STANDARDS, INC. • 800-368-1131

15234-AB

Part #: 10007 Laboratory Use Only
Lot #: 100909 Exp: 100914
CLP Semi-Volatile - PAH Standard
17 components
2000 ug/mL in methylene chloride

15235-AB

Part #: 70313 Laboratory Use Only - See MSDS
Lot #: 020108 Exp: 020113 Storage 4 °C
1-Methylnaphthalene
1000 ug/mL in methanol 1 mL
ABSOLUTE STANDARDS, INC. • 800-368-1131

15236-AB

Part #: 70214 Laboratory Use
Lot #: 060109 Exp: 060114
2-Methylnaphthalene
Xp 06/2014
1000 ug/mL in methanol

Continued on Page

Read and Understood By

Doug Carson 6/13/12 — Signed — Date
6/14/12 — Signed — Date

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

ISO 9(S Registered
ISC 025 Accredited

CERTIFIED WEIGHT REPORT

Part Number: 10007
Lot Number: 100909
Description: CLP Semi-Volatiles - PAH Standard
17 components
Expiration Date: 100914
Storage: 4 °C
Nominal Concentration (µg/mL): 2000

Solvent(s): Lot # H16S03 Methylene chloride

Formulated By:	Justin Dippold	100909 DATE
Reviewed By:	Pedro L. Rentas	100909 DATE

5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to: 500.0 0.049 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty	MSDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. Acenaphthene	1	01619AX	2000	99	0.2	1.01015	1.01075	2001.2	0.0040	00083-32-9	N/A	ipr-rat 600mg/kg
2. Acenaphthylene	3	ER030707-01	2000	99	0.2	1.01015	1.01080	2001.3	0.0040	00208-96-8	N/A	N/A
3. Anthracene	13	A0210580	2000	99	0.2	1.01015	1.01062	2000.9	0.0040	00120-12-7	0.2mg/m3 (8H)	ipr-mus 430mg/kg
4. Benzo(a)anthracene	28	ER121707-01	2000	99	0.2	1.01015	1.01080	2001.3	0.0040	00056-55-3	N/A	N/A
5. Benzo(a)pyrene	30	ER050707-01	2000	99	0.2	1.01015	1.01063	2001.0	0.0040	00050-32-8	0.2mg/m3 (8H)	scu-rat 50mg/kg
6. Benzo(b)fluoranthene	31	ER022008-02	2000	99	0.2	1.01015	1.01070	2001.1	0.0040	00205-99-2	N/A	N/A
7. Benzo(k)fluoranthene	33	ER061608-02	2000	99	0.2	1.01015	1.01103	2001.7	0.0040	00207-08-9	N/A	orl-rat 2820mg/kg
8. Benzo(g,h,i)perylene	32	ER020708-08	2000	99	0.2	1.01015	1.01072	2001.1	0.0040	00191-24-2	N/A	N/A
9. Carbazole	59	022809	2000	99	0.2	1.01015	1.01104	2001.8	0.0040	00086-74-8	N/A	ipr-mus 200mg/kg
10. Chrysene	91	ER081006-02	2000	99	0.2	1.01015	1.01094	2001.6	0.0040	00218-01-9	0.2mg/m3	N/A
11. Dibenzo(a,h)anthracene	112	ER091206-01	2000	99	0.2	1.01015	1.01072	2001.1	0.0040	00053-70-3	0.2mg/m3	N/A
12. Fluoranthene	183	04221PV	2000	98	0.2	1.02045	1.02126	2001.6	0.0041	00206-44-0	N/A	orl-rat 2000mg/kg
13. Fluorene	184	07211MV	2000	98	0.2	1.02045	1.02110	2001.3	0.0041	00086-73-7	N/A	ipr-mus 2 g/kg
14. Indeno(1,2,3-cd)pyrene	202	ER082107-02	2000	99	0.2	1.01015	1.01070	2001.1	0.0040	00193-39-5	N/A	N/A
15. Naphthalene	222	09424LC	2000	99	0.2	1.01015	1.01070	2001.1	0.0040	00091-20-3	10 ppm (50mg/m3/8H)	orl-rat 490mg/kg
16. Phenanthrene	248	03410PV	2000	99	0.2	1.01015	1.01071	2001.1	0.0040	00085-01-8	0.2mg/m3/8H	orl-mus 700mg/kg
17. Pyrene	259	010197	2000	98	0.2	1.02045	1.02110	2001.3	0.0041	00129-00-0	0.2mg/m3/8H	orl-rat 2700mg/kg

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

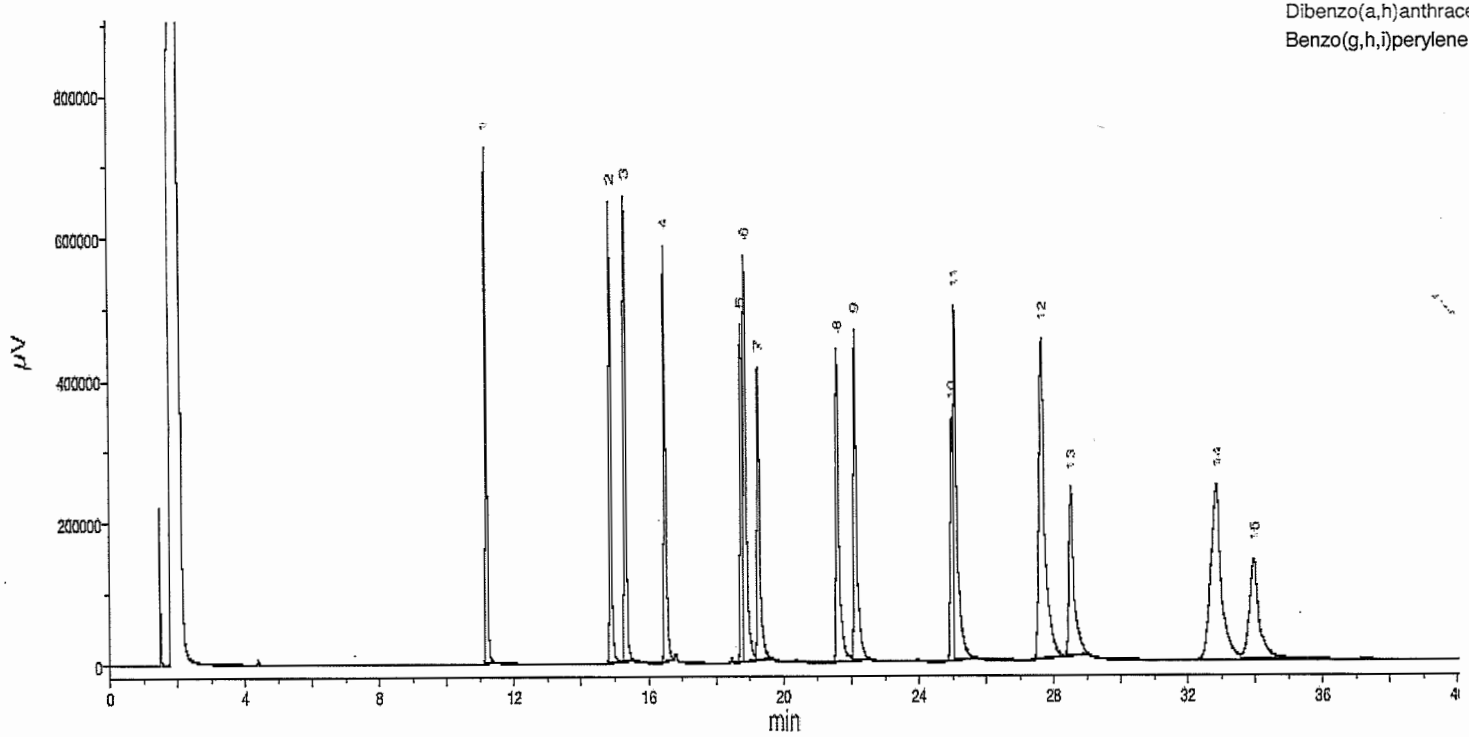
ISO 9001 QS Registered
ISO 17025 Accredited

Run 12, "P10007 L100909 [2000µg/mL in MeCl2]"

Run Length: 40.01 min, 24003 points at 10 points/second.
Created: Fri, Nov 13, 2009 at 10:07:24 PM.
Sampled: Sequence "111209-GC9M2", Method "GC9-M2".
Analyzed using Method "GC9-M2".

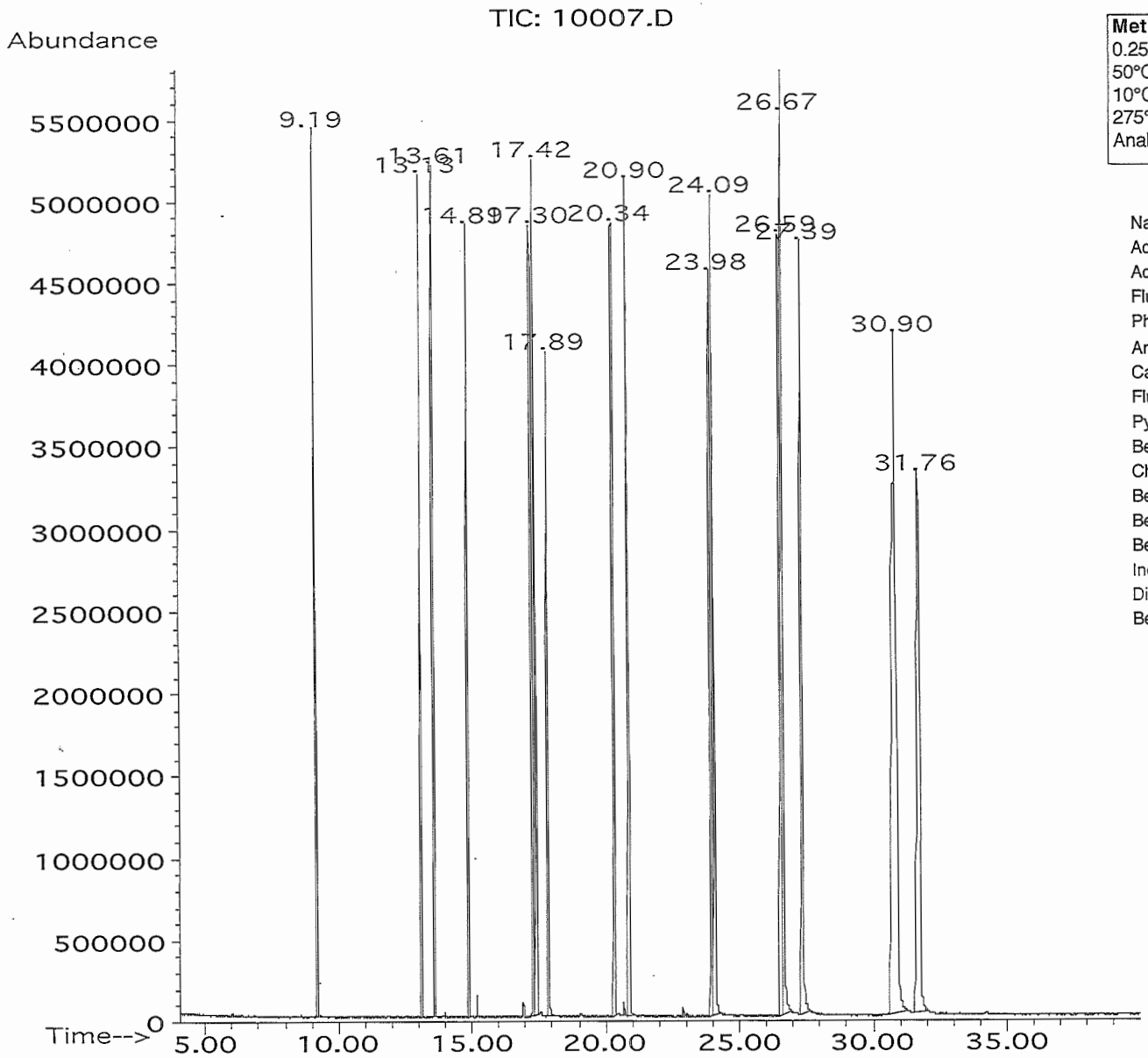
Comments
GC9M2 Analysis by Gina McLane
SPB-5 30 meter x 0.53 µm x 1.5 df
Flow Rates; Total Flow = 300 mL/min, Helium (carrier)=6mL, Helium (makeup)=25mL, Hydrogen (detector)=30, Air (detector)=360
Oven Temp 1 = 50 C (1 min), Rate = 10 C/min, Oven Temp 2 = 300 (14 min), Total Run Time=40 min.
Injector Temp = 250 C, FID Temp = 300 C, FID Signal = Edaq Channel 1
Gas Chromatograph = HP5890, Inejector = HP7673A, Standard Injection = 0.5 uL, Range = 3

	Retention Time (min.)
Naphthalene	11.20
Acenaphthylene	14.89
Acenaphthene	15.32
Fluorene	16.51
Phenanthrene	18.77
Anthracene	18.88
Carbazole	19.27
Fluoranthene	21.6
Pyrene	22.14
Benzo(a)anthracene	25
Chrysene	25.1
Benzo(b)fluoranthene	27.69
Benzo(k)fluoranthene	27.69
Benzo(a)pyrene	28.54
Indeno(1,2,3-cd)pyrene	32.87
Dibenzo(a,h)anthracene	32.87
Benzo(g,h,i)perylene	33.98



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

ISO 9(S Registered
ISO 025 Accredited



Method GC8MSD-2.M Column:SPB-5 (30m X 0.25mm ID X 0.25μm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (14min.), Rate = 10°C/min., Injector B= 250°C, Detector B = 275°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by: Gina McLane.

Retention Time (min.)	
Naphthalene	9.19
Acenaphthylene	13.13
Acenaphthene	13.61
Fluorene	14.89
Phenanthrene	17.3
Anthracene	17.42
Carbazole	17.89
Fluoranthene	20.34
Pyrene	20.9
Benz(a)anthracene	23.98
Chrysene	24.09
Benzo(b)fluoranthene	26.59
Benzo(k)fluoranthene	26.67
Benzo(a)pyrene	27.39
Indeno(1,2,3-cd)pyrene	30.9
Dibenz(a,h)anthracene	30.9
Benzo(ghi)perylene	31.76

STOCK

16086-R

RESTEK Made in USA
Cat# 31282 Recd 10.17.13
Sonicate ampule 15 minutes prior to opening
Pyrene Standard
1000 ug/mL each in Methanol
Lot# A071610 Exp. Date: 01/2017 Store: Room Temperature
Restek Corporation - 110 Benner Circle - Bellefonte, PA 16823
opened 10/22/13

STOCK

16087-R

RESTEK 110 Benner Circle Bellefonte, PA 16823 Made in USA
Catalog # 31031 Recd 10.17.13
606 Phthalate Esters Calibration Mix
2000 ug/mL each in Methanol
Lot# A082358 Exp. Date: 10/2015 Store: 10°C or colder
opened 10/22/13

16088 HI Spike mix (Tissues)

1.00 mL of # 16086-R Pyrene (1,000 µg/mL)
0.5 mL of # 16087-R 606 Phthalate Esters (2,000 µg/mL)
2.50 mL Methanol (Macron Lot 44064)
4.00 mL of 250 µg/mL each

JO 10/22/13 exp 10/22/14

16089 25 PPM DFTPP

1 µL of 14810-S (25,000 PPM exp 03/2014). Brought to 1.0 mL VF with MeCl2. = 25 PPM DFTPP

MeCl2	PEK	exp
0000054901	10/24/2013	10/31/2013

16090 10 PPM STD D/D UM84

10 µL each 15960-AB (1000 PPM exp. 12/2016), 15961-AB (1000 PPM exp. 05/2016), and 15962-US (1000 PPM exp 03/2016). Brought to 1.0 mL VF with MeCl2.
1.0 mL of 10 µg/mL + 5 µL of 15972-S (2000 µg/mL exp. 05/2016).

MeCl2	PEK	exp.
0000054901	10/24/2013	10/31/2013

Continued on Page

Read and Understood By

PEK	10/24/2013	JRC	10/29/13
Signed	Date	Signed	Date

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

www.Restek.com

Certificate of Analysis

FOR LABORATORY USE ONLY-READ MSDS PRIOR TO USE.

Catalog No. : 31031 **Lot No.:** A082358

Description : 606 Phthalate Esters Calibration Mix

SV Mix, 600 Series Method, 606 Calibration Std, phthalate esters, 2,000µg/ml, Methanol, 1ml/ampule

Container Size : [5] 2 mL **Pkg Amt:** [5] > 1 mL

Expiration Date : [1] October 2015 **Storage:** 10°C or colder

Elution Order	Compound	CAS #	Percent Purity [2]	Grav. Conc. (weight/volume) [3]	Grav.Uncert. (95% C.L.; K=2) [4]
1	Dimethylphthalate	131-11-3	99%	2,000.0 ug/mL	+/- 11.6 ug/mL
2	Diethylphthalate	84-66-2	99%	2,000.0 ug/mL	+/- 11.6 ug/mL
3	Di-n-butylphthalate	84-74-2	99%	2,000.0 ug/mL	+/- 11.6 ug/mL
4	Benzyl butyl phthalate	85-68-7	99%	2,000.0 ug/mL	+/- 11.6 ug/mL
5	Bis(2-ethylhexyl)phthalate	117-81-7	99%	2,000.0 ug/mL	+/- 11.6 ug/mL
6	Di-n-octyl phthalate	117-84-0	99%	2,000.0 ug/mL	+/- 11.6 ug/mL
Solvent:	Methanol	67-56-1	99%		

Column:
30m x .25mm x .25um
Rtx-5 (cat.#10223)

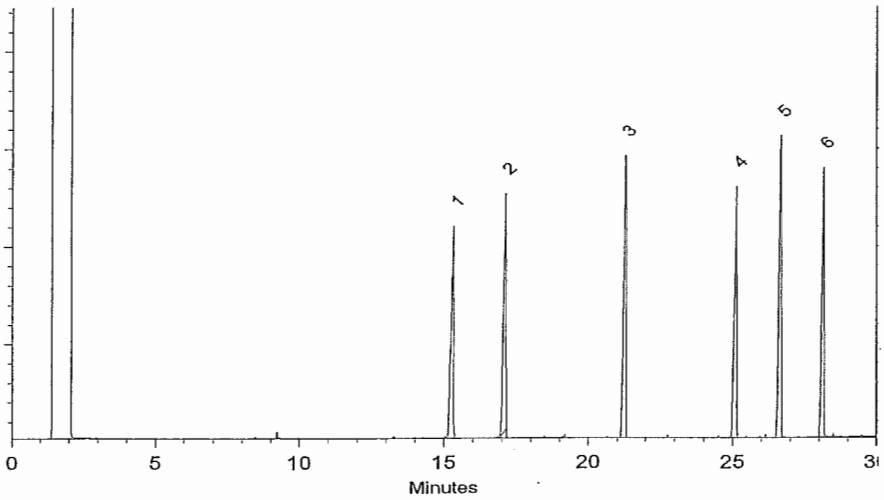
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID



Standards Preparation Information

Rev. 1.1

PROJECT

16508 30 PPM 8270 STD (ICV)
150 µL 9002782 (200 PPM exp 4/2016)
15 µL 16288-R Acid Surr (2000 µg/mL exp 3/7/2015)
30 µL 26006 050613 (1000 µg/mL exp 05/06/2018)
805 µL MeCl2 (000000684188)
1.0 mL 30 PPM STD w/ 20 µL ISTD 16437-S (2000 µg/mL exp 10/2016)
PEK exp
5/16/2014 5/23/2014

16509 50 PPM DFTPP
20 µL 16357-R (2500 µg/mL exp 09/2016)
980 µL MeCl2 (000000-74359)
1.0 mL 50 PPM DFTPP
PEK exp
5/22/2014 5/29/2014

16510 5 PPM PNA/SIM STD
250 µL 16272 (20 µg/mL exp 6/1/2014)
750 µL MeCl2 (000000 74359)
1.0 mL 5 PPM STD w/ 5 µL ISTD 16437-S (2000 µg/mL exp 10/2016)
PEK exp
5/22/2014 5/29/2014

16511 8270-BNA-Tissues Spike
500 µL 15234-AB (2000 µg/mL exp 10/9/2014)
500 µL 16087-R (2000 µg/mL exp 10/2015)
3000 µL MeCl2 (000000 74359)
4.0 mL ~~2500 ppm~~ 250 PPM Spike Solution
PEK 5/23/2014
PEK exp
5/23/2014 10/9/2014

16512 8270 Tune
50 µL 16102-R (1000 µg/mL exp 01/2016)
950 µL MeCl2 (000000 74359)
1.0 mL 50 PPM Tune
PEK exp
5/27/2014 6/3/2014

Continued on Page

Read and Understood By

PEK 5/27/2014 5/28/14
Signed Date Signed Date

8270 Cal STDs

[redacted]

STD #	Name	µL 16077	µL 16078	µL 15880-S	Vf MeCl2
16095	Cal BLK	—	—	—	1.0 mL
16096	5 PPM	20 µL	20 µL	2.5 µL	
16097	10 PPM	40	40	5	
16098	20 PPM	80	80	10	
16099	30 PPM	120	120	15	
16100	40 PPM	160	160	20	
16101	60 PPM	240	240	30	

All w/ 20µL ISTD 16076-S (2000µg/mL exp 05/2014)

MeCl2
000000549 01

PEK
10/30/2013

exp
2/22 2/30/2014 gp 11/8/13

16102-R

8270 Tune Mixture Stock

RESTEK
Catalog # 31615
GC/MS Tuning Mixture
1000 ug/mL each in Methylene Chloride
Lot# A092905 Exp. Date: 01/2016 Store: 10°C or colder
110 Benner Circle
Bellefonte, PA 16823
Made in USA

Opened 11/4/2013
recieved 11/1/2013

PEK
11/4/2013

16103

50 PPM 8270 Tune Mixture

50µL of 16102-R (1000µg/mL exp 1/2016)
950µL MeCl2 (000000549 01)
1.0 mL of 50 PPM 8270 Tune

PEK
11/4/2013

exp
2/4/2014

Continued on Page

Read and Understood By

PEK — Signed
11/4/2013 — Date
gp — Signed
11/8/13 — Date

16513-S

SUPELCO
Solutions within.
595 North Harrison Road • Bellefonte, PA
16823-0048 USA • Phone 814-359-3441

Lot: LC03378V CRM48902
EXP: OCT/2016 2 x 1ml
STORAGE: REFRIGERATE
Recieved 10/25/2013
Opened 5/27/2014

Semivolatile Internal Std Mix
2000ug/ml in dichloromethane
Danger

PEK
5/27/2014

16514-R

RESTEK
110 Benner Circle
Bellefonte, PA 16823
Made in USA
Catalog# 31062
Sonicate prior to use.
B/N Surrogate Mix (4/89 SOW)
5000 ug/mL each in Methylene Chloride
Lot# A098468 Exp. Date: 09/2019 Store: 10°C or colder
Recieved 5/21/2014
Opened 5/21/2014

PEK
5/21/2014

16515-

100 PPM Intermediate 8270 STD (Tissues)
300 µL 16383-R (1000 µg/mL exp 06/2015)
60 µL 16514-R (5000 µg/mL exp 09/2019)
2640 µL MeCl2 (000000 74 359)
3.0 mL 100 PPM 8270 Tissue STD
PEK exp
5/27/2014 6/3/2014

16 PEK 5/28/2014

8270 Tissue Cal STDs

STD #	Name	µL 16515	µL 16513-S	VF MeCl2
16516	BLK	—	20 µL	1.0 mL
16517	5 PPM	50 µL		
16518	10 PPM	100		
16519	20 PPM	200		
16520	30 PPM	300		
16521	40 PPM	400		
16522	60 PPM	600 µL	20 µL	1.0 mL

PEK 5/28/2014
exp. 6/3/2014

Continued on Page

Read and Understood By

PEK — Signed — 5/28/2014 — Date
JO — Signed — 5/30/14 — Date

PROJECT

16380: 50 PPM DFTPP
20µL 16357-R (2500µg/mL exp 09/2016)
980µL MeCl2 (0000068488)
1.0 mL 50PPM DFTPP
PEK exp
4/9/2014 4/16/2014

16381: 5 PPM PNA/SIM STD
250µL 16272 (20µg/mL exp 6/1/2014)
750µL MeCl2 (0000068488)
1.0mL 5 PPM PNA/SIM STD w/ 5µL ISTD 16364-S (2000µg/mL exp 10/2016)
PEK exp
4/9/2014 4/16/2014

16382: 8270 Tune
50µL 16102-R (1000µg/mL exp 01/2016)
950µL MeCl2 (0000068488)
1.0mL 50 PPM 8270 Tune
PEK exp
4/10/2014 4/17/2014

16383-R 8270 Mega Mix

RESTEK 110 Benner Circle Bellefonte, PA 16823 Made in USA
Catalog# 31850
Sonication required. Mix is photosensitive.
8270 MegaMix®
Recieved 3/11/2014
Opened 4/10/2014
500-1000 ug/mL each in Methylene Chloride
Lot# A0100278 Exp. Date: 08/2015 Store: 0°C or colder
PEK
4/10/2014

16384 30 PPM 8270 STD (ICV)
150µL 9002782 (200PPM exp 11/2016)
15µL 16288-R Acid Surr (2000µg/mL exp 3/7/2015)
30µL 16291-S B/N Surr (1000µg/mL exp 07/2016)
805µL MeCl2 (0000068488)
1.0mL 30 PPM 8270 STD w/ 20µL ISTD 16364-S (2000µg/mL exp 10/2016)
PEK exp
4/10/2014 4/17/2014

Continued on Page

Read and Understood By

PEK 4/10/2014
Signed Date

Signed 4/15/14
Date

PROJECT

16523 30 PPM 8270 Tissues STD (ICV)

15 µL 15234-AB (2000 µg/mL exp 10/9/2014)
15 µL 16087-R (2000 µg/mL exp 10/2015)
6 µL 16514-R (5000 µg/mL exp 09/2019)
964 µL MeCl2 (000007 4359)
1.0 mL 30 PPM STD w/ 20 µL ISTD 16513-S (2000 µg/mL exp 10/2016)
PEK exp
5/28/2014 6/4/2014

16524 25 PPM DFTPP

10 µL 16357-R (2500 µg/mL exp 09/2016)
990 µL MeCl2 (000007 4359)
1.0 mL 25 PPM DFTPP
PEK exp
6/2/2014 6/9/2014

16525 10 PPM UM84 STD

10 µL 16165-AB (1000 µg/mL exp 12/1/2016)
10 µL 16166-AB (1000 µg/mL exp 5/10/2016)
10 µL 16167-US (1000 µg/mL exp 3/31/2016)
970 µL MeCl2 (000007 4359)
1.0 mL 10 PPM STD w/ 5 µL ISTD 16478-R (2000 µg/mL exp 09/2021)
PEK exp
6/2/2014 6/9/2014

16526 UM81 Tune

100 µL 16524 (25 ppm) DFTPP
900 µL MeCl2
1.0 mL of 2.5 µg/mL Soln. JD 6/2/14 XP 6/9/14

16527 UM81 CalStd

10 µL of 16276 (5 ppm NDMA) exp 9/5/14
10 µL 16335 (5 ppm NDMA D6) exp 6/21/14
+ MeCl2 74359
VF 1.0 mL + 10 µL ISTD 16325 of 50 µg/L
JD 6/2/14 exp 6/9/14

Continued on Page

Read and Understood By

JD 6/2/14 PEK 6/3/2014
Signed Date Signed Date

6/13/12 opened:

15230-AB

Part #: 71480 Laboratory Use Only - See MSDS
Lot #: 120111 Exp: 120116 Storage 4 °C
Diisopropyl methylphosphonate
1000 ug/mL in methanol 1 mL
ABSOLUTE STANDARDS, INC. • 800-368-1131

15231-AB

Part #: 71475 Laboratory Use Only - See MSDS
Lot #: 051011 Exp: 051016 Storage 4 °C
Dimethyl methylphosphonate
1000 ug/mL in methanol 1 mL
ABSOLUTE STANDARDS, INC. • 800-368-1131

NOTEBOOK INSERT LABEL

15232-S

Semi-Volatile Base-Neutral Surrogate Spike Mix 4-8935
Lot: LB80026 EXP: NOV/2013 STORAGE: REFRIGERATE 1 x 1ml
DATE RECEIVED: 6/2/11 1000 PPM SUPELCO Analytical
595 North Harrison Road • Bellefonte, PA 16823-0048 USA • Phone 814-359-3441

15233-AB

Part #: 70373 Laboratory Use Only - See MSDS
Lot #: 060711 Exp: 060716 Storage 4 °C
1,4-Dioxane
1000 ug/mL in methanol 1 mL
ABSOLUTE STANDARDS, INC. • 800-368-1131

15234-AB

Part #: 10007 Laboratory Use Or
Lot #: 100909 Exp: 100914
CLP Semi-Volatile - PAH Standard
17 components
2000 ug/mL in methylene chloride

15235-AB

Part #: 70313 Laboratory Use Only - See MSDS
Lot #: 020108 Exp: 020113 Storage 4 °C
1-Methylnaphthalene
1000 ug/mL in methanol 1 mL
ABSOLUTE STANDARDS, INC. • 800-368-1131

15236-AB

Part #: 70214 Laboratory Use
Lot #: 060109 Exp: 060114
2-Methylnaphthalene
XP 06/2014
1000 ug/mL in methanol

Continued on Page

Read and Understood By

Doug Carroll 6/13/12 — Signed — Date

6/14/12 — Signed — Date

STOCK

16086-R

RESTEK Made in USA
Cat# 31282 Rec'd 10-17-13
Scribe ampule 10 minutes prior to opening
Pyrene Standard
1000 ug/mL each in Methanol
Lot# A071610 Exp. Date: 01/2017 Store: Room Temperature
Restek Corporation - 110 Benner Circle - Bellefonte, PA 16823
opened 10/22/13

STOCK

16087-R

RESTEK 110 Benner Circle Bellefonte, PA 16823 Made in USA
Catalog # 31031 Rec'd 10-17-13
606 Phthalate Esters Calibration Mix
2000 ug/mL each in Methanol
Lot# A082358 Exp. Date: 10/2016 Store: 10°C or colder
opened 10/22/13

16088 HI Spike mix (Tissues)

1.00 mL of # 16086-R Pyrene (1,000 µg/mL)
0.5 mL of # 16087-R 606 Phthalate Esters (2,000 µg/mL)
2.50 mL Methanol (Macron Lot 44064)
4.00 mL of 250 µg/mL each

JO 10/22/13 exp 10/22/14

16089 25 PPM DFTPP

1 µL of 14810-S (25,000 PPM exp 03/2014). Brought to 1.0 mL VF with MeCl2. = 25 PPM DFTPP

MeCl2	PEK	exp
0000054901	10/24/2013	10/31/2013

16090 10 PPM STD D/D UM84

10 µL each 15960-AB (1000 PPM exp. 12/2016), 15961-AB (1000 PPM exp. 05/2016), and 15962-US (1000 PPM exp 03/2016). Brought to 1.0 mL VF with MeCl2. 1.0 mL of 10 µg/mL + 5 µL of 15972-S (2000 µg/mL exp. 05/2016).

MeCl2	PEK	exp.
0000054901	10/24/2013	10/31/2013

Continued on Page

Read and Understood By

PEK	10/24/2013	RC	10/29/13
Signed	Date	Signed	Date

RESTEK

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

www.restek.com

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ilac-MRA

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. : 31615 **Lot No.:** A092905

Description : GC/MS Tuning Mixture

GC/MS Tuning Mixture 1000µg/mL, Methylene Chloride, 1mL/ampul

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

Expiration Date : January 2016 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Pentachlorophenol CAS # 87-86-5 Purity 99%	1,000.0 µg/mL	+/- 5.8275 +/- 35.2615 +/- 60.8566	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
2	DFTPP (Decafluorotriphenylphosphine) CAS # 5074-71-5 Purity 99%	1,000.0 µg/mL	+/- 5.8275 +/- 35.2615 +/- 60.8566	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
3	Benzidine CAS # 92-87-5 Purity 99%	1,000.0 µg/mL	+/- 5.8275 +/- 35.2615 +/- 60.8566	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
4	4,4'-DDT CAS # 50-29-3 Purity 99%	1,000.0 µg/mL	+/- 5.8275 +/- 35.2615 +/- 60.8566	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: Methylene Chloride
CAS # 75-09-2
Purity 99%

RESTEK® CERTIFIED REFERENCE MATERIAL

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

www.restek.com

ACCREDITED
ISO Guide 34 Accredited Reference Material Producer Certificate #3222.01

Certificate of Analysis

ilac-MRA

ACCREDITED
ISO/IEC 17025 Accredited Testing Laboratory Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 31850 **Lot No.:** A0100278

Description : 8270 MegaMix®

8270 MegaMix® 500-1000 µg/ml, Methylene Chloride, 1 ml/ampul

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

Expiration Date : June 30, 2015 **Storage:** 0°C or colder

Handling: Sonication required. Mix is photosensitive.

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Pyridine CAS # 110-86-1 Purity 99%	(Lot 09882HH)	1,000.0 µg/mL	+/- 6.3027 +/- 27.6979 +/- 27.6979	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
2	N-Nitrosodimethylamine CAS # 62-75-9 Purity 99%	(Lot 909500)	1,000.0 µg/mL	+/- 6.3027 +/- 27.6979 +/- 27.6979	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
3	Aniline CAS # 62-53-3 Purity 99%	(Lot BCBF4299V)	1,000.0 µg/mL	+/- 6.3027 +/- 27.6979 +/- 27.6979	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
4	Phenol CAS # 108-95-2 Purity 99%	(Lot BCBC0688)	1,000.0 µg/mL	+/- 6.3027 +/- 27.6979 +/- 27.6979	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
5	Bis(2-chloroethyl)ether CAS # 111-44-4 Purity 99%	(Lot 45296HKV)	1,000.0 µg/mL	+/- 6.3027 +/- 27.6979 +/- 27.6979	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
6	2-Chlorophenol CAS # 95-57-8 Purity 99%	(Lot MKBD3900V)	1,000.0 µg/mL	+/- 6.3027 +/- 27.6979 +/- 27.6979	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
7	1,3-Dichlorobenzene CAS # 541-73-1 Purity 99%	(Lot BCBC1891V)	1,000.0 µg/mL	+/- 6.3027 +/- 27.6979 +/- 27.6979	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
8	1,4-Dichlorobenzene CAS # 106-46-7 Purity 99%	(Lot MKBG7690V)	1,000.0 µg/mL	+/- 6.3027 +/- 27.6979 +/- 27.6979	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

9	1,2-Dichlorobenzene			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	95-50-1	(Lot 00245KB)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
10	Benzyl alcohol			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	100-51-6	(Lot 02236CC)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
11	Bis(2-chloroisopropyl)ether			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	108-60-1	(Lot LB93561V)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
12	2-Methylphenol (o-cresol)			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	95-48-7	(Lot 29996EK)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
13	Hexachloroethane			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	67-72-1	(Lot 4H3SF)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
14	N-Nitroso-di-n-propylamine			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	621-64-7	(Lot OPAGF-LS)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
15	4-Methylphenol (p-cresol)			500.0	µg/mL	+/-	3.1575	µg/mL	Gravimetric
	CAS #	106-44-5	(Lot 49396APV)			+/-	13.8504	µg/mL	Unstressed
	Purity	99%				+/-	13.8504	µg/mL	Stressed
16	3-Methylphenol (m-cresol)			500.0	µg/mL	+/-	3.1575	µg/mL	Gravimetric
	CAS #	108-39-4	(Lot 04627KA)			+/-	13.8504	µg/mL	Unstressed
	Purity	99%				+/-	13.8504	µg/mL	Stressed
17	Nitrobenzene			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	98-95-3	(Lot 65096APV)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
18	Isophorone			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	78-59-1	(Lot 06705DE)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
19	2-Nitrophenol			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	88-75-5	(Lot 02611AH)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
20	2,4-Dimethylphenol			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	105-67-9	(Lot 10165155)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
21	Bis(2-chloroethoxy)methane			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	111-91-1	(Lot 317200)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
22	2,4-Dichlorophenol			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	120-83-2	(Lot BCBH1617V)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
23	1,2,4-Trichlorobenzene			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	120-82-1	(Lot 26896BM)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
24	Naphthalene			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	91-20-3	(Lot MKBF8633V)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed

25	4-Chloroaniline **CAS #** 106-47-8 **Purity** 98%	(Lot 12528PH)	1,000.0	µg/mL	+/-	6.3028 27.6987 27.6987	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
26	Hexachlorobutadiene **CAS #** 87-68-3 **Purity** 97%	(Lot K22W009)	1,000.0	µg/mL	+/-	6.3027 27.6982 27.6982	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
27	2-Methylnaphthalene **CAS #** 91-57-6 **Purity** 96%	(Lot 19399MJV)	1,000.0	µg/mL	+/-	6.3028 27.6985 27.6985	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
28	4-Chloro-3-methylphenol **CAS #** 59-50-7 **Purity** 99%	(Lot STBC0769V)	1,000.0	µg/mL	+/-	6.3027 27.6979 27.6979	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
29	1-Methylnaphthalene **CAS #** 90-12-0 **Purity** 99%	(Lot 5250.00-10)	1,000.0	µg/mL	+/-	6.3027 27.6979 27.6979	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
30	Hexachlorocyclopentadiene **CAS #** 77-47-4 **Purity** 98%	(Lot 14752)	1,000.0	µg/mL	+/-	6.3025 27.6970 27.6970	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
31	2,4,6-Trichlorophenol **CAS #** 88-06-2 **Purity** 99%	(Lot MKBH7393V)	1,000.0	µg/mL	+/-	6.3027 27.6979 27.6979	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
32	2,4,5-Trichlorophenol **CAS #** 95-95-4 **Purity** 99%	(Lot MKBG3862V)	1,000.0	µg/mL	+/-	6.3027 27.6979 27.6979	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
33	2-Chloronaphthalene **CAS #** 91-58-7 **Purity** 99%	(Lot FIJ01)	1,000.0	µg/mL	+/-	6.3027 27.6979 27.6979	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
34	2-Nitroaniline **CAS #** 88-74-4 **Purity** 99%	(Lot MKBF9132V)	1,001.7	µg/mL	+/-	5.8240 27.6377 27.6377	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
35	1,4-Dinitrobenzene **CAS #** 100-25-4 **Purity** 99%	(Lot S58502V)	1,000.0	µg/mL	+/-	6.3027 27.6979 27.6979	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
36	Acenaphthylene **CAS #** 208-96-8 **Purity** 99%	(Lot ER030707-01)	1,000.0	µg/mL	+/-	6.3027 27.6979 27.6979	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
37	1,3-Dinitrobenzene **CAS #** 99-65-0 **Purity** 97%	(Lot 0001338960)	1,000.0	µg/mL	+/-	6.3027 27.6982 27.6982	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
38	Dimethylphthalate **CAS #** 131-11-3 **Purity** 99%	(Lot 10117699)	1,000.0	µg/mL	+/-	6.3027 27.6979 27.6979	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
39	2,6-Dinitrotoluene **CAS #** 606-20-2 **Purity** 99%	(Lot 1437483V)	1,000.0	µg/mL	+/-	6.3027 27.6979 27.6979	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
40	1,2-Dinitrobenzene **CAS #** 528-29-0 **Purity** 99%	(Lot MKBK2313V)	1,000.0	µg/mL	+/-	6.3027 27.6979 27.6979	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

41	Acenaphthene			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	83-32-9	(Lot MKBH3748V)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
42	3-Nitroaniline			1,000.1	µg/mL	+/-	5.8145	µg/mL	Gravimetric
	CAS #	99-09-2	(Lot MKBH5131V)			+/-	27.5928	µg/mL	Unstressed
	Purity	97%				+/-	27.5928	µg/mL	Stressed
43	2,4-Dinitrophenol			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	51-28-5	(Lot MKBH0709V)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
44	Dibenzofuran			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	132-64-9	(Lot MKBG6507V)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
45	2,4-Dinitrotoluene			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	121-14-2	(Lot MKAA0690V)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
46	4-Nitrophenol			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	100-02-7	(Lot MKBF5564V)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
47	2,3,4,6-Tetrachlorophenol			1,000.8	µg/mL	+/-	5.8187	µg/mL	Gravimetric
	CAS #	58-90-2	(Lot ER100206-01)			+/-	27.6129	µg/mL	Unstressed
	Purity	99%				+/-	27.6129	µg/mL	Stressed
48	2,3,5,6-Tetrachlorophenol			1,001.2	µg/mL	+/-	5.8211	µg/mL	Gravimetric
	CAS #	935-95-5	(Lot ER090607-01)			+/-	27.6239	µg/mL	Unstressed
	Purity	99%				+/-	27.6239	µg/mL	Stressed
49	Fluorene			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	86-73-7	(Lot 1326187)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
50	4-Chlorophenyl phenyl ether			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	7005-72-3	(Lot MKBK0830V)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
51	Diethylphthalate			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	84-66-2	(Lot MKBG0599V)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
52	4-Nitroaniline			1,001.9	µg/mL	+/-	5.8251	µg/mL	Gravimetric
	CAS #	100-01-6	(Lot BCBG4702V)			+/-	27.6432	µg/mL	Unstressed
	Purity	99%				+/-	27.6432	µg/mL	Stressed
53	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	534-52-1	(Lot 13212DW)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
54	Diphenylamine			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	122-39-4	(Lot 07525MF)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
55	Azobenzene			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	103-33-3	(Lot 121029JLM)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
56	4-Bromophenyl phenyl ether			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	101-55-3	(Lot STBB9729V)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed

57	Hexachlorobenzene			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	118-74-1	(Lot LB93343V)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
58	Pentachlorophenol			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	87-86-5	(Lot 17181)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
59	Phenanthrene			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	85-01-8	(Lot MKBB7303V)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
60	Anthracene			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	120-12-7	(Lot 81296TJV)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
61	Carbazole			1,000.0	µg/mL	+/-	6.3028	µg/mL	Gravimetric
	CAS #	86-74-8	(Lot S42950-417)			+/-	27.6987	µg/mL	Unstressed
	Purity	98%				+/-	27.6987	µg/mL	Stressed
62	Di-n-butylphthalate			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	84-74-2	(Lot MKBG1851V)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
63	Fluoranthene			1,000.0	µg/mL	+/-	6.3025	µg/mL	Gravimetric
	CAS #	206-44-0	(Lot 00828AJ)			+/-	27.6970	µg/mL	Unstressed
	Purity	98%				+/-	27.6970	µg/mL	Stressed
64	Pyrene			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	129-00-0	(Lot S22012V)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
65	Benzyl butyl phthalate			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	85-68-7	(Lot 03027HV)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
66	Bis(2-ethylhexyl)adipate			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	103-23-1	(Lot MKAA1388V)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
67	Benz(a)anthracene			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	56-55-3	(Lot ER121707-01)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
68	Chrysene			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	218-01-9	(Lot ER120810-02)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
69	Bis(2-ethylhexyl)phthalate			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	117-81-7	(Lot MKBH9511V)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
70	Di-n-octyl phthalate			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	117-84-0	(Lot 36100)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
71	Benzo(b)fluoranthene			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	205-99-2	(Lot ER022008-02)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed
72	Benzo(k)fluoranthene			1,000.0	µg/mL	+/-	6.3027	µg/mL	Gravimetric
	CAS #	207-08-9	(Lot ER061608-02)			+/-	27.6979	µg/mL	Unstressed
	Purity	99%				+/-	27.6979	µg/mL	Stressed

73	Benzo(a)pyrene **CAS #** 50-32-8 **Purity** 99%	(Lot ER071309-02)	1,000.0	µg/mL	+/- 6.3027 +/- 27.6979 +/- 27.6979	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
74	Indeno(1,2,3-cd)pyrene **CAS #** 193-39-5 **Purity** 99%	(Lot ER082107-02)	1,000.0	µg/mL	+/- 6.3027 +/- 27.6979 +/- 27.6979	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
75	Dibenz(a,h)anthracene **CAS #** 53-70-3 **Purity** 99%	(Lot ER032211-01)	1,000.0	µg/mL	+/- 6.3027 +/- 27.6979 +/- 27.6979	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
76	Benzo(g,h,i)perylene **CAS #** 191-24-2 **Purity** 99%	(Lot ER020708-08)	1,000.0	µg/mL	+/- 6.3027 +/- 27.6979 +/- 27.6979	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: Methylene Chloride
CAS # 75-09-2
Purity 99%

Specific Reference Material Notes:

Product Notice

8270 MegaMix™, cat. #31850

The presence of benzene or other high boiling solvents can lead to low response,poor peak shape, or lack of resolution by gas chromatography of certain early
eluting semivolatile organic compounds at low concentrations. These compounds include pyridine, N-nitrosodimethylamine, 1,4-dioxane, 2-picoline, and N-nitrosomethylethylamine.
Therefore, we have discontinued the use of methylene chloride:benzene (75:25) as the solvent for this analytical reference material and replaced it with 100% methylene chloride to ensure superior performance.

If you have any questions, please do not hesitate to contact our technical service department at 800-356-1688 or 814-353-1300 ext.4.

Restek Corporation
110 Benner Circle, Bellefonte, PA16823
phone: (800) 356-1688 or (814) 353-1300
fax: (814) 353-1309; www.restekcorp.com

Tech Tips:

N-Nitrosodiphenylamine is prone to breakdown in the injection port and will be converted to diphenylamine.
N-Nitrosodiphenylamine is also a reactive species that can initiate premature decomposition of other compounds in the mix. For these reasons diphenylamine is used in the preparation of this mixture. When comparing the response of this compound to mixtures manufactured using N-nitrosodiphenylamine, a difference in response will be observed.

RESTEK® CERTIFIED REFERENCE MATERIAL

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

www.restek.com

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

Certificate of Analysis

ilac-MRA

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 31062 **Lot No.:** A098468

Description : B/N Surrogate Mix (4/89 SOW)

Base Neutral Surrogate 4/89(SOW) 5000µg/mL, Methylene Chloride, 1mL/ampul

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

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

Handling: Sonicate prior to use.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Nitrobenzene-d5 CAS # 4165-60-0 (Lot PR-20474) Purity 99%	5,006.2 µg/mL	+/- 29.1065 µg/mL +/- 230.3077 µg/mL +/- 252.1387 µg/mL	Gravimetric Unstressed Stressed
2	2-Fluorobiphenyl CAS # 321-60-8 (Lot B19Z016) Purity 99%	5,000.4 µg/mL	+/- 29.0728 µg/mL +/- 230.0408 µg/mL +/- 251.8466 µg/mL	Gravimetric Unstressed Stressed
3	p-Terphenyl-d14 CAS # 1718-51-0 (Lot PR-20577) Purity 99%	4,999.8 µg/mL	+/- 29.0693 µg/mL +/- 230.0132 µg/mL +/- 251.8164 µg/mL	Gravimetric Unstressed Stressed

Solvent: Methylene Chloride
CAS # 75-09-2
Purity 99%

Tech Tips:
Due to the limited solubility of p-terphenyl-d14 in methanol, we do not recommend that this mixture be diluted in methanol.

TraceCERT®
Traceable Certified Reference Materials

SUPELCO
Solutions within.™
595 North Harrison Road · Bellefonte, PA
16823-0048 USA · Phone(814)359-3441

Certificate of Analysis

Description: Semivolatile Internal Std Mix, 2x1ml, 2000µg/ml in dichloromethane

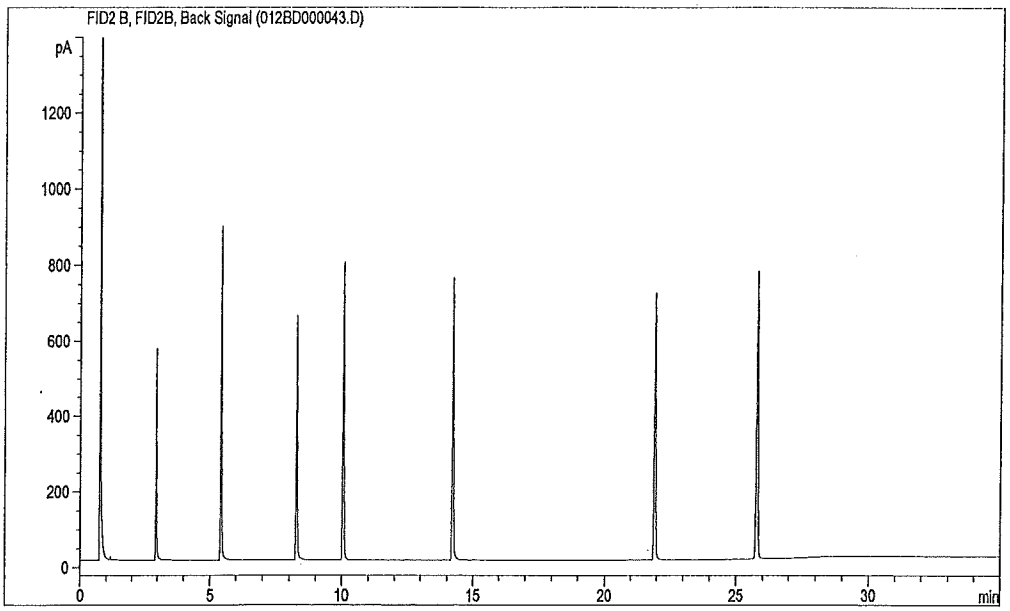
Part Number: CRM48902

Lot Number: LC03378V

Expiration Date: October 2016

Storage: Refrigerate

Analytical Method Parameters:
Column: SPB-5 30m x .53mm x 1.5um
100°C (2 min) to 310°C (8 min) @ 10°C/min
Detector: FID, 310°C
Injection Volume: 1.0ul



Elution	Analyte	Lot Number	CAS Number	Certified Purity %	Certified Gravimetric Conc. µg/ml	Expanded Uncertainty µg/ml	Analytical Conc. µg/ml
1.	1,4-Dichlorobenzene-D4, CRM	LB94999	3855-82-1	99.9	1998.5	±3.9	2009.6
2.	Naphthalene-D8, CRM	LB94261	1146-65-2	96.3	1999.6	±3.9	2090.2
	Internal Standard	N/A	N/A	N/A	N/A	N/A	N/A
4.	Acenaphthene-D10, CRM	LB93879	15067-26-2	99.9	1997.6	±1.7	2019.0
5.	Phenanthrene-D10, CRM	LB95000	1517-22-2	98.7	1974.5	±2.6	1975.5
6.	Chrysene-D12, CRM	LB93880	1719-03-5	98.8	1976.2	±8.0	1901.1
7.	Perylene-D12, CRM	LB95001	1520-96-3	99.7	1994.0	±7.9	2018.6

Notes:

ACLASS ACCREDITED TESTING Cert# AT-1607

ACLASS ACCREDITED REFERENCE MATERIAL PRODUCER Cert# AR-1606

Produced in double accredited laboratory fulfulling
ISO/IEC 17025 and
ISO Guide 34

SIGMA-ALDRICH®

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

ISO 9(S Registered
ISO J25 Accredited

CERTIFIED WEIGHT REPORT

Part Number:	10007	**Solvent(s):**	Lot # H16S03	Methylene chloride
Lot Number:	100909			
Description:	CLP Semi-Volatiles - PAH Standard 17 components			
Expiration Date:	100914			
		Storage:	4 °C	
Nominal Concentration (µg/mL):	2000			

5E-05 Balance Uncertainty

Weight(s) shown below were combined and diluted to: 500.0 0.049 Flask Uncertainty

Formulated By:	Justin Dippold	100909 DATE
Reviewed By:	Pedro L. Rentas	100909 DATE

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty	MSDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. Acenaphthene	1	01619AX	2000	99	0.2	1.01015	1.01075	2001.2	0.0040	00083-32-9	N/A	ipr-rat 600mg/kg
2. Acenaphthylene	3	ER030707-01	2000	99	0.2	1.01015	1.01080	2001.3	0.0040	00208-96-8	N/A	N/A
3. Anthracene	13	A0210580	2000	99	0.2	1.01015	1.01062	2000.9	0.0040	00120-12-7	0.2mg/m3 (8H)	ipr-mus 430mg/kg
4. Benzo(a)anthracene	28	ER121707-01	2000	99	0.2	1.01015	1.01080	2001.3	0.0040	00056-55-3	N/A	N/A
5. Benzo(a)pyrene	30	ER050707-01	2000	99	0.2	1.01015	1.01063	2001.0	0.0040	00050-32-8	0.2mg/m3 (8H)	scu-rat 50mg/kg
6. Benzo(b)fluoranthene	31	ER022008-02	2000	99	0.2	1.01015	1.01070	2001.1	0.0040	00205-99-2	N/A	N/A
7. Benzo(k)fluoranthene	33	ER061608-02	2000	99	0.2	1.01015	1.01103	2001.7	0.0040	00207-08-9	N/A	orl-rat 2820mg/kg
8. Benzo(g,h,i)perylene	32	ER020708-08	2000	99	0.2	1.01015	1.01072	2001.1	0.0040	00191-24-2	N/A	N/A
9. Carbazole	59	022809	2000	99	0.2	1.01015	1.01104	2001.8	0.0040	00086-74-8	N/A	ipr-mus 200mg/kg
10. Chrysene	91	ER081006-02	2000	99	0.2	1.01015	1.01094	2001.6	0.0040	00218-01-9	0.2mg/m3	N/A
11. Dibenzo(a,h)anthracene	112	ER091206-01	2000	99	0.2	1.01015	1.01072	2001.1	0.0040	00053-70-3	0.2mg/m3	N/A
12. Fluoranthene	183	04221PV	2000	98	0.2	1.02045	1.02126	2001.6	0.0041	00206-44-0	N/A	orl-rat 2000mg/kg
13. Fluorene	184	07211MV	2000	98	0.2	1.02045	1.02110	2001.3	0.0041	00086-73-7	N/A	ipr-mus 2 g/kg
14. Indeno(1,2,3-cd)pyrene	202	ER082107-02	2000	99	0.2	1.01015	1.01070	2001.1	0.0040	00193-39-5	N/A	N/A
15. Naphthalene	222	09424LC	2000	99	0.2	1.01015	1.01070	2001.1	0.0040	00091-20-3	10 ppm (50mg/m3/8H)	orl-rat 490mg/kg
16. Phenanthrene	248	03410PV	2000	99	0.2	1.01015	1.01071	2001.1	0.0040	00085-01-8	0.2mg/m3/8H	orl-mus 700mg/kg
17. Pyrene	259	010197	2000	98	0.2	1.02045	1.02110	2001.3	0.0041	00129-00-0	0.2mg/m3/8H	orl-rat 2700mg/kg

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

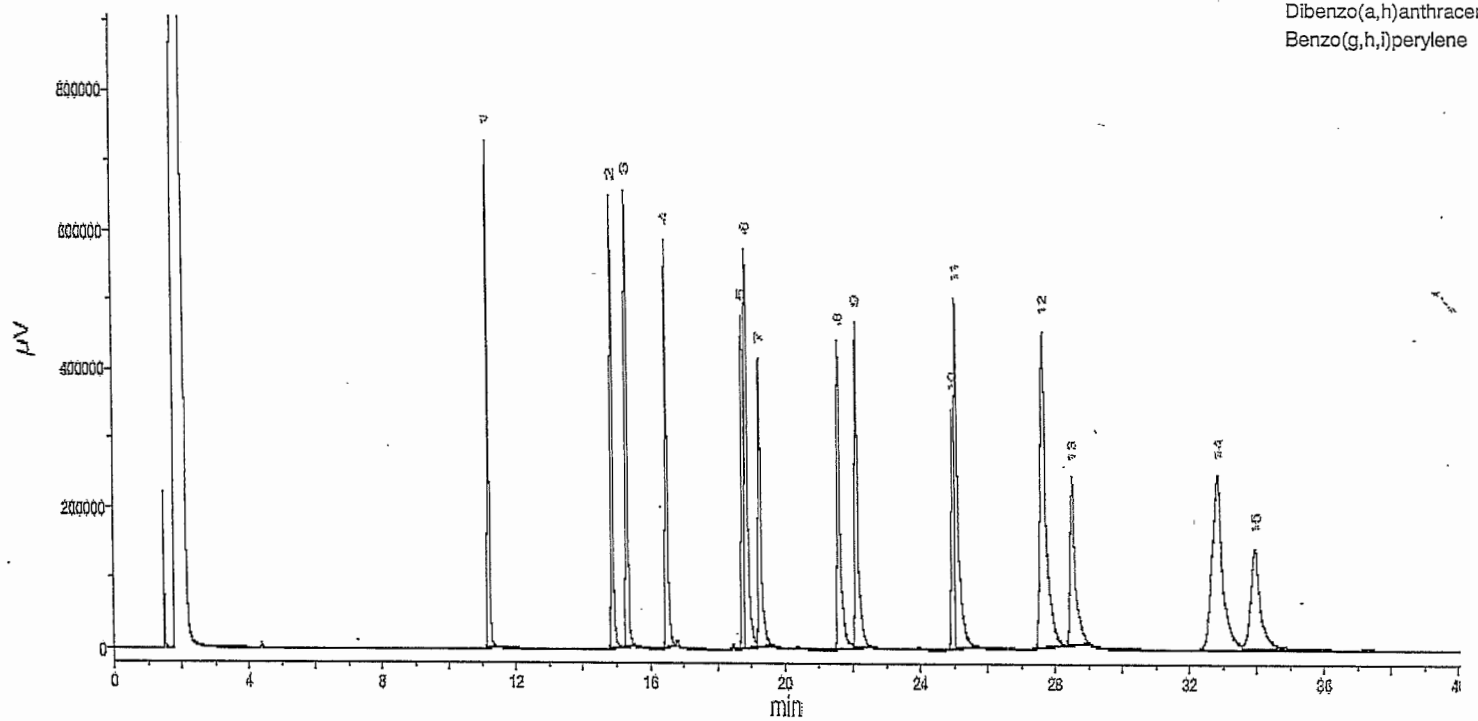
ISO 9001 QS Registered
ISO 17025 Accredited

Run 12, "P10007 L100909 [2000µg/mL in MeCl2]"

Run Length: 40.01 min, 24003 points at 10 points/second.
Created: Fri, Nov 13, 2009 at 10:07:24 PM.
Sampled: Sequence "111209-GC9M2", Method "GC9-M2".
Analyzed using Method "GC9-M2".

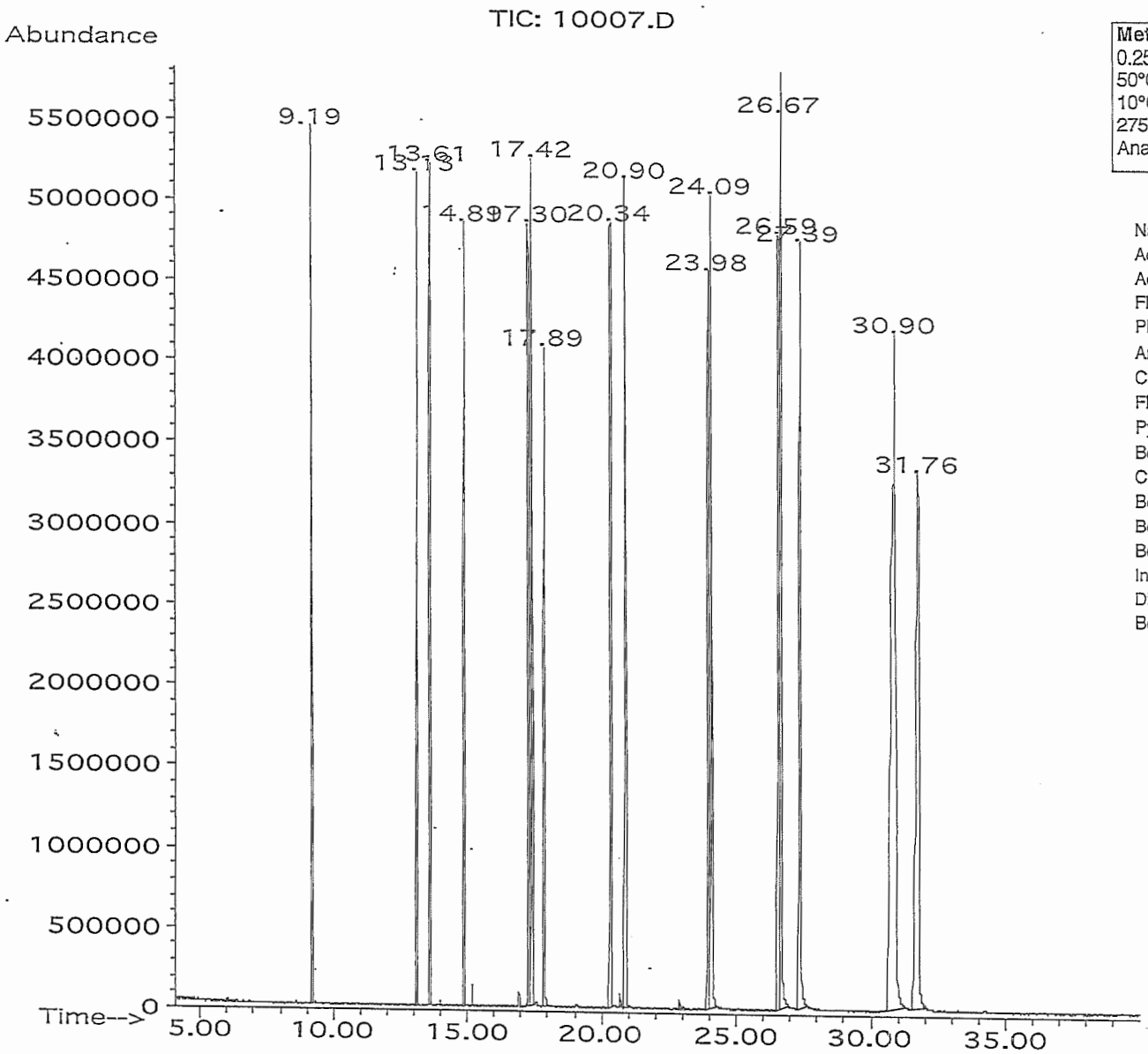
Comments
GC9M2 Analysis by Gina McLane
SPB-5 30 meter x 0.53 µm x 1.5 df
Flow Rates; Total Flow = 300 mL/min, Helium (carrier)=6mL, Helium (makeup)=25mL, Hydrogen (detector)=30, Air (detector)=360
Oven Temp 1 = 50 C (1 min), Rate = 10 C/min, Oven Temp 2 = 300 (14 min), Total Run Time=40 min.
Injector Temp = 250 C, FID Temp = 300 C, FID Signal = Edaq Channel 1
Gas Chromatograph = HP5890, Injector = HP7673A, Standard Injection = 0.5 uL, Range = 3

Retention Time (min.)	
Naphthalene	11.20
Acenaphthylene	14.89
Acenaphthene	15.32
Fluorene	16.51
Phenanthrene	18.77
Anthracene	18.88
Carbazole	19.27
Fluoranthene	21.6
Pyrene	22.14
Benzo(a)anthracene	25
Chrysene	25.1
Benzo(b)fluoranthene	27.69
Benzo(k)fluoranthene	27.69
Benzo(a)pyrene	28.54
Indeno(1,2,3-cd)pyrene	32.87
Dibenzo(a,h)anthracene	32.87
Benzo(g,h,i)perylene	33.98



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

ISO 9(S Registered
ISO 025 Accredited



Method GC8MSD-2.M Column:SPB-5 (30m X 0.25mm ID X 0.25μm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (14min.), Rate = 10°C/min., Injector B= 250°C, Detector B = 275°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by: Gina McLane.

	Retention Time (min.)
Naphthalene	9.19
Acenaphthylene	13.13
Acenaphthene	13.61
Fluorene	14.89
Phenanthrene	17.3
Anthracene	17.42
Carbazole	17.89
Fluoranthene	20.34
Pyrene	20.9
Benz(a)anthracene	23.98
Chrysene	24.09
Benzo(b)fluoranthene	26.59
Benzo(k)fluoranthene	26.67
Benzo(a)pyrene	27.39
Indeno(1,2,3-cd)pyrene	30.9
Dibenz(a,h)anthracene	30.9
Benzo(ghi)perylene	31.76

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

www.Restek.com

Certificate of Analysis

FOR LABORATORY USE ONLY-READ MSDS PRIOR TO USE.

Catalog No. : 31031 **Lot No.:** A082358

Description : 606 Phthalate Esters Calibration Mix

SV Mix, 600 Series Method, 606 Calibration Std, phthalate esters, 2,000µg/ml, Methanol, 1ml/ampule

Container Size : [5] 2 mL **Pkg Amt:** [5] > 1 mL

Expiration Date : [1] October 2015 **Storage:** 10°C or colder

Elution Order	Compound	CAS #	Percent Purity [2]	Grav. Conc. (weight/volume) [3]	Grav.Uncert. (95% C.L.; K=2) [4]
1	Dimethylphthalate	131-11-3	99%	2,000.0 ug/mL	+/- 11.6 ug/mL
2	Diethylphthalate	84-66-2	99%	2,000.0 ug/mL	+/- 11.6 ug/mL
3	Di-n-butylphthalate	84-74-2	99%	2,000.0 ug/mL	+/- 11.6 ug/mL
4	Benzyl butyl phthalate	85-68-7	99%	2,000.0 ug/mL	+/- 11.6 ug/mL
5	Bis(2-ethylhexyl)phthalate	117-81-7	99%	2,000.0 ug/mL	+/- 11.6 ug/mL
6	Di-n-octyl phthalate	117-84-0	99%	2,000.0 ug/mL	+/- 11.6 ug/mL
Solvent:	Methanol	67-56-1	99%		

Column:
30m x .25mm x .25um
Rtx-5 (cat.#10223)

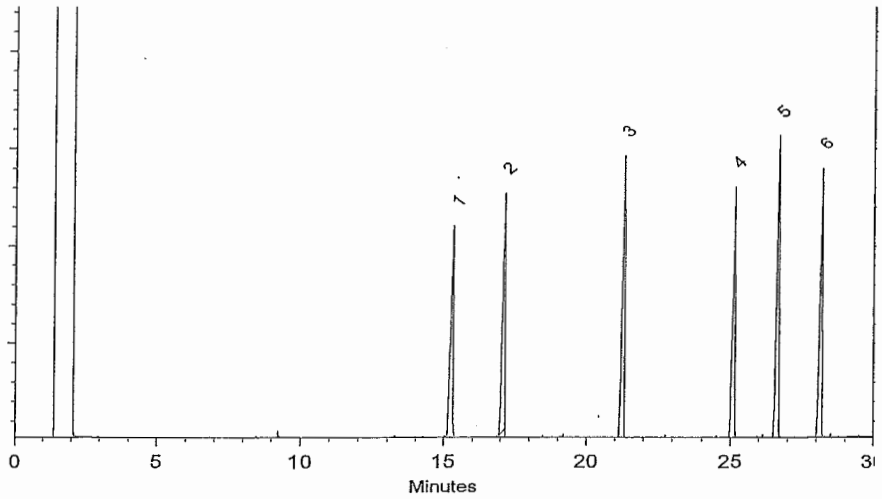
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID



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

5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ARDL, Inc. Contract: ---

Lab Code: --- Case No.: 006620 SAS No.: --- SDG No.: ---

Lab File ID: E0528401 DFTPP Injection Date: 05/28/14

Instrument ID: AG5 DFTPP Injection Time: 10:05

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30 - 80% of mass 198	37.0
68	Less than 2.0% of mass 69	0.0 (1)
69	(reference only)	33.1
70	Less than 2.0% of mass 69	0.6 (1)
127	25 - 75% of mass 198	53.3
197	Less than 1% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.
199	5 - 9% of mass 198	6.8
275	10 - 30% of mass 198	22.3
365	Greater than 1% of mass 198	2.7
441	0 - 100% of mass 443	86.9
442	40 - 110% of mass 198	71.9
443	15 - 24% of mass 442	21.9 (2)

(1)-Value is % mass 69 (2)-Value is % mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

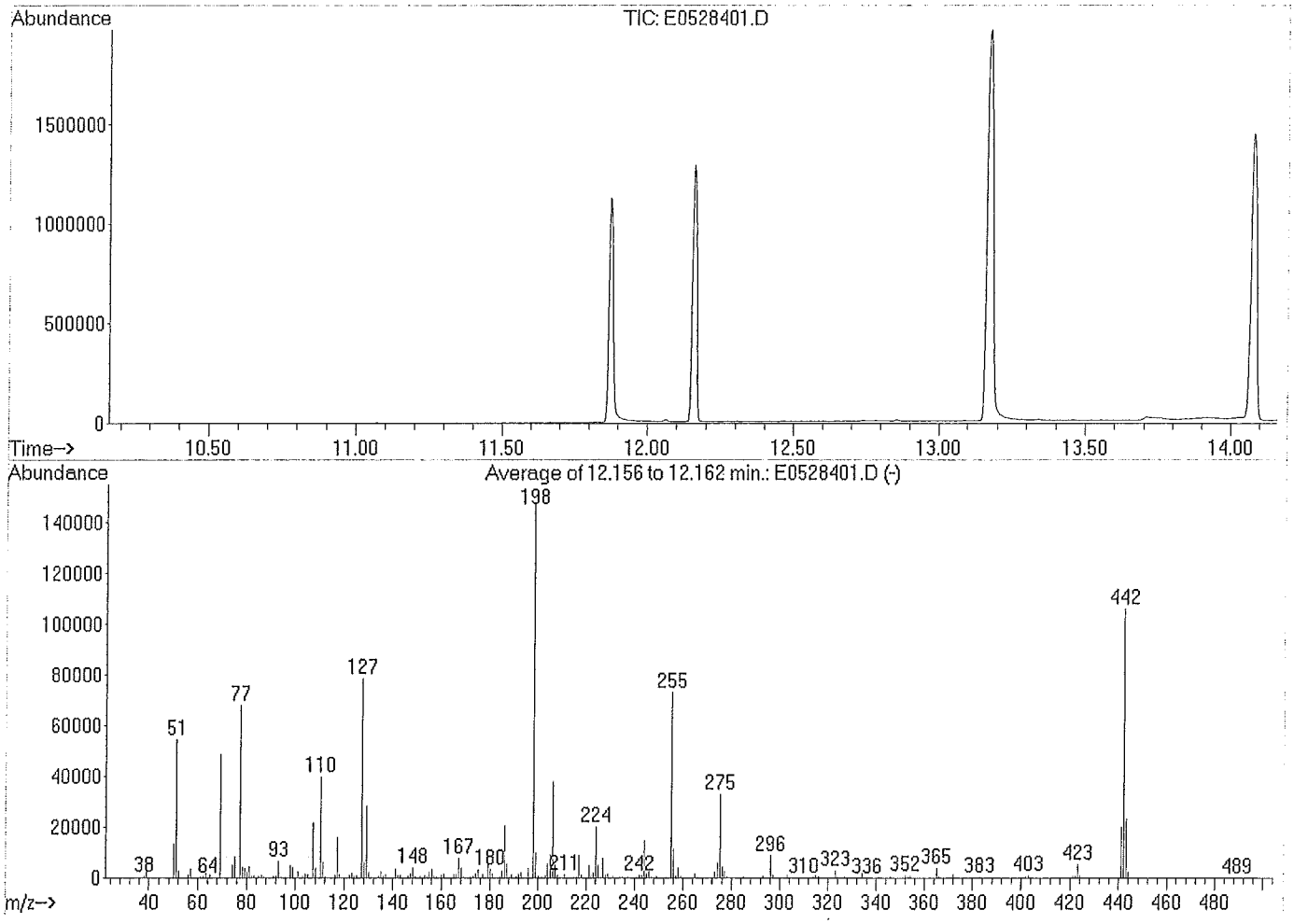
	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	BLANK STD	000 PPM STD	E0528402	05/28/14	10:33
2	BNA STD	005 PPM STD	E0528403	05/28/14	11:14
3	BNA STD	010 PPM STD	E0528404	05/28/14	11:55
4	BNA STD	020 PPM STD	E0528405	05/28/14	12:37
5	BNA STD	030 PPM STD	E0528406	05/28/14	13:19
6	BNA STD	040 PPM STD	E0528407	05/28/14	14:02
7	BNA STD	060 PPM STD	E0528408	05/28/14	14:44
8	ICV	030 PPM STD	E0528409	05/28/14	15:38
9	BLANK B10211	006620-01B1	E0528410	05/28/14	16:22
10	SPBK B10211	006620-01K1	E0528411	05/28/14	17:04
11	MAK130L	006620-01	E0528412	05/28/14	17:46
12	MAK130LMS	006620-01MS	E0528413	05/28/14	18:28
13	MAK130LMSD	006620-01MD	E0528414	05/28/14	19:10
14	MAK132L	006620-02	E0528415	05/28/14	19:51
15	MAK134L	006620-03	E0528416	05/28/14	20:32
16					
17					
18					
19					
20					
21					
22					

DFTPP

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528401.D
Acq On : 28 May 2014 10:05
Operator : PEK
Sample : 50 PPM TUNE 16512
Misc : AG-5 8270
ALS Vial : 1 Sample Multiplier: 1

Integration File: FRED.P

Method : C:\MSDCHEM\1\METHODS\8270TUNPULSE.M
Title : 8270 TUNE METHOD
Last Update : Wed Apr 16 11:23:29 2014



AutoFind: Scans 1083, 1084, 1085; Background Corrected with Scan 1074

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	80	37.0	54536	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.01	100	33.1	48832	PASS
70	69	0.00	2	0.6	315	PASS
127	198	25	75	53.3	78562	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	147498	PASS
199	198	5	9	6.8	9966	PASS
275	198	10	30	22.3	32933	PASS
365	198	0.75	100	2.7	3938	PASS
441	443	0.01	100	86.9	20202	PASS
442	198	40	110	71.9	106008	PASS
443	442	15	24	21.9	23237	PASS

Average of 12.156 to 12.162 min.: E0528401.D
50 PPM TUNE 16512
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
37.05	186	57.10	3610	71.00	66	84.05	148
38.10	701	58.00	263	73.10	337	85.05	738
39.10	3688	61.00	555	74.10	5330	86.05	1122
40.05	159	62.10	869	75.10	8312	87.05	695
45.00	39	63.10	2130	77.15	68037	88.00	263
50.15	13493	64.10	284	78.15	4527	89.05	201
51.10	54536	65.10	1357	79.10	3967	91.10	861
52.10	2869	66.05	72	80.05	2611	92.05	994
53.10	12	67.10	76	81.10	4520	93.10	6629
55.05	83	69.05	48832	82.05	964	94.05	495
56.10	1360	70.05	315	83.05	955	95.20	68

Average of 12.156 to 12.162 min.: E0528401.D
50 PPM TUNE 16512
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
96.05	403	108.10	3877	120.05	308	132.05	254
98.05	4909	110.10	39914	120.95	132	133.00	146
99.10	4205	111.05	6210	122.10	1239	134.05	887
100.05	354	112.05	662	123.10	2057	135.10	2434
101.05	2522	113.05	312	124.10	945	136.05	1096
101.90	61	114.00	122	125.05	1009	137.10	1453
102.05	154	115.05	153	127.10	78562	137.95	253
103.05	845	116.10	1281	128.10	6352	139.10	226
104.10	1672	117.05	16163	129.10	28488	140.00	70
105.05	1393	118.05	1393	130.10	2370	141.10	3699
107.05	21853	119.05	209	131.00	449	142.05	1165

Average of 12.156 to 12.162 min.: E0528401.D
50 PPM TUNE 16512
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
143.05	1012	153.05	1103	163.15	74	173.05	806
144.05	246	154.05	671	164.05	183	174.10	1726
145.05	280	155.10	2498	165.05	1441	175.10	3212
146.10	812	156.10	3380	166.10	1454	176.05	558
147.05	1779	157.15	817	167.10	7768	177.00	1265
148.10	4057	158.00	553	168.10	3849	178.05	422
149.00	773	159.05	531	169.05	744	179.05	5249
150.00	344	160.05	1168	170.00	248	180.05	3490
151.10	553	161.05	1588	170.60	94	181.05	1809
151.70	106	162.05	373	171.00	347	182.05	301
151.95	252	162.80	45	172.00	608	182.90	207

Average of 12.156 to 12.162 min.: E0528401.D
50 PPM TUNE 16512
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
183.30	84	194.05	483	205.10	9241	215.05	441
184.05	597	195.10	151	206.10	37930	216.00	297
185.10	2876	196.10	3861	207.05	5280	216.20	603
186.10	20608	198.05	147498	208.00	1170	217.05	8966
187.10	5826	199.00	9966	209.15	446	218.05	1163
188.05	627	200.05	881	210.05	567	219.00	148
189.05	1304	200.90	87	211.05	1402	219.20	69
190.10	229	201.50	638	212.00	65	221.10	4928
191.05	758	202.00	122	212.80	35	222.05	1356
192.05	1759	203.10	1132	213.00	27	223.05	2244
193.10	2123	204.05	5693	213.90	30	224.10	20133

Average of 12.156 to 12.162 min.: E0528401.D
50 PPM TUNE 16512
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
225.10	5180	236.00	401	246.00	2717	258.00	3983
226.10	421	237.05	651	247.05	621	259.05	682
227.05	7716	238.00	132	248.00	104	260.05	126
228.10	1245	238.80	71	249.05	721	260.90	78
229.05	1668	238.95	180	250.00	168	262.70	49
229.95	313	239.95	270	250.90	160	263.10	36
231.05	843	241.00	461	252.05	230	264.10	80
232.05	185	242.00	1079	252.95	473	265.05	1759
233.00	235	243.10	1128	255.10	73096	265.95	472
234.00	537	244.10	14964	256.10	11502	267.00	32
235.00	542	245.05	1959	257.05	940	267.85	237

Average of 12.156 to 12.162 min.: E0528401.D
50 PPM TUNE 16512

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
269.90	131	278.95	98	289.70	48	302.00	197
270.20	46	279.90	27	290.10	41	303.10	1209
271.00	202	280.95	126	290.85	79	304.05	270
272.00	207	282.10	40	292.00	79	305.10	40
273.00	2492	283.05	379	292.20	72	307.95	98
274.10	6077	283.95	242	293.05	694	309.00	88
275.10	32933	285.05	613	294.05	244	310.00	210
276.10	4464	285.90	26	296.05	8768	313.00	64
277.05	2747	286.20	39	297.05	1247	314.00	475
278.05	537	288.10	39	298.10	50	314.95	899
278.80	30	289.00	79	300.90	49	316.05	608

Average of 12.156 to 12.162 min.: E0528401.D
50 PPM TUNE 16512
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
319.10	31	333.10	296	350.00	28	366.90	30
319.90	39	334.05	1891	350.90	126	370.00	62
320.95	353	335.05	495	352.05	1014	370.95	247
321.80	40	336.15	77	353.05	622	372.05	1496
322.00	45	339.20	30	354.05	819	373.00	416
323.10	2960	340.20	27	355.05	246	376.90	32
324.05	502	341.00	418	359.10	26	383.00	432
327.00	492	342.05	109	361.00	27	384.00	171
327.95	248	345.95	722	363.80	39	389.00	35
329.05	148	346.70	38	365.00	3938	390.00	130
332.05	195	347.00	112	365.95	665	391.00	152

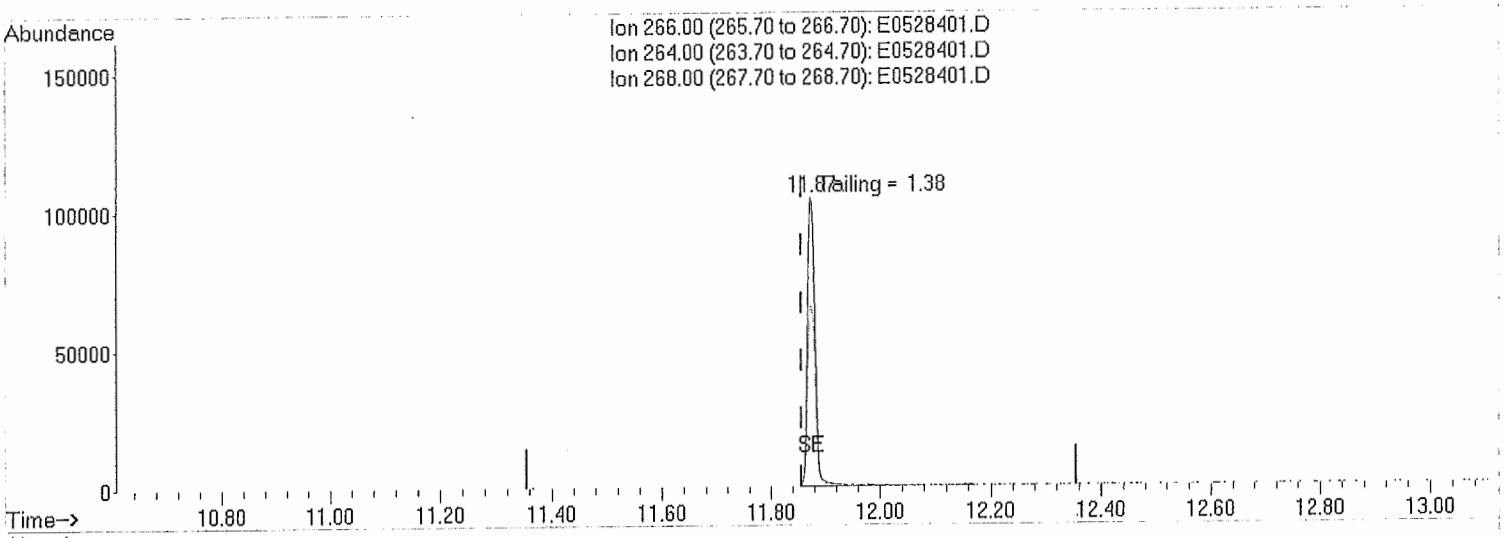
Average of 12.156 to 12.162 min.: E0528401.D
50 PPM TUNE 16512
Modified:subtracted

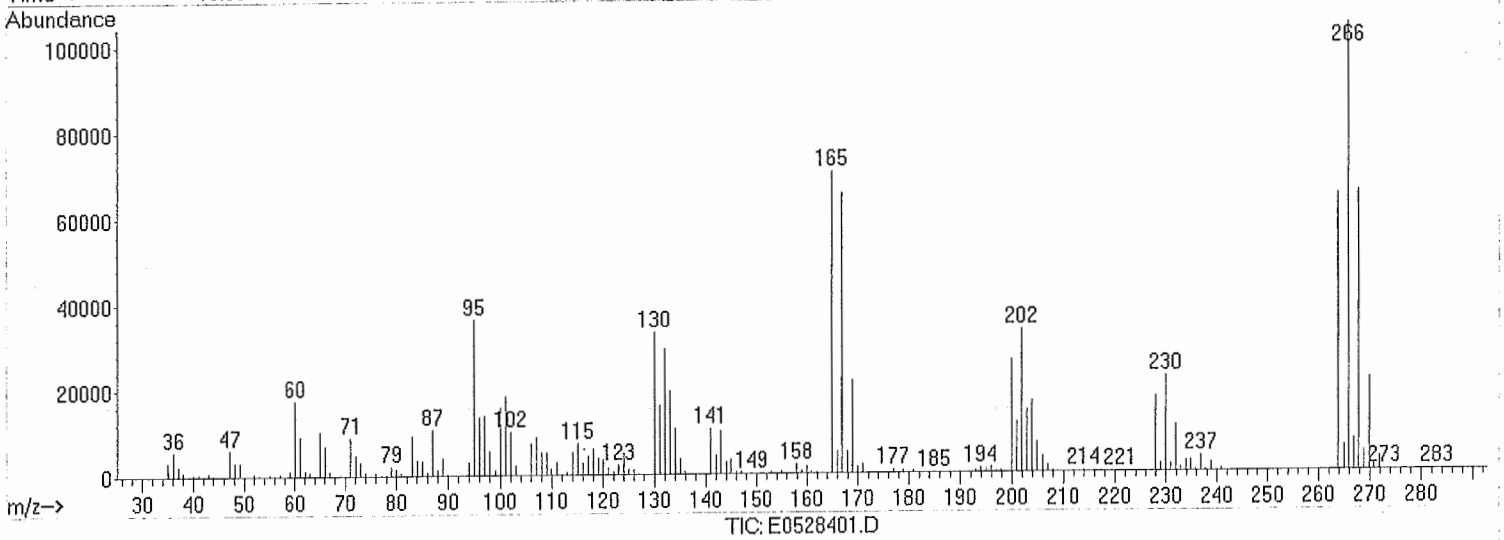
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
392.20	27	421.05	815	432.20	28		
393.00	40	422.05	752	433.60	68		
394.80	36	423.10	5322	435.30	28		
400.85	94	424.00	1106	437.40	27		
401.20	52	424.80	59	441.10	20202		
402.05	738	424.95	99	442.10	106008		
403.05	953	426.20	32	443.10	23237		
403.95	387	427.40	37	444.05	2459		
404.90	31	427.70	40	444.95	91		
408.50	29	428.50	93	489.20	28		
415.30	40	429.30	59				

Quantitation Report (Qedit)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528401.D
Acq On : 28 May 2014 10:05
Operator : PEK
Sample : 50 PPM TUNE 16512
Misc : AG-5 8270
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 28 10:24:29 2014
Quant Method : C:\MSDCHEM\1\METHODS\8270TUNPULSE.M
Quant Title : 8270 TUNE METHOD
QLast Update : Wed Apr 16 11:23:29 2014
Response via : Initial Calibration





(1) Pentachlorophenol (TMC)

11.872min (+0.017) 9.18ug/L

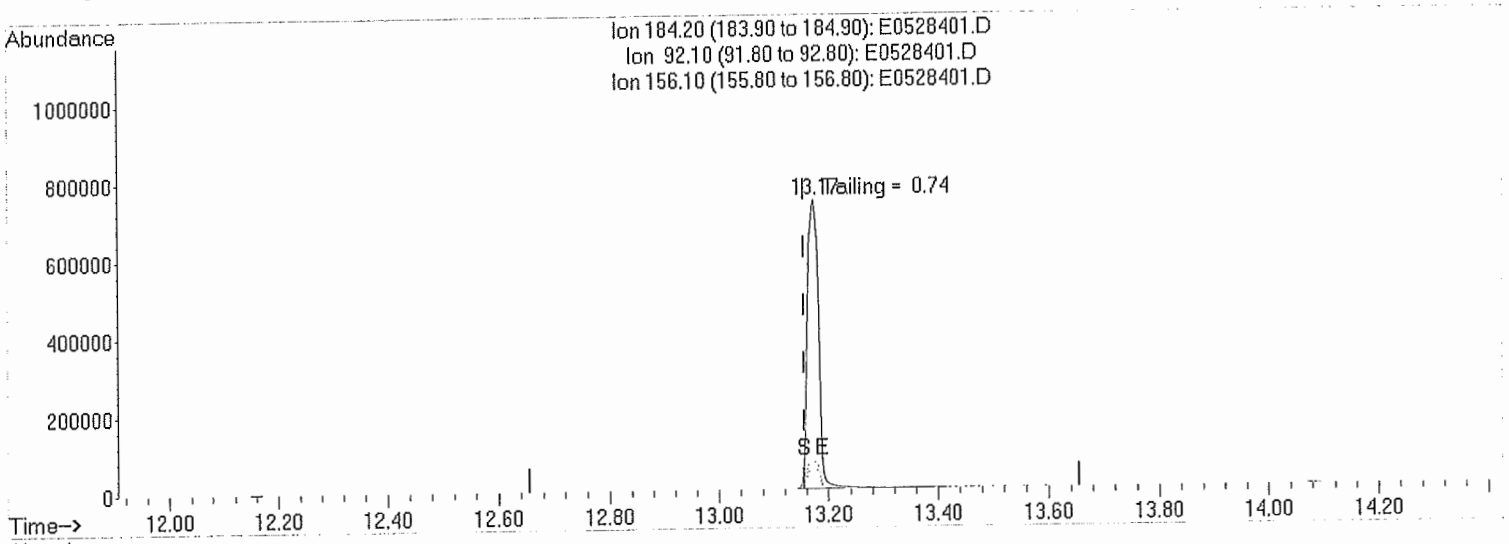
response 97886

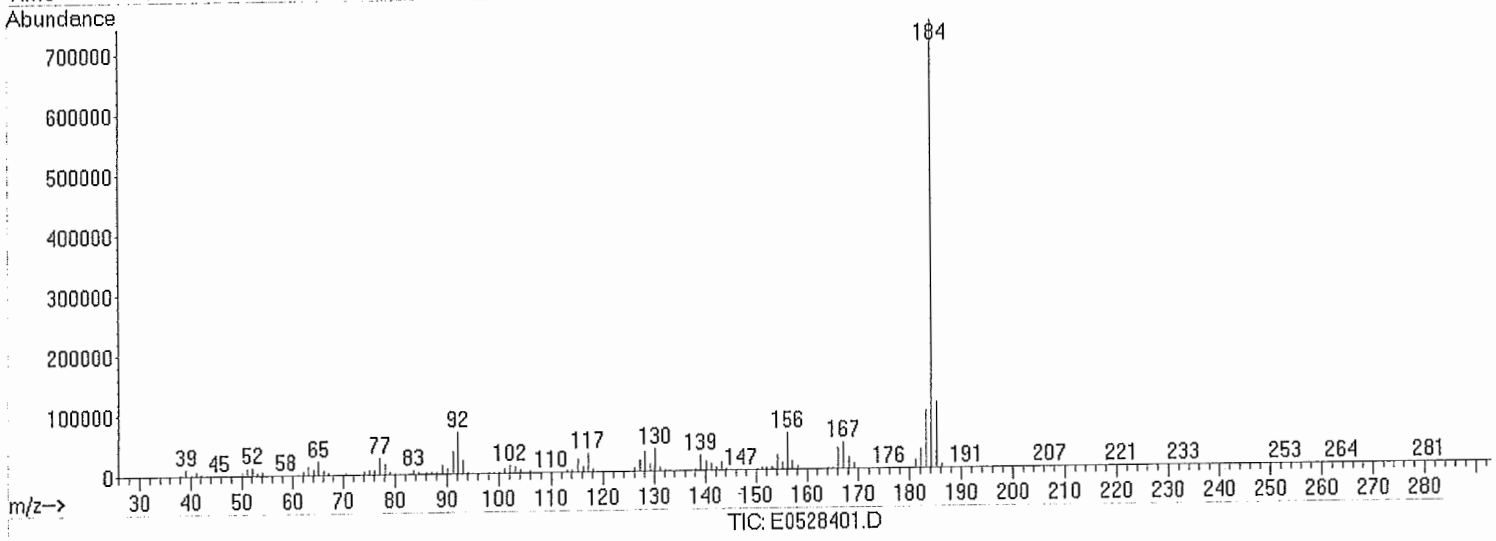
Ion	Exp%	Act%
266.00	100	100
264.00	63.80	64.98
268.00	63.80	63.53
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528401.D
Acq On : 28 May 2014 10:05
Operator : PEK
Sample : 50 PPM TUNE 16512
Misc : AG-5 8270
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 28 10:24:29 2014
Quant Method : C:\MSDCHEM\1\METHODS\8270TUNPULSE.M
Quant Title : 8270 TUNE METHOD
QLast Update : Wed Apr 16 11:23:29 2014
Response via : Initial Calibration





(3) Benzidine (T)

13.175min (+0.020) 20.33ug/L

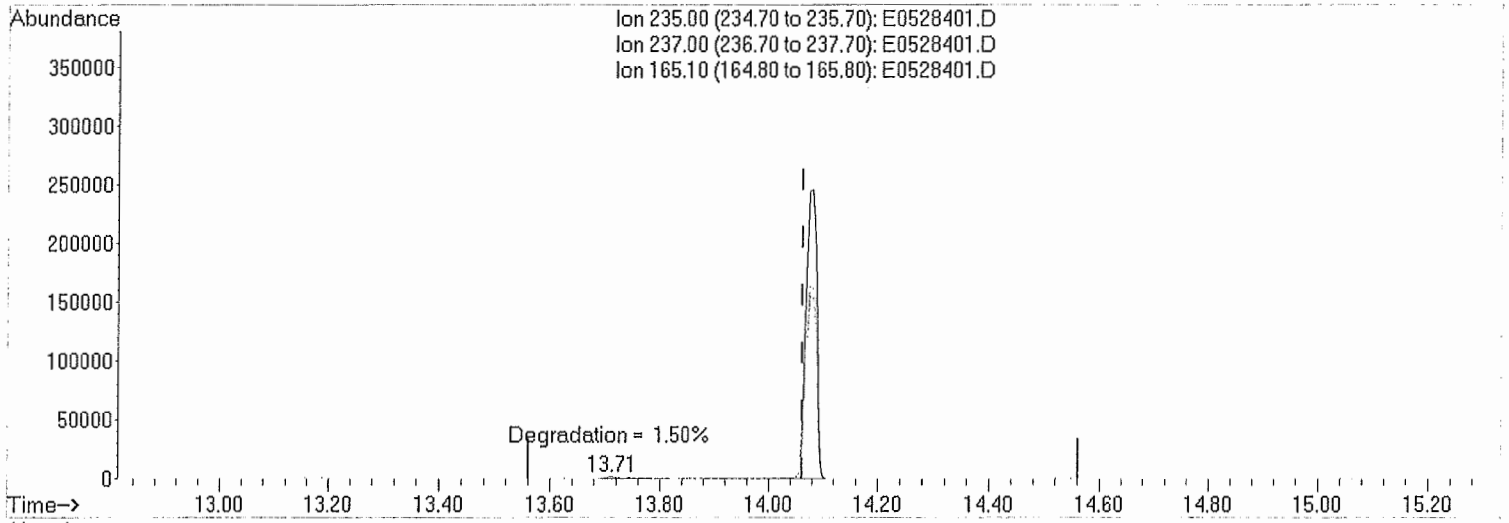
response 1048356

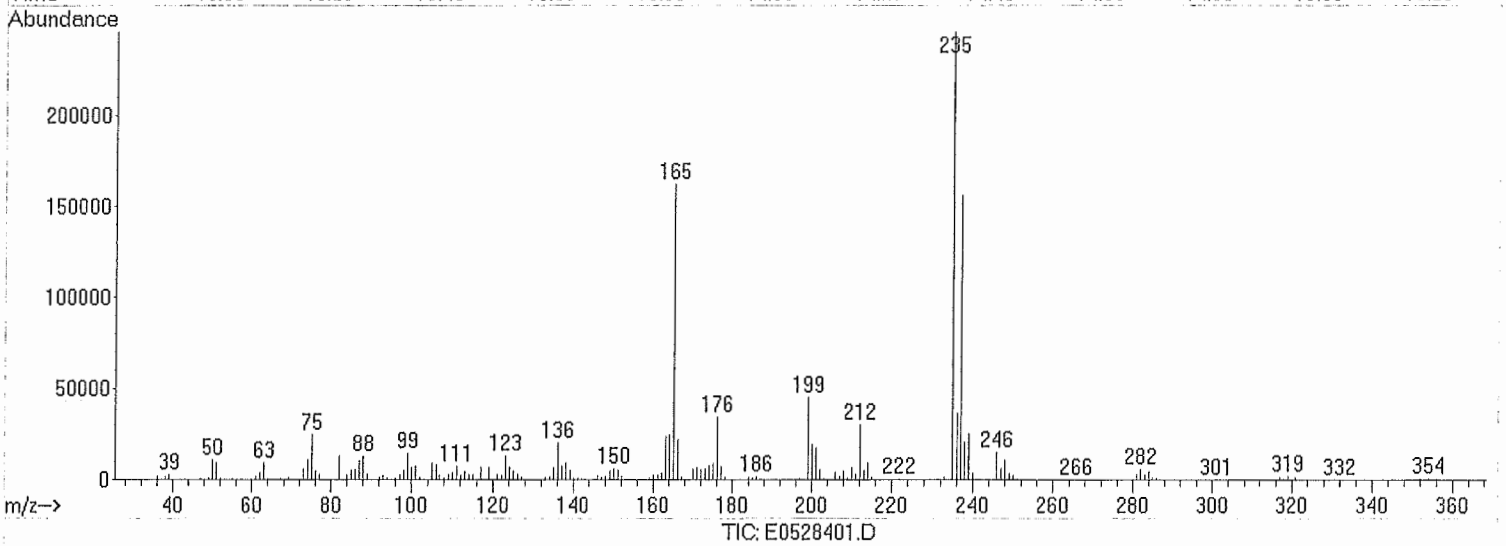
Ion	Exp%	Act%
184.20	100	100
92.10	13.70	10.86#
156.10	8.60	7.80
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528401.D
Acq On : 28 May 2014 10:05
Operator : PEK
Sample : 50 PPM TUNE 16512
Misc : AG-5 8270
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 28 10:24:29 2014
Quant Method : C:\MSDCHEM\1\METHODS\8270TUNPULSE.M
Quant Title : 8270 TUNE METHOD
QLast Update : Wed Apr 16 11:23:29 2014
Response via : Initial Calibration





(4) DDT

14.080min (+0.019) 13.14ug/L

response 341195

Ion	Exp%	Act%
235.00	100	100
237.00	64.80	63.90
165.10	59.00	69.89
0.00	0.00	0.00

Response Factor Report AG5

Method Path : C:\MSDCHEM\1\CALFILES\8270CALS\
Method File : E8270323HW.M
Title : 8270 BNA Calibration
Last Update : Wed May 28 15:23:12 2014
Response Via : Initial Calibration

Calibration Files
10 =E0528404.D 20 =E0528405.D 30 =E0528406.D
40 =E0528407.D 5 =E0528403.D 60 =E0528408.D

		Compound	10	20	30	40	5	60	Avg	%RSD
1)	I	1,4-Dichlorobenzene-d	----------ISTD----------							
2)	I	Naphthalene-d8	----------ISTD----------							
3)	S	Nitrobenzene-d5	0.403	0.383	0.369	0.352	0.406	0.330	0.374	7.87
4)	I	Acenaphthene-d10	----------ISTD----------							
5)	S	2-Fluorobiphenyl	1.571	1.457	1.348	1.245	1.650	1.110	1.397	14.51
6)	T	Dimethylphthalate	1.724	1.600	1.504	1.418	1.828	1.305	1.563	12.42
7)	T	Diethylphthalate	1.713	1.597	1.478	1.376	1.823	1.231	1.536	14.24
8)	I	Phenanthrene-d10	----------ISTD----------							
9)	T	Di-n-butylphthala	1.871	1.709	1.586	1.452	1.932	1.293	1.640	14.99
10)	I	Chrysene-d12	----------ISTD----------							
11)	TM	Pyrene	1.628	1.483	1.405	1.321	1.711	1.216	1.460	12.76
12)	S	Terphenyl-d14	0.951	0.876	0.829	0.786	0.990	0.721	0.859	11.81
13)	T	bis(2-Ethylhexyl)	1.214	1.185	1.165	1.120	1.191	1.053	1.155	5.10
14)	TC	Di-n-octylphthala	2.141	2.149	2.133	2.057	2.042	1.967	2.082	3.46#
15)	I	Perylene-d12	----------ISTD----------							

(#) = Out of Range ### Number of calibration levels exceeded format ###

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528402.D
Acq On : 28 May 2014 10:33
Operator : PEK
Sample : CAL BLK 16516
Misc : AG-5 8270
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 28 15:20:21 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HW.M
Quant Title : 8270 BNA Calibration
QLast Update : Tue May 27 14:47:46 2014
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	7.05	152	2459850	40.00 ug/L	0.00
2) Naphthalene-d8	9.01	136	9618748	40.00 ug/L	0.00
4) Acenaphthene-d10	11.89	164	5015884	40.00 ug/L	0.00
8) Phenanthrene-d10	14.44	188	7905751	40.00 ug/L	0.00
10) Chrysene-d12	19.70	240	8522164	40.00 ug/L	-0.01
15) Perylene-d12	24.78	264	8729974	40.00 ug/L	0.00

System Monitoring Compounds					
3) Nitrobenzene-d5	0.00	82	0	0.00 ug/L	
Spiked Amount 50.000			Recovery	=	0.00%
5) 2-Fluorobiphenyl	0.00	172	0	0.00 ug/L	
Spiked Amount 50.000			Recovery	=	0.00%
12) Terphenyl-d14	0.00	244	0	0.00 ug/L	
Spiked Amount 50.000			Recovery	=	0.00%

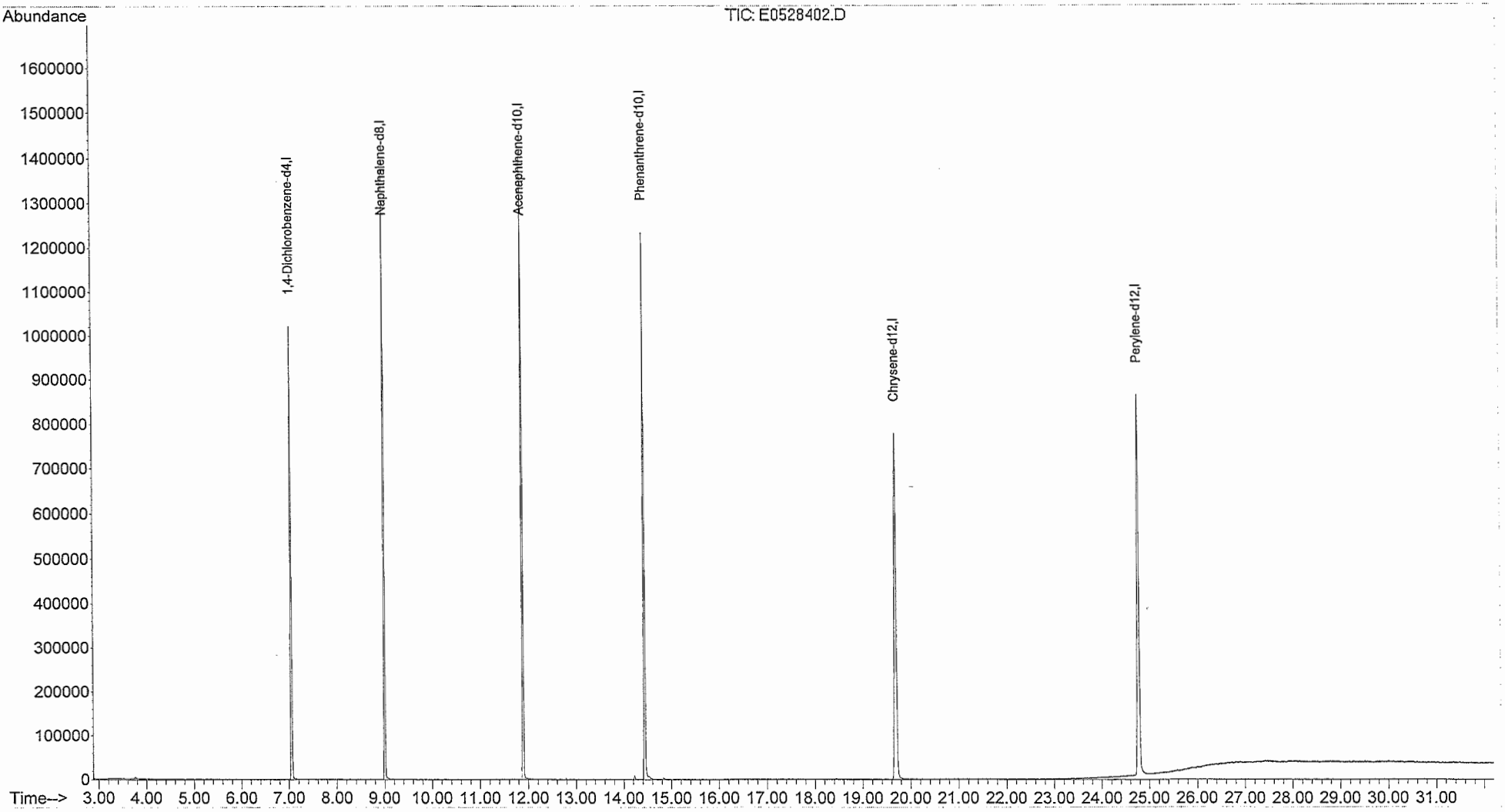
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528402.D
Acq On : 28 May 2014 10:33
Operator : PEK
Sample : CAL BLK 16516
Misc : AG-5 8270
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 28 15:20:21 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HW.M
Quant Title : 8270 BNA Calibration
QLast Update : Tue May 27 14:47:46 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528403.D
Acq On : 28 May 2014 11:14
Operator : PEK
Sample : 5 PPM STD 16517
Misc : AG-5 8270
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 28 15:20:23 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HW.M
Quant Title : 8270 BNA Calibration
QLast Update : Tue May 27 14:47:46 2014
Response via : Initial Calibration

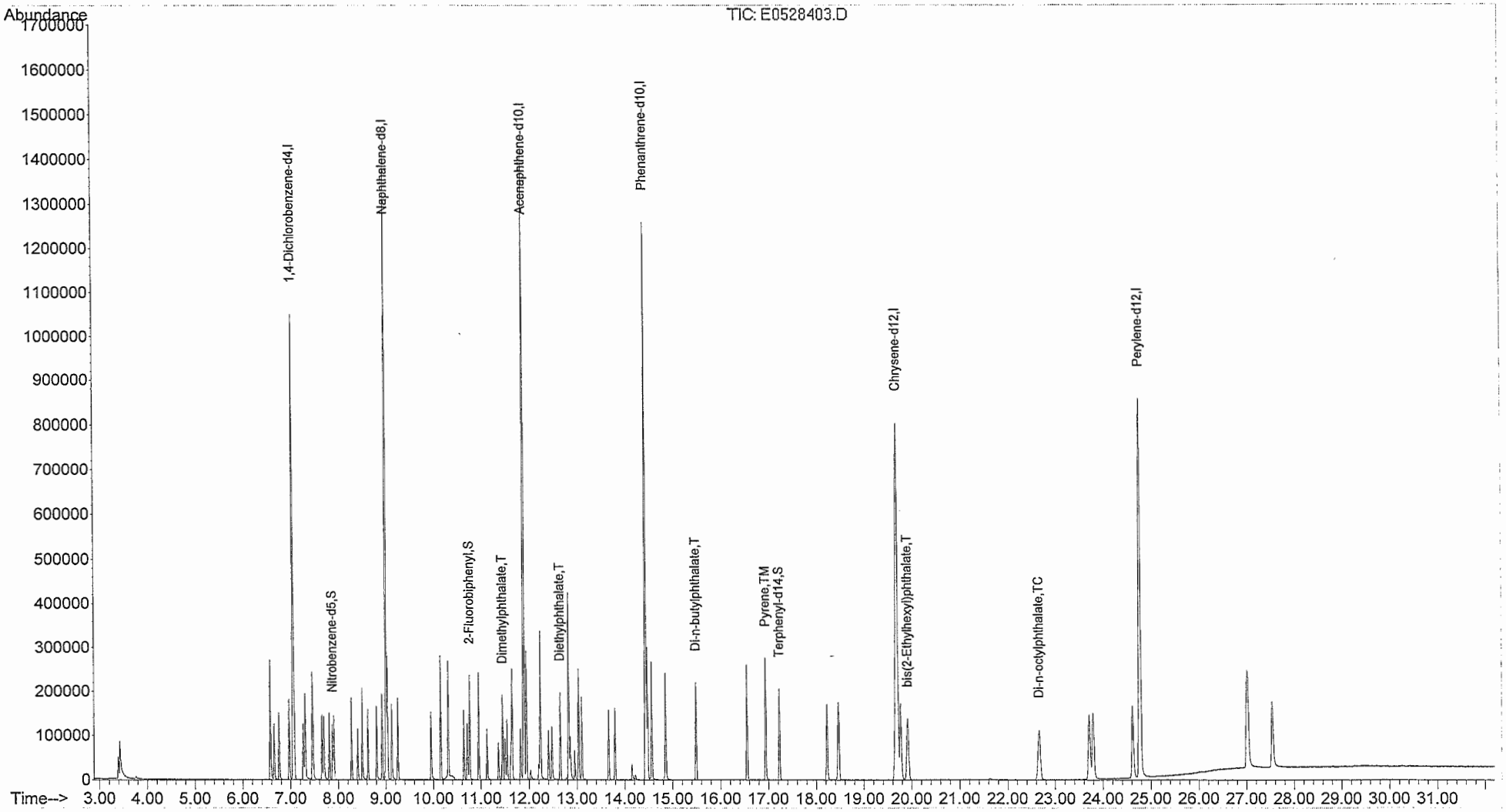
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	7.05	152	2449773	40.00	ug/L	0.00
2) Naphthalene-d8	9.01	136	9538883	40.00	ug/L	0.00
4) Acenaphthene-d10	11.89	164	5017280	40.00	ug/L	0.00
8) Phenanthrene-d10	14.44	188	7861638	40.00	ug/L	0.00
10) Chrysene-d12	19.70	240	8571150	40.00	ug/L	-0.01
15) Perylene-d12	24.78	264	9189937	40.00	ug/L	0.01
System Monitoring Compounds						
3) Nitrobenzene-d5	7.88	82	483896	6.03	ug/L	-0.01
Spiked Amount 50.000			Recovery	=	12.06%	
5) 2-Fluorobiphenyl	10.76	172	1034736	6.63	ug/L	0.00
Spiked Amount 50.000			Recovery	=	13.26%	
12) Terphenyl-d14	17.23	244	1061181	7.36	ug/L	-0.01
Spiked Amount 50.000			Recovery	=	14.72%	
Target Compounds						Qvalue
6) Dimethylphthalate	11.45	163	1146286	5.69	ug/L #	78
7) Diethylphthalate	12.65	149	1143398	5.64	ug/L	98
9) Di-n-butylphthalate	15.49	149	1898295	6.10	ug/L	94
11) Pyrene	16.94	202	1832753	6.52	ug/L	83
13) bis(2-Ethylhexyl)phthalate	19.92	149	1275562	6.01	ug/L	98
14) Di-n-octylphthalate	22.66	149	2187363	6.16	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528403.D
Acq On : 28 May 2014 11:14
Operator : PEK
Sample : 5 PPM STD 16517
Misc : AG-5 8270
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 28 15:20:23 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HW.M
Quant Title : 8270 BNA Calibration
QLast Update : Tue May 27 14:47:46 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528404.D
Acq On : 28 May 2014 11:55
Operator : PEK
Sample : 10 PPM STD 16518
Misc : AG-5 8270
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 28 15:20:26 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HW.M
Quant Title : 8270 BNA Calibration
QLast Update : Tue May 27 14:47:46 2014
Response via : Initial Calibration

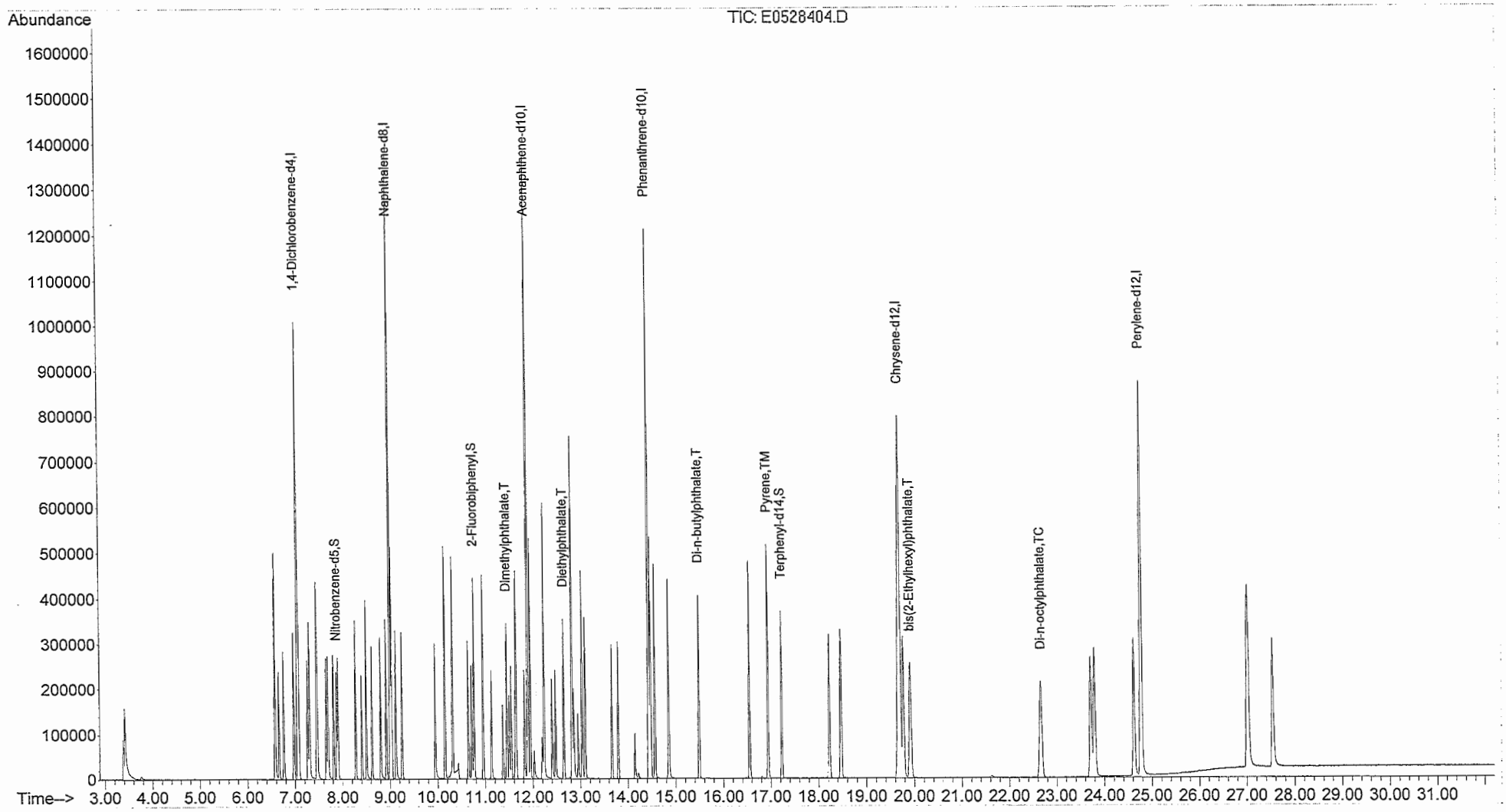
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	7.05	152	2323411	40.00 ug/L	0.00
2) Naphthalene-d8	9.01	136	9303740	40.00 ug/L	0.00
4) Acenaphthene-d10	11.90	164	4897335	40.00 ug/L	0.00
8) Phenanthrene-d10	14.44	188	7669810	40.00 ug/L	0.00
10) Chrysene-d12	19.70	240	8226018	40.00 ug/L	-0.01
15) Perylene-d12	24.78	264	9056856	40.00 ug/L	0.00
System Monitoring Compounds					
3) Nitrobenzene-d5	7.88	82	938025	11.98 ug/L	0.00
Spiked Amount 50.000			Recovery =	23.96%	
5) 2-Fluorobiphenyl	10.76	172	1923274	12.63 ug/L	0.00
Spiked Amount 50.000			Recovery =	25.26%	
12) Terphenyl-d14	17.23	244	1956252	14.14 ug/L	-0.01
Spiked Amount 50.000			Recovery =	28.28%	
Target Compounds					Qvalue
6) Dimethylphthalate	11.45	163	2110299	10.73 ug/L	99
7) Diethylphthalate	12.65	149	2096738	10.59 ug/L	99
9) Di-n-butylphthalate	15.49	149	3588101	11.83 ug/L	94
11) Pyrene	16.94	202	3348566	12.42 ug/L	83
13) bis(2-Ethylhexyl)phthalate	19.92	149	2497001	12.26 ug/L	97
14) Di-n-octylphthalate	22.67	149	4402681	12.91 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528404.D
Acq On : 28 May 2014 11:55
Operator : PEK
Sample : 10 PPM STD 16518
Misc : AG-5 8270
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 28 15:20:26 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HW.M
Quant Title : 8270 BNA Calibration
QLast Update : Tue May 27 14:47:46 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528405.D
Acq On : 28 May 2014 12:37
Operator : PEK
Sample : 20 PPM STD 16519
Misc : AG-5 8270
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 28 15:20:28 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HW.M
Quant Title : 8270 BNA Calibration
QLast Update : Tue May 27 14:47:46 2014
Response via : Initial Calibration

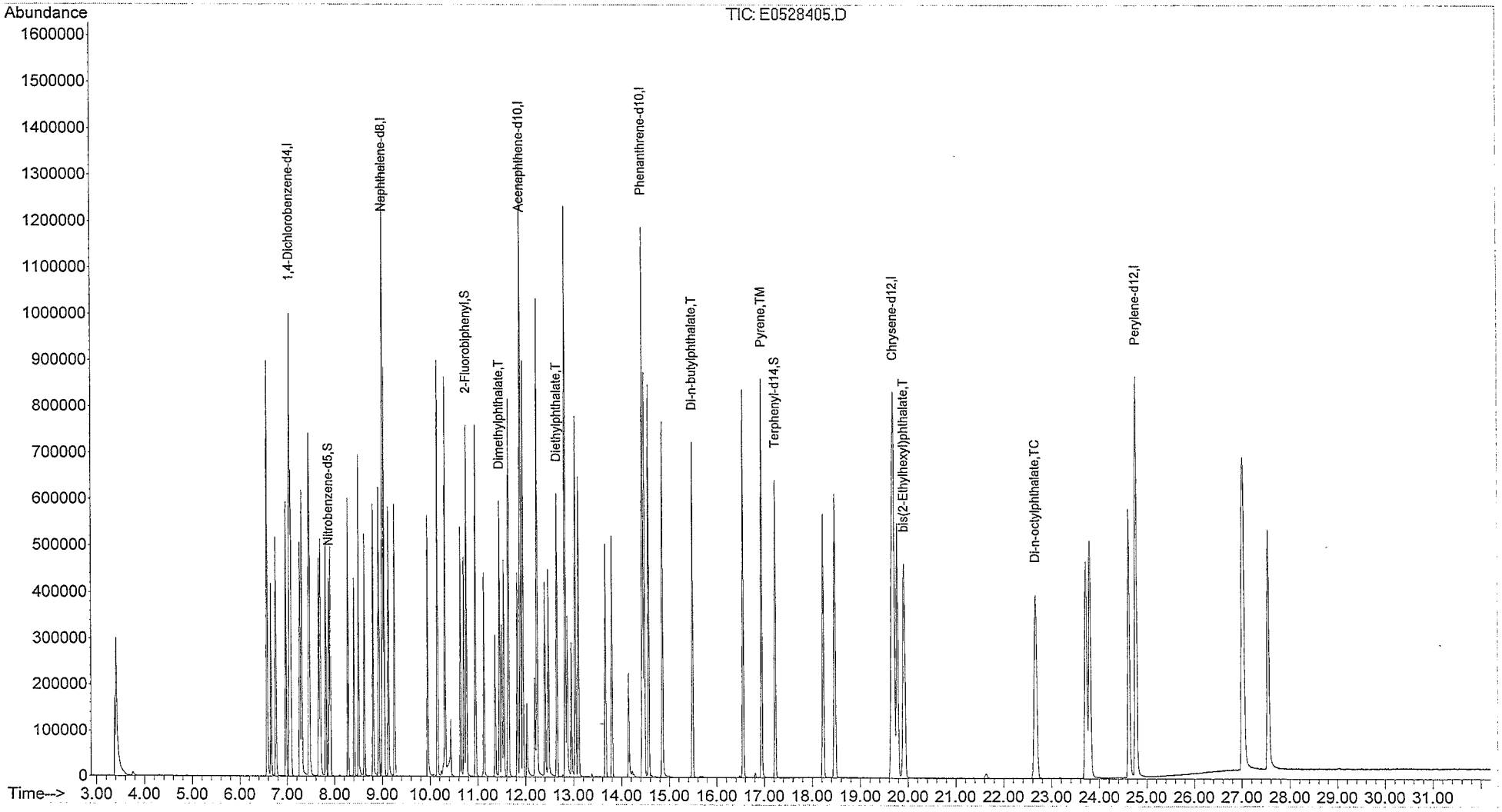
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	7.05	152	2308585	40.00 ug/L	0.00
2) Naphthalene-d8	9.01	136	9201404	40.00 ug/L	0.00
4) Acenaphthene-d10	11.90	164	4788961	40.00 ug/L	0.00
8) Phenanthrene-d10	14.44	188	7538826	40.00 ug/L	0.00
10) Chrysene-d12	19.71	240	7982927	40.00 ug/L	0.00
15) Perylene-d12	24.78	264	9009861	40.00 ug/L	0.01
System Monitoring Compounds					
3) Nitrobenzene-d5	7.88	82	1761994	22.75 ug/L	0.00
Spiked Amount 50.000			Recovery =	45.50%	
5) 2-Fluorobiphenyl	10.77	172	3487910	23.43 ug/L	0.00
Spiked Amount 50.000			Recovery =	46.86%	
12) Terphenyl-d14	17.23	244	3497280	26.04 ug/L	-0.01
Spiked Amount 50.000			Recovery =	52.08%	
Target Compounds					Qvalue
6) Dimethylphthalate	11.46	163	3830070	19.91 ug/L	99
7) Diethylphthalate	12.66	149	3824207	19.75 ug/L	99
9) Di-n-butylphthalate	15.49	149	6441386	21.60 ug/L	94
11) Pyrene	16.94	202	5917547	22.62 ug/L	82
13) bis(2-Ethylhexyl)phthalate	19.92	149	4728400	23.93 ug/L	97
14) Di-n-octylphthalate	22.67	149	8576665	25.92 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528405.D
Acq On : 28 May 2014 12:37
Operator : PEK
Sample : 20 PPM STD 16519
Misc : AG-5 8270
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 28 15:20:28 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HW.M
Quant Title : 8270 BNA Calibration
QLast Update : Tue May 27 14:47:46 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528406.D
Acq On : 28 May 2014 13:19
Operator : PEK
Sample : 30 PPM STD 16520
Misc : AG-5 8270
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 28 15:20:30 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HW.M
Quant Title : 8270 BNA Calibration
QLast Update : Tue May 27 14:47:46 2014
Response via : Initial Calibration

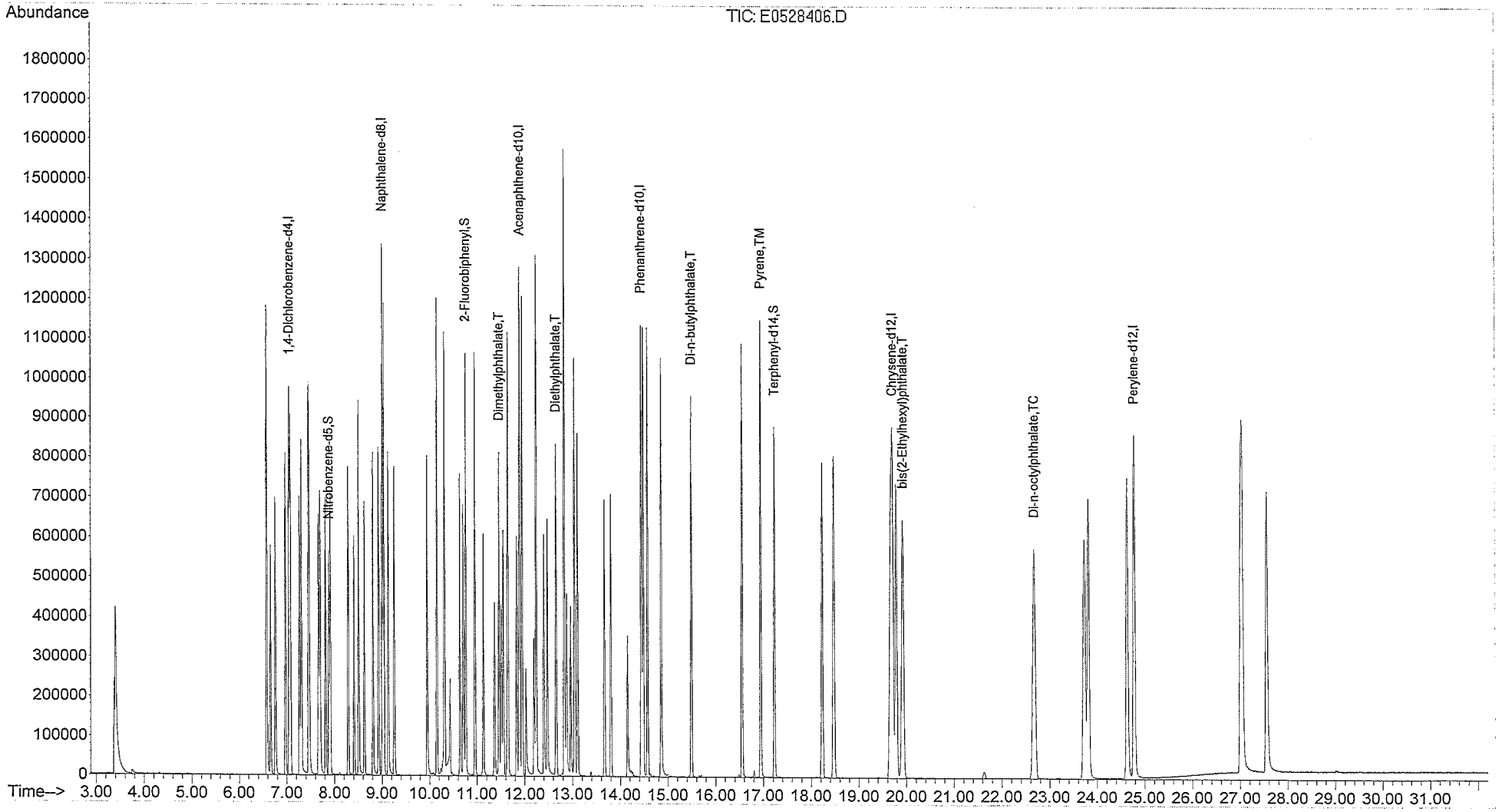
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	7.05	152	2313018	40.00	ug/L	0.00
2) Naphthalene-d8	9.01	136	9193955	40.00	ug/L	0.00
4) Acenaphthene-d10	11.90	164	4819437	40.00	ug/L	0.00
8) Phenanthrene-d10	14.44	188	7597694	40.00	ug/L	0.00
10) Chrysene-d12	19.71	240	7793304	40.00	ug/L	0.00
15) Perylene-d12	24.78	264	9115539	40.00	ug/L	0.01
System Monitoring Compounds						
3) Nitrobenzene-d5	7.88	82	2547068	32.91	ug/L	0.00
Spiked Amount 50.000			Recovery = 65.82%			
5) 2-Fluorobiphenyl	10.77	172	4871473	32.52	ug/L	0.00
Spiked Amount 50.000			Recovery = 65.04%			
12) Terphenyl-d14	17.23	244	4844269	36.95	ug/L	0.00
Spiked Amount 50.000			Recovery = 73.90%			
Target Compounds						Qvalue
6) Dimethylphthalate	11.47	163	5435429	28.08	ug/L	99
7) Diethylphthalate	12.66	149	5342306	27.41	ug/L	99
9) Di-n-butylphthalate	15.50	149	9036404	30.07	ug/L	94
11) Pyrene	16.95	202	8210656	32.15	ug/L	82
13) bis(2-Ethylhexyl)phthalate	19.92	149	6806702	35.28	ug/L	97
14) Di-n-octylphthalate	22.67	149	12467614	38.59	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528406.D
Acq On : 28 May 2014 13:19
Operator : PEK
Sample : 30 PPM STD 16520
Misc : AG-5 8270
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 28 15:20:30 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HW.M
Quant Title : 8270 BNA Calibration
QLast Update : Tue May 27 14:47:46 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528407.D
Acq On : 28 May 2014 14:02
Operator : PEK
Sample : 40 PPM STD 16521
Misc : AG-5 8270
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 28 15:20:33 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HW.M
Quant Title : 8270 BNA Calibration
QLast Update : Tue May 27 14:47:46 2014
Response via : Initial Calibration

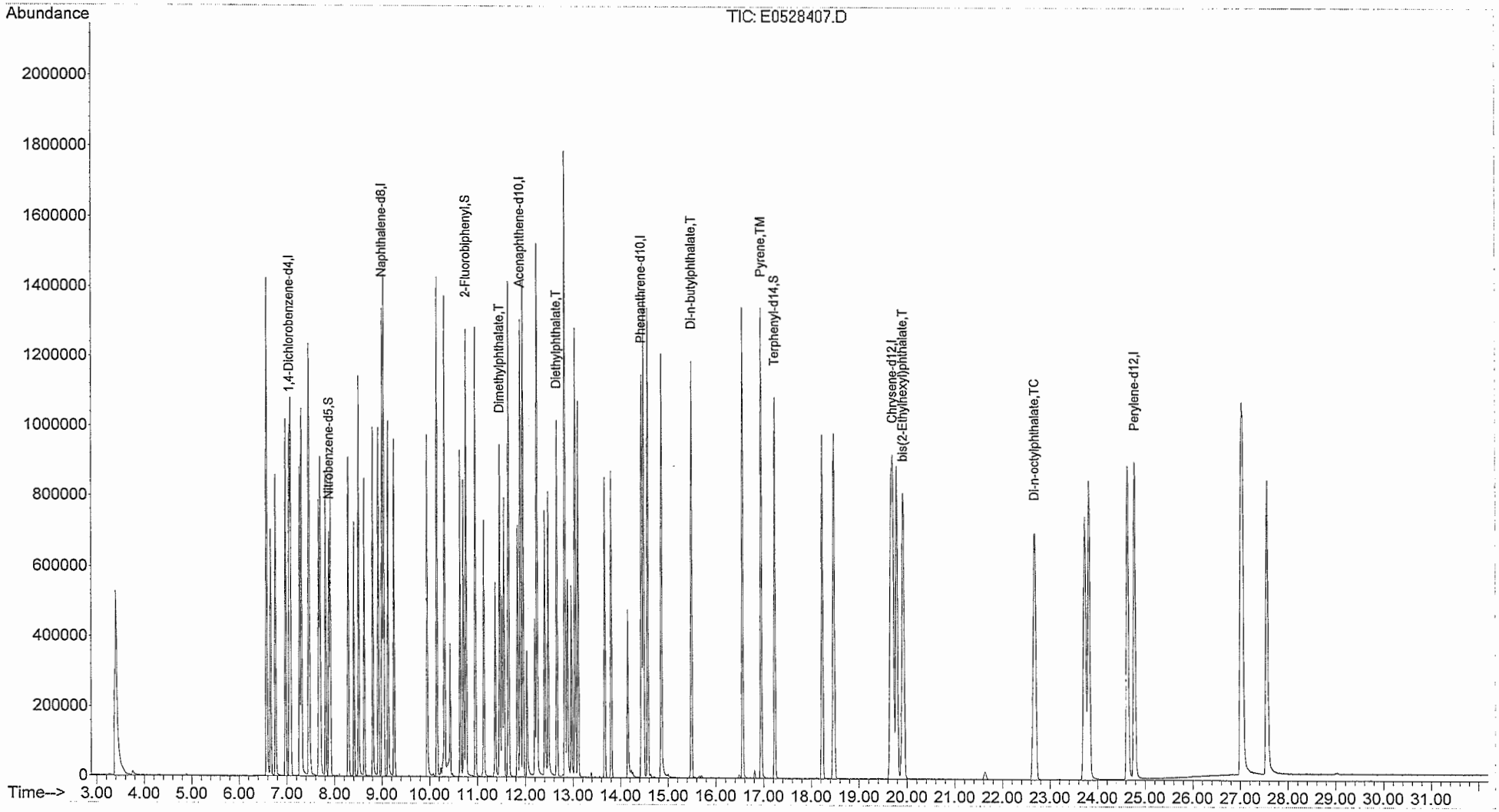
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	7.05	152	2314989	40.00	ug/L	0.00
2) Naphthalene-d8	9.01	136	9321703	40.00	ug/L	0.00
4) Acenaphthene-d10	11.90	164	4880097	40.00	ug/L	0.00
8) Phenanthrene-d10	14.44	188	7740461	40.00	ug/L	0.00
10) Chrysene-d12	19.71	240	7789732	40.00	ug/L	0.00
15) Perylene-d12	24.78	264	9301494	40.00	ug/L	0.01
System Monitoring Compounds						
3) Nitrobenzene-d5	7.89	82	3285450	41.87	ug/L	0.00
Spiked Amount 50.000			Recovery = 83.74%			
5) 2-Fluorobiphenyl	10.77	172	6077461	40.06	ug/L	0.00
Spiked Amount 50.000			Recovery = 80.12%			
12) Terphenyl-d14	17.24	244	6126016	46.75	ug/L	0.00
Spiked Amount 50.000			Recovery = 93.50%			
Target Compounds						Qvalue
6) Dimethylphthalate	11.47	163	6917647	35.29	ug/L	99
7) Diethylphthalate	12.66	149	6716608	34.03	ug/L	99
9) Di-n-butylphthalate	15.50	149	11239861	36.71	ug/L	94
11) Pyrene	16.95	202	10286951	40.30	ug/L	82
13) bis(2-Ethylhexyl)phthalate	19.93	149	8725545	45.25	ug/L	97
14) Di-n-octylphthalate	22.68	149	16026125	49.63	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528407.D
Acq On : 28 May 2014 14:02
Operator : PEK
Sample : 40 PPM STD 16521
Misc : AG-5 8270
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 28 15:20:33 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HW.M
Quant Title : 8270 BNA Calibration
QLast Update : Tue May 27 14:47:46 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528408.D
Acq On : 28 May 2014 14:44
Operator : PEK
Sample : 60 PPM STD 16522
Misc : AG-5 8270
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 28 15:20:35 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HW.M
Quant Title : 8270 BNA Calibration
QLast Update : Tue May 27 14:47:46 2014
Response via : Initial Calibration

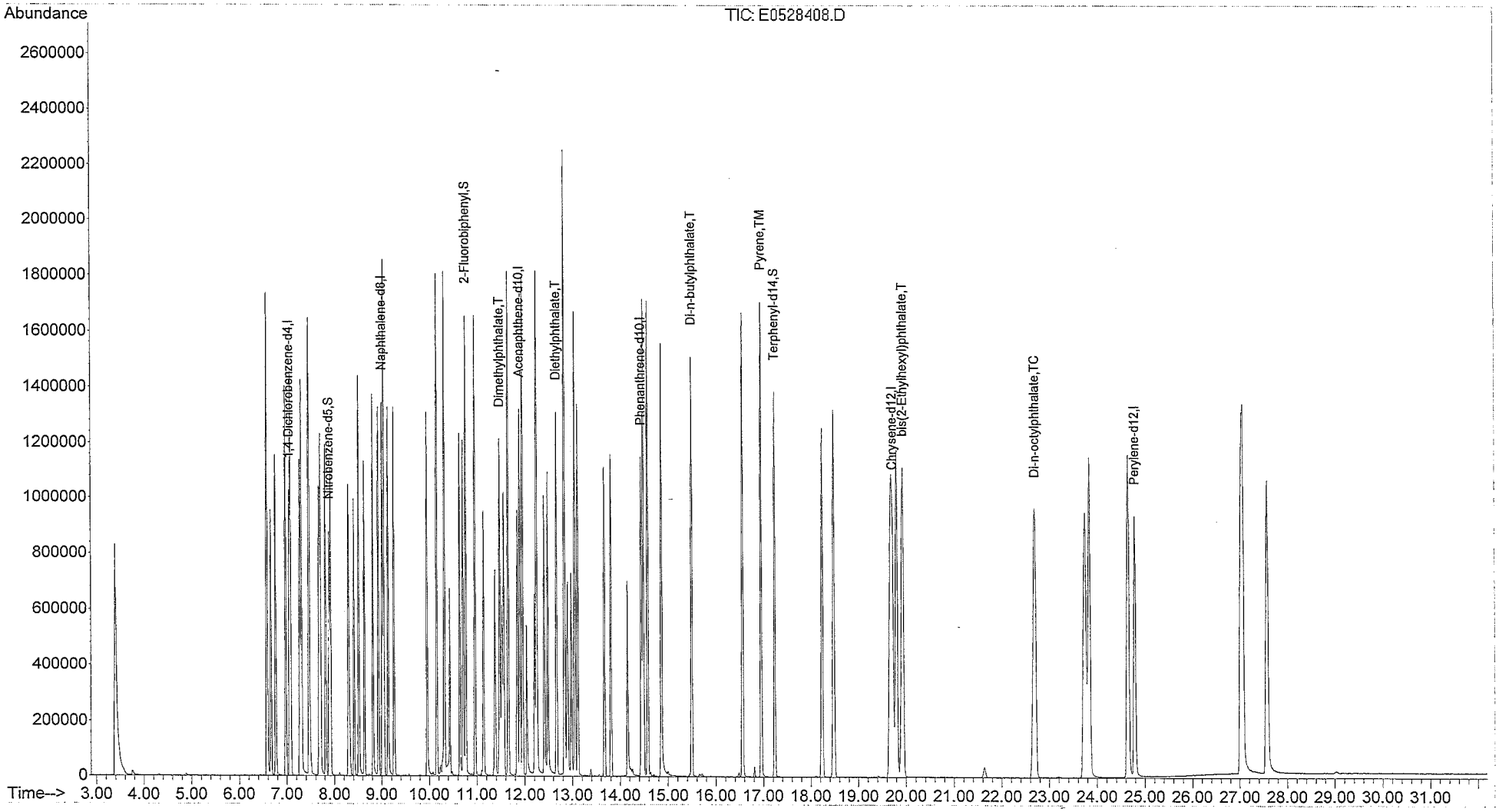
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	7.05	152	2393713	40.00	ug/L	0.00
2) Naphthalene-d8	9.01	136	9654595	40.00	ug/L	0.00
4) Acenaphthene-d10	11.90	164	5063792	40.00	ug/L	0.00
8) Phenanthrene-d10	14.45	188	7938638	40.00	ug/L	0.00
10) Chrysene-d12	19.73	240	7755735	40.00	ug/L	0.02
15) Perylene-d12	24.79	264	9445296	40.00	ug/L	0.02
System Monitoring Compounds						
3) Nitrobenzene-d5	7.89	82	4785610	58.88	ug/L	0.00
Spiked Amount 50.000			Recovery	=	117.76%	
5) 2-Fluorobiphenyl	10.77	172	8432231	53.57	ug/L	0.00
Spiked Amount 50.000			Recovery	=	107.14%	
12) Terphenyl-d14	17.24	244	8383519	64.26	ug/L	0.00
Spiked Amount 50.000			Recovery	=	128.52%	
Target Compounds						Qvalue
6) Dimethylphthalate	11.48	163	9911571	48.73	ug/L	99
7) Diethylphthalate	12.67	149	9349866	45.66	ug/L	100
9) Di-n-butylphthalate	15.50	149	15392691	49.01	ug/L	94
11) Pyrene	16.96	202	14144102	55.65	ug/L	81
13) bis(2-Ethylhexyl)phthalate	19.93	149	12250360	63.81	ug/L	97
14) Di-n-octylphthalate	22.70	149	22888166	71.20	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528408.D
Acq On : 28 May 2014 14:44
Operator : PEK
Sample : 60 PPM STD 16522
Misc : AG-5 8270
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 28 15:20:35 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HW.M
Quant Title : 8270 BNA Calibration
QLast Update : Tue May 27 14:47:46 2014
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528409.D
Acq On : 28 May 2014 15:38
Operator : PEK
Sample : 30 PPM ICV 16523
Misc : AG-5 8270
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 28 16:10:43 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HW.M
Quant Title : 8270 BNA Calibration
QLast Update : Wed May 28 15:23:12 2014
Response via : Initial Calibration

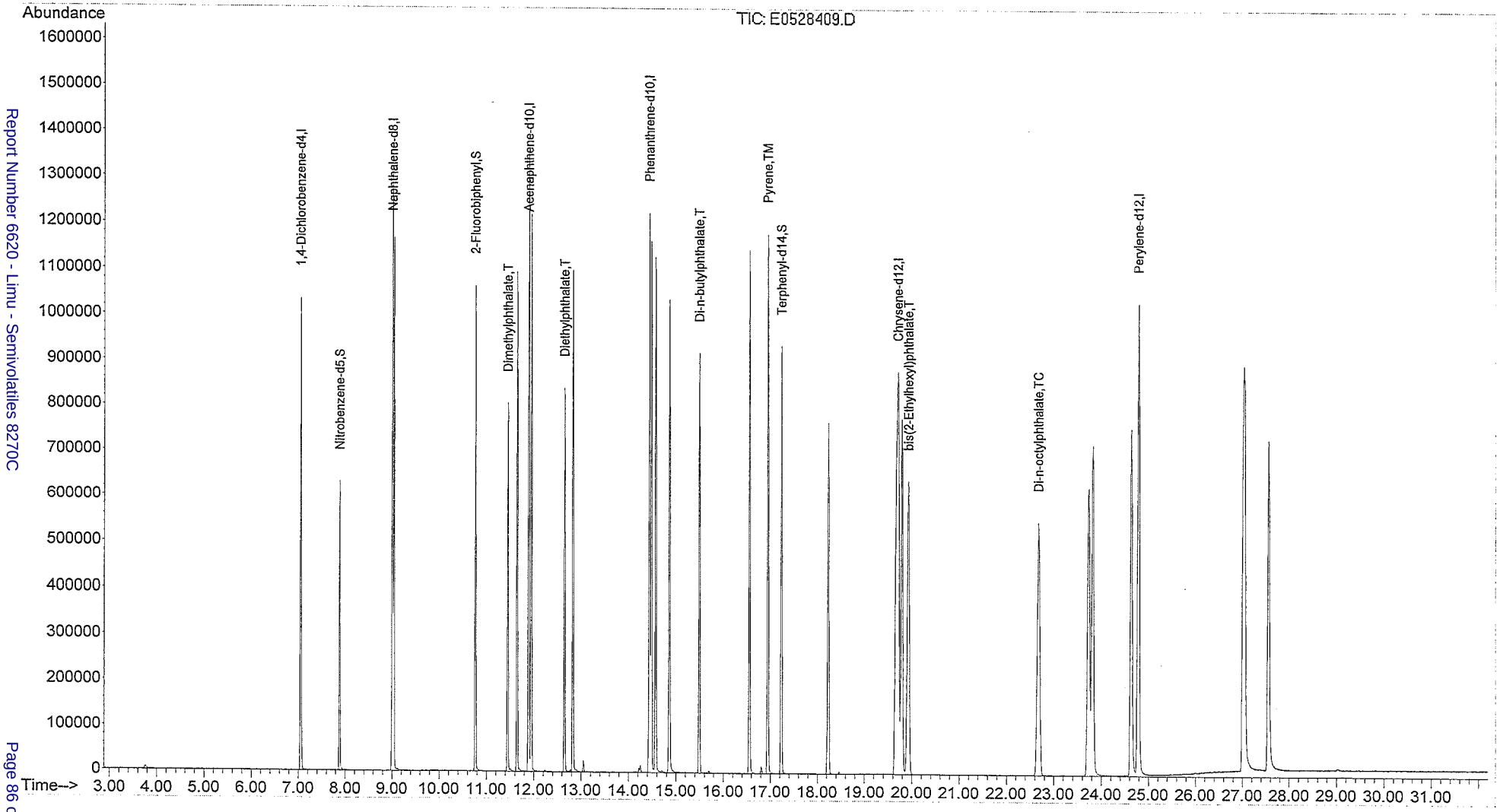
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	7.05	152	2430075	40.00	ug/L	0.00
2) Naphthalene-d8	9.01	136	9535107	40.00	ug/L	0.00
4) Acenaphthene-d10	11.89	164	4971961	40.00	ug/L	0.00
8) Phenanthrene-d10	14.44	188	7882635	40.00	ug/L	0.00
10) Chrysene-d12	19.71	240	8192733	40.00	ug/L	0.00
15) Perylene-d12	24.79	264	11132752	40.00	ug/L	0.02
System Monitoring Compounds						
3) Nitrobenzene-d5	7.88	82	2608685	29.26	ug/L	0.00
Spiked Amount 50.000			Recovery	=	58.52%	
5) 2-Fluorobiphenyl	10.77	172	5097511	29.36	ug/L	0.00
Spiked Amount 50.000			Recovery	=	58.72%	
12) Terphenyl-d14	17.24	244	5167723	29.37	ug/L	0.00
Spiked Amount 50.000			Recovery	=	58.74%	
Target Compounds						Qvalue
6) Dimethylphthalate	11.45	163	5193735	26.74	ug/L	99
7) Diethylphthalate	12.65	149	5099108	26.70	ug/L	99
9) Di-n-butylphthalate	15.50	149	8752285	27.07	ug/L	94
11) Pyrene	16.95	202	8385530	28.03	ug/L	82
13) bis(2-Ethylhexyl)phthalate	19.93	149	6519514	27.57	ug/L	97
14) Di-n-octylphthalate	22.67	149	11794515	27.67	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528409.D
Acq On : 28 May 2014 15:38
Operator : PEK
Sample : 30 PPM ICV 16523
Misc : AG-5 8270
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 28 16:10:43 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HW.M
Quant Title : 8270 BNA Calibration
QLast Update : Wed May 28 15:23:12 2014
Response via : Initial Calibration



Continuing Calibration Report AG5

Method Path : C:\MSDCHEM\1\CALFILES\8270CALS\
Method File : E8270323HW.M
Title : 8270 BNA Calibration
Last Update : Wed May 28 16:10:46 2014
Response Via : Initial Calibration

CC Data File: E0528409.D

Min. RRF : 0.000 Min. Rel. Area : 50%
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	105
2	I	Naphthalene-d8	1.000	1.000	0.0	104
3	S	Nitrobenzene-d5	0.374	0.365	2.5	102
4	I	Acenaphthene-d10	1.000	1.000	0.0	103
5	S	2-Fluorobiphenyl	1.397	1.367	2.1	105
6	T	Dimethylphthalate	1.563	1.393	10.9	96
7	T	Diethylphthalate	1.536	1.367	11.0	95
8	I	Phenanthrene-d10	1.000	1.000	0.0	104
9	T	Di-n-butylphthalate	1.640	1.480	9.8	97
10	I	Chrysene-d12	1.000	1.000	0.0	105
11	TM	Pyrene	1.460	1.365	6.6	102
12	S	Terphenyl-d14	0.859	0.841	2.1	107
13	T	bis(2-Ethylhexyl)phthalate	1.155	1.061	8.1	96
14	TC	Di-n-octylphthalate	2.082	1.920	7.8#	95
15	I	Perylene-d12	1.000	1.000	0.0	122

(#) = Out of Range SPCC's out = 0 CCC's out = 1

Instrument Logs/
Analysis Notebook Pages

Rev. 1.1

Injection Log

Directory: C:\MSDCHEM\1\DATA\052814

Line	Vial	FileName	Multiplier	SampleName	Misc Info
1	1	E0528401.d	1.	50 PPM TUNE 16512 Pass	AG-5 8270
2	2	E0528402.d	1.	CAL BLK 16516	AG-5 8270
3	3	E0528403.d	1.	5 PPM STD 16517	AG-5 8270
4	4	E0528404.d	1.	10 PPM STD 16518	AG-5 8270
5	5	E0528405.d	1.	20 PPM STD 16519	AG-5 8270
6	6	E0528406.d	1.	30 PPM STD 16520	AG-5 8270
7	7	E0528407.d	1.	40 PPM STD 16521	AG-5 8270
8	8	E0528408.d	1.	60 PPM STD 16522	AG-5 8270
9	9	E0528409.d	1.	30 PPM ICV 16523 Pass	AG-5 8270
10	10	E0528410.d	1.	006620-01B1 Pass	B10211 AG-5 8270 ...
11	11	E0528411.d	1.	006620-01K1	B10211 AG-5 8270 ...
12	12	E0528412.d	1.	006620-01	B10211 AG-5 8270 ...
13	13	E0528413.d	1.	006620-01MS	B10211 AG-5 8270 ...
14	14	E0528414.d	1.	006620-01MD	B10211 AG-5 8270 ...
15	15	E0528415.d	1.	006620-02	B10211 AG-5 8270 ...
16	16	E0528416.d	1.	006620-03 Pass	B10211 AG-5 8270 ...

Valid Curve Saved as E8270323HW.M

E8270323HT.W used for Tissue Analysis.

PEK 5/29/2014

Continued on Page

Read and Understood By

Signed	Date	Signed	Date
PEK	5/29/2014	[illegible]	5/30/14

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: 006620 Report Date: 05/30/2014

Project Name: MAKAU MILITARY RESER Analysis: BNA'S (METHOD 8270)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3550A

Field ID:	NA	ARDL Lab No.:	006620-01B1
Desc/Location:	NA	Lab Filename:	E0528410
Sample Date:	NA	Received Date:	NA
Sample Time:	NA	Prep. Date:	05/23/2014
Matrix:	QC Material	Analysis Date:	05/28/2014
Amount Used:	5 g	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B10211
% Moisture:	NA	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units
Dimethylphthalate	200	1000	ND		UG/KG
Diethylphthalate	200	1000	ND		UG/KG
Di-n-butylphthalate	200	1000	ND		UG/KG
Pyrene	200	1000	ND		UG/KG
bis(2-Ethylhexyl)phthalate	200	1000	ND		UG/KG
Di-n-octylphthalate	200	1000	ND		UG/KG

SURROGATE RECOVERIES:	Limits	Results
Nitrobenzene-d5	30-130	66%
2-Fluorobiphenyl	30-130	76%
Terphenyl-d14	30-130	80%

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

Blank for Run B10211, BNA'S (METHOD 8270) Page 1 of 1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528410.D
Acq On : 28 May 2014 16:22
Operator : PEK
Sample : 006620-01B1
Misc : B10211 AG-5 8270 SOIL
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 30 08:29:21 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HT.M
Quant Title : 8270 BNA Calibration
QLast Update : Fri May 30 08:27:54 2014
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	7.05	152	2455048	8000.00	ug/L	0.00
2) Naphthalene-d8	9.01	136	9544640	8000.00	ug/L	0.00
4) Acenaphthene-d10	11.89	164	5014330	8000.00	ug/L	0.00
8) Phenanthrene-d10	14.44	188	7972377	8000.00	ug/L	0.00
10) Chrysene-d12	19.69	240	8726958	8000.00	ug/L	-0.02
15) Perylene-d12	24.78	264	11019449	8000.00	ug/L	-0.01
System Monitoring Compounds						
3) Nitrobenzene-d5	7.88	82	1473965	3302.71	ug/L	0.00
Spiked Amount 5000.000			Recovery =	66.05%		
5) 2-Fluorobiphenyl	10.76	172	3337068	3811.69	ug/L	0.00
Spiked Amount 5000.000			Recovery =	76.23%		
12) Terphenyl-d14	17.23	244	3753297	4005.60	ug/L	0.00
Spiked Amount 5000.000			Recovery =	80.11%		

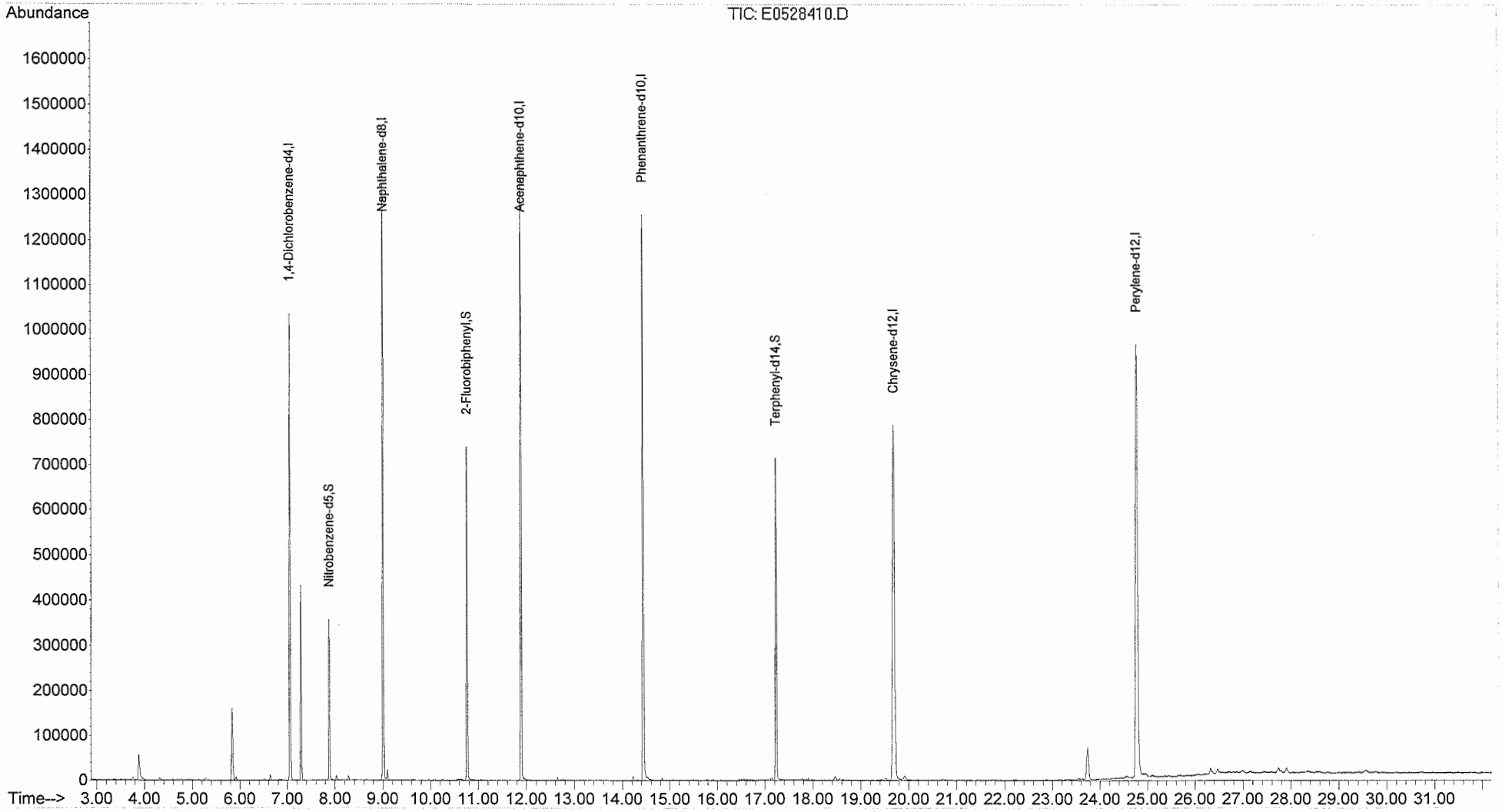
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528410.D
Acq On : 28 May 2014 16:22
Operator : PEK
Sample : 006620-01B1
Misc : B10211 AG-5 8270 SOIL
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 30 08:29:21 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HT.M
Quant Title : 8270 BNA Calibration
QLast Update : Fri May 30 08:27:54 2014
Response via : Initial Calibration



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

Lab Report No: 006620 Report Date: 05/30/2014

Project Name: MAKAU MILITARY RESER Analysis: BNA'S (METHOD 8270)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3550A

Field ID:	NA	ARDL Lab No.:	006620-01K1
Desc/Location:	NA	Lab Filename:	E0528411
Sample Date:	NA	Received Date:	NA
Sample Time:	NA	Prep. Date:	05/23/2014
Matrix:	QC Material	Analysis Date:	05/28/2014
Amount Used:	5 g	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B10211
% Moisture:	NA	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units
Dimethylphthalate	200	1000	3810		UG/KG
Diethylphthalate	200	1000	3890		UG/KG
Di-n-butylphthalate	200	1000	3990		UG/KG
Pyrene	200	1000	4110		UG/KG
bis(2-Ethylhexyl)phthalate	200	1000	3910		UG/KG
Di-n-octylphthalate	200	1000	3850		UG/KG

SURROGATE RECOVERIES:	Limits	Results
Nitrobenzene-d5	30-130	76%
2-Fluorobiphenyl	30-130	82%
Terphenyl-d14	30-130	83%

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

Spike Blank for Run B10211, BNA'S (METHOD 8270) Page 1 of 1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528411.D
Acq On : 28 May 2014 17:04
Operator : PEK
Sample : 006620-01K1
Misc : B10211 AG-5 8270 SOIL
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 30 08:29:29 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HT.M
Quant Title : 8270 BNA Calibration
QLast Update : Fri May 30 08:27:54 2014
Response via : Initial Calibration

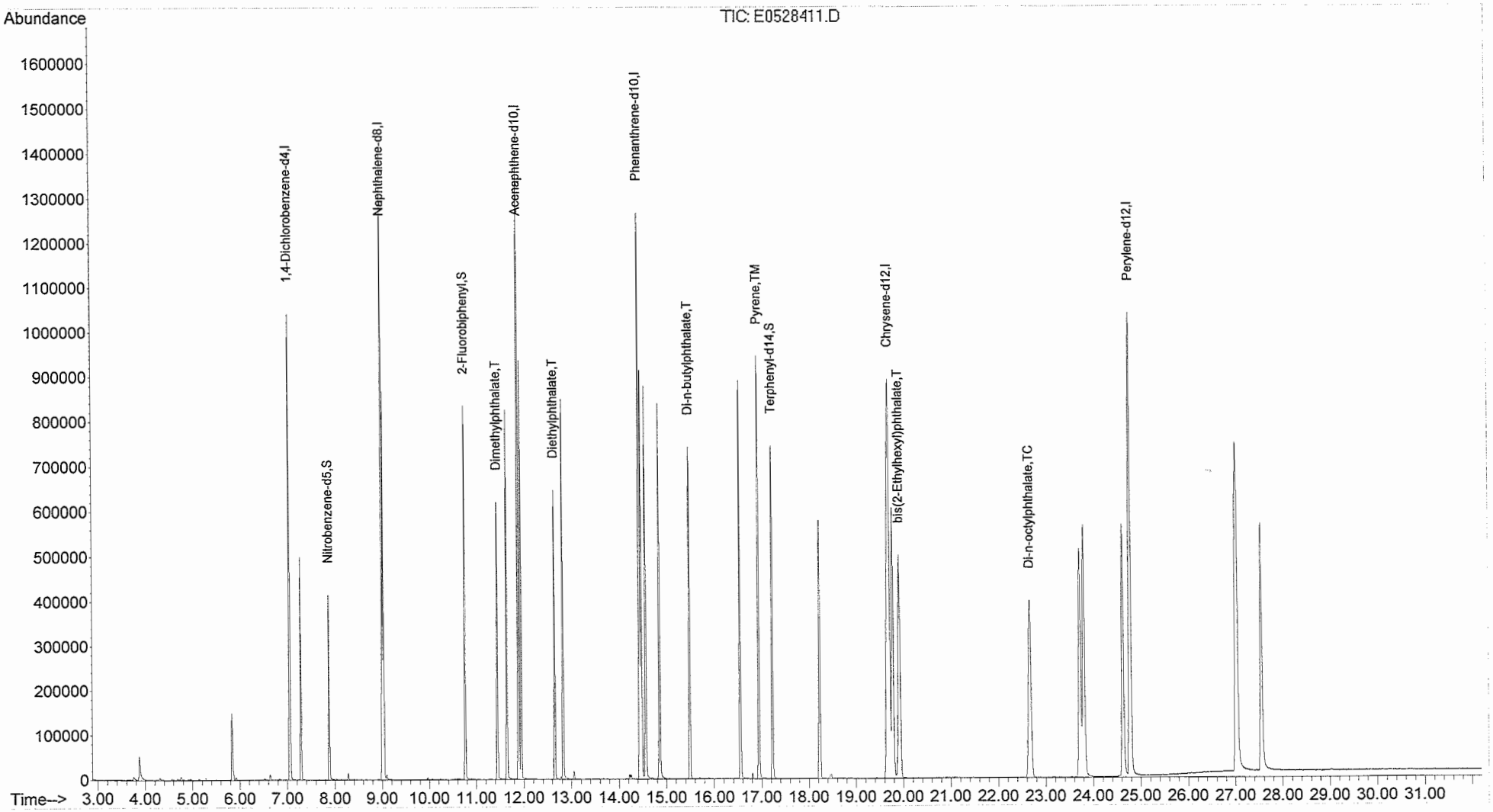
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	7.05	152	2496655	8000.00	ug/L	0.00
2) Naphthalene-d8	9.00	136	9742187	8000.00	ug/L	0.00
4) Acenaphthene-d10	11.89	164	5146626	8000.00	ug/L	0.00
8) Phenanthrene-d10	14.44	188	8179407	8000.00	ug/L	0.00
10) Chrysene-d12	19.71	240	8658448	8000.00	ug/L	0.00
15) Perylene-d12	24.79	264	11680945	8000.00	ug/L	0.00
System Monitoring Compounds						
3) Nitrobenzene-d5	7.88	82	1726613	3790.36	ug/L	0.00
Spiked Amount 5000.000			Recovery =	75.81%		
5) 2-Fluorobiphenyl	10.76	172	3675034	4089.82	ug/L	0.00
Spiked Amount 5000.000			Recovery =	81.80%		
12) Terphenyl-d14	17.23	244	3870723	4163.61	ug/L	0.00
Spiked Amount 5000.000			Recovery =	83.27%		
Target Compounds						Qvalue
6) Dimethylphthalate	11.45	163	3831437	3810.77	ug/L	99
7) Diethylphthalate	12.65	149	3847792	3893.06	ug/L	99
9) Di-n-butylphthalate	15.49	149	6693128	3990.69	ug/L	94
11) Pyrene	16.94	202	6499333	4111.86	ug/L	82
13) bis(2-Ethylhexyl)phthalate	19.92	149	4880708	3906.02	ug/L	97
14) Di-n-octylphthalate	22.67	149	8671792	3849.30	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528411.D
Acq On : 28 May 2014 17:04
Operator : PEK
Sample : 006620-01K1
Misc : B10211 AG-5 8270 SOIL
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 30 08:29:29 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HT.M
Quant Title : 8270 BNA Calibration
QLast Update : Fri May 30 08:27:54 2014
Response via : Initial Calibration



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

Lab Report No: 006620 Report Date: 05/30/2014

Project Name: MAKAU MILITARY RESER Analysis: BNA'S (METHOD 8270)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3550A

Field ID:	MAK130L	ARDL Lab No.:	006620-01
Desc/Location:	MAKAU MILITARY RESERVATION	Lab Filename:	E0528412
Sample Date:	03/27/2014	Received Date:	04/29/2014
Sample Time:	0820	Prep. Date:	05/23/2014
Matrix:	TISSUE	Analysis Date:	05/28/2014
Amount Used:	5 g	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B10211
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Dimethylphthalate	200	1000	ND		UG/KG	1
Diethylphthalate	200	1000	ND		UG/KG	1
Di-n-butylphthalate	200	1000	ND		UG/KG	1
Pyrene	200	1000	ND		UG/KG	1
bis(2-Ethylhexyl)phthalate	200	1000	ND		UG/KG	1
Di-n-octylphthalate	200	1000	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Nitrobenzene-d5	30-130	73%
2-Fluorobiphenyl	30-130	79%
Terphenyl-d14	30-130	80%

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

Sample 006620-01, BNA'S (METHOD 8270) Page 1 of 1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528412.D
Acq On : 28 May 2014 17:46
Operator : PEK
Sample : 006620-01
Misc : B10211 AG-5 8270 SOIL
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 30 08:29:40 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HT.M
Quant Title : 8270 BNA Calibration
QLast Update : Fri May 30 08:27:54 2014
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	7.05	152	2568468	8000.00	ug/L	0.00
2) Naphthalene-d8	9.00	136	9990406	8000.00	ug/L	0.00
4) Acenaphthene-d10	11.89	164	5209139	8000.00	ug/L	0.00
8) Phenanthrene-d10	14.44	188	8268579	8000.00	ug/L	0.00
10) Chrysene-d12	19.70	240	9483184	8000.00	ug/L	-0.02
15) Perylene-d12	24.78	264	9284553	8000.00	ug/L	-0.01
System Monitoring Compounds						
3) Nitrobenzene-d5	7.88	82	1713739	3668.63	ug/L	0.00
Spiked Amount 5000.000			Recovery =	73.37%		
5) 2-Fluorobiphenyl	10.76	172	3590571	3947.87	ug/L	0.00
Spiked Amount 5000.000			Recovery =	78.96%		
12) Terphenyl-d14	17.23	244	4083077	4010.06	ug/L	0.00
Spiked Amount 5000.000			Recovery =	80.20%		

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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

Lab Report No: 006620 Report Date: 05/30/2014

Project Name: MAKAU MILITARY RESER Analysis: BNA'S (METHOD 8270)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3550A

Field ID:	MAK130L	ARDL Lab No.:	006620-01MS
Desc/Location:	MAKAU MILITARY RESERVATION	Lab Filename:	E0528413
Sample Date:	03/27/2014	Received Date:	04/29/2014
Sample Time:	0820	Prep. Date:	05/23/2014
Matrix:	TISSUE	Analysis Date:	05/28/2014
Amount Used:	5 g	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B10211
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Dimethylphthalate	200	1000	3950		UG/KG	1
Diethylphthalate	200	1000	4040		UG/KG	1
Di-n-butylphthalate	200	1000	3470		UG/KG	1
Pyrene	200	1000	4120		UG/KG	1
bis(2-Ethylhexyl)phthalate	200	1000	4120		UG/KG	1
Di-n-octylphthalate	200	1000	4150		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Nitrobenzene-d5	30-130	75%
2-Fluorobiphenyl	30-130	81%
Terphenyl-d14	30-130	86%

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

Matrix Spike for 006620-01, BNA'S (METHOD 8270) Page 1 of 1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528413.D
Acq On : 28 May 2014 18:28
Operator : PEK
Sample : 006620-01MS
Misc : B10211 AG-5 8270 SOIL
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 30 08:30:10 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HT.M
Quant Title : 8270 BNA Calibration
QLast Update : Fri May 30 08:27:54 2014
Response via : Initial Calibration

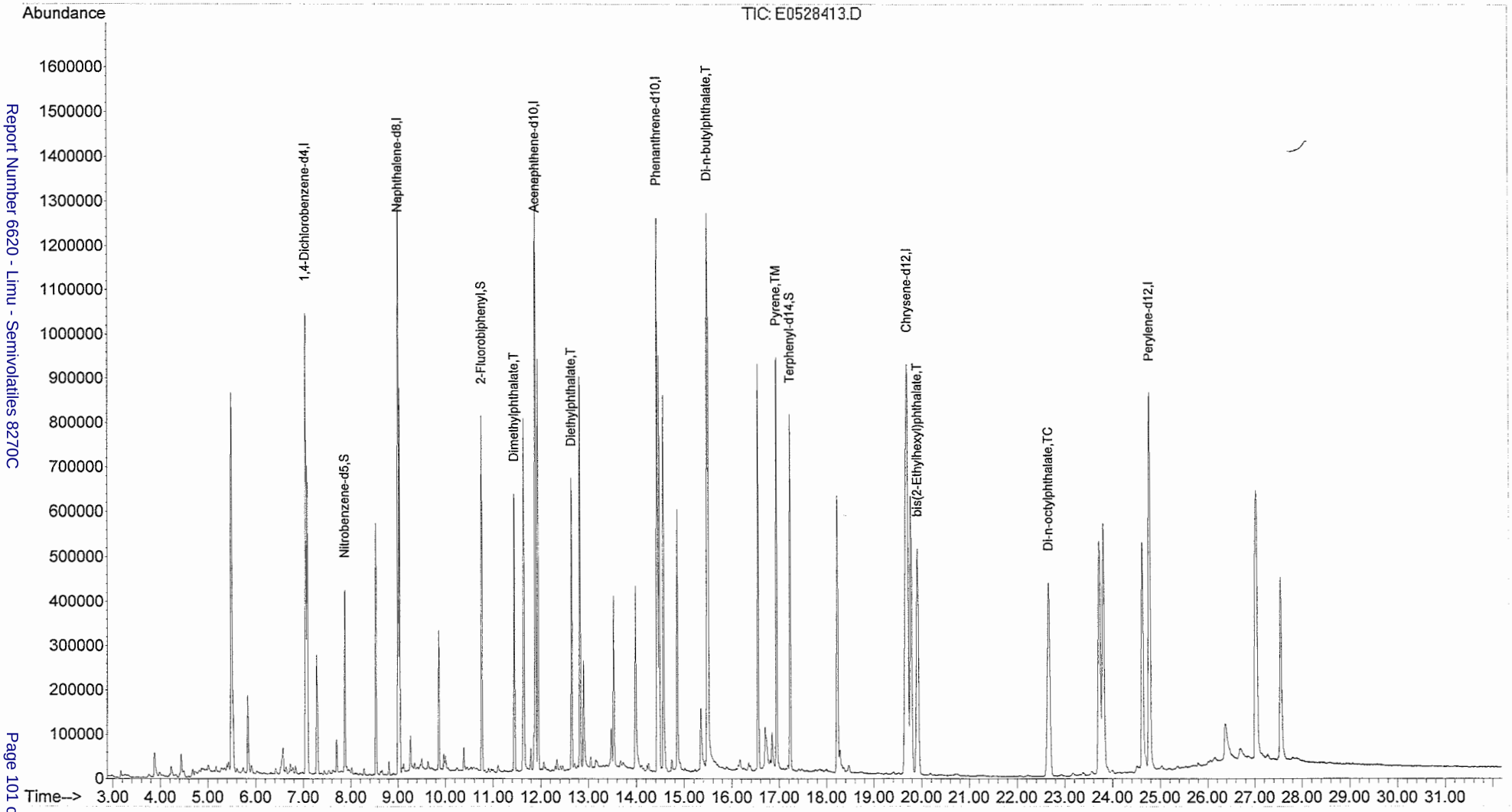
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	7.05	152	2468058	8000.00	ug/L	0.00
2) Naphthalene-d8	9.00	136	9599707	8000.00	ug/L	0.00
4) Acenaphthene-d10	11.89	164	5040660	8000.00	ug/L	0.00
8) Phenanthrene-d10	14.45	188	8024363	8000.00	ug/L	0.00
10) Chrysene-d12	19.71	240	8688134	8000.00	ug/L	0.00
15) Perylene-d12	24.78	264	8884867	8000.00	ug/L	-0.01
System Monitoring Compounds						
3) Nitrobenzene-d5	7.88	82	1676430	3734.82	ug/L	0.00
Spiked Amount 5000.000			Recovery =	74.70%		
5) 2-Fluorobiphenyl	10.76	172	3571178	4057.79	ug/L	0.00
Spiked Amount 5000.000			Recovery =	81.16%		
12) Terphenyl-d14	17.23	244	4027436	4317.38	ug/L	0.00
Spiked Amount 5000.000			Recovery =	86.35%		
Target Compounds						Qvalue
6) Dimethylphthalate	11.45	163	3890171	3950.53	ug/L	99
7) Diethylphthalate	12.65	149	3911053	4040.26	ug/L	99
9) Di-n-butylphthalate	15.49	149	5705194	3467.37	ug/L	94
11) Pyrene	16.95	202	6526807	4115.13	ug/L	82
13) bis(2-Ethylhexyl)phthalate	19.92	149	5161092	4116.29	ug/L	97
14) Di-n-octylphthalate	22.67	149	9374518	4147.01	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528413.D
Acq On : 28 May 2014 18:28
Operator : PEK
Sample : 006620-01MS
Misc : B10211 AG-5 8270 SOIL
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 30 08:30:10 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HT.M
Quant Title : 8270 BNA Calibration
QLast Update : Fri May 30 08:27:54 2014
Response via : Initial Calibration



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

Lab Report No: 006620 Report Date: 05/30/2014

Project Name: MAKAU MILITARY RESER Analysis: BNA'S (METHOD 8270)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3550A

Field ID:	MAK130L	ARDL Lab No.:	006620-01MD
Desc/Location:	MAKAU MILITARY RESERVATION	Lab Filename:	E0528414
Sample Date:	03/27/2014	Received Date:	04/29/2014
Sample Time:	0820	Prep. Date:	05/23/2014
Matrix:	TISSUE	Analysis Date:	05/28/2014
Amount Used:	5 g	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B10211
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Dimethylphthalate	200	1000	3810		UG/KG	1
Diethylphthalate	200	1000	3890		UG/KG	1
Di-n-butylphthalate	200	1000	3400		UG/KG	1
Pyrene	200	1000	3910		UG/KG	1
bis(2-Ethylhexyl)phthalate	200	1000	3950		UG/KG	1
Di-n-octylphthalate	200	1000	4010		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Nitrobenzene-d5	30-130	59%
2-Fluorobiphenyl	30-130	72%
Terphenyl-d14	30-130	80%

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

Matrix Spike Duplicate for 006620-01, BNA'S (METHOD 8270) Page 1 of 1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528414.D
Acq On : 28 May 2014 19:10
Operator : PEK
Sample : 006620-01MD
Misc : B10211 AG-5 8270 SOIL
ALS Vial : 14 Sample Multiplier: 1

Quant Time: May 30 08:30:18 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HT.M
Quant Title : 8270 BNA Calibration
QLast Update : Fri May 30 08:27:54 2014
Response via : Initial Calibration

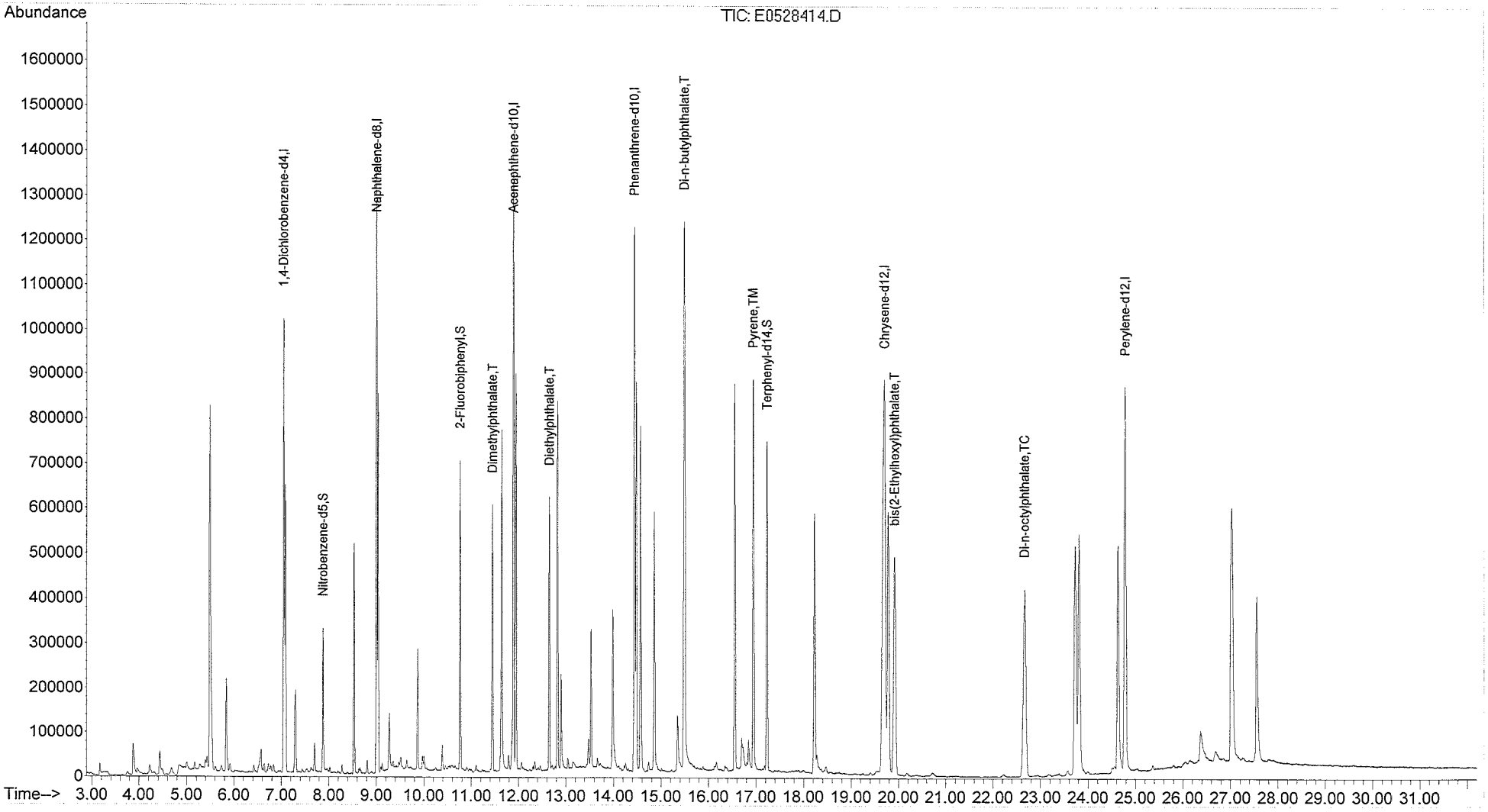
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	7.05	152	2413002	8000.00	ug/L	0.00
2) Naphthalene-d8	9.01	136	9400610	8000.00	ug/L	0.00
4) Acenaphthene-d10	11.89	164	4874595	8000.00	ug/L	0.00
8) Phenanthrene-d10	14.45	188	7850100	8000.00	ug/L	0.00
10) Chrysene-d12	19.71	240	8588746	8000.00	ug/L	0.00
15) Perylene-d12	24.78	264	8925251	8000.00	ug/L	0.00
System Monitoring Compounds						
3) Nitrobenzene-d5	7.88	82	1286274	2926.31	ug/L	0.00
Spiked Amount 5000.000			Recovery =	58.53%		
5) 2-Fluorobiphenyl	10.76	172	3043388	3575.89	ug/L	0.00
Spiked Amount 5000.000			Recovery =	71.52%		
12) Terphenyl-d14	17.23	244	3666794	3976.26	ug/L	0.00
Spiked Amount 5000.000			Recovery =	79.53%		
Target Compounds						Qvalue
6) Dimethylphthalate	11.45	163	3630363	3812.28	ug/L	99
7) Diethylphthalate	12.65	149	3642772	3891.31	ug/L	99
9) Di-n-butylphthalate	15.49	149	5465545	3395.46	ug/L	94
11) Pyrene	16.95	202	6132189	3911.07	ug/L	83
13) bis(2-Ethylhexyl)phthalate	19.92	149	4893421	3947.97	ug/L	97
14) Di-n-octylphthalate	22.67	149	8955641	4007.56	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528414.D
Acq On : 28 May 2014 19:10
Operator : PEK
Sample : 006620-01MD
Misc : B10211 AG-5 8270 SOIL
ALS Vial : 14 Sample Multiplier: 1

Quant Time: May 30 08:30:18 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HT.M
Quant Title : 8270 BNA Calibration
QLast Update : Fri May 30 08:27:54 2014
Response via : Initial Calibration



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

Lab Report No: 006620 Report Date: 05/30/2014

Project Name: MAKAU MILITARY RESER Analysis: BNA'S (METHOD 8270)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3550A

Field ID:	MAK132L	ARDL Lab No.:	006620-02
Desc/Location:	MAKAU MILITARY RESERVATION	Lab Filename:	E0528415
Sample Date:	03/28/2014	Received Date:	04/29/2014
Sample Time:	0838	Prep. Date:	05/23/2014
Matrix:	TISSUE	Analysis Date:	05/28/2014
Amount Used:	5 g	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B10211
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Dimethylphthalate	200	1000	ND		UG/KG	1
Diethylphthalate	200	1000	ND		UG/KG	1
Di-n-butylphthalate	200	1000	ND		UG/KG	1
Pyrene	200	1000	ND		UG/KG	1
bis(2-Ethylhexyl)phthalate	200	1000	ND		UG/KG	1
Di-n-octylphthalate	200	1000	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Nitrobenzene-d5	30-130	68%
2-Fluorobiphenyl	30-130	68%
Terphenyl-d14	30-130	78%

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

Sample 006620-02, BNA'S (METHOD 8270) Page 1 of 1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528415.D
Acq On : 28 May 2014 19:51
Operator : PEK
Sample : 006620-02
Misc : B10211 AG-5 8270 SOIL
ALS Vial : 15 Sample Multiplier: 1

Quant Time: May 30 08:31:09 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HT.M
Quant Title : 8270 BNA Calibration
QLast Update : Fri May 30 08:27:54 2014
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	7.05	152	2417005	8000.00	ug/L	0.00
2) Naphthalene-d8	9.01	136	9188343	8000.00	ug/L	0.00
4) Acenaphthene-d10	11.89	164	4816211	8000.00	ug/L	0.00
8) Phenanthrene-d10	14.44	188	7773356	8000.00	ug/L	0.00
10) Chrysene-d12	19.70	240	9073544	8000.00	ug/L	-0.01
15) Perylene-d12	24.78	264	8261502	8000.00	ug/L	-0.01
System Monitoring Compounds						
3) Nitrobenzene-d5	7.88	82	1458380	3394.50	ug/L	0.00
Spiked Amount 5000.000			Recovery =	67.89%		
5) 2-Fluorobiphenyl	10.76	172	2857720	3398.44	ug/L	0.00
Spiked Amount 5000.000			Recovery =	67.97%		
12) Terphenyl-d14	17.23	244	3781321	3881.36	ug/L	0.00
Spiked Amount 5000.000			Recovery =	77.63%		

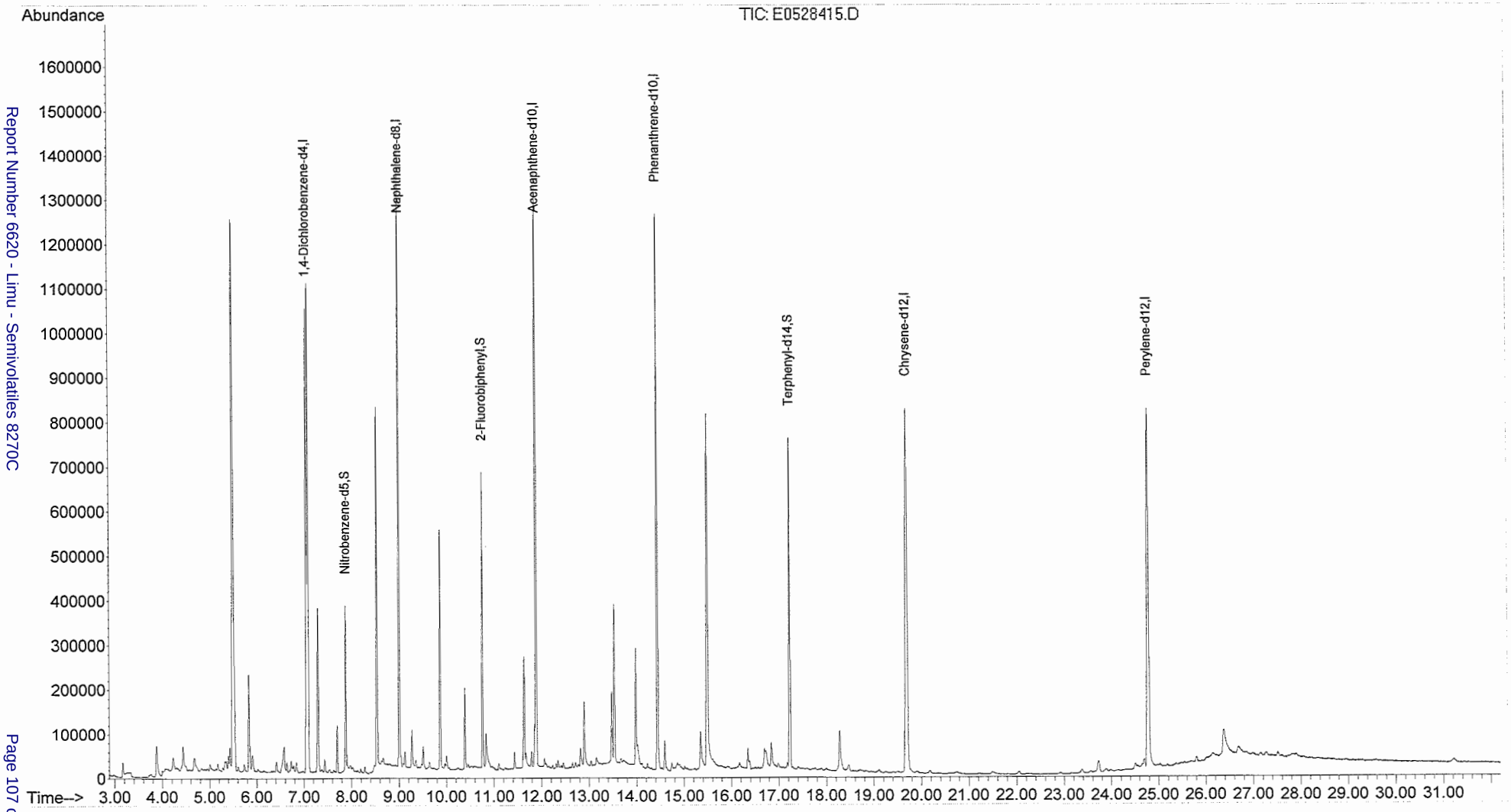
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528415.D
Acq On : 28 May 2014 19:51
Operator : PEK
Sample : 006620-02
Misc : B10211 AG-5 8270 SOIL
ALS Vial : 15 Sample Multiplier: 1

Quant Time: May 30 08:31:09 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HT.M
Quant Title : 8270 BNA Calibration
QLast Update : Fri May 30 08:27:54 2014
Response via : Initial Calibration



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

Lab Report No: 006620 Report Date: 05/30/2014

Project Name: MAKAU MILITARY RESER Analysis: BNA'S (METHOD 8270)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3550A

Field ID:	MAK134L	ARDL Lab No.:	006620-03
Desc/Location:	MAKAU MILITARY RESERVATION	Lab Filename:	E0528416
Sample Date:	03/28/2014	Received Date:	04/29/2014
Sample Time:	0920	Prep. Date:	05/23/2014
Matrix:	TISSUE	Analysis Date:	05/28/2014
Amount Used:	5 g	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B10211
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Dimethylphthalate	200	1000	ND		UG/KG	1
Diethylphthalate	200	1000	ND		UG/KG	1
Di-n-butylphthalate	200	1000	ND		UG/KG	1
Pyrene	200	1000	ND		UG/KG	1
bis(2-Ethylhexyl)phthalate	200	1000	ND		UG/KG	1
Di-n-octylphthalate	200	1000	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Nitrobenzene-d5	30-130	65%
2-Fluorobiphenyl	30-130	53%
Terphenyl-d14	30-130	81%

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

Sample 006620-03, BNA'S (METHOD 8270) Page 1 of 1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528416.D
Acq On : 28 May 2014 20:32
Operator : PEK
Sample : 006620-03
Misc : B10211 AG-5 8270 SOIL
ALS Vial : 16 Sample Multiplier: 1

Quant Time: May 30 08:31:17 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HT.M
Quant Title : 8270 BNA Calibration
QLast Update : Fri May 30 08:27:54 2014
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	7.05	152	2579619	8000.00	ug/L	0.00
2) Naphthalene-d8	9.00	136	9767438	8000.00	ug/L	0.00
4) Acenaphthene-d10	11.89	164	5145718	8000.00	ug/L	0.00
8) Phenanthrene-d10	14.45	188	8121487	8000.00	ug/L	0.00
10) Chrysene-d12	19.70	240	9360608	8000.00	ug/L	-0.01
15) Perylene-d12	24.78	264	8793539	8000.00	ug/L	-0.01
System Monitoring Compounds						
3) Nitrobenzene-d5	7.88	82	1482463	3245.98	ug/L	0.00
Spiked Amount 5000.000			Recovery =	64.92%		
5) 2-Fluorobiphenyl	10.76	172	2394818	2665.58	ug/L	0.00
Spiked Amount 5000.000			Recovery =	53.31%		
12) Terphenyl-d14	17.23	244	4081540	4061.04	ug/L	0.00
Spiked Amount 5000.000			Recovery =	81.22%		

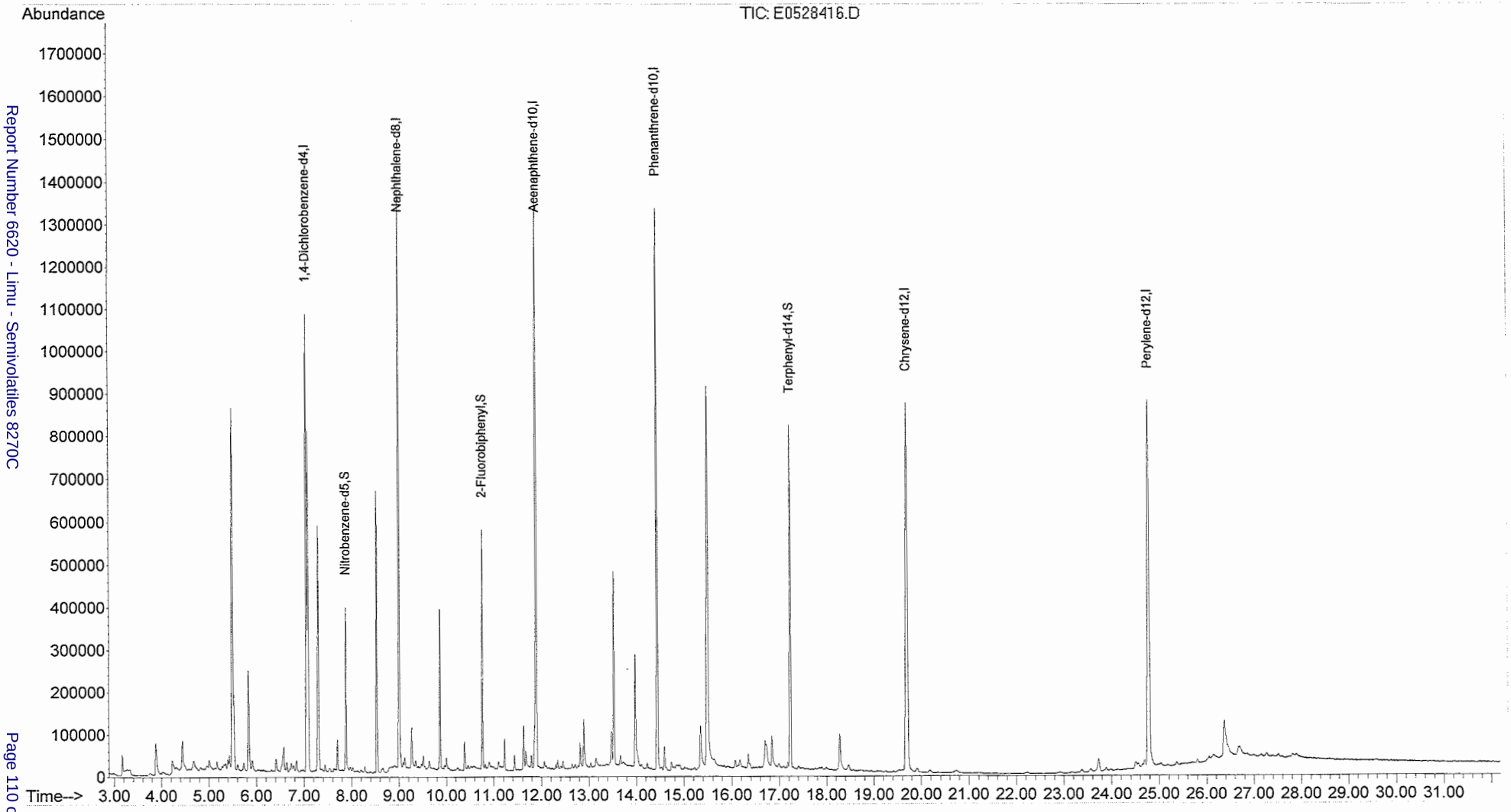
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052814\
Data File : E0528416.D
Acq On : 28 May 2014 20:32
Operator : PEK
Sample : 006620-03
Misc : B10211 AG-5 8270 SOIL
ALS Vial : 16 Sample Multiplier: 1

Quant Time: May 30 08:31:17 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HT.M
Quant Title : 8270 BNA Calibration
QLast Update : Fri May 30 08:27:54 2014
Response via : Initial Calibration



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

5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ARDL, Inc. Contract: ---

Lab Code: --- Case No.: 006620 SAS No.: --- SDG No.: ---

Lab File ID: E0529401 DFTPP Injection Date: 05/29/14

Instrument ID: AG5 DFTPP Injection Time: 09:34

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30 - 80% of mass 198	37.2
68	Less than 2.0% of mass 69	0.0 (1)
69	(reference only)	33.5
70	Less than 2.0% of mass 69	0.7 (1)
127	25 - 75% of mass 198	52.5
197	Less than 1% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.
199	5 - 9% of mass 198	7.0
275	10 - 30% of mass 198	21.2
365	Greater than 1% of mass 198	2.3
441	0 - 100% of mass 443	94.9
442	40 - 110% of mass 198	70.3
443	15 - 24% of mass 442	20.2 (2)

(1)-Value is % mass 69 (2)-Value is % mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

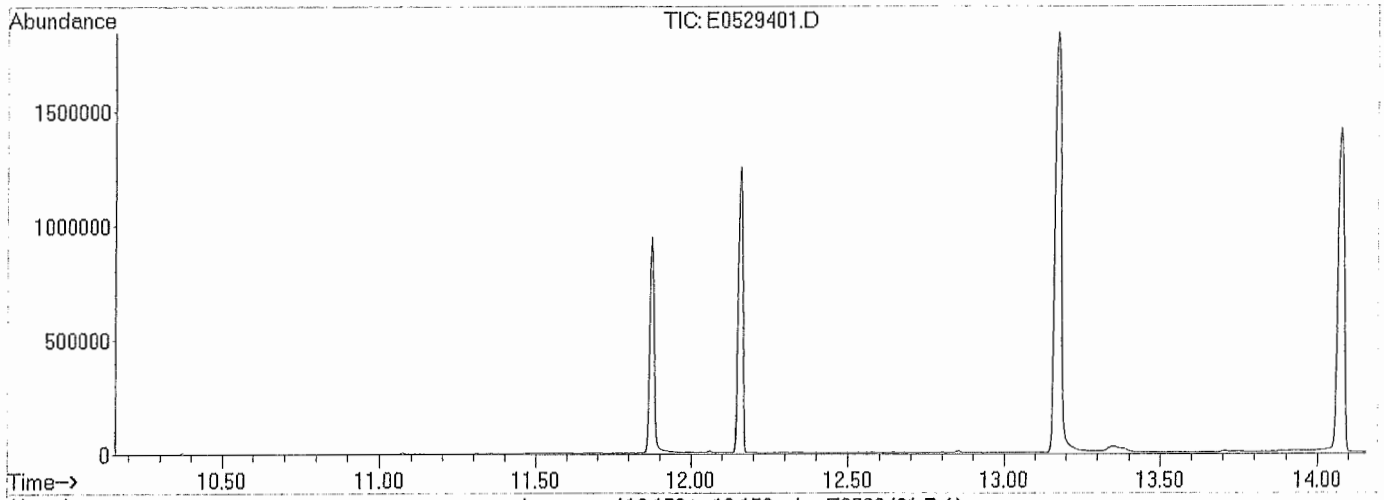
	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	BNA STD	030 PPM STD	E0529402	05/29/14	10:01
2	BLANK B10215	006621-03B1	E0529403	05/29/14	10:42
3	MAK135L	006620-04	E0529405	05/29/14	12:05
4	MAK138L	006620-05	E0529406	05/29/14	12:46
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

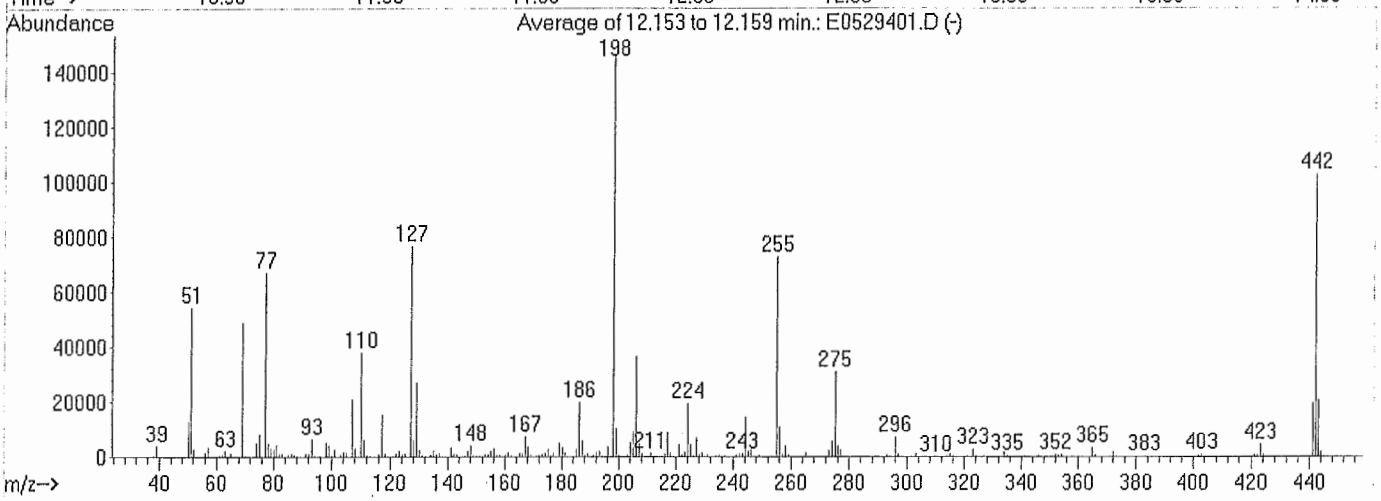
DFTPP

Data Path : C:\MSDCHEM\1\DATA\052914\
Data File : E0529401.D
Acq On : 29 May 2014 9:34
Operator : PEK
Sample : 50 PPM TUNE 16512
Misc : AG-5 8270
ALS Vial : 1 Sample Multiplier: 1

Integration File: FRED.P

Method : C:\MSDCHEM\1\METHODS\8270TUNPULSE.M
Title : 8270 TUNE METHOD
Last Update : Wed Apr 16 11:23:29 2014





AutoFind: Scans 1082, 1083, 1084; Background Corrected with Scan 1073

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	80	37.2	54408	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.01	100	33.5	48983	PASS
70	69	0.00	2	0.7	336	PASS
127	198	25	75	52.5	76674	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	146154	PASS
199	198	5	9	7.0	10217	PASS
275	198	10	30	21.2	30984	PASS
365	198	0.75	100	2.3	3397	PASS
441	443	0.01	100	94.9	19719	PASS
442	198	40	110	70.3	102818	PASS
443	442	15	24	20.2	20781	PASS

Average of 12.153 to 12.159 min.: E0529401.D
50 PPM TUNE 16512
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
37.05	207	53.10	212	67.20	134	81.05	4307
38.10	567	55.05	65	69.10	48983	82.05	1114
39.05	3930	56.00	1523	70.05	336	83.05	1166
40.00	154	57.05	3426	72.20	28	83.95	93
45.00	118	58.05	180	73.10	403	85.00	789
45.20	29	61.10	645	74.10	5006	86.10	1158
46.70	38	62.05	875	75.10	8151	87.10	661
48.10	35	63.15	2087	77.10	67008	88.05	328
50.15	13040	64.05	326	78.10	4869	89.10	65
51.10	54408	65.10	1294	79.05	3283	91.00	1070
52.10	2798	66.05	128	80.10	2850	92.10	1100

Average of 12.153 to 12.159 min.: E0529401.D
50 PPM TUNE 16512
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
93.10	6466	105.05	1544	119.10	196	131.05	641
94.05	632	107.10	21032	120.05	273	132.10	358
95.15	188	108.10	3179	121.00	94	132.80	34
96.05	450	110.10	37882	122.00	1207	133.00	51
98.10	5212	111.10	6280	123.10	2128	134.05	819
99.05	4262	112.05	721	124.05	972	135.05	2368
100.05	489	113.05	340	125.10	1048	136.05	958
101.05	2702	114.50	41	127.10	76674	137.05	1278
102.05	98	116.15	892	128.10	6012	137.95	252
103.10	939	117.10	15406	129.10	27080	138.90	51
104.05	1740	118.10	1181	130.10	2491	139.05	148

Average of 12.153 to 12.159 min.: E0529401.D
50 PPM TUNE 16512
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
140.10	267	150.05	331	160.00	876	169.95	271
141.10	3316	151.00	203	161.05	1525	171.00	317
142.05	1019	151.15	368	162.05	516	171.95	605
143.05	855	151.95	190	162.95	141	173.05	917
144.05	185	153.05	904	163.50	33	174.05	1438
145.05	276	154.05	1068	163.95	141	175.10	2857
146.00	414	155.05	2078	165.05	1343	176.10	851
146.30	179	156.10	3095	166.10	1271	177.05	1350
147.10	2109	157.05	686	167.10	7375	178.10	214
148.05	4106	158.05	675	168.10	3720	179.05	4965
148.95	570	159.05	406	169.05	761	180.10	3340

Average of 12.153 to 12.159 min.: E0529401.D
50 PPM TUNE 16512
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
181.05	1619	191.05	652	201.90	157	212.10	92
182.05	283	192.00	1803	203.05	993	213.05	151
182.80	31	193.10	2063	204.10	5318	214.00	105
183.05	74	194.05	582	205.10	9205	215.05	364
184.05	359	194.95	283	206.10	36648	216.15	1064
185.10	2851	196.10	3904	207.05	4835	217.00	9019
186.10	19853	198.00	146154	208.05	1286	218.05	1350
187.10	5864	199.05	10217	208.95	383	218.90	186
188.05	678	200.05	749	210.10	450	220.00	99
189.05	1197	201.20	187	211.05	1358	221.10	4455
190.00	196	201.55	410	211.90	197	222.00	796

Average of 12.153 to 12.159 min.: E0529401.D
50 PPM TUNE 16512
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
223.05	1895	234.00	542	243.10	1221	252.05	162
224.10	19509	235.00	654	244.10	14404	253.05	477
225.10	4592	236.00	415	245.05	2100	253.60	133
226.05	640	237.05	574	246.05	2512	255.05	72813
227.10	7018	237.80	46	247.00	562	256.05	11038
228.00	1089	238.05	115	248.05	160	257.05	955
229.05	1583	239.00	274	248.95	585	258.05	3961
230.00	268	239.90	77	250.00	206	259.05	683
231.05	914	240.10	179	250.70	70	259.95	192
231.95	170	241.00	541	251.20	135	260.95	157
233.10	163	242.05	1170	251.80	54	262.20	29

Average of 12.153 to 12.159 min.: E0529401.D
50 PPM TUNE 16512

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
263.00	35	270.85	78	281.00	53	292.05	122
263.90	140	271.10	63	282.00	93	293.00	653
264.10	68	272.00	224	282.95	261	293.85	185
265.05	1516	273.05	2420	284.00	215	296.00	7287
265.80	220	274.05	5761	285.05	442	297.00	1158
267.05	70	275.10	30984	286.10	87	298.00	37
267.70	69	276.05	4229	288.20	26	300.95	139
267.95	96	277.00	2815	288.90	105	301.90	94
268.70	31	277.95	392	290.00	85	302.10	69
269.00	39	278.90	57	290.90	28	303.05	1121
270.05	99	279.10	121	291.80	29	304.00	250

Average of 12.153 to 12.159 min.: E0529401.D
50 PPM TUNE 16512
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
308.00	83	322.00	31	332.95	308	351.10	40
308.90	26	323.10	2831	334.00	1775	352.05	883
309.10	40	324.05	611	335.05	638	353.00	680
310.05	110	326.10	31	335.90	35	354.05	957
313.00	33	326.95	470	338.90	44	354.95	147
313.95	516	327.80	84	339.10	35	358.85	57
315.00	1036	328.00	183	339.90	27	365.00	3397
316.00	646	328.90	40	341.00	417	365.95	696
317.05	91	329.80	34	342.00	111	366.90	50
319.10	26	331.90	61	346.05	735	369.90	57
321.00	302	332.10	192	347.00	127	370.30	35

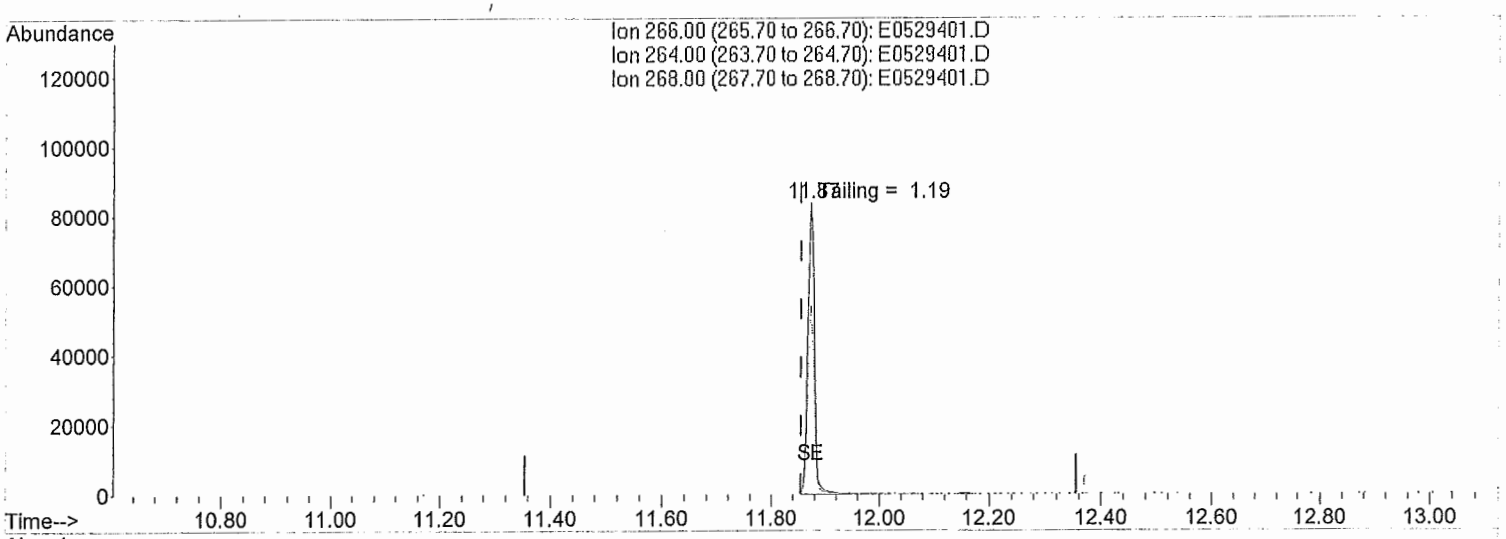
Average of 12.153 to 12.159 min.: E0529401.D
50 PPM TUNE 16512
Modified:subtracted

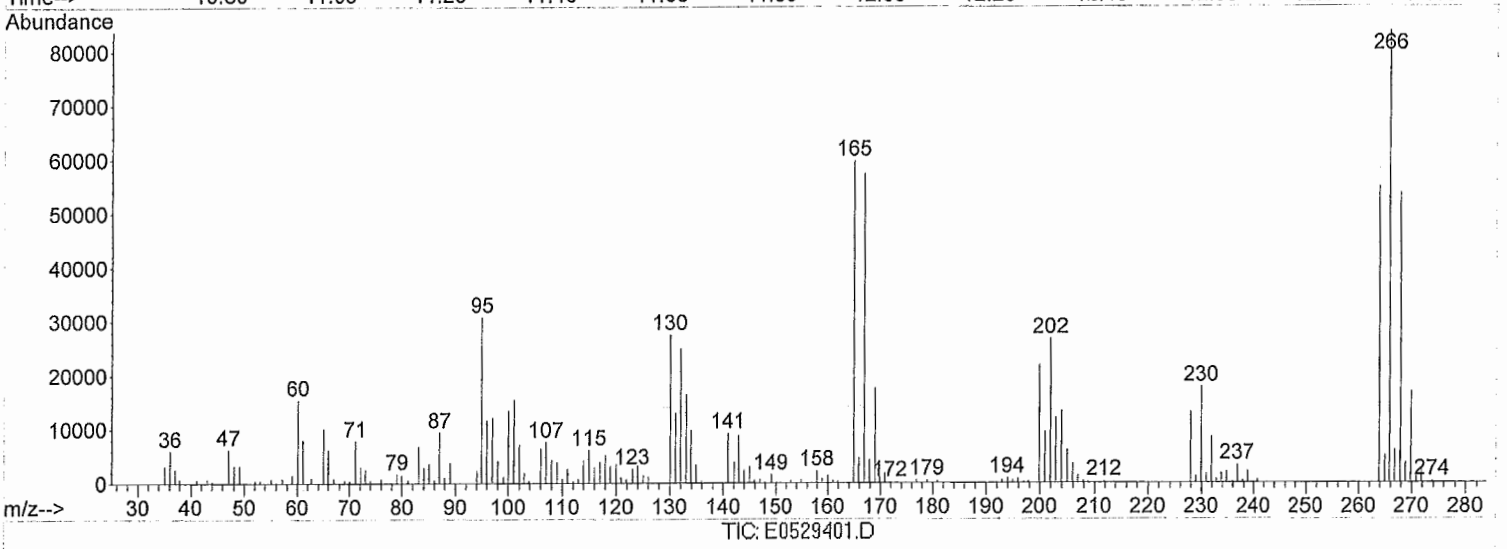
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
371.00	229	392.20	36	426.00	43	436.10	27
372.05	1655	401.05	153	426.50	41	436.80	28
372.95	338	402.00	699	426.70	34	441.10	19719
374.10	36	403.00	945	426.90	28	442.05	102818
376.90	29	404.05	384	427.80	49	443.10	20781
377.10	36	415.00	35	429.20	34	444.00	2120
382.95	359	421.05	796	429.60	34	445.05	97
384.00	54	422.05	865	431.10	27		
390.00	225	423.10	4646	431.40	34		
391.10	169	424.05	1109	433.00	59		
391.90	40	425.00	114	434.20	40		

Quantitation Report (Qedit)

Data Path : C:\MSDCHEM\1\DATA\052914\
Data File : E0529401.D
Acq On : 29 May 2014 9:34
Operator : PEK
Sample : 50 PPM TUNE 16512
Misc : AG-5 8270
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 29 09:52:56 2014
Quant Method : C:\MSDCHEM\1\METHODS\8270TUNPULSE.M
Quant Title : 8270 TUNE METHOD
QLast Update : Wed Apr 16 11:23:29 2014
Response via : Initial Calibration





(1) Pentachlorophenol (TMC)

11.872min (+0.017) 6.85ug/L

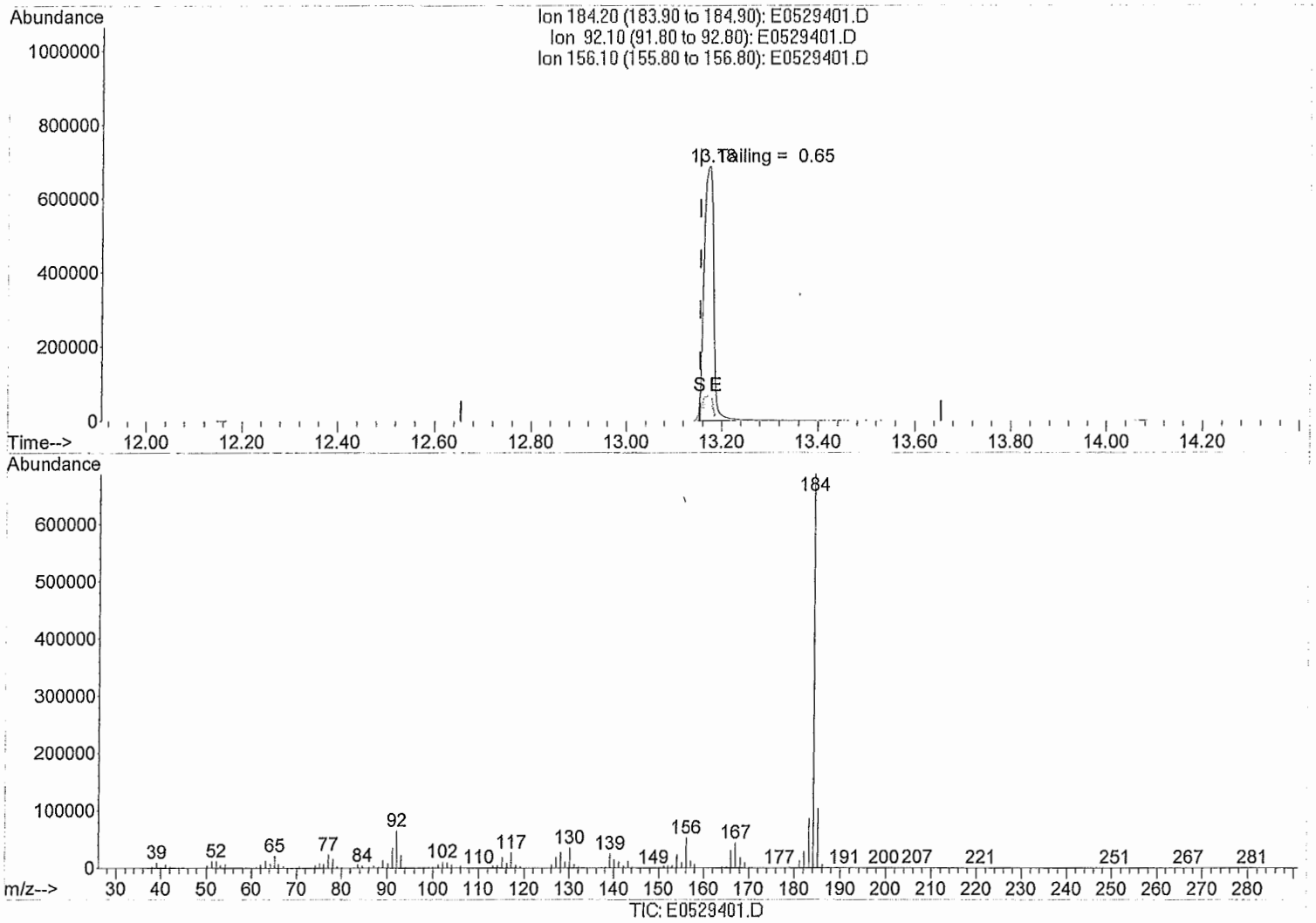
response 73048

Ion	Exp%	Act%
266.00	100	100
264.00	63.80	63.85
268.00	63.80	62.78
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\MSDCHEM\1\DATA\052914\
Data File : E0529401.D
Acq On : 29 May 2014 9:34
Operator : PEK
Sample : 50 PPM TUNE 16512
Misc : AG-5 8270
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 29 09:52:56 2014
Quant Method : C:\MSDCHEM\1\METHODS\8270TUNPULSE.M
Quant Title : 8270 TUNE METHOD
QLast Update : Wed Apr 16 11:23:29 2014
Response via : Initial Calibration



(3) Benzidine (T)

13.175min (+0.020) 18.61ug/L

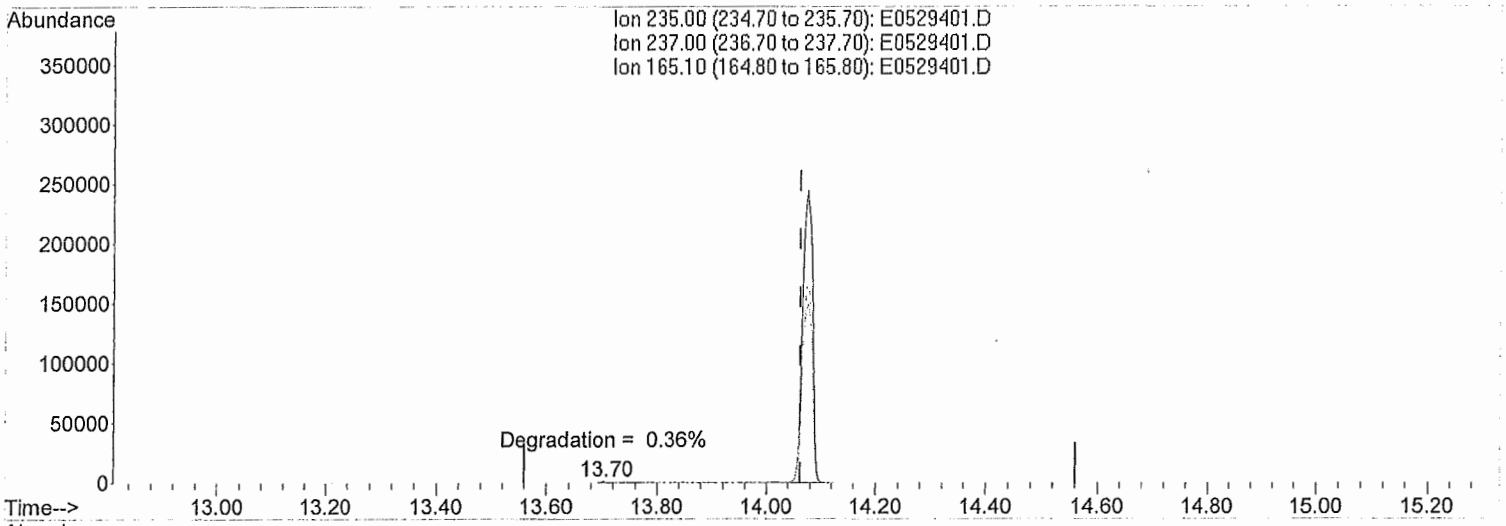
response 959731

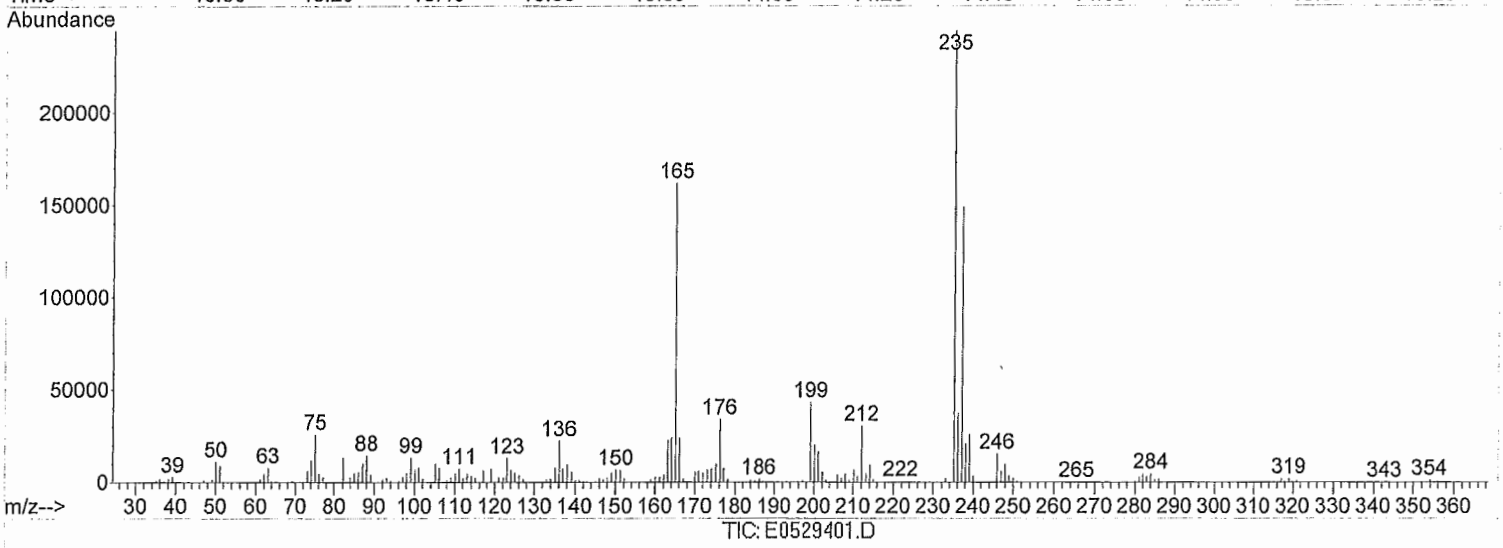
Ion	Exp%	Act%
184.20	100	100
92.10	13.70	10.95#
156.10	8.60	7.65
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\MSDCHEM\1\DATA\052914\
Data File : E0529401.D
Acq On : 29 May 2014 9:34
Operator : PEK
Sample : 50 PPM TUNE 16512
Misc : AG-5 8270
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 29 09:52:56 2014
Quant Method : C:\MSDCHEM\1\METHODS\8270TUNPULSE.M
Quant Title : 8270 TUNE METHOD
QLast Update : Wed Apr 16 11:23:29 2014
Response via : Initial Calibration





(4) DDT

14.075min (+0.014) 12.38ug/L

response 321409

Ion	Exp%	Act%
235.00	100	100
237.00	64.80	63.60
165.10	59.00	71.54#
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052914\
Data File : E0529402.D
Acq On : 29 May 2014 10:01
Operator : PEK
Sample : 30 PPM STD 16520
Misc : AG-5 8270
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 29 10:33:41 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HW.M
Quant Title : 8270 BNA Calibration
QLast Update : Wed May 28 15:23:12 2014
Response via : Initial Calibration

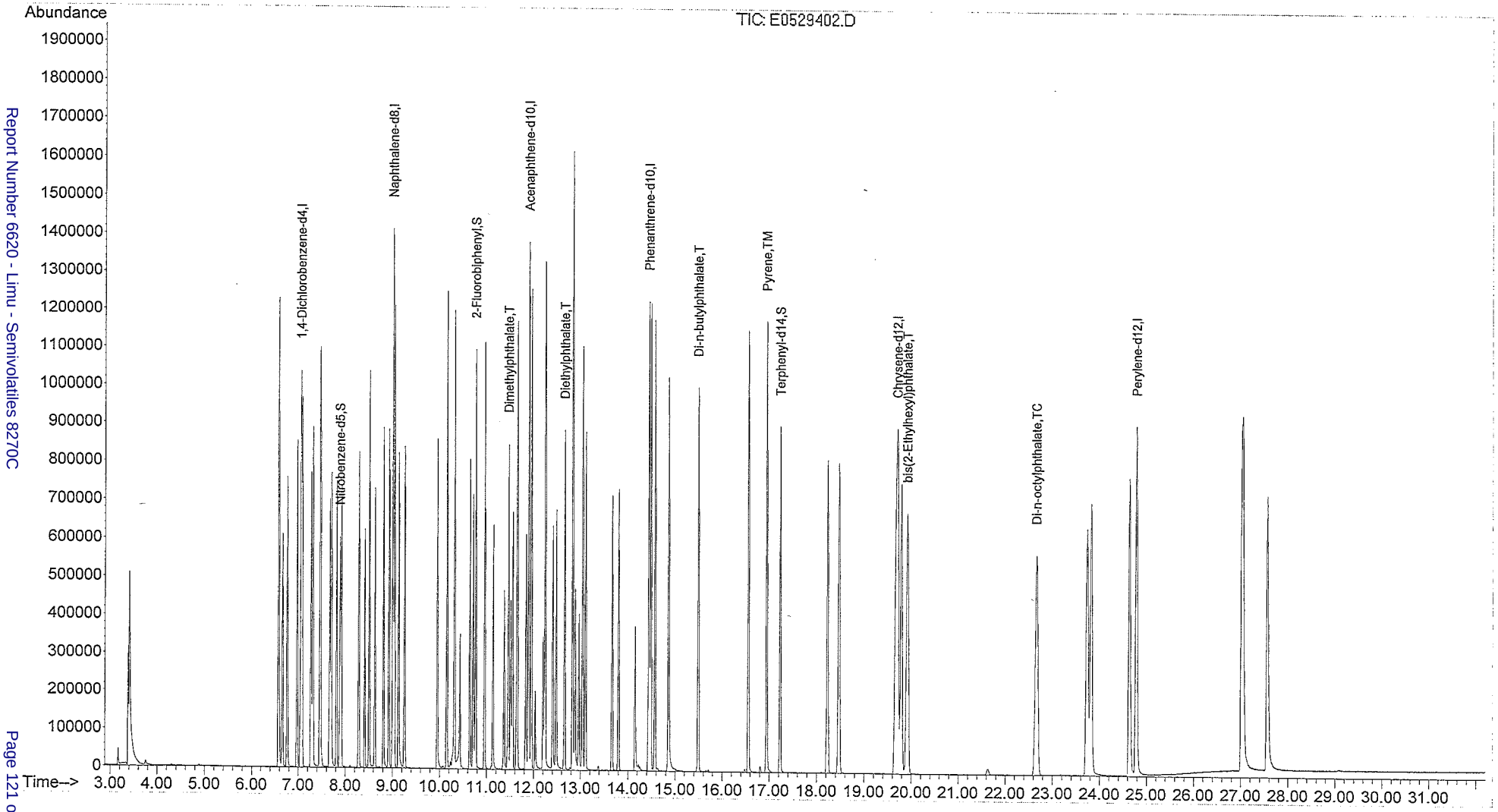
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	7.05	152	2530230	40.00 ug/L	0.00
2) Naphthalene-d8	9.01	136	9946166	40.00 ug/L	0.00
4) Acenaphthene-d10	11.90	164	5128389	40.00 ug/L	0.00
8) Phenanthrene-d10	14.44	188	7882700	40.00 ug/L	0.00
10) Chrysene-d12	19.71	240	8013745	40.00 ug/L	0.00
15) Perylene-d12	24.79	264	9360977	40.00 ug/L	0.02
System Monitoring Compounds					
3) Nitrobenzene-d5	7.88	82	2754064	29.61 ug/L	0.00
Spiked Amount 50.000			Recovery	= 59.22%	
5) 2-Fluorobiphenyl	10.77	172	5178171	28.92 ug/L	0.00
Spiked Amount 50.000			Recovery	= 57.84%	
12) Terphenyl-d14	17.23	244	4960157	28.82 ug/L	0.00
Spiked Amount 50.000			Recovery	= 57.64%	
Target Compounds					Qvalue
6) Dimethylphthalate	11.47	163	5763871	28.77 ug/L	99
7) Diethylphthalate	12.66	149	5578121	28.32 ug/L	99
9) Di-n-butylphthalate	15.49	149	9353630	28.93 ug/L	94
11) Pyrene	16.95	202	8538500	29.18 ug/L	82
13) bis(2-Ethylhexyl)phthalate	19.92	149	6953687	30.06 ug/L	97
14) Di-n-octylphthalate	22.66	149	12717663	30.50 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052914\
Data File : E0529402.D
Acq On : 29 May 2014 10:01
Operator : PEK
Sample : 30 PPM STD 16520
Misc : AG-5 8270
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 29 10:33:41 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HW.M
Quant Title : 8270 BNA Calibration
QLast Update : Wed May 28 15:23:12 2014
Response via : Initial Calibration



Continuing Calibration Report AG5

Method Path : C:\MSDCHEM\1\CALFILES\8270CALS\
Method File : E8270323HW.M
Title : 8270 BNA Calibration
Last Update : Thu May 29 10:34:08 2014
Response Via : Initial Calibration

CC Data File: E0529402.D

Min. RRF : 0.000 Min. Rel. Area : 50%
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	109
2	I	Naphthalene-d8	1.000	1.000	0.0	108
3	S	Nitrobenzene-d5	0.374	0.369	1.3	108
4	I	Acenaphthene-d10	1.000	1.000	0.0	106
5	S	2-Fluorobiphenyl	1.397	1.346	3.6	106
6	T	Dimethylphthalate	1.563	1.499	4.1	106
7	T	Diethylphthalate	1.536	1.450	5.6	104
8	I	Phenanthrene-d10	1.000	1.000	0.0	104
9	T	Di-n-butylphthalate	1.640	1.582	3.6	104
10	I	Chrysene-d12	1.000	1.000	0.0	103
11	TM	Pyrene	1.460	1.421	2.7	104
12	S	Terphenyl-d14	0.859	0.825	3.9	102
13	T	bis(2-Ethylhexyl)phthalate	1.155	1.157	-0.2	102
14	TC	Di-n-octylphthalate	2.082	2.116	-1.7#	102
15	I	Perylene-d12	1.000	1.000	0.0	103

(#) = Out of Range SPCC's out = 0 CCC's out = 1

Instrument Logs/
Analysis Notebook Pages

Rev. 1.1

PROJECT 5/29/2014 8270/Tissues

Notebook No. 3323 55

Continued from Page

Injection Log

Directory: C:\MSDCHEM\1\DATA\052914

Line	Vial	FileName	Multiplier	SampleName	Misc Info
1	1	E0529401.d	1.	50 PPM TUNE 16512 Pass	AG-5 8270
2	2	E0529402.d	1.	30 PPM STD 16520 Pass	AG-5 8270
3	3	E0529403.d	1.	006621-03B1	B10215 AG-5 8270 ...
4	4	E0529404.d	1.	006621-03K1	B10215 AG-5 8270 ...
5	5	E0529405.d	1.	006620-04	B10211 AG-5 8270 ...
6	6	E0529406.d	1.	006620-05	B10211 AG-5 8270 ...
7	7	E0529407.d	1.	006621-01	B10215 AG-5 8270 ...
8	8	E0529408.d	1.	006621-02	B10215 AG-5 8270 ...
9	9	E0529409.d	1.	006621-03	B10215 AG-5 8270 ...
10	10	E0529410.d	1.	006621-03MS	B10215 AG-5 8270 ...
11	11	E0529411.d	1.	006621-03MD	B10215 AG-5 8270 ...
12	12	E0529412.d	1.	006621-04	B10215 AG-5 8270 ...
13	13	E0529413.d	1.	006621-05	B10215 AG-5 8270 ...
14	14	E0529414.d	1.	006621-06	B10215 AG-5 8270 ...
15	15	E0529415.d	1.	006621-07	B10215 AG-5 8270 ...
16	16	E0529416.d	1.	006621-08 Pass	B10215 AG-5 8270 ...

PEK 5/30/2014

Continued on Page

Read and Understood By

PEK — Signed — 5/30/2014 — Date

Signed — 5/30/14 — 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

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

Lab Report No: 006620 Report Date: 05/30/2014

Project Name: MAKAU MILITARY RESER Analysis: BNA'S (METHOD 8270)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3550A

Field ID:	MAK135L	ARDL Lab No.:	006620-04
Desc/Location:	MAKAU MILITARY RESERVATION	Lab Filename:	E0529405
Sample Date:	03/28/2014	Received Date:	04/29/2014
Sample Time:	1000	Prep. Date:	05/23/2014
Matrix:	TISSUE	Analysis Date:	05/29/2014
Amount Used:	5 g	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B10211
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Dimethylphthalate	200	1000	ND		UG/KG	1
Diethylphthalate	200	1000	ND		UG/KG	1
Di-n-butylphthalate	200	1000	ND		UG/KG	1
Pyrene	200	1000	ND		UG/KG	1
bis(2-Ethylhexyl)phthalate	200	1000	ND		UG/KG	1
Di-n-octylphthalate	200	1000	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Nitrobenzene-d5	30-130	65%
2-Fluorobiphenyl	30-130	57%
Terphenyl-d14	30-130	82%

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

Sample 006620-04, BNA'S (METHOD 8270) Page 1 of 1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052914\
Data File : E0529405.D
Acq On : 29 May 2014 12:05
Operator : PEK
Sample : 006620-04
Misc : B10211 AG-5 8270 SOIL
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 30 08:32:55 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HT.M
Quant Title : 8270 BNA Calibration
QLast Update : Fri May 30 08:27:54 2014
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	7.05	152	2421526	8000.00	ug/L	0.00
2) Naphthalene-d8	9.00	136	9272374	8000.00	ug/L	0.00
4) Acenaphthene-d10	11.89	164	4796721	8000.00	ug/L	0.00
8) Phenanthrene-d10	14.44	188	7655969	8000.00	ug/L	0.00
10) Chrysene-d12	19.70	240	8856671	8000.00	ug/L	-0.02
15) Perylene-d12	24.77	264	6215683	8000.00	ug/L	-0.02
System Monitoring Compounds						
3) Nitrobenzene-d5	7.88	82	1409359	3250.67	ug/L	0.00
Spiked Amount 5000.000			Recovery =	65.01%		
5) 2-Fluorobiphenyl	10.76	172	2403251	2869.59	ug/L	0.00
Spiked Amount 5000.000			Recovery =	57.39%		
12) Terphenyl-d14	17.23	244	3921959	4124.30	ug/L	0.00
Spiked Amount 5000.000			Recovery =	82.49%		

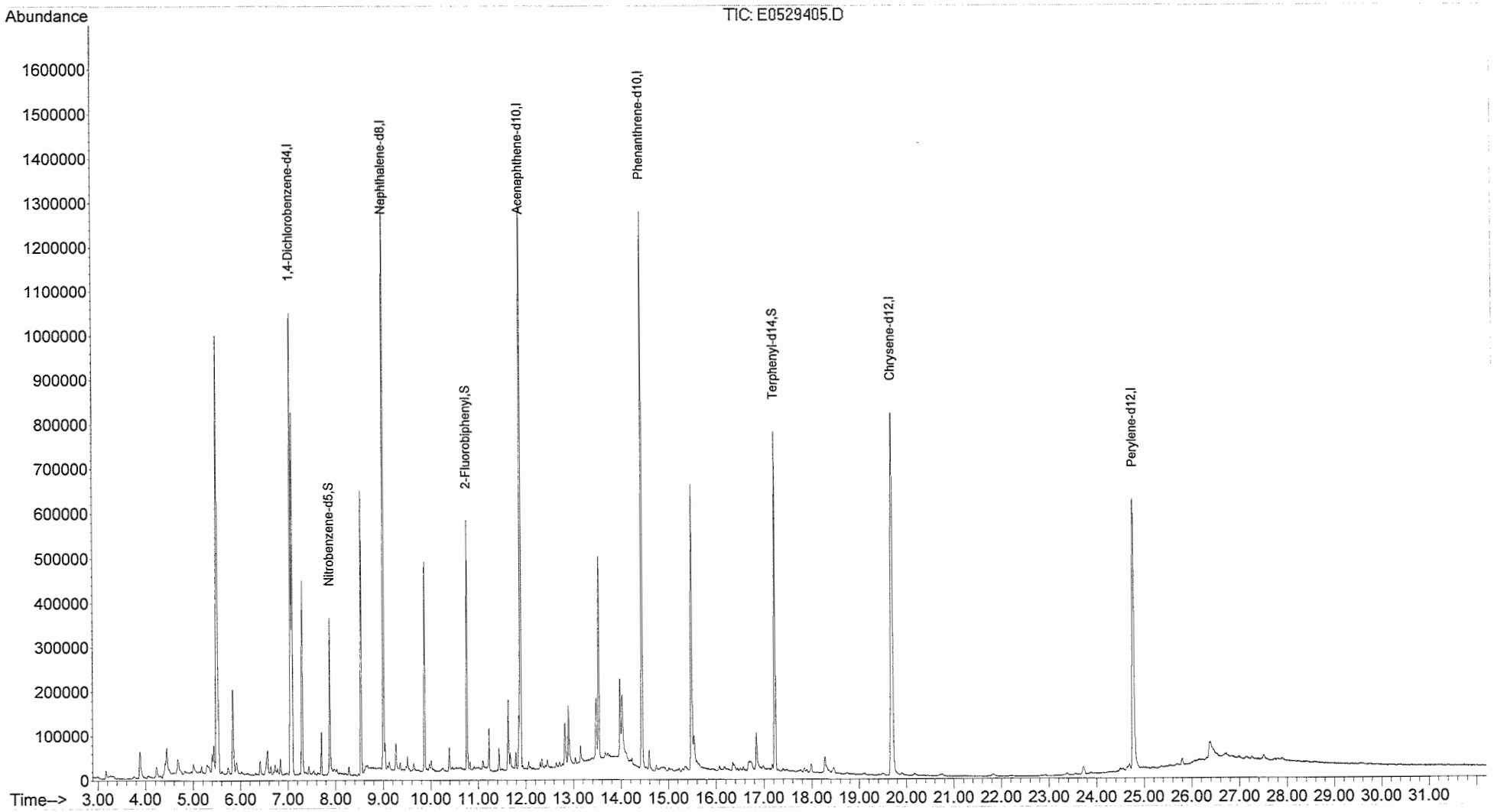
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052914\
Data File : E0529405.D
Acq On : 29 May 2014 12:05
Operator : PEK
Sample : 006620-04
Misc : B10211 AG-5 8270 SOIL
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 30 08:32:55 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HT.M
Quant Title : 8270 BNA Calibration
QLast Update : Fri May 30 08:27:54 2014
Response via : Initial Calibration



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

Lab Report No: 006620 Report Date: 05/30/2014

Project Name: MAKAU MILITARY RESER Analysis: BNA'S (METHOD 8270)
Project No.: Analytical Method: 8270C
NELAC Certified - IL100308 Prep Method: 3550A

Field ID:	MAK138L	ARDL Lab No.:	006620-05
Desc/Location:	MAKAU MILITARY RESERVATION	Lab Filename:	E0529406
Sample Date:	03/28/2014	Received Date:	04/29/2014
Sample Time:	1132	Prep. Date:	05/23/2014
Matrix:	TISSUE	Analysis Date:	05/29/2014
Amount Used:	5 g	Instrument ID:	AG5
Final Volume:	1 mL	QC Batch:	B10211
% Moisture:	No Moisture Present	Level:	LOW

Parameter	Method Limit	Reporting Limit	Result	Data Flag	Units	Dilution Factor
Dimethylphthalate	200	1000	ND		UG/KG	1
Diethylphthalate	200	1000	ND		UG/KG	1
Di-n-butylphthalate	200	1000	ND		UG/KG	1
Pyrene	200	1000	ND		UG/KG	1
bis(2-Ethylhexyl)phthalate	200	1000	ND		UG/KG	1
Di-n-octylphthalate	200	1000	ND		UG/KG	1

SURROGATE RECOVERIES:	Limits	Results
Nitrobenzene-d5	30-130	57%
2-Fluorobiphenyl	30-130	65%
Terphenyl-d14	30-130	84%

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

Sample 006620-05, BNA'S (METHOD 8270) Page 1 of 1

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052914\
Data File : E0529406.D
Acq On : 29 May 2014 12:46
Operator : PEK
Sample : 006620-05
Misc : B10211 AG-5 8270 SOIL
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 30 08:33:04 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HT.M
Quant Title : 8270 BNA Calibration
QLast Update : Fri May 30 08:27:54 2014
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	7.05	152	2533389	8000.00	ug/L	0.00
2) Naphthalene-d8	9.00	136	9585842	8000.00	ug/L	0.00
4) Acenaphthene-d10	11.89	164	4910308	8000.00	ug/L	0.00
8) Phenanthrene-d10	14.44	188	7730386	8000.00	ug/L	0.00
10) Chrysene-d12	19.70	240	8725913	8000.00	ug/L	-0.02
15) Perylene-d12	24.78	264	6359430	8000.00	ug/L	-0.01
System Monitoring Compounds						
3) Nitrobenzene-d5	7.88	82	1281623	2859.38	ug/L	0.00
Spiked Amount 5000.000			Recovery =	57.19%		
5) 2-Fluorobiphenyl	10.76	172	2792938	3257.75	ug/L	0.00
Spiked Amount 5000.000			Recovery =	65.16%		
12) Terphenyl-d14	17.23	244	3942591	4208.12	ug/L	0.00
Spiked Amount 5000.000			Recovery =	84.16%		

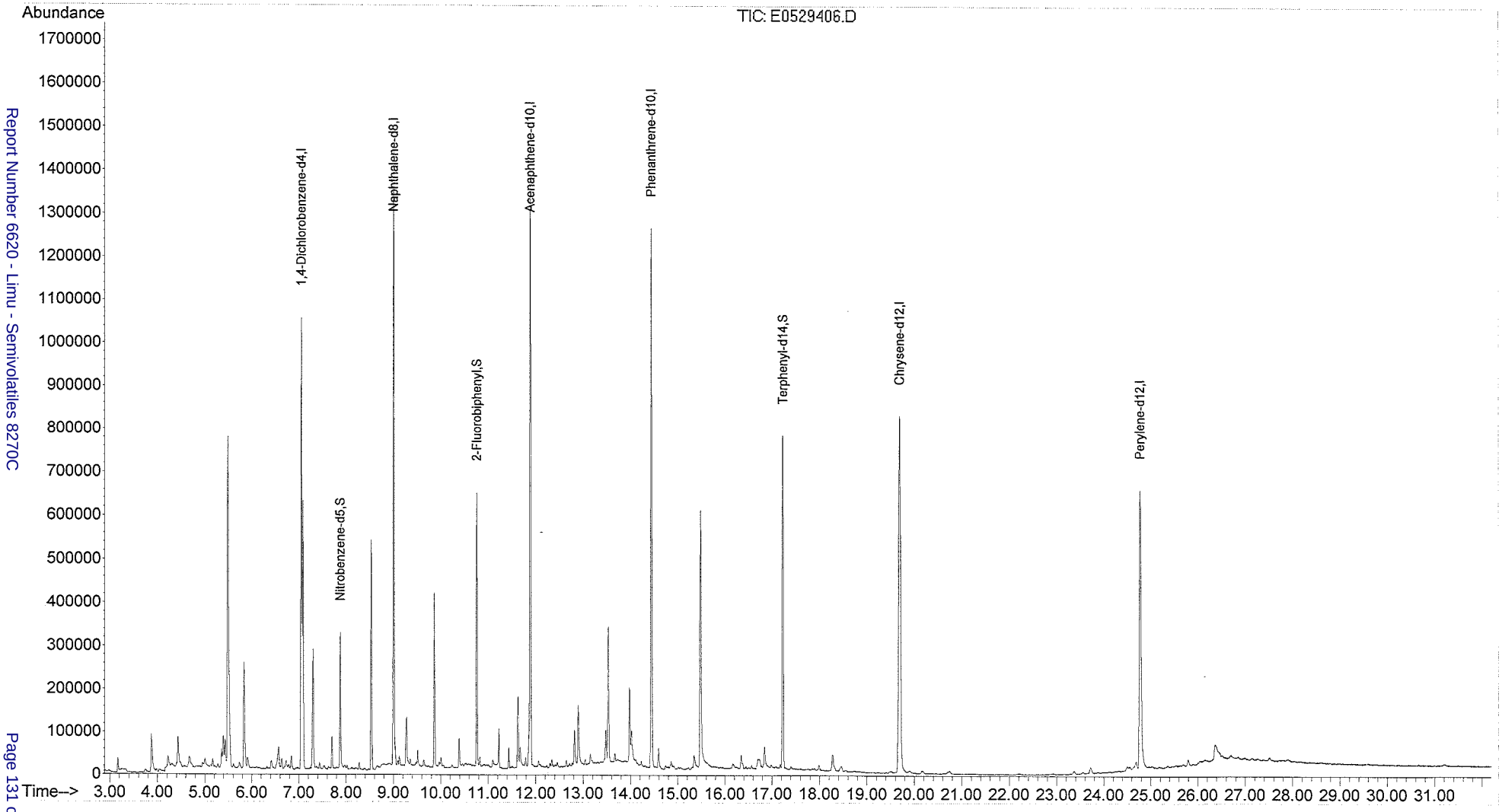
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\MSDCHEM\1\DATA\052914\
Data File : E0529406.D
Acq On : 29 May 2014 12:46
Operator : PEK
Sample : 006620-05
Misc : B10211 AG-5 8270 SOIL
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 30 08:33:04 2014
Quant Method : C:\MSDCHEM\1\CALFILES\8270CALS\E8270323HT.M
Quant Title : 8270 BNA Calibration
QLast Update : Fri May 30 08:27:54 2014
Response via : Initial Calibration



Example Calculation

Rev. 1.1

EXAMPLE CALCULATIONS
(BNA – General Use)

Response Factor Calculations

The data system tabulates the area response of the characteristic ions against the concentration for each compound and each internal standard. Response factors (RF) are calculated for each compound relative to the internal standard assignments. The RF is calculated as follows:

$$RF = (A_x C_{is}) / (A_{is} C_x)$$

Where:

A_x = Area of the characteristic ion for the compound being measured

A_{is} = Area of the characteristic ion for the specific internal standard.

C_{is} = Concentration of the specific internal standard.

C_x = Concentration of the compound being measured.

The RF is calculated for each standard concentration level in the initial calibration curve. The average RF is then calculated off these points.

Sample Calculations

Sample calculations are made by the instrument software and are performed as follows:

Water:

$$\text{Concentration (ug/L)} = \frac{(A_x)(Is)(V_t)}{(A_{is})(RF)(V_i)(V_o)}$$

Soil: (Low and Medium Level)

$$\text{Concentration (ug/Kg)} = \frac{(A_x)(Is)(V_t)}{(A_{is})(RF)(V_i)(W_s)}$$

Where:

A_x = Area of characteristic ion for the compound being measured.

Is = Amount of internal standard injected (ng).

A_{is} = Area of characteristic ion for the internal standard.

RF = Average response factor for the compound being measured.

V_i = Volume of extract injected (uL).

V_t = Volume of total extract (uL).

V_o = Volume of water extracted (mL).

W_s = Weight of sample extracted (g).

Example Sample Calculation

Sample No.: 006620-01MS Compound: Dimethylphthalate Matrix: Tissue

$$\text{Concentration (ug/Kg)} = \frac{(3890171)*(40ng)*(1000uL)}{(5040660)*(1.563)*(1uL)*(5g)} = 3950$$

Example Calculations Performed By: PEK Date: 6/3/2014

Miscellaneous Additional Data
(If applicable)

☑ **None** BNS 6/05/14

Rev. 1.1