



12/13/11

Technical Report for

KRW Consulting, Inc.

XOM FRU 297-17A

1108-13A

Accutest Job Number: D29649

Sampling Date: 11/18/11


Report to:

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Total number of pages in report: 137



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)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

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Sample Summary

KRW Consulting, Inc.

Job No: D29649

XOM FRU 297-17A
Project No: 1108-13A

Sample Number	Collected		Time By	Received	Matrix		Client Sample ID
	Date				Code	Type	
D29649-1	11/18/11	11:00	RR	11/19/11	SO	Soil	RESERVE PIT MIX BLEND 11-16
D29649-1R	11/18/11	11:00	RR	11/19/11	SO	Soil	RESERVE PIT MIX BLEND 11-16
D29649-1RA	11/18/11	11:00	RR	11/19/11	SO	Soil	RESERVE PIT MIX BLEND 11-16

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

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: KRW Consulting, Inc.

Job No D29649

Site: XOM FRU 297-17A

Report Dat 12/13/2011 3:53:09 PM

On 11/19/2011, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 2.1 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D29649 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: V3V848

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D29644-1MS, D29644-1MSD were used as the QC samples indicated.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO

Batch ID: OP4929

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D29647-1RMS, D29647-1RMSD were used as the QC samples indicated.

Volatiles by GC By Method SW846 8015B

Matrix SO

Batch ID: GGB794

- All samples were analyzed within the recommended method holding time.
- Sample(s) D29577-1MS, D29577-1MSD 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: OP4885

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D29644-1MS, D29644-1MSD were used as the QC samples indicated.

Metals By Method SW846 6010B

Matrix AQ

Batch ID: MP6374

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D29649-1RAMS, D29649-1RAMSD were used as the QC samples for the metals analysis.

Matrix SO

Batch ID: MP6361

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D29760-1MS, D29760-1MSD, D29760-1SDL were used as the QC samples for the metals analysis.
- 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 serial dilution RPD(s) for Cadmium, Selenium, Silver are outside control limits for sample MP6361-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- D29649-1R for Selenium: Elevated detection limit due to dilution required for possible matrix interference.
- The serial dilution RPD(s) for Chromium, Nickel, Zinc are outside control limits for sample MP6361-SD1. Serial dilution indicates possible matrix interference.

Metals By Method SW846 6020

Matrix SO

Batch ID: MP6362

- All samples were digested and analyzed within the recommended method holding time.
- Sample(s) D29759-1MS, D29759-1MSD, D29759-1SDL were used as the QC samples for the metals analysis.
- The serial dilution RPD(s) for Arsenic are outside control limits for sample MP6362-SD1. Serial dilution indicates possible matrix interference.
- MP6362-MB1 for Arsenic: All sample results < RL or > 10x MB concentration.

Metals By Method SW846 7471A

Matrix SO

Batch ID: MP6363

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D25269-9MS, D25269-9MSD were used as the QC samples for the metals analysis.

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: GN12598

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

Wet Chemistry By Method SW846 3060/7196A M

Matrix SO

Batch ID: R11034

- The data for SW846 3060/7196A M meets quality control requirements.
- D29649-1R for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Wet Chemistry By Method SW846 3060A/7196A**Matrix** SO**Batch ID:** M:GP13883

- The data for SW846 3060A/7196A meets quality control requirements.
- D29649-1R for Chromium, Hexavalent: Analysis performed at Accutest Laboratories, Marlborough, MA.

Wet Chemistry By Method SW846 9045C**Matrix** SO**Batch ID:** GN12694

- The following sample was run outside of holding time for method SW846 9045C: D29649-1R.

Wet Chemistry By Method USDA HANDBOOK 60**Matrix** SO**Batch ID:** MP6374

- D29649-1RA for Sodium Adsorption Ratio: Calculated as: $(\text{Na meq/L}) / \sqrt{[(\text{Ca meq/L}) + (\text{Mg meq/L})/2]}$

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 D29649

Site: KRWCCOL: XOM FRU 297-17A

Report Date 12/12/2011 11:27:08 AM

1 Sample was collected on 11/18/2011 and were received at Accutest on 11/19/2011 properly preserved, at 1.6 Deg. C and intact. These Samples received an Accutest job number of D29649. 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: GP13883

- 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) D29653-14DUP, D29653-14MS were used as the QC samples for Chromium, Hexavalent.

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(D29649).

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	RESERVE PIT MIX BLEND 11-16	
Lab Sample ID:	D29649-1	Date Sampled: 11/18/11
Matrix:	SO - Soil	Date Received: 11/19/11
Method:	SW846 8260B	Percent Solids: 82.8
Project:	XOM FRU 297-17A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V14688.D	1	11/21/11	DC	n/a	n/a	V3V848
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.08 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	70	31	ug/kg	
108-88-3	Toluene	ND	140	70	ug/kg	
100-41-4	Ethylbenzene	ND	140	35	ug/kg	
1330-20-7	Xylene (total)	ND	280	140	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	101%		61-130%
460-00-4	4-Bromofluorobenzene	106%		53-131%
17060-07-0	1,2-Dichloroethane-D4	104%		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

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Client Sample ID:	RESERVE PIT MIX BLEND 11-16			Date Sampled:	11/18/11
Lab Sample ID:	D29649-1			Date Received:	11/19/11
Matrix:	SO - Soil			Percent Solids:	82.8
Method:	SW846 8015B				
Project:	XOM FRU 297-17A				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB13994.D	1	11/22/11	SK	n/a	n/a	GGB794
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.1 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	11.2	14	7.0	mg/kg	J
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	96%		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

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Client Sample ID:	RESERVE PIT MIX BLEND 11-16				
Lab Sample ID:	D29649-1			Date Sampled:	11/18/11
Matrix:	SO - Soil			Date Received:	11/19/11
Method:	SW846-8015B SW846 3546			Percent Solids:	82.8
Project:	XOM FRU 297-17A				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD11781.D	1	11/29/11	TR	11/21/11	OP4885	GFD599
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	452	16	10	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	79%		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:	RESERVE PIT MIX BLEND 11-16	Date Sampled:	11/18/11
Lab Sample ID:	D29649-1R	Date Received:	11/19/11
Matrix:	SO - Soil	Percent Solids:	82.8
Method:	SW846 8270C BY SIM SW846 3546		
Project:	XOM FRU 297-17A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G07245.D	20	12/13/11	DC	11/30/11	OP4929	E3G266
Run #2							

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

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	160	130	ug/kg	
120-12-7	Anthracene	ND	160	140	ug/kg	
56-55-3	Benzo(a)anthracene	ND	400	210	ug/kg	
50-32-8	Benzo(a)pyrene	ND	400	290	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	400	300	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	400	180	ug/kg	
218-01-9	Chrysene	ND	400	180	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	400	300	ug/kg	
206-44-0	Fluoranthene	ND	160	160	ug/kg	
86-73-7	Fluorene	144	160	140	ug/kg	J
193-39-5	Indeno(1,2,3-cd)pyrene	ND	480	440	ug/kg	
91-20-3	Naphthalene	ND	160	150	ug/kg	
129-00-0	Pyrene	ND	160	150	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	54%		10-145%
321-60-8	2-Fluorobiphenyl	69%		10-130%
1718-51-0	Terphenyl-d14	70%		22-130%

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

Report of Analysis

Client Sample ID: RESERVE PIT MIX BLEND 11-16**Lab Sample ID:** D29649-1R**Matrix:** SO - Soil**Project:** XOM FRU 297-17A**Date Sampled:** 11/18/11**Date Received:** 11/19/11**Percent Solids:** 82.8**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	4.8	0.49	mg/kg	5	11/30/11	11/30/11 GJ	SW846 6020 ¹	SW846 3050B ⁵
Barium	6790	12	mg/kg	10	11/30/11	12/01/11 JB	SW846 6010B ²	SW846 3050B ⁴
Cadmium	< 1.2	1.2	mg/kg	1	11/30/11	11/30/11 JB	SW846 6010B ²	SW846 3050B ⁴
Chromium	58.0	1.2	mg/kg	1	11/30/11	11/30/11 JB	SW846 6010B ²	SW846 3050B ⁴
Copper	12.4	1.2	mg/kg	1	11/30/11	11/30/11 JB	SW846 6010B ²	SW846 3050B ⁴
Lead	13.4	6.1	mg/kg	1	11/30/11	11/30/11 JB	SW846 6010B ²	SW846 3050B ⁴
Mercury	< 0.12	0.12	mg/kg	1	11/30/11	11/30/11 JB	SW846 7471A ³	SW846 7471A ⁶
Nickel	20.7	3.7	mg/kg	1	11/30/11	11/30/11 JB	SW846 6010B ²	SW846 3050B ⁴
Selenium ^a	< 61	61	mg/kg	10	11/30/11	12/01/11 JB	SW846 6010B ²	SW846 3050B ⁴
Silver	< 3.7	3.7	mg/kg	1	11/30/11	11/30/11 JB	SW846 6010B ²	SW846 3050B ⁴
Zinc	46.8	3.7	mg/kg	1	11/30/11	11/30/11 JB	SW846 6010B ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA2010

(2) Instrument QC Batch: MA2011

(3) Instrument QC Batch: MA2012

(4) Prep QC Batch: MP6361

(5) Prep QC Batch: MP6362

(6) Prep QC Batch: MP6363

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

RL = Reporting Limit

Report of Analysis

Client Sample ID: RESERVE PIT MIX BLEND 11-16**Lab Sample ID:** D29649-1R**Matrix:** SO - Soil**Project:** XOM FRU 297-17A**Date Sampled:** 11/18/11**Date Received:** 11/19/11**Percent Solids:** 82.8

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent ^a	0.71	0.47	mg/kg	1	12/06/11 15:25	AMA	SW846 3060A/7196A
Chromium, Trivalent ^b	57.3	1.7	mg/kg	1	12/06/11 15:25	AMA	SW846 3060/7196A M
Redox Potential Vs H2	222		mv	1	11/29/11	JD	ASTM D1498-76M
Specific Conductivity	5980	1.0	umhos/cm	1	12/01/11	JD	DEPT.OF AG, BOOK N9
pH	12.48		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: RESERVE PIT MIX BLEND 11-16**Lab Sample ID:** D29649-1RA**Matrix:** SO - Soil**Project:** XOM FRU 297-17A**Date Sampled:** 11/18/11**Date Received:** 11/19/11**Percent Solids:** 82.8

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	210	2.0	mg/l	1	12/01/11	12/02/11 JB	SW846 6010B ¹	EPA 200.7 ²
Magnesium	< 1.0	1.0	mg/l	1	12/01/11	12/02/11 JB	SW846 6010B ¹	EPA 200.7 ²
Sodium	488	2.0	mg/l	1	12/01/11	12/02/11 JB	SW846 6010B ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA2020

(2) Prep QC Batch: MP6374

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RESERVE PIT MIX BLEND 11-16	Date Sampled:	11/18/11
Lab Sample ID:	D29649-1RA	Date Received:	11/19/11
Matrix:	SO - Soil	Percent Solids:	82.8
Project:	XOM FRU 297-17A		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	9.25		ratio	1	12/02/11 11:04	JB	USDA HANDBOOK 60

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

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

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 # D2 9649

[illegible]



Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D29649

Client: KRW CONSULTING INC.

Immediate Client Services Action Required: No

Date / Time Received: 11/19/2011 9:00:00 AM

No. Coolers: 1

Client Service Action Required at Login: No

Project: XOM FRU 297-17A

Airbill #'s: Fedex

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>		<input type="checkbox"/>

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:			Infrared gun
3. Cooler media:			Ice (bag)

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	<input type="checkbox"/>		<input type="checkbox"/>	
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input type="checkbox"/>	
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. VOCs headspace free:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>		<input type="checkbox"/>

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Condition of sample:			Intact

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume rec'd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

Accutest Laboratories
V:(303) 425-6021

4036 Youngfield Street
F: (303) 425-6854

Wheat Ridge, CO
www.accutest.com

Job Change Order: D29649_11/29/2011

Requested	11/29/2011	Received Date:	11/19/2011
Account Name:	KRW Consulting, Inc.	Due Date:	11/23/2011
Project	XOM FRU 297-17A	Deliverable:	COMMBN+
CSR:	RR	TAT (Days):	10
Sample #:	D29649-1	Change:	Please log the remainder of table 910 to an R sample and analyze on a standard turn. Thank you.

RESERVE PIT MIX BLEND 11-16

Above Changes Per: Dwayne Knudson - Client **Date:** 11/29/2011

To Client: This Change Order is confirmation of the revisions, previously discussed with the Accutest Client Service Representative.

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D29649: Chain of Custody
Page 3 of 3

GC/MS Volatiles

5

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: D29649**Account:** KRWCCOL KRW Consulting, Inc.**Project:** XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V848-MB	3V14680.D	1	11/21/11	DC	n/a	n/a	V3V848

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

D29649-1

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	105% 61-130%
460-00-4	4-Bromofluorobenzene	102% 53-131%
17060-07-0	1,2-Dichloroethane-D4	107% 62-130%

Blank Spike Summary

Page 1 of 1

Job Number: D29649

Account: KRWCCOL KRW Consulting, Inc.

Project: XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V848-BS	3V14681.D	1	11/21/11	DC	n/a	n/a	V3V848

The QC reported here applies to the following samples:

Method: SW846 8260B

D29649-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	58.1	116	70-130
100-41-4	Ethylbenzene	50	56.3	113	70-130
108-88-3	Toluene	50	53.7	107	70-130
1330-20-7	Xylene (total)	150	169	113	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	103%	61-130%
460-00-4	4-Bromofluorobenzene	114%	53-131%
17060-07-0	1,2-Dichloroethane-D4	110%	62-130%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D29649

Account: KRWCCOL KRW Consulting, Inc.

Project: XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D29644-1MS	3V14683.D	1	11/21/11	DC	n/a	n/a	V3V848
D29644-1MSD	3V14684.D	1	11/21/11	DC	n/a	n/a	V3V848
D29644-1	3V14682.D	1	11/21/11	DC	n/a	n/a	V3V848

The QC reported here applies to the following samples:

Method: SW846 8260B

D29649-1

CAS No.	Compound	D29644-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		3480	3810	110	3990	115	5	70-134/30
100-41-4	Ethylbenzene	ND		3480	3660	105	3900	112	6	70-137/30
108-88-3	Toluene	ND		3480	3460	99	3710	107	7	70-130/30
1330-20-7	Xylene (total)	ND		10400	11000	105	11600	111	5	61-131/30

CAS No.	Surrogate Recoveries	MS	MSD	D29644-1	Limits
2037-26-5	Toluene-D8	100%	101%	101%	61-130%
460-00-4	4-Bromofluorobenzene	113%	116%	109%	53-131%
17060-07-0	1,2-Dichloroethane-D4	108%	100%	111%	62-130%

GC/MS Volatiles

Raw Data



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3112111.S\
Data File : 3V14688.D
Acq On : 21 Nov 2011 6:22 pm
Operator : DONC
Sample : D29649-1, 50x
Misc : MS2987,V3V848,5.076,,100,5,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 22 08:31:05 2011
Quant Method : C:\msdchem\1\METHODS\V3AP830TVH830.M
Quant Title : 8260
QLast Update : Mon Nov 07 14:42:41 2011
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.885	168	393258	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.678	114	652410	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.316	117	603539	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.308	152	319787	50.00	ug/l	0.00

System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	12.280	102	54266	52.24	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	104.48%
61) Toluene-d8	14.070	98	905648	50.30	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	100.60%
69) 4-Bromofluorobenzene	16.265	95	310644	53.03	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	106.06%

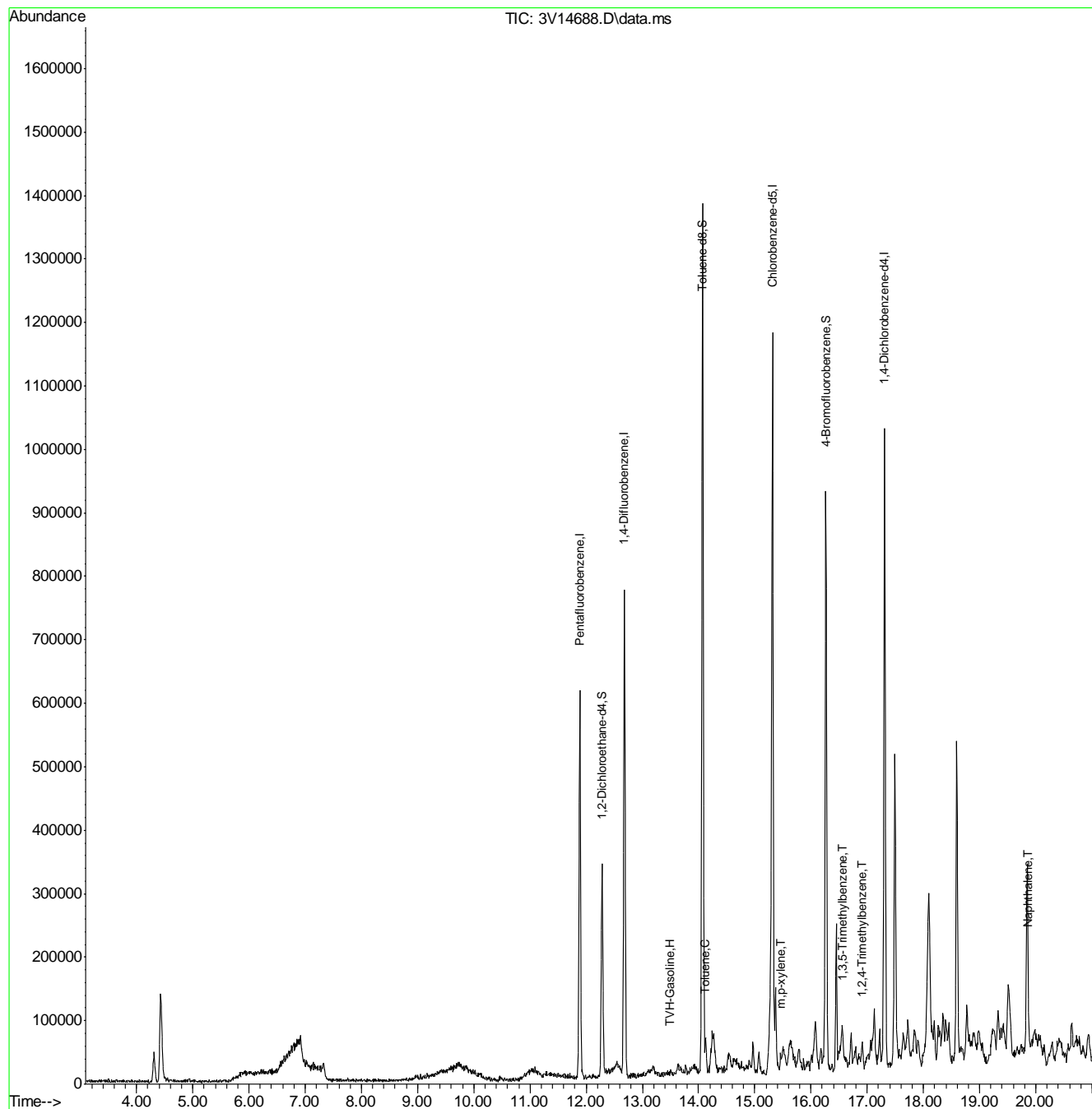
Target Compounds						Qvalue
1) TVH-Gasoline	13.491	TIC	4061011m	242.08	ug/l	
62) Toluene	14.131	92	5923	0.48	ug/l	97
72) m,p-xylene	15.460	106	6948	0.69	ug/l	95
80) 1,3,5-Trimethylbenzene	16.561	105	15139	0.93	ug/l	87
82) 1,2,4-Trimethylbenzene	16.910	105	15028	0.78	ug/l	90
91) Naphthalene	19.875	128	19059	1.08	ug/l	100

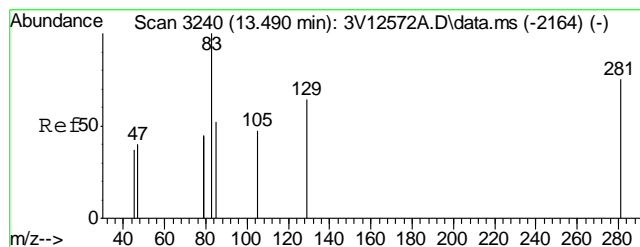
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3112111.S\
Data File : 3V14688.D
Acq On : 21 Nov 2011 6:22 pm
Operator : DONC
Sample : D29649-1, 50x
Misc : MS2987,V3V848,5.076,,100,5,1
ALS Vial : 11 Sample Multiplier: 1

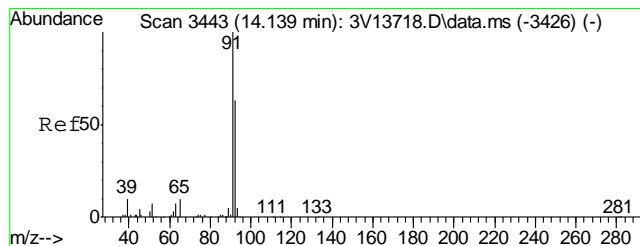
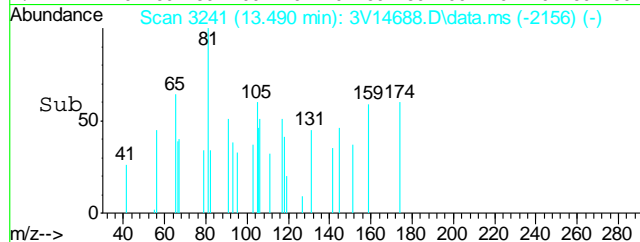
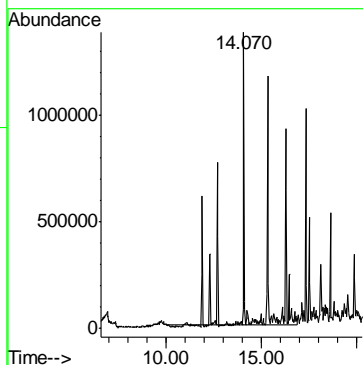
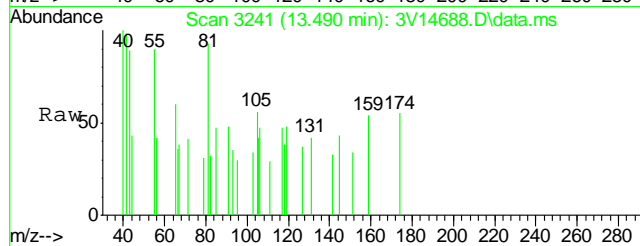
Quant Time: Nov 22 08:31:05 2011
Quant Method : C:\msdchem\1\METHODS\V3AP830TVH830.M
Quant Title : 8260
QLast Update : Mon Nov 07 14:42:41 2011
Response via : Initial Calibration





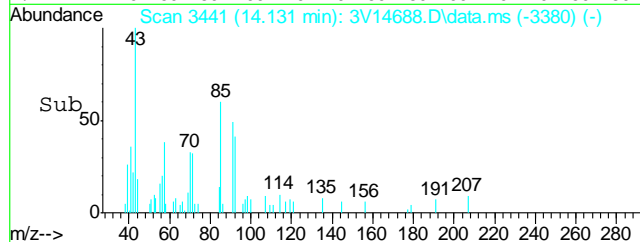
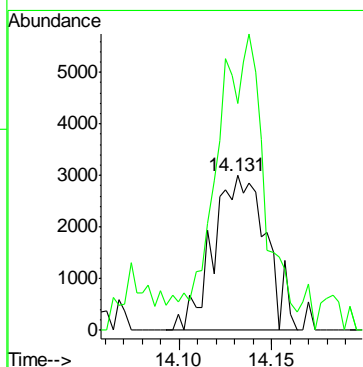
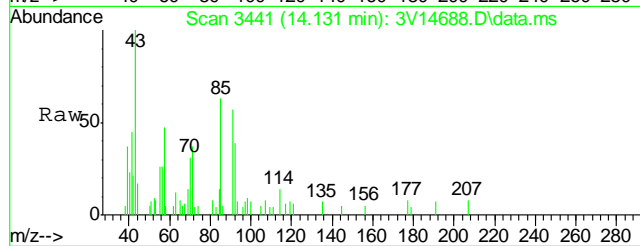
#1
TVH-Gasoline
Concen: 242.08 ug/l m
RT: 13.491 min Scan# 3241
Delta R.T. 0.000 min
Lab File: 3V14688.D
Acq: 21 Nov 2011 6:22 pm

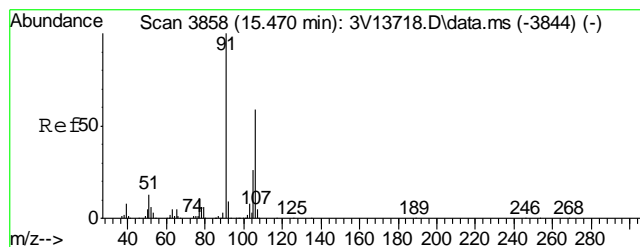
Tgt Ion:TIC Resp: 4061011



#62
Toluene
Concen: 0.48 ug/l
RT: 14.131 min Scan# 3441
Delta R.T. -0.004 min
Lab File: 3V14688.D
Acq: 21 Nov 2011 6:22 pm

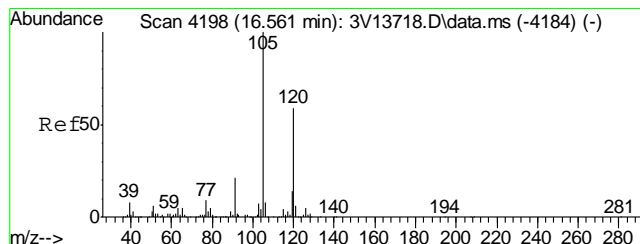
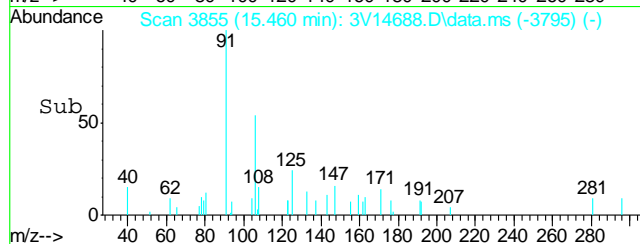
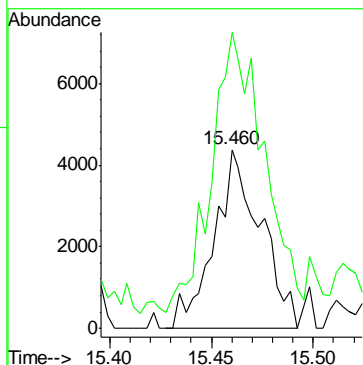
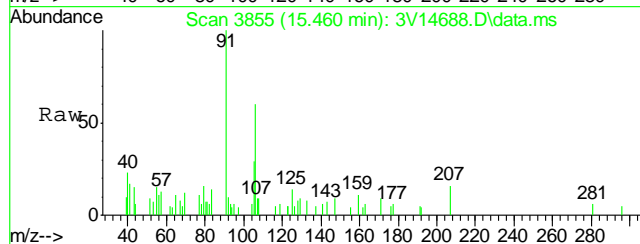
Tgt Ion: 92 Resp: 5923
Ion Ratio Lower Upper
92 100
91 172.8 156.8 196.8





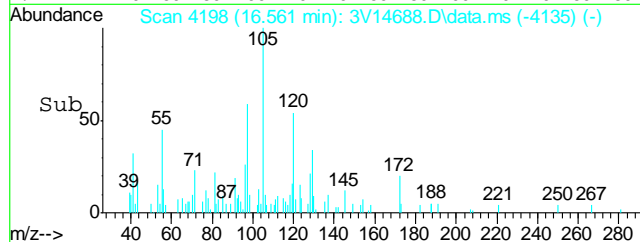
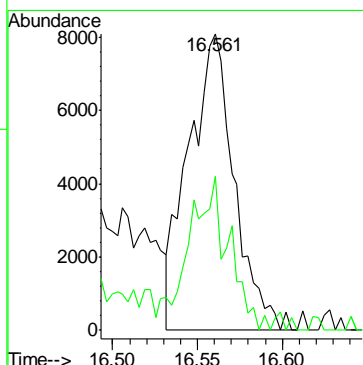
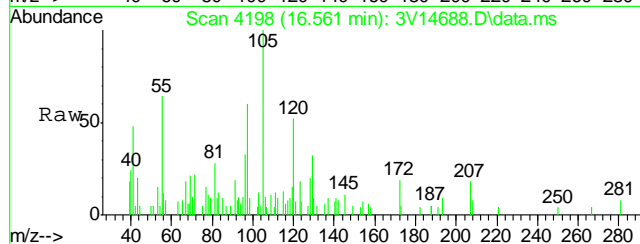
#72
m,p-xylene
Concen: 0.69 ug/l
RT: 15.460 min Scan# 3855
Delta R.T. -0.006 min
Lab File: 3V14688.D
Acq: 21 Nov 2011 6:22 pm

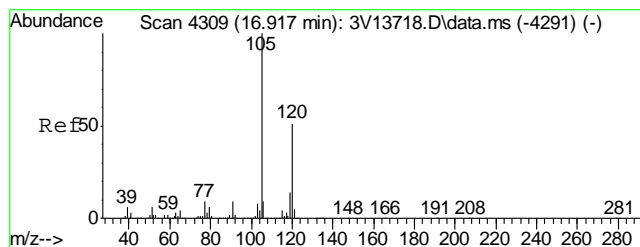
Tgt Ion:106 Resp: 6948
Ion Ratio Lower Upper
106 100
91 177.1 164.7 204.7



#80
1,3,5-Trimethylbenzene
Concen: 0.93 ug/l
RT: 16.561 min Scan# 4198
Delta R.T. 0.004 min
Lab File: 3V14688.D
Acq: 21 Nov 2011 6:22 pm

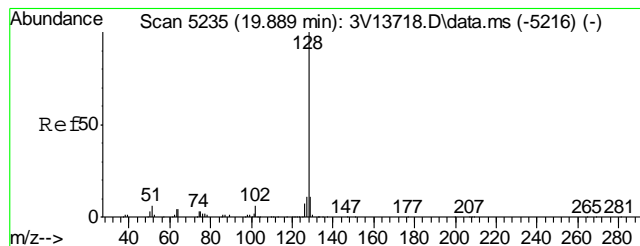
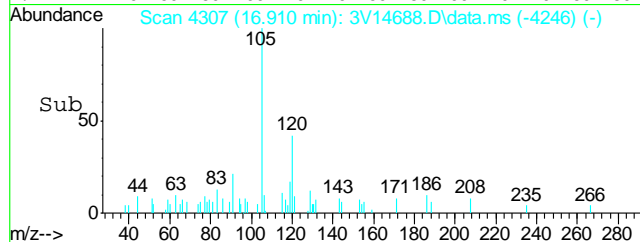
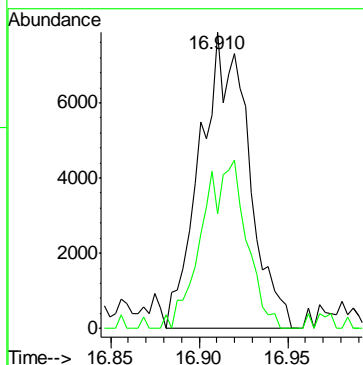
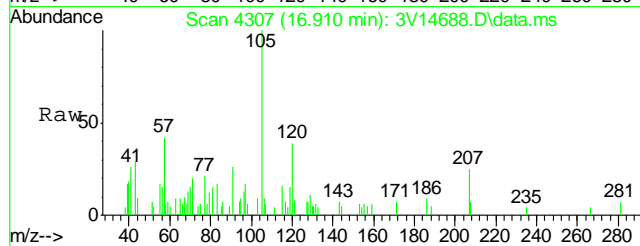
Tgt Ion:105 Resp: 15139
Ion Ratio Lower Upper
105 100
120 45.6 43.8 65.8





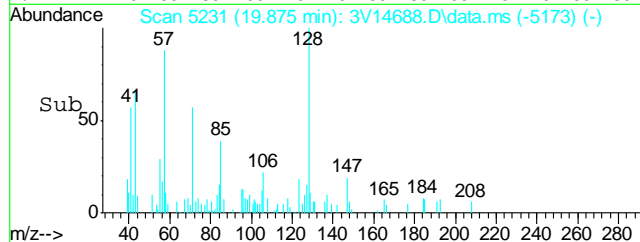
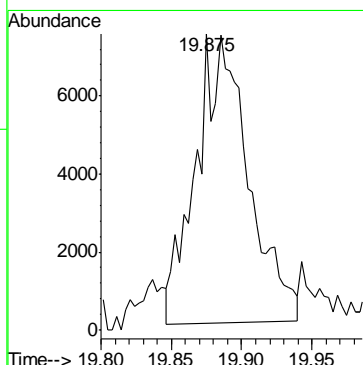
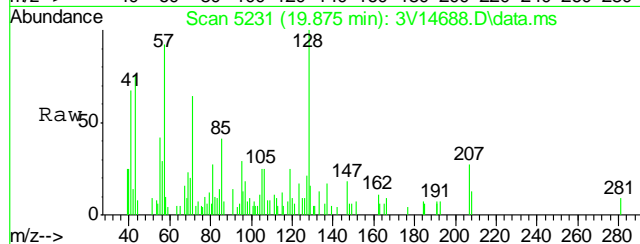
#82
1,2,4-Trimethylbenzene
Concen: 0.78 ug/l
RT: 16.910 min Scan# 4307
Delta R.T. -0.004 min
Lab File: 3V14688.D
Acq: 21 Nov 2011 6:22 pm

Tgt Ion:105 Resp: 15028
Ion Ratio Lower Upper
105 100
120 52.2 47.8 71.6



#91
Naphthalene
Concen: 1.08 ug/l
RT: 19.875 min Scan# 5231
Delta R.T. -0.013 min
Lab File: 3V14688.D
Acq: 21 Nov 2011 6:22 pm

Tgt Ion:128 Resp: 19059



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3112111.S\
Data File : 3V14680.D
Acq On : 21 Nov 2011 2:11 pm
Operator : DONC
Sample : MB, MEB112111
Misc : MS2987,V3V848,5,,100,5,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 22 08:19:59 2011
Quant Method : C:\msdchem\1\METHODS\V3AP830TVH830.M
Quant Title : 8260
QLast Update : Mon Nov 07 14:42:41 2011
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.887	168	289638	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.683	114	495822	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.314	117	436642	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.307	152	228943	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.282	102	41028	53.62	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	107.24%
61) Toluene-d8	14.072	98	686411	52.70	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	105.40%
69) 4-Bromofluorobenzene	16.264	95	216209	51.01	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	102.02%

Target Compounds

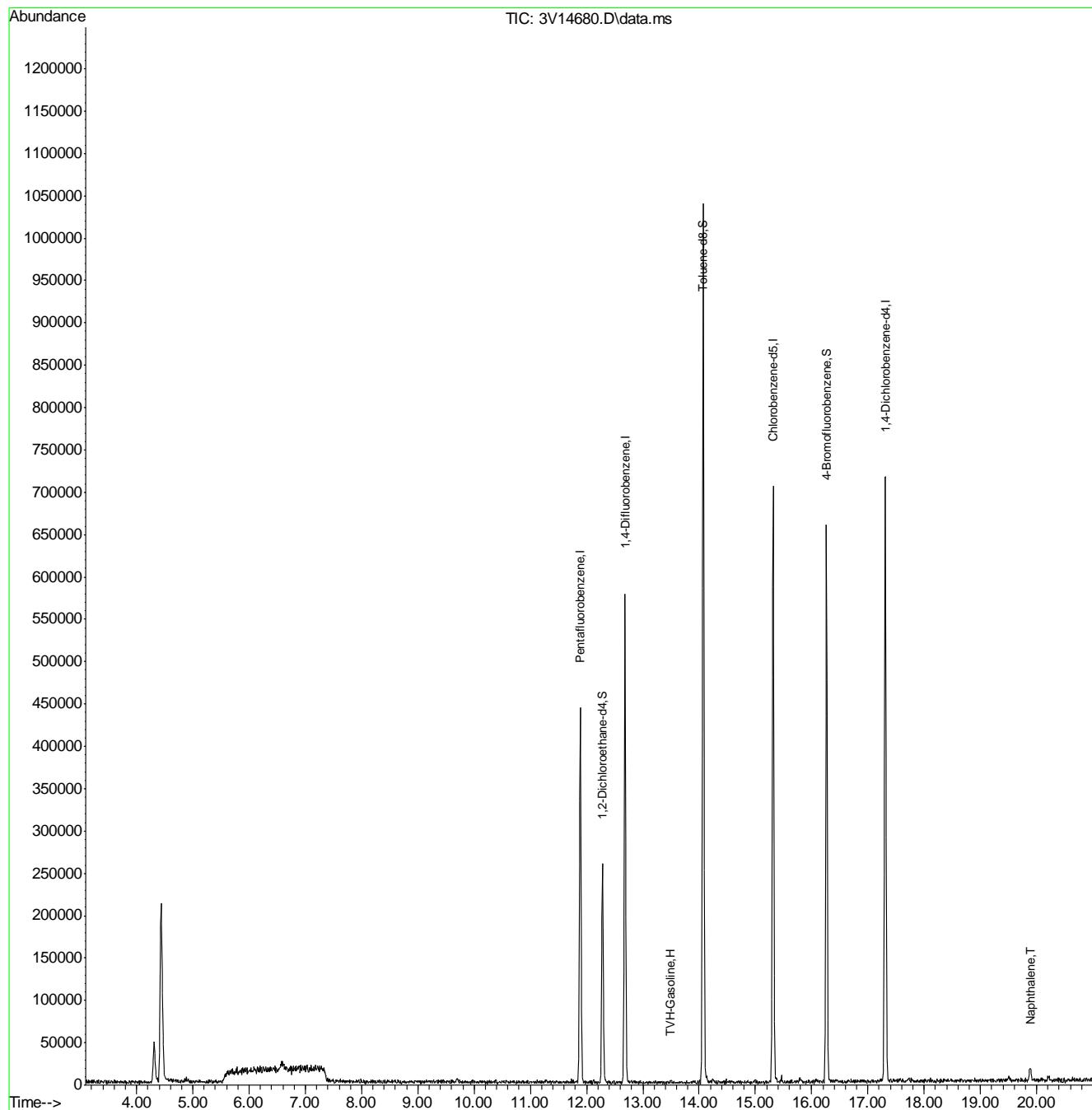
					Qvalue
1) TVH-Gasoline	13.491	TIC	174727m	22.29	ug/l
91) Naphthalene	19.893	128	18848	1.49	ug/l

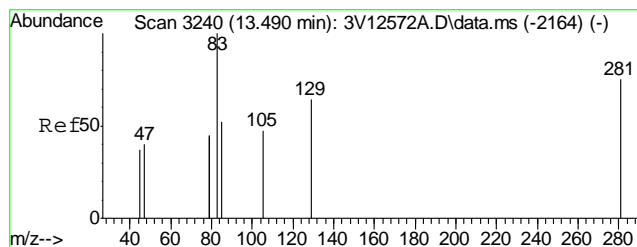
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3112111.S\
Data File : 3V14680.D
Acq On : 21 Nov 2011 2:11 pm
Operator : DONC
Sample : MB, MEB112111
Misc : MS2987,V3V848,5,,100,5,1
ALS Vial : 3 Sample Multiplier: 1

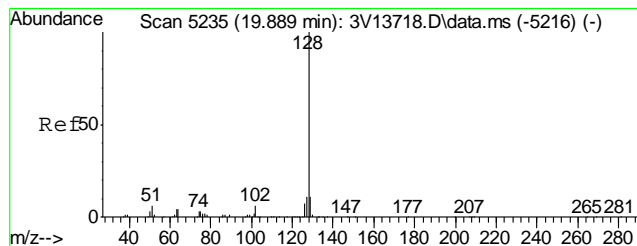
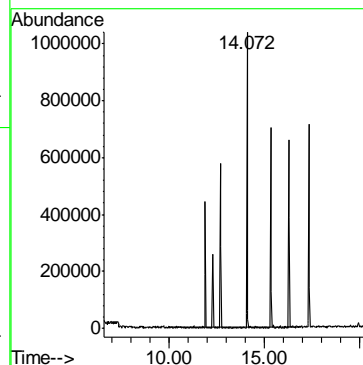
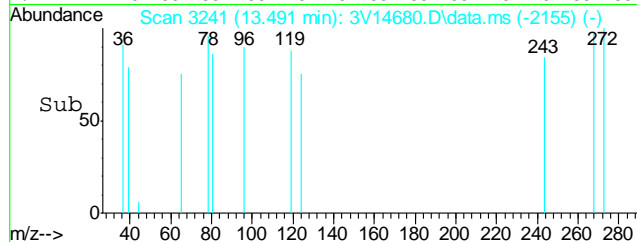
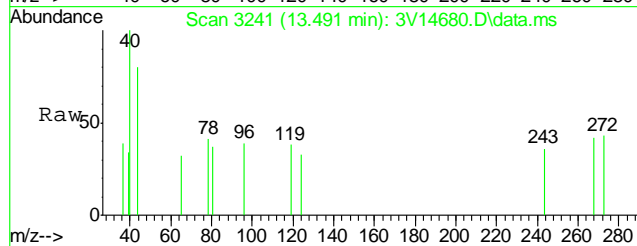
Quant Time: Nov 22 08:19:59 2011
Quant Method : C:\msdchem\1\METHODS\V3AP830TVH830.M
Quant Title : 8260
QLast Update : Mon Nov 07 14:42:41 2011
Response via : Initial Calibration





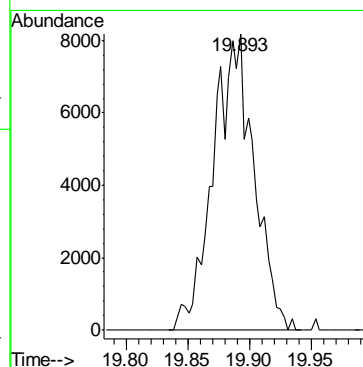
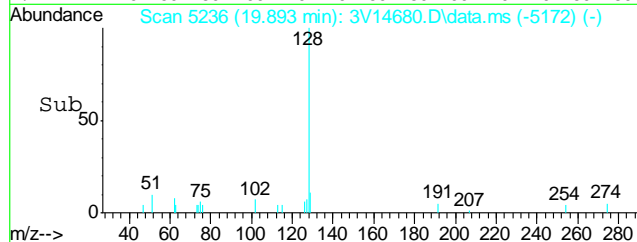
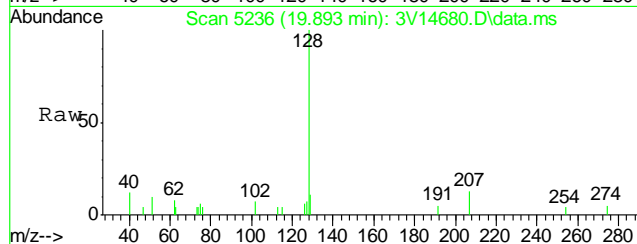
#1
TVH-Gasoline
Concen: 22.29 ug/l m
RT: 13.491 min Scan# 3241
Delta R.T. 0.000 min
Lab File: 3V14680.D
Acq: 21 Nov 2011 2:11 pm

Tgt Ion:TIC Resp: 174727



#91
Naphthalene
Concen: 1.49 ug/l
RT: 19.893 min Scan# 5236
Delta R.T. 0.004 min
Lab File: 3V14680.D
Acq: 21 Nov 2011 2:11 pm

Tgt Ion:128 Resp: 18848



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

Page 1 of 1

Job Number: D29649**Account:** KRWCCOL KRW Consulting, Inc.**Project:** XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4929-MB	3G07152.D	1	12/07/11	DC	11/30/11	OP4929	E3G262

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

D29649-1R

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	92% 10-145%
321-60-8	2-Fluorobiphenyl	88% 10-130%
1718-51-0	Terphenyl-d14	101% 22-130%

Blank Spike Summary

Page 1 of 1

Job Number: D29649

Account: KRWCCOL KRW Consulting, Inc.

Project: XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4929-BS	3G07153.D	1	12/07/11	DC	11/30/11	OP4929	E3G262

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D29649-1R

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	61.9	74	34-130
120-12-7	Anthracene	83.3	69.7	84	35-130
56-55-3	Benzo(a)anthracene	83.3	72.0	86	36-130
50-32-8	Benzo(a)pyrene	83.3	62.3	75	36-130
205-99-2	Benzo(b)fluoranthene	83.3	66.7	80	35-130
207-08-9	Benzo(k)fluoranthene	83.3	70.4	84	37-130
218-01-9	Chrysene	83.3	67.9	81	40-130
53-70-3	Dibenzo(a,h)anthracene	83.3	64.0	77	32-130
206-44-0	Fluoranthene	83.3	58.9	71	38-130
86-73-7	Fluorene	83.3	70.1	84	35-130
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	60.6	73	28-130
91-20-3	Naphthalene	83.3	65.2	78	35-130
129-00-0	Pyrene	83.3	70.9	85	37-130

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	77%	10-145%
321-60-8	2-Fluorobiphenyl	72%	10-130%
1718-51-0	Terphenyl-d14	91%	22-130%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D29649
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4929-MS	3G07154.D	1	12/07/11	DC	11/30/11	OP4929	E3G262
OP4929-MSD	3G07155.D	1	12/07/11	DC	11/30/11	OP4929	E3G262
D29647-1R ^a	3G07176.D	5	12/08/11	DC	11/30/11	OP4929	E3G262

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D29649-1R

CAS No.	Compound	D29647-1R ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		92.2	72.3	78	68.0	74	6	10-155/30
120-12-7	Anthracene	ND		92.2	65.9	71	61.6	67	7	10-155/30
56-55-3	Benzo(a)anthracene	ND		92.2	71.8	78	74.4	81	4	10-175/30
50-32-8	Benzo(a)pyrene	ND		92.2	57.0	62	62.2	67	9	10-164/30
205-99-2	Benzo(b)fluoranthene	ND		92.2	67.5	73	67.4	73	0	10-165/30
207-08-9	Benzo(k)fluoranthene	ND		92.2	69.2	75	72.6	79	5	10-178/30
218-01-9	Chrysene	ND		92.2	72.0	78	74.1	80	3	10-147/30
53-70-3	Dibenzo(a,h)anthracene	ND		92.2	64.8	70	68.8	74	6	10-144/30
206-44-0	Fluoranthene	ND		92.2	94.0	102	83.4	90	12	10-207/30
86-73-7	Fluorene	79.5		92.2	139	65	130	55	7	10-163/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		92.2	62.7	68	64.7	70	3	10-180/30
91-20-3	Naphthalene	ND		92.2	89.5	97	85.4	92	5	10-198/30
129-00-0	Pyrene	ND		92.2	61.4	67	68.9	75	12	10-189/30

CAS No.	Surrogate Recoveries	MS	MSD	D29647-1R	Limits
4165-60-0	Nitrobenzene-d5	82%	83%	78%	10-145%
321-60-8	2-Fluorobiphenyl	68%	67%	71%	10-130%
1718-51-0	Terphenyl-d14	62%	66%	71%	22-130%

(a) Elevated RL due to matrix interference.

GC/MS Semi-volatiles

Raw Data

∞

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\121311\
 Data File : 3g07245.D
 Acq On : 13 Dec 2011 1:35 pm
 Operator : DONC
 Sample : D29649-1R,20
 Misc : OP4929,E3G266,30.05,,,1,20
 ALS Vial : 21 Sample Multiplier: 1

Quant Time: Dec 13 14:29:37 2011
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G265.M
 Quant Title : PAHSIM BASE
 QLast Update : Tue Dec 13 09:07:03 2011
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

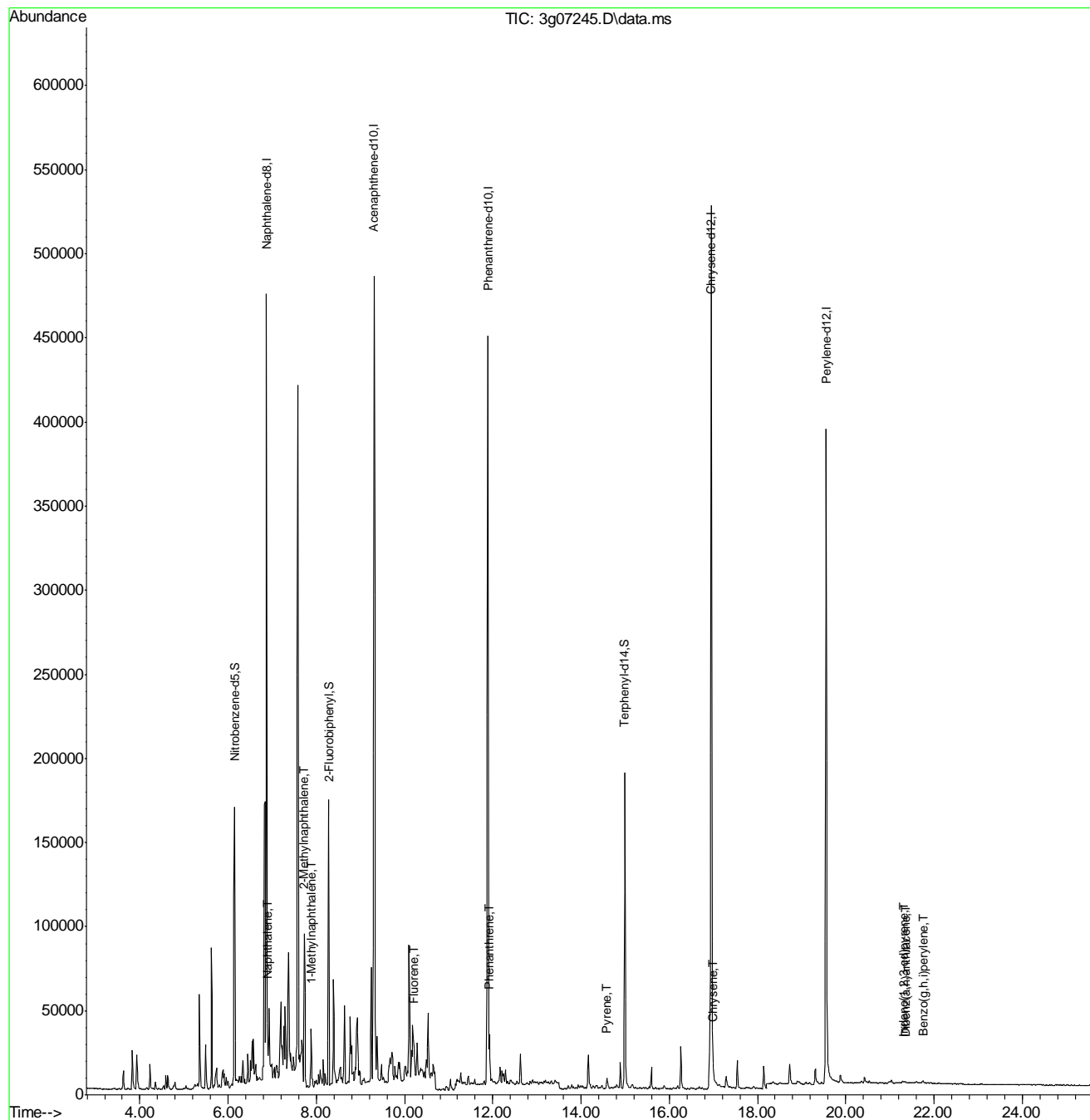
Internal Standards						
1) Naphthalene-d8	6.869	136	390327	4.00	ug/mL	-0.01
6) Acenaphthene-d10	9.311	164	274159	4.00	ug/mL	-0.02
14) Phenanthrene-d10	11.889	188	475855	4.00	ug/mL	-0.02
18) Chrysene-d12	16.950	240	590871	4.00	ug/mL	-0.03
23) Perylene-d12	19.553	264	496518	4.00	ug/mL	-0.02
System Monitoring Compounds						
2) Nitrobenzene-d5	6.146	82	105710	1.34	ug/mL	-0.01
7) 2-Fluorobiphenyl	8.283	172	175340	1.73	ug/mL	-0.01
20) Terphenyl-d14	14.991	244	211625	1.75	ug/mL	-0.04
Target Compounds						Qvalue
3) N-Nitrosodimethylamine	0.000		0	N.D.	d	
4) N-Nitrosodi-propylamine	0.000		0	N.D.	d	
5) Naphthalene	6.894	128	15723	0.14	ug/mL	92
8) 2-Methylnaphthalene	7.728	142	50892	0.59	ug/mL	95
9) 1-Methylnaphthalene	7.882	142	16194m	0.22	ug/mL	
10) Acenaphthylene	0.000		0	N.D.	d	
11) Acenaphthene	0.000		0	N.D.	d	
12) Fluorene	10.209	166	17513	0.18	ug/mL#	15
13) Diphenylamine	0.000		0	N.D.	d	
15) Phenanthrene	11.928	178	26719	0.18	ug/mL	98
16) Anthracene	0.000		0	N.D.	d	
17) Fluoranthene	0.000		0	N.D.	d	
19) Pyrene	14.587	202	4425	0.02	ug/mL#	46
21) Benzo(a)anthracene	0.000		0	N.D.	d	
22) Chrysene	16.997	228	4113	0.02	ug/mL	97
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	21.309	276	1800	0.02	ug/mL#	18
28) Dibenz(a,h)anthracene	21.351	278	1326	0.01	ug/mL	92
29) Benzo(g,h,i)perylene	21.751	276	2020	0.01	ug/mL	96

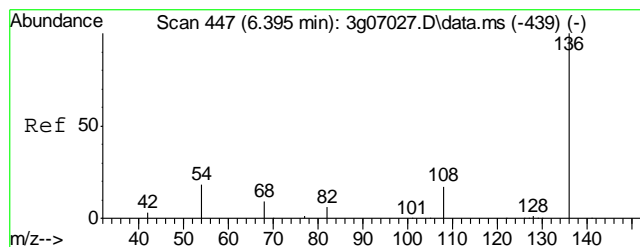
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\121311\
Data File : 3g07245.D
Acq On : 13 Dec 2011 1:35 pm
Operator : DONC
Sample : D29649-1R,20
Misc : OP4929,E3G266,30.05,,,1,20
ALS Vial : 21 Sample Multiplier: 1

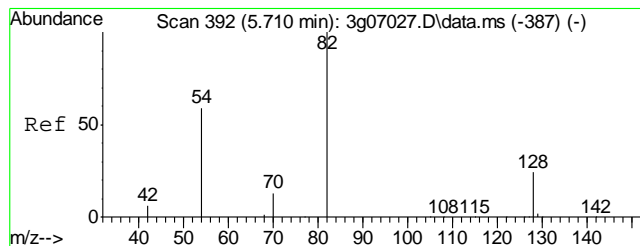
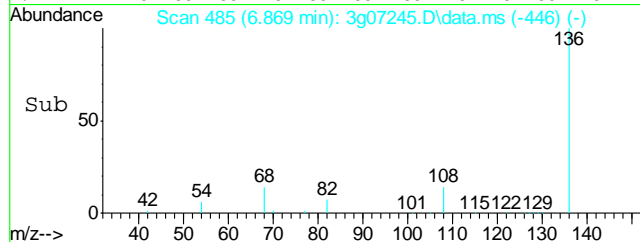
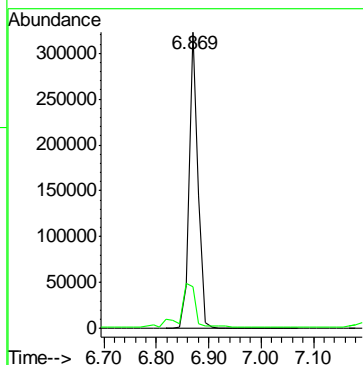
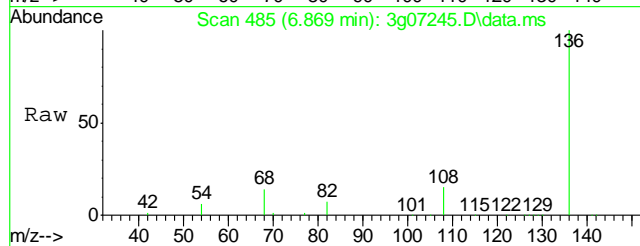
Quant Time: Dec 13 14:29:37 2011
Quant Method : C:\msdchem\1\METHODS\SIMPE3G265.M
Quant Title : PAHSIM BASE
QLast Update : Tue Dec 13 09:07:03 2011
Response via : Initial Calibration





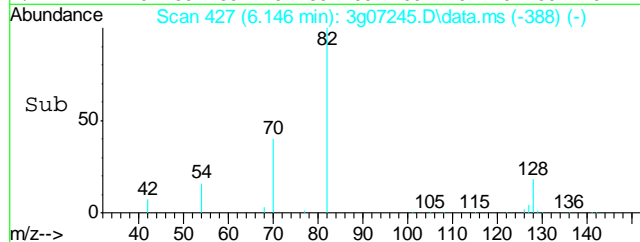
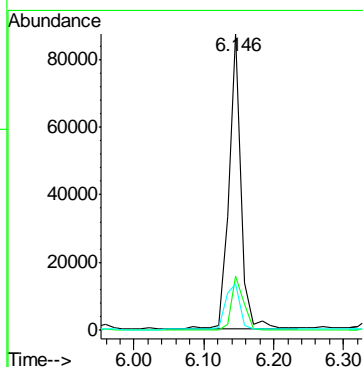
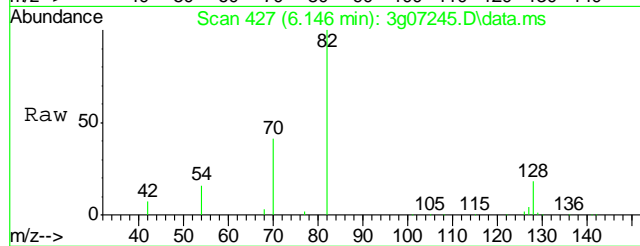
#1
Naphthalene-d8
Concen: 4.00 ug/mL
RT: 6.869 min Scan# 485
Delta R.T. -0.012 min
Lab File: 3g07245.D
Acq: 13 Dec 11 1:35 pm

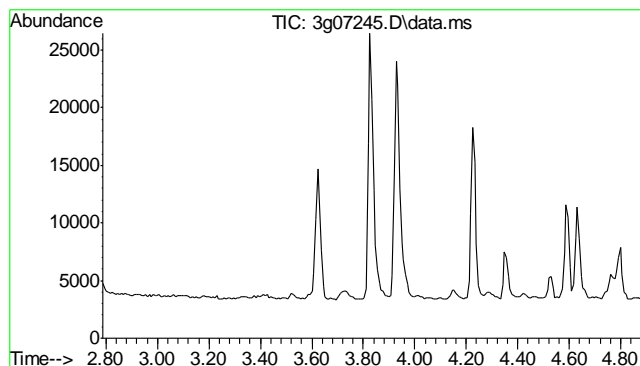
Tgt Ion	Ratio	Lower	Upper
136	100		
68	24.2	1.0	41.0



#2
Nitrobenzene-d5
Concen: 1.34 ug/mL
RT: 6.146 min Scan# 427
Delta R.T. -0.012 min
Lab File: 3g07245.D
Acq: 13 Dec 11 1:35 pm

Tgt Ion	Ratio	Lower	Upper
82	100		
128	18.1	0.0	38.8
54	19.4	0.0	39.1

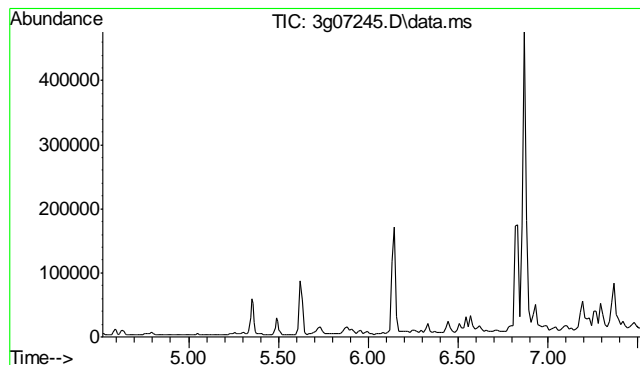
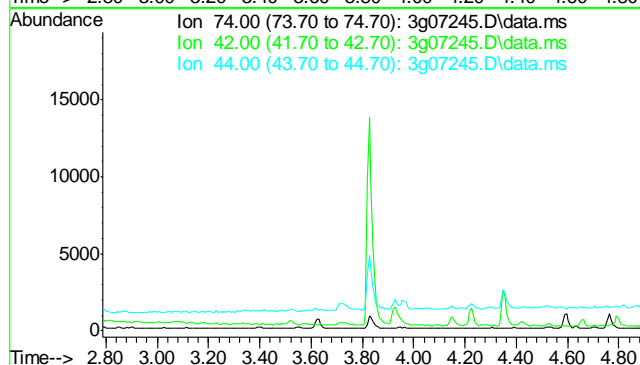




#3
 N-Nitrosodimethylamine
 Concen: N.D. ug/mL
 Expected RT: 3.38 min

 Lab File: 3g07245.D
 Acq: 13 Dec 11 1:35 pm

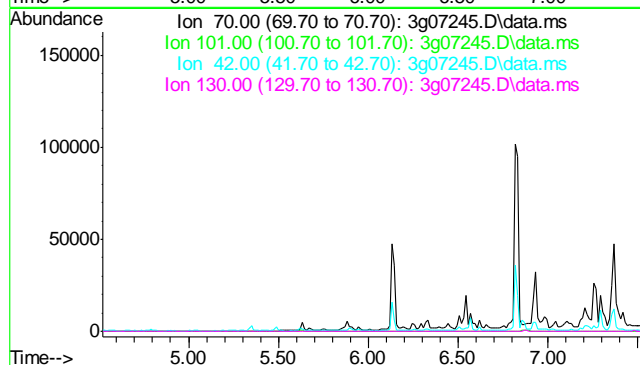
Tgt Ion	Exp Ratio
74	100
42	21.8
44	1.6

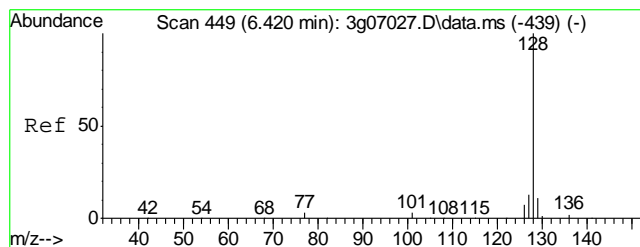


#4
 N-Nitrosodi-propylamine
 Concen: N.D. ug/mL
 Expected RT: 6.02 min

 Lab File: 3g07245.D
 Acq: 13 Dec 11 1:35 pm

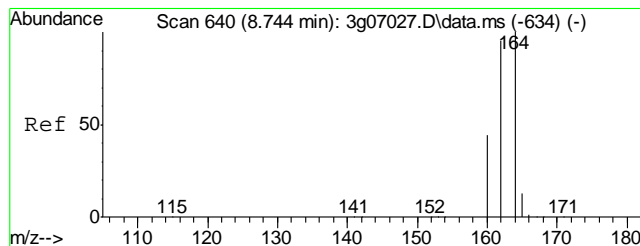
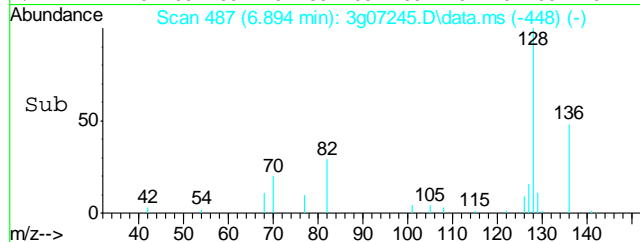
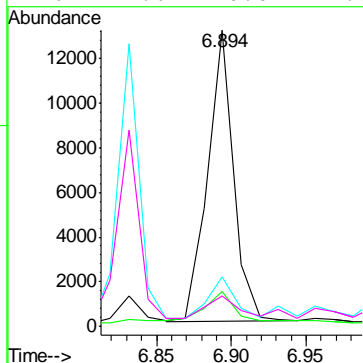
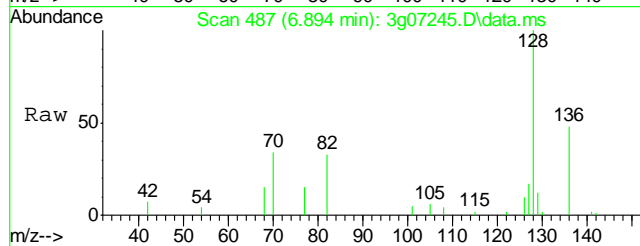
Tgt Ion	Exp Ratio
70	100
101	7.7
42	19.0
130	8.9





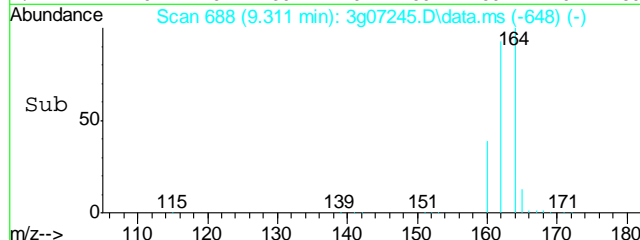
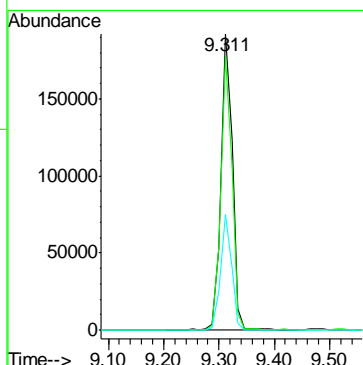
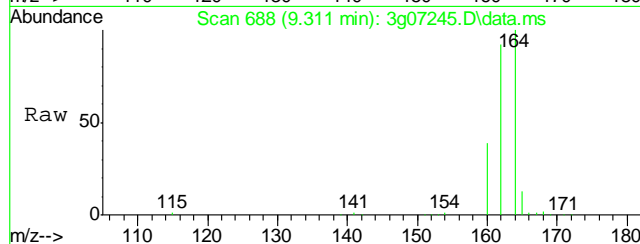
#5
Naphthalene
Concen: 0.14 ug/mL
RT: 6.894 min Scan# 487
Delta R.T. -0.012 min
Lab File: 3g07245.D
Acq: 13 Dec 11 1:35 pm

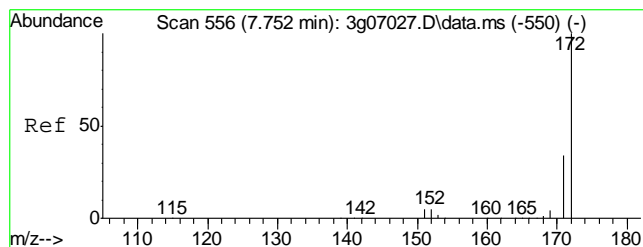
Tgt Ion	Ratio	Lower	Upper
128	100		
129	16.5	0.0	30.9
127	14.6	0.0	33.7
126	11.6	0.0	27.8



#6
Acenaphthene-d10
Concen: 4.00 ug/mL
RT: 9.311 min Scan# 688
Delta R.T. -0.023 min
Lab File: 3g07245.D
Acq: 13 Dec 11 1:35 pm

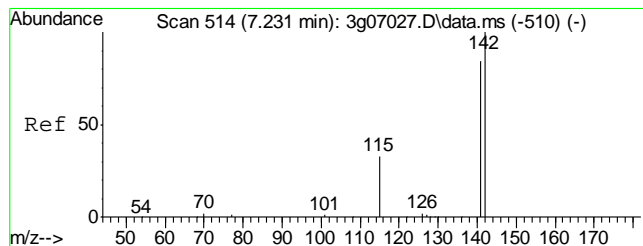
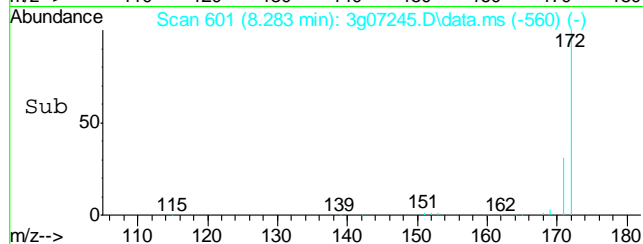
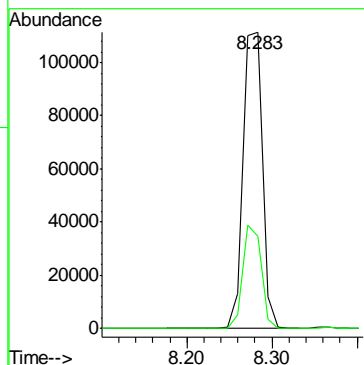
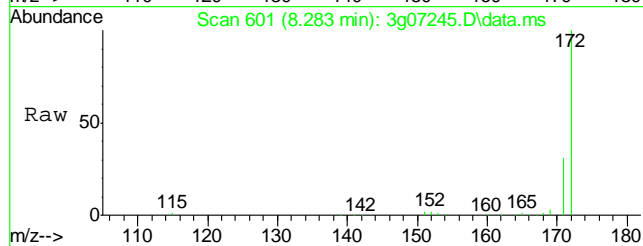
Tgt Ion	Ratio	Lower	Upper
164	100		
162	90.2	72.2	112.2
160	37.3	18.4	58.4





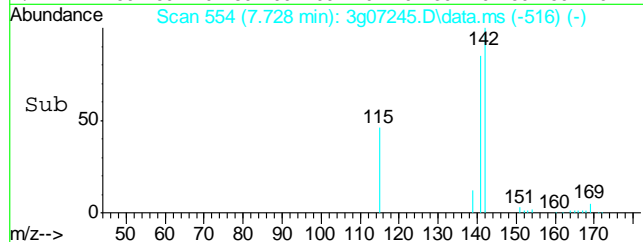
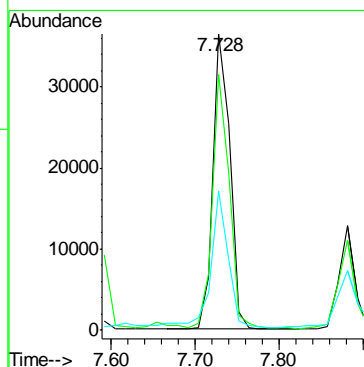
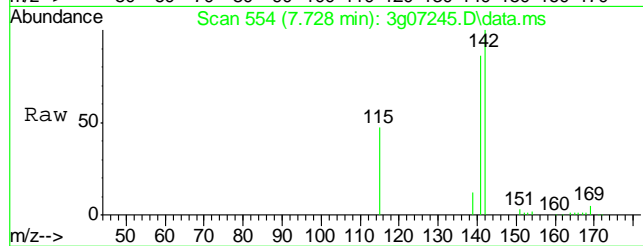
#7
2-Fluorobiphenyl
Concen: 1.73 ug/mL
RT: 8.283 min Scan# 601
Delta R.T. -0.012 min
Lab File: 3g07245.D
Acq: 13 Dec 11 1:35 pm

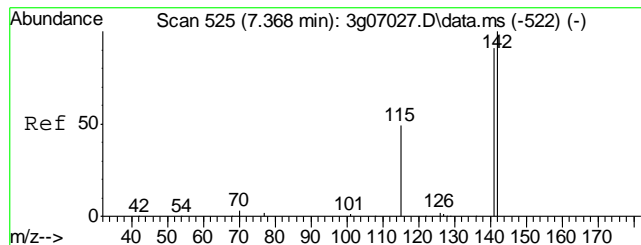
Tgt Ion	Ratio	Lower	Upper
172	100		
171	33.0	12.5	52.5



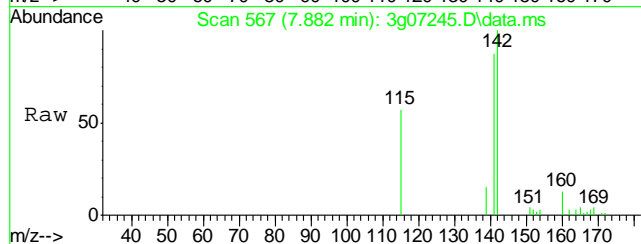
#8
2-Methylnaphthalene
Concen: 0.59 ug/mL
RT: 7.728 min Scan# 554
Delta R.T. -0.023 min
Lab File: 3g07245.D
Acq: 13 Dec 11 1:35 pm

Tgt Ion	Ratio	Lower	Upper
142	100		
141	84.6	61.6	101.6
115	48.1	23.7	63.7

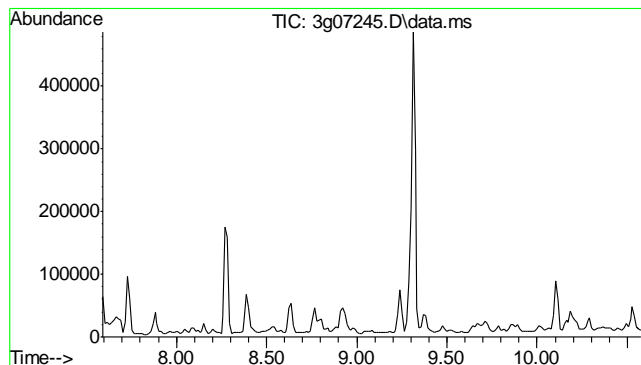
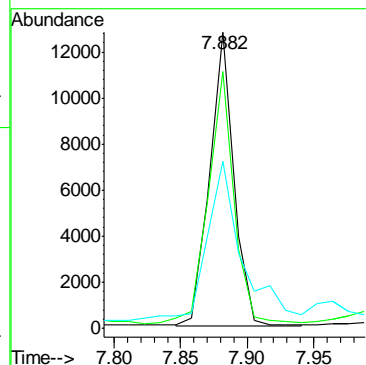
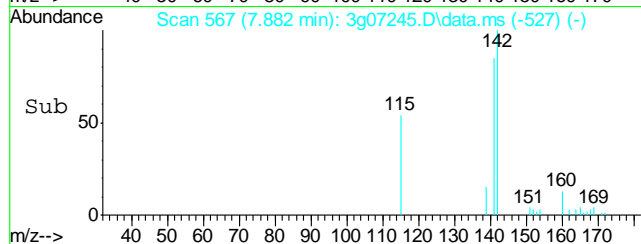




#9
1-Methylnaphthalene
Concen: 0.22 ug/mL m
RT: 7.882 min Scan# 567
Delta R.T. -0.012 min
Lab File: 3g07245.D
Acq: 13 Dec 11 1:35 pm

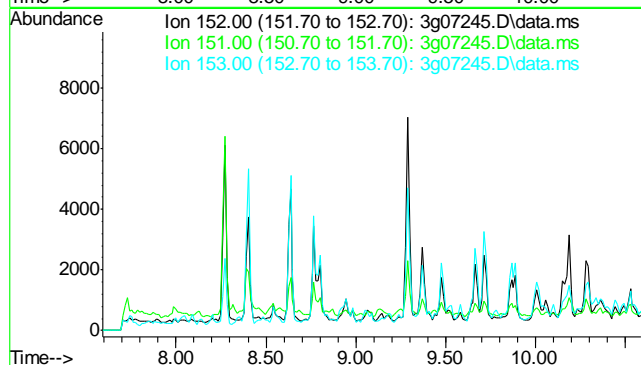


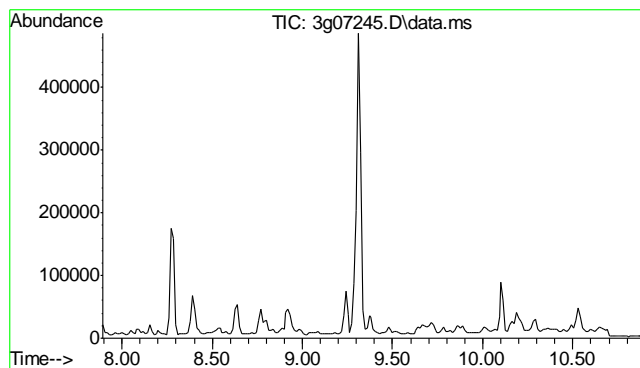
Tgt Ion	Ratio	Lower	Upper
142	100		
141	266.3	67.8	101.8#
115	151.2	36.1	54.1#



#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 9.09 min
Lab File: 3g07245.D
Acq: 13 Dec 11 1:35 pm

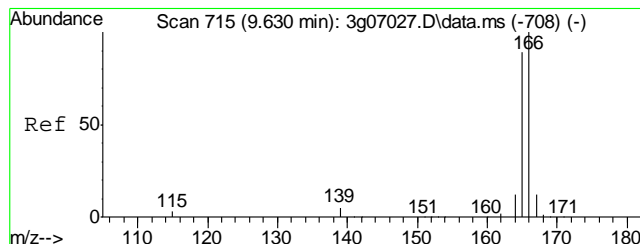
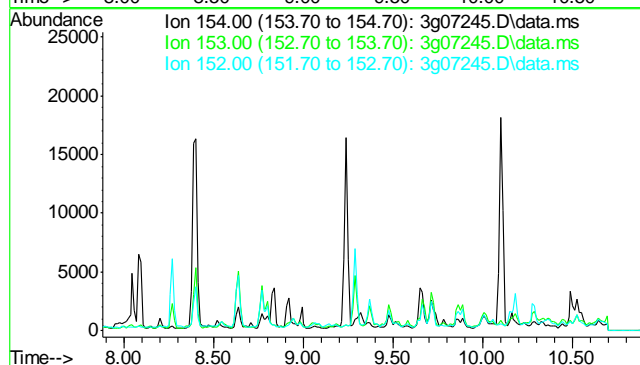
Tgt Ion	Sig	Exp Ratio
152	100	
151	18.8	
153	12.9	





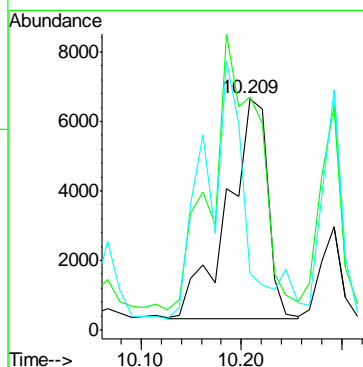
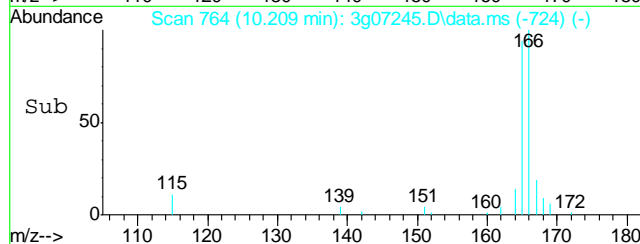
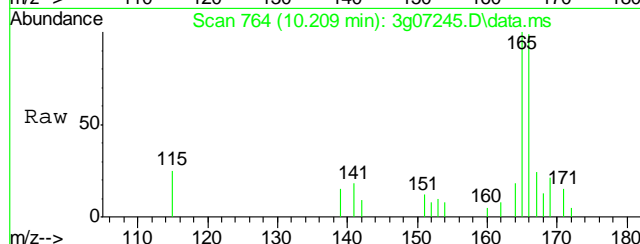
#11
 Acenaphthene
 Concen: N.D. ug/mL
 Expected RT: 9.38 min
 Lab File: 3g07245.D
 Acq: 13 Dec 11 1:35 pm

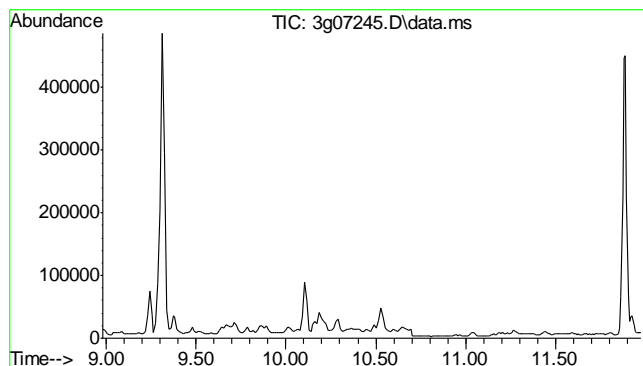
Tgt Ion: 154
 Sig Exp Ratio
 154 100
 153 102.5
 152 49.2



#12
 Fluorene
 Concen: 0.18 ug/mL
 RT: 10.209 min Scan# 764
 Delta R.T. -0.023 min
 Lab File: 3g07245.D
 Acq: 13 Dec 11 1:35 pm

Tgt Ion: 166 Resp: 17513
 Ion Ratio Lower Upper
 166 100
 165 145.9 70.5 110.5#
 167 120.5 0.0 33.2#

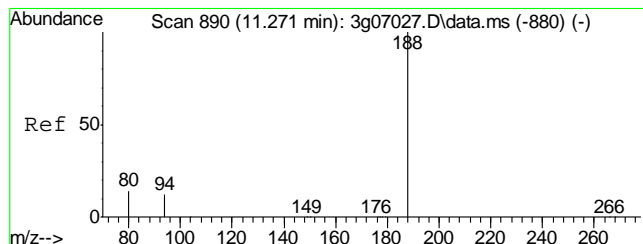
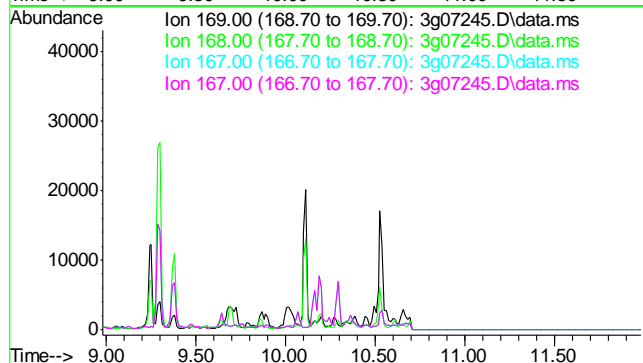




#13
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 10.48 min

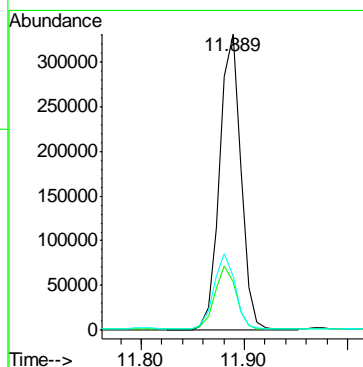
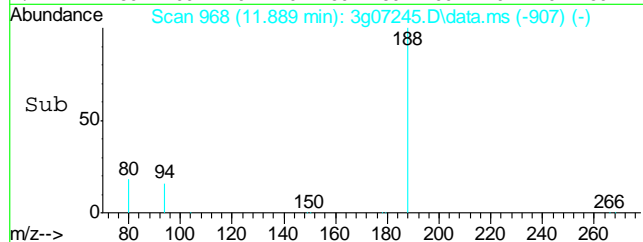
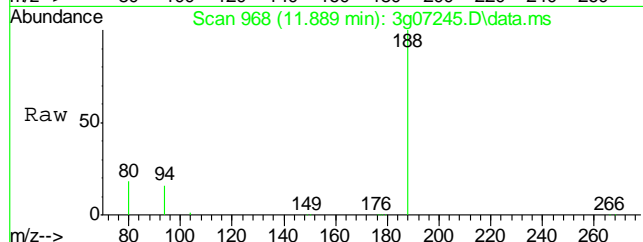
Lab File: 3g07245.D
Acq: 13 Dec 11 1:35 pm

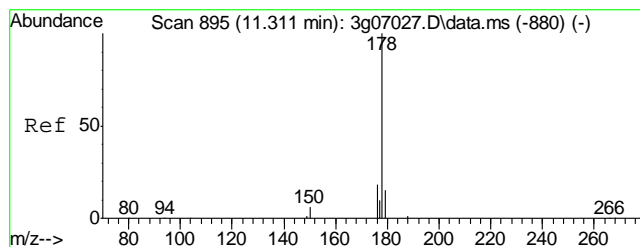
Tgt Ion: 169
Sig Exp Ratio
169 100
168 61.5
167 33.7
167 33.7



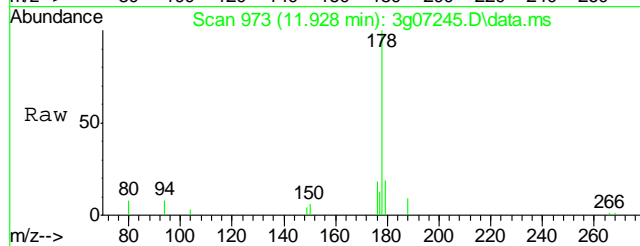
#14
Phenanthrene-d10
Concen: 4.00 ug/mL
RT: 11.889 min Scan# 968
Delta R.T. -0.016 min
Lab File: 3g07245.D
Acq: 13 Dec 11 1:35 pm

Tgt Ion: 188 Resp: 475855
Ion Ratio Lower Upper
188 100
94 21.1 5.1 45.1
80 25.1 9.8 49.8

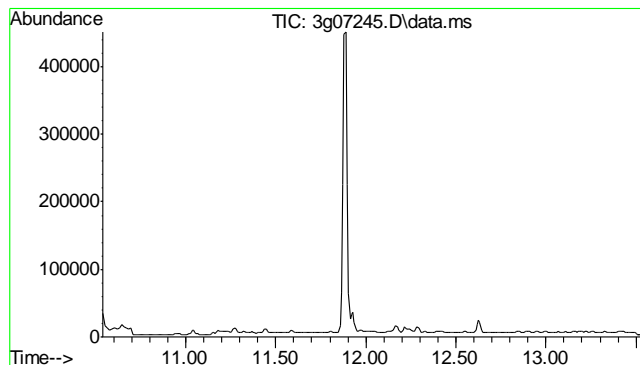
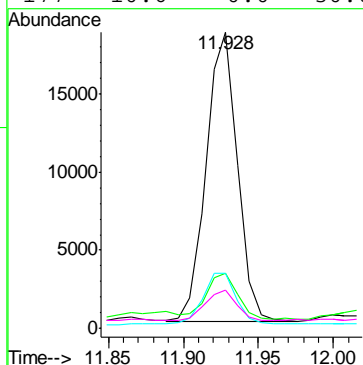
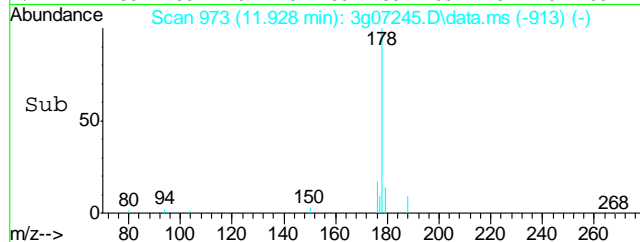




#15
Phenanthrene
Concen: 0.18 ug/mL
RT: 11.928 min Scan# 973
Delta R.T. -0.024 min
Lab File: 3g07245.D
Acq: 13 Dec 11 1:35 pm

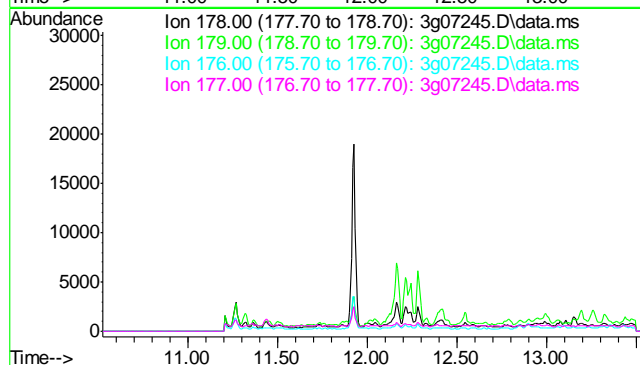


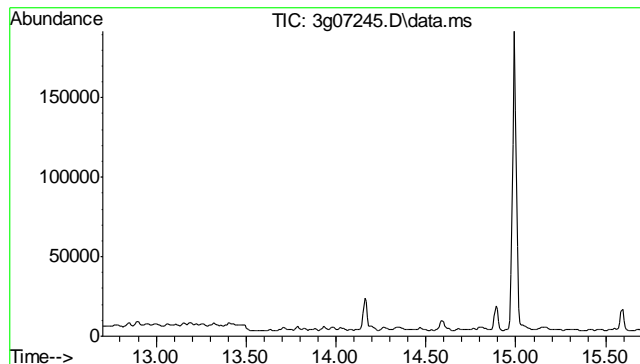
Tgt Ion:	178	Resp:	26719
Ion Ratio	Lower	Upper	
178	100		
179	16.0	0.0	35.2
176	19.4	0.0	38.6
177	10.6	0.0	30.0



#16
Anthracene
Concen: N.D. ug/mL
Expected RT: 12.03 min
Lab File: 3g07245.D
Acq: 13 Dec 11 1:35 pm

Tgt Ion:	178
Sig	Exp Ratio
178	100
179	14.9
176	17.9
177	8.5

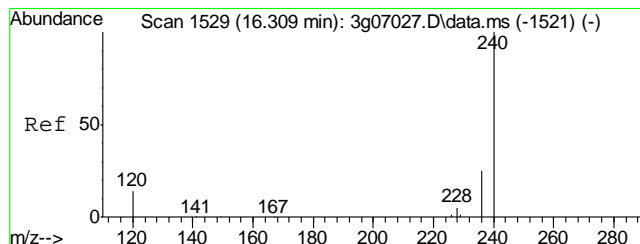
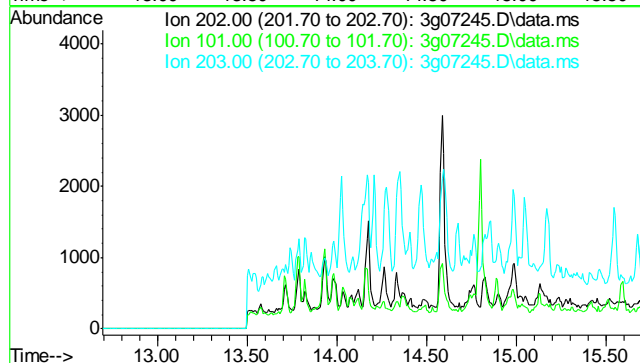




#17
 Fluoranthene
 Concen: N.D. ug/mL
 Expected RT: 14.20 min

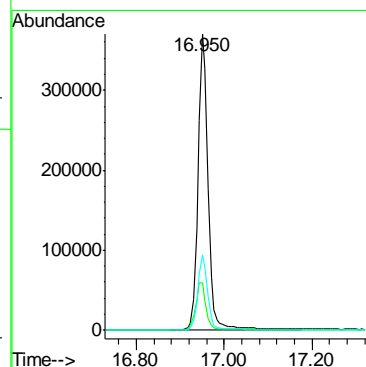
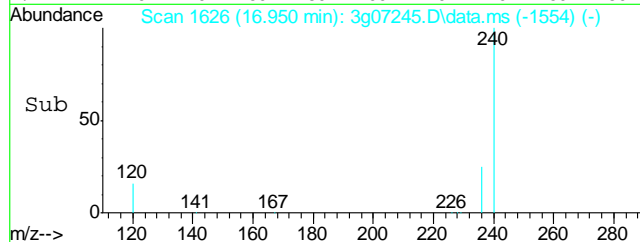
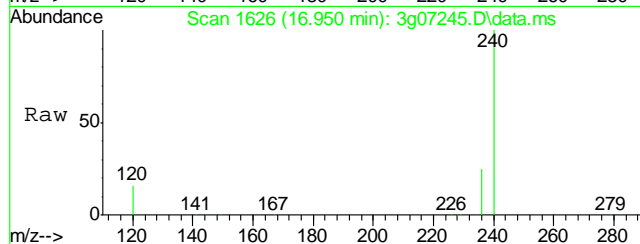
 Lab File: 3g07245.D
 Acq: 13 Dec 11 1:35 pm

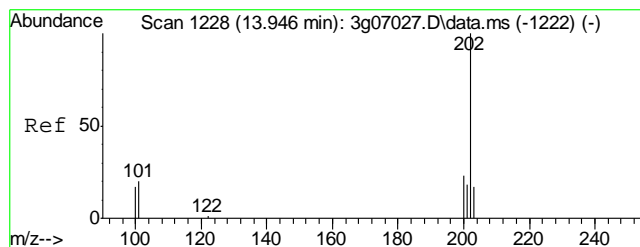
Tgt Ion	Exp Ratio
202	100
101	22.3
203	17.1



#18
 Chrysene-d12
 Concen: 4.00 ug/mL
 RT: 16.950 min Scan# 1626
 Delta R.T. -0.026 min
 Lab File: 3g07245.D
 Acq: 13 Dec 11 1:35 pm

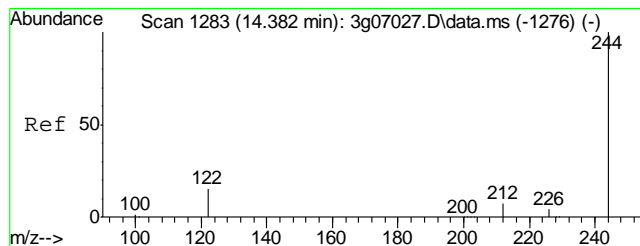
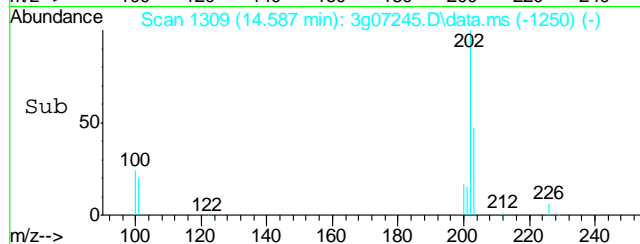
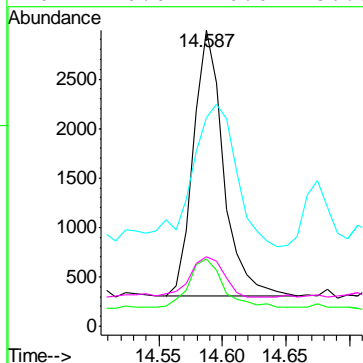
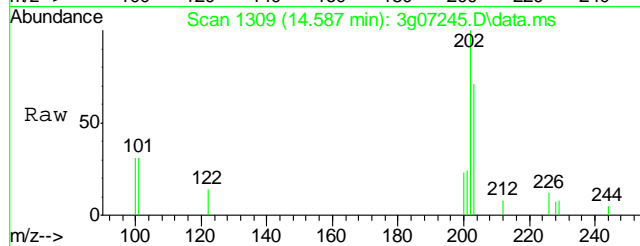
Tgt Ion	Ratio	Lower	Upper
240	100		
120	16.1	0.5	40.5
236	25.1	5.9	45.9





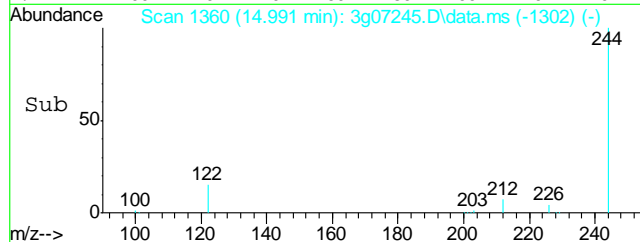
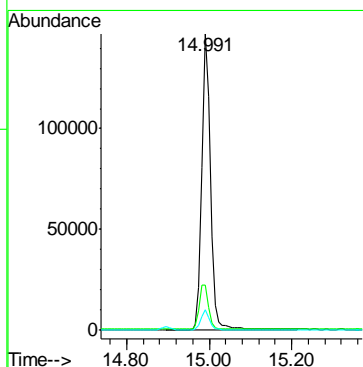
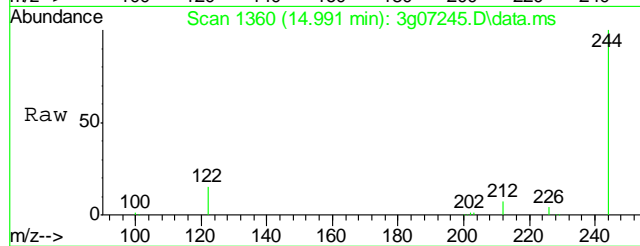
#19
Pyrene
Concen: 0.02 ug/mL
RT: 14.587 min Scan# 1309
Delta R.T. -0.032 min
Lab File: 3g07245.D
Acq: 13 Dec 11 1:35 pm

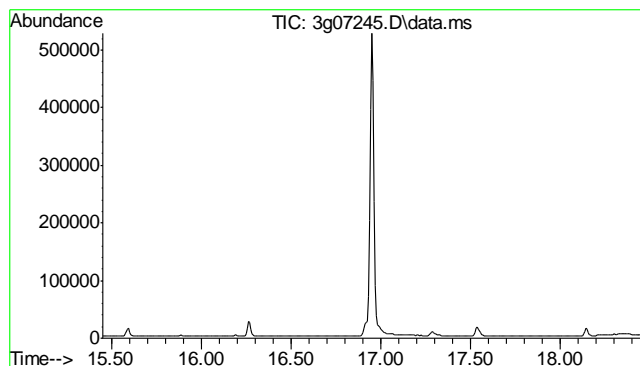
Tgt Ion:	202	Resp:	4425
Ion Ratio	Lower	Upper	
202	100		
200	22.8	0.2	40.2
203	84.4	0.0	37.5#
201	20.0	0.0	36.5



#20
Terphenyl-d14
Concen: 1.75 ug/mL
RT: 14.991 min Scan# 1360
Delta R.T. -0.039 min
Lab File: 3g07245.D
Acq: 13 Dec 11 1:35 pm

Tgt Ion:	244	Resp:	211625
Ion Ratio	Lower	Upper	
244	100		
122	16.4	0.0	40.0
212	6.5	0.0	27.3

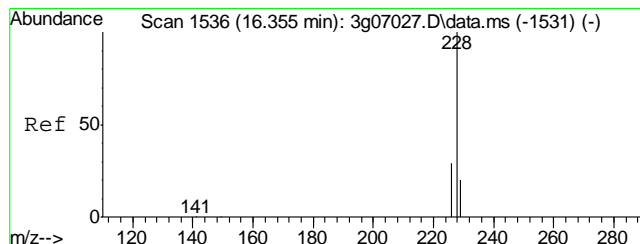
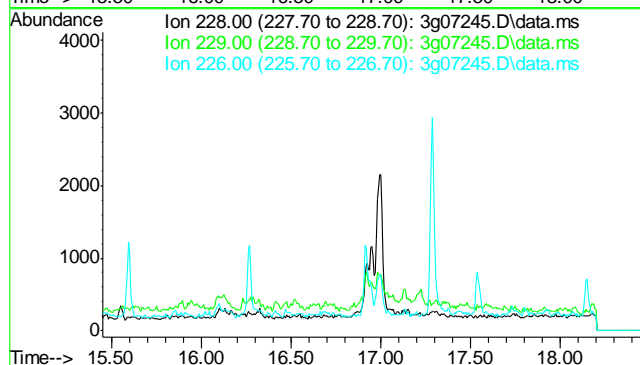




#21
Benzo(a)anthracene
Concen: N.D. ug/mL
Expected RT: 16.95 min

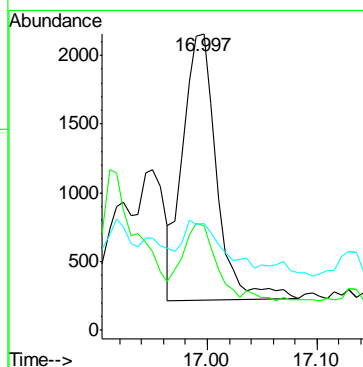
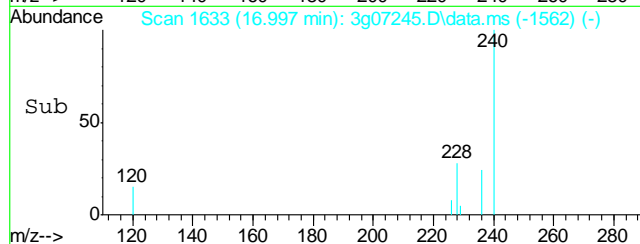
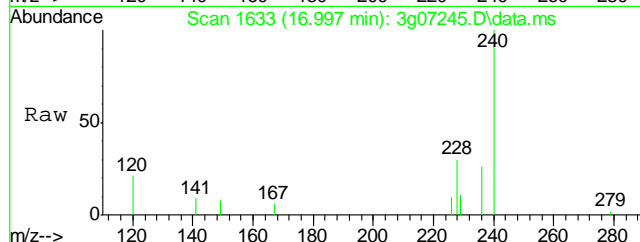
Lab File: 3g07245.D
Acq: 13 Dec 11 1:35 pm

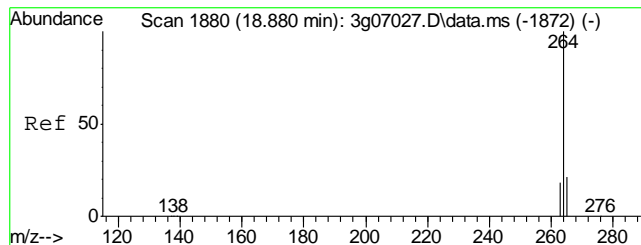
Tgt Ion: 228
Sig Exp Ratio
228 100
229 19.4
226 26.4



#22
Chrysene
Concen: 0.02 ug/mL
RT: 16.997 min Scan# 1633
Delta R.T. -0.033 min
Lab File: 3g07245.D
Acq: 13 Dec 11 1:35 pm

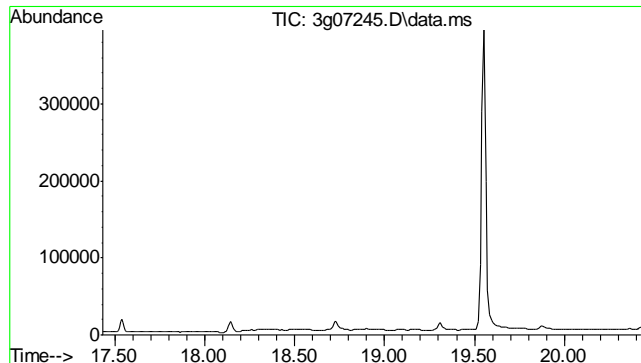
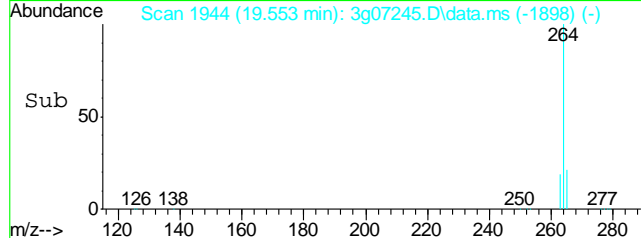
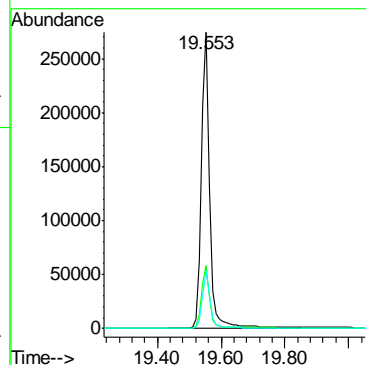
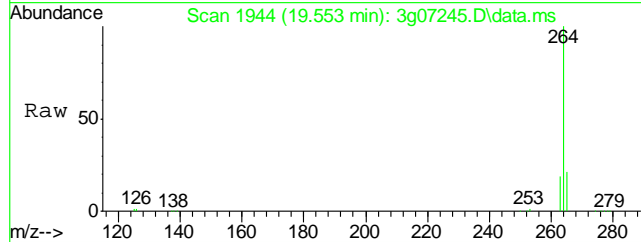
Tgt Ion: 228 Resp: 4113
Ion Ratio Lower Upper
228 100
226 27.3 8.5 48.5
229 20.5 0.0 39.3





#23
Perylene-d12
Concen: 4.00 ug/mL
RT: 19.553 min Scan# 1944
Delta R.T. -0.021 min
Lab File: 3g07245.D
Acq: 13 Dec 11 1:35 pm

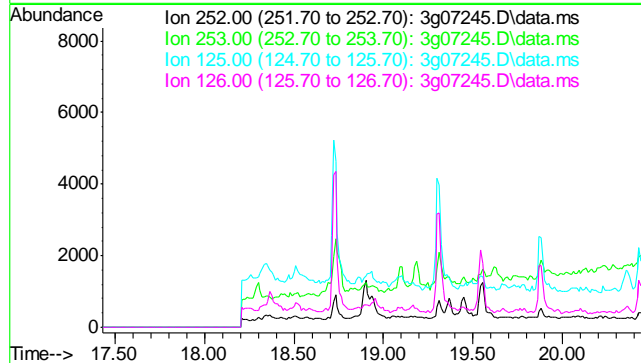
Tgt Ion:	264	Resp:	496518
Ion Ratio	Lower	Upper	
264	100		
265	20.8	0.8	40.8
263	18.5	0.0	39.1

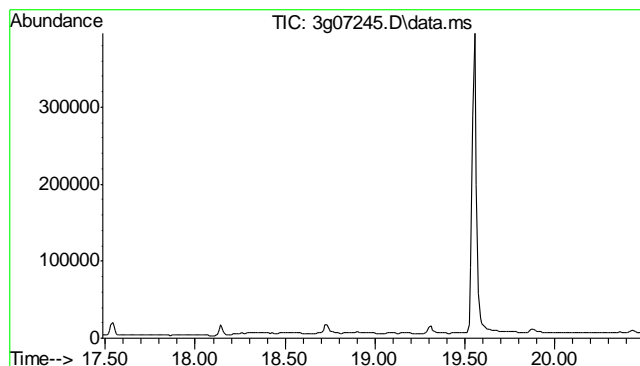


#24
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 18.93 min

Lab File: 3g07245.D
Acq: 13 Dec 11 1:35 pm

Tgt Ion:	252
Sig	Exp Ratio
252	100
253	25.6
125	13.5
126	19.5

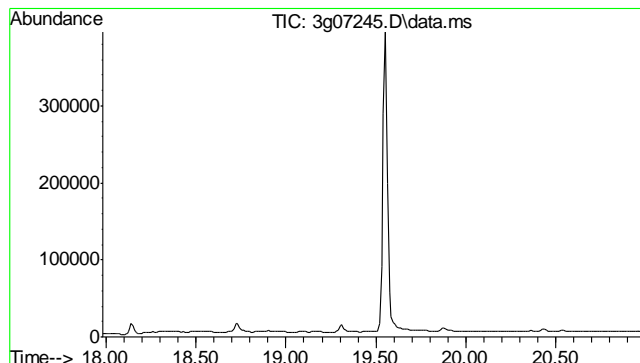
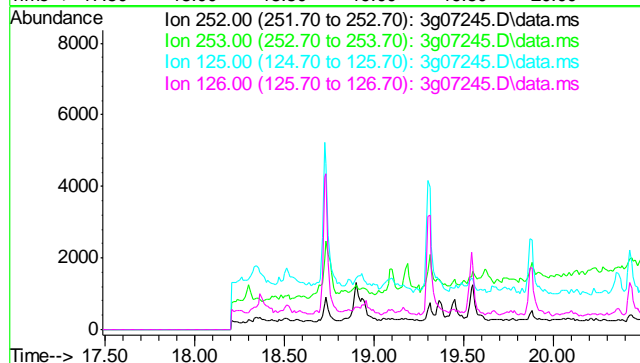




#25
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 18.98 min

Lab File: 3g07245.D
Acq: 13 Dec 11 1:35 pm

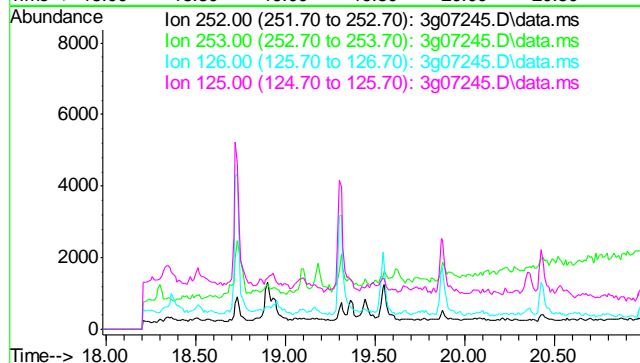
Tgt Ion	Sig	Exp Ratio
252	100	
253	19.2	
125	12.2	
126	19.4	

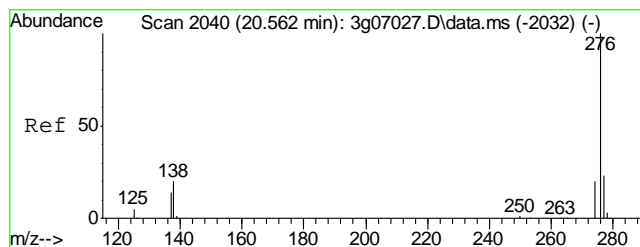


#26
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 19.48 min

Lab File: 3g07245.D
Acq: 13 Dec 11 1:35 pm

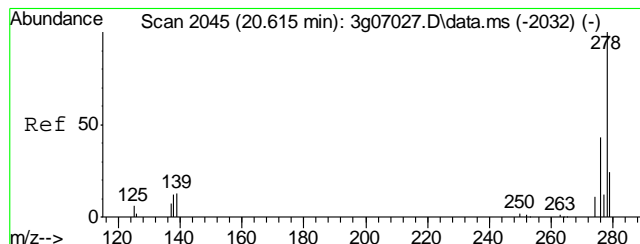
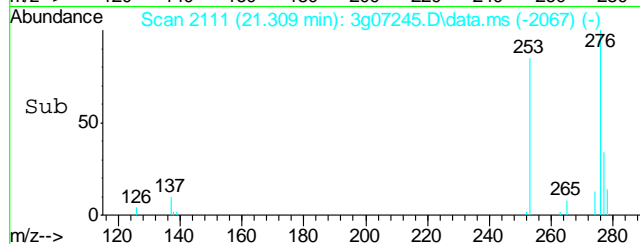
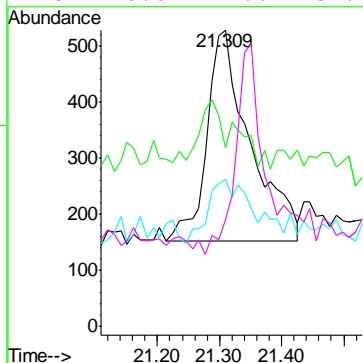
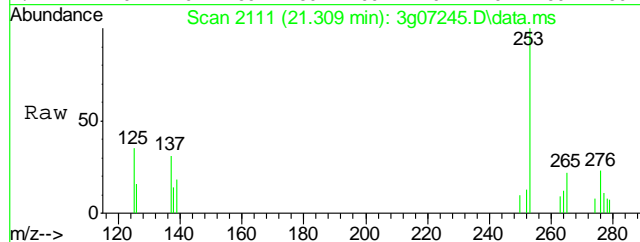
Tgt Ion	Sig	Exp Ratio
252	100	
253	21.4	
126	19.1	
125	13.8	





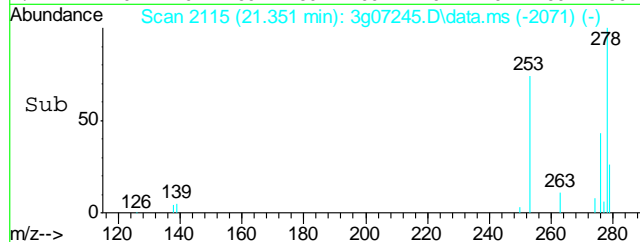
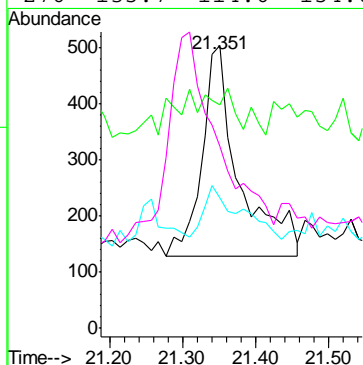
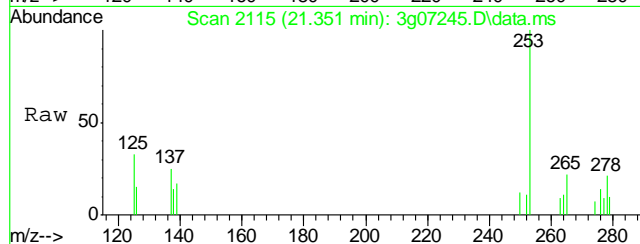
#27
 Indeno(1,2,3-cd)pyrene
 Concen: 0.02 ug/mL
 RT: 21.309 min Scan# 2111
 Delta R.T. -0.041 min
 Lab File: 3g07245.D
 Acq: 13 Dec 11 1:35 pm

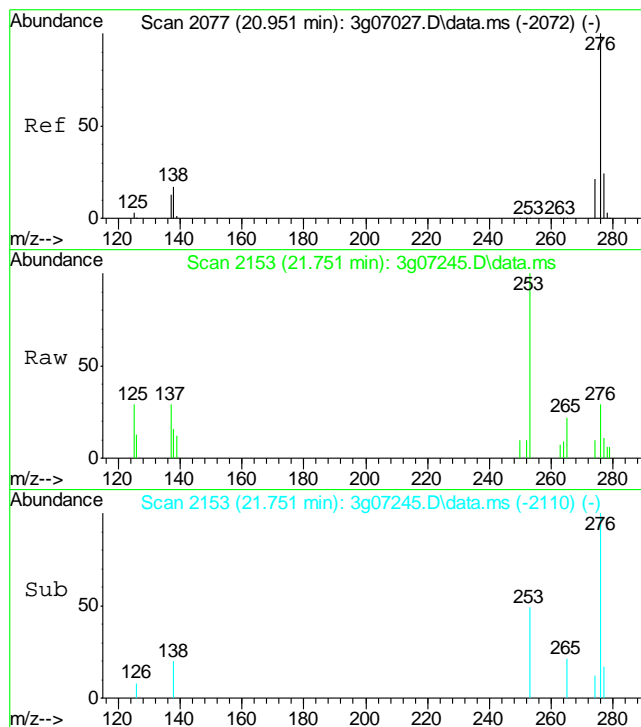
Tgt Ion	Ratio	Lower	Upper
276	100		
138	14.3	4.1	44.1
277	26.9	24.0	64.0
278	0.0	111.6	151.6#



#28
 Dibenzo(a,h)anthracene
 Concen: 0.01 ug/mL
 RT: 21.351 min Scan# 2115
 Delta R.T. -0.041 min
 Lab File: 3g07245.D
 Acq: 13 Dec 11 1:35 pm

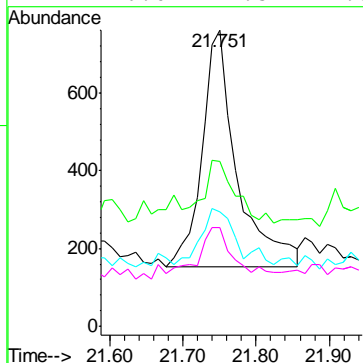
Tgt Ion	Ratio	Lower	Upper
278	100		
139	2.4	2.4	42.4
279	30.8	3.4	43.4
276	135.7	114.6	154.6





#29
Benzo(g,h,i)perylene
Concen: 0.01 ug/mL
RT: 21.751 min Scan# 2153
Delta R.T. -0.052 min
Lab File: 3g07245.D
Acq: 13 Dec 11 1:35 pm

Tgt Ion:	276	Resp:	2020
Ion Ratio	Lower	Upper	
276	100		
138	25.3	6.6	46.6
277	24.1	3.7	43.7
274	26.0	1.5	41.5



8.1.1

8

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\120711\
 Data File : 3g07152.D
 Acq On : 7 Dec 2011 9:58 pm
 Operator : DONC
 Sample : OP4929-MB
 Misc : OP4929,E3G262,30,,,1,1
 ALS Vial : 16 Sample Multiplier: 1

Quant Time: Dec 08 09:47:15 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

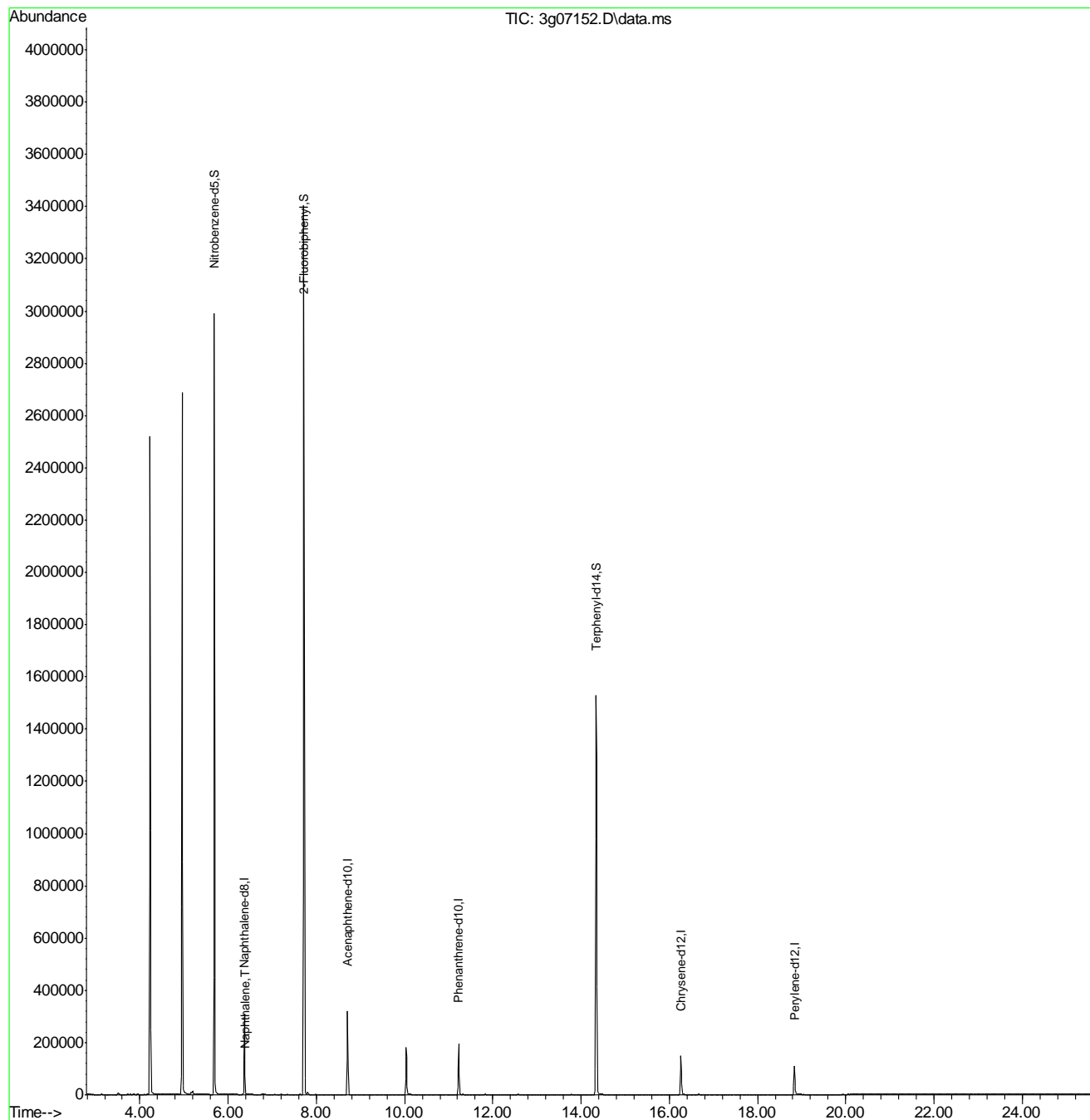
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	6.370	136	271050	4.00	ug/mL	0.00
6) Acenaphthene-d10	8.709	164	166538	4.00	ug/mL	0.00
14) Phenanthrene-d10	11.232	188	222176	4.00	ug/mL	0.00
18) Chrysene-d12	16.263	240	176214	4.00	ug/mL	-0.01
23) Perylene-d12	18.838	264	152019	4.00	ug/mL	0.00
System Monitoring Compounds						
2) Nitrobenzene-d5	5.685	82	1506607	46.01	ug/mL	-0.01
7) 2-Fluorobiphenyl	7.716	172	2865854	43.84	ug/mL	-0.01
20) Terphenyl-d14	14.342	244	1788307	50.71	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	6.395	128	862	0.01	ug/mL	71
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	

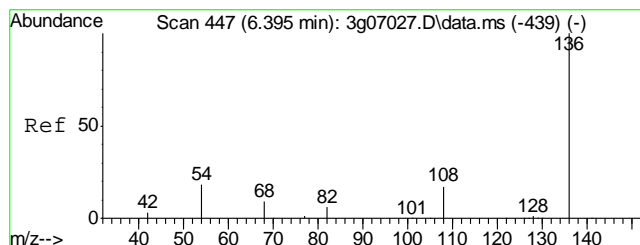
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\120711\
Data File : 3g07152.D
Acq On : 7 Dec 2011 9:58 pm
Operator : DONC
Sample : OP4929-MB
Misc : OP4929,E3G262,30,,,1,1
ALS Vial : 16 Sample Multiplier: 1

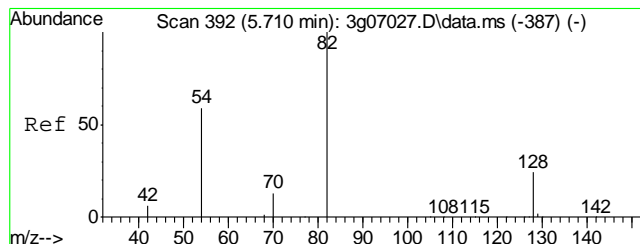
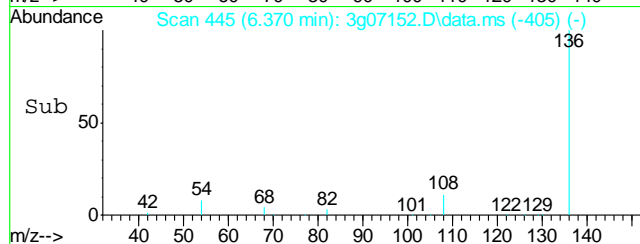
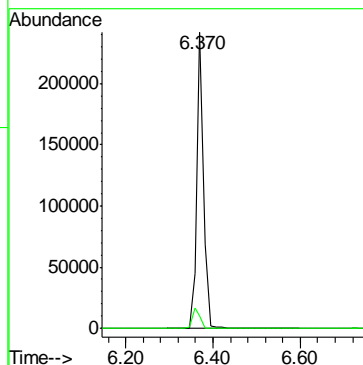
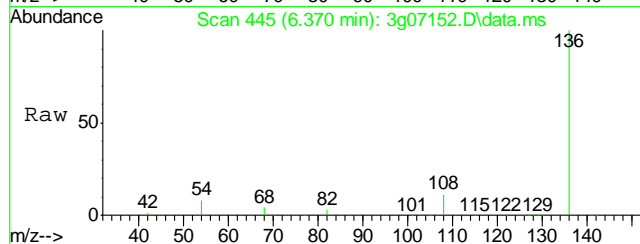
Quant Time: Dec 08 09:47:15 2011
Quant Method : C:\msdchem\1\METHODS\SIMPE3G262.M
Quant Title : PAHSIM BASE
QLast Update : Thu Dec 08 09:26:11 2011
Response via : Initial Calibration





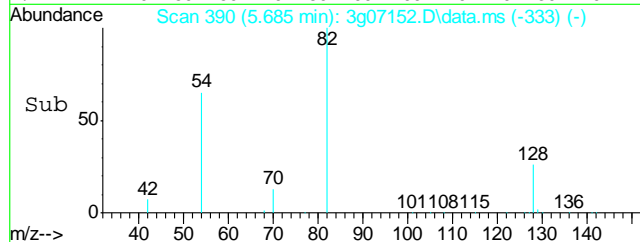
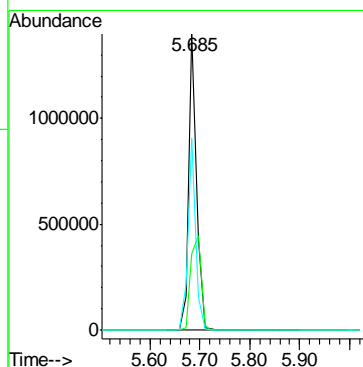
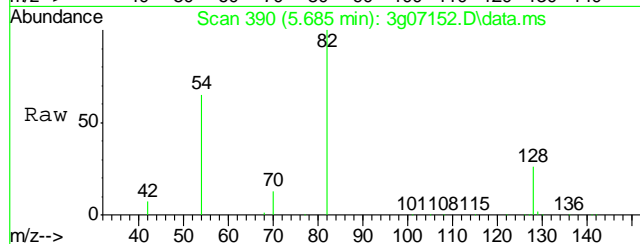
#1
Naphthalene-d8
Concen: 4.00 ug/mL
RT: 6.370 min Scan# 445
Delta R.T. 0.000 min
Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

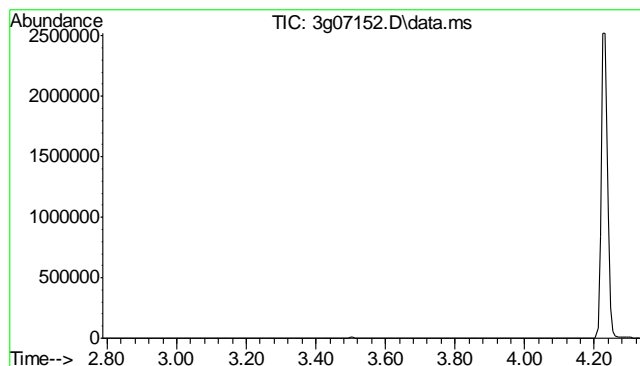
Tgt Ion: 136 Resp: 271050
Ion Ratio Lower Upper
136 100
68 7.9 0.0 27.5



#2
Nitrobenzene-d5
Concen: 46.01 ug/mL
RT: 5.685 min Scan# 390
Delta R.T. -0.012 min
Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

Tgt Ion: 82 Resp: 1506607
Ion Ratio Lower Upper
82 100
128 41.8 22.2 62.2
54 64.2 32.9 72.9

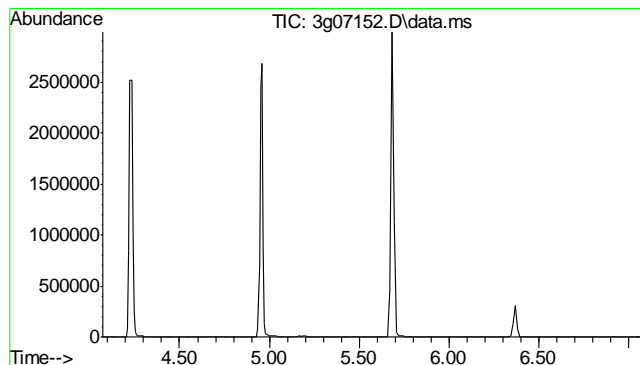
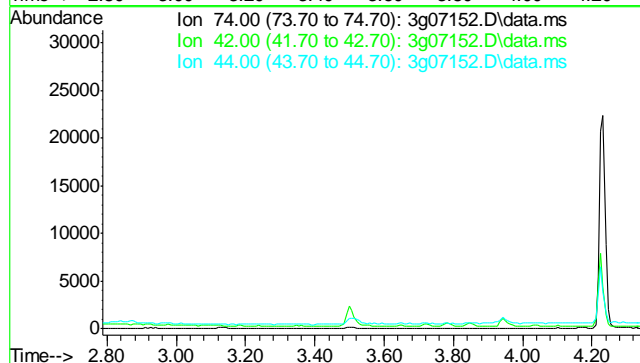




#3
N-Nitrosodimethylamine
Concen: N.D. ug/mL
Expected RT: 2.84 min

Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

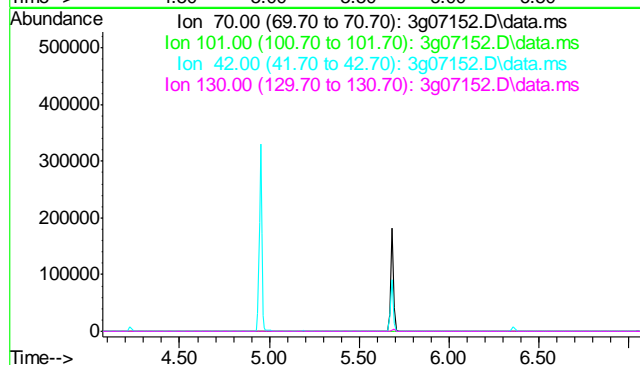
Tgt Ion:	74
Sig	Exp Ratio
74	100
42	62.7
44	4.7

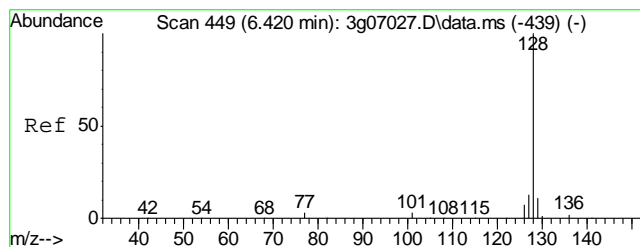


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 5.57 min

Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

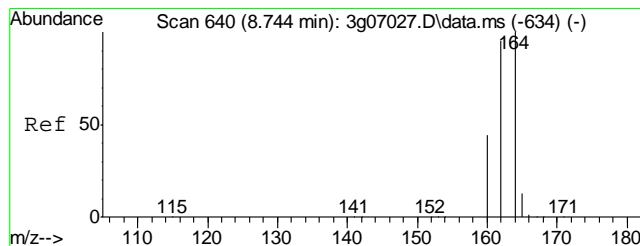
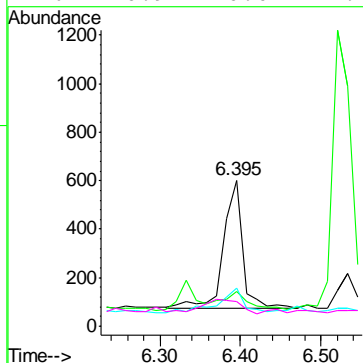
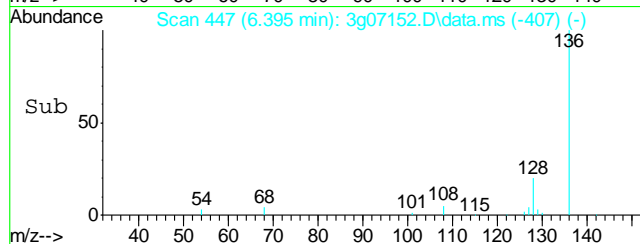
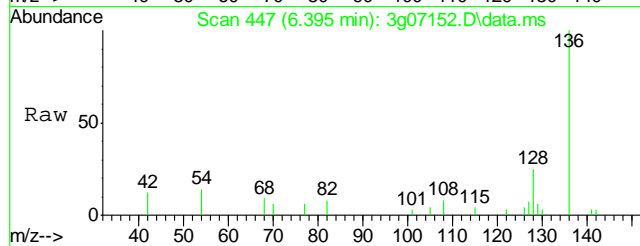
Tgt Ion:	70
Sig	Exp Ratio
70	100
101	12.9
42	56.3
130	25.7





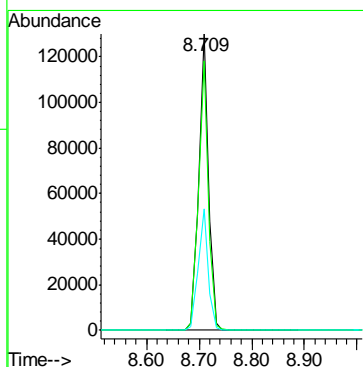
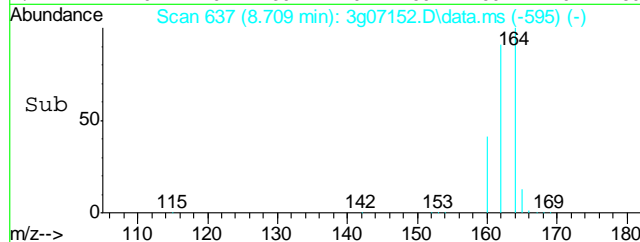
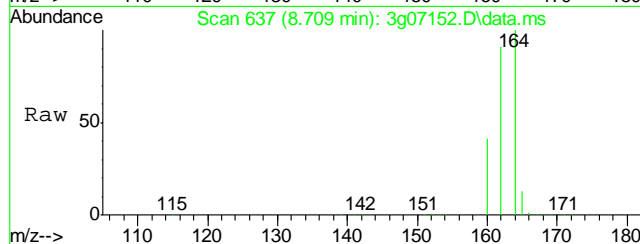
#5
Naphthalene
Concen: 0.01 ug/mL
RT: 6.395 min Scan# 447
Delta R.T. 0.000 min
Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

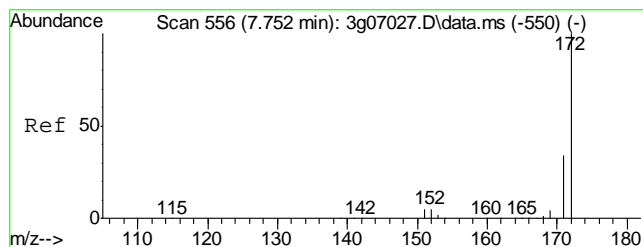
Tgt Ion:128	Resp:	862
Ion Ratio	Lower	Upper
128	100	
129	19.1	0.0 31.0
127	24.4	0.0 32.5
126	20.9	0.0 27.2



#6
Acenaphthene-d10
Concen: 4.00 ug/mL
RT: 8.709 min Scan# 637
Delta R.T. 0.000 min
Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

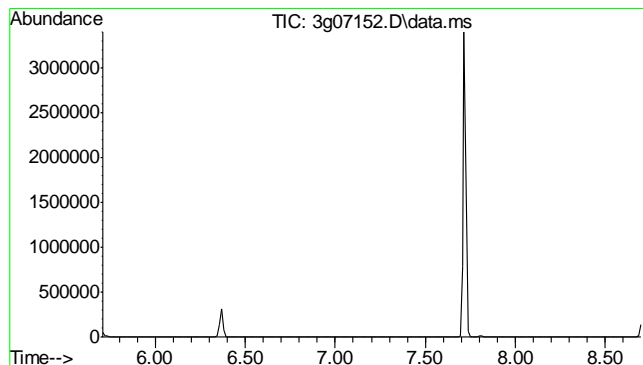
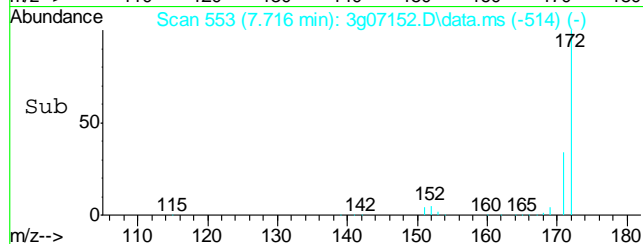
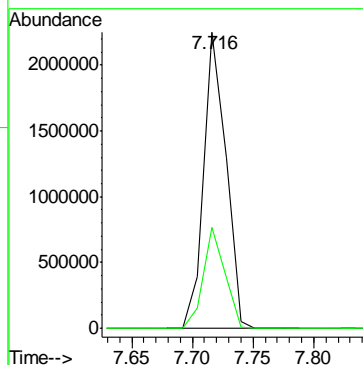
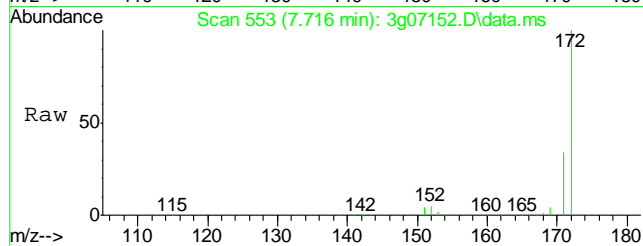
Tgt Ion:164	Resp:	166538
Ion Ratio	Lower	Upper
164	100	
162	91.0	71.7 111.7
160	41.2	21.3 61.3





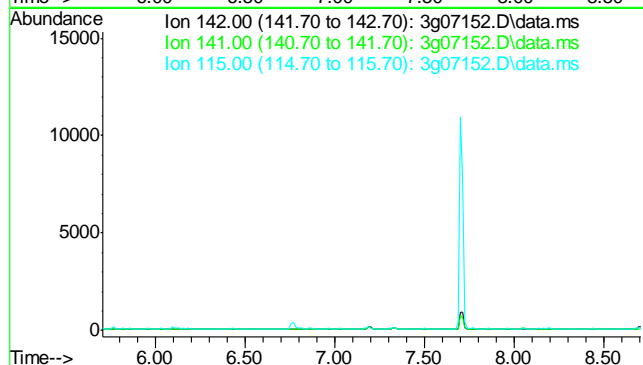
#7
2-Fluorobiphenyl
Concen: 43.84 ug/mL
RT: 7.716 min Scan# 553
Delta R.T. -0.012 min
Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

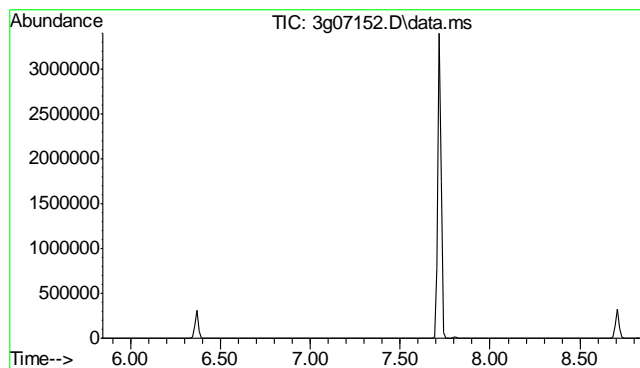
Tgt Ion: 172 Resp: 2865854
Ion Ratio Lower Upper
172 100
171 33.1 12.5 52.5



#8
2-Methylnaphthalene
Concen: N.D. ug/mL
Expected RT: 7.21 min
Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

Tgt Ion: 142
Sig Exp Ratio
142 100
141 82.4
115 36.5

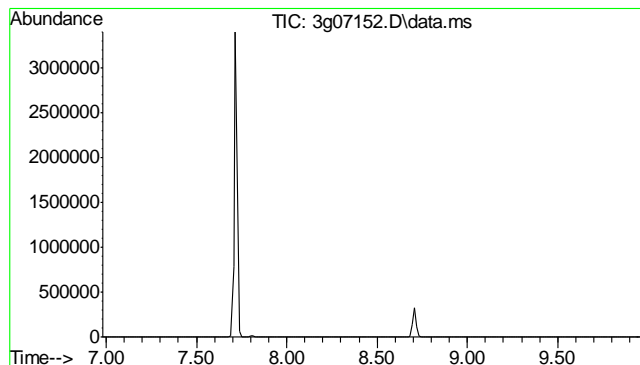
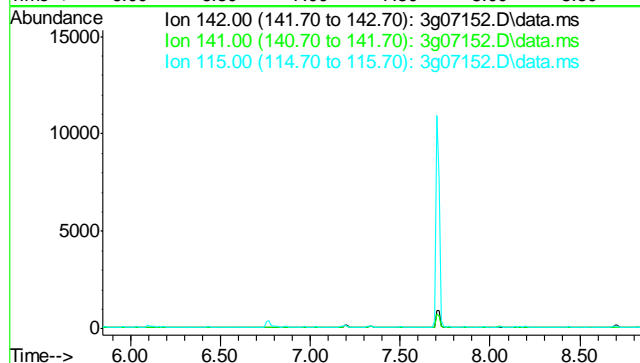




#9
1-Methylnaphthalene
Concen: N.D. ug/mL
Expected RT: 7.34 min

Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

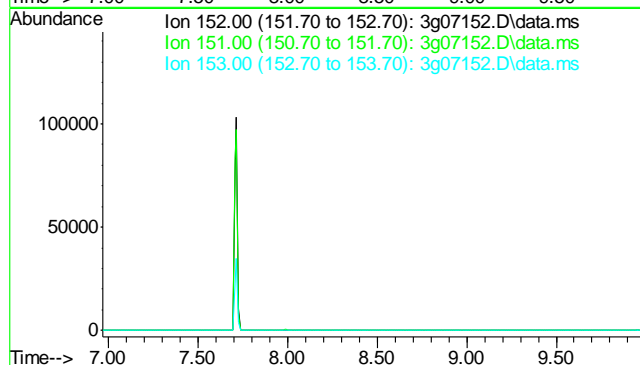
Tgt Ion:	142
Sig	Exp Ratio
142	100
141	85.1
115	39.1

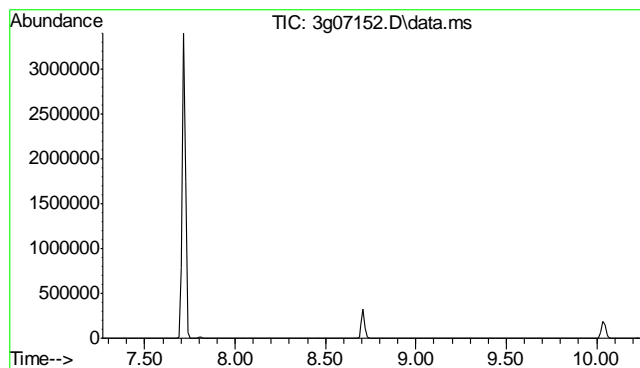


#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 8.47 min

Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

Tgt Ion:	152
Sig	Exp Ratio
152	100
151	18.8
153	13.0

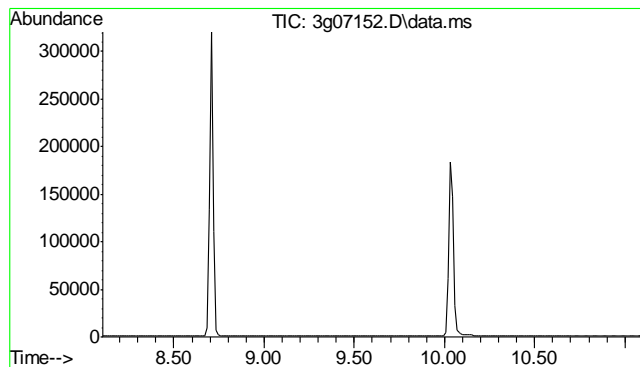
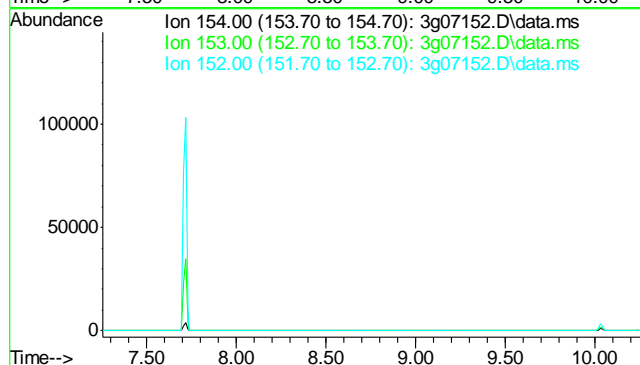




#11
Acenaphthene
Concen: N.D. ug/mL
Expected RT: 8.76 min

Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

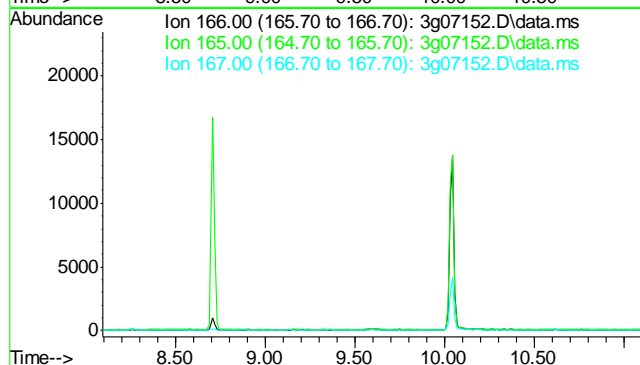
Tgt Ion: 154
Sig Exp Ratio
154 100
153 102.1
152 48.4

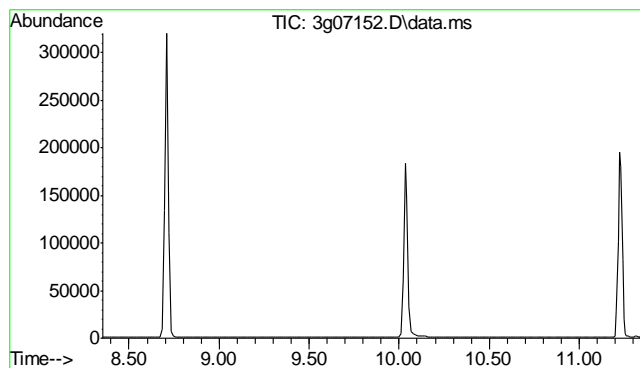


#12
Fluorene
Concen: N.D. ug/mL
Expected RT: 9.59 min

Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

Tgt Ion: 166
Sig Exp Ratio
166 100
165 89.2
167 12.0

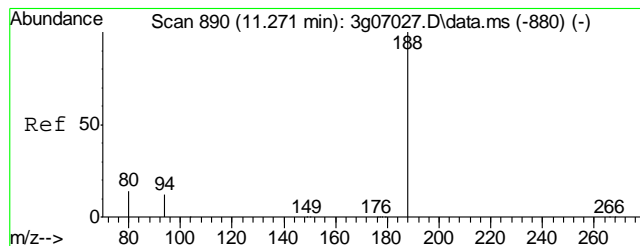
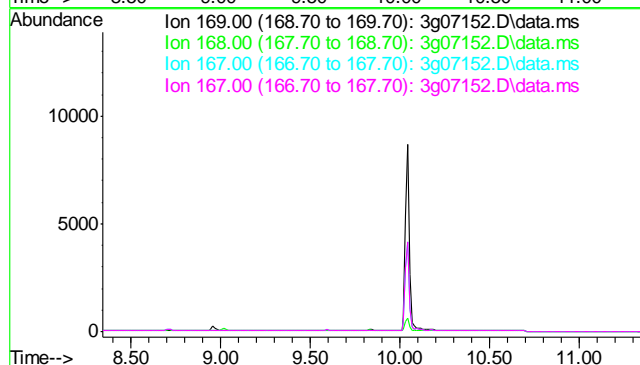




#13
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 9.84 min

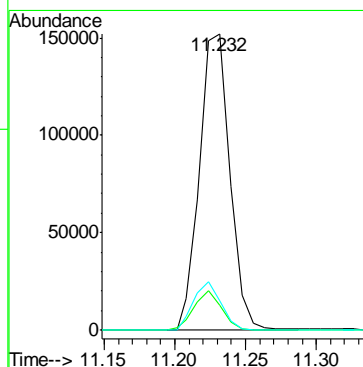
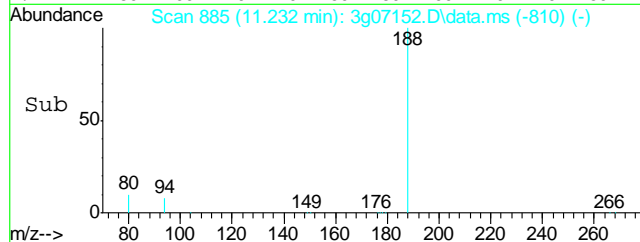
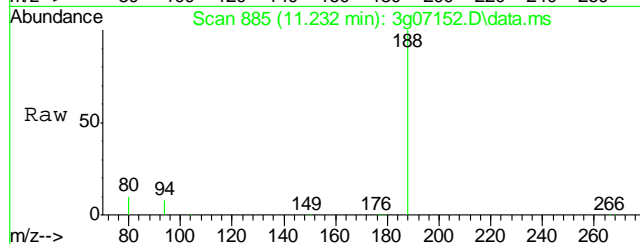
Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

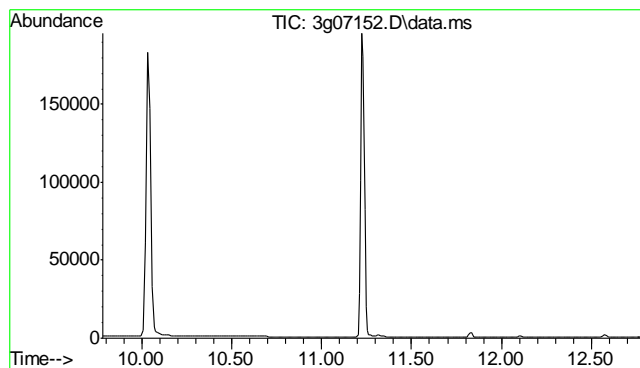
Tgt Ion:	169
Sig	Exp Ratio
169	100
168	60.5
167	32.9
167	32.9



#14
Phenanthrene-d10
Concen: 4.00 ug/mL
RT: 11.232 min Scan# 885
Delta R.T. 0.000 min
Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

Tgt Ion:	188	Resp:	222176
Ion	Ratio	Lower	Upper
188	100		
94	11.9	0.0	34.2
80	15.1	0.0	36.8

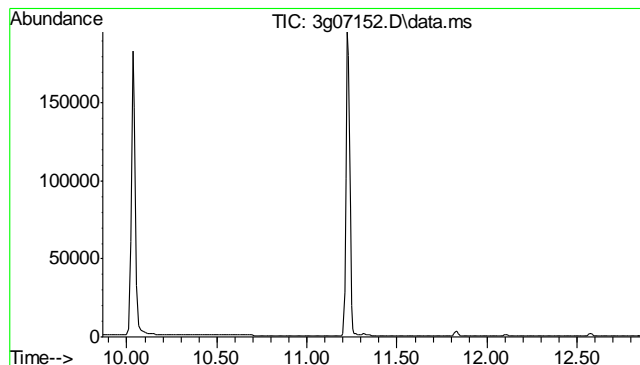
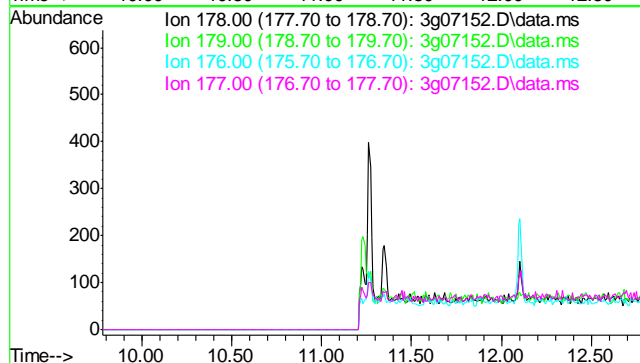




#15
Phenanthrene
Concen: N.D. ug/mL
Expected RT: 11.28 min

Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

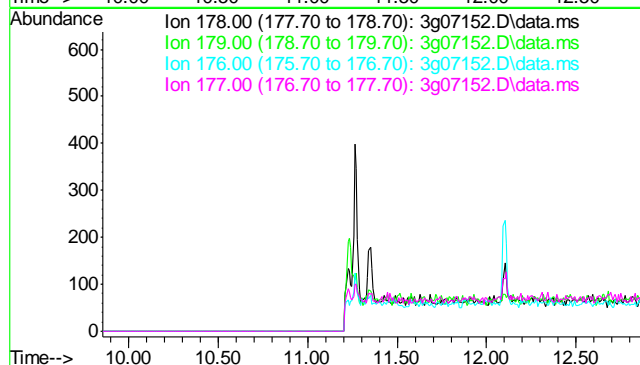
Tgt Ion: 178
Sig Exp Ratio
178 100
179 15.3
176 18.3
177 10.1

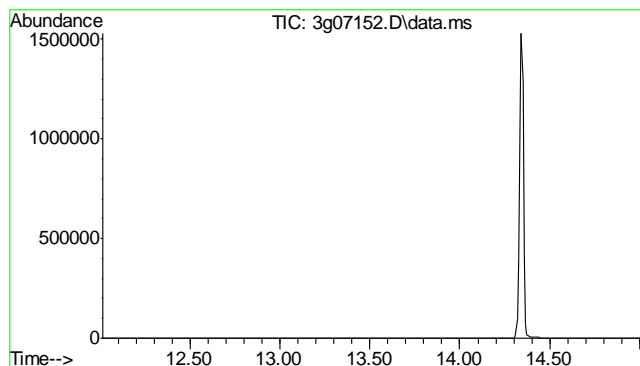


#16
Anthracene
Concen: N.D. ug/mL
Expected RT: 11.36 min

Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

Tgt Ion: 178
Sig Exp Ratio
178 100
179 15.1
176 17.8
177 8.7

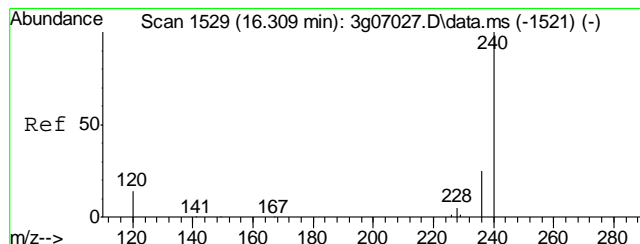
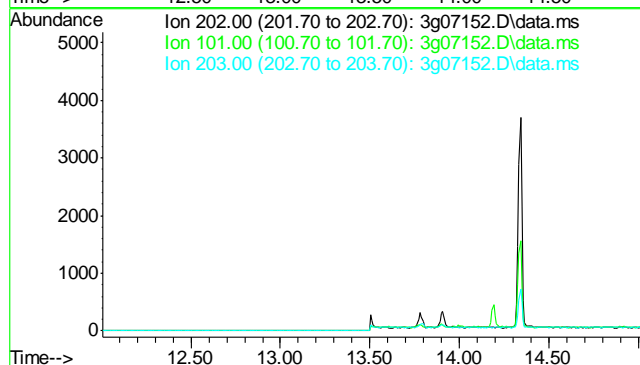




#17
Fluoranthene
Concen: N.D. ug/mL
Expected RT: 13.51 min

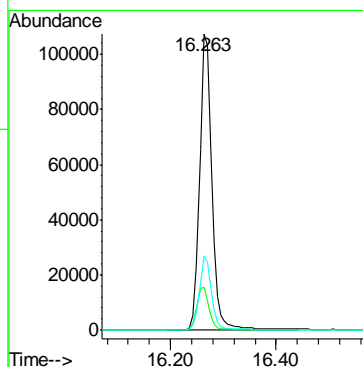
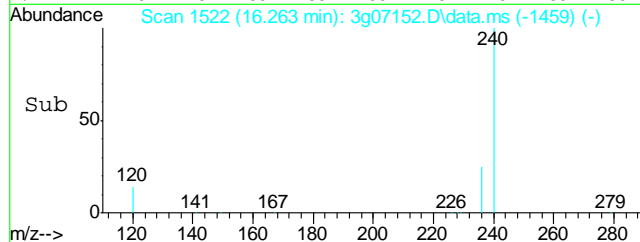
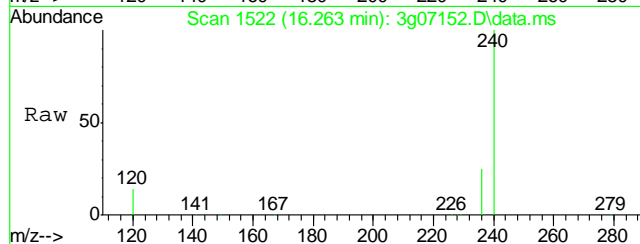
Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

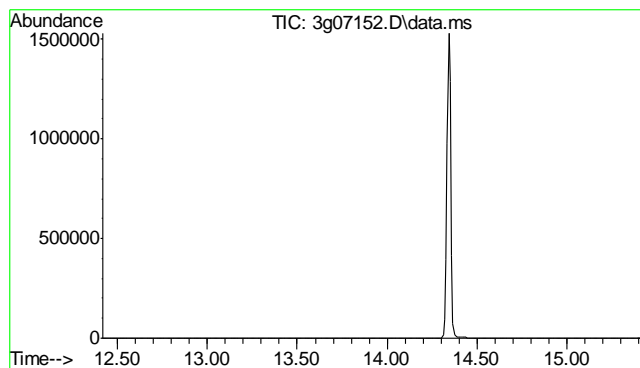
Tgt Ion:	202
Sig	Exp Ratio
202	100
101	12.8
203	18.0



#18
Chrysene-d12
Concen: 4.00 ug/mL
RT: 16.263 min Scan# 1522
Delta R.T. -0.013 min
Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

Tgt Ion:	240	Resp:	176214
Ion	Ratio	Lower	Upper
240	100		
120	14.5	0.0	38.6
236	24.8	5.2	45.2

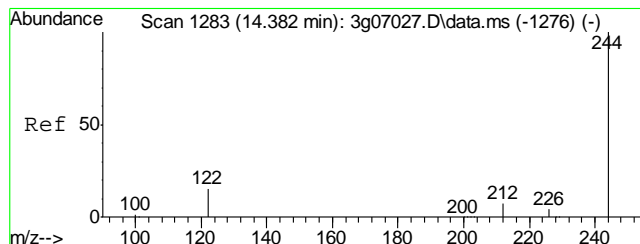
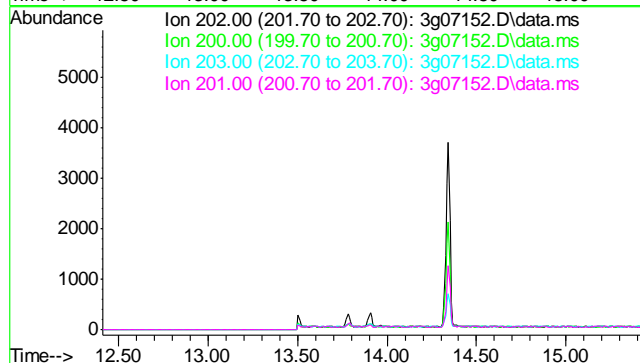




#19
Pyrene
Concen: N.D. ug/mL
Expected RT: 13.91 min

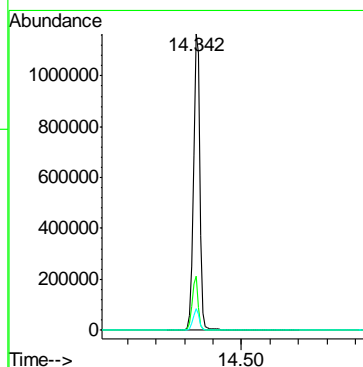
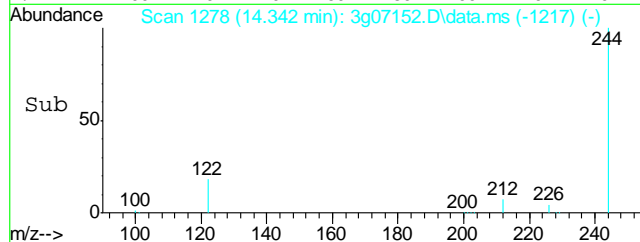
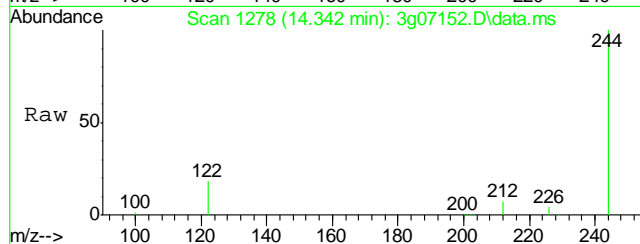
Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

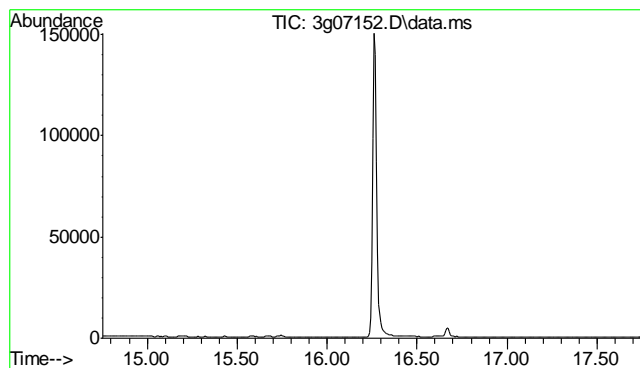
Tgt Ion:	202
Sig	Exp Ratio
202	100
200	22.1
203	17.8
201	18.2



#20
Terphenyl-d14
Concen: 50.71 ug/mL
RT: 14.342 min Scan# 1278
Delta R.T. -0.016 min
Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

Tgt Ion:	244	Resp:	1788307
Ion	Ratio	Lower	Upper
244	100		
122	16.9	0.8	40.8
212	7.0	0.0	27.2

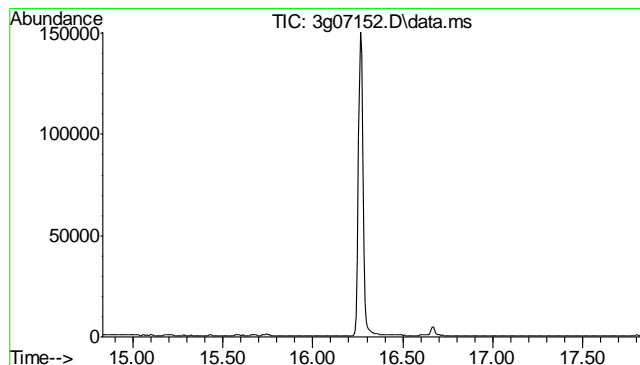
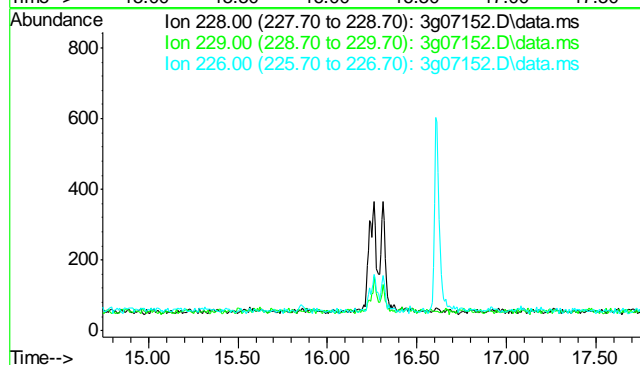




#21
Benzo(a)anthracene
Concen: N.D. ug/mL
Expected RT: 16.25 min

Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

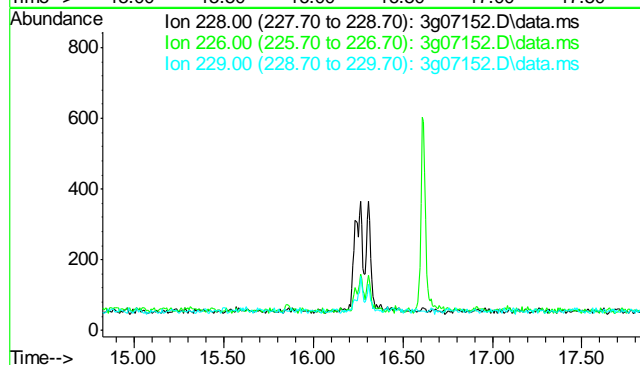
Tgt Ion:	228
Sig	Exp Ratio
228	100
229	19.6
226	26.6

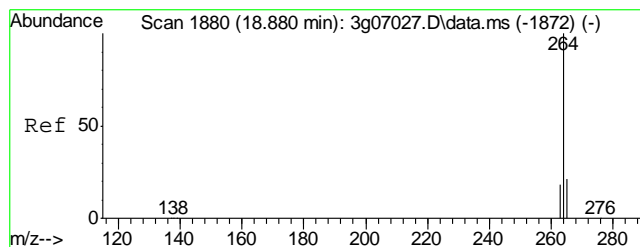


#22
Chrysene
Concen: N.D. ug/mL
Expected RT: 16.33 min

Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

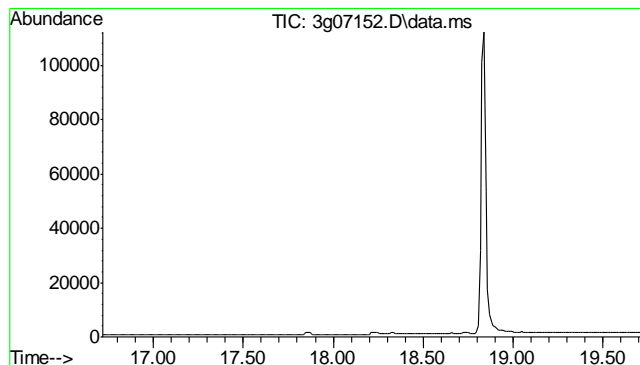
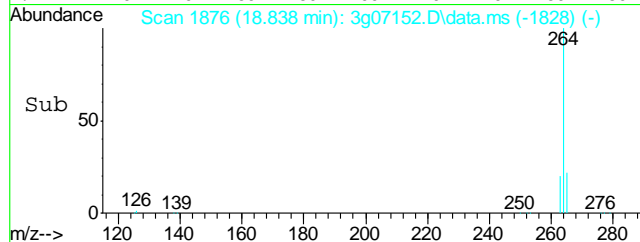
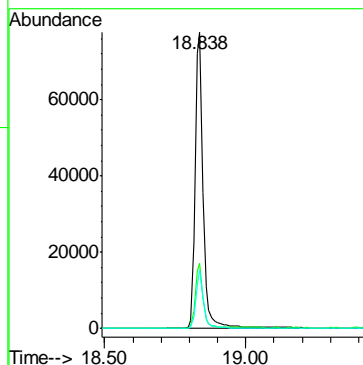
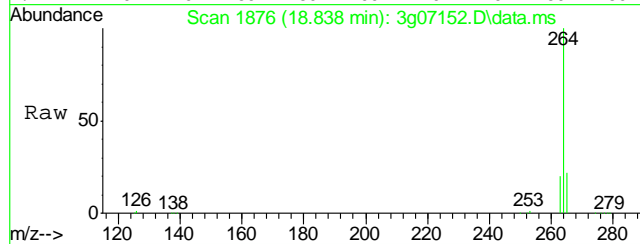
Tgt Ion:	228
Sig	Exp Ratio
228	100
226	27.4
229	19.2





#23
Perylene-d12
Concen: 4.00 ug/mL
RT: 18.838 min Scan# 1876
Delta R.T. 0.000 min
Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

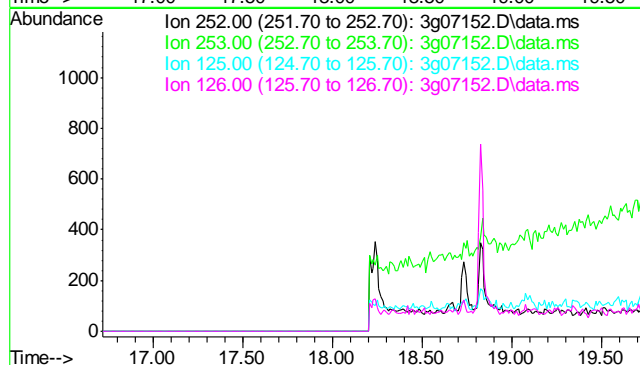
Tgt Ion	Ratio	Lower	Upper
264	100		
265	21.1	1.0	41.0
263	18.4	0.0	38.6

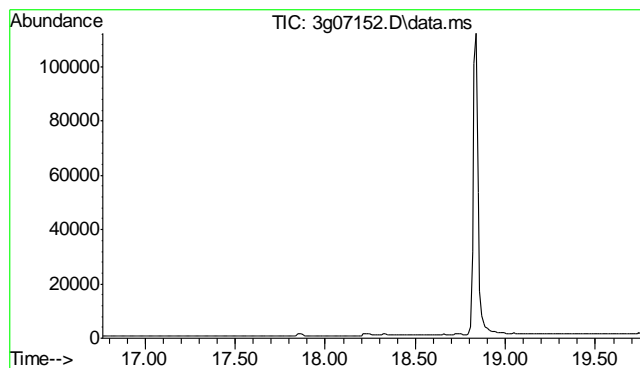


#24
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 18.22 min

Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

Tgt Ion	Sig	Exp Ratio
252	100	
253	66.5	
125	35.4	
126	50.6	

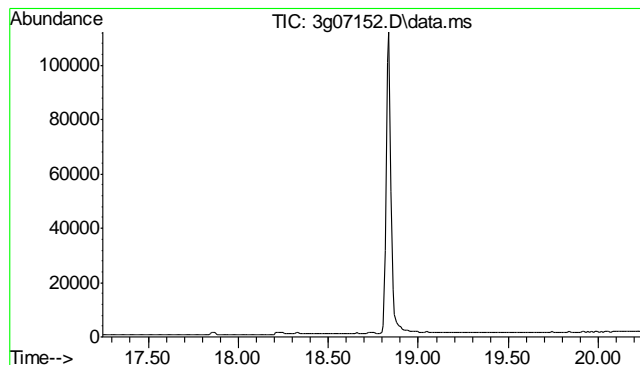
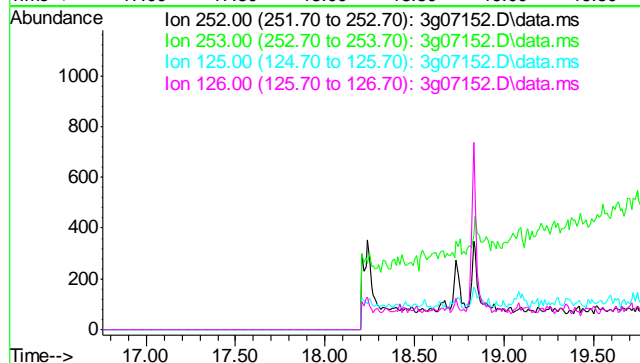




#25
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 18.26 min

Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

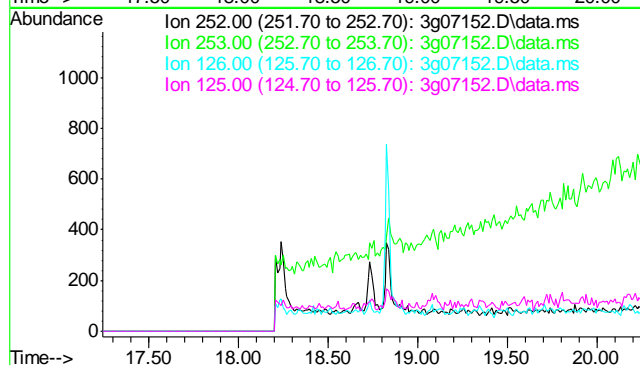
Tgt Ion:	252
Sig	Exp Ratio
252	100
253	37.7
125	20.1
126	28.7

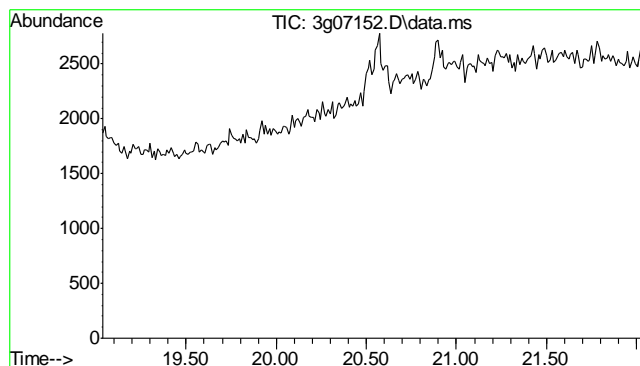


#26
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 18.74 min

Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

Tgt Ion:	252
Sig	Exp Ratio
252	100
253	21.4
126	18.6
125	14.0

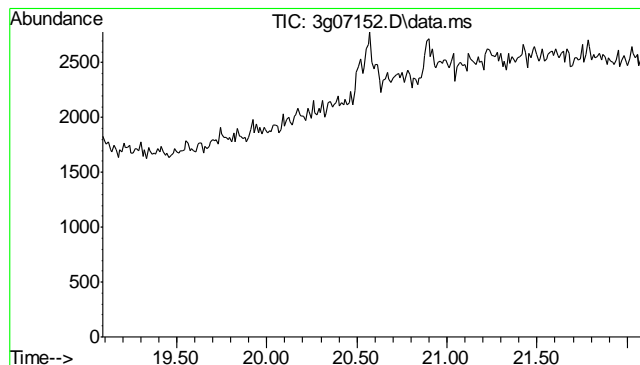
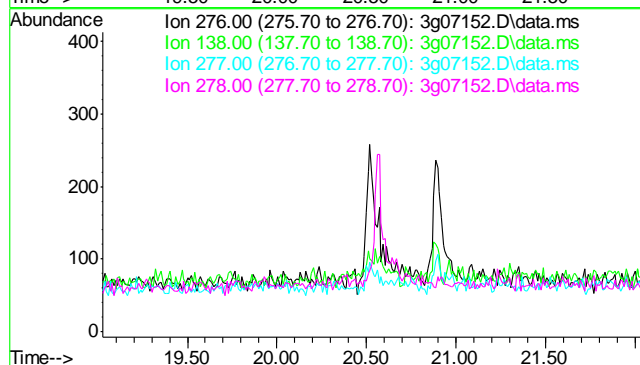




#27
Indeno(1,2,3-cd)pyrene
Concen: N.D. ug/mL
Expected RT: 20.53 min

Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

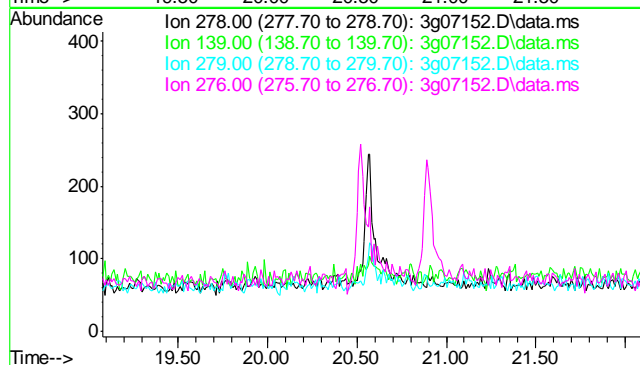
Tgt Ion:	276
Sig	Exp Ratio
276	100
138	28.2
277	28.3
278	3.7

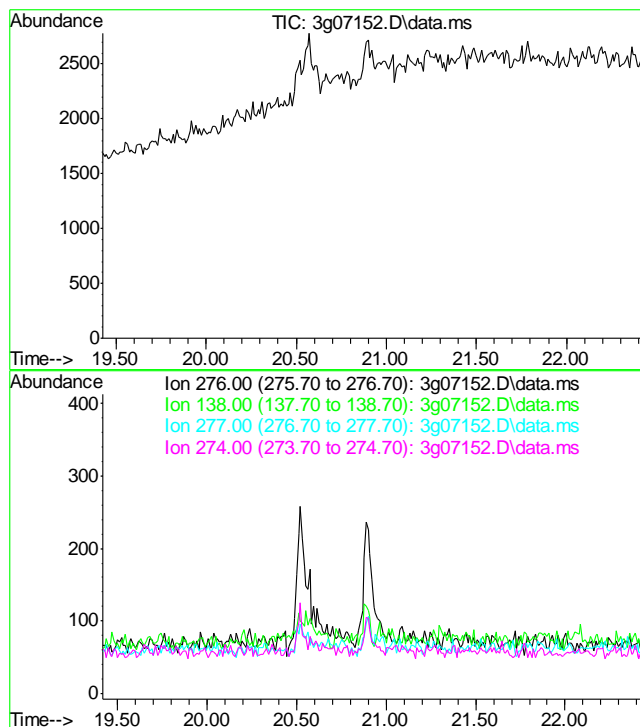


#28
Dibenz(a,h)anthracene
Concen: N.D. ug/mL
Expected RT: 20.58 min

Lab File: 3g07152.D
Acq: 7 Dec 11 9:58 pm

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: 3g07152.D
Acq: 7 Dec 11 9:58 pm

Tgt Ion: 276
Sig Exp Ratio
276 100
138 23.3
277 23.1
274 20.6

GC Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: D29649
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB794-MB	GB13979.D	1	11/21/11	SK	n/a	n/a	GGB794

The QC reported here applies to the following samples:

Method: SW846 8015B

D29649-1

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	97% 60-140%

9.1.1

9

Blank Spike Summary

Job Number: D29649
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB794-BS	GB13980.D	1	11/21/11	SK	n/a	n/a	GGB794

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

D29649-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	110	100	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	107%	60-140%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D29649
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D29577-1MS	GB13982.D	1	11/21/11	SK	n/a	n/a	GGB794
D29577-1MSD	GB13983.D	1	11/21/11	SK	n/a	n/a	GGB794
D29577-1	GB13981.D	1	11/21/11	SK	n/a	n/a	GGB794

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

D29649-1

CAS No.	Compound	D29577-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	12.2	J	154	162	97	159	95	2	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D29577-1	Limits
120-82-1	1,2,4-Trichlorobenzene	109%	107%	87%	60-140%

GC Volatiles

Raw Data

Judy Melson
11/22/11 09:23

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\112111\GB13994.D\FID1A.CH Vial: 18
Signal #2 : Y:\1\DATA\112111\GB13994.D\FID2B.CH
Acq On : 22 Nov 2011 1:41 am Operator: StephK
Sample : D29649-1, 50X Inst : GC/MS Ins
Misc : GC2426,GGB794,5.076,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 22 08:15:52 2011 Quant Results File: TB791GB791SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB791GB791SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Tue Nov 22 08:15:35 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	14.38	2808663	96.006 %	m
10) S 1,2,4-Trichlorobenzene (P)	14.38	26404941	114.884 %	
Target Compounds				
1) H TVH-Gasoline	7.32	11459544	0.161 mg/L	
4) T Methyl-t-butyl-ether	0.00	0	N.D. ug/L	d
5) T Benzene	4.17	140315	0.245 ug/L	
6) T Toluene	7.69	459194	0.810 ug/L	
7) T Ethylbenzene	10.31	106583	0.219 ug/L	
8) T m,p-Xylene	10.49	824360	1.042 ug/L	
9) T o-Xylene	10.99	226683	0.193 ug/L	
11) T Naphthalene	14.57	9114985	35.412 ug/L	

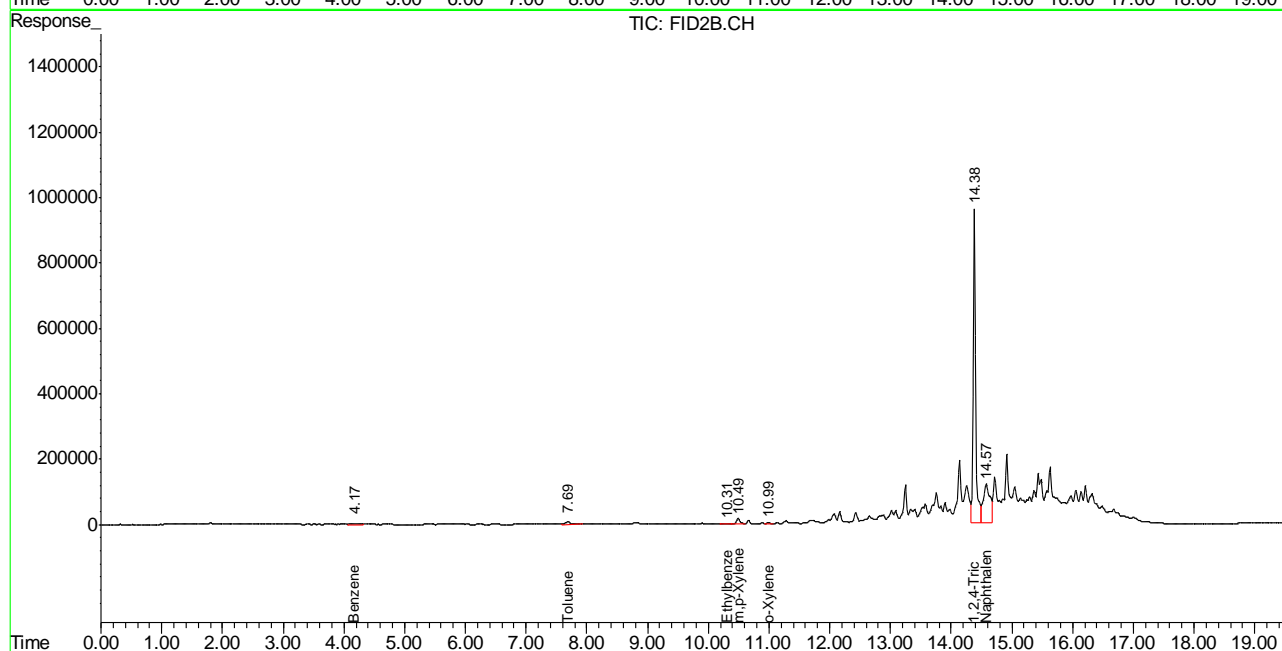
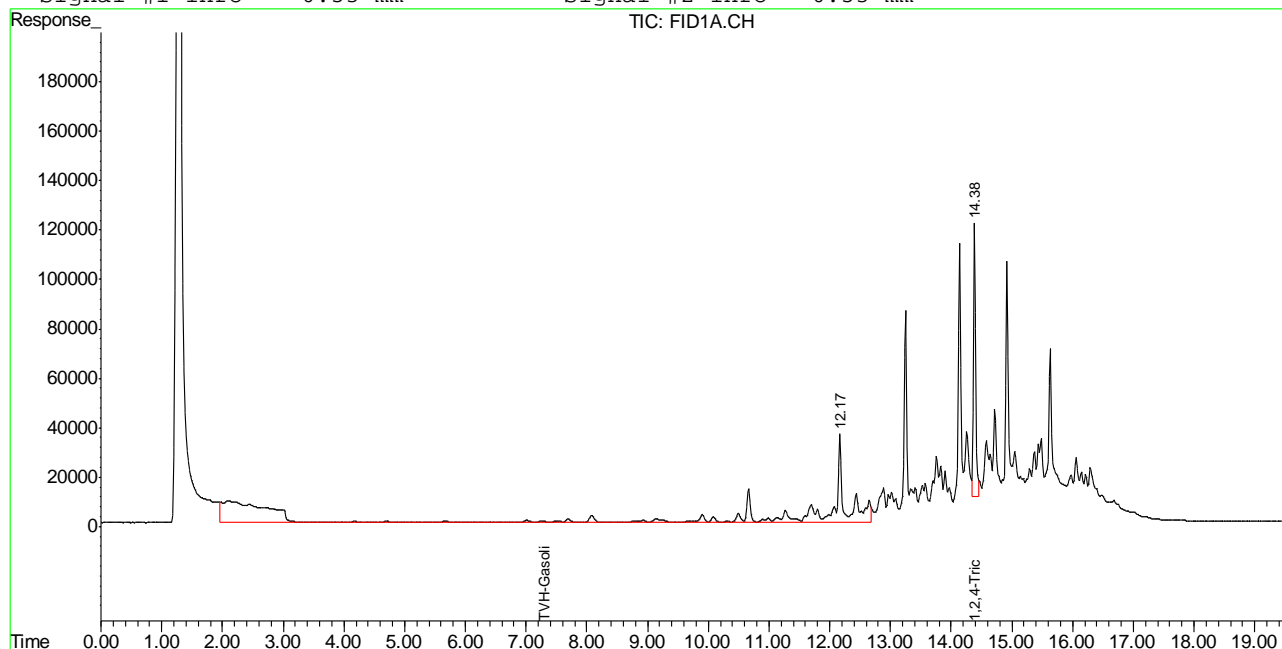
(f)=RT Delta > 1/2 Window (m)=manual int.
GB13994.D TB791GB791SOIL.M Tue Nov 22 08:24:14 2011 GC

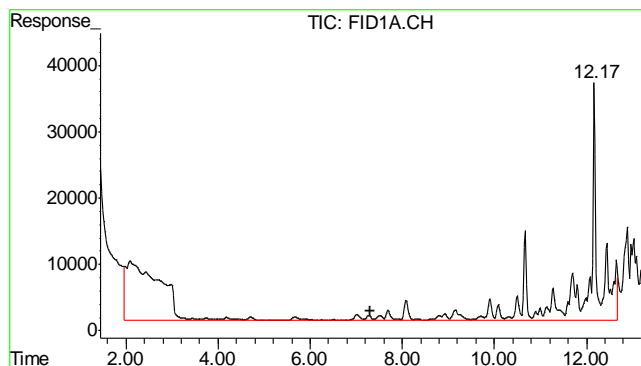
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\112111\GB13994.D\FID1A.CH Vial: 18
Signal #2 : Y:\1\DATA\112111\GB13994.D\FID2B.CH
Acq On : 22 Nov 2011 1:41 am Operator: StephK
Sample : D29649-1, 50X Inst : GC/MS Ins
Misc : GC2426,GGB794,5.076,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 22 8:20 2011 Quant Results File: TB791GB791SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB791GB791SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Tue Nov 22 08:15:35 2011
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

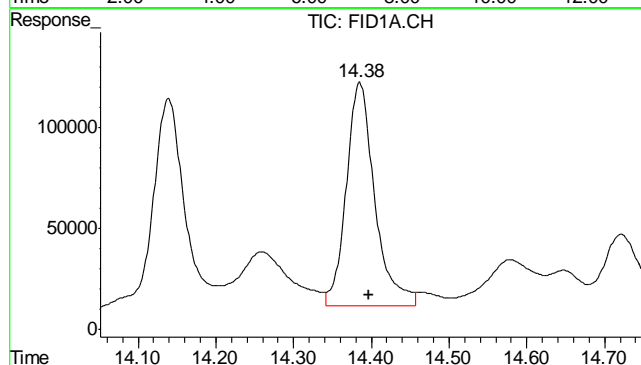
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





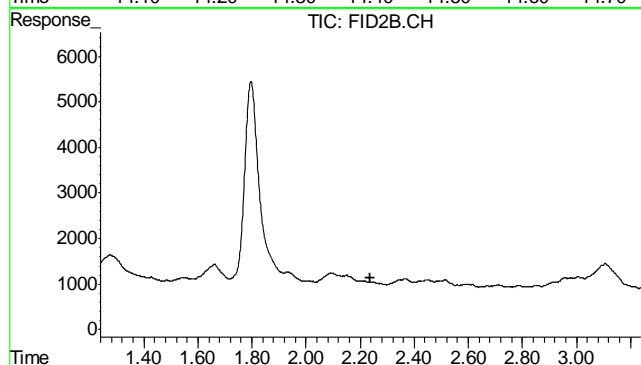
#1 TVH-Gasoline

R.T.: 7.315 min
Delta R.T.: 0.000 min
Response: 11459544
Conc: 0.16 mg/L m



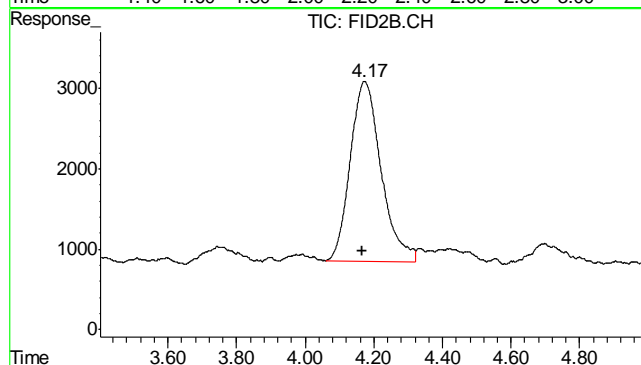
#2 1,2,4-Trichlorobenzene

R.T.: 14.384 min
Delta R.T.: -0.013 min
Response: 2808663
Conc: 96.01 % m



#4 Methyl-t-butyl-ether

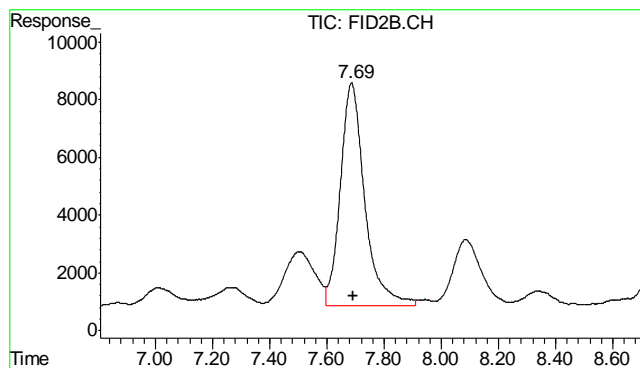
R.T.: 0.000 min
Exp R.T.: 2.239 min
Response: 0
Conc: N.D.



#5 Benzene

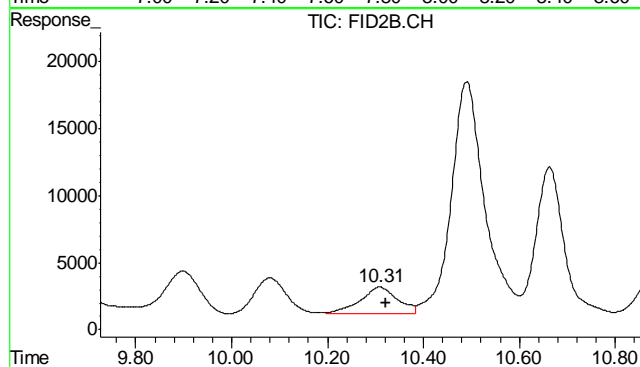
R.T.: 4.173 min
Delta R.T.: 0.005 min
Response: 140315
Conc: 0.25 ug/L

10.1.1
10



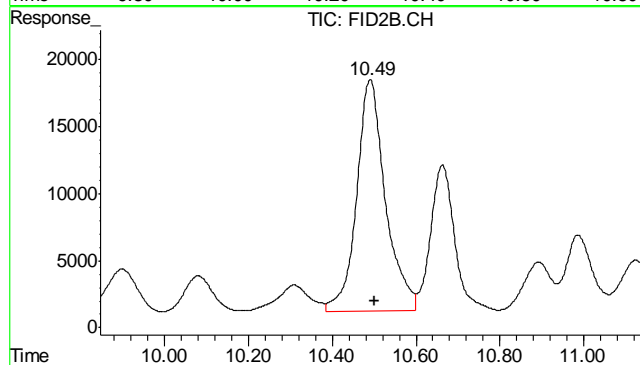
#6 Toluene

R.T.: 7.686 min
Delta R.T.: -0.008 min
Response: 459194
Conc: 0.81 ug/L



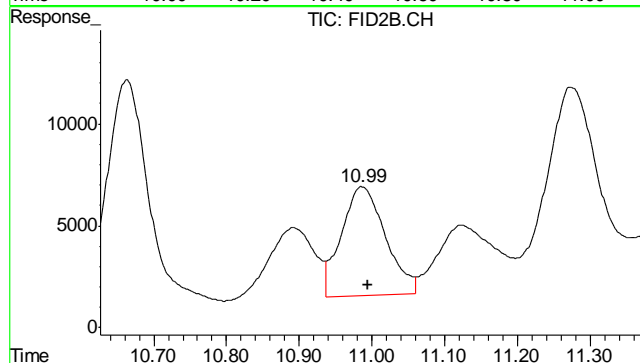
#7 Ethylbenzene

R.T.: 10.308 min
Delta R.T.: -0.013 min
Response: 106583
Conc: 0.22 ug/L



#8 m,p-Xylene

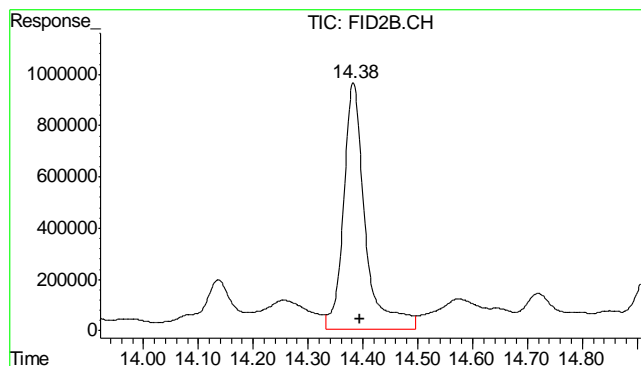
R.T.: 10.490 min
Delta R.T.: -0.010 min
Response: 824360
Conc: 1.04 ug/L



#9 o-Xylene

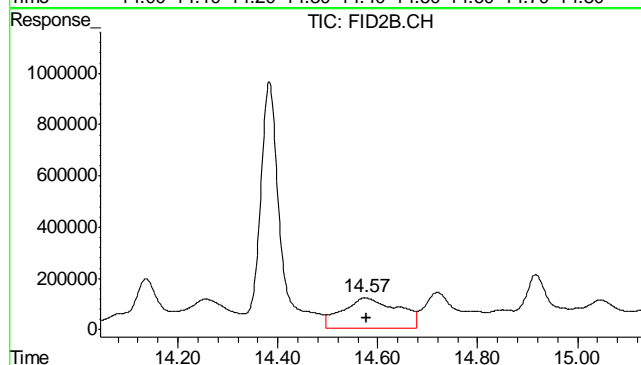
R.T.: 10.987 min
Delta R.T.: -0.008 min
Response: 226683
Conc: 0.19 ug/L

10.1.1 10



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

R.T.: 14.383 min
 Delta R.T.: -0.013 min
 Response: 26404941
 Conc: 114.88 %



#11 Naphthalene

R.T.: 14.575 min
 Delta R.T.: -0.003 min
 Response: 9114985
 Conc: 35.41 ug/L

10.1.1
10

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\112111\GB13979.D\FID1A.CH Vial: 3
 Signal #2 : Y:\1\DATA\112111\GB13979.D\FID2B.CH
 Acq On : 21 Nov 2011 4:46 pm Operator: StephK
 Sample : MB, S Inst : GC/MS Ins
 Misc : GC2426,GGB794,5.000,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Nov 21 16:55:18 2011 Quant Results File: TB791GB791SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB791GB791SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Mon Nov 21 16:54:59 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	2831394	96.783	%
10) S	1,2,4-Trichlorobenzene (P)	14.40	23494418	102.221	%
Target Compounds					
1) H	TVH-Gasoline	7.32	5609938	<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	7.70	197556	0.349	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	14.58	441310	1.715	ug/L

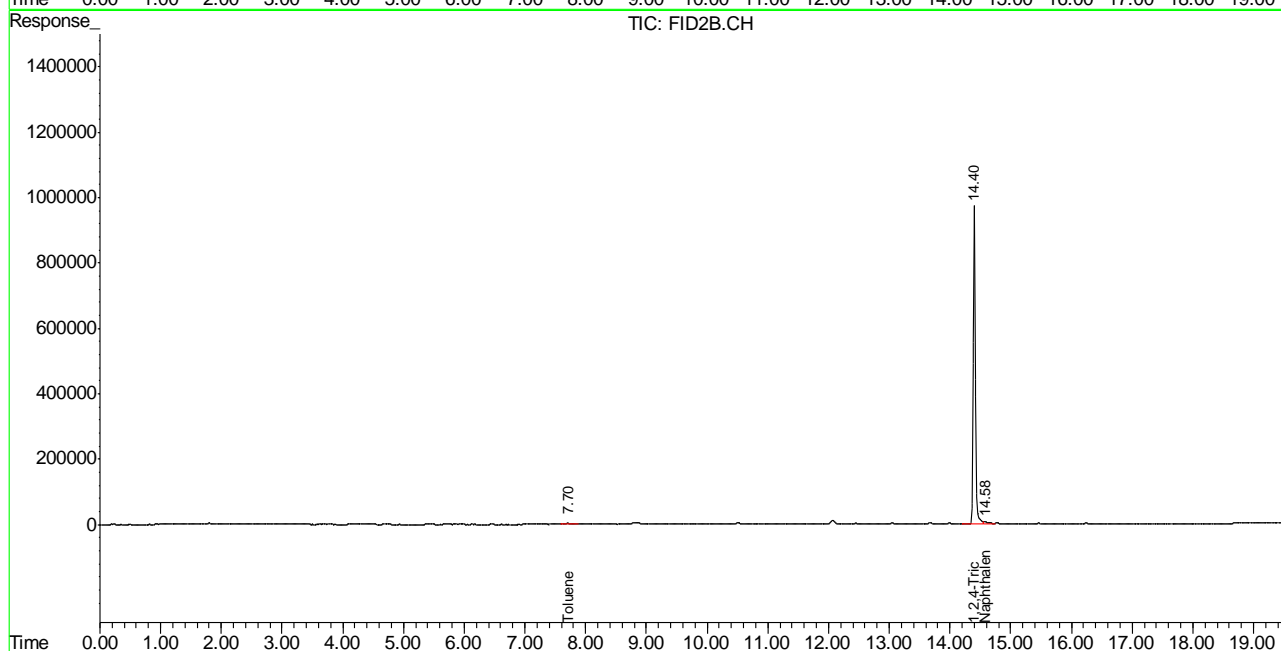
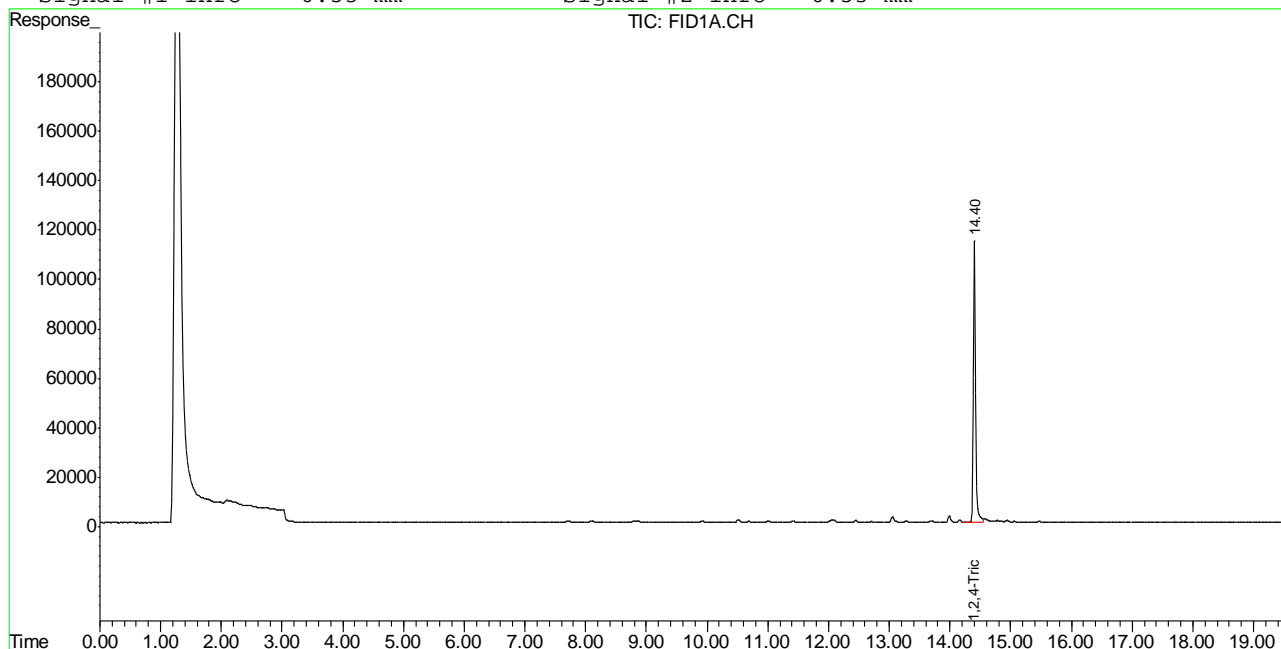
(f)=RT Delta > 1/2 Window (m)=manual int.
 GB13979.D TB791GB791SOIL.M Tue Nov 22 08:23:29 2011 GC

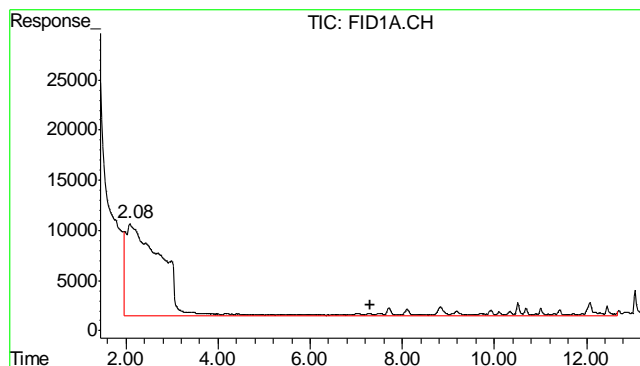
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\112111\GB13979.D\FID1A.CH Vial: 3
Signal #2 : Y:\1\DATA\112111\GB13979.D\FID2B.CH
Acq On : 21 Nov 2011 4:46 pm Operator: StephK
Sample : MB, S Inst : GC/MS Ins
Misc : GC2426,GGB794,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 21 16:55 2011 Quant Results File: TB791GB791SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB791GB791SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Mon Nov 21 16:54:59 2011
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

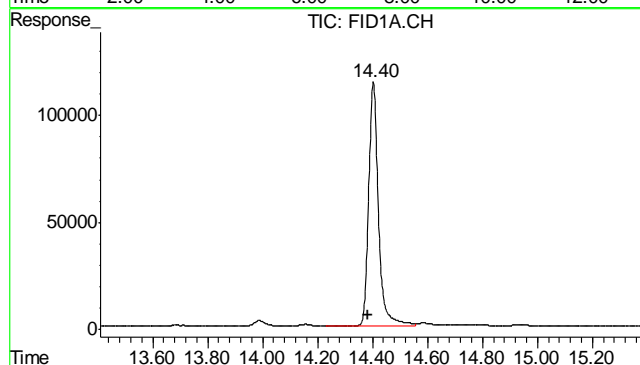
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





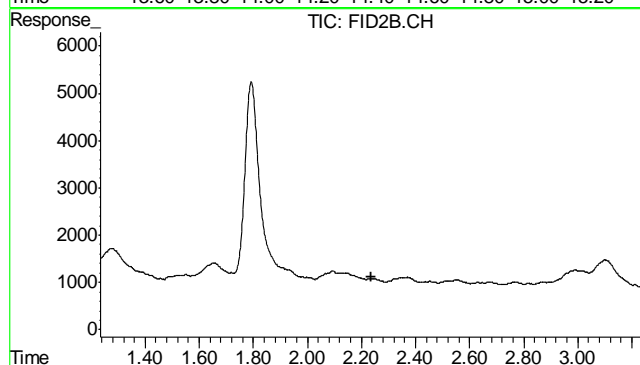
#1 TVH-Gasoline

R.T.: 7.315 min
Delta R.T.: 0.000 min
Response: 5609938
Conc: N.D.



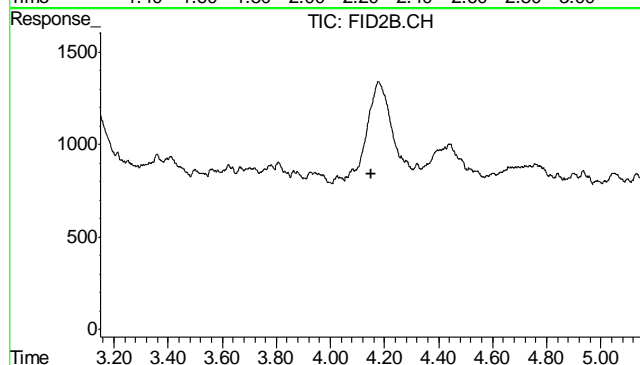
#2 1,2,4-Trichlorobenzene

R.T.: 14.403 min
Delta R.T.: 0.021 min
Response: 2831394
Conc: 96.78 %



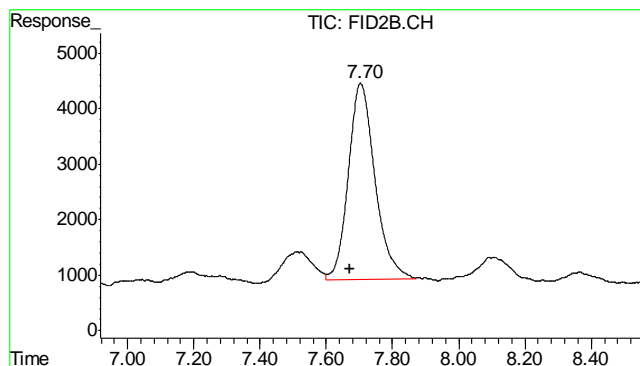
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.235 min
Response: 0
Conc: N.D.



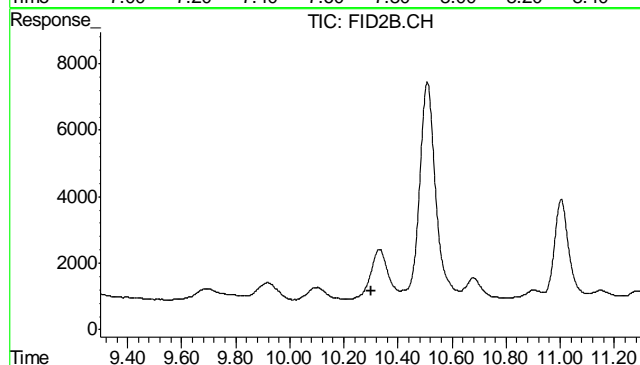
#5 Benzene

R.T.: 0.000 min
Exp R.T.: 4.149 min
Response: 0
Conc: N.D.



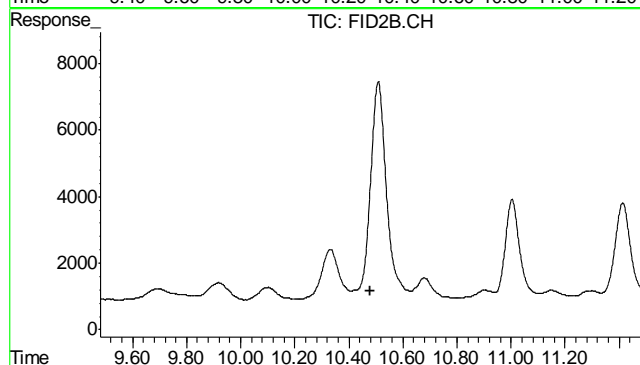
#6 Toluene

R.T.: 7.704 min
Delta R.T.: 0.033 min
Response: 197556
Conc: 0.35 ug/L



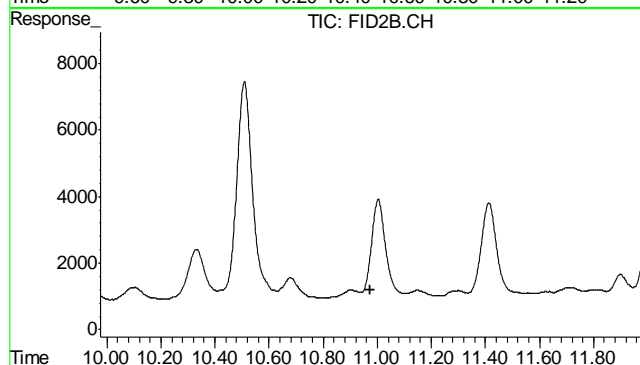
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T.: 10.300 min
Response: 0
Conc: N.D.



#8 m,p-Xylene

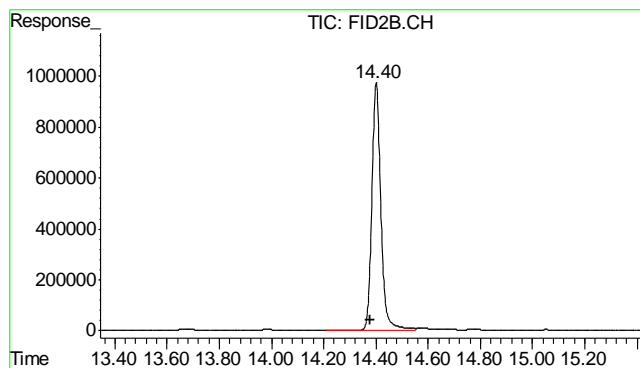
R.T.: 0.000 min
Exp R.T.: 10.480 min
Response: 0
Conc: N.D.



#9 o-Xylene

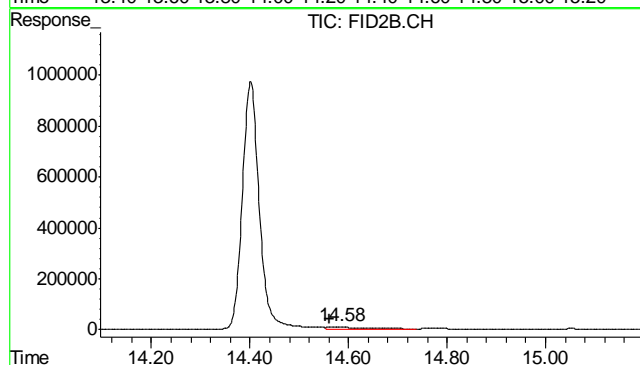
R.T.: 0.000 min
Exp R.T.: 10.976 min
Response: 0
Conc: N.D.

10.2.1 10



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

R.T.: 14.402 min
Delta R.T.: 0.022 min
Response: 23494418
Conc: 102.22 %



#11 Naphthalene

R.T.: 14.582 min
Delta R.T.: 0.020 min
Response: 441310
Conc: 1.71 ug/L

10.2.1
10

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

Page 1 of 1

Job Number: D29649**Account:** KRWCCOL KRW Consulting, Inc.**Project:** XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4885-MB	FD11773.D	1	11/28/11	TR	11/21/11	OP4885	GFD599

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

D29649-1

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	94% 61-142%

11.1.1
11

Blank Spike Summary

Job Number: D29649
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4885-BS	FD11774.D	1	11/28/11	TR	11/21/11	OP4885	GFD599

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

D29649-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	554	83	60-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	83%	61-142%

11.2.1
11

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D29649
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 297-17A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4885-MS	FD11775.D	1	11/28/11	TR	11/21/11	OP4885	GFD599
OP4885-MSD	FD11776.D	1	11/28/11	TR	11/21/11	OP4885	GFD599
D29644-1	FD11777.D	1	11/28/11	TR	11/21/11	OP4885	GFD599

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

D29649-1

CAS No.	Compound	D29644-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	390		804	793	50	1090	87	31	24-157/35

CAS No.	Surrogate Recoveries	MS	MSD	D29644-1	Limits
84-15-1	o-Terphenyl	61%	77%	61%	61-142%

11.3.1
11

GC Semi-volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2011\NOV\FD112811\FD11781.D Vial: 20
Acq On : 29 Nov 2011 12:50 am Operator: TEDR
Sample : D29649-1 Inst : FID5
Misc : OP4885,GFD599,30.06,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Nov 29 10:10:27 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	41973615	791.484 mg/L m
Target Compounds			
2) H TPH-DRO (c10-c28)	7.46	286593905	5627.906 mg/L

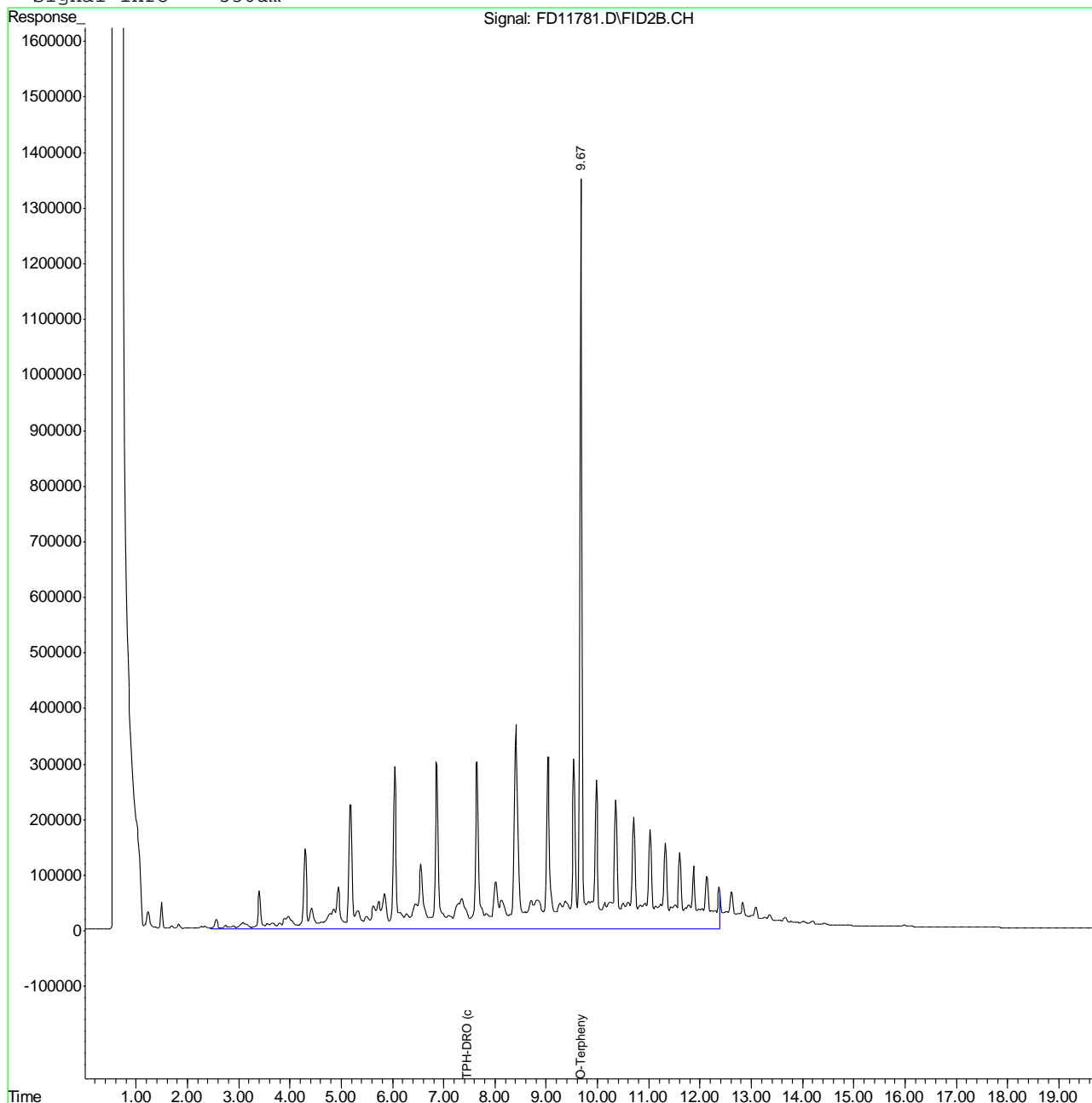
12.1.1
12

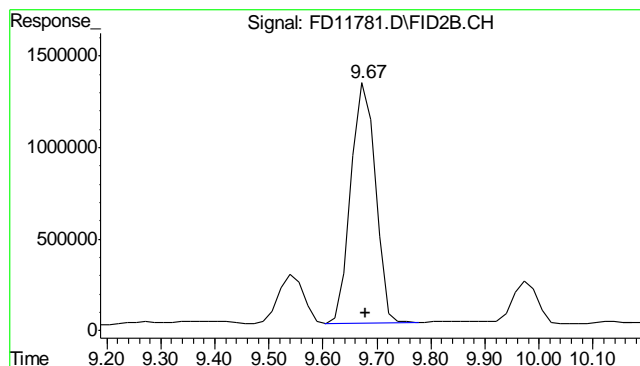
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2011\NOV\FD112811\FD11781.D Vial: 20
 Acq On : 29 Nov 2011 12:50 am Operator: TEDR
 Sample : D29649-1 Inst : FID5
 Misc : OP4885,GFD599,30.06,,,2,1 Multiplr: 1.00
 IntFile : autoint1.e
 Quant Time: Nov 29 10:10 2011 Quant Results File: GFD599.RES

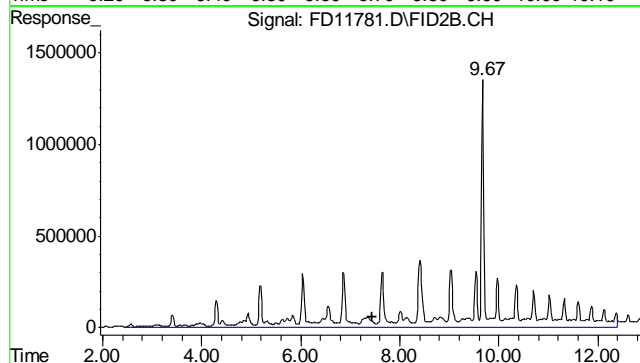
Quant Method : C:\MSDCHEM\2\METHODS\GFD599.M (Chemstation Integrator)
 Title : 8015B TEH
 Last Update : Tue Nov 29 09:00:39 2011
 Response via : Multiple Level Calibration
 DataAcq Meth : JH080911.M

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

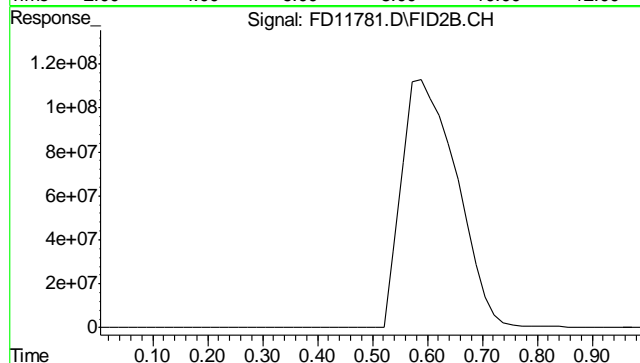




#1 O-Terphenyl
 R.T.: 9.675 min
 Delta R.T.: -0.005 min
 Response: 41973615
 Conc: 791.48 mg/L m



#2 TPH-DRO (c10-c28)
 R.T.: 7.455 min
 Delta R.T.: 0.000 min
 Response: 286593905
 Conc: 5627.91 mg/L m



#9 5a-Androstane
 R.T.: 0.000 min
 Exp R.T.: 0.000 min
 Response: 0
 Conc: N.D.

12.1.1
12

Judy Melson
11/29/11 12:07

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2011\NOV\FD112811\FD11773.D Vial: 12
Acq On : 11-28-2011 09:25:46 PM Operator: TEDR
Sample : OP4885-MB Inst : FID5
Misc : OP4885,GFD599,30.00,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Nov 29 10:04:27 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	49721277	942.239 mg/L m
Target Compounds			
2) H TPH-DRO (c10-c28)	7.46	2428144	46.985 mg/L

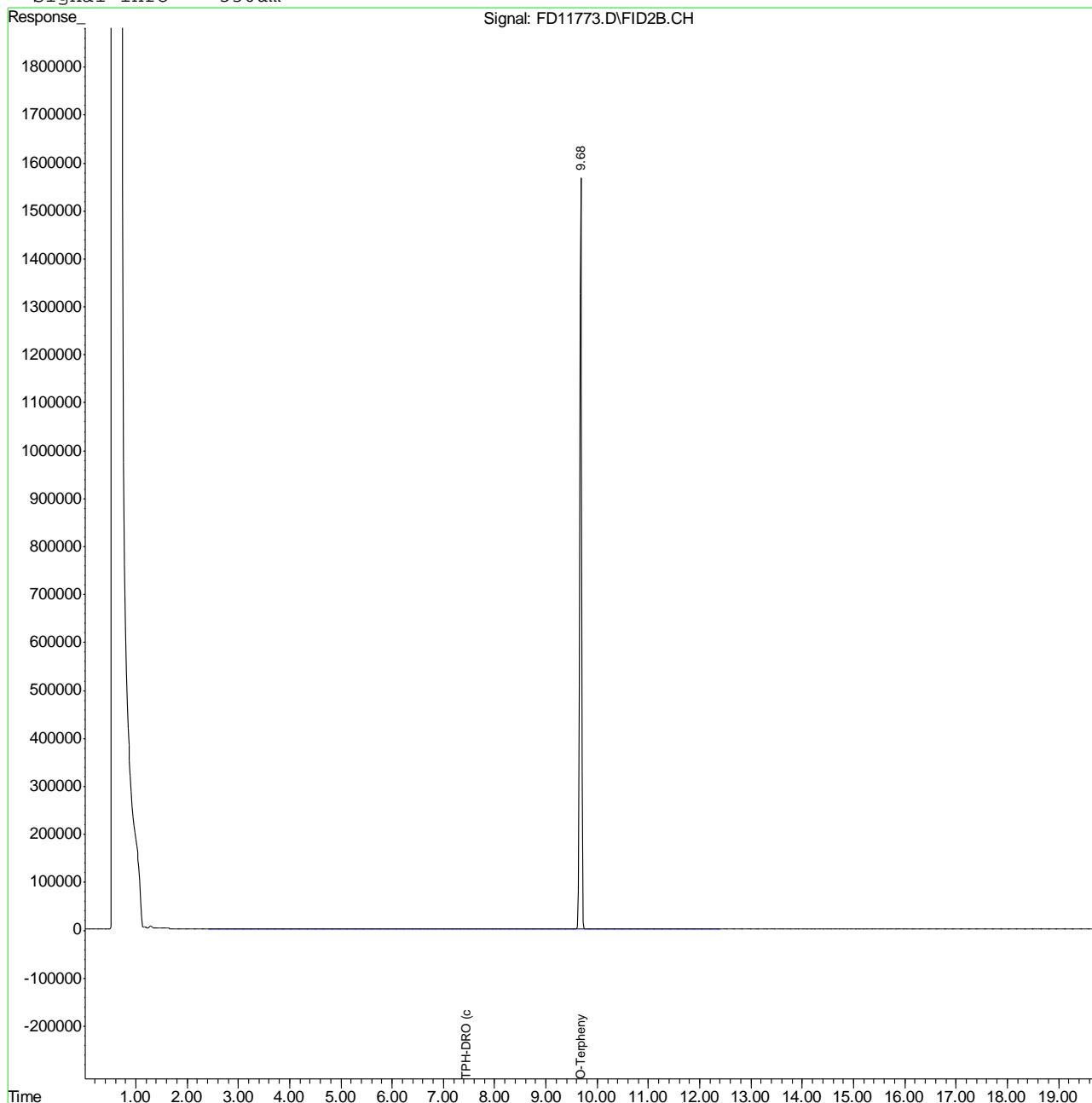
(f)=RT Delta > 1/2 Window (m)=manual int.
FD11773.D GFD599.M Tue Nov 29 10:40:25 2011 GC

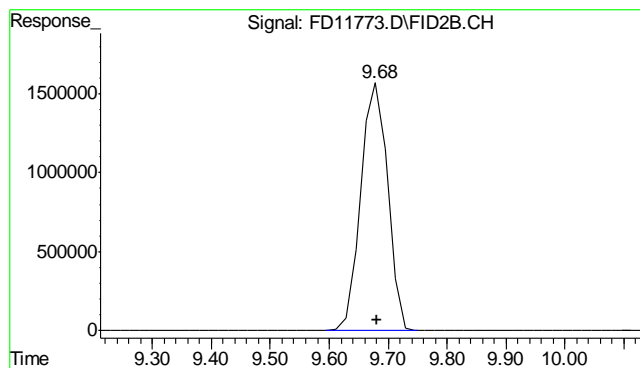
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2011\NOV\FD112811\FD11773.D Vial: 12
Acq On : 11-28-2011 09:25:46 PM Operator: TEDR
Sample : OP4885-MB Inst : FID5
Misc : OP4885,GFD599,30.00,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Nov 29 10:04 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

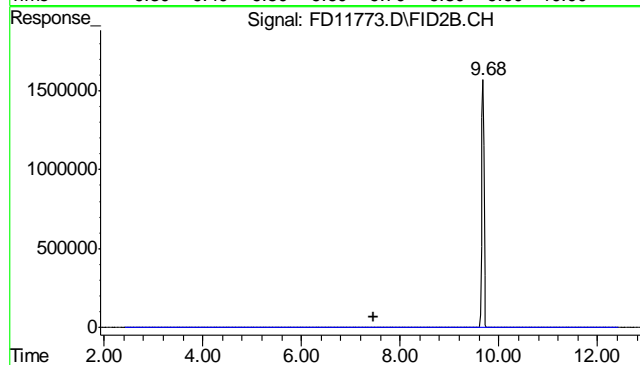
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





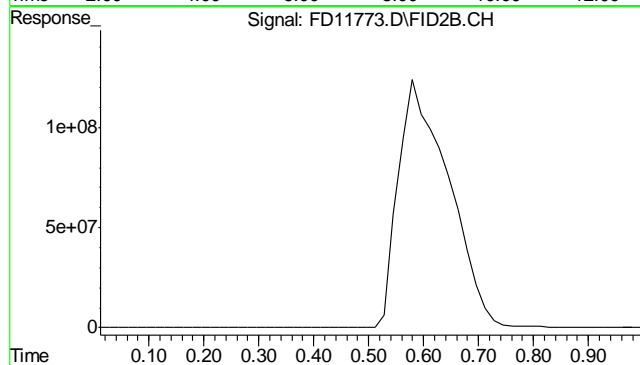
#1 O-Terphenyl

R.T.: 9.676 min
Delta R.T.: -0.004 min
Response: 49721277
Conc: 942.24 mg/L m



#2 TPH-DRO (c10-c28)

R.T.: 7.455 min
Delta R.T.: 0.000 min
Response: 2428144
Conc: 46.98 mg/L m



#9 5a-Androstane

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

12.2.1
12

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: D29649
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6361
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/30/11

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	0.030	<1.0
Beryllium	1.0	.044	.1		
Boron	5.0	.48	.48		
Cadmium	1.0	.027	.27	0.0	<1.0
Calcium	40	.96	1.1		
Chromium	1.0	.018	.031	-0.030	<1.0
Cobalt	0.50	.035	.035		
Copper	1.0	.085	.16	-0.050	<1.0
Iron	7.0	.34	2		
Lead	5.0	.16	.21	-0.11	<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	-0.060	<3.0
Phosphorus	10	1.1	1.2		
Potassium	200	5.5	9.2		
Selenium	5.0	.38	.5	0.070	<5.0
Silicon	5.0	.38	.51		
Silver	3.0	.018	.051	0.0	<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	0.10	<3.0

Associated samples MP6361: D29649-1R

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D29649
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6361
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29649
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6361
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/30/11

Metal	D29760-1 Original MS		SpikeLot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	2480	2990	241	211.4(a)	75-125
Beryllium					
Boron					
Cadmium	0.11	56.0	60.3	92.7	75-125
Calcium					
Chromium	48.4	103	60.3	90.5	75-125
Cobalt					
Copper	11.3	66.3	60.3	91.2	75-125
Iron					
Lead	14.2	122	121	89.4	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	18.8	71.0	60.3	86.6	75-125
Phosphorus					
Potassium					
Selenium	2.1	110	121	89.5	75-125
Silicon					
Silver	0.11	22.1	24.1	91.2	75-125
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	52.0	102	60.3	82.9	75-125

Associated samples MP6361: D29649-1R

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29649
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6361
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.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29649
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6361
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/30/11

Metal	D29760-1 Original	MSD	Spikelot MPICPAL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	2480	2720	239	100.5	9.5	20
Beryllium						
Boron						
Cadmium	0.11	55.7	59.7	93.1	0.5	20
Calcium						
Chromium	48.4	99.2	59.7	85.1	3.8	20
Cobalt						
Copper	11.3	67.5	59.7	94.1	1.8	20
Iron						
Lead	14.2	122	119	90.3	0.0	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	18.8	69.7	59.7	85.3	1.8	20
Phosphorus						
Potassium						
Selenium	2.1	109	119	89.5	0.9	20
Silicon						
Silver	0.11	22.1	23.9	92.1	0.0	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	52.0	99.7	59.7	79.9	2.3	20

Associated samples MP6361: D29649-1R

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29649
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6361
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

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

13.1.2
13

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D29649
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM FRU 297-17A

QC Batch ID: MP6361
 Matrix Type: SOLID

Methods: SW846 6010B
 Units: mg/kg

Prep Date: 11/30/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	184	200	92.0	80-120
Beryllium				
Boron				
Cadmium	46.5	50	93.0	80-120
Calcium				
Chromium	47.3	50	94.6	80-120
Cobalt				
Copper	45.3	50	90.6	80-120
Iron				
Lead	95.2	100	95.2	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	46.2	50	92.4	80-120
Phosphorus				
Potassium				
Selenium	91.3	100	91.3	80-120
Silicon				
Silver	18.9	20	94.5	80-120
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	47.5	50	95.0	80-120

Associated samples MP6361: D29649-1R

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D29649
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6361
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D29649
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM FRU 297-17A

QC Batch ID: MP6361
 Matrix Type: SOLID

Methods: SW846 6010B
 Units: ug/l

Prep Date: 11/30/11

Metal	D29760-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	22200	24200	9.1	0-10
Beryllium				
Boron				
Cadmium	1.00	0.00	100.0(a)	0-10
Calcium				
Chromium	434	478	10.1*(b)	0-10
Cobalt				
Copper	101	102	0.4	0-10
Iron				
Lead	128	123	4.0	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	168	190	12.5*(b)	0-10
Phosphorus				
Potassium				
Selenium	18.9	31.5	66.7 (a)	0-10
Silicon				
Silver	1.00	3.50	250.0(a)	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	467	554	18.6*(b)	0-10

Associated samples MP6361: D29649-1R

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

13.1.4
13

SERIAL DILUTION RESULTS SUMMARY

Login Number: D29649
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6361
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date:

Metal

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D29649
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6362
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 11/30/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	.14	1.2		
Antimony	0.20	.001	.0095		
Arsenic	0.40	.049	.22	0.29	* (a)
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 MP6362: D29649-1R

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) All sample results < RL or > 10x MB concentration.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29649
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM FRU 297-17A

QC Batch ID: MP6362
 Matrix Type: SOLID

Methods: SW846 6020
 Units: mg/kg

Prep Date: 11/30/11

Metal	D29759-1 Original MS		Spikelot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic	4.5	129	120	103.3	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 MP6362: D29649-1R

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: D29649
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6362
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 11/30/11

Metal	D29759-1 Original	MSD	Spikelot MPICPAL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	4.5	129	119	104.4	0.0	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 MP6362: D29649-1R

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: D29649
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM FRU 297-17A

QC Batch ID: MP6362
 Matrix Type: SOLID

Methods: SW846 6020
 Units: mg/kg

Prep Date: 11/30/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	101	100	101.0	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 MP6362: D29649-1R

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: D29649
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM FRU 297-17A

QC Batch ID: MP6362
 Matrix Type: SOLID

Methods: SW846 6020
 Units: ug/l

Prep Date: 11/30/11

Metal	D29759-1			QC	
	Original	SDL 5:25	%DIF	Limits	
Aluminum					
Antimony					
Arsenic	36.6	58.0	58.5*(a)	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 MP6362: D29649-1R

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested
 (a) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D29649
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6363
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 11/30/11

Metal	RL	IDL	MDL	MB	
				raw	final
Mercury	0.10	.0011	.013	-0.0026	<0.10

Associated samples MP6363: D29649-1R

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: D29649
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM FRU 297-17A

QC Batch ID: MP6363
 Matrix Type: SOLID

Methods: SW846 7471A
 Units: mg/kg

Prep Date: 11/30/11

Metal	D25269-9		Spikelot		QC
	Original	MS	HGWSR1	% Rec	
Mercury	0.045	0.39	0.4	86.3	85-115

Associated samples MP6363: D29649-1R

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

13.3.2
 13

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29649
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM FRU 297-17A

QC Batch ID: MP6363
 Matrix Type: SOLID

Methods: SW846 7471A
 Units: mg/kg

Prep Date: 11/30/11

Metal	D25269-9 Original MSD	Spikelot HGWSR1	% Rec	MSD RPD	QC Limit
Mercury	0.045	0.36	0.364	86.6	8.0 20

Associated samples MP6363: D29649-1R

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: D29649
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM FRU 297-17A

QC Batch ID: MP6363
 Matrix Type: SOLID

Methods: SW846 7471A
 Units: mg/kg

Prep Date: 11/30/11

Metal	BSP Result	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.40	0.4	100.0	80-120

Associated samples MP6363: D29649-1R

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: D29649
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6374
Matrix Type: AQUEOUS

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

Prep Date: 12/01/11

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	-18	<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	22.0	<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	-38	<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 MP6374: D29649-1RA

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D29649
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6374
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: D29649
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6374
Matrix Type: AQUEOUS

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

Prep Date: 12/01/11

Metal	D29649-1RA Original MS		Spikelot MPICPAL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	210000	347000	125000	109.6	75-125
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	221	130000	125000	103.8	75-125
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	488000	608000	125000	96.0	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP6374: D29649-1RA

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29649
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6374
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

13.4.2
13

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29649
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM FRU 297-17A

QC Batch ID: MP6374
 Matrix Type: AQUEOUS

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

Prep Date: 12/01/11

Metal	D29649-1RA Original MSD		Spikelot MPICPAL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium	210000	364000	125000	123.2	4.8	20
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Lithium						
Magnesium	221	128000	125000	102.2	1.6	20
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium	488000	661000	125000	138.4N(a	8.4	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP6374: D29649-1RA

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D29649
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6374
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
(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D29649
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6374
Matrix Type: AQUEOUS

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

Prep Date: 12/01/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	141000	125000	112.8	80-120
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	126000	125000	100.8	80-120
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	128000	125000	102.4	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP6374: D29649-1RA

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D29649
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

QC Batch ID: MP6374
Matrix Type: AQUEOUS

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

Prep Date:

Metal

(anr) Analyte not requested

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: D29649
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Specific Conductivity	GP6037/GN12726			umhos/cm	10008	9900	98.9	90-110%
pH	GN12694			su	8.00	8.04	100.5	99.3-100.7%

Associated Samples:
Batch GN12694: D29649-1R
Batch GP6037: D29649-1R
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D29649
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 297-17A

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: D29649-1R
(*) Outside of QC limits

Misc. Forms

Custody Documents and Other Forms

(Accutest Labs of New England, Inc.)

Includes the following where applicable:

- Chain of Custody

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D29649

Client: AMS

Immediate Client Services Action Required: No

Date / Time Received: 11/30/2011

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:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>		<input type="checkbox"/>

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:			Infrared gun
3. Cooler media:			Ice (bag)

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. VOCs headspace free:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>		<input type="checkbox"/>

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Condition of sample:			Intact

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

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: D29649
Account: ALMS - Accutest Mountain States
Project: KRWCCOL: XOM FRU 297-17A

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP13883/GN37110	0.40	0.0	mg/kg	40	39.5	98.8	80-120%
Chromium, Hexavalent	GP13883/GN37110			mg/kg	1230	1450	117.9	80-120%

Associated Samples:
Batch GP13883: D29649-1R
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D29649
Account: ALMS - Accutest Mountain States
Project: KRWCCOL: XOM FRU 297-17A

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP13883/GN37110	D29653-14	mg/kg	0.22	0.20	9.5	0-20%

Associated Samples:
Batch GP13883: D29649-1R
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D29649
Account: ALMS - Accutest Mountain States
Project: KRWCCOL: XOM FRU 297-17A

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP13883/GN37110	D29653-14	mg/kg	0.22	41.6	43.8	104.7	75-125%
Chromium, Hexavalent	GP13883/GN37110	D29653-14	mg/kg	0.22	1050	1240	118.0	75-125%

Associated Samples:
Batch GP13883: D29649-1R
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits