Mountain States ACCUTEST LABORATORIES

12/13/11

Technical Report for

KRW Consulting, Inc.

XOM FRU 297-32A

1108-12A

Accutest Job Number: D29744

Sampling Date: 11/22/11

Report to:

KRW Consulting, Inc.
8000 West 14th Avenue Suite 200
Lakewood, CO 80214
cburger@krwconsulting.com; gknell@krwconsulting.com;
dknudson@krwconsulting.com; jhess@krwconsulting.com;
ATTN: Dwayne Knudson

Total number of pages in report: **161**

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Brad Madadian
Laboratory Director

Client Service contact: 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW) UT (NELAP CO00049)

Test results relate only to samples analyzed.

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Sample Summary

KRW Consulting, Inc.

Job No: D29744

XOM FRU 297-32A
Project No: 1108-12A

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D29744-1	11/22/11	11:45	CB	11/23/11	SO	Soil	CUT-1_CONTENTS_INITIAL
D29744-1A	11/22/11	11:45	CB	11/23/11	SO	Soil	CUT-1_CONTENTS_INITIAL

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	KRW Consulting, Inc.	**Job No**	D29744
Site:	XOM FRU 297-32A	**Report Dat**	12/13/2011 1:05:02 PM

On 11/23/2011, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D29744 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix SO **Batch ID:** V5V1103

- All samples were analyzed within the recommended method holding time.
- Sample(s) D29701-1MS, D29701-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO **Batch ID:** OP4914

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) D29745-1MS, D29745-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- The matrix spike (MS) recovery(s) of Anthracene, Fluorene, Naphthalene are outside control limits. Outside control limits due to high level in sample relative to spike amount.
- The matrix spike duplicate (MSD) recovery(s) of Naphthalene are outside control limits. Probable cause due to matrix interference.
- The RPD(s) for the MS and MSD recoveries of Anthracene are outside control limits for sample OP4914-MSD. Probable cause due to sample homogeneity.
- D29744-1: Confirmation run.

Volatiles by GC By Method SW846 8015B

Matrix SO **Batch ID:** GGB797

- All samples were analyzed within the recommended method holding time.
- Sample(s) D29732-2BMS, D29732-2BMSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GC By Method SW846-8015B

Matrix SO **Batch ID:** OP4917

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) D29747-1MS, D29747-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Metals By Method SW846 6010B

Matrix	AQ	Batch ID:	MP6360

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D29759-1AMS, D29759-1AMSD were used as the QC samples for the metals analysis.

Matrix	SO	Batch ID:	MP6350

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D29744-1MS, D29744-1MSD, D29744-1SDL were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Lead are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- The matrix spike (MS) recovery(s) of Barium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- The RPD(s) for the MS and MSD recoveries of Barium, Lead are outside control limits for sample MP6350-S2. High RPD due to possible sample matrix or nonhomogeneity.
- The serial dilution RPD(s) for Cadmium are outside control limits for sample MP6350-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- D29744-1 for Selenium: Elevated detection limit due to dilution required for possible matrix interference.
- The serial dilution RPD(s) for Barium, Chromium, Lead, Nickel, Zinc are outside control limits for sample MP6350-SD1. Serial dilution indicates possible matrix interference.

Metals By Method SW846 6020

Matrix	SO	Batch ID:	MP6351

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D29744-1MS, D29744-1MSD, D29744-1SDL were used as the QC samples for the metals analysis.

Metals By Method SW846 7471A

Matrix	SO	Batch ID:	MP6348

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D29744-1MSD, D29744-1MS were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Mercury are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- The RPD(s) for the MS and MSD recoveries of Mercury are outside control limits for sample MP6348-S2. High RPD due to possible sample matrix or nonhomogeneity.

Wet Chemistry By Method ASTM D1498-76M

Matrix	SO	Batch ID:	GN12695

- Sample(s) D29644-1RDUP were used as the QC samples for the Redox Potential Vs H2 analysis.

Wet Chemistry By Method SM19 2540B M

Matrix	SO	Batch ID:	GN12658

- The data for SM19 2540B M meets quality control requirements.

Wet Chemistry By Method SW846 3060/7196A M

Matrix	SO	Batch ID:	R10906

- The data for SW846 3060/7196A M meets quality control requirements.
- D29744-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Wet Chemistry By Method SW846 3060A/7196A

Matrix	SO	Batch ID:	M:GP13862

- The data for SW846 3060A/7196A meets quality control requirements.
- D29744-1 for Chromium, Hexavalent: Analysis performed at Accutest Laboratories, Marlborough, MA.

Wet Chemistry By Method SW846 9045C

Matrix	SO	Batch ID:	GN12693

- The following sample was run outside of holding time for method SW846 9045C: D29744-1.

Wet Chemistry By Method USDA HANDBOOK 60

Matrix	SO	Batch ID:	MP6360

- D29744-1A for Sodium Adsorption Ratio: Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+(Mg meq/L)/2]

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Accutest Mountain States	**Job No**	D29744
Site:	KRWCCOL: XOM FRU 297-32A	**Report Date**	11/30/2011 5:41:11 PM

1 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were collected on 11/22/2011 and were received at Accutest on 11/23/2011 properly preserved, at 5.8 Deg. C and intact. These Samples received an Accutest job number of D29744. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Wet Chemistry By Method SW846 3060A/7196A

Matrix SO **Batch ID:** GP13862

- All samples were distilled within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D29745-1MS, D29745-1DUP were used as the QC samples for Chromium, Hexavalent.
- RPD(s) for Duplicate for Chromium, Hexavalent are outside control limits for sample GP13862-D1. RPD acceptable due to low duplicate and sample concentrations.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety.The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(D29744).

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Client Sample ID:	CUT-1_CONTENTS_INITIAL		
Lab Sample ID:	D29744-1	**Date Sampled:**	11/22/11
Matrix:	SO - Soil	**Date Received:**	11/23/11
Method:	SW846 8260B	**Percent Solids:**	72.1
Project:	XOM FRU 297-32A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V18461.D	1	11/23/11	DC	n/a	n/a	V5V1103
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.04 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	306	88	39	ug/kg	
108-88-3	Toluene	720	180	88	ug/kg	
100-41-4	Ethylbenzene	924	180	44	ug/kg	
1330-20-7	Xylene (total)	3860	350	180	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	90%		61-130%
460-00-4	4-Bromofluorobenzene	90%		53-131%
17060-07-0	1,2-Dichloroethane-D4	108%		62-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CUT-1_CONTENTS_INITIAL		
Lab Sample ID:	D29744-1	**Date Sampled:**	11/22/11
Matrix:	SO - Soil	**Date Received:**	11/23/11
Method:	SW846 8270C BY SIM SW846 3546	**Percent Solids:**	72.1
Project:	XOM FRU 297-32A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	3G07160.D	1	12/08/11	DC	11/28/11	OP4914	E3G262
Run #2	3G07226.D	4	12/12/11	DC	11/28/11	OP4914	E3G265

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2	30.1 g	1.0 ml

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND [b]	37	30	ug/kg	
120-12-7	Anthracene	ND [b]	37	33	ug/kg	
56-55-3	Benzo(a)anthracene	ND [b]	92	48	ug/kg	
50-32-8	Benzo(a)pyrene	ND [b]	92	66	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND [b]	92	68	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND [b]	92	41	ug/kg	
218-01-9	Chrysene	ND [b]	92	41	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND [b]	92	68	ug/kg	
206-44-0	Fluoranthene	241 [b]	37	37	ug/kg	
86-73-7	Fluorene	32.8 [b]	37	31	ug/kg	J
193-39-5	Indeno(1,2,3-cd)pyrene	ND [b]	110	100	ug/kg	
91-20-3	Naphthalene	196 [b]	37	35	ug/kg	
129-00-0	Pyrene	ND [b]	37	35	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	10%	10%	10-145%
321-60-8	2-Fluorobiphenyl	26%	23%	10-130%
1718-51-0	Terphenyl-d14	43%	38%	22-130%

(a) Confirmation run.
(b) Result is from Run# 2

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CUT-1_CONTENTS_INITIAL		
Lab Sample ID:	D29744-1	**Date Sampled:**	11/22/11
Matrix:	SO - Soil	**Date Received:**	11/23/11
Method:	SW846 8015B	**Percent Solids:**	72.1
Project:	XOM FRU 297-32A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB14076.D	1	11/28/11	SK	n/a	n/a	GGB797
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.0 g	5.0 ml	50.0 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	135	35	18	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	87%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID: CUT-1_CONTENTS_INITIAL
Lab Sample ID: D29744-1
Matrix: SO - Soil
Method: SW846-8015B SW846 3546
Project: XOM FRU 297-32A

Date Sampled: 11/22/11
Date Received: 11/23/11
Percent Solids: 72.1

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD11863.D	1	12/01/11	TR	11/28/11	OP4917	GFD606
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	1310	18	12	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	67%		61-142%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CUT-1_CONTENTS_INITIAL		
Lab Sample ID:	D29744-1	**Date Sampled:**	11/22/11
Matrix:	SO - Soil	**Date Received:**	11/23/11
		Percent Solids:	72.1
Project:	XOM FRU 297-32A		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	13.8	0.50	mg/kg	5	11/28/11	11/29/11	GJ	SW846 6020 [3]	SW846 3050B [7]
Barium	4780	6.3	mg/kg	5	11/28/11	11/29/11	JB	SW846 6010B [2]	SW846 3050B [6]
Cadmium	< 1.3	1.3	mg/kg	1	11/28/11	11/28/11	JB	SW846 6010B [2]	SW846 3050B [6]
Chromium	19.5	1.3	mg/kg	1	11/28/11	11/28/11	JB	SW846 6010B [2]	SW846 3050B [6]
Copper	32.3	1.3	mg/kg	1	11/28/11	11/29/11	JB	SW846 6010B [4]	SW846 3050B [6]
Lead	16.3	6.3	mg/kg	1	11/28/11	11/28/11	JB	SW846 6010B [2]	SW846 3050B [6]
Mercury	< 0.15	0.15	mg/kg	1	11/28/11	11/28/11	JB	SW846 7471A [1]	SW846 7471A [5]
Nickel	18.1	3.8	mg/kg	1	11/28/11	11/28/11	JB	SW846 6010B [2]	SW846 3050B [6]
Selenium [a]	< 32	32	mg/kg	5	11/28/11	11/29/11	JB	SW846 6010B [2]	SW846 3050B [6]
Silver	< 3.8	3.8	mg/kg	1	11/28/11	11/28/11	JB	SW846 6010B [2]	SW846 3050B [6]
Zinc	56.8	3.8	mg/kg	1	11/28/11	11/28/11	JB	SW846 6010B [2]	SW846 3050B [6]

(1) Instrument QC Batch: MA2002
(2) Instrument QC Batch: MA2005
(3) Instrument QC Batch: MA2006
(4) Instrument QC Batch: MA2009
(5) Prep QC Batch: MP6348
(6) Prep QC Batch: MP6350
(7) Prep QC Batch: MP6351

(a) Elevated detection limit due to dilution required for possible matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CUT-1_CONTENTS_INITIAL		
Lab Sample ID:	D29744-1	**Date Sampled:**	11/22/11
Matrix:	SO - Soil	**Date Received:**	11/23/11
		Percent Solids:	72.1
Project:	XOM FRU 297-32A		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent [a]	< 0.55	0.55	mg/kg	1	11/30/11 16:41	AMA	SW846 3060A/7196A
Chromium, Trivalent [b]	19.1	1.9	mg/kg	1	11/30/11 16:41	AMA	SW846 3060/7196A M
Redox Potential Vs H2	344		mv	1	11/29/11	JD	ASTM D1498-76M
Solids, Percent	72.1		%	1	11/28/11	SWT	SM19 2540B M
Specific Conductivity	1490	1.0	umhos/cm	1	11/29/11	CJ	DEPT.OF AG, BOOK N9
pH	9.13		su	1	11/29/11 15:00	JD	SW846 9045C

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.
(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Client Sample ID: CUT-1_CONTENTS_INITIAL
Lab Sample ID: D29744-1A
Matrix: SO - Soil
Project: XOM FRU 297-32A

Date Sampled: 11/22/11
Date Received: 11/23/11
Percent Solids: 72.1

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	20.4	2.0	mg/l	1	11/29/11	11/29/11	JB	SW846 6010B [1]	EPA 200.7 [2]
Magnesium	4.29	1.0	mg/l	1	11/29/11	11/29/11	JB	SW846 6010B [1]	EPA 200.7 [2]
Sodium	351	2.0	mg/l	1	11/29/11	11/29/11	JB	SW846 6010B [1]	EPA 200.7 [2]

(1) Instrument QC Batch: MA2009
(2) Prep QC Batch: MP6360

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CUT-1_CONTENTS_INITIAL		
Lab Sample ID:	D29744-1A	**Date Sampled:**	11/22/11
Matrix:	SO - Soil	**Date Received:**	11/23/11
		Percent Solids:	72.1
Project:	XOM FRU 297-32A		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	18.4		ratio	1	11/29/11 21:02	JB	USDA HANDBOOK 60

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST LABORATORIES

Accutest Laboratories Mountain States
4036 Youngfield Street Wheat Ridge, Co 80033
TEL. 303-425-6021 877-737-4521
FAX 303-425-6021

FED-EX Tracking # | Bottle Order Control #

Accutest Quote # | Accutest Job # D29744

Client / Reporting Information

Company Name: KRW Consulting Inc
Street Address: 8000 W. 14th Ave. Ste. 200
City: Lakewood State: Co Zip: 80214
Project Contact: Dwayne Knudson E-mail:
Phone #: 970 675 4066 Fax #:
Sampler(s) Name(s): C. Burger 303.239.9011 Phone #:

Project Information

Project Name: XOM-FRU-297-32A
Street:
City:
Project#: 1108-12A
Client PO#:
Project Manager: Joe Hess

Billing Information (If different from Report to)

Company Name:
Street Address:
City State Zip:
Attention: PO#:

Requested Analysis (see TEST CODE sheet)

Table 910

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB- Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Bisulfate	Table 910	LAB USE ONLY
	Cut-T_contents_initial		11/22/11	11:45	CB	SO	5					X					X	01
																		(MP) 11/23/11

Data Deliverable Information

- Commercial "A" (Level 1)
- Commercial "B" (Level 2)
- Commercial "B" +Narrative
- FULLT1 (Level 3+4)
- State Forms
- EDD Format
- PDF

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary

Turnaround Time (Business days)

Approved By (Accutest PM): / Date:

- Std. 10 Business Days
- Std. 5 Business Days (By Contract only)
- 5 Day RUSH
- 3 Day EMERGENCY
- 2 Day EMERGENCY
- 1 Day EMERGENCY

Emergency & Rush T/A data available VIA Lablink

Comments / Special Instructions

Please email results to KRW Piceance Creek XOM Team

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		11/22/11 16:00	Rifle Service Center	2		2 Jacob Porter 11/23/11 1430
3			3	4		4
5			5			

Custody Seal # HD160 Intact / Not Intact | Preserved where applicable | On Ice | Cooler Temp. 4.0

D29744: Chain of Custody
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Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D29744 **Client:** KRW **Immediate Client Services Action Required:** No

Date / Time Received: 11/23/2011 2:30:00 PM **No. Coolers:** 1 **Client Service Action Required at Login:** No

Project: XOM **Airbill #'s:** CO

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	Infared gun		
3. Cooler media:	Ice (bag)		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☐	
2. Trip Blank listed on COC:	☐		☐	
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume rec'd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Accutest Laboratories
V:(303) 425-6021

4036 Youngfield Street
F: (303) 425-6854

Wheat Ridge, CO
www/accutest.com

D29744: Chain of Custody
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Mountain States ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D29744
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1103-MB	5V18443.D	1	11/23/11	DC	n/a	n/a	V5V1103

The QC reported here applies to the following samples: **Method:** SW846 8260B

D29744-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	50	22	ug/kg	
100-41-4	Ethylbenzene	ND	100	25	ug/kg	
108-88-3	Toluene	ND	100	50	ug/kg	
1330-20-7	Xylene (total)	ND	200	100	ug/kg	

CAS No.	Surrogate Recoveries		Limits
2037-26-5	Toluene-D8	94%	61-130%
460-00-4	4-Bromofluorobenzene	84%	53-131%
17060-07-0	1,2-Dichloroethane-D4	102%	62-130%

Blank Spike Summary

Job Number: D29744
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1103-BS	5V18444.D	1	11/23/11	DC	n/a	n/a	V5V1103

The QC reported here applies to the following samples: **Method:** SW846 8260B

D29744-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	53.7	107	70-130
100-41-4	Ethylbenzene	50	47.7	95	70-130
108-88-3	Toluene	50	44.1	88	70-130
1330-20-7	Xylene (total)	150	152	101	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	87%	61-130%
460-00-4	4-Bromofluorobenzene	109%	53-131%
17060-07-0	1,2-Dichloroethane-D4	111%	62-130%

Blank Spike Summary

Job Number: D29744
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1103-BS	5V18445.D	1	11/23/11	DC	n/a	n/a	V5V1103

The QC reported here applies to the following samples: **Method:** SW846 8260B

D29744-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	94%	61-130%
460-00-4	4-Bromofluorobenzene	93%	53-131%
17060-07-0	1,2-Dichloroethane-D4	113%	62-130%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D29744
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D29701-1MS	5V18447.D	1	11/23/11	DC	n/a	n/a	V5V1103
D29701-1MSD	5V18448.D	1	11/23/11	DC	n/a	n/a	V5V1103
D29701-1	5V18446.D	1	11/23/11	DC	n/a	n/a	V5V1103

The QC reported here applies to the following samples: **Method:** SW846 8260B

D29744-1

CAS No.	Compound	D29701-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		3380	3550	105	3950	117	11	70-134/30
100-41-4	Ethylbenzene	ND		3380	3150	93	3590	106	13	70-137/30
108-88-3	Toluene	ND		3380	2900	86	3270	97	12	70-130/30
1330-20-7	Xylene (total)	ND		10100	10100	100	11400	113	12	61-131/30

CAS No.	Surrogate Recoveries	MS	MSD	D29701-1	Limits
2037-26-5	Toluene-D8	92%	94%	91%	61-130%
460-00-4	4-Bromofluorobenzene	114%	121%	92%	53-131%
17060-07-0	1,2-Dichloroethane-D4	114%	116%	109%	62-130%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D29744
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D29701-1MS	5V18449.D	1	11/23/11	DC	n/a	n/a	V5V1103
D29701-1MSD	5V18450.D	1	11/23/11	DC	n/a	n/a	V5V1103
D29701-1	5V18446.D	1	11/23/11	DC	n/a	n/a	V5V1103

The QC reported here applies to the following samples: **Method:** SW846 8260B

D29744-1

CAS No.	Compound	D29701-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD

CAS No.	Surrogate Recoveries	MS	MSD	D29701-1	Limits
2037-26-5	Toluene-D8	85%	88%	91%	61-130%
460-00-4	4-Bromofluorobenzene	95%	100%	92%	53-131%
17060-07-0	1,2-Dichloroethane-D4	104%	113%	109%	62-130%

Mountain States ACCUTEST LABORATORIES

GC/MS Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5112311.S\
Data File : 5V18461.D
Acq On : 23 Nov 2011 8:20 pm
Operator : DONC
Sample : D29744-1, 50x
Misc : MS2992,V5V1103,5.035,,100,5,1
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Nov 28 14:26:16 2011
Quant Method : C:\msdchem\1\METHODS\V5AP1092TVH1092.M
Quant Title : 8260
QLast Update : Tue Nov 01 10:41:21 2011
Response via : Initial Calibration

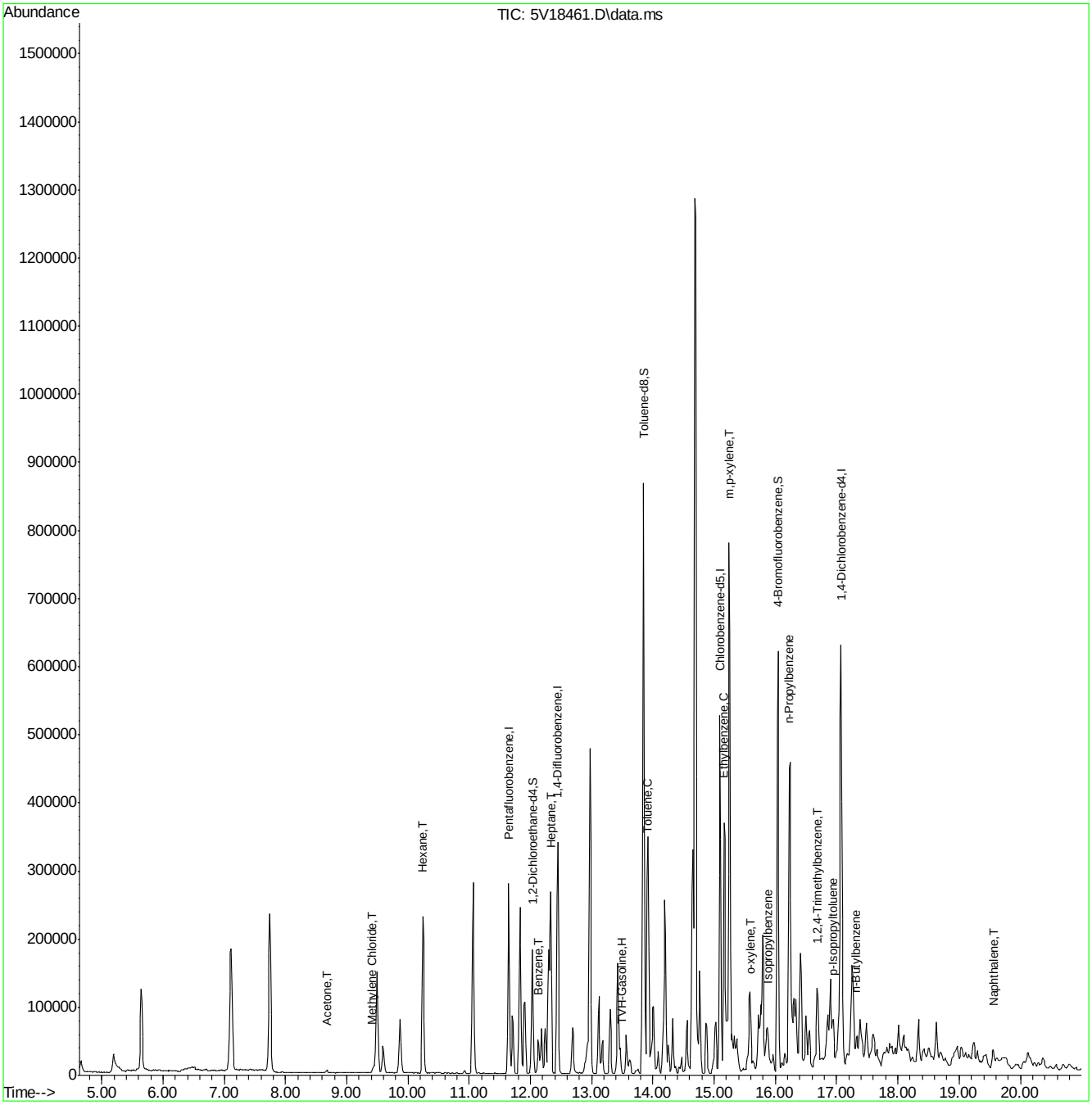
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	195635	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.446	114	267703	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.095	117	256248	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.070	152	184131	50.00	ug/l	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	12.035	102	25146	54.08	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 108.16%			
61) Toluene-d8	13.851	98	512184	44.97	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 89.94%			
69) 4-Bromofluorobenzene	16.043	95	180469	44.93	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 89.86%			
Target Compounds						Qvalue
1) TVH-Gasoline	13.491	TIC	16740377m	944.17	ug/l	
15) Acetone	8.679	58	1357	4.34	ug/l #	68
17) Methylene Chloride	9.421	84	1272	0.48	ug/l #	72
41) Hexane	10.243	57	107750	29.22	ug/l	100
43) Heptane	12.332	43	104944	24.55	ug/l	96
50) Benzene	12.127	78	35823	3.47	ug/l	100
62) Toluene	13.908	92	62129	8.16	ug/l	100
66) Ethylbenzene	15.164	91	146804	10.47	ug/l	99
68) Isopropylbenzene	15.872	105	6265	0.55	ug/l	99
72) m,p-xylene	15.244	106	220384	41.36	ug/l	99
73) o-xylene	15.598	106	11866	2.35	ug/l	99
77) n-Propylbenzene	16.225	91	36177	1.92	ug/l	95
82) 1,2,4-Trimethylbenzene	16.682	105	48590	3.59	ug/l	91
86) p-Isopropyltoluene	16.945	119	32329	2.21	ug/l	97
88) n-Butylbenzene	17.322	91	19646	1.42	ug/l #	74
91) Naphthalene	19.559	128	14263	2.42	ug/l	100

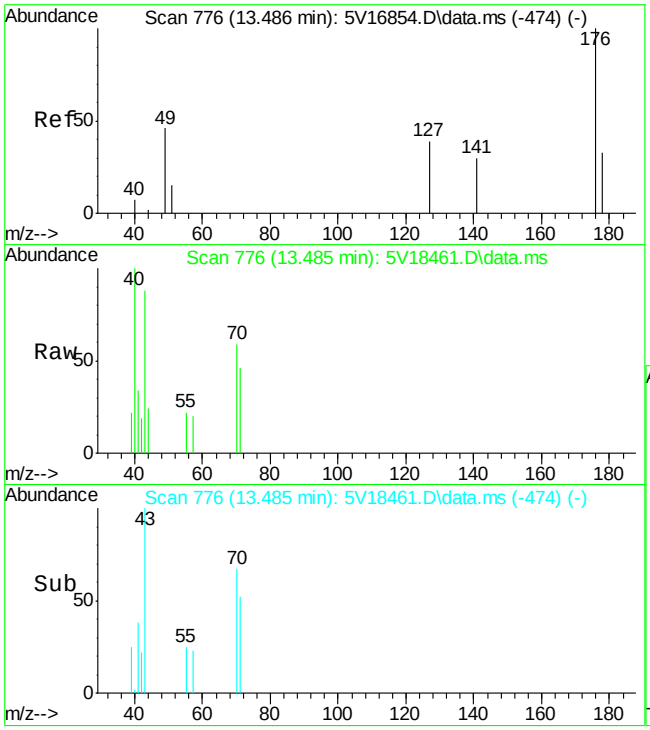
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5112311.S\
Data File : 5V18461.D
Acq On : 23 Nov 2011 8:20 pm
Operator : DONC
Sample : D29744-1, 50x
Misc : MS2992,V5V1103,5.035,,100,5,1
ALS Vial : 23 Sample Multiplier: 1

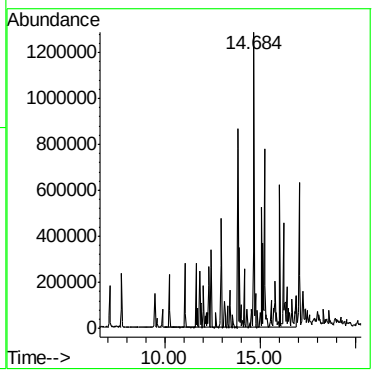
Quant Time: Nov 28 14:26:16 2011
Quant Method : C:\msdchem\1\METHODS\V5AP1092TVH1092.M
Quant Title : 8260
QLast Update : Tue Nov 01 10:41:21 2011
Response via : Initial Calibration

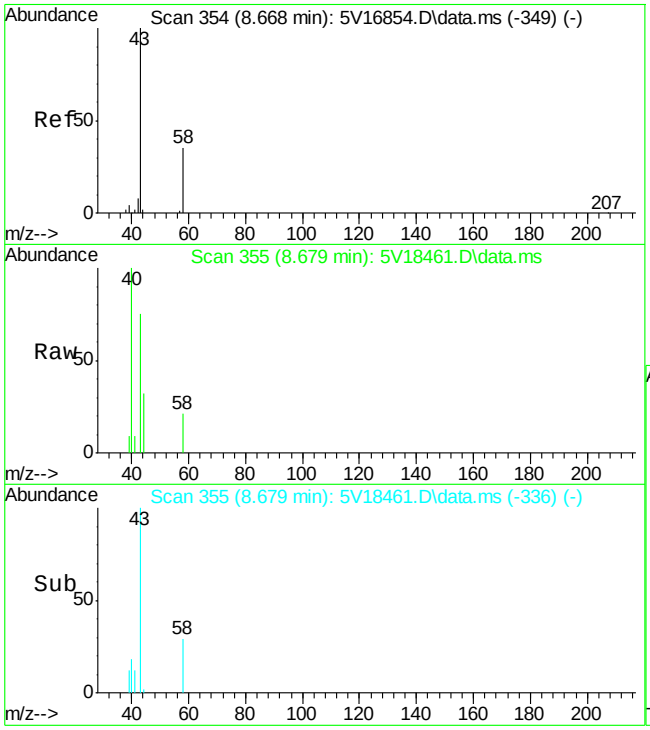




#1
TVH-Gasoline
Concen: 944.17 ug/l m
RT: 13.491 min Scan# 776
Delta R.T. 0.000 min
Lab File: 5V18461.D
Acq: 23 Nov 2011 8:20 pm

Tgt Ion:TIC Resp:16740377

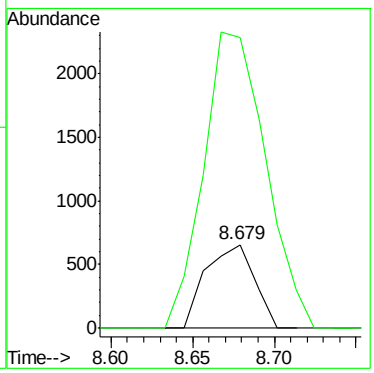


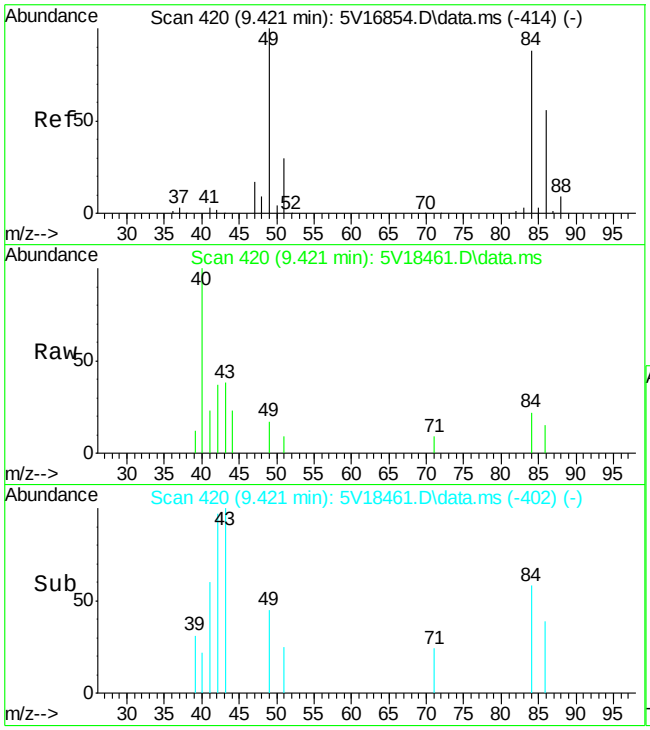


#15
Acetone
Concen: 4.34 ug/l
RT: 8.679 min Scan# 355
Delta R.T. 0.012 min
Lab File: 5V18461.D
Acq: 23 Nov 2011 8:20 pm

Tgt Ion: 58 Resp: 1357

Ion	Ratio	Lower	Upper
58	100		
43	453.3	359.4	399.4#

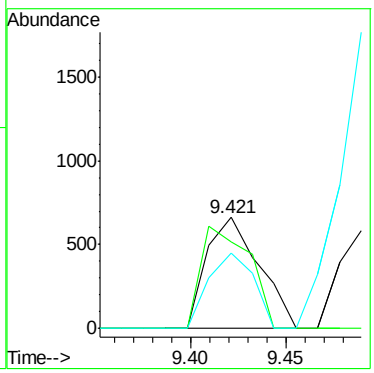


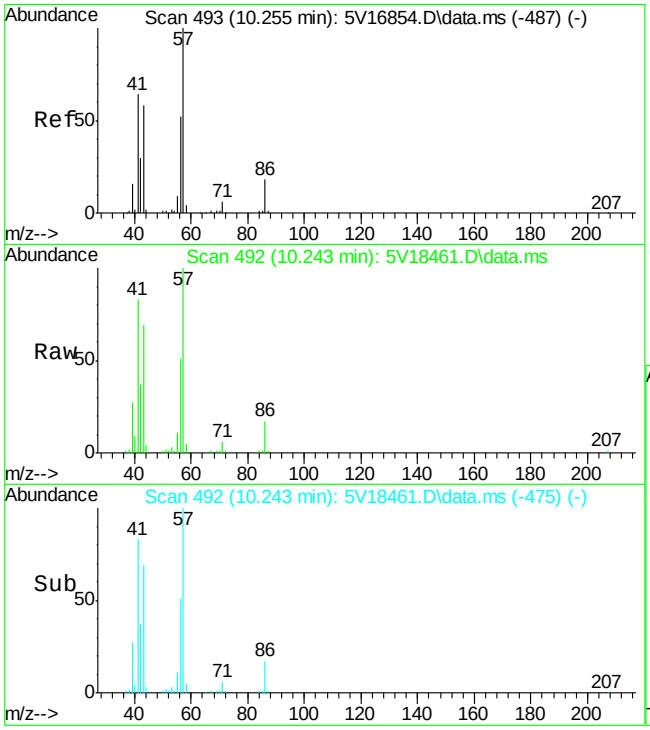


#17
Methylene Chloride
Concen: 0.48 ug/l
RT: 9.421 min Scan# 420
Delta R.T. 0.000 min
Lab File: 5V18461.D
Acq: 23 Nov 2011 8:20 pm

Tgt Ion: 84 Resp: 1272

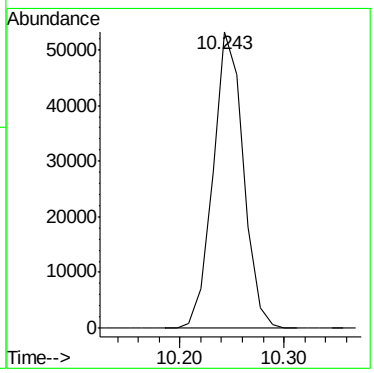
Ion	Ratio	Lower	Upper
84	100		
49	84.6	108.8	148.8#
86	58.4	43.2	83.2

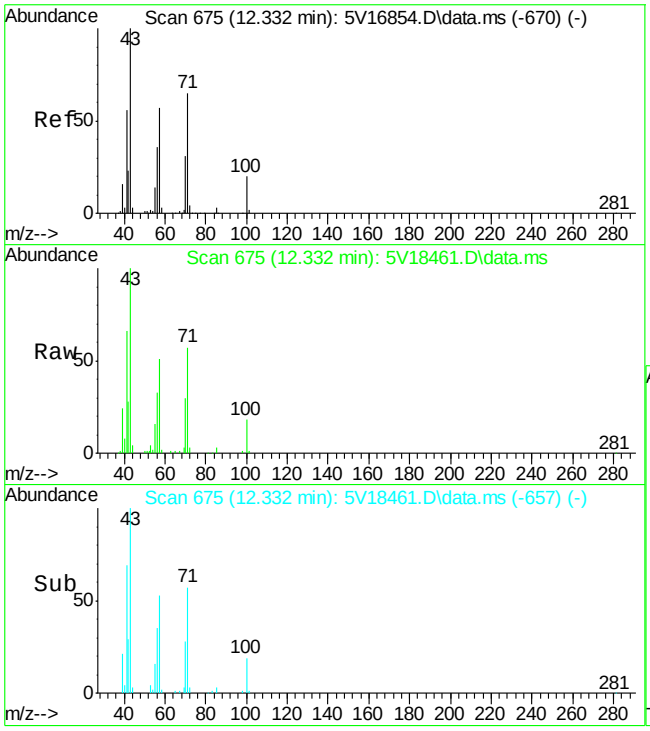




#41
Hexane
Concen: 29.22 ug/l
RT: 10.243 min Scan# 492
Delta R.T. -0.011 min
Lab File: 5V18461.D
Acq: 23 Nov 2011 8:20 pm

Tgt Ion: 57 Resp: 107750

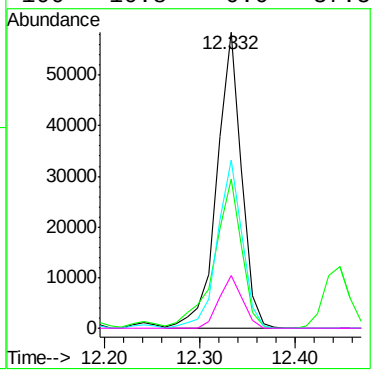


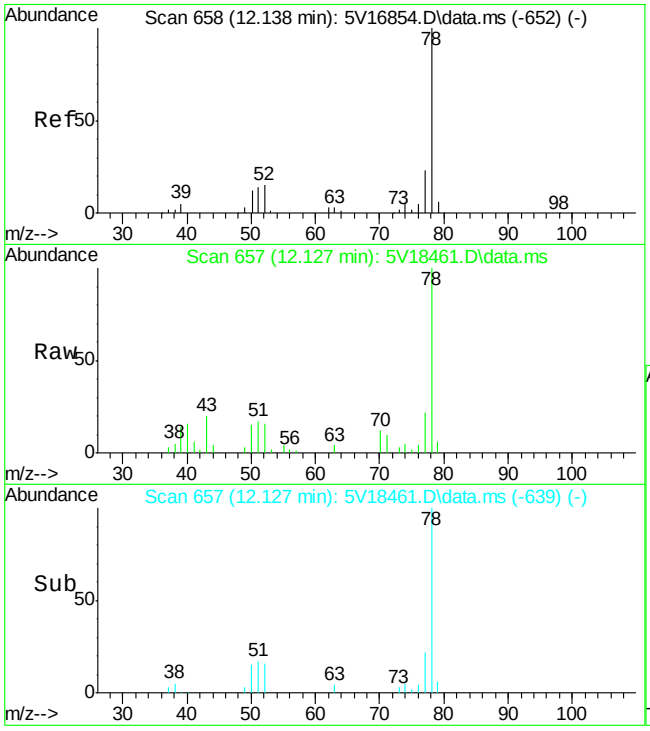


#43
Heptane
Concen: 24.55 ug/l
RT: 12.332 min Scan# 675
Delta R.T. 0.000 min
Lab File: 5V18461.D
Acq: 23 Nov 2011 8:20 pm

Tgt Ion: 43 Resp: 104944

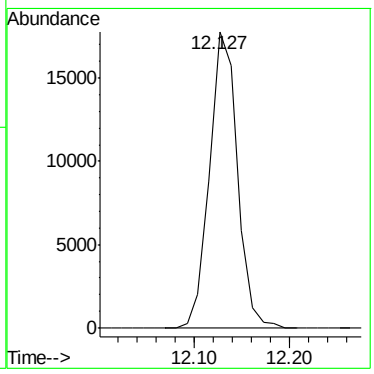
Ion	Ratio	Lower	Upper
43	100		
57	56.1	30.8	70.8
71	57.4	39.2	79.2
100	16.8	0.0	37.5

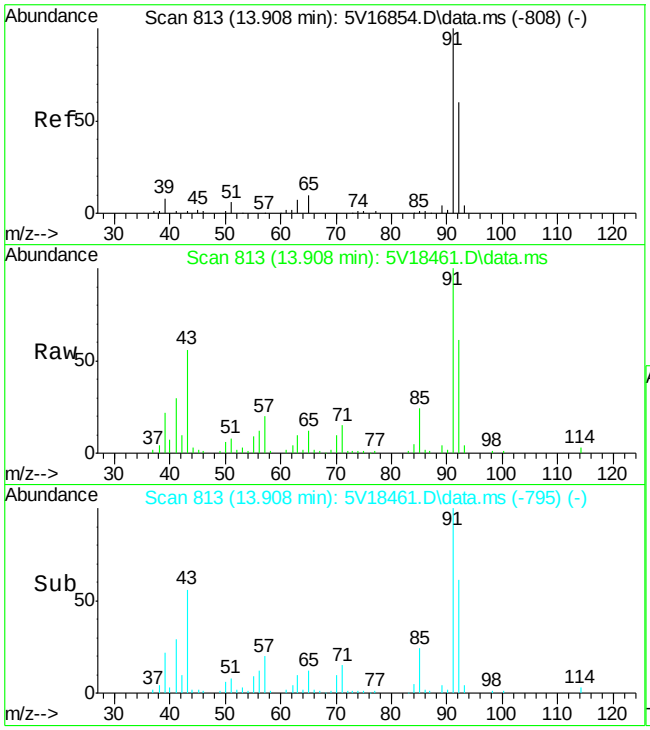




#50
Benzene
Concen: 3.47 ug/l
RT: 12.127 min Scan# 657
Delta R.T. 0.000 min
Lab File: 5V18461.D
Acq: 23 Nov 2011 8:20 pm

Tgt Ion: 78 Resp: 35823

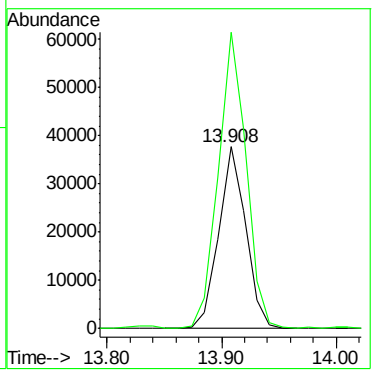


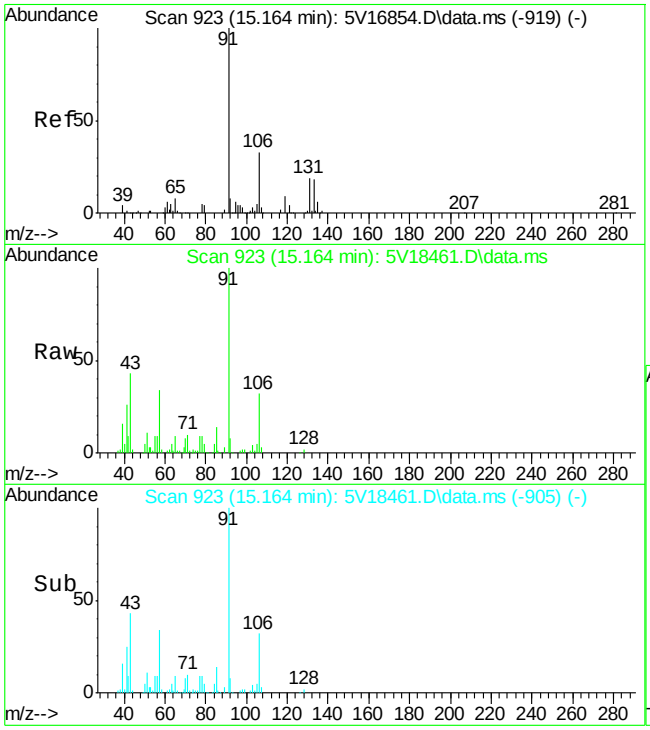


#62
Toluene
Concen: 8.16 ug/l
RT: 13.908 min Scan# 813
Delta R.T. 0.000 min
Lab File: 5V18461.D
Acq: 23 Nov 2011 8:20 pm

Tgt Ion: 92 Resp: 62129

Ion	Ratio	Lower	Upper
92	100		
91	168.0	147.5	187.5

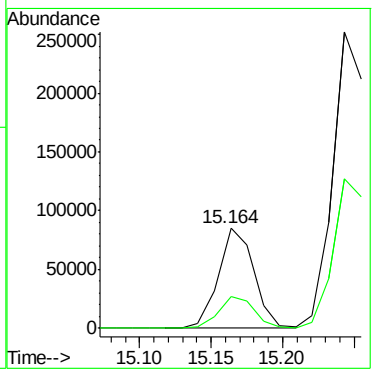


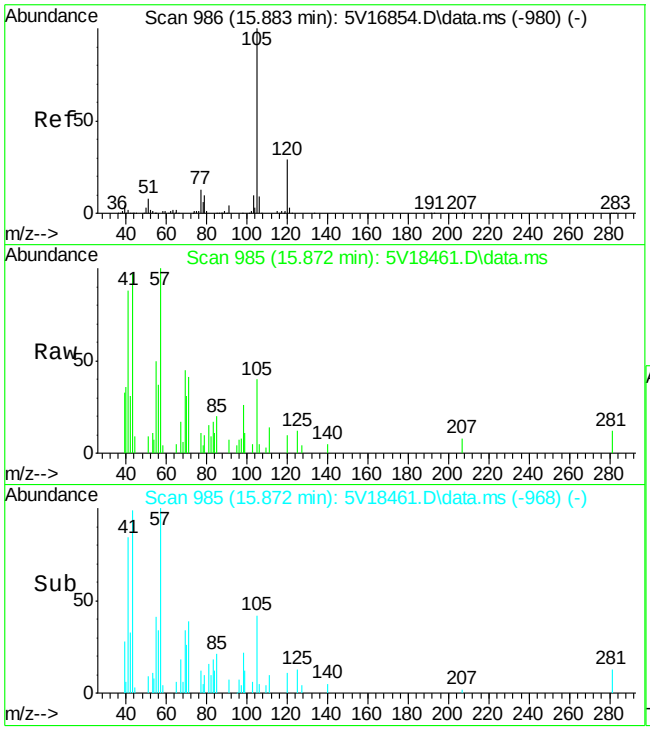


#66
Ethylbenzene
Concen: 10.47 ug/l
RT: 15.164 min Scan# 923
Delta R.T. 0.001 min
Lab File: 5V18461.D
Acq: 23 Nov 2011 8:20 pm

Tgt Ion: 91 Resp: 146804

Ion	Ratio	Lower	Upper
91	100		
106	32.0	11.4	51.4

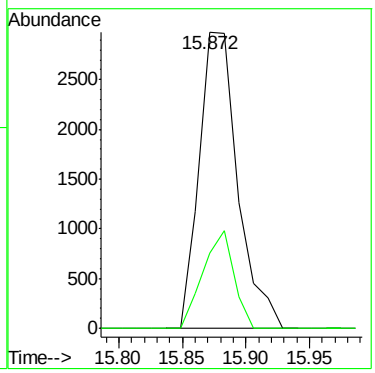


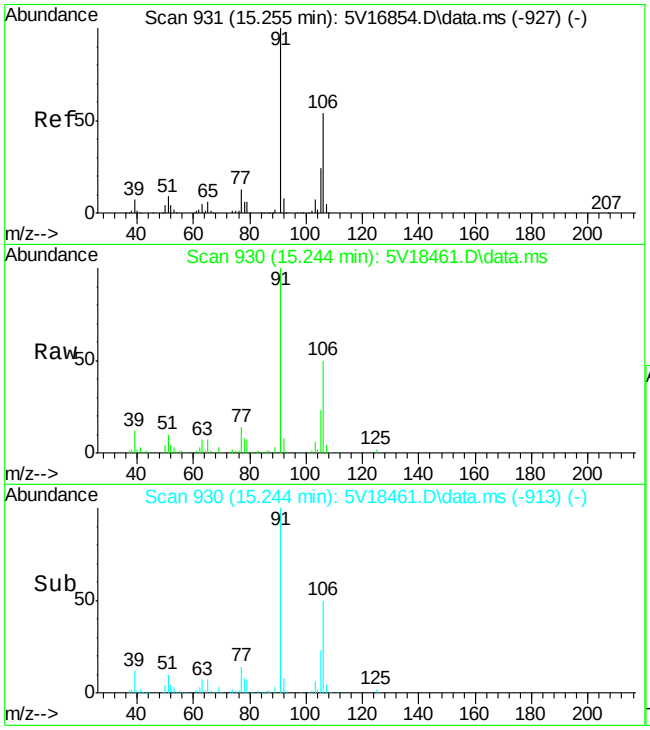


#68
Isopropylbenzene
Concen: 0.55 ug/l
RT: 15.872 min Scan# 985
Delta R.T. -0.010 min
Lab File: 5V18461.D
Acq: 23 Nov 2011 8:20 pm

Tgt Ion:105 Resp: 6265

Ion	Ratio	Lower	Upper
105	100		
120	26.3	20.7	31.1

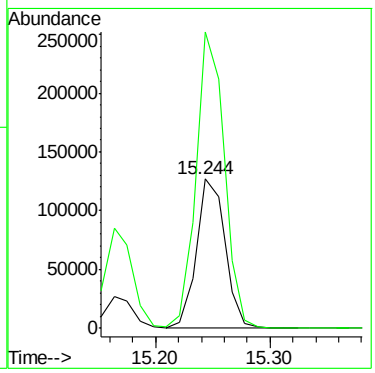


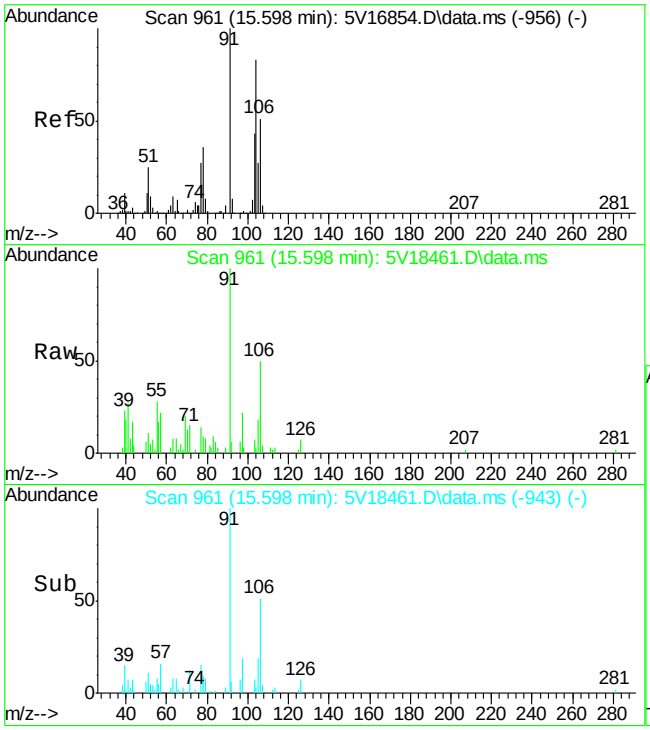


#72
m,p-xylene
Concen: 41.36 ug/l
RT: 15.244 min Scan# 930
Delta R.T. -0.010 min
Lab File: 5V18461.D
Acq: 23 Nov 2011 8:20 pm

Tgt Ion:106 Resp: 220384

Ion	Ratio	Lower	Upper
106	100		
91	196.9	178.3	218.3

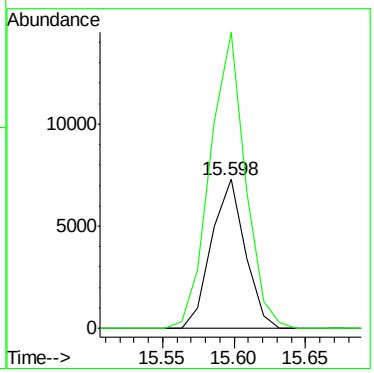


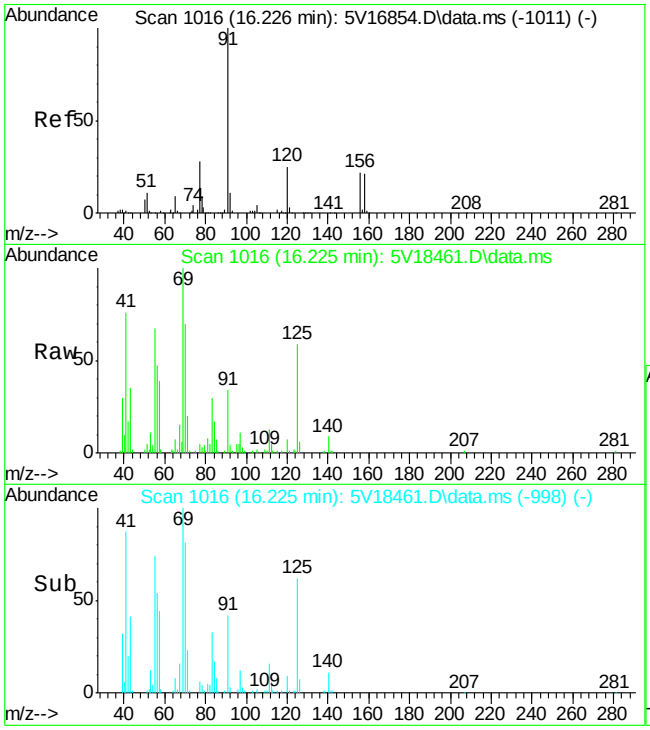


#73
o-xylene
Concen: 2.35 ug/l
RT: 15.598 min Scan# 961
Delta R.T. 0.001 min
Lab File: 5V18461.D
Acq: 23 Nov 2011 8:20 pm

Tgt Ion:106 Resp: 11866

Ion	Ratio	Lower	Upper
106	100		
91	208.3	167.5	251.3

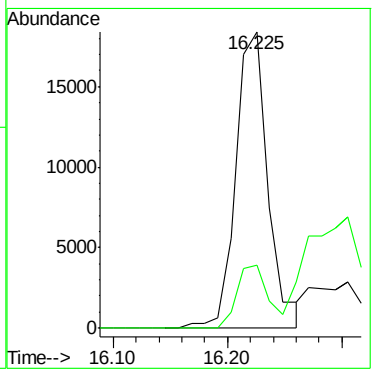


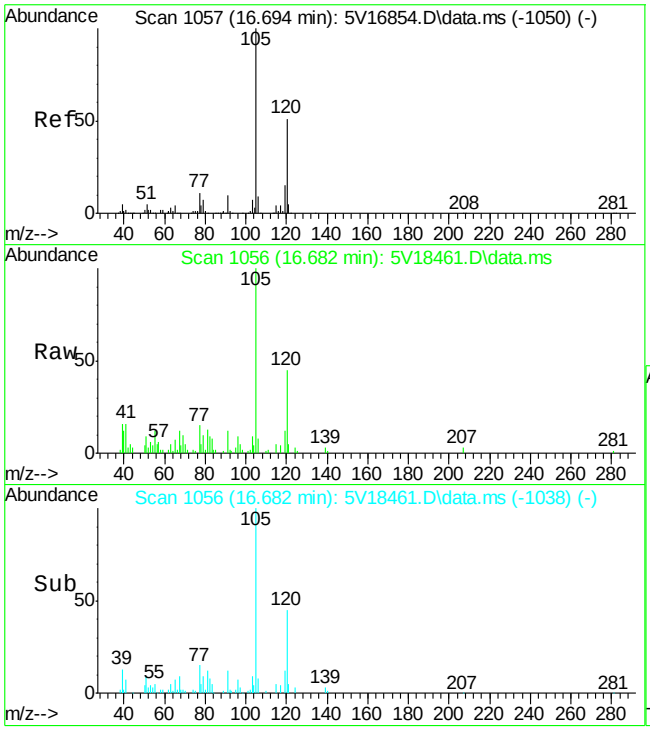


#77
n-Propylbenzene
Concen: 1.92 ug/l
RT: 16.225 min Scan# 1016
Delta R.T. 0.000 min
Lab File: 5V18461.D
Acq: 23 Nov 2011 8:20 pm

Tgt Ion: 91 Resp: 36177

Ion	Ratio	Lower	Upper
91	100		
120	21.1	18.7	28.1

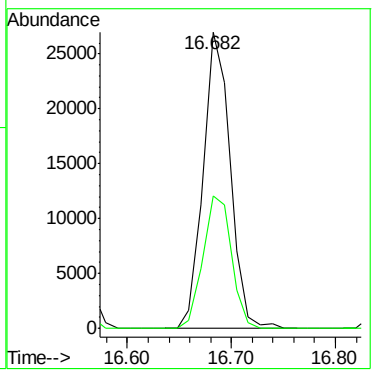


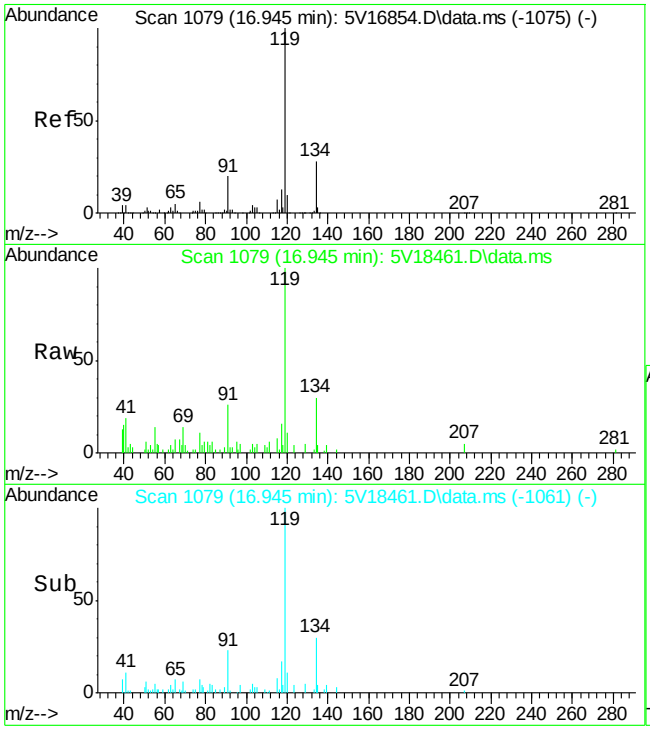


#82
1,2,4-Trimethylbenzene
Concen: 3.59 ug/l
RT: 16.682 min Scan# 1056
Delta R.T. 0.000 min
Lab File: 5V18461.D
Acq: 23 Nov 2011 8:20 pm

Tgt Ion:105 Resp: 48590

Ion	Ratio	Lower	Upper
105	100		
120	47.1	43.0	64.6

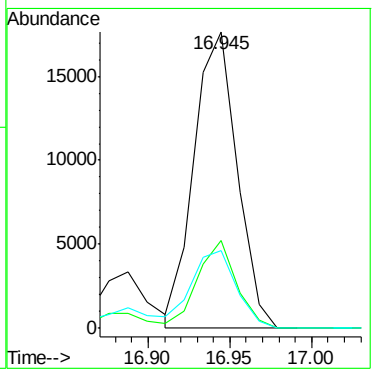


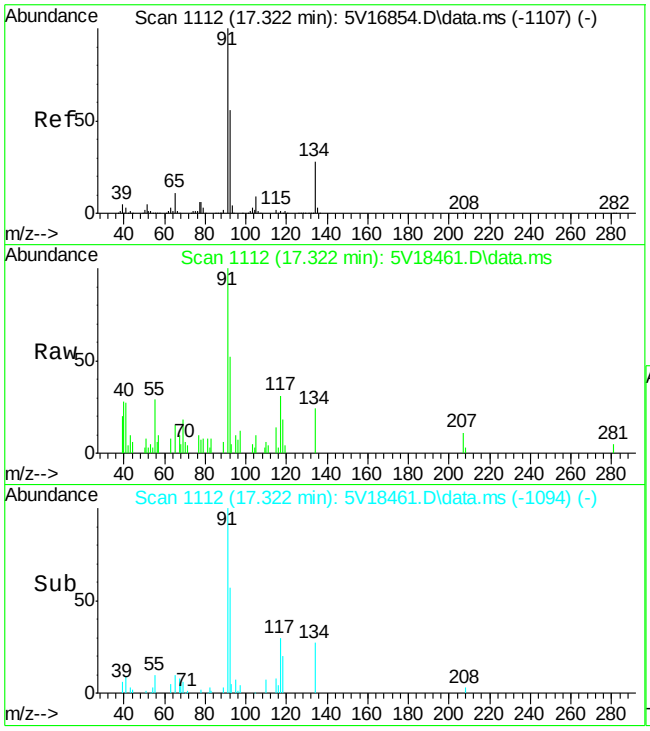


#86
p-Isopropyltoluene
Concen: 2.21 ug/l
RT: 16.945 min Scan# 1079
Delta R.T. 0.000 min
Lab File: 5V18461.D
Acq: 23 Nov 2011 8:20 pm

Tgt Ion:119 Resp: 32329

Ion	Ratio	Lower	Upper
119	100		
134	27.0	21.5	32.3
91	27.4	19.7	29.5

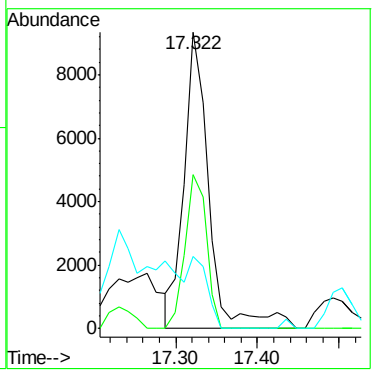


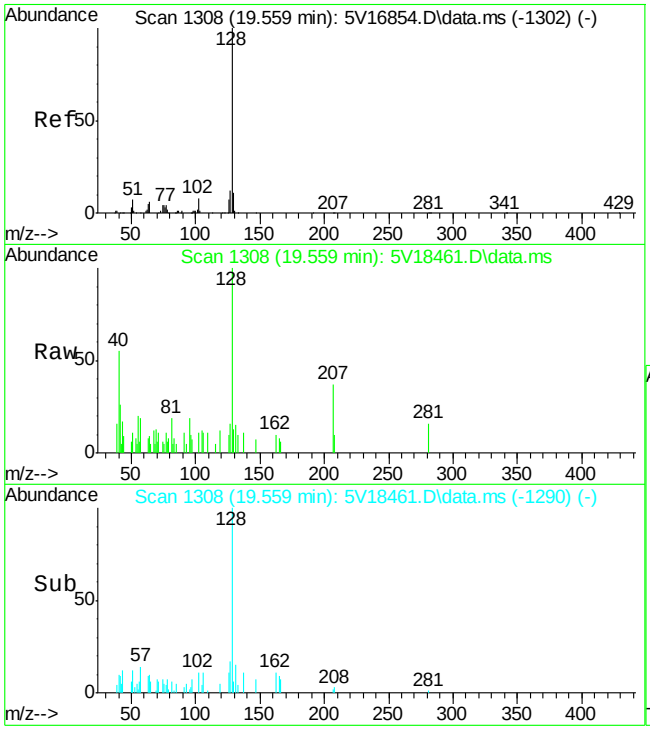


#88
n-Butylbenzene
Concen: 1.42 ug/l
RT: 17.322 min Scan# 1112
Delta R.T. 0.000 min
Lab File: 5V18461.D
Acq: 23 Nov 2011 8:20 pm

Tgt Ion: 91 Resp: 19646

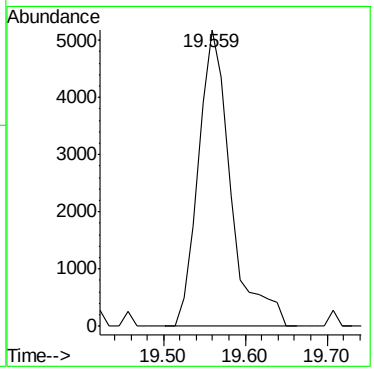
Ion	Ratio	Lower	Upper
91	100		
92	44.9	42.7	64.1
134	0.0	21.7	32.5#





#91
Naphthalene
Concen: 2.42 ug/l
RT: 19.559 min Scan# 1308
Delta R.T. 0.001 min
Lab File: 5V18461.D
Acq: 23 Nov 2011 8:20 pm

Tgt Ion:128 Resp: 14263



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5112311.S\
Data File : 5V18443.D
Acq On : 23 Nov 2011 10:52 am
Operator : DONC
Sample : MB, MEB112311
Misc : MS2992,V5V1103,5,,100,5,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 28 14:06:21 2011
Quant Method : C:\msdchem\1\METHODS\V5AP1092TVH1092.M
Quant Title : 8260
QLast Update : Tue Nov 01 10:41:21 2011
Response via : Initial Calibration

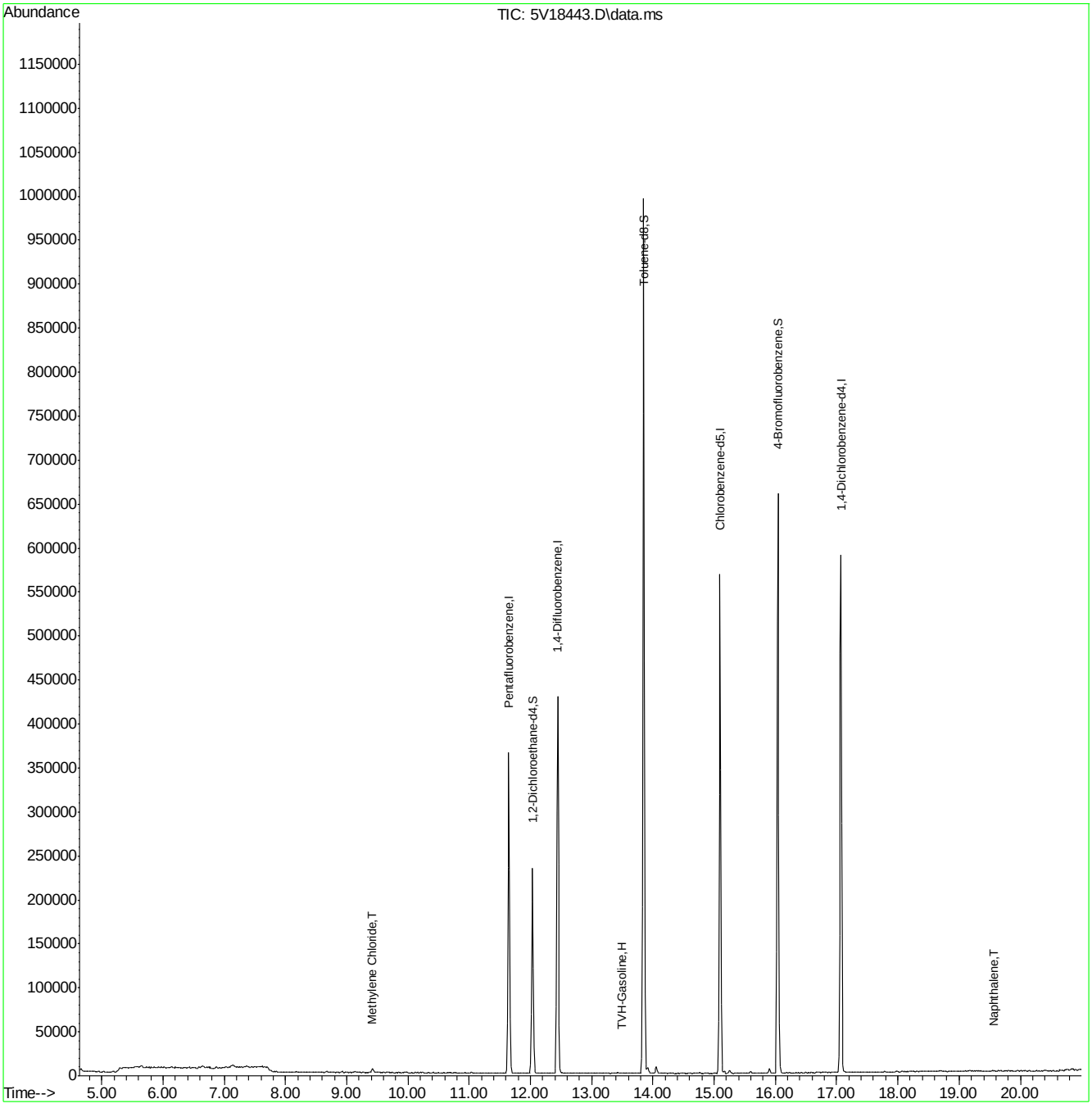
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	260562	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.446	114	335634	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.095	117	301451	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.070	152	184641	50.00	ug/l	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	12.035	102	31609	50.94	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 101.88%			
61) Toluene-d8	13.850	98	626434	46.75	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 93.50%			
69) 4-Bromofluorobenzene	16.042	95	197913	41.89	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 83.78%			
Target Compounds						Qvalue
1) TVH-Gasoline	13.491	TIC	12026m	37.35	ug/l	
17) Methylene Chloride	9.421	84	2422	0.69	ug/l	94
91) Naphthalene	19.570	128	497	0.69	ug/l	100

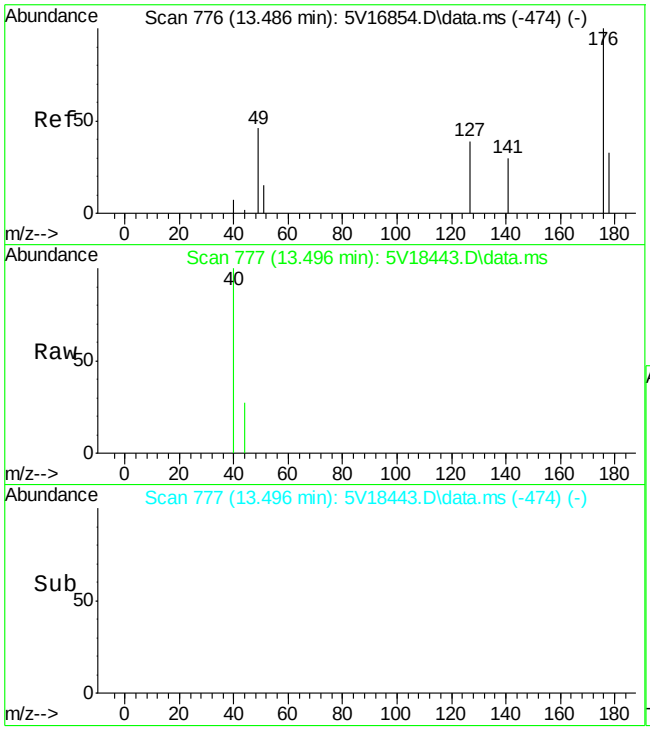
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5112311.S\
Data File : 5V18443.D
Acq On : 23 Nov 2011 10:52 am
Operator : DONC
Sample : MB, MEB112311
Misc : MS2992,V5V1103,5,,100,5,1
ALS Vial : 5 Sample Multiplier: 1

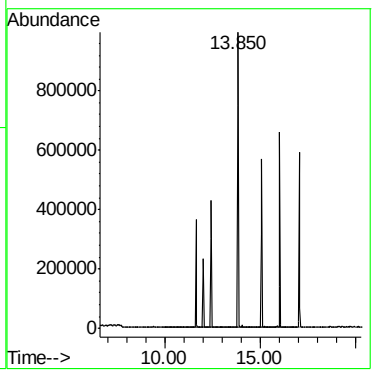
Quant Time: Nov 28 14:06:21 2011
Quant Method : C:\msdchem\1\METHODS\V5AP1092TVH1092.M
Quant Title : 8260
QLast Update : Tue Nov 01 10:41:21 2011
Response via : Initial Calibration

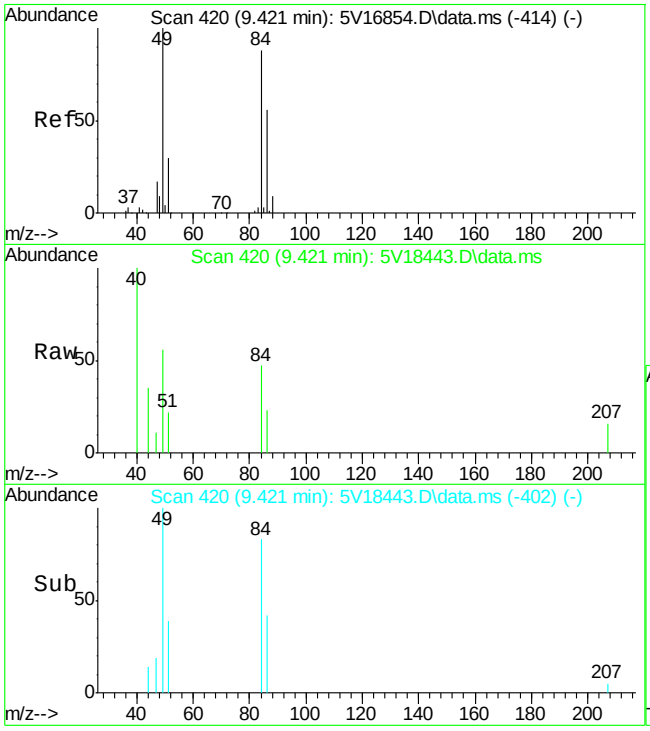




#1
TVH-Gasoline
Concen: 37.35 ug/l m
RT: 13.491 min Scan# 777
Delta R.T. 0.000 min
Lab File: 5V18443.D
Acq: 23 Nov 2011 10:52 am

Tgt Ion:TIC Resp: 12026

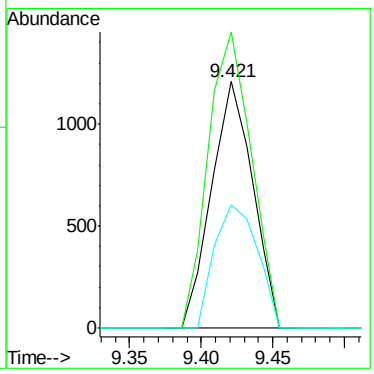


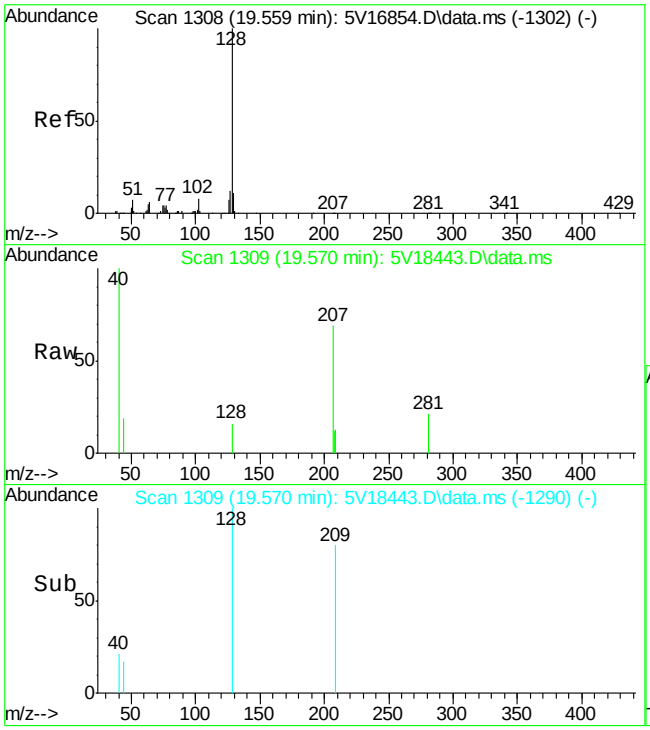


#17
Methylene Chloride
Concen: 0.69 ug/l
RT: 9.421 min Scan# 420
Delta R.T. -0.000 min
Lab File: 5V18443.D
Acq: 23 Nov 2011 10:52 am

Tgt Ion: 84 Resp: 2422

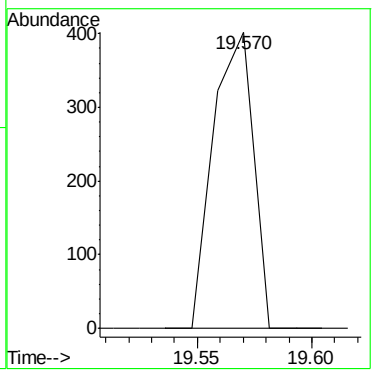
Ion	Ratio	Lower	Upper
84	100		
49	126.0	108.8	148.8
86	52.1	43.2	83.2





#91
Naphthalene
Concen: 0.69 ug/l
RT: 19.570 min Scan# 1309
Delta R.T. 0.012 min
Lab File: 5V18443.D
Acq: 23 Nov 2011 10:52 am

Tgt Ion:128 Resp: 497



Mountain States ACCUTEST LABORATORIES

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D29744
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4914-MB	3G07070.D	1	11/29/11	TMB	11/28/11	OP4914	E3G260

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

D29744-1

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	6.7	5.3	ug/kg	
120-12-7	Anthracene	ND	6.7	6.0	ug/kg	
56-55-3	Benzo(a)anthracene	ND	17	8.7	ug/kg	
50-32-8	Benzo(a)pyrene	ND	17	12	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	17	12	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	17	7.3	ug/kg	
218-01-9	Chrysene	ND	17	7.3	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	17	12	ug/kg	
206-44-0	Fluoranthene	ND	6.7	6.7	ug/kg	
86-73-7	Fluorene	ND	6.7	5.7	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	20	18	ug/kg	
91-20-3	Naphthalene	ND	6.7	6.3	ug/kg	
129-00-0	Pyrene	ND	6.7	6.3	ug/kg	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	80%	10-145%
321-60-8	2-Fluorobiphenyl	77%	10-130%
1718-51-0	Terphenyl-d14	104%	22-130%

Blank Spike Summary

Job Number: D29744
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4914-BS	3G07071.D	1	11/29/11	TMB	11/28/11	OP4914	E3G260

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

D29744-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	70.7	85	34-130
120-12-7	Anthracene	83.3	79.3	95	35-130
56-55-3	Benzo(a)anthracene	83.3	76.6	92	36-130
50-32-8	Benzo(a)pyrene	83.3	75.7	91	36-130
205-99-2	Benzo(b)fluoranthene	83.3	74.2	89	35-130
207-08-9	Benzo(k)fluoranthene	83.3	76.0	91	37-130
218-01-9	Chrysene	83.3	71.6	86	40-130
53-70-3	Dibenzo(a,h)anthracene	83.3	71.9	86	32-130
206-44-0	Fluoranthene	83.3	77.8	93	38-130
86-73-7	Fluorene	83.3	77.7	93	35-130
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	77.3	93	28-130
91-20-3	Naphthalene	83.3	75.5	91	35-130
129-00-0	Pyrene	83.3	79.7	96	37-130

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	88%	10-145%
321-60-8	2-Fluorobiphenyl	81%	10-130%
1718-51-0	Terphenyl-d14	99%	22-130%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D29744
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4914-MS	3G07081.D	1	11/29/11	TMB	11/28/11	OP4914	E3G260
OP4914-MSD	3G07082.D	1	11/29/11	TMB	11/28/11	OP4914	E3G260
D29745-1	3G07080.D	1	11/29/11	TMB	11/28/11	OP4914	E3G260
D29745-1 [a]	3G07168.D	4	12/08/11	DC	11/28/11	OP4914	E3G262

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

D29744-1

CAS No.	Compound	D29745-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		86.5	64.6	75	64.8	75	0	10-155/30
120-12-7	Anthracene	343		86.5	48.0	-341* [b]	389	53	156*	10-155/30
56-55-3	Benzo(a)anthracene	16.1	J	86.5	83.9	78	87.8	83	5	10-175/30
50-32-8	Benzo(a)pyrene	ND		86.5	78.1	90	73.6	85	6	10-164/30
205-99-2	Benzo(b)fluoranthene	ND		86.5	104	120	100	116	4	10-165/30
207-08-9	Benzo(k)fluoranthene	ND		86.5	94.1	109	83.3	96	12	10-178/30
218-01-9	Chrysene	78.0		86.5	185	124	193	133	4	10-147/30
53-70-3	Dibenzo(a,h)anthracene	ND		86.5	58.4	68	54.1	63	8	10-144/30
206-44-0	Fluoranthene	ND		86.5	45.1	52	43.4	50	4	10-207/30
86-73-7	Fluorene	320		86.5	325	6* [b]	330	12	2	10-163/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		86.5	71.3	82	61.3	71	15	10-180/30
91-20-3	Naphthalene	224		86.5	201	-27* [b]	209	-17* [b]	4	10-198/30
129-00-0	Pyrene	40.4		86.5	137	112	142	117	4	10-189/30

CAS No.	Surrogate Recoveries	MS	MSD	D29745-1	D29745-1	Limits
4165-60-0	Nitrobenzene-d5	73%	73%	81%	109%	10-145%
321-60-8	2-Fluorobiphenyl	45%	48%	55%	68%	10-130%
1718-51-0	Terphenyl-d14	109%	123%	106%	102%	22-130%

(a) Confirmation run.
(b) Outside control limits due to high level in sample relative to spike amount.

Mountain States ACCUTEST LABORATORIES

GC/MS Semi-volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
12/13/11 12:07

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\120711\
Data File : 3g07160.D
Acq On : 8 Dec 2011 3:11 am
Operator : DONC
Sample : D29744-1
Misc : OP4914,E3G262,30.09,,,1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Dec 08 09:55:00 2011
Quant Method : C:\msdchem\1\METHODS\SIMPE3G262.M
Quant Title : PAHSIM BASE
QLast Update : Thu Dec 08 09:26:11 2011
Response via : Initial Calibration

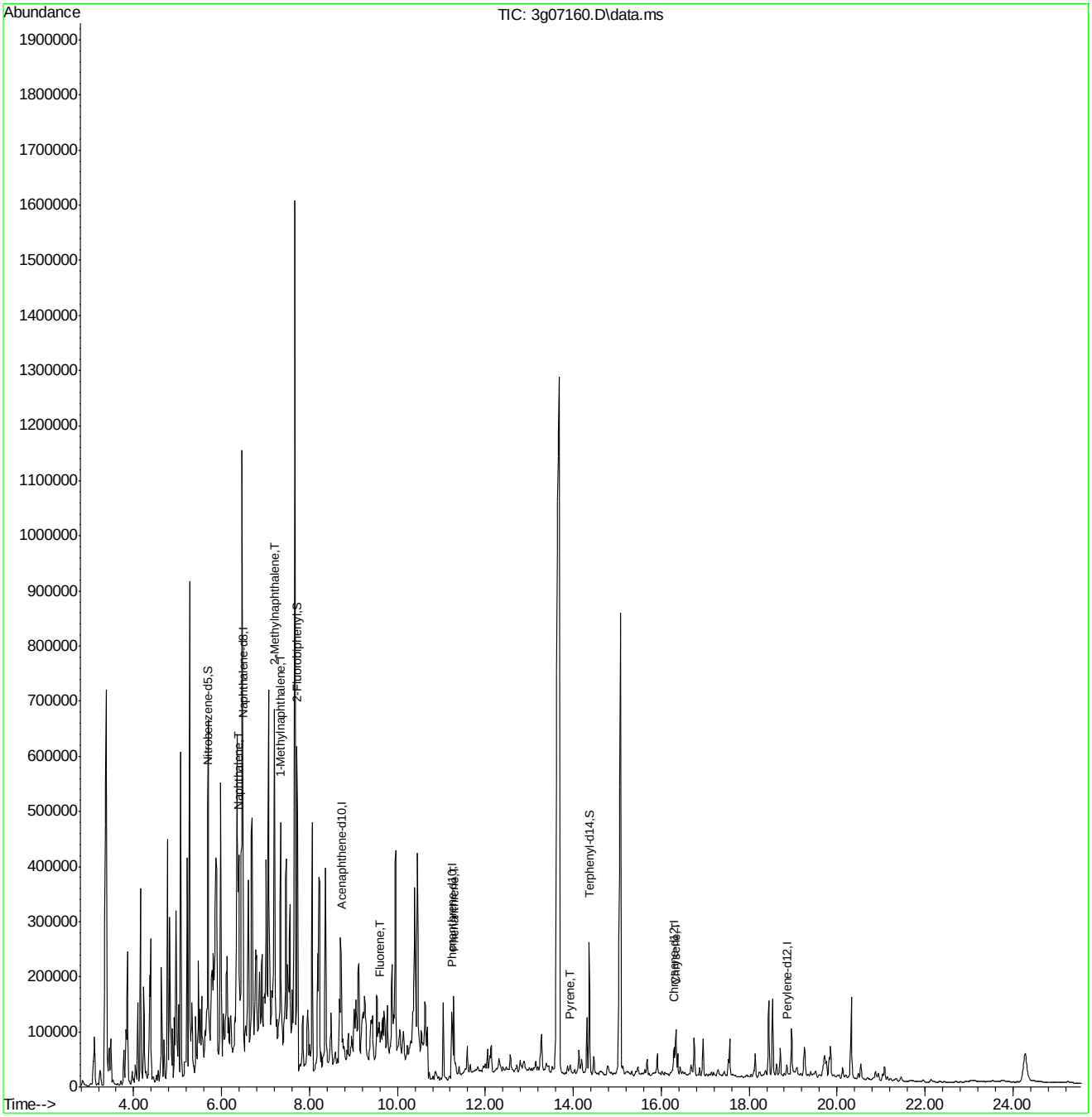
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	6.483	136	411311	4.00	ug/mL	0.11
6) Acenaphthene-d10	8.720	164	109418	4.00	ug/mL	0.01
14) Phenanthrene-d10	11.240	188	141312	4.00	ug/mL	0.00
18) Chrysene-d12	16.289	240	63306	4.00	ug/mL	0.01
23) Perylene-d12	18.859	264	25645	4.00	ug/mL	0.02
System Monitoring Compounds						
2) Nitrobenzene-d5	5.685	82	244429m	5.03	ug/mL	-0.01
7) 2-Fluorobiphenyl	7.716	172	568577	13.24	ug/mL	-0.01
20) Terphenyl-d14	14.366	244	272820	21.53	ug/mL	0.00
Target Compounds						Qvalue
3) N-Nitrosodimethylamine	0.000		0	N.D.	d	
4) N-Nitrosodi-propylamine	0.000		0	N.D.	d	
5) Naphthalene	6.395	128	323995m	2.52	ug/mL	
8) 2-Methylnaphthalene	7.206	142	384762	9.62	ug/mL#	81
9) 1-Methylnaphthalene	7.343	142	196367	5.17	ug/mL#	79
10) Acenaphthylene	0.000		0	N.D.	d	
11) Acenaphthene	0.000		0	N.D.	d	
12) Fluorene	9.595	166	30063	0.82	ug/mL#	55
13) Diphenylamine	0.000		0	N.D.	d	
15) Phenanthrene	11.279	178	142777	2.80	ug/mL	83
16) Anthracene	0.000		0	N.D.	d	
17) Fluoranthene	0.000		0	N.D.	d	
19) Pyrene	13.931	202	10803	0.44	ug/mL#	69
21) Benzo(a)anthracene	0.000		0	N.D.	d	
22) Chrysene	16.335	228	12280	0.63	ug/mL#	60
24) Benzo(b)fluoranthene	0.000		0	N.D.	d	
25) Benzo(k)fluoranthene	0.000		0	N.D.	d	
26) Benzo(a)pyrene	0.000		0	N.D.	d	
27) Indeno(1,2,3-cd)pyrene	0.000		0	N.D.	d	
28) Dibenz(a,h)anthracene	0.000		0	N.D.	d	
29) Benzo(g,h,i)perylene	0.000		0	N.D.	d	

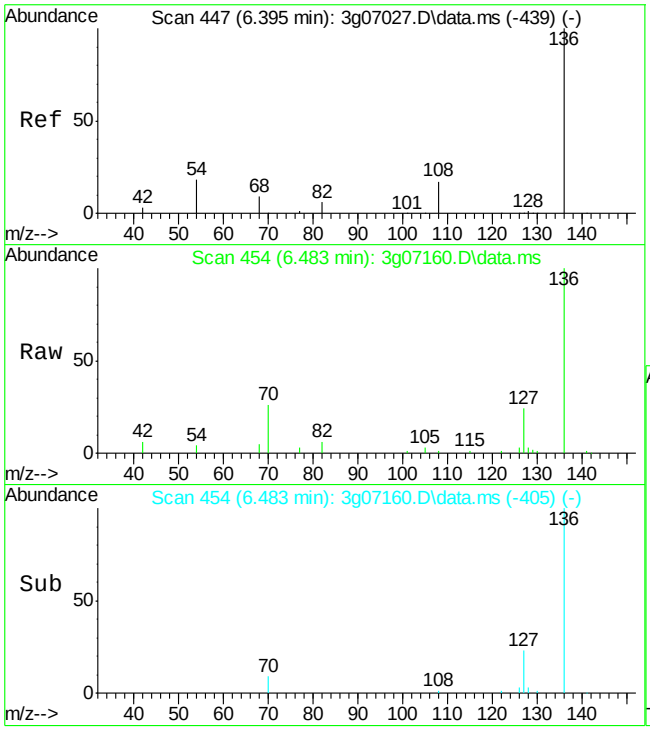
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\120711\
Data File : 3g07160.D
Acq On : 8 Dec 2011 3:11 am
Operator : DONC
Sample : D29744-1
Misc : OP4914,E3G262,30.09,,,1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Dec 08 09:55:00 2011
Quant Method : C:\msdchem\1\METHODS\SIMPE3G262.M
Quant Title : PAHSIM BASE
QLast Update : Thu Dec 08 09:26:11 2011
Response via : Initial Calibration

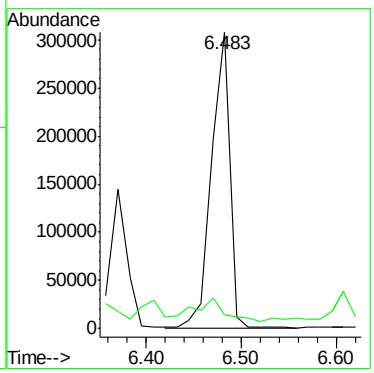


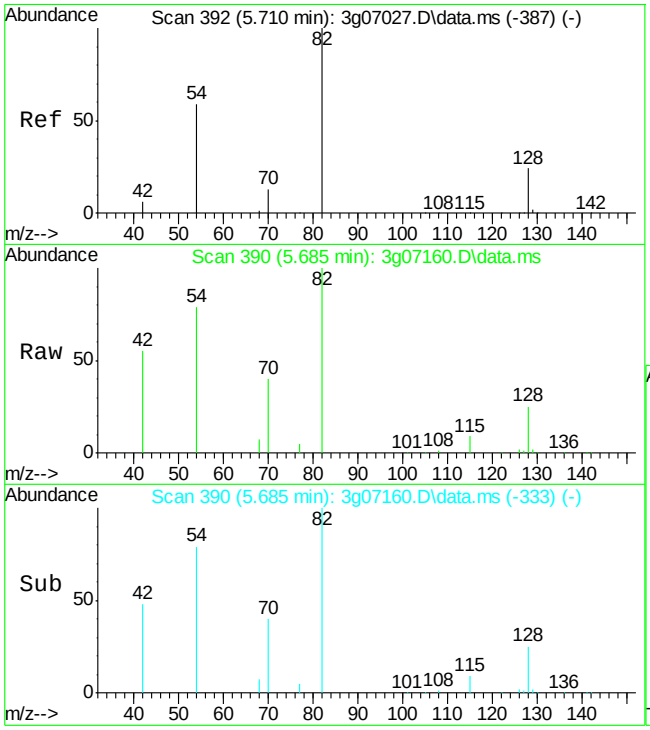


#1
Naphthalene-d8
Concen: 4.00 ug/mL
RT: 6.483 min Scan# 454
Delta R.T. 0.112 min
Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion:136 Resp: 411311

Ion	Ratio	Lower	Upper
136	100		
68	11.6	0.0	27.5

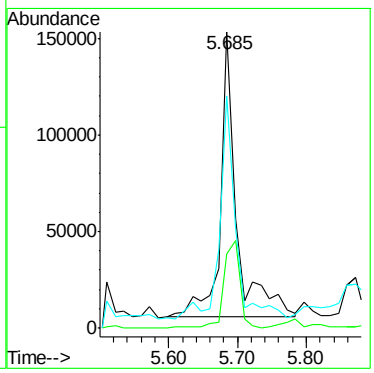


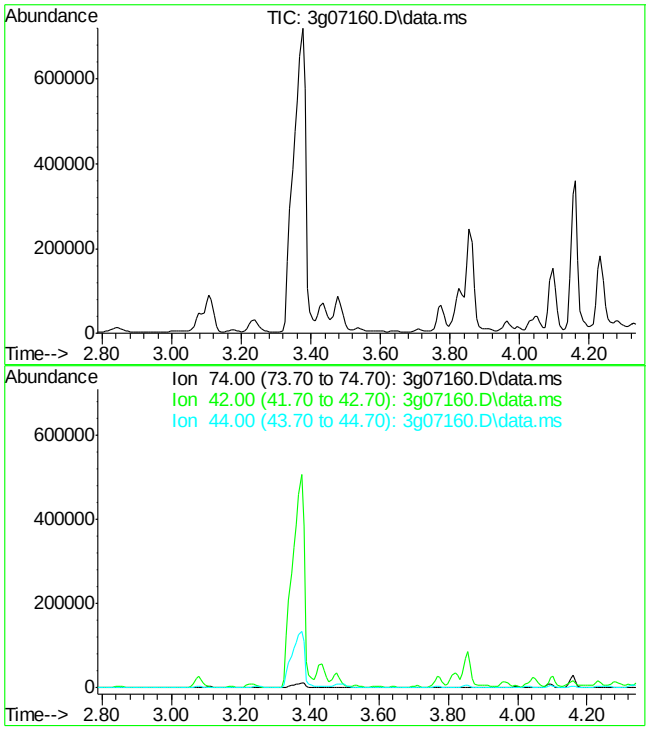


#2
Nitrobenzene-d5
Concen: 5.03 ug/mL m
RT: 5.685 min Scan# 390
Delta R.T. -0.012 min
Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion: 82 Resp: 244429

Ion	Ratio	Lower	Upper
82	100		
128	4.2	22.2	62.2#
54	35.6	32.9	72.9



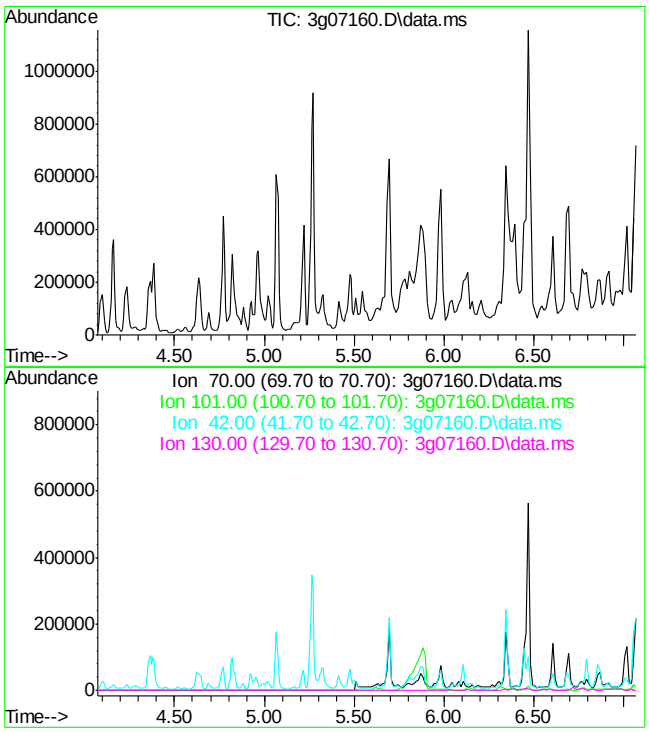


#3
N-Nitrosodimethylamine
Concen: N.D. ug/mL
Expected RT: 2.84 min

Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion: 74

Sig	Exp Ratio
74	100
42	62.7
44	4.7

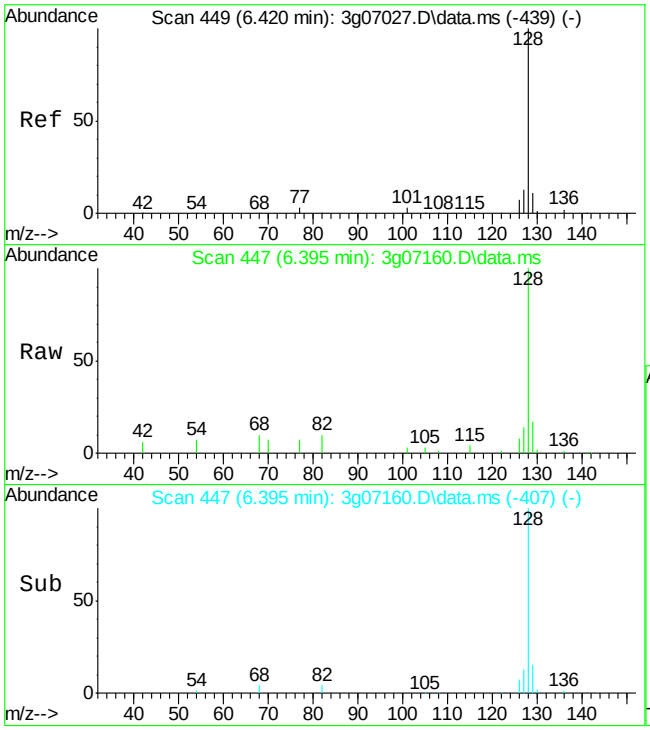


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 5.57 min

Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion: 70

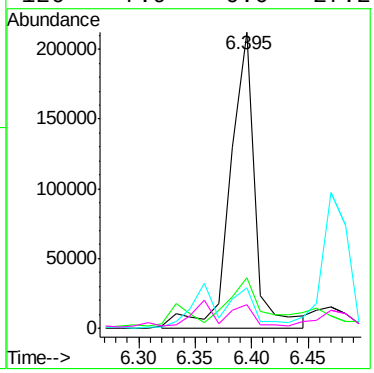
Sig	Exp Ratio
70	100
101	12.9
42	56.3
130	25.7

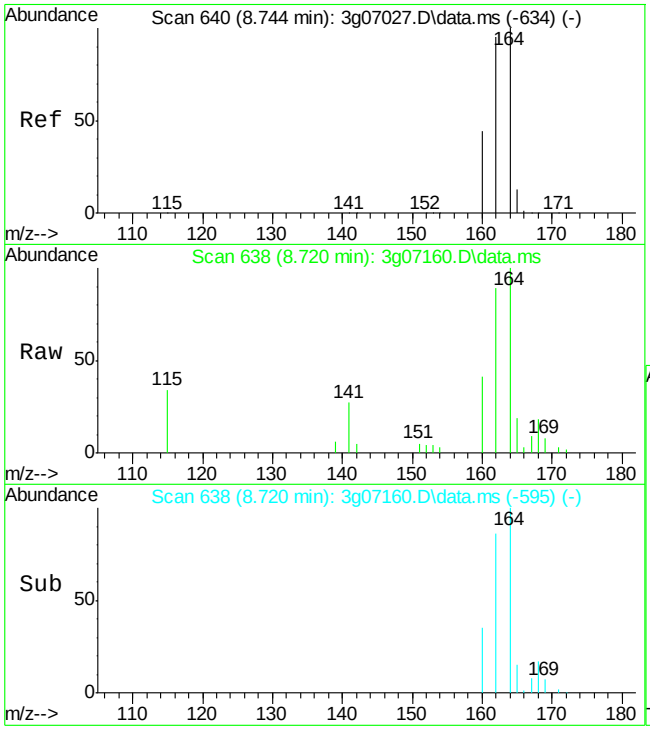


#5
Naphthalene
Concen: 2.52 ug/mL m
RT: 6.395 min Scan# 447
Delta R.T. 0.000 min
Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion:128 Resp: 323995

Ion	Ratio	Lower	Upper
128	100		
129	9.5	0.0	31.0
127	46.1	0.0	32.5#
126	7.9	0.0	27.2

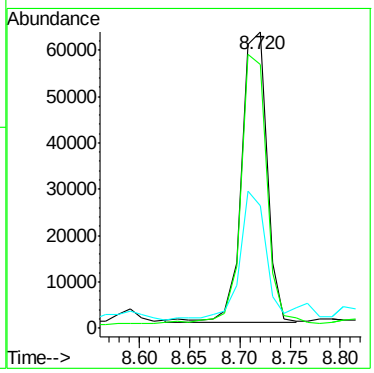


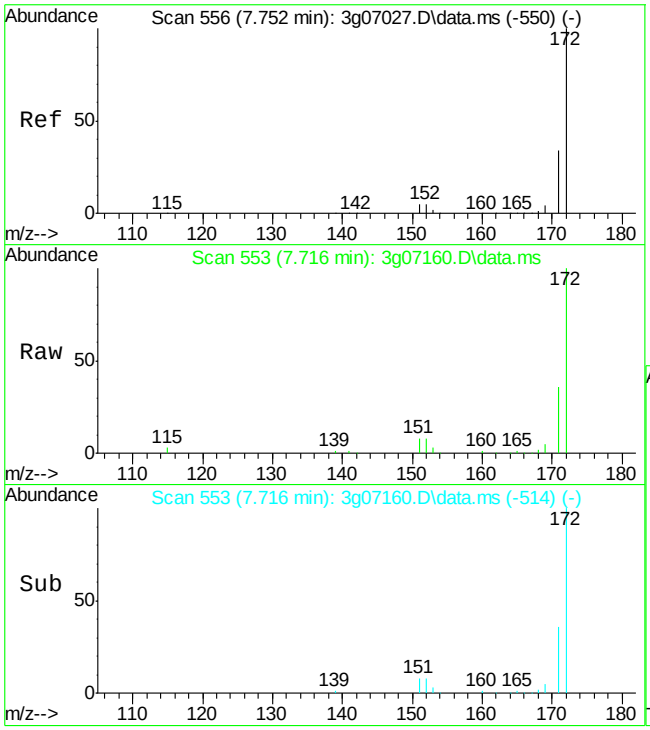


#6
Acenaphthene-d10
Concen: 4.00 ug/mL
RT: 8.720 min Scan# 638
Delta R.T. 0.012 min
Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion:164 Resp: 109418

Ion	Ratio	Lower	Upper
164	100		
162	97.0	71.7	111.7
160	50.5	21.3	61.3

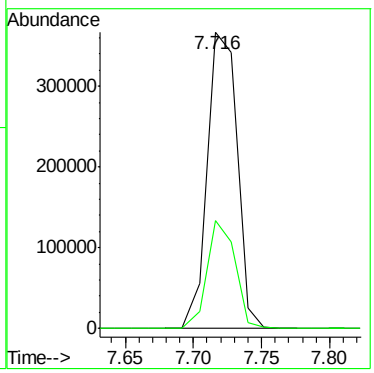


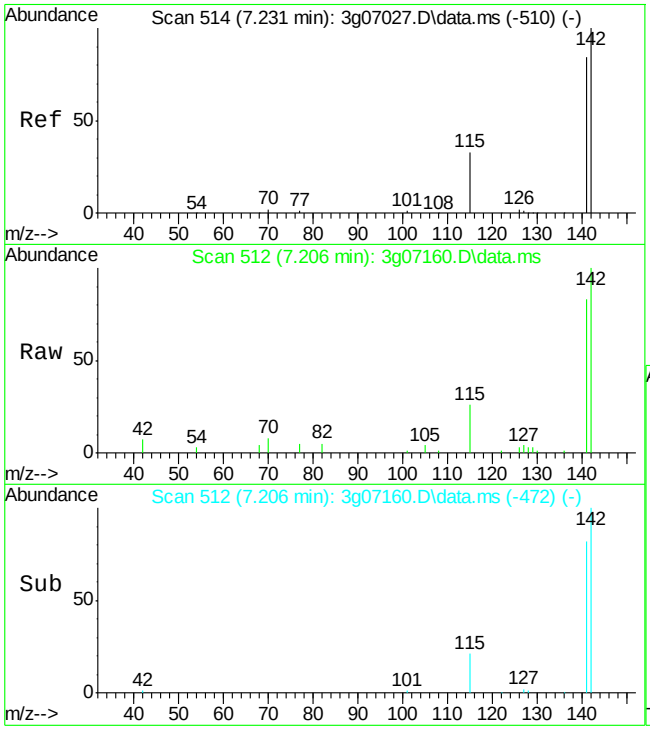


#7
2-Fluorobiphenyl
Concen: 13.24 ug/mL
RT: 7.716 min Scan# 553
Delta R.T. -0.012 min
Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion:172 Resp: 568577

Ion	Ratio	Lower	Upper
172	100		
171	34.6	12.5	52.5

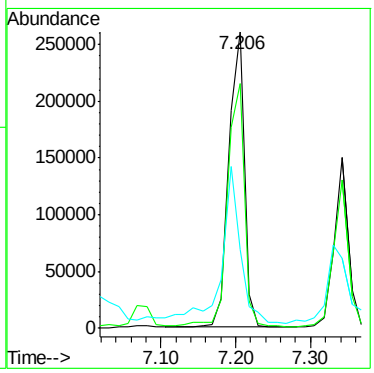


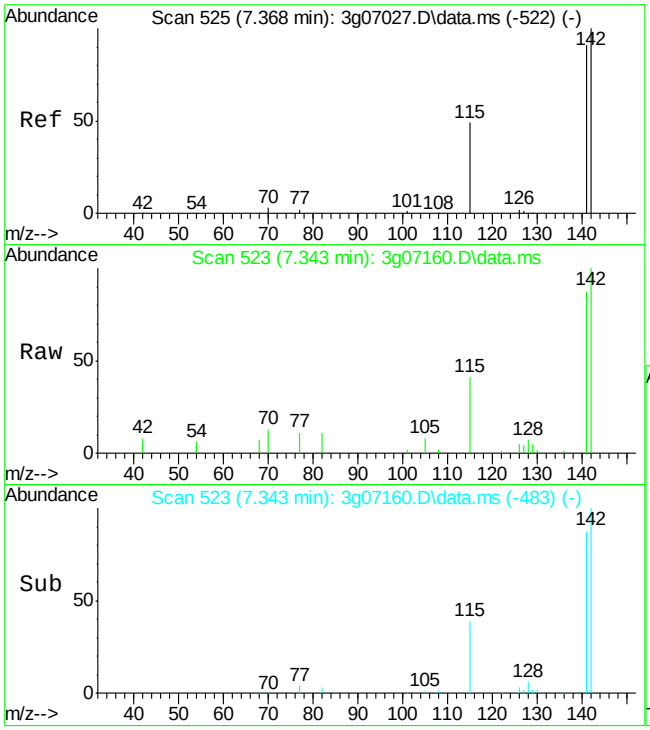


#8
2-Methylnaphthalene
Concen: 9.62 ug/mL
RT: 7.206 min Scan# 512
Delta R.T. 0.000 min
Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion:142 Resp: 384762

Ion	Ratio	Lower	Upper
142	100		
141	87.6	62.4	102.4
115	65.5	16.5	56.5#

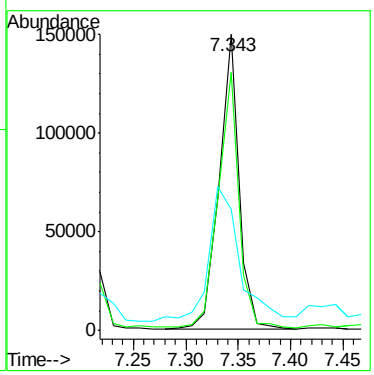


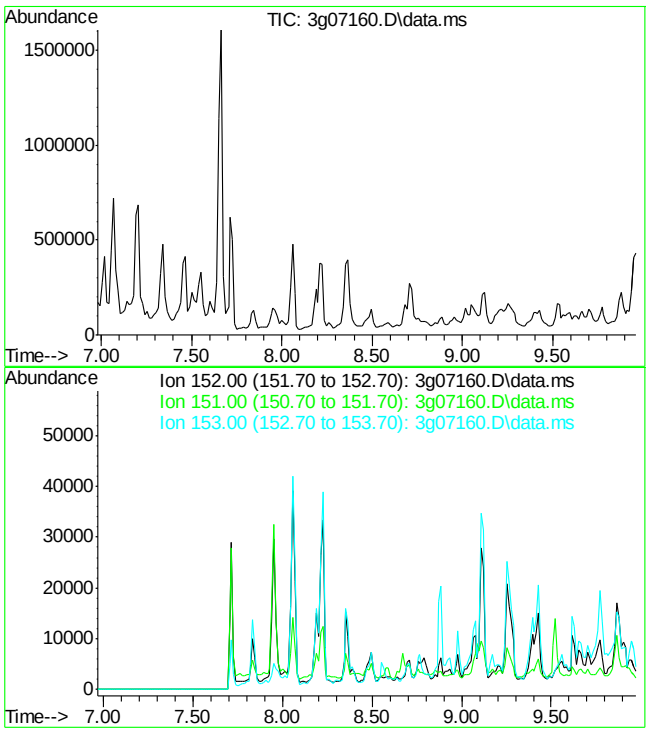


#9
1-Methylnaphthalene
Concen: 5.17 ug/mL
RT: 7.343 min Scan# 523
Delta R.T. 0.000 min
Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion:142 Resp: 196367

Ion	Ratio	Lower	Upper
142	100		
141	90.4	68.1	102.1
115	71.3	31.3	46.9#



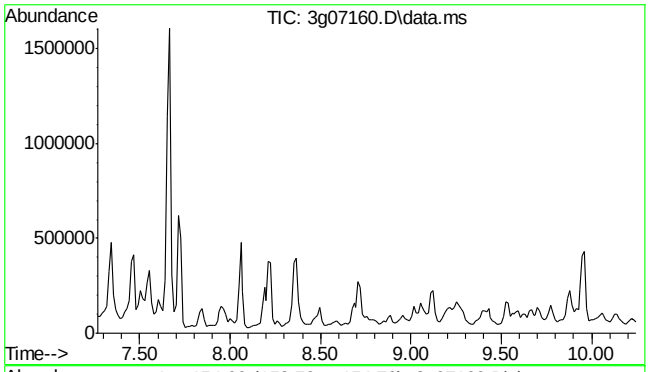


#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 8.47 min

Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion: 152

Sig	Exp Ratio
152	100
151	18.8
153	13.0

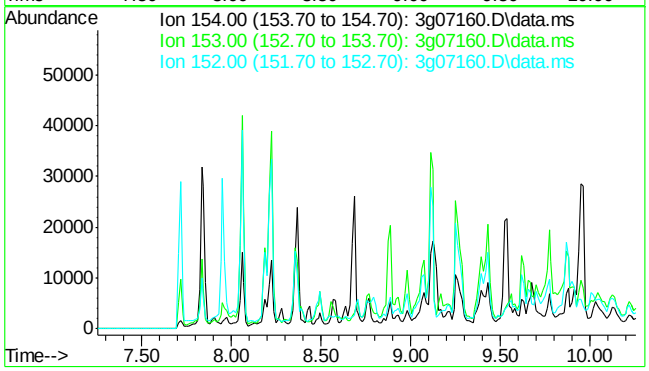


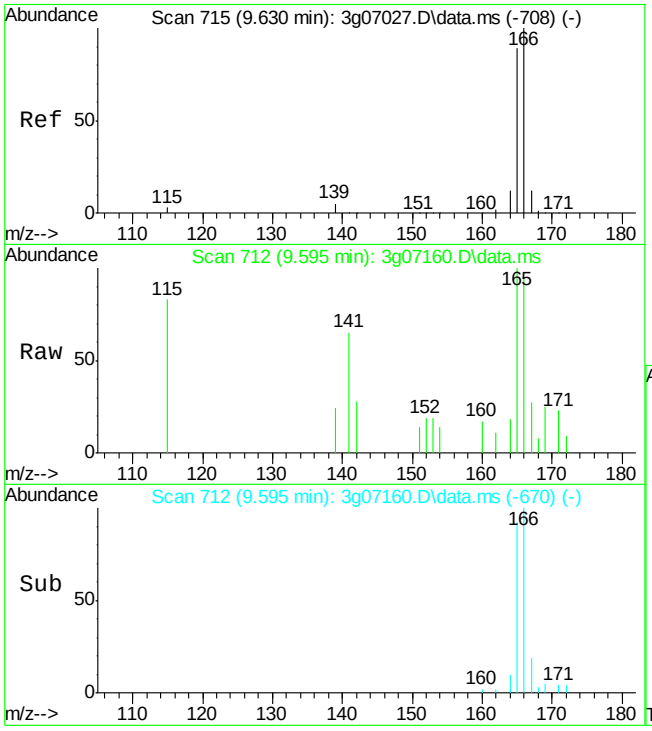
#11
Acenaphthene
Concen: N.D. ug/mL
Expected RT: 8.76 min

Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion: 154

Sig	Exp Ratio
154	100
153	102.1
152	48.4

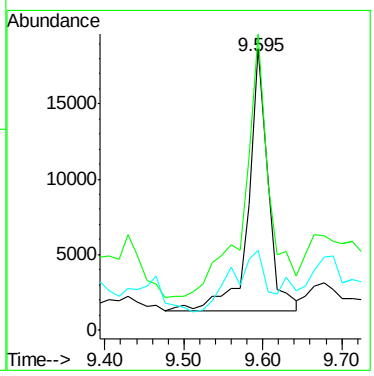


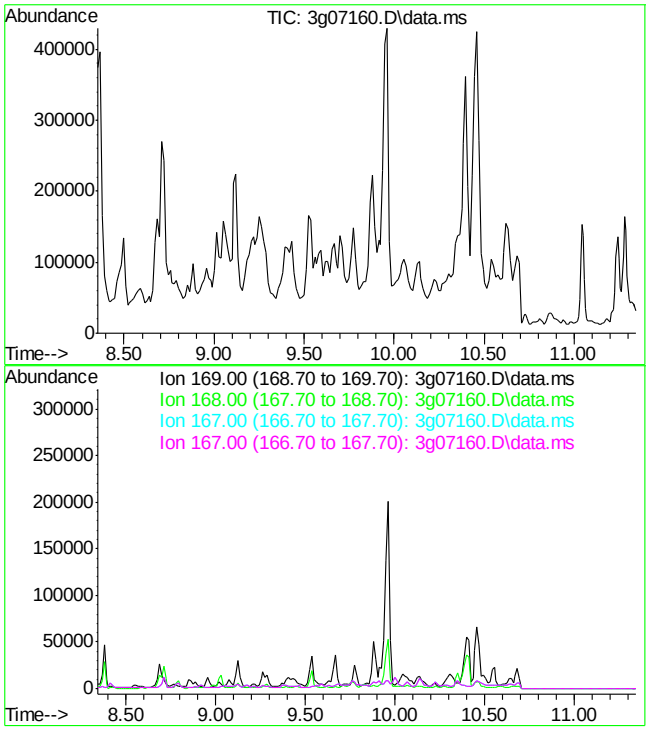


#12
Fluorene
Concen: 0.82 ug/mL
RT: 9.595 min Scan# 712
Delta R.T. 0.000 min
Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion:166 Resp: 30063

Ion	Ratio	Lower	Upper
166	100		
165	127.3	69.2	109.2#
167	42.1	0.0	32.0#



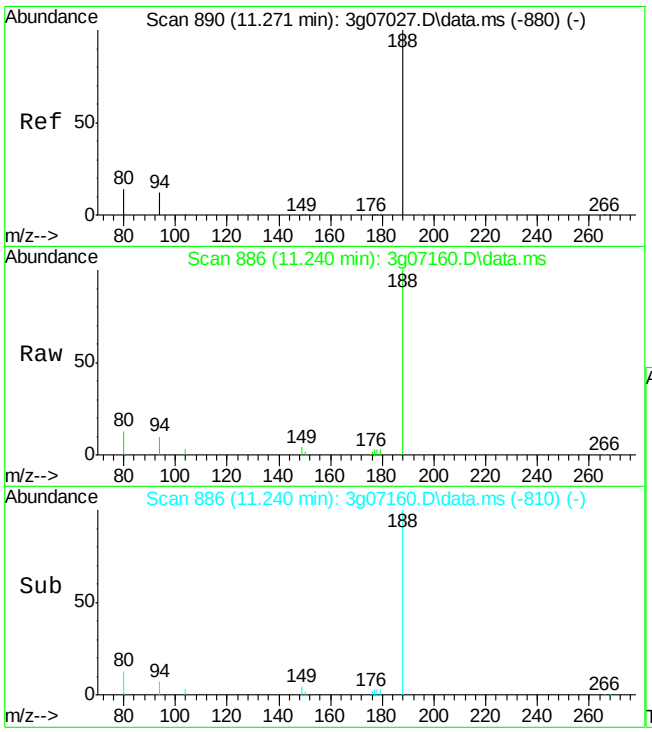


#13
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 9.84 min

Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion: 169

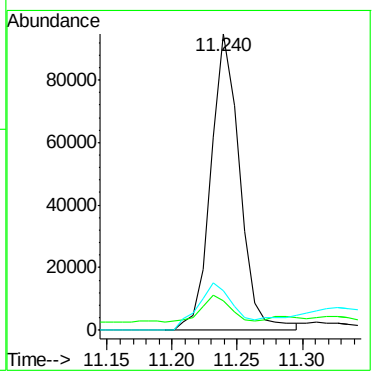
Sig	Exp Ratio
169	100
168	60.5
167	32.9
167	32.9

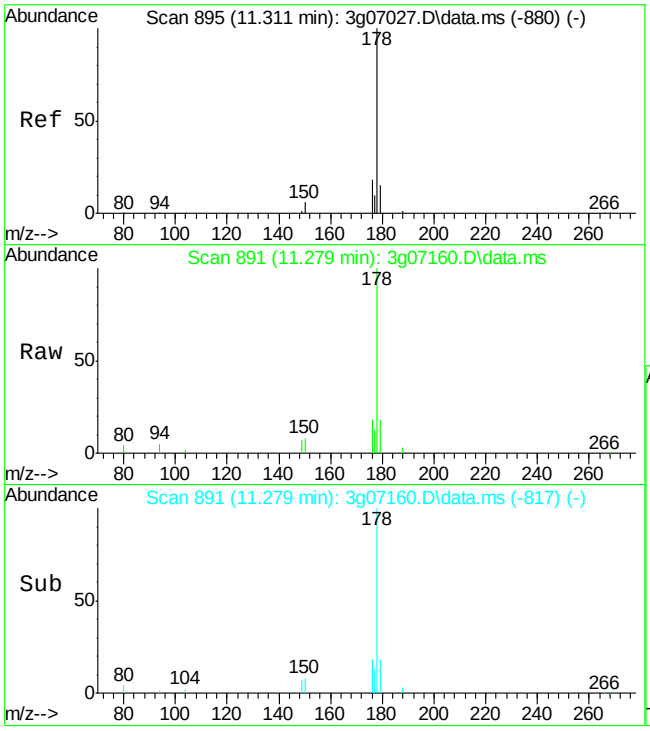


#14
Phenanthrene-d10
Concen: 4.00 ug/mL
RT: 11.240 min Scan# 886
Delta R.T. 0.008 min
Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion:188 Resp: 141312

Ion	Ratio	Lower	Upper
188	100		
94	8.3	0.0	34.2
80	20.0	0.0	36.8

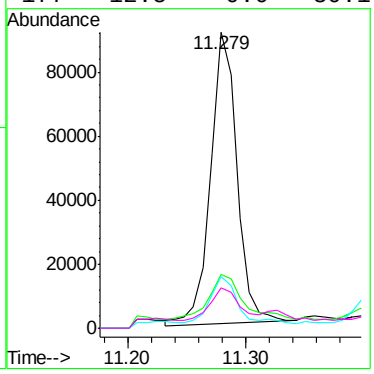


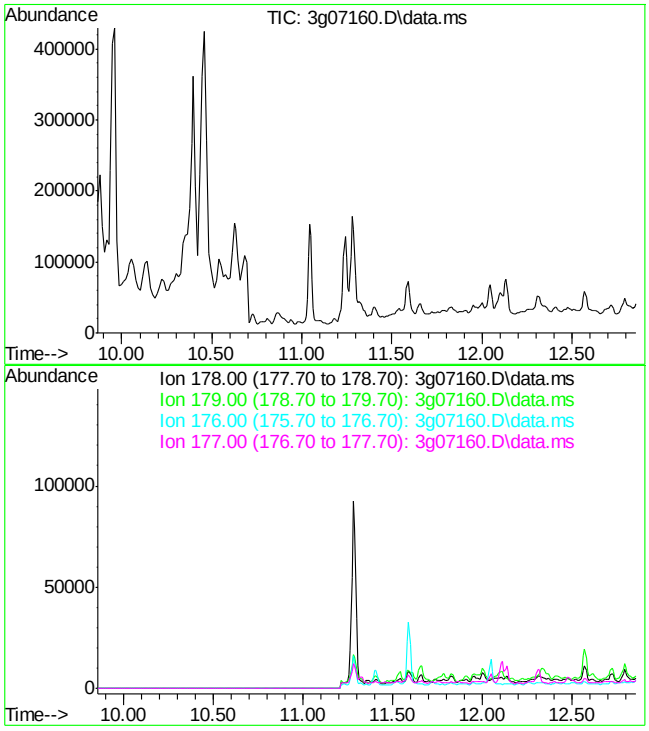


#15
Phenanthrene
Concen: 2.80 ug/mL
RT: 11.279 min Scan# 891
Delta R.T. 0.000 min
Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion:178 Resp: 142777

Ion	Ratio	Lower	Upper
178	100		
179	31.3	0.0	35.3
176	20.2	0.0	38.3
177	12.5	0.0	30.1



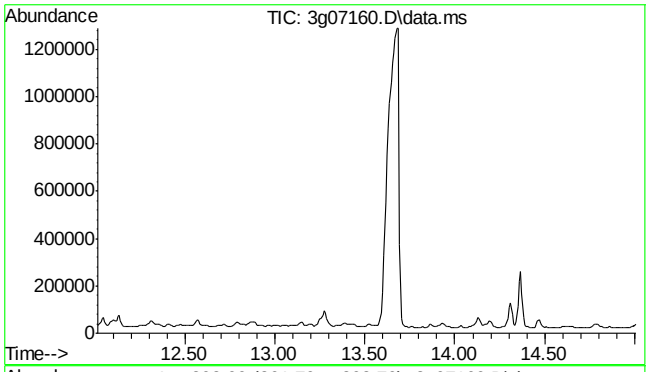


#16
Anthracene
Concen: N.D. ug/mL
Expected RT: 11.36 min

Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion: 178

Sig	Exp Ratio
178	100
179	15.1
176	17.8
177	8.7

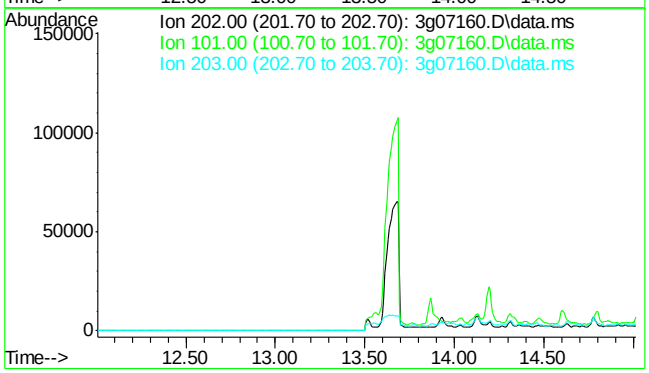


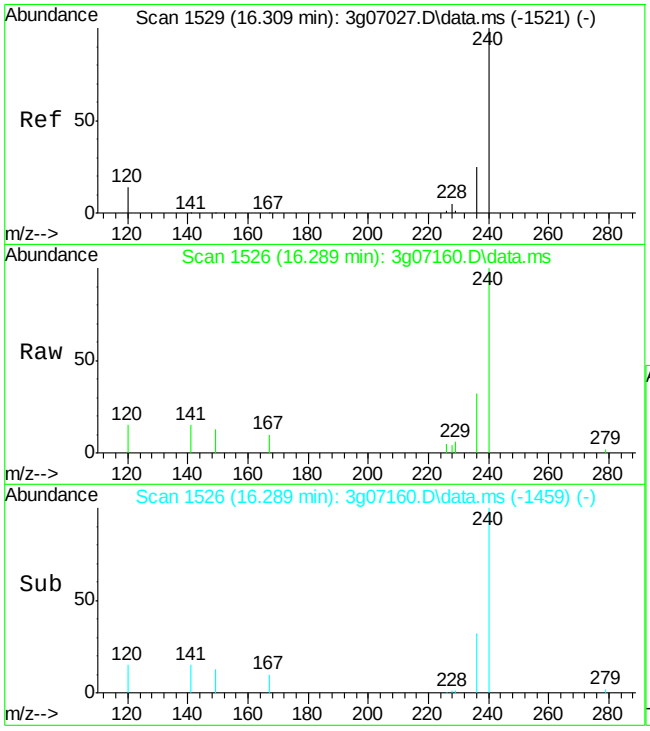
#17
Fluoranthene
Concen: N.D. ug/mL
Expected RT: 13.51 min

Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion: 202

Sig	Exp Ratio
202	100
101	12.8
203	18.0

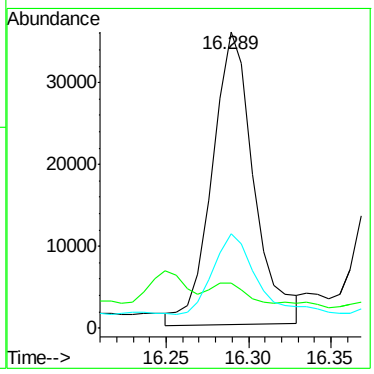


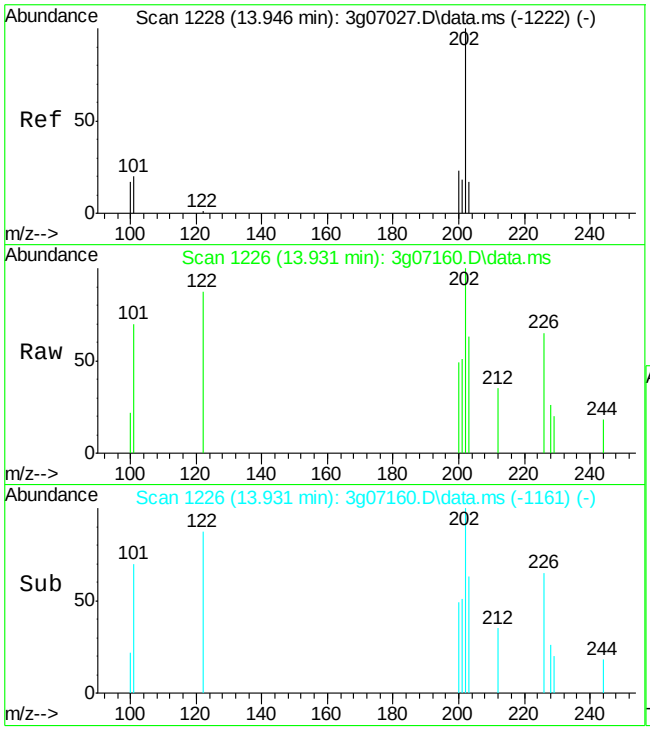


#18
Chrysene-d12
Concen: 4.00 ug/mL
RT: 16.289 min Scan# 1526
Delta R.T. 0.013 min
Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion:240 Resp: 63306

Ion	Ratio	Lower	Upper
240	100		
120	8.2	0.0	38.6
236	40.8	5.2	45.2

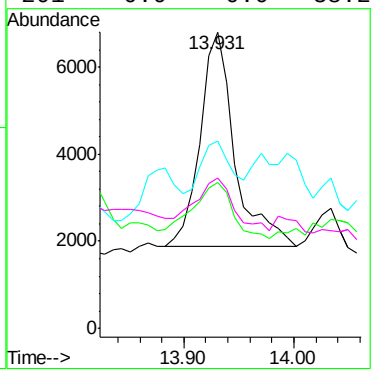


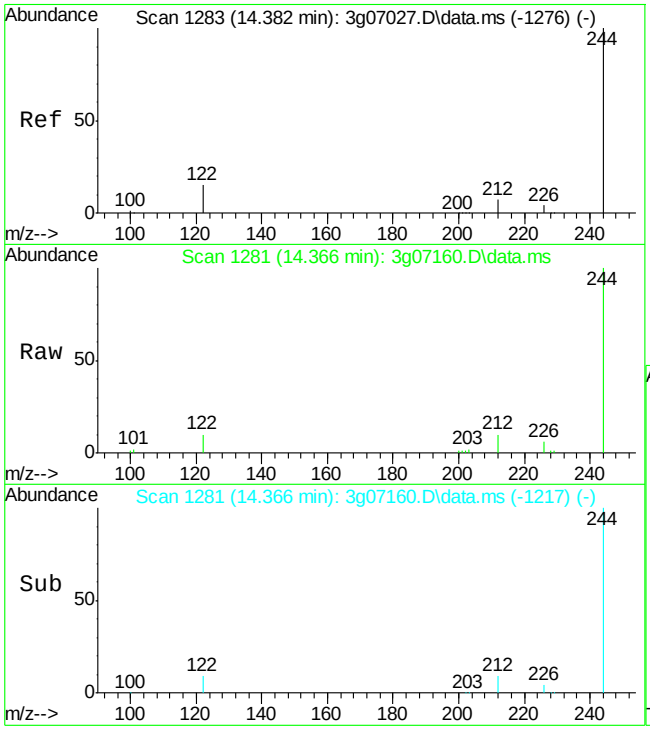


#19
Pyrene
Concen: 0.44 ug/mL
RT: 13.931 min Scan# 1226
Delta R.T. 0.016 min
Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion:202 Resp: 10803

Ion	Ratio	Lower	Upper
202	100		
200	0.0	2.1	42.1#
203	18.8	0.0	37.8
201	0.0	0.0	38.2

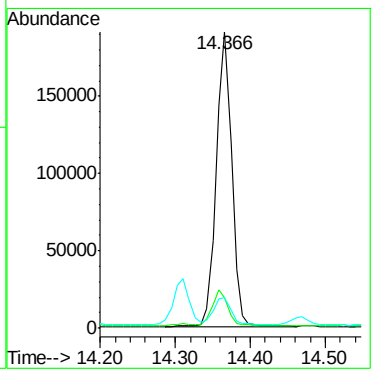


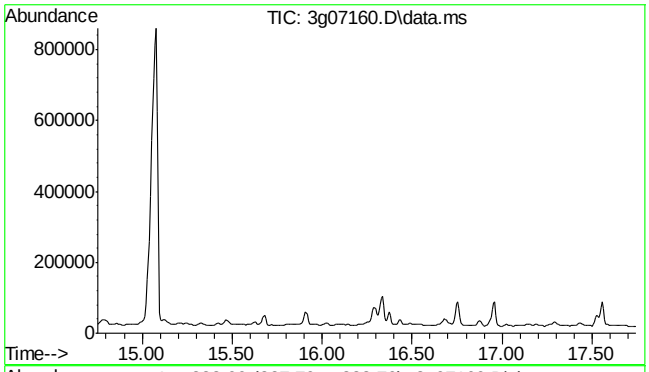


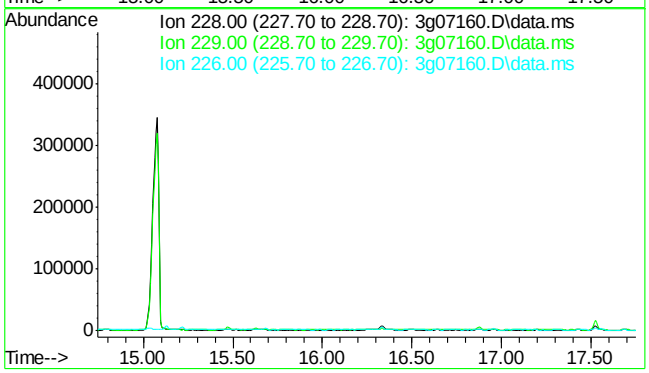
#20
Terphenyl-d14
Concen: 21.53 ug/mL
RT: 14.366 min Scan# 1281
Delta R.T. 0.008 min
Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion:244 Resp: 272820

Ion	Ratio	Lower	Upper
244	100		
122	12.0	0.8	40.8
212	10.6	0.0	27.2





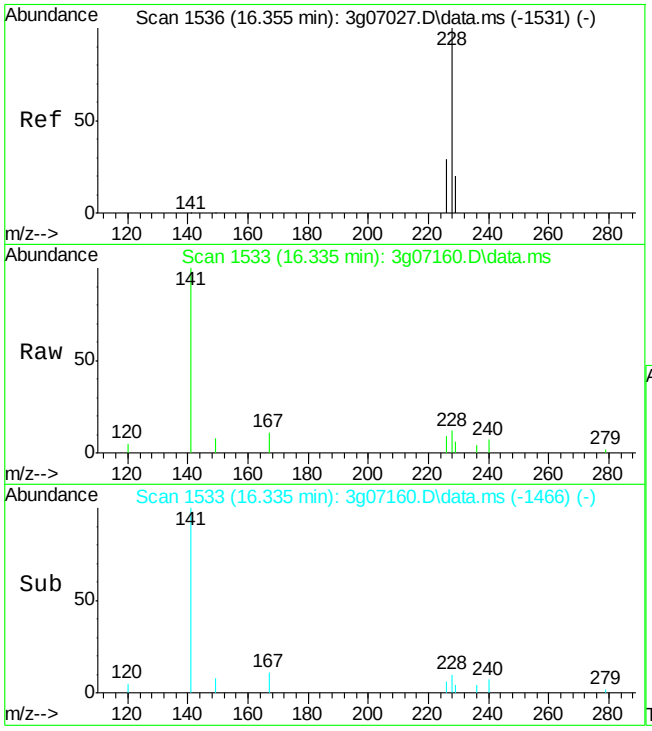


#21
Benzo(a)anthracene
Concen: N.D. ug/mL
Expected RT: 16.25 min

Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion: 228

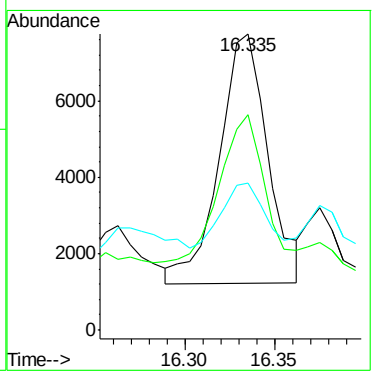
Sig	Exp Ratio
228	100
229	19.6
226	26.6

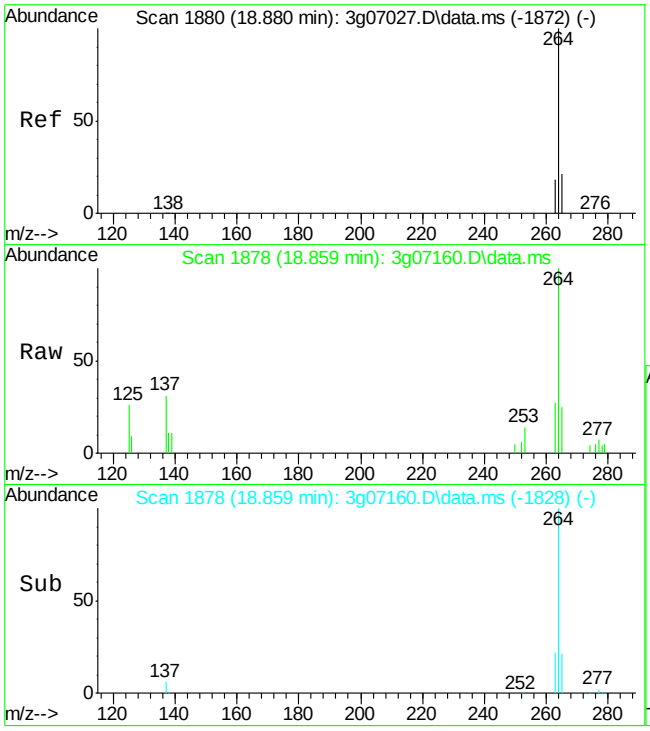


#22
Chrysene
Concen: 0.63 ug/mL
RT: 16.335 min Scan# 1533
Delta R.T. 0.007 min
Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion:228 Resp: 12280

Ion	Ratio	Lower	Upper
228	100		
226	52.2	7.4	47.4#
229	32.8	0.0	39.2

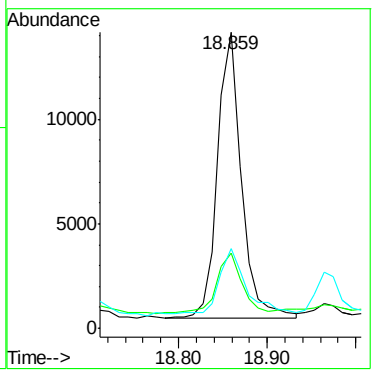


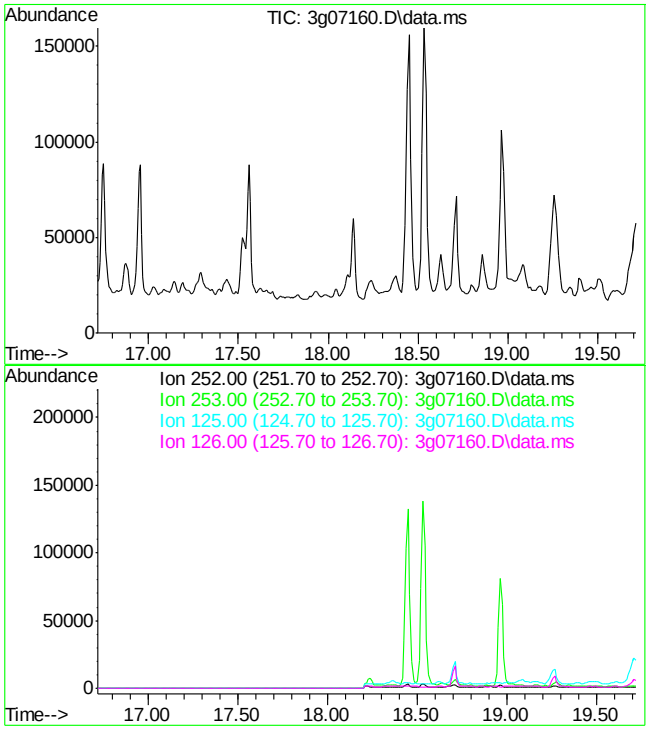


#23
Perylene-d12
Concen: 4.00 ug/mL
RT: 18.859 min Scan# 1878
Delta R.T. 0.021 min
Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion:264 Resp: 25645

Ion	Ratio	Lower	Upper
264	100		
265	22.7	1.0	41.0
263	29.9	0.0	38.6



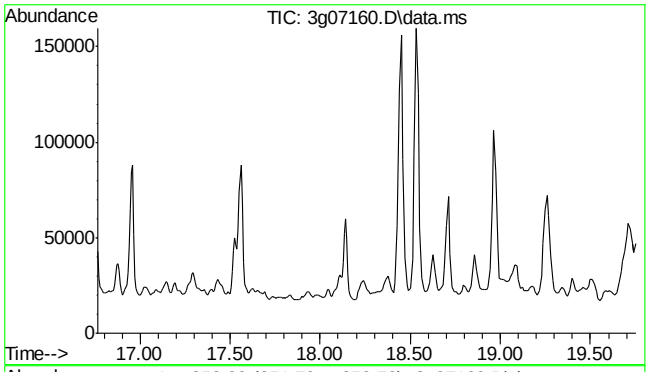


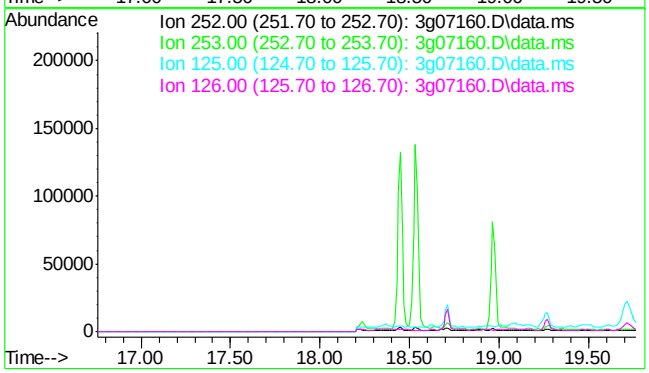
#24
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 18.22 min

Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion: 252

Sig	Exp Ratio
252	100
253	66.5
125	35.4
126	50.6



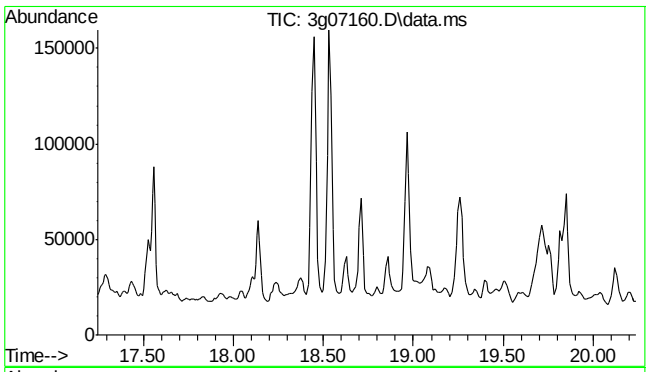


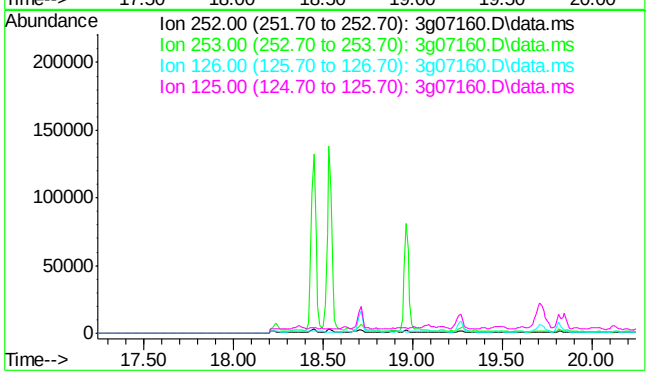
#25
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 18.26 min

Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion: 252

Sig	Exp Ratio
252	100
253	37.7
125	20.1
126	28.7



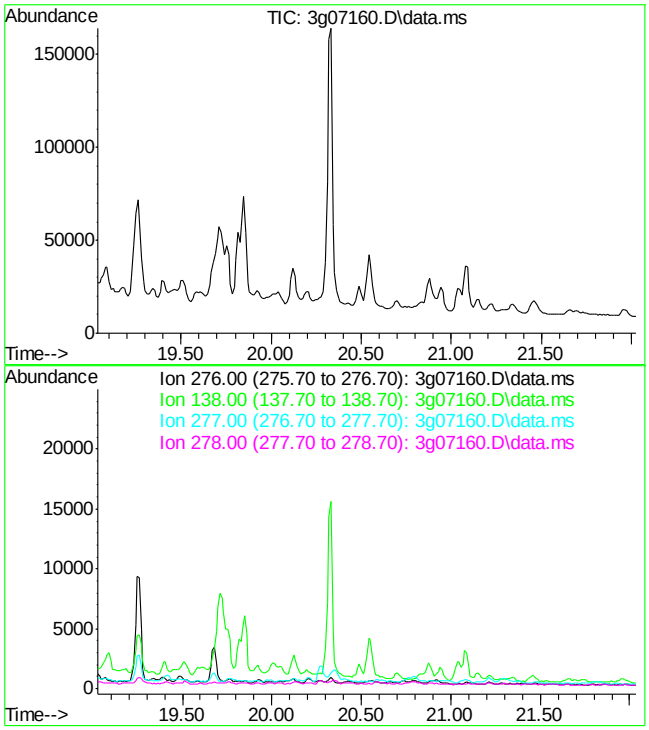


#26
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 18.74 min

Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion: 252

Sig	Exp Ratio
252	100
253	21.4
126	18.6
125	14.0

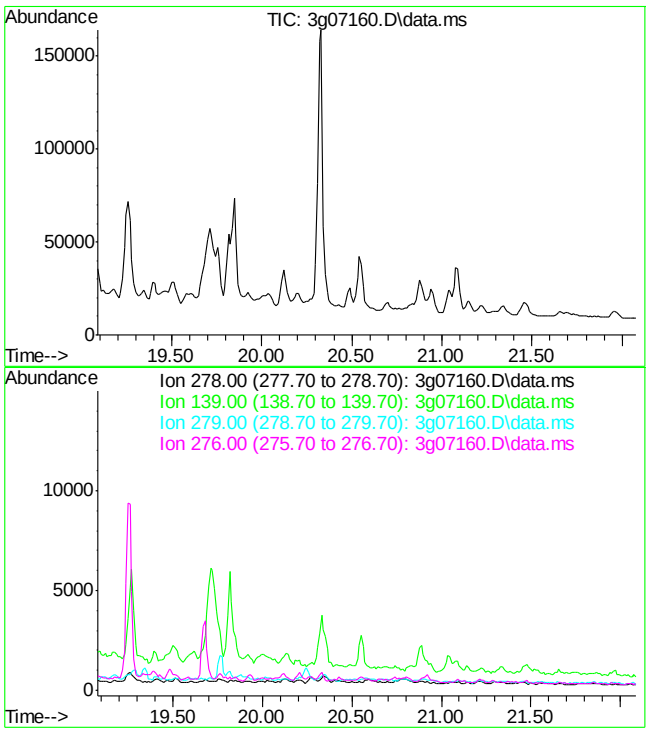


#27
Indeno(1,2,3-cd)pyrene
Concen: N.D. ug/mL
Expected RT: 20.53 min

Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion: 276

Sig	Exp Ratio
276	100
138	28.2
277	28.3
278	3.7

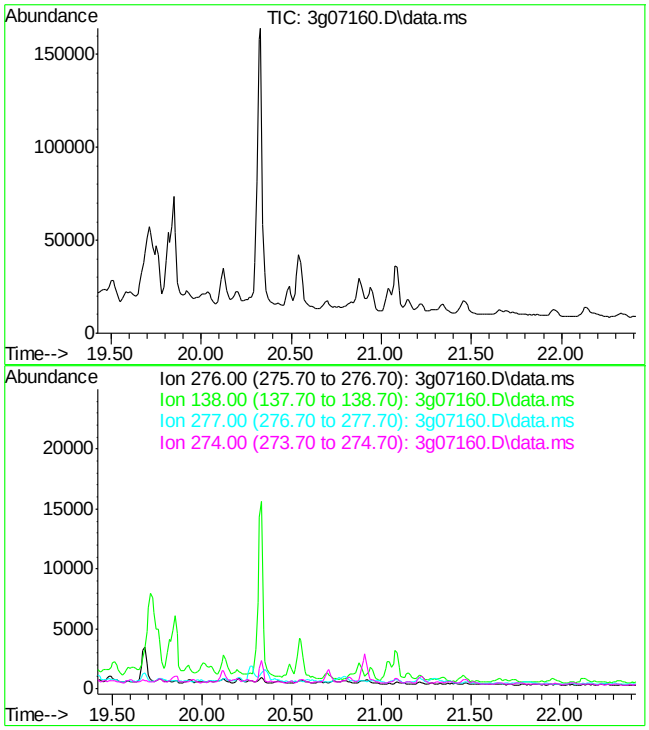


#28
Dibenz(a,h)anthracene
Concen: N.D. ug/mL
Expected RT: 20.58 min

Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion: 278

Sig	Exp Ratio
278	100
139	18.1
279	23.6
276	125.3



#29
Benzo(g,h,i)perylene
Concen: N.D. ug/mL
Expected RT: 20.92 min

Lab File: 3g07160.D
Acq: 8 Dec 11 3:11 am

Tgt Ion: 276

Sig	Exp Ratio
276	100
138	23.3
277	23.1
274	20.6

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
12/13/11 12:07

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\121211\
Data File : 3g07226.D
Acq On : 12 Dec 2011 2:57 pm
Operator : DONC
Sample : D29744-1, 4x
Misc : OP4914,E3G265,30.09,,,1,4
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Dec 13 09:14:40 2011
Quant Method : C:\msdchem\1\METHODS\SIMPE3G265.M
Quant Title : PAHSIM BASE
QLast Update : Tue Dec 13 08:57:43 2011
Response via : Initial Calibration

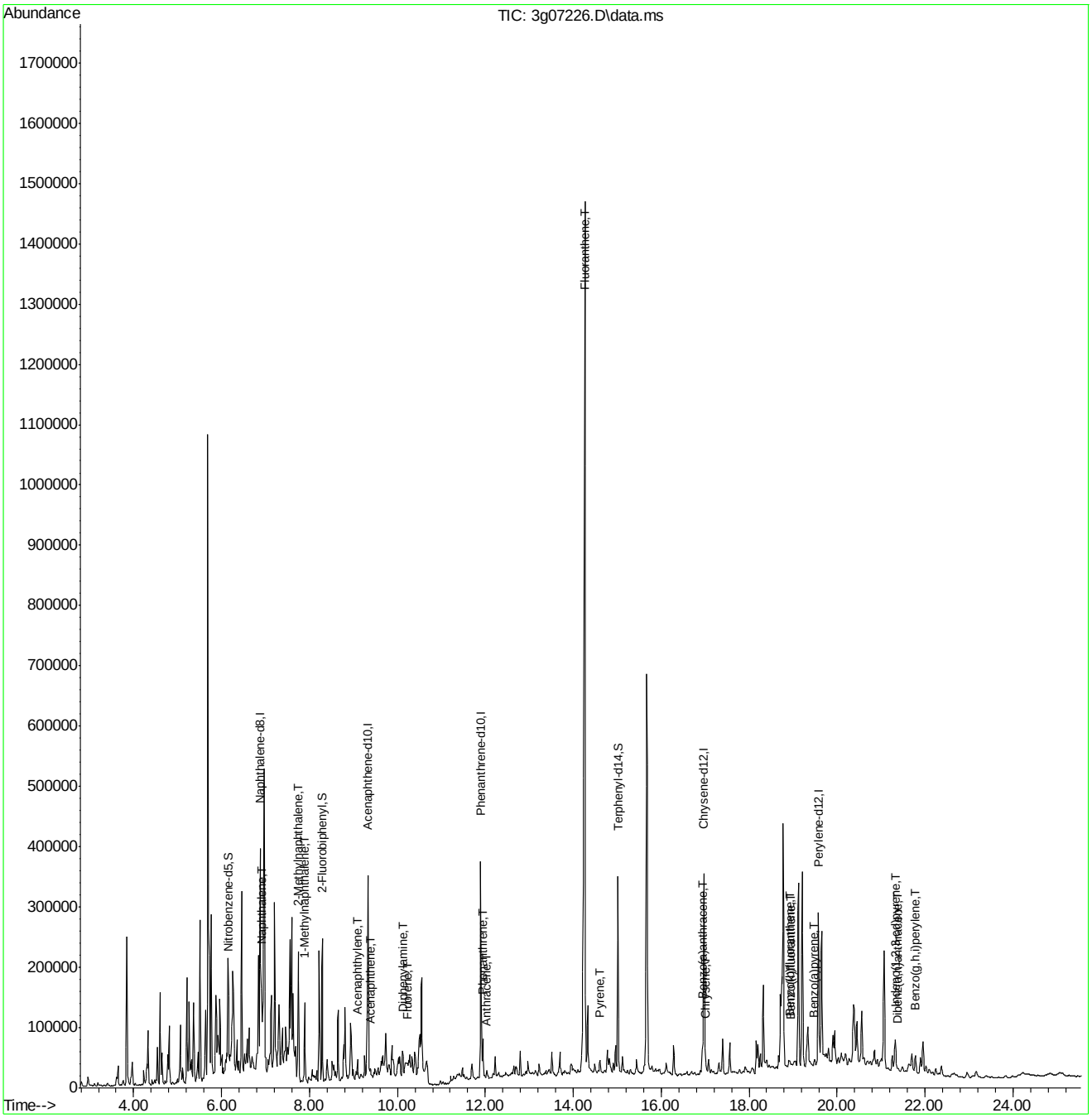
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	6.882	136	303454	4.00	ug/mL	0.00
6) Acenaphthene-d10	9.323	164	221329	4.00	ug/mL	-0.01
14) Phenanthrene-d10	11.897	188	355286	4.00	ug/mL	0.00
18) Chrysene-d12	16.970	240	385476	4.00	ug/mL	0.00
23) Perylene-d12	19.574	264	327362	4.00	ug/mL	0.00
System Monitoring Compounds						
2) Nitrobenzene-d5	6.158	82	73347	1.20	ug/mL	0.00
7) 2-Fluorobiphenyl	8.295	172	235616	2.87	ug/mL	0.00
20) Terphenyl-d14	15.015	244	370952	4.74	ug/mL	-0.02
Target Compounds						Qvalue
3) N-Nitrosodimethylamine	0.000		0	N.D.	d	
4) N-Nitrosodi-propylamine	0.000		0	N.D.	d	
5) Naphthalene	6.906	128	93271	1.06	ug/mL	87
8) 2-Methylnaphthalene	7.740	142	133516	1.90	ug/mL	91
9) 1-Methylnaphthalene	7.893	142	66034	1.09	ug/mL#	86
10) Acenaphthylene	9.098	152	4350	0.05	ug/mL#	1
11) Acenaphthene	9.382	154	2886	0.05	ug/mL#	15
12) Fluorene	10.233	166	14084	0.18	ug/mL#	64
13) Diphenylamine	10.126	169	14936	0.25	ug/mL	90
15) Phenanthrene	11.944	178	63872	0.56	ug/mL	97
16) Anthracene	12.031	178	4527m	0.04	ug/mL	
17) Fluoranthene	14.263	202	181693	1.31	ug/mL#	1
19) Pyrene	14.611	202	11057	0.08	ug/mL#	43
21) Benzo(a)anthracene	16.944	228	4438m	0.04	ug/mL	
22) Chrysene	17.016	228	17313	0.14	ug/mL	92
24) Benzo(b)fluoranthene	18.922	252	5113m	0.06	ug/mL	
25) Benzo(k)fluoranthene	18.943	252	2993m	0.02	ug/mL	
26) Benzo(a)pyrene	19.469	252	3971	0.04	ug/mL#	7
27) Indeno(1,2,3-cd)pyrene	21.341	276	5826	0.09	ug/mL#	16
28) Dibenz(a,h)anthracene	21.372	278	5151	0.06	ug/mL#	45
29) Benzo(g,h,i)perylene	21.782	276	5357	0.05	ug/mL#	6

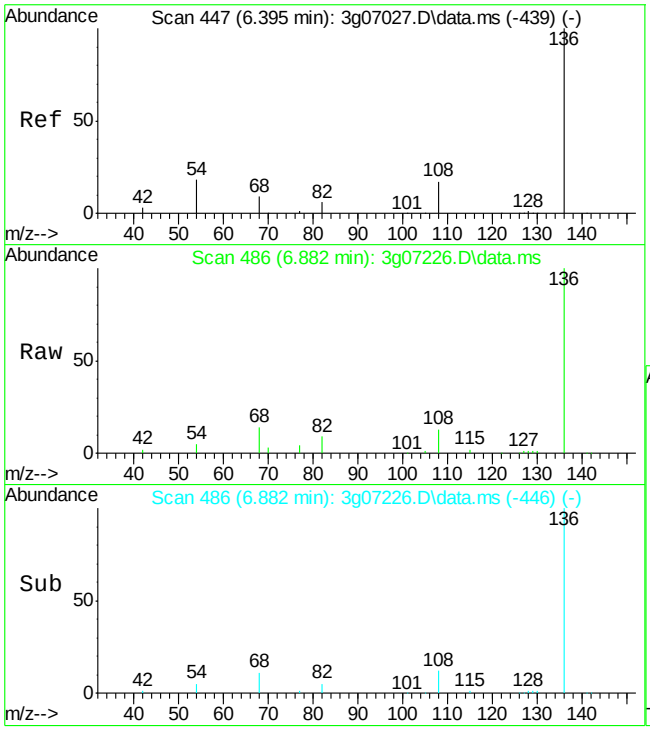
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\121211\
Data File : 3g07226.D
Acq On : 12 Dec 2011 2:57 pm
Operator : DONC
Sample : D29744-1, 4x
Misc : OP4914,E3G265,30.09,,,1,4
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Dec 13 09:14:40 2011
Quant Method : C:\msdchem\1\METHODS\SIMPE3G265.M
Quant Title : PAHSIM BASE
QLast Update : Tue Dec 13 08:57:43 2011
Response via : Initial Calibration

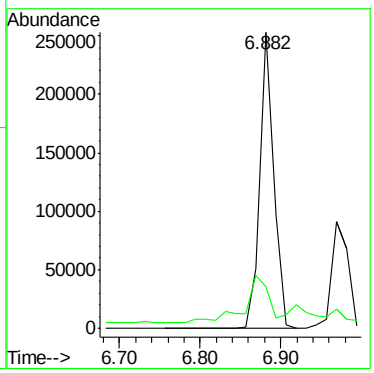


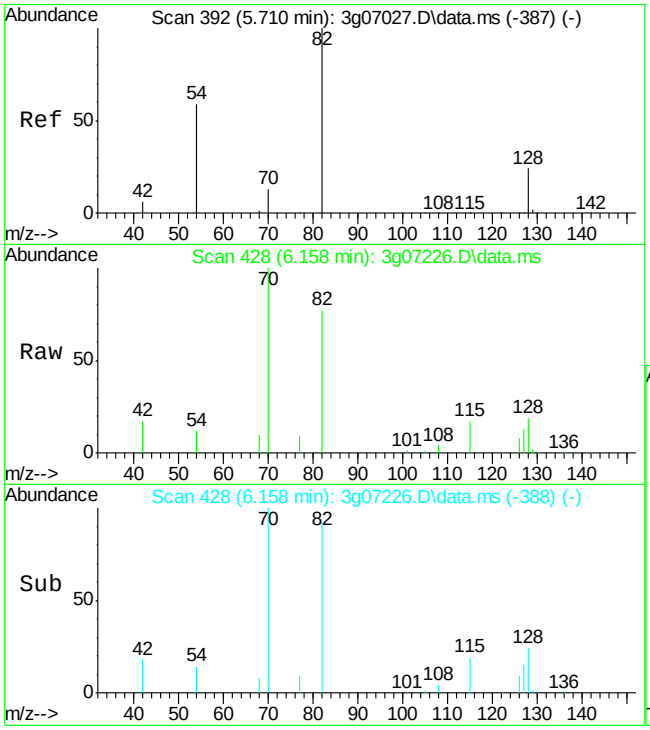


#1
Naphthalene-d8
Concen: 4.00 ug/mL
RT: 6.882 min Scan# 486
Delta R.T. 0.000 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:136 Resp: 303454

Ion	Ratio	Lower	Upper
136	100		
68	29.0	1.0	41.0

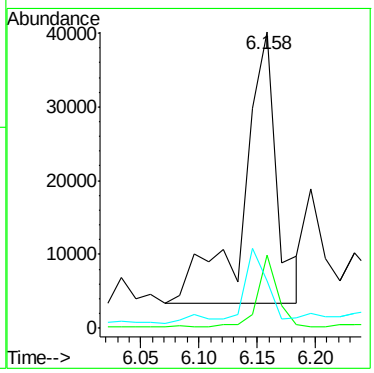


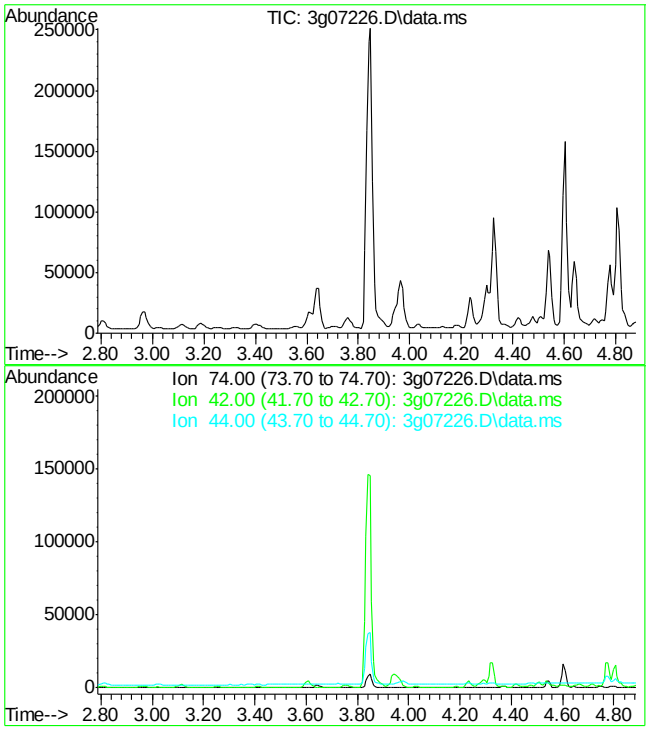


#2
Nitrobenzene-d5
Concen: 1.20 ug/mL
RT: 6.158 min Scan# 428
Delta R.T. 0.000 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion: 82 Resp: 73347

Ion	Ratio	Lower	Upper
82	100		
128	16.0	0.0	38.8
54	17.9	0.0	39.1



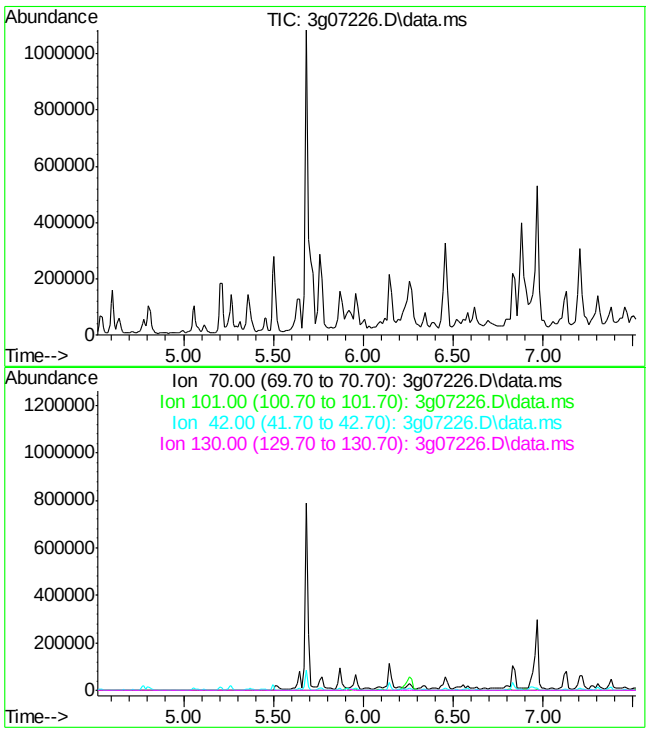


#3
N-Nitrosodimethylamine
Concen: N.D. ug/mL
Expected RT: 3.38 min

Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion: 74

Sig	Exp Ratio
74	100
42	21.8
44	1.6

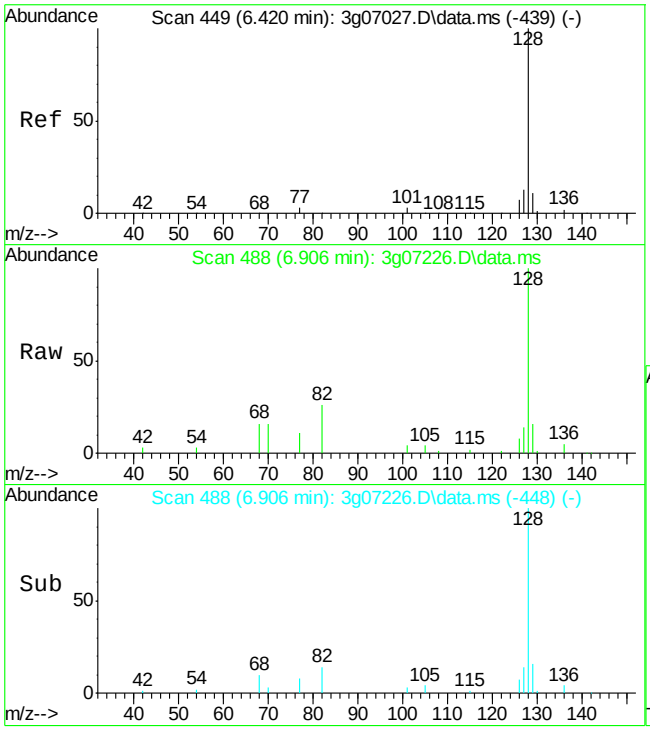


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 6.02 min

Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion: 70

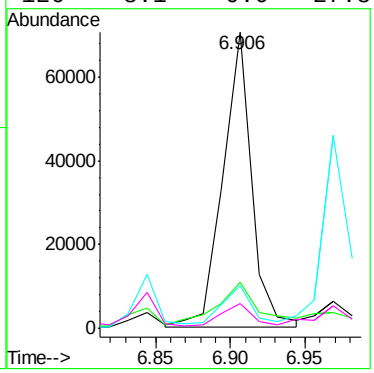
Sig	Exp Ratio
70	100
101	7.7
42	19.0
130	8.9

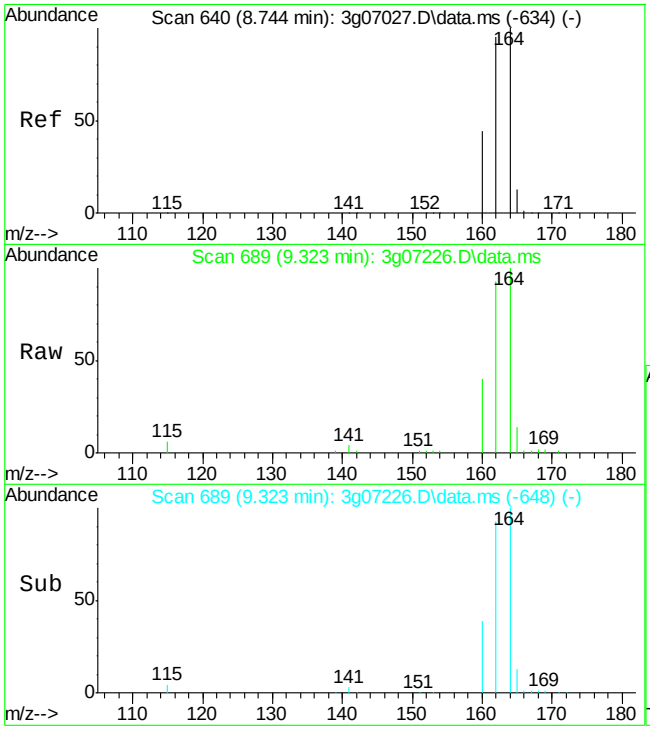


#5
Naphthalene
Concen: 1.06 ug/mL
RT: 6.906 min Scan# 488
Delta R.T. 0.000 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:128 Resp: 93271

Ion	Ratio	Lower	Upper
128	100		
129	22.5	0.0	30.9
127	15.9	0.0	33.7
126	8.1	0.0	27.8

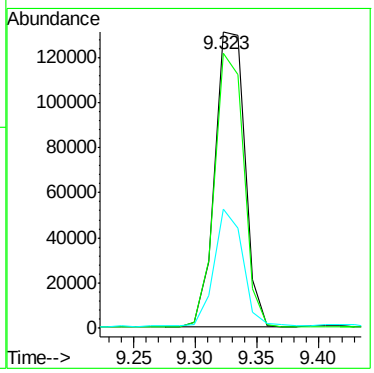


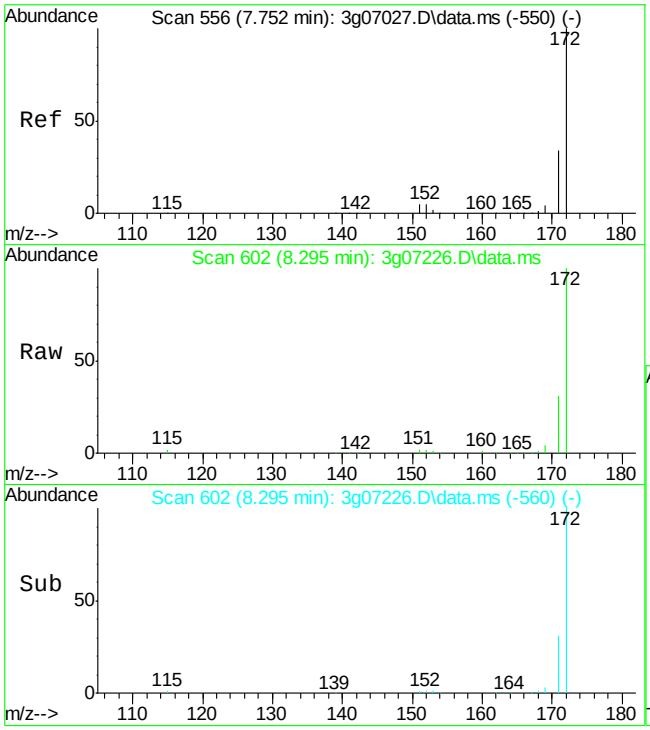


#6
Acenaphthene-d10
Concen: 4.00 ug/mL
RT: 9.323 min Scan# 689
Delta R.T. -0.012 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:164 Resp: 221329

Ion	Ratio	Lower	Upper
164	100		
162	90.8	72.2	112.2
160	39.3	18.4	58.4

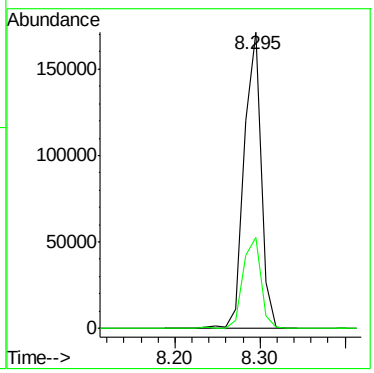


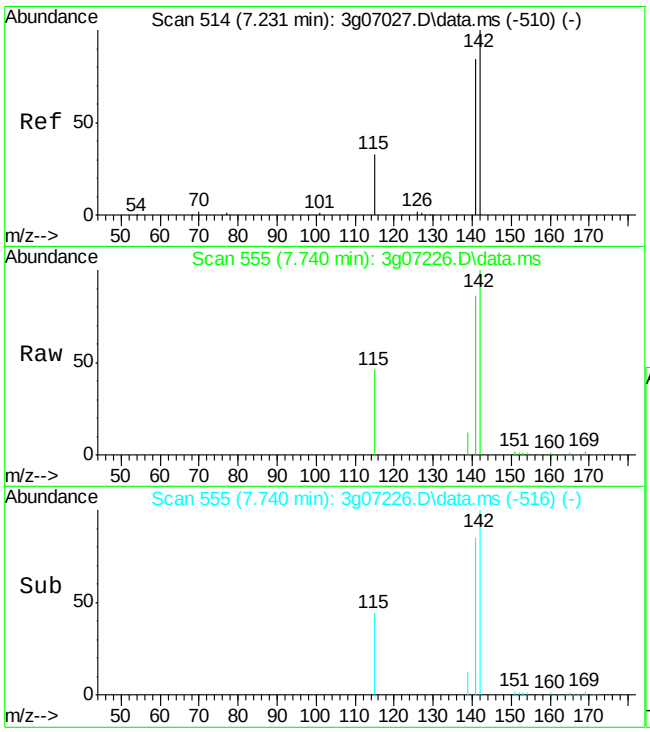


#7
2-Fluorobiphenyl
Concen: 2.87 ug/mL
RT: 8.295 min Scan# 602
Delta R.T. 0.000 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:172 Resp: 235616

Ion	Ratio	Lower	Upper
172	100		
171	32.5	12.5	52.5

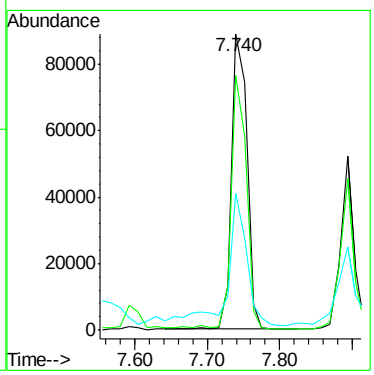


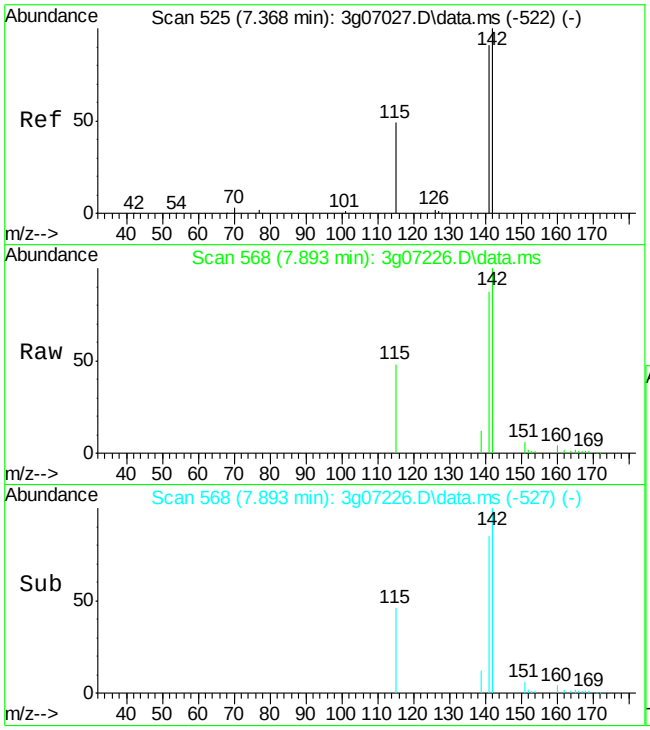


#8
2-Methylnaphthalene
Concen: 1.90 ug/mL
RT: 7.740 min Scan# 555
Delta R.T. -0.011 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:142 Resp: 133516

Ion	Ratio	Lower	Upper
142	100		
141	83.9	61.6	101.6
115	56.5	23.7	63.7

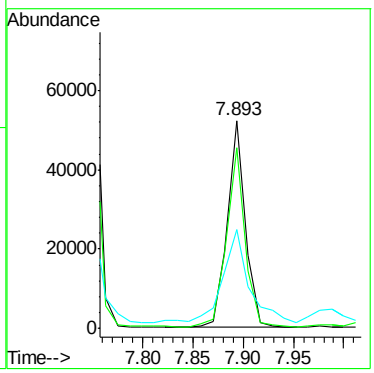


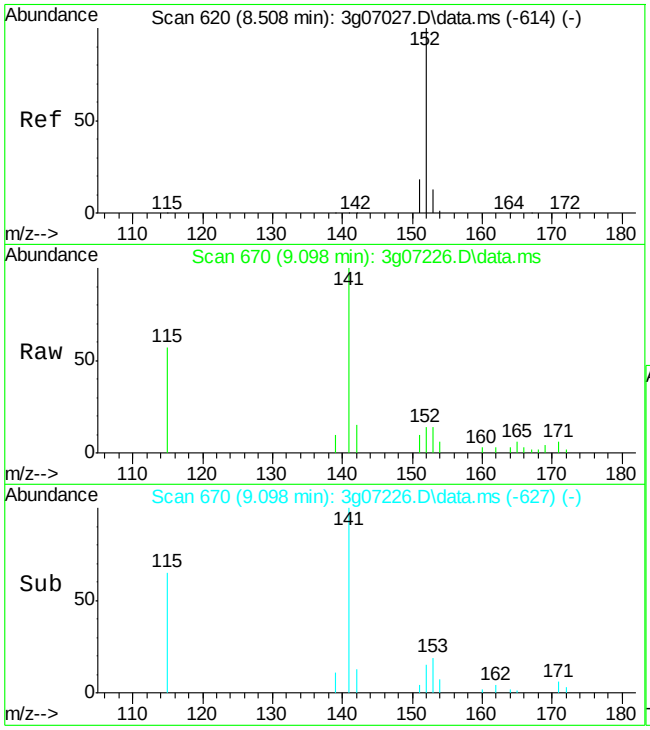


#9
1-Methylnaphthalene
Concen: 1.09 ug/mL
RT: 7.893 min Scan# 568
Delta R.T. 0.000 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:142 Resp: 66034

Ion	Ratio	Lower	Upper
142	100		
141	88.2	67.8	101.8
115	66.0	36.1	54.1#

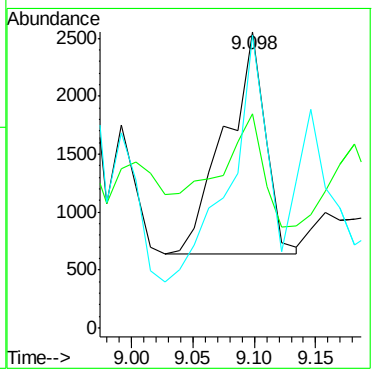


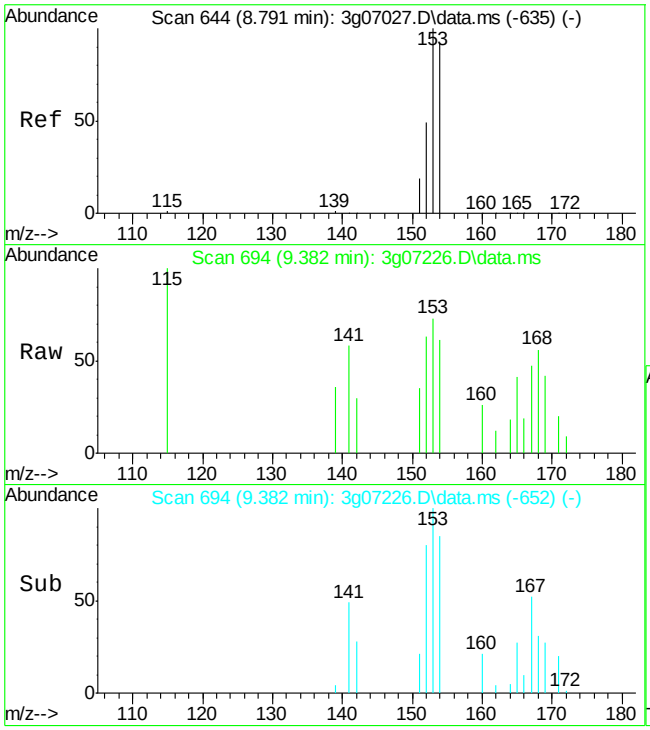


#10
Acenaphthylene
Concen: 0.05 ug/mL
RT: 9.098 min Scan# 670
Delta R.T. 0.012 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:152 Resp: 4350

Ion	Ratio	Lower	Upper
152	100		
151	53.2	0.0	38.8#
153	103.1	0.0	32.9#

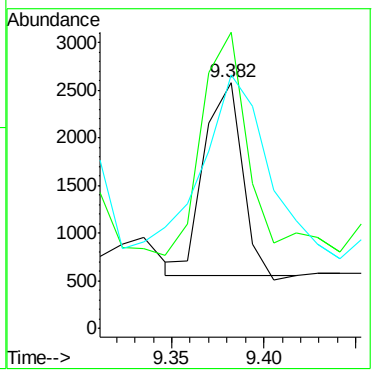


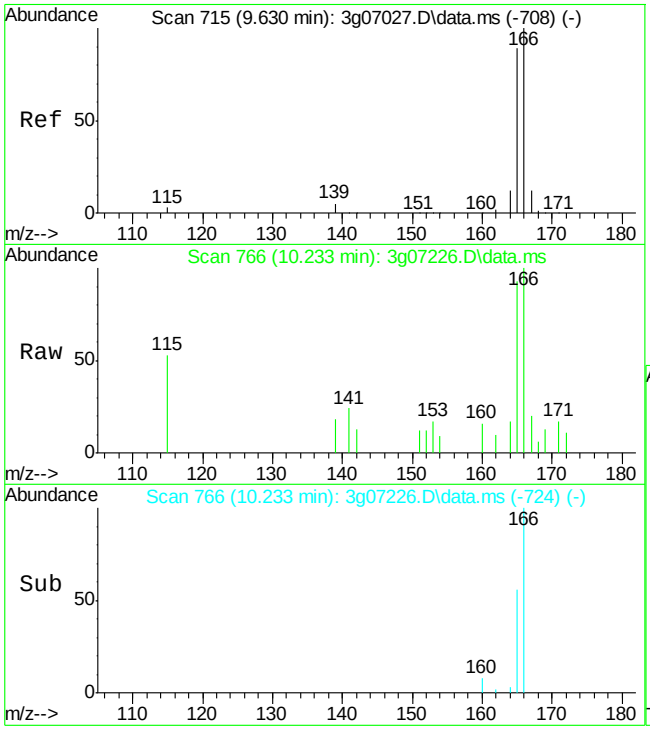


#11
Acenaphthene
Concen: 0.05 ug/mL
RT: 9.382 min Scan# 694
Delta R.T. 0.000 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:154 Resp: 2886

Ion	Ratio	Lower	Upper
154	100		
153	145.5	82.5	122.5#
152	168.5	29.2	69.2#

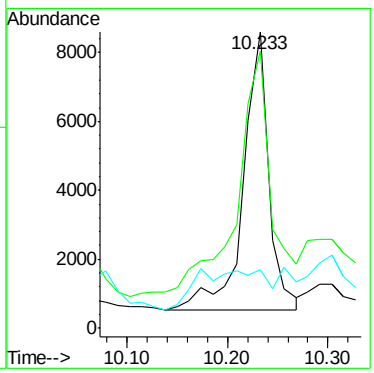


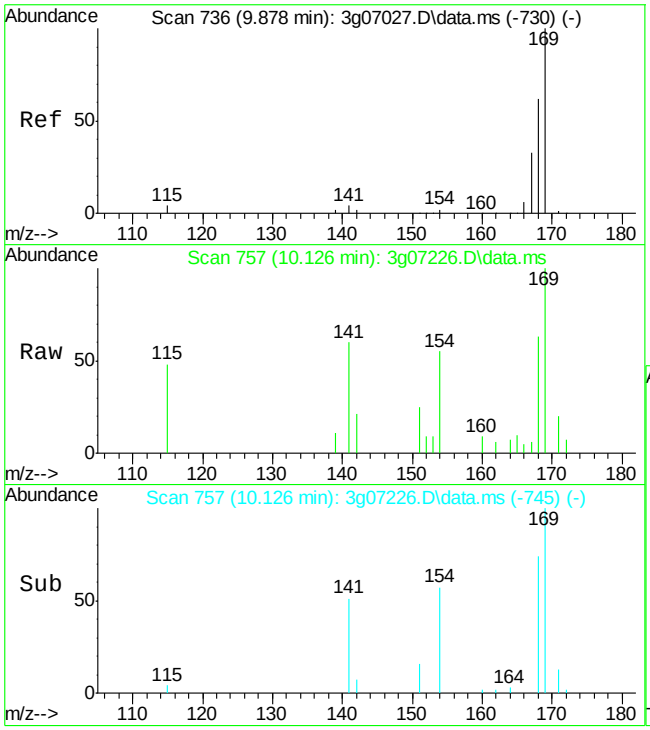


#12
Fluorene
Concen: 0.18 ug/mL
RT: 10.233 min Scan# 766
Delta R.T. 0.001 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:166 Resp: 14084

Ion	Ratio	Lower	Upper
166	100		
165	120.3	70.5	110.5#
167	39.2	0.0	33.2#

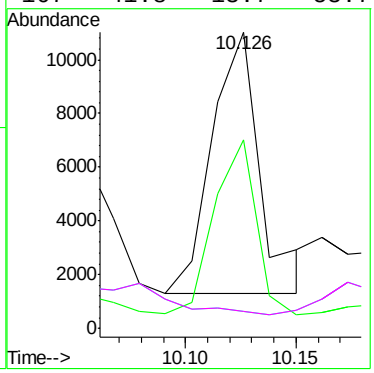


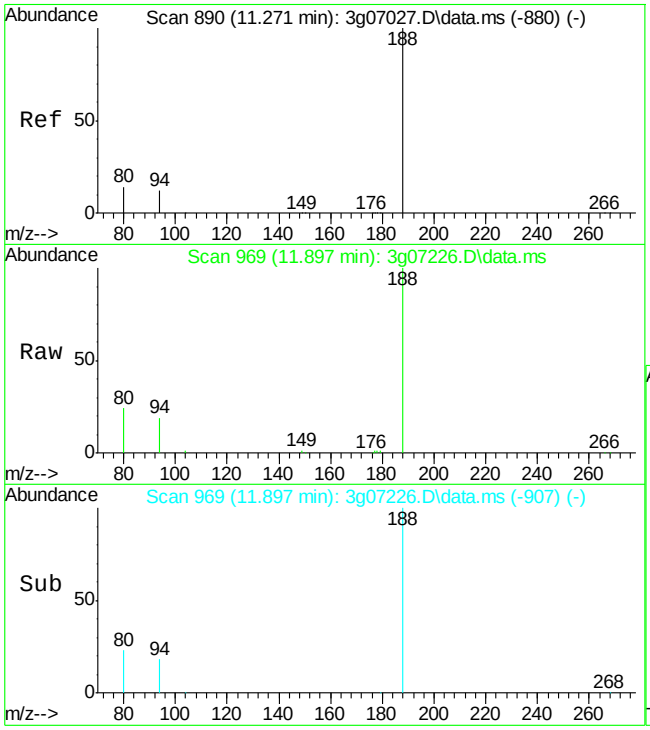


#13
Diphenylamine
Concen: 0.25 ug/mL
RT: 10.126 min Scan# 757
Delta R.T. -0.354 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:169 Resp: 14936

Ion	Ratio	Lower	Upper
169	100		
168	56.6	41.5	81.5
167	41.8	13.7	53.7
167	41.8	13.7	53.7

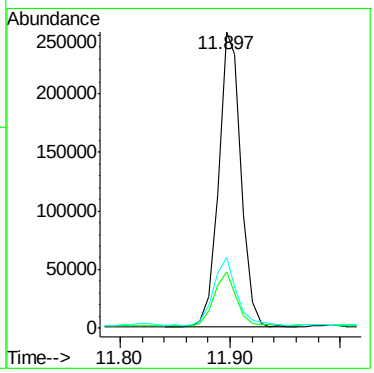


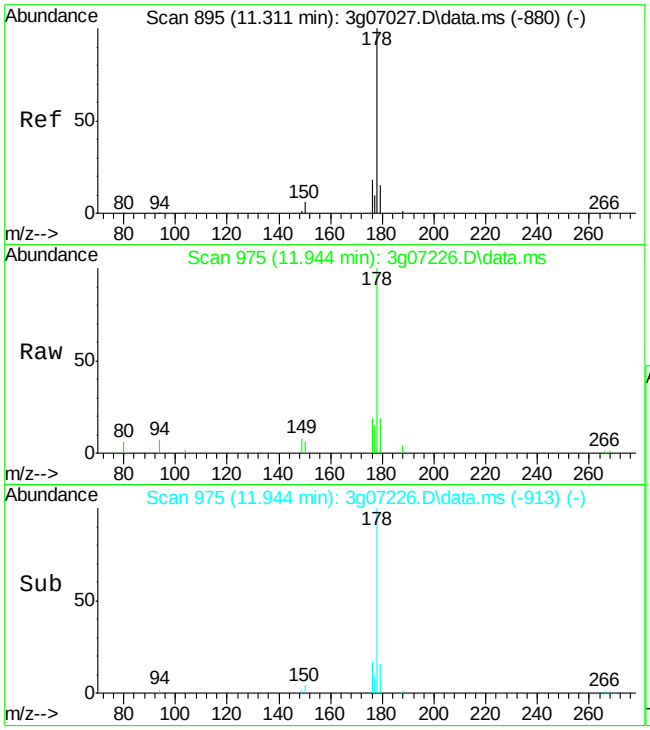


#14
Phenanthrene-d10
Concen: 4.00 ug/mL
RT: 11.897 min Scan# 969
Delta R.T. -0.008 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:188 Resp: 355286

Ion	Ratio	Lower	Upper
188	100		
94	18.0	5.1	45.1
80	23.9	9.8	49.8

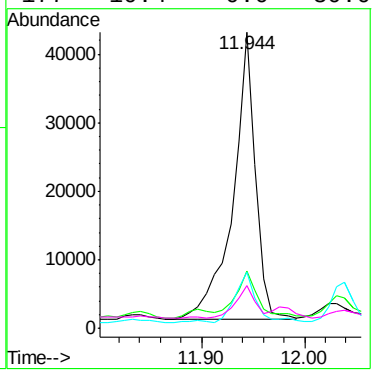


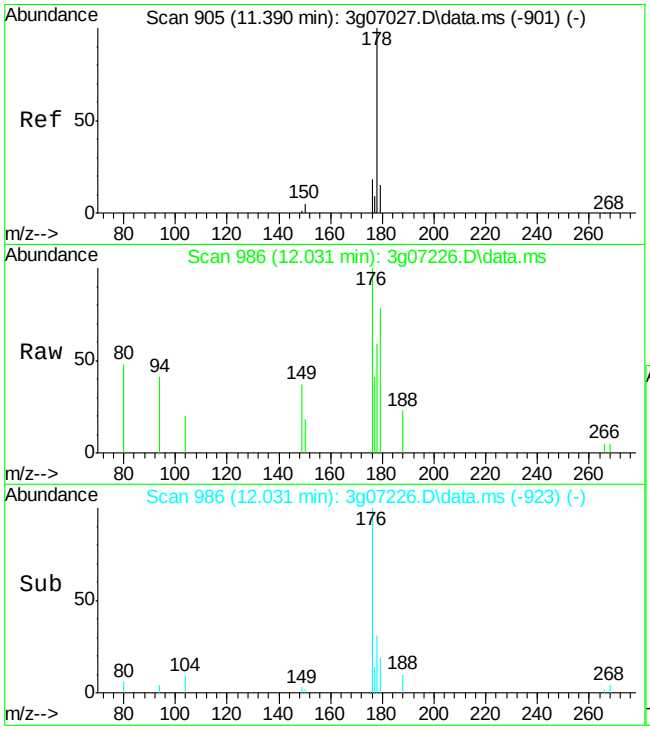


#15
Phenanthrene
Concen: 0.56 ug/mL
RT: 11.944 min Scan# 975
Delta R.T. -0.008 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:178 Resp: 63872

Ion	Ratio	Lower	Upper
178	100		
179	14.0	0.0	35.2
176	16.2	0.0	38.6
177	10.4	0.0	30.0

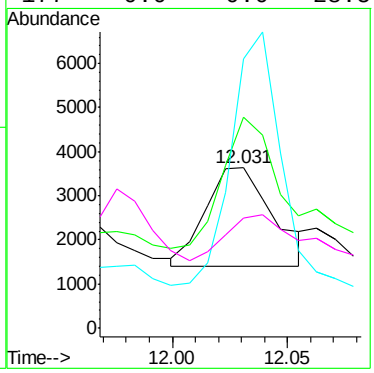


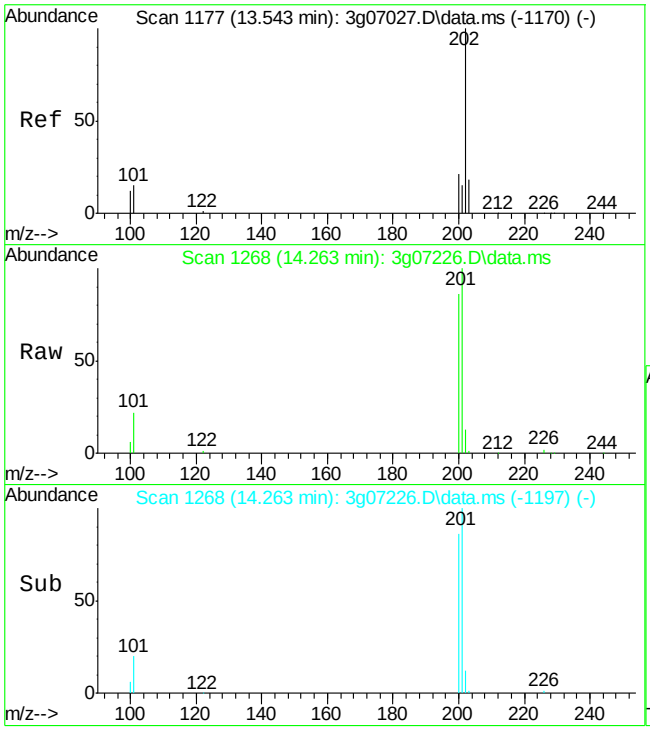


#16
Anthracene
Concen: 0.04 ug/mL m
RT: 12.031 min Scan# 986
Delta R.T. 0.001 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:178 Resp: 4527

Ion	Ratio	Lower	Upper
178	100		
179	0.0	0.0	34.9
176	0.0	0.0	37.9
177	0.0	0.0	28.5

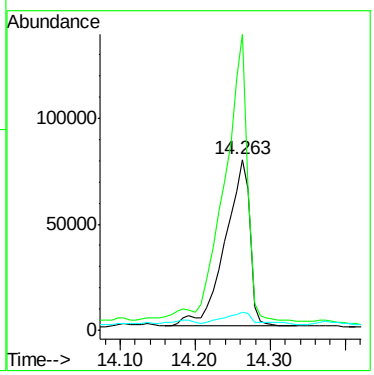


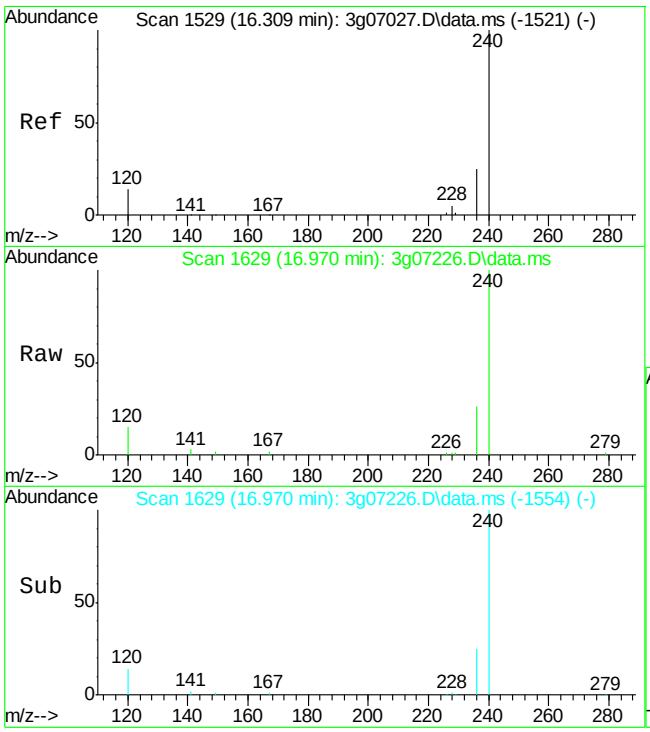


#17
Fluoranthene
Concen: 1.31 ug/mL
RT: 14.263 min Scan# 1268
Delta R.T. 0.064 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:202 Resp: 181693

Ion	Ratio	Lower	Upper
202	100		
101	164.6	2.3	42.3#
203	6.7	0.0	37.1

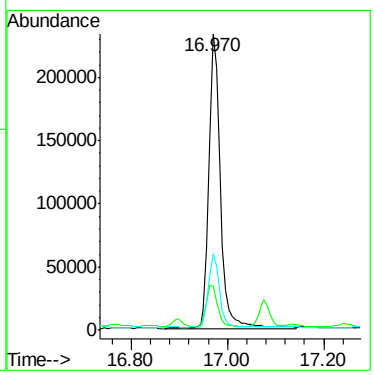


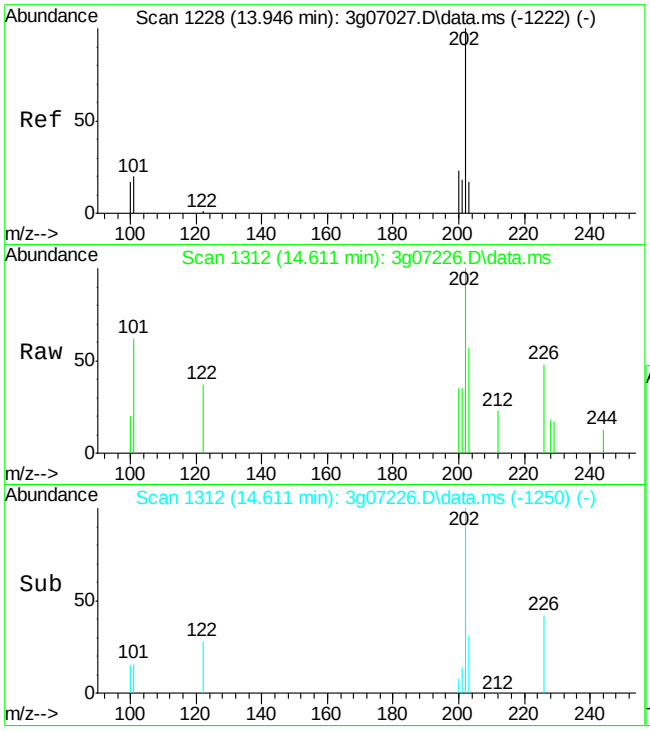


#18
Chrysene-d12
Concen: 4.00 ug/mL
RT: 16.970 min Scan# 1629
Delta R.T. -0.006 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:240 Resp: 385476

Ion	Ratio	Lower	Upper
240	100		
120	13.7	0.5	40.5
236	23.5	5.9	45.9

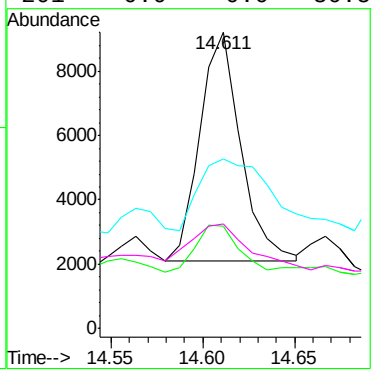


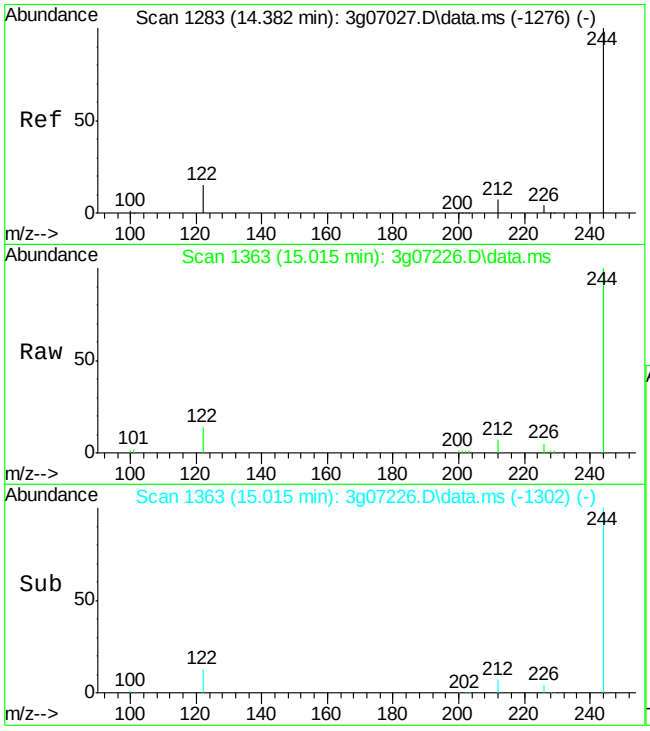


#19
Pyrene
Concen: 0.08 ug/mL
RT: 14.611 min Scan# 1312
Delta R.T. -0.008 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:202 Resp: 11057

Ion	Ratio	Lower	Upper
202	100		
200	0.0	0.2	40.2#
203	56.4	0.0	37.5#
201	0.0	0.0	36.5

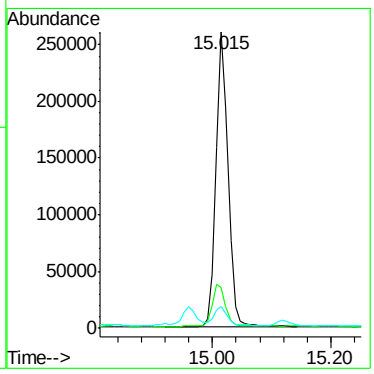


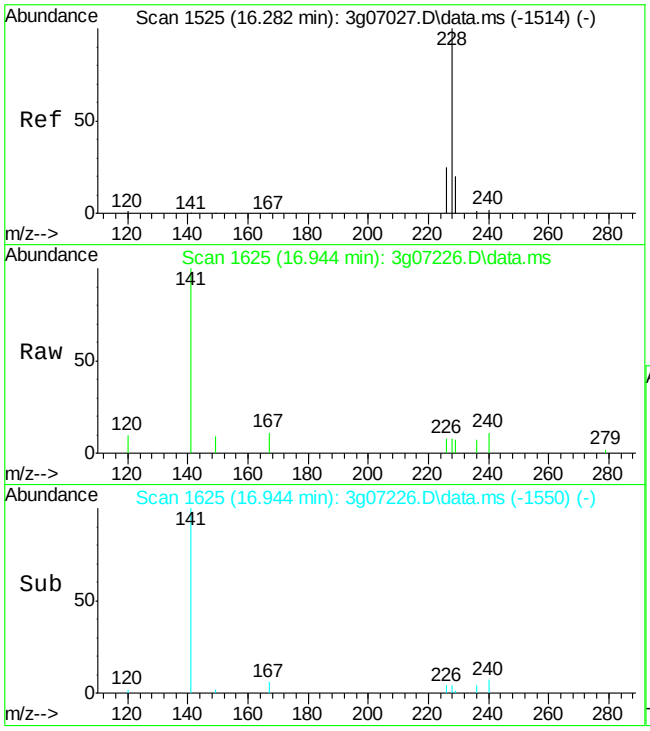


#20
Terphenyl-d14
Concen: 4.74 ug/mL
RT: 15.015 min Scan# 1363
Delta R.T. -0.015 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:244 Resp: 370952

Ion	Ratio	Lower	Upper
244	100		
122	16.1	0.0	40.0
212	7.1	0.0	27.3

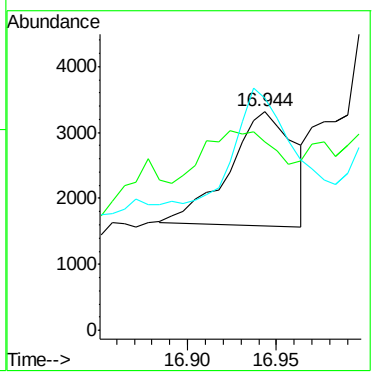


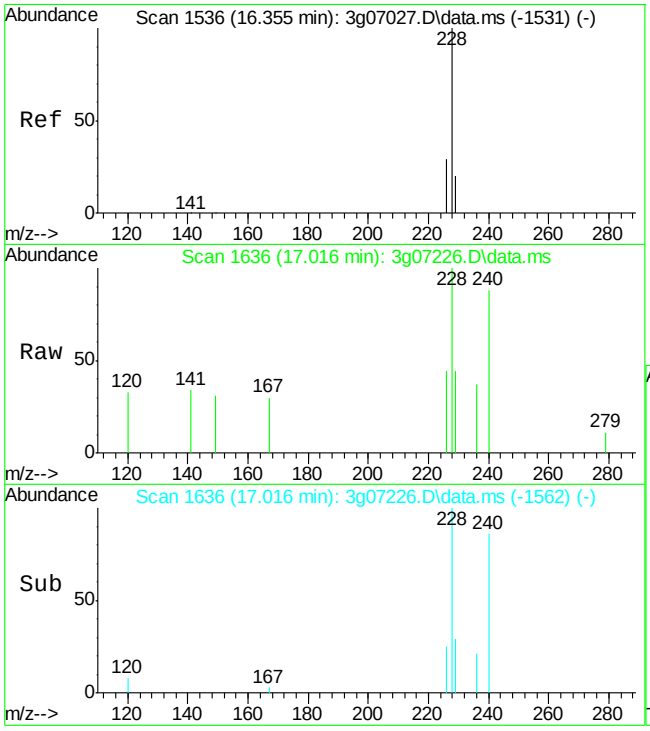


#21
Benzo(a)anthracene
Concen: 0.04 ug/mL m
RT: 16.944 min Scan# 1625
Delta R.T. -0.006 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:228 Resp: 4438

Ion	Ratio	Lower	Upper
228	100		
229	64.2	0.0	39.4#
226	90.9	6.4	46.4#

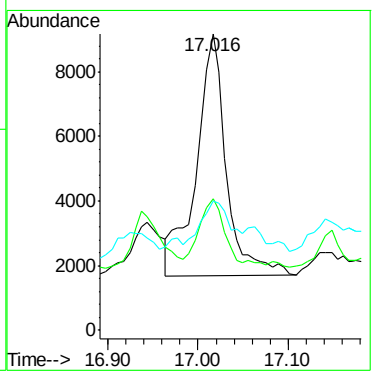


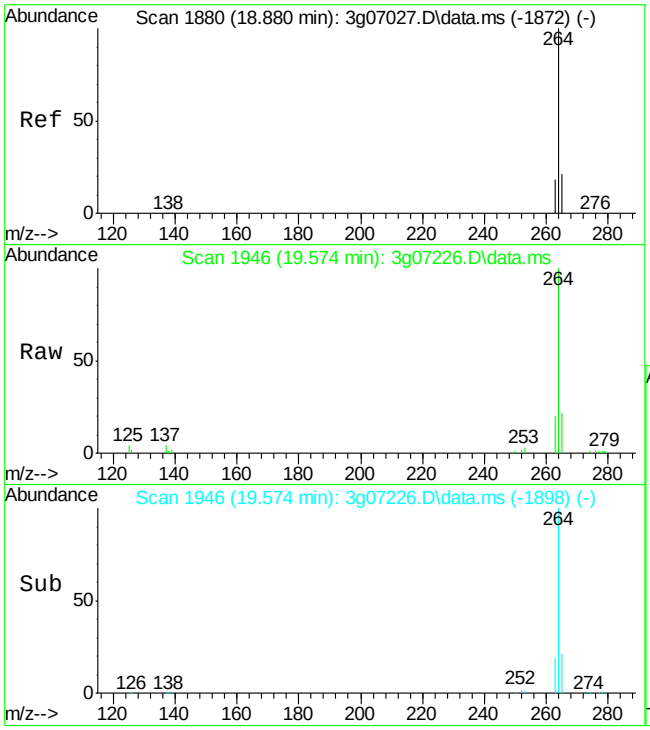


#22
Chrysene
Concen: 0.14 ug/mL
RT: 17.016 min Scan# 1636
Delta R.T. -0.013 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:228 Resp: 17313

Ion	Ratio	Lower	Upper
228	100		
226	23.3	8.5	48.5
229	16.5	0.0	39.3

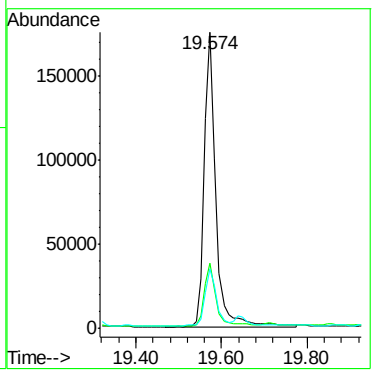


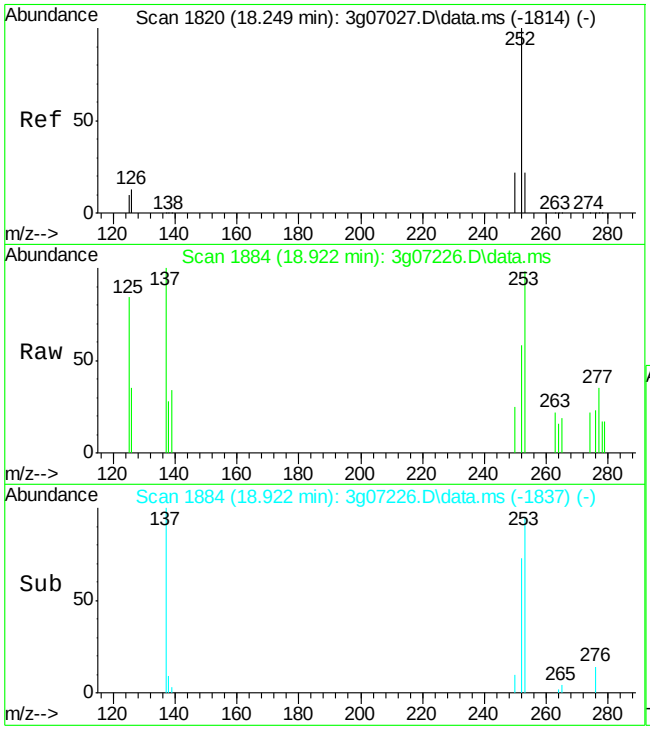


#23
Perylene-d12
Concen: 4.00 ug/mL
RT: 19.574 min Scan# 1946
Delta R.T. 0.000 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:264 Resp: 327362

Ion	Ratio	Lower	Upper
264	100		
265	21.1	0.8	40.8
263	19.2	0.0	39.1

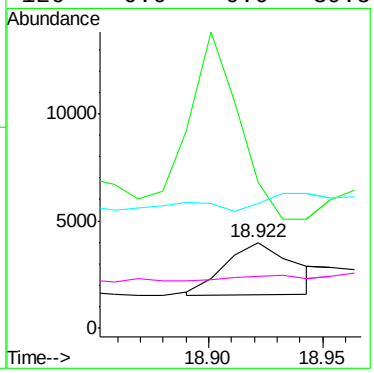


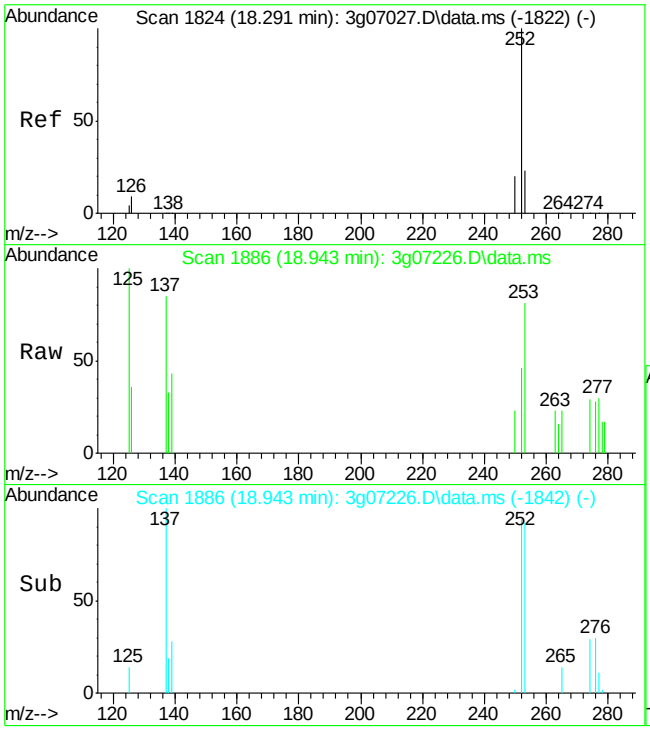


#24
Benzo(b)fluoranthene
Concen: 0.06 ug/mL m
RT: 18.922 min Scan# 1884
Delta R.T. -0.010 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:252 Resp: 5113

Ion	Ratio	Lower	Upper
252	100		
253	0.0	5.6	45.6#
125	44.0	0.0	33.5#
126	0.0	0.0	39.5

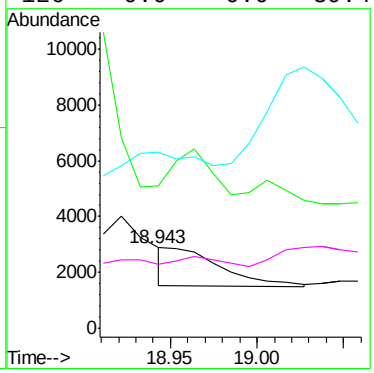


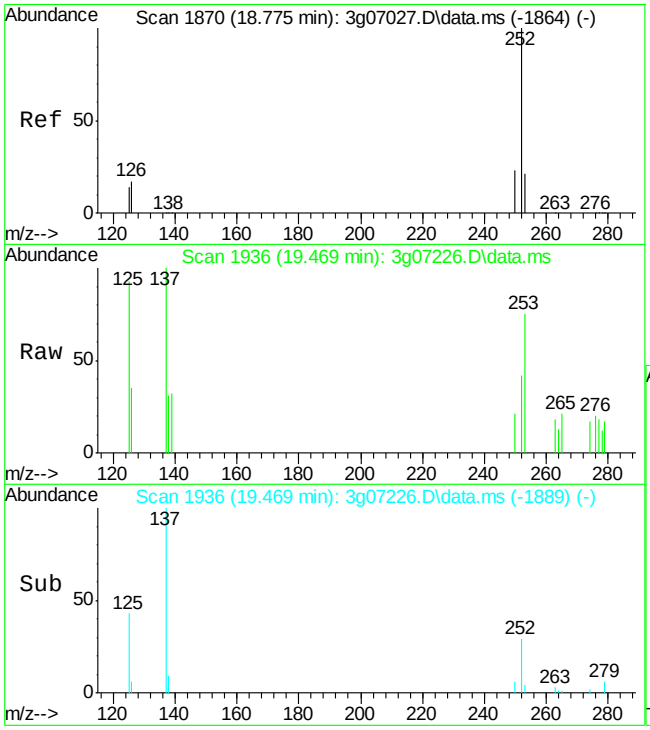


#25
Benzo(k)fluoranthene
Concen: 0.02 ug/mL m
RT: 18.943 min Scan# 1886
Delta R.T. -0.042 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:252 Resp: 2993

Ion	Ratio	Lower	Upper
252	100		
253	0.0	0.0	39.2
125	75.1	0.0	32.2#
126	0.0	0.0	39.4

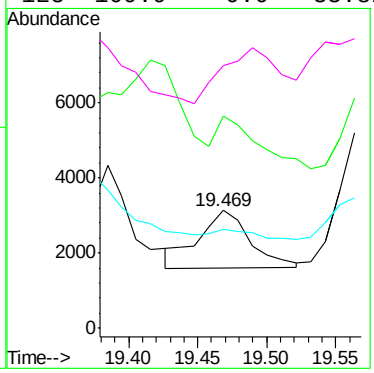


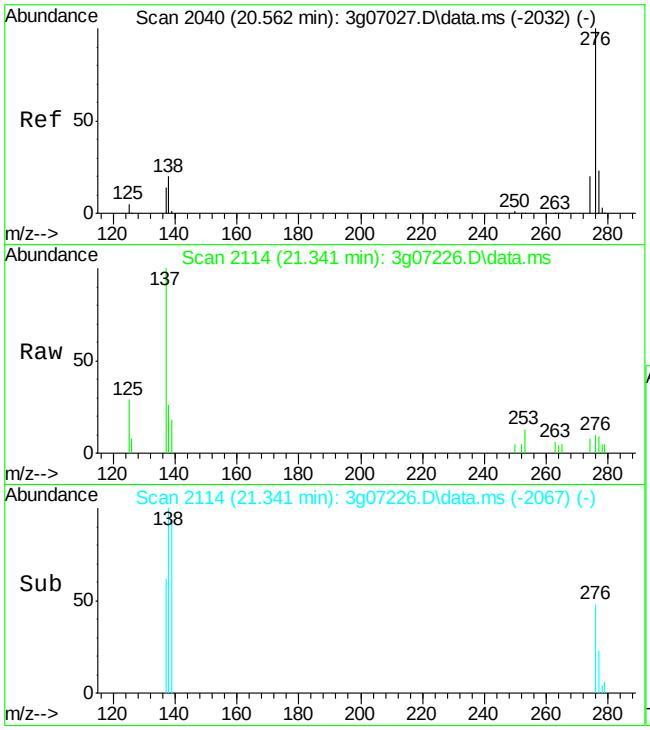


#26
Benzo(a)pyrene
Concen: 0.04 ug/mL
RT: 19.469 min Scan# 1936
Delta R.T. -0.010 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:252 Resp: 3971

Ion	Ratio	Lower	Upper
252	100		
253	0.0	1.4	41.4#
126	0.0	0.0	39.1
125	109.9	0.0	33.8#

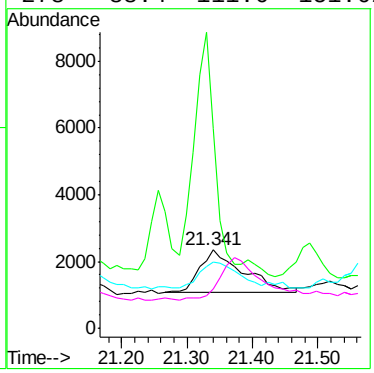


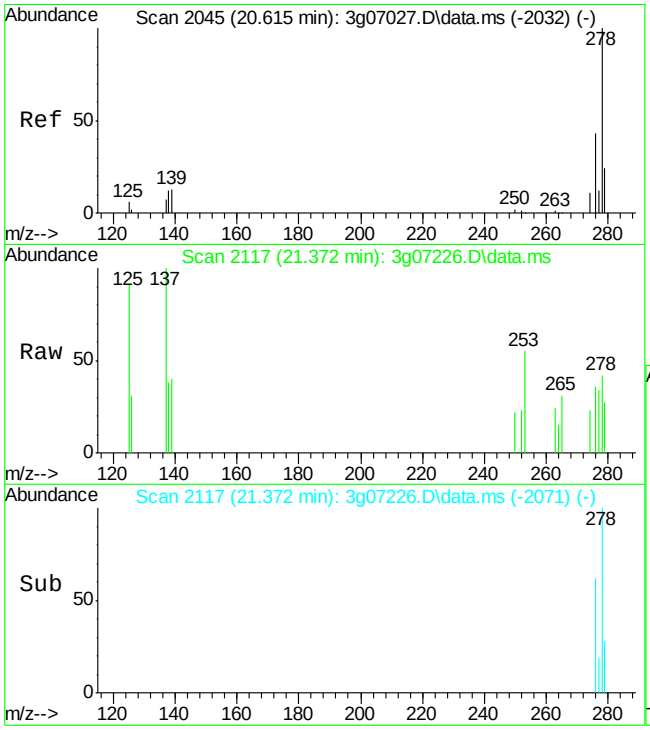


#27
Indeno(1,2,3-cd)pyrene
Concen: 0.09 ug/mL
RT: 21.341 min Scan# 2114
Delta R.T. -0.009 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:276 Resp: 5826

Ion	Ratio	Lower	Upper
276	100		
138	256.6	4.1	44.1#
277	52.8	24.0	64.0
278	88.4	111.6	151.6#

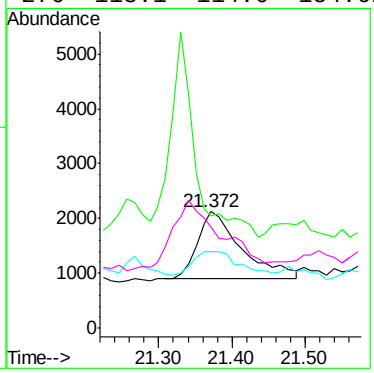


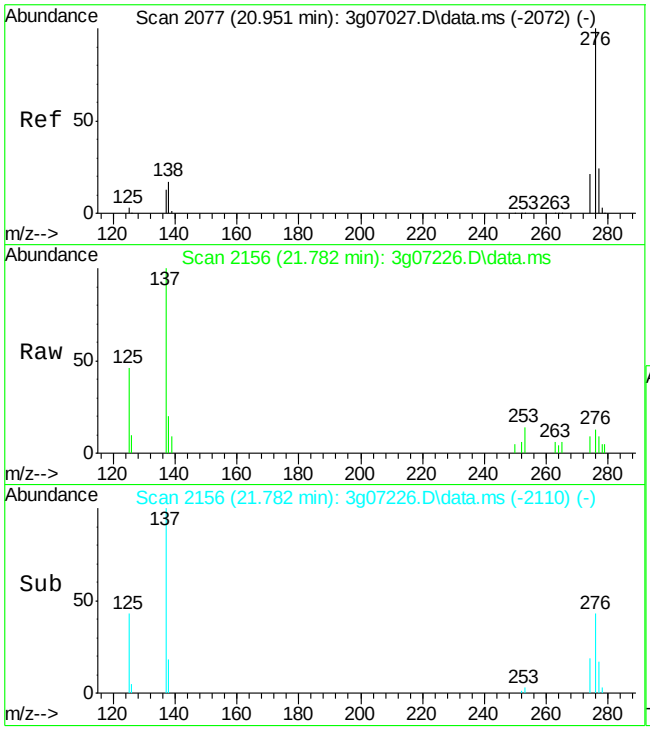


#28
Dibenz(a,h)anthracene
Concen: 0.06 ug/mL
RT: 21.372 min Scan# 2117
Delta R.T. -0.020 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:278 Resp: 5151

Ion	Ratio	Lower	Upper
278	100		
139	168.7	2.4	42.4#
279	37.1	3.4	43.4
276	113.1	114.6	154.6#

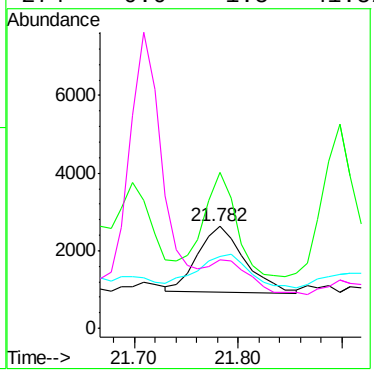




#29
Benzo(g,h,i)perylene
Concen: 0.05 ug/mL
RT: 21.782 min Scan# 2156
Delta R.T. -0.021 min
Lab File: 3g07226.D
Acq: 12 Dec 11 2:57 pm

Tgt Ion:276 Resp: 5357

Ion	Ratio	Lower	Upper
276	100		
138	110.5	6.6	46.6#
277	53.7	3.7	43.7#
274	0.0	1.5	41.5#



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\112811\
Data File : 3g07070.D
Acq On : 29 Nov 2011 6:54 am
Operator : TamiB
Sample : OP4914-MB
Misc : OP4914,E3G260,30,,,1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Nov 29 13:52:51 2011
Quant Method : C:\msdchem\1\METHODS\SIMPE3G260.M
Quant Title : PAHSIM BASE
QLast Update : Tue Nov 29 12:28:30 2011
Response via : Initial Calibration

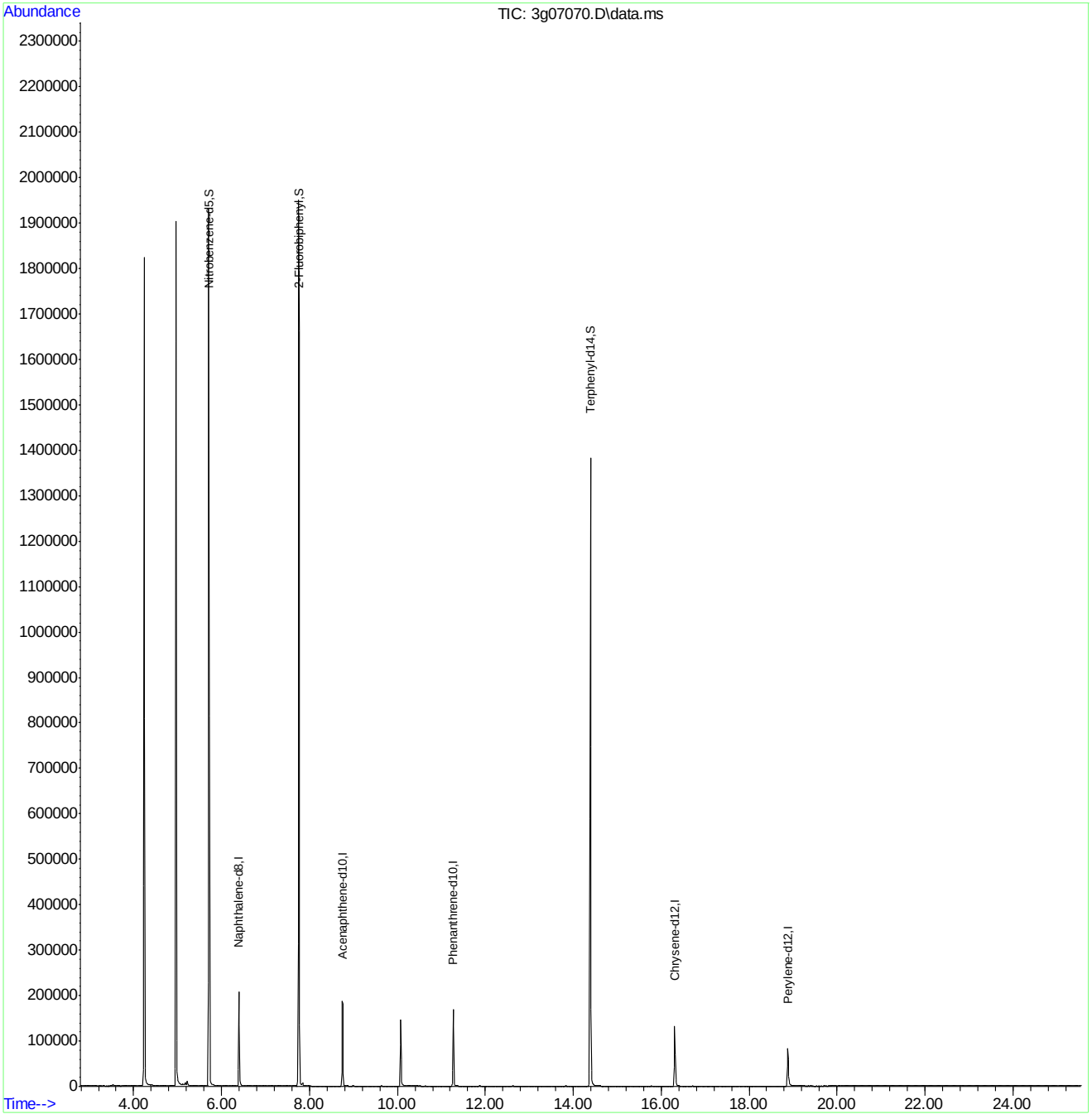
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	6.395	136	205340	4.00	ug/mL	0.00
6) Acenaphthene-d10	8.756	164	123304	4.00	ug/mL	0.01
14) Phenanthrene-d10	11.271	188	188887	4.00	ug/mL	0.00
18) Chrysene-d12	16.309	240	154856	4.00	ug/mL	0.00
23) Perylene-d12	18.880	264	108266	4.00	ug/mL	0.00
System Monitoring Compounds						
2) Nitrobenzene-d5	5.710	82	1009871	40.21	ug/mL	0.00
7) 2-Fluorobiphenyl	7.752	172	1928830	38.70	ug/mL	0.00
20) Terphenyl-d14	14.390	244	1586995	52.03	ug/mL	0.00
Target Compounds						Qvalue
3) N-Nitrosodimethylamine	0.000		0	N.D.	d	
4) N-Nitrosodi-propylamine	0.000		0	N.D.	d	
5) Naphthalene	0.000		0	N.D.	d	
8) 2-Methylnaphthalene	0.000		0	N.D.	d	
9) 1-Methylnaphthalene	0.000		0	N.D.	d	
10) Acenaphthylene	0.000		0	N.D.	d	
11) Acenaphthene	0.000		0	N.D.	d	
12) Fluorene	0.000		0	N.D.	d	
13) Diphenylamine	0.000		0	N.D.	d	
15) Phenanthrene	0.000		0	N.D.	d	
16) Anthracene	0.000		0	N.D.	d	
17) Fluoranthene	0.000		0	N.D.	d	
19) Pyrene	0.000		0	N.D.	d	
21) Benzo(a)anthracene	0.000		0	N.D.	d	
22) Chrysene	0.000		0	N.D.	d	
24) Benzo(b)fluoranthene	0.000		0	N.D.	d	
25) Benzo(k)fluoranthene	0.000		0	N.D.	d	
26) Benzo(a)pyrene	0.000		0	N.D.	d	
27) Indeno(1,2,3-cd)pyrene	0.000		0	N.D.	d	
28) Dibenz(a,h)anthracene	0.000		0	N.D.	d	
29) Benzo(g,h,i)perylene	0.000		0	N.D.	d	

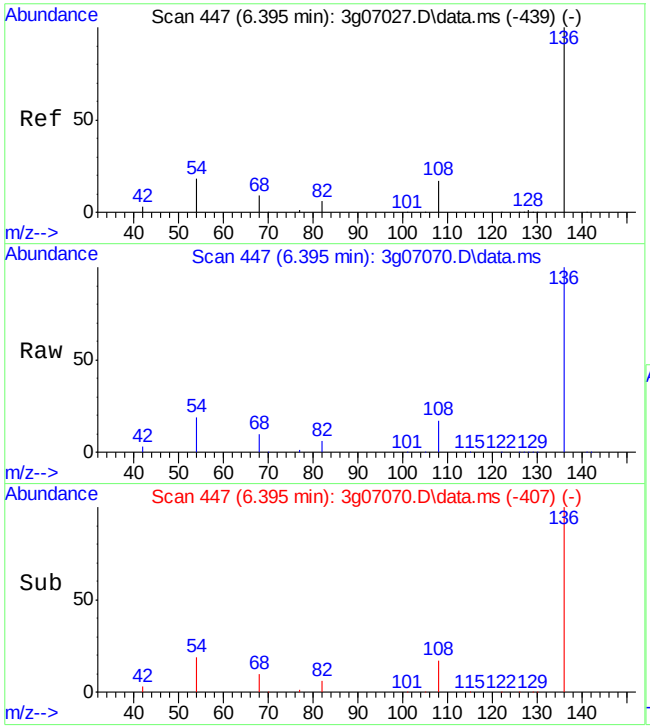
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\112811\
Data File : 3g07070.D
Acq On : 29 Nov 2011 6:54 am
Operator : TamiB
Sample : OP4914-MB
Misc : OP4914,E3G260,30,,,1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Nov 29 13:52:51 2011
Quant Method : C:\msdchem\1\METHODS\SIMPE3G260.M
Quant Title : PAHSIM BASE
QLast Update : Tue Nov 29 12:28:30 2011
Response via : Initial Calibration

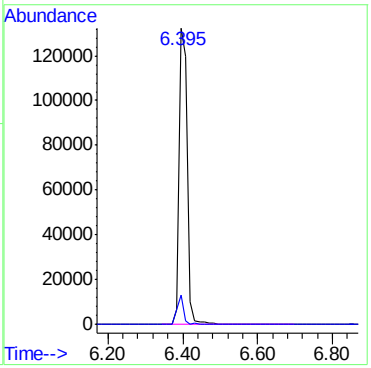


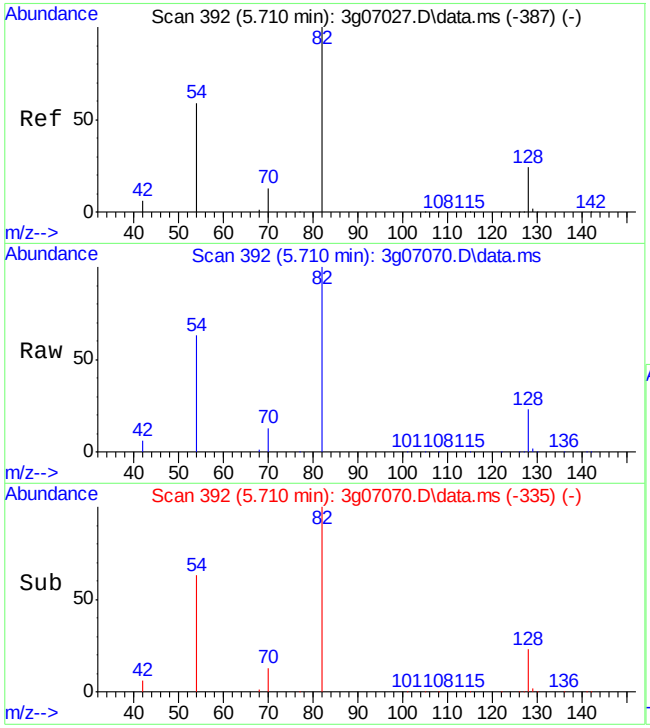


#1
Naphthalene-d8
Concen: 4.00 ug/mL
RT: 6.395 min Scan# 447
Delta R.T. -0.000 min
Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion:136 Resp: 205340

Ion	Ratio	Lower	Upper
136	100		
68	7.9	0.0	27.7

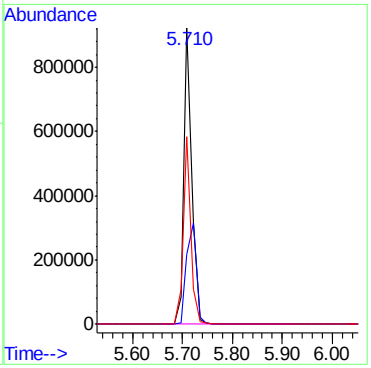


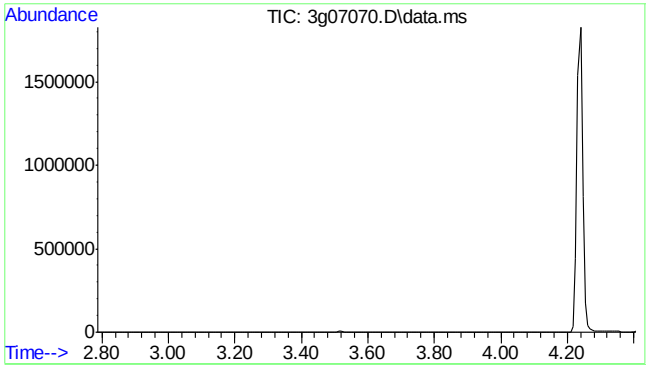


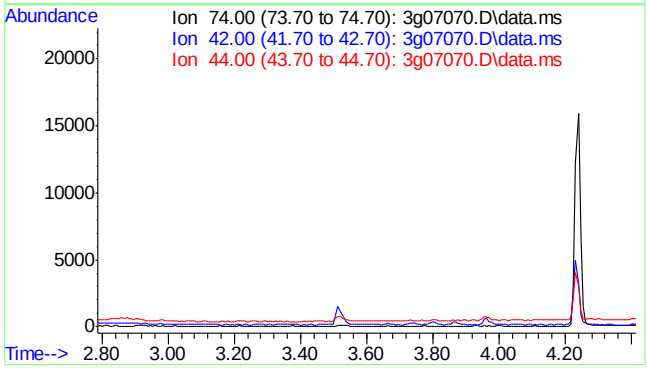
#2
Nitrobenzene-d5
Concen: 40.21 ug/mL
RT: 5.710 min Scan# 392
Delta R.T. 0.001 min
Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion: 82 Resp: 1009871

Ion	Ratio	Lower	Upper
82	100		
128	41.7	21.4	61.4
54	60.3	33.7	73.7





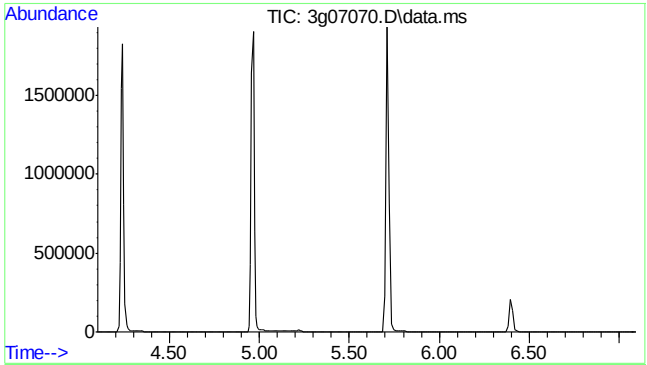


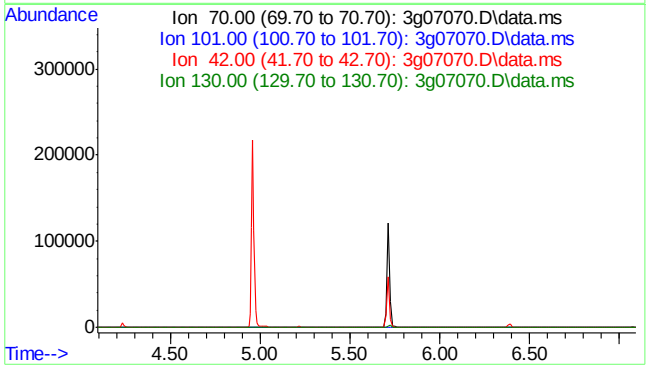
#3
N-Nitrosodimethylamine
Concen: N.D. ug/mL
Expected RT: 2.91 min

Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion: 74

Sig	Exp Ratio
74	100
42	61.9
44	5.3



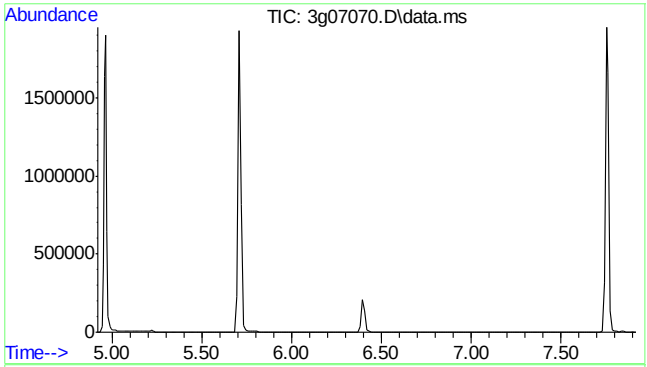


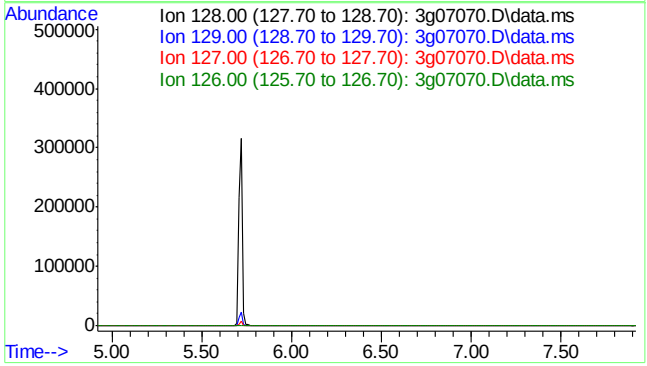
#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 5.60 min

Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion: 70

Sig	Exp Ratio
70	100
101	12.8
42	56.0
130	26.0



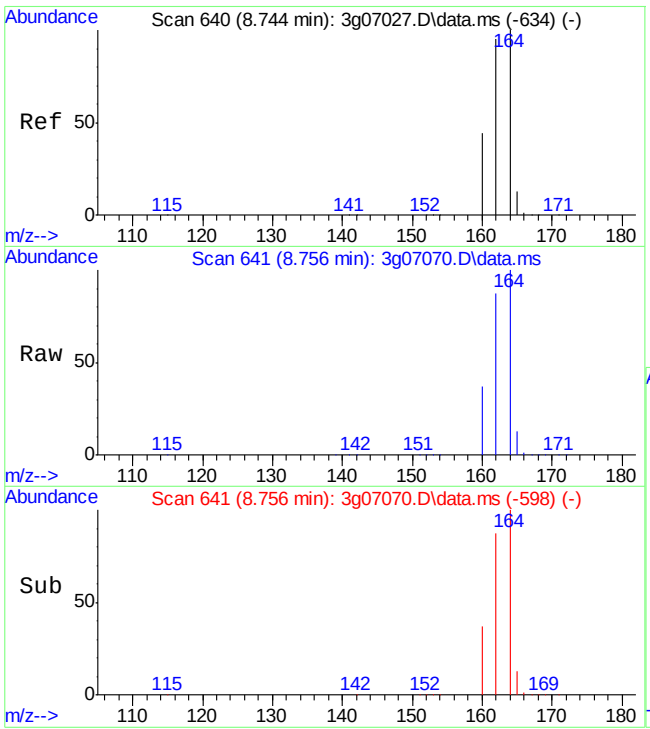


#5
Naphthalene
Concen: N.D. ug/mL
Expected RT: 6.42 min

Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion: 128

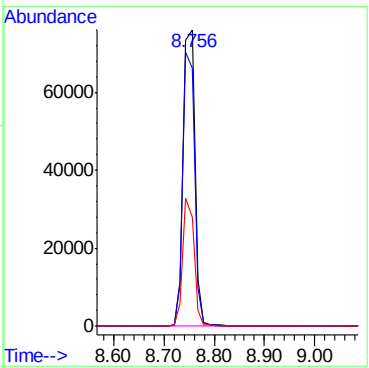
Sig	Exp Ratio
128	100
129	10.9
127	12.7
126	7.3

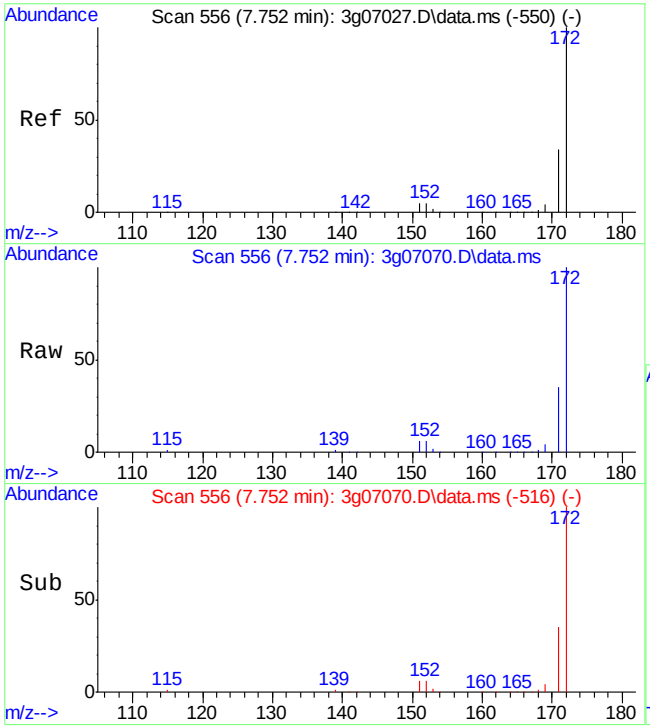


#6
Acenaphthene-d10
Concen: 4.00 ug/mL
RT: 8.756 min Scan# 641
Delta R.T. 0.012 min
Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion:164 Resp: 123304

Ion	Ratio	Lower	Upper
164	100		
162	91.9	72.3	112.3
160	41.1	21.6	61.6

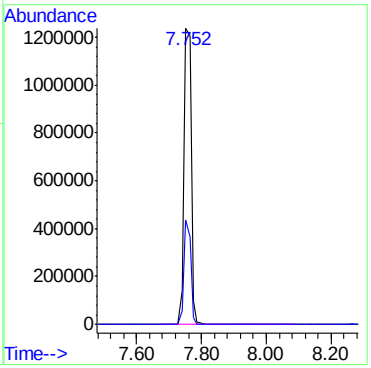


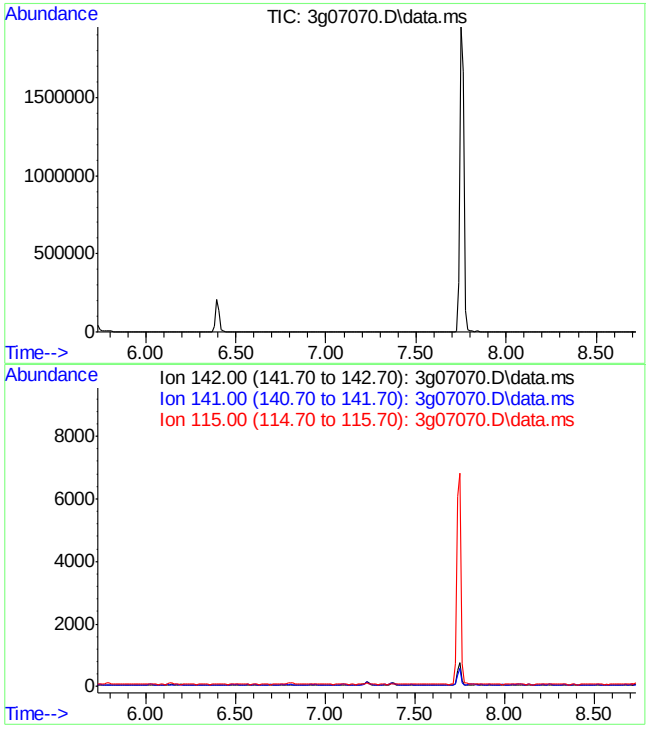


#7
2-Fluorobiphenyl
Concen: 38.70 ug/mL
RT: 7.752 min Scan# 556
Delta R.T. -0.000 min
Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion:172 Resp: 1928830

Ion	Ratio	Lower	Upper
172	100		
171	33.0	13.1	53.1



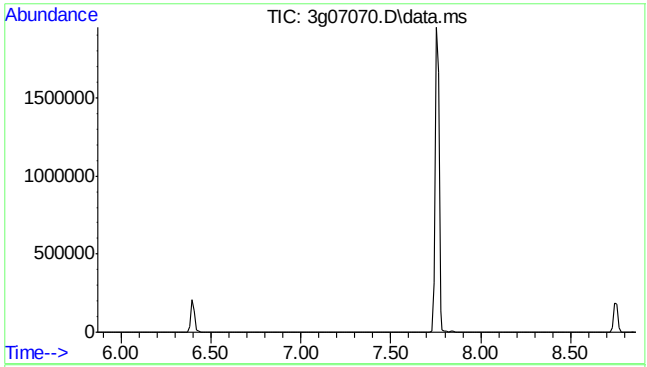


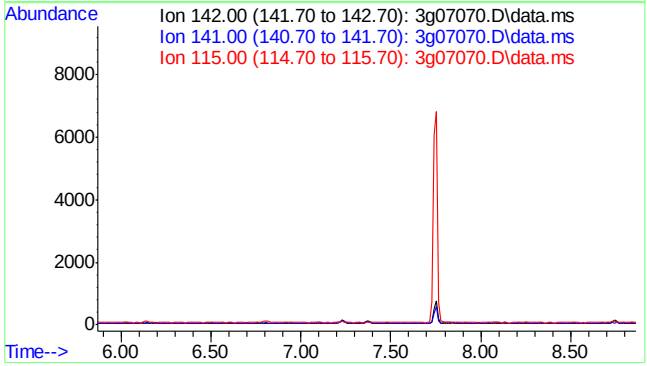
#8
2-Methylnaphthalene
Concen: N.D. ug/mL
Expected RT: 7.23 min

Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion: 142

Sig	Exp Ratio
142	100
141	82.1
115	36.6



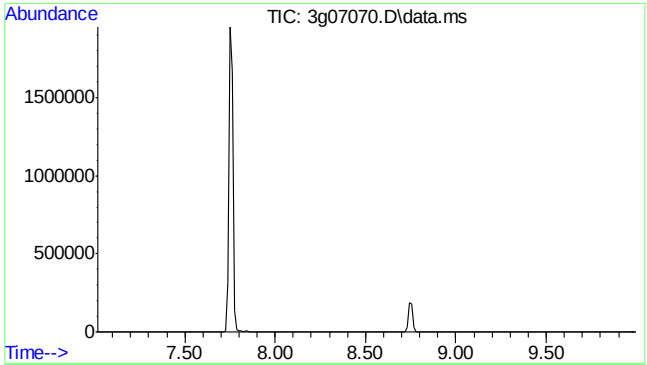


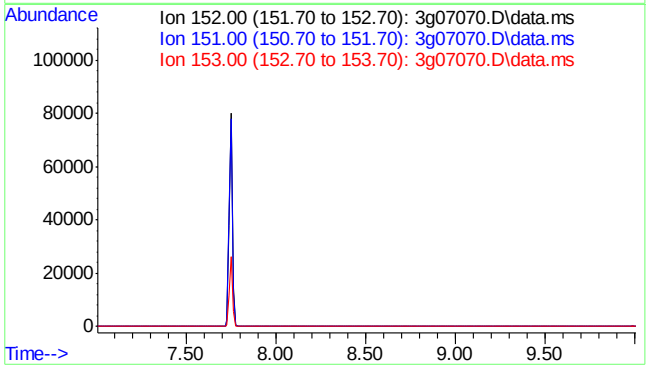
#9
1-Methylnaphthalene
Concen: N.D. ug/mL
Expected RT: 7.37 min

Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion: 142

Sig	Exp Ratio
142	100
141	84.7
115	38.2



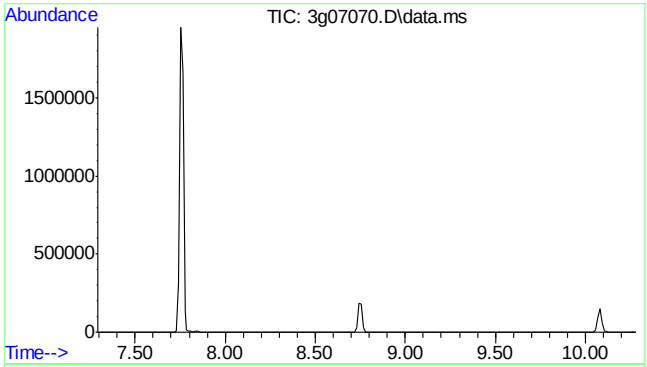


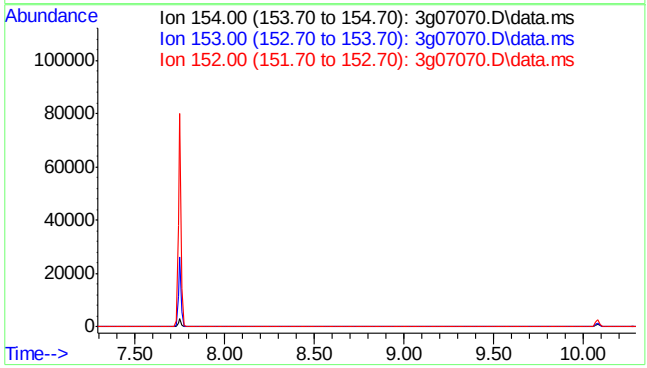
#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 8.51 min

Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion: 152

Sig	Exp Ratio
152	100
151	19.0
153	13.1



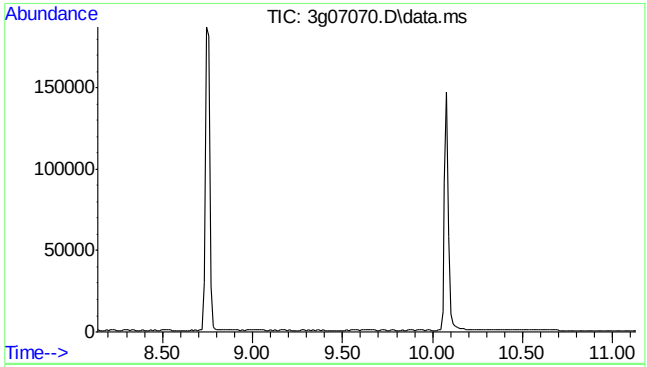


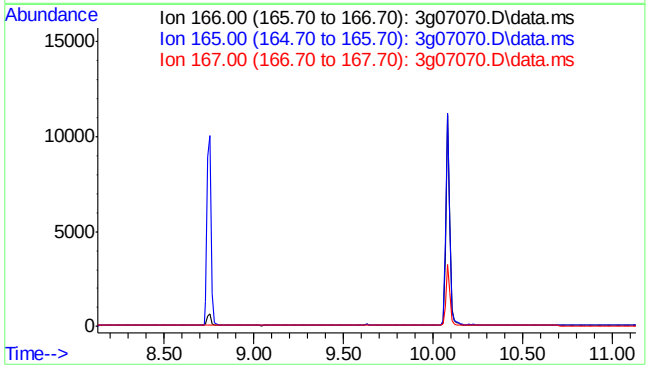
#11
Acenaphthene
Concen: N.D. ug/mL
Expected RT: 8.79 min

Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion: 154

Sig	Exp Ratio
154	100
153	102.6
152	48.6



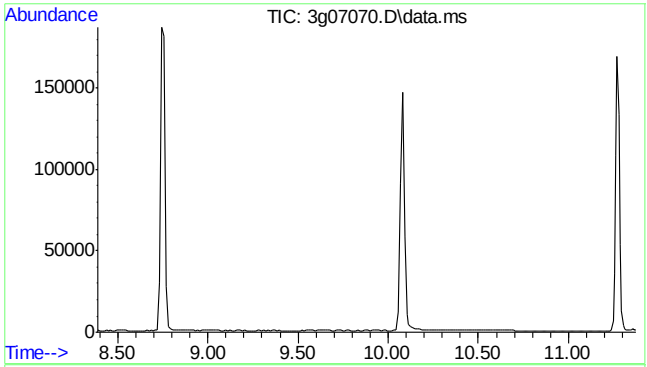


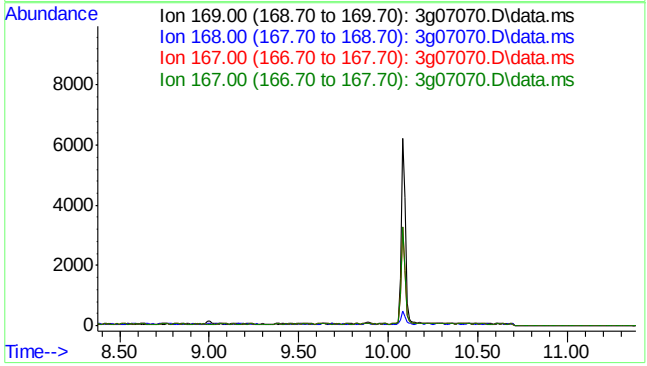
#12
Fluorene
Concen: N.D. ug/mL
Expected RT: 9.63 min

Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion: 166

Sig	Exp Ratio
166	100
165	90.3
167	12.1



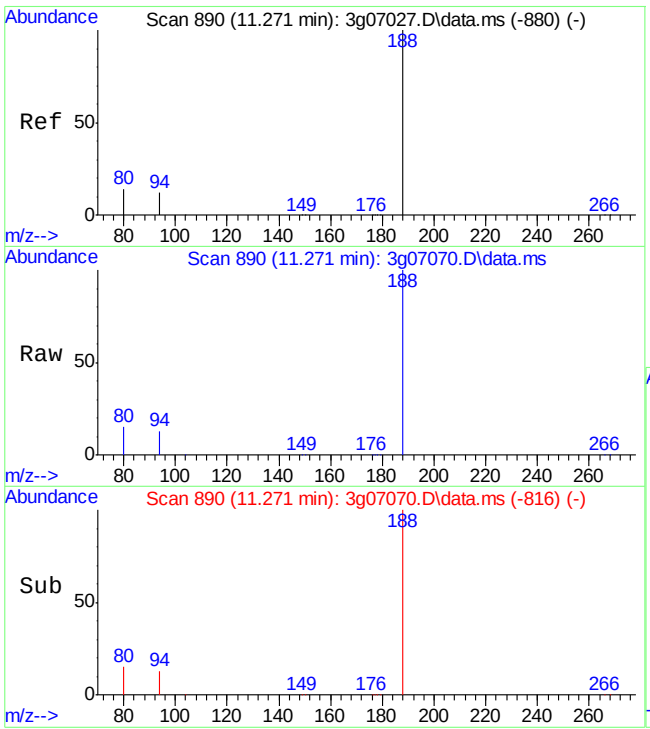


#13
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 9.88 min

Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion: 169

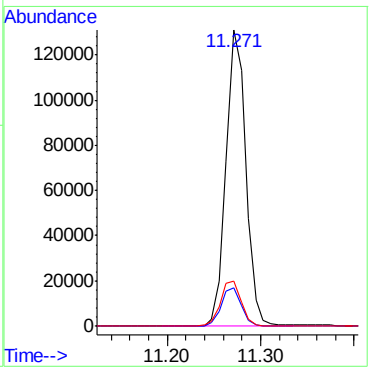
Sig	Exp Ratio
169	100
168	60.6
167	32.6
167	32.6

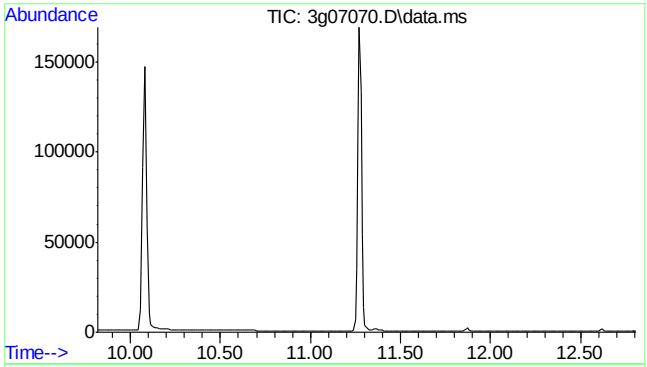


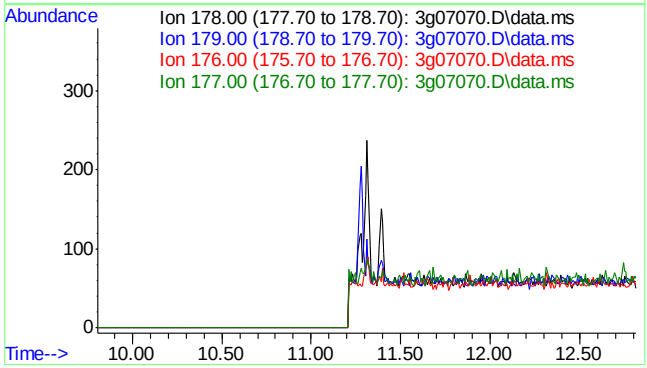
#14
Phenanthrene-d10
Concen: 4.00 ug/mL
RT: 11.271 min Scan# 890
Delta R.T. -0.000 min
Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion:188 Resp: 188887

Ion	Ratio	Lower	Upper
188	100		
94	13.0	0.0	35.2
80	16.0	0.0	37.6





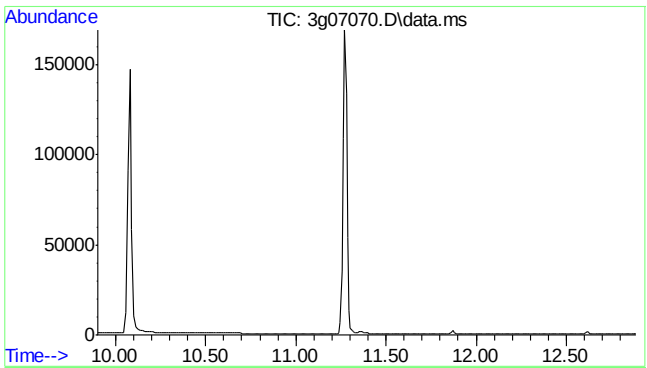


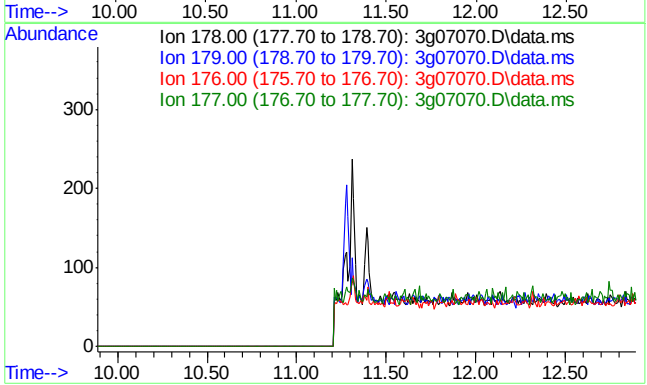
#15
Phenanthrene
Concen: N.D. ug/mL
Expected RT: 11.31 min

Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion: 178

Sig	Exp Ratio
178	100
179	15.3
176	18.5
177	10.2



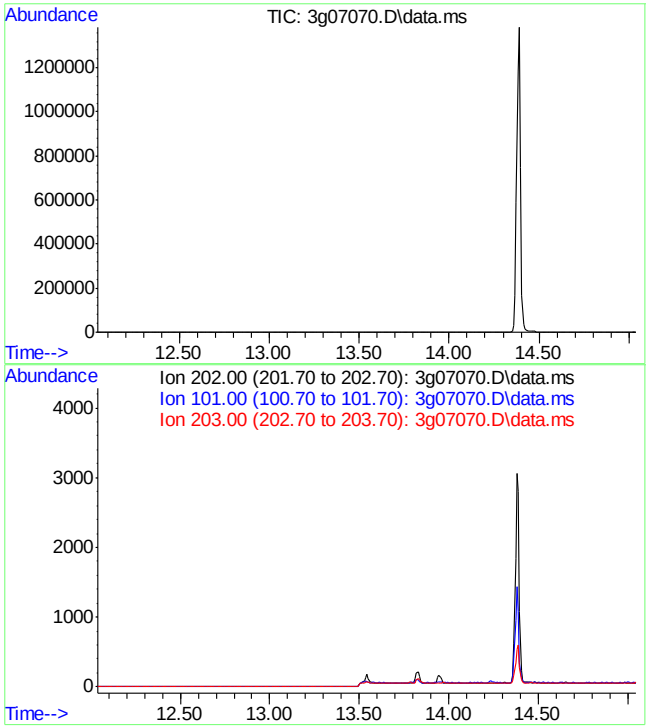


#16
Anthracene
Concen: N.D. ug/mL
Expected RT: 11.39 min

Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion: 178

Sig	Exp Ratio
178	100
179	15.2
176	17.6
177	8.7

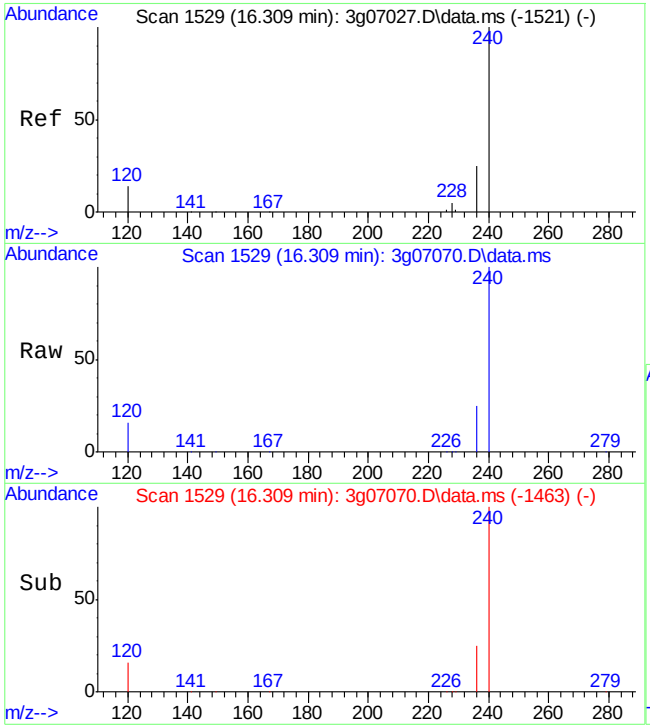


#17
Fluoranthene
Concen: N.D. ug/mL
Expected RT: 13.54 min

Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion: 202

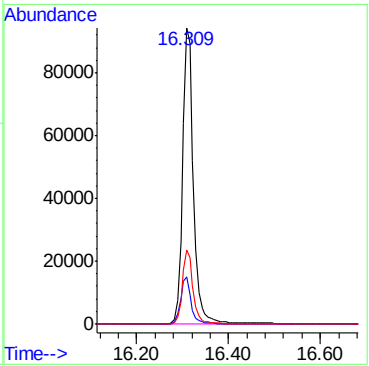
Sig	Exp Ratio
202	100
101	17.5
203	17.3

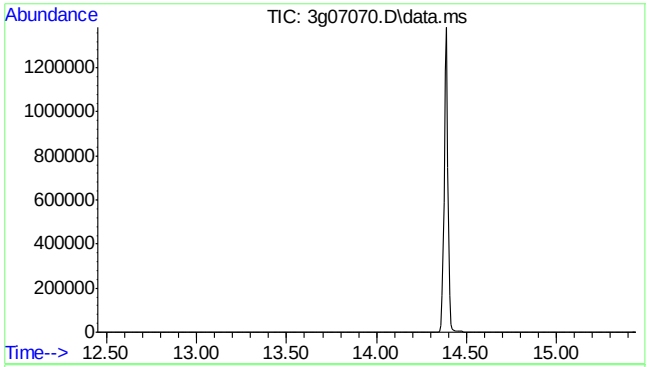


#18
Chrysene-d12
Concen: 4.00 ug/mL
RT: 16.309 min Scan# 1529
Delta R.T. -0.000 min
Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion:240 Resp: 154856

Ion	Ratio	Lower	Upper
240	100		
120	15.1	0.0	37.7
236	24.7	4.9	44.9



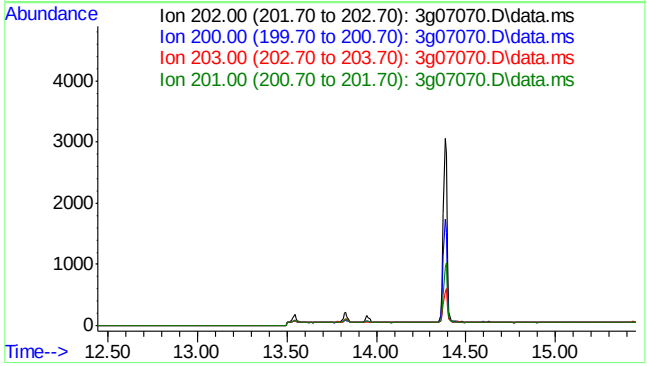


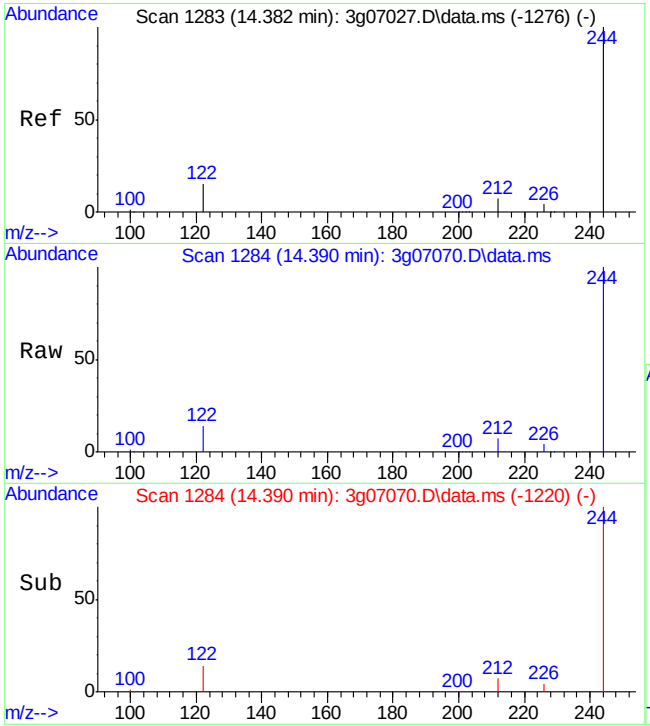
#19
Pyrene
Concen: N.D. ug/mL
Expected RT: 13.95 min

Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion: 202

Sig	Exp Ratio
202	100
200	21.9
203	17.5
201	18.1

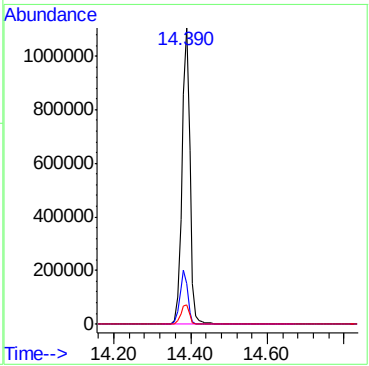


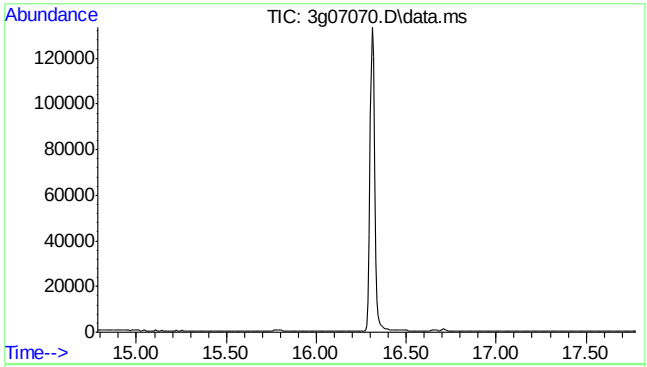


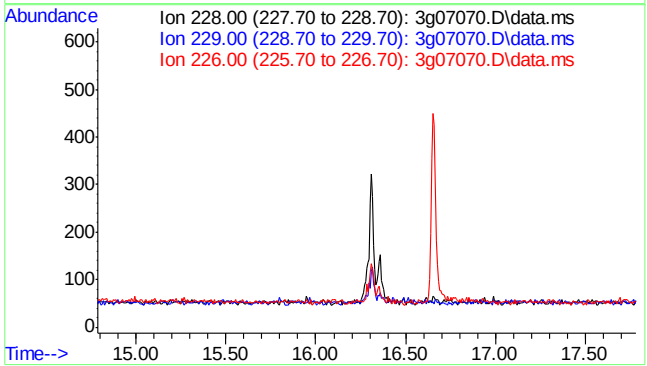
#20
Terphenyl-d14
Concen: 52.03 ug/mL
RT: 14.390 min Scan# 1284
Delta R.T. 0.008 min
Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion:244 Resp: 1586995

Ion	Ratio	Lower	Upper
244	100		
122	18.0	0.7	40.7
212	7.0	0.0	27.5





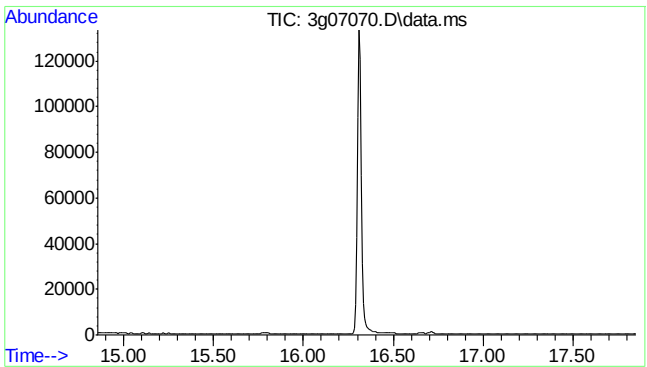


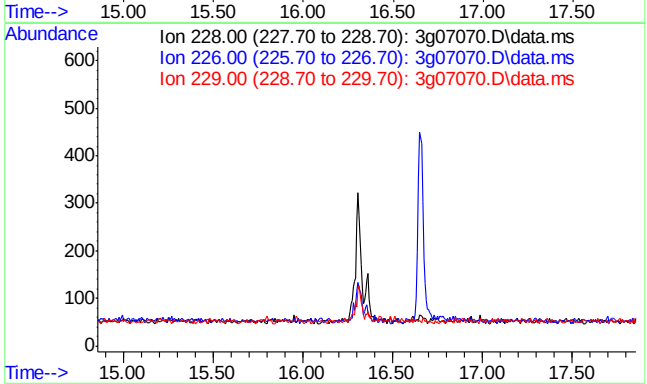
#21
Benzo(a)anthracene
Concen: N.D. ug/mL
Expected RT: 16.28 min

Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion: 228

Sig	Exp Ratio
228	100
229	19.5
226	25.6



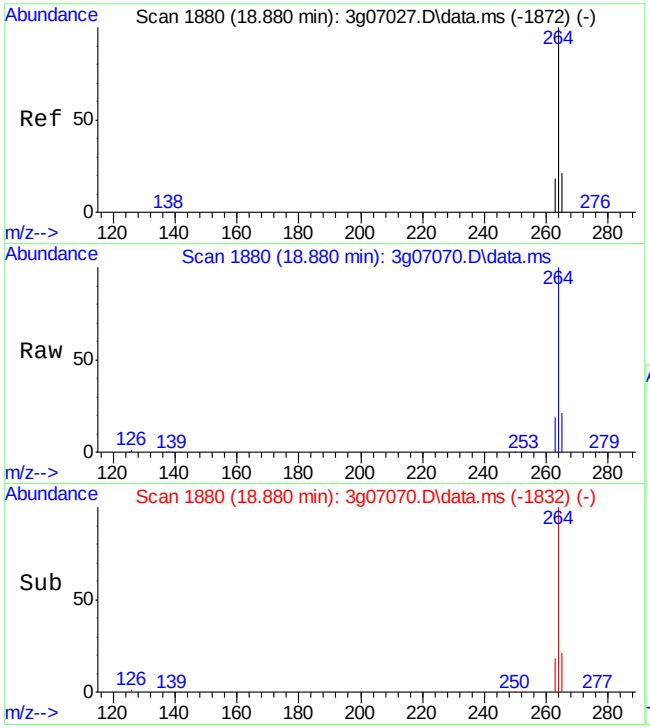


#22
Chrysene
Concen: N.D. ug/mL
Expected RT: 16.36 min

Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion: 228

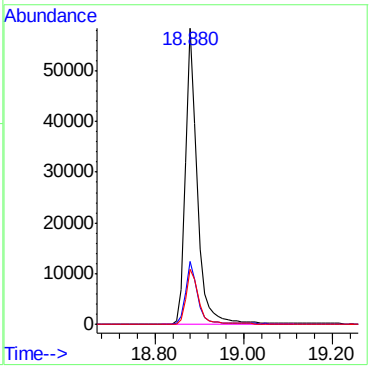
Sig	Exp Ratio
228	100
226	27.6
229	19.2

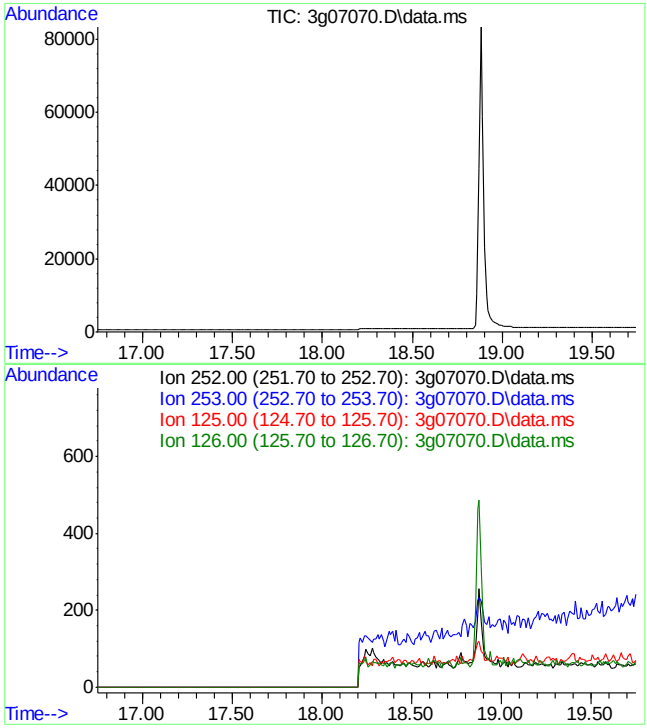


#23
Perylene-d12
Concen: 4.00 ug/mL
RT: 18.880 min Scan# 1880
Delta R.T. -0.000 min
Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion:264 Resp: 108266

Ion	Ratio	Lower	Upper
264	100		
265	21.3	1.1	41.1
263	19.3	0.0	38.8



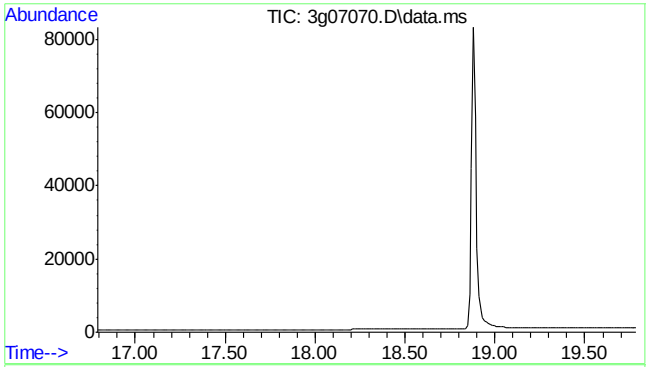


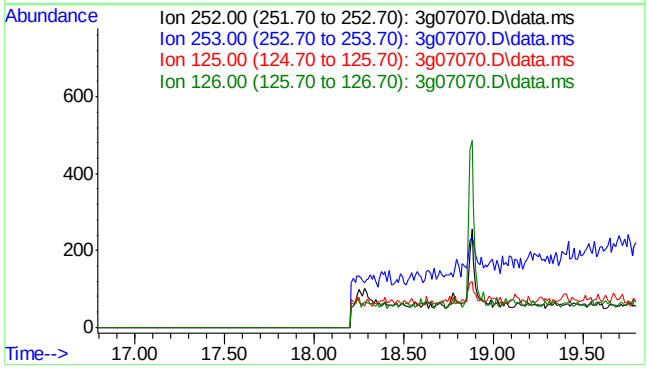
#24
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 18.25 min

Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion: 252

Sig	Exp Ratio
252	100
253	21.6
125	11.4
126	15.4



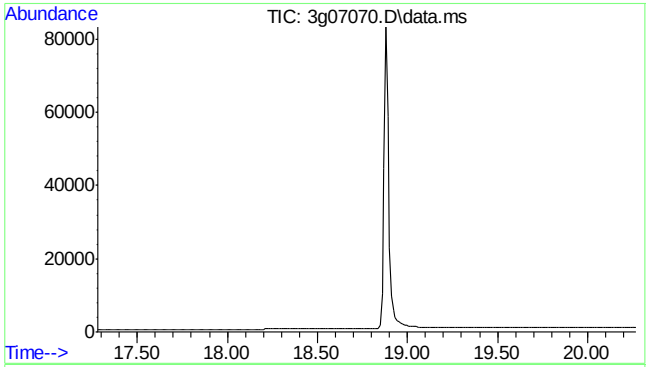


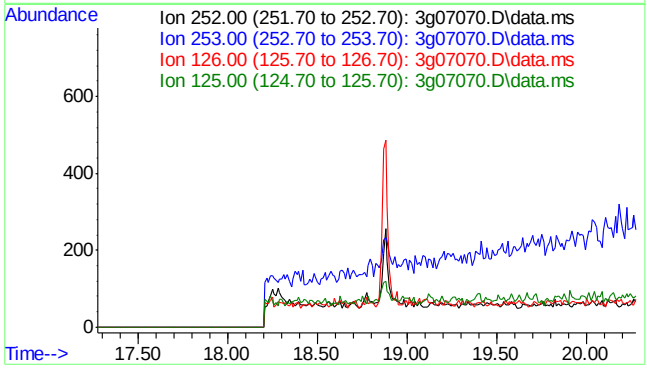
#25
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 18.29 min

Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion: 252

Sig	Exp Ratio
252	100
253	22.7
125	13.3
126	19.8



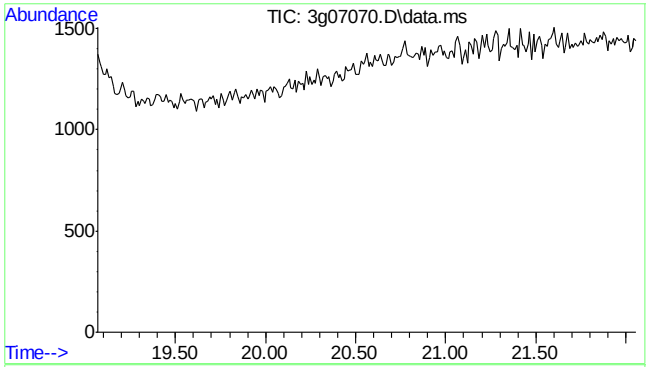


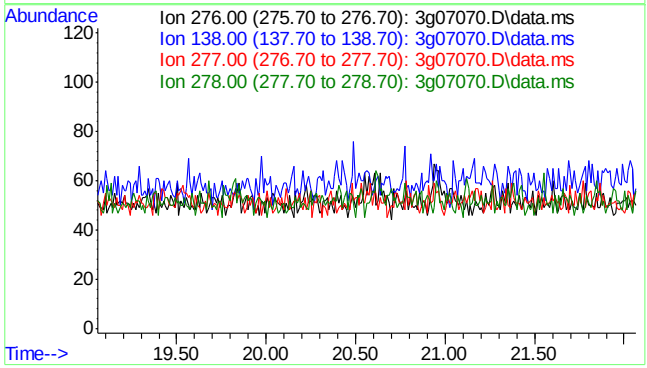
#26
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 18.77 min

Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion: 252

Sig	Exp Ratio
252	100
253	21.7
126	17.6
125	13.5



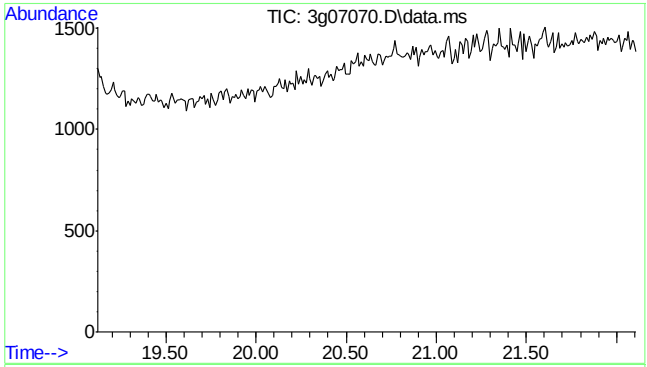


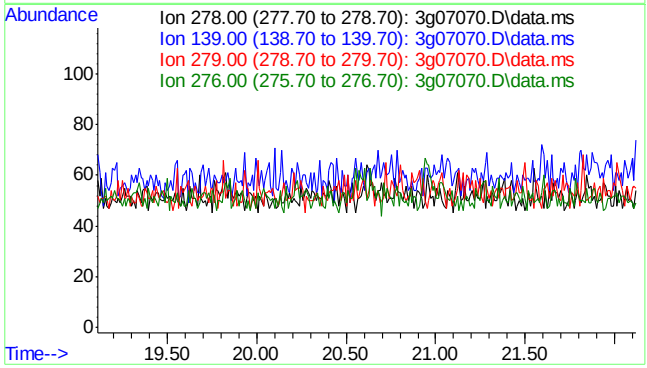
#27
Indeno(1,2,3-cd)pyrene
Concen: N.D. ug/mL
Expected RT: 20.56 min

Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion: 276

Sig	Exp Ratio
276	100
138	20.7
277	38.7
278	125.5



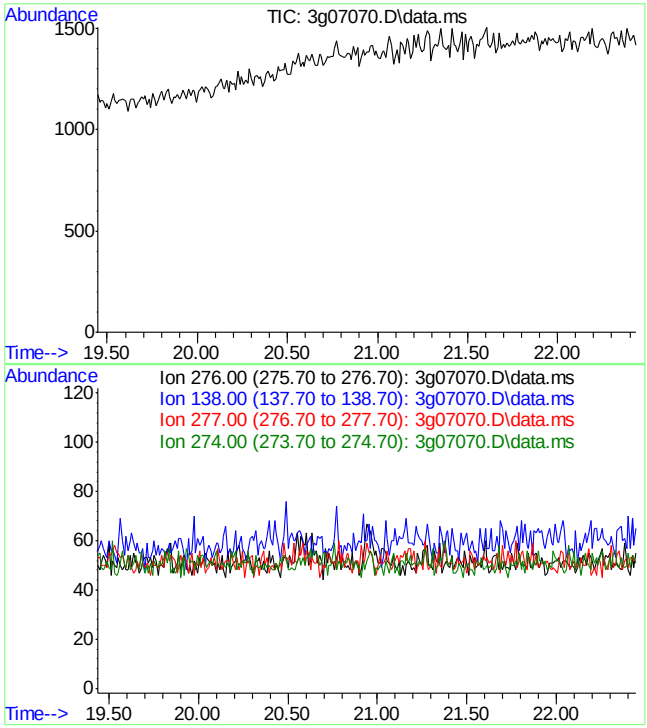


#28
Dibenz(a,h)anthracene
Concen: N.D. ug/mL
Expected RT: 20.61 min

Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion: 278

Sig	Exp Ratio
278	100
139	18.3
279	23.4
276	124.2



#29
Benzo(g,h,i)perylene
Concen: N.D. ug/mL
Expected RT: 20.94 min

Lab File: 3g07070.D
Acq: 29 Nov 11 6:54 am

Tgt Ion: 276

Sig	Exp Ratio
276	100
138	21.4
277	22.6
274	20.4

Mountain States ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D29744
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB797-MB	GB14070.D	1	11/28/11	SK	n/a	n/a	GGB797

The QC reported here applies to the following samples: **Method:** SW846 8015B

D29744-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	10	5.0	mg/kg	

CAS No.	Surrogate Recoveries		Limits
120-82-1	1,2,4-Trichlorobenzene	106%	60-140%

Blank Spike Summary

Job Number: D29744
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB797-BS	GB14071.D	1	11/28/11	SK	n/a	n/a	GGB797

The QC reported here applies to the following samples: **Method:** SW846 8015B

D29744-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	109	99	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	111%	60-140%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D29744
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D29732-2BMS	GB14073.D	1	11/28/11	SK	n/a	n/a	GGB797
D29732-2BMSD	GB14074.D	1	11/28/11	SK	n/a	n/a	GGB797
D29732-2B	GB14072.D	1	11/28/11	SK	n/a	n/a	GGB797

The QC reported here applies to the following samples: **Method:** SW846 8015B

D29744-1

CAS No.	Compound	D29732-2B mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		135	138	103	138	103	0	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D29732-2B	Limits
120-82-1	1,2,4-Trichlorobenzene	107%	107%	100%	60-140%

Mountain States ACCUTEST LABORATORIES

GC Volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson 11/29/11 10:38

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\112811\GB14076.D\FID1A.CH Vial: 10
Signal #2 : Y:\1\DATA\112811\GB14076.D\FID2B.CH
Acq On : 28 Nov 2011 4:14 pm Operator: StephK
Sample : D29744-1, 100X Inst : GC/MS Ins
Misc : GC2434,GGB797,5.035,,50,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 28 15:44:01 2011 Quant Results File: TB791GB791SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB791GB791SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Mon Nov 28 14:28:18 2011
Response via : Initial Calibration
DataAcq Meth : TVB4.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.40	2548930	87.128	%	m
10) S	1,2,4-Trichlorobenzene (P)	14.40	27839478	121.126	%	
	Target Compounds					
1) H	TVH-Gasoline	7.32	54569607	0.766	mg/L	
4) T	Methyl-t-butyl-ether	2.25	143690	0.769	ug/L	
5) T	Benzene	4.18	4058746	7.095	ug/L	
6) T	Toluene	7.70	9981661	17.615	ug/L	
7) T	Ethylbenzene	10.33	6628438	13.602	ug/L	
8) T	m,p-Xylene	10.50	26199412	46.633	ug/L	
9) T	o-Xylene	11.00	1847746	3.705	ug/L	
11) T	Naphthalene	14.59	3986559	15.488	ug/L	

10.1.1 10

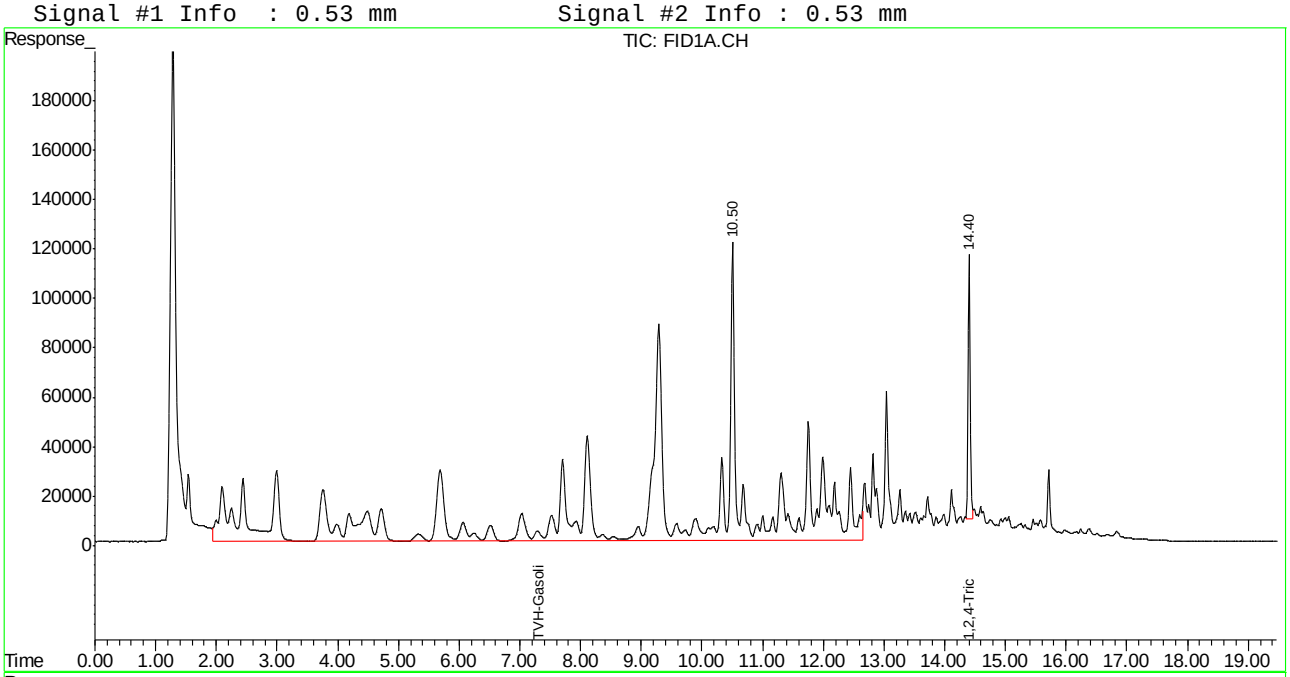
(f)=RT Delta > 1/2 Window (m)=manual int.

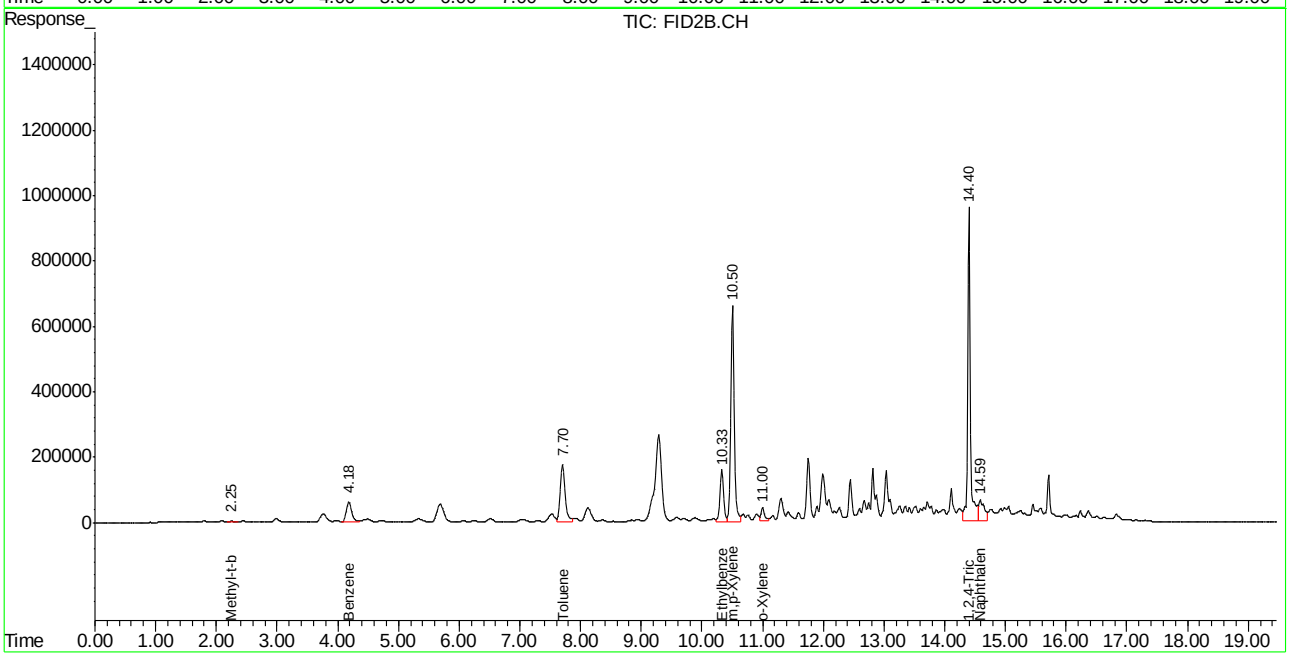
Quantitation Report (QT Reviewed)

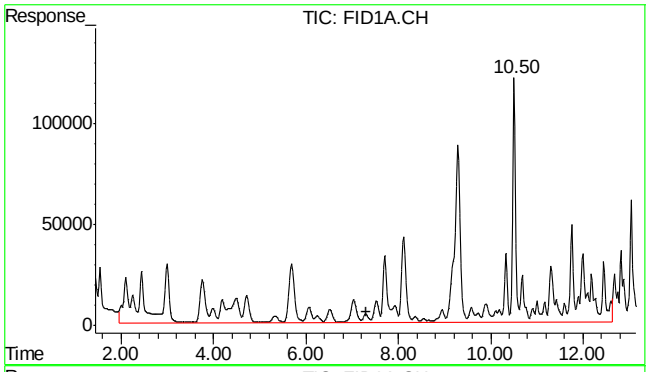
Signal #1 : Y:\1\DATA\112811\GB14076.D\FID1A.CH Vial: 10
Signal #2 : Y:\1\DATA\112811\GB14076.D\FID2B.CH
Acq On : 28 Nov 2011 4:14 pm Operator: StephK
Sample : D29744-1, 100X Inst : GC/MS Ins
Misc : GC2434,GGB797,5.035,,50,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 28 15:43 2011 Quant Results File: TB791GB791SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB791GB791SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Mon Nov 28 14:28:18 2011
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

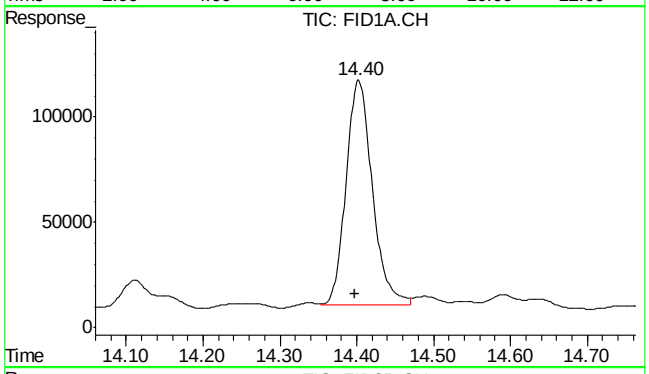






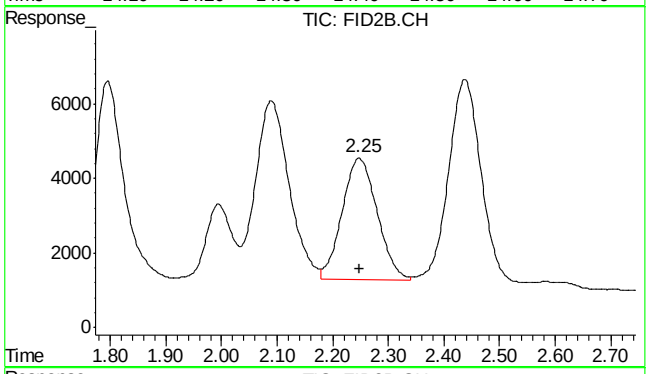
#1 TVH-Gasoline

R.T.: 7.315 min
Delta R.T.: 0.000 min
Response: 54569607
Conc: 0.77 mg/L m



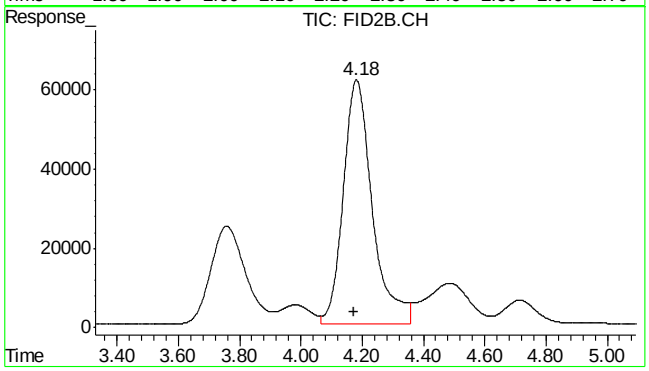
#2 1,2,4-Trichlorobenzene

R.T.: 14.402 min
Delta R.T.: 0.005 min
Response: 2548930
Conc: 87.13 % m



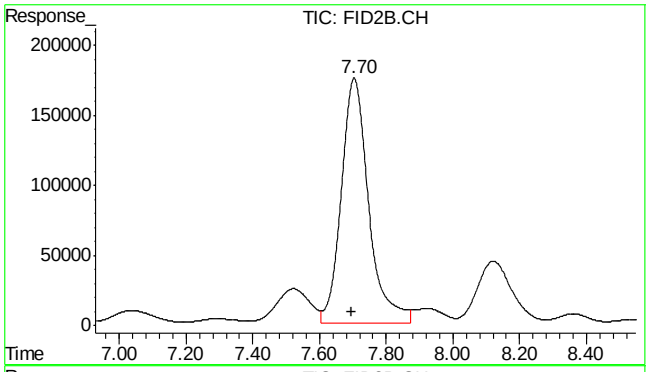
#4 Methyl-t-butyl-ether

R.T.: 2.247 min
Delta R.T.: -0.001 min
Response: 143690
Conc: 0.77 ug/L



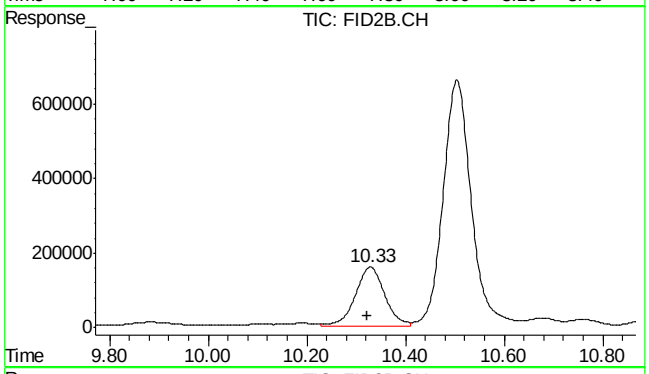
#5 Benzene

R.T.: 4.182 min
Delta R.T.: 0.008 min
Response: 4058746
Conc: 7.10 ug/L



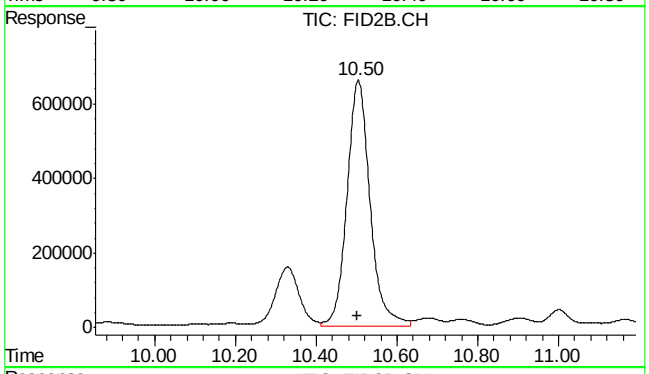
#6 Toluene

R.T.: 7.704 min
Delta R.T.: 0.006 min
Response: 9981661
Conc: 17.61 ug/L



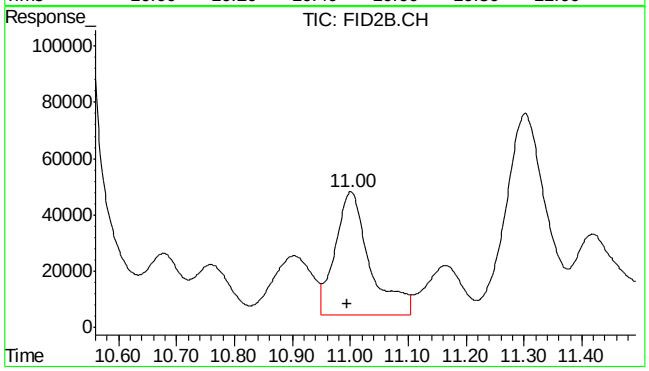
#7 Ethylbenzene

R.T.: 10.329 min
Delta R.T.: 0.006 min
Response: 6628438
Conc: 13.60 ug/L



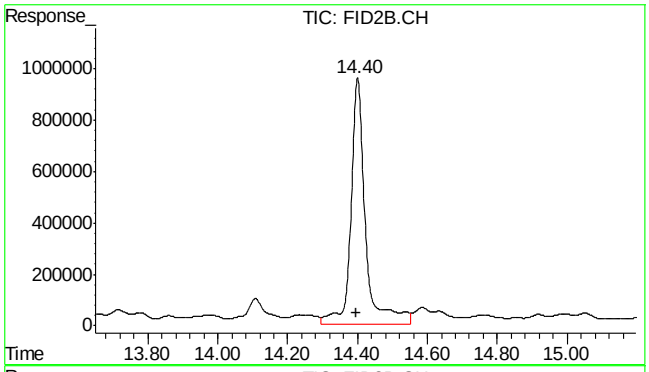
#8 m,p-Xylene

R.T.: 10.504 min
Delta R.T.: 0.003 min
Response: 26199412
Conc: 46.63 ug/L



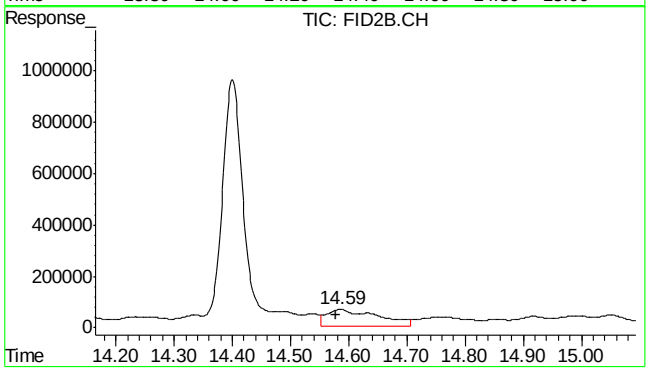
#9 o-Xylene

R.T.: 11.001 min
Delta R.T.: 0.006 min
Response: 1847746
Conc: 3.70 ug/L



#10 1,2,4-Trichlorobenzene (P)

R.T.: 14.401 min
Delta R.T.: 0.005 min
Response: 27839478
Conc: 121.13 %



#11 Naphthalene

R.T.: 14.586 min
Delta R.T.: 0.008 min
Response: 3986559
Conc: 15.49 ug/L

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\112811\GB14070.D\FID1A.CH Vial: 4
Signal #2 : Y:\1\DATA\112811\GB14070.D\FID2B.CH
Acq On : 28 Nov 2011 12:39 pm Operator: StephK
Sample : MB, S Inst : GC/MS Ins
Misc : GC2434,GGB797,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 28 12:01:40 2011 Quant Results File: TB791GB791SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB791GB791SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Mon Nov 28 12:01:29 2011
Response via : Initial Calibration
DataAcq Meth : TVB4.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

	Compound	R.T.	Response	Conc	Units
	System Monitoring Compounds				
2) S	1,2,4-Trichlorobenzene	14.39	3096604	105.848	%
10) S	1,2,4-Trichlorobenzene (P)	14.39	25502181	110.956	%
	Target Compounds				
1) H	TVH-Gasoline	7.32	5737280	<MDL	mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T	Benzene	0.00	0	N.D.	ug/L d
6) T	Toluene	7.69	162594	0.287	ug/L
7) T	Ethylbenzene	0.00	0	N.D.	ug/L d
8) T	m,p-Xylene	0.00	0	N.D.	ug/L d
9) T	o-Xylene	0.00	0	N.D.	ug/L d
11) T	Naphthalene	14.57	497465	1.933	ug/L m

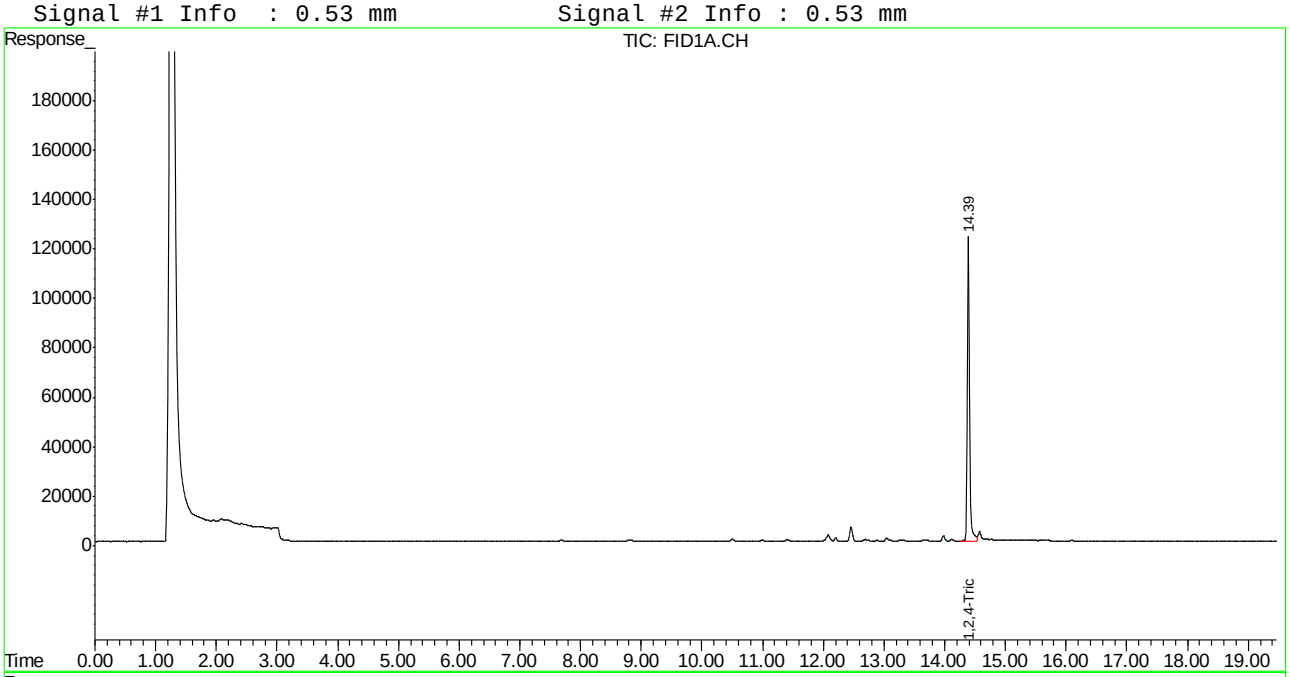
(f)=RT Delta > 1/2 Window (m)=manual int.

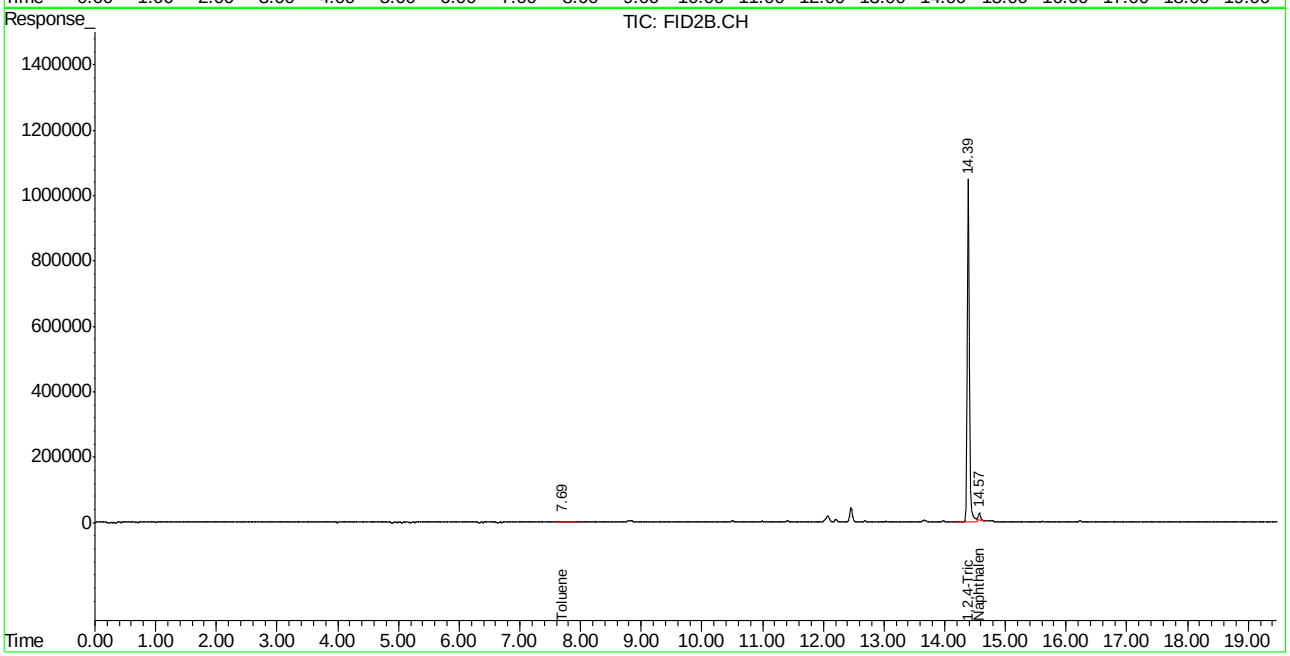
Quantitation Report (QT Reviewed)

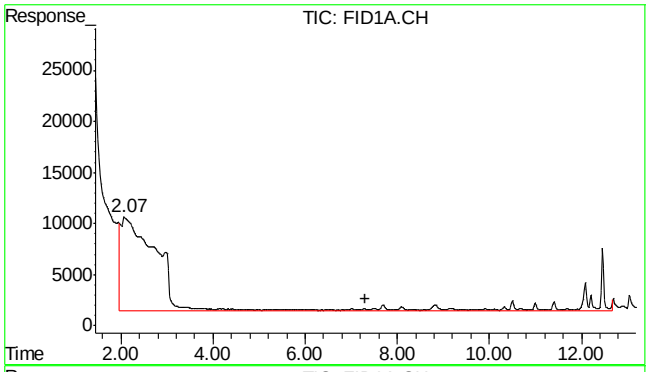
Signal #1 : Y:\1\DATA\112811\GB14070.D\FID1A.CH Vial: 4
Signal #2 : Y:\1\DATA\112811\GB14070.D\FID2B.CH
Acq On : 28 Nov 2011 12:39 pm Operator: StephK
Sample : MB, S Inst : GC/MS Ins
Misc : GC2434,GGB797,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 28 12:02 2011 Quant Results File: TB791GB791SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB791GB791SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Mon Nov 28 12:01:29 2011
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm

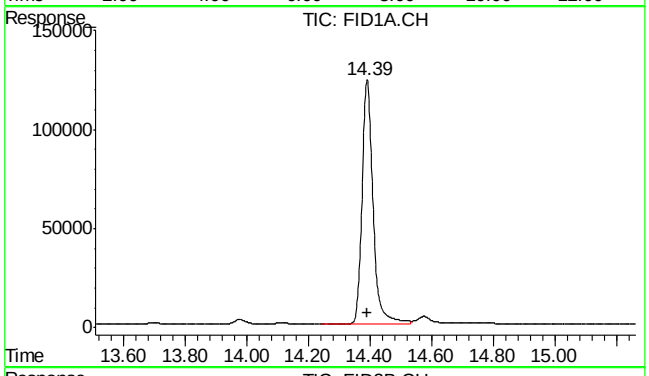






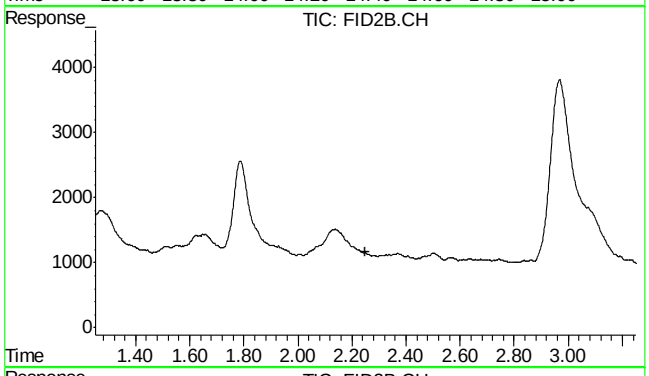
#1 TVH-Gasoline

R.T.: 7.315 min
Delta R.T.: 0.000 min
Response: 5737280
Conc: N.D.



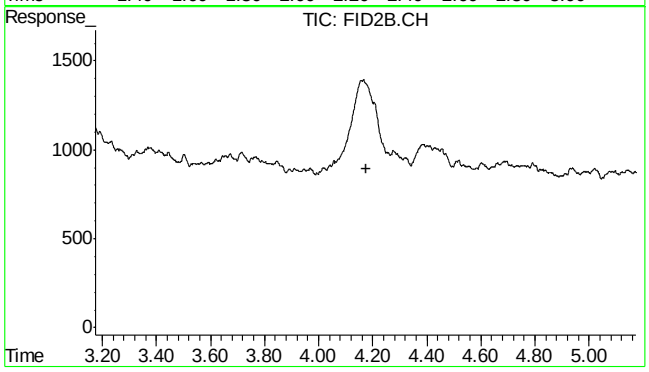
#2 1,2,4-Trichlorobenzene

R.T.: 14.391 min
Delta R.T.: -0.001 min
Response: 3096604
Conc: 105.85 %



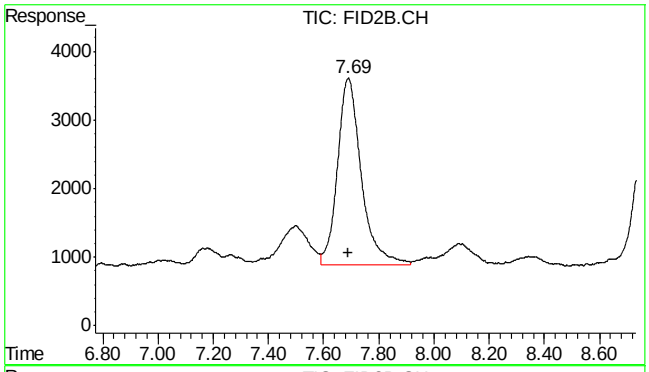
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T. : 2.251 min
Response: 0
Conc: N.D.



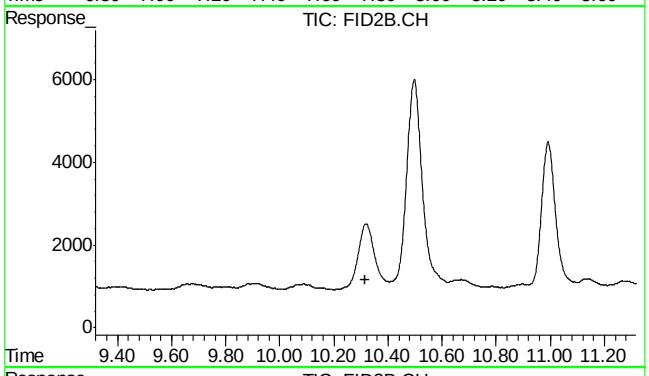
#5 Benzene

R.T.: 0.000 min
Exp R.T. : 4.174 min
Response: 0
Conc: N.D.



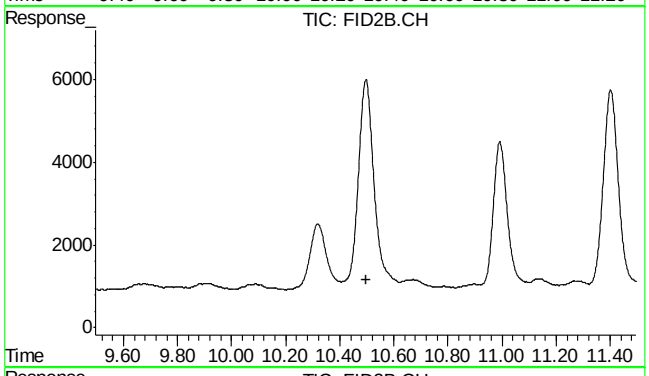
#6 Toluene

R.T.: 7.690 min
Delta R.T.: 0.000 min
Response: 162594
Conc: 0.29 ug/L



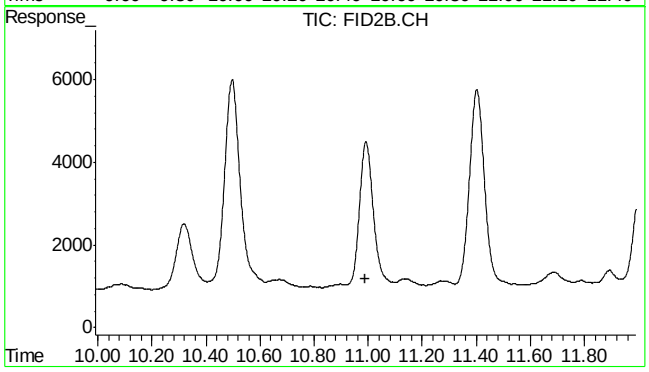
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.317 min
Response: 0
Conc: N.D.



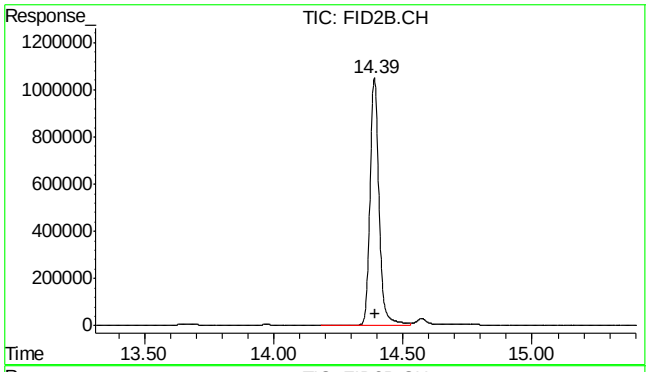
#8 m,p-Xylene

R.T.: 0.000 min
Exp R.T. : 10.496 min
Response: 0
Conc: N.D.



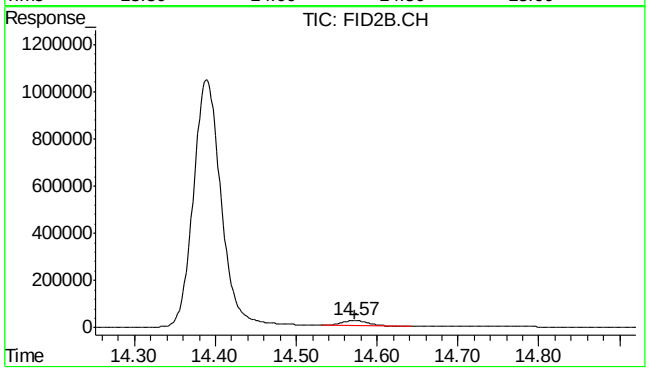
#9 o-Xylene

R.T.: 0.000 min
Exp R.T. : 10.991 min
Response: 0
Conc: N.D.



#10 1,2,4-Trichlorobenzene (P)

R.T.: 14.390 min
Delta R.T.: -0.001 min
Response: 25502181
Conc: 110.96 %



#11 Naphthalene

R.T.: 14.572 min
Delta R.T.: -0.001 min
Response: 497465
Conc: 1.93 ug/L m

Mountain States ACCUTEST LABORATORIES

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D29744
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4917-MB	FD11856.D	1	12/01/11	TR	11/28/11	OP4917	GFD606

The QC reported here applies to the following samples: **Method:** SW846-8015B

D29744-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	13	8.7	mg/kg	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	90%	61-142%

Blank Spike Summary

Job Number: D29744
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4917-BS	FD11857.D	1	12/01/11	TR	11/28/11	OP4917	GFD606

The QC reported here applies to the following samples: **Method:** SW846-8015B

D29744-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	563	84	60-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	92%	61-142%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D29744
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-32A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4917-MS	FD11858.D	1	12/01/11	TR	11/28/11	OP4917	GFD606
OP4917-MSD	FD11859.D	1	12/01/11	TR	11/28/11	OP4917	GFD606
D29747-1	FD11860.D	1	12/01/11	TR	11/28/11	OP4917	GFD606

The QC reported here applies to the following samples: **Method:** SW846-8015B

D29744-1

CAS No.	Compound	D29747-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	791		677	1400	90	1030	35	30	24-157/35

CAS No.	Surrogate Recoveries	MS	MSD	D29747-1	Limits
84-15-1	o-Terphenyl	90%	70%	89%	61-142%

Mountain States ACCUTEST LABORATORIES

GC Semi-volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson 12/01/11 14:22

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2011\DEC\FD120111\FD11863.D Vial: 10
Acq On : 12-1-2011 01:16:03 PM Operator: TEDR
Sample : D29744-1 Inst : FID5
Misc : OP4917,GFD606,30.17,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Dec 01 13:36:05 2011 Quant Results File: GFD599.RES

Quant Method : C:\MSDCHEM\2\METHODS\GFD599.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Tue Nov 29 09:00:39 2011
Response via : Initial Calibration
DataAcq Meth : JH080911.M

Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um

	Compound	R.T.	Response	Conc Units
	System Monitoring Compounds			
1) S	O-Terphenyl	9.67	35794781	672.668 mg/L m
	Target Compounds			
2) H	TPH-DRO (c10-c28)	7.46	706843794	14204.401 mg/L

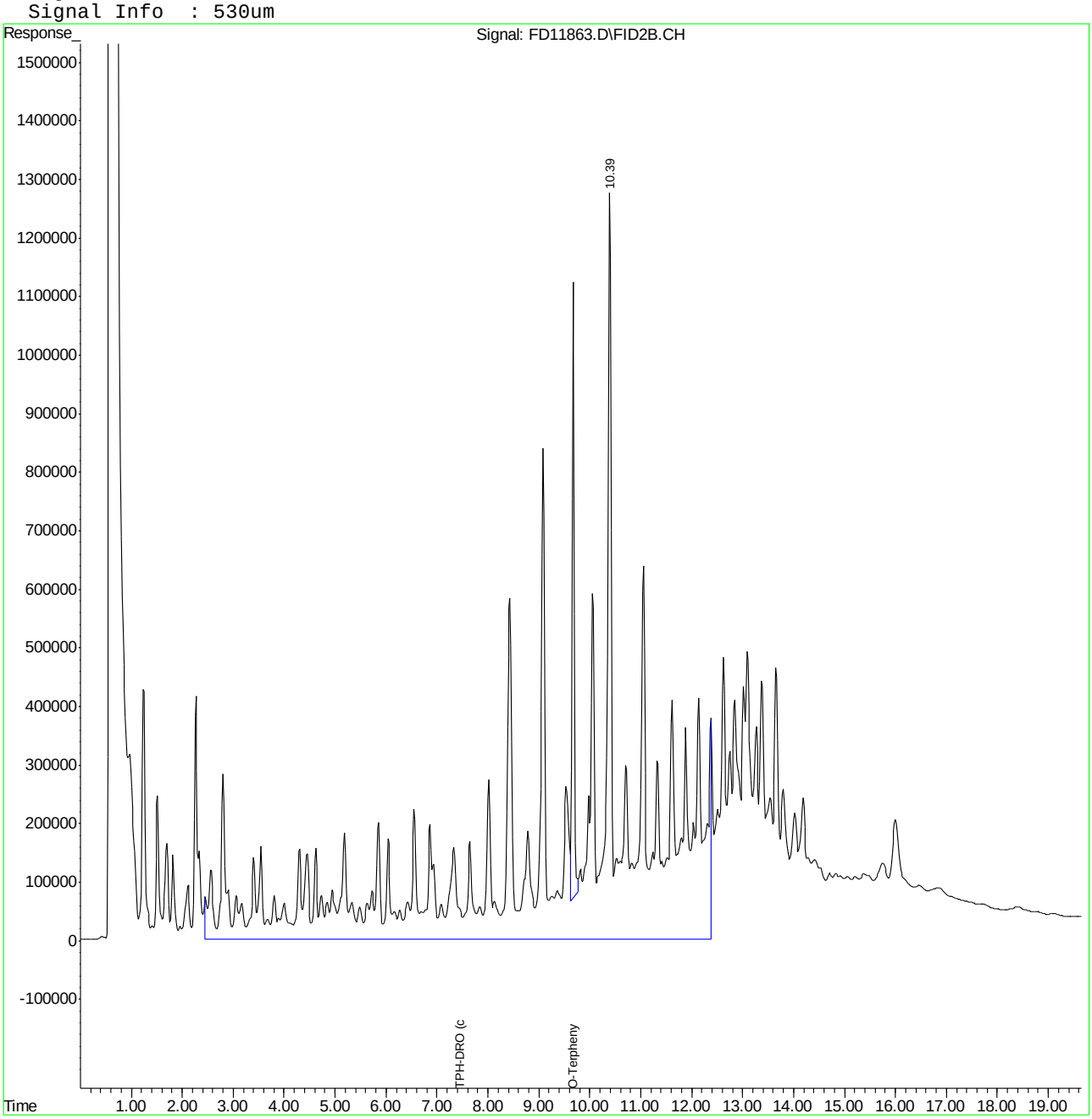
(f)=RT Delta > 1/2 Window (m)=manual int.
FD11863.D GFD599.M Thu Dec 01 13:45:58 2011 GC Page 1

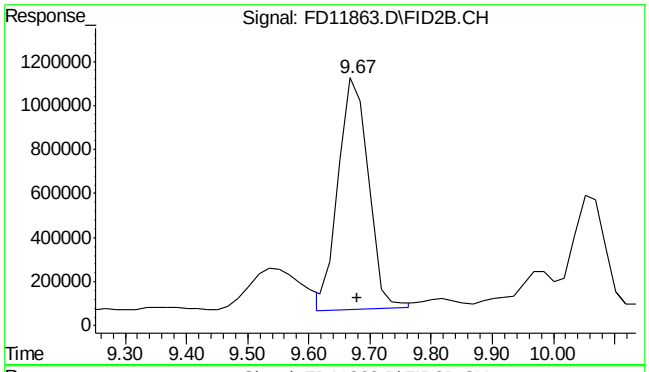
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2011\DEC\FD120111\FD11863.D Vial: 10
Acq On : 12-1-2011 01:16:03 PM Operator: TEDR
Sample : D29744-1 Inst : FID5
Misc : OP4917,GFD606,30.17,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Dec 1 13:36 2011 Quant Results File: GFD599.RES

Quant Method : C:\MSDCHEM\2\METHODS\GFD599.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Tue Nov 29 09:00:39 2011
Response via : Multiple Level Calibration
DataAcq Meth : JH080911.M

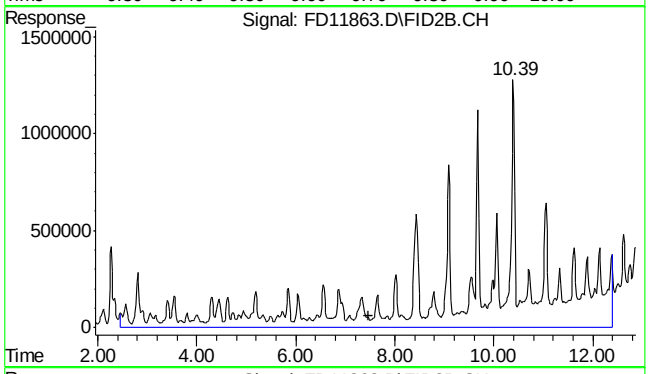
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





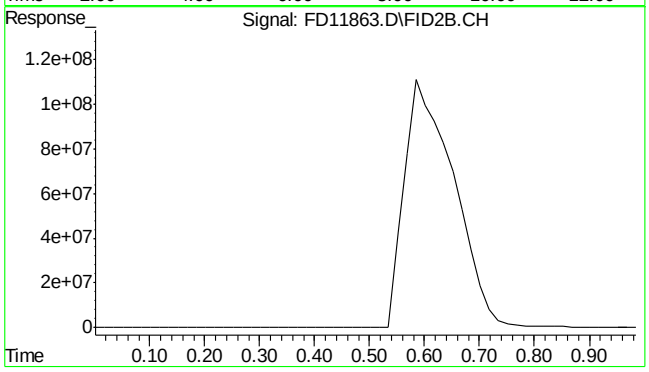
#1 O-Terphenyl

R.T.: 9.673 min
Delta R.T.: -0.007 min
Response: 35794781
Conc: 672.67 mg/L m



#2 TPH-DRO (c10-c28)

R.T.: 7.455 min
Delta R.T.: 0.000 min
Response: 706843794
Conc: 14204.40 mg/L m



#9 5a-Androstane

R.T.: 0.000 min
Exp R.T. : 0.000 min
Response: 0
Conc: N.D.

Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson 12/01/11 14:22

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2011\DEC\FD120111\FD11856.D Vial: 3
Acq On : 01 Dec 2011 10:16 am Operator: TEDR
Sample : OP4917-MB Inst : FID5
Misc : OP4917,GFD606,30.00,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Dec 01 11:48:32 2011 Quant Results File: GFD599.RES

Quant Method : C:\MSDCHEM\2\METHODS\GFD599.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Tue Nov 29 09:00:39 2011
Response via : Initial Calibration
DataAcq Meth : JH080911.M

Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um

	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
1) S	O-Terphenyl	9.68	47699102	902.697	mg/L	m
	Target Compounds					
2) H	TPH-DRO (c10-c28)	7.46	1793297	34.699	mg/L	

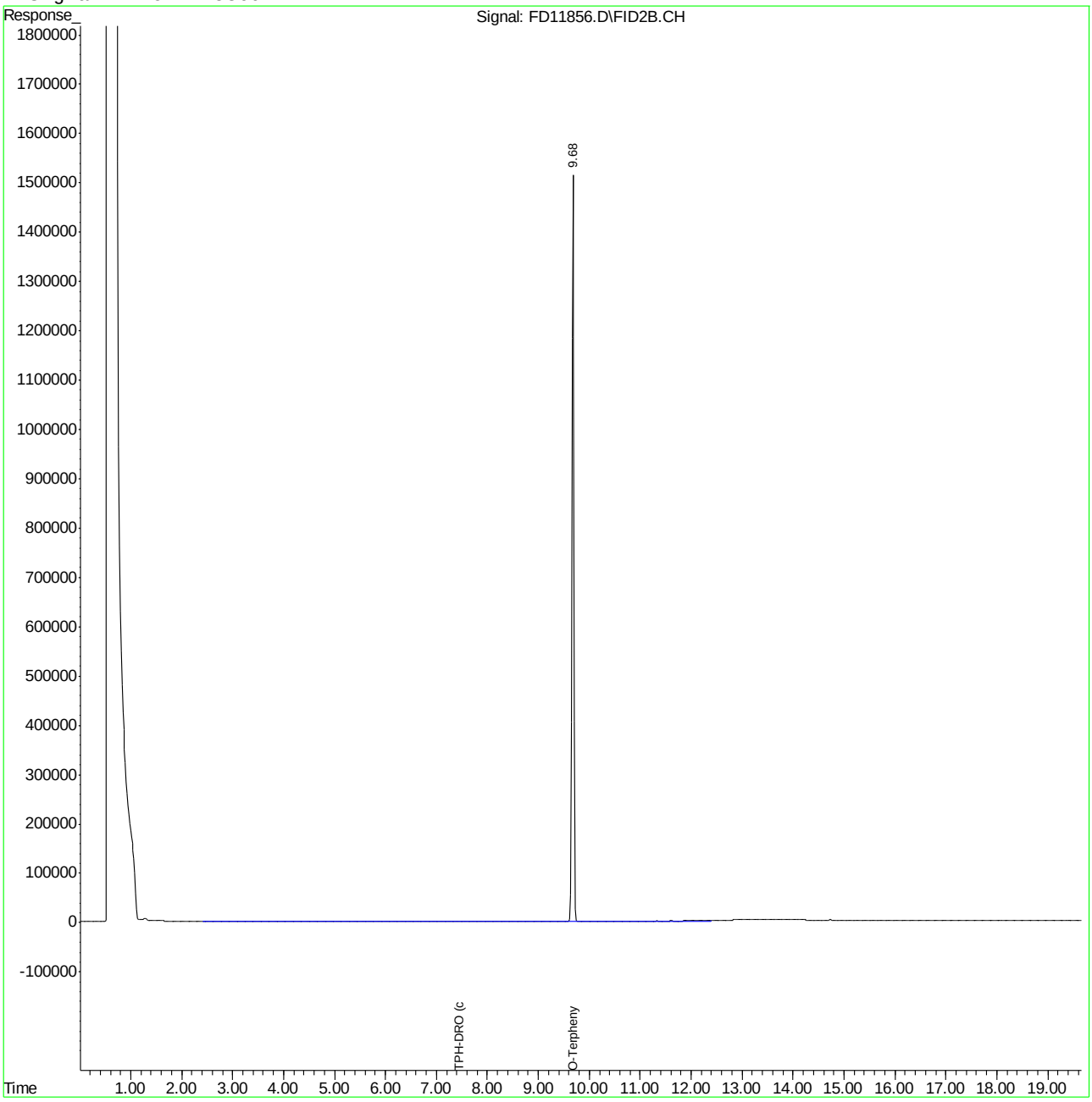
(f)=RT Delta > 1/2 Window (m)=manual int.
FD11856.D GFD599.M Thu Dec 01 13:51:07 2011 GC Page 1

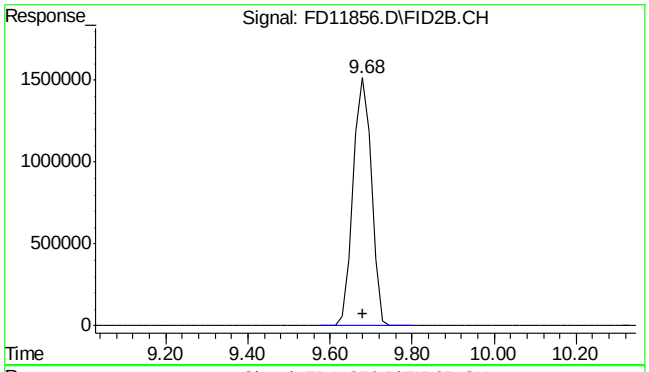
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2011\DEC\FD120111\FD11856.D Vial: 3
Acq On : 01 Dec 2011 10:16 am Operator: TEDR
Sample : OP4917-MB Inst : FID5
Misc : OP4917,GFD606,30.00,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Dec 1 11:48 2011 Quant Results File: GFD599.RES

Quant Method : C:\MSDCHEM\2\METHODS\GFD599.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Tue Nov 29 09:00:39 2011
Response via : Multiple Level Calibration
DataAcq Meth : JH080911.M

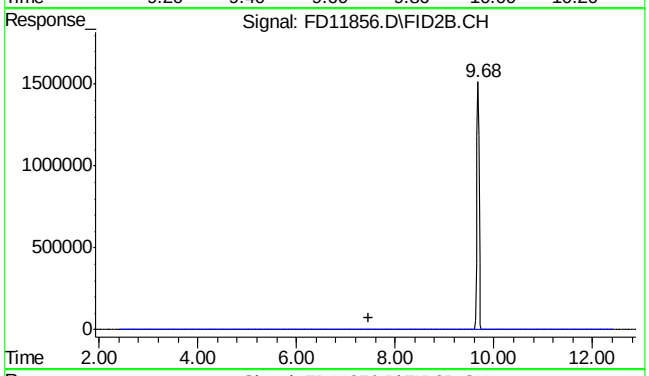
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





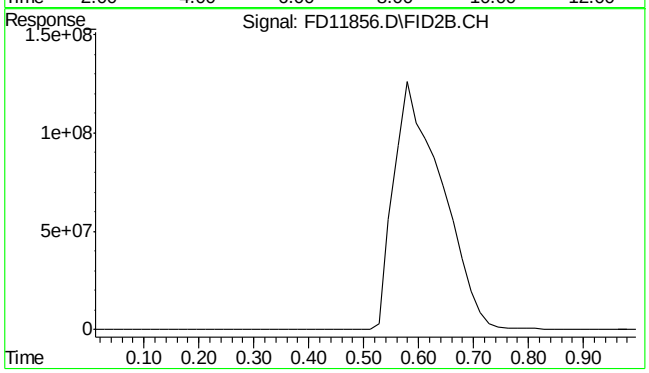
#1 O-Terphenyl

R.T.: 9.679 min
Delta R.T.: -0.001 min
Response: 47699102
Conc: 902.70 mg/L m



#2 TPH-DRO (c10-c28)

R.T.: 7.455 min
Delta R.T.: 0.000 min
Response: 1793297
Conc: 34.70 mg/L m



#9 5a-Androstane

R.T.: 0.000 min
Exp R.T. : 0.000 min
Response: 0
Conc: N.D.

Mountain States ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6348 Methods: SW846 7471A
Matrix Type: SOLID Units: mg/kg

Prep Date: 11/28/11

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.10	.0011	.013	-0.0021	<0.10

Associated samples MP6348: D29744-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6348 Methods: SW846 7471A
Matrix Type: SOLID Units: mg/kg

Prep Date: 11/28/11

Metal	D29744-1 Original	MS	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.038	0.47	0.523	82.5N(a)	85-115

Associated samples MP6348: D29744-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6348 Methods: SW846 7471A
Matrix Type: SOLID Units: mg/kg

Prep Date: 11/28/11

Metal	D29744-1 Original	MSD	Spikelot HGWSR1	% Rec	MSD RPD	QC Limit
Mercury	0.038	0.58	0.59	91.8	21.0 (a)	20

Associated samples MP6348: D29744-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) High RPD due to possible sample matrix or nonhomogeneity.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6348
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 11/28/11

Metal	BSP Result	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.41	0.4	102.5	80-120

Associated samples MP6348: D29744-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6350
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/28/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.59	.59		
Antimony	3.0	.31	.31		
Arsenic	2.5	.59	.59		
Barium	1.0	.11	.11	0.070	<1.0
Beryllium	1.0	.044	.1		
Boron	5.0	.48	.48		
Cadmium	1.0	.027	.27	0.010	<1.0
Calcium	40	.96	1.1		
Chromium	1.0	.018	.031	0.010	<1.0
Cobalt	0.50	.035	.035		
Copper	1.0	.085	.16	0.10	<1.0
Iron	7.0	.34	2		
Lead	5.0	.16	.21	-0.10	<5.0
Lithium	0.20	.028	.031		
Magnesium	20	.58	1.4		
Manganese	0.50	.0053	.012		
Molybdenum	1.0	.045	.054		
Nickel	3.0	.043	.099	-0.020	<3.0
Phosphorus	10	1.1	1.2		
Potassium	200	5.5	9.2		
Selenium	5.0	.38	.5	-0.020	<5.0
Silicon	5.0	.38	.51		
Silver	3.0	.018	.051	0.030	<3.0
Sodium	40	11	11		
Strontium	5.0		.017		
Thallium	1.0	.29	.34		
Tin	5.0	.55	1.3		
Titanium	1.0	.011	.1		
Uranium	5.0	.15	.2		
Vanadium	1.0	.016	.025		
Zinc	3.0	.028	.06	0.14	<3.0

Associated samples MP6350: D29744-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6350
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6350
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/28/11

Metal	D29744-1 Original	MS	Spikelot MPICPALL	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	4780	6710	248	779.3(a)	75-125
Beryllium					
Boron					
Cadmium	0.55	54.7	61.9	87.5	75-125
Calcium					
Chromium	19.5	69.6	61.9	80.9	75-125
Cobalt					
Copper	32.3	92.4	61.9	97.1	75-125
Iron					
Lead	16.3	198	124	146.7N(b	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	18.1	65.3	61.9	76.2	75-125
Phosphorus					
Potassium					
Selenium	0.0	146	124	117.9	75-125
Silicon					
Silver	0.0	23.1	24.8	93.3	75-125
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	56.8	110	61.9	85.9	75-125

Associated samples MP6350: D29744-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6350
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
(b) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6350 Methods: SW846 6010B
Matrix Type: SOLID Units: mg/kg

Prep Date: 11/28/11

Metal	D29744-1 Original	MSD	Spikelot MPICPALL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	4780	5420	252	253.8(a)	21.3 (b)	20
Beryllium						
Boron						
Cadmium	0.55	55.7	63	87.5	1.8	20
Calcium						
Chromium	19.5	71.3	63	82.2	2.4	20
Cobalt						
Copper	32.3	88.6	63	89.3	4.2	20
Iron						
Lead	16.3	126	126	87.0	44.4 (b)	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	18.1	65.8	63	75.7	0.8	20
Phosphorus						
Potassium						
Selenium	0.0	148	126	117.4	1.4	20
Silicon						
Silver	0.0	23.5	25.2	93.2	1.7	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	56.8	110	63	84.4	0.0	20

Associated samples MP6350: D29744-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6350 Methods: SW846 6010B
Matrix Type: SOLID Units: mg/kg

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
(b) High RPD due to possible sample matrix or nonhomogeneity.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6350
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/28/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	175	200	87.5	80-120
Beryllium				
Boron				
Cadmium	44.1	50	88.2	80-120
Calcium				
Chromium	45.1	50	90.2	80-120
Cobalt				
Copper	43.2	50	86.4	80-120
Iron				
Lead	90.8	100	90.8	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	43.7	50	87.4	80-120
Phosphorus				
Potassium				
Selenium	88.8	100	88.8	80-120
Silicon				
Silver	18.2	20	91.0	80-120
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	45.2	50	90.4	80-120

Associated samples MP6350: D29744-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6350
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6350
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/28/11

Metal	D29744-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	30700	45700	20.4*(a)	0-10
Beryllium				
Boron				
Cadmium	4.40	3.50	20.5 (b)	0-10
Calcium				
Chromium	154	172	11.1*(a)	0-10
Cobalt				
Copper	243	265	3.3	0-10
Iron				
Lead	129	150	15.6*(a)	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	144	168	16.4*(a)	0-10
Phosphorus				
Potassium				
Selenium	33.7	0.00		0-10
Silicon				
Silver	0.00	4.00		0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	450	550	22.0*(a)	0-10

Associated samples MP6350: D29744-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SERIAL DILUTION RESULTS SUMMARY

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6350
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested
(a) Serial dilution indicates possible matrix interference.
(b) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6351 Methods: SW846 6020
Matrix Type: SOLID Units: mg/kg

Prep Date: 11/28/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	.14	1.2		
Antimony	0.20	.001	.0095		
Arsenic	0.40	.049	.22	-0.035	<0.40
Barium	1.0	.0035	.1		
Beryllium	0.10	.0075	.014		
Boron	20	.97	1		
Cadmium	0.050	.023	.048		
Calcium	200	1.8	8.2		
Chromium	1.0	.021	.24		
Cobalt	0.10	.0033	.003		
Copper	1.0	.011	.063		
Iron	20	.81	3.7		
Lead	0.25	.0012	.015		
Magnesium	50	.067	2.6		
Manganese	0.50	.007	.029		
Molybdenum	0.50	.0044	.023		
Nickel	1.0	.0029	.031		
Phosphorus	30	1.8	3.5		
Potassium	100	2	3.2		
Selenium	0.20	.075	.19		
Silver	0.050	.0008	.002		
Sodium	250	.8	4.4		
Strontium	10	.004	.04		
Thallium	0.10	.015	.02		
Tin	5.0	.006	.028		
Titanium	1.0	.035	.062		
Uranium	0.25	.00038	.0009		
Vanadium	2.0	.052	.29		
Zinc	5.0	.039	.12		

Associated samples MP6351: D29744-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6351
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 11/28/11

Metal	D29744-1 Original	MS	Spikelot MPICPALL	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	13.8	142	124	103.5	75-125
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP6351: D29744-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6351
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 11/28/11

Metal	D29744-1 Original	MSD	Spikelot MPICPALL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	13.8	145	126	104.1	2.1	20
Barium						
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP6351: D29744-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6351
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 11/28/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	98.3	100	98.3	80-120
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP6351: D29744-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6351
Matrix Type: SOLID

Methods: SW846 6020
Units: ug/l

Prep Date: 11/28/11

Metal	D29744-1 Original	SDL 5:25	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	110	114	4.0	0-10
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP6351: D29744-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6360
Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60
Units: ug/l

Prep Date: 11/29/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	500	30	30		
Antimony	150	16	16		
Arsenic	130	30	30		
Barium	50	5.5	5.5		
Beryllium	50	2.2	2.5		
Boron	250	24	24		
Cadmium	50	1.4	1.4		
Calcium	2000	48	75	3.0	<2000
Chromium	50	.9	4		
Cobalt	25	1.8	1.8		
Copper	50	4.3	14		
Iron	350	17	65		
Lead	250	8	11		
Lithium	10	1.4	6		
Magnesium	1000	29	50	-15	<1000
Manganese	25	.27	1.6		
Molybdenum	50	2.3	4.4		
Nickel	150	2.2	5		
Phosphorus	500	55	100		
Potassium	5000	280	280		
Selenium	250	19	19		
Silicon	250	19	19		
Silver	150	.9	1.6		
Sodium	2000	570	570	-150	<2000
Strontium	25		1.3		
Thallium	50	15	15		
Tin	250	28	50		
Titanium	50	.55	1.6		
Uranium	250	7.5	18		
Vanadium	50	.8	1.1		
Zinc	150	1.4	9		

Associated samples MP6360: D29744-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6360
Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6360
Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60
Units: ug/l

Prep Date: 11/29/11

Metal	D29759-1A Original MS		Spikelot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	45100	176000	125000	104.7	75-125
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	127	126000	125000	100.7	75-125
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	424000	543000	125000	95.2	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP6360: D29744-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6360
Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6360
Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60
Units: ug/l

Prep Date: 11/29/11

Metal	D29759-1A Original	MSD	Spikelot MPICPALL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium	45100	176000	125000	104.7	0.0	20
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Lithium						
Magnesium	127	128000	125000	102.3	1.6	20
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium	424000	544000	125000	96.0	0.2	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP6360: D29744-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6360
Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6360
Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60
Units: ug/l

Prep Date: 11/29/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	133000	125000	106.4	80-120
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	127000	125000	101.6	80-120
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	131000	125000	104.8	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP6360: D29744-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

QC Batch ID: MP6360
Matrix Type: AQUEOUS

Methods: SW846 6010B, USDA HANDBOOK 60
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

Mountain States ACCUTEST LABORATORIES

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Specific Conductivity	GP6017/GN12683			umhos/cm	10008	9880	98.7	90-110%
pH	GN12693			su	8.00	8.00	100.0	99.3-100.7%

Associated Samples:
Batch GN12693: D29744-1
Batch GP6017: D29744-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D29744
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-32A

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Redox Potential Vs H2	GN12695	D29644-1R	mv	204	223	8.7	0-20%

Associated Samples:
Batch GN12695: D29744-1
(*) Outside of QC limits

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

(Accutest Labs of New England, Inc.)

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST

4036 Youngfield St., Wheat Ridge, CO 80033
303-425-6021 FAX: 303-425-6854

Accutest Job #:	D29744
Accutest Quote #:	0
AMS P.O. #:	
Project No.:	

Client Information			Subcontract Laboratory Information		
Name: Accutest Mountain States (AMS)			Name: Accutest - New England		
Address: 4036 Youngfield St.			Address: 495 Technology Center West, BLDG C		
City: Wheat Ridge,	State: CO	Zip: 80033	City: Marlborough	State: MA	Zip: 01752
Send Report to: Tiffany Pham			Contact:		
Any questions contact: Shea Greiner			Sample Management		
Phone/Fax #: (303) 425-6021; (303)425-6854			Phone: (508) 481-6200		

Field ID / Point of Collection	Collection Date	Collection Time		Matrix	# of bottles	Preservation HCL	NaOH	HNO3	H2So4	None	XCRA					Comments
D29744 -1	11/22/11	11:45 AM		Soil	1						X					

Turnaround Information	Data Deliverable Information	Comments / Remarks
[X] 3 - 5 Business Day Rush — Approved By:	[ ] Commercial "A" [ ] PDF	Please use Colorado regulations and RLs.
[ ] Other _____ (Days)	[ ] Commercial "B" [ ] Compact Disk Deliverable	
	[ ] Commercial "BN" [ ] Electronic Delivery:	
	[ ] Reduced Tier 1 [ ] State Forms	
10 Day Turnaround Hardcopy, RUSH is FAX Data unless previously approved.	[ ] Full Tier 1 [ ] Other (Specify)	3E

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date & Time:	Received By:	Date & Time:
1	11/23/11	1 FedEx	1
2 FedEx	11/28/11 10:00	2	2
3		3	3

For Subcontract Laborartory Use Only

Seal #: Headspace: Yes [ ] No [ ] NA [ ]

Preserved where applicable: [ ]

Temperature °C 5.8 On Ice [ ]

15.1 15

D29744: Chain of Custody
Page 1 of 2
Accutest Labs of New England, Inc.

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D29744 **Client:** AMS **Immediate Client Services Action Required:** No

Date / Time Received: 11/28/2011 **Delivery Method:** **Client Service Action Required at Login:** No

Project: **No. Coolers:** 1 **Airbill #'s:**

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	Infared gun		
3. Cooler media:	Ice (bag)		

Quality Control Preservatio	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☐	☑
2. Trip Blank listed on COC:	☐		☐	☑
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Accutest Laboratories
V:508.481.6200

495 Technology Center West, Bldg One
F: 508.481.7753

Marlborough, MA
www/accutest.com

D29744: Chain of Custody
Page 2 of 2

Mountain States ACCUTEST LABORATORIES

General Chemistry

QC Data Summaries

(Accutest Labs of New England, Inc.)

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D29744
Account: ALMS - Accutest Mountain States
Project: KRWCCOL: XOM FRU 297-32A

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP13862/GN37061	0.40	0.0	mg/kg	40	39.0	97.5	80-120%
Chromium, Hexavalent	GP13862/GN37061			mg/kg	966	1100	113.9	80-120%

Associated Samples:
Batch GP13862: D29744-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D29744
Account: ALMS - Accutest Mountain States
Project: KRWCCOL: XOM FRU 297-32A

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP13862/GN37061	D29745-1	mg/kg	0.21	0.26	21.3(a)	0-20%

Associated Samples:
Batch GP13862: D29744-1
(*) Outside of QC limits
(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D29744
Account: ALMS - Accutest Mountain States
Project: KRWCCOL: XOM FRU 297-32A

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP13862/GN37061	D29745-1	mg/kg	0.21	41.5	39.8	95.5	75-125%
Chromium, Hexavalent	GP13862/GN37061	D29745-1	mg/kg	0.21	939	1050	111.8	75-125%

Associated Samples:
Batch GP13862: D29744-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits