



04/15/11

## Technical Report for

**KRW Consulting, Inc.**

**FRU 197-33A**

**1103-03A**

**Accutest Job Number: D22470**

**Sampling Date: 04/06/11**

### 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: Joe Hess**

**Total number of pages in report: 177**



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.

# Table of Contents

-1-

<b>Section 1: Sample Summary .....</b>	<b>4</b>
<b>Section 2: Case Narrative/Conformance Summary .....</b>	<b>5</b>
<b>Section 3: Sample Results .....</b>	<b>9</b>
<b>3.1: D22470-1: FRU 197-33A U/L .....</b>	<b>10</b>
<b>3.2: D22470-1A: FRU 197-33A U/L .....</b>	<b>16</b>
<b>3.3: D22470-2: FRU 197-33A CUT/SPOILS MIX .....</b>	<b>18</b>
<b>3.4: D22470-2A: FRU 197-33A CUT/SPOILS MIX .....</b>	<b>24</b>
<b>Section 4: Misc. Forms .....</b>	<b>26</b>
<b>4.1: Chain of Custody .....</b>	<b>27</b>
<b>Section 5: GC/MS Volatiles - QC Data Summaries .....</b>	<b>29</b>
<b>5.1: Method Blank Summary .....</b>	<b>30</b>
<b>5.2: Blank Spike Summary .....</b>	<b>31</b>
<b>5.3: Matrix Spike/Matrix Spike Duplicate Summary .....</b>	<b>32</b>
<b>Section 6: GC/MS Volatiles - Raw Data .....</b>	<b>33</b>
<b>6.1: Samples .....</b>	<b>34</b>
<b>6.2: Method Blanks .....</b>	<b>50</b>
<b>Section 7: GC/MS Semi-volatiles - QC Data Summaries .....</b>	<b>55</b>
<b>7.1: Method Blank Summary .....</b>	<b>56</b>
<b>7.2: Blank Spike Summary .....</b>	<b>57</b>
<b>7.3: Matrix Spike/Matrix Spike Duplicate Summary .....</b>	<b>58</b>
<b>Section 8: GC/MS Semi-volatiles - Raw Data .....</b>	<b>59</b>
<b>8.1: Samples .....</b>	<b>60</b>
<b>8.2: Method Blanks .....</b>	<b>86</b>
<b>Section 9: GC Volatiles - QC Data Summaries .....</b>	<b>99</b>
<b>9.1: Method Blank Summary .....</b>	<b>100</b>
<b>9.2: Blank Spike Summary .....</b>	<b>101</b>
<b>9.3: Matrix Spike/Matrix Spike Duplicate Summary .....</b>	<b>102</b>
<b>Section 10: GC Volatiles - Raw Data .....</b>	<b>103</b>
<b>10.1: Samples .....</b>	<b>104</b>
<b>10.2: Method Blanks .....</b>	<b>114</b>
<b>Section 11: GC Semi-volatiles - QC Data Summaries .....</b>	<b>119</b>
<b>11.1: Method Blank Summary .....</b>	<b>120</b>
<b>11.2: Blank Spike Summary .....</b>	<b>121</b>
<b>11.3: Matrix Spike/Matrix Spike Duplicate Summary .....</b>	<b>122</b>
<b>Section 12: GC Semi-volatiles - Raw Data .....</b>	<b>123</b>
<b>12.1: Samples .....</b>	<b>124</b>
<b>12.2: Method Blanks .....</b>	<b>134</b>
<b>Section 13: Metals Analysis - QC Data Summaries .....</b>	<b>139</b>
<b>13.1: Prep QC MP4439: Ba,Cd,Cr,Cu,Pb,Ni,Se,Ag,Zn .....</b>	<b>140</b>
<b>13.2: Prep QC MP4440: As .....</b>	<b>150</b>
<b>13.3: Prep QC MP4441: Hg .....</b>	<b>155</b>
<b>13.4: Prep QC MP4444: Ca,Mg,Na,Sodium Adsorption Ratio .....</b>	<b>159</b>

# Table of Contents

-2-

**Section 14: General Chemistry - QC Data Summaries ..... 167**

**14.1:** Method Blank and Spike Results Summary ..... 168

**14.2:** Duplicate Results Summary ..... 169

**Section 15: Misc. Forms (Accutest Labs of New England, Inc.) ..... 170**

**15.1:** Chain of Custody ..... 171

**Section 16: General Chemistry - QC Data (Accutest Labs of New England, Inc.) ..... 173**

**16.1:** Method Blank and Spike Results Summary ..... 174

**16.2:** Blank Spike Duplicate Results Summary ..... 175

**16.3:** Duplicate Results Summary ..... 176

**16.4:** Matrix Spike Results Summary ..... 177

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16



Sample Summary

KRW Consulting, Inc.

Job No: D22470

FRU 197-33A  
Project No: 1103-03A

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
D22470-1	04/06/11	11:00 BB	04/08/11	SO	Soil	FRU 197-33A U/L
D22470-1A	04/06/11	11:00 BB	04/08/11	SO	Soil	FRU 197-33A U/L
D22470-2	04/06/11	11:00 BB	04/08/11	SO	Soil	FRU 197-33A CUT/SPOILS MIX
D22470-2A	04/06/11	11:00 BB	04/08/11	SO	Soil	FRU 197-33A CUT/SPOILS MIX

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

## CASE NARRATIVE / CONFORMANCE SUMMARY

**Client:** KRW Consulting, Inc.

**Job No** D22470

**Site:** FRU 197-33A

**Report Dat** 4/15/2011 10:39:04 AM

On 04/08/2011, 2 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 5.7 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D22470 was assigned to the project. The lab sample IDs, client sample IDs, and dates 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

<b>Matrix</b> SO	<b>Batch ID:</b> V3V575
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- Sample(s) D22299-2MS, D22299-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

### Extractables by GCMS By Method SW846 8270C BY SIM

<b>Matrix</b> SO	<b>Batch ID:</b> OP3477
------------------	-------------------------

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) D22522-1MS, D22522-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- The RPD(s) for the MS and MSD recoveries of all analytes are outside control limits for sample OP3477-MSD. Variability of recovery may be due to sample matrix/homogeneity.

### Volatiles by GC By Method SW846 8015B

<b>Matrix</b> SO	<b>Batch ID:</b> GGA614
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- Sample(s) D22522-1MS, D22522-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

### Extractables by GC By Method SW846-8015B

<b>Matrix</b> SO	<b>Batch ID:</b> OP3473
------------------	-------------------------

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) D22500-1MS, D22500-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- The matrix spike duplicate (MSD) recovery(s) of TPH-DRO (C10-C28) are outside control limits. Probable cause due to matrix interference.

## Metals By Method SW846 6010B

**Matrix** AQ

**Batch ID:** MP4444

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D22499-1AMS, D22499-1AMSD were used as the QC samples for the metals analysis.

**Matrix** SO

**Batch ID:** MP4439

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D22499-1MS, D22499-1MSD, D22499-1SDL were used as the QC samples for the metals analysis.
- The matrix spike and matrix spike duplicate (MS/MSD) recovery(s) of Cadmium, Lead, Nickel, Zinc are outside control limits. Spike recovery indicates possible matrix interference.
- The RPD(s) for the MS and MSD recoveries of Barium are outside control limits for sample MP4439-S2. High RPD due to possible sample nonhomogeneity.
- The serial dilution RPD(s) for Silver are outside control limits for sample MP4439-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- D22470-2 for Selenium: Elevated detection limit due to dilution required for possible matrix interference.
- The serial dilution RPD(s) for Barium, Chromium, Nickel, Zinc are outside control limits for sample MP4439-SD1. Serial dilution indicates possible matrix interference.

## Metals By Method SW846 6020

**Matrix** SO

**Batch ID:** MP4440

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D22499-1MS, D22499-1MSD, D22499-1SDL were used as the QC samples for the metals analysis.

## Metals By Method SW846 7471A

**Matrix** SO

**Batch ID:** MP4441

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D22299-6MSD, D22299-6MS were used as the QC samples for the metals analysis.
- The matrix spike and matrix spike duplicate (MS/MD) recovery(s) of Mercury are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

## Wet Chemistry By Method ASTM D1498-76M

**Matrix** SO

**Batch ID:** GN9043

- Sample(s) D22470-1DUP were used as the QC samples for the Redox Potential Vs H2 analysis.

## Wet Chemistry By Method DEPT.OF AG, BOOK N9

**Matrix** SO

**Batch ID:** GP4198

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

## Wet Chemistry By Method LADNR29B

**Matrix** SO

**Batch ID:** MP4444

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

**Wet Chemistry By Method SM19 2540B M****Matrix** SO**Batch ID:** GN9038

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

**Wet Chemistry By Method SW846 3060/7196A M****Matrix** SO**Batch ID:** R7027

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

**Wet Chemistry By Method SW846 3060A/7196A****Matrix** SO**Batch ID:** M:GP12826

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

**Wet Chemistry By Method SW846 9045C****Matrix** SO**Batch ID:** GN9041

- The following samples were run outside of holding time for method SW846 9045C: D22470-1, D22470-2.

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

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

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

## SAMPLE DELIVERY GROUP CASE NARRATIVE

**Client:** Accutest Mountain States**Job No** D22470**Site:** KRWCCOL: FRU 197-33A**Report Date** 4/14/2011 9:05:11 AM

2 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were collected on 04/06/2011 and were received at Accutest on 04/08/2011 properly preserved, at XXXXNO TEMPERATURE FOUNDXXXX Deg. C and intact. These Samples received an Accutest job number of D22470. 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:** GP12826

- 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) M99098-7DUP, M99098-7MS 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(D22470).



## Sample Results

## Report of Analysis

Accutest Laboratories

## Report of Analysis

Page 1 of 1

**Client Sample ID:** FRU 197-33A U/L  
**Lab Sample ID:** D22470-1  
**Matrix:** SO - Soil  
**Method:** SW846 8260B  
**Project:** FRU 197-33A

**Date Sampled:** 04/06/11  
**Date Received:** 04/08/11  
**Percent Solids:** 88.3

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V10429.D	1	04/11/11	DC	n/a	n/a	V3V575
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.02 g	5.0 ml	100 ul
Run #2			

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	63	19	ug/kg	J
108-88-3	Toluene	75.0	130	63	ug/kg	
100-41-4	Ethylbenzene	ND	130	25	ug/kg	
1330-20-7	Xylene (total)	144	130	44	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	79%		70-130%
460-00-4	4-Bromofluorobenzene	80%		70-130%
17060-07-0	1,2-Dichloroethane-D4	80%		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

## Report of Analysis

<b>Client Sample ID:</b>	FRU 197-33A U/L	<b>Date Sampled:</b>	04/06/11
<b>Lab Sample ID:</b>	D22470-1	<b>Date Received:</b>	04/08/11
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	88.3
<b>Method:</b>	SW846 8270C BY SIM SW846 3546		
<b>Project:</b>	FRU 197-33A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G03613.D	5	04/12/11	TMB	04/12/11	OP3477	E3G133
Run #2							

	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	38	30	ug/kg	
208-96-8	Acenaphthylene	ND	38	34	ug/kg	
120-12-7	Anthracene	ND	38	34	ug/kg	
56-55-3	Benzo(a)anthracene	ND	94	49	ug/kg	
50-32-8	Benzo(a)pyrene	ND	94	68	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	94	70	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	94	59	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	94	42	ug/kg	
218-01-9	Chrysene	ND	94	42	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	94	70	ug/kg	
206-44-0	Fluoranthene	ND	38	38	ug/kg	
86-73-7	Fluorene	ND	38	32	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	110	100	ug/kg	
90-12-0	1-Methylnaphthalene	ND	38	28	ug/kg	
91-57-6	2-Methylnaphthalene	ND	38	32	ug/kg	
91-20-3	Naphthalene	ND	38	36	ug/kg	
85-01-8	Phenanthrene	ND	38	26	ug/kg	
129-00-0	Pyrene	ND	38	36	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	36%		10-193%
321-60-8	2-Fluorobiphenyl	34%		20-138%
1718-51-0	Terphenyl-d14	39%		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:** FRU 197-33A U/L  
**Lab Sample ID:** D22470-1  
**Matrix:** SO - Soil  
**Method:** SW846 8015B  
**Project:** FRU 197-33A

**Date Sampled:** 04/06/11  
**Date Received:** 04/08/11  
**Percent Solids:** 88.3

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA1152.D	1	04/13/11	BR	n/a	n/a	GGA614
Run #2							

	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	13	6.3	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	102%		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:** FRU 197-33A U/L  
**Lab Sample ID:** D22470-1  
**Matrix:** SO - Soil  
**Method:** SW846-8015B SW846 3546  
**Project:** FRU 197-33A

**Date Sampled:** 04/06/11  
**Date Received:** 04/08/11  
**Percent Solids:** 88.3

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI1544.D	1	04/12/11	JB	04/11/11	OP3473	GFI108
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)	21.4	15	9.8	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	91%		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: FRU 197-33A U/L

Lab Sample ID: D22470-1

Matrix: SO - Soil

Project: FRU 197-33A

Date Sampled: 04/06/11

Date Received: 04/08/11

Percent Solids: 88.3

## Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	5.2	0.43	mg/kg	5	04/12/11	04/12/11 JM	SW846 6020 <sup>3</sup>	SW846 3050B <sup>6</sup>
Barium	1590	1.1	mg/kg	1	04/12/11	04/12/11 GJ	SW846 6010B <sup>1</sup>	SW846 3050B <sup>5</sup>
Cadmium	< 1.1	1.1	mg/kg	1	04/12/11	04/12/11 GJ	SW846 6010B <sup>1</sup>	SW846 3050B <sup>5</sup>
Chromium	23.3	1.1	mg/kg	1	04/12/11	04/12/11 GJ	SW846 6010B <sup>1</sup>	SW846 3050B <sup>5</sup>
Copper	14.4	1.1	mg/kg	1	04/12/11	04/12/11 GJ	SW846 6010B <sup>1</sup>	SW846 3050B <sup>5</sup>
Lead	13.3	5.4	mg/kg	1	04/12/11	04/12/11 GJ	SW846 6010B <sup>1</sup>	SW846 3050B <sup>5</sup>
Mercury	< 0.10	0.10	mg/kg	1	04/12/11	04/12/11 JB	SW846 7471A <sup>2</sup>	SW846 7471A <sup>7</sup>
Nickel	18.3	3.2	mg/kg	1	04/12/11	04/12/11 GJ	SW846 6010B <sup>1</sup>	SW846 3050B <sup>5</sup>
Selenium	< 5.4	5.4	mg/kg	1	04/12/11	04/13/11 GJ	SW846 6010B <sup>4</sup>	SW846 3050B <sup>5</sup>
Silver	< 3.2	3.2	mg/kg	1	04/12/11	04/12/11 GJ	SW846 6010B <sup>1</sup>	SW846 3050B <sup>5</sup>
Zinc	45.1	3.2	mg/kg	1	04/12/11	04/12/11 GJ	SW846 6010B <sup>1</sup>	SW846 3050B <sup>5</sup>

(1) Instrument QC Batch: MA1448

(2) Instrument QC Batch: MA1451

(3) Instrument QC Batch: MA1452

(4) Instrument QC Batch: MA1453

(5) Prep QC Batch: MP4439

(6) Prep QC Batch: MP4440

(7) Prep QC Batch: MP4441

RL = Reporting Limit

## Report of Analysis

**Client Sample ID:** FRU 197-33A U/L**Lab Sample ID:** D22470-1**Matrix:** SO - Soil**Project:** FRU 197-33A**Date Sampled:** 04/06/11**Date Received:** 04/08/11**Percent Solids:** 88.3**General Chemistry**

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent <sup>a</sup>	0.80	0.44	mg/kg	1	04/12/11 15:48	AMA	SW846 3060A/7196A
Chromium, Trivalent <sup>b</sup>	22.5	1.5	mg/kg	1	04/12/11 17:07	GJ	SW846 3060/7196A M
Redox Potential Vs H2	219		mv	1	04/08/11 14:30	CB	ASTM D1498-76M
Solids, Percent	88.3		%	1	04/08/11	SWT	SM19 2540B M
Specific Conductivity	2150	1.0	umhos/cm	1	04/13/11	JK	DEPT.OF AG, BOOK N9
pH	9.77		su	1	04/08/11 12:15	JD	SW846 9045C

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

<b>Client Sample ID:</b>	FRU 197-33A U/L	<b>Date Sampled:</b>	04/06/11
<b>Lab Sample ID:</b>	D22470-1A	<b>Date Received:</b>	04/08/11
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	88.3
<b>Project:</b>	FRU 197-33A		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	24.0	2.0	mg/l	1	04/12/11	04/12/11 GJ	SW846 6010B <sup>1</sup>	EPA 200.7 <sup>2</sup>
Magnesium	23.2	1.0	mg/l	1	04/12/11	04/12/11 GJ	SW846 6010B <sup>1</sup>	EPA 200.7 <sup>2</sup>
Sodium	404	2.0	mg/l	1	04/12/11	04/12/11 GJ	SW846 6010B <sup>1</sup>	EPA 200.7 <sup>2</sup>

(1) Instrument QC Batch: MA1448  
(2) Prep QC Batch: MP4444

RL = Reporting Limit



Report of Analysis

<b>Client Sample ID:</b>	FRU 197-33A U/L	<b>Date Sampled:</b>	04/06/11
<b>Lab Sample ID:</b>	D22470-1A	<b>Date Received:</b>	04/08/11
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	88.3
<b>Project:</b>	FRU 197-33A		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio <sup>a</sup>	14.1		ratio	1	04/12/11 15:15	GJ	LADNR29B

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

RL = Reporting Limit

Accutest Laboratories

## Report of Analysis

Page 1 of 1

<b>Client Sample ID:</b>	FRU 197-33A CUT/SPOILS MIX			<b>Date Sampled:</b>	04/06/11
<b>Lab Sample ID:</b>	D22470-2			<b>Date Received:</b>	04/08/11
<b>Matrix:</b>	SO - Soil			<b>Percent Solids:</b>	82.5
<b>Method:</b>	SW846 8260B				
<b>Project:</b>	FRU 197-33A				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V10430.D	1	04/11/11	DC	n/a	n/a	V3V575
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.05 g	5.0 ml	100 ul
Run #2			

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	634	71	21	ug/kg	
108-88-3	Toluene	1690	140	71	ug/kg	
100-41-4	Ethylbenzene	227	140	28	ug/kg	
1330-20-7	Xylene (total)	1610	140	49	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	78%		70-130%
460-00-4	4-Bromofluorobenzene	80%		70-130%
17060-07-0	1,2-Dichloroethane-D4	81%		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

## Report of Analysis

<b>Client Sample ID:</b>	FRU 197-33A CUT/SPOILS MIX			<b>Date Sampled:</b>	04/06/11
<b>Lab Sample ID:</b>	D22470-2			<b>Date Received:</b>	04/08/11
<b>Matrix:</b>	SO - Soil			<b>Percent Solids:</b>	82.5
<b>Method:</b>	SW846 8270C BY SIM SW846 3546				
<b>Project:</b>	FRU 197-33A				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G03614.D	5	04/12/11	TMB	04/12/11	OP3477	E3G133
Run #2							

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

## BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	40	32	ug/kg	
208-96-8	Acenaphthylene	ND	40	36	ug/kg	
120-12-7	Anthracene	ND	40	36	ug/kg	
56-55-3	Benzo(a)anthracene	ND	100	52	ug/kg	
50-32-8	Benzo(a)pyrene	ND	100	72	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	100	74	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	100	62	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	100	44	ug/kg	
218-01-9	Chrysene	ND	100	44	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	100	74	ug/kg	
206-44-0	Fluoranthene	ND	40	40	ug/kg	
86-73-7	Fluorene	85.1	40	34	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	120	110	ug/kg	
90-12-0	1-Methylnaphthalene	394	40	30	ug/kg	
91-57-6	2-Methylnaphthalene	673	40	34	ug/kg	
91-20-3	Naphthalene	353	40	38	ug/kg	
85-01-8	Phenanthrene	195	40	28	ug/kg	
129-00-0	Pyrene	ND	40	38	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	58%		10-193%
321-60-8	2-Fluorobiphenyl	55%		20-138%
1718-51-0	Terphenyl-d14	72%		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:** FRU 197-33A CUT/SPOILS MIX**Lab Sample ID:** D22470-2**Date Sampled:** 04/06/11**Matrix:** SO - Soil**Date Received:** 04/08/11**Method:** SW846 8015B**Percent Solids:** 82.5**Project:** FRU 197-33A

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA1153.D	1	04/13/11	BR	n/a	n/a	GGA614
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	34.6	14	7.1	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	103%		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:** FRU 197-33A CUT/SPOILS MIX**Lab Sample ID:** D22470-2**Date Sampled:** 04/06/11**Matrix:** SO - Soil**Date Received:** 04/08/11**Method:** SW846-8015B SW846 3546**Percent Solids:** 82.5**Project:** FRU 197-33A

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F11545.D	1	04/12/11	JB	04/11/11	OP3473	GFI108
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)	190	16	10	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	96%		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:** FRU 197-33A CUT/SPOILS MIX**Lab Sample ID:** D22470-2**Date Sampled:** 04/06/11**Matrix:** SO - Soil**Date Received:** 04/08/11**Percent Solids:** 82.5**Project:** FRU 197-33A**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	5.8	0.48	mg/kg	5	04/12/11	04/12/11 JM	SW846 6020 <sup>3</sup>	SW846 3050B <sup>6</sup>
Barium	4180	2.4	mg/kg	2	04/12/11	04/13/11 GJ	SW846 6010B <sup>4</sup>	SW846 3050B <sup>5</sup>
Cadmium	< 1.2	1.2	mg/kg	1	04/12/11	04/12/11 GJ	SW846 6010B <sup>1</sup>	SW846 3050B <sup>5</sup>
Chromium	19.3	1.2	mg/kg	1	04/12/11	04/12/11 GJ	SW846 6010B <sup>1</sup>	SW846 3050B <sup>5</sup>
Copper	22.5	1.2	mg/kg	1	04/12/11	04/12/11 GJ	SW846 6010B <sup>1</sup>	SW846 3050B <sup>5</sup>
Lead	16.4	5.9	mg/kg	1	04/12/11	04/12/11 GJ	SW846 6010B <sup>1</sup>	SW846 3050B <sup>5</sup>
Mercury	< 0.12	0.12	mg/kg	1	04/12/11	04/12/11 JB	SW846 7471A <sup>2</sup>	SW846 7471A <sup>7</sup>
Nickel	13.5	3.6	mg/kg	1	04/12/11	04/12/11 GJ	SW846 6010B <sup>1</sup>	SW846 3050B <sup>5</sup>
Selenium <sup>a</sup>	< 12	12	mg/kg	2	04/12/11	04/13/11 GJ	SW846 6010B <sup>4</sup>	SW846 3050B <sup>5</sup>
Silver	< 3.6	3.6	mg/kg	1	04/12/11	04/12/11 GJ	SW846 6010B <sup>1</sup>	SW846 3050B <sup>5</sup>
Zinc	37.3	3.6	mg/kg	1	04/12/11	04/12/11 GJ	SW846 6010B <sup>1</sup>	SW846 3050B <sup>5</sup>

(1) Instrument QC Batch: MA1448

(2) Instrument QC Batch: MA1451

(3) Instrument QC Batch: MA1452

(4) Instrument QC Batch: MA1453

(5) Prep QC Batch: MP4439

(6) Prep QC Batch: MP4440

(7) Prep QC Batch: MP4441

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

RL = Reporting Limit

## Report of Analysis

**Client Sample ID:** FRU 197-33A CUT/SPOILS MIX**Lab Sample ID:** D22470-2**Date Sampled:** 04/06/11**Matrix:** SO - Soil**Date Received:** 04/08/11**Project:** FRU 197-33A**Percent Solids:** 82.5

## General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent <sup>a</sup>	0.58	0.48	mg/kg	1	04/12/11 15:48	AMA	SW846 3060A/7196A
Chromium, Trivalent <sup>b</sup>	18.7	1.7	mg/kg	1	04/12/11 17:17	GJ	SW846 3060/7196A M
Redox Potential Vs H2	216		mv	1	04/08/11 14:30	CB	ASTM D1498-76M
Solids, Percent	82.5		%	1	04/08/11	SWT	SM19 2540B M
Specific Conductivity	3860	1.0	umhos/cm	1	04/13/11	JK	DEPT.OF AG, BOOK N9
pH	9.80		su	1	04/08/11 12:15	JD	SW846 9045C

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

<b>Client Sample ID:</b>	FRU 197-33A CUT/SPOILS MIX			<b>Date Sampled:</b>	04/06/11
<b>Lab Sample ID:</b>	D22470-2A			<b>Date Received:</b>	04/08/11
<b>Matrix:</b>	SO - Soil			<b>Percent Solids:</b>	82.5
<b>Project:</b>	FRU 197-33A				

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By		Method	Prep Method
Calcium	125	2.0	mg/l	1	04/12/11	04/12/11	GJ	SW846 6010B <sup>1</sup>	EPA 200.7 <sup>2</sup>
Magnesium	8.48	1.0	mg/l	1	04/12/11	04/12/11	GJ	SW846 6010B <sup>1</sup>	EPA 200.7 <sup>2</sup>
Sodium	767	2.0	mg/l	1	04/12/11	04/12/11	GJ	SW846 6010B <sup>1</sup>	EPA 200.7 <sup>2</sup>

(1) Instrument QC Batch: MA1448  
(2) Prep QC Batch: MP4444

RL = Reporting Limit



Report of Analysis

<b>Client Sample ID:</b>	FRU 197-33A CUT/SPOILS MIX	<b>Date Sampled:</b>	04/06/11
<b>Lab Sample ID:</b>	D22470-2A	<b>Date Received:</b>	04/08/11
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	82.5
<b>Project:</b>	FRU 197-33A		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio <sup>a</sup>	17.9		ratio	1	04/12/11 15:21	GJ	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

## 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

D22470

PAGE 1 OF 1

[illegible]

## D22470: Chain of Custody

Page 1 of 2

## Accutest Laboratories Sample Receipt Summary

**Accutest Job Number:** D22470

**Client:** KRW CONSULTING INC.

**Immediate Client Services Action Required:** No

**Date / Time Received:** 4/8/2011 8:40:00 AM

**No. Coolers:** 1

**Client Service Action Required at Login:** No

**Project:** FRU-197-33A

**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:** D22470**Account:** KRWCCOL KRW Consulting, Inc.**Project:** FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V575-MB1	3V10418.D	1	04/10/11	DC	n/a	n/a	V3V575

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

D22470-1, D22470-2

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	82% 70-130%
460-00-4	4-Bromofluorobenzene	77% 70-130%
17060-07-0	1,2-Dichloroethane-D4	81% 70-130%

Blank Spike Summary

Job Number: D22470  
Account: KRWCCOL KRW Consulting, Inc.  
Project: FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V575-BS1	3V10419.D	1	04/10/11	DC	n/a	n/a	V3V575

The QC reported here applies to the following samples:

Method: SW846 8260B

D22470-1, D22470-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	46.3	93	68-130
100-41-4	Ethylbenzene	50	47.6	95	70-130
108-88-3	Toluene	50	44.9	90	70-130
1330-20-7	Xylene (total)	100	84.2	84	60-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	80%	70-130%
460-00-4	4-Bromofluorobenzene	77%	70-130%
17060-07-0	1,2-Dichloroethane-D4	82%	70-130%

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D22470

**Account:** KRWCCOL KRW Consulting, Inc.

**Project:** FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D22299-2MS	3V10421.D	1	04/10/11	DC	n/a	n/a	V3V575
D22299-2MSD	3V10422.D	1	04/11/11	DC	n/a	n/a	V3V575
D22299-2	3V10420.D	1	04/10/11	DC	n/a	n/a	V3V575

The QC reported here applies to the following samples:

Method: SW846 8260B

D22470-1, D22470-2

CAS No.	Compound	D22299-2 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		3220	3550	110	3540	110	0	55-140/30
100-41-4	Ethylbenzene	ND		3220	3800	118	3770	117	1	56-139/30
108-88-3	Toluene	ND		3220	3510	109	3530	110	1	57-144/30
1330-20-7	Xylene (total)	ND		6440	7030	109	6920	107	2	51-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D22299-2	Limits
2037-26-5	Toluene-D8	78%	79%	76%	70-130%
460-00-4	4-Bromofluorobenzene	80%	81%	79%	70-130%
17060-07-0	1,2-Dichloroethane-D4	81%	85%	82%	70-130%



GC/MS Volatiles

Raw Data



## Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3040911.S\  
 Data File : 3V10429.D  
 Acq On : 11 Apr 2011 4:04 am  
 Operator : DONC  
 Sample : D22470-1, 50X  
 Misc : MS2029,V3V575,5.016,,100,5,1  
 ALS Vial : 35 Sample Multiplier: 1

Quant Time: Apr 11 12:24:33 2011  
 Quant Method : C:\msdchem\1\METHODS\V3HSL543TVH543.M  
 Quant Title : 8260  
 QLast Update : Fri Mar 25 12:05:44 2011  
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.888	168	538540	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.684	114	923123	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.318	117	912071	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.311	152	512329	50.00	ug/l	0.00

## System Monitoring Compounds

30) 1,2-Dichloroethane-d4	12.286	102	63964	40.13	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	80.26%
55) Toluene-d8	14.073	98	1023497	39.51	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	79.02%
59) 4-Bromofluorobenzene	16.268	95	385139	40.02	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	80.04%

## Target Compounds

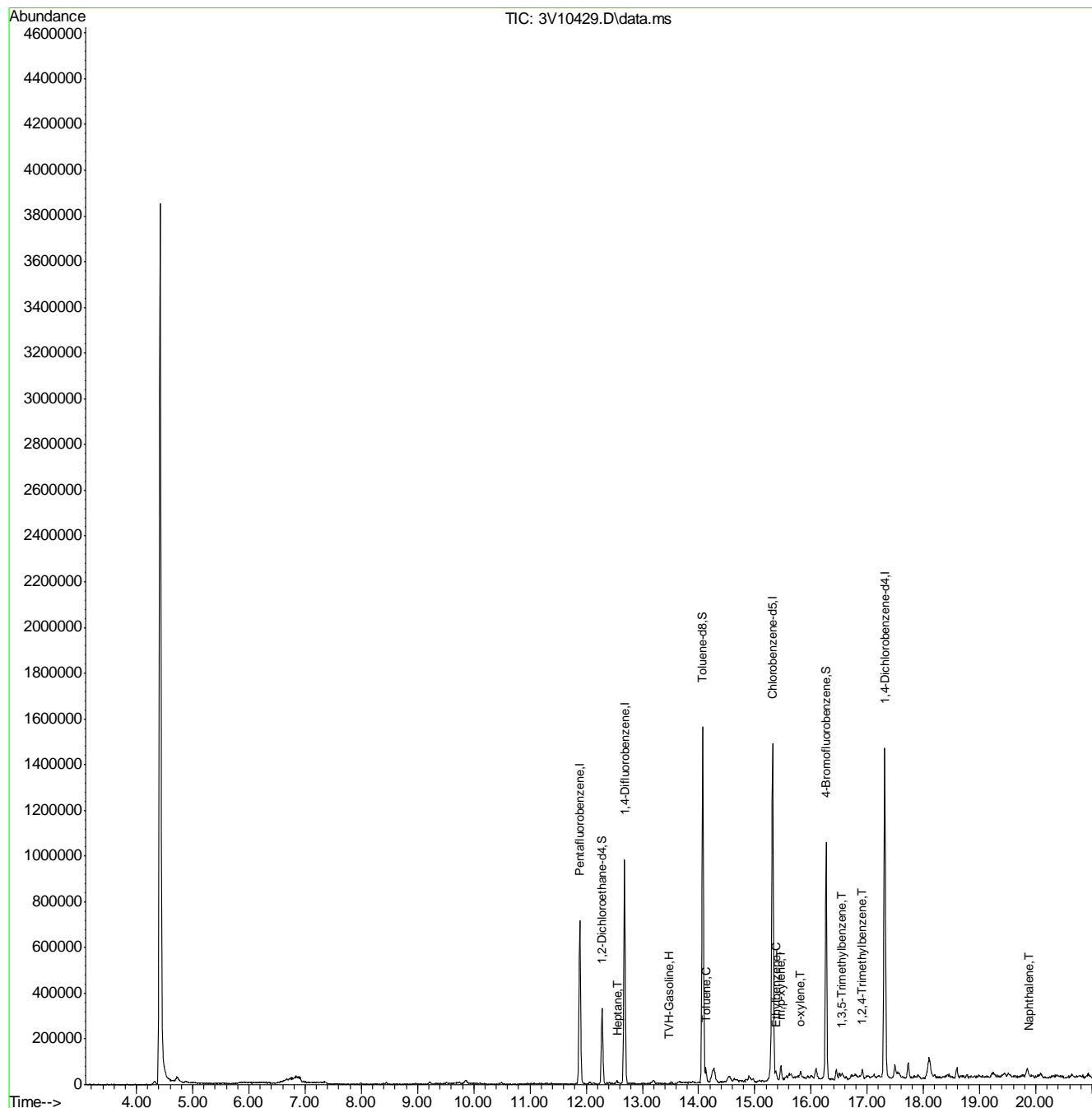
					Qvalue
1) TVH-Gasoline	13.491	TIC	1405318m	29.91	ug/l
39) Heptane	12.546	43	5950	0.36	ug/l
56) Toluene	14.131	92	20068	1.19	ug/l
58) Ethylbenzene	15.389	91	11331	0.39	ug/l
61) m,p-xylene	15.459	106	22443	1.59	ug/l
62) o-xylene	15.819	106	9857	0.69	ug/l
66) 1,3,5-Trimethylbenzene	16.560	105	5966	0.22	ug/l
67) 1,2,4-Trimethylbenzene	16.919	105	21471	0.75	ug/l
72) Naphthalene	19.891	128	12364	0.37	ug/l

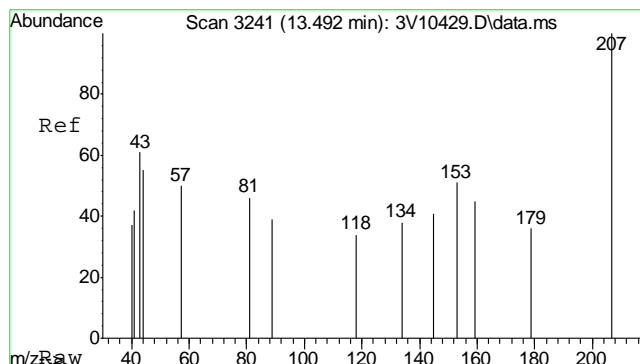
(#) = qualifier out of range (m) = manual integration (+) = signals summed

## Quantitation Report (QT Reviewed)

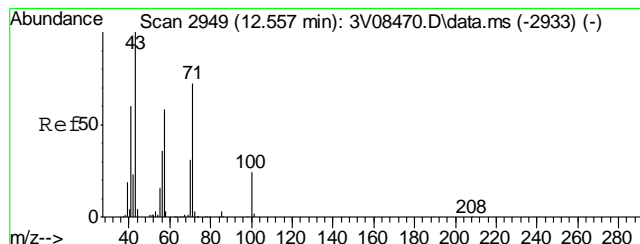
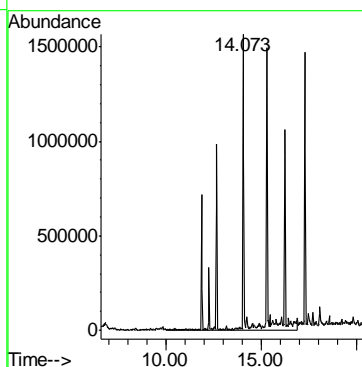
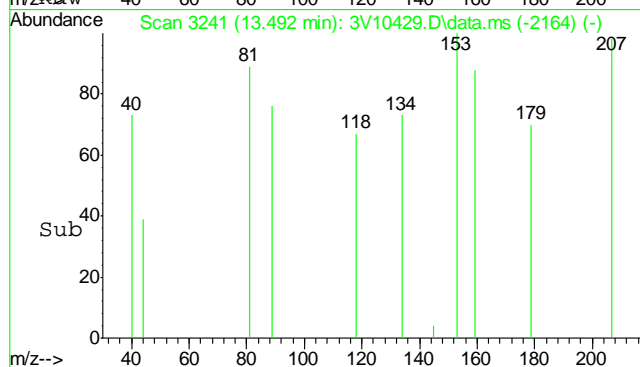
Data Path : C:\msdchem\1\DATA\V3040911.S\  
Data File : 3V10429.D  
Acq On : 11 Apr 2011 4:04 am  
Operator : DONC  
Sample : D22470-1, 50X  
Misc : MS2029,V3V575,5.016,,100,5,1  
ALS Vial : 35 Sample Multiplier: 1

Quant Time: Apr 11 12:24:33 2011  
Quant Method : C:\msdchem\1\METHODS\V3HSL543TVH543.M  
Quant Title : 8260  
QLast Update : Fri Mar 25 12:05:44 2011  
Response via : Initial Calibration





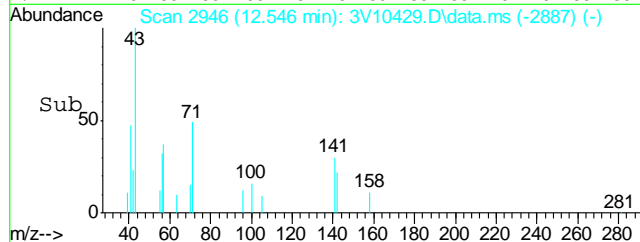
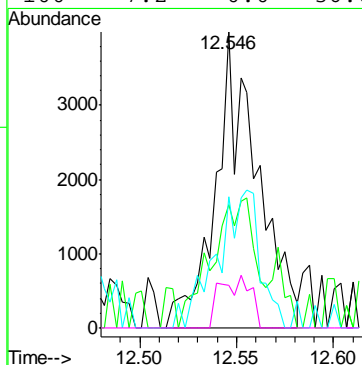
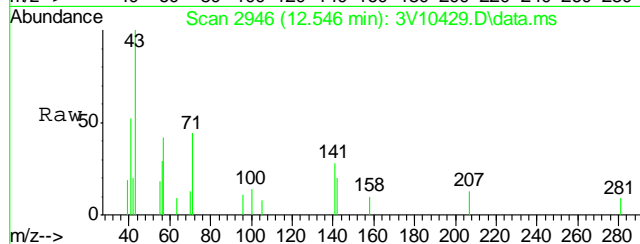
#1  
TVH-Gasoline  
Concen: 29.91 ug/l m  
RT: 13.491 min Scan# 3241  
Delta R.T. 0.000 min  
Lab File: 3V10429.D  
Acq: 11 Apr 2011 4:04 am  
Tgt Ion:TIC Resp: 1405318

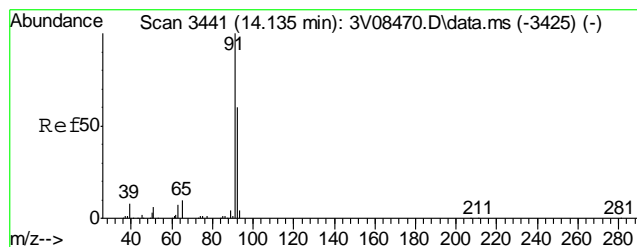


#39  
Heptane  
Concen: 0.36 ug/l  
RT: 12.546 min Scan# 2946  
Delta R.T. -0.011 min  
Lab File: 3V10429.D  
Acq: 11 Apr 2011 4:04 am

Tgt Ion: 43 Resp: 5950

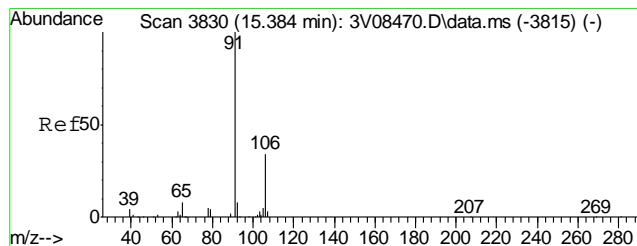
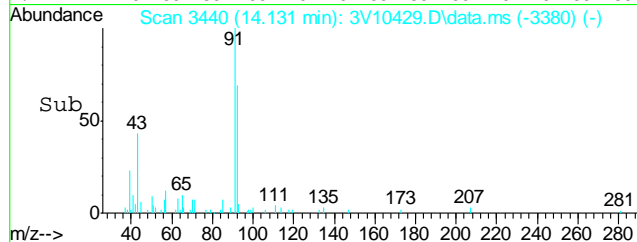
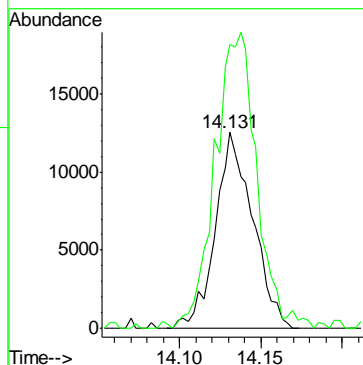
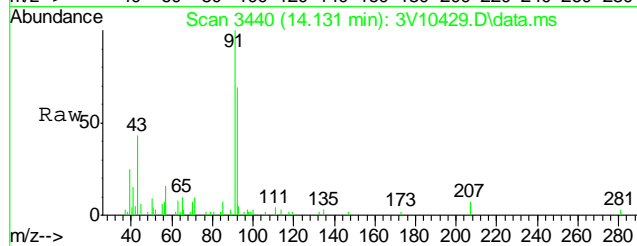
Ion	Ratio	Lower	Upper
43	100		
57	45.6	22.7	62.7
71	48.0	21.4	61.4
100	7.2	0.0	36.6





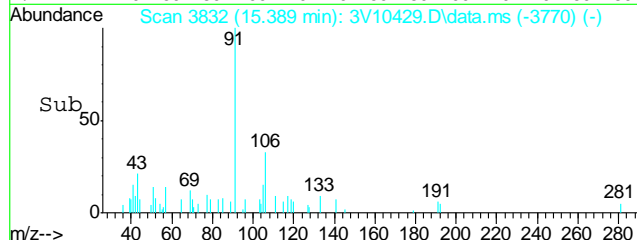
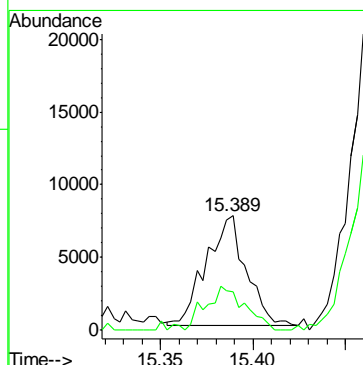
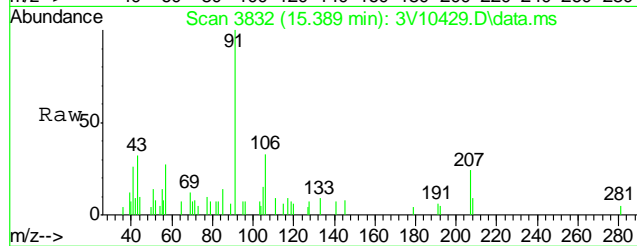
#56  
Toluene  
Concen: 1.19 ug/l  
RT: 14.131 min Scan# 3440  
Delta R.T. -0.008 min  
Lab File: 3V10429.D  
Acq: 11 Apr 2011 4:04 am

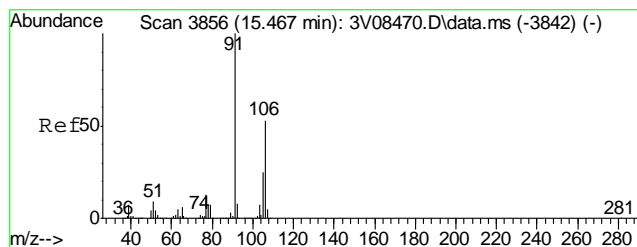
Tgt Ion: 92 Resp: 20068  
Ion Ratio Lower Upper  
92 100  
91 168.9 143.2 183.2



#58  
Ethylbenzene  
Concen: 0.39 ug/l  
RT: 15.389 min Scan# 3832  
Delta R.T. -0.002 min  
Lab File: 3V10429.D  
Acq: 11 Apr 2011 4:04 am

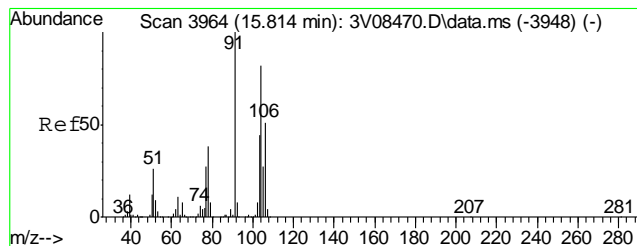
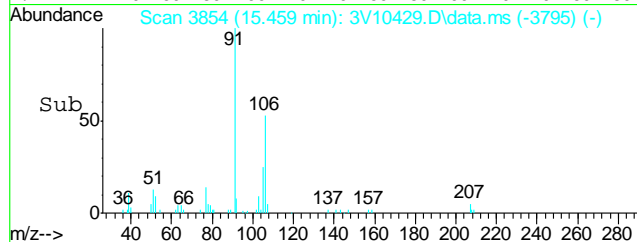
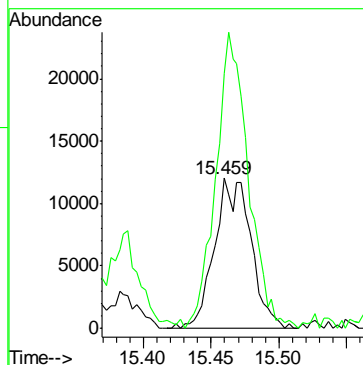
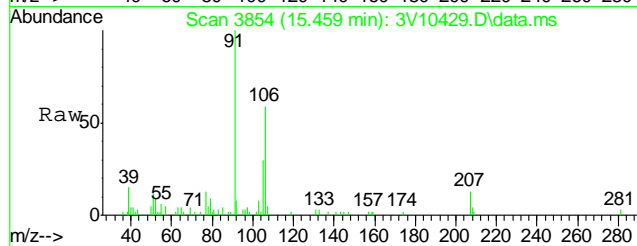
Tgt Ion: 91 Resp: 11331  
Ion Ratio Lower Upper  
91 100  
106 38.7 16.8 56.8





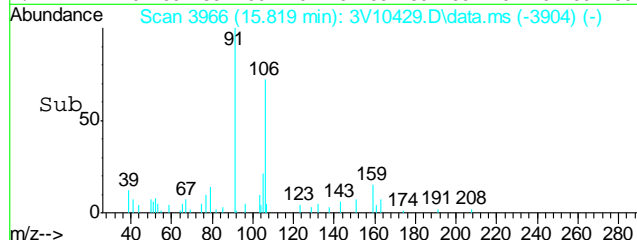
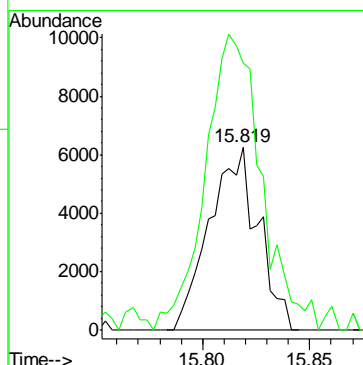
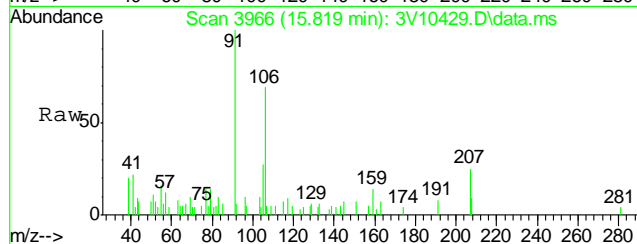
#61  
m,p-xylene  
Concen: 1.59 ug/l  
RT: 15.459 min Scan# 3854  
Delta R.T. -0.011 min  
Lab File: 3V10429.D  
Acq: 11 Apr 2011 4:04 am

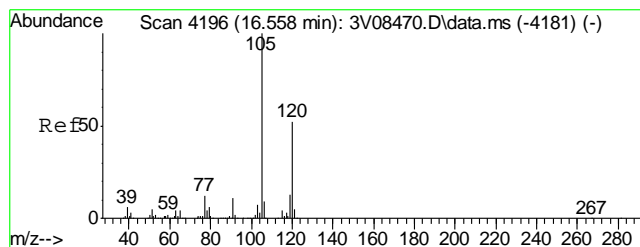
Tgt Ion:106 Resp: 22443  
Ion Ratio Lower Upper  
106 100  
91 175.9 146.8 186.8



#62  
o-xylene  
Concen: 0.69 ug/l  
RT: 15.819 min Scan# 3966  
Delta R.T. -0.002 min  
Lab File: 3V10429.D  
Acq: 11 Apr 2011 4:04 am

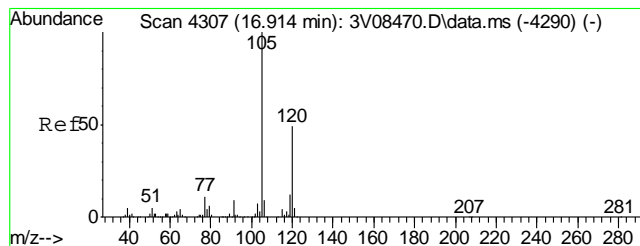
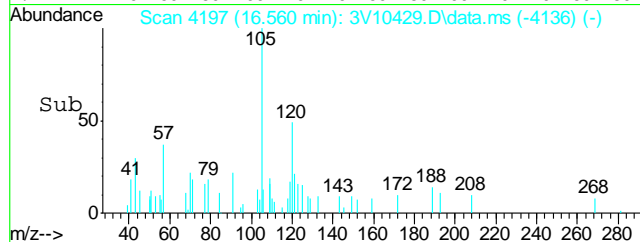
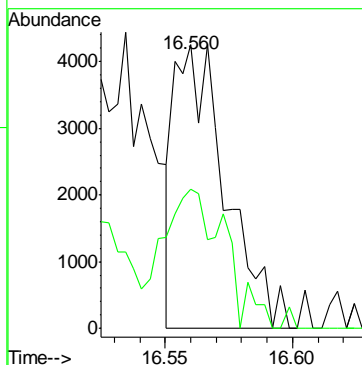
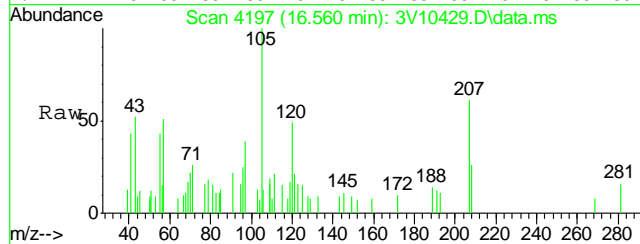
Tgt Ion:106 Resp: 9857  
Ion Ratio Lower Upper  
106 100  
91 186.3 141.5 212.3





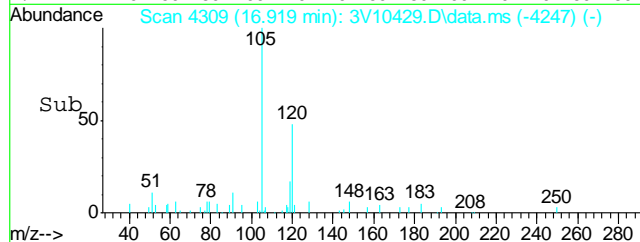
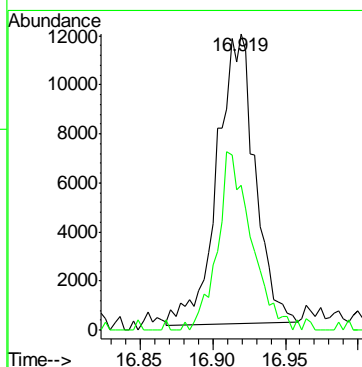
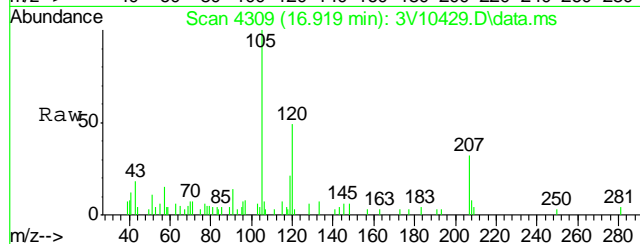
#66  
1,3,5-Trimethylbenzene  
Concen: 0.22 ug/l  
RT: 16.560 min Scan# 4197  
Delta R.T. -0.005 min  
Lab File: 3V10429.D  
Acq: 11 Apr 2011 4:04 am

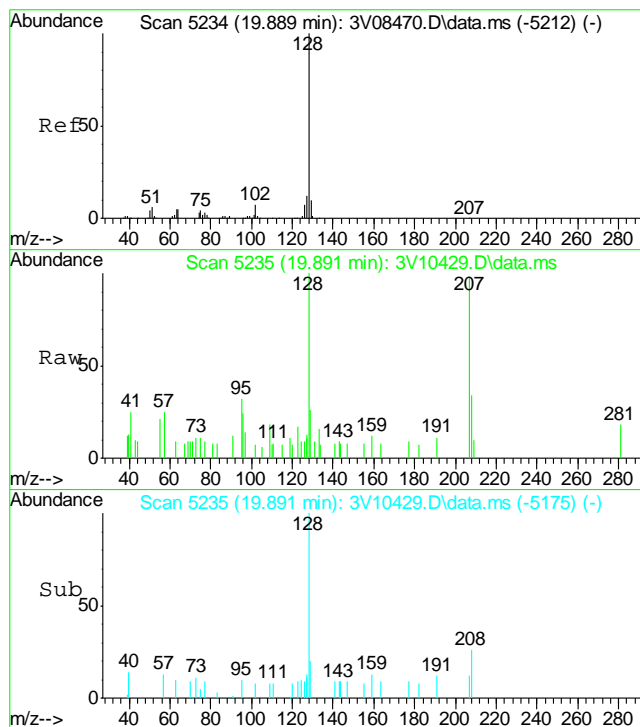
Tgt Ion:105 Resp: 5966  
Ion Ratio Lower Upper  
105 100  
120 59.1 45.0 67.6



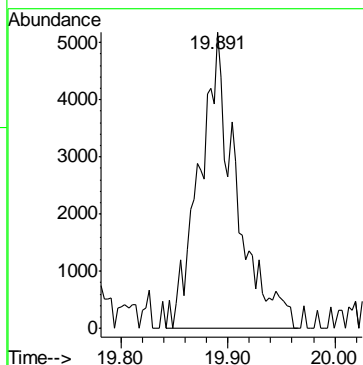
#67  
1,2,4-Trimethylbenzene  
Concen: 0.75 ug/l  
RT: 16.919 min Scan# 4309  
Delta R.T. -0.002 min  
Lab File: 3V10429.D  
Acq: 11 Apr 2011 4:04 am

Tgt Ion:105 Resp: 21471  
Ion Ratio Lower Upper  
105 100  
120 54.2 41.8 62.6





#72  
 Naphthalene  
 Concen: 0.37 ug/l  
 RT: 19.891 min Scan# 5235  
 Delta R.T. -0.008 min  
 Lab File: 3V10429.D  
 Acq: 11 Apr 2011 4:04 am  
 Tgt Ion:128 Resp: 12364





## Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3040911.S\  
 Data File : 3V10430.D  
 Acq On : 11 Apr 2011 4:35 am  
 Operator : DONC  
 Sample : D22470-2, 50X  
 Misc : MS2029,V3V575,5.050,,100,5,1  
 ALS Vial : 36 Sample Multiplier: 1

Quant Time: Apr 11 12:26:11 2011  
 Quant Method : C:\msdchem\1\METHODS\V3HSL543TVH543.M  
 Quant Title : 8260  
 QLast Update : Fri Mar 25 12:05:44 2011  
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.888	168	531095	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.684	114	906684	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.318	117	890339	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.311	152	500829	50.00	ug/l	0.00

## System Monitoring Compounds

30) 1,2-Dichloroethane-d4	12.289	102	63492	40.39	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	80.78%
55) Toluene-d8	14.073	98	989410	39.13	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	78.26%
59) 4-Bromofluorobenzene	16.268	95	374816	39.90	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	79.80%

## Target Compounds

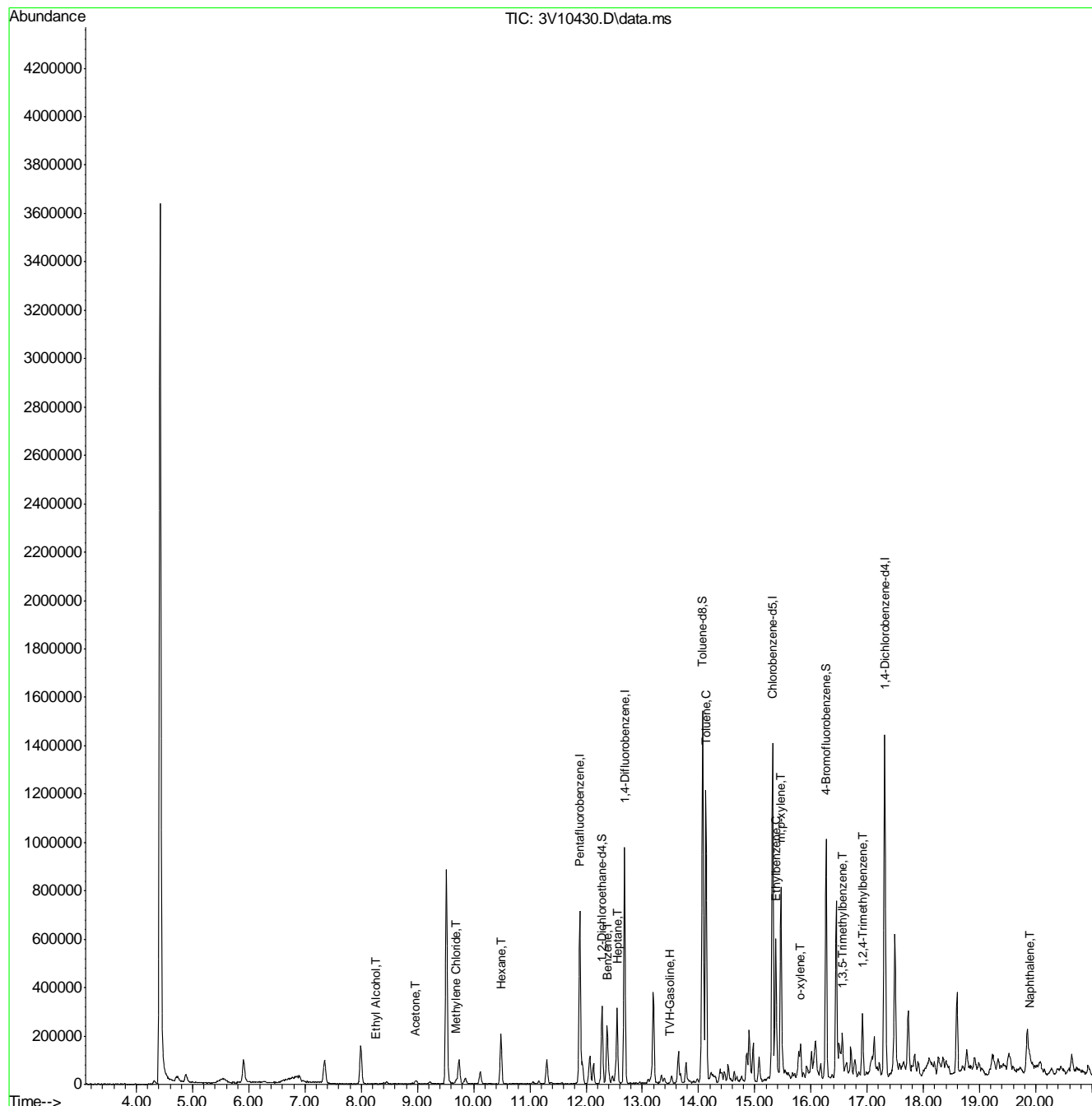
					Qvalue
1) TVH-Gasoline	13.491	TIC	13779770m	293.28	ug/l
9) Ethyl Alcohol	8.246	45	603	5.73	ug/l
14) Acetone	8.971	58	6231	9.11	ug/l
16) Methylene Chloride	9.693	84	3294	0.58	ug/l #
37) Hexane	10.483	57	93898	7.58	ug/l
39) Heptane	12.549	43	151596	9.42	ug/l
45) Benzene	12.373	78	201881	8.98	ug/l
56) Toluene	14.134	92	393466	23.90	ug/l
58) Ethylbenzene	15.386	91	89889	3.21	ug/l
61) m,p-xylene	15.466	106	269974	19.64	ug/l
62) o-xylene	15.816	106	44275	3.20	ug/l
66) 1,3,5-Trimethylbenzene	16.557	105	69329	2.64	ug/l
67) 1,2,4-Trimethylbenzene	16.916	105	145368	5.18	ug/l
72) Naphthalene	19.897	128	98411	3.00	ug/l

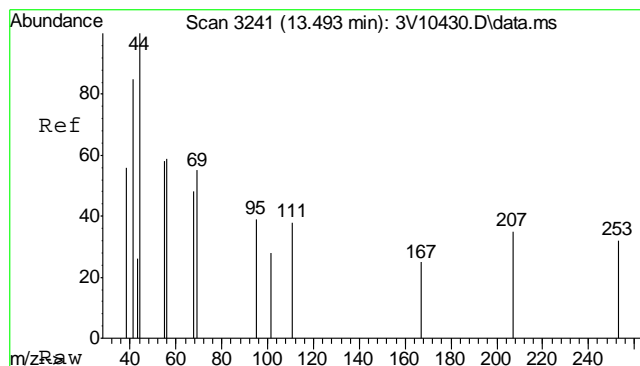
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3040911.S\  
 Data File : 3V10430.D  
 Acq On : 11 Apr 2011 4:35 am  
 Operator : DONC  
 Sample : D22470-2, 50X  
 Misc : MS2029,V3V575,5.050,,100,5,1  
 ALS Vial : 36 Sample Multiplier: 1

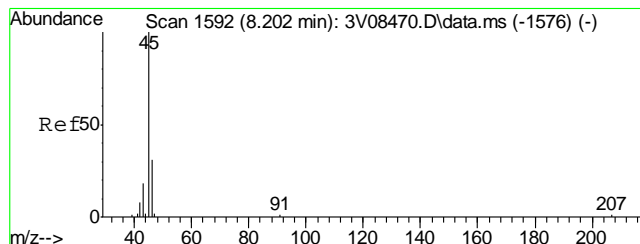
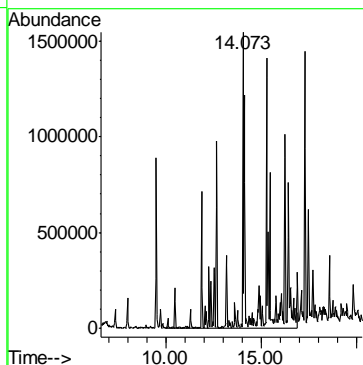
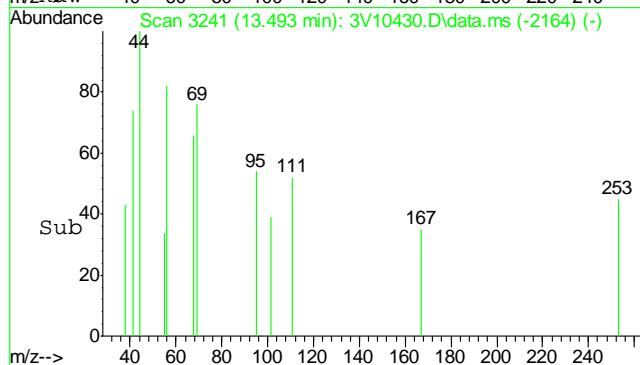
Quant Time: Apr 11 12:26:11 2011  
 Quant Method : C:\msdchem\1\METHODS\V3HSL543TVH543.M  
 Quant Title : 8260  
 QLast Update : Fri Mar 25 12:05:44 2011  
 Response via : Initial Calibration





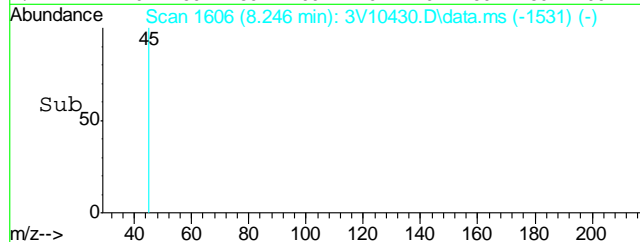
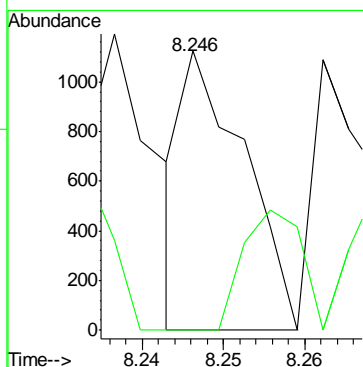
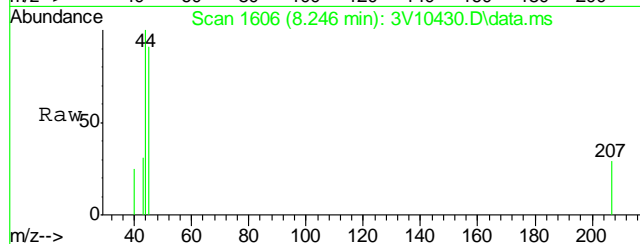
#1  
TVH-Gasoline  
Concen: 293.28 ug/l m  
RT: 13.491 min Scan# 3241  
Delta R.T. 0.000 min  
Lab File: 3V10430.D  
Acq: 11 Apr 2011 4:35 am

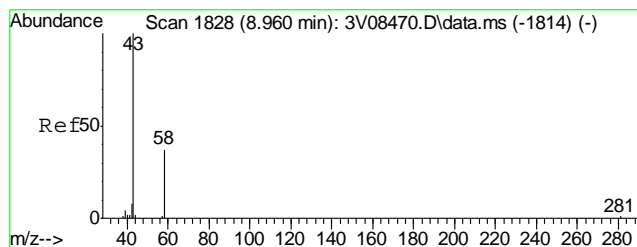
Tgt Ion:TIC Resp:13779770



#9  
Ethyl Alcohol  
Concen: 5.73 ug/l  
RT: 8.246 min Scan# 1606  
Delta R.T. 0.040 min  
Lab File: 3V10430.D  
Acq: 11 Apr 2011 4:35 am

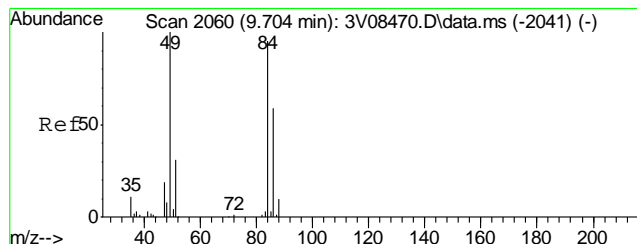
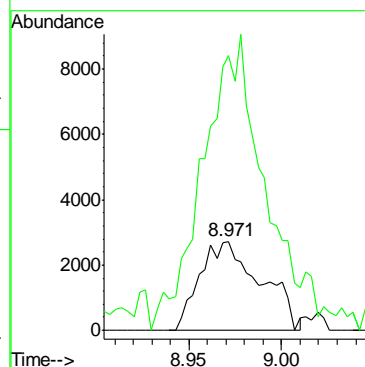
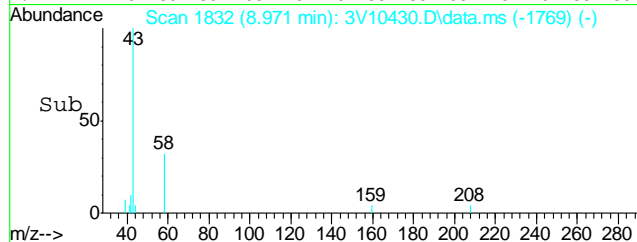
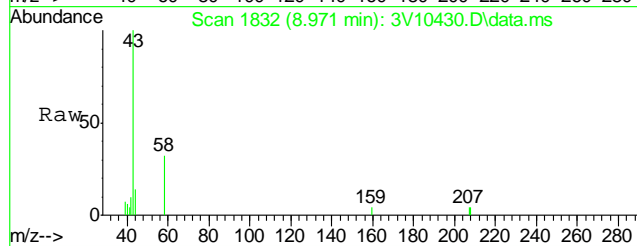
Tgt Ion: 45 Resp: 603  
Ion Ratio Lower Upper  
45 100  
46 40.0 32.9 49.3





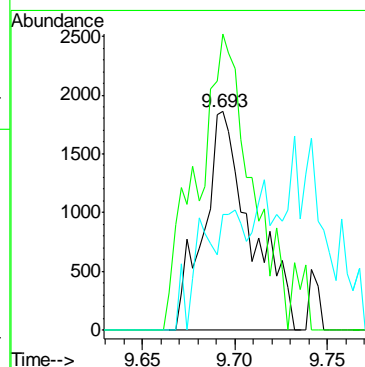
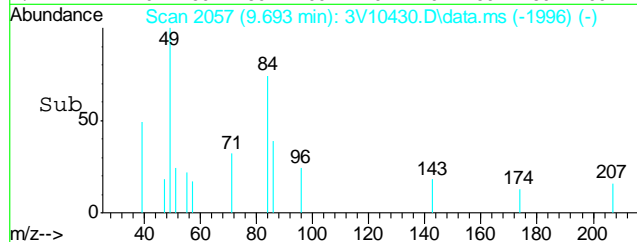
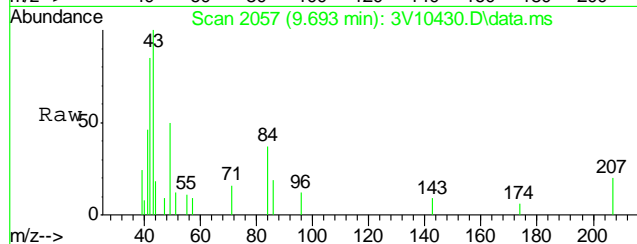
#14  
Acetone  
Concen: 9.11 ug/l  
RT: 8.971 min Scan# 1832  
Delta R.T. 0.002 min  
Lab File: 3V10430.D  
Acq: 11 Apr 2011 4:35 am

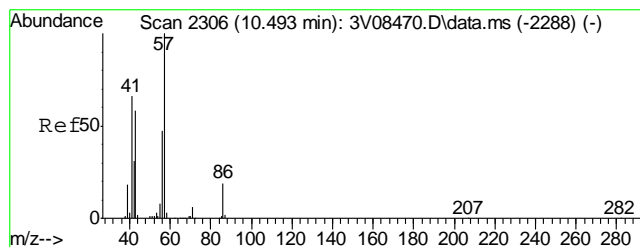
Tgt Ion: 58 Resp: 6231  
Ion Ratio Lower Upper  
58 100  
43 346.9 344.7 384.7



#16  
Methylene Chloride  
Concen: 0.58 ug/l  
RT: 9.693 min Scan# 2057  
Delta R.T. -0.005 min  
Lab File: 3V10430.D  
Acq: 11 Apr 2011 4:35 am

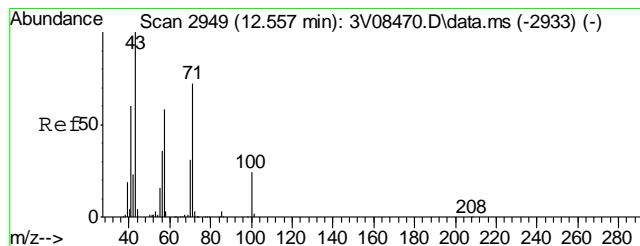
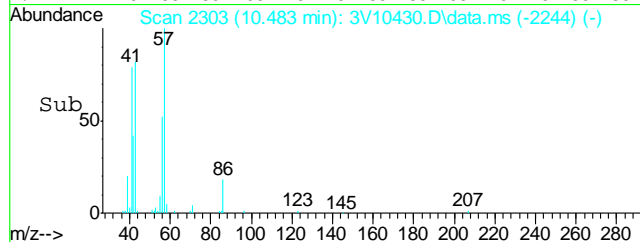
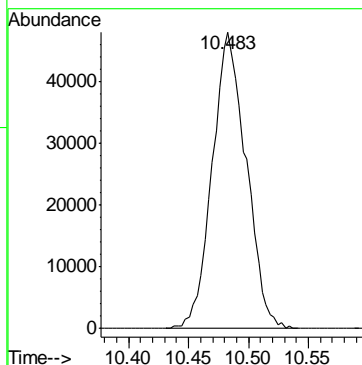
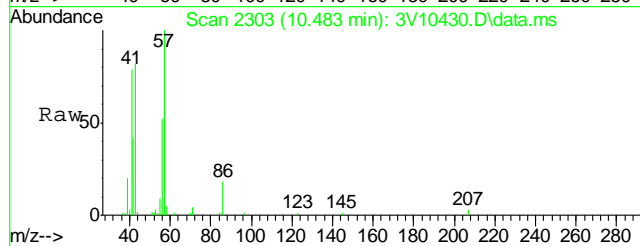
Tgt Ion: 84 Resp: 3294  
Ion Ratio Lower Upper  
84 100  
49 154.8 140.6 180.6  
86 22.6 44.2 84.2#





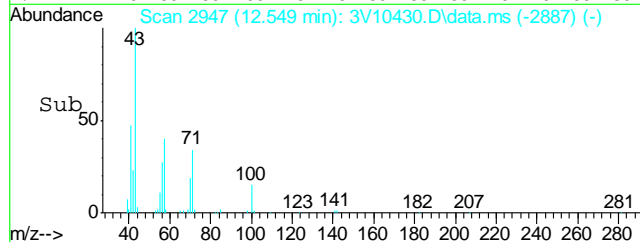
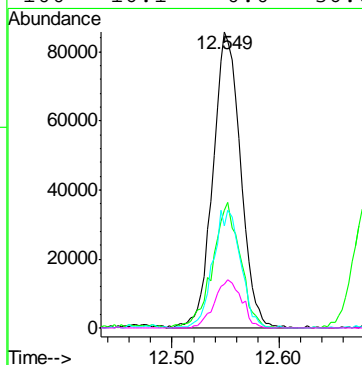
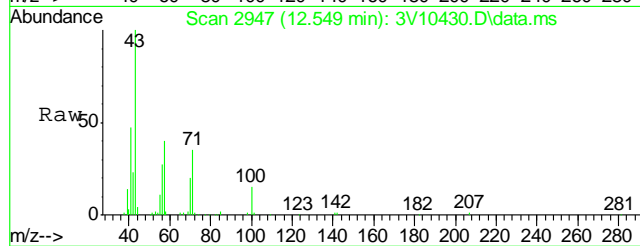
#37  
Hexane  
Concen: 7.58 ug/l  
RT: 10.483 min Scan# 2303  
Delta R.T. -0.011 min  
Lab File: 3V10430.D  
Acq: 11 Apr 2011 4:35 am

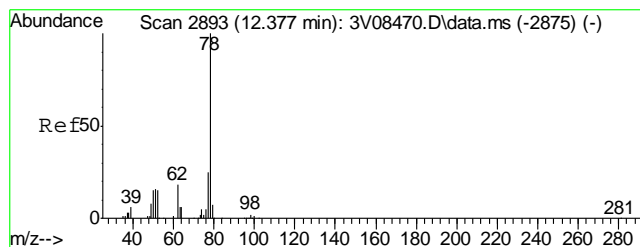
Tgt Ion: 57 Resp: 93898



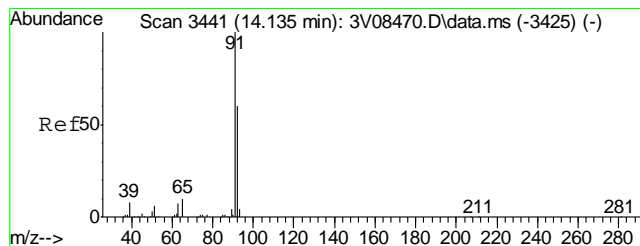
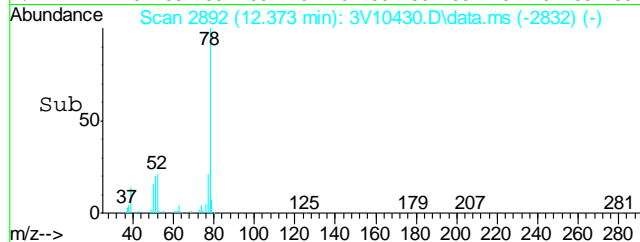
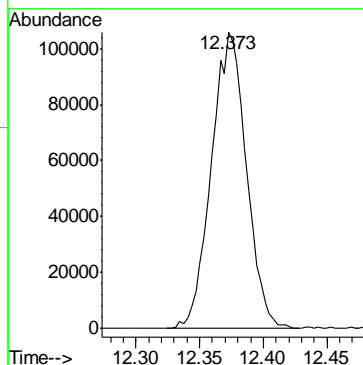
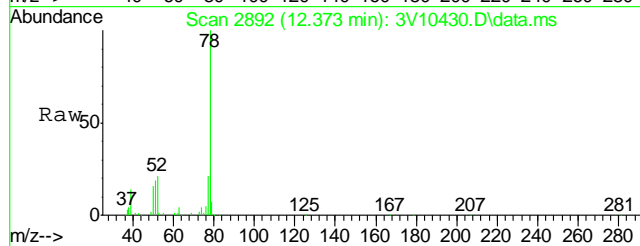
#39  
Heptane  
Concen: 9.42 ug/l  
RT: 12.549 min Scan# 2947  
Delta R.T. -0.008 min  
Lab File: 3V10430.D  
Acq: 11 Apr 2011 4:35 am

Tgt Ion: 43 Resp: 151596  
Ion Ratio Lower Upper  
43 100  
57 42.8 22.7 62.7  
71 40.0 21.4 61.4  
100 16.1 0.0 36.6

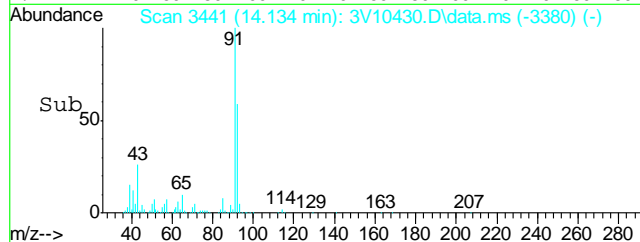
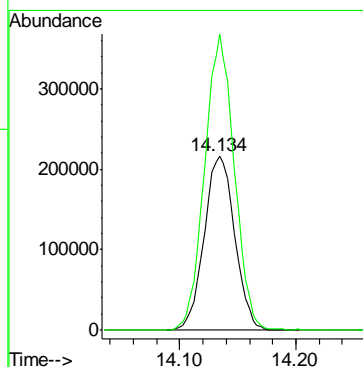
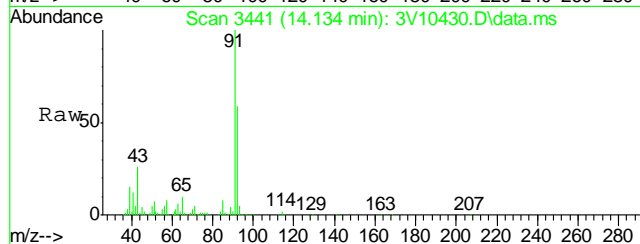


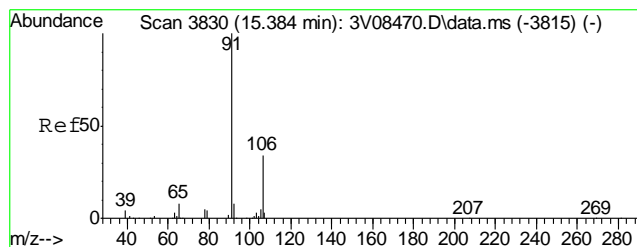


#45  
Benzene  
Concen: 8.98 ug/l  
RT: 12.373 min Scan# 2892  
Delta R.T. -0.008 min  
Lab File: 3V10430.D  
Acq: 11 Apr 2011 4:35 am  
Tgt Ion: 78 Resp: 201881



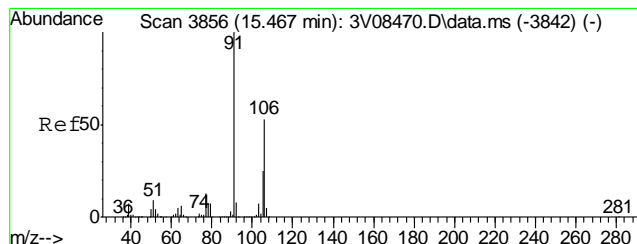
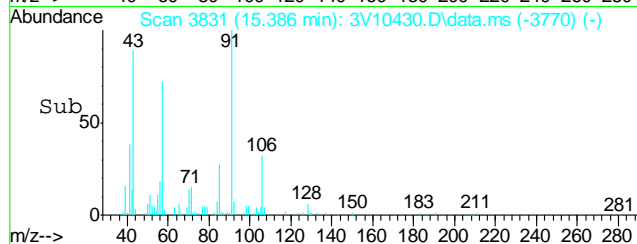
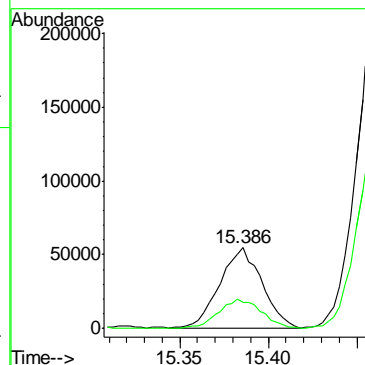
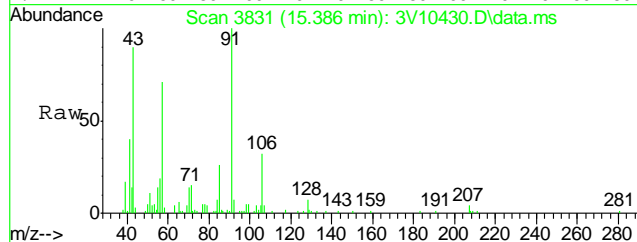
#56  
Toluene  
Concen: 23.90 ug/l  
RT: 14.134 min Scan# 3441  
Delta R.T. -0.005 min  
Lab File: 3V10430.D  
Acq: 11 Apr 2011 4:35 am  
Tgt Ion: 92 Resp: 393466  
Ion Ratio Lower Upper  
92 100  
91 165.2 143.2 183.2





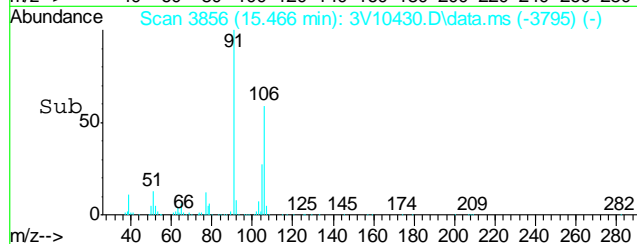
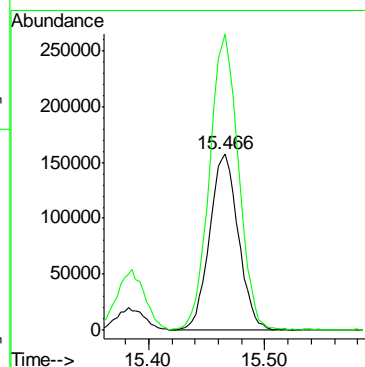
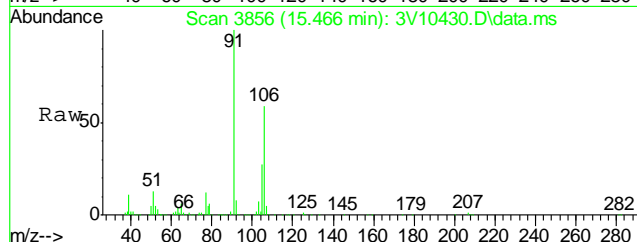
#58  
Ethylbenzene  
Concen: 3.21 ug/l  
RT: 15.386 min Scan# 3831  
Delta R.T. -0.005 min  
Lab File: 3V10430.D  
Acq: 11 Apr 2011 4:35 am

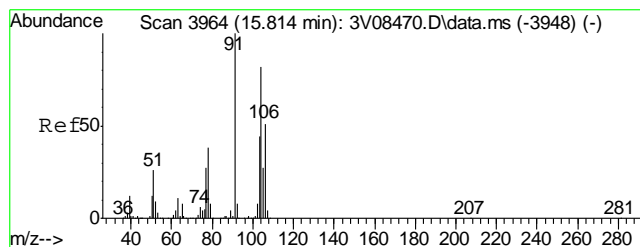
Tgt Ion: 91 Resp: 89889  
Ion Ratio Lower Upper  
91 100  
106 37.0 16.8 56.8



#61  
m,p-xylene  
Concen: 19.64 ug/l  
RT: 15.466 min Scan# 3856  
Delta R.T. -0.005 min  
Lab File: 3V10430.D  
Acq: 11 Apr 2011 4:35 am

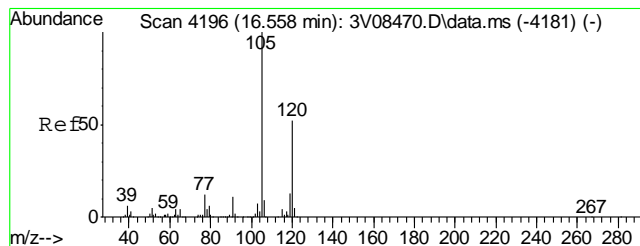
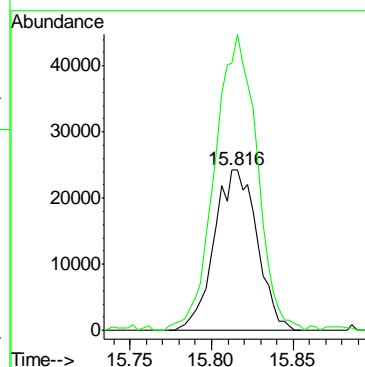
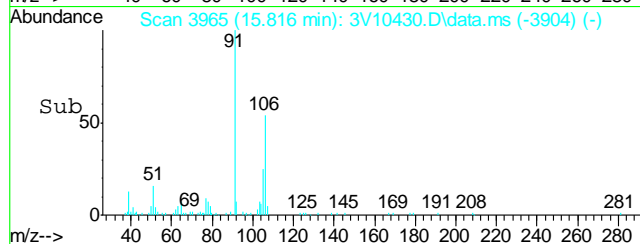
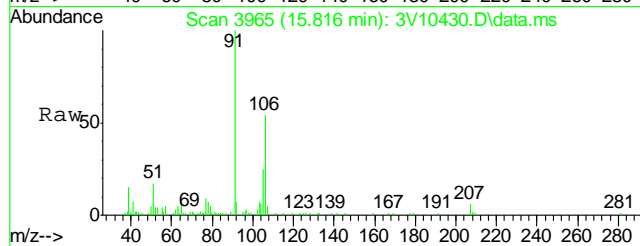
Tgt Ion: 106 Resp: 269974  
Ion Ratio Lower Upper  
106 100  
91 168.9 146.8 186.8





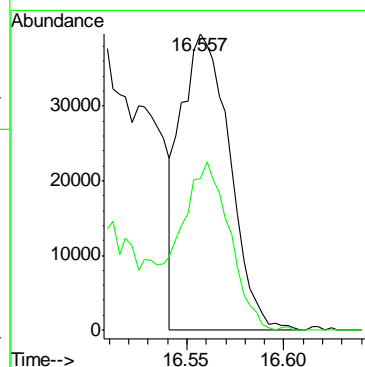
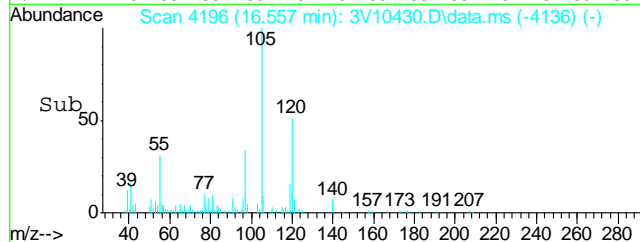
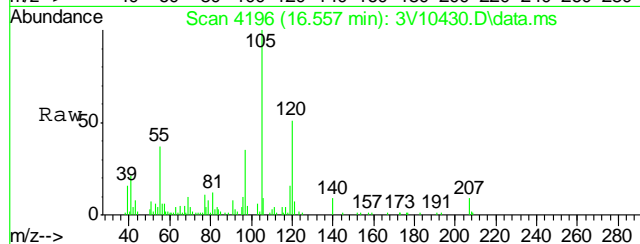
#62  
o-xylene  
Concen: 3.20 ug/l  
RT: 15.816 min Scan# 3965  
Delta R.T. -0.005 min  
Lab File: 3V10430.D  
Acq: 11 Apr 2011 4:35 am

Tgt Ion:106 Resp: 44275  
Ion Ratio Lower Upper  
106 100  
91 181.8 141.5 212.3

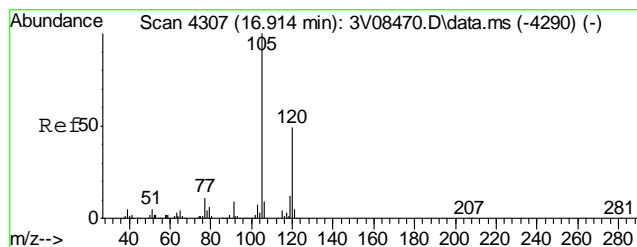


#66  
1,3,5-Trimethylbenzene  
Concen: 2.64 ug/l  
RT: 16.557 min Scan# 4196  
Delta R.T. -0.008 min  
Lab File: 3V10430.D  
Acq: 11 Apr 2011 4:35 am

Tgt Ion:105 Resp: 69329  
Ion Ratio Lower Upper  
105 100  
120 55.8 45.0 67.6

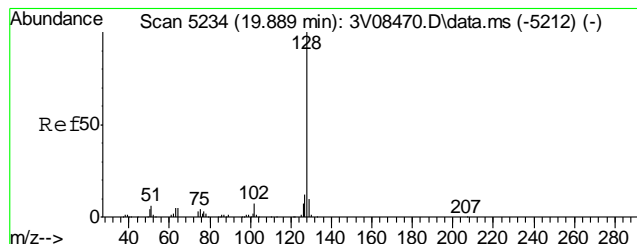
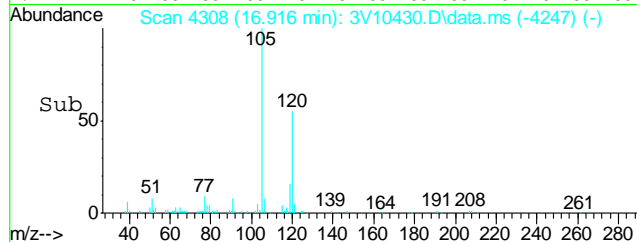
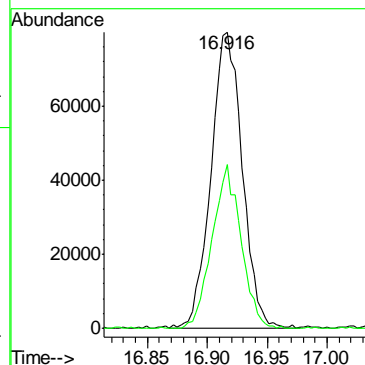
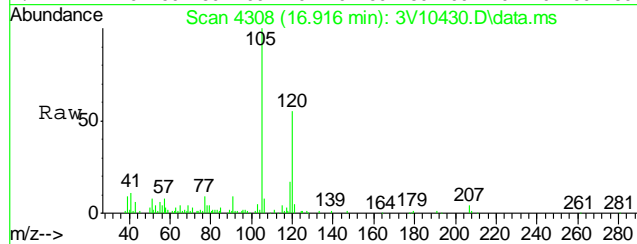






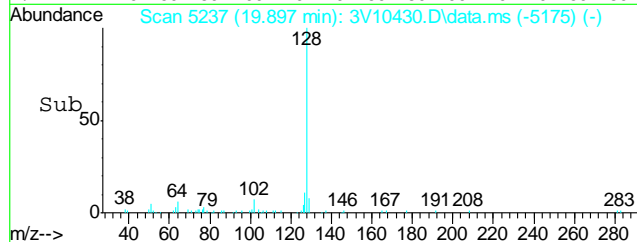
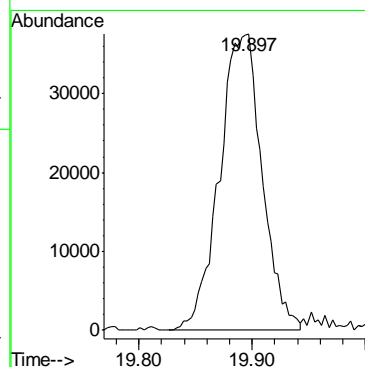
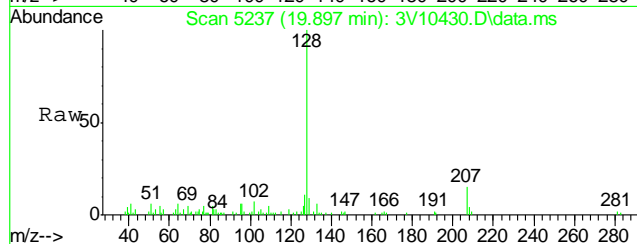
#67  
1,2,4-Trimethylbenzene  
Concen: 5.18 ug/l  
RT: 16.916 min Scan# 4308  
Delta R.T. -0.005 min  
Lab File: 3V10430.D  
Acq: 11 Apr 2011 4:35 am

Tgt Ion	Resp
105	145368
105	100
120	50.7
	41.8
	62.6



#72  
Naphthalene  
Concen: 3.00 ug/l  
RT: 19.897 min Scan# 5237  
Delta R.T. -0.002 min  
Lab File: 3V10430.D  
Acq: 11 Apr 2011 4:35 am

Tgt Ion	Resp
128	98411



## Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3040911.S\  
Data File : 3V10418.D  
Acq On : 10 Apr 2011 10:25 pm  
Operator : DONC  
Sample : MB1  
Misc : MS2029,V3V575,5,,100,5,1  
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 11 11:52:45 2011  
Quant Method : C:\msdchem\1\METHODS\V3HSL543TVH543.M  
Quant Title : 8260  
QLast Update : Fri Mar 25 12:05:44 2011  
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.889	168	561325	50.00	ug/l	0.00
32) 1,4-Difluorobenzene	12.685	114	947414	50.00	ug/l	0.00
48) Chlorobenzene-d5	15.316	117	885872	50.00	ug/l	0.00
63) 1,4-Dichlorobenzene-d4	17.312	152	484806	50.00	ug/l	0.00

## System Monitoring Compounds

30) 1,2-Dichloroethane-d4	12.287	102	67623	40.70	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	81.40%
55) Toluene-d8	14.074	98	1033926	41.09	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	82.18%
59) 4-Bromofluorobenzene	16.266	95	361776	38.70	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	77.40%

## Target Compounds

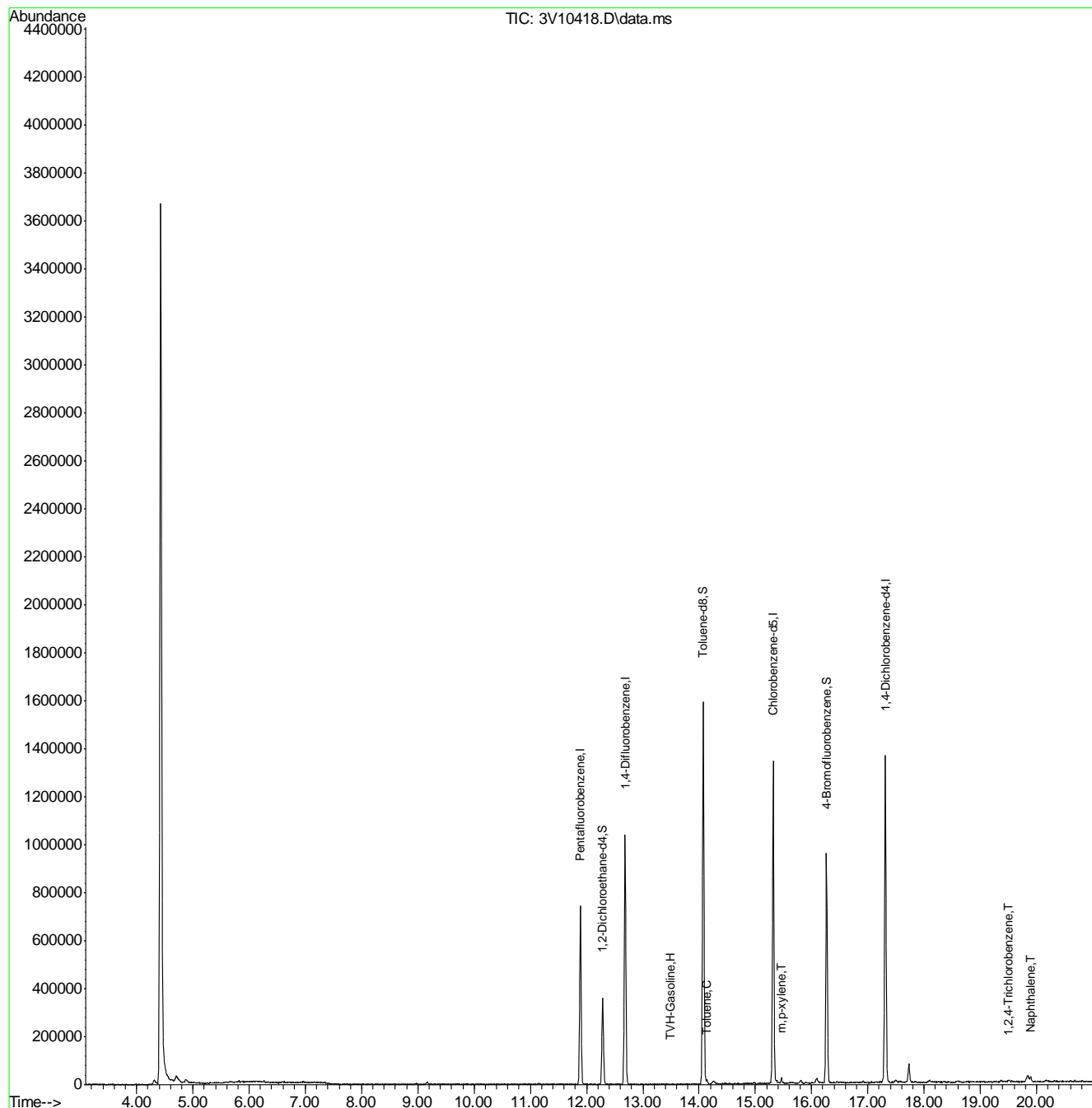
					Qvalue
1) TVH-Gasoline	13.491	TIC	126846m	2.70	ug/l
56) Toluene	14.135	92	5163	0.32	ug/l
61) m,p-xylene	15.467	106	6484	0.47	ug/l
71) 1,2,4-Trichlorobenzene	19.507	180	2408	0.20	ug/l
72) Naphthalene	19.895	128	22103	0.70	ug/l

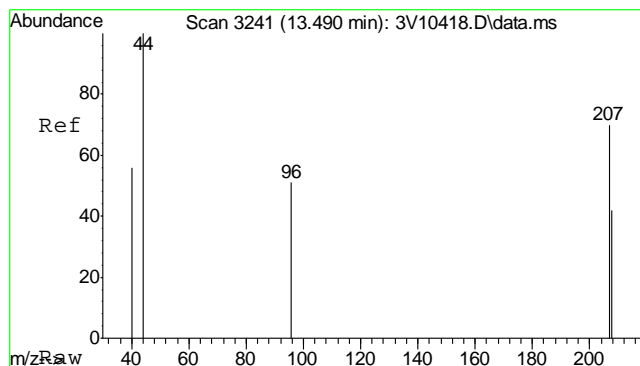
(#) = qualifier out of range (m) = manual integration (+) = signals summed

## Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3040911.S\  
Data File : 3V10418.D  
Acq On : 10 Apr 2011 10:25 pm  
Operator : DONC  
Sample : MB1  
Misc : MS2029,V3V575,5,,100,5,1  
ALS Vial : 24 Sample Multiplier: 1

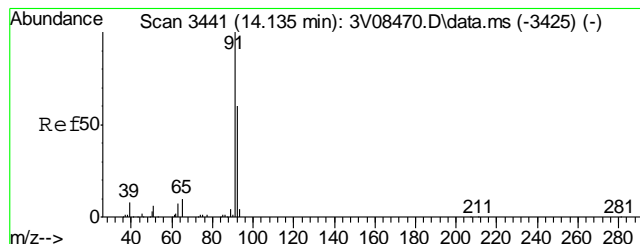
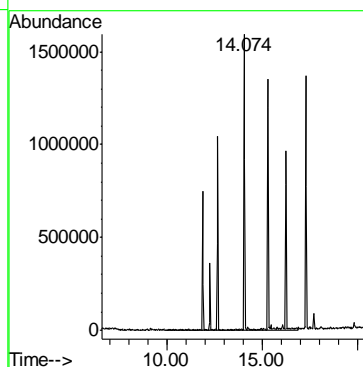
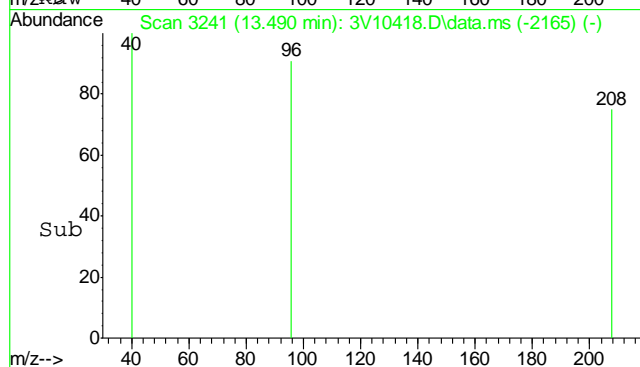
Quant Time: Apr 11 11:52:45 2011  
Quant Method : C:\msdchem\1\METHODS\V3HSL543TVH543.M  
Quant Title : 8260  
QLast Update : Fri Mar 25 12:05:44 2011  
Response via : Initial Calibration





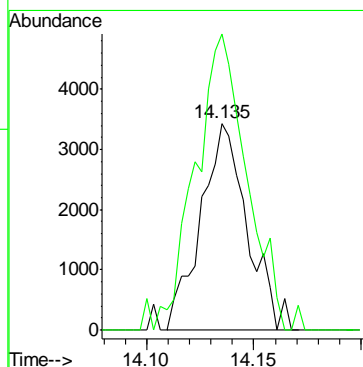
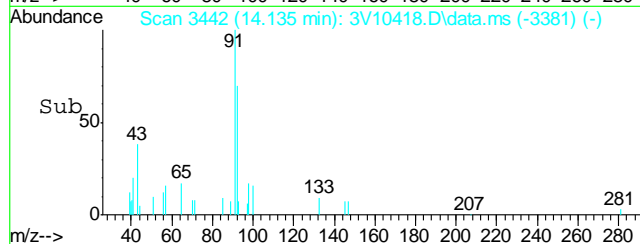
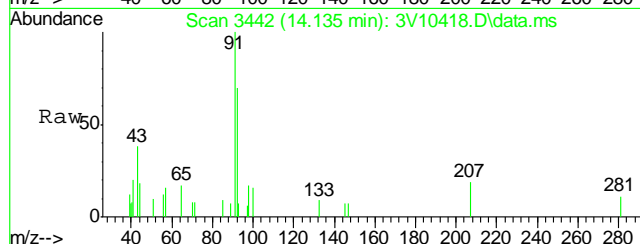
#1  
TVH-Gasoline  
Concen: 2.70 ug/l m  
RT: 13.491 min Scan# 3241  
Delta R.T. 0.000 min  
Lab File: 3V10418.D  
Acq: 10 Apr 2011 10:25 pm

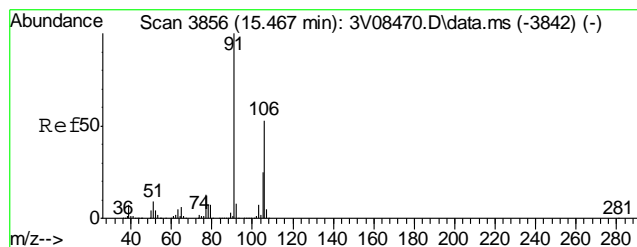
Tgt Ion:TIC Resp: 126846



#56  
Toluene  
Concen: 0.32 ug/l  
RT: 14.135 min Scan# 3442  
Delta R.T. -0.004 min  
Lab File: 3V10418.D  
Acq: 10 Apr 2011 10:25 pm

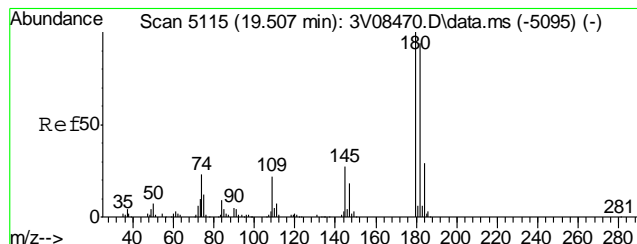
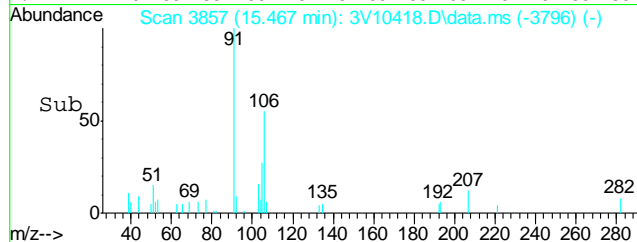
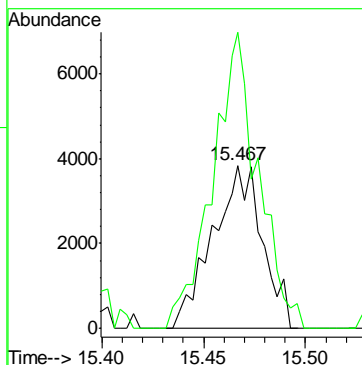
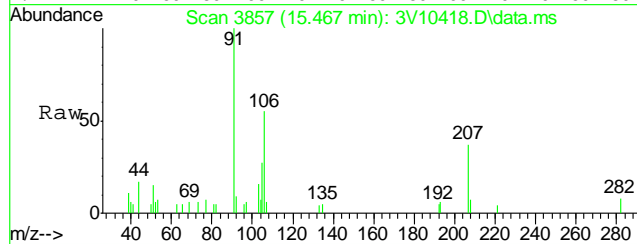
Tgt Ion: 92 Resp: 5163  
Ion Ratio Lower Upper  
92 100  
91 158.1 143.2 183.2





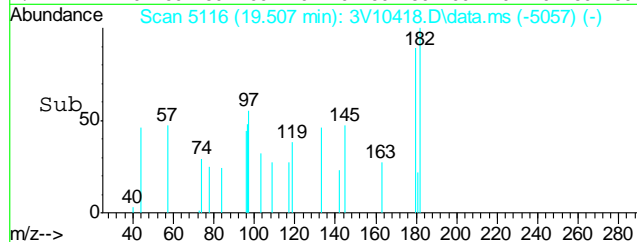
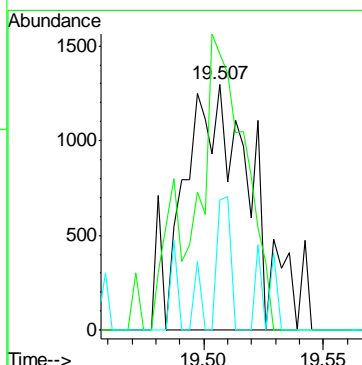
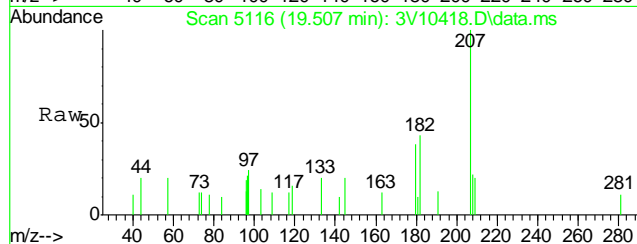
#61  
m,p-xylene  
Concen: 0.47 ug/l  
RT: 15.467 min Scan# 3857  
Delta R.T. -0.004 min  
Lab File: 3V10418.D  
Acq: 10 Apr 2011 10:25 pm

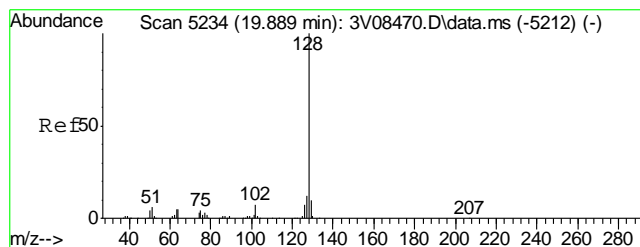
Tgt Ion:106 Resp: 6484  
Ion Ratio Lower Upper  
106 100  
91 167.3 146.8 186.8



#71  
1,2,4-Trichlorobenzene  
Concen: 0.20 ug/l  
RT: 19.507 min Scan# 5116  
Delta R.T. -0.010 min  
Lab File: 3V10418.D  
Acq: 10 Apr 2011 10:25 pm

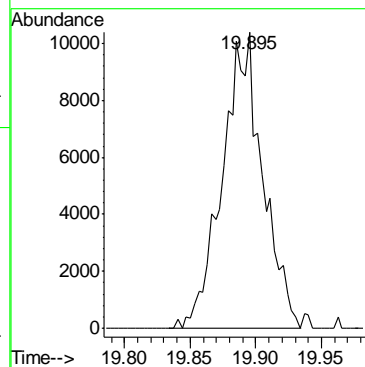
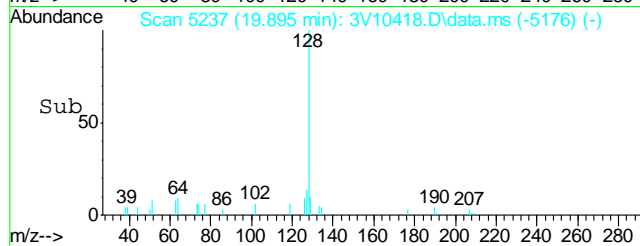
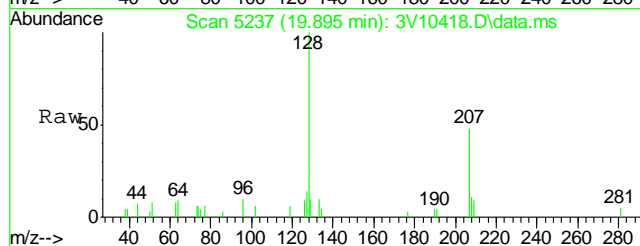
Tgt Ion:180 Resp: 2408  
Ion Ratio Lower Upper  
180 100  
182 76.0 72.1 108.1  
145 11.1 24.9 37.3#





#72  
Naphthalene  
Concen: 0.70 ug/l  
RT: 19.895 min Scan# 5237  
Delta R.T. -0.004 min  
Lab File: 3V10418.D  
Acq: 10 Apr 2011 10:25 pm

Tgt Ion: 128 Resp: 22103



## 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:** D22470**Account:** KRWCCOL KRW Consulting, Inc.**Project:** FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP3477-MB	3G03611.D	1	04/12/11	TMB	04/12/11	OP3477	E3G133

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

D22470-1, D22470-2

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	73% 10-193%
321-60-8	2-Fluorobiphenyl	63% 20-138%
1718-51-0	Terphenyl-d14	79% 17-174%



## Blank Spike Summary

Page 1 of 1

**Job Number:** D22470

**Account:** KRWCCOL KRW Consulting, Inc.

**Project:** FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP3477-BS	3G03612.D	1	04/12/11	TMB	04/12/11	OP3477	E3G133

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D22470-1, D22470-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	52.2	63	40-136
208-96-8	Acenaphthylene	83.3	50.6	61	42-139
120-12-7	Anthracene	83.3	53.7	64	40-141
56-55-3	Benzo(a)anthracene	83.3	54.3	65	38-143
50-32-8	Benzo(a)pyrene	83.3	54.3	65	39-145
205-99-2	Benzo(b)fluoranthene	83.3	53.5	64	38-151
191-24-2	Benzo(g,h,i)perylene	83.3	55.3	66	35-136
207-08-9	Benzo(k)fluoranthene	83.3	63.4	76	38-147
218-01-9	Chrysene	83.3	60.3	72	39-137
53-70-3	Dibenzo(a,h)anthracene	83.3	53.9	65	35-139
206-44-0	Fluoranthene	83.3	51.4	62	34-132
86-73-7	Fluorene	83.3	51.0	61	41-136
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	52.0	62	31-144
90-12-0	1-Methylnaphthalene	83.3	52.9	63	36-130
91-57-6	2-Methylnaphthalene	83.3	49.7	60	40-131
91-20-3	Naphthalene	83.3	52.7	63	36-130
85-01-8	Phenanthrene	83.3	52.4	63	40-135
129-00-0	Pyrene	83.3	51.9	62	29-157

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	73%	10-193%
321-60-8	2-Fluorobiphenyl	63%	20-138%
1718-51-0	Terphenyl-d14	79%	17-174%

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D22470  
**Account:** KRWCCOL KRW Consulting, Inc.  
**Project:** FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP3477-MS	3G03616.D	1	04/12/11	TMB	04/12/11	OP3477	E3G133
OP3477-MSD	3G03617.D	1	04/12/11	TMB	04/12/11	OP3477	E3G133
D22522-1	3G03615.D	1	04/12/11	TMB	04/12/11	OP3477	E3G133

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D22470-1, D22470-2

CAS No.	Compound	D22522-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		95.2	45.9	48	32.4	34	34* <sup>a</sup>	20-151/30
208-96-8	Acenaphthylene	ND		95.2	44.9	47	32.2	34	33* <sup>a</sup>	23-156/30
120-12-7	Anthracene	ND		95.2	49.0	51	34.0	36	36* <sup>a</sup>	25-149/30
56-55-3	Benzo(a)anthracene	ND		95.2	59.6	63	42.1	44	34* <sup>a</sup>	22-157/30
50-32-8	Benzo(a)pyrene	ND		95.2	56.9	60	38.9	41	38* <sup>a</sup>	23-153/30
205-99-2	Benzo(b)fluoranthene	ND		95.2	61.6	65	41.4	43	39* <sup>a</sup>	22-161/30
191-24-2	Benzo(g,h,i)perylene	ND		95.2	47.9	50	32.9	35	37* <sup>a</sup>	20-158/30
207-08-9	Benzo(k)fluoranthene	ND		95.2	63.6	67	44.5	47	35* <sup>a</sup>	17-161/30
218-01-9	Chrysene	ND		95.2	57.8	61	41.8	44	32* <sup>a</sup>	16-159/30
53-70-3	Dibenzo(a,h)anthracene	ND		95.2	51.1	54	34.0	36	40* <sup>a</sup>	21-154/30
206-44-0	Fluoranthene	ND		95.2	57.7	61	39.9	42	36* <sup>a</sup>	16-140/30
86-73-7	Fluorene	ND		95.2	45.4	48	31.9	34	35* <sup>a</sup>	15-153/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		95.2	44.6	47	29.7	31	40* <sup>a</sup>	21-159/30
90-12-0	1-Methylnaphthalene	ND		95.2	47.1	49	33.5	35	34* <sup>a</sup>	10-148/30
91-57-6	2-Methylnaphthalene	ND		95.2	45.0	47	31.6	33	35* <sup>a</sup>	10-181/30
91-20-3	Naphthalene	ND		95.2	49.0	51	34.4	36	35* <sup>a</sup>	10-176/30
85-01-8	Phenanthrene	ND		95.2	45.7	48	32.0	34	35* <sup>a</sup>	22-152/30
129-00-0	Pyrene	ND		95.2	51.5	54	36.4	38	34* <sup>a</sup>	10-200/30

CAS No.	Surrogate Recoveries	MS	MSD	D22522-1	Limits
4165-60-0	Nitrobenzene-d5	59%	44%	51%	10-193%
321-60-8	2-Fluorobiphenyl	47%	36%	42%	20-138%
1718-51-0	Terphenyl-d14	61%	44%	63%	17-174%

(a) Variability of recovery may be due to sample matrix/homogeneity.

GC/MS Semi-volatiles

Raw Data

∞

## Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\041211\  
 Data File : 3g03613.D  
 Acq On : 12 Apr 2011 6:26 pm  
 Operator : TamiB  
 Sample : D22470-1,5x  
 Misc : OP3477,E3G133,30,,,1,5  
 ALS Vial : 13 Sample Multiplier: 1

Quant Time: Apr 13 12:36:06 2011  
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G131.M  
 Quant Title : PAHSIM BASE  
 QLast Update : Thu Apr 07 14:54:07 2011  
 Response via : Initial Calibration

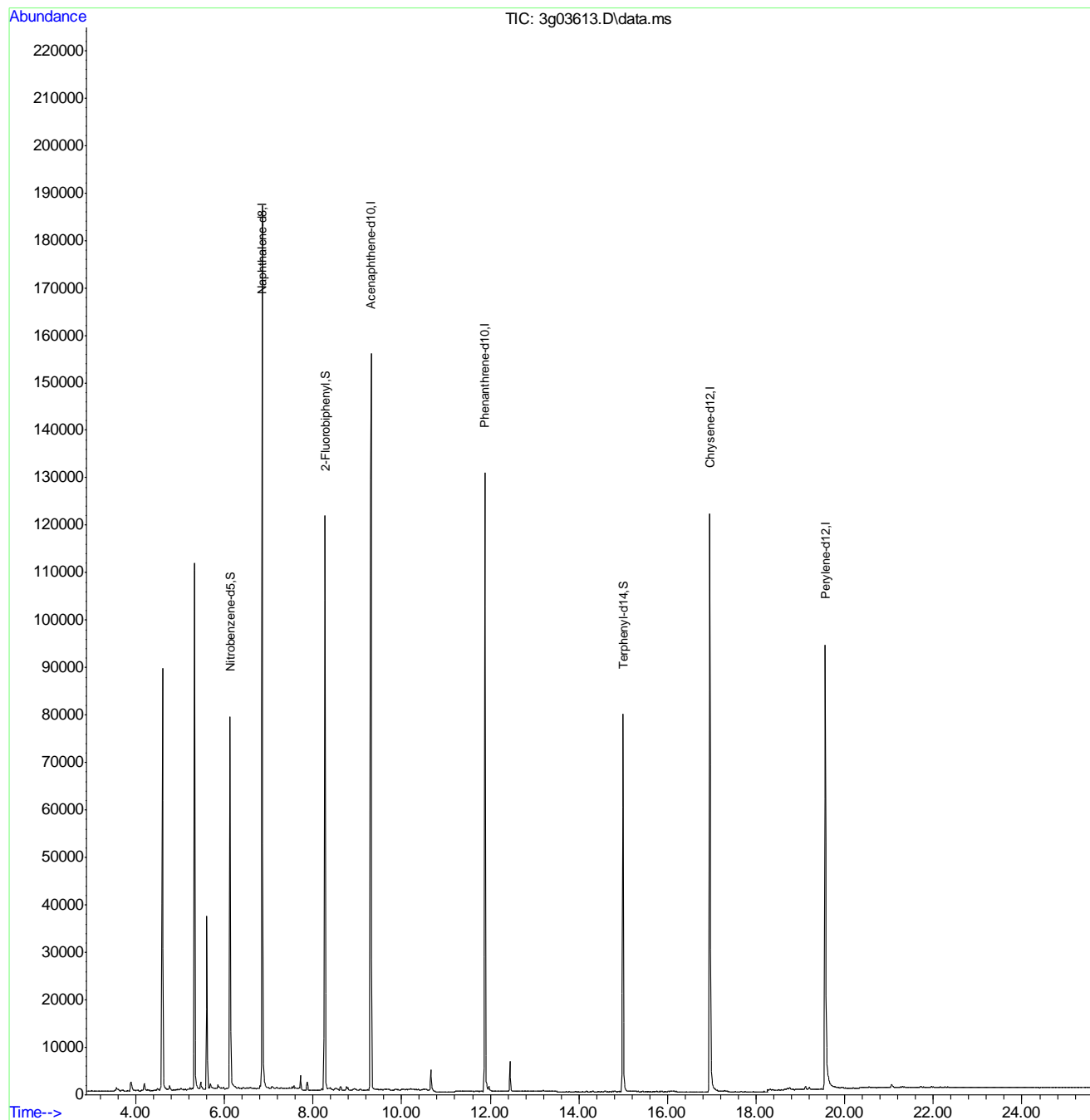
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	6.855	136	179593	4.00	ug/mL	0.00
6) Acenaphthene-d10	9.310	164	94548	4.00	ug/mL	0.00
14) Phenanthrene-d10	11.878	188	152828	4.00	ug/mL	0.00
18) Chrysene-d12	16.954	240	149363	4.00	ug/mL	0.00
23) Perylene-d12	19.561	264	135111	4.00	ug/mL	0.00
System Monitoring Compounds						
2) Nitrobenzene-d5	6.132	82	62548	3.60	ug/mL	0.01
7) 2-Fluorobiphenyl	8.270	172	121442	3.39	ug/mL	0.00
20) Terphenyl-d14	14.996	244	90008	3.94	ug/mL	0.00
Target Compounds						
					Qvalue	
3) N-Nitrosodimethylamine	0.000		0	N.D.	d	
4) N-Nitrosodi-propylamine	0.000		0	N.D.	d	
5) Naphthalene	0.000		0	N.D.	d	
8) 2-Methylnaphthalene	0.000		0	N.D.	d	
9) 1-Methylnaphthalene	0.000		0	N.D.	d	
10) Acenaphthylene	0.000		0	N.D.	d	
11) Acenaphthene	0.000		0	N.D.	d	
12) Fluorene	0.000		0	N.D.	d	
13) Diphenylamine	0.000		0	N.D.	d	
15) Phenanthrene	0.000		0	N.D.	d	
16) Anthracene	0.000		0	N.D.	d	
17) Fluoranthene	0.000		0	N.D.	d	
19) Pyrene	0.000		0	N.D.	d	
21) Benzo(a)anthracene	0.000		0	N.D.	d	
22) Chrysene	0.000		0	N.D.	d	
24) Benzo(b)fluoranthene	0.000		0	N.D.	d	
25) Benzo(k)fluoranthene	0.000		0	N.D.	d	
26) Benzo(a)pyrene	0.000		0	N.D.	d	
27) Indeno(1,2,3-cd)pyrene	0.000		0	N.D.	d	
28) Dibenz(a,h)anthracene	0.000		0	N.D.	d	
29) Benzo(g,h,i)perylene	0.000		0	N.D.	d	

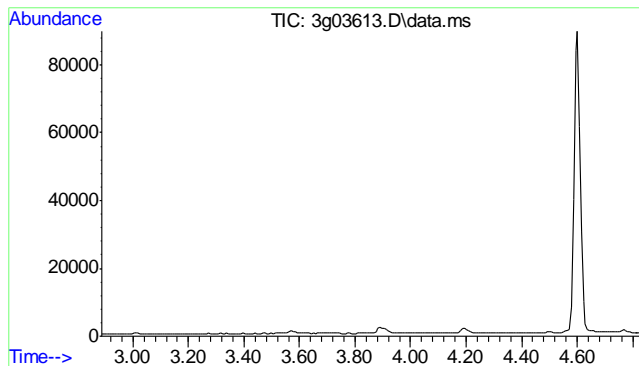
(#) = qualifier out of range (m) = manual integration (+) = signals summed

## Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\041211\  
Data File : 3g03613.D  
Acq On : 12 Apr 2011 6:26 pm  
Operator : TamiB  
Sample : D22470-1,5x  
Misc : OP3477,E3G133,30,,,1,5  
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Apr 13 12:36:06 2011  
Quant Method : C:\msdchem\1\METHODS\SIMPE3G131.M  
Quant Title : PAHSIM BASE  
QLast Update : Thu Apr 07 14:54:07 2011  
Response via : Initial Calibration

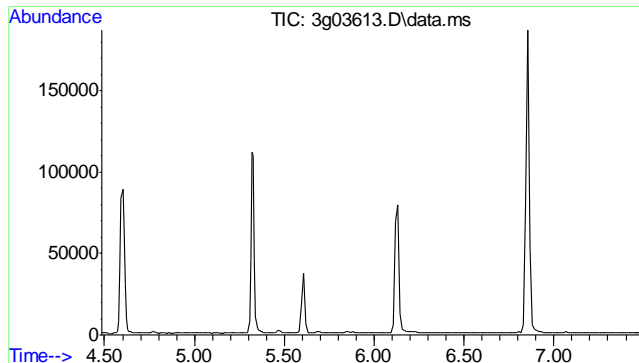
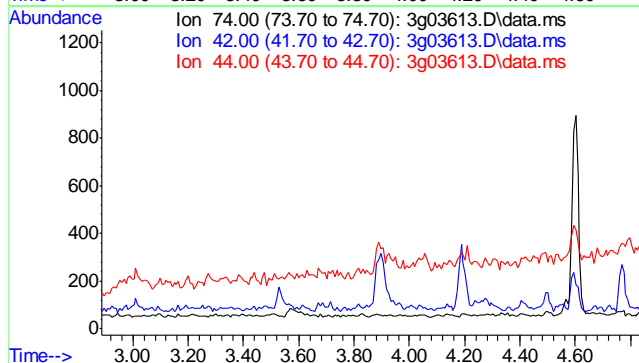




#3  
N-Nitrosodimethylamine  
Concen: N.D. ug/mL  
Expected RT: 3.33 min

Lab File: 3g03613.D  
Acq: 12 Apr 11 6:26 pm

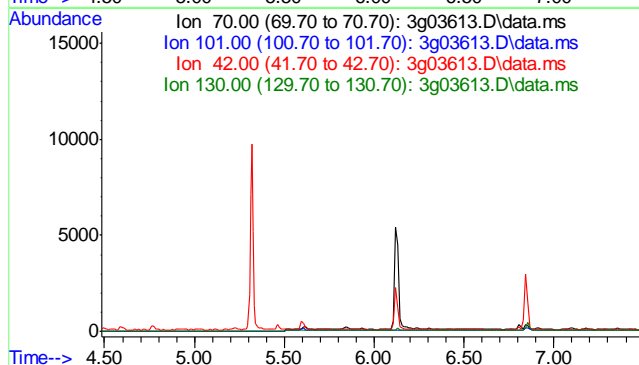
Tgt Ion	Exp Ratio
74	100
42	57.2
44	3.3

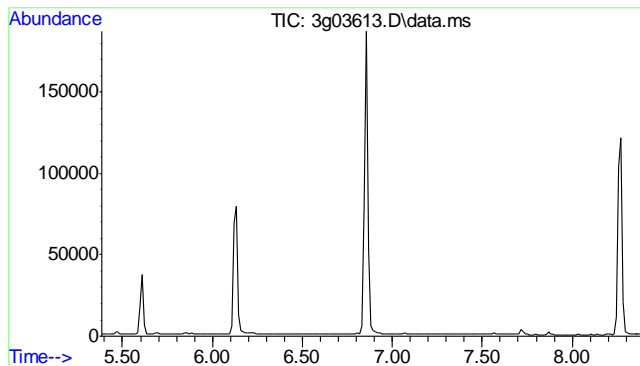


#4  
N-Nitrosodi-propylamine  
Concen: N.D. ug/mL  
Expected RT: 5.98 min

Lab File: 3g03613.D  
Acq: 12 Apr 11 6:26 pm

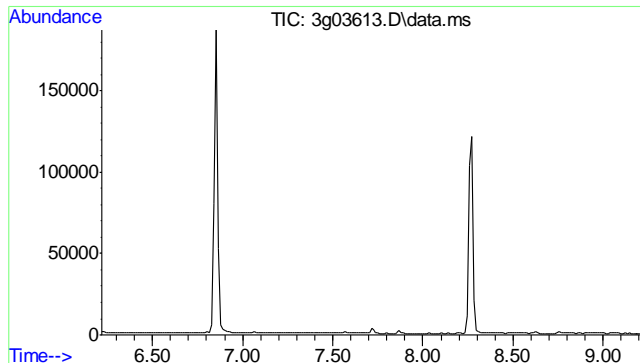
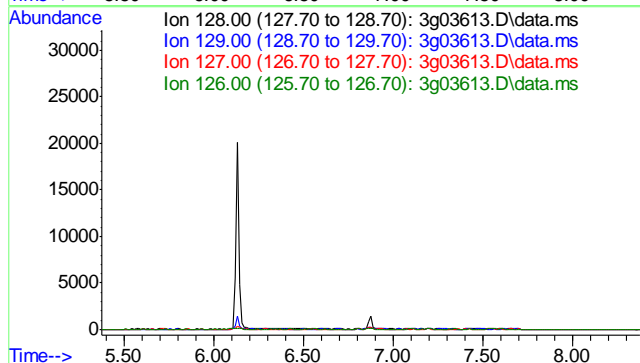
Tgt Ion	Exp Ratio
70	100
101	12.2
42	40.2
130	21.6





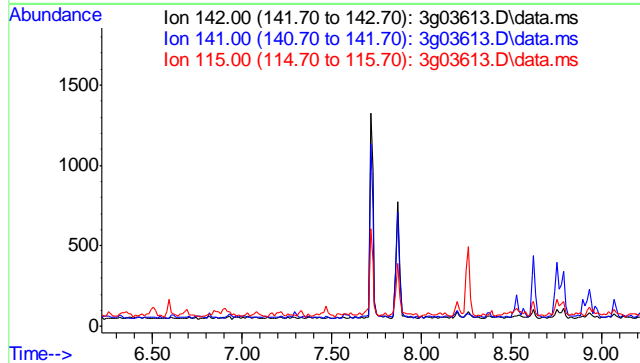
#5  
Naphthalene  
Concen: N.D. ug/mL  
Expected RT: 6.88 min  
  
Lab File: 3g03613.D  
Acq: 12 Apr 11 6:26 pm

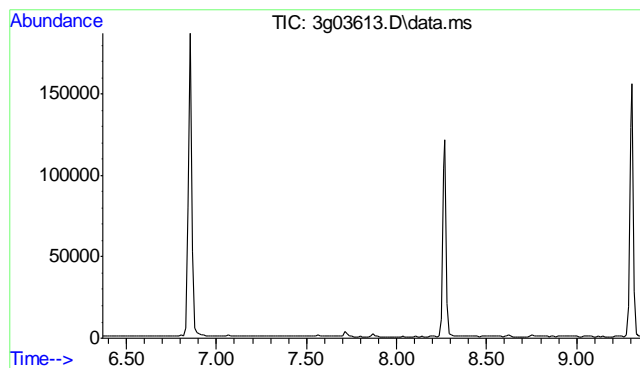
Tgt Ion:	128
Sig	Exp Ratio
128	100
129	10.8
127	12.7
126	7.3



#8  
2-Methylnaphthalene  
Concen: N.D. ug/mL  
Expected RT: 7.72 min  
  
Lab File: 3g03613.D  
Acq: 12 Apr 11 6:26 pm

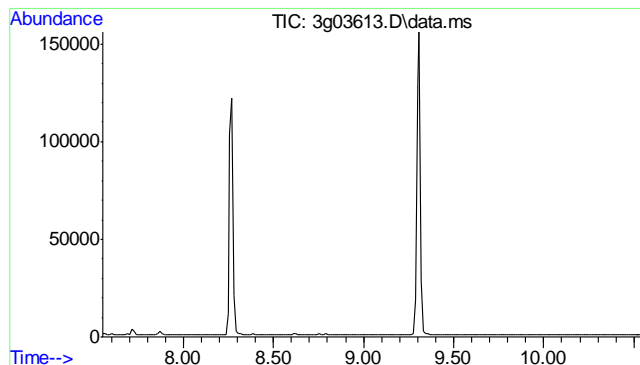
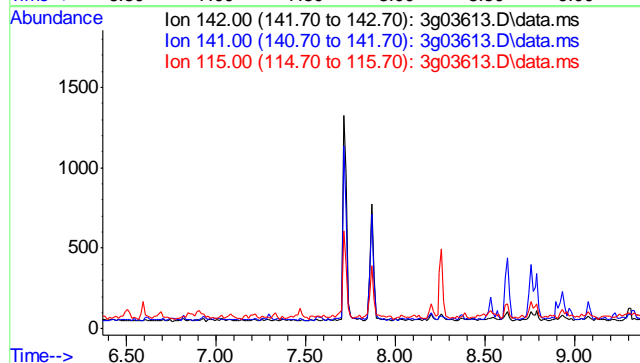
Tgt Ion:	142
Sig	Exp Ratio
142	100
141	83.0
115	39.8





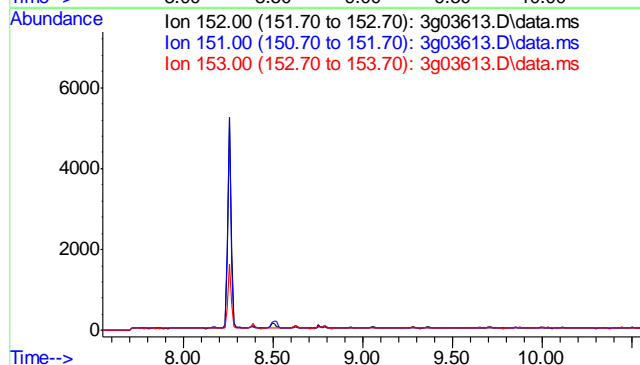
#9  
1-Methylnaphthalene  
Concen: N.D. ug/mL  
Expected RT: 7.87 min  
  
Lab File: 3g03613.D  
Acq: 12 Apr 11 6:26 pm

Tgt Ion:	142
Sig	Exp Ratio
142	100
141	87.4
115	42.2

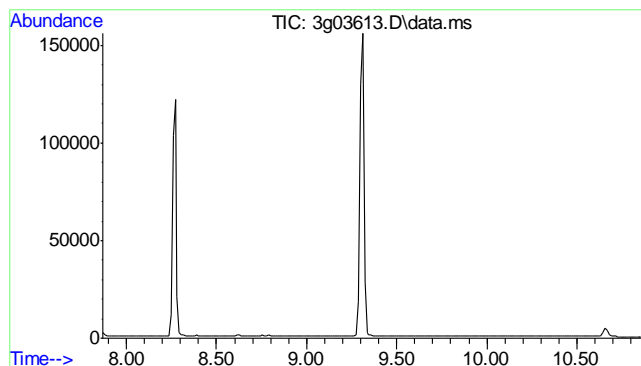


#10  
Acenaphthylene  
Concen: N.D. ug/mL  
Expected RT: 9.05 min  
  
Lab File: 3g03613.D  
Acq: 12 Apr 11 6:26 pm

Tgt Ion:	152
Sig	Exp Ratio
152	100
151	19.1
153	12.8

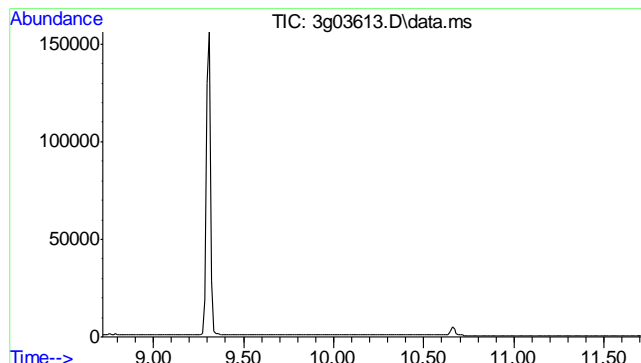
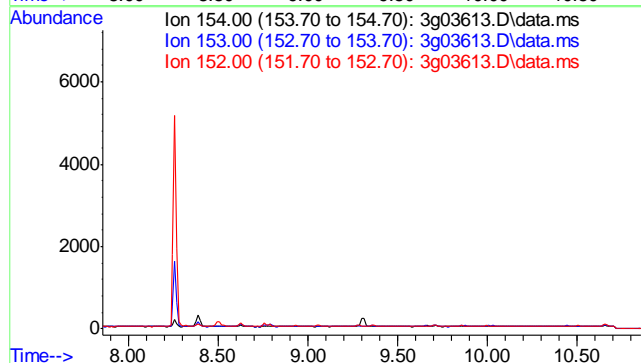






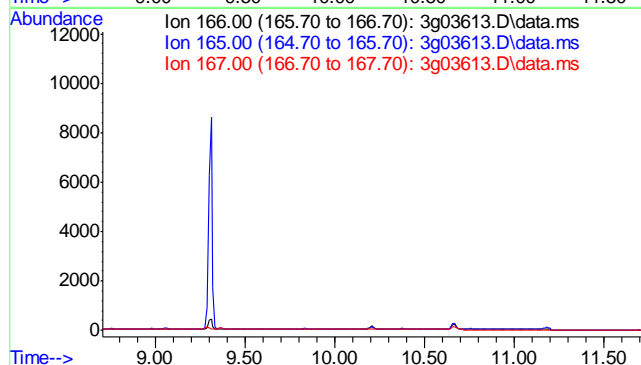
#11  
 Acenaphthene  
 Concen: N.D. ug/mL  
 Expected RT: 9.36 min  
  
 Lab File: 3g03613.D  
 Acq: 12 Apr 11 6:26 pm

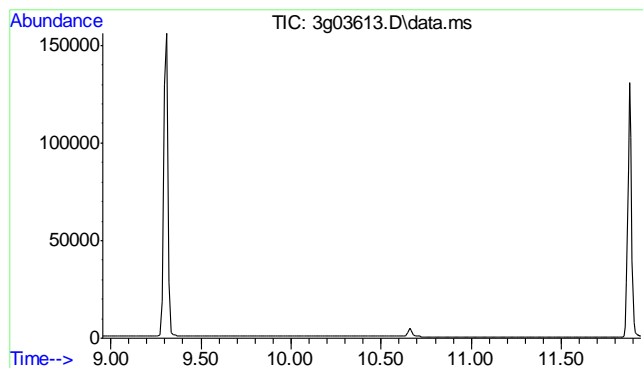
Tgt Ion	Exp Ratio
154	100
153	114.0
152	53.6



#12  
 Fluorene  
 Concen: N.D. ug/mL  
 Expected RT: 10.21 min  
  
 Lab File: 3g03613.D  
 Acq: 12 Apr 11 6:26 pm

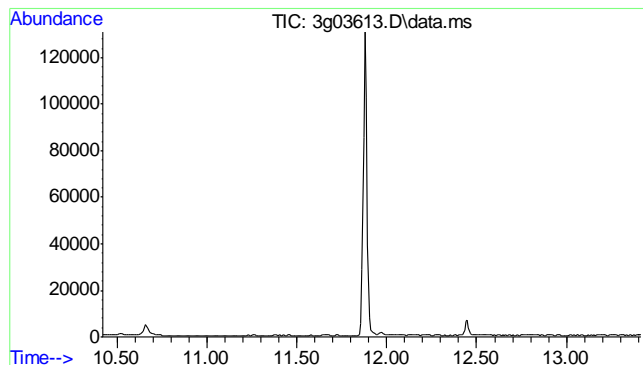
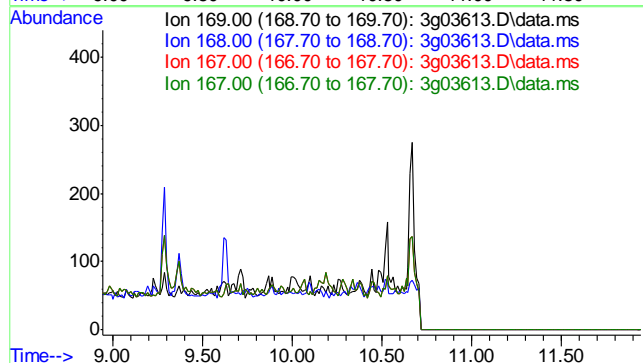
Tgt Ion	Exp Ratio
166	100
165	90.1
167	13.1





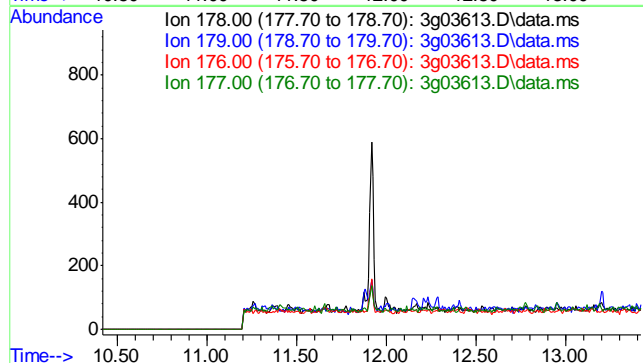
#13  
Diphenylamine  
Concen: N.D. ug/mL  
Expected RT: 10.44 min  
  
Lab File: 3g03613.D  
Acq: 12 Apr 11 6:26 pm

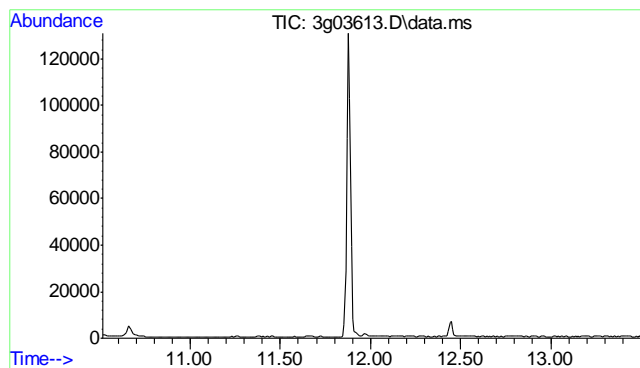
Tgt Ion	Sig	Exp Ratio
169	100	
168	61.8	
167	33.2	
167	33.2	



#15  
Phenanthrene  
Concen: N.D. ug/mL  
Expected RT: 11.92 min  
  
Lab File: 3g03613.D  
Acq: 12 Apr 11 6:26 pm

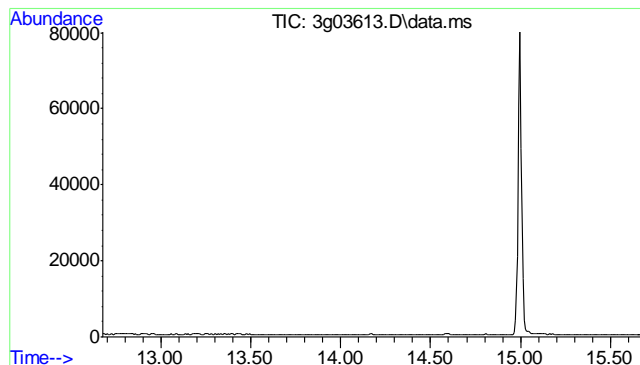
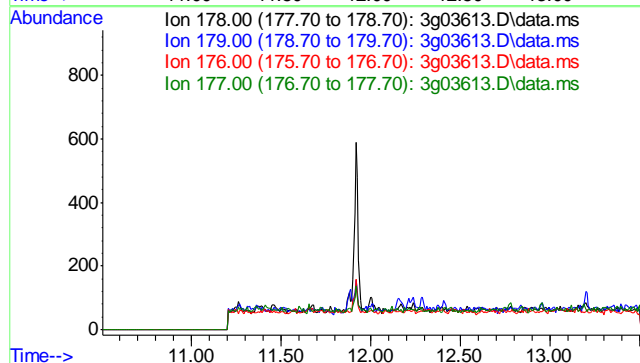
Tgt Ion	Sig	Exp Ratio
178	100	
179	15.1	
176	18.7	
177	10.2	





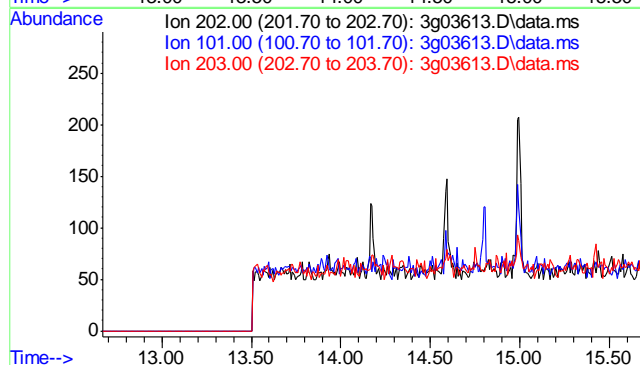
#16  
 Anthracene  
 Concen: N.D. ug/mL  
 Expected RT: 12.00 min  
  
 Lab File: 3g03613.D  
 Acq: 12 Apr 11 6:26 pm

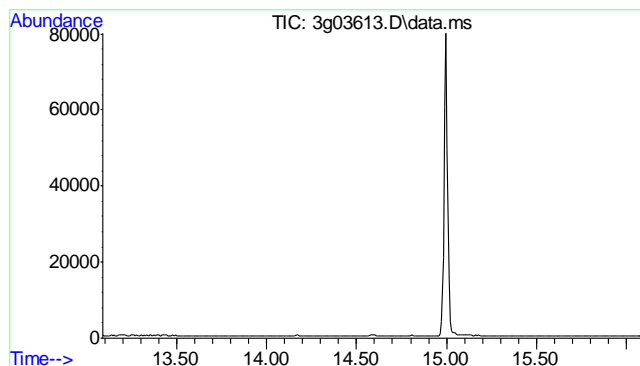
Tgt Ion	Sig	Exp Ratio
178	100	
179	15.1	
176	17.8	
177	8.7	



#17  
 Fluoranthene  
 Concen: N.D. ug/mL  
 Expected RT: 14.17 min  
  
 Lab File: 3g03613.D  
 Acq: 12 Apr 11 6:26 pm

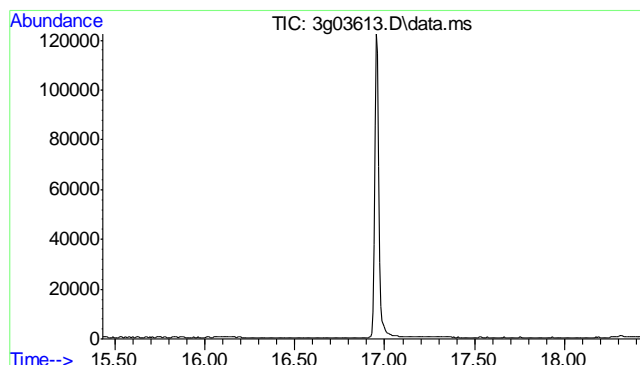
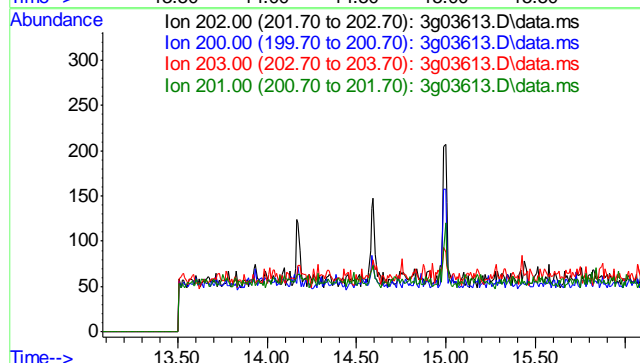
Tgt Ion	Sig	Exp Ratio
202	100	
101	13.0	
203	17.1	





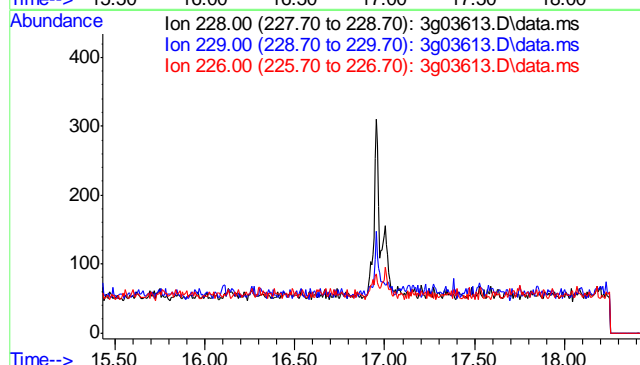
#19  
 Pyrene  
 Concen: N.D. ug/mL  
 Expected RT: 14.58 min  
  
 Lab File: 3g03613.D  
 Acq: 12 Apr 11 6:26 pm

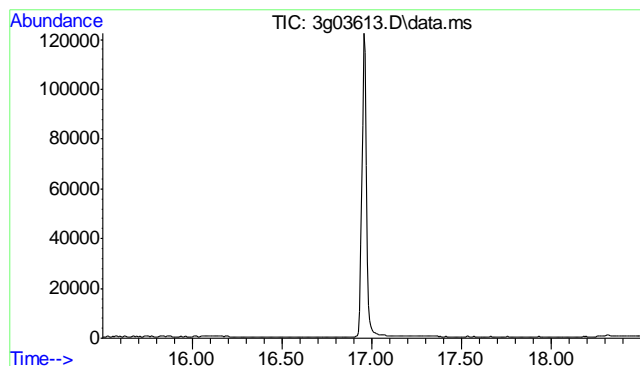
Tgt Ion	Exp Ratio
202	100
200	20.2
203	17.5
201	16.5



#21  
 Benzo(a)anthracene  
 Concen: N.D. ug/mL  
 Expected RT: 16.93 min  
  
 Lab File: 3g03613.D  
 Acq: 12 Apr 11 6:26 pm

Tgt Ion	Exp Ratio
228	100
229	19.4
226	25.8

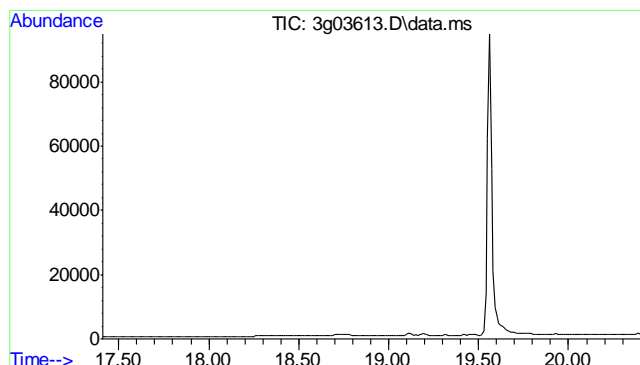
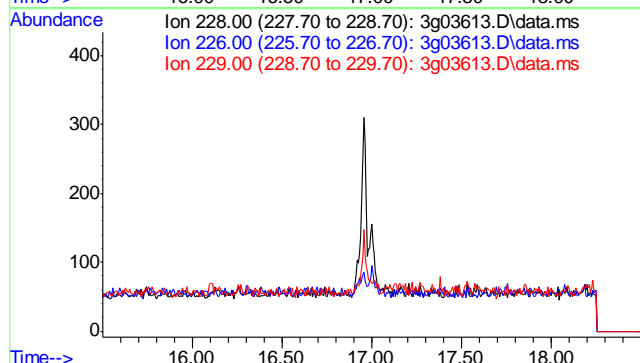




#22  
 Chrysene  
 Concen: N.D. ug/mL  
 Expected RT: 17.00 min

Lab File: 3g03613.D  
 Acq: 12 Apr 11 6:26 pm

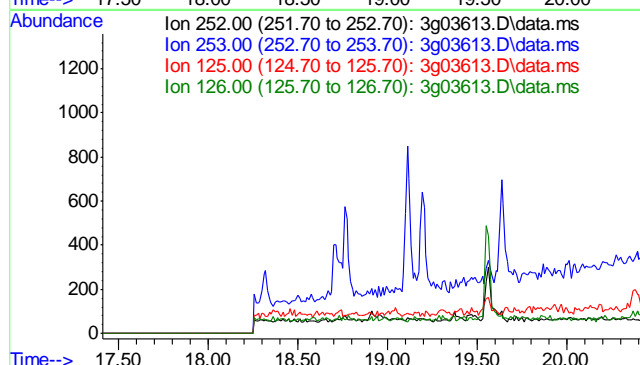
Tgt Ion	Sig	Exp Ratio
228	100	
226	28.1	
229	19.2	

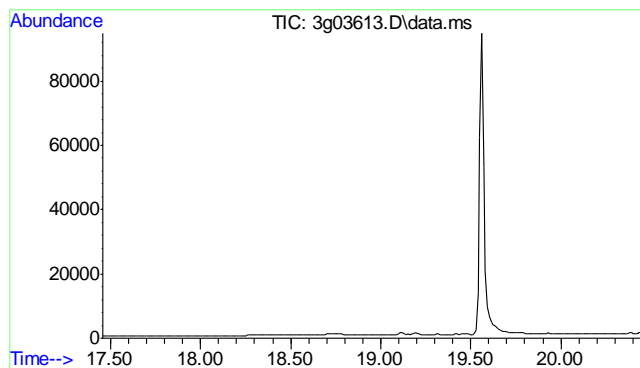


#24  
 Benzo(b)fluoranthene  
 Concen: N.D. ug/mL  
 Expected RT: 18.91 min

Lab File: 3g03613.D  
 Acq: 12 Apr 11 6:26 pm

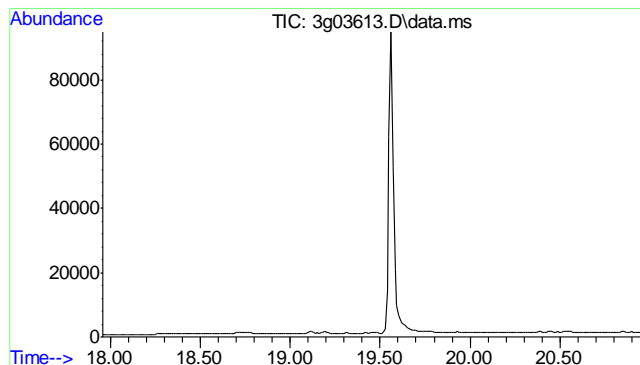
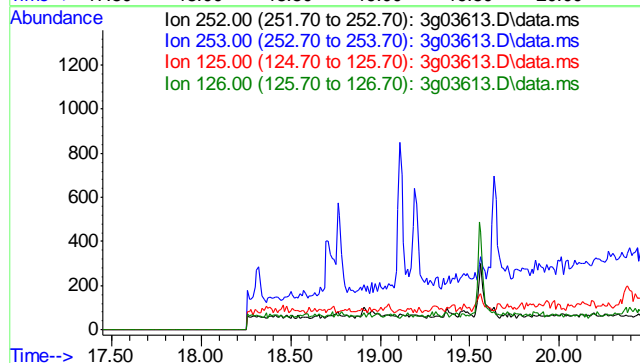
Tgt Ion	Sig	Exp Ratio
252	100	
253	21.5	
125	9.8	
126	11.6	





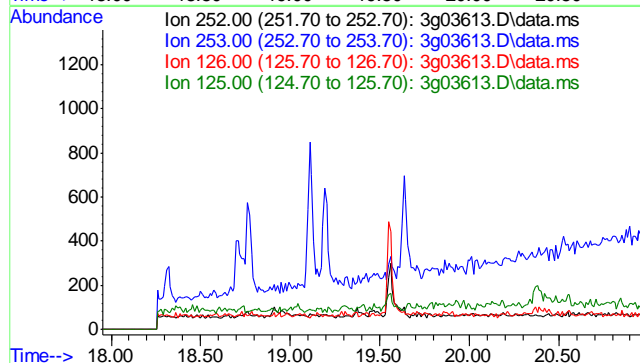
#25  
Benzo(k)fluoranthene  
Concen: N.D. ug/mL  
Expected RT: 18.95 min  
  
Lab File: 3g03613.D  
Acq: 12 Apr 11 6:26 pm

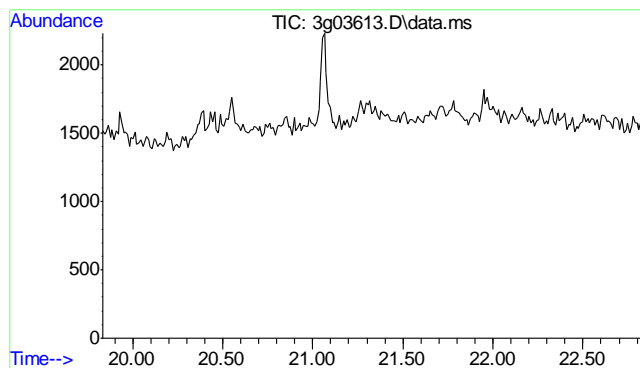
Tgt Ion	Sig	Exp Ratio
252	100	
253	21.4	
125	8.4	
126	10.9	



#26  
Benzo(a)pyrene  
Concen: N.D. ug/mL  
Expected RT: 19.46 min  
  
Lab File: 3g03613.D  
Acq: 12 Apr 11 6:26 pm

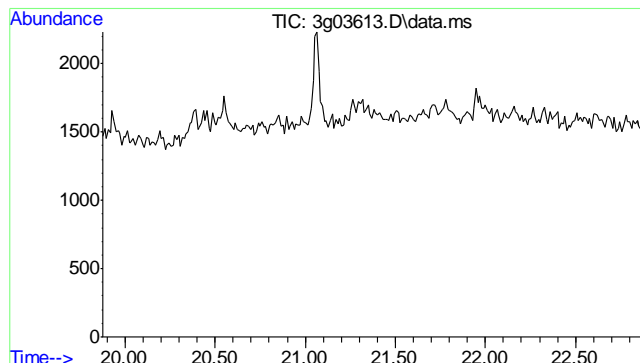
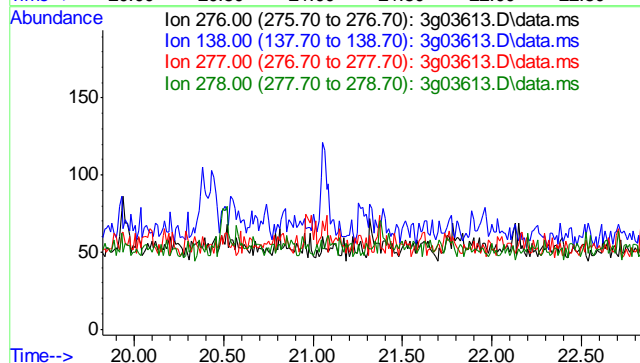
Tgt Ion	Sig	Exp Ratio
252	100	
253	22.7	
126	11.5	
125	10.6	





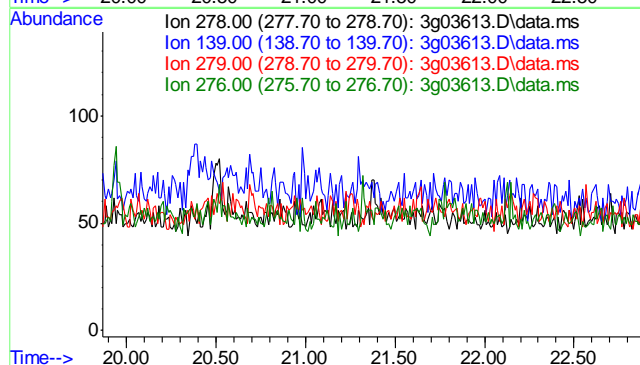
#27  
 Indeno(1,2,3-cd)pyrene  
 Concen: N.D. ug/mL  
 Expected RT: 21.33 min  
 Lab File: 3g03613.D  
 Acq: 12 Apr 11 6:26 pm

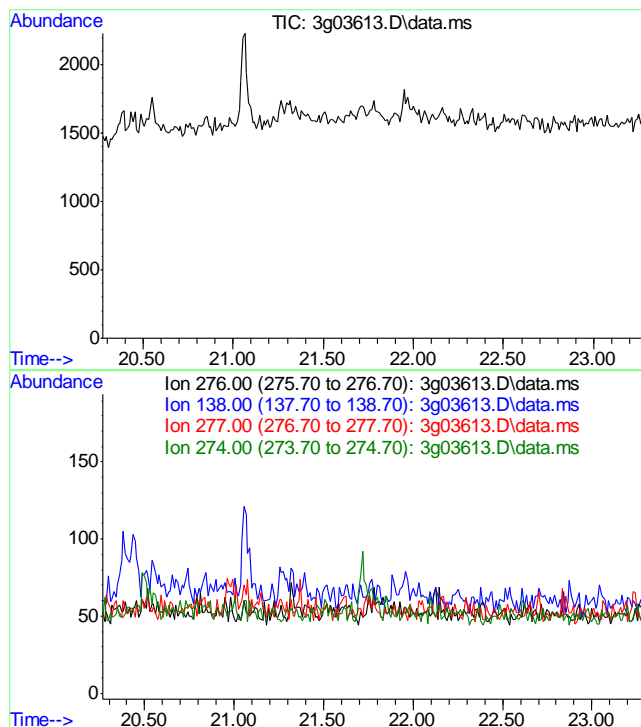
Tgt Ion	Exp Ratio
276	100
138	17.2
277	37.2
278	121.3



#28  
 Dibenz(a,h)anthracene  
 Concen: N.D. ug/mL  
 Expected RT: 21.37 min  
 Lab File: 3g03613.D  
 Acq: 12 Apr 11 6:26 pm

Tgt Ion	Exp Ratio
278	100
139	12.0
279	23.2
276	124.1





#29  
 Benzo(g,h,i)perylene  
 Concen: N.D. ug/mL  
 Expected RT: 21.77 min

Lab File: 3g03613.D  
 Acq: 12 Apr 11 6:26 pm

Tgt Ion: 276  
 Sig Exp Ratio  
 276 100  
 138 16.1  
 277 23.6  
 274 20.9

8.1.1

8



## Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\041211\  
 Data File : 3g03614.D  
 Acq On : 12 Apr 2011 7:04 pm  
 Operator : TamiB  
 Sample : D22470-2,5x  
 Misc : OP3477,E3G133,30.10,,,1,5  
 ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 13 12:37:11 2011  
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G131.M  
 Quant Title : PAHSIM BASE  
 QLast Update : Thu Apr 07 14:54:07 2011  
 Response via : Initial Calibration

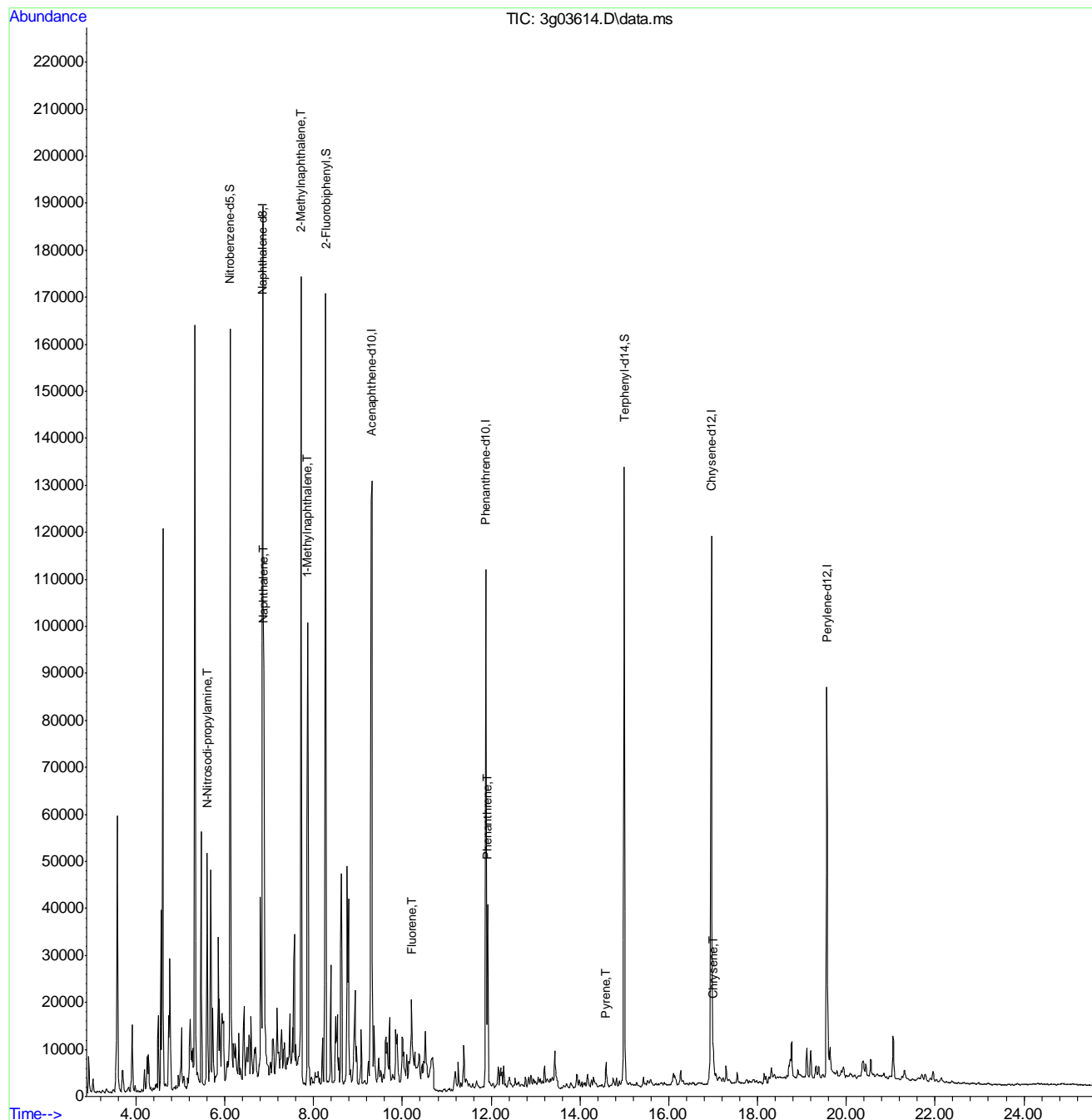
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	6.855	136	172852	4.00	ug/mL	0.00
6) Acenaphthene-d10	9.310	164	81928	4.00	ug/mL	0.00
14) Phenanthrene-d10	11.878	188	134449	4.00	ug/mL	0.00
18) Chrysene-d12	16.961	240	141979	4.00	ug/mL	0.00
23) Perylene-d12	19.561	264	117938	4.00	ug/mL	0.00
System Monitoring Compounds						
2) Nitrobenzene-d5	6.119	82	96577	5.78	ug/mL	0.00
7) 2-Fluorobiphenyl	8.270	172	171900	5.54	ug/mL	0.00
20) Terphenyl-d14	14.996	244	156474	7.21	ug/mL	0.00
Target Compounds						
					Qvalue	
3) N-Nitrosodimethylamine	0.000		0	N.D.	d	
4) N-Nitrosodi-propylamine	5.608	70	12263	0.99	ug/mL	78
5) Naphthalene	6.880	128	86534	1.75	ug/mL	97
8) 2-Methylnaphthalene	7.715	142	87686	3.34	ug/mL	95
9) 1-Methylnaphthalene	7.869	142	51639m	1.96	ug/mL	
10) Acenaphthylene	0.000		0	N.D.	d	
11) Acenaphthene	0.000		0	N.D.	d	
12) Fluorene	10.208	166	11681	0.42	ug/mL#	75
13) Diphenylamine	0.000		0	N.D.	d	
15) Phenanthrene	11.918	178	36248	0.97	ug/mL	98
16) Anthracene	0.000		0	N.D.	d	
17) Fluoranthene	0.000		0	N.D.	d	
19) Pyrene	14.593	202	4783	0.12	ug/mL	89
21) Benzo(a)anthracene	0.000		0	N.D.	d	
22) Chrysene	17.001	228	7546	0.20	ug/mL	87
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	

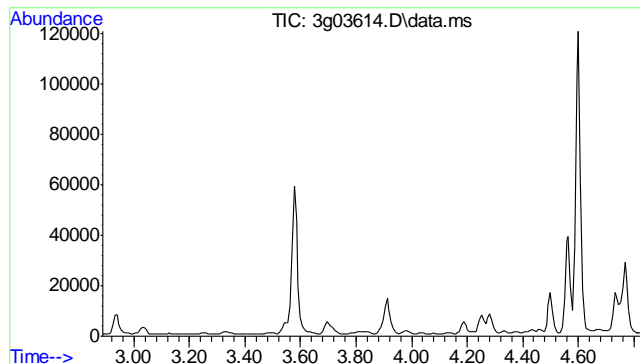
(#) = qualifier out of range (m) = manual integration (+) = signals summed

## Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\041211\  
Data File : 3g03614.D  
Acq On : 12 Apr 2011 7:04 pm  
Operator : TamiB  
Sample : D22470-2,5x  
Misc : OP3477,E3G133,30.10,,,1,5  
ALS Vial : 14 Sample Multiplier: 1

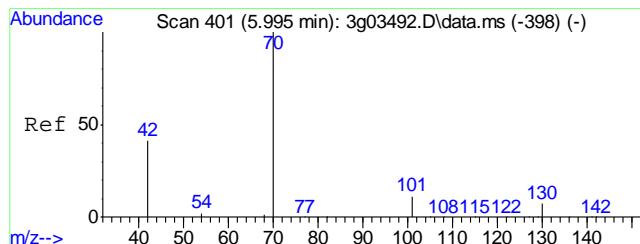
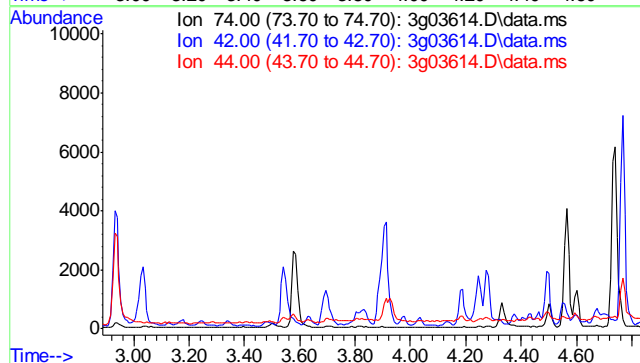
Quant Time: Apr 13 12:37:11 2011  
Quant Method : C:\msdchem\1\METHODS\SIMPE3G131.M  
Quant Title : PAHSIM BASE  
QLast Update : Thu Apr 07 14:54:07 2011  
Response via : Initial Calibration





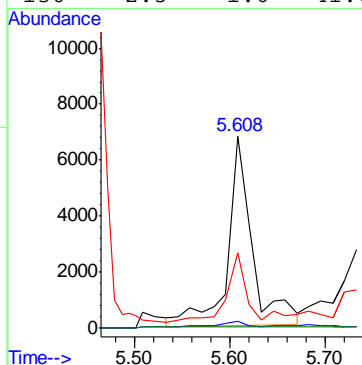
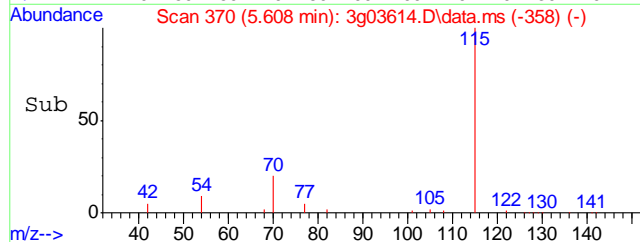
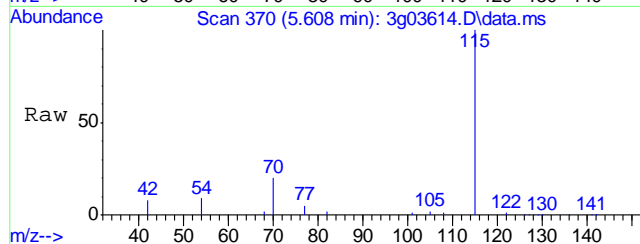
#3  
N-Nitrosodimethylamine  
Concen: N.D. ug/mL  
Expected RT: 3.33 min  
  
Lab File: 3g03614.D  
Acq: 12 Apr 11 7:04 pm

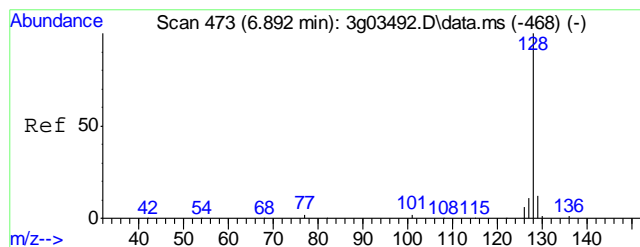
Tgt Ion: 74  
Sig Exp Ratio  
74 100  
42 57.2  
44 3.3



#4  
N-Nitrosodi-propylamine  
Concen: 0.99 ug/mL  
RT: 5.608 min Scan# 370  
Delta R.T. -0.374 min  
Lab File: 3g03614.D  
Acq: 12 Apr 11 7:04 pm

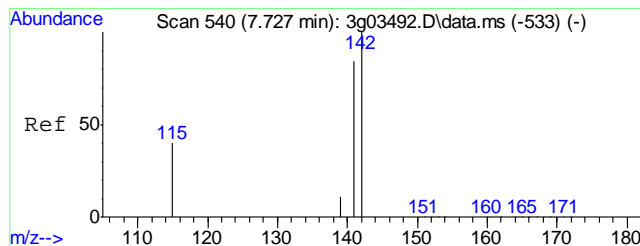
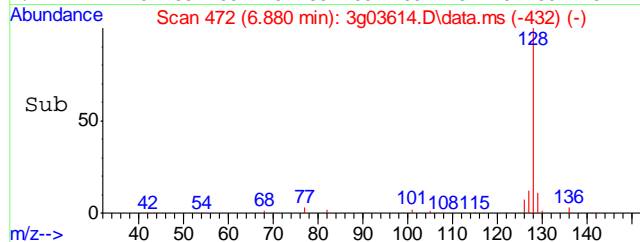
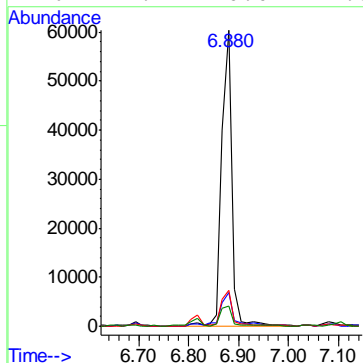
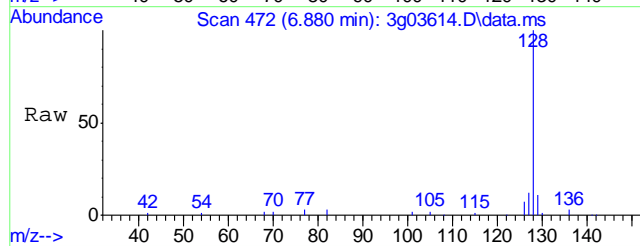
Tgt Ion: 70 Resp: 12263  
Ion Ratio Lower Upper  
70 100  
101 6.2 0.0 32.2  
42 31.3 20.2 60.2  
130 2.5 1.6 41.6





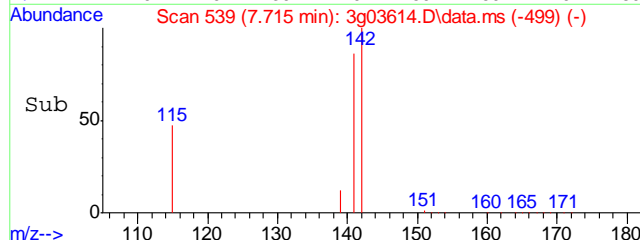
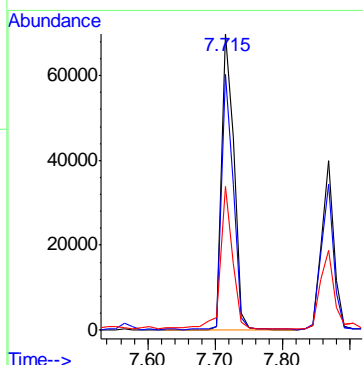
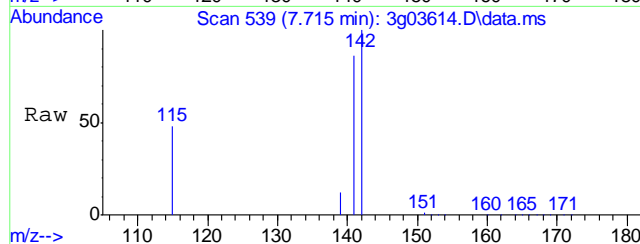
#5  
Naphthalene  
Concen: 1.75 ug/mL  
RT: 6.880 min Scan# 472  
Delta R.T. -0.000 min  
Lab File: 3g03614.D  
Acq: 12 Apr 11 7:04 pm

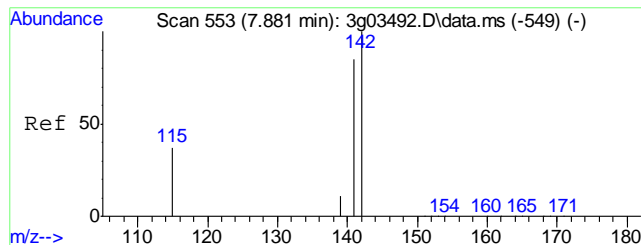
Tgt Ion	Ratio	Lower	Upper
128	100		
129	13.6	0.0	30.8
127	12.9	0.0	32.7
126	7.7	0.0	27.3



#8  
2-Methylnaphthalene  
Concen: 3.34 ug/mL  
RT: 7.715 min Scan# 539  
Delta R.T. -0.000 min  
Lab File: 3g03614.D  
Acq: 12 Apr 11 7:04 pm

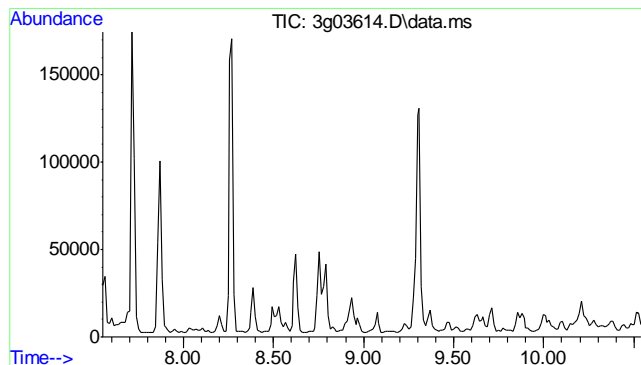
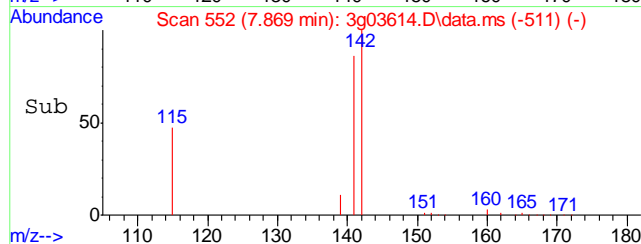
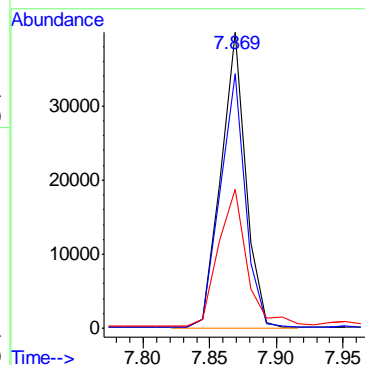
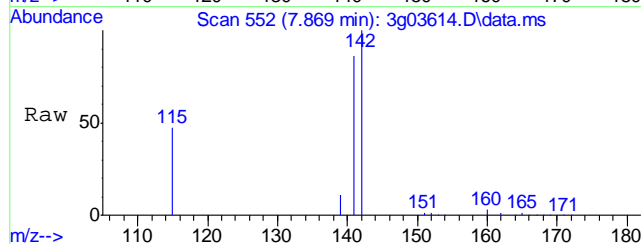
Tgt Ion	Ratio	Lower	Upper
142	100		
141	82.0	63.0	103.0
115	47.9	19.8	59.8





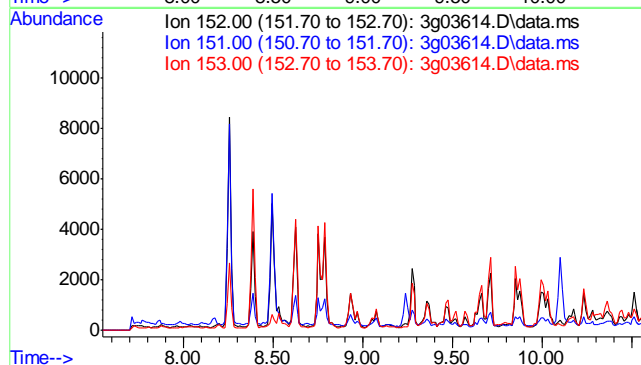
#9  
1-Methylnaphthalene  
Concen: 1.96 ug/mL m  
RT: 7.869 min Scan# 552  
Delta R.T. -0.000 min  
Lab File: 3g03614.D  
Acq: 12 Apr 11 7:04 pm

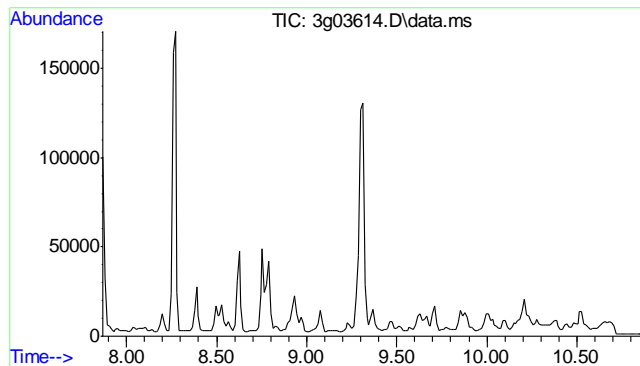
Tgt Ion:	142	Resp:	51639
Ion Ratio	Lower	Upper	
142	100		
141	139.3	69.9	104.9#
115	81.4	33.8	50.6#



#10  
Acenaphthylene  
Concen: N.D. ug/mL  
Expected RT: 9.05 min  
Lab File: 3g03614.D  
Acq: 12 Apr 11 7:04 pm

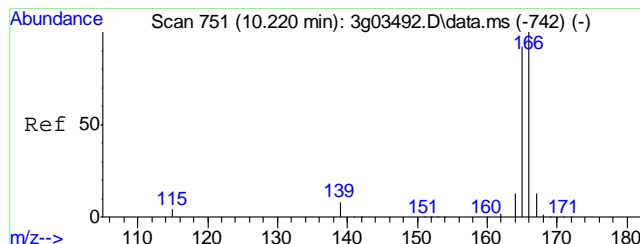
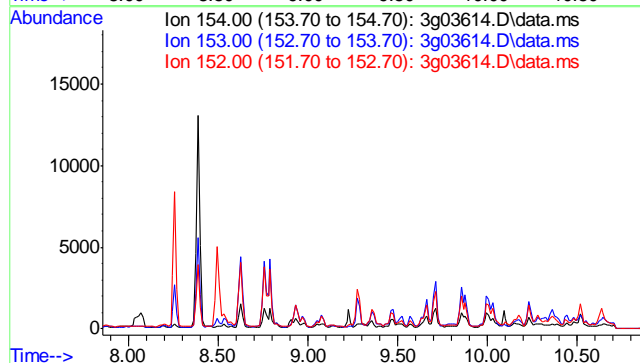
Tgt Ion:	152
Sig	Exp Ratio
152	100
151	19.1
153	12.8





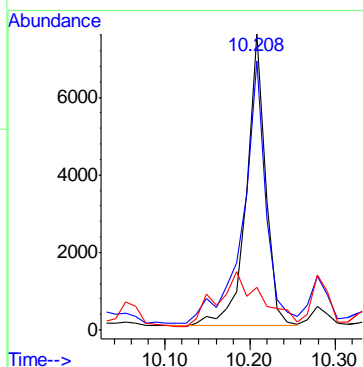
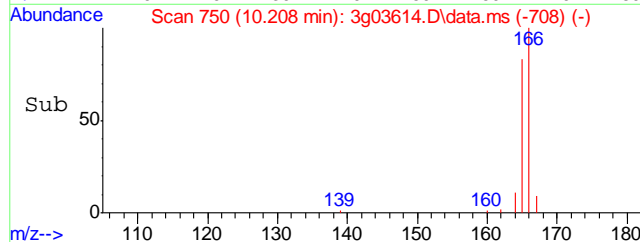
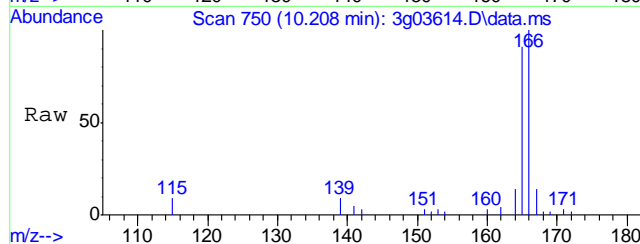
#11  
 Acenaphthene  
 Concen: N.D. ug/mL  
 Expected RT: 9.36 min  
 Lab File: 3g03614.D  
 Acq: 12 Apr 11 7:04 pm

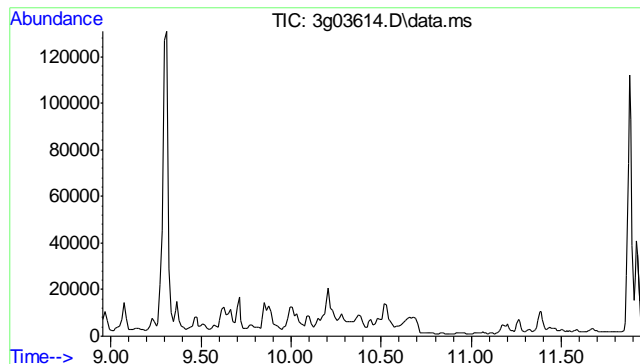
Tgt Ion: 154  
 Sig Exp Ratio  
 154 100  
 153 114.0  
 152 53.6



#12  
 Fluorene  
 Concen: 0.42 ug/mL  
 RT: 10.208 min Scan# 750  
 Delta R.T. -0.000 min  
 Lab File: 3g03614.D  
 Acq: 12 Apr 11 7:04 pm

Tgt Ion: 166 Resp: 11681  
 Ion Ratio Lower Upper  
 166 100  
 165 107.0 70.1 110.1  
 167 43.0 0.0 33.1#

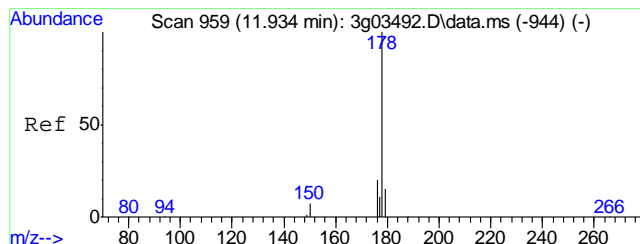
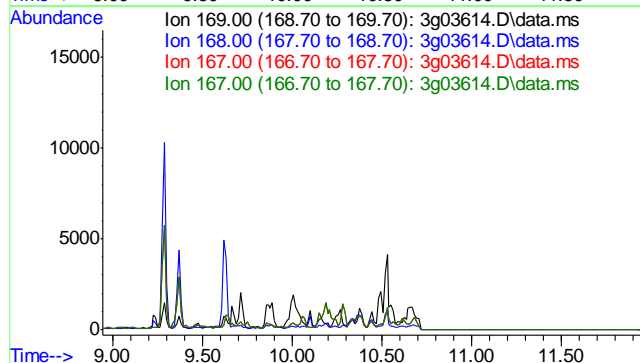




#13  
 Diphenylamine  
 Concen: N.D. ug/mL  
 Expected RT: 10.44 min  
  
 Lab File: 3g03614.D  
 Acq: 12 Apr 11 7:04 pm

Tgt Ion: 169  

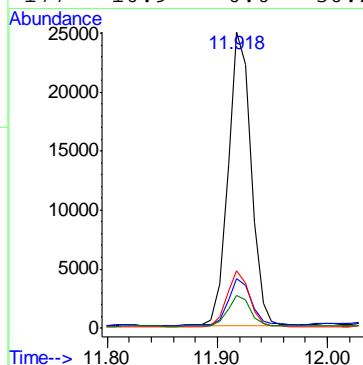
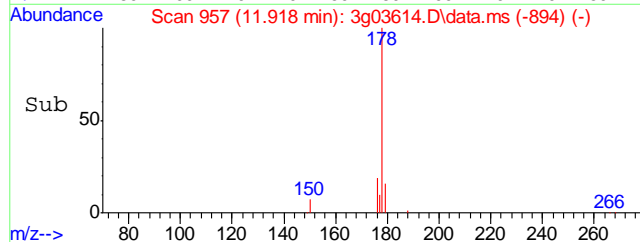
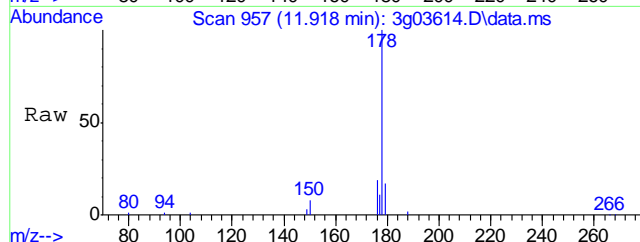
Sig	Exp Ratio
169	100
168	61.8
167	33.2
167	33.2

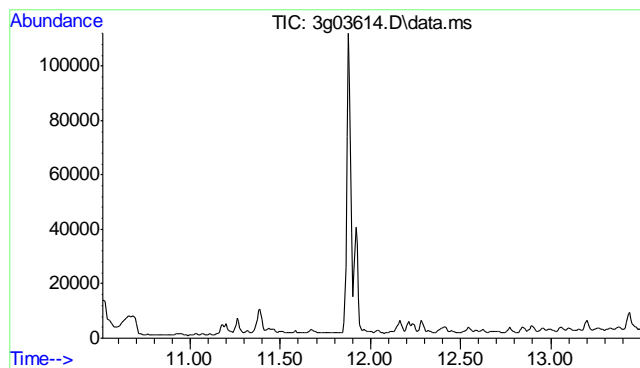


#15  
 Phenanthrene  
 Concen: 0.97 ug/mL  
 RT: 11.918 min Scan# 957  
 Delta R.T. -0.000 min  
 Lab File: 3g03614.D  
 Acq: 12 Apr 11 7:04 pm

Tgt Ion: 178 Resp: 36248  

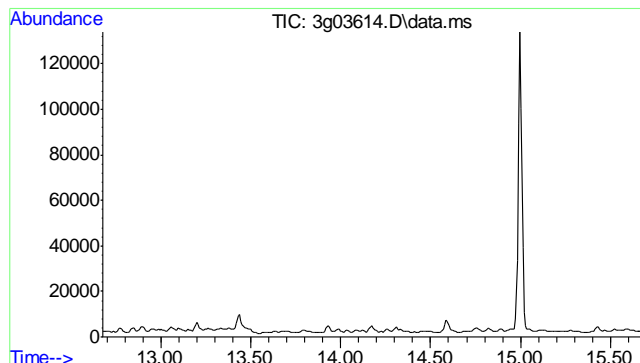
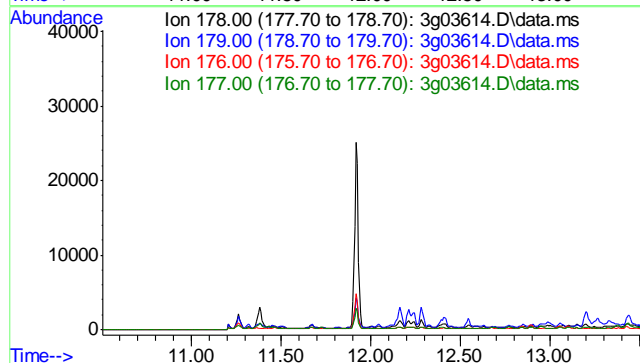
Ion	Ratio	Lower	Upper
178	100		
179	16.7	0.0	35.1
176	18.8	0.0	38.7
177	10.9	0.0	30.2





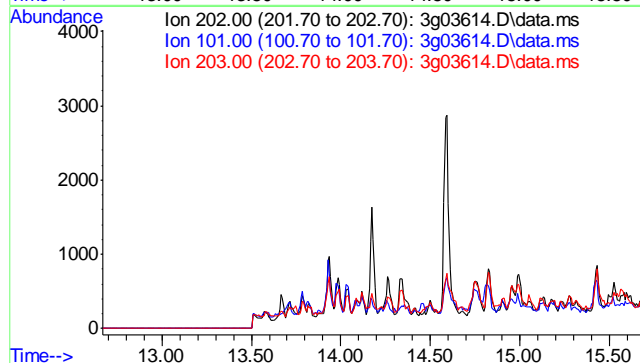
#16  
 Anthracene  
 Concen: N.D. ug/mL  
 Expected RT: 12.00 min  
  
 Lab File: 3g03614.D  
 Acq: 12 Apr 11 7:04 pm

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

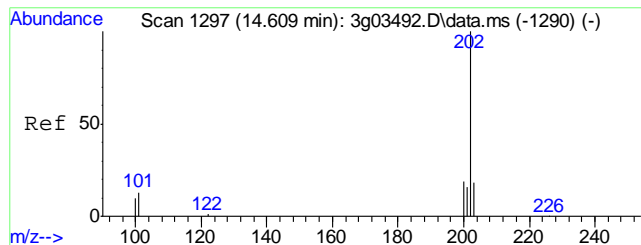


#17  
 Fluoranthene  
 Concen: N.D. ug/mL  
 Expected RT: 14.17 min  
  
 Lab File: 3g03614.D  
 Acq: 12 Apr 11 7:04 pm

Tgt Ion	Exp Ratio
202	100
101	13.0
203	17.1

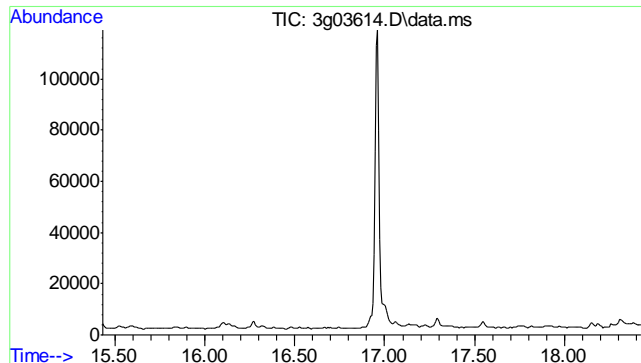
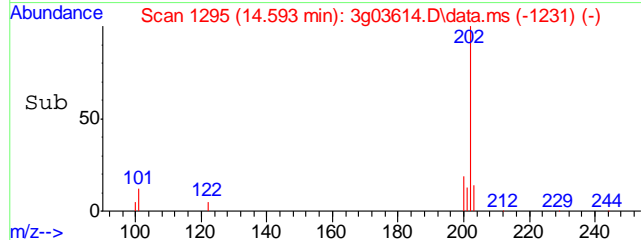
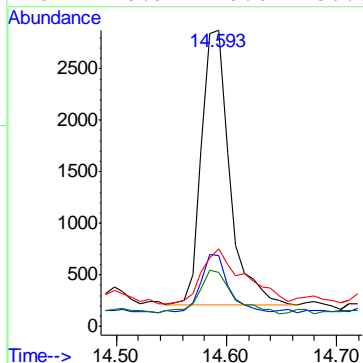
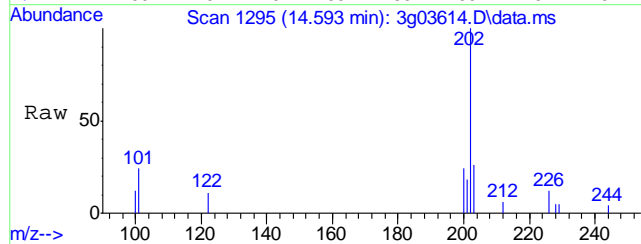






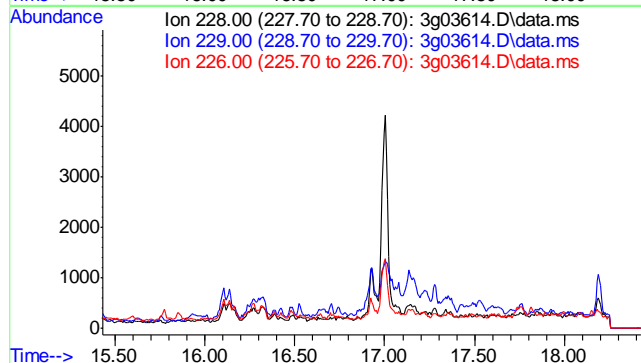
#19  
Pyrene  
Concen: 0.12 ug/mL  
RT: 14.593 min Scan# 1295  
Delta R.T. 0.008 min  
Lab File: 3g03614.D  
Acq: 12 Apr 11 7:04 pm

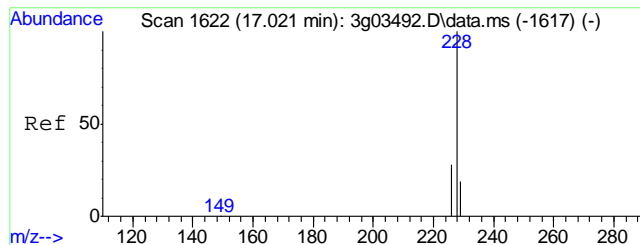
Tgt Ion:	202	Resp:	4783
Ion Ratio	Lower	Upper	
202	100		
200	20.8	0.2	40.2
203	30.1	0.0	37.5
201	18.9	0.0	36.5



#21  
Benzo(a)anthracene  
Concen: N.D. ug/mL  
Expected RT: 16.93 min  
Lab File: 3g03614.D  
Acq: 12 Apr 11 7:04 pm

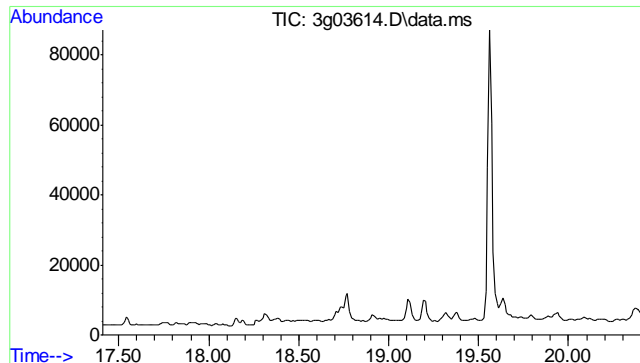
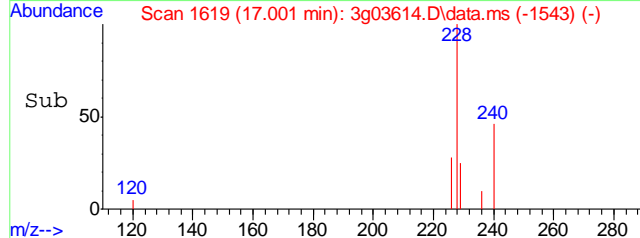
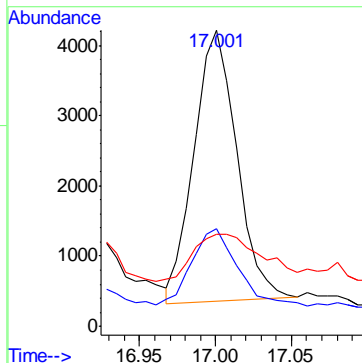
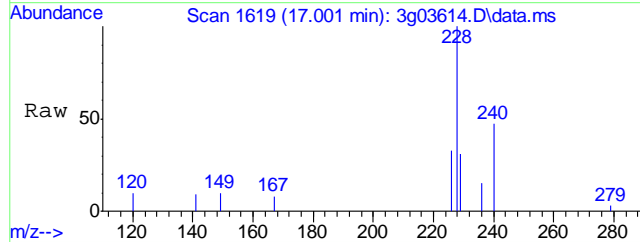
Tgt Ion:	228
Sig	Exp Ratio
228	100
229	19.4
226	25.8





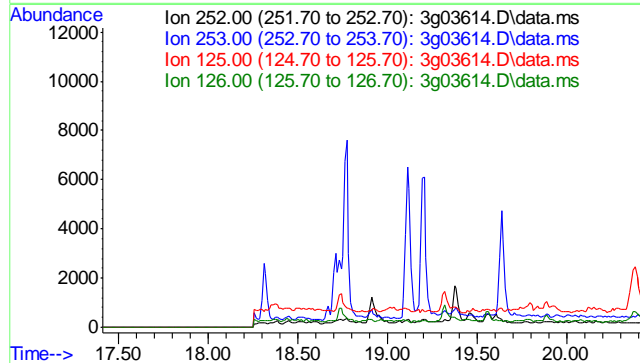
#22  
Chrysene  
Concen: 0.20 ug/mL  
RT: 17.001 min Scan# 1619  
Delta R.T. -0.000 min  
Lab File: 3g03614.D  
Acq: 12 Apr 11 7:04 pm

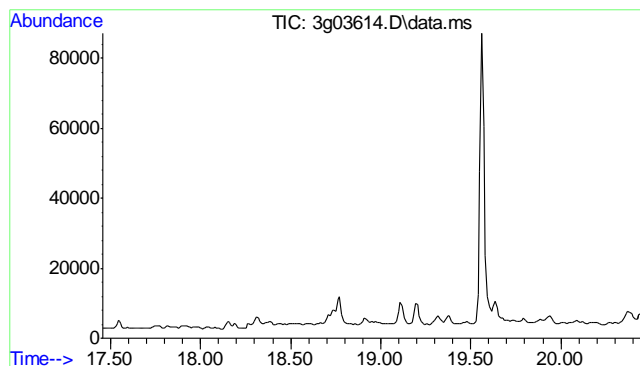
Tgt Ion:	228	Resp:	7546
Ion Ratio	Lower	Upper	
228	100		
226	32.3	8.1	48.1
229	28.0	0.0	39.2



#24  
Benzo(b)fluoranthene  
Concen: N.D. ug/mL  
Expected RT: 18.91 min  
Lab File: 3g03614.D  
Acq: 12 Apr 11 7:04 pm

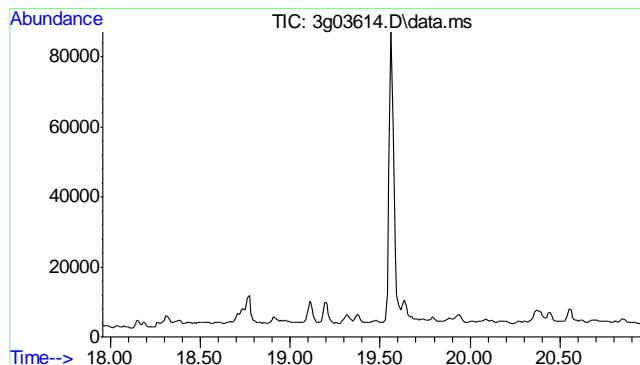
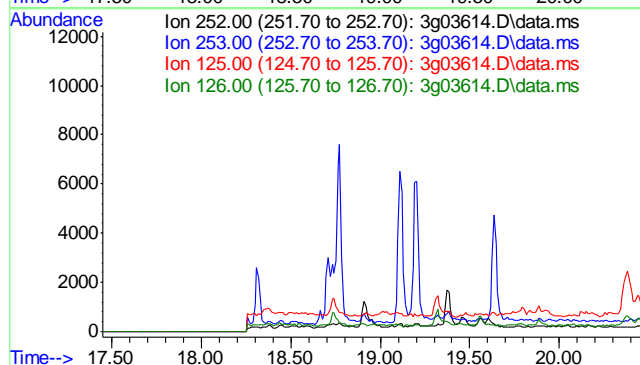
Tgt Ion:	252
Sig	Exp Ratio
252	100
253	21.5
125	9.8
126	11.6





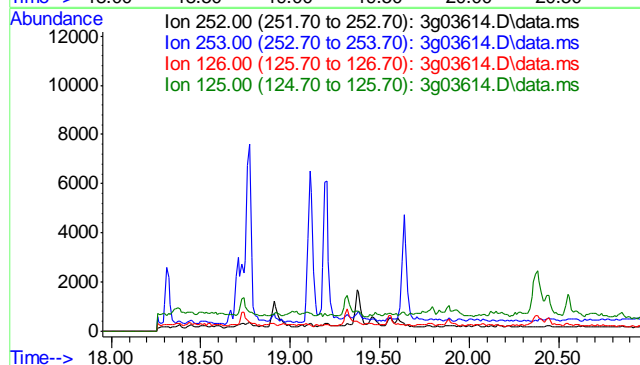
#25  
Benzo(k)fluoranthene  
Concen: N.D. ug/mL  
Expected RT: 18.95 min  
  
Lab File: 3g03614.D  
Acq: 12 Apr 11 7:04 pm

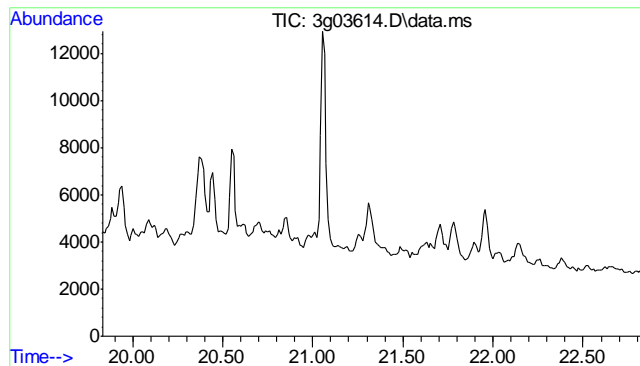
Tgt Ion	Exp Ratio
252	100
253	21.4
125	8.4
126	10.9



#26  
Benzo(a)pyrene  
Concen: N.D. ug/mL  
Expected RT: 19.46 min  
  
Lab File: 3g03614.D  
Acq: 12 Apr 11 7:04 pm

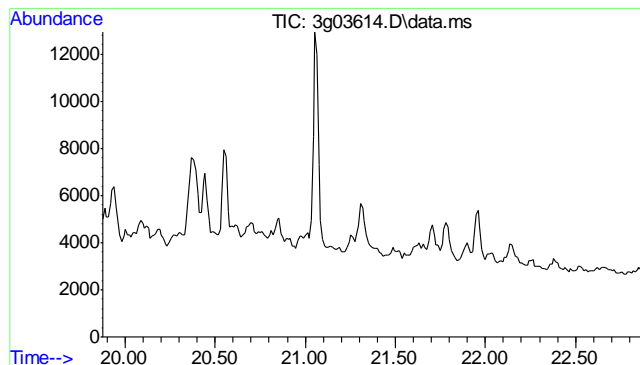
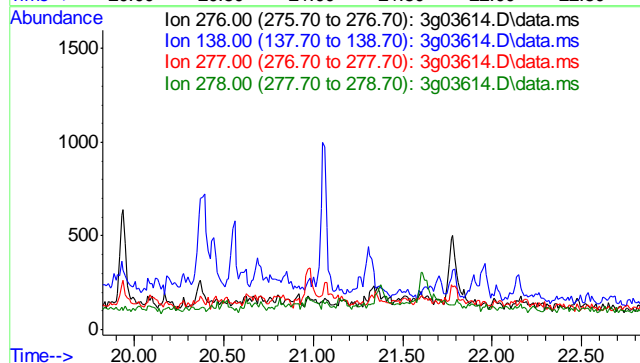
Tgt Ion	Exp Ratio
252	100
253	22.7
126	11.5
125	10.6





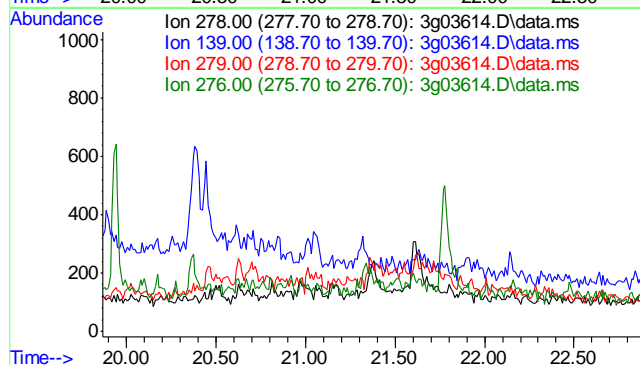
#27  
Indeno(1,2,3-cd)pyrene  
Concen: N.D. ug/mL  
Expected RT: 21.33 min  
  
Lab File: 3g03614.D  
Acq: 12 Apr 11 7:04 pm

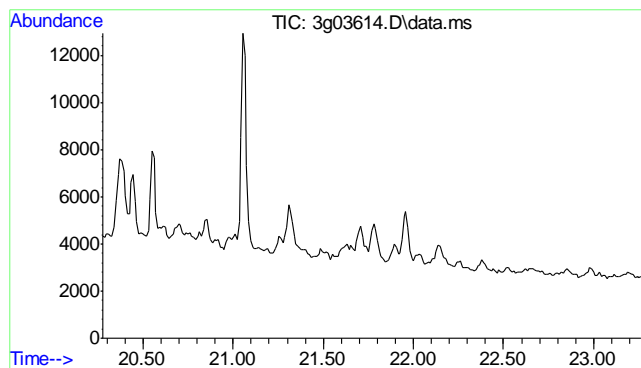
Tgt Ion: 276	
Sig	Exp Ratio
276	100
138	17.2
277	37.2
278	121.3



#28  
Dibenz(a,h)anthracene  
Concen: N.D. ug/mL  
Expected RT: 21.37 min  
  
Lab File: 3g03614.D  
Acq: 12 Apr 11 7:04 pm

Tgt Ion: 278	
Sig	Exp Ratio
278	100
139	12.0
279	23.2
276	124.1



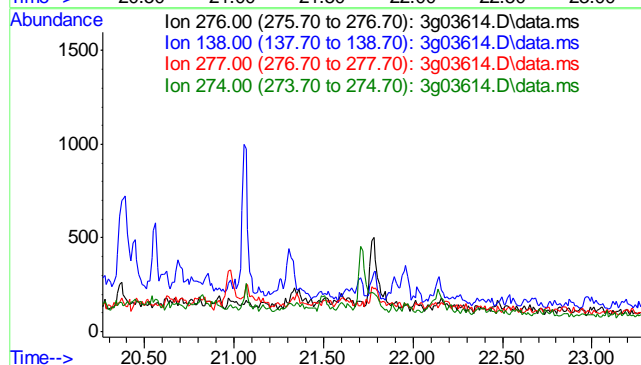


#29  
 Benzo(g,h,i)perylene  
 Concen: N.D. ug/mL  
 Expected RT: 21.77 min

Lab File: 3g03614.D  
 Acq: 12 Apr 11 7:04 pm

Tgt Ion: 276

Sig	Exp Ratio
276	100
138	16.1
277	23.6
274	20.9



## Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\041211\  
 Data File : 3g03611.D  
 Acq On : 12 Apr 2011 5:08 pm  
 Operator : TamiB  
 Sample : OP3477-MB  
 Misc : OP3477,E3G133,30,,,1,1  
 ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 13 12:35:11 2011  
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G131.M  
 Quant Title : PAHSIM BASE  
 QLast Update : Thu Apr 07 14:54:07 2011  
 Response via : Initial Calibration

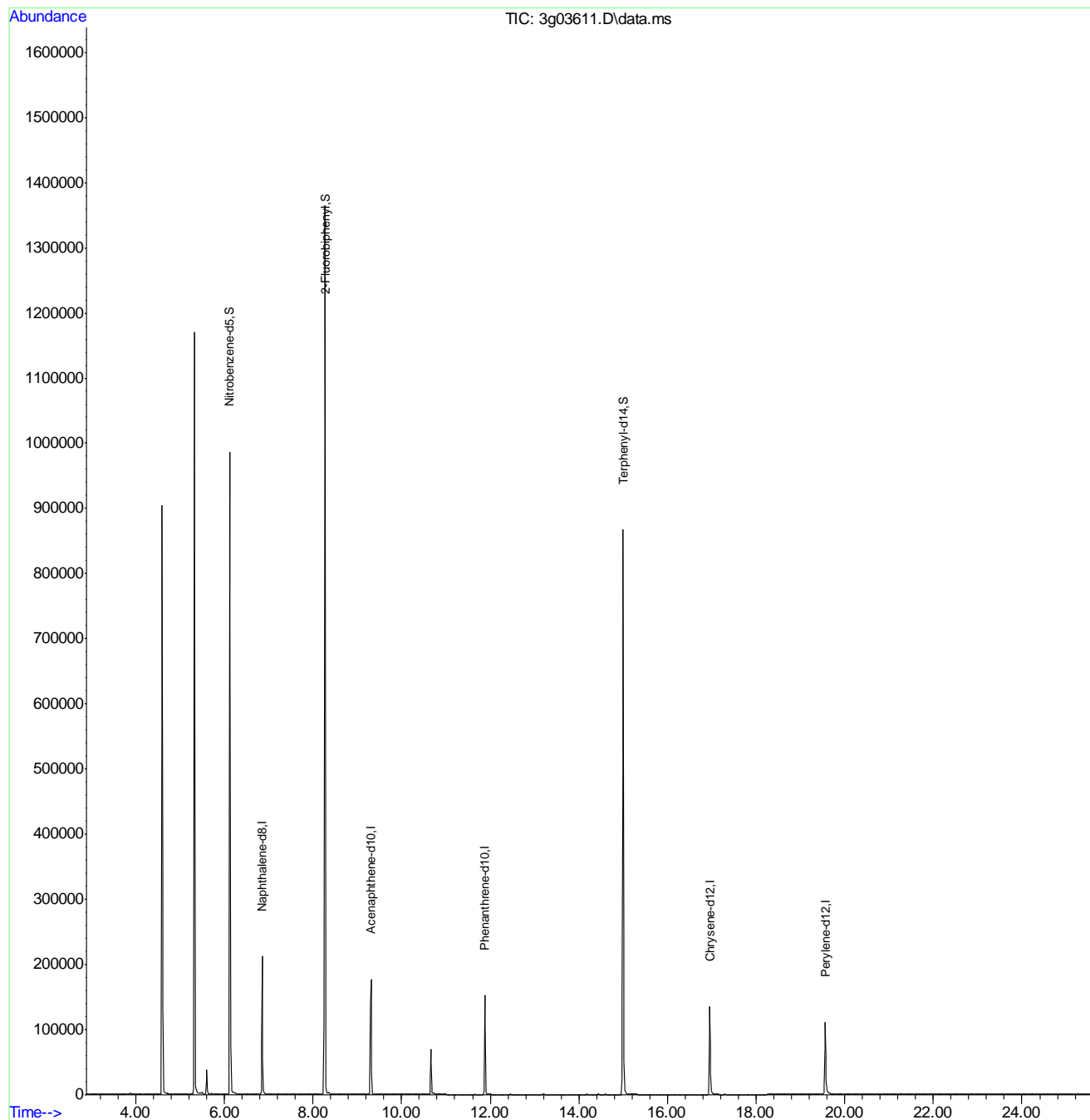
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	6.855	136	200706	4.00	ug/mL	0.00
6) Acenaphthene-d10	9.310	164	107302	4.00	ug/mL	0.00
14) Phenanthrene-d10	11.878	188	170213	4.00	ug/mL	0.00
18) Chrysene-d12	16.954	240	162497	4.00	ug/mL	0.00
23) Perylene-d12	19.561	264	154728	4.00	ug/mL	0.00
System Monitoring Compounds						
2) Nitrobenzene-d5	6.119	82	705082	36.36	ug/mL	0.00
7) 2-Fluorobiphenyl	8.270	172	1271999	31.28	ug/mL	0.00
20) Terphenyl-d14	14.997	244	985914	39.67	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	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	

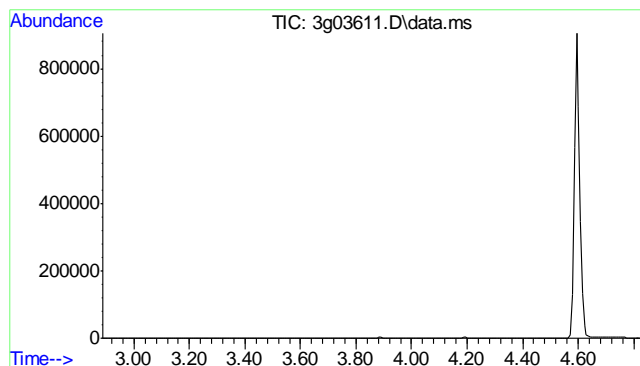
(#) = qualifier out of range (m) = manual integration (+) = signals summed

## Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\041211\  
Data File : 3g03611.D  
Acq On : 12 Apr 2011 5:08 pm  
Operator : TamiB  
Sample : OP3477-MB  
Misc : OP3477,E3G133,30,,,1,1  
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 13 12:35:11 2011  
Quant Method : C:\msdchem\1\METHODS\SIMPE3G131.M  
Quant Title : PAHSIM BASE  
QLast Update : Thu Apr 07 14:54:07 2011  
Response via : Initial Calibration

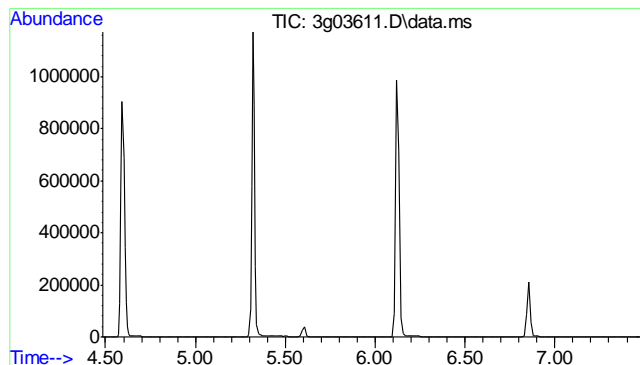
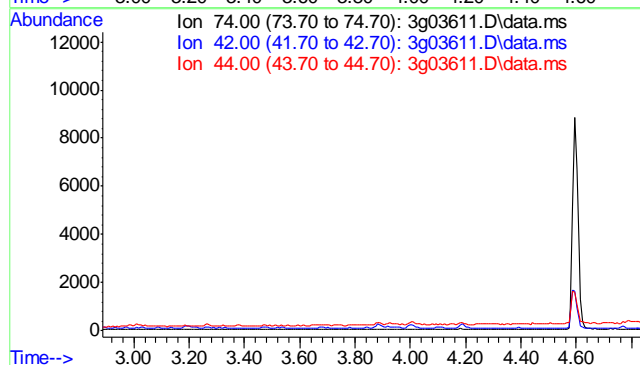




#3  
N-Nitrosodimethylamine  
Concen: N.D. ug/mL  
Expected RT: 3.33 min

Lab File: 3g03611.D  
Acq: 12 Apr 11 5:08 pm

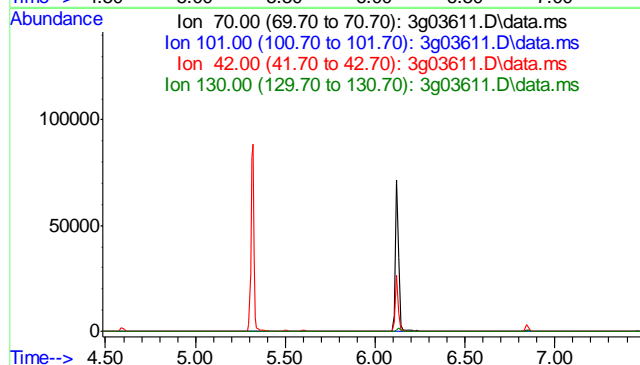
Tgt Ion:	74
Sig	Exp Ratio
74	100
42	57.2
44	3.3



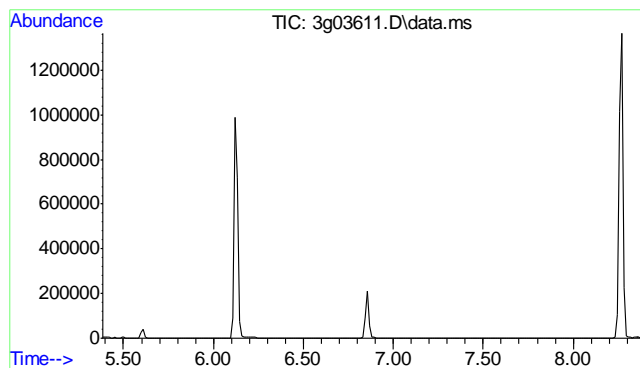
#4  
N-Nitrosodi-propylamine  
Concen: N.D. ug/mL  
Expected RT: 5.98 min

Lab File: 3g03611.D  
Acq: 12 Apr 11 5:08 pm

Tgt Ion:	70
Sig	Exp Ratio
70	100
101	12.2
42	40.2
130	21.6



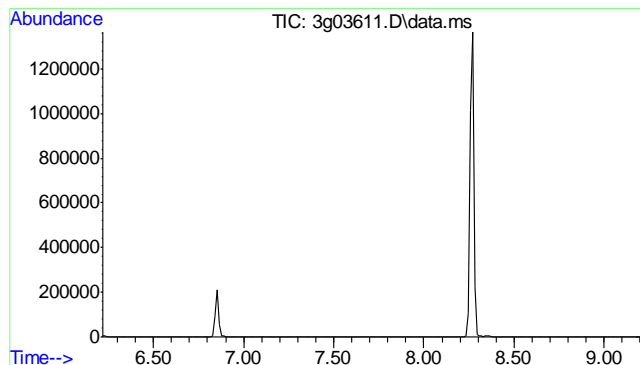
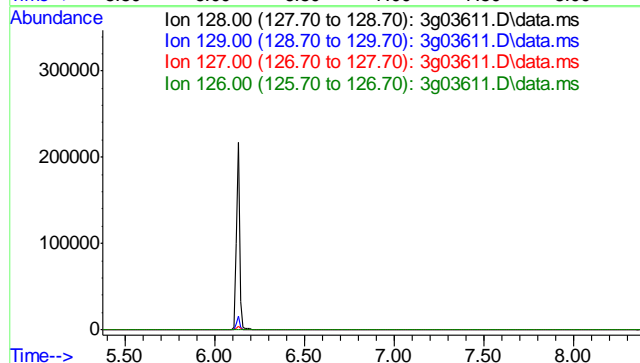




#5  
Naphthalene  
Concen: N.D. ug/mL  
Expected RT: 6.88 min

Lab File: 3g03611.D  
Acq: 12 Apr 11 5:08 pm

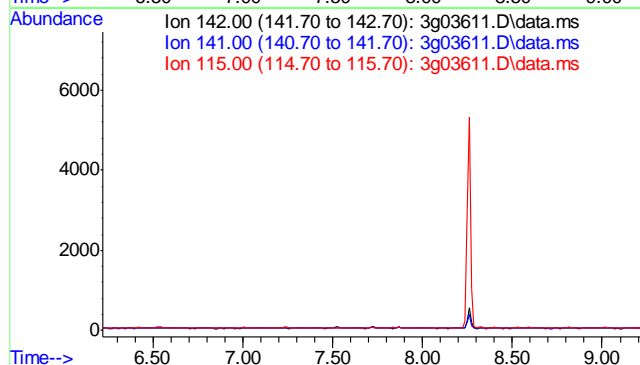
Tgt Ion:	128
Sig	Exp Ratio
128	100
129	10.8
127	12.7
126	7.3

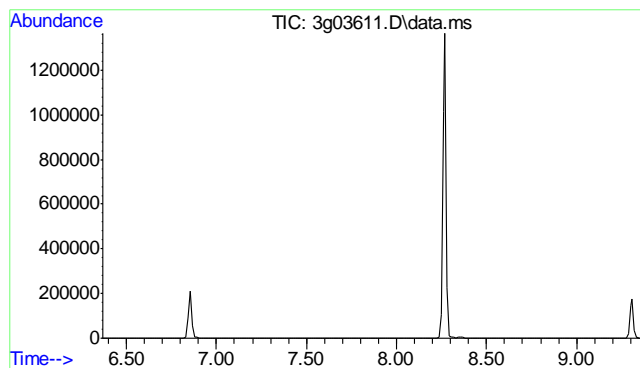


#8  
2-Methylnaphthalene  
Concen: N.D. ug/mL  
Expected RT: 7.72 min

Lab File: 3g03611.D  
Acq: 12 Apr 11 5:08 pm

Tgt Ion:	142
Sig	Exp Ratio
142	100
141	83.0
115	39.8

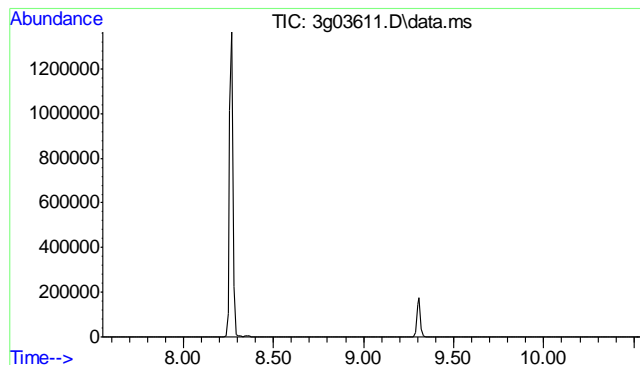
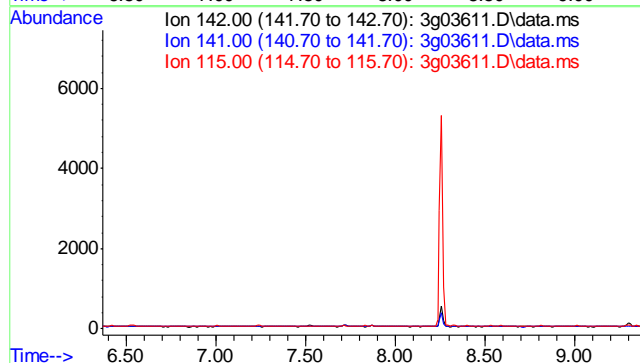




#9  
1-Methylnaphthalene  
Concen: N.D. ug/mL  
Expected RT: 7.87 min

Lab File: 3g03611.D  
Acq: 12 Apr 11 5:08 pm

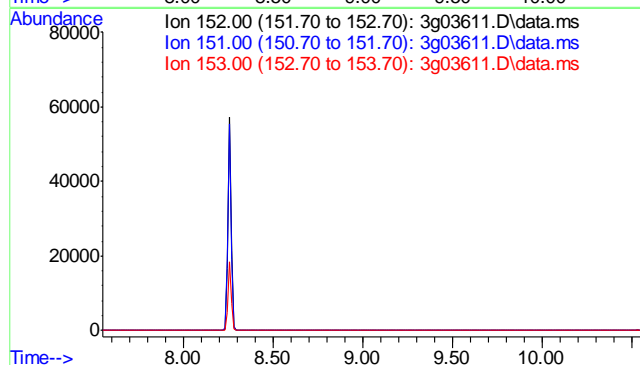
Tgt Ion:	142
Sig	Exp Ratio
142	100
141	87.4
115	42.2

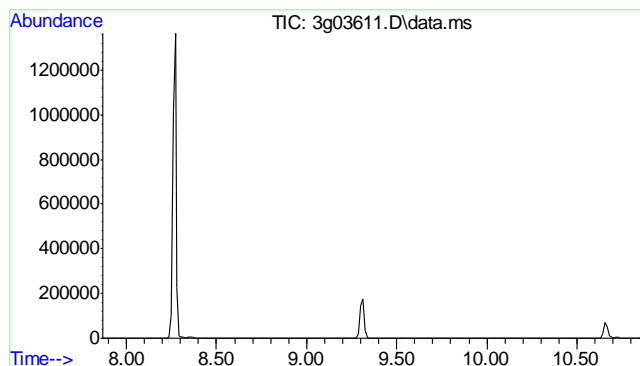


#10  
Acenaphthylene  
Concen: N.D. ug/mL  
Expected RT: 9.05 min

Lab File: 3g03611.D  
Acq: 12 Apr 11 5:08 pm

Tgt Ion:	152
Sig	Exp Ratio
152	100
151	19.1
153	12.8

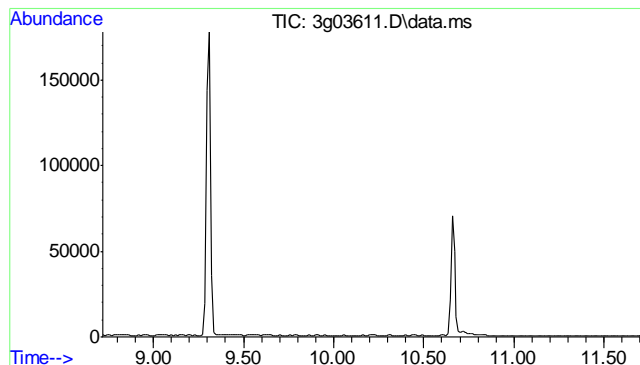
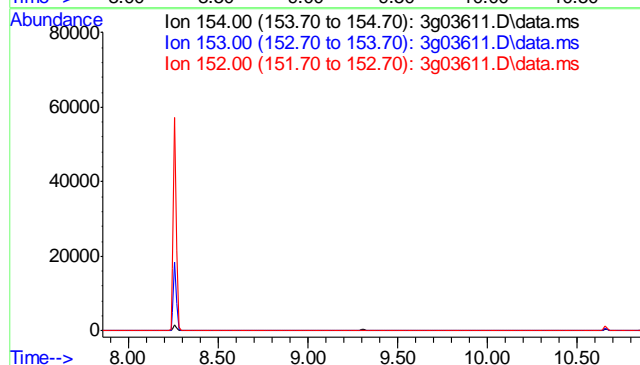




#11  
Acenaphthene  
Concen: N.D. ug/mL  
Expected RT: 9.36 min

Lab File: 3g03611.D  
Acq: 12 Apr 11 5:08 pm

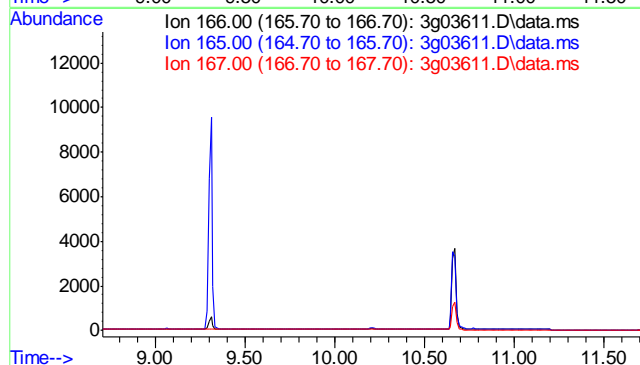
Tgt Ion: 154  
Sig Exp Ratio  
154 100  
153 114.0  
152 53.6

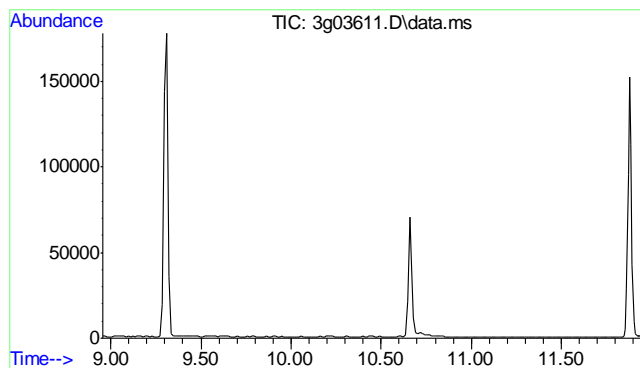


#12  
Fluorene  
Concen: N.D. ug/mL  
Expected RT: 10.21 min

Lab File: 3g03611.D  
Acq: 12 Apr 11 5:08 pm

Tgt Ion: 166  
Sig Exp Ratio  
166 100  
165 90.1  
167 13.1

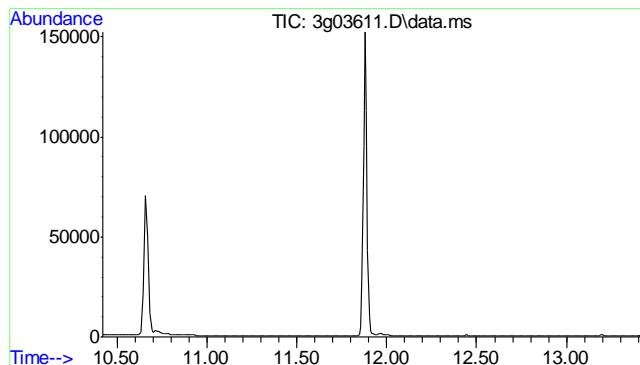
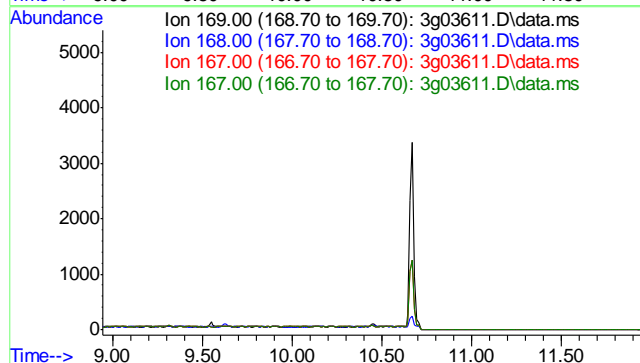




#13  
Diphenylamine  
Concen: N.D. ug/mL  
Expected RT: 10.44 min

Lab File: 3g03611.D  
Acq: 12 Apr 11 5:08 pm

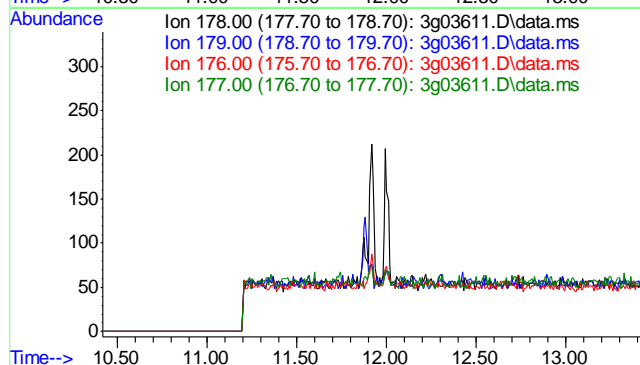
Tgt Ion: 169	
Sig	Exp Ratio
169	100
168	61.8
167	33.2
167	33.2

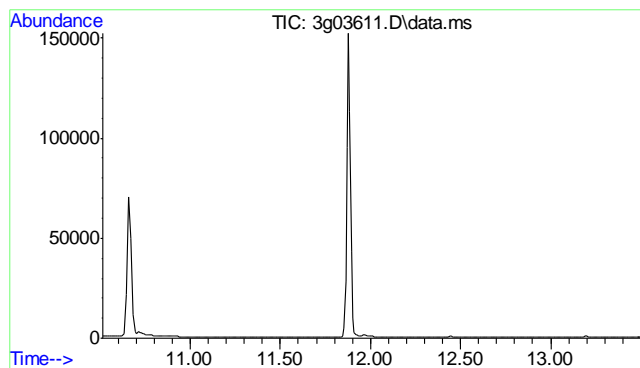


#15  
Phenanthrene  
Concen: N.D. ug/mL  
Expected RT: 11.92 min

Lab File: 3g03611.D  
Acq: 12 Apr 11 5:08 pm

Tgt Ion: 178	
Sig	Exp Ratio
178	100
179	15.1
176	18.7
177	10.2

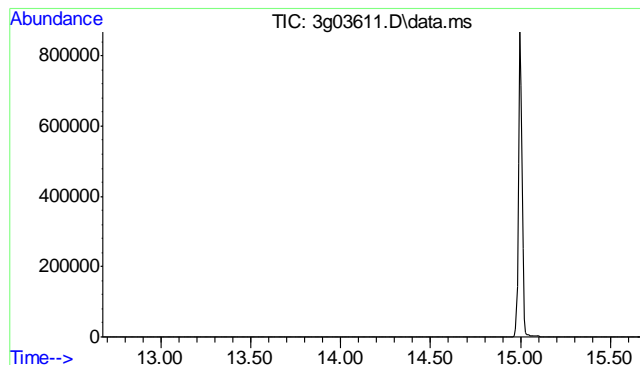
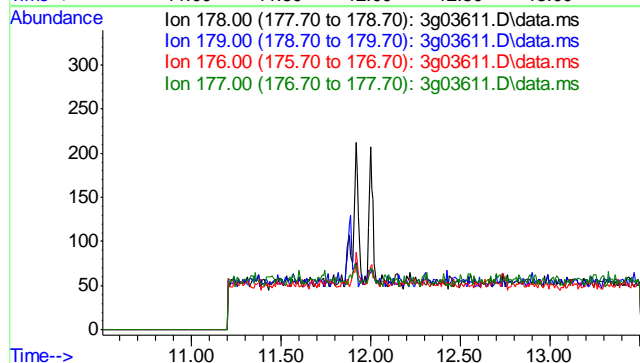




#16  
Anthracene  
Concen: N.D. ug/mL  
Expected RT: 12.00 min

Lab File: 3g03611.D  
Acq: 12 Apr 11 5:08 pm

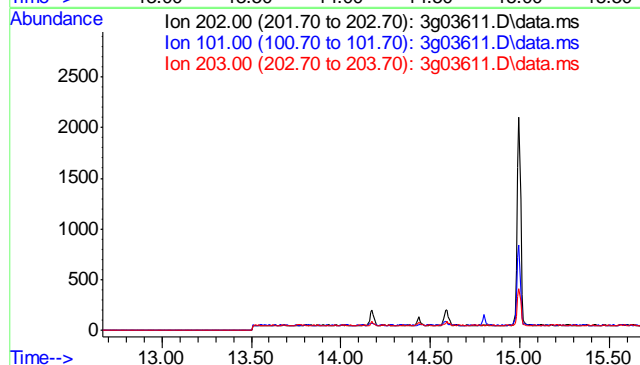
Tgt Ion:	178
Sig	Exp Ratio
178	100
179	15.1
176	17.8
177	8.7

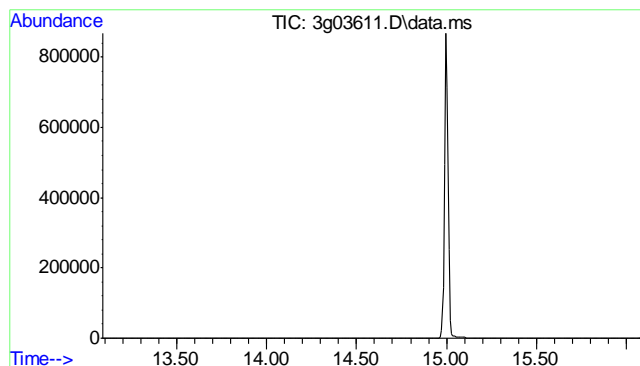


#17  
Fluoranthene  
Concen: N.D. ug/mL  
Expected RT: 14.17 min

Lab File: 3g03611.D  
Acq: 12 Apr 11 5:08 pm

Tgt Ion:	202
Sig	Exp Ratio
202	100
101	13.0
203	17.1

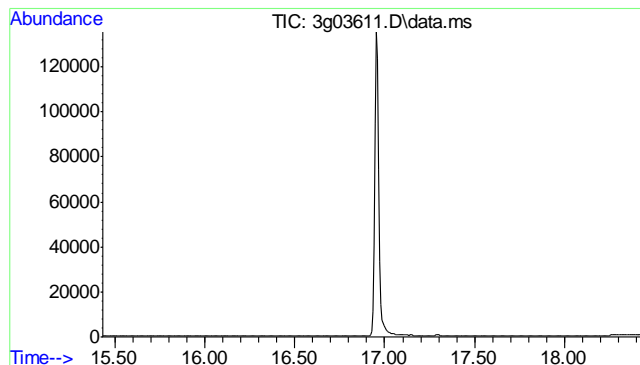
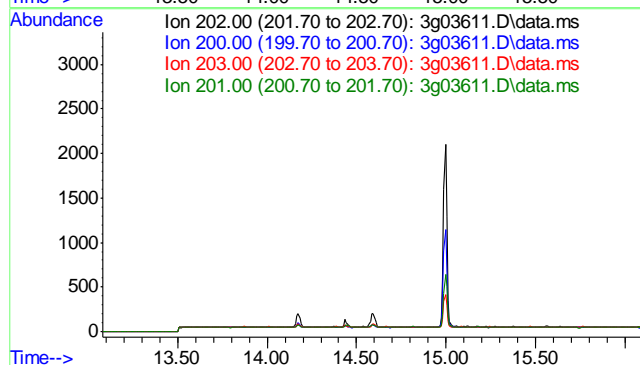




#19  
Pyrene  
Concen: N.D. ug/mL  
Expected RT: 14.58 min

Lab File: 3g03611.D  
Acq: 12 Apr 11 5:08 pm

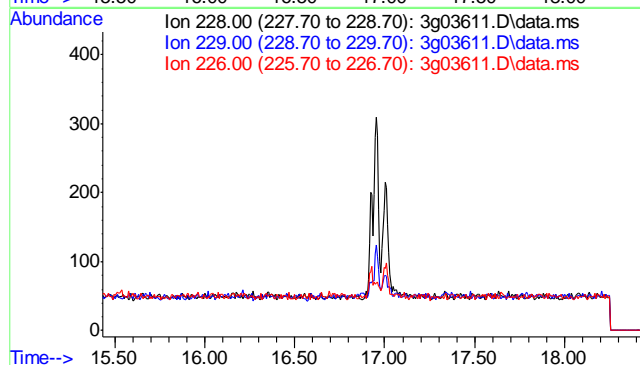
Tgt Ion:	202
Sig	Exp Ratio
202	100
200	20.2
203	17.5
201	16.5

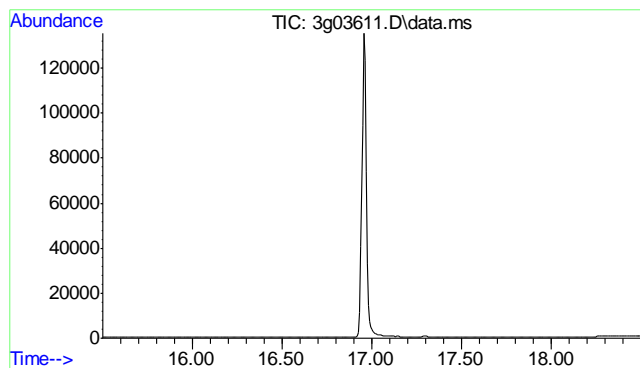


#21  
Benzo(a)anthracene  
Concen: N.D. ug/mL  
Expected RT: 16.93 min

Lab File: 3g03611.D  
Acq: 12 Apr 11 5:08 pm

Tgt Ion:	228
Sig	Exp Ratio
228	100
229	19.4
226	25.8

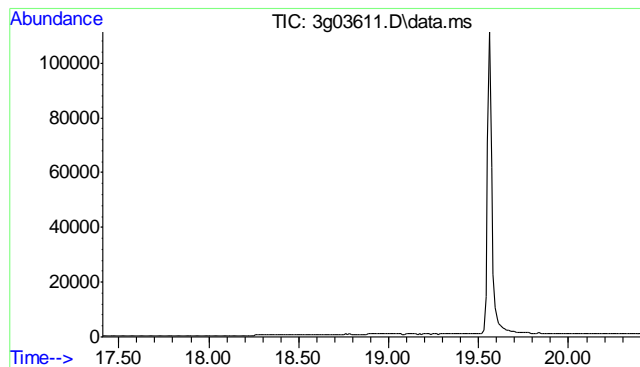
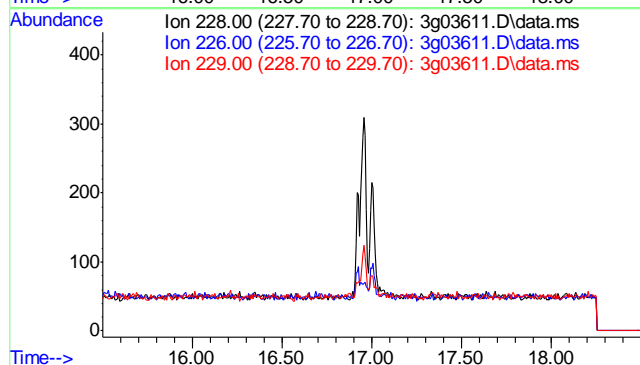




#22  
Chrysene  
Concen: N.D. ug/mL  
Expected RT: 17.00 min

Lab File: 3g03611.D  
Acq: 12 Apr 11 5:08 pm

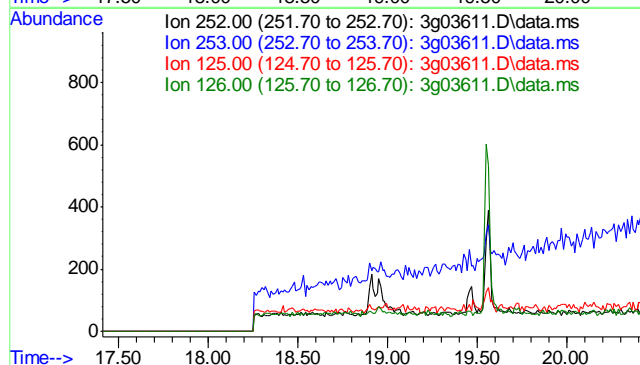
Tgt Ion:	228
Sig	Exp Ratio
228	100
226	28.1
229	19.2

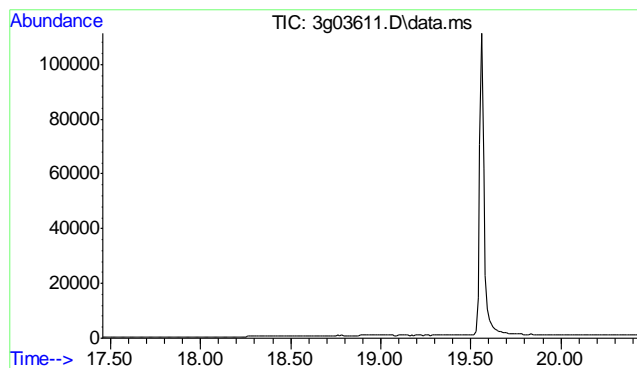


#24  
Benzo(b)fluoranthene  
Concen: N.D. ug/mL  
Expected RT: 18.91 min

Lab File: 3g03611.D  
Acq: 12 Apr 11 5:08 pm

Tgt Ion:	252
Sig	Exp Ratio
252	100
253	21.5
125	9.8
126	11.6

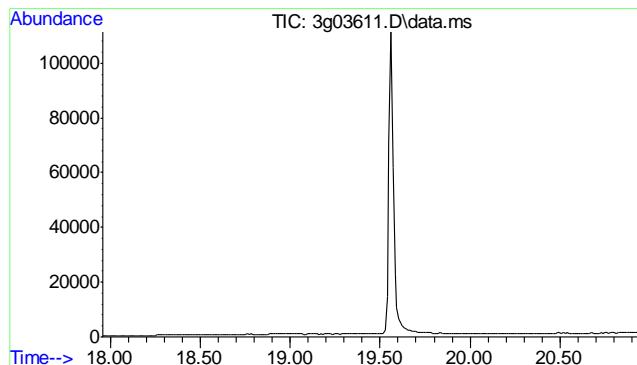
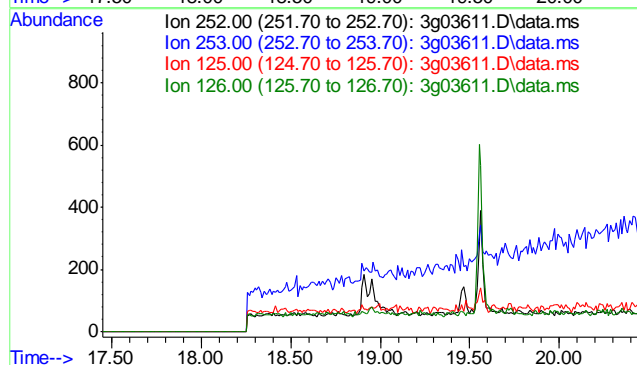




#25  
Benzo(k)fluoranthene  
Concen: N.D. ug/mL  
Expected RT: 18.95 min

Lab File: 3g03611.D  
Acq: 12 Apr 11 5:08 pm

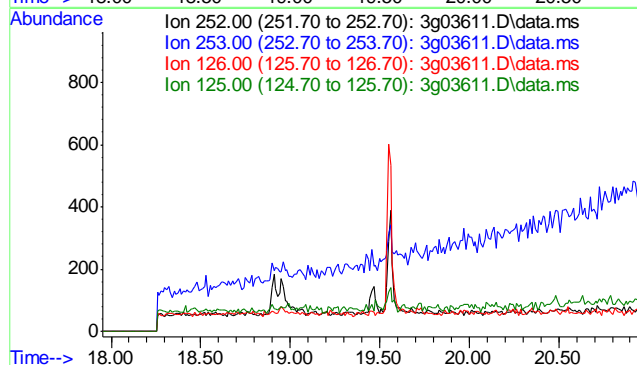
Tgt Ion:	252
Sig	Exp Ratio
252	100
253	21.4
125	8.4
126	10.9



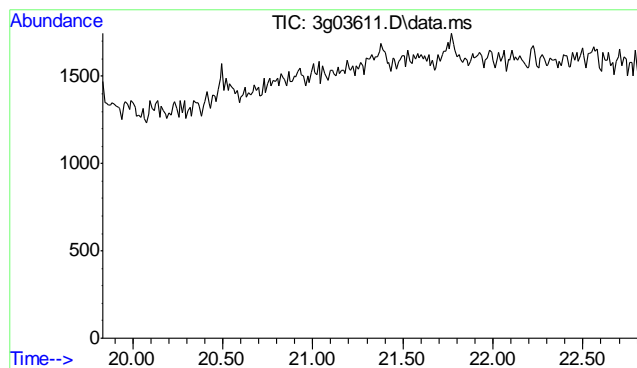
#26  
Benzo(a)pyrene  
Concen: N.D. ug/mL  
Expected RT: 19.46 min

Lab File: 3g03611.D  
Acq: 12 Apr 11 5:08 pm

Tgt Ion:	252
Sig	Exp Ratio
252	100
253	22.7
126	11.5
125	10.6



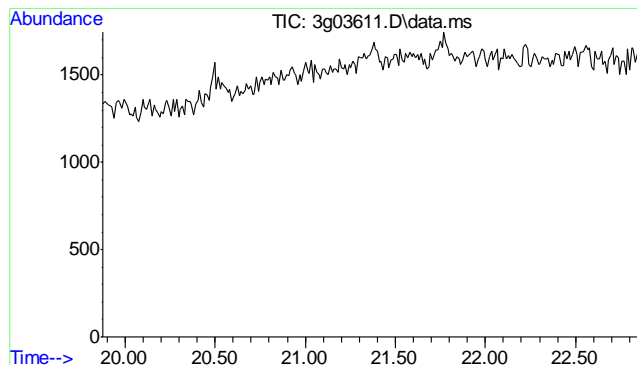
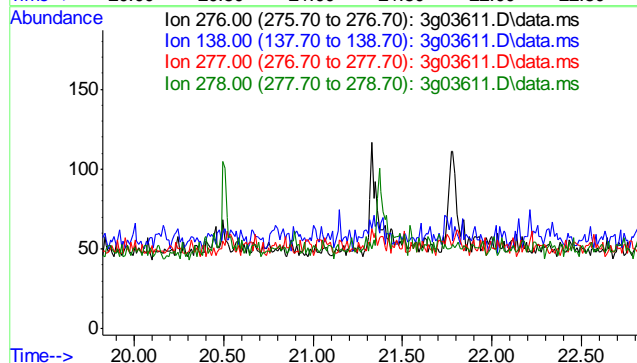




#27  
Indeno(1,2,3-cd)pyrene  
Concen: N.D. ug/mL  
Expected RT: 21.33 min

Lab File: 3g03611.D  
Acq: 12 Apr 11 5:08 pm

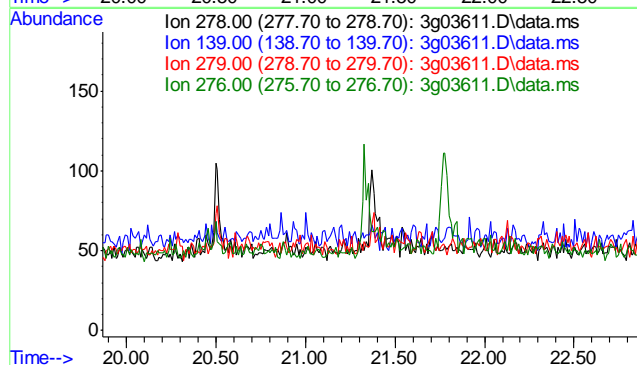
Tgt Ion:	276
Sig	Exp Ratio
276	100
138	17.2
277	37.2
278	121.3

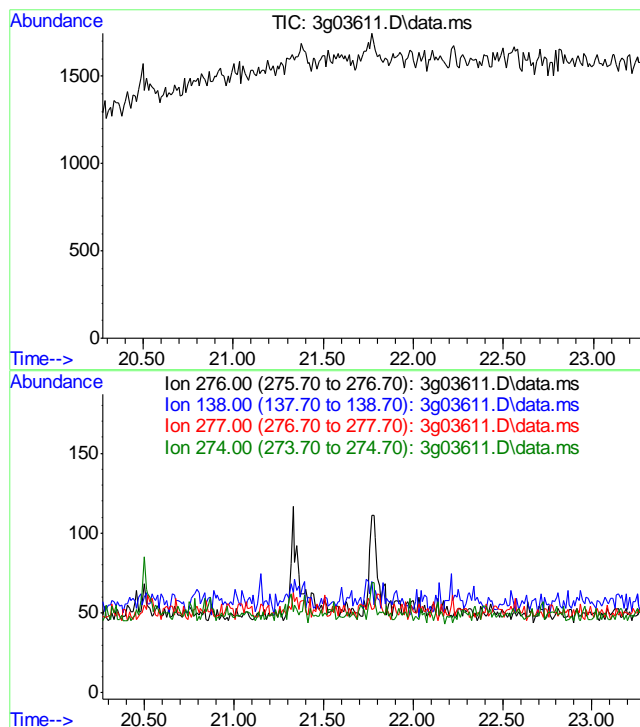


#28  
Dibenz(a,h)anthracene  
Concen: N.D. ug/mL  
Expected RT: 21.37 min

Lab File: 3g03611.D  
Acq: 12 Apr 11 5:08 pm

Tgt Ion:	278
Sig	Exp Ratio
278	100
139	12.0
279	23.2
276	124.1





#29  
Benzo(g,h,i)perylene  
Concen: N.D. ug/mL  
Expected RT: 21.77 min

Lab File: 3g03611.D  
Acq: 12 Apr 11 5:08 pm

Tgt Ion: 276

Sig	Exp Ratio
276	100
138	16.1
277	23.6
274	20.9

## 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: D22470  
Account: KRWCCOL KRW Consulting, Inc.  
Project: FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA614-MB	GA1140.D	1	04/13/11	BR	n/a	n/a	GGA614

The QC reported here applies to the following samples: Method: SW846 8015B  
D22470-1, D22470-2

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

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	105% 60-140%

9.1.1  
9

Blank Spike Summary

Job Number: D22470  
Account: KRWCCOL KRW Consulting, Inc.  
Project: FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA614-BS	GA1141.D	1	04/13/11	BR	n/a	n/a	GGA614

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

D22470-1, D22470-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	104	95	70-130

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

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D22470  
Account: KRWCCOL KRW Consulting, Inc.  
Project: FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D22522-1MS	GA1143.D	1	04/13/11	BR	n/a	n/a	GGA614
D22522-1MSD	GA1144.D	1	04/13/11	BR	n/a	n/a	GGA614
D22522-1	GA1142.D	1	04/13/11	BR	n/a	n/a	GGA614

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

D22470-1, D22470-2

CAS No.	Compound	D22522-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		141	138	98	137	97	1	62-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D22522-1	Limits
120-82-1	1,2,4-Trichlorobenzene	110%	113%	106%	60-140%

GC Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Signal #1 : Z:\041211\GA1152.D\FID1A.CH Vial: 37  
Signal #2 : Z:\041211\GA1152.D\FID2B.CH  
Acq On : 13 Apr 2011 11:51 am Operator: BrianR  
Sample : D22470-1, 50X Inst : BTEX2  
Misc : GC1805,GGA614,5.016,,100,5,1 Multiplr: 1.00  
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
Quant Time: Apr 14 12:14:19 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)  
Title : 8015B/8021B TVH/BTEX  
Last Update : Thu Apr 14 12:13:00 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	3725531	101.689 %
10) S	1,2,4-Trichlorobenzene (P)	14.54	7986791	102.499 %
Target Compounds				
1) H	TVH-Gasoline	7.56	4891197	0.051 mg/L
4) T	Methyl-t-butyl-ether	0.00	0	N.D. ug/L d
5) T	Benzene	4.49	66143	0.241 ug/L
6) T	Toluene	8.04	377536	1.483 ug/L
7) T	Ethylbenzene	10.58	68562	0.302 ug/L
8) T	m,p-Xylene	10.74	349697	1.354 ug/L
9) T	o-Xylene	11.21	82493	0.389 ug/L
11) T	Naphthalene	14.72	273247	1.947 ug/L

-----  
(f)=RT Delta > 1/2 Window (m)=manual int.  
GA1152.D TA582GA534.M Thu Apr 14 12:28:02 2011 GC

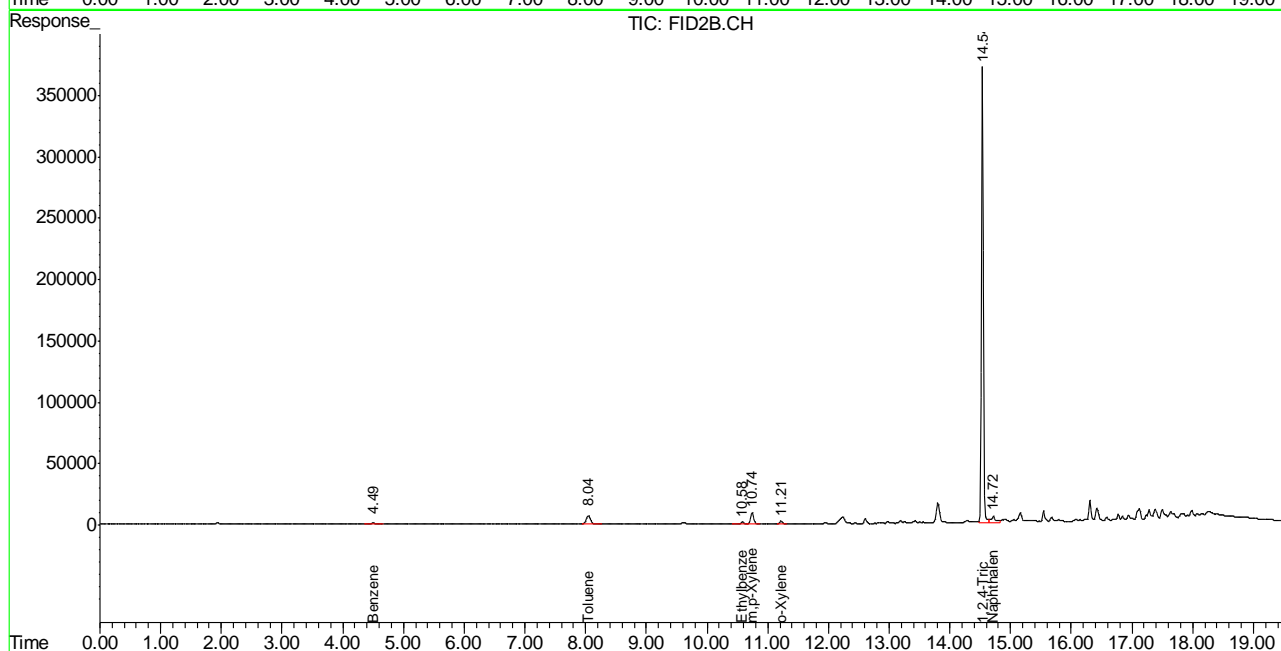
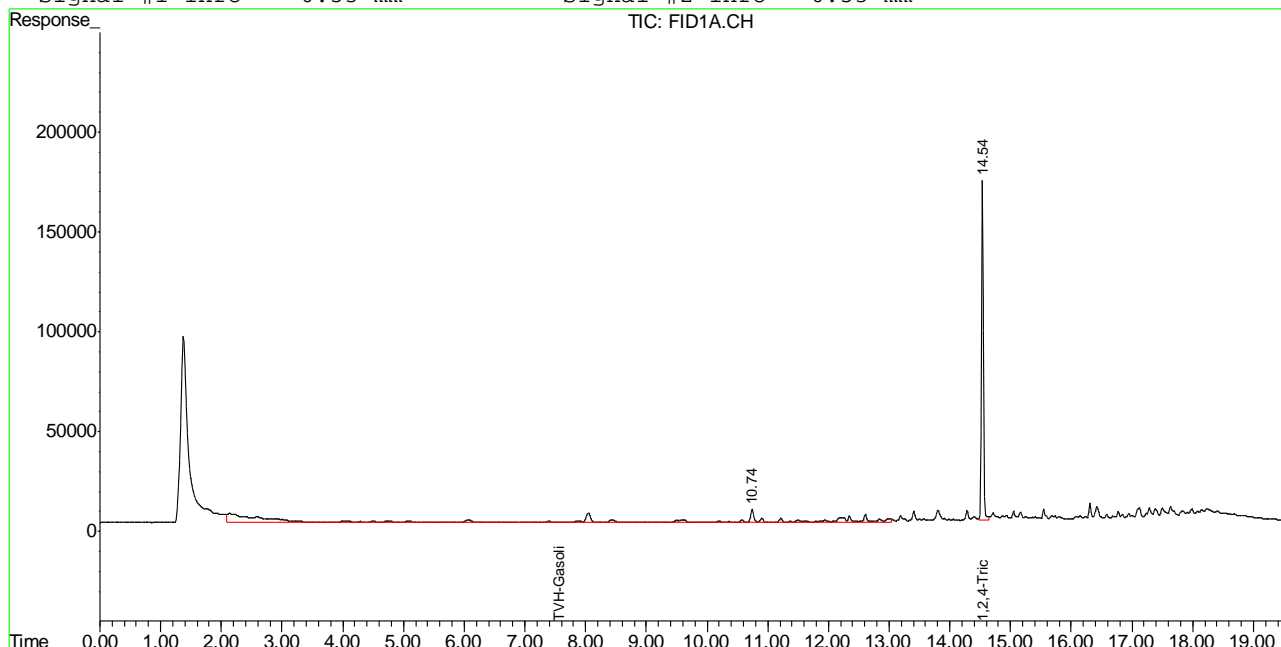


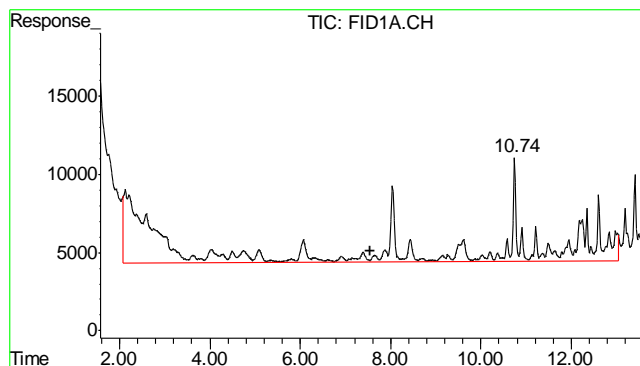
Quantitation Report (QT Reviewed)

Signal #1 : Z:\041211\GA1152.D\FID1A.CH Vial: 37  
 Signal #2 : Z:\041211\GA1152.D\FID2B.CH  
 Acq On : 13 Apr 2011 11:51 am Operator: BrianR  
 Sample : D22470-1, 50X Inst : BTEX2  
 Misc : GC1805,GGA614,5.016,,100,5,1 Multiplr: 1.00  
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
 Quant Time: Apr 14 10:15 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)  
 Title : 8015B/8021B TVH/BTEX  
 Last Update : Thu Apr 14 12:13:00 2011  
 Response via : Multiple Level Calibration  
 DataAcq Meth : TVB2.M

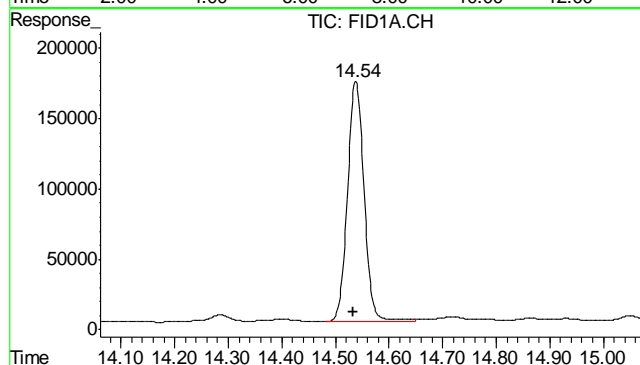
Volume Inj. :  
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624  
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





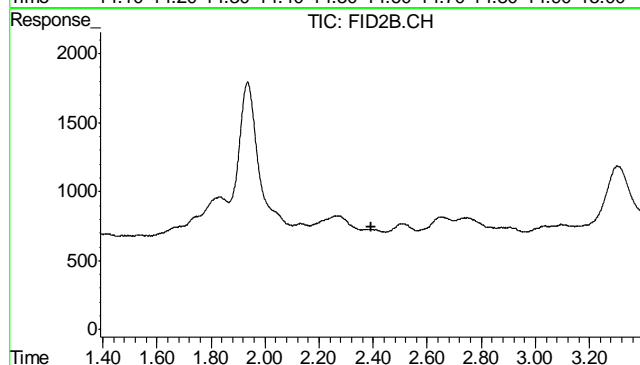
#1 TVH-Gasoline

R.T.: 7.560 min  
Delta R.T.: 0.000 min  
Response: 4891197  
Conc: 0.05 mg/L m



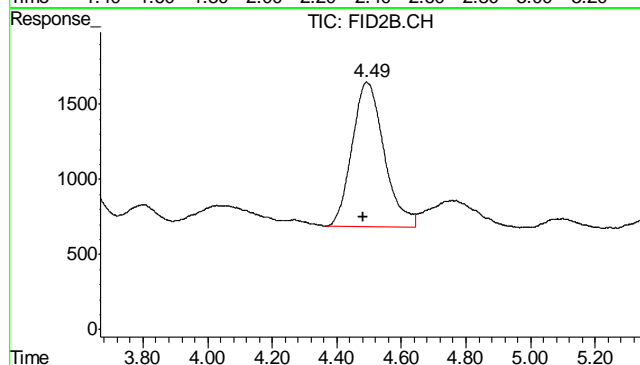
#2 1,2,4-Trichlorobenzene

R.T.: 14.538 min  
Delta R.T.: 0.005 min  
Response: 3725531  
Conc: 101.69 %



#4 Methyl-t-butyl-ether

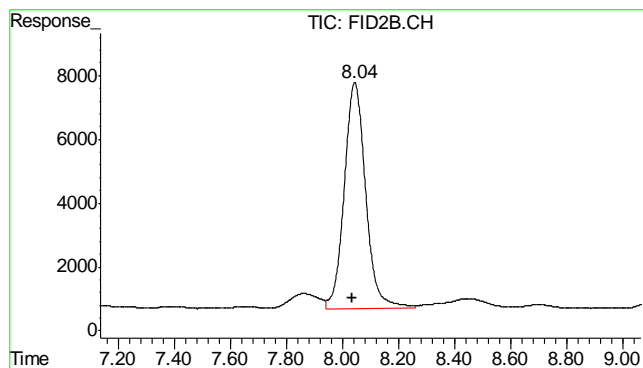
R.T.: 0.000 min  
Exp R.T.: 2.391 min  
Response: 0  
Conc: N.D.



#5 Benzene

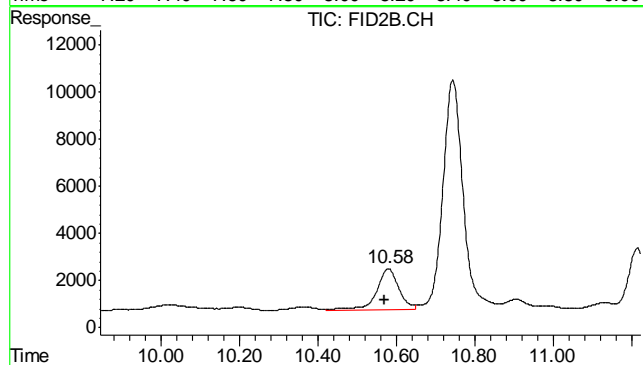
R.T.: 4.494 min  
Delta R.T.: 0.012 min  
Response: 66143  
Conc: 0.24 ug/L

10.1.1  
10



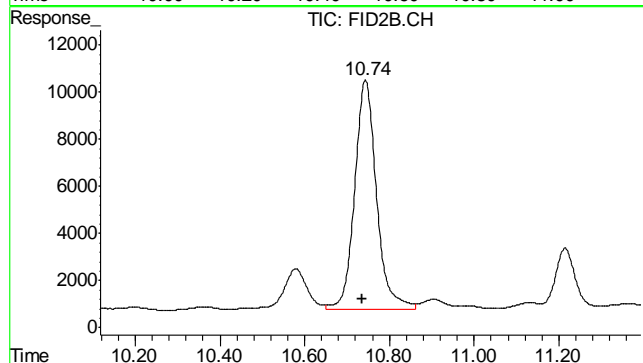
#6 Toluene

R.T.: 8.044 min  
Delta R.T.: 0.008 min  
Response: 377536  
Conc: 1.48 ug/L



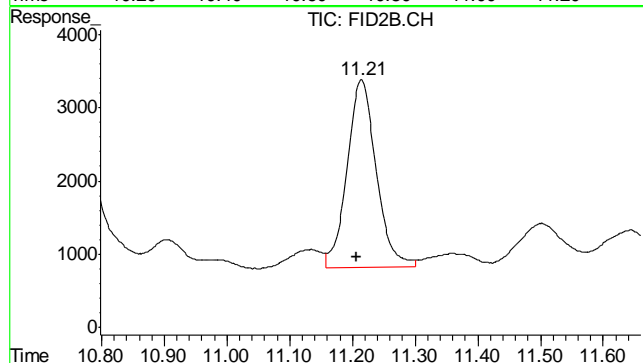
#7 Ethylbenzene

R.T.: 10.579 min  
Delta R.T.: 0.008 min  
Response: 68562  
Conc: 0.30 ug/L



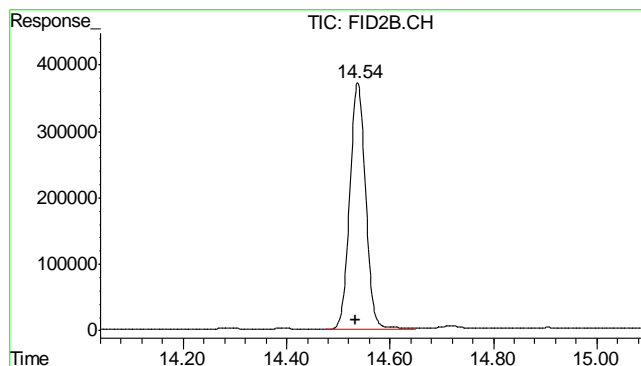
#8 m,p-Xylene

R.T.: 10.744 min  
Delta R.T.: 0.006 min  
Response: 349697  
Conc: 1.35 ug/L



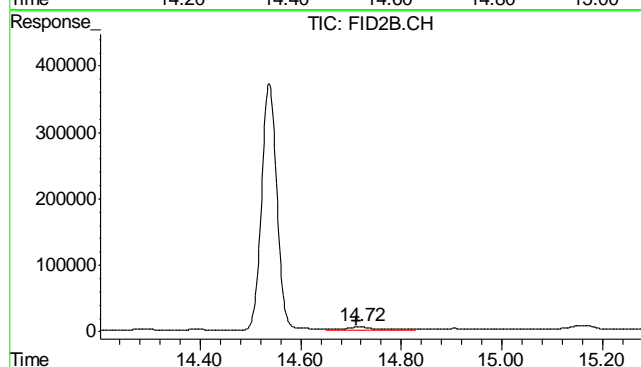
#9 o-Xylene

R.T.: 11.215 min  
Delta R.T.: 0.008 min  
Response: 82493  
Conc: 0.39 ug/L



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

R.T.: 14.538 min  
 Delta R.T.: 0.005 min  
 Response: 7986791  
 Conc: 102.50 %



#11 Naphthalene

R.T.: 14.718 min  
 Delta R.T.: 0.007 min  
 Response: 273247  
 Conc: 1.95 ug/L

10.1.1  
10

Quantitation Report (QT Reviewed)

Signal #1 : Z:\041211\GA1153.D\FID1A.CH Vial: 38  
Signal #2 : Z:\041211\GA1153.D\FID2B.CH  
Acq On : 13 Apr 2011 12:27 pm Operator: BrianR  
Sample : D22470-2, 50X Inst : BTEX2  
Misc : GC1805,GGA614,5.050,,100,5,1 Multiplr: 1.00  
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
Quant Time: Apr 14 12:14:22 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)  
Title : 8015B/8021B TVH/BTEX  
Last Update : Thu Apr 14 12:13:00 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	3768193	102.854 %	m
10) S	1,2,4-Trichlorobenzene (P)	14.54	9009273	115.622 %	
Target Compounds					
1) H	TVH-Gasoline	7.56	47270275	0.490 mg/L	
4) T	Methyl-t-butyl-ether	2.40	22090	0.255 ug/L	
5) T	Benzene	4.49	2427280	8.836 ug/L	
6) T	Toluene	8.04	6550944	25.727 ug/L	
7) T	Ethylbenzene	10.58	788842	3.479 ug/L	
8) T	m,p-Xylene	10.74	5693808	22.042 ug/L	
9) T	o-Xylene	11.21	950320	4.480 ug/L	
11) T	Naphthalene	14.72	2149756	15.315 ug/L	

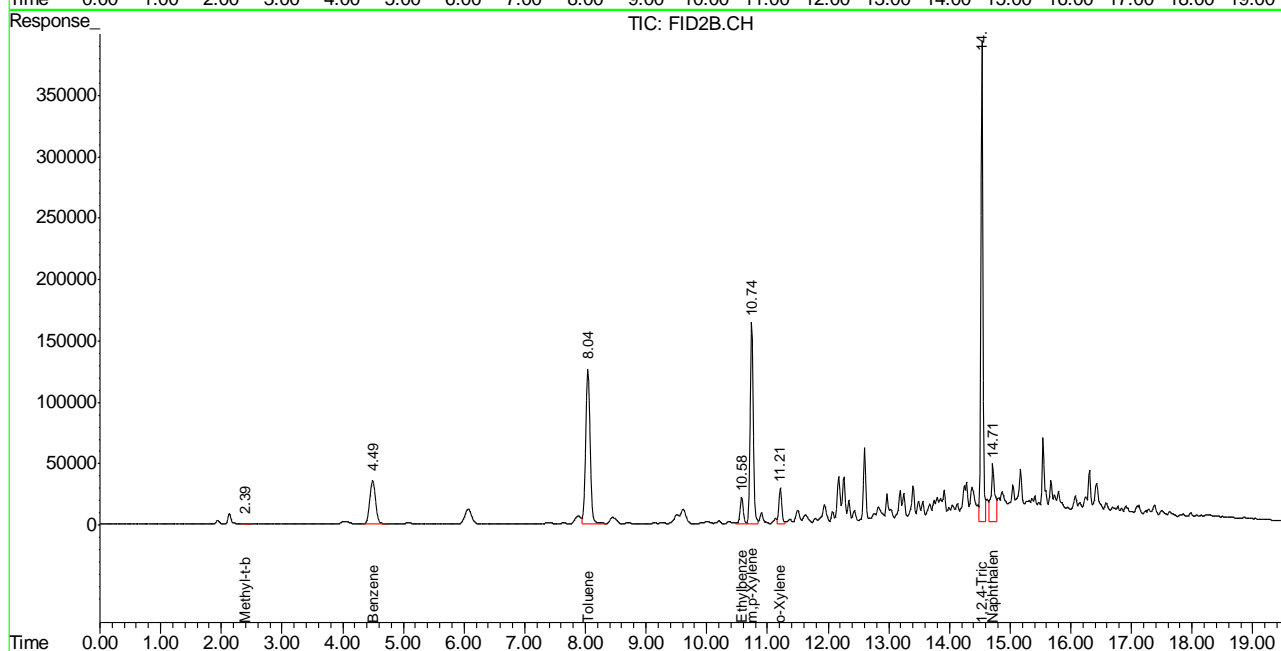
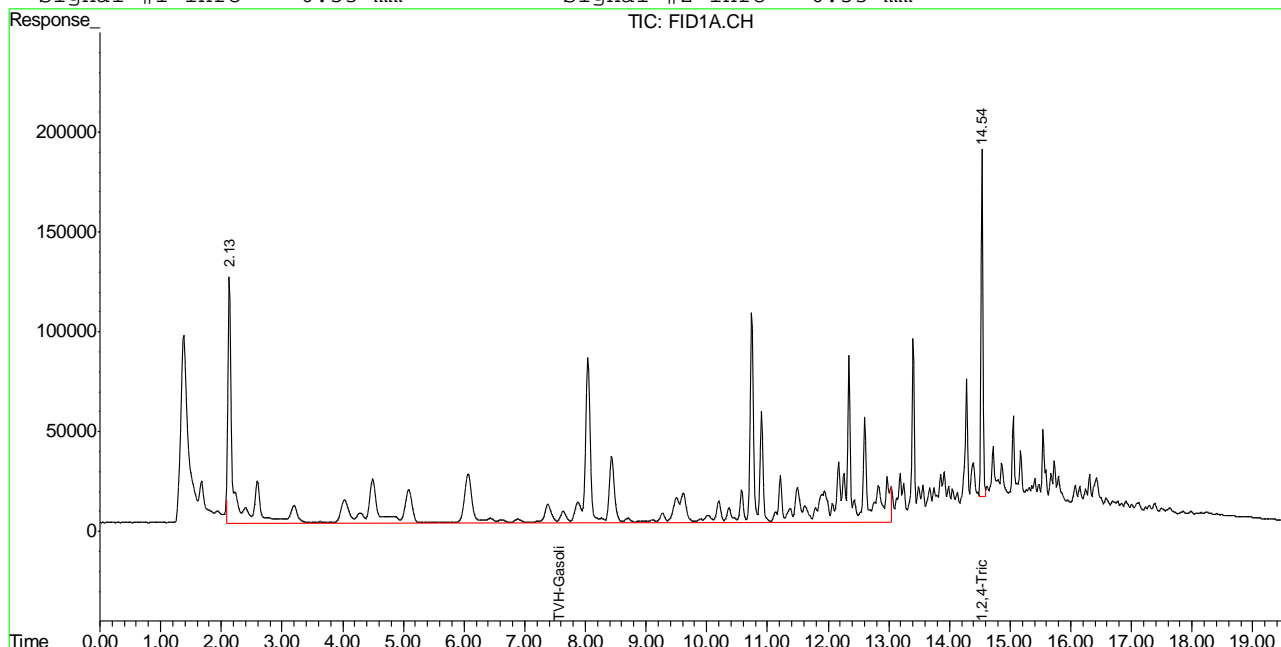
10.12 10

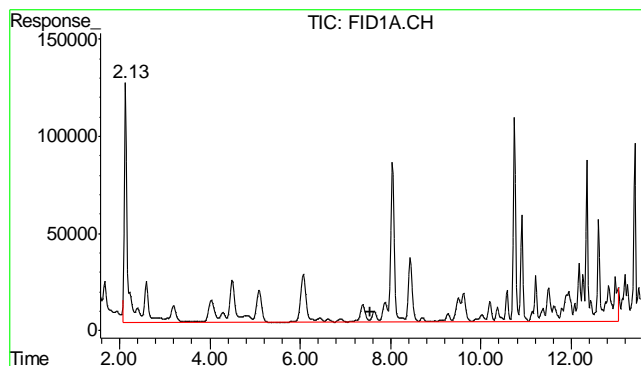
Quantitation Report (QT Reviewed)

Signal #1 : Z:\041211\GA1153.D\FID1A.CH Vial: 38  
 Signal #2 : Z:\041211\GA1153.D\FID2B.CH  
 Acq On : 13 Apr 2011 12:27 pm Operator: BrianR  
 Sample : D22470-2, 50X Inst : BTEX2  
 Misc : GC1805,GGA614,5.050,,100,5,1 Multiplr: 1.00  
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
 Quant Time: Apr 14 10:16 2011 Quant Results File: TA582GA534.RES

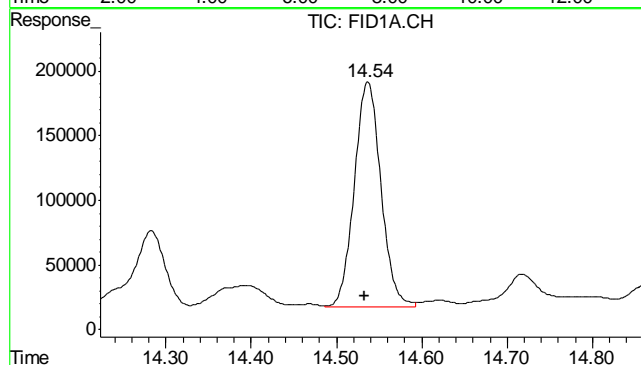
Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)  
 Title : 8015B/8021B TVH/BTEX  
 Last Update : Thu Apr 14 12:13:00 2011  
 Response via : Multiple Level Calibration  
 DataAcq Meth : TVB2.M

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

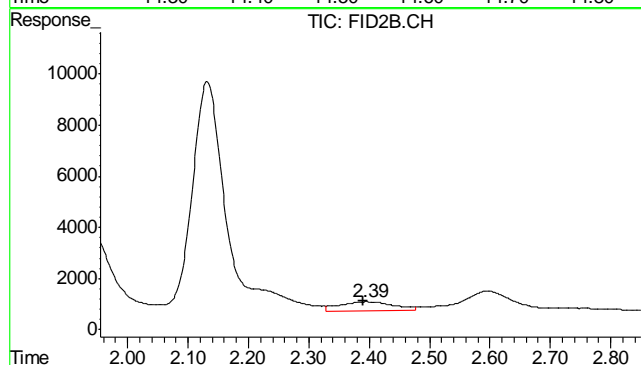




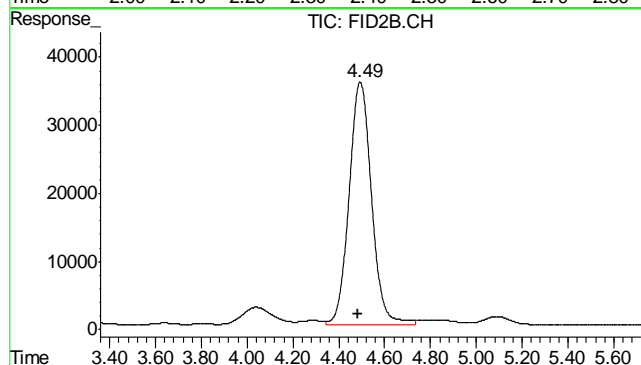
#1 TVH-Gasoline  
 R.T.: 7.560 min  
 Delta R.T.: 0.000 min  
 Response: 47270275  
 Conc: 0.49 mg/L m



#2 1,2,4-Trichlorobenzene  
 R.T.: 14.536 min  
 Delta R.T.: 0.003 min  
 Response: 3768193  
 Conc: 102.85 % m

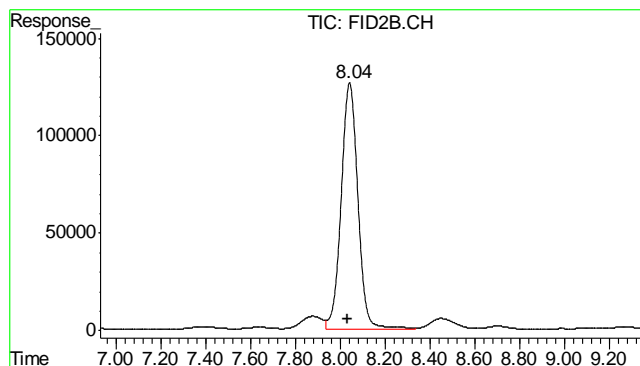


#4 Methyl-t-butyl-ether  
 R.T.: 2.395 min  
 Delta R.T.: 0.004 min  
 Response: 22090  
 Conc: 0.25 ug/L



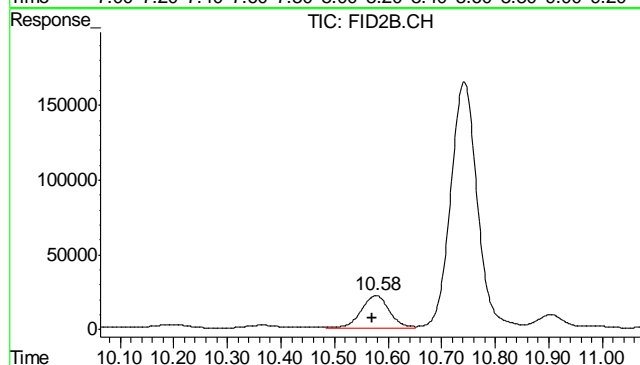
#5 Benzene  
 R.T.: 4.494 min  
 Delta R.T.: 0.012 min  
 Response: 2427280  
 Conc: 8.84 ug/L

10.12 10



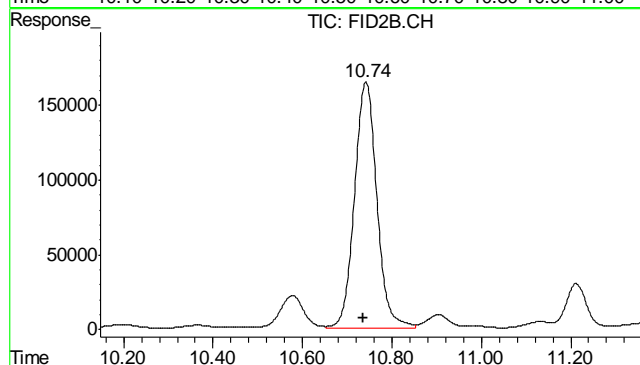
#6 Toluene

R.T.: 8.042 min  
Delta R.T.: 0.006 min  
Response: 6550944  
Conc: 25.73 ug/L



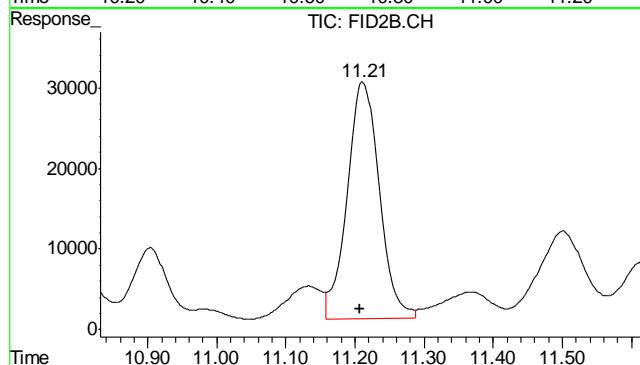
#7 Ethylbenzene

R.T.: 10.577 min  
Delta R.T.: 0.007 min  
Response: 788842  
Conc: 3.48 ug/L



#8 m,p-Xylene

R.T.: 10.742 min  
Delta R.T.: 0.005 min  
Response: 5693808  
Conc: 22.04 ug/L

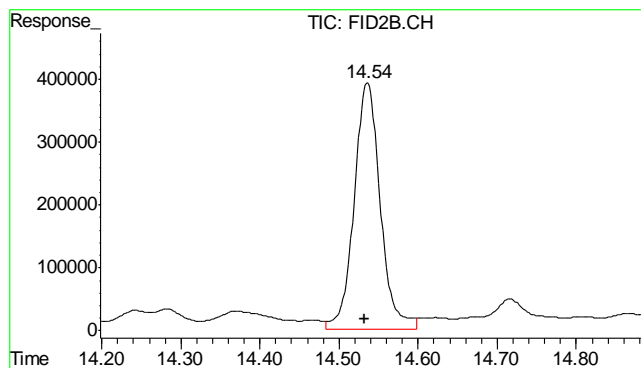


#9 o-Xylene

R.T.: 11.211 min  
Delta R.T.: 0.005 min  
Response: 950320  
Conc: 4.48 ug/L

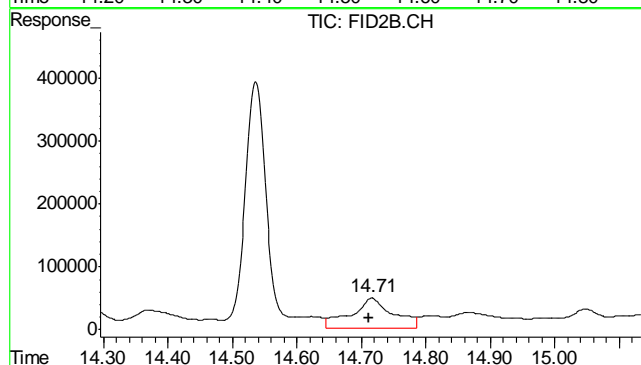
10.12 10





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

R.T.: 14.536 min  
Delta R.T.: 0.004 min  
Response: 9009273  
Conc: 115.62 %



#11 Naphthalene

R.T.: 14.716 min  
Delta R.T.: 0.005 min  
Response: 2149756  
Conc: 15.31 ug/L

10.1.2  
10

## Quantitation Report (QT Reviewed)

Signal #1 : Z:\041211\GA1140.D\FID1A.CH Vial: 25  
Signal #2 : Z:\041211\GA1140.D\FID2B.CH  
Acq On : 13 Apr 2011 4:42 am Operator: BrianR  
Sample : MB, S Inst : BTEX2  
Misc : GC1805,GGA614,5.000,,100,5,1 Multiplr: 1.00  
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
Quant Time: Apr 14 12:11:16 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)  
Title : 8015B/8021B TVH/BTEX  
Last Update : Thu Apr 14 12:10:57 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	3837445	104.744 %
10) S	1,2,4-Trichlorobenzene (P)	14.56	8265729	106.079 %
Target Compounds				
1) H	TVH-Gasoline	7.56	3187927	0.033 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	8.10	79951	0.314 ug/L
7) T	Ethylbenzene	10.62	30753	0.136 ug/L
8) T	m,p-Xylene	10.78	150828	0.584 ug/L
9) T	o-Xylene	11.25	68897	0.325 ug/L
11) T	Naphthalene	14.73	178154	1.269 ug/L

(f)=RT Delta &gt; 1/2 Window

GA1140.D TA582GA534.M

Thu Apr 14 12:27:39 2011

(m)=manual int.

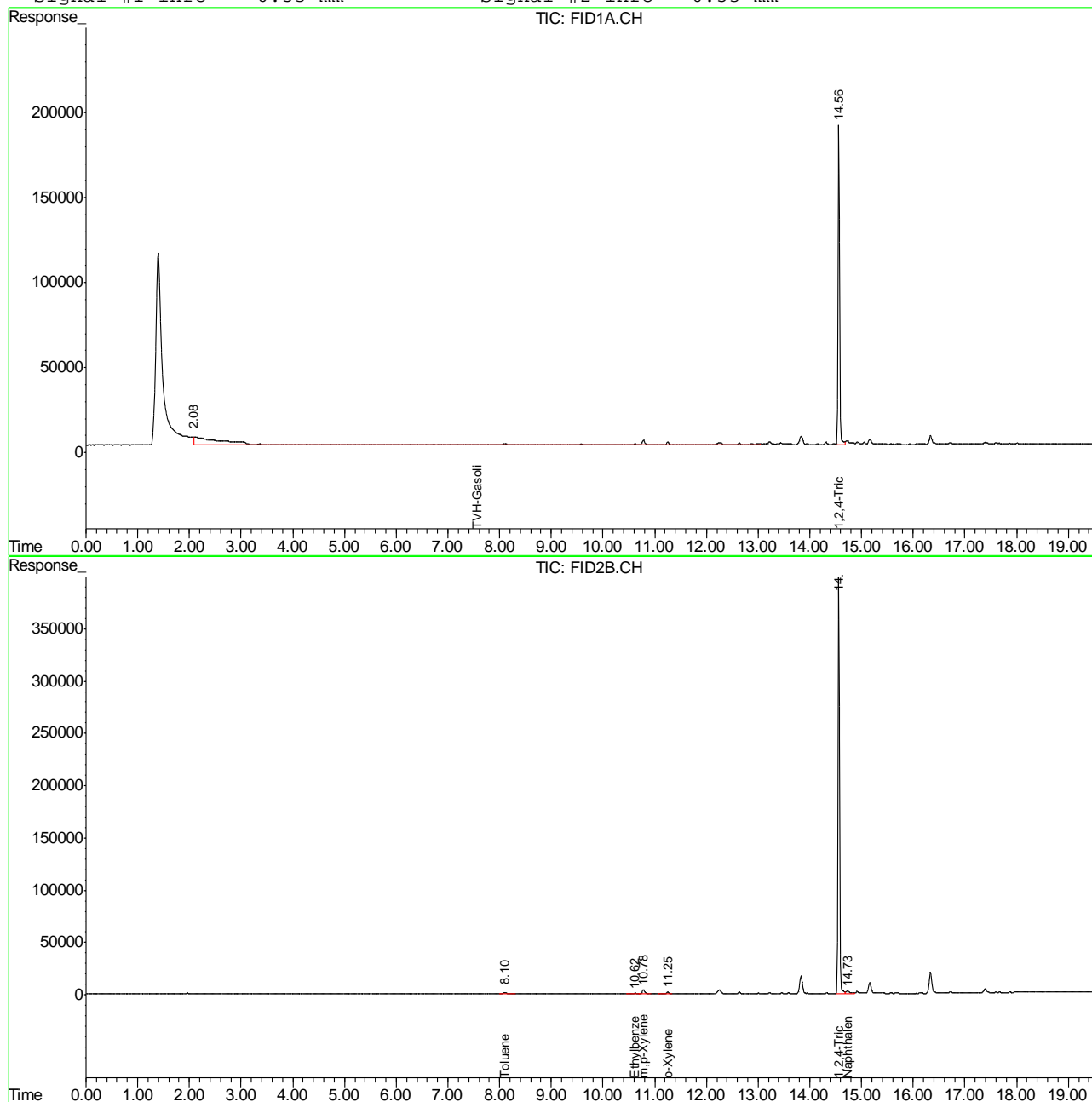
GC

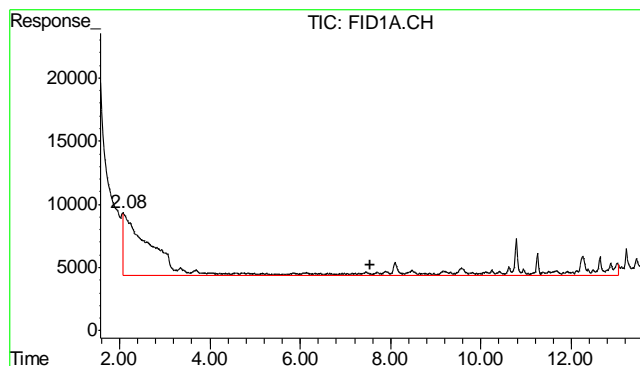
## Quantitation Report (QT Reviewed)

Signal #1 : Z:\041211\GA1140.D\FID1A.CH Vial: 25  
Signal #2 : Z:\041211\GA1140.D\FID2B.CH  
Acq On : 13 Apr 2011 4:42 am Operator: BrianR  
Sample : MB, S Inst : BTEX2  
Misc : GC1805,GGA614,5.000,,100,5,1 Multiplr: 1.00  
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E  
Quant Time: Apr 14 10:11 2011 Quant Results File: TA582GA534.RES

Quant Method : C:\MSDCHEM\1\METHODS\TA582GA534.M (Chemstation Integrator)  
Title : 8015B/8021B TVH/BTEX  
Last Update : Thu Apr 14 12:10:57 2011  
Response via : Multiple Level Calibration  
DataAcq Meth : TVB2.M

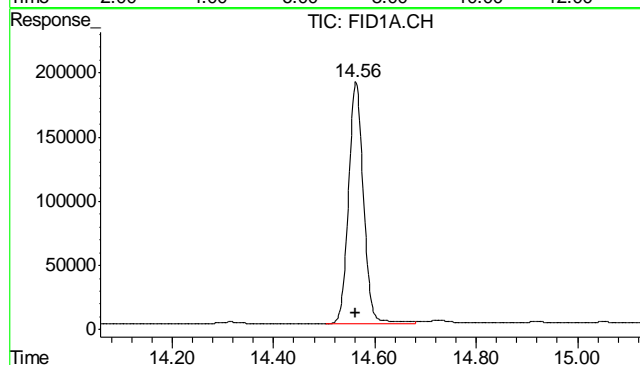
Volume Inj. :  
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624  
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





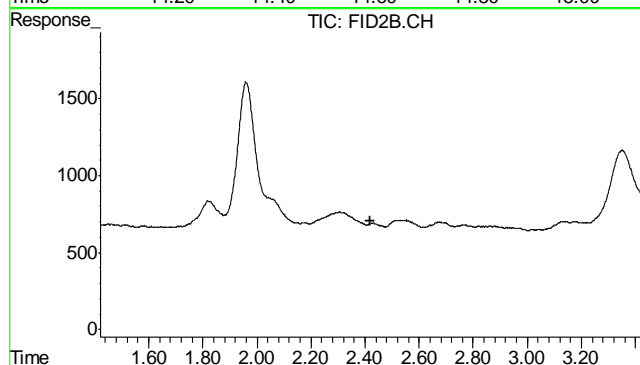
#1 TVH-Gasoline

R.T.: 7.560 min  
Delta R.T.: 0.000 min  
Response: 3187927  
Conc: 0.03 mg/L m



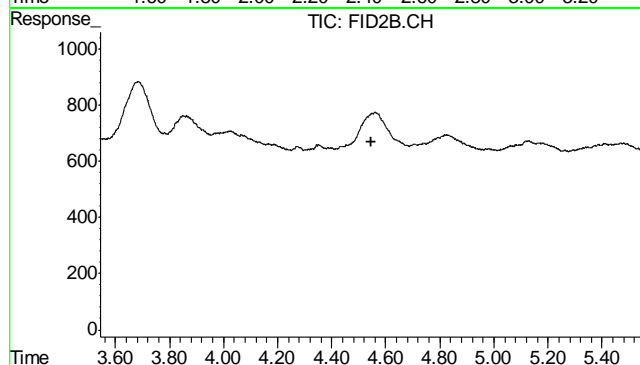
#2 1,2,4-Trichlorobenzene

R.T.: 14.563 min  
Delta R.T.: 0.000 min  
Response: 3837445  
Conc: 104.74 %



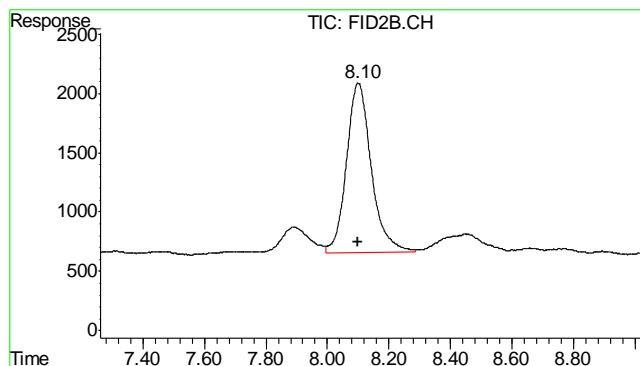
#4 Methyl-t-butyl-ether

R.T.: 0.000 min  
Exp R.T.: 2.420 min  
Response: 0  
Conc: N.D.



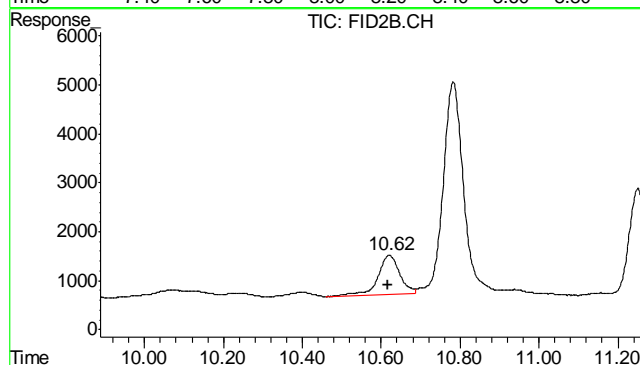
#5 Benzene

R.T.: 0.000 min  
Exp R.T.: 4.545 min  
Response: 0  
Conc: N.D.



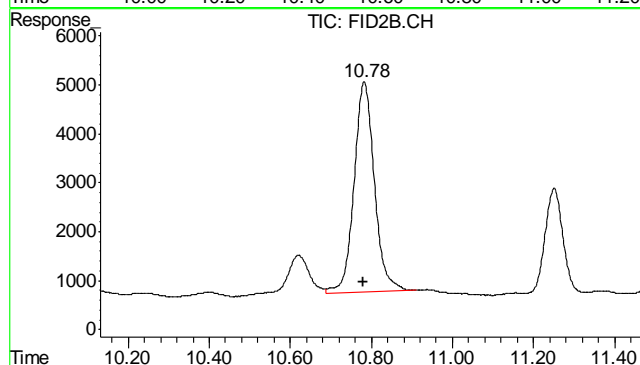
#6 Toluene

R.T.: 8.100 min  
Delta R.T.: 0.002 min  
Response: 79951  
Conc: 0.31 ug/L



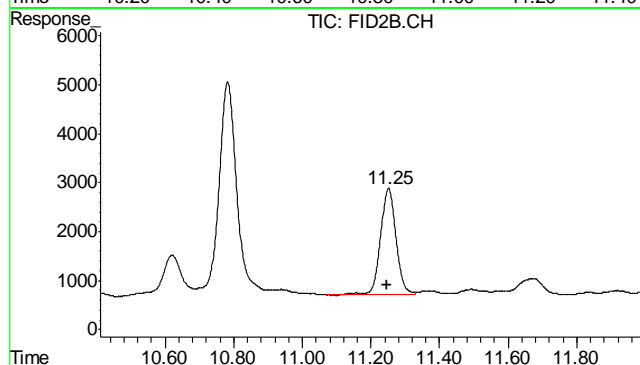
#7 Ethylbenzene

R.T.: 10.620 min  
Delta R.T.: 0.004 min  
Response: 30753  
Conc: 0.14 ug/L



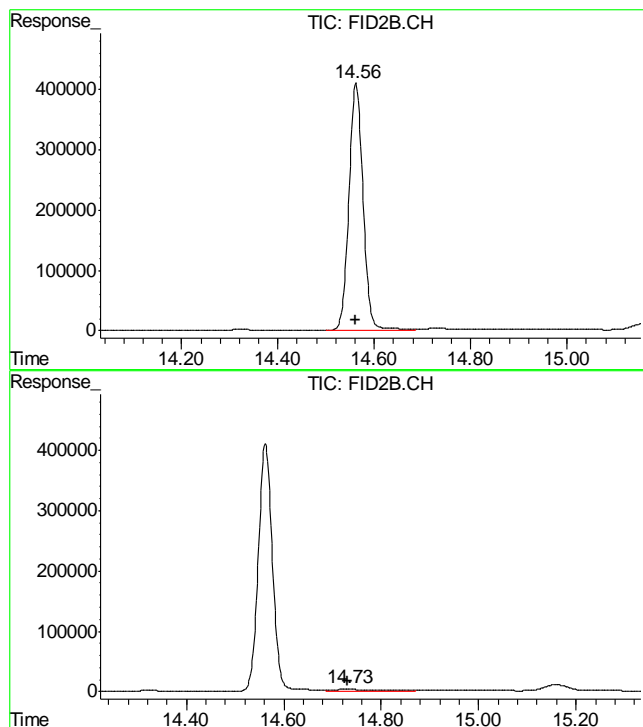
#8 m,p-Xylene

R.T.: 10.782 min  
Delta R.T.: 0.003 min  
Response: 150828  
Conc: 0.58 ug/L



#9 o-Xylene

R.T.: 11.251 min  
Delta R.T.: 0.004 min  
Response: 68897  
Conc: 0.32 ug/L



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

R.T.: 14.562 min  
Delta R.T.: 0.001 min  
Response: 8265729  
Conc: 106.08 %

#11 Naphthalene

R.T.: 14.733 min  
Delta R.T.: 0.001 min  
Response: 178154  
Conc: 1.27 ug/L

10.2.1  
10

## GC Semi-volatiles

### QC Data Summaries

Includes the following where applicable:

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

**Method Blank Summary**

Page 1 of 1

**Job Number:** D22470**Account:** KRWCCOL KRW Consulting, Inc.**Project:** FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP3473-MB	FI1533.D	1	04/11/11	JB	04/11/11	OP3473	GFI107

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

D22470-1, D22470-2

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	91% 63-130%



Blank Spike Summary

Job Number: D22470  
Account: KRWCCOL KRW Consulting, Inc.  
Project: FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP3473-BS	FI1534.D	1	04/11/11	JB	04/11/11	OP3473	GFI107

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

D22470-1, D22470-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	538	81	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	89%	63-130%

11.2.1  
11

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D22470  
Account: KRWCCOL KRW Consulting, Inc.  
Project: FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP3473-MS	FI1535.D	1	04/11/11	JB	04/11/11	OP3473	GFI107
OP3473-MSD	FI1536.D	1	04/11/11	JB	04/11/11	OP3473	GFI107
D22500-1	FI1537.D	1	04/11/11	JB	04/11/11	OP3473	GFI107

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

D22470-1, D22470-2

CAS No.	Compound	D22500-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	ND		703	512	73	467	66* a	9	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D22500-1	Limits
84-15-1	o-Terphenyl	79%	75%	90%	63-130%

(a) Spike recovery indicates possible matrix interference.

11.3.1  
11

GC Semi-volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data File : E:\DATA\FI041211\FI1544.D Vial: 5  
Acq On : 12 Apr 2011 5:03 pm Operator: jacobbb  
Sample : D22470-1 Inst : FID6  
Misc : OP3473,GFI108,30.08,,,2,1 Multiplr: 1.00  
IntFile : DF-GFE136.E  
Quant Time: Apr 13 07:24:57 2011 Quant Results File: DF-GFI101.RES

Quant Method : C:\MSDCHEM\1\METHODS\DF-GFI101.M (Chemstation Integrator)  
Title : 8015B TEH  
Last Update : Tue Mar 29 12:01:48 2011  
Response via : Initial Calibration  
DataAcq Meth : RR\_BASE2.M

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

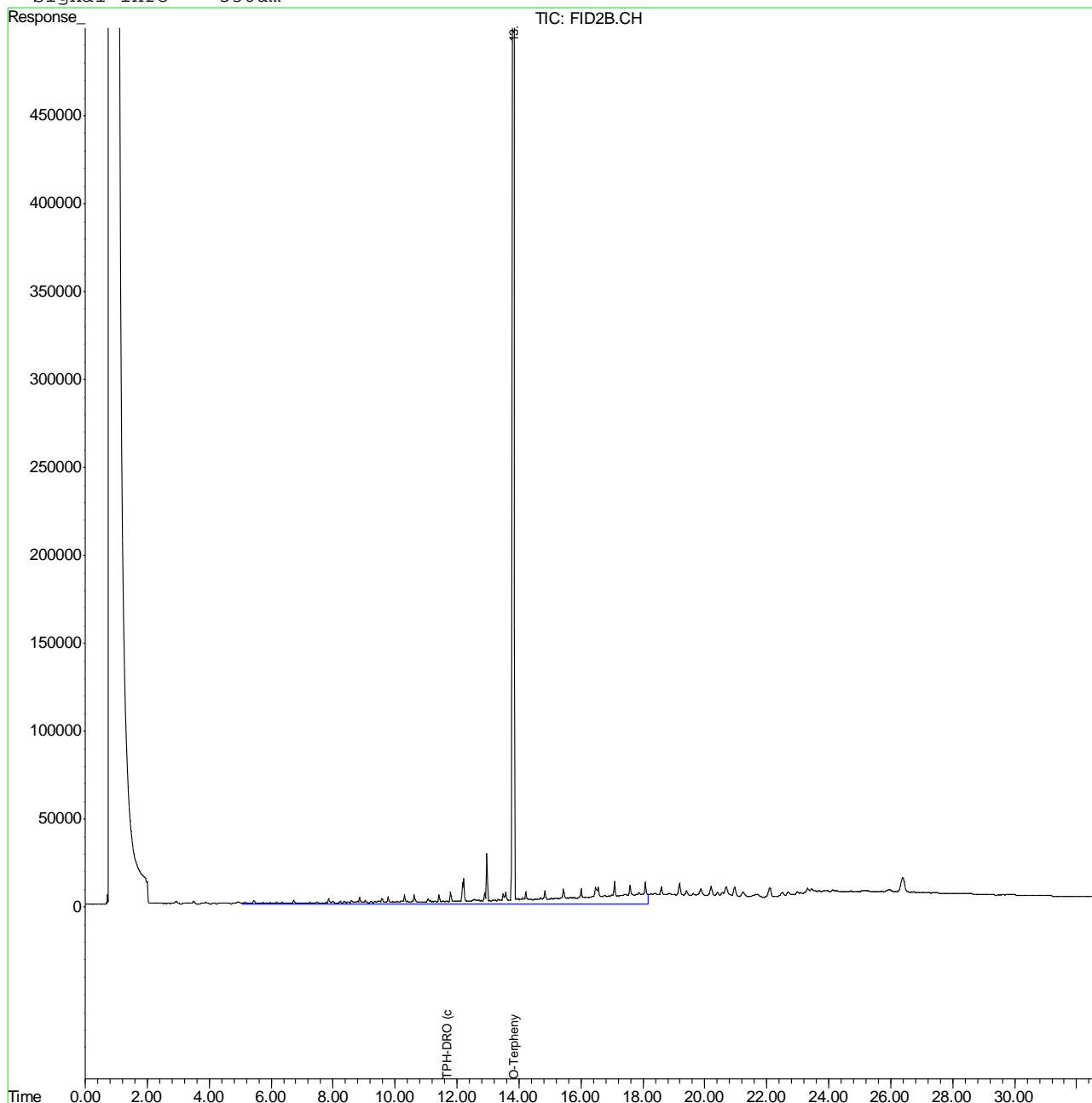
Compound	R.T.	Response	Conc Units
-----			
System Monitoring Compounds			
1) S O-Terphenyl	13.83	64459070	914.593 mg/L m
Target Compounds			
2) H TPH-DRO (c10-c28)	11.69	18646514	284.299 mg/L

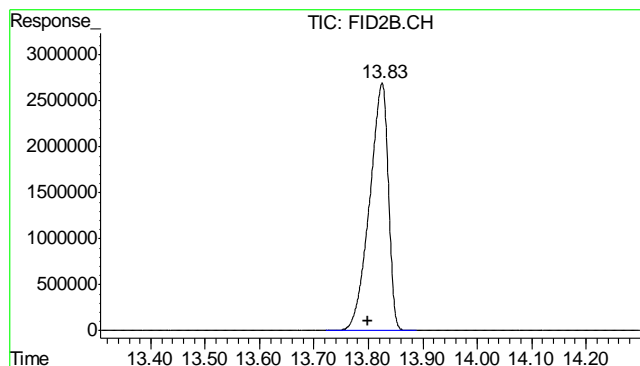
## Quantitation Report (QT Reviewed)

Data File : E:\DATA\FI041211\FI1544.D Vial: 5  
Acq On : 12 Apr 2011 5:03 pm Operator: jacobbb  
Sample : D22470-1 Inst : FID6  
Misc : OP3473,GFI108,30.08,,,2,1 Multiplr: 1.00  
IntFile : DF-GFE136.E  
Quant Time: Apr 13 7:35 2011 Quant Results File: DF-GFI101.RES

Quant Method : C:\MSDCHEM\1\METHODS\DF-GFI101.M (Chemstation Integrator)  
Title : 8015B TEH  
Last Update : Tue Mar 29 12:01:48 2011  
Response via : Multiple Level Calibration  
DataAcq Meth : RR\_BASE2.M

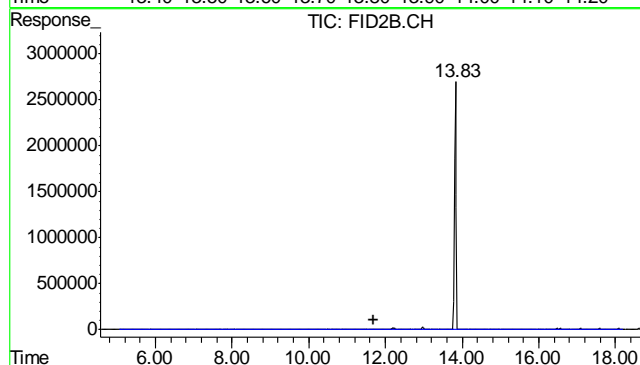
Volume Inj. : 1ul  
Signal Phase : RTX-5  
Signal Info : 530um





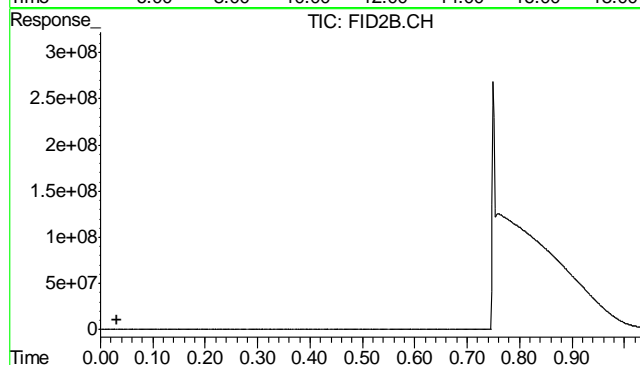
#1 O-Terphenyl

R.T.: 13.825 min  
Delta R.T.: 0.025 min  
Response: 64459070  
Conc: 914.59 mg/L m



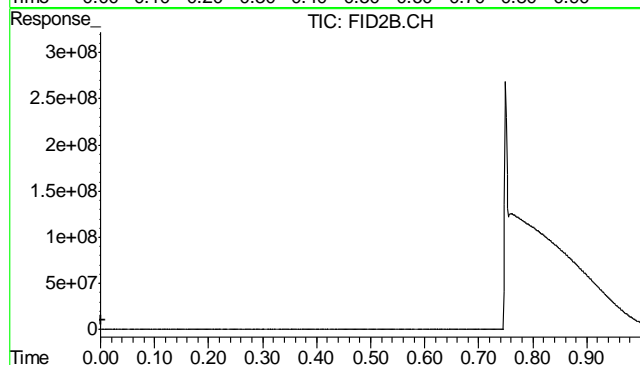
#2 TPH-DRO (c10-c28)

R.T.: 11.685 min  
Delta R.T.: 0.000 min  
Response: 18646514  
Conc: 284.30 mg/L m



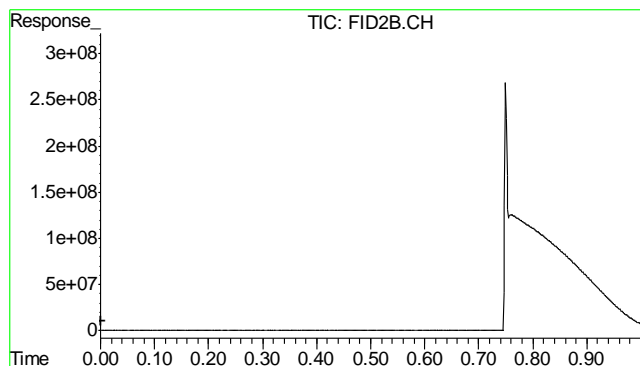
#9 5a-Androstane

R.T.: 0.084 min  
Delta R.T.: 0.052 min  
Response: 101  
Conc: N.D.

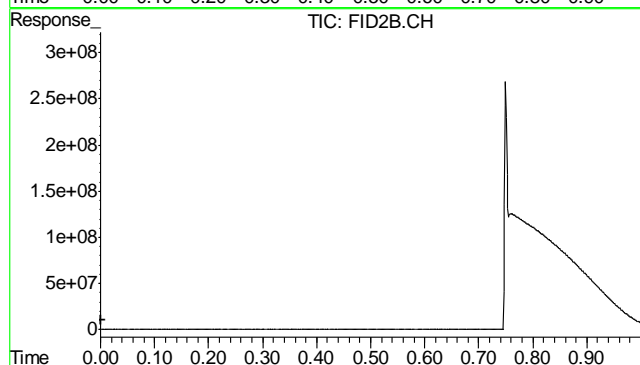


#10 2-Fluorophenol

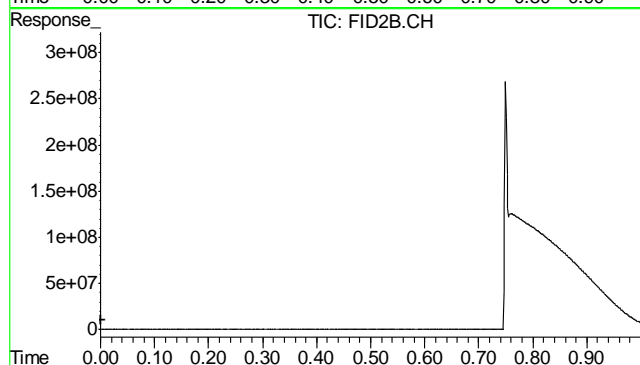
R.T.: 0.084 min  
Delta R.T.: 0.084 min  
Response: 101  
Conc: N.D.



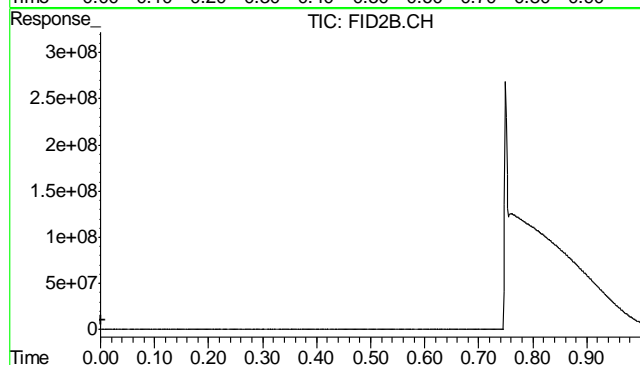
#11 Phenol-d5  
R.T.: 0.084 min  
Delta R.T.: 0.084 min  
Response: 101  
Conc: N.D.



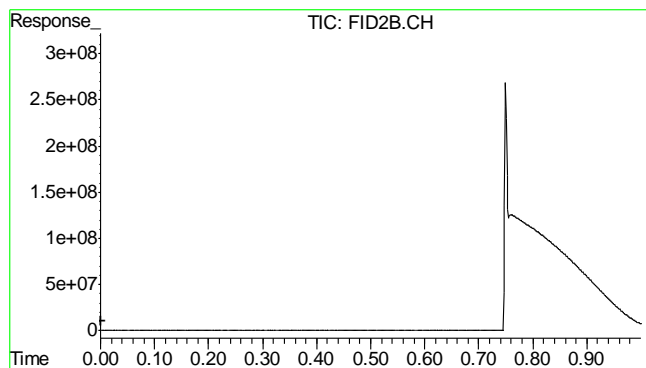
#12 Nitrobenzene-d5  
R.T.: 0.084 min  
Delta R.T.: 0.084 min  
Response: 101  
Conc: N.D.



#13 2-Fluorobiphenyl  
R.T.: 0.084 min  
Delta R.T.: 0.084 min  
Response: 101  
Conc: N.D.



#14 2,4,6-Tribromophenol  
R.T.: 0.084 min  
Delta R.T.: 0.084 min  
Response: 101  
Conc: N.D.



#15 Terphenyl-d14

R.T.: 0.084 min  
Delta R.T.: 0.084 min  
Response: 101  
Conc: N.D.

12.1.1  
12



Quantitation Report (QT Reviewed)

Data File : E:\DATA\FI041211\FI1545.D Vial: 6  
Acq On : 12 Apr 2011 5:42 pm Operator: jacobbb  
Sample : D22470-2 Inst : FID6  
Misc : OP3473,GFI108,30.07,,,2,1 Multiplr: 1.00  
IntFile : DF-GFE136.E  
Quant Time: Apr 13 07:25:02 2011 Quant Results File: DF-GFI101.RES

Quant Method : C:\MSDCHEM\1\METHODS\DF-GFI101.M (Chemstation Integrator)  
Title : 8015B TEH  
Last Update : Tue Mar 29 12:01:48 2011  
Response via : Initial Calibration  
DataAcq Meth : RR\_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	13.82	67840553	962.572 mg/L m
Target Compounds			
2) H TPH-DRO (c10-c28)	11.69	154436099	2354.651 mg/L

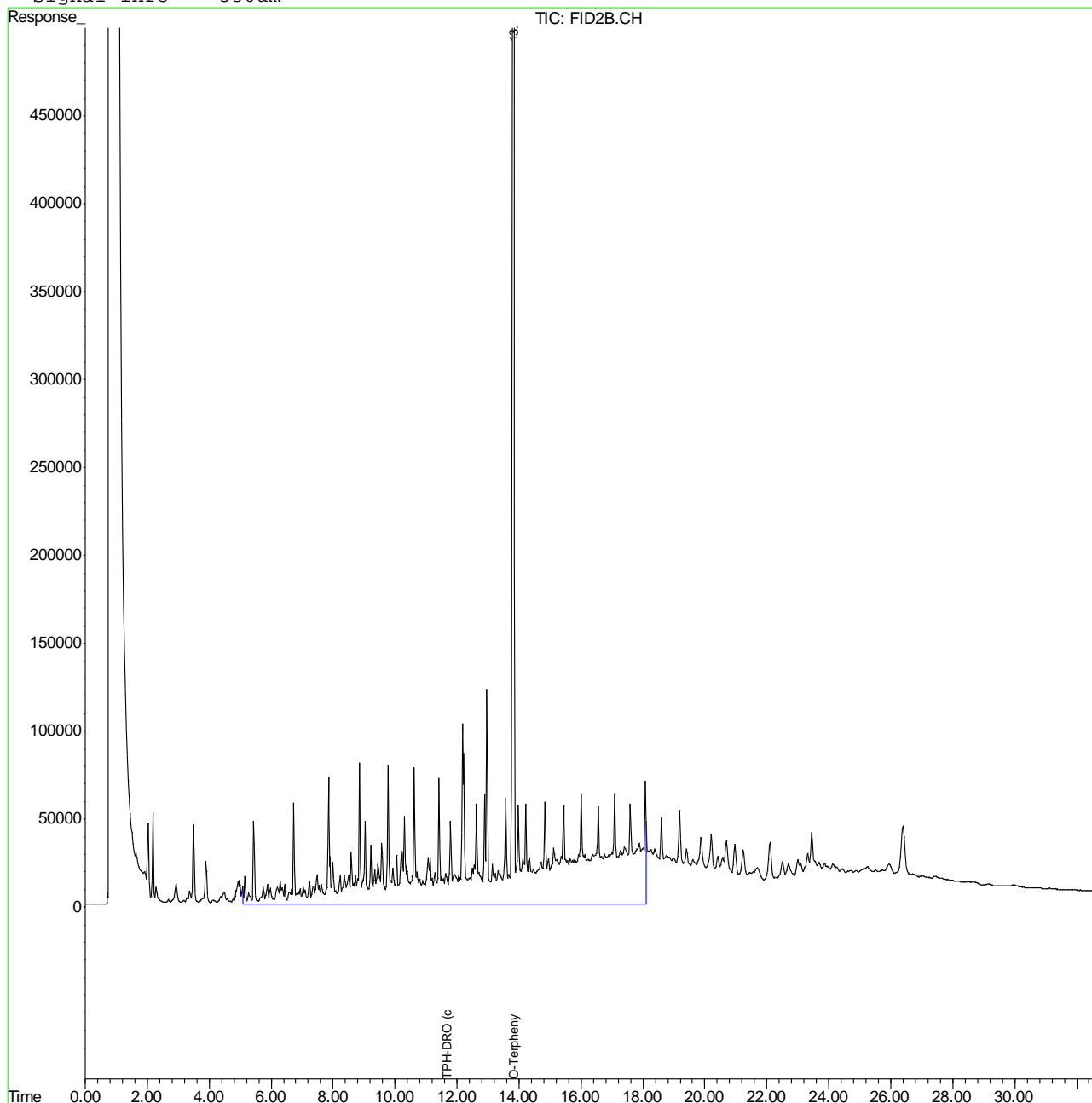
12.1.2  
12

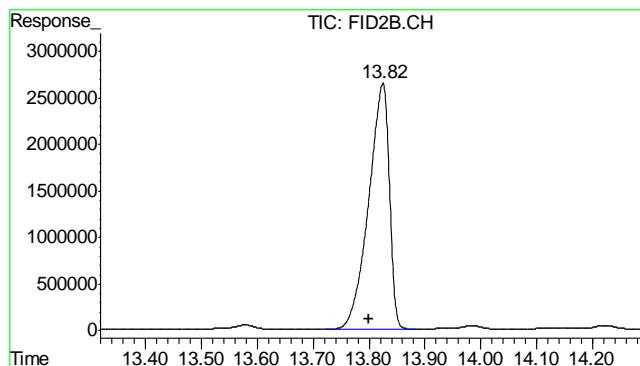
Quantitation Report (QT Reviewed)

Data File : E:\DATA\FI041211\FI1545.D Vial: 6  
 Acq On : 12 Apr 2011 5:42 pm Operator: jacobbb  
 Sample : D22470-2 Inst : FID6  
 Misc : OP3473,GFI108,30.07,,,2,1 Multiplr: 1.00  
 IntFile : DF-GFE136.E  
 Quant Time: Apr 13 7:37 2011 Quant Results File: DF-GFI101.RES

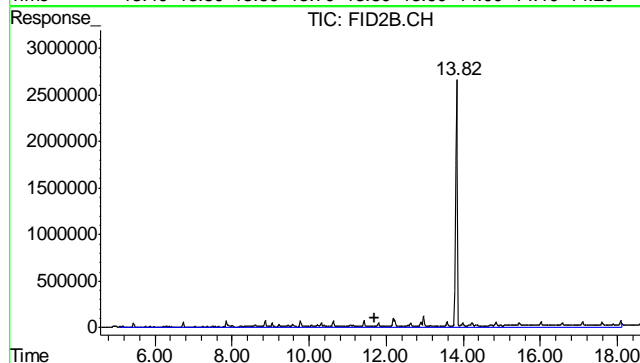
Quant Method : C:\MSDCHEM\1\METHODS\DF-GFI101.M (Chemstation Integrator)  
 Title : 8015B TEH  
 Last Update : Tue Mar 29 12:01:48 2011  
 Response via : Multiple Level Calibration  
 DataAcq Meth : RR\_BASE2.M

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

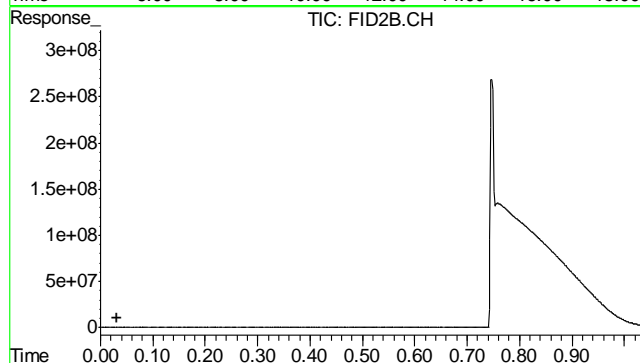




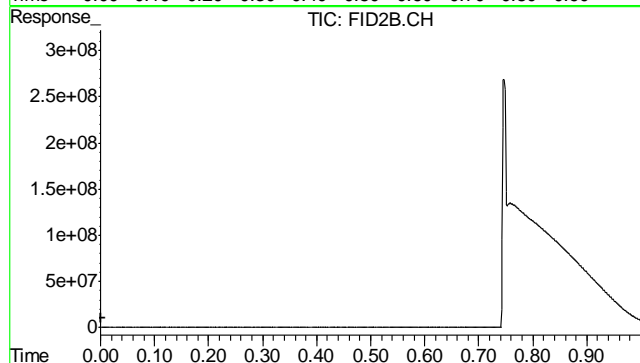
#1 O-Terphenyl  
 R.T.: 13.825 min  
 Delta R.T.: 0.025 min  
 Response: 67840553  
 Conc: 962.57 mg/L m



#2 TPH-DRO (c10-c28)  
 R.T.: 11.685 min  
 Delta R.T.: 0.000 min  
 Response: 154436099  
 Conc: 2354.65 mg/L m

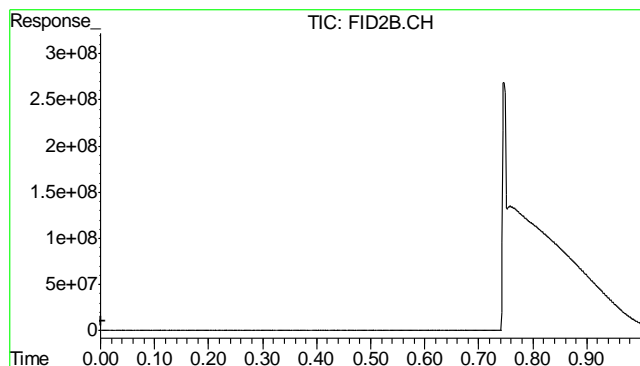


#9 5a-Androstane  
 R.T.: 0.000 min  
 Exp R.T.: 0.032 min  
 Response: 0  
 Conc: N.D.

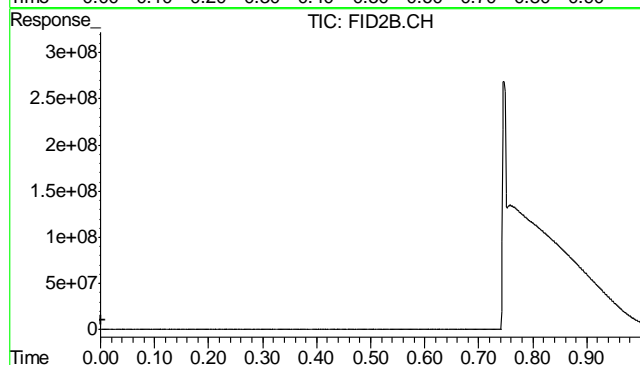


#10 2-Fluorophenol  
 R.T.: 0.000 min  
 Exp R.T.: 0.000 min  
 Response: 0  
 Conc: N.D.

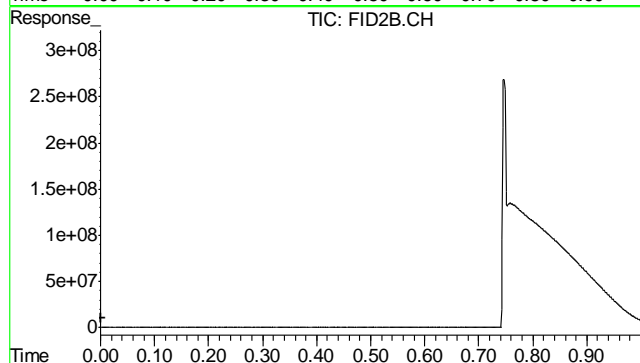
12.1.2  
 12



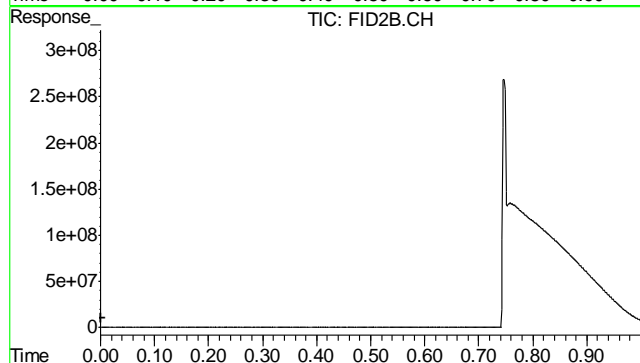
#11 Phenol-d5  
 R.T.: 0.000 min  
 Exp R.T. : 0.000 min  
 Response: 0  
 Conc: N.D.



#12 Nitrobenzene-d5  
 R.T.: 0.000 min  
 Exp R.T. : 0.000 min  
 Response: 0  
 Conc: N.D.

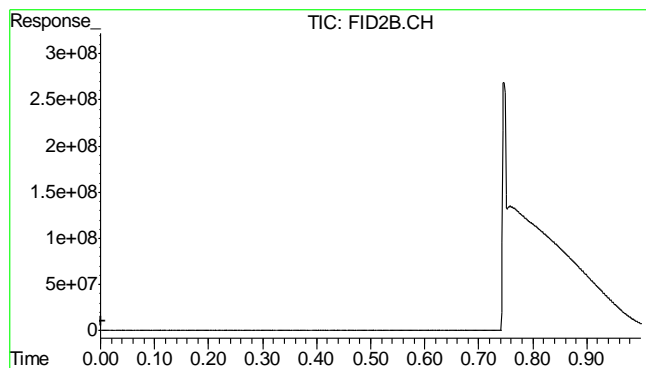


#13 2-Fluorobiphenyl  
 R.T.: 0.000 min  
 Exp R.T. : 0.000 min  
 Response: 0  
 Conc: N.D.



#14 2,4,6-Tribromophenol  
 R.T.: 0.000 min  
 Exp R.T. : 0.000 min  
 Response: 0  
 Conc: N.D.

12.1.2  
 12



#15 Terphenyl-d14

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

12.1.2  
12

## Quantitation Report (QT Reviewed)

Data File : E:\DATA\FI041111\FI1533.D Vial: 3  
Acq On : 11 Apr 2011 6:42 pm Operator: jacobbb  
Sample : OP3473-MB Inst : FID6  
Misc : OP3473,GFI107,30.00,,,2,1 Multiplr: 1.00  
IntFile : DF-GFE136.E  
Quant Time: Apr 12 07:36:58 2011 Quant Results File: DF-GFI101.RES

Quant Method : C:\MSDCHEM\1\METHODS\DF-GFI101.M (Chemstation Integrator)  
Title : 8015B TEH  
Last Update : Tue Mar 29 12:01:48 2011  
Response via : Initial Calibration  
DataAcq Meth : RR\_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	13.83	64380834	913.483 mg/L
Target Compounds			
2) H TPH-DRO (c10-c28)	11.69	1890135	28.818 mg/L

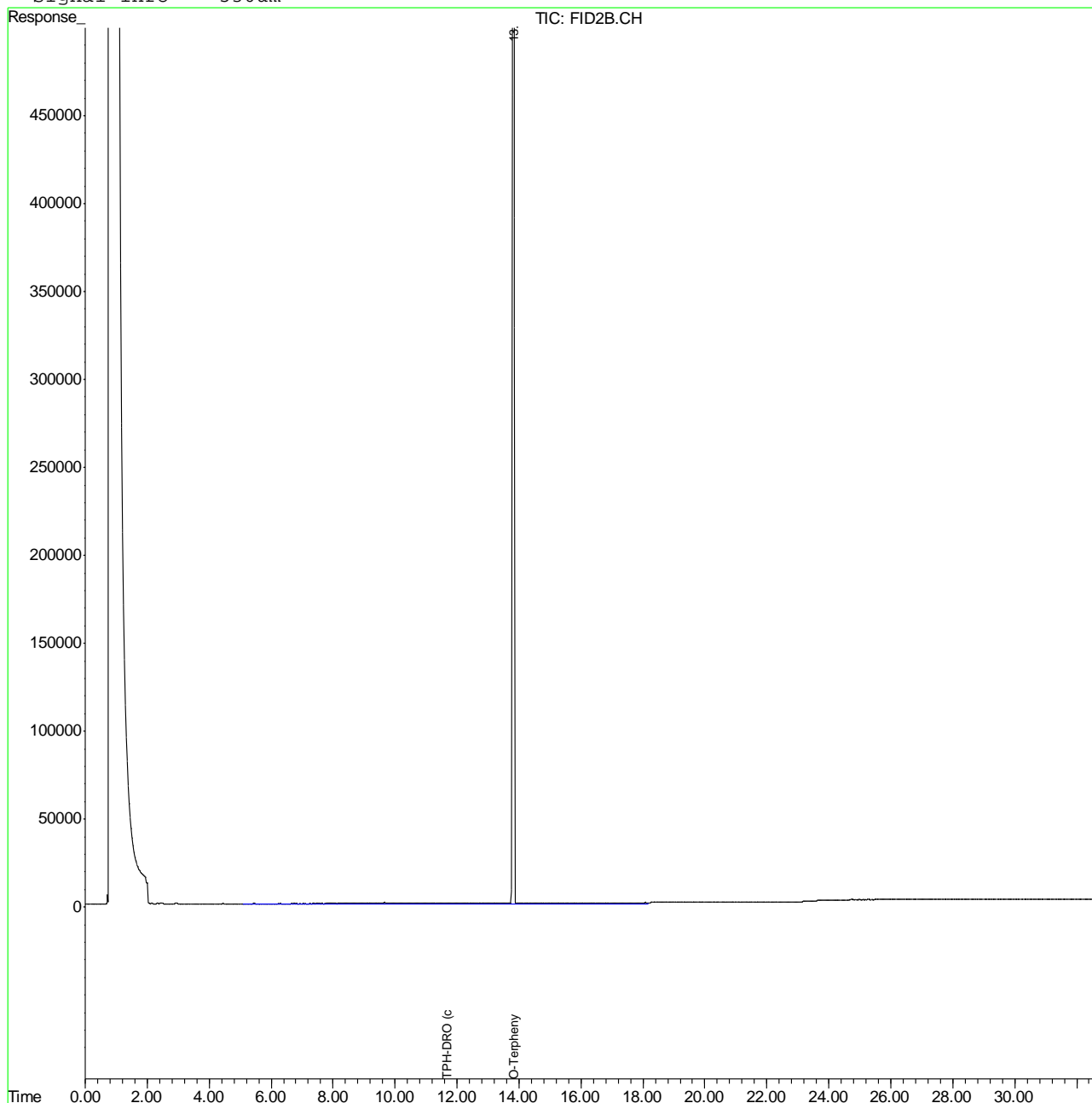
-----  
(f)=RT Delta > 1/2 Window (m)=manual int.  
FI1533.D DF-GFI101.M Tue Apr 12 12:48:48 2011 TEH

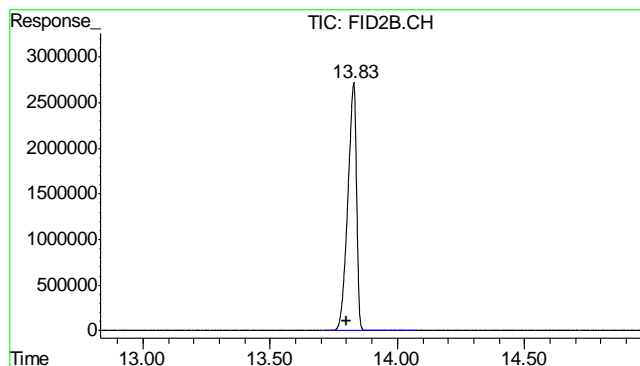
## Quantitation Report (QT Reviewed)

Data File : E:\DATA\FI041111\FI1533.D Vial: 3  
Acq On : 11 Apr 2011 6:42 pm Operator: jacobbb  
Sample : OP3473-MB Inst : FID6  
Misc : OP3473,GFI107,30.00,,,2,1 Multiplr: 1.00  
IntFile : DF-GFE136.E  
Quant Time: Apr 12 7:40 2011 Quant Results File: DF-GFI101.RES

Quant Method : C:\MSDCHEM\1\METHODS\DF-GFI101.M (Chemstation Integrator)  
Title : 8015B TEH  
Last Update : Tue Mar 29 12:01:48 2011  
Response via : Multiple Level Calibration  
DataAcq Meth : RR\_BASE2.M

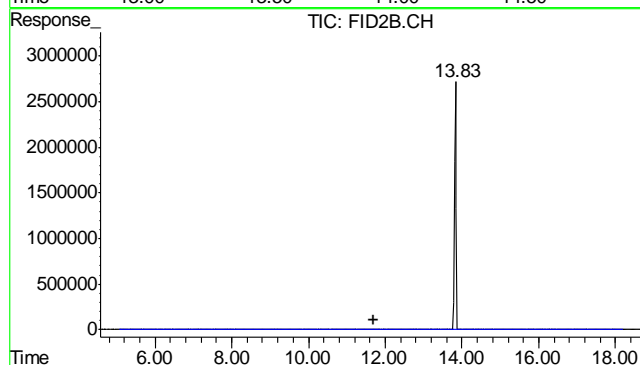
Volume Inj. : 1ul  
Signal Phase : RTX-5  
Signal Info : 530um





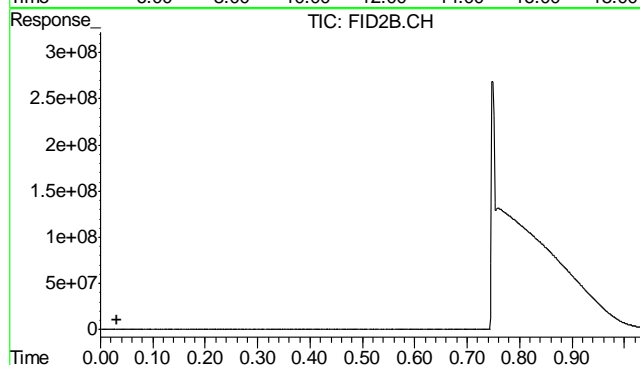
#1 O-Terphenyl

R.T.: 13.828 min  
Delta R.T.: 0.028 min  
Response: 64380834  
Conc: 913.48 mg/L



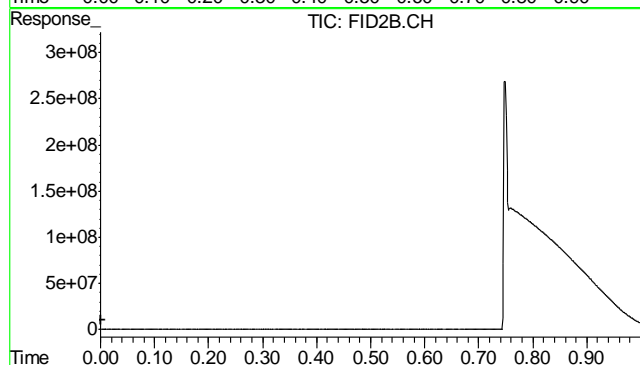
#2 TPH-DRO (c10-c28)

R.T.: 11.685 min  
Delta R.T.: 0.000 min  
Response: 1890135  
Conc: 28.82 mg/L m



#9 5a-Androstane

R.T.: 0.041 min  
Delta R.T.: 0.009 min  
Response: 71  
Conc: N.D.

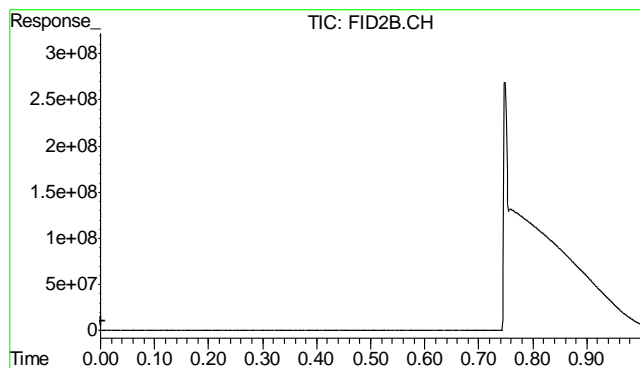


#10 2-Fluorophenol

R.T.: 0.032 min  
Delta R.T.: 0.032 min  
Response: 45  
Conc: N.D.

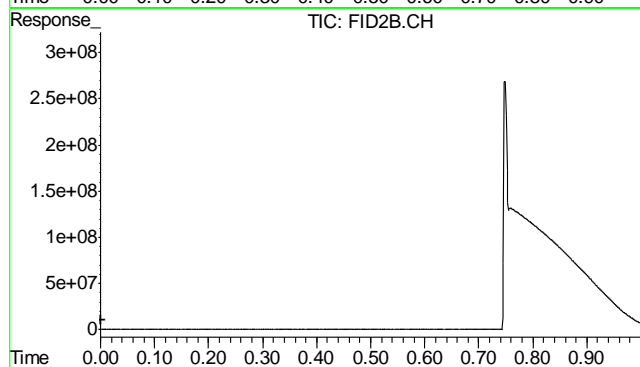
12.2.1  
12





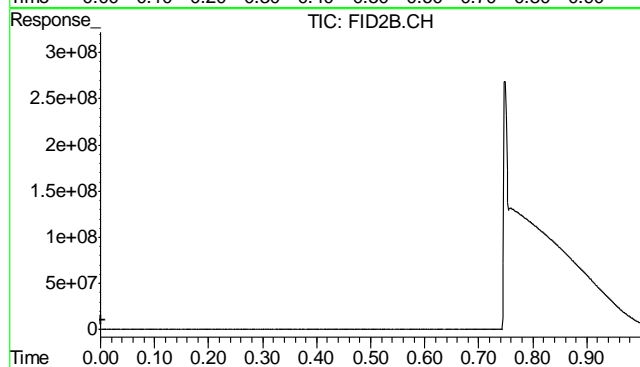
#11 Phenol-d5

R.T.: 0.032 min  
Delta R.T.: 0.032 min  
Response: 45  
Conc: N.D.



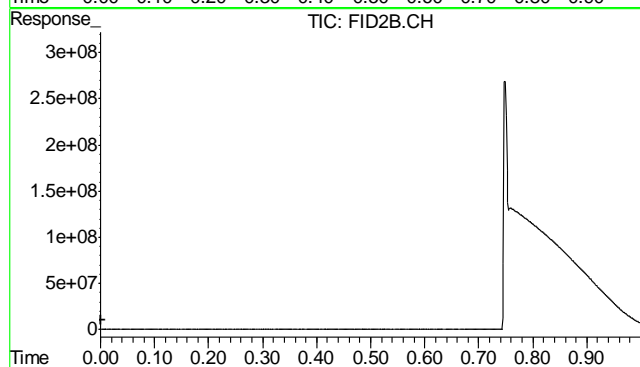
#12 Nitrobenzene-d5

R.T.: 0.032 min  
Delta R.T.: 0.032 min  
Response: 45  
Conc: N.D.



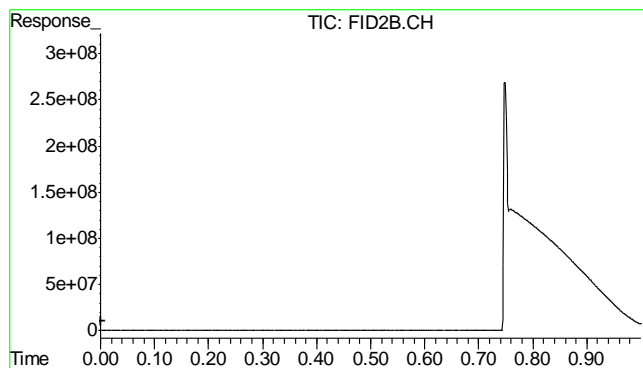
#13 2-Fluorobiphenyl

R.T.: 0.032 min  
Delta R.T.: 0.032 min  
Response: 45  
Conc: N.D.



#14 2,4,6-Tribromophenol

R.T.: 0.032 min  
Delta R.T.: 0.032 min  
Response: 45  
Conc: N.D.



#15 Terphenyl-d14

R.T.: 0.032 min  
Delta R.T.: 0.032 min  
Response: 45  
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: D22470  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: FRU 197-33A

QC Batch ID: MP4439  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 04/12/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.59	.59		
Antimony	3.0	.31	.31		
Arsenic	2.5	.59	.59		
Barium	1.0	.11	.11	0.69	<1.0
Beryllium	1.0	.044	.1		
Boron	5.0	.48	.48		
Cadmium	1.0	.027	.27	0.070	<1.0
Calcium	40	.96	1.1		
Chromium	1.0	.018	.031	0.070	<1.0
Cobalt	0.50	.035	.035		
Copper	1.0	.085	.16	0.62	<1.0
Iron	7.0	.34	2		
Lead	5.0	.16	.21	0.12	<5.0
Lithium	0.20	.028	.031		
Magnesium	20	.58	1.4		
Manganese	0.50	.0053	.012		
Molybdenum	1.0	.045	.054		
Nickel	3.0	.043	.099	-0.070	<3.0
Phosphorus	10	1.1	1.2		
Potassium	200	5.5	9.2		
Selenium	5.0	.38	.5	0.010	<5.0
Silicon	5.0	.38	.51		
Silver	3.0	.018	.051	-0.040	<3.0
Sodium	40	11	11		
Strontium	5.0		.017		
Thallium	1.0	.29	.34		
Tin	5.0	.55	1.3		
Titanium	1.0	.011	.1		
Uranium	5.0	.15	.2		
Vanadium	1.0	.016	.025		
Zinc	3.0	.028	.06	0.41	<3.0

Associated samples MP4439: D22470-1, D22470-2

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

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D22470  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: FRU 197-33A

QC Batch ID: MP4439  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D22470  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: FRU 197-33A

QC Batch ID: MP4439  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 04/12/11

Metal	D22499-1 Original MS		SpikeLot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	65.6	295	256	89.6	75-125
Beryllium					
Boron	anr				
Cadmium	0.35	47.2	64	73.2N(a)	75-125
Calcium					
Chromium	13.1	63.0	64	78.0	75-125
Cobalt					
Copper	16.9	68.1	64	80.0	75-125
Iron					
Lead	14.0	108	128	73.4N(a)	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	17.8	60.5	64	66.7N(a)	75-125
Phosphorus					
Potassium					
Selenium	0.0	97.2	128	75.9	75-125
Silicon					
Silver	0.23	19.6	25.6	75.7	75-125
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	58.7	99.3	64	63.4N(a)	75-125

Associated samples MP4439: D22470-1, D22470-2

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D22470  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: FRU 197-33A

QC Batch ID: MP4439  
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 recovery indicates possible matrix interference.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D22470  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: FRU 197-33A

QC Batch ID: MP4439  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date: 04/12/11

Metal	D22499-1 Original	MSD	Spikelot MPICPAL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	65.6	370	272	111.9	22.6 (a)	20
Beryllium						
Boron	anr					
Cadmium	0.35	50.4	68	73.6N(b)	6.6	20
Calcium						
Chromium	13.1	66.4	68	78.4	5.3	20
Cobalt						
Copper	16.9	71.4	68	80.2	4.7	20
Iron						
Lead	14.0	115	136	74.3N(b)	6.3	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	17.8	64.1	68	68.1N(b)	5.8	20
Phosphorus						
Potassium						
Selenium	0.0	102	136	75.0	4.8	20
Silicon						
Silver	0.23	20.7	27.2	75.3	5.5	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	58.7	103	68	65.2N(b)	3.7	20

Associated samples MP4439: D22470-1, D22470-2

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



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D22470  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: FRU 197-33A

QC Batch ID: MP4439  
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) High RPD due to possible sample nonhomogeneity.
- (b) Spike recovery indicates possible matrix interference.

## SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D22470

Account: KRWCCOL - KRW Consulting, Inc.

Project: FRU 197-33A

QC Batch ID: MP4439

Methods: SW846 6010B

Matrix Type: SOLID

Units: mg/kg

Prep Date: 04/12/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	186	200	93.0	80-120
Beryllium				
Boron	anr			
Cadmium	46.1	50	92.2	80-120
Calcium				
Chromium	48.8	50	97.6	80-120
Cobalt				
Copper	49.4	50	98.8	80-120
Iron				
Lead	96.4	100	96.4	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	46.3	50	92.6	80-120
Phosphorus				
Potassium				
Selenium	94.0	100	94.0	80-120
Silicon				
Silver	18.8	20	94.0	80-120
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	43.2	50	86.4	80-120

Associated samples MP4439: D22470-1, D22470-2

Results &lt; IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D22470  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: FRU 197-33A

QC Batch ID: MP4439  
Matrix Type: SOLID

Methods: SW846 6010B  
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

# SERIAL DILUTION RESULTS SUMMARY

Login Number: D22470  
 Account: KRWCCOL - KRW Consulting, Inc.  
 Project: FRU 197-33A

QC Batch ID: MP4439  
 Matrix Type: SOLID

Methods: SW846 6010B  
 Units: ug/l

Prep Date: 04/12/11

Metal	D22499-1 Original	SDL 1:1	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	487	545	11.8*(a)	0-10
Beryllium				
Boron	anr			
Cadmium	2.60	2.50	3.8	0-10
Calcium				
Chromium	97.5	111	13.3*(a)	0-10
Cobalt				
Copper	126	135	7.0	0-10
Iron				
Lead	104	111	7.0	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	132	153	15.4*(a)	0-10
Phosphorus				
Potassium				
Selenium	5.40	4.10		0-10
Silicon				
Silver	1.70	2.50	47.1 (b)	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	436	538	23.5*(a)	0-10

Associated samples MP4439: D22470-1, D22470-2

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: D22470  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: FRU 197-33A

QC Batch ID: MP4439  
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: D22470  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: FRU 197-33A

QC Batch ID: MP4440  
Matrix Type: SOLID

Methods: SW846 6020  
Units: mg/kg

Prep Date: 04/12/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	.14	1.2		
Antimony	0.20	.001	.0095		
Arsenic	0.40	.049	.22	-0.0018	<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 MP4440: D22470-1, D22470-2

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: D22470  
 Account: KRWCCOL - KRW Consulting, Inc.  
 Project: FRU 197-33A

QC Batch ID: MP4440  
 Matrix Type: SOLID

Methods: SW846 6020  
 Units: mg/kg

Prep Date: 04/12/11

Metal	D22499-1 Original MS		SpikeLot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic	7.3	134	128	99.0	60-119
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper	anr				
Iron					
Lead	anr				
Magnesium					
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium	anr				
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP4440: D22470-1, D22470-2

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D22470  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: FRU 197-33A

QC Batch ID: MP4440  
Matrix Type: SOLID

Methods: SW846 6020  
Units: mg/kg

Prep Date: 04/12/11

Metal	D22499-1 Original	MSD	Spikelot MPICPAL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	7.3	125	136	86.6	6.9	20
Barium						
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper	anr					
Iron						
Lead	anr					
Magnesium						
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium	anr					
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP4440: D22470-1, D22470-2

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: D22470

Account: KRWCCOL - KRW Consulting, Inc.

Project: FRU 197-33A

QC Batch ID: MP4440

Methods: SW846 6020

Matrix Type: SOLID

Units: mg/kg

Prep Date:

04/12/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	98.6	100	98.6	80-120
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper	anr			
Iron				
Lead	anr			
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium	anr			
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP4440: D22470-1, D22470-2

Results &lt; IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D22470  
 Account: KRWCCOL - KRW Consulting, Inc.  
 Project: FRU 197-33A

QC Batch ID: MP4440  
 Matrix Type: SOLID

Methods: SW846 6020  
 Units: ug/l

Prep Date: 04/12/11

Metal		D22499-1 Original SDL 5:25 %DIF		QC Limits
Aluminum				
Antimony				
Arsenic	54.3	59.4	9.4	0-10
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper	anr			
Iron				
Lead	anr			
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium	anr			
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP4440: D22470-1, D22470-2

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: D22470  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: FRU 197-33A

QC Batch ID: MP4441  
Matrix Type: SOLID

Methods: SW846 7471A  
Units: mg/kg

Prep Date: 04/12/11

Metal	RL	IDL	MDL	MB	
				raw	final
Mercury	0.10	.0011	.013	-0.0053	<0.10

Associated samples MP4441: D22470-1, D22470-2

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: D22470  
 Account: KRWCCOL - KRW Consulting, Inc.  
 Project: FRU 197-33A

QC Batch ID: MP4441  
 Matrix Type: SOLID

Methods: SW846 7471A  
 Units: mg/kg

Prep Date: 04/12/11

Metal	D22299-6		Spikelot		QC
	Original	MS	HGWSR1	% Rec	Limits
Mercury	0.37	0.62	0.485	51.5N(a)	85-115

Associated samples MP4441: D22470-1, D22470-2

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

13.3.2  
13

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D22470  
 Account: KRWCCOL - KRW Consulting, Inc.  
 Project: FRU 197-33A

QC Batch ID: MP4441  
 Matrix Type: SOLID

Methods: SW846 7471A  
 Units: mg/kg

Prep Date: 04/12/11

Metal	D22299-6 Original MSD	Spikelot HGWSR1	% Rec	MSD RPD	QC Limit
Mercury	0.37	0.67	0.485	61.8N(a) 7.8	20

Associated samples MP4441: D22470-1, D22470-2

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

13.3.2  
13

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D22470  
 Account: KRWCCOL - KRW Consulting, Inc.  
 Project: FRU 197-33A

QC Batch ID: MP4441  
 Matrix Type: SOLID

Methods: SW846 7471A  
 Units: mg/kg

Prep Date: 04/12/11

Metal	BSP Result	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.43	0.4	107.5	80-120

Associated samples MP4441: D22470-1, D22470-2

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: D22470  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: FRU 197-33A

QC Batch ID: MP4444  
Matrix Type: AQUEOUS

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

Prep Date: 04/12/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	500	30	30		
Antimony	150	16	16		
Arsenic	130	30	30		
Barium	50	5.5	5.5		
Beryllium	50	2.2	2.5		
Boron	250	24	24		
Cadmium	50	1.4	1.4		
Calcium	2000	48	75	68.5	<2000
Chromium	50	.9	4		
Cobalt	25	1.8	1.8		
Copper	50	4.3	14		
Iron	350	17	65		
Lead	250	8	11		
Lithium	10	1.4	6		
Magnesium	1000	29	50	4.0	<1000
Manganese	25	.27	1.6		
Molybdenum	50	2.3	4.4		
Nickel	150	2.2	5		
Phosphorus	500	55	100		
Potassium	5000	280	280		
Selenium	250	19	19		
Silicon	250	19	19		
Silver	150	.9	1.6		
Sodium	2000	570	570	426	<2000
Strontium	25		1.3		
Thallium	50	15	15		
Tin	250	28	50		
Titanium	50	.55	1.6		
Uranium	250	7.5	18		
Vanadium	50	.8	1.1		
Zinc	150	1.4	9		

Associated samples MP4444: D22470-1A, D22470-2A

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

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: D22470  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: FRU 197-33A

QC Batch ID: MP4444  
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: D22470  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: FRU 197-33A

QC Batch ID: MP4444  
Matrix Type: AQUEOUS

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

Prep Date: 04/12/11

Metal	D22499-1A Original MS		Spikelot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	115000	254000	125000	111.2	75-125
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	39100	169000	125000	103.9	75-125
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	338000	485000	125000	117.6	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP4444: D22470-1A, D22470-2A

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: D22470  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: FRU 197-33A

QC Batch ID: MP4444  
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: D22470  
 Account: KRWCCOL - KRW Consulting, Inc.  
 Project: FRU 197-33A

QC Batch ID: MP4444  
 Matrix Type: AQUEOUS

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

Prep Date: 04/12/11

Metal	D22499-1A Original	MSD	Spikelot MPICPAL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium	115000	253000	125000	110.4	0.4	20
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Lithium						
Magnesium	39100	166000	125000	101.5	1.8	20
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium	338000	476000	125000	110.4	1.9	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP4444: D22470-1A, D22470-2A

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: D22470  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: FRU 197-33A

QC Batch ID: MP4444  
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: D22470

Account: KRWCCOL - KRW Consulting, Inc.

Project: FRU 197-33A

QC Batch ID: MP4444

Methods: LADNR29B, SW846 6010B

Matrix Type: AQUEOUS

Units: ug/l

Prep Date:

04/12/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	127000	125000	101.6	80-120
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	125000	125000	100.0	80-120
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	126000	125000	100.8	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP4444: D22470-1A, D22470-2A

Results &lt; 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: D22470  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: FRU 197-33A

QC Batch ID: MP4444  
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: D22470  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: FRU 197-33A

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Specific Conductivity	GP4198/GN9094	1.0	<1.0	umhos/cm	9985	9980	99.9	90-110%
pH	GN9041			su	8.00	7.97	99.6	99.3-100.7%

Associated Samples:  
Batch GN9041: D22470-1, D22470-2  
Batch GP4198: D22470-1, D22470-2  
(\*) Outside of QC limits



DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D22470  
Account: KRWCCOL - KRW Consulting, Inc.  
Project: FRU 197-33A

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Redox Potential Vs H2	GN9043	D22470-1	mv	219	210	2.3	0-20%

Associated Samples:

Batch GN9043: D22470-1, D22470-2  
(\*) Outside of QC limits

## Misc. Forms

---

### Custody Documents and Other Forms

(Accutest Labs of New England, Inc.)

---

Includes the following where applicable:

- Chain of Custody



## Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D22470

Client: AMS

Immediate Client Services Action Required: No

Date / Time Received: 4/9/2011

Delivery Method:

Client Service Action Required at Login: No

Project: N/A

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: D22470  
Account: ALMS - Accutest Mountain States  
Project: KRWCCOL: FRU 197-33A

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP12826/GN34611	0.40	0.0	mg/kg	12	12.4	103.3	80-120%
Chromium, Hexavalent	GP12826/GN34611			mg/kg	1185	1380	116.5	80-120%

Associated Samples:  
Batch GP12826: D22470-1, D22470-2  
(\*) Outside of QC limits

BLANK SPIKE DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D22470  
Account: ALMS - Accutest Mountain States  
Project: KRWCCOL: FRU 197-33A

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit
Chromium, Hexavalent	GP12826/GN34611	mg/kg	12	12.3	0.8	

Associated Samples:  
Batch GP12826: D22470-1, D22470-2  
(\*) Outside of QC limits

DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D22470  
Account: ALMS - Accutest Mountain States  
Project: KRWCCOL: FRU 197-33A

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP12826/GN34611	M99098-7	mg/kg	0.52	0.54	3.8	0-20%

Associated Samples:  
Batch GP12826: D22470-1, D22470-2  
(\*) Outside of QC limits



MATRIX SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: D22470  
Account: ALMS - Accutest Mountain States  
Project: KRWCCOL: FRU 197-33A

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP12826/GN34611	M99098-7	mg/kg	0.52	12.5	12.9	99.1	75-125%
Chromium, Hexavalent	GP12826/GN34611	M99098-7	mg/kg	0.52	1310	1490	114.0	75-125%

Associated Samples:  
Batch GP12826: D22470-1, D22470-2  
(\*) Outside of QC limits  
(N) Matrix Spike Rec. outside of QC limits