



03/18/11

Technical Report for

KRW Consulting, Inc.

296-7A

Project 1007-02

Accutest Job Number: D21712

Sampling Date: 03/10/11

Report to:

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

Total number of pages in report: 133



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.

A handwritten signature in black ink, appearing to read 'John Hamilton'.

John Hamilton
Laboratory Director

Client Service contact: Amanda Kissell 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: D21712

296-7A
Project No: Project 1007-02

Sample Number	Collected		Time By	Received	Matrix		Client Sample ID
	Date				Code	Type	
D21712-1	03/10/11	12:00	MR	03/11/11	SO	Soil	296-7A FW BOTTOM COMP
D21712-1A	03/10/11	12:00	MR	03/11/11	SO	Soil	296-7A FW BOTTOM COMP

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

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: KRW Consulting, Inc.

Job No D21712

Site: 296-7A

Report Dat 3/18/2011 4:07:26 PM

On 03/11/2011, one (1) sample, 0 Trip Blanks, and 0 Field Blanks were received at Accutest Mountain States (AMS) at a temperature of 3.9°C. The sample was intact and properly preserved, unless noted below. An AMS Job Number of D21712 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: V5V820
------------------	-------------------------

- The sample was analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D21751-1MS and D21751-1MSD were used as the QC samples indicated.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO	Batch ID: OP3293
------------------	-------------------------

- The sample was extracted and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D21712-1MS and D21712-1MSD were used as the QC samples indicated.
- The RPDs for the MS and MSD recoveries of 1-Methylnaphthalene and 2-Methylnaphthalene are outside control limits for sample OP3293-MSD. Outside control limits due to low ISTD recovery on MS.

Volatiles by GC By Method SW846 8015B

Matrix SO	Batch ID: GGA580
------------------	-------------------------

- The sample was analyzed within the recommended method holding time.
- Samples D21667-1MS and D21667-1MSD were used as the QC samples indicated.
- The method blank for this batch meets method specific criteria.

Extractables by GC By Method SW846-8015B

Matrix SO	Batch ID: OP3291
------------------	-------------------------

- The sample was extracted and analyzed within the recommended method holding time.
- Samples D21716-3MS and D21716-3MSD were used as the QC samples indicated.
- The method blank for this batch meets method specific criteria.

Metals By Method SW846 6010B

Matrix AQ

Batch ID: MP4239

- The sample was digested and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D21623-1AMS and D21623-1AMSD were used as the QC samples for the metals analysis.

Matrix SO

Batch ID: MP4214

- The sample was digested and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D21712-1MS, D21712-1MSD, and D21712-1SDL were used as the QC samples for the metals analysis.
- The matrix spike duplicate (MSD) recoveries of Nickel and Zinc are outside control limits. Probable cause due to matrix interference. Refer to the lab control or spike blank for recovery information.
- The matrix spike (MS) recovery of Barium are outside control limits. The spike amount is low relative to the sample amount. Refer to the lab control or spike blank for recovery information.
- The serial dilution RPDs for Lead, Selenium, Silver, and Zinc are outside control limits for sample MP4214-SD1. The percent differences are acceptable for Selenium and Silver due to low initial sample concentration (< 50 times IDL).
- MP4214-SD1 for Lead and Zinc: Serial dilution indicates possible matrix interference.

Metals By Method SW846 6020

Matrix SO

Batch ID: MP4215

- The sample was digested and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D21712-1MS, D21712-1MSD, and D21712-1SDL were used as the QC samples for the metals analysis.

Metals By Method SW846 7471A

Matrix SO

Batch ID: MP4219

- The sample was digested and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D21712-1MS and D21712-1MSD were used as the QC samples for the Mercury analysis.

Wet Chemistry By Method ASTM D1498-76M

Matrix SO

Batch ID: GN8662

- Sample D21712-1DUP was used as the QC sample for the Redox Potential Vs H2 analysis.

Wet Chemistry By Method DEPT.OF AG, BOOK N9

Matrix SO

Batch ID: GP3984

- The sample was prepared and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.

Wet Chemistry By Method LADNR29B

Matrix SO

Batch ID: MP4239

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

Wet Chemistry By Method SM19 2540B M

Matrix SO

Batch ID: GN8658

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

Wet Chemistry By Method SW846 3060/7196A M**Matrix** SO**Batch ID:** R6684

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

Wet Chemistry By Method SW846 3060A/7196A**Matrix** SO**Batch ID:** M:GP12719

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

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 D21712

Site: KRWCCOL: 296-7A

Report Date 3/18/2011 8:57:34 AM

1 Sample was collected on 03/10/2011 and were received at Accutest on 03/11/2011 properly preserved, at 3.8 Deg. C and intact. These Samples received an Accutest job number of D21712. 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: GP12719

- 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) D21665-1DUP, D21665-1MS 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(D21712).

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	296-7A FW BOTTOM COMP			Date Sampled:	03/10/11		
Lab Sample ID:	D21712-1			Date Received:	03/11/11		
Matrix:	SO - Soil			Percent Solids:	81.2		
Method:	SW846 8260B						
Project:	296-7A						

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V13918.D	1	03/14/11	JL	n/a	n/a	V5V820
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.03 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	73	22	ug/kg	
108-88-3	Toluene	ND	150	73	ug/kg	
100-41-4	Ethylbenzene	ND	150	29	ug/kg	
1330-20-7	Xylene (total)	77.0	150	51	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	94%		70-130%
460-00-4	4-Bromofluorobenzene	99%		70-130%
17060-07-0	1,2-Dichloroethane-D4	96%		70-130%

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

Page 1 of 1

Client Sample ID:	296-7A FW BOTTOM COMP			Date Sampled:	03/10/11
Lab Sample ID:	D21712-1			Date Received:	03/11/11
Matrix:	SO - Soil			Percent Solids:	81.2
Method:	SW846 8270C BY SIM SW846 3540C				
Project:	296-7A				

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G03223.D	2	03/16/11	TMB	03/11/11	OP3293	E3G117
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	16	13	ug/kg	
208-96-8	Acenaphthylene	ND	16	15	ug/kg	
120-12-7	Anthracene	ND	16	15	ug/kg	
56-55-3	Benzo(a)anthracene	ND	41	21	ug/kg	
50-32-8	Benzo(a)pyrene	ND	41	30	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	41	30	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	41	25	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	41	18	ug/kg	
218-01-9	Chrysene	ND	41	18	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	41	30	ug/kg	
206-44-0	Fluoranthene	ND	16	16	ug/kg	
86-73-7	Fluorene	46.2	16	14	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	49	45	ug/kg	
90-12-0	1-Methylnaphthalene	47.3	16	12	ug/kg	
91-57-6	2-Methylnaphthalene	94.4	16	14	ug/kg	
91-20-3	Naphthalene	ND	16	16	ug/kg	
85-01-8	Phenanthrene	28.6	16	11	ug/kg	
129-00-0	Pyrene	ND	16	16	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	47%		10-193%
321-60-8	2-Fluorobiphenyl	45%		20-138%
1718-51-0	Terphenyl-d14	56%		17-174%

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

Page 1 of 1

Client Sample ID:	296-7A FW BOTTOM COMP			Date Sampled:	03/10/11		
Lab Sample ID:	D21712-1			Date Received:	03/11/11		
Matrix:	SO - Soil			Percent Solids:	81.2		
Method:	SW846 8015B						
Project:	296-7A						

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA0622.D	1	03/11/11	BR	n/a	n/a	GGA580
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	15	15	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	100%		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

Page 1 of 1

Client Sample ID:	296-7A FW BOTTOM COMP					Date Sampled:	03/10/11
Lab Sample ID:	D21712-1					Date Received:	03/11/11
Matrix:	SO - Soil					Percent Solids:	81.2
Method:	SW846-8015B SW846 3550B						
Project:	296-7A						

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FE6291.D	1	03/11/11	JB	03/11/11	OP3291	GFE310
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)	215	16	11	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	106%		63-130%		

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: 296-7A FW BOTTOM COMP

Lab Sample ID: D21712-1

Date Sampled: 03/10/11

Matrix: SO - Soil

Date Received: 03/11/11

Percent Solids: 81.2

Project: 296-7A

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	3.7	0.51	mg/kg	5	03/14/11	03/15/11 GJ	SW846 6020 ¹	SW846 3050B ⁶
Barium	1450	1.3	mg/kg	1	03/14/11	03/14/11 JM	SW846 6010B ²	SW846 3050B ⁵
Cadmium	< 1.3	1.3	mg/kg	1	03/14/11	03/14/11 JM	SW846 6010B ²	SW846 3050B ⁵
Chromium	33.7	1.3	mg/kg	1	03/14/11	03/14/11 JM	SW846 6010B ²	SW846 3050B ⁵
Copper	9.1	1.3	mg/kg	1	03/14/11	03/15/11 JY	SW846 6010B ⁴	SW846 3050B ⁵
Lead	9.0	6.4	mg/kg	1	03/14/11	03/14/11 JM	SW846 6010B ²	SW846 3050B ⁵
Mercury	< 0.12	0.12	mg/kg	1	03/15/11	03/15/11 JY	SW846 7471A ³	SW846 7471A ⁷
Nickel	13.8	3.8	mg/kg	1	03/14/11	03/14/11 JM	SW846 6010B ²	SW846 3050B ⁵
Selenium	< 6.4	6.4	mg/kg	1	03/14/11	03/14/11 JM	SW846 6010B ²	SW846 3050B ⁵
Silver	< 3.8	3.8	mg/kg	1	03/14/11	03/14/11 JM	SW846 6010B ²	SW846 3050B ⁵
Zinc	37.4	3.8	mg/kg	1	03/14/11	03/14/11 JM	SW846 6010B ²	SW846 3050B ⁵

(1) Instrument QC Batch: MA1381

(2) Instrument QC Batch: MA1382

(3) Instrument QC Batch: MA1383

(4) Instrument QC Batch: MA1384

(5) Prep QC Batch: MP4214

(6) Prep QC Batch: MP4215

(7) Prep QC Batch: MP4219

RL = Reporting Limit

Report of Analysis

Client Sample ID: 296-7A FW BOTTOM COMP

Lab Sample ID: D21712-1

Matrix: SO - Soil

Project: 296-7A

Date Sampled: 03/10/11

Date Received: 03/11/11

Percent Solids: 81.2

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent ^a	0.66	0.49	mg/kg	1	03/16/11 16:35	AMA	SW846 3060A/7196A
Chromium, Trivalent ^b	33.0	1.8	mg/kg	1	03/16/11 16:35	AMA	SW846 3060/7196A M
Redox Potential Vs H2	251		mv	1	03/11/11 13:20	CJ	ASTM D1498-76M
Solids, Percent	81.2		%	1	03/11/11	CJ	SM19 2540B M
Specific Conductivity	2160	1.0	umhos/cm	1	03/15/11	JK	DEPT.OF AG, BOOK N9
pH	9.41		su	1	03/11/11 13:20	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: 296-7A FW BOTTOM COMP

Lab Sample ID: D21712-1A

Matrix: SO - Soil

Project: 296-7A

Date Sampled: 03/10/11

Date Received: 03/11/11

Percent Solids: 81.2

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	81.9	2.0	mg/l	1	03/15/11	03/15/11 JY	SW846 6010B ¹	EPA 200.7 ³
Magnesium	27.8	1.0	mg/l	1	03/15/11	03/15/11 JY	SW846 6010B ¹	EPA 200.7 ³
Sodium	344	2.0	mg/l	1	03/15/11	03/16/11 JY	SW846 6010B ²	EPA 200.7 ³

(1) Instrument QC Batch: MA1384

(2) Instrument QC Batch: MA1387

(3) Prep QC Batch: MP4239

RL = Reporting Limit

Report of Analysis

Client Sample ID:	296-7A FW BOTTOM COMP	Date Sampled:	03/10/11
Lab Sample ID:	D21712-1A	Date Received:	03/11/11
Matrix:	SO - Soil	Percent Solids:	81.2
Project:	296-7A		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	8.38		ratio	1	03/16/11 11:17	JY	LADNR29B

(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

ACCUTEST LABORATORIES						Accutest Laboratories Mountain States 4036 Youngfield Street Wheat Ridge, Co 80033 TEL 303-425-6021 877-737-4521 FAX 303-425-6021								PED-EX Tracking #		Bottle Order Control #							
						Accutest Quote #								Accutest Job #									
Client / Reporting Information						Project Information								Requested Analysis (see TEST CODE sheet)						Matrix Codes			
Company Name KRW Consulting						Project Name 296-7A FW Bottom Composite								<div style="writing-mode: vertical-rl; transform: rotate(180deg);">Table 910-1</div>						DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED-Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB-Field Blank EB-Equipment Blank RB-Rinse Blank TB-Trip Blank			
Street Address 8000 w 14th Ave						Street:																	
City State Zip Lakewood CO 80214						Billing Information (If different from Report to) Company Name																	
Project Contact Dwight Knudson						Street Address																	
Phone # Fax # 303 239 9011						City State Zip																	
Sample(s) Name(s) Phone # Mike Raynoso						Client PO# Project Manager Joe Hess								Attention: PO#									
Field ID / Point of Collection						Collection								Number of preserved Bottles						LAB USE ONLY			
MEOH/DI Vial # Date Time Sampled by Matrix # of bottles HCl NH3 NH4NO3 H2SO4 NONE DI Water MCHH ENCORE Baseline						296-7A FW Bottom comp 03/10/11 1200 MR SO 6 6 6																	
Turnaround Time (Business days)						Approved By (Accutest PM): / Date:								Data Deliverable Information						Comments / Special Instructions			
<input type="checkbox"/> Std. 10 Business Days <input type="checkbox"/> Std. 5 Business Days (By Contract only) <input checked="" type="checkbox"/> 5 Day FRI SH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY						<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> Commercial "B" + Narrative <input type="checkbox"/> FULLT1 (Level 3+4)								<input type="checkbox"/> State Forms <input type="checkbox"/> EDD Format <input checked="" type="checkbox"/> PDF						<p>please email results to dknudson@kwrconsulting.com rrasnic@kwrconsulting.com gknell@kwrconsulting.com</p>			
Emergency & Rush T/A date available VIA Lablink						Commercial "A" = Results Only Commercial "B" = Results + QC Summary																	
Relinquished by Sampler: 1 Mike Raynoso						Date Time: 23/10/11 1700								Received By: 1 [Signature]						Date Time: 3-11-11	Received By: 2 Christine Paschak		
Relinquished by Sampler: 3 Christine Paschak						Date Time: 3/11/11 8:00A								Received By: 3 [Signature]						Date Time: 0800	Received By: 4 [Signature]		
Relinquished by: 5						Date Time:								Received By: 5						Custody Seal # <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Not intact	Preserved where applicable <input type="checkbox"/> NA	On Ice <input checked="" type="checkbox"/>	Cooler Temp. 3.9°

D21712: Chain of Custody

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Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D21712

Client: KRW

Immediate Client Services Action Required: No

Date / Time Received: 3/11/2011 8:00:00 AM

No. Coolers: 1

Client Service Action Required at Login: No

Project: 296-7A FW BOTTOM COMPOSITE

Airbill #'s: HD

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

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: D21712
Account: KRWCCOL KRW Consulting, Inc.
Project: 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V820-MB	5V13905.D	1	03/14/11	JL	n/a	n/a	V5V820

The QC reported here applies to the following samples:

Method: SW846 8260B

D21712-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	50	15	ug/kg	
100-41-4	Ethylbenzene	ND	100	20	ug/kg	
108-88-3	Toluene	ND	100	50	ug/kg	
1330-20-7	Xylene (total)	ND	100	35	ug/kg	

CAS No.	Surrogate Recoveries	Limits
2037-26-5	Toluene-D8	95% 70-130%
460-00-4	4-Bromofluorobenzene	87% 70-130%
17060-07-0	1,2-Dichloroethane-D4	90% 70-130%

Blank Spike Summary

Page 1 of 1

Job Number: D21712
Account: KRWCCOL KRW Consulting, Inc.
Project: 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V820-BS	5V13906.D	1	03/14/11	JL	n/a	n/a	V5V820

The QC reported here applies to the following samples:

Method: SW846 8260B

D21712-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	47.6	95	68-130
100-41-4	Ethylbenzene	50	50.0	100	70-130
108-88-3	Toluene	50	49.7	99	70-130
1330-20-7	Xylene (total)	100	93.8	94	60-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	96%	70-130%
460-00-4	4-Bromofluorobenzene	98%	70-130%
17060-07-0	1,2-Dichloroethane-D4	92%	70-130%

Blank Spike Summary

Job Number: D21712
Account: KRWCCOL KRW Consulting, Inc.
Project: 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V820-BS	5V13911.D	1	03/14/11	JL	n/a	n/a	V5V820

The QC reported here applies to the following samples:

Method: SW846 8260B

D21712-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
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CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	93%	70-130%
460-00-4	4-Bromofluorobenzene	89%	70-130%
17060-07-0	1,2-Dichloroethane-D4	92%	70-130%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D21712
Account: KRWCCOL KRW Consulting, Inc.
Project: 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D21751-1MS	5V13909.D	1	03/14/11	JL	n/a	n/a	V5V820
D21751-1MSD	5V13910.D	1	03/14/11	JL	n/a	n/a	V5V820
D21751-1	5V13908.D	1	03/14/11	JL	n/a	n/a	V5V820

The QC reported here applies to the following samples:

Method: SW846 8260B

D21712-1

CAS No.	Compound	D21751-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		2730	2260	83	2620	96	15	55-140/30
100-41-4	Ethylbenzene	ND		2730	2380	87	2750	101	14	56-139/30
108-88-3	Toluene	ND		2730	2310	85	2640	97	13	57-144/30
1330-20-7	Xylene (total)	ND		5460	4570	84	5300	97	15	51-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D21751-1	Limits
2037-26-5	Toluene-D8	90%	91%	93%	70-130%
460-00-4	4-Bromofluorobenzene	103%	104%	93%	70-130%
17060-07-0	1,2-Dichloroethane-D4	89%	90%	88%	70-130%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D21712
Account: KRWCCOL KRW Consulting, Inc.
Project: 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D21751-1MS	5V13912.D	1	03/14/11	JL	n/a	n/a	V5V820
D21751-1MSD	5V13913.D	1	03/14/11	JL	n/a	n/a	V5V820
D21751-1	5V13908.D	1	03/14/11	JL	n/a	n/a	V5V820

The QC reported here applies to the following samples:

Method: SW846 8260B

D21712-1

CAS No.	Compound	D21751-1 ug/kg	Spike Q	ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
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CAS No.	Surrogate Recoveries	MS	MSD	D21751-1	Limits
2037-26-5	Toluene-D8	93%	93%	93%	70-130%
460-00-4	4-Bromofluorobenzene	96%	96%	93%	70-130%
17060-07-0	1,2-Dichloroethane-D4	91%	91%	88%	70-130%

GC/MS Volatiles

Raw Data



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5031411.S\
 Data File : 5V13918.D
 Acq On : 14 Mar 2011 6:11 pm
 Operator : JESSICA1
 Sample : D21712-1, 50X
 Misc : MS1916,V5V820,5.028,,100,5,1
 ALS Vial : 17 Sample Multiplier: 1

Quant Time: Mar 15 17:50:17 2011
 Quant Method : C:\msdchem\1\METHODS\V5hsl817tvh817Soil.M
 Quant Title : 8260
 QLast Update : Mon Mar 14 09:29:14 2011
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	360075	50.00	ug/l	0.00
31) 1,4-Difluorobenzene	12.446	114	477523	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.095	117	435749	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.070	152	283312	50.00	ug/l	0.00

System Monitoring Compounds

30) 1,2-Dichloroethane-d4	12.035	102	34029	47.99	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	95.98%
55) Toluene-d8	13.850	98	629501	46.89	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	93.78%
59) 4-Bromofluorobenzene	16.042	95	277619	49.43	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	98.86%

Target Compounds

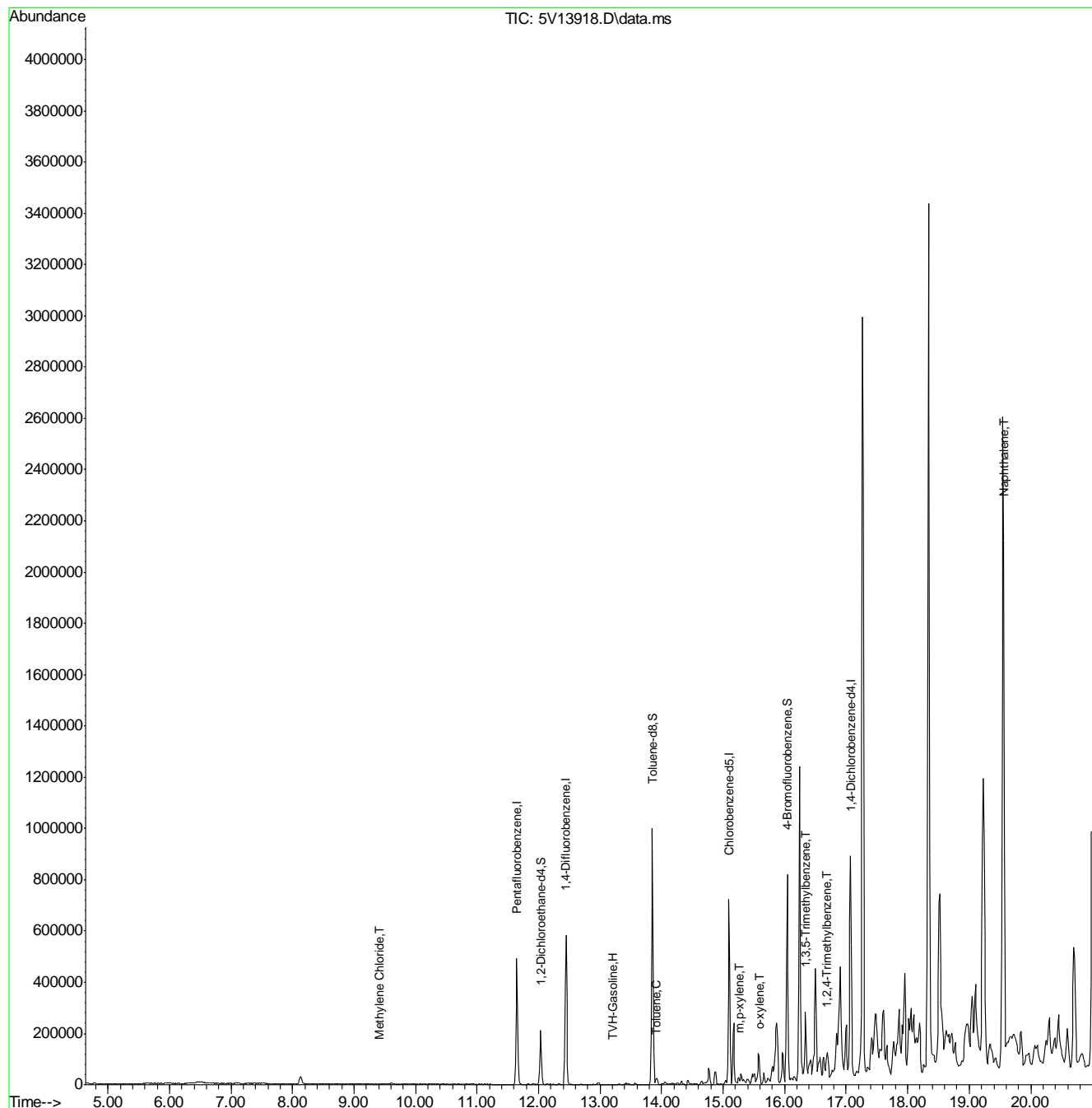
					Qvalue
1) TVH-Gasoline	13.210	TIC	4834710m	189.46	ug/l
15) Methylene Chloride	9.421	84	984	0.28	ug/l
56) Toluene	13.907	92	4325	0.49	ug/l
61) m,p-xylene	15.255	106	6145	0.83	ug/l
62) o-xylene	15.597	106	1623	0.22	ug/l
65) 1,3,5-Trimethylbenzene	16.339	105	102513	6.23	ug/l
66) 1,2,4-Trimethylbenzene	16.693	105	42399	2.49	ug/l
72) Naphthalene	19.559	128	16926	1.42	ug/l

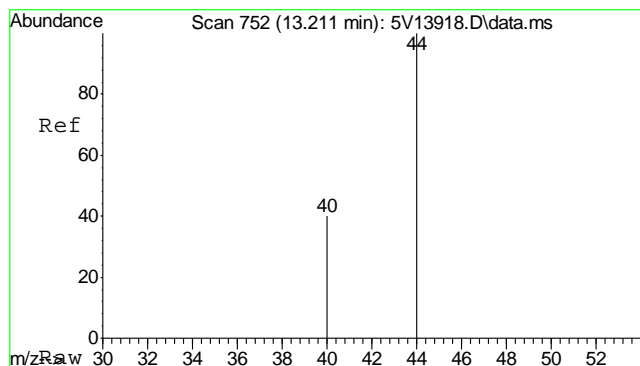
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

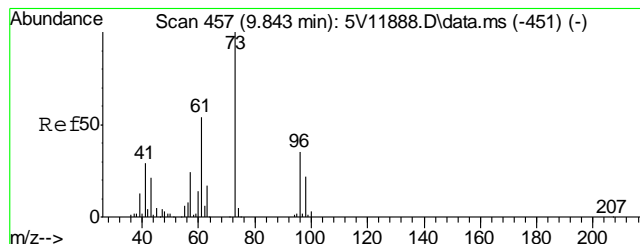
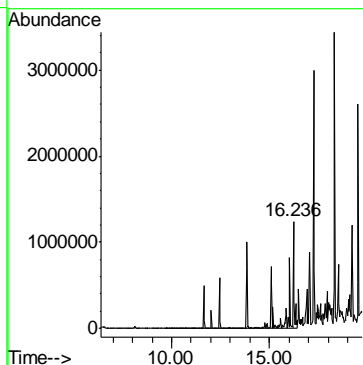
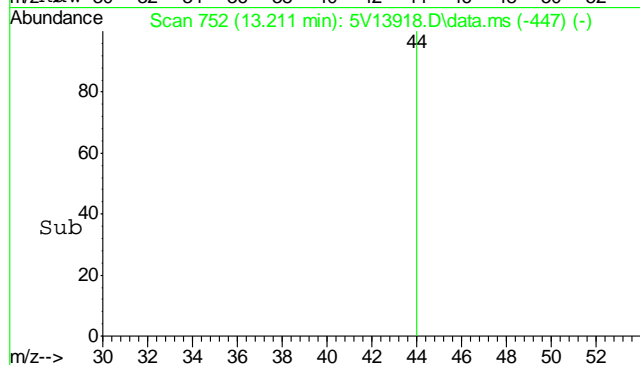
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Data File : 5V13918.D
Acq On : 14 Mar 2011 6:11 pm
Operator : JESSICA1
Sample : D21712-1, 50X
Misc : MS1916,V5V820,5.028,,100,5,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Mar 15 17:50:17 2011
Quant Method : C:\msdchem\1\METHODS\V5hs1817tvh817Soil.M
Quant Title : 8260
QLast Update : Mon Mar 14 09:29:14 2011
Response via : Initial Calibration



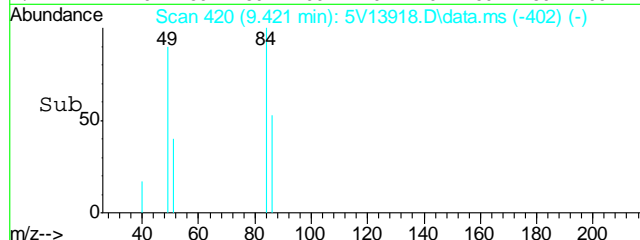
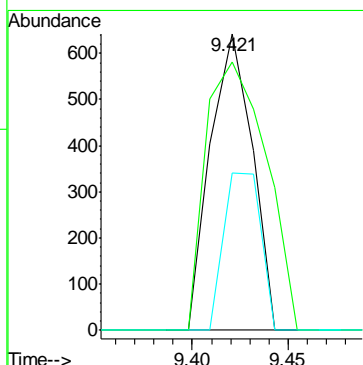
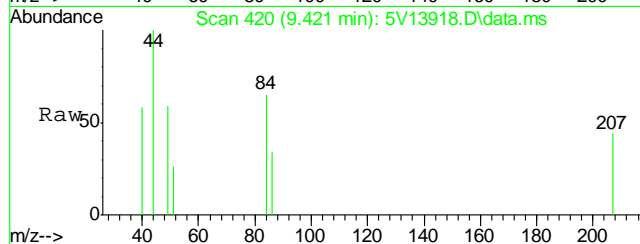


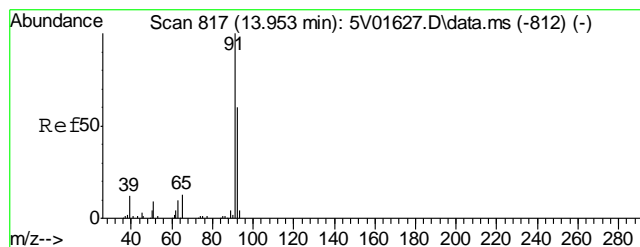
#1
TVH-Gasoline
Concen: 189.46 ug/l m
RT: 13.210 min Scan# 752
Delta R.T. 0.000 min
Lab File: 5V13918.D
Acq: 14 Mar 2011 6:11 pm
Tgt Ion:TIC Resp: 4834710



#15
Methylene Chloride
Concen: 0.28 ug/l
RT: 9.421 min Scan# 420
Delta R.T. 0.000 min
Lab File: 5V13918.D
Acq: 14 Mar 2011 6:11 pm

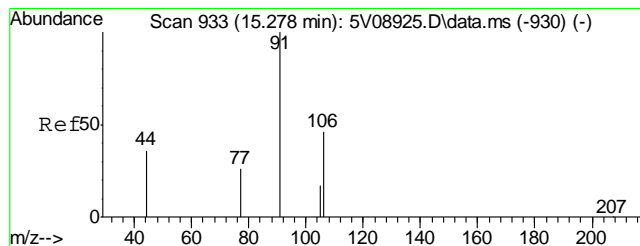
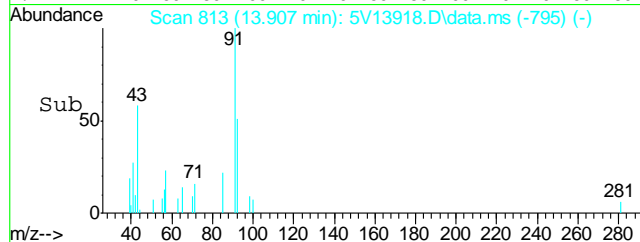
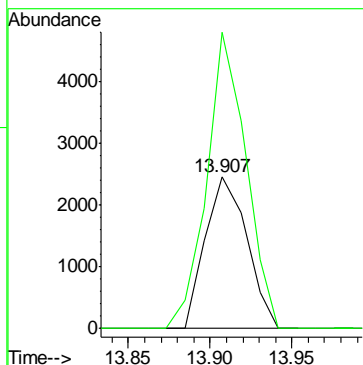
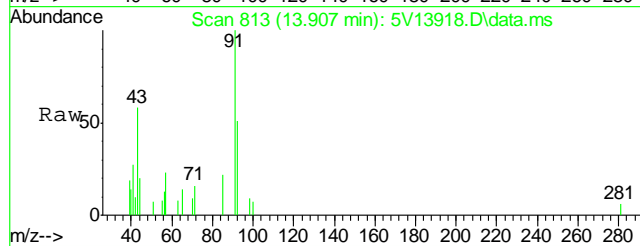
Tgt Ion: 84 Resp: 984
Ion Ratio Lower Upper
84 100
49 130.2 112.1 152.1
86 47.4 44.1 84.1





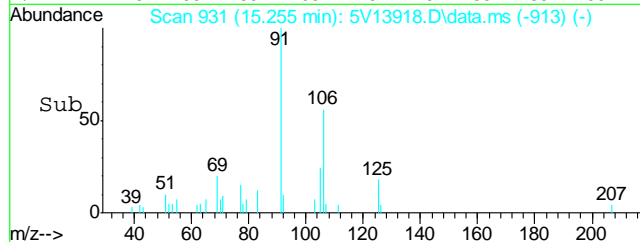
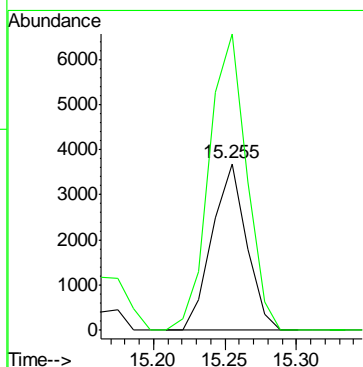
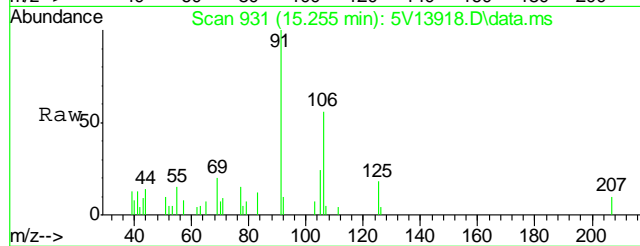
#56
Toluene
Concen: 0.49 ug/l
RT: 13.907 min Scan# 813
Delta R.T. 0.000 min
Lab File: 5V13918.D
Acq: 14 Mar 2011 6:11 pm

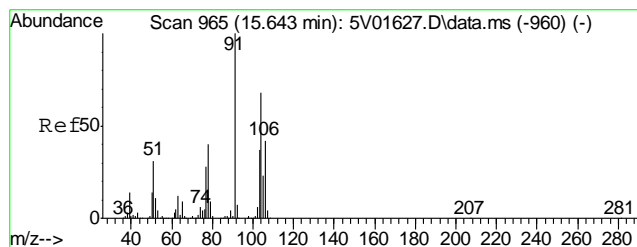
Tgt Ion: 92 Resp: 4325
Ion Ratio Lower Upper
92 100
91 185.1 146.4 186.4



#61
m,p-xylene
Concen: 0.83 ug/l
RT: 15.255 min Scan# 931
Delta R.T. 0.000 min
Lab File: 5V13918.D
Acq: 14 Mar 2011 6:11 pm

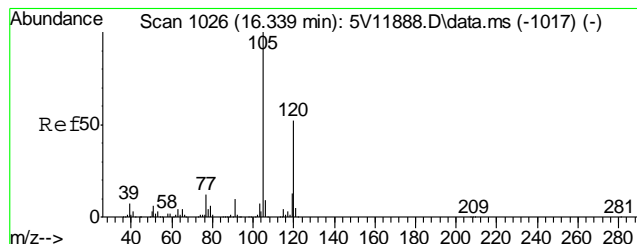
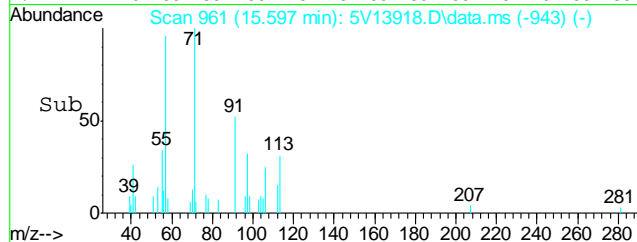
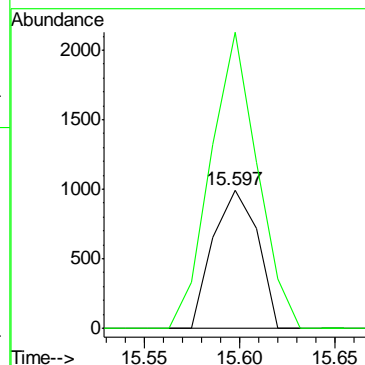
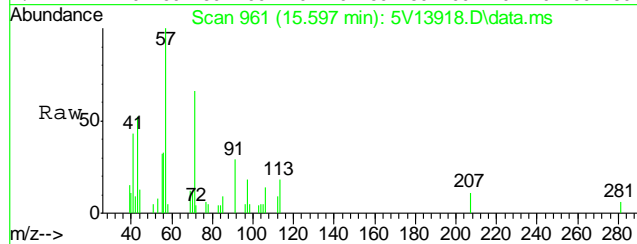
Tgt Ion: 106 Resp: 6145
Ion Ratio Lower Upper
106 100
91 192.7 169.5 209.5





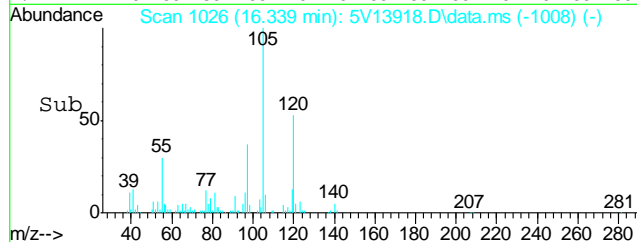
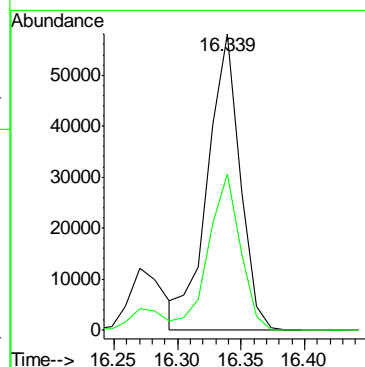
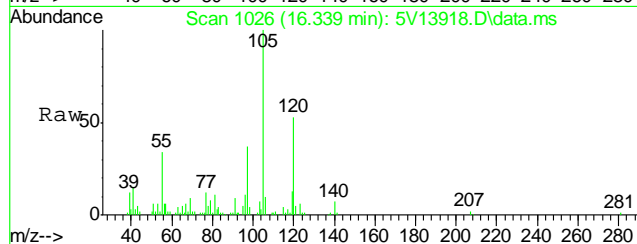
#62
o-xylene
Concen: 0.22 ug/l
RT: 15.597 min Scan# 961
Delta R.T. 0.000 min
Lab File: 5V13918.D
Acq: 14 Mar 2011 6:11 pm

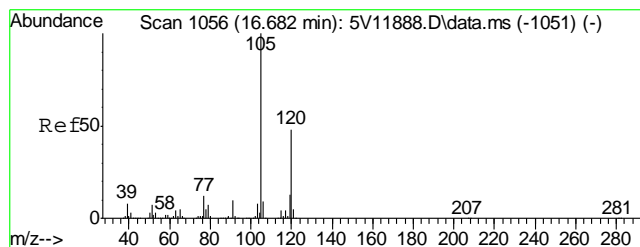
Tgt Ion:106 Resp: 1623
Ion Ratio Lower Upper
106 100
91 225.6 160.1 240.1



#65
1,3,5-Trimethylbenzene
Concen: 6.23 ug/l
RT: 16.339 min Scan# 1026
Delta R.T. 0.000 min
Lab File: 5V13918.D
Acq: 14 Mar 2011 6:11 pm

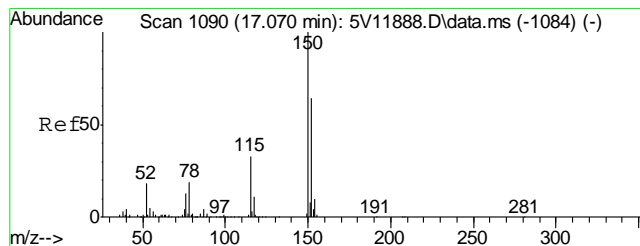
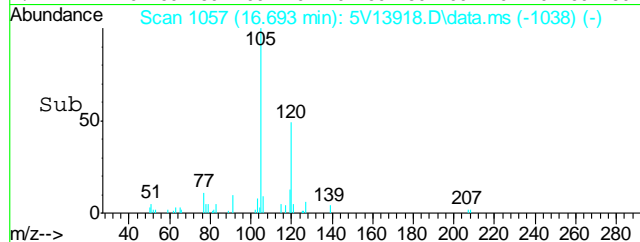
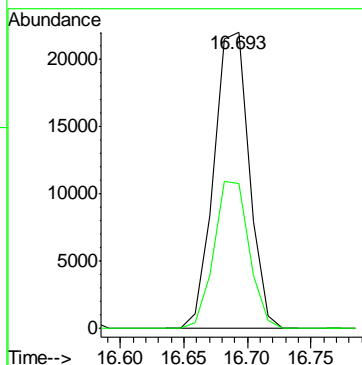
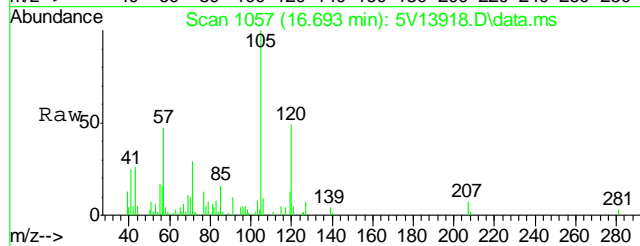
Tgt Ion:105 Resp: 102513
Ion Ratio Lower Upper
105 100
120 51.5 41.0 61.6





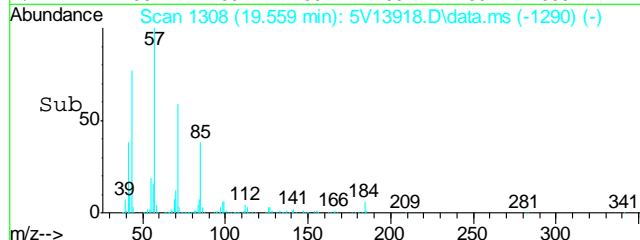
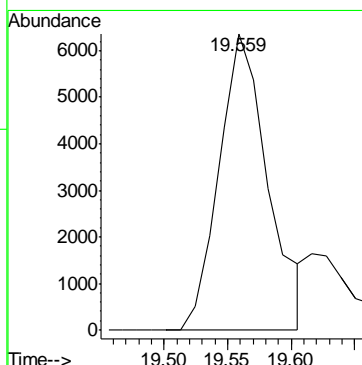
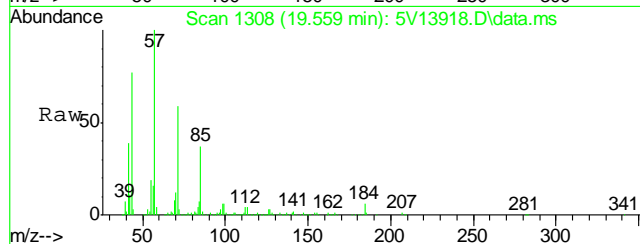
#66
1,2,4-Trimethylbenzene
Concen: 2.49 ug/l
RT: 16.693 min Scan# 1057
Delta R.T. 0.011 min
Lab File: 5V13918.D
Acq: 14 Mar 2011 6:11 pm

Tgt Ion:105 Resp: 42399
Ion Ratio Lower Upper
105 100
120 49.4 38.2 57.4



#72
Naphthalene
Concen: 1.42 ug/l
RT: 19.559 min Scan# 1308
Delta R.T. 0.000 min
Lab File: 5V13918.D
Acq: 14 Mar 2011 6:11 pm

Tgt Ion:128 Resp: 16926



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5031411.S\
Data File : 5V13905.D
Acq On : 14 Mar 2011 10:15 am
Operator : JESSICA1
Sample : MB
Misc : MS1916,V5V820,5,,100,5,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 15 17:33:04 2011
Quant Method : C:\msdchem\1\METHODS\V5hsl817tvh817Soil.M
Quant Title : 8260
QLast Update : Mon Mar 14 09:29:14 2011
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	471302	50.00	ug/l	0.00
31) 1,4-Difluorobenzene	12.446	114	614690	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.095	117	538887	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.070	152	304743	50.00	ug/l	0.00

System Monitoring Compounds

30) 1,2-Dichloroethane-d4	12.035	102	41688	44.92	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	89.84%
55) Toluene-d8	13.850	98	791272	47.66	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	95.32%
59) 4-Bromofluorobenzene	16.042	95	302125	43.50	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	87.00%

Target Compounds

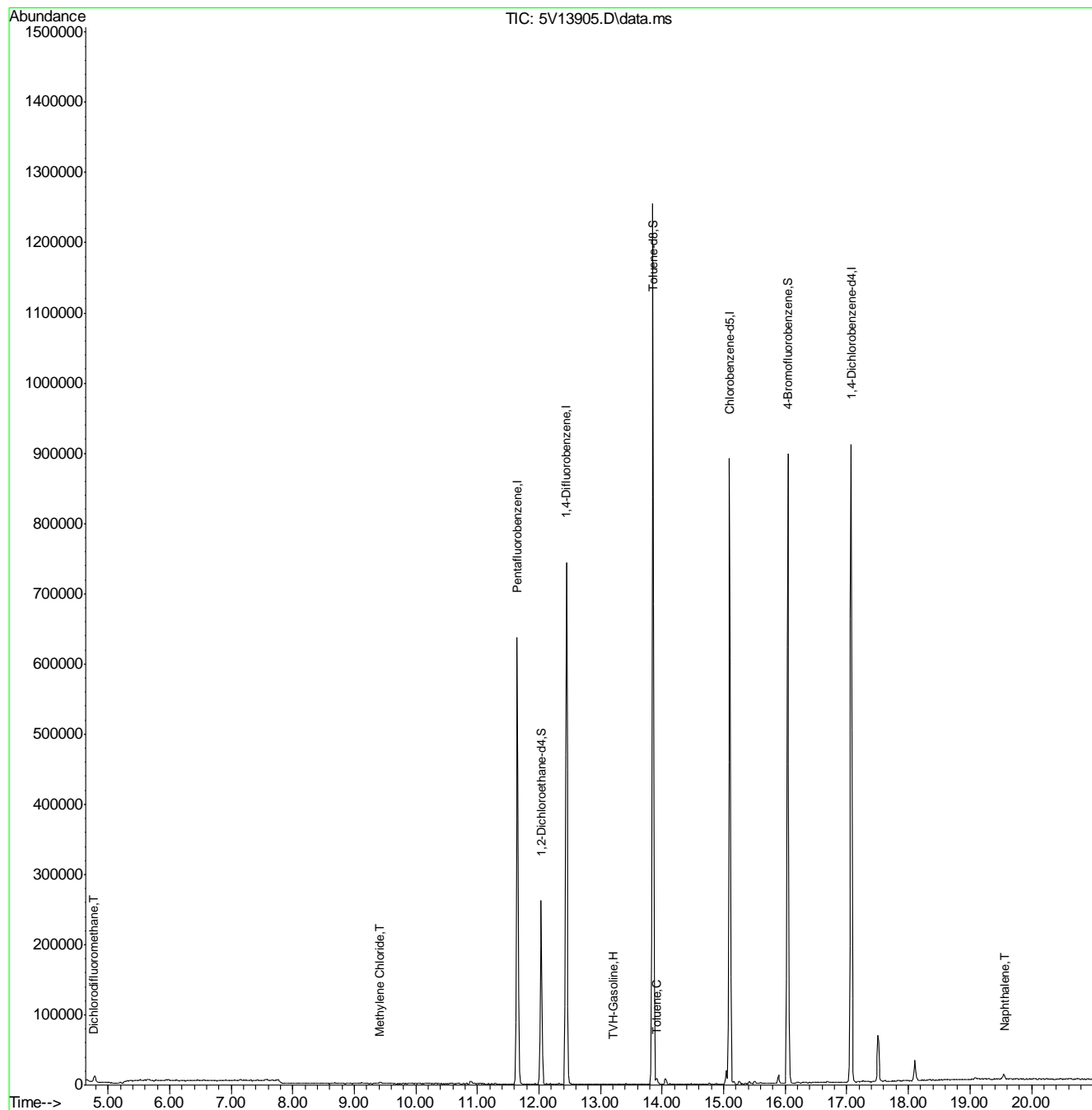
					Qvalue
1) TVH-Gasoline	13.210	TIC	11223m	0.44	ug/l
3) Dichlorodifluoromethane	4.762	85	2374	0.28	ug/l
15) Methylene Chloride	9.421	84	1265	0.28	ug/l
56) Toluene	13.907	92	3194	0.29	ug/l
72) Naphthalene	19.559	128	3654	0.28	ug/l

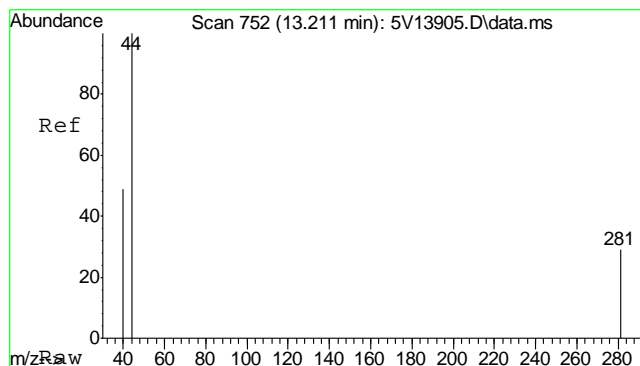
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5031411.S\
Data File : 5V13905.D
Acq On : 14 Mar 2011 10:15 am
Operator : JESSICA1
Sample : MB
Misc : MS1916,V5V820,5,,100,5,1
ALS Vial : 4 Sample Multiplier: 1

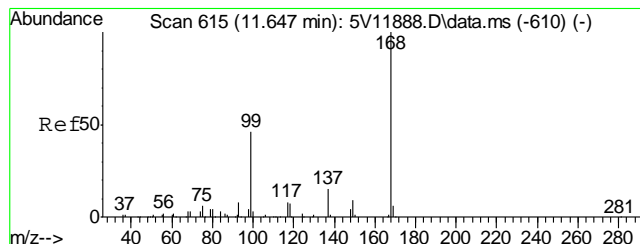
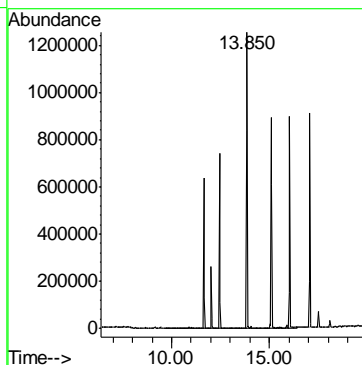
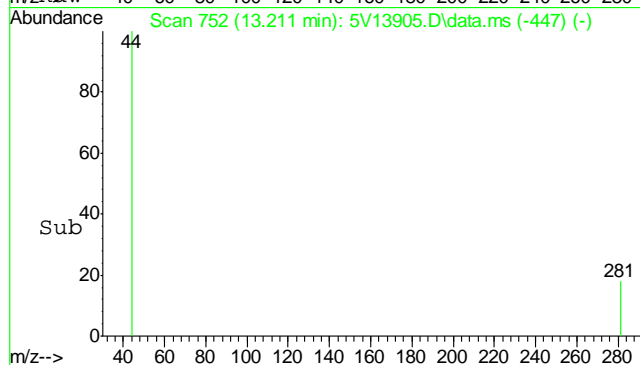
Quant Time: Mar 15 17:33:04 2011
Quant Method : C:\msdchem\1\METHODS\V5hs1817tvh817Soil.M
Quant Title : 8260
QLast Update : Mon Mar 14 09:29:14 2011
Response via : Initial Calibration





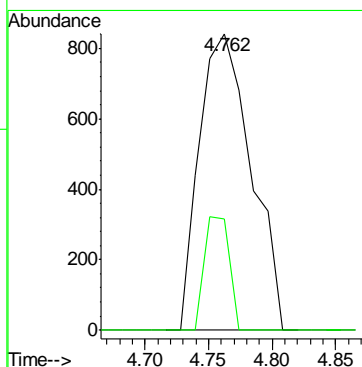
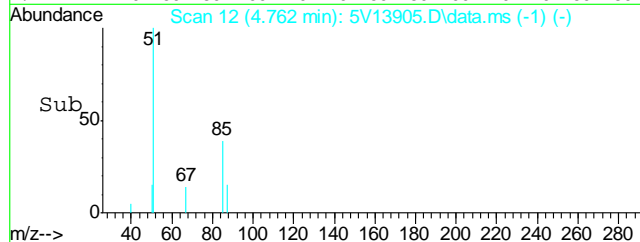
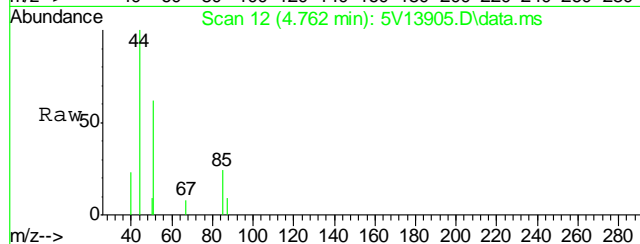
#1
TVH-Gasoline
Concen: 0.44 ug/l m
RT: 13.210 min Scan# 752
Delta R.T. 0.000 min
Lab File: 5V13905.D
Acq: 14 Mar 2011 10:15 am

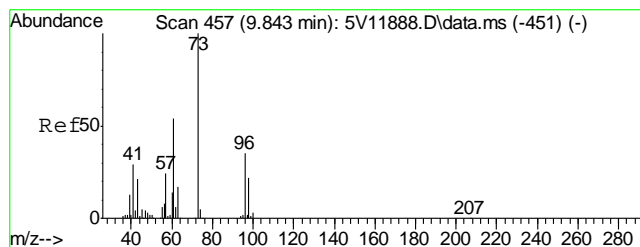
Tgt Ion:TIC Resp: 11223



#3
Dichlorodifluoromethane
Concen: 0.28 ug/l
RT: 4.762 min Scan# 12
Delta R.T. 0.000 min
Lab File: 5V13905.D
Acq: 14 Mar 2011 10:15 am

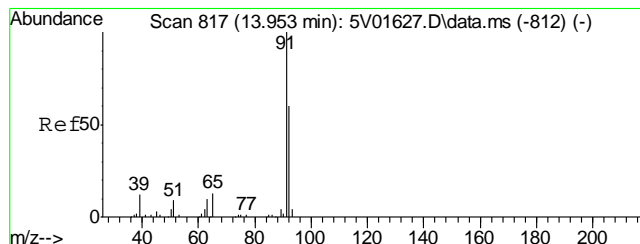
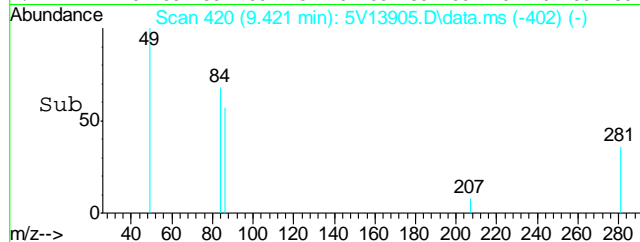
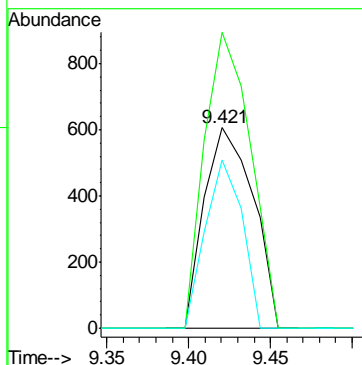
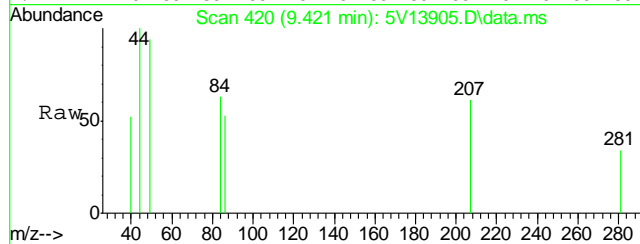
Tgt Ion: 85 Resp: 2374
Ion Ratio Lower Upper
85 100
87 18.4 12.1 52.1





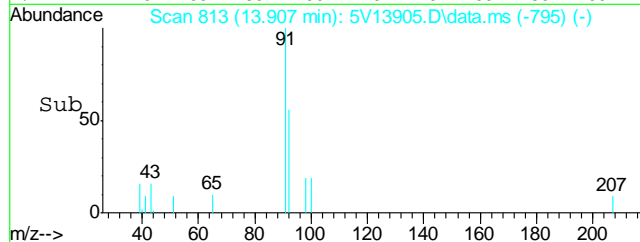
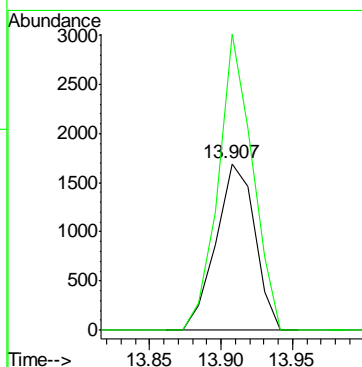
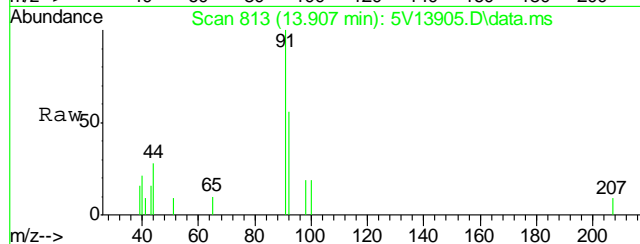
#15
Methylene Chloride
Concen: 0.28 ug/l
RT: 9.421 min Scan# 420
Delta R.T. 0.000 min
Lab File: 5V13905.D
Acq: 14 Mar 2011 10:15 am

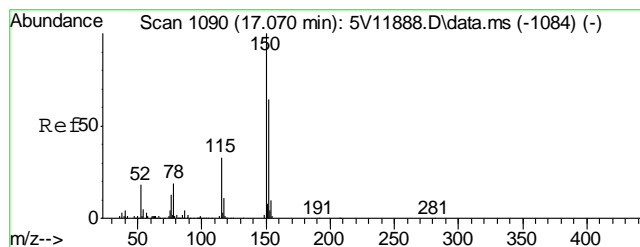
Tgt Ion: 84 Resp: 1265
Ion Ratio Lower Upper
84 100
49 138.8 112.1 152.1
86 63.0 44.1 84.1



#56
Toluene
Concen: 0.29 ug/l
RT: 13.907 min Scan# 813
Delta R.T. 0.000 min
Lab File: 5V13905.D
Acq: 14 Mar 2011 10:15 am

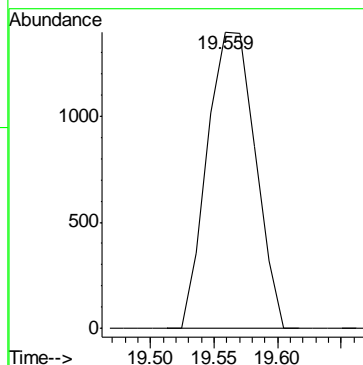
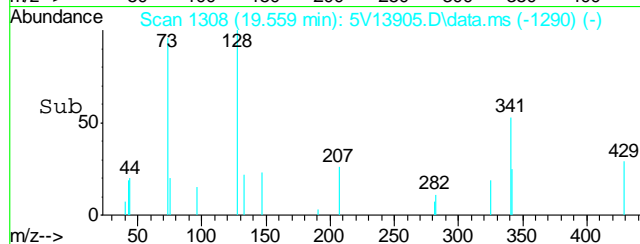
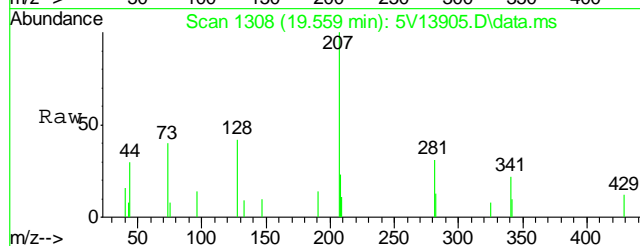
Tgt Ion: 92 Resp: 3194
Ion Ratio Lower Upper
92 100
91 156.1 146.4 186.4





#72
Naphthalene
Concen: 0.28 ug/l
RT: 19.559 min Scan# 1308
Delta R.T. 0.000 min
Lab File: 5V13905.D
Acq: 14 Mar 2011 10:15 am

Tgt Ion:128 Resp: 3654



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: D21712
Account: KRWCCOL KRW Consulting, Inc.
Project: 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP3293-MB	3G03215.D	1	03/15/11	TMB	03/11/11	OP3293	E3G117

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D21712-1

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	6.7	5.3	ug/kg	
208-96-8	Acenaphthylene	ND	6.7	6.0	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	
191-24-2	Benzo(g,h,i)perylene	ND	17	10	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	
90-12-0	1-Methylnaphthalene	ND	6.7	5.0	ug/kg	
91-57-6	2-Methylnaphthalene	ND	6.7	5.7	ug/kg	
91-20-3	Naphthalene	ND	6.7	6.3	ug/kg	
85-01-8	Phenanthrene	ND	6.7	4.7	ug/kg	
129-00-0	Pyrene	ND	6.7	6.3	ug/kg	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	47% 10-193%
321-60-8	2-Fluorobiphenyl	41% 20-138%
1718-51-0	Terphenyl-d14	55% 17-174%

Blank Spike Summary

Page 1 of 1

Job Number: D21712
Account: KRWCCOL KRW Consulting, Inc.
Project: 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP3293-BS	3G03216.D	1	03/15/11	TMB	03/11/11	OP3293	E3G117

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D21712-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	42.0	50	40-136
208-96-8	Acenaphthylene	83.3	41.6	50	42-139
120-12-7	Anthracene	83.3	49.5	59	40-141
56-55-3	Benzo(a)anthracene	83.3	57.4	69	38-143
50-32-8	Benzo(a)pyrene	83.3	55.8	67	39-145
205-99-2	Benzo(b)fluoranthene	83.3	59.7	72	38-151
191-24-2	Benzo(g,h,i)perylene	83.3	59.4	71	35-136
207-08-9	Benzo(k)fluoranthene	83.3	55.5	67	38-147
218-01-9	Chrysene	83.3	53.2	64	39-137
53-70-3	Dibenzo(a,h)anthracene	83.3	60.1	72	35-139
206-44-0	Fluoranthene	83.3	51.3	62	34-132
86-73-7	Fluorene	83.3	45.0	54	41-136
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	66.6	80	31-144
90-12-0	1-Methylnaphthalene	83.3	38.1	46	36-130
91-57-6	2-Methylnaphthalene	83.3	37.4	45	40-131
91-20-3	Naphthalene	83.3	38.9	47	36-130
85-01-8	Phenanthrene	83.3	44.8	54	40-135
129-00-0	Pyrene	83.3	54.9	66	29-157

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	42%	10-193%
321-60-8	2-Fluorobiphenyl	38%	20-138%
1718-51-0	Terphenyl-d14	53%	17-174%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D21712
Account: KRWCCOL KRW Consulting, Inc.
Project: 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP3293-MS	3G03224.D	2	03/16/11	TMB	03/11/11	OP3293	E3G117
OP3293-MSD	3G03227.D	2	03/16/11	TMB	03/11/11	OP3293	E3G117
D21712-1	3G03223.D	2	03/16/11	TMB	03/11/11	OP3293	E3G117

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D21712-1

CAS No.	Compound	D21712-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		103	82.7	81	70.8	69	16	20-151/30
208-96-8	Acenaphthylene	ND		103	68.5	67	62.0	60	10	23-156/30
120-12-7	Anthracene	ND		103	88.2	86	78.3	76	12	25-149/30
56-55-3	Benzo(a)anthracene	ND		103	85.8	84	75.2	73	13	22-157/30
50-32-8	Benzo(a)pyrene	ND		103	78.8	77	70.3	69	11	23-153/30
205-99-2	Benzo(b)fluoranthene	ND		103	84.7	83	75.5	74	11	22-161/30
191-24-2	Benzo(g,h,i)perylene	ND		103	102	99	90.6	88	12	20-158/30
207-08-9	Benzo(k)fluoranthene	ND		103	68.2	66	60.6	59	12	17-161/30
218-01-9	Chrysene	ND		103	80.7	79	70.7	69	13	16-159/30
53-70-3	Dibenzo(a,h)anthracene	ND		103	104	101	90.7	88	14	21-154/30
206-44-0	Fluoranthene	ND		103	89.3	87	79.4	77	12	16-140/30
86-73-7	Fluorene	46.2		103	133	85	113	65	16	15-153/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		103	108	105	95.0	93	13	21-159/30
90-12-0	1-Methylnaphthalene	47.3		103	142	92	100	51	35* a	10-148/30
91-57-6	2-Methylnaphthalene	94.4		103	216	118	135	40	46* a	10-181/30
91-20-3	Naphthalene	ND		103	61.4	60	53.1	52	14	10-176/30
85-01-8	Phenanthrene	28.6		103	111	80	89.7	60	21	22-152/30
129-00-0	Pyrene	ND		103	82.5	80	73.7	72	11	10-200/30

CAS No.	Surrogate Recoveries	MS	MSD	D21712-1	Limits
4165-60-0	Nitrobenzene-d5	63%	54%	47%	10-193%
321-60-8	2-Fluorobiphenyl	48%	43%	45%	20-138%
1718-51-0	Terphenyl-d14	57%	50%	56%	17-174%

(a) Outside control limits due to low ISTD recovery on MS.

GC/MS Semi-volatiles

Raw Data



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\031511\
 Data File : 3g03223.D
 Acq On : 16 Mar 2011 1:35 pm
 Operator : TamiB
 Sample : D21712-1,2x
 Misc : OP3293,E3G117,30.03,,,1,2
 ALS Vial : 18 Sample Multiplier: 1

Quant Time: Mar 16 14:41:08 2011
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G117.M
 Quant Title : PAHSIM BASE
 QLast Update : Wed Mar 16 10:29:44 2011
 Response via : Initial Calibration

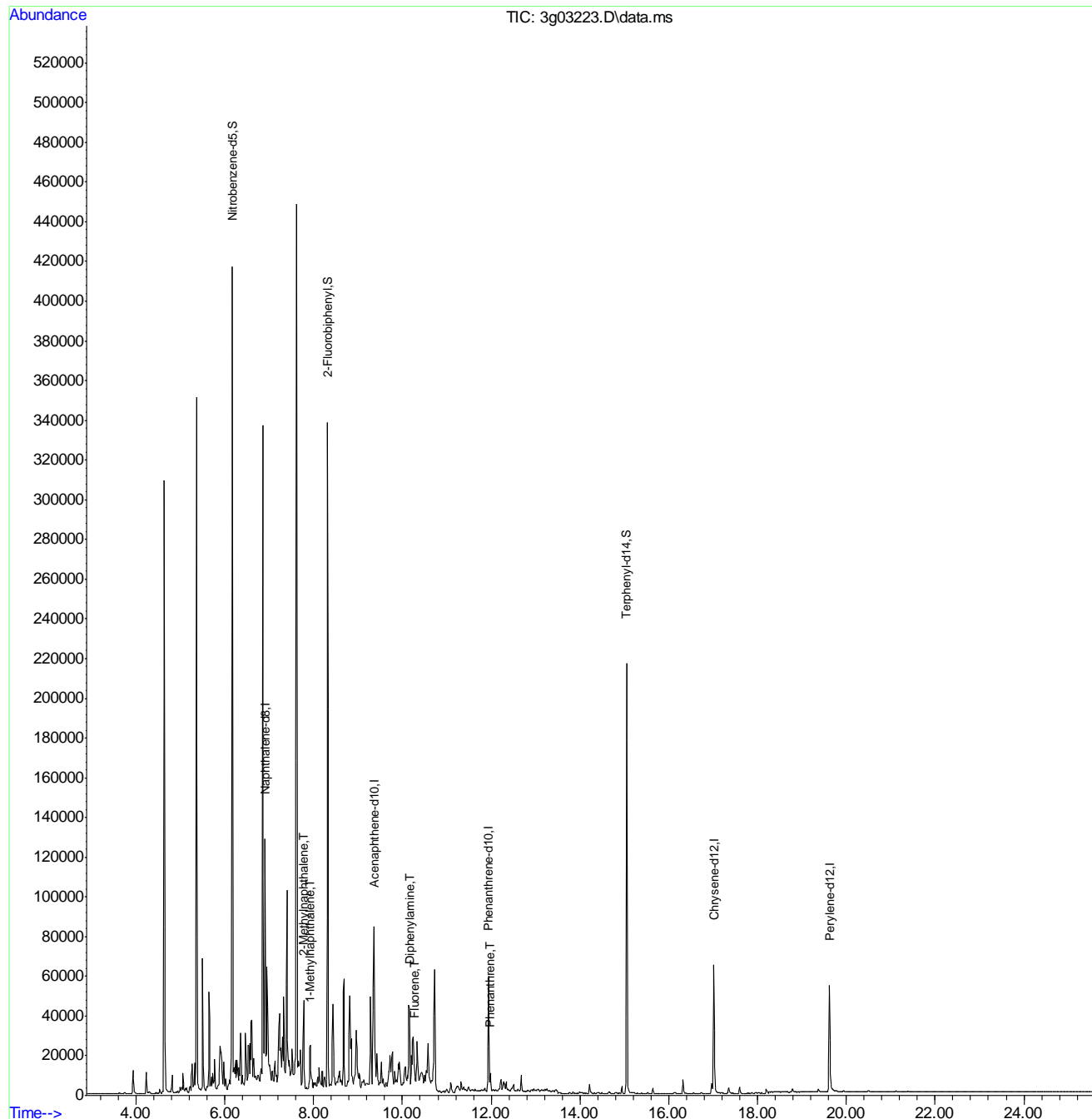
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	6.905	136	112523	4.00	ug/mL	0.00
6) Acenaphthene-d10	9.369	164	49941	4.00	ug/mL	0.01
14) Phenanthrene-d10	11.942	188	73803	4.00	ug/mL	0.00
18) Chrysene-d12	17.014	240	77573	4.00	ug/mL	0.00
23) Perylene-d12	19.624	264	83698	4.00	ug/mL	0.01
System Monitoring Compounds						
2) Nitrobenzene-d5	6.169	82	210366	11.86	ug/mL	0.00
7) 2-Fluorobiphenyl	8.318	172	287465	11.16	ug/mL	0.00
20) Terphenyl-d14	15.052	244	244515	14.01	ug/mL	0.00
Target Compounds						
					Qvalue	
3) N-Nitrosodimethylamine	0.000		0	N.D.	d	
4) N-Nitrosodi-propylamine	0.000		0	N.D.	d	
5) Naphthalene	0.000		0	N.D.	d	
8) 2-Methylnaphthalene	7.774	142	22707	1.15	ug/mL#	79
9) 1-Methylnaphthalene	7.916	142	10779	0.58	ug/mL#	54
10) Acenaphthylene	0.000		0	N.D.	d	
11) Acenaphthene	0.000		0	N.D.	d	
12) Fluorene	10.267	166	10819	0.56	ug/mL#	1
13) Diphenylamine	10.161	169	13751	0.88	ug/mL	78
15) Phenanthrene	11.981	178	8319	0.35	ug/mL	97
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	

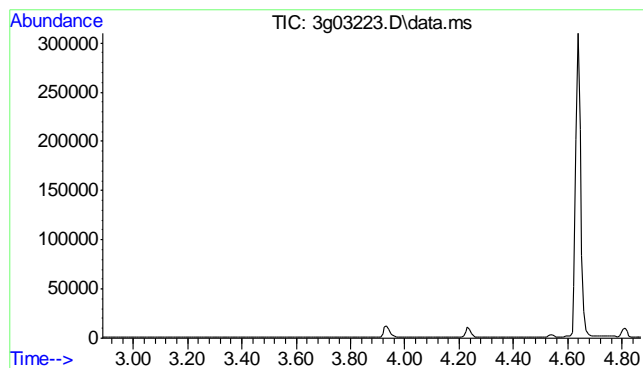
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\031511\
Data File : 3g03223.D
Acq On : 16 Mar 2011 1:35 pm
Operator : TamiB
Sample : D21712-1,2x
Misc : OP3293,E3G117,30.03,,,1,2
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Mar 16 14:41:08 2011
Quant Method : C:\msdchem\1\METHODS\SIMPE3G117.M
Quant Title : PAHSIM BASE
QLast Update : Wed Mar 16 10:29:44 2011
Response via : Initial Calibration

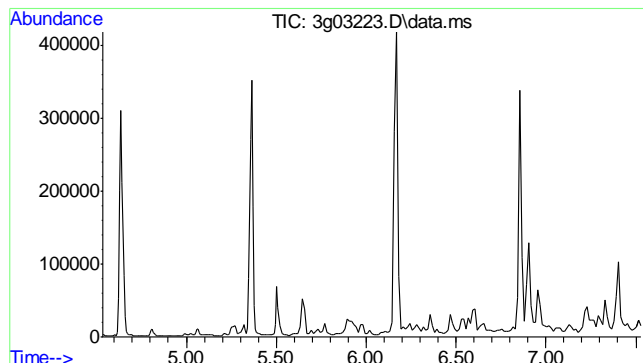
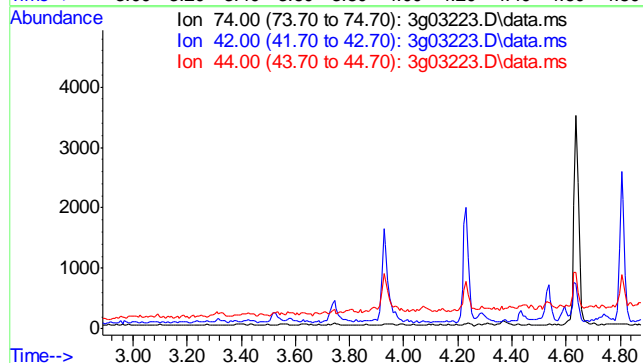




#3
 N-Nitrosodimethylamine
 Concen: N.D. ug/mL
 Expected RT: 3.37 min

 Lab File: 3g03223.D
 Acq: 16 Mar 11 1:35 pm

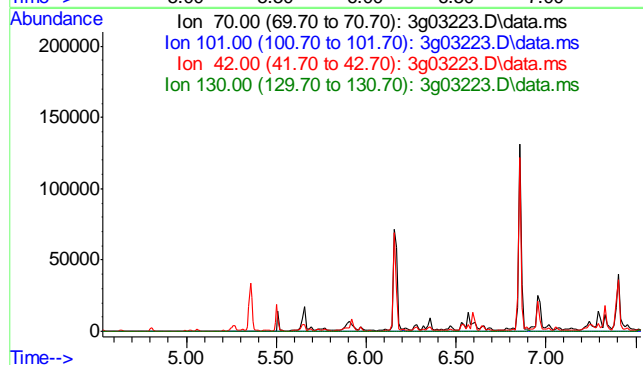
Tgt Ion	Exp Ratio
74	100
42	70.8
44	3.9

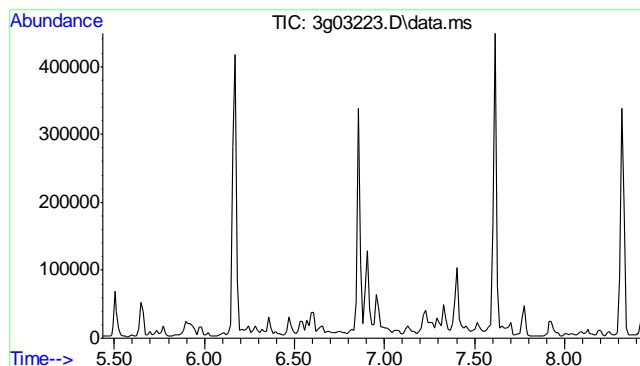


#4
 N-Nitrosodi-propylamine
 Concen: N.D. ug/mL
 Expected RT: 6.03 min

 Lab File: 3g03223.D
 Acq: 16 Mar 11 1:35 pm

Tgt Ion	Exp Ratio
70	100
101	11.8
42	43.7
130	19.9

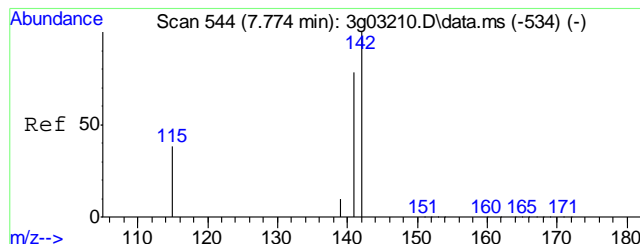
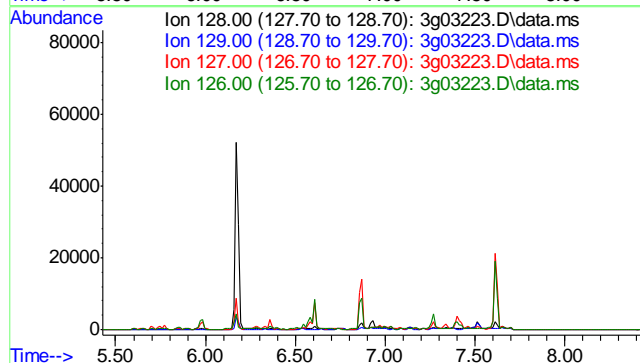




#5
Naphthalene
Concen: N.D. ug/mL
Expected RT: 6.93 min

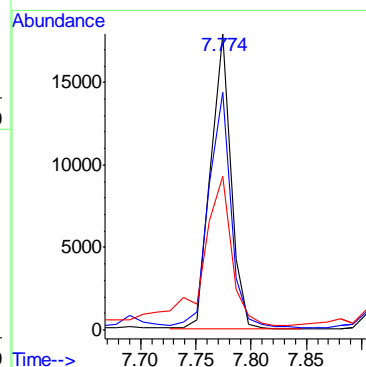
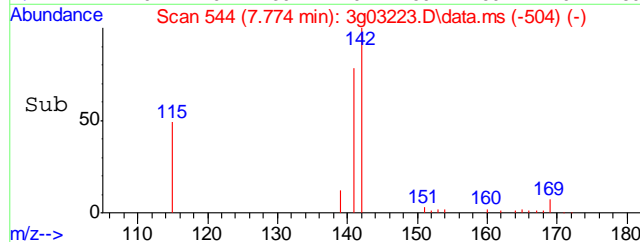
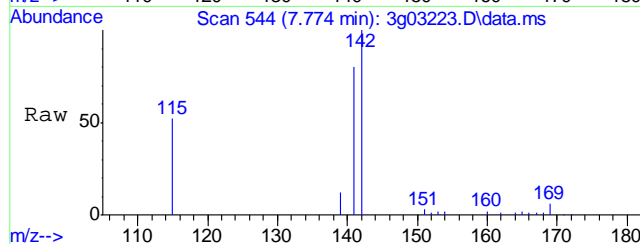
Lab File: 3g03223.D
Acq: 16 Mar 11 1:35 pm

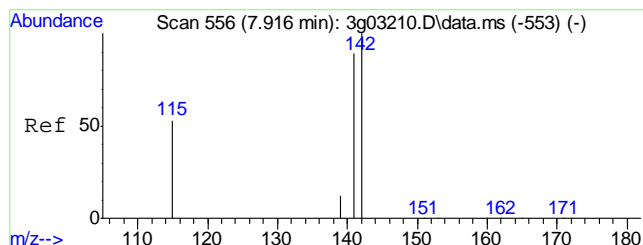
Tgt Ion: 128
Sig Exp Ratio
128 100
129 10.9
127 12.6
126 7.3



#8
2-Methylnaphthalene
Concen: 1.15 ug/mL
RT: 7.774 min Scan# 544
Delta R.T. 0.000 min
Lab File: 3g03223.D
Acq: 16 Mar 11 1:35 pm

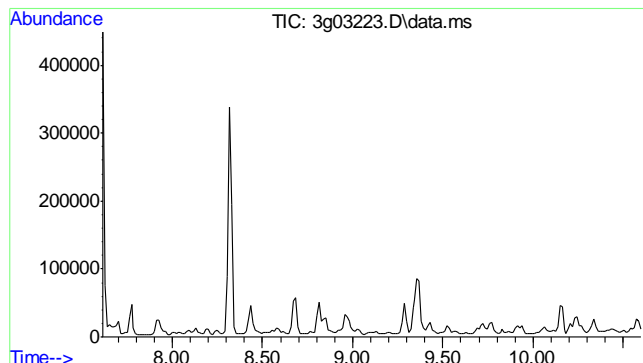
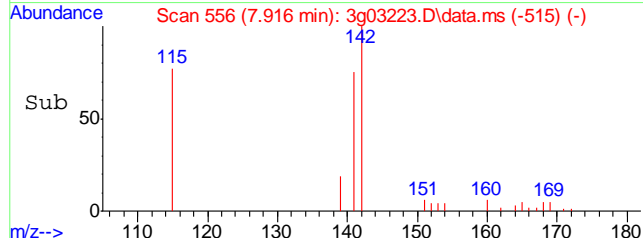
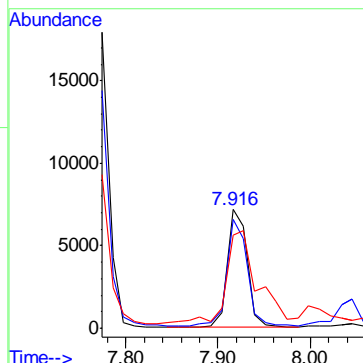
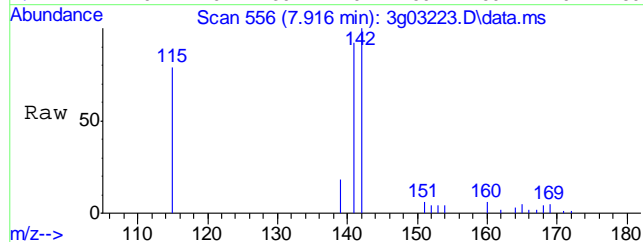
Tgt Ion: 142 Resp: 22707
Ion Ratio Lower Upper
142 100
141 87.1 60.8 100.8
115 74.3 24.6 64.6#





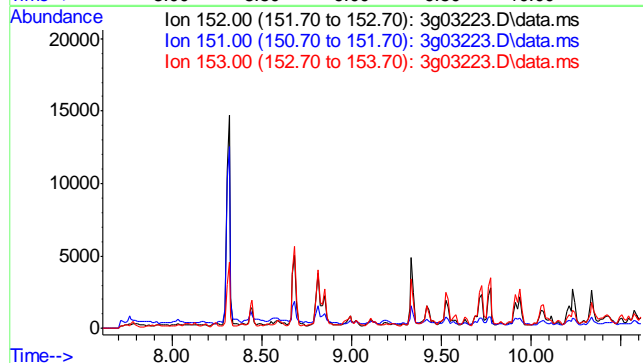
#9
1-Methylnaphthalene
Concen: 0.58 ug/mL
RT: 7.916 min Scan# 556
Delta R.T. 0.000 min
Lab File: 3g03223.D
Acq: 16 Mar 11 1:35 pm

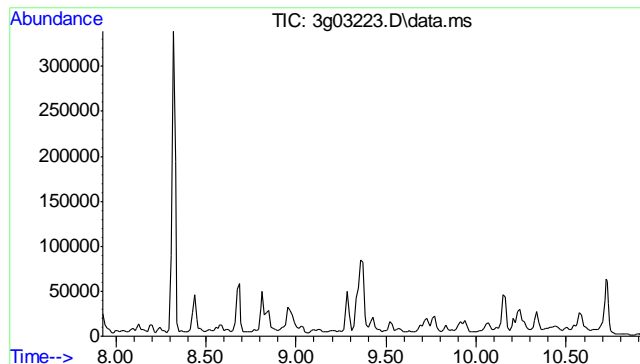
Tgt Ion:	142	Resp:	10779
Ion Ratio	Lower	Upper	
142	100		
141	93.2	68.2	102.4
115	123.1	38.2	57.2#



#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 9.11 min
Lab File: 3g03223.D
Acq: 16 Mar 11 1:35 pm

Tgt Ion:	152
Sig	Exp Ratio
152	100
151	19.2
153	13.1

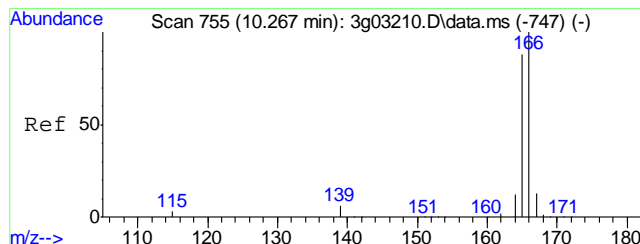
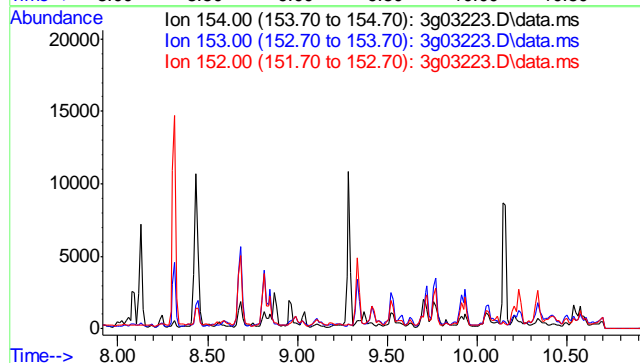




#11
Acenaphthene
Concen: N.D. ug/mL
Expected RT: 9.42 min

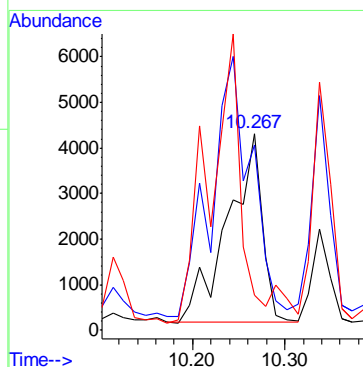
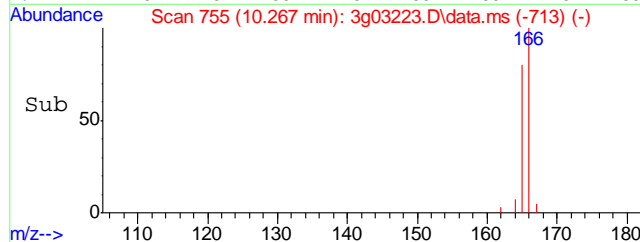
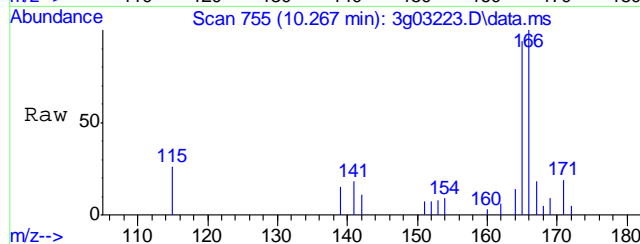
Lab File: 3g03223.D
Acq: 16 Mar 11 1:35 pm

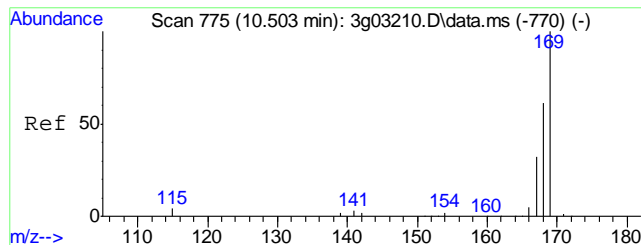
Tgt Ion: 154
Sig Exp Ratio
154 100
153 112.7
152 53.4



#12
Fluorene
Concen: 0.56 ug/mL
RT: 10.267 min Scan# 755
Delta R.T. 0.000 min
Lab File: 3g03223.D
Acq: 16 Mar 11 1:35 pm

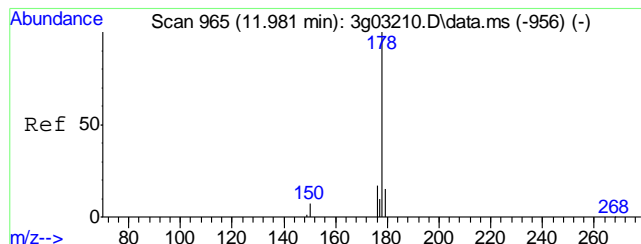
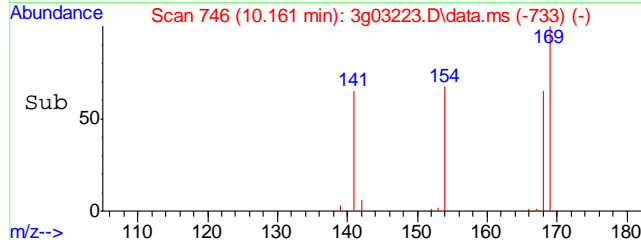
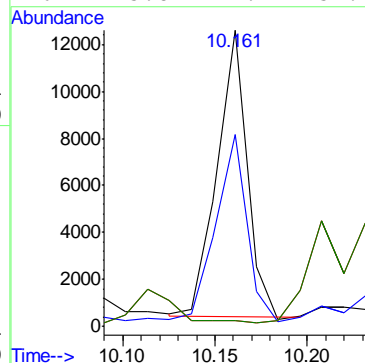
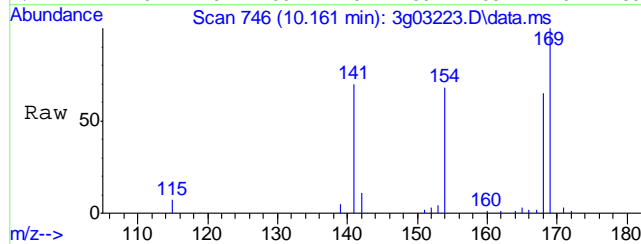
Tgt Ion: 166 Resp: 10819
Ion Ratio Lower Upper
166 100
165 160.1 69.2 109.2#
167 143.5 0.0 33.3#





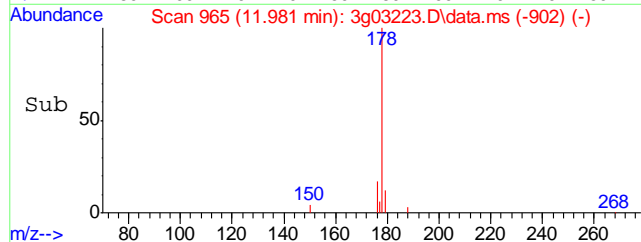
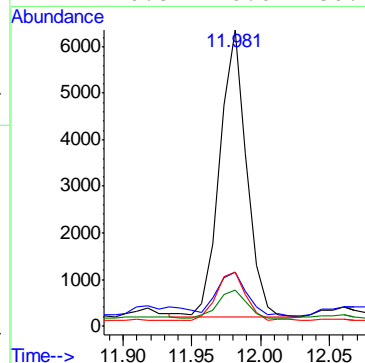
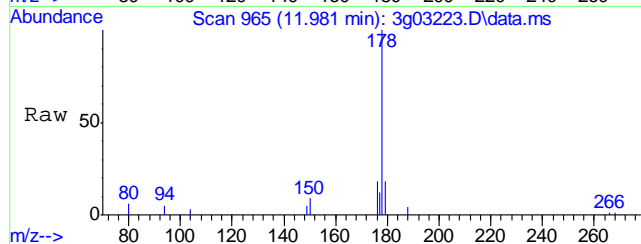
#13
Diphenylamine
Concen: 0.88 ug/mL
RT: 10.161 min Scan# 746
Delta R.T. -0.343 min
Lab File: 3g03223.D
Acq: 16 Mar 11 1:35 pm

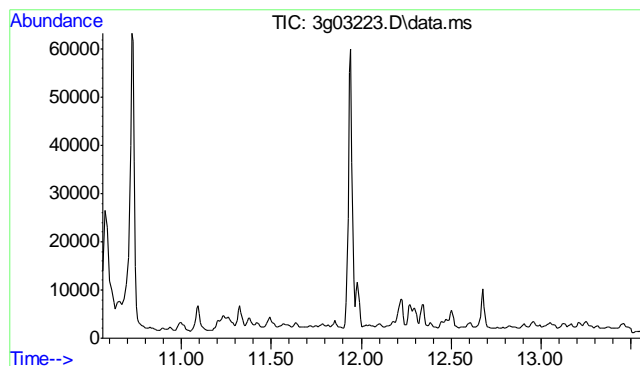
Tgt Ion: 169	Resp: 13751
Ion Ratio	Lower Upper
169 100	
168 70.5	40.3 80.3
167 15.8	12.1 52.1
167 15.8	12.1 52.1



#15
Phenanthrene
Concen: 0.35 ug/mL
RT: 11.981 min Scan# 965
Delta R.T. 0.000 min
Lab File: 3g03223.D
Acq: 16 Mar 11 1:35 pm

Tgt Ion: 178	Resp: 8319
Ion Ratio	Lower Upper
178 100	
179 16.9	0.0 35.1
176 19.4	0.0 38.4
177 10.5	0.0 30.2

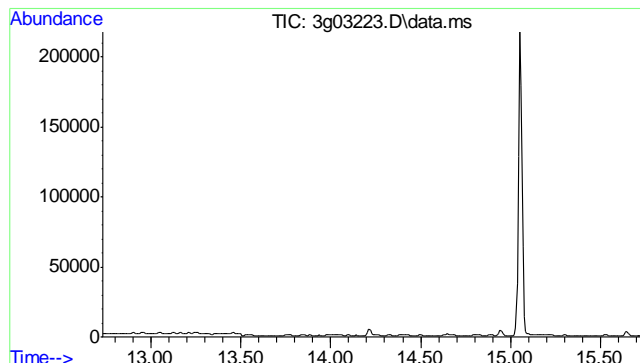
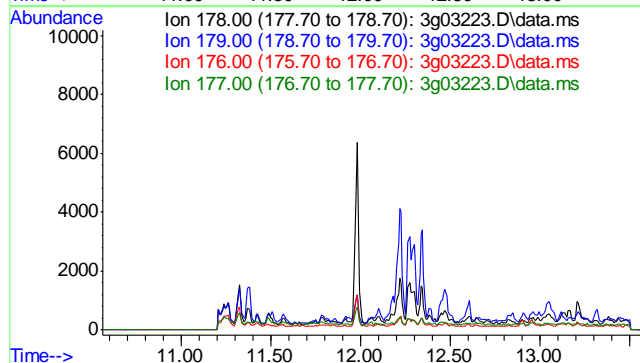




#16
 Anthracene
 Concen: N.D. ug/mL
 Expected RT: 12.06 min

 Lab File: 3g03223.D
 Acq: 16 Mar 11 1:35 pm

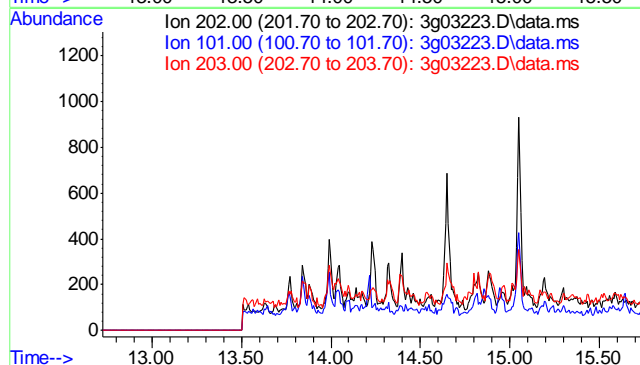
Tgt Ion	Exp Ratio
178	100
179	15.2
176	17.7
177	8.7

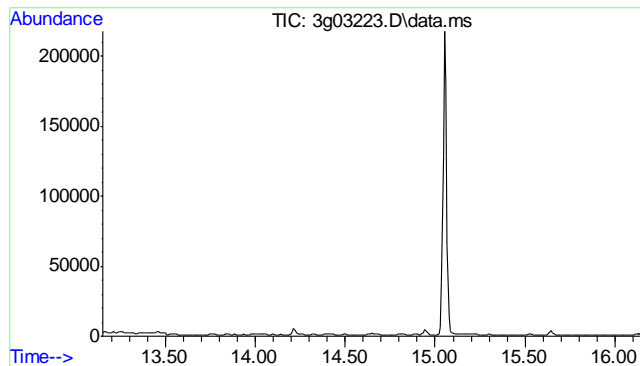


#17
 Fluoranthene
 Concen: N.D. ug/mL
 Expected RT: 14.23 min

 Lab File: 3g03223.D
 Acq: 16 Mar 11 1:35 pm

Tgt Ion	Exp Ratio
202	100
101	10.7
203	17.3

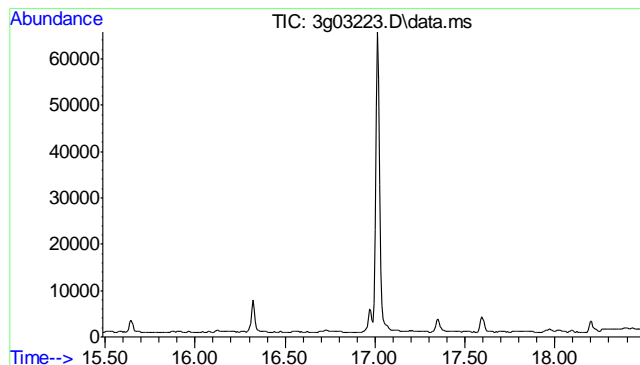
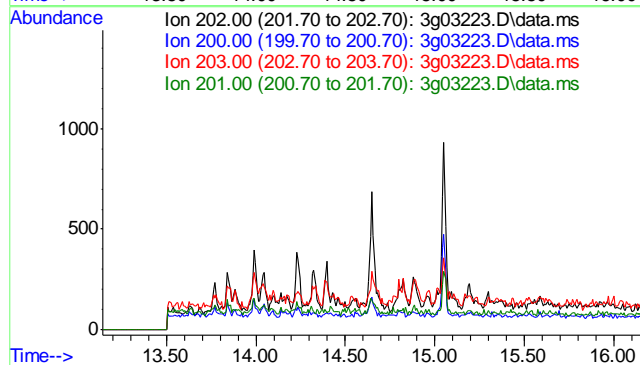




#19
 Pyrene
 Concen: N.D. ug/mL
 Expected RT: 14.65 min

 Lab File: 3g03223.D
 Acq: 16 Mar 11 1:35 pm

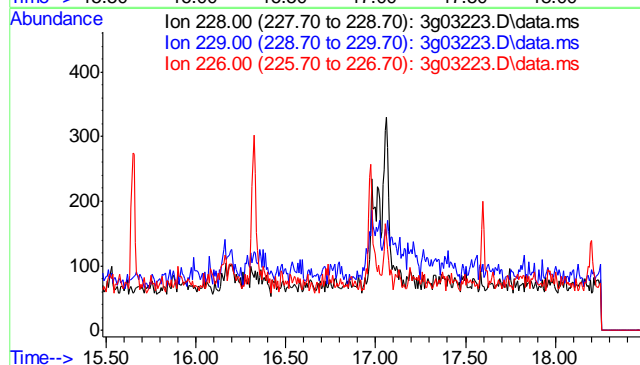
Tgt Ion	Exp Ratio
202	100
200	20.2
203	17.5
201	16.6

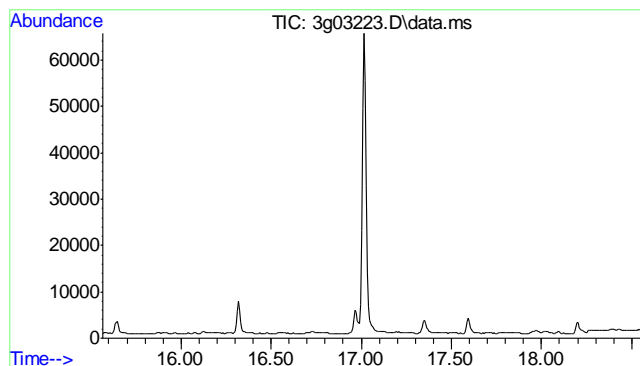


#21
 Benzo(a)anthracene
 Concen: N.D. ug/mL
 Expected RT: 16.98 min

 Lab File: 3g03223.D
 Acq: 16 Mar 11 1:35 pm

Tgt Ion	Exp Ratio
228	100
229	19.6
226	25.8

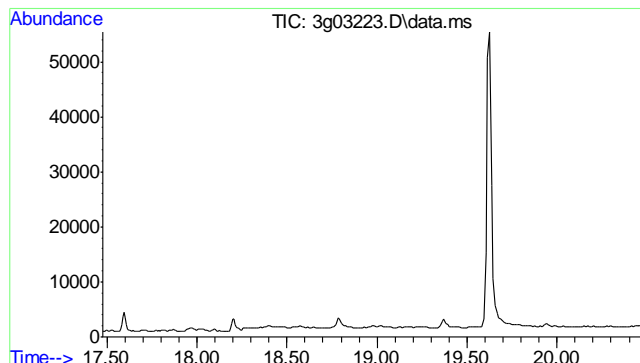
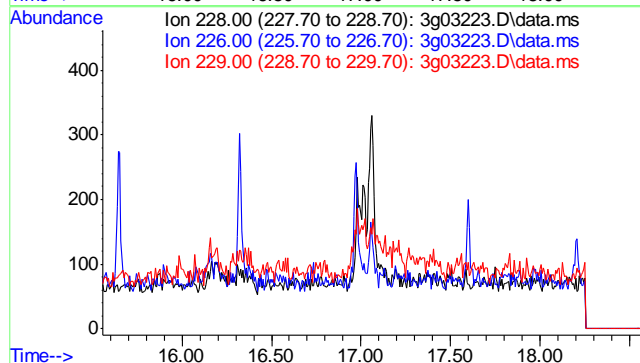




#22
 Chrysene
 Concen: N.D. ug/mL
 Expected RT: 17.06 min

 Lab File: 3g03223.D
 Acq: 16 Mar 11 1:35 pm

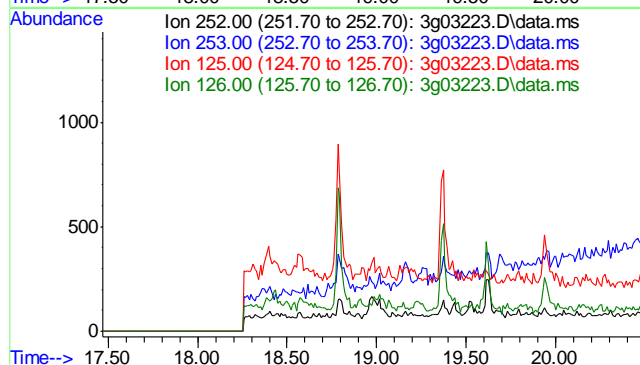
Tgt Ion	Exp Ratio
228	100
226	28.0
229	19.1

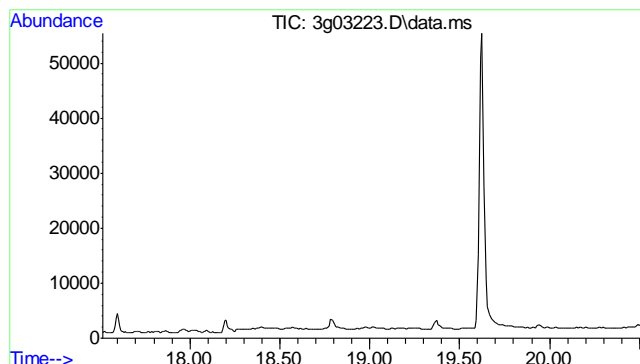


#24
 Benzo(b)fluoranthene
 Concen: N.D. ug/mL
 Expected RT: 18.97 min

 Lab File: 3g03223.D
 Acq: 16 Mar 11 1:35 pm

Tgt Ion	Exp Ratio
252	100
253	21.4
125	8.0
126	9.4

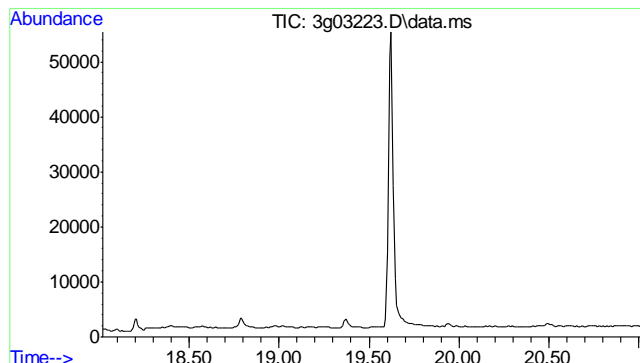
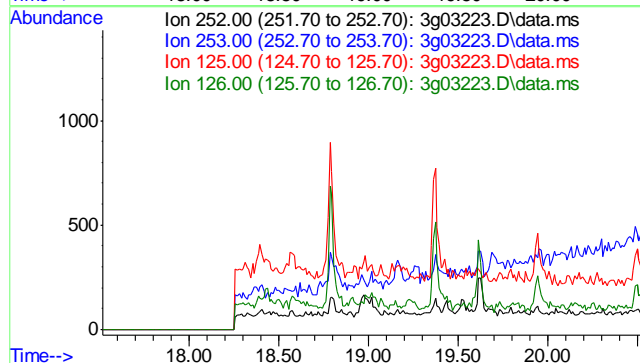




#25
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 19.01 min

Lab File: 3g03223.D
Acq: 16 Mar 11 1:35 pm

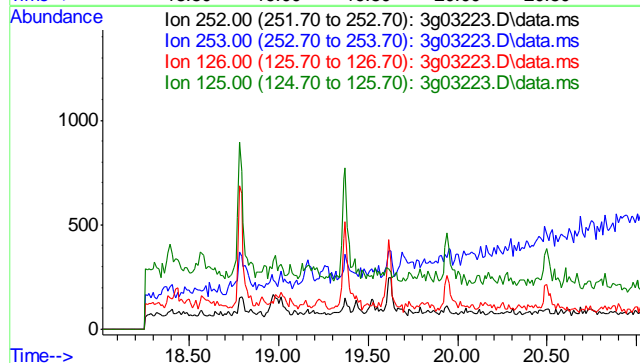
Tgt Ion	Exp Ratio
252	100
253	21.0
125	6.7
126	8.7

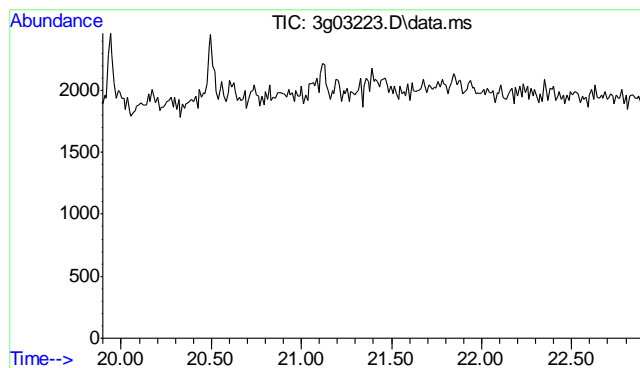


#26
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 19.52 min

Lab File: 3g03223.D
Acq: 16 Mar 11 1:35 pm

Tgt Ion	Exp Ratio
252	100
253	21.9
126	9.0
125	7.4

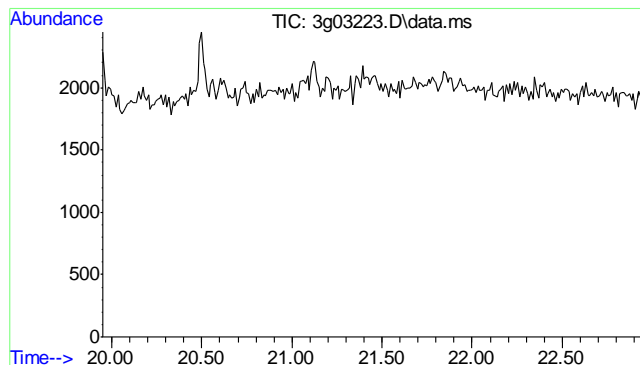
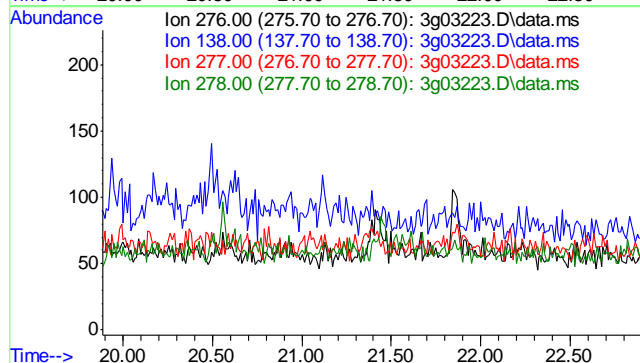




#27
 Indeno(1,2,3-cd)pyrene
 Concen: N.D. ug/mL
 Expected RT: 21.39 min

 Lab File: 3g03223.D
 Acq: 16 Mar 11 1:35 pm

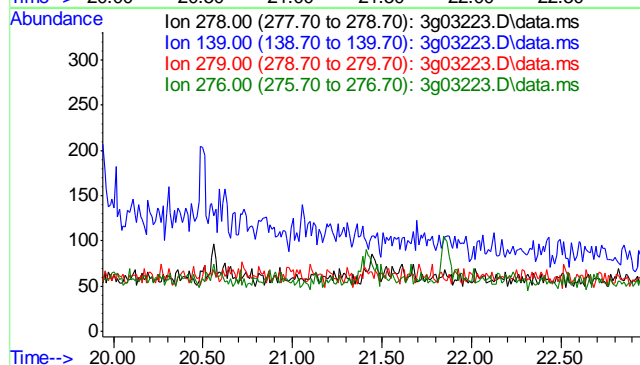
Tgt Ion	Exp Ratio
276	100
138	13.1
277	40.3
278	133.5

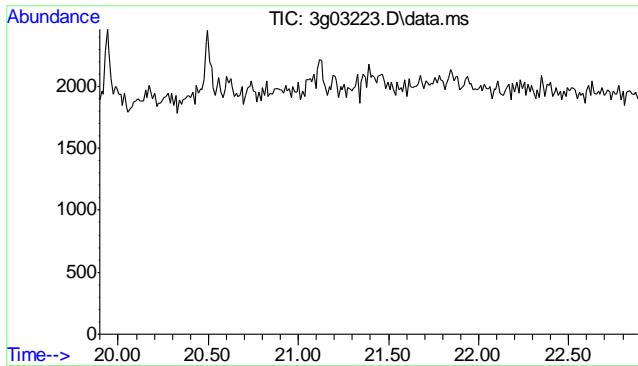


#28
 Dibenzo(a,h)anthracene
 Concen: N.D. ug/mL
 Expected RT: 21.44 min

 Lab File: 3g03223.D
 Acq: 16 Mar 11 1:35 pm

Tgt Ion	Exp Ratio
278	100
139	10.7
279	22.8
276	123.6

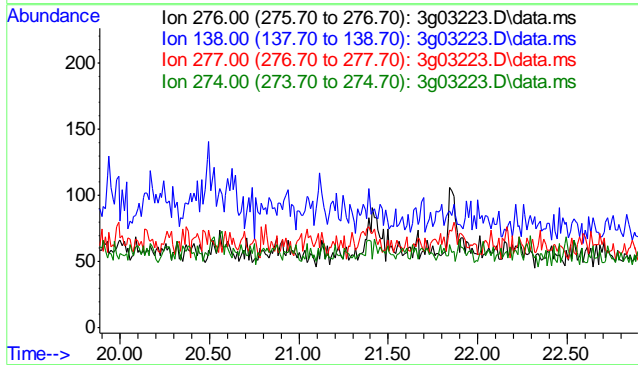




#29
Benzo(g,h,i)perylene
Concen: N.D. ug/mL
Expected RT: 21.39 min

Lab File: 3g03223.D
Acq: 16 Mar 11 1:35 pm

Tgt Ion:	276
Sig	Exp Ratio
276	100
138	7.9
277	24.4
274	21.3



8.1.1

8

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\031511\
 Data File : 3g03215.D
 Acq On : 15 Mar 2011 8:24 pm
 Operator : TamiB
 Sample : OP3293-MB
 Misc : OP3293,E3G117,30,,,1,1
 ALS Vial : 11 Sample Multiplier: 1

Quant Time: Mar 16 10:34:42 2011
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G117.M
 Quant Title : PAHSIM BASE
 QLast Update : Wed Mar 16 10:29:44 2011
 Response via : Initial Calibration

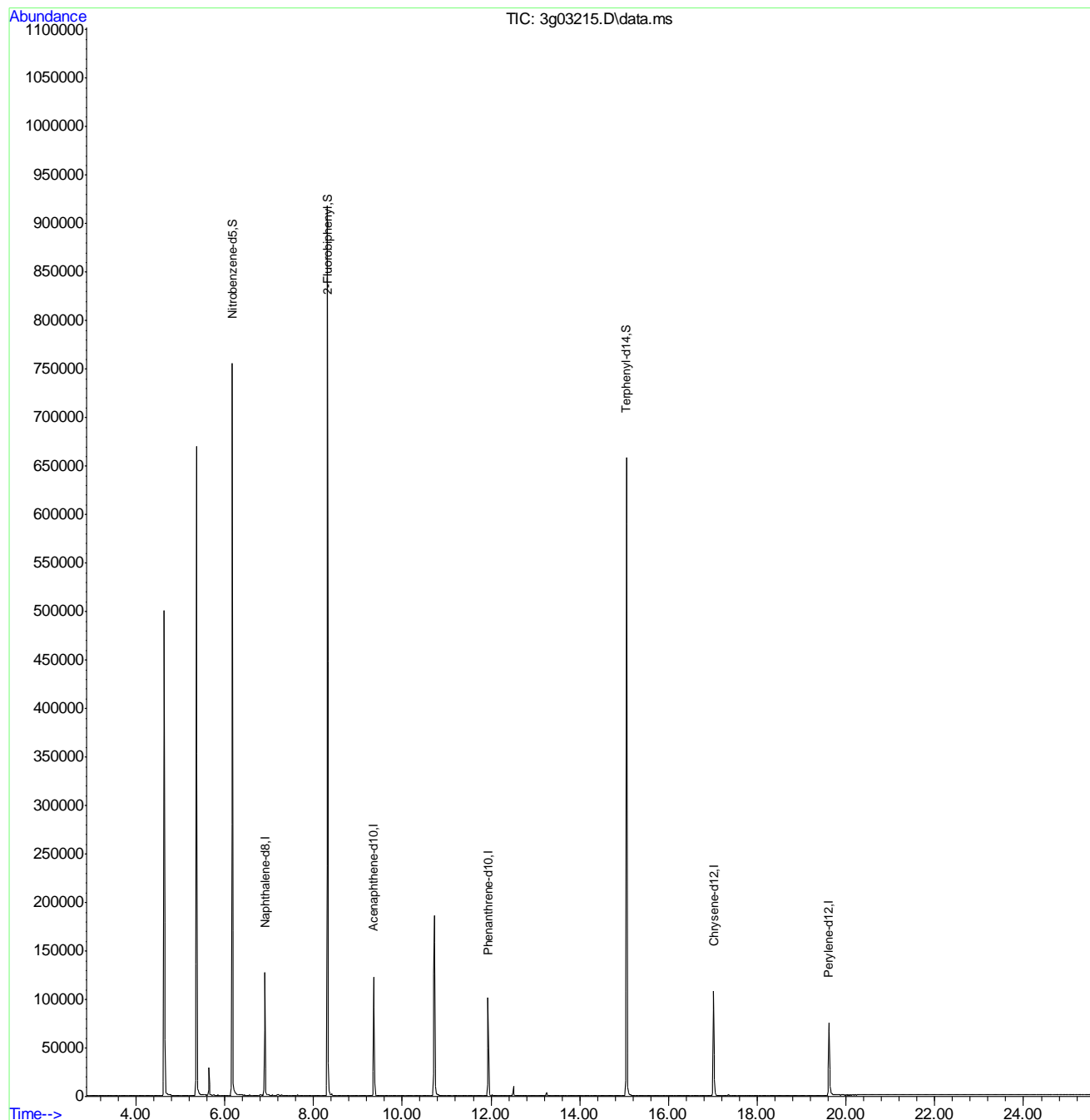
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	6.905	136	120622	4.00	ug/mL	0.00
6) Acenaphthene-d10	9.357	164	72231	4.00	ug/mL	0.00
14) Phenanthrene-d10	11.942	188	130186	4.00	ug/mL	0.00
18) Chrysene-d12	17.014	240	125247	4.00	ug/mL	0.00
23) Perylene-d12	19.614	264	111456	4.00	ug/mL	0.00
System Monitoring Compounds						
2) Nitrobenzene-d5	6.169	82	449976	23.67	ug/mL	0.00
7) 2-Fluorobiphenyl	8.318	172	761255	20.43	ug/mL	0.00
20) Terphenyl-d14	15.052	244	779755	27.67	ug/mL	0.00
Target Compounds						
					Qvalue	
3) N-Nitrosodimethylamine	0.000		0	N.D.	d	
4) N-Nitrosodi-propylamine	0.000		0	N.D.	d	
5) Naphthalene	0.000		0	N.D.	d	
8) 2-Methylnaphthalene	0.000		0	N.D.	d	
9) 1-Methylnaphthalene	0.000		0	N.D.	d	
10) Acenaphthylene	0.000		0	N.D.	d	
11) Acenaphthene	0.000		0	N.D.	d	
12) Fluorene	0.000		0	N.D.	d	
13) Diphenylamine	0.000		0	N.D.	d	
15) Phenanthrene	0.000		0	N.D.	d	
16) Anthracene	0.000		0	N.D.	d	
17) Fluoranthene	0.000		0	N.D.	d	
19) Pyrene	0.000		0	N.D.	d	
21) Benzo(a)anthracene	0.000		0	N.D.	d	
22) Chrysene	0.000		0	N.D.	d	
24) Benzo(b)fluoranthene	18.972	252	81	Below Cal	#	1
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	

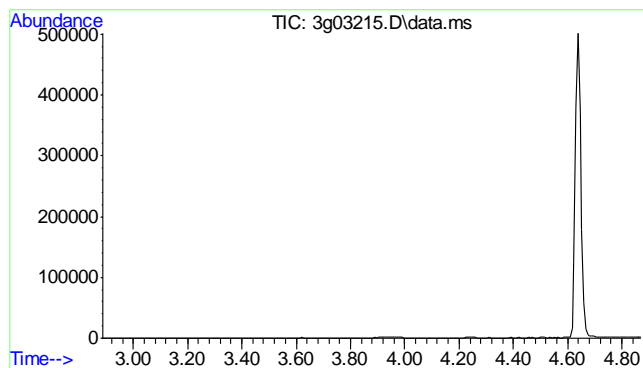
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\031511\
Data File : 3g03215.D
Acq On : 15 Mar 2011 8:24 pm
Operator : TamiB
Sample : OP3293-MB
Misc : OP3293,E3G117,30,,,1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Mar 16 10:34:42 2011
Quant Method : C:\msdchem\1\METHODS\SIMPE3G117.M
Quant Title : PAHSIM BASE
QLast Update : Wed Mar 16 10:29:44 2011
Response via : Initial Calibration

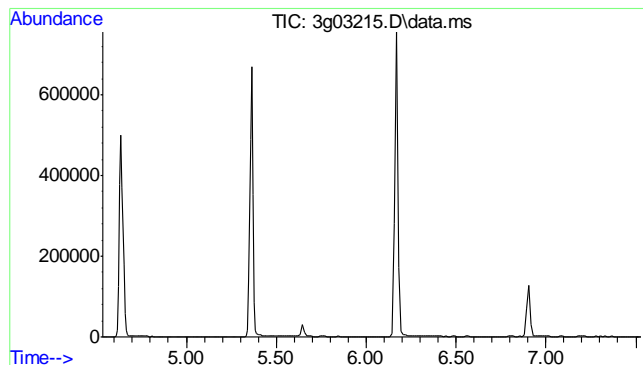
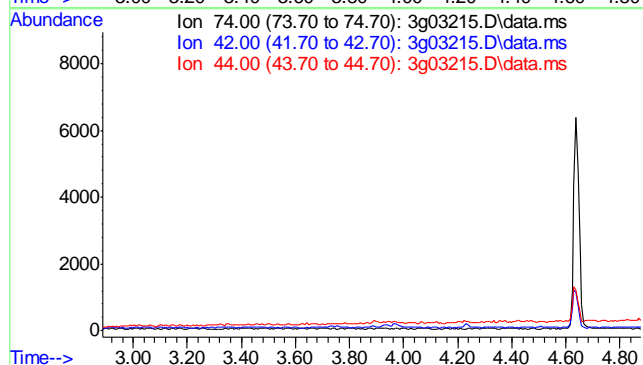




#3
N-Nitrosodimethylamine
Concen: N.D. ug/mL
Expected RT: 3.37 min

Lab File: 3g03215.D
Acq: 15 Mar 11 8:24 pm

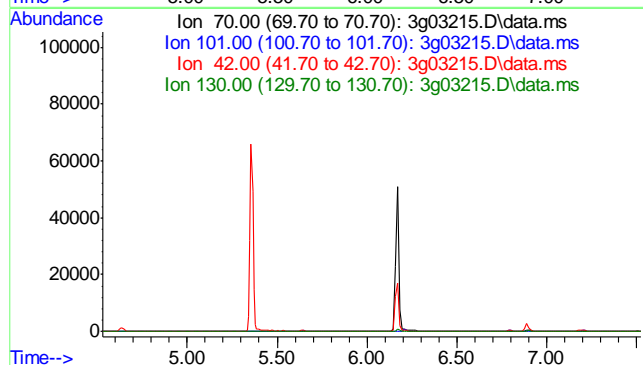
Tgt Ion:	74
Sig	Exp Ratio
74	100
42	70.8
44	3.9

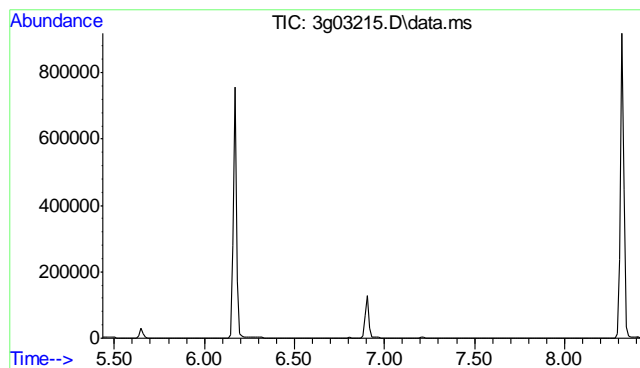


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 6.03 min

Lab File: 3g03215.D
Acq: 15 Mar 11 8:24 pm

Tgt Ion:	70
Sig	Exp Ratio
70	100
101	11.8
42	43.7
130	19.9

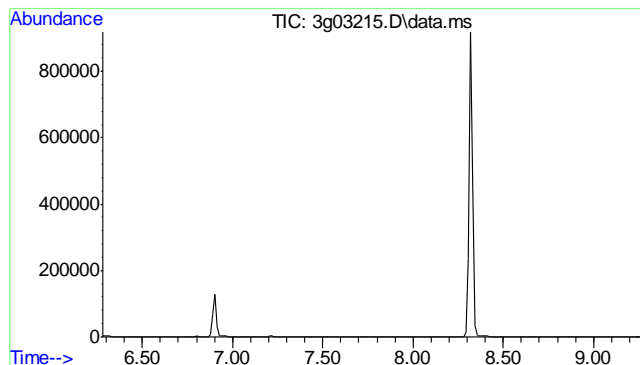
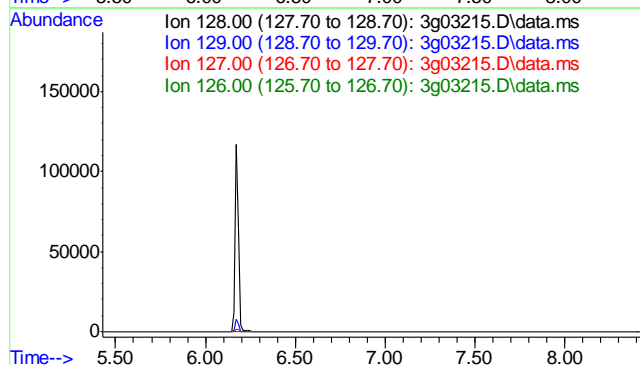




#5
Naphthalene
Concen: N.D. ug/mL
Expected RT: 6.93 min

Lab File: 3g03215.D
Acq: 15 Mar 11 8:24 pm

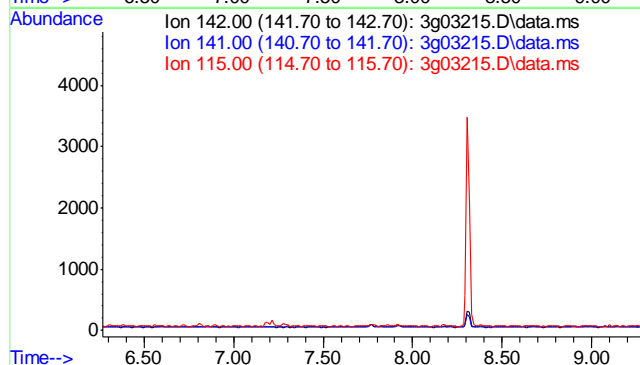
Tgt Ion:	128
Sig	Exp Ratio
128	100
129	10.9
127	12.6
126	7.3

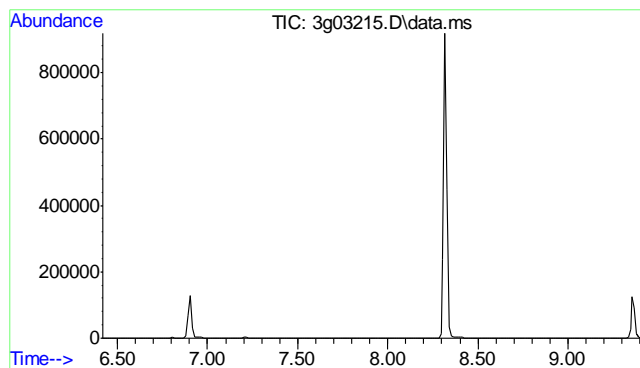


#8
2-Methylnaphthalene
Concen: N.D. ug/mL
Expected RT: 7.77 min

Lab File: 3g03215.D
Acq: 15 Mar 11 8:24 pm

Tgt Ion:	142
Sig	Exp Ratio
142	100
141	80.8
115	44.6

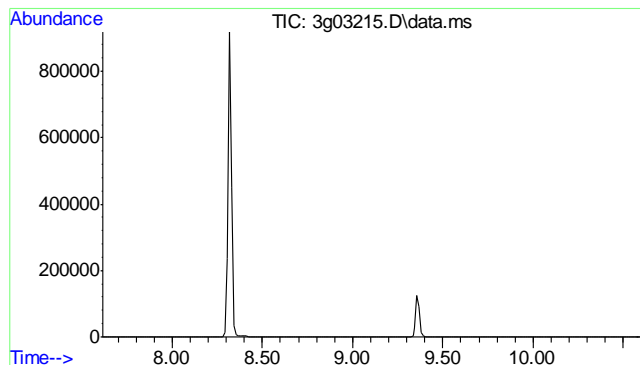
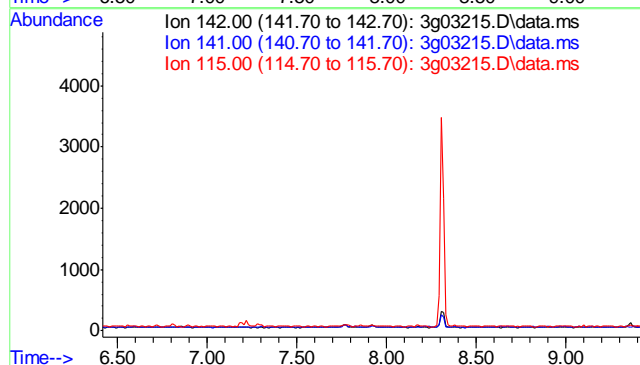




#9
1-Methylnaphthalene
Concen: N.D. ug/mL
Expected RT: 7.92 min

Lab File: 3g03215.D
Acq: 15 Mar 11 8:24 pm

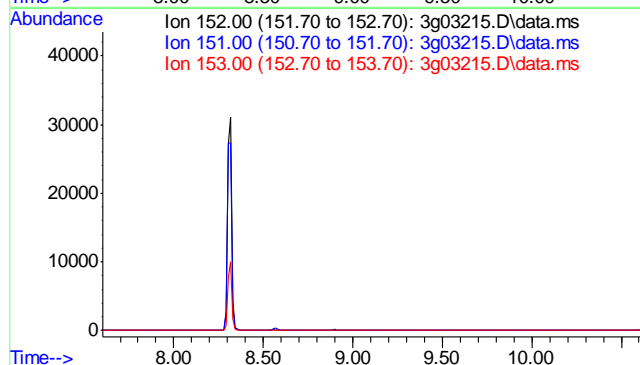
Tgt Ion: 142
Sig Exp Ratio
142 100
141 85.3
115 47.7

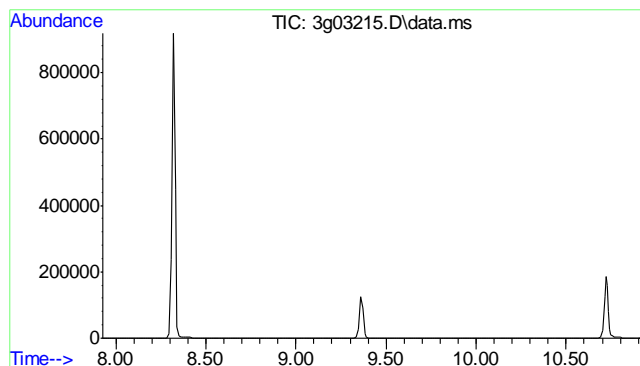


#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 9.11 min

Lab File: 3g03215.D
Acq: 15 Mar 11 8:24 pm

Tgt Ion: 152
Sig Exp Ratio
152 100
151 19.2
153 13.1

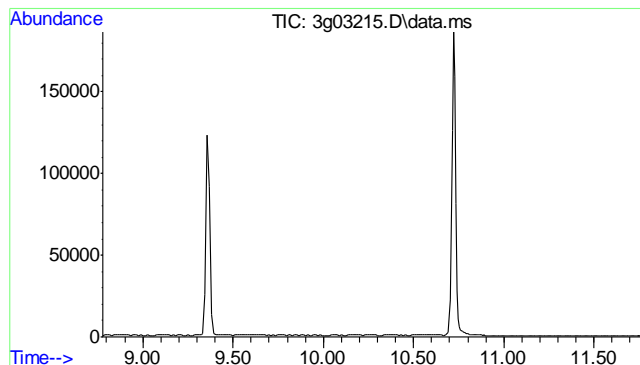
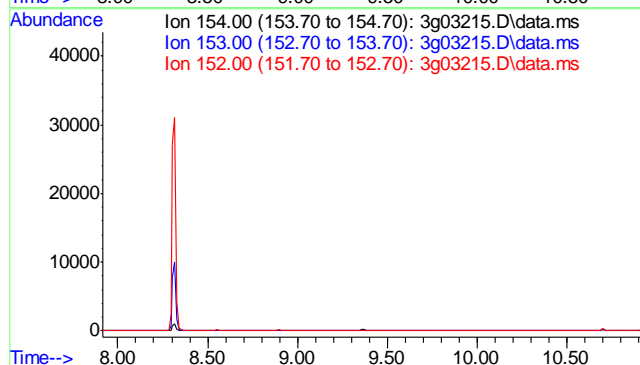




#11
Acenaphthene
Concen: N.D. ug/mL
Expected RT: 9.42 min

Lab File: 3g03215.D
Acq: 15 Mar 11 8:24 pm

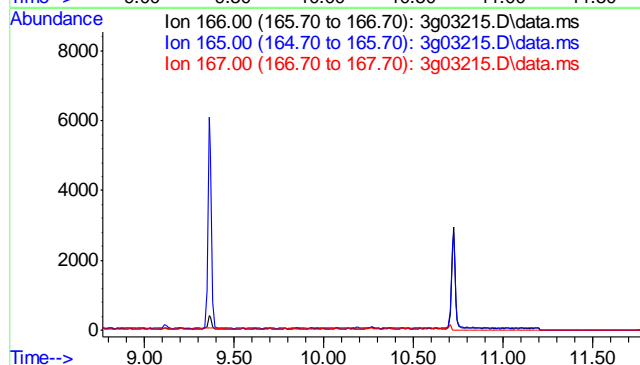
Tgt Ion: 154
Sig Exp Ratio
154 100
153 112.7
152 53.4

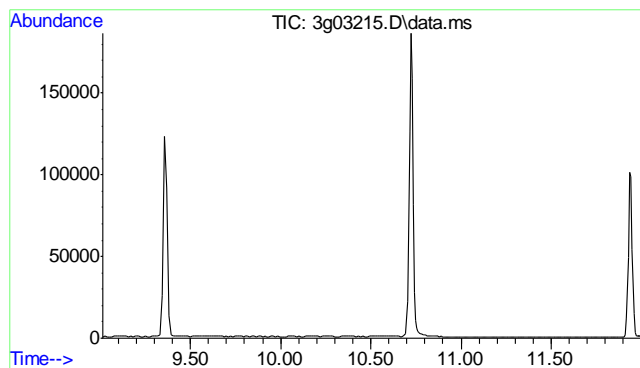


#12
Fluorene
Concen: N.D. ug/mL
Expected RT: 10.27 min

Lab File: 3g03215.D
Acq: 15 Mar 11 8:24 pm

Tgt Ion: 166
Sig Exp Ratio
166 100
165 89.2
167 13.3

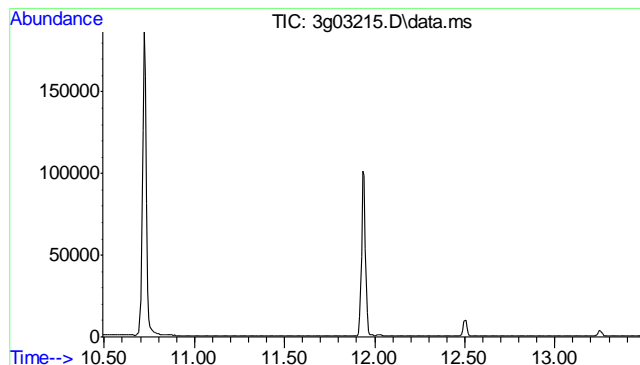
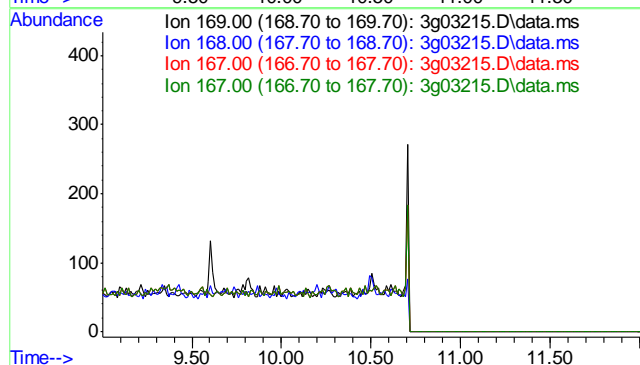




#13
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 10.50 min

Lab File: 3g03215.D
Acq: 15 Mar 11 8:24 pm

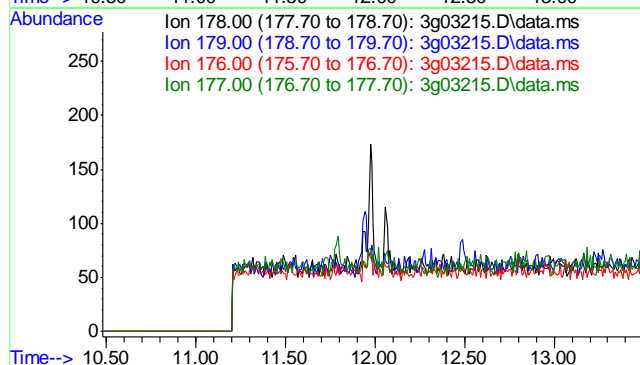
Tgt Ion: 169
Sig Exp Ratio
169 100
168 60.3
167 32.1
167 32.1

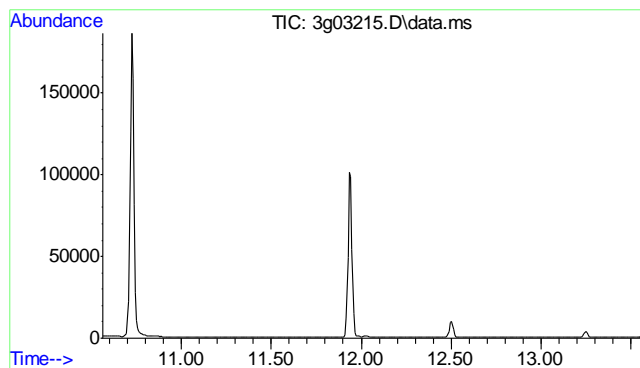


#15
Phenanthrene
Concen: N.D. ug/mL
Expected RT: 11.98 min

Lab File: 3g03215.D
Acq: 15 Mar 11 8:24 pm

Tgt Ion: 178
Sig Exp Ratio
178 100
179 15.1
176 18.4
177 10.2

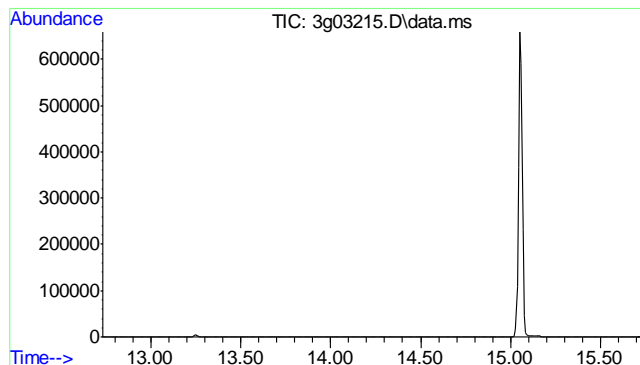
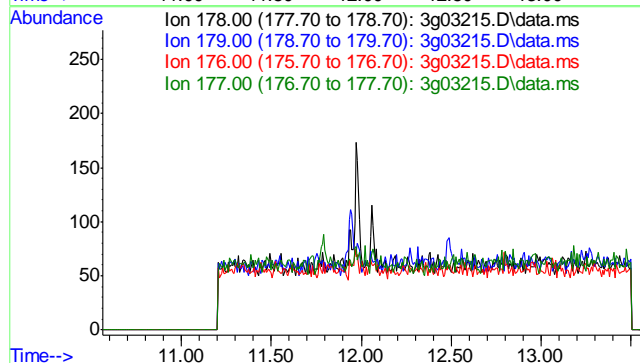




#16
Anthracene
Concen: N.D. ug/mL
Expected RT: 12.06 min

Lab File: 3g03215.D
Acq: 15 Mar 11 8:24 pm

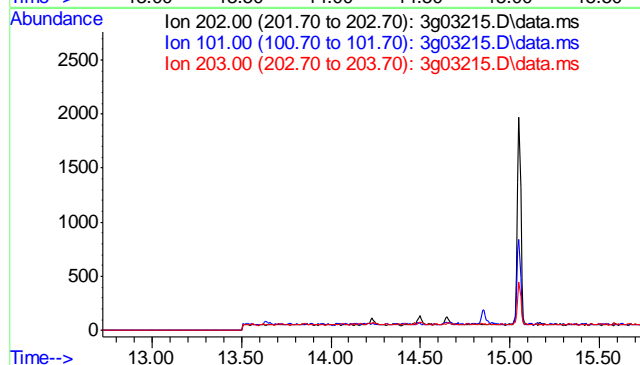
Tgt Ion:	178
Sig	Exp Ratio
178	100
179	15.2
176	17.7
177	8.7

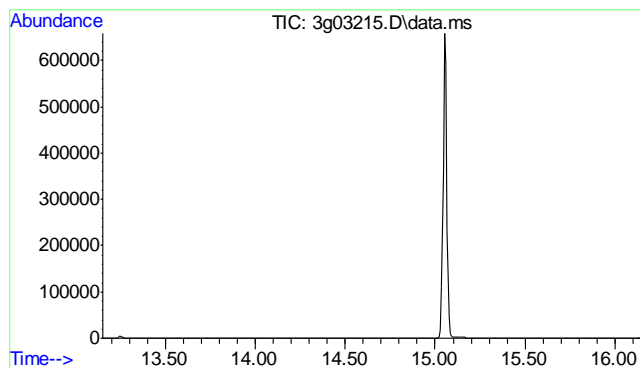


#17
Fluoranthene
Concen: N.D. ug/mL
Expected RT: 14.23 min

Lab File: 3g03215.D
Acq: 15 Mar 11 8:24 pm

Tgt Ion:	202
Sig	Exp Ratio
202	100
101	10.7
203	17.3



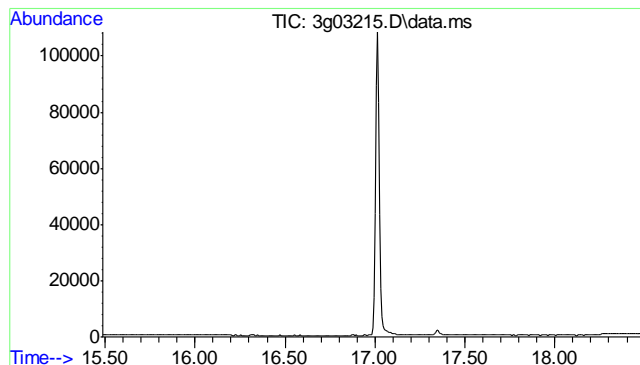
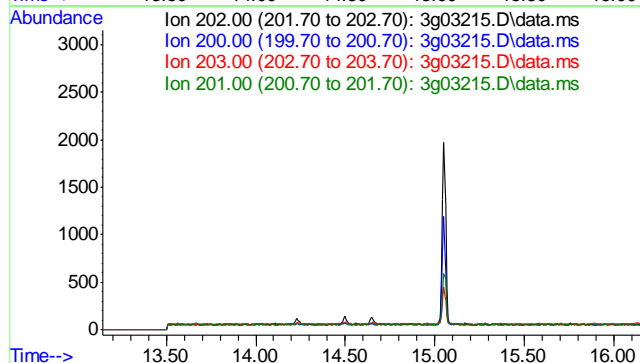


#19
Pyrene
Concen: N.D. ug/mL
Expected RT: 14.65 min

Lab File: 3g03215.D
Acq: 15 Mar 11 8:24 pm

Tgt Ion: 202

Sig	Exp Ratio
202	100
200	20.2
203	17.5
201	16.6

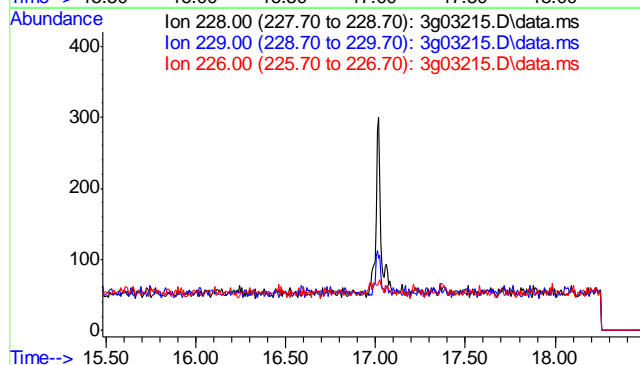


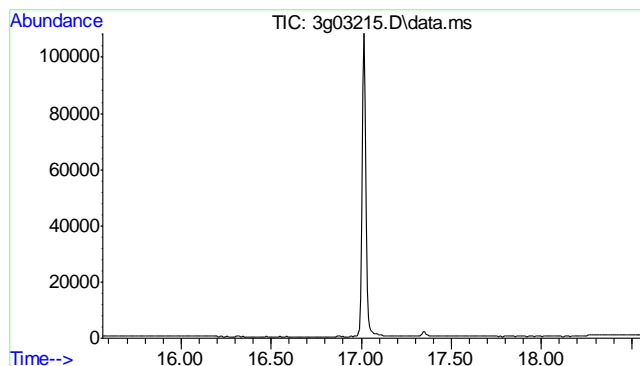
#21
Benzo(a)anthracene
Concen: N.D. ug/mL
Expected RT: 16.98 min

Lab File: 3g03215.D
Acq: 15 Mar 11 8:24 pm

Tgt Ion: 228

Sig	Exp Ratio
228	100
229	19.6
226	25.8

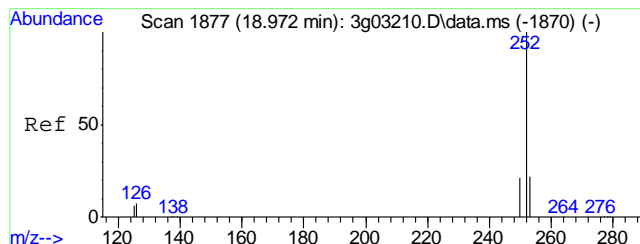
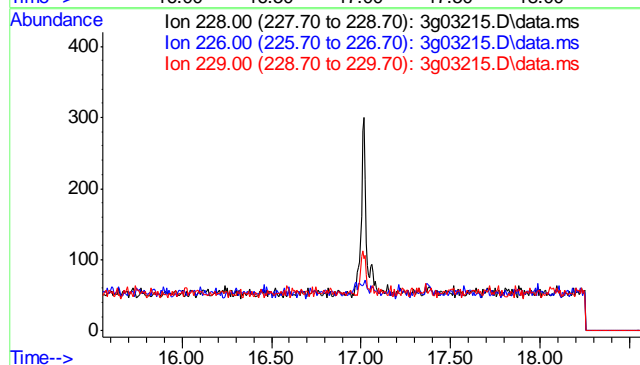




#22
Chrysene
Concen: N.D. ug/mL
Expected RT: 17.06 min

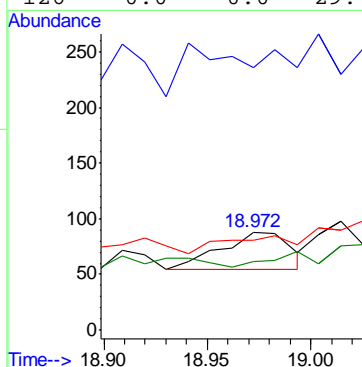
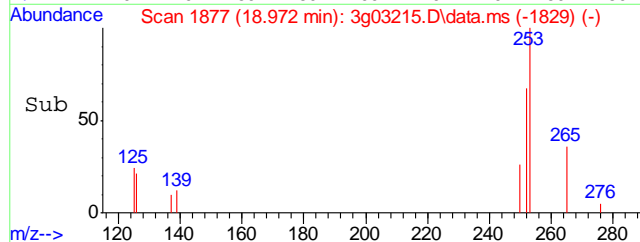
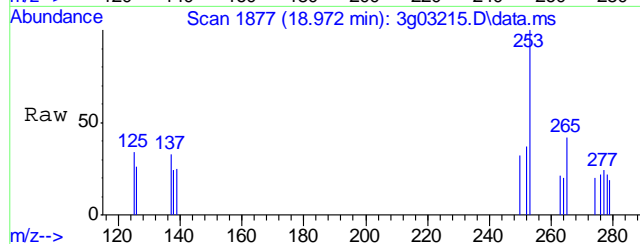
Lab File: 3g03215.D
Acq: 15 Mar 11 8:24 pm

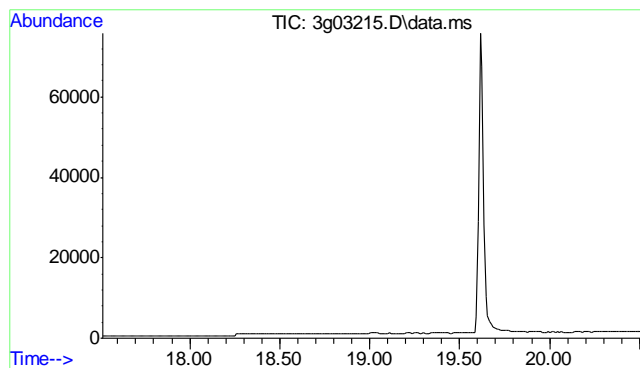
Tgt Ion	Exp Ratio
228	100
226	28.0
229	19.1



#24
Benzo(b)fluoranthene
Concen: Below ug/mL
RT: 18.972 min Scan# 1877
Delta R.T. 0.000 min
Lab File: 3g03215.D
Acq: 15 Mar 11 8:24 pm

Tgt Ion	Ratio	Lower	Upper
252	100		
253	111.1	1.4	41.4#
125	0.0	0.0	28.0
126	0.0	0.0	29.4

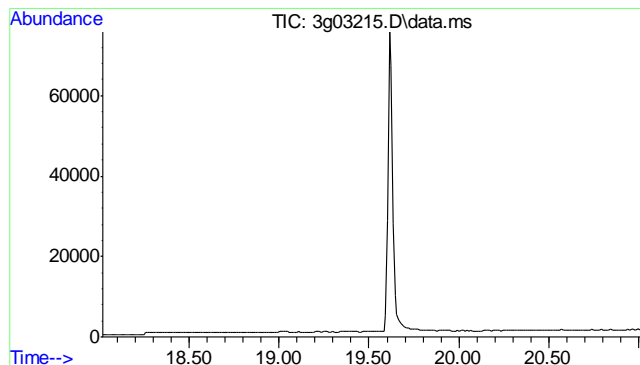
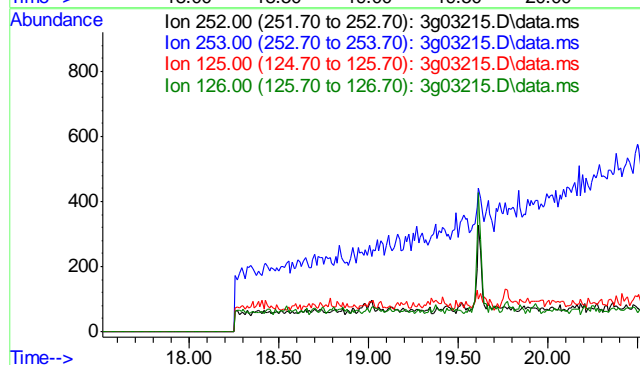




#25
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 19.01 min

Lab File: 3g03215.D
Acq: 15 Mar 11 8:24 pm

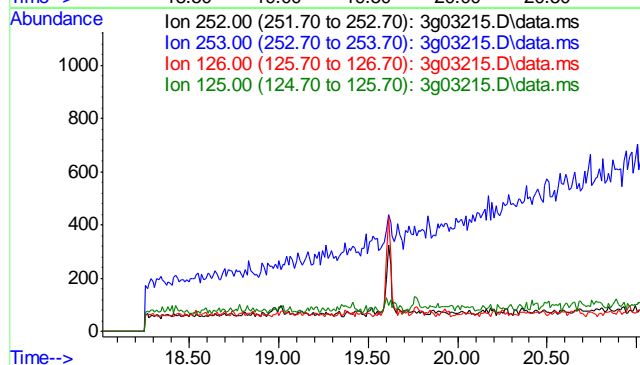
Tgt Ion:	252
Sig	Exp Ratio
252	100
253	21.0
125	6.7
126	8.7

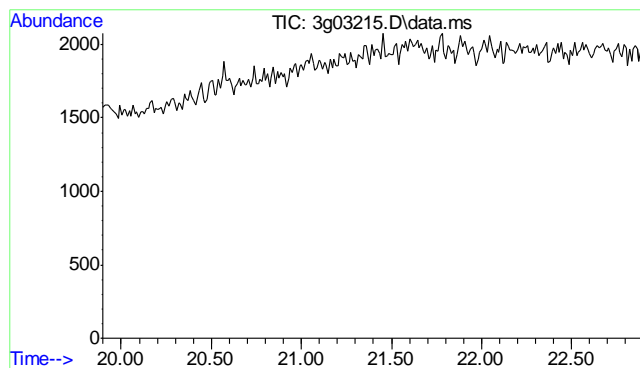


#26
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 19.52 min

Lab File: 3g03215.D
Acq: 15 Mar 11 8:24 pm

Tgt Ion:	252
Sig	Exp Ratio
252	100
253	21.9
126	9.0
125	7.4

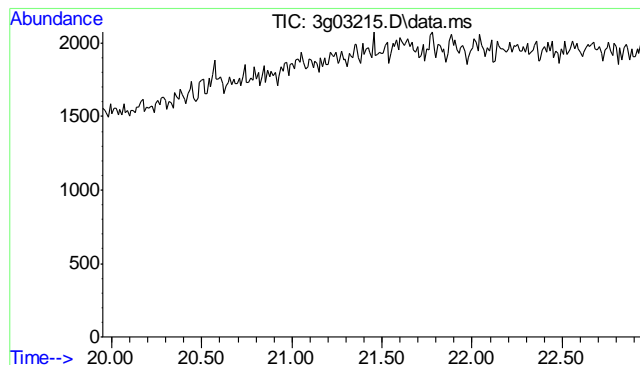
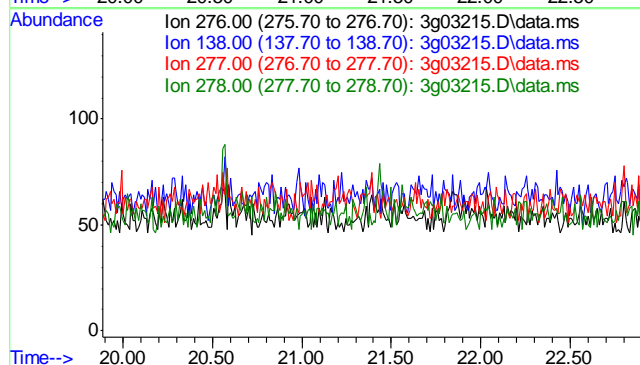




#27
Indeno(1,2,3-cd)pyrene
Concen: N.D. ug/mL
Expected RT: 21.39 min

Lab File: 3g03215.D
Acq: 15 Mar 11 8:24 pm

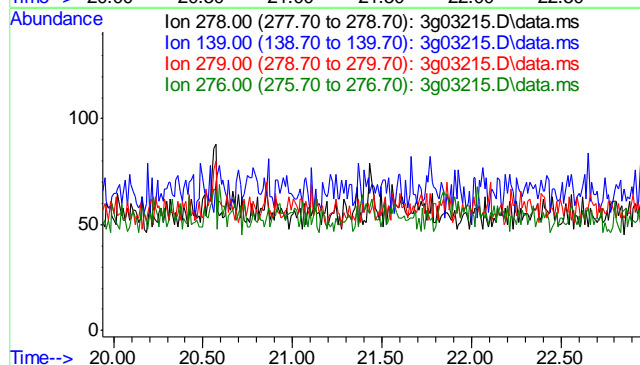
Tgt Ion:	276
Sig	Exp Ratio
276	100
138	13.1
277	40.3
278	133.5

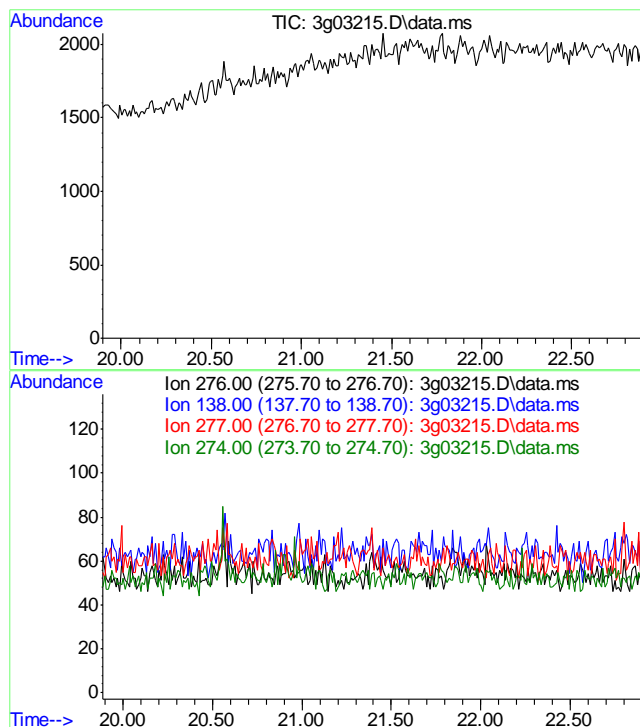


#28
Dibenz(a,h)anthracene
Concen: N.D. ug/mL
Expected RT: 21.44 min

Lab File: 3g03215.D
Acq: 15 Mar 11 8:24 pm

Tgt Ion:	278
Sig	Exp Ratio
278	100
139	10.7
279	22.8
276	123.6





#29
Benzo(g,h,i)perylene
Concen: N.D. ug/mL
Expected RT: 21.39 min

Lab File: 3g03215.D
Acq: 15 Mar 11 8:24 pm

Tgt Ion: 276
Sig Exp Ratio
276 100
138 7.9
277 24.4
274 21.3

GC Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: D21712
Account: KRWCCOL KRW Consulting, Inc.
Project: 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA580-MB	GA0613.D	1	03/11/11	BR	n/a	n/a	GGA580

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

D21712-1

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

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	114% 60-140%

9.1.1
9

Blank Spike Summary

Job Number: D21712
Account: KRWCCOL KRW Consulting, Inc.
Project: 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA580-BS	GA0614.D	1	03/11/11	BR	n/a	n/a	GGA580

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

D21712-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	101	92	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	115%	60-140%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D21712
Account: KRWCCOL KRW Consulting, Inc.
Project: 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D21667-1MS	GA0616.D	1	03/11/11	BR	n/a	n/a	GGA580
D21667-1MSD	GA0617.D	1	03/11/11	BR	n/a	n/a	GGA580
D21667-1	GA0615.D	1	03/11/11	BR	n/a	n/a	GGA580

The QC reported here applies to the following samples:

Method: SW846 8015B

D21712-1

CAS No.	Compound	D21667-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		144	129	89	126	87	2	62-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D21667-1	Limits
120-82-1	1,2,4-Trichlorobenzene	112%	111%	110%	60-140%

9.3.1

6

GC Volatiles

Raw Data

Manual Integrations

APPROVED

(compounds with "m" flag)

Judy Melson

03/15/11 10:32

Quantitation Report (QT Reviewed)

Signal #1 : Z:\031111\GA0622.D\FID1A.CH Vial: 13
Signal #2 : Z:\031111\GA0622.D\FID2B.CH
Acq On : 11 Mar 2011 5:29 pm Operator: BrianR
Sample : D21712-1, 50X Inst : BTEX2
Misc : GC1722,GGA580,5.028,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Mar 12 11:53:12 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Sat Mar 12 11:52:27 2011
Response via : Initial Calibration
DataAcq Meth : TVB2.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	14.54	3665275	100.044 %	m	
10) S	1,2,4-Trichlorobenzene (P)	0.00	0	N.D. %	d	
Target Compounds						
1) H	TVH-Gasoline	7.56	17474452	0.181 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	0.00	0	N.D. ug/L	d	
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	0.00	0	N.D. ug/L	d	

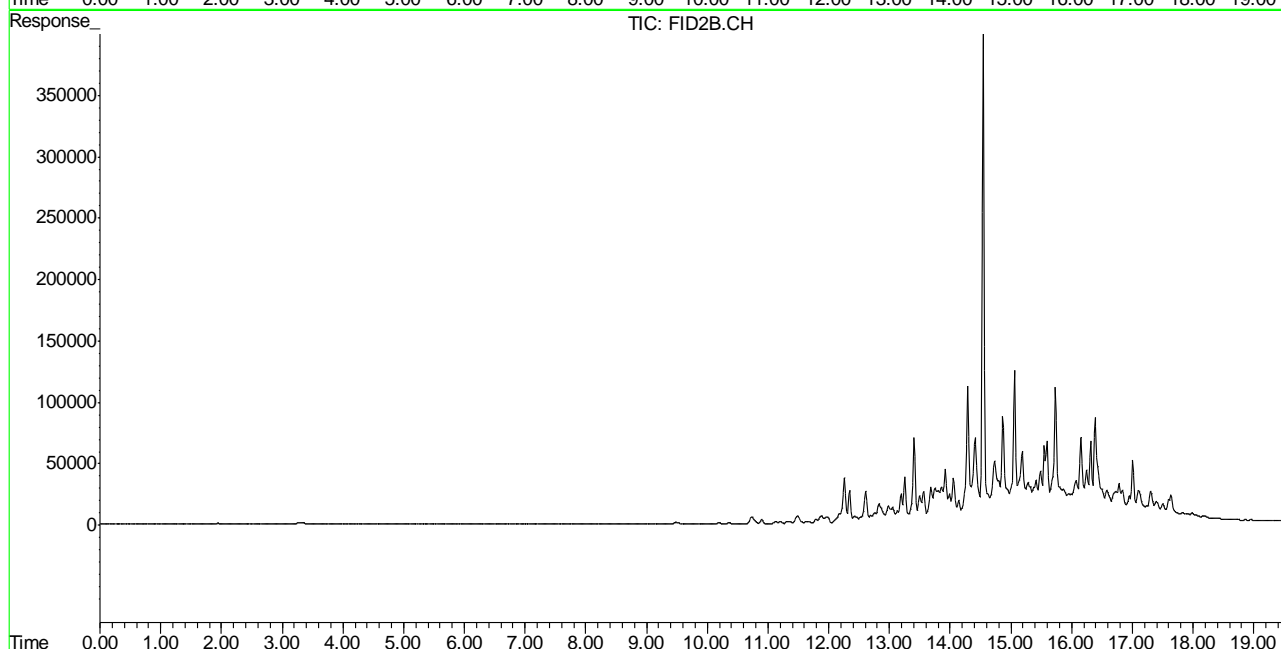
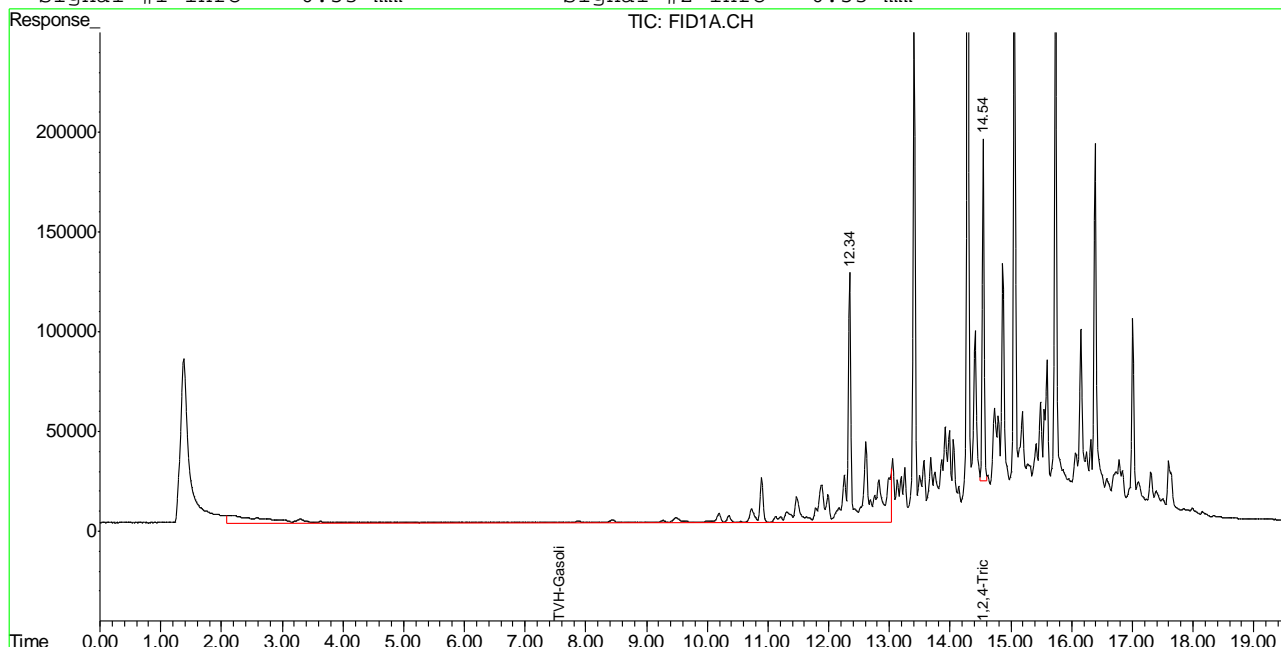
10.1.1 10

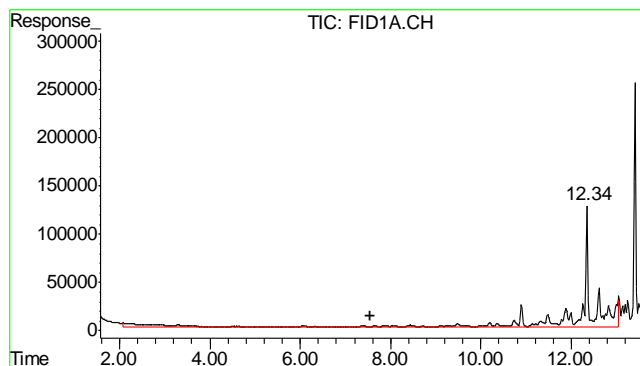
Quantitation Report (QT Reviewed)

Signal #1 : Z:\031111\GA0622.D\FID1A.CH Vial: 13
 Signal #2 : Z:\031111\GA0622.D\FID2B.CH
 Acq On : 11 Mar 2011 5:29 pm Operator: BrianR
 Sample : D21712-1, 50X Inst : BTEX2
 Misc : GC1722,GGA580,5.028,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Mar 12 9:41 2011 Quant Results File: TA582GA534.RES

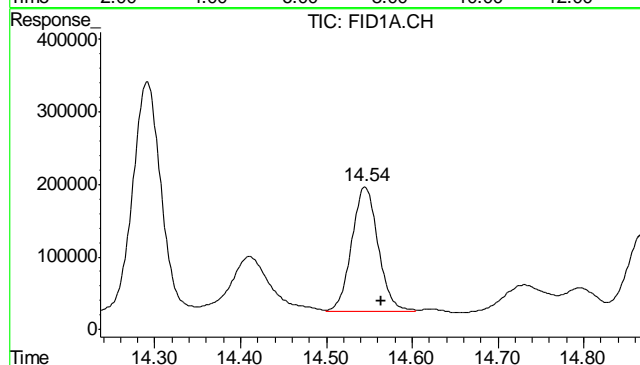
Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Sat Mar 12 11:52:27 2011
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB2.M

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

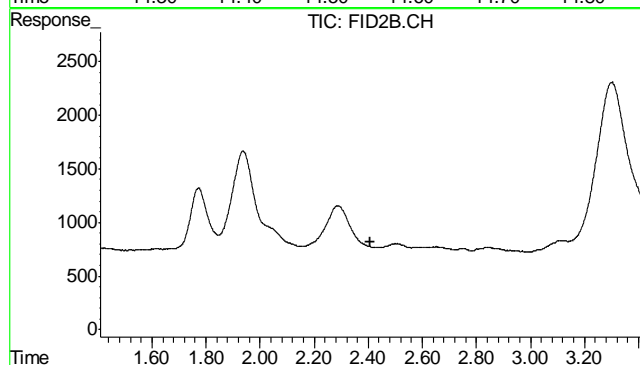




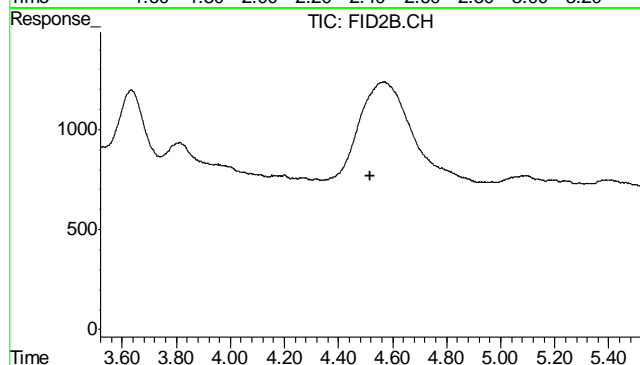
#1 TVH-Gasoline
 R.T.: 7.560 min
 Delta R.T.: 0.000 min
 Response: 17474452
 Conc: 0.18 mg/L m



#2 1,2,4-Trichlorobenzene
 R.T.: 14.545 min
 Delta R.T.: -0.019 min
 Response: 3665275
 Conc: 100.04 % m

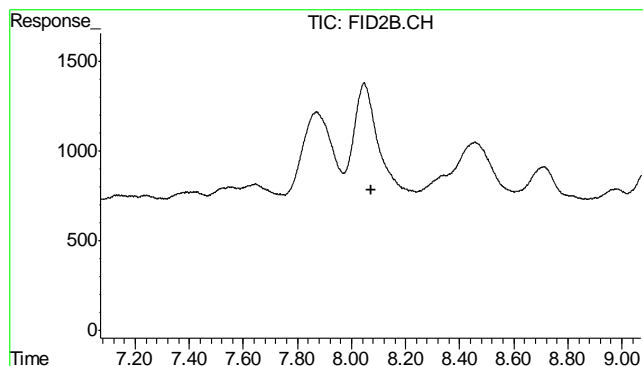


#4 Methyl-t-butyl-ether
 R.T.: 0.000 min
 Exp R.T.: 2.409 min
 Response: 0
 Conc: N.D.

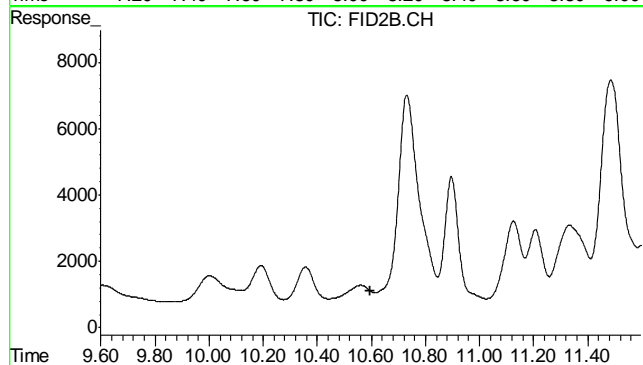


#5 Benzene
 R.T.: 0.000 min
 Exp R.T.: 4.519 min
 Response: 0
 Conc: N.D.

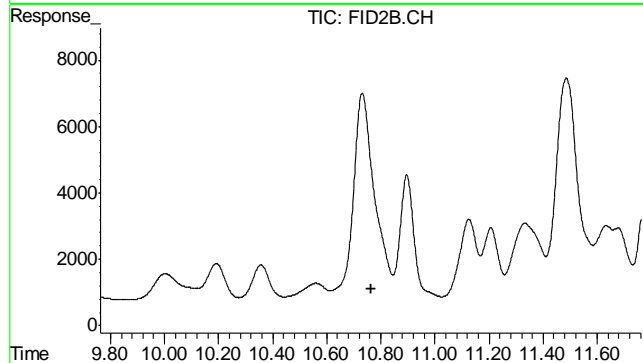
10.1.1
 10



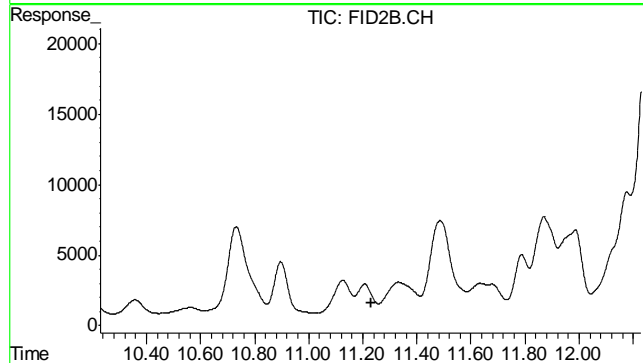
#6 Toluene
 R.T.: 0.000 min
 Exp R.T.: 8.072 min
 Response: 0
 Conc: N.D.



#7 Ethylbenzene
 R.T.: 0.000 min
 Exp R.T.: 10.597 min
 Response: 0
 Conc: N.D.

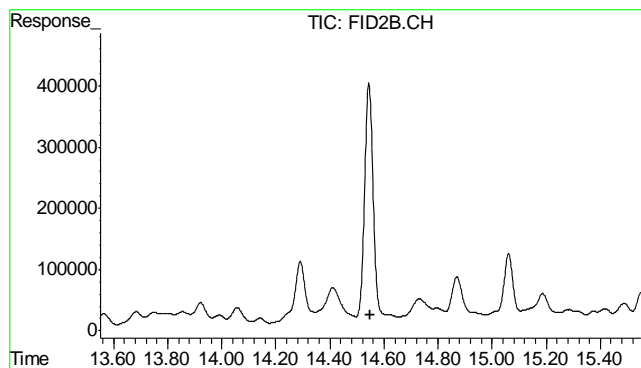


#8 m,p-Xylene
 R.T.: 0.000 min
 Exp R.T.: 10.763 min
 Response: 0
 Conc: N.D.



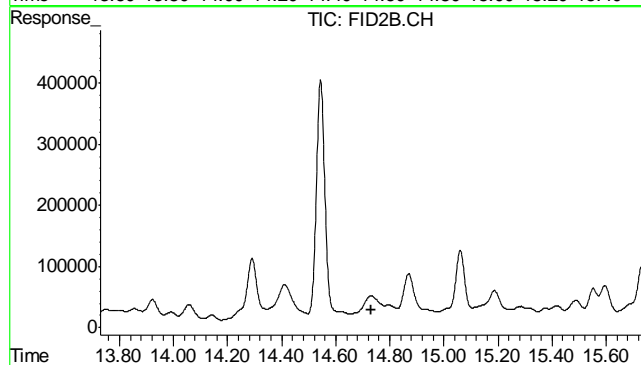
#9 o-Xylene
 R.T.: 0.000 min
 Exp R.T.: 11.229 min
 Response: 0
 Conc: N.D.

10.1.1
 10



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

R.T.: 0.000 min
Exp R.T. : 14.550 min
Response: 0
Conc: N.D.



#11 Naphthalene

R.T.: 0.000 min
Exp R.T. : 14.730 min
Response: 0
Conc: N.D.

10.1.1
10

Quantitation Report (QT Reviewed)

Signal #1 : Z:\031111\GA0613.D\FID1A.CH Vial: 4
 Signal #2 : Z:\031111\GA0613.D\FID2B.CH
 Acq On : 11 Mar 2011 12:02 pm Operator: BrianR
 Sample : MB, S Inst : BTEX2
 Misc : GC1722,GGA580,5.000,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Mar 12 11:52:45 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Sat Mar 12 11:52:27 2011
 Response via : Initial Calibration
 DataAcq Meth : TVB2.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	14.56	4166362	113.722	%	
10) S	1,2,4-Trichlorobenzene (P)	0.00	0	N.D.	%	d
Target Compounds						
1) H	TVH-Gasoline	7.56	2849408	0.030	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	0.00	0	N.D.	ug/L	d
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	0.00	0	N.D.	ug/L	d

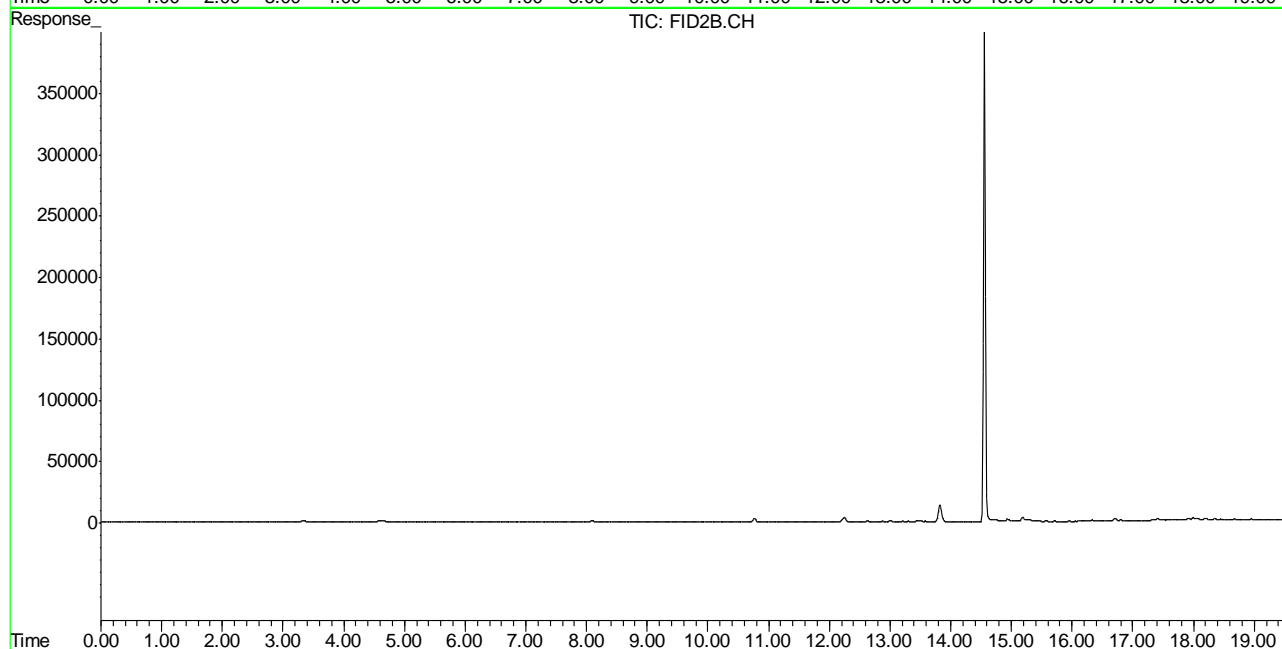
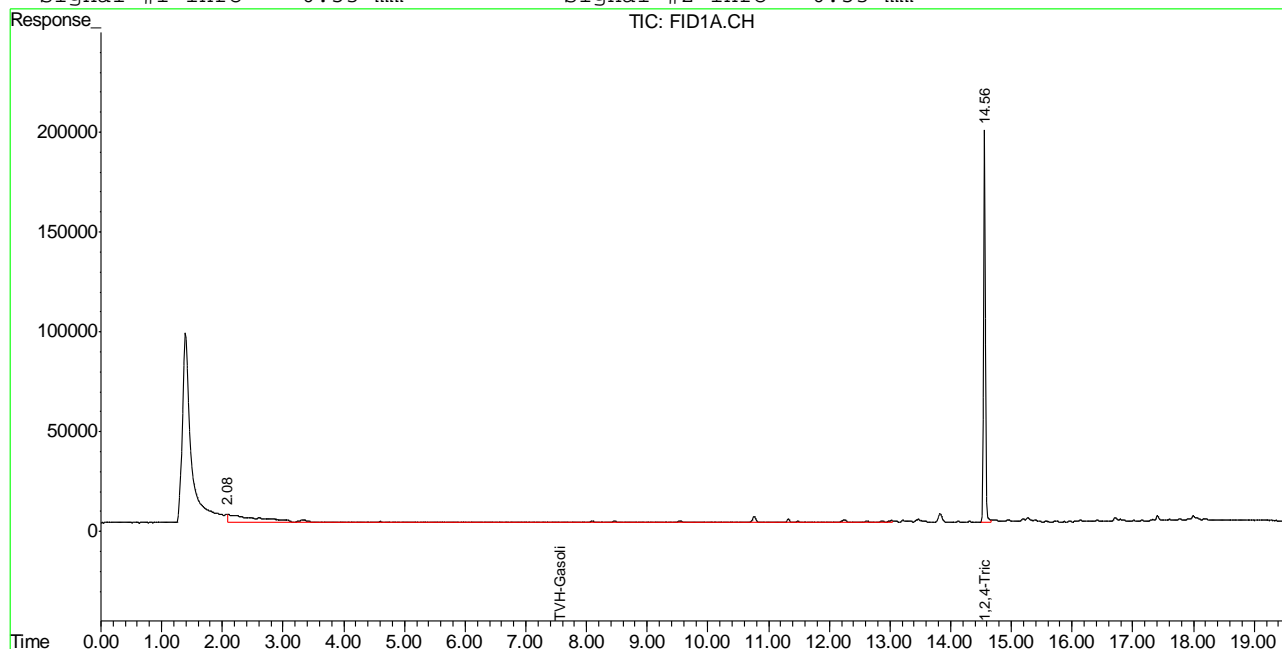
 (f)=RT Delta > 1/2 Window (m)=manual int.
 GA0613.D TA582GA534.M Sat Mar 12 14:52:53 2011 GC

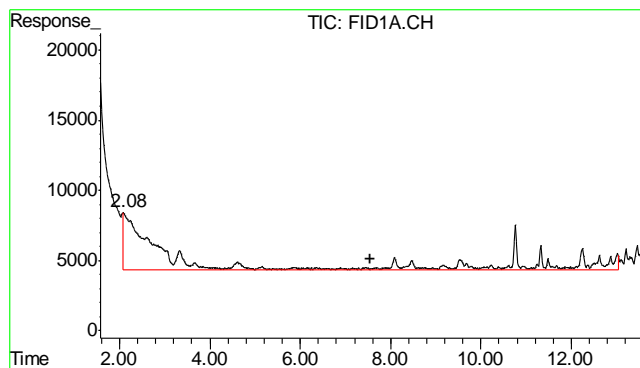
Quantitation Report (QT Reviewed)

Signal #1 : Z:\031111\GA0613.D\FID1A.CH Vial: 4
Signal #2 : Z:\031111\GA0613.D\FID2B.CH
Acq On : 11 Mar 2011 12:02 pm Operator: BrianR
Sample : MB, S Inst : BTEX2
Misc : GC1722,GGA580,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Mar 12 9:36 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Sat Mar 12 11:52:27 2011
Response via : Multiple Level Calibration
DataAcq Meth : TVB2.M

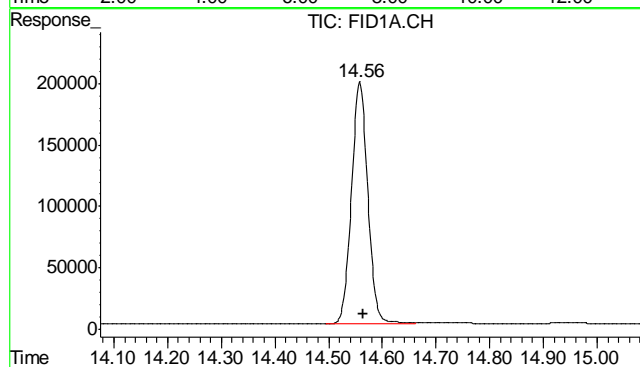
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





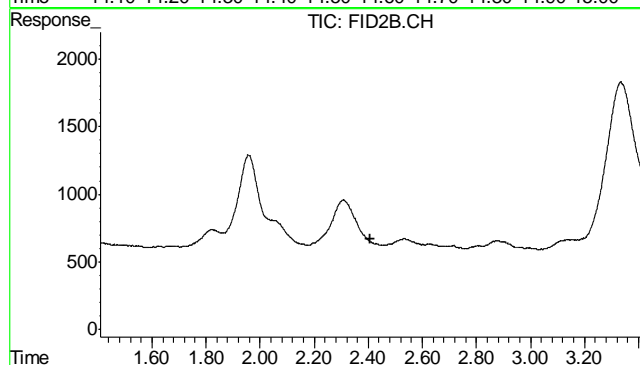
#1 TVH-Gasoline

R.T.: 7.560 min
Delta R.T.: 0.000 min
Response: 2849408
Conc: 0.03 mg/L m



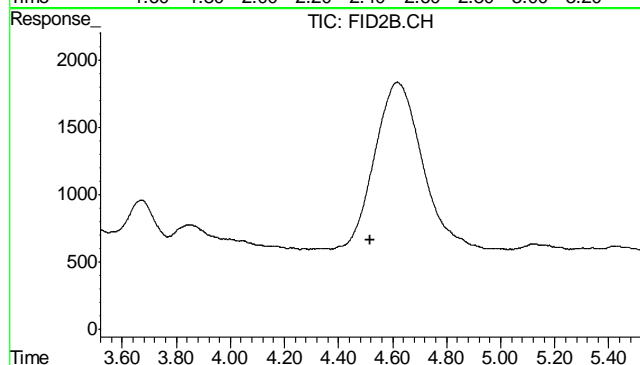
#2 1,2,4-Trichlorobenzene

R.T.: 14.558 min
Delta R.T.: -0.006 min
Response: 4166362
Conc: 113.72 %



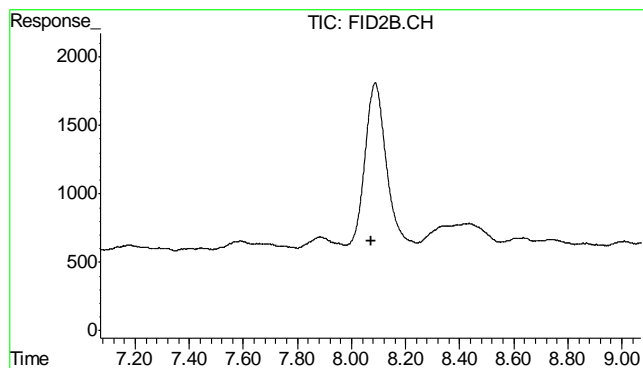
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.409 min
Response: 0
Conc: N.D.



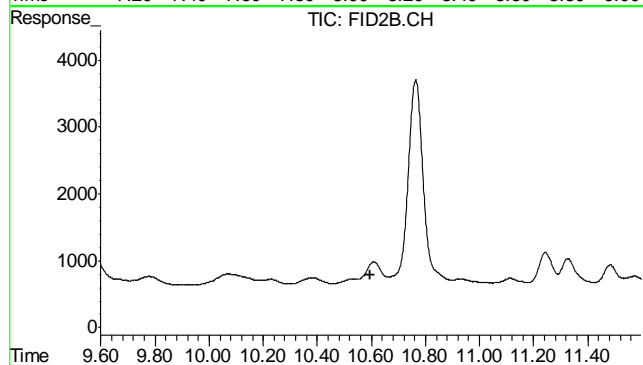
#5 Benzene

R.T.: 0.000 min
Exp R.T.: 4.519 min
Response: 0
Conc: N.D.



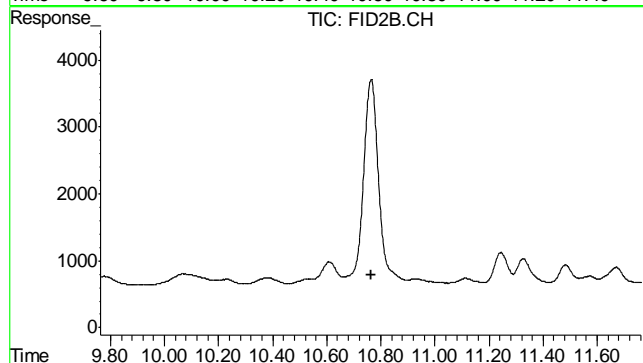
#6 Toluene

R.T.: 0.000 min
Exp R.T. : 8.072 min
Response: 0
Conc: N.D.



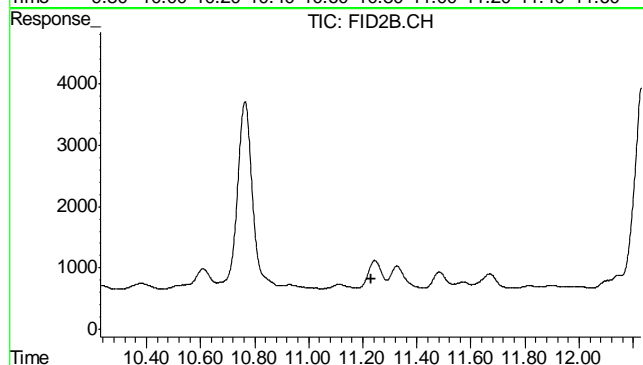
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.597 min
Response: 0
Conc: N.D.



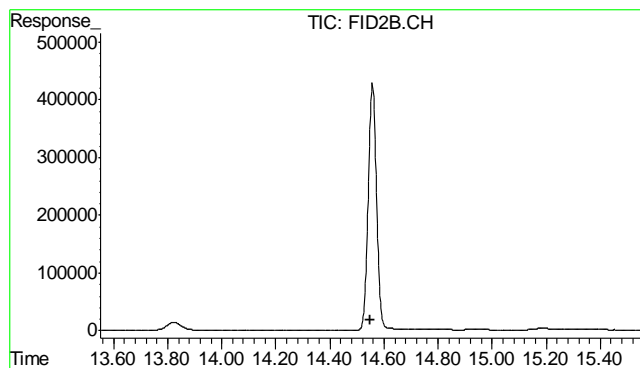
#8 m,p-Xylene

R.T.: 0.000 min
Exp R.T. : 10.763 min
Response: 0
Conc: N.D.



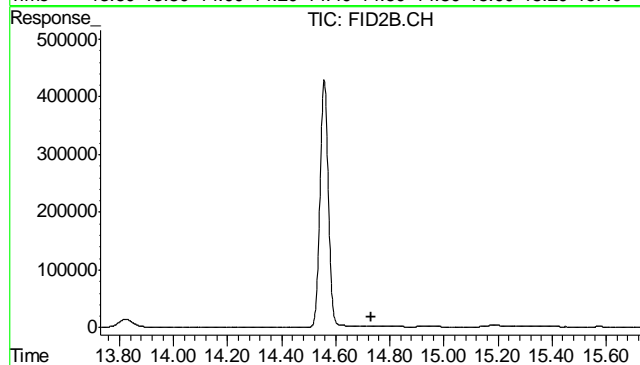
#9 o-Xylene

R.T.: 0.000 min
Exp R.T. : 11.229 min
Response: 0
Conc: N.D.



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

R.T.: 0.000 min
Exp R.T. : 14.550 min
Response: 0
Conc: N.D.



#11 Naphthalene

R.T.: 0.000 min
Exp R.T. : 14.730 min
Response: 0
Conc: N.D.

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: D21712
Account: KRWCCOL KRW Consulting, Inc.
Project: 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP3291-MB	FE6286.D	1	03/11/11	JB	03/11/11	OP3291	GFE310

The QC reported here applies to the following samples:

Method: SW846-8015B

D21712-1

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	129% 63-130%

Blank Spike Summary

Page 1 of 1

Job Number: D21712

Account: KRWCCOL KRW Consulting, Inc.

Project: 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP3291-BS	FE6287.D	1	03/11/11	JB	03/11/11	OP3291	GFE310

The QC reported here applies to the following samples:

Method: SW846-8015B

D21712-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	751	113	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	129%	63-130%

11.2.1
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Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D21712
Account: KRWCCOL KRW Consulting, Inc.
Project: 296-7A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP3291-MS	FE6315.D	10	03/14/11	JB	03/11/11	OP3291	GFE311
OP3291-MSD	FE6316.D	10	03/14/11	JB	03/11/11	OP3291	GFE311
D21716-3	FE6317.D	10	03/15/11	JB	03/11/11	OP3291	GFE311

The QC reported here applies to the following samples:

Method: SW846-8015B

D21712-1

CAS No.	Compound	D21716-3 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	3840		731	4460	85	5760	262* a	25	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D21716-3	Limits
84-15-1	o-Terphenyl	107%	91%	107%	63-130%

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

11.3.1
11

GC Semi-volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data File : E:\DATA\FE031111\FE6291.D Vial: 8
Acq On : 11 Mar 2011 9:26 pm Operator: JacobB
Sample : D21712-1 Inst : FID6
Misc : OP3291,GFE310,30.09,,,2,1 Multiplr: 1.00
IntFile : DF-GFE136.E
Quant Time: Mar 14 07:47:37 2011 Quant Results File: DF-GFE301.RES

Quant Method : C:\MSDCHEM\1\METHODS\DF-GFE301.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Fri Mar 11 09:07:29 2011
Response via : Initial Calibration
DataAcq Meth : FR_BASE2.M

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

Compound	R.T.	Response	Conc Units

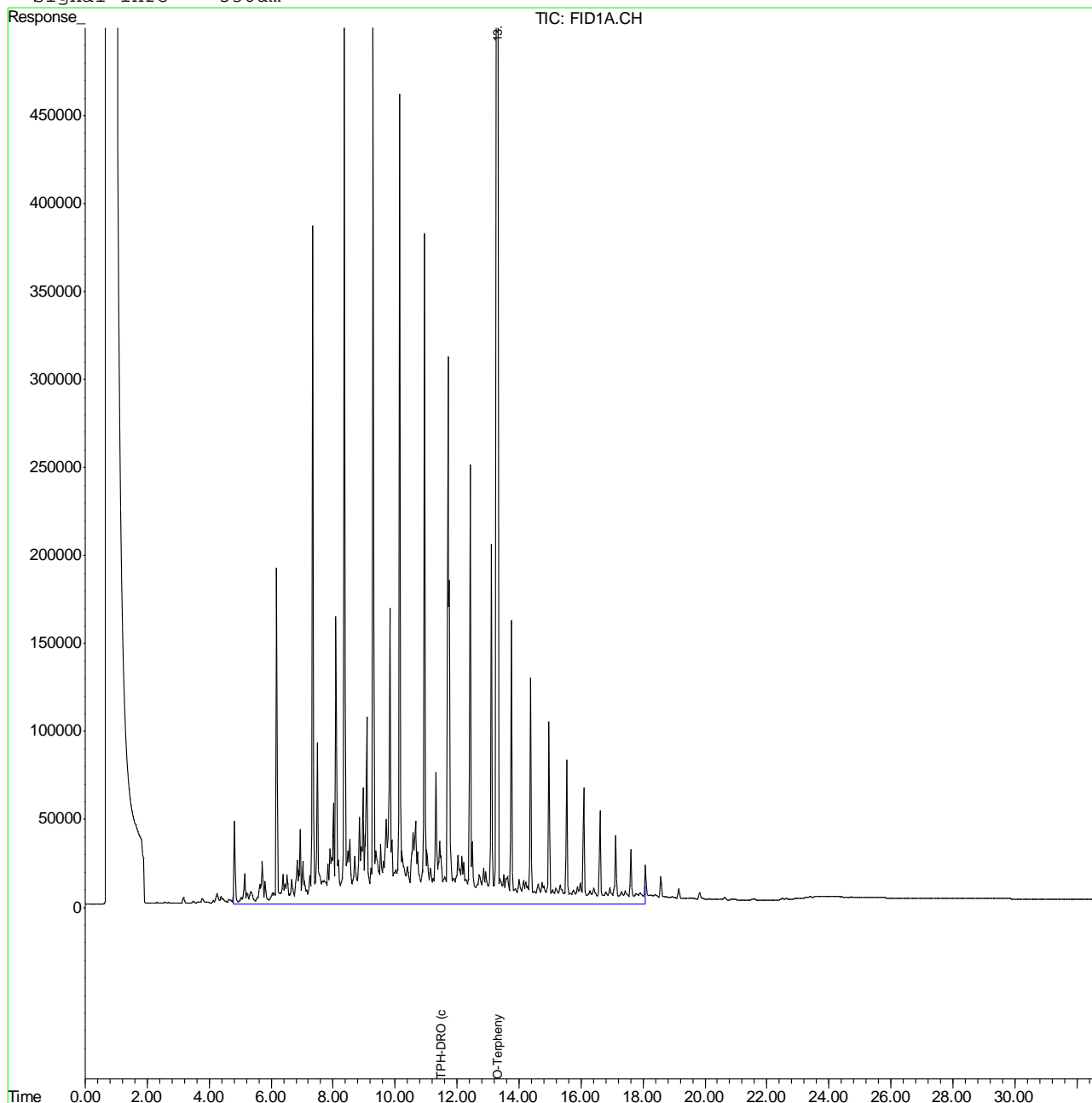
System Monitoring Compounds			
1) S O-Terphenyl	13.31	81941278	1059.005 mg/L m
Target Compounds			
2) H TPH-DRO (c10-c28)	11.48	198126809	2629.503 mg/L

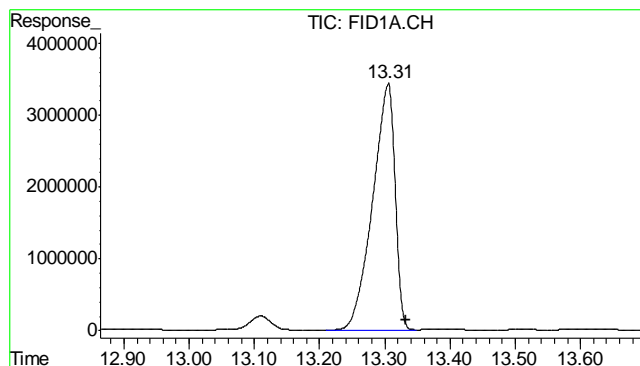
Quantitation Report (QT Reviewed)

Data File : E:\DATA\FE031111\FE6291.D Vial: 8
Acq On : 11 Mar 2011 9:26 pm Operator: JacobB
Sample : D21712-1 Inst : FID6
Misc : OP3291,GFE310,30.09,,,2,1 Multiplr: 1.00
IntFile : DF-GFE136.E
Quant Time: Mar 14 7:56 2011 Quant Results File: DF-GFE301.RES

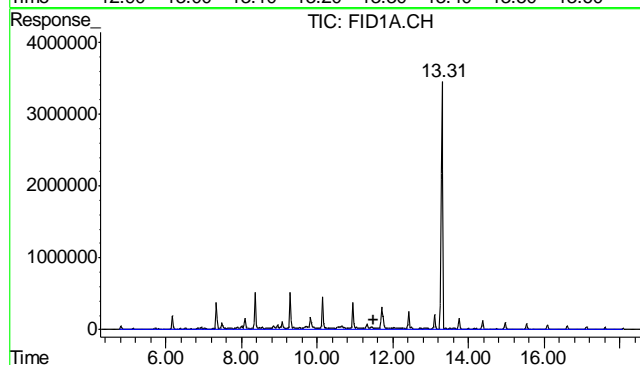
Quant Method : C:\MSDCHEM\1\METHODS\DF-GFE301.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Fri Mar 11 09:07:29 2011
Response via : Multiple Level Calibration
DataAcq Meth : FR_BASE2.M

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

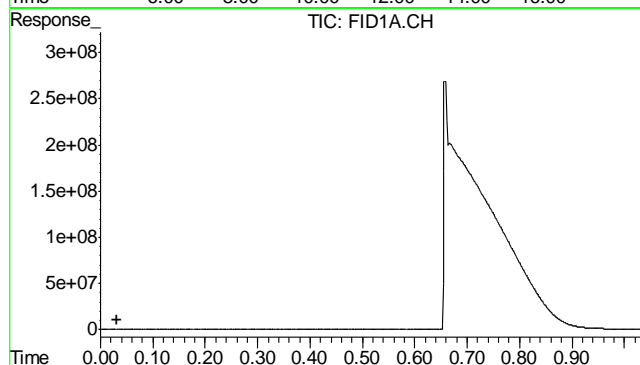




#1 O-Terphenyl
 R.T.: 13.306 min
 Delta R.T.: -0.026 min
 Response: 81941278
 Conc: 1059.00 mg/L m



#2 TPH-DRO (c10-c28)
 R.T.: 11.485 min
 Delta R.T.: 0.000 min
 Response: 198126809
 Conc: 2629.50 mg/L m



#3 5a-Androstane
 R.T.: 0.074 min
 Delta R.T.: 0.042 min
 Response: 43
 Conc: N.D.

12.1.1
 12

Quantitation Report (QT Reviewed)

Data File : E:\DATA\FE031111\FE6286.D Vial: 3
Acq On : 11 Mar 2011 6:08 pm Operator: JacobB
Sample : OP3291-MB Inst : FID6
Misc : OP3291,GFE310,30.00,,,2,1 Multiplr: 1.00
IntFile : DF-GFE136.E
Quant Time: Mar 14 07:47:22 2011 Quant Results File: DF-GFE301.RES

Quant Method : C:\MSDCHEM\1\METHODS\DF-GFE301.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Fri Mar 11 09:07:29 2011
Response via : Initial Calibration
DataAcq Meth : FR_BASE2.M

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

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
1) S O-Terphenyl	13.31	99013547	1288.281 mg/L
Target Compounds			

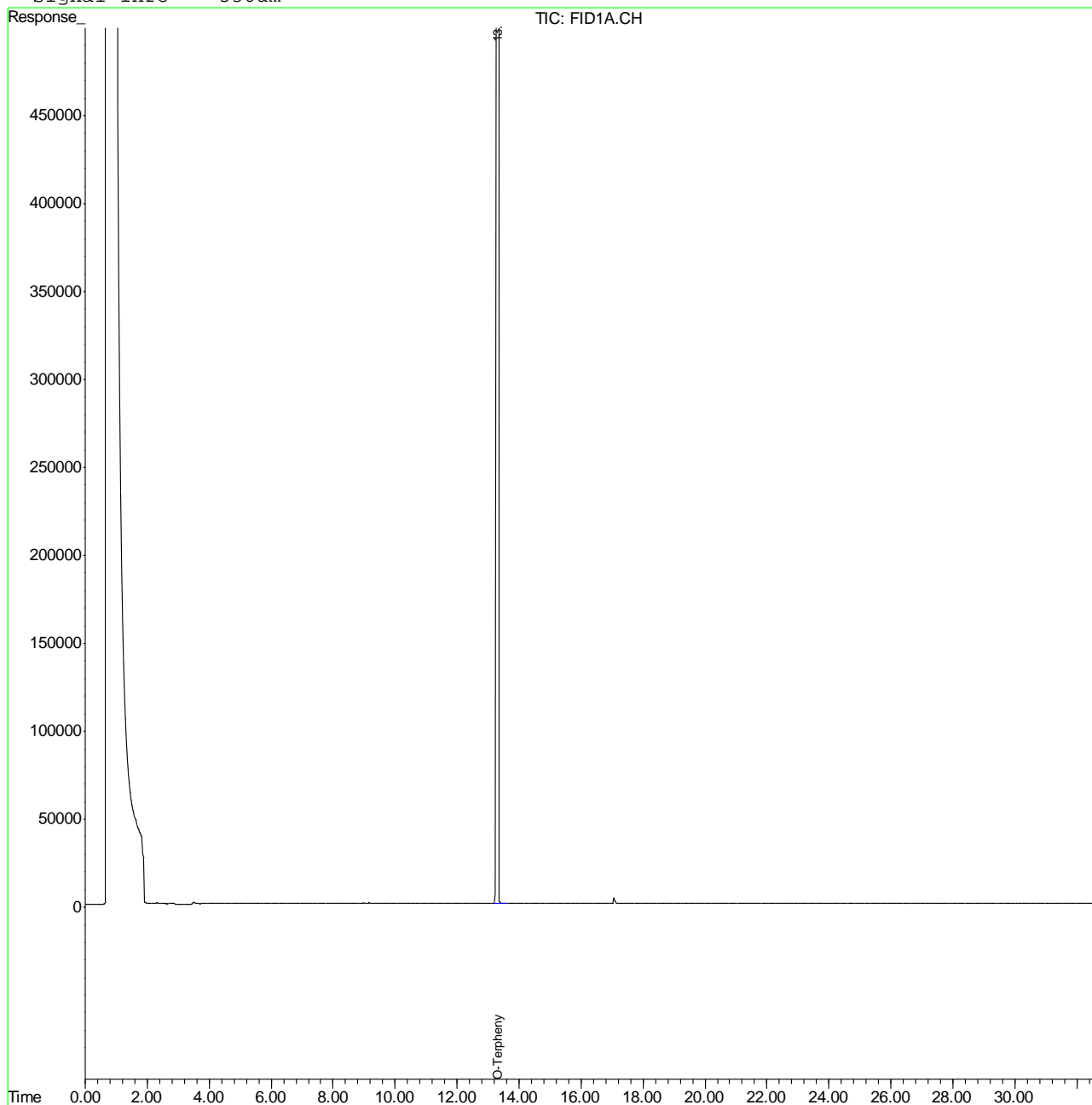
(f)=RT Delta > 1/2 Window (m)=manual int.
FE6286.D DF-GFE301.M Mon Mar 14 09:28:11 2011 TEH

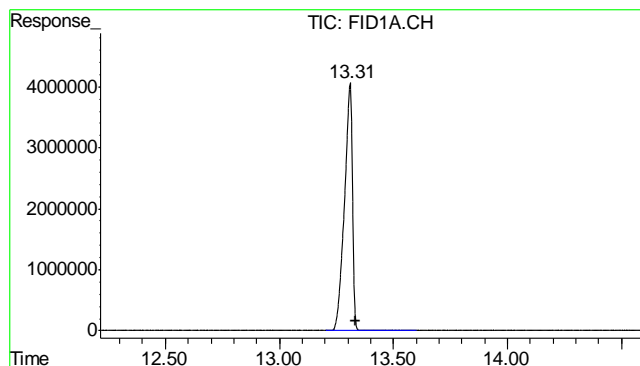
Quantitation Report (QT Reviewed)

Data File : E:\DATA\FE031111\FE6286.D Vial: 3
Acq On : 11 Mar 2011 6:08 pm Operator: JacobB
Sample : OP3291-MB Inst : FID6
Misc : OP3291,GFE310,30.00,,,2,1 Multiplr: 1.00
IntFile : DF-GFE136.E
Quant Time: Mar 14 7:54 2011 Quant Results File: DF-GFE301.RES

Quant Method : C:\MSDCHEM\1\METHODS\DF-GFE301.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Fri Mar 11 09:07:29 2011
Response via : Multiple Level Calibration
DataAcq Meth : FR_BASE2.M

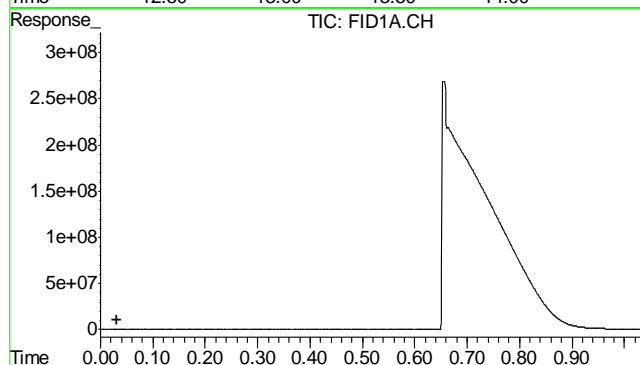
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





#1 O-Terphenyl

R.T.: 13.310 min
Delta R.T.: -0.022 min
Response: 99013547
Conc: 1288.28 mg/L



#3 5a-Androstane

R.T.: 0.086 min
Delta R.T.: 0.054 min
Response: 175
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: D21712
Account: KRWCCOL - KRW Consulting, Inc.
Project: 296-7A

QC Batch ID: MP4214
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 03/14/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.7	2		
Antimony	3.0	.17	.5		
Arsenic	2.5	.28	.72		
Barium	1.0	.014	.05	0.23	<1.0
Beryllium	1.0	.14	.21		
Boron	5.0	.35	.91		
Cadmium	1.0	.022	.12	0.12	<1.0
Calcium	40	1.7	2.7		
Chromium	1.0	.027	.18	0.060	<1.0
Cobalt	0.50	.048	.058		
Copper	1.0	.16	.38	0.71	<1.0
Iron	7.0	.77	.91		
Lead	5.0	.13	.24	0.33	<5.0
Lithium	0.20	.076	.09		
Magnesium	20	.58	.93		
Manganese	0.50	.021	.028		
Molybdenum	1.0	.041	.16		
Nickel	3.0	.038	.075	-0.22	<3.0
Phosphorus	10	1.5	3.5		
Potassium	200	38	130		
Selenium	5.0	.28	.54	0.50	<5.0
Silicon	5.0	1.2	.68		
Silver	3.0	.098	.068	0.090	<3.0
Sodium	40	23	6.3		
Strontium	5.0	.0091	.02		
Thallium	1.0	.31	.21		
Tin	5.0	1.4	.56		
Titanium	1.0	.0098	.041		
Uranium	5.0	.22	.53		
Vanadium	1.0	.027	.034		
Zinc	3.0	.076	.49	0.29	<3.0

Associated samples MP4214: D21712-1

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D21712
Account: KRWCCOL - KRW Consulting, Inc.
Project: 296-7A

QC Batch ID: MP4214
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21712
Account: KRWCCOL - KRW Consulting, Inc.
Project: 296-7A

QC Batch ID: MP4214
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 03/14/11

Metal	D21712-1 Original MS		SpikeLot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	1450	2410	259	370.3(a)	75-125
Beryllium					
Boron					
Cadmium	0.19	54.6	64.8	83.9	75-125
Calcium					
Chromium	33.7	85.2	64.8	79.5	75-125
Cobalt					
Copper	9.1	64.1	64.8	84.9	75-125
Iron					
Lead	9.0	114	130	81.0	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	13.8	63.7	64.8	77.0	75-125
Phosphorus					
Potassium					
Selenium	0.50	111	130	85.2	75-125
Silicon					
Silver	0.26	22.8	25.9	86.9	75-125
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	37.4	86.8	64.8	76.2	75-125

Associated samples MP4214: D21712-1

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21712
Account: KRWCCOL - KRW Consulting, Inc.
Project: 296-7A

QC Batch ID: MP4214
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.

13.1.2
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MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21712
Account: KRWCCOL - KRW Consulting, Inc.
Project: 296-7A

QC Batch ID: MP4214
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 03/14/11

Metal	D21712-1 Original	MSD	Spikelot MPICPAL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	1450	2300	239	355.5(a)	4.7	20
Beryllium						
Boron						
Cadmium	0.19	49.6	59.8	82.6	9.6	20
Calcium						
Chromium	33.7	79.0	59.8	75.8	7.6	20
Cobalt						
Copper	9.1	59.5	59.8	84.3	7.4	20
Iron						
Lead	9.0	103	120	78.6	10.1	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	13.8	58.6	59.8	74.9N(b)	8.3	20
Phosphorus						
Potassium						
Selenium	0.50	102	120	84.9	8.5	20
Silicon						
Silver	0.26	20.5	23.9	84.6	10.6	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	37.4	80.7	59.8	72.4N(b)	7.3	20

Associated samples MP4214: D21712-1

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21712
Account: KRWCCOL - KRW Consulting, Inc.
Project: 296-7A

QC Batch ID: MP4214
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D21712

Account: KRWCCOL - KRW Consulting, Inc.

Project: 296-7A

QC Batch ID: MP4214

Methods: SW846 6010B

Matrix Type: SOLID

Units: mg/kg

Prep Date:

03/14/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	183	200	91.5	80-120
Beryllium				
Boron				
Cadmium	45.6	50	91.2	80-120
Calcium				
Chromium	47.3	50	94.6	80-120
Cobalt				
Copper	46.0	50	92.0	80-120
Iron				
Lead	90.6	100	90.6	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	45.0	50	90.0	80-120
Phosphorus				
Potassium				
Selenium	94.6	100	94.6	80-120
Silicon				
Silver	18.8	20	94.0	80-120
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	43.5	50	87.0	80-120

Associated samples MP4214: D21712-1

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

13.1.3
13

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D21712
Account: KRWCCOL - KRW Consulting, Inc.
Project: 296-7A

QC Batch ID: MP4214
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D21712
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: 296-7A

QC Batch ID: MP4214
 Matrix Type: SOLID

Methods: SW846 6010B
 Units: ug/l

Prep Date: 03/14/11

Metal	D21712-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	11300	12000	5.9	0-10
Beryllium				
Boron				
Cadmium	1.50	1.50	0.0	0-10
Calcium				
Chromium	262	282	7.5	0-10
Cobalt				
Copper	58.9	68.0	4.4	0-10
Iron				
Lead	70.5	57.0	19.1*(a)	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	108	117	8.4	0-10
Phosphorus				
Potassium				
Selenium	3.90	0.00	100.0(b)	0-10
Silicon				
Silver	2.00	9.00	350.0(b)	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	292	344	17.9*(a)	0-10

Associated samples MP4214: D21712-1

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

13.1.4
13

SERIAL DILUTION RESULTS SUMMARY

Login Number: D21712
Account: KRWCCOL - KRW Consulting, Inc.
Project: 296-7A

QC Batch ID: MP4214
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date:

Metal

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D21712
Account: KRWCCOL - KRW Consulting, Inc.
Project: 296-7A

QC Batch ID: MP4215
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 03/14/11

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

Associated samples MP4215: D21712-1

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21712
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: 296-7A

QC Batch ID: MP4215
 Matrix Type: SOLID

Methods: SW846 6020
 Units: mg/kg

Prep Date: 03/14/11

Metal	D21712-1 Original MS		SpikeLot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic	3.7	124	130	92.8	60-119
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 MP4215: D21712-1

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

13.22
13

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21712
Account: KRWCCOL - KRW Consulting, Inc.
Project: 296-7A

QC Batch ID: MP4215
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 03/14/11

Metal	D21712-1 Original	MSD	Spikelot MPICPAL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	3.7	103	120	83.1	18.5	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 MP4215: D21712-1

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D21712

Account: KRWCCOL - KRW Consulting, Inc.

Project: 296-7A

QC Batch ID: MP4215

Methods: SW846 6020

Matrix Type: SOLID

Units: mg/kg

Prep Date:

03/14/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	100	100	100.0	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 MP4215: D21712-1

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D21712
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: 296-7A

QC Batch ID: MP4215
 Matrix Type: SOLID

Methods: SW846 6020
 Units: ug/l

Prep Date: 03/14/11

Metal	D21712-1			QC
	Original	SDL 5:25	%DIF	Limits
Aluminum				
Antimony				
Arsenic	29.1	29.7	2.0	0-10
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP4215: D21712-1

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

13.2.4
13

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D21712
Account: KRWCCOL - KRW Consulting, Inc.
Project: 296-7A

QC Batch ID: MP4219
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 03/15/11

Metal	RL	IDL	MDL	MB	
				raw	final
Mercury	0.10	.0011	.013	0.0011	<0.10

Associated samples MP4219: D21712-1

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21712
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: 296-7A

QC Batch ID: MP4219
 Matrix Type: SOLID

Methods: SW846 7471A
 Units: mg/kg

Prep Date: 03/15/11

Metal	D21712-1		SpikeLot		QC	
	Original	MS	HGWSR1	% Rec	Limits	
Mercury	0.0081	0.43	0.432	97.6	85-115	

Associated samples MP4219: D21712-1

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

13.3.2
 13

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21712
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: 296-7A

QC Batch ID: MP4219
 Matrix Type: SOLID

Methods: SW846 7471A
 Units: mg/kg

Prep Date: 03/15/11

Metal	D21712-1 Original	MSD	Spikelot HGWSR1	% Rec	MSD RPD	QC Limit
Mercury	0.0081	0.46	0.493	91.7	6.7	20

Associated samples MP4219: D21712-1

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D21712
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: 296-7A

QC Batch ID: MP4219
 Matrix Type: SOLID

Methods: SW846 7471A
 Units: mg/kg

Prep Date: 03/15/11

Metal	BSP Result	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.38	0.4	95.0	80-120

Associated samples MP4219: D21712-1

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D21712
Account: KRWCCOL - KRW Consulting, Inc.
Project: 296-7A

QC Batch ID: MP4239
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 03/15/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	500	35	250		
Antimony	150	8.5	65		
Arsenic	130	14	33		
Barium	50	.7	12		
Beryllium	50	7	22		
Boron	250	18	93		
Cadmium	50	1.1	6		
Calcium	2000	85	46	-4.0	<2000
Chromium	50	1.4	8		
Cobalt	25	2.4	1.5		
Copper	25	8	14		
Iron	350	39	50		
Lead	250	6.5	16		
Lithium	10	3.8	8		
Magnesium	1000	29	62	10.5	<1000
Manganese	25	1.1	3.5		
Molybdenum	50	2.1	6		
Nickel	150	1.9	3		
Phosphorus	500	75	270		
Potassium	5000	1900	2700		
Selenium	250	14	36		
Silicon	250	60	100		
Silver	150	4.9	1.5		
Sodium	2000	1200	110	-230	<2000
Strontium	25	.46	17		
Thallium	50	16	11		
Tin	250	70	22		
Titanium	50	.49	3.5		
Uranium	250	11	20		
Vanadium	50	1.4	1.5		
Zinc	150	3.8	8.5		

Associated samples MP4239: D21712-1A

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D21712
Account: KRWCCOL - KRW Consulting, Inc.
Project: 296-7A

QC Batch ID: MP4239
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21712
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: 296-7A

QC Batch ID: MP4239
 Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
 Units: ug/l

Prep Date: 03/15/11

Metal	D21623-1A Original MS		Spikelot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	67400	205000	125000	110.1	75-125
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	15600	146000	125000	104.3	75-125
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	8200	138000	125000	103.8	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP4239: D21712-1A

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

13.4.2
13

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21712
Account: KRWCCOL - KRW Consulting, Inc.
Project: 296-7A

QC Batch ID: MP4239
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
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: D21712
Account: KRWCCOL - KRW Consulting, Inc.
Project: 296-7A

QC Batch ID: MP4239
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 03/15/11

Metal	D21623-1A Original MSD	Spikelot MPICPAL % Rec	MSD RPD	QC Limit
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	67400	198000	125000	104.5
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	15600	145000	125000	103.5
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	8200	137000	125000	103.0
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP4239: D21712-1A

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

13.4.2
13

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D21712
Account: KRWCCOL - KRW Consulting, Inc.
Project: 296-7A

QC Batch ID: MP4239
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date:

Metal

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

13.4.2
13

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D21712

Account: KRWCCOL - KRW Consulting, Inc.

Project: 296-7A

QC Batch ID: MP4239

Methods: LADNR29B, SW846 6010B

Matrix Type: AQUEOUS

Units: ug/l

Prep Date:

03/15/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	130000	125000	104.0	80-120
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	130000	125000	104.0	80-120
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	125000	125000	100.0	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP4239: D21712-1A

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

13.4.3
13

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D21712
Account: KRWCCOL - KRW Consulting, Inc.
Project: 296-7A

QC Batch ID: MP4239
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
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: D21712
Account: KRWCCOL - KRW Consulting, Inc.
Project: 296-7A

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Specific Conductivity	GP3984/GN8685	1.0	<1.0	umhos/cm	9985	10000	100.5	90-110%
pH	GN8660			su	8.00	7.97	99.6	99.3-100.7%

Associated Samples:
Batch GN8660: D21712-1
Batch GP3984: D21712-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D21712
Account: KRWCCOL - KRW Consulting, Inc.
Project: 296-7A

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Redox Potential Vs H2	GN8662	D21712-1	mv	251	262	4.3	0-20%

Associated Samples:
Batch GN8662: D21712-1
(*) Outside of QC limits

14.2
14

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: D21712

Client: AMS

Immediate Client Services Action Required: No

Date / Time Received: 3/12/2011

Delivery Method:

Client Service Action Required at Login: No

Project: XCRA

No. Coolers: 1

Airbill #'s: N/A

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: D21712
Account: ALMS - Accutest Mountain States
Project: KRWCCOL: 296-7A

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP12719/GN34344	0.40	0.20	mg/kg	12	11.9	99.2	80-120%
Chromium, Hexavalent	GP12719/GN34344			mg/kg	1110	1190	107.2	80-120%

Associated Samples:
Batch GP12719: D21712-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D21712
Account: ALMS - Accutest Mountain States
Project: KRWCCOL: 296-7A

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP12719/GN34344	D21665-1	mg/kg	0.33	0.28	16.4	0-20%

Associated Samples:
Batch GP12719: D21712-1
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D21712
Account: ALMS - Accutest Mountain States
Project: KRWCCOL: 296-7A

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP12719/GN34344	D21665-1	mg/kg	0.33	13.4	12.5	90.9	75-125%
Chromium, Hexavalent	GP12719/GN34344	D21665-1	mg/kg	0.33	1270	1250	98.4	75-125%

Associated Samples:

Batch GP12719: D21712-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits