



08/26/11

Technical Report for

KRW Consulting, Inc.

XOM FRU 197-33A

1103-03

Accutest Job Number: D26811

Sampling Date: 08/19/11

Report to:

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Total number of pages in report: 204



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: 303-425-6021

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

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Test results relate only to samples analyzed.

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Sample Summary

KRW Consulting, Inc.

Job No: D26811

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

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
D26811-1	08/19/11	11:30 DK	08/20/11	SO	Sludge	INITIAL FW
D26811-1A	08/19/11	11:30 DK	08/20/11	SO	Sludge	INITIAL FW
D26811-2	08/19/11	11:00 DK	08/20/11	SO	Sludge	INITIAL RESERVE
D26811-2A	08/19/11	11:00 DK	08/20/11	SO	Sludge	INITIAL RESERVE

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

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: KRW Consulting, Inc.

Job No D26811

Site: XOM FRU 197-33A

Report Dat 8/26/2011 4:51:06 PM

On 08/20/2011, 2 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 3.7 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D26811 was assigned to the project. The lab sample IDs, client sample IDs, and date of sample collection are detailed in the report's Results Summary.

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

Volatiles by GCMS By Method SW846 8260B

Matrix SO	Batch ID: V5V1014
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D26812-1MS, D26812-1MSD were used as the QC samples indicated.

Matrix SO	Batch ID: V5V1015
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D26843-1MS, D26843-1MSD were used as the QC samples indicated.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO	Batch ID: OP4330
------------------	-------------------------

- All samples were extracted 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) D26816-1MS, D26816-1MSD were used as the QC samples indicated.
- The matrix spike (MS) and matrix spike duplicate (MSD) recovery(s) of multiple analytes are outside control limits. Outside control limits due to matrix interference.
- The RPD(s) for the MS and MSD recoveries of Fluoranthene, Naphthalene are outside control limits for sample OP4330-MSD. Variability of recovery may be due to sample matrix/homogeneity.
- OP4330-MB for Nitrobenzene-d5: Surrogate recovery is above control limits. The method blank is non-detect for target analytes, so no further action is needed.
- OP4330-MB for Terphenyl-d14: Surrogate recovery is above control limits. The method blank is non-detect for target analytes, so no further action is needed.
- OP4330-MSD for Fluoranthene: Outside control limits due to matrix interference.
- D26811-1 and D26811-2 for Nitrobenzene-d5: Outside control limits due to matrix interference.

Volatiles by GC By Method SW846 8015B

Matrix SO	Batch ID: GGB710
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- Sample(s) D26812-1MS, D26812-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GC By Method SW846-8015B

Matrix SO

Batch ID: OP4324

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) D26817-7MS, D26817-7MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- D26811-1 for o-Terphenyl: Outside control limits due to dilution.

Metals By Method SW846 6010B

Matrix AQ

Batch ID: MP5544

- All samples were digested 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) D26784-1AMS, D26784-1AMSD were used as the QC samples for the metals analysis.

Matrix SO

Batch ID: MP5531

- All samples were digested 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) D26783-1MS, D26783-1MSD, D26783-1SDL were used as the QC samples for the metals analysis.
- The matrix spike (MS) and matrix spike duplicate (MSD) recovery(s) of Zinc are outside control limits. Spike recovery indicates possible matrix interference.
- The matrix spike (MS) recovery(s) of Barium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- The serial dilution RPD(s) for Cadmium, Silver are outside control limits for sample MP5531-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- D26811-1, D26811-2 for Selenium: Elevated detection limit due to dilution required for possible matrix interference.
- The serial dilution RPD(s) for Barium, Chromium, Copper, Nickel, Zinc are outside control limits for sample MP5531-SD1. Serial dilution indicates possible matrix interference.

Metals By Method SW846 6020

Matrix SO

Batch ID: MP5532

- All samples were digested 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) D26783-1MS, D26783-1MSD, D26783-1SDL were used as the QC samples for the metals analysis.
- The serial dilution RPD(s) for Arsenic are outside control limits for sample MP5532-SD1. Serial dilution indicates possible matrix interference.

Metals By Method SW846 7471A

Matrix SO

Batch ID: MP5540

- All samples were digested 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) D26397-1MS, D26397-1MSD were used as the QC samples for the metals analysis.

Wet Chemistry By Method ASTM D1498-76M

Matrix SO

Batch ID: GN11192

- Sample(s) D26814-1DUP were used as the QC samples for the Redox Potential Vs H2 analysis.

Wet Chemistry By Method SM19 2540B M

Matrix SO

Batch ID: GN11179

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

Wet Chemistry By Method SW846 3060/7196A M

Matrix SO

Batch ID: R9307

- 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:GP13404

- 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: GN11185

- The following samples were run outside of holding time for method SW846 9045C: D26811-1, D26811-2.

Wet Chemistry By Method USDA HANDBOOK 60

Matrix SO

Batch ID: MP5544

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

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

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

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

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Accutest Mountain States

Job No D26811

Site: KRWCCOL: XOM FRU 197-33A

Report Date 8/25/2011 4:27:06 PM

2 Sample(s) were collected on 08/19/2011 and were received at Accutest on 08/20/2011 properly preserved, at 2.3 Deg. C and intact. These Samples received an Accutest job number of D26811. 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: GP13404

- 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) D26814-1DUP, D26814-1MS were used as the QC samples for Chromium, Hexavalent.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety. The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(D26811).

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

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Client Sample ID:	INITIAL FW		
Lab Sample ID:	D26811-1	Date Sampled:	08/19/11
Matrix:	SO - Sludge	Date Received:	08/20/11
Method:	SW846 8260B	Percent Solids:	24.6
Project:	XOM FRU 197-33A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V17110.D	1	08/22/11	DC	n/a	n/a	V5V1014
Run #2	5V17128.D	1	08/23/11	DC	n/a	n/a	V5V1015

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.10 g	10.0 ml	10.0 ul
Run #2	5.10 g	10.0 ml	5.0 ul

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	140000	5500	2400	ug/kg	
108-88-3	Toluene	1220000 a	22000	11000	ug/kg	
100-41-4	Ethylbenzene	187000	11000	2800	ug/kg	
1330-20-7	Xylene (total)	3060000 a	44000	22000	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	125%	119%	61-130%
460-00-4	4-Bromofluorobenzene	114%	107%	53-131%
17060-07-0	1,2-Dichloroethane-D4	120%	116%	62-130%

(a) Result is from Run# 2

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	INITIAL FW	
Lab Sample ID:	D26811-1	Date Sampled: 08/19/11
Matrix:	SO - Sludge	Date Received: 08/20/11
Method:	SW846 8270C BY SIM SW846 3546	Percent Solids: 24.6
Project:	XOM FRU 197-33A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G05654.D	100	08/24/11	TMB	08/23/11	OP4330	E3G205
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	4.0 ml
Run #2		

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	11000	8700	ug/kg	
120-12-7	Anthracene	ND	11000	9700	ug/kg	
56-55-3	Benzo(a)anthracene	ND	27000	14000	ug/kg	
50-32-8	Benzo(a)pyrene	ND	27000	19000	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	27000	20000	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	27000	12000	ug/kg	
218-01-9	Chrysene	ND	27000	12000	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	27000	20000	ug/kg	
206-44-0	Fluoranthene	ND	11000	11000	ug/kg	
86-73-7	Fluorene	77900	11000	9200	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	32000	30000	ug/kg	
91-20-3	Naphthalene	103000	11000	10000	ug/kg	
129-00-0	Pyrene	ND	11000	10000	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	1579% ^a		10-145%
321-60-8	2-Fluorobiphenyl	102%		10-130%
1718-51-0	Terphenyl-d14	77%		22-130%

(a) Outside control limits due to matrix interference.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

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Client Sample ID:	INITIAL FW	
Lab Sample ID:	D26811-1	Date Sampled: 08/19/11
Matrix:	SO - Sludge	Date Received: 08/20/11
Method:	SW846 8015B	Percent Solids: 24.6
Project:	XOM FRU 197-33A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB12506.D	1	08/23/11	SK	n/a	n/a	GGB710
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.1 g	10.0 ml	5.0 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	21100	2200	1100	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	94%		60-140%		

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

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Client Sample ID:	INITIAL FW		Date Sampled:	08/19/11
Lab Sample ID:	D26811-1		Date Received:	08/20/11
Matrix:	SO - Sludge		Percent Solids:	24.6
Method:	SW846-8015B SW846 3546			
Project:	XOM FRU 197-33A			

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD09498.D	20	08/25/11	CS	08/22/11	OP4324	GFD414
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	4.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	288000	2200	1400	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	0% ^a		61-142%		

(a) Outside control limits due to dilution.

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: INITIAL FW

Lab Sample ID: D26811-1

Matrix: SO - Sludge

Project: XOM FRU 197-33A

Date Sampled: 08/19/11

Date Received: 08/20/11

Percent Solids: 24.6

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	6.7	1.6	mg/kg	5	08/22/11	08/22/11 GJ	SW846 6020 ¹	SW846 3050B ⁶
Barium	21200	20	mg/kg	5	08/22/11	08/23/11 JM	SW846 6010B ⁴	SW846 3050B ⁵
Cadmium	< 3.9	3.9	mg/kg	1	08/22/11	08/22/11 JM	SW846 6010B ²	SW846 3050B ⁵
Chromium	81.8	3.9	mg/kg	1	08/22/11	08/22/11 JM	SW846 6010B ²	SW846 3050B ⁵
Copper	48.0	3.9	mg/kg	1	08/22/11	08/23/11 JM	SW846 6010B ⁴	SW846 3050B ⁵
Lead	< 20	20	mg/kg	1	08/22/11	08/22/11 JM	SW846 6010B ²	SW846 3050B ⁵
Mercury	2.1	0.39	mg/kg	1	08/23/11	08/23/11 JM	SW846 7471A ³	SW846 7471A ⁷
Nickel	19.5	12	mg/kg	1	08/22/11	08/22/11 JM	SW846 6010B ²	SW846 3050B ⁵
Selenium ^a	< 98	98	mg/kg	5	08/22/11	08/23/11 JM	SW846 6010B ⁴	SW846 3050B ⁵
Silver	< 12	12	mg/kg	1	08/22/11	08/22/11 JM	SW846 6010B ²	SW846 3050B ⁵
Zinc	66.7	12	mg/kg	1	08/22/11	08/23/11 JM	SW846 6010B ⁴	SW846 3050B ⁵

(1) Instrument QC Batch: MA1765

(2) Instrument QC Batch: MA1767

(3) Instrument QC Batch: MA1769

(4) Instrument QC Batch: MA1772

(5) Prep QC Batch: MP5531

(6) Prep QC Batch: MP5532

(7) Prep QC Batch: MP5540

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

RL = Reporting Limit

Report of Analysis

Client Sample ID: INITIAL FW
Lab Sample ID: D26811-1
Matrix: SO - Sludge
Project: XOM FRU 197-33A

Date Sampled: 08/19/11
Date Received: 08/20/11
Percent Solids: 24.6

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent ^a	< 1.6	1.6	mg/kg	1	08/25/11 15:31	AMA	SW846 3060A/7196A
Chromium, Trivalent ^b	80.7	5.5	mg/kg	1	08/25/11 15:31	AMA	SW846 3060/7196A M
Redox Potential Vs H2	88.3		mv	1	08/22/11	CJ	ASTM D1498-76M
Solids, Percent	24.6		%	1	08/22/11	SWT	SM19 2540B M
Specific Conductivity	2020	1.0	umhos/cm	1	08/23/11	CJ	DEPT.OF AG, BOOK N9
pH	7.79		su	1	08/22/11 11:00	CJ	SW846 9045C

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

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

RL = Reporting Limit

Report of Analysis

Client Sample ID:	INITIAL FW	Date Sampled:	08/19/11
Lab Sample ID:	D26811-1A	Date Received:	08/20/11
Matrix:	SO - Sludge	Percent Solids:	24.6
Project:	XOM FRU 197-33A		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	18.4	2.0	mg/l	1	08/23/11	08/23/11 JM	SW846 6010B ¹	EPA 200.7 ²
Magnesium	5.64	1.0	mg/l	1	08/23/11	08/23/11 JM	SW846 6010B ¹	EPA 200.7 ²
Sodium	457	2.0	mg/l	1	08/23/11	08/23/11 JM	SW846 6010B ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA1772
(2) Prep QC Batch: MP5544

RL = Reporting Limit

Report of Analysis

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Client Sample ID:	INITIAL FW		
Lab Sample ID:	D26811-1A	Date Sampled:	08/19/11
Matrix:	SO - Sludge	Date Received:	08/20/11
		Percent Solids:	24.6
Project:	XOM FRU 197-33A		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	23.9		ratio	1	08/23/11 22:55	JM	USDA HANDBOOK 60

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

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

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Client Sample ID:	INITIAL RESERVE				
Lab Sample ID:	D26811-2			Date Sampled:	08/19/11
Matrix:	SO - Sludge			Date Received:	08/20/11
Method:	SW846 8260B			Percent Solids:	22.3
Project:	XOM FRU 197-33A				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V17108.D	1	08/22/11	DC	n/a	n/a	V5V1014
Run #2	5V17109.D	1	08/22/11	DC	n/a	n/a	V5V1014

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.13 g	5.0 ml	10.0 ul
Run #2	5.13 g	5.0 ml	50.0 ul

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	39600 ^a	790	350	ug/kg	
108-88-3	Toluene	424000	7900	3900	ug/kg	
100-41-4	Ethylbenzene	44200 ^a	1600	390	ug/kg	
1330-20-7	Xylene (total)	1180000	16000	7900	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	123%	118%	61-130%
460-00-4	4-Bromofluorobenzene	116%	112%	53-131%
17060-07-0	1,2-Dichloroethane-D4	121%	113%	62-130%

(a) Result is from Run# 2

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	INITIAL RESERVE				
Lab Sample ID:	D26811-2			Date Sampled:	08/19/11
Matrix:	SO - Sludge			Date Received:	08/20/11
Method:	SW846 8270C BY SIM SW846 3546			Percent Solids:	22.3
Project:	XOM FRU 197-33A				

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G05630.D	10	08/23/11	TMB	08/23/11	OP4330	E3G204
Run #2							

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

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	2640	300	240	ug/kg	
120-12-7	Anthracene	ND	300	270	ug/kg	
56-55-3	Benzo(a)anthracene	ND	750	390	ug/kg	
50-32-8	Benzo(a)pyrene	ND	750	540	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	750	550	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	750	330	ug/kg	
218-01-9	Chrysene	ND	750	330	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	750	550	ug/kg	
206-44-0	Fluoranthene	ND	300	300	ug/kg	
86-73-7	Fluorene	9560	300	250	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	890	820	ug/kg	
91-20-3	Naphthalene	20600	300	280	ug/kg	
129-00-0	Pyrene	354	300	280	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	172% ^a		10-145%
321-60-8	2-Fluorobiphenyl	90%		10-130%
1718-51-0	Terphenyl-d14	97%		22-130%

(a) Outside control limits due to matrix interference.

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:	INITIAL RESERVE		Date Sampled:	08/19/11
Lab Sample ID:	D26811-2		Date Received:	08/20/11
Matrix:	SO - Sludge		Percent Solids:	22.3
Method:	SW846 8015B			
Project:	XOM FRU 197-33A			

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB12507.D	1	08/23/11	SK	n/a	n/a	GGB710
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.1 g	5.0 ml	20.0 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	9410	390	200	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	90%		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:	INITIAL RESERVE		Date Sampled:	08/19/11
Lab Sample ID:	D26811-2		Date Received:	08/20/11
Matrix:	SO - Sludge		Percent Solids:	22.3
Method:	SW846-8015B SW846 3546			
Project:	XOM FRU 197-33A			

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD09491.D	250	08/24/11	KV	08/22/11	OP4324	GFD413
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	4.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	295000	30000	19000	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	105%		61-142%		

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: INITIAL RESERVE

Lab Sample ID: D26811-2

Matrix: SO - Sludge

Project: XOM FRU 197-33A

Date Sampled: 08/19/11

Date Received: 08/20/11

Percent Solids: 22.3

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	7.0	1.9	mg/kg	5	08/22/11	08/23/11 GJ	SW846 6020 ³	SW846 3050B ⁶
Barium	36700	23	mg/kg	5	08/22/11	08/23/11 JM	SW846 6010B ⁴	SW846 3050B ⁵
Cadmium	< 4.7	4.7	mg/kg	1	08/22/11	08/22/11 JM	SW846 6010B ¹	SW846 3050B ⁵
Chromium	94.6	4.7	mg/kg	1	08/22/11	08/22/11 JM	SW846 6010B ¹	SW846 3050B ⁵
Copper	113	4.7	mg/kg	1	08/22/11	08/23/11 JM	SW846 6010B ⁴	SW846 3050B ⁵
Lead	< 23	23	mg/kg	1	08/22/11	08/22/11 JM	SW846 6010B ¹	SW846 3050B ⁵
Mercury	1.3	0.46	mg/kg	1	08/23/11	08/23/11 JM	SW846 7471A ²	SW846 7471A ⁷
Nickel	20.6	14	mg/kg	1	08/22/11	08/22/11 JM	SW846 6010B ¹	SW846 3050B ⁵
Selenium ^a	< 120	120	mg/kg	5	08/22/11	08/23/11 JM	SW846 6010B ⁴	SW846 3050B ⁵
Silver	< 14	14	mg/kg	1	08/22/11	08/22/11 JM	SW846 6010B ¹	SW846 3050B ⁵
Zinc	56.2	14	mg/kg	1	08/22/11	08/23/11 JM	SW846 6010B ⁴	SW846 3050B ⁵

(1) Instrument QC Batch: MA1767

(2) Instrument QC Batch: MA1769

(3) Instrument QC Batch: MA1771

(4) Instrument QC Batch: MA1772

(5) Prep QC Batch: MP5531

(6) Prep QC Batch: MP5532

(7) Prep QC Batch: MP5540

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

RL = Reporting Limit

Report of Analysis

Client Sample ID: INITIAL RESERVE**Lab Sample ID:** D26811-2**Matrix:** SO - Sludge**Project:** XOM FRU 197-33A**Date Sampled:** 08/19/11**Date Received:** 08/20/11**Percent Solids:** 22.3**General Chemistry**

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent ^a	2.7	1.8	mg/kg	1	08/25/11 15:31	AMA	SW846 3060A/7196A
Chromium, Trivalent ^b	91.9	6.5	mg/kg	1	08/25/11 15:31	AMA	SW846 3060/7196A M
Redox Potential Vs H2	254		mv	1	08/22/11	CJ	ASTM D1498-76M
Solids, Percent	22.3		%	1	08/22/11	SWT	SM19 2540B M
Specific Conductivity	3980	1.0	umhos/cm	1	08/23/11	CJ	DEPT.OF AG, BOOK N9
pH	9.42		su	1	08/22/11 11:00	CJ	SW846 9045C

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

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

RL = Reporting Limit

Report of Analysis

Client Sample ID:	INITIAL RESERVE		
Lab Sample ID:	D26811-2A	Date Sampled:	08/19/11
Matrix:	SO - Sludge	Date Received:	08/20/11
		Percent Solids:	22.3
Project:	XOM FRU 197-33A		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	28.7	2.0	mg/l	1	08/23/11	08/23/11 JM	SW846 6010B ¹	EPA 200.7 ²
Magnesium	11.4	1.0	mg/l	1	08/23/11	08/23/11 JM	SW846 6010B ¹	EPA 200.7 ²
Sodium	870	2.0	mg/l	1	08/23/11	08/23/11 JM	SW846 6010B ¹	EPA 200.7 ²

(1) Instrument QC Batch: MA1772
(2) Prep QC Batch: MP5544

RL = Reporting Limit

Report of Analysis

Client Sample ID:	INITIAL RESERVE	Date Sampled:	08/19/11
Lab Sample ID:	D26811-2A	Date Received:	08/20/11
Matrix:	SO - Sludge	Percent Solids:	22.3
Project:	XOM FRU 197-33A		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	34.8		ratio	1	08/23/11 23:01	JM	USDA HANDBOOK 60

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

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

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

TEST LABORATORIES		Accutest Laboratories Mountain States 4036 Youngfield Street Wheat Ridge, Co 80033 TEL 303-425-6021 877-737-4521 FAX 303-425-6021		PED-EX Tracking # Accutest Quote #		Bottle Order Control # Accutest Job #																															
Client / Reporting Information		Project Information				Requested Analysis (see TEST CODE sheet)				Matrix Codes																											
Company Name KRW Consulting		Project Name XOM FRU 197-334				Table 910-1				DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank																											
Street Address 8000 W. 14th Ave Ste. 200		Street:		Billing Information (If different from Report to)																																	
City State Zip Lakewood CO 80214		City:		Company Name																																	
Project Contact Dwayne Knudson		Project # 1103-03		Street Address																																	
Phone # Fax # 970-675-4066 3-239-0745		Client PO#		City State Zip																																	
Sampler(s) Name(s) Phone # Dwayne Knudson 3022		Project Manager		Attention:		PO#																															
Field ID / Point of Collection		MECH/DI Vial #		Collection		Date		Time		Sampled by		Matrix		# of bottles		Number of preserved Bottles		HCl		KNOH		HNO3		H2SO4		NONE		DI Water		MEOH		ENCORE		Bioshield		LAB USE ONLY	
Initial FW						8-19-11		1130		DK SL		5				5																		X		01	
Initial Resene						8-19-11		1100		DK SL		5				5																X		02			

D26811: Chain of Custody

Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D26811

Client: KRW CONSULTING

Immediate Client Services Action Required: No

Date / Time Received: 8/20/2011 9:00:00 AM

No. Coolers: 1

Client Service Action Required at Login: No

Project: XOM FRU 197-33A

Airbill #'s: Fedex

<u>Cooler Security</u>	<u>Y</u>	<u>or</u>	<u>N</u>		<u>Y</u>	<u>or</u>	<u>N</u>
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"/>

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

<u>Quality Control Preservation</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
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"/>

<u>Sample Integrity - Documentation</u>	<u>Y</u>	<u>or</u>	<u>N</u>
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"/>

<u>Sample Integrity - Condition</u>	<u>Y</u>	<u>or</u>	<u>N</u>
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

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

Comments

 Accutest Laboratories
 V:(303) 425-6021

 4036 Youngfield Street
 F: (303) 425-6854

 Wheat Ridge, CO
 www.accutest.com

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: D26811
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1014-MB	5V17094A.D 1		08/22/11	DC	n/a	n/a	V5V1014

The QC reported here applies to the following samples:

Method: SW846 8260B

D26811-1, D26811-2

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

CAS No.	Surrogate Recoveries	Limits
2037-26-5	Toluene-D8	114% 61-130%
460-00-4	4-Bromofluorobenzene	100% 53-131%
17060-07-0	1,2-Dichloroethane-D4	112% 62-130%

Method Blank Summary

Page 1 of 1

Job Number: D26811
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1015-MB	5V17119.D	1	08/23/11	DC	n/a	n/a	V5V1015

The QC reported here applies to the following samples:

Method: SW846 8260B

D26811-1

CAS No.	Compound	Result	RL	MDL	Units	Q
108-88-3	Toluene	ND	100	50	ug/kg	
1330-20-7	Xylene (total)	ND	200	100	ug/kg	

CAS No.	Surrogate Recoveries	Limits
2037-26-5	Toluene-D8	118% 61-130%
460-00-4	4-Bromofluorobenzene	103% 53-131%
17060-07-0	1,2-Dichloroethane-D4	115% 62-130%

Blank Spike Summary

Page 1 of 1

Job Number: D26811
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1014-BS	5V17095A.D 1		08/22/11	DC	n/a	n/a	V5V1014

The QC reported here applies to the following samples:

Method: SW846 8260B

D26811-1, D26811-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	57.8	116	70-130
100-41-4	Ethylbenzene	50	54.7	109	70-130
108-88-3	Toluene	50	53.4	107	70-130
1330-20-7	Xylene (total)	150	162	108	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	118%	61-130%
460-00-4	4-Bromofluorobenzene	116%	53-131%
17060-07-0	1,2-Dichloroethane-D4	122%	62-130%

Blank Spike Summary

Page 1 of 1

Job Number: D26811
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1015-BS	5V17120.D	1	08/23/11	DC	n/a	n/a	V5V1015

The QC reported here applies to the following samples:

Method: SW846 8260B

D26811-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
108-88-3	Toluene	50	53.1	106	70-130
1330-20-7	Xylene (total)	150	161	107	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	118%	61-130%
460-00-4	4-Bromofluorobenzene	116%	53-131%
17060-07-0	1,2-Dichloroethane-D4	122%	62-130%

Blank Spike Summary

Job Number: D26811
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1015-BS	5V17121.D	1	08/23/11	DC	n/a	n/a	V5V1015

The QC reported here applies to the following samples:

Method: SW846 8260B

D26811-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
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CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	118%	61-130%
460-00-4	4-Bromofluorobenzene	105%	53-131%
17060-07-0	1,2-Dichloroethane-D4	119%	62-130%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D26811
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D26812-1MS	5V17101.D	1	08/22/11	DC	n/a	n/a	V5V1014
D26812-1MSD	5V17102.D	1	08/22/11	DC	n/a	n/a	V5V1014
D26812-1	5V17100.D	1	08/22/11	DC	n/a	n/a	V5V1014

The QC reported here applies to the following samples:

Method: SW846 8260B

D26811-1, D26811-2

CAS No.	Compound	D26812-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	77.7		3700	4300	114	4500	119	5	70-134/30
100-41-4	Ethylbenzene	116	J	3700	4050	106	4220	111	4	70-137/30
108-88-3	Toluene	373		3700	4170	103	4370	108	5	70-130/30
1330-20-7	Xylene (total)	2350		11100	14100	106	14800	112	5	61-131/30

CAS No.	Surrogate Recoveries	MS	MSD	D26812-1	Limits
2037-26-5	Toluene-D8	112%	116%	116%	61-130%
460-00-4	4-Bromofluorobenzene	123%	128%	118%	53-131%
17060-07-0	1,2-Dichloroethane-D4	114%	119%	122%	62-130%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D26811
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D26843-1MS	5V17126.D	1	08/23/11	DC	n/a	n/a	V5V1015
D26843-1MSD	5V17127.D	1	08/23/11	DC	n/a	n/a	V5V1015
D26843-1	5V17125.D	1	08/23/11	DC	n/a	n/a	V5V1015

The QC reported here applies to the following samples:

Method: SW846 8260B

D26811-1

CAS No.	Compound	D26843-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
108-88-3	Toluene	ND		3010	2730	91	3060	102	11	70-130/30
1330-20-7	Xylene (total)	ND		9030	8760	97	9880	109	12	61-131/30

CAS No.	Surrogate Recoveries	MS	MSD	D26843-1	Limits
2037-26-5	Toluene-D8	105%	113%	113%	61-130%
460-00-4	4-Bromofluorobenzene	113%	124%	110%	53-131%
17060-07-0	1,2-Dichloroethane-D4	104%	115%	115%	62-130%

GC/MS Volatiles

Raw Data



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5082211.S\
 Data File : 5V17110.D
 Acq On : 22 Aug 2011 6:55 pm
 Operator : DONC
 Sample : D26811-1, 1000x
 Misc : MS2608,V5V1014,5.103,,10,10,1
 ALS Vial : 21 Sample Multiplier: 1

Quant Time: Aug 23 09:14:48 2011
 Quant Method : C:\msdchem\1\METHODS\V5AP998TVH998.M
 Quant Title : 8260
 QLast Update : Wed Aug 10 06:49:20 2011
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	250351	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.446	114	391447	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.095	117	454460	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.070	152	296675	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.035	102	48170	59.81	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	119.62%
61) Toluene-d8	13.851	98	937350	62.38	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	124.76%
69) 4-Bromofluorobenzene	16.043	95	351604	57.03	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	114.06%

Target Compounds

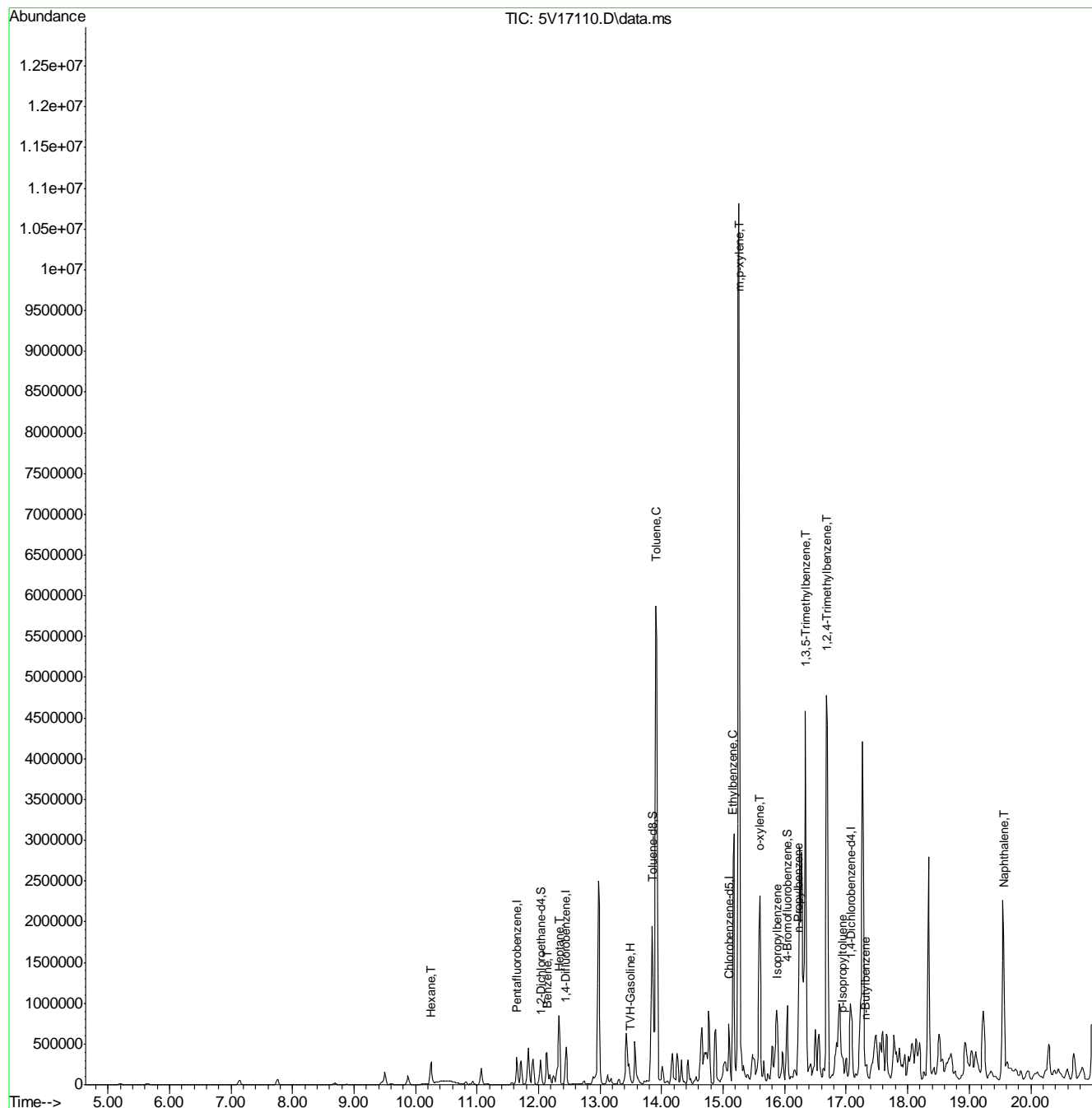
						Qvalue
1) TVH-Gasoline	13.491	TIC	100458721m	4688.55	ug/l	
41) Hexane	10.254	57	151754	29.01	ug/l	100
43) Heptane	12.332	43	328565	56.94	ug/l	98
50) Benzene	12.138	78	381725	25.33	ug/l	100
62) Toluene	13.908	92	2398078	221.79	ug/l	99
66) Ethylbenzene	15.163	91	688358	33.99	ug/l	99
68) Isopropylbenzene	15.883	105	164661	8.12	ug/l	98
72) m,p-xylene	15.255	106	3850591	461.09	ug/l	100
73) o-xylene	15.597	106	648330	79.34	ug/l	100
77) n-Propylbenzene	16.225	91	352570	14.27	ug/l #	50
80) 1,3,5-Trimethylbenzene	16.339	105	2831949	161.16	ug/l	98
82) 1,2,4-Trimethylbenzene	16.682	105	3195317	176.82	ug/l	90
86) p-Isopropyltoluene	16.944	119	143069	7.15	ug/l	100
88) n-Butylbenzene	17.321	91	88079	4.68	ug/l #	78
91) Naphthalene	19.559	128	646011	43.08	ug/l	100

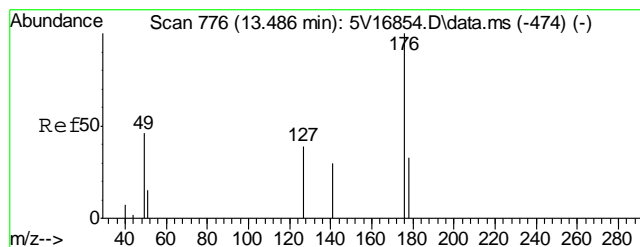
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5082211.S\
Data File : 5V17110.D
Acq On : 22 Aug 2011 6:55 pm
Operator : DONC
Sample : D26811-1, 1000x
Misc : MS2608,V5V1014,5.103,,10,10,1
ALS Vial : 21 Sample Multiplier: 1

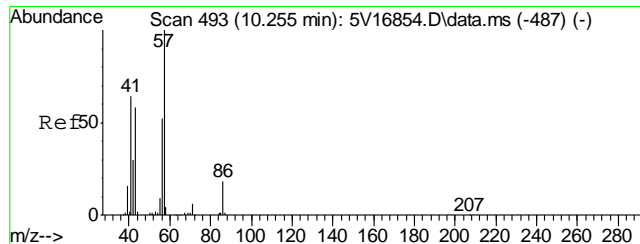
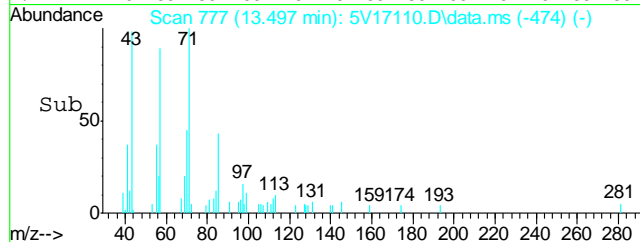
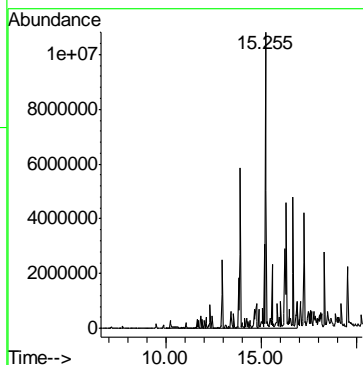
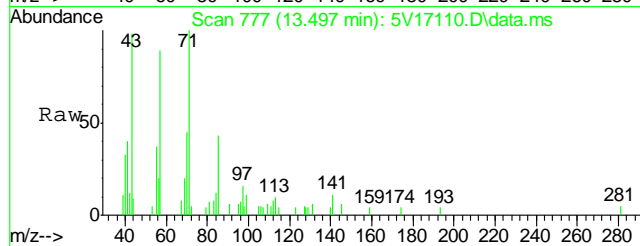
Quant Time: Aug 23 09:14:48 2011
Quant Method : C:\msdchem\1\METHODS\V5AP998TVH998.M
Quant Title : 8260
QLast Update : Wed Aug 10 06:49:20 2011
Response via : Initial Calibration





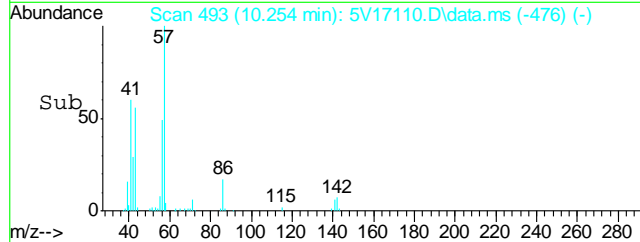
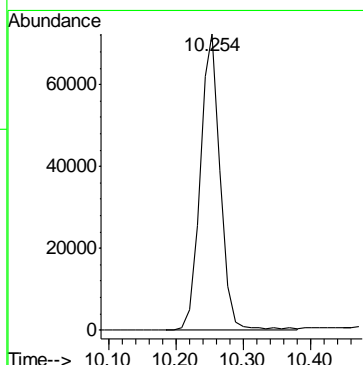
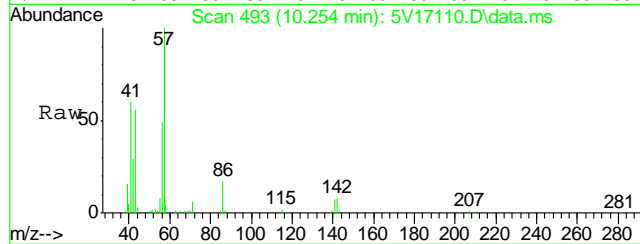
#1
TVH-Gasoline
Concen: 4688.55 ug/l m
RT: 13.491 min Scan# 777
Delta R.T. 0.000 min
Lab File: 5V17110.D
Acq: 22 Aug 2011 6:55 pm

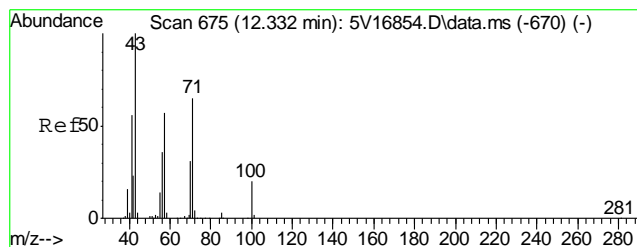
Tgt Ion:TIC Resp:100458721



#41
Hexane
Concen: 29.01 ug/l
RT: 10.254 min Scan# 493
Delta R.T. -0.000 min
Lab File: 5V17110.D
Acq: 22 Aug 2011 6:55 pm

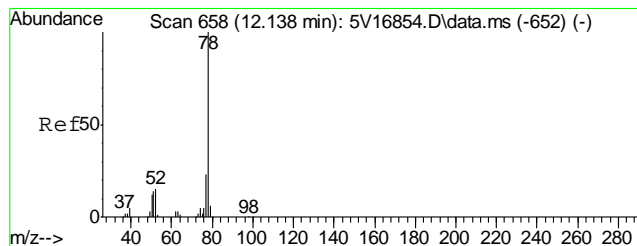
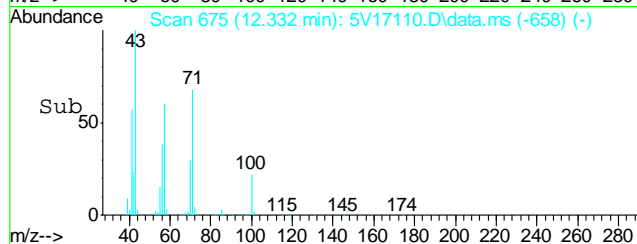
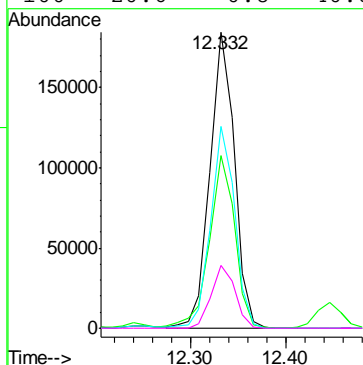
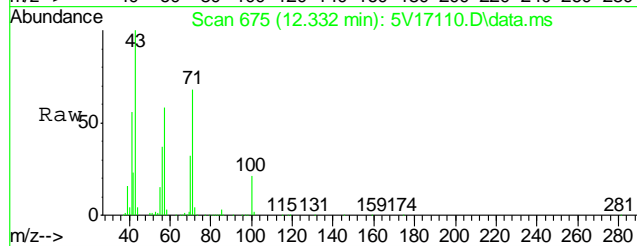
Tgt Ion: 57 Resp: 151754





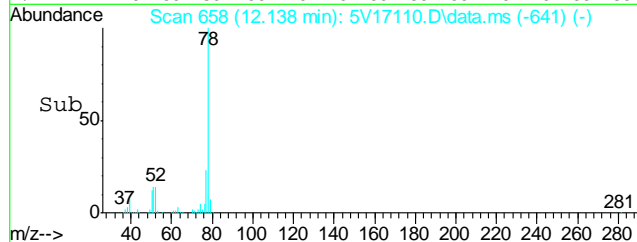
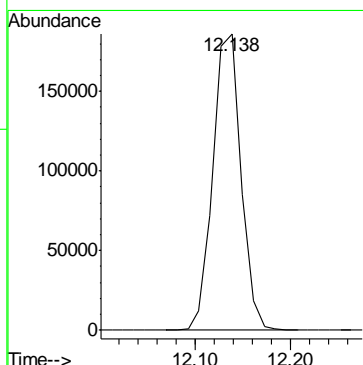
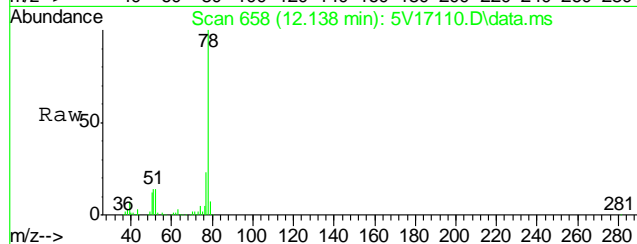
#43
Heptane
Concen: 56.94 ug/l
RT: 12.332 min Scan# 675
Delta R.T. -0.000 min
Lab File: 5V17110.D
Acq: 22 Aug 2011 6:55 pm

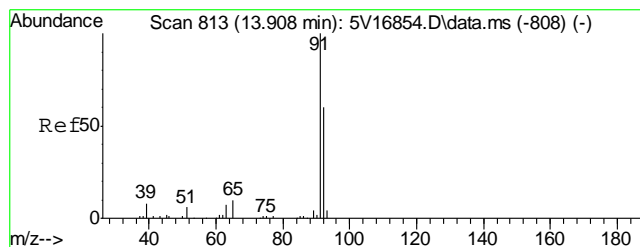
Tgt Ion	Ratio	Lower	Upper
43	100		
57	60.4	37.4	77.4
71	67.0	46.4	86.4
100	20.6	0.8	40.8



#50
Benzene
Concen: 25.33 ug/l
RT: 12.138 min Scan# 658
Delta R.T. -0.000 min
Lab File: 5V17110.D
Acq: 22 Aug 2011 6:55 pm

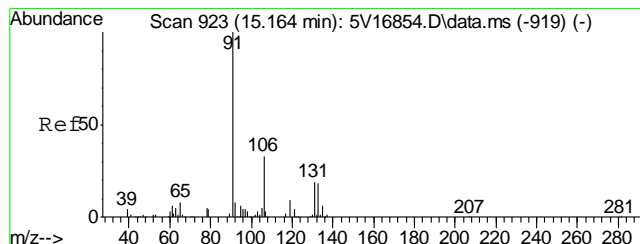
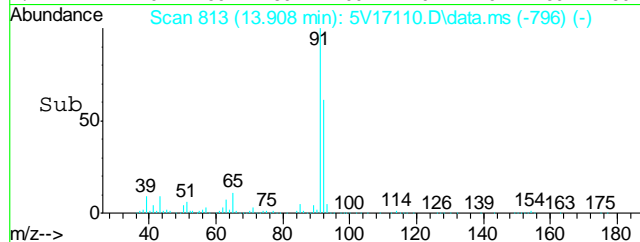
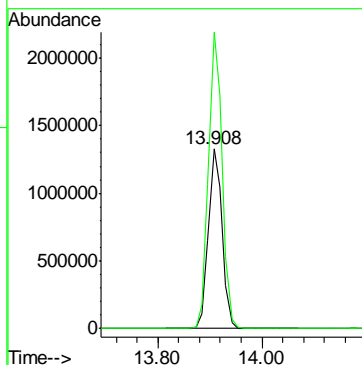
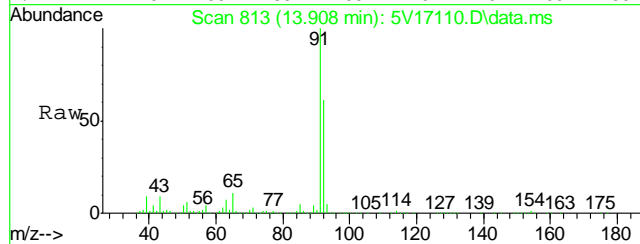
Tgt Ion: 78 Resp: 381725





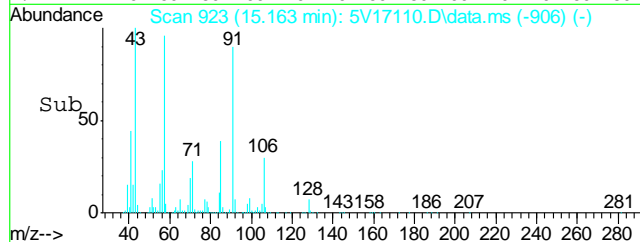
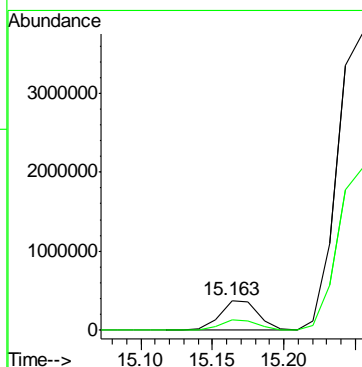
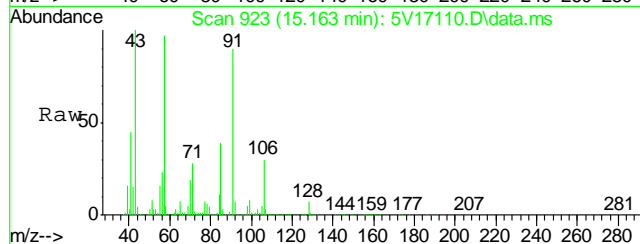
#62
Toluene
Concen: 221.79 ug/l
RT: 13.908 min Scan# 813
Delta R.T. -0.000 min
Lab File: 5V17110.D
Acq: 22 Aug 2011 6:55 pm

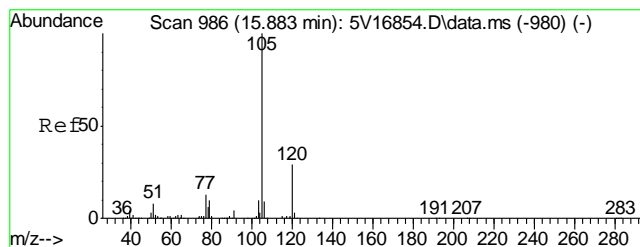
Tgt Ion: 92 Resp: 2398078
Ion Ratio Lower Upper
92 100
91 165.1 146.1 186.1



#66
Ethylbenzene
Concen: 33.99 ug/l
RT: 15.163 min Scan# 923
Delta R.T. -0.000 min
Lab File: 5V17110.D
Acq: 22 Aug 2011 6:55 pm

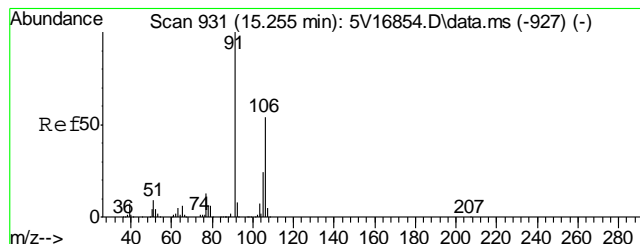
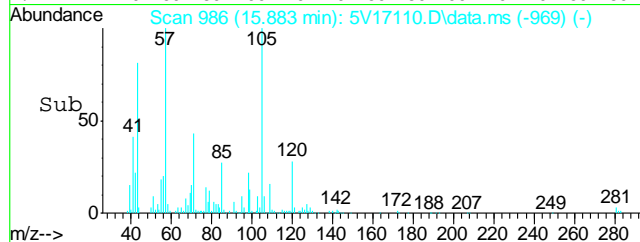
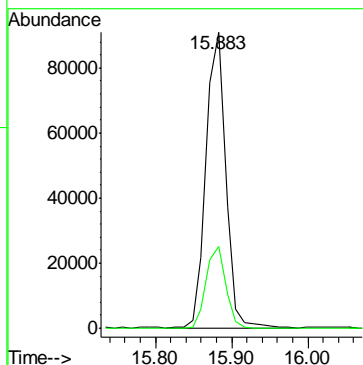
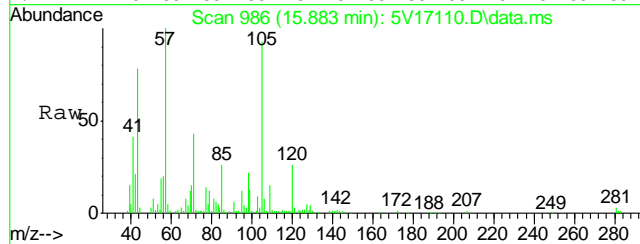
Tgt Ion: 91 Resp: 688358
Ion Ratio Lower Upper
91 100
106 33.7 13.0 53.0





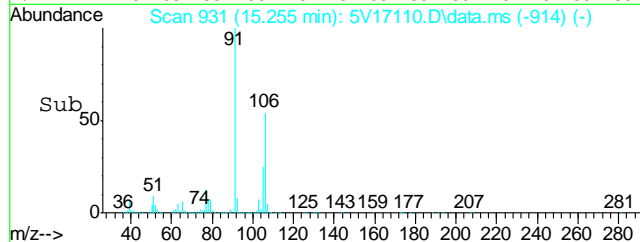
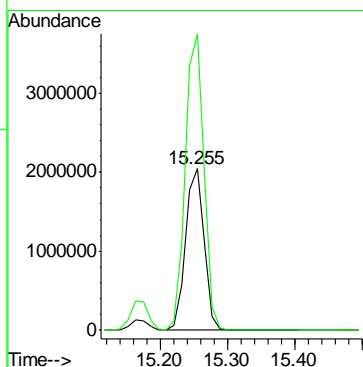
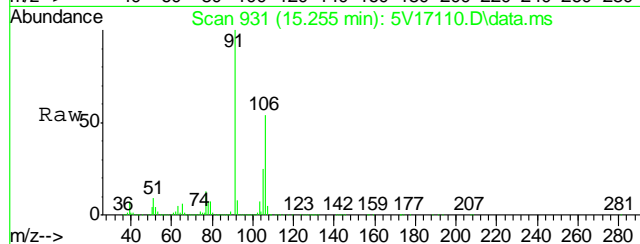
#68
Isopropylbenzene
Concen: 8.12 ug/l
RT: 15.883 min Scan# 986
Delta R.T. -0.000 min
Lab File: 5V17110.D
Acq: 22 Aug 2011 6:55 pm

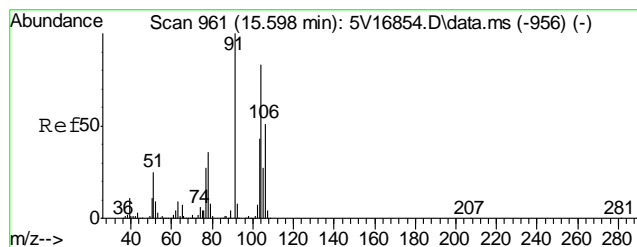
Tgt Ion	Ratio	Lower	Upper
105	100		
120	27.3	22.6	33.8



#72
m,p-xylene
Concen: 461.09 ug/l
RT: 15.255 min Scan# 931
Delta R.T. -0.000 min
Lab File: 5V17110.D
Acq: 22 Aug 2011 6:55 pm

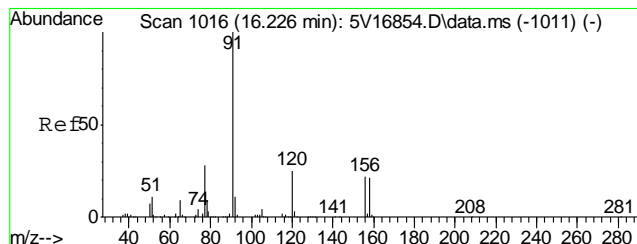
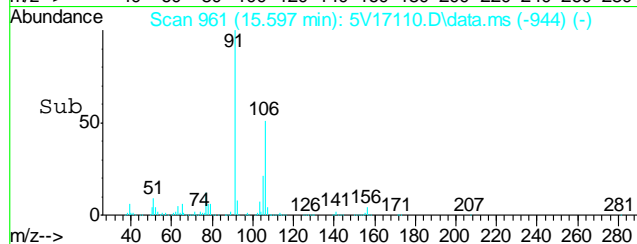
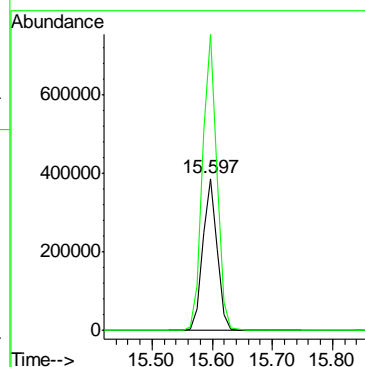
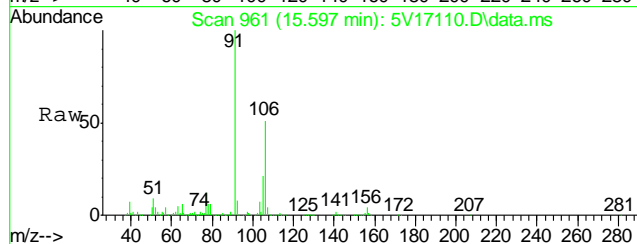
Tgt Ion	Ratio	Lower	Upper
106	100		
91	185.7	165.9	205.9





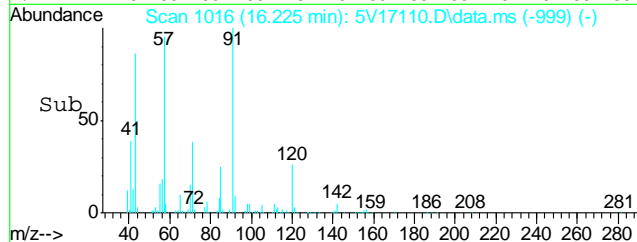
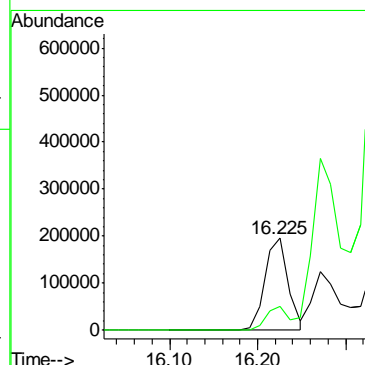
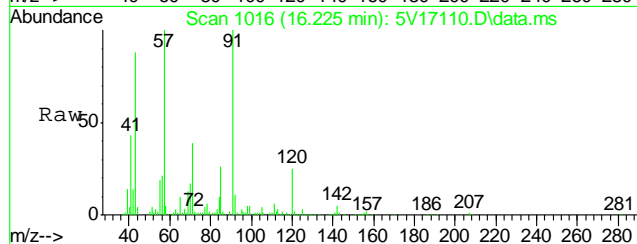
#73
o-xylene
Concen: 79.34 ug/l
RT: 15.597 min Scan# 961
Delta R.T. -0.000 min
Lab File: 5V17110.D
Acq: 22 Aug 2011 6:55 pm

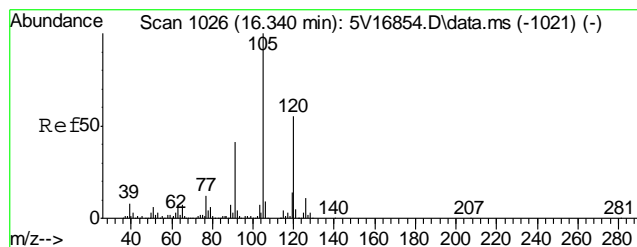
Tgt Ion: 106 Resp: 648330
Ion Ratio Lower Upper
106 100
91 196.5 157.4 236.2



#77
n-Propylbenzene
Concen: 14.27 ug/l
RT: 16.225 min Scan# 1016
Delta R.T. -0.000 min
Lab File: 5V17110.D
Acq: 22 Aug 2011 6:55 pm

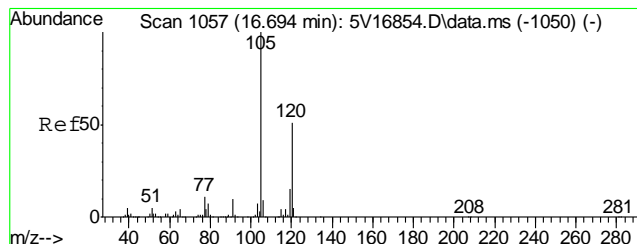
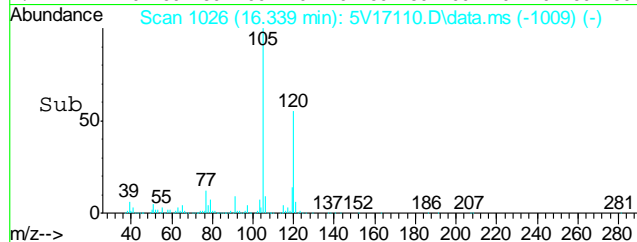
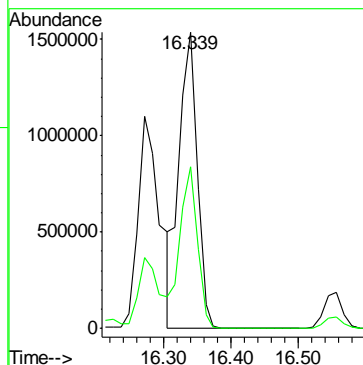
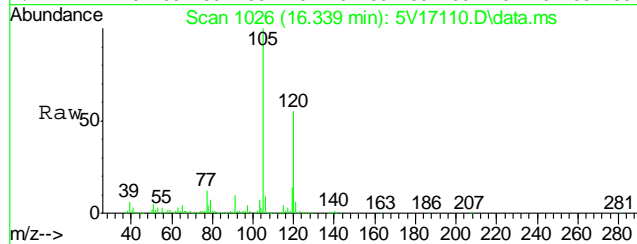
Tgt Ion: 91 Resp: 352570
Ion Ratio Lower Upper
91 100
120 0.0 19.9 29.9#





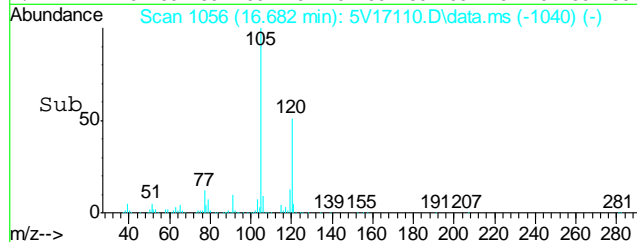
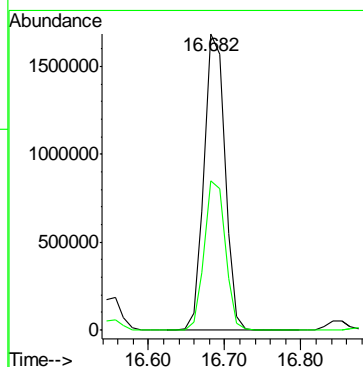
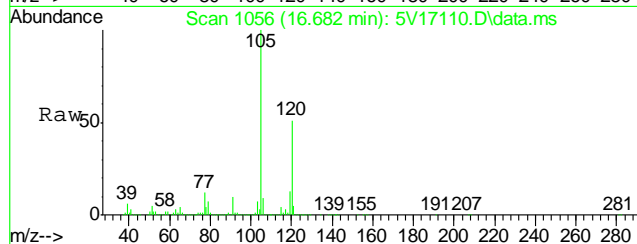
#80
1,3,5-Trimethylbenzene
Concen: 161.16 ug/l
RT: 16.339 min Scan# 1026
Delta R.T. -0.000 min
Lab File: 5V17110.D
Acq: 22 Aug 2011 6:55 pm

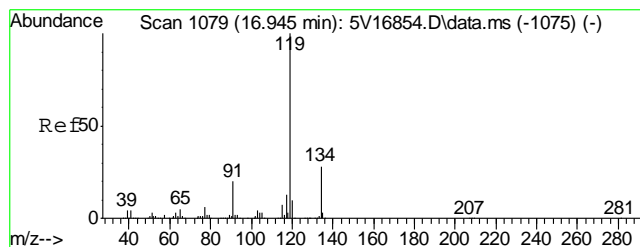
Tgt Ion	Ratio	Lower	Upper
105	100		
120	52.8	43.1	64.7



#82
1,2,4-Trimethylbenzene
Concen: 176.82 ug/l
RT: 16.682 min Scan# 1056
Delta R.T. -0.012 min
Lab File: 5V17110.D
Acq: 22 Aug 2011 6:55 pm

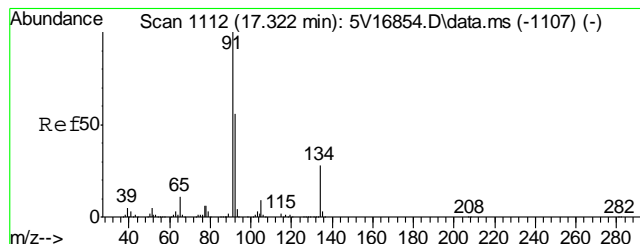
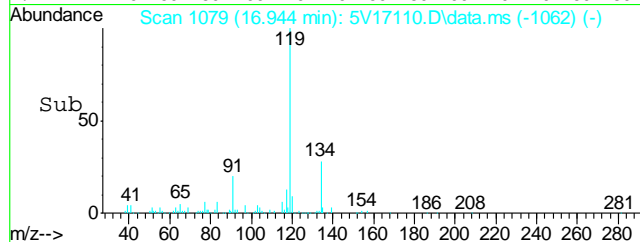
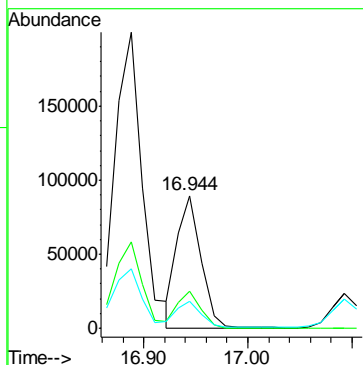
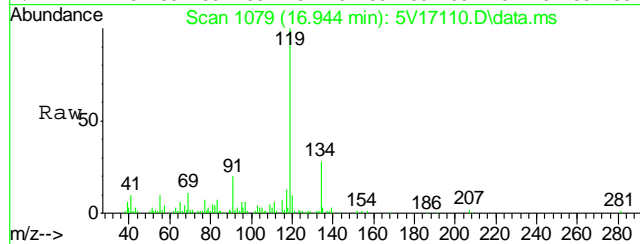
Tgt Ion	Ratio	Lower	Upper
105	100		
120	50.9	46.8	70.2





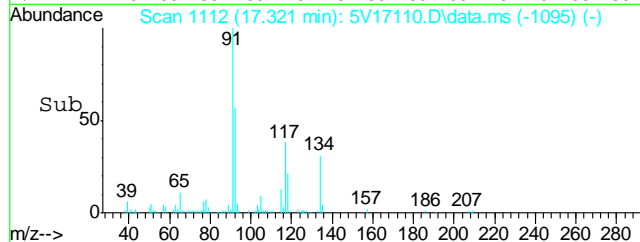
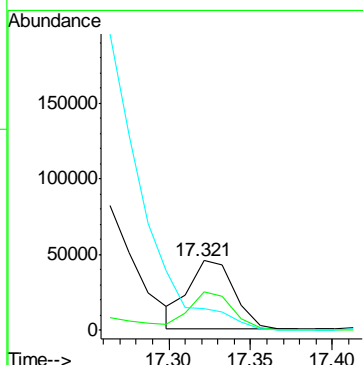
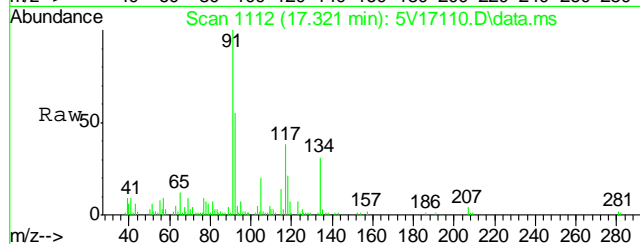
#86
p-Isopropyltoluene
Concen: 7.15 ug/l
RT: 16.944 min Scan# 1079
Delta R.T. -0.000 min
Lab File: 5V17110.D
Acq: 22 Aug 2011 6:55 pm

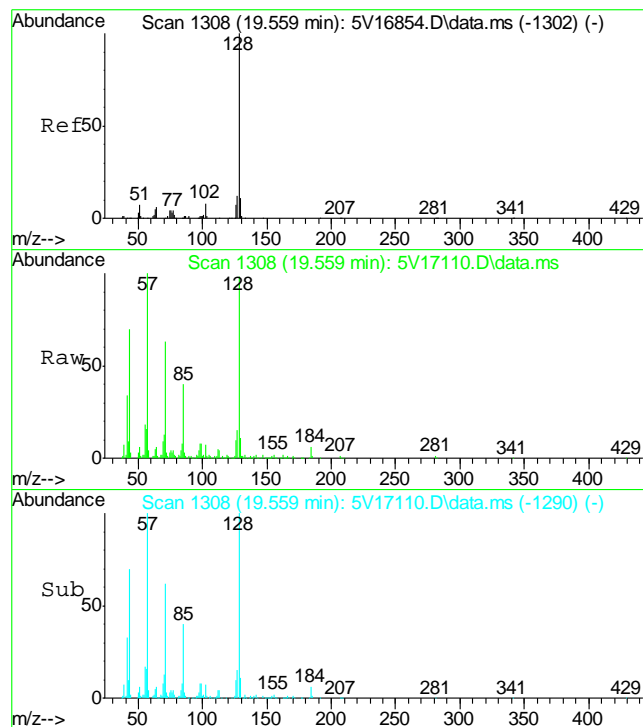
Tgt Ion:	119	Resp:	143069
Ion Ratio	Lower	Upper	
119	100		
134	27.5	22.1	33.1
91	19.8	15.9	23.9



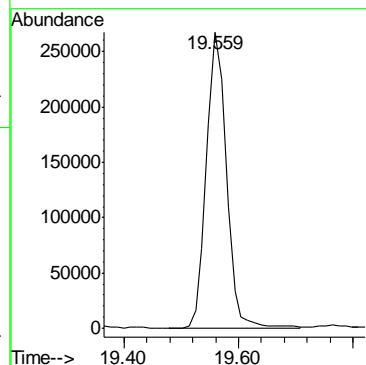
#88
n-Butylbenzene
Concen: 4.68 ug/l
RT: 17.321 min Scan# 1112
Delta R.T. -0.000 min
Lab File: 5V17110.D
Acq: 22 Aug 2011 6:55 pm

Tgt Ion:	91	Resp:	88079
Ion Ratio	Lower	Upper	
91	100		
92	52.5	44.6	67.0
134	0.0	23.4	35.0#





#91
Naphthalene
Concen: 43.08 ug/l
RT: 19.559 min Scan# 1308
Delta R.T. -0.000 min
Lab File: 5V17110.D
Acq: 22 Aug 2011 6:55 pm
Tgt Ion:128 Resp: 646011



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5082311.S\
 Data File : 5V17128.D
 Acq On : 23 Aug 2011 2:49 pm
 Operator : DONC
 Sample : D26811-1, 2000x
 Misc : MS2609,V5V1015,5.103,,5,10,1
 ALS Vial : 14 Sample Multiplier: 1

Quant Time: Aug 24 08:52:00 2011
 Quant Method : C:\msdchem\1\METHODS\V5AP998TVH998.M
 Quant Title : 8260
 QLast Update : Wed Aug 10 06:49:20 2011
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	252588	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.446	114	402664	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.095	117	471142	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.070	152	300770	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.035	102	46936	57.76	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	115.52%
61) Toluene-d8	13.851	98	923387	59.28	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	118.56%
69) 4-Bromofluorobenzene	16.043	95	343112	53.68	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	107.36%

Target Compounds

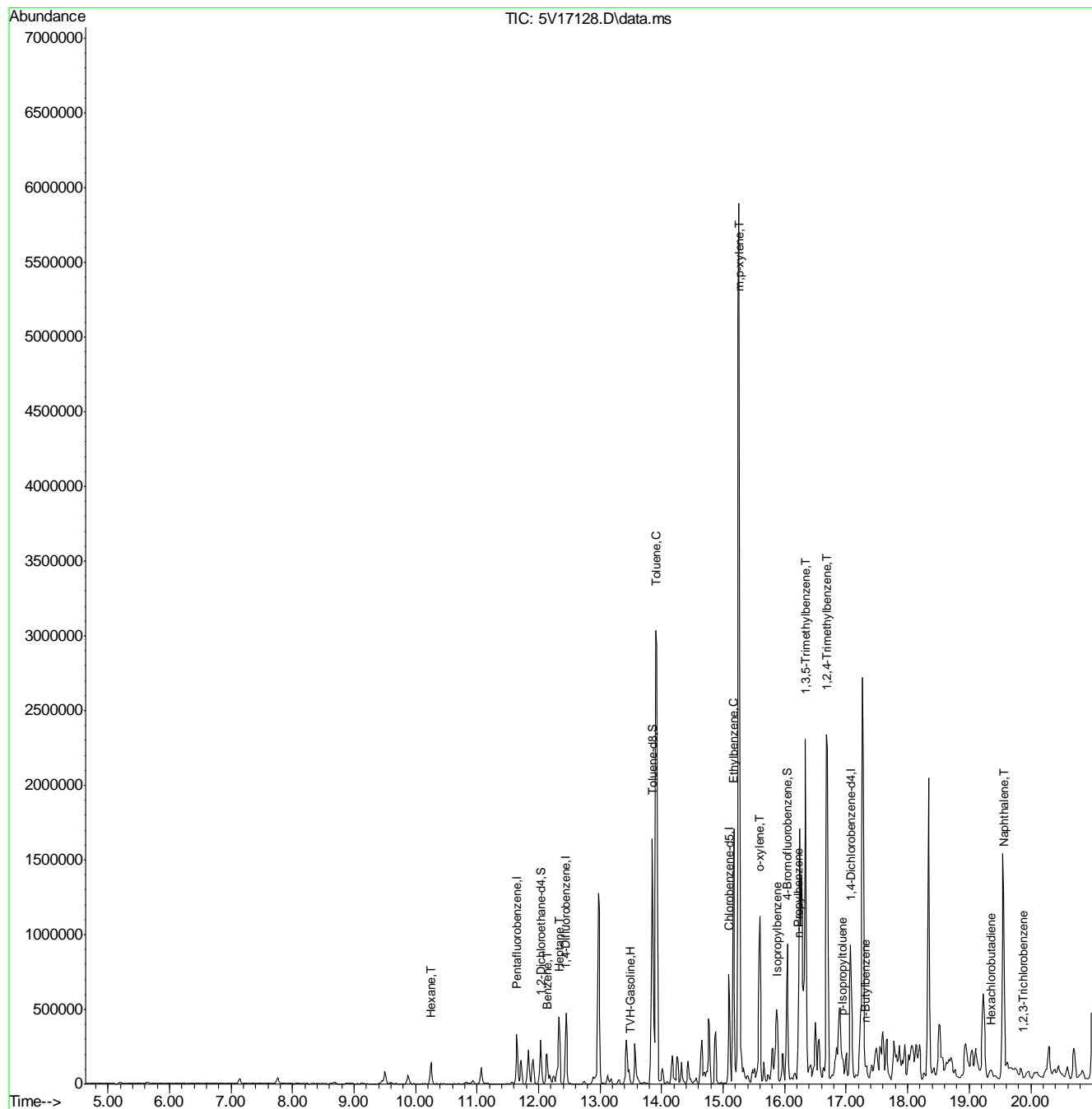
						Qvalue
1) TVH-Gasoline	13.491	TIC	50226053m	2344.12	ug/l	
41) Hexane	10.254	57	78918	14.67	ug/l	100
43) Heptane	12.332	43	175867	29.63	ug/l	98
50) Benzene	12.138	78	189906	12.25	ug/l	100
62) Toluene	13.908	92	1241063	110.72	ug/l	99
66) Ethylbenzene	15.175	91	344556	16.41	ug/l	99
68) Isopropylbenzene	15.883	105	77508	3.69	ug/l	99
72) m,p-xylene	15.255	106	2073633	239.51	ug/l	99
73) o-xylene	15.597	106	323864	38.23	ug/l	100
77) n-Propylbenzene	16.225	91	170223	6.79	ug/l #	50
80) 1,3,5-Trimethylbenzene	16.339	105	1420014	79.71	ug/l	98
82) 1,2,4-Trimethylbenzene	16.682	105	1591761	86.89	ug/l	89
86) p-Isopropyltoluene	16.945	119	69479	3.43	ug/l	99
88) n-Butylbenzene	17.321	91	44067	2.31	ug/l #	81
91) Naphthalene	19.559	128	318565	21.28	ug/l	100
92) Hexachlorobutadiene	19.354	225	1812	0.33	ug/l #	89
93) 1,2,3-Trichlorobenzene	19.879	180	5509	0.73	ug/l #	96

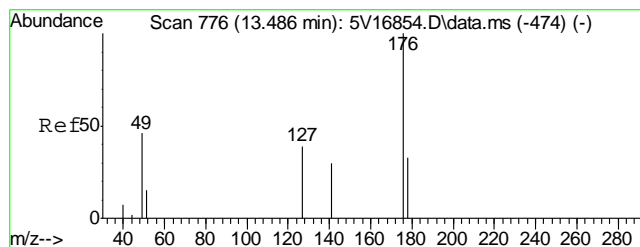
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5082311.S\
Data File : 5V17128.D
Acq On : 23 Aug 2011 2:49 pm
Operator : DONC
Sample : D26811-1, 2000x
Misc : MS2609,V5V1015,5.103,,5,10,1
ALS Vial : 14 Sample Multiplier: 1

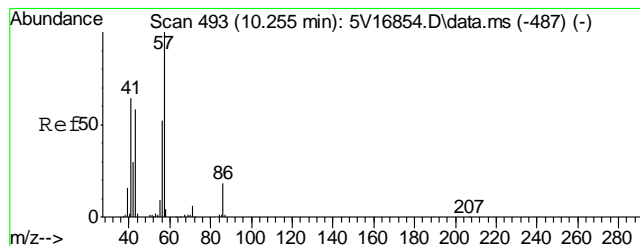
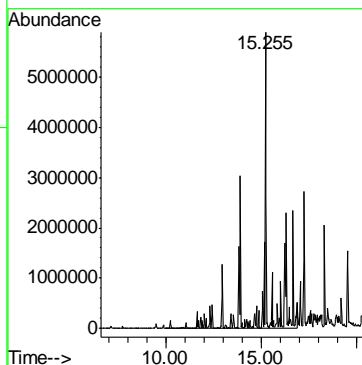
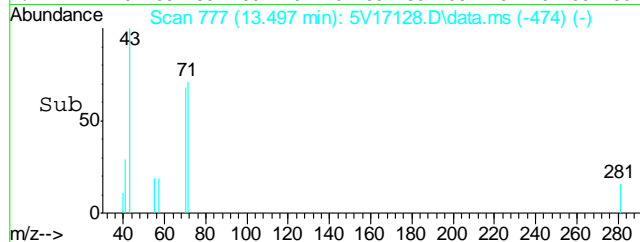
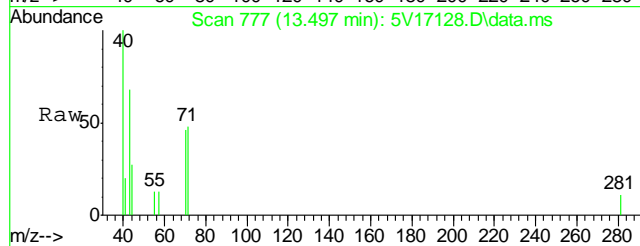
Quant Time: Aug 24 08:52:00 2011
Quant Method : C:\msdchem\1\METHODS\V5AP998TVH998.M
Quant Title : 8260
QLast Update : Wed Aug 10 06:49:20 2011
Response via : Initial Calibration





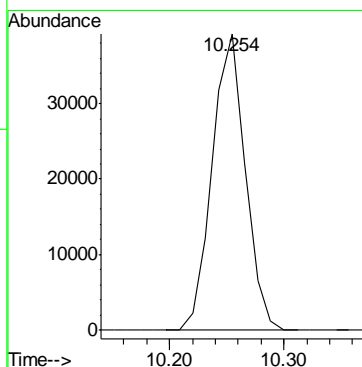
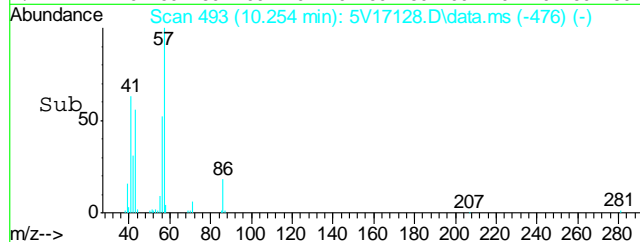
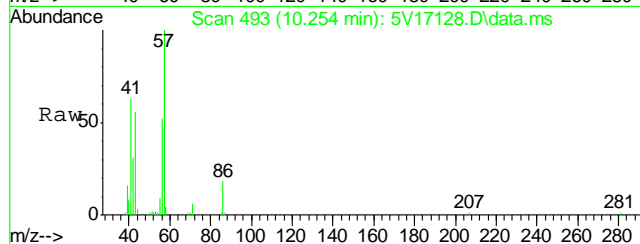
#1
TVH-Gasoline
Concen: 2344.12 ug/l m
RT: 13.491 min Scan# 777
Delta R.T. 0.000 min
Lab File: 5V17128.D
Acq: 23 Aug 2011 2:49 pm

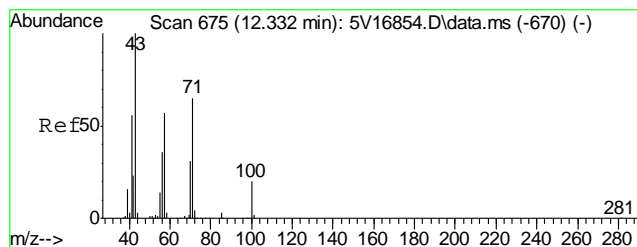
Tgt Ion:TIC Resp:50226053



#41
Hexane
Concen: 14.67 ug/l
RT: 10.254 min Scan# 493
Delta R.T. -0.000 min
Lab File: 5V17128.D
Acq: 23 Aug 2011 2:49 pm

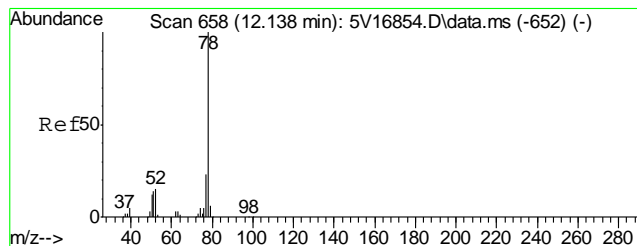
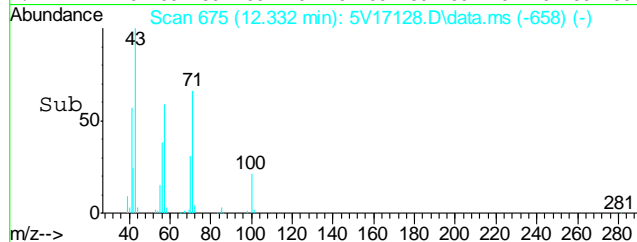
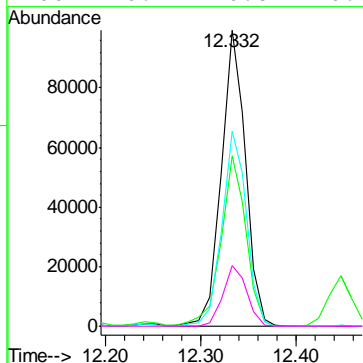
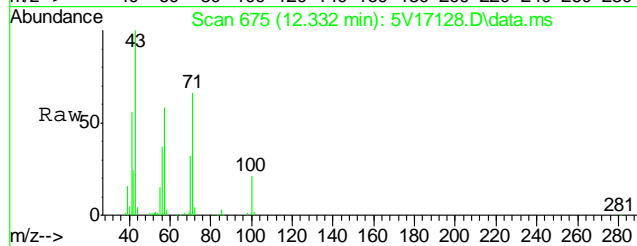
Tgt Ion: 57 Resp: 78918





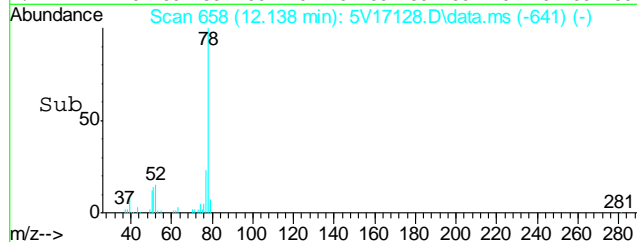
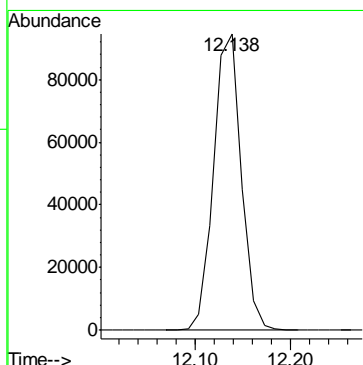
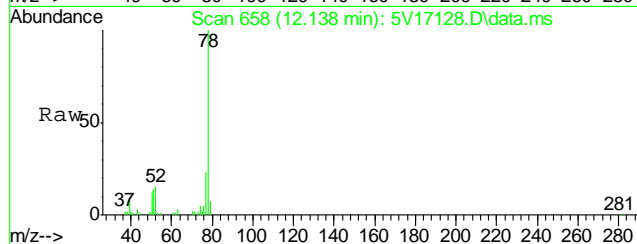
#43
Heptane
Concen: 29.63 ug/l
RT: 12.332 min Scan# 675
Delta R.T. -0.000 min
Lab File: 5V17128.D
Acq: 23 Aug 2011 2:49 pm

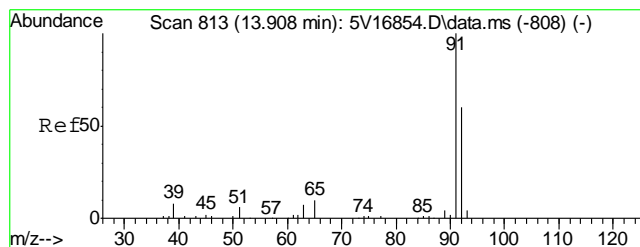
Tgt Ion	Ratio	Lower	Upper
43	100		
57	59.6	37.4	77.4
71	66.8	46.4	86.4
100	20.4	0.8	40.8



#50
Benzene
Concen: 12.25 ug/l
RT: 12.138 min Scan# 658
Delta R.T. -0.000 min
Lab File: 5V17128.D
Acq: 23 Aug 2011 2:49 pm

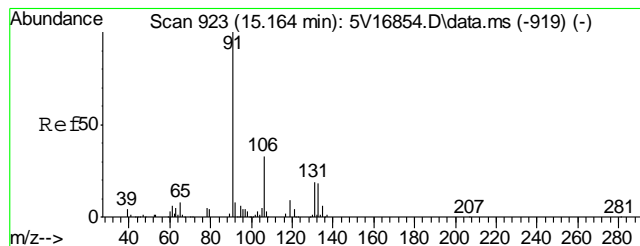
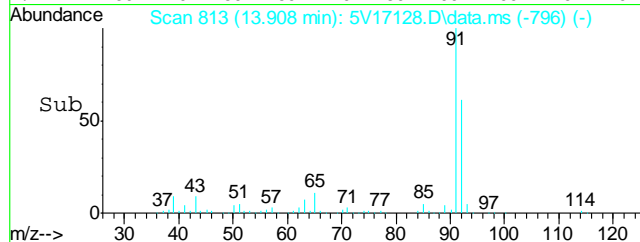
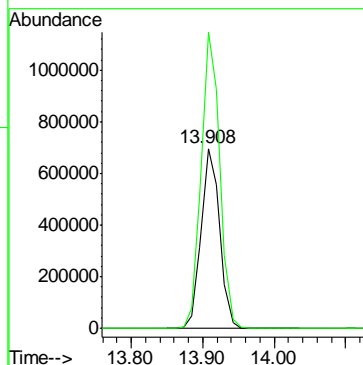
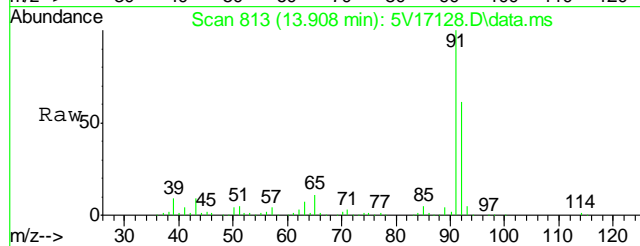
Tgt Ion: 78 Resp: 189906





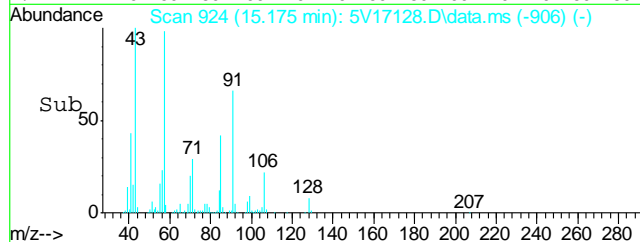
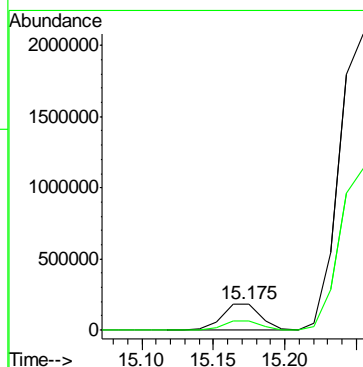
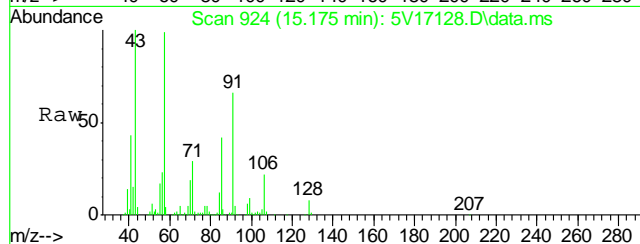
#62
Toluene
Concen: 110.72 ug/l
RT: 13.908 min Scan# 813
Delta R.T. -0.000 min
Lab File: 5V17128.D
Acq: 23 Aug 2011 2:49 pm

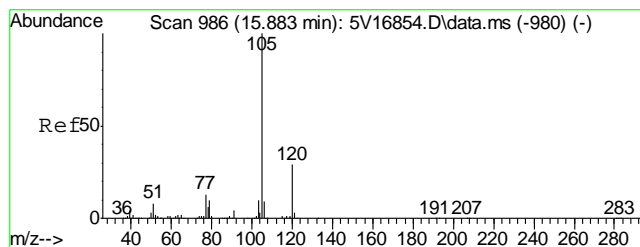
Tgt Ion: 92 Resp: 1241063
Ion Ratio Lower Upper
92 100
91 165.3 146.1 186.1



#66
Ethylbenzene
Concen: 16.41 ug/l
RT: 15.175 min Scan# 924
Delta R.T. 0.011 min
Lab File: 5V17128.D
Acq: 23 Aug 2011 2:49 pm

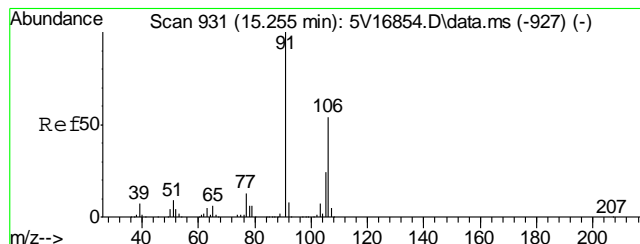
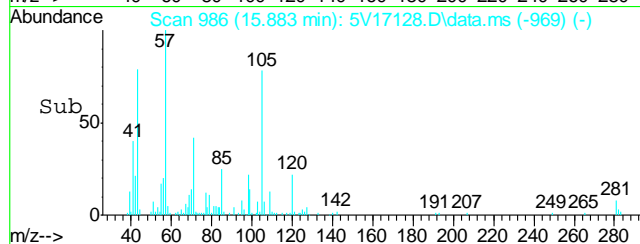
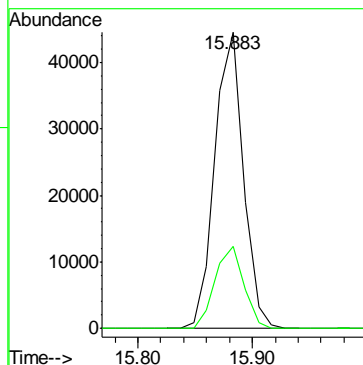
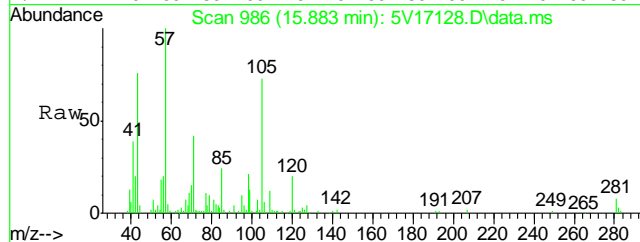
Tgt Ion: 91 Resp: 344556
Ion Ratio Lower Upper
91 100
106 33.4 13.0 53.0





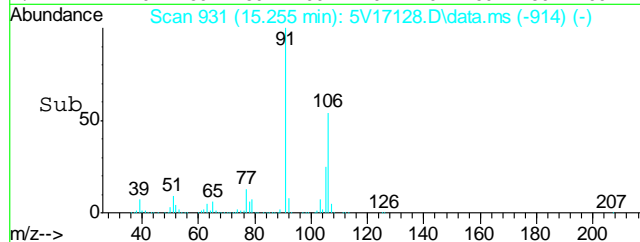
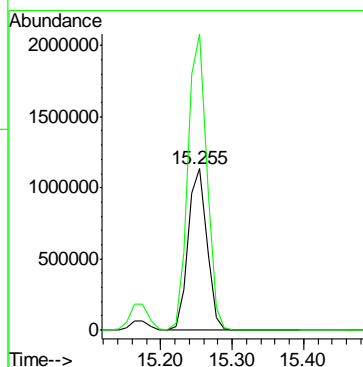
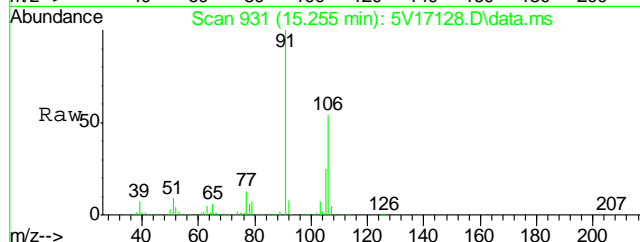
#68
Isopropylbenzene
Concen: 3.69 ug/l
RT: 15.883 min Scan# 986
Delta R.T. -0.000 min
Lab File: 5V17128.D
Acq: 23 Aug 2011 2:49 pm

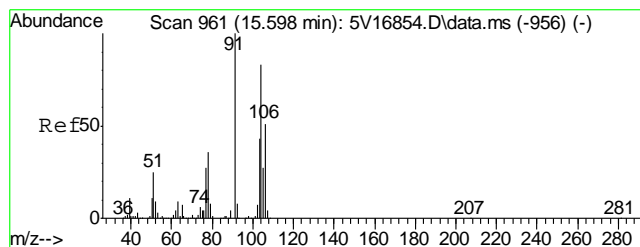
Tgt Ion	Ratio	Lower	Upper
105	100		
120	27.8	22.6	33.8



#72
m,p-xylene
Concen: 239.51 ug/l
RT: 15.255 min Scan# 931
Delta R.T. -0.000 min
Lab File: 5V17128.D
Acq: 23 Aug 2011 2:49 pm

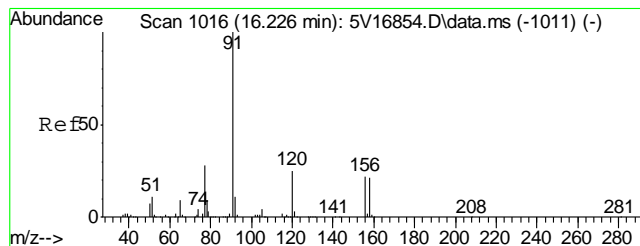
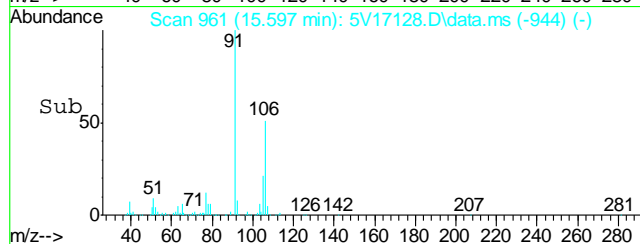
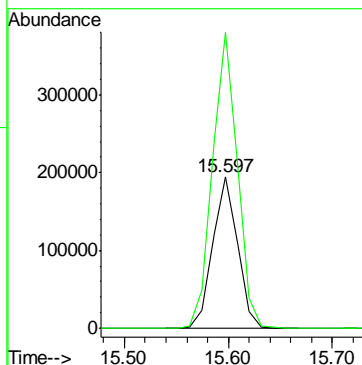
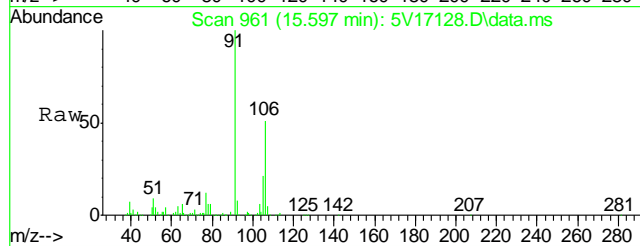
Tgt Ion	Ratio	Lower	Upper
106	100		
91	184.7	165.9	205.9





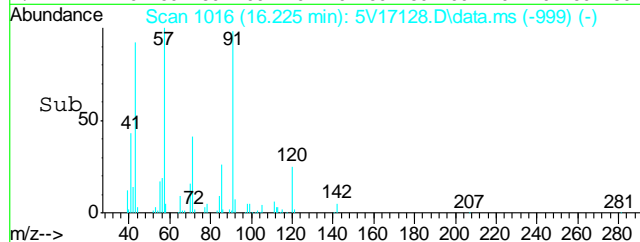
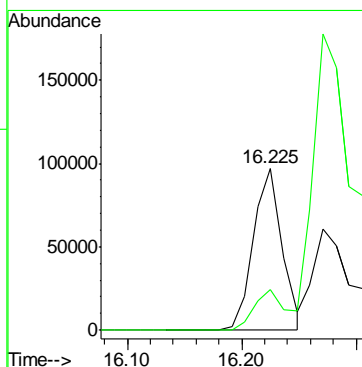
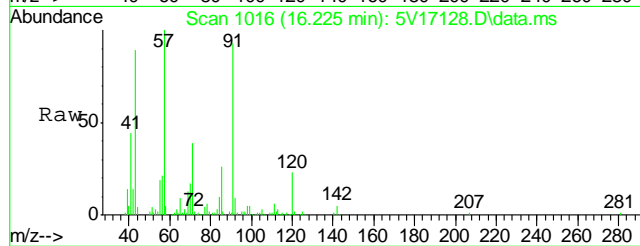
#73
o-xylene
Concen: 38.23 ug/l
RT: 15.597 min Scan# 961
Delta R.T. -0.000 min
Lab File: 5V17128.D
Acq: 23 Aug 2011 2:49 pm

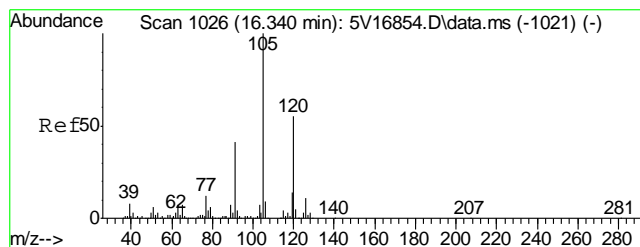
Tgt Ion:	106	Resp:	323864
Ion Ratio	Lower	Upper	
106	100		
91	196.3	157.4	236.2



#77
n-Propylbenzene
Concen: 6.79 ug/l
RT: 16.225 min Scan# 1016
Delta R.T. -0.000 min
Lab File: 5V17128.D
Acq: 23 Aug 2011 2:49 pm

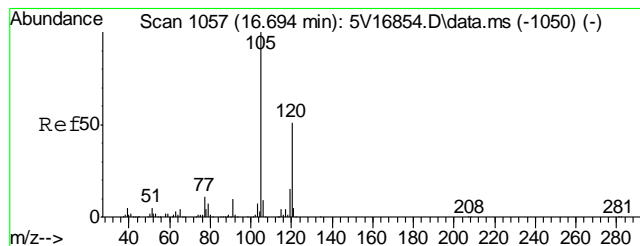
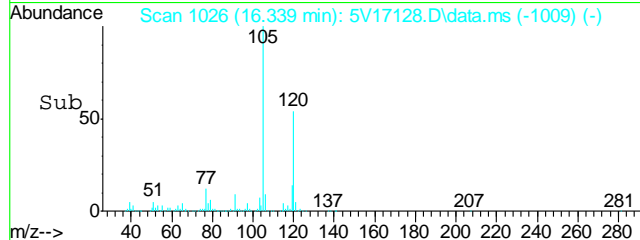
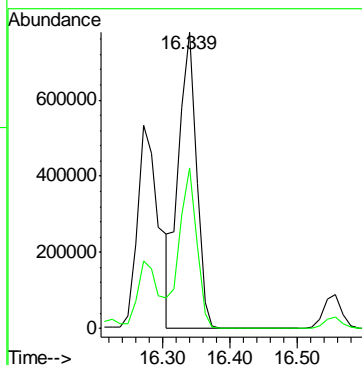
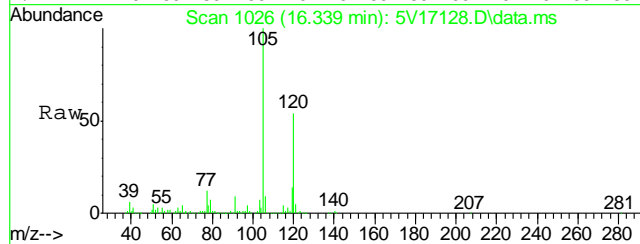
Tgt Ion:	91	Resp:	170223
Ion Ratio	Lower	Upper	
91	100		
120	0.0	19.9	29.9#





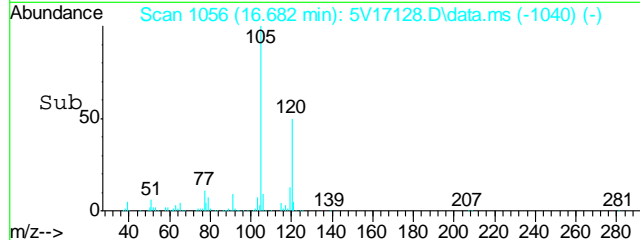
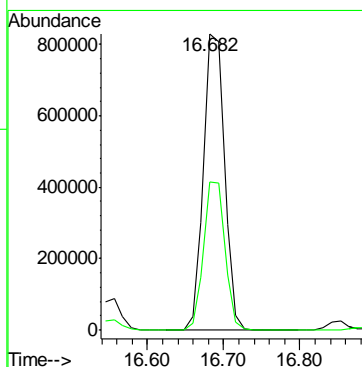
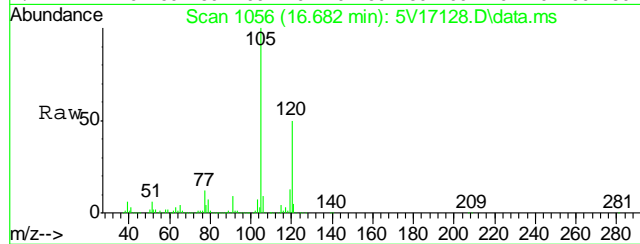
#80
1,3,5-Trimethylbenzene
Concen: 79.71 ug/l
RT: 16.339 min Scan# 1026
Delta R.T. -0.000 min
Lab File: 5V17128.D
Acq: 23 Aug 2011 2:49 pm

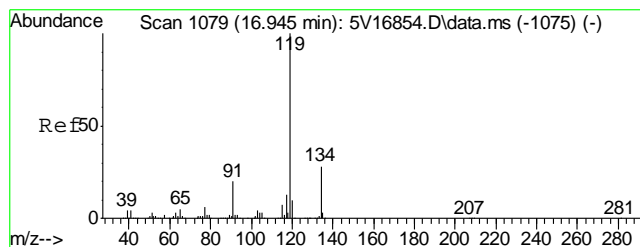
Tgt Ion:105 Resp: 1420014
Ion Ratio Lower Upper
105 100
120 52.2 43.1 64.7



#82
1,2,4-Trimethylbenzene
Concen: 86.89 ug/l
RT: 16.682 min Scan# 1056
Delta R.T. -0.012 min
Lab File: 5V17128.D
Acq: 23 Aug 2011 2:49 pm

Tgt Ion:105 Resp: 1591761
Ion Ratio Lower Upper
105 100
120 50.5 46.8 70.2





#86

p-Isopropyltoluene

Concen: 3.43 ug/l

RT: 16.945 min Scan# 1079

Delta R.T. -0.000 min

Lab File: 5V17128.D

Acq: 23 Aug 2011 2:49 pm

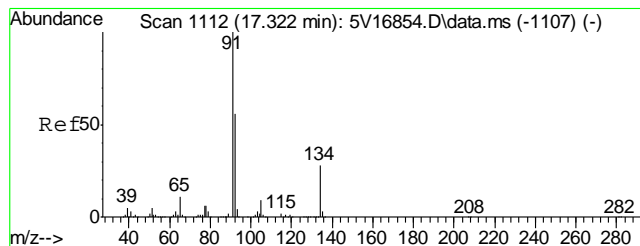
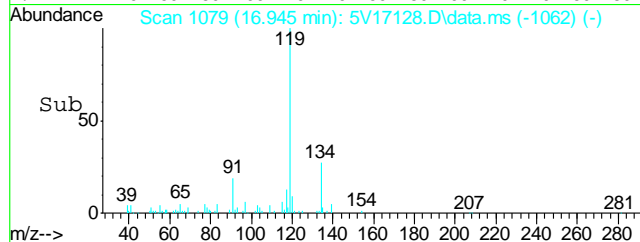
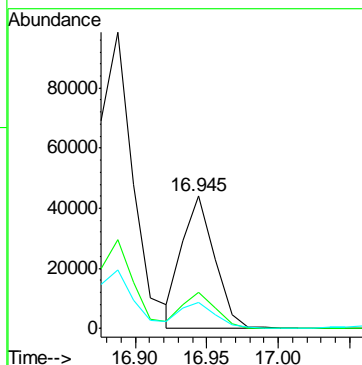
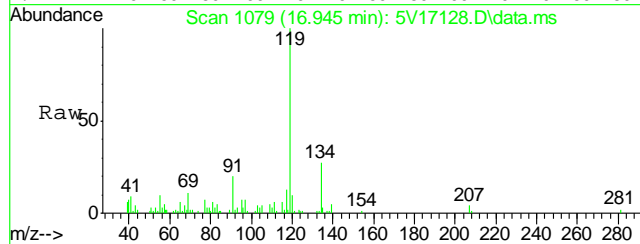
Tgt Ion: 119 Resp: 69479

Ion Ratio Lower Upper

119 100

134 27.7 22.1 33.1

91 21.0 15.9 23.9



#88

n-Butylbenzene

Concen: 2.31 ug/l

RT: 17.321 min Scan# 1112

Delta R.T. -0.000 min

Lab File: 5V17128.D

Acq: 23 Aug 2011 2:49 pm

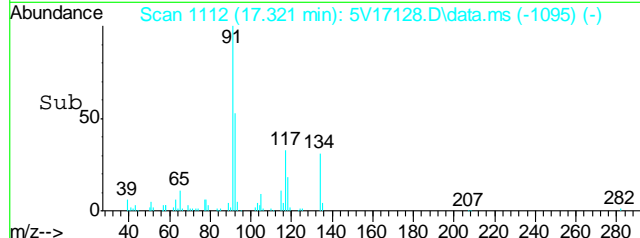
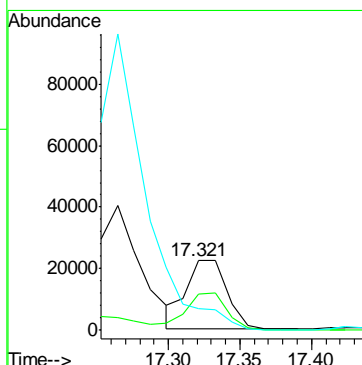
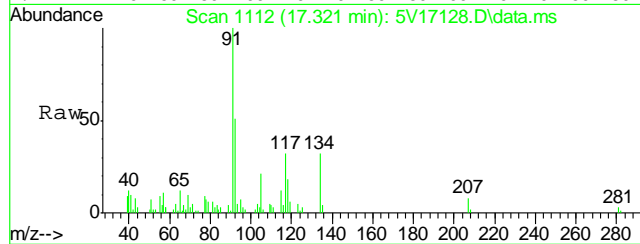
Tgt Ion: 91 Resp: 44067

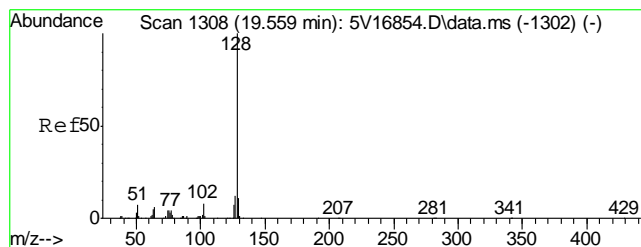
Ion Ratio Lower Upper

91 100

92 55.8 44.6 67.0

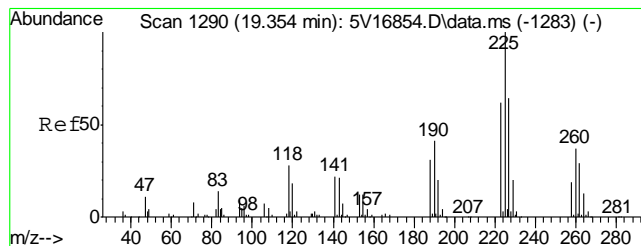
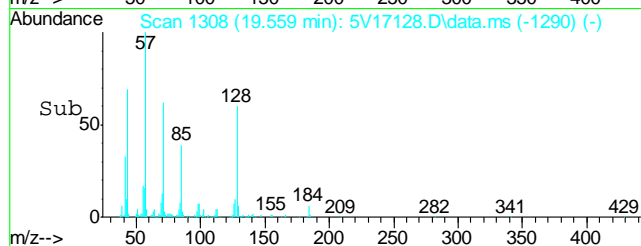
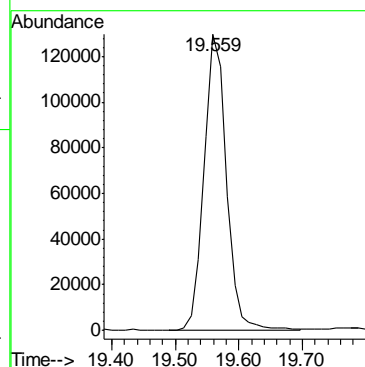
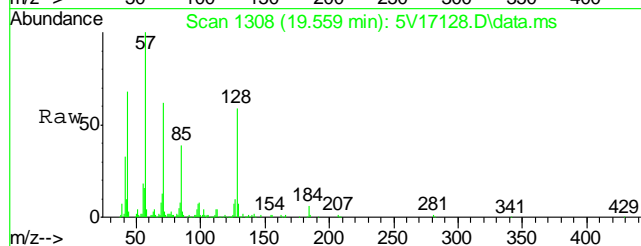
134 0.0 23.4 35.0#





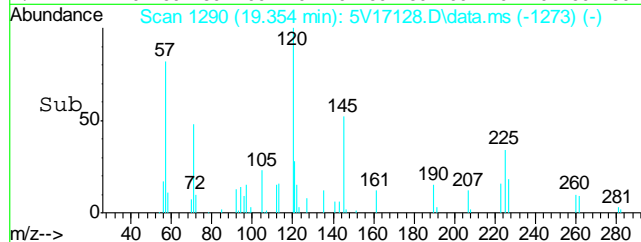
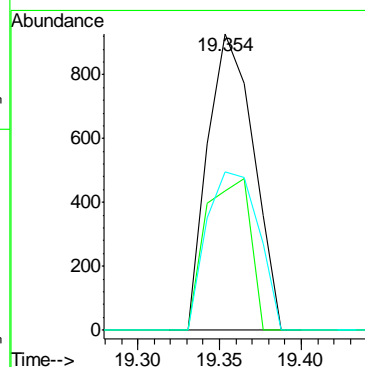
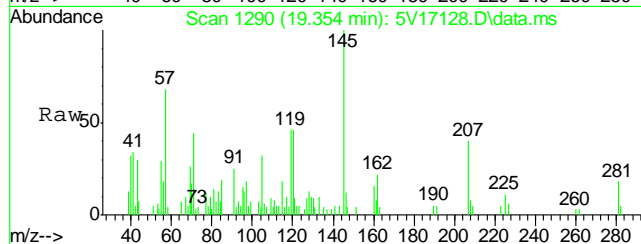
#91
Naphthalene
Concen: 21.28 ug/l
RT: 19.559 min Scan# 1308
Delta R.T. 0.000 min
Lab File: 5V17128.D
Acq: 23 Aug 2011 2:49 pm

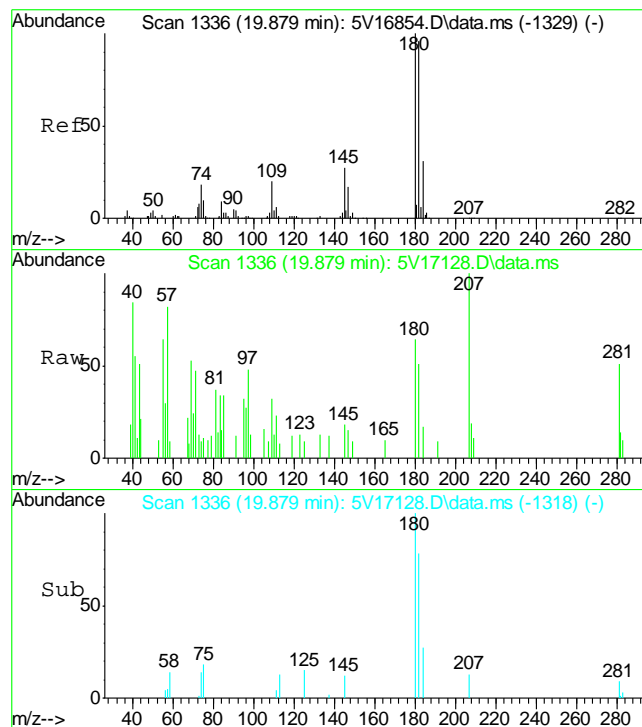
Tgt Ion:128 Resp: 318565



#92
Hexachlorobutadiene
Concen: 0.33 ug/l
RT: 19.354 min Scan# 1290
Delta R.T. -0.000 min
Lab File: 5V17128.D
Acq: 23 Aug 2011 2:49 pm

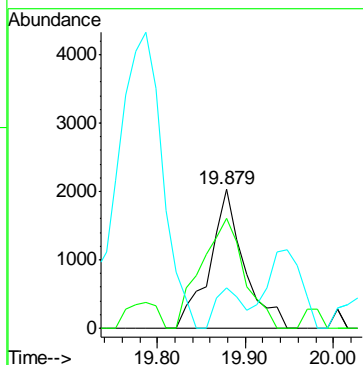
Tgt Ion:225 Resp: 1812
Ion Ratio Lower Upper
225 100
223 49.4 49.5 74.3#
227 60.2 51.3 76.9





#93
1,2,3-Trichlorobenzene
Concen: 0.73 ug/l
RT: 19.879 min Scan# 1336
Delta R.T. 0.001 min
Lab File: 5V17128.D
Acq: 23 Aug 2011 2:49 pm

Tgt Ion:	180	Resp:	5509
Ion Ratio	Lower	Upper	
180	100		
182	98.9	77.6	116.4
145	21.8	22.2	33.4



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5082211.S\
 Data File : 5V17108.D
 Acq On : 22 Aug 2011 5:52 pm
 Operator : DONC
 Sample : D26811-2, 500x
 Misc : MS2608,V5V1014,5.126,,10,5,1
 ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 23 09:10:10 2011
 Quant Method : C:\msdchem\1\METHODS\V5AP998TVH998.M
 Quant Title : 8260
 QLast Update : Wed Aug 10 06:49:20 2011
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	243840	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.446	114	385380	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.095	117	450332	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.070	152	289636	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.035	102	47547	60.61	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	121.22%
61) Toluene-d8	13.851	98	915044	61.46	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	122.92%
69) 4-Bromofluorobenzene	16.043	95	353222	57.81	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	115.62%

Target Compounds

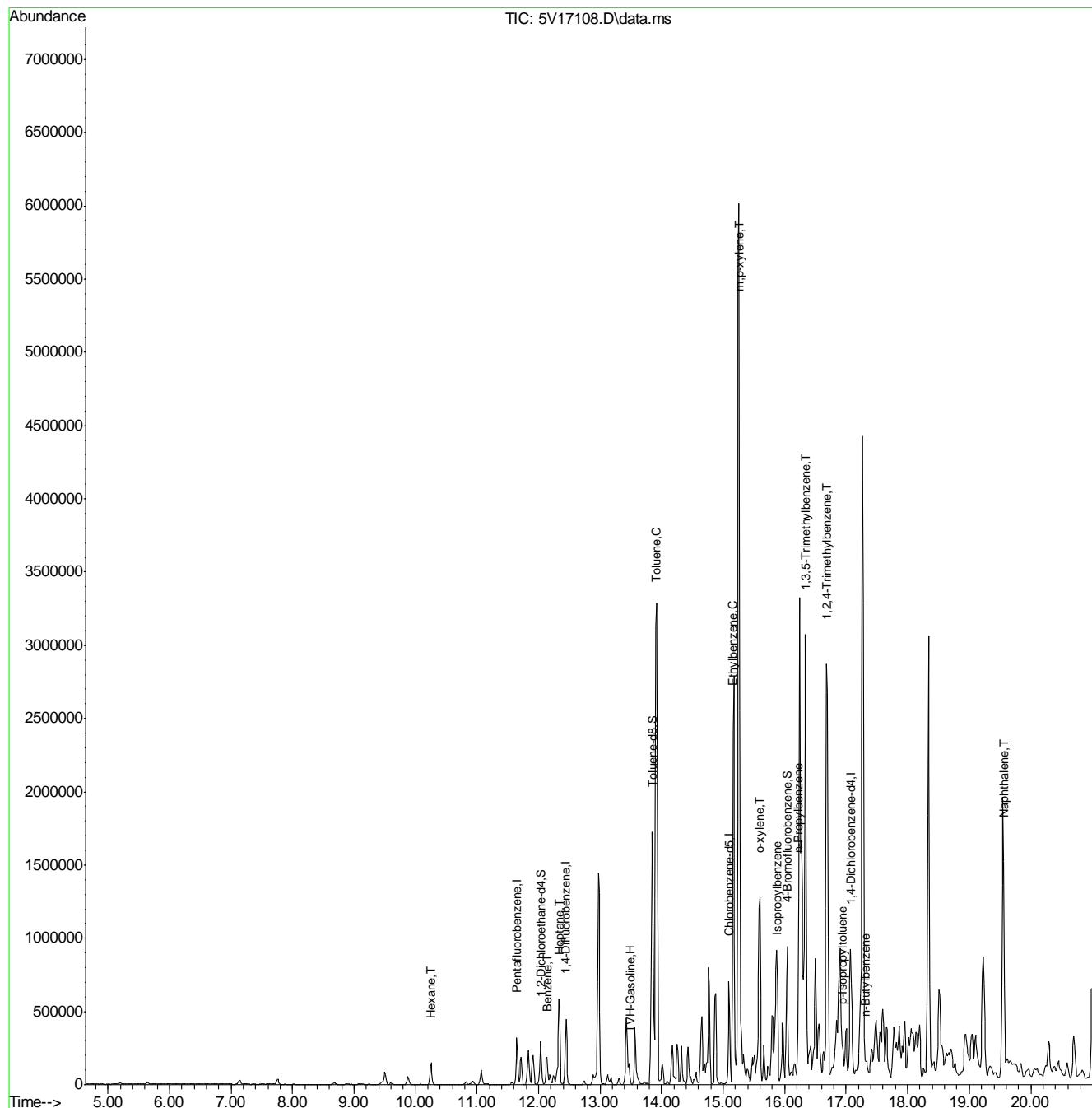
						Qvalue
1) TVH-Gasoline	13.491	TIC	69310652m	3234.83	ug/l	
41) Hexane	10.254	57	80861	15.70	ug/l	100
43) Heptane	12.332	43	223720	39.38	ug/l	97
50) Benzene	12.138	78	177049	11.93	ug/l	100
62) Toluene	13.908	92	1155803	107.87	ug/l	99
66) Ethylbenzene	15.164	91	324341	16.16	ug/l	99
68) Isopropylbenzene	15.883	105	81990	4.08	ug/l	98
72) m,p-xylene	15.255	106	2133746	257.85	ug/l	100
73) o-xylene	15.597	106	349034	43.11	ug/l	100
77) n-Propylbenzene	16.225	91	174459	7.23	ug/l #	50
80) 1,3,5-Trimethylbenzene	16.339	105	1787732	104.21	ug/l	99
82) 1,2,4-Trimethylbenzene	16.682	105	1898806	107.63	ug/l	89
86) p-Isopropyltoluene	16.945	119	83501	4.27	ug/l	97
88) n-Butylbenzene	17.321	91	48564	2.64	ug/l #	79
91) Naphthalene	19.559	128	321888	22.30	ug/l	100

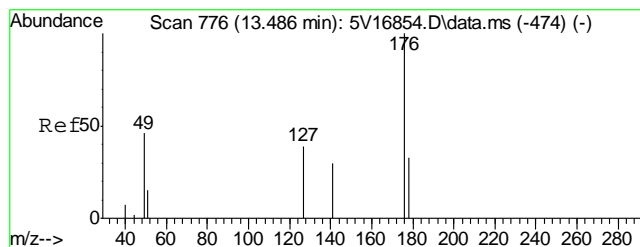
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5082211.S\
Data File : 5V17108.D
Acq On : 22 Aug 2011 5:52 pm
Operator : DONC
Sample : D26811-2, 500x
Misc : MS2608,V5V1014,5.126,,10,5,1
ALS Vial : 19 Sample Multiplier: 1

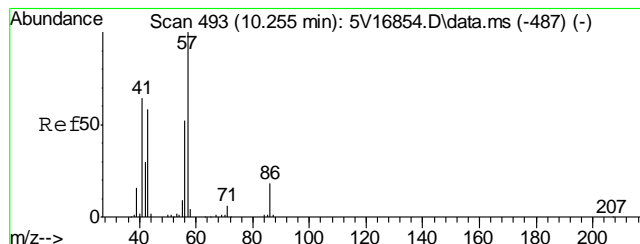
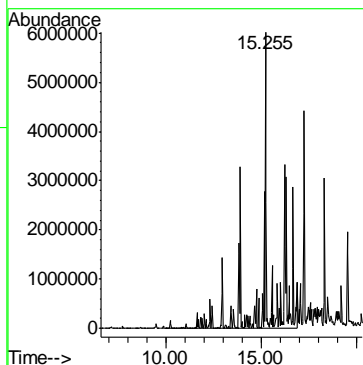
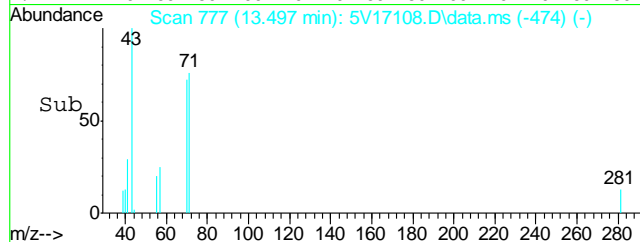
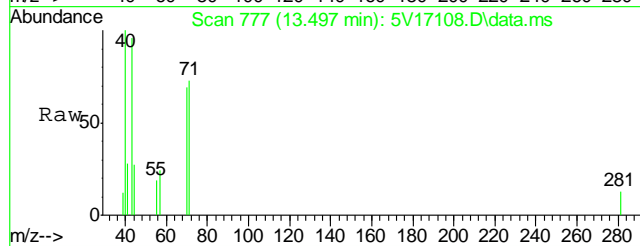
Quant Time: Aug 23 09:10:10 2011
Quant Method : C:\msdchem\1\METHODS\V5AP998TVH998.M
Quant Title : 8260
QLast Update : Wed Aug 10 06:49:20 2011
Response via : Initial Calibration





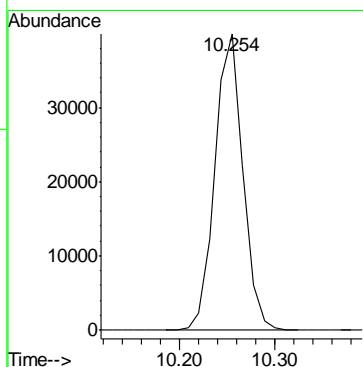
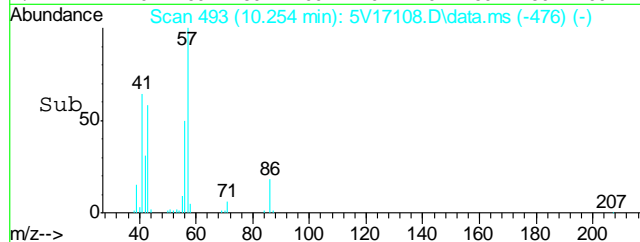
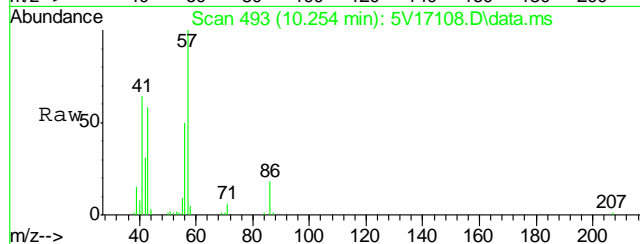
#1
TVH-Gasoline
Concen: 3234.83 ug/l m
RT: 13.491 min Scan# 777
Delta R.T. 0.000 min
Lab File: 5V17108.D
Acq: 22 Aug 2011 5:52 pm

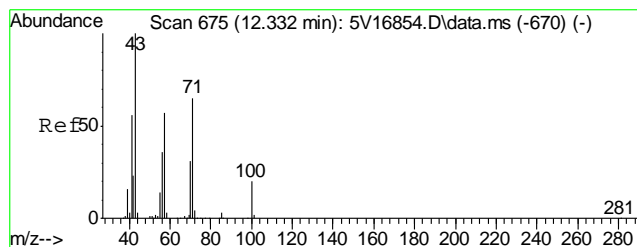
Tgt Ion:TIC Resp:69310652



#41
Hexane
Concen: 15.70 ug/l
RT: 10.254 min Scan# 493
Delta R.T. -0.000 min
Lab File: 5V17108.D
Acq: 22 Aug 2011 5:52 pm

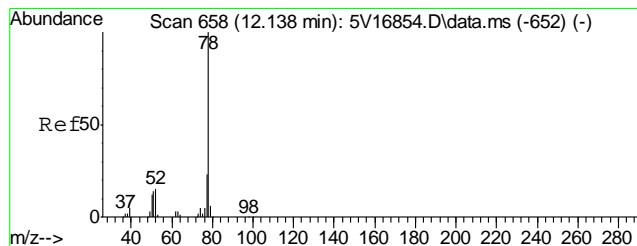
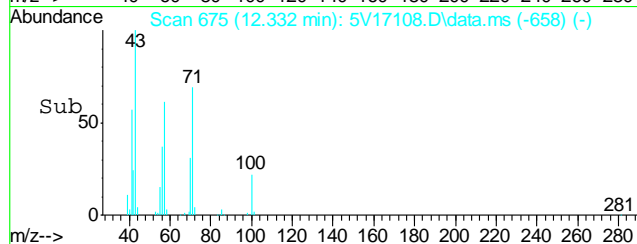
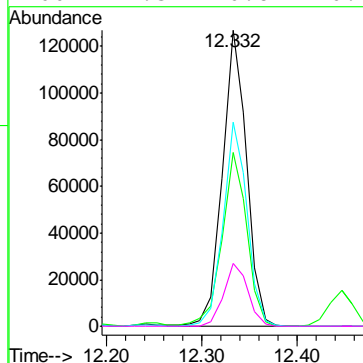
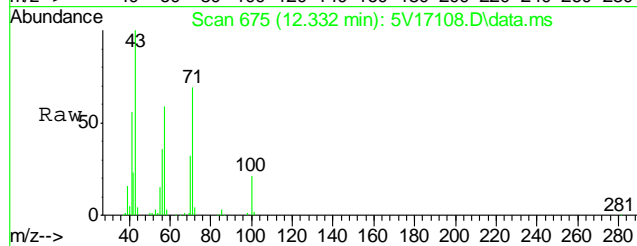
Tgt Ion: 57 Resp: 80861





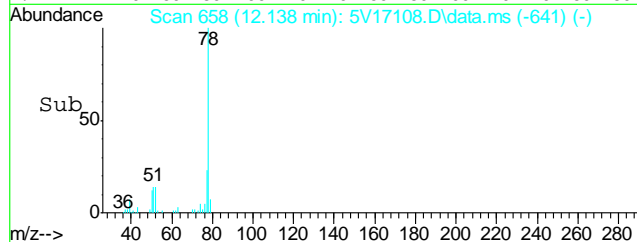
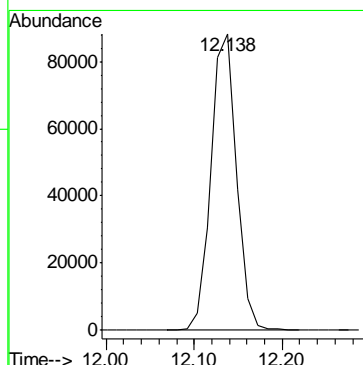
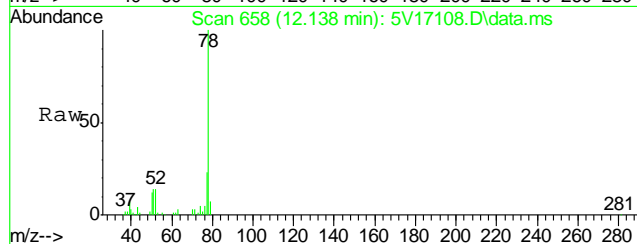
#43
Heptane
Concen: 39.38 ug/l
RT: 12.332 min Scan# 675
Delta R.T. -0.000 min
Lab File: 5V17108.D
Acq: 22 Aug 2011 5:52 pm

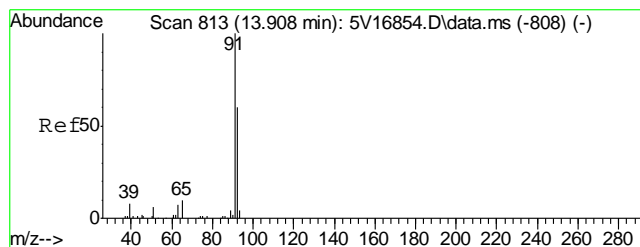
Tgt Ion	Ratio	Lower	Upper
43	100		
57	60.7	37.4	77.4
71	68.6	46.4	86.4
100	21.3	0.8	40.8



#50
Benzene
Concen: 11.93 ug/l
RT: 12.138 min Scan# 658
Delta R.T. -0.000 min
Lab File: 5V17108.D
Acq: 22 Aug 2011 5:52 pm

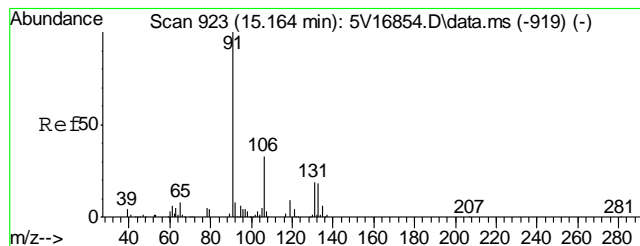
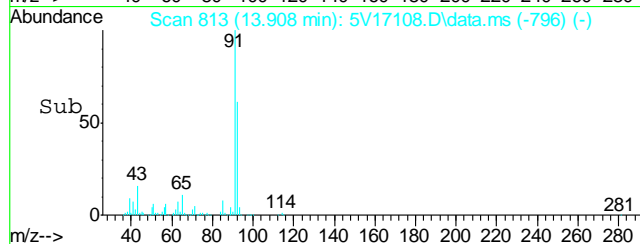
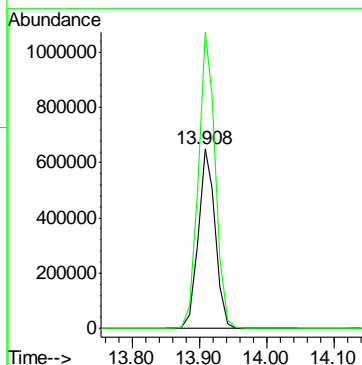
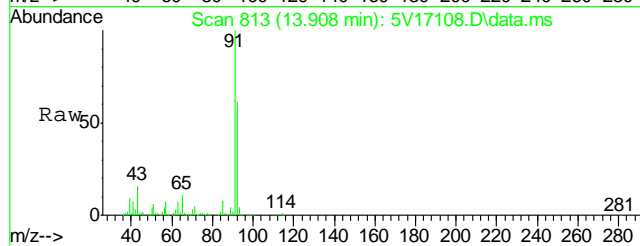
Tgt Ion: 78 Resp: 177049





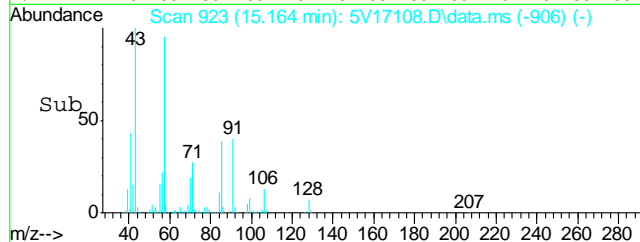
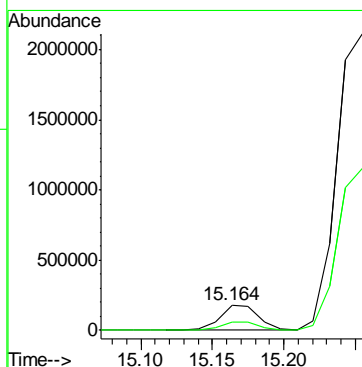
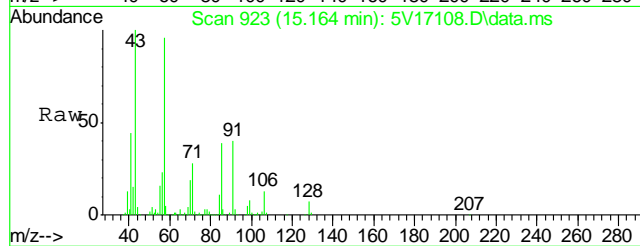
#62
Toluene
Concen: 107.87 ug/l
RT: 13.908 min Scan# 813
Delta R.T. -0.000 min
Lab File: 5V17108.D
Acq: 22 Aug 2011 5:52 pm

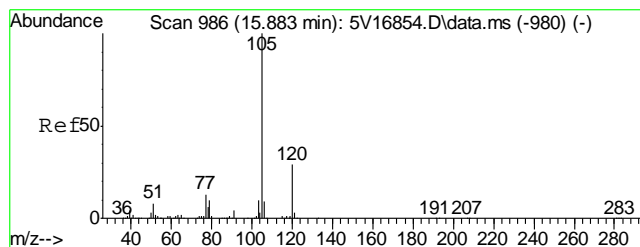
Tgt Ion: 92 Resp: 1155803
Ion Ratio Lower Upper
92 100
91 165.3 146.1 186.1



#66
Ethylbenzene
Concen: 16.16 ug/l
RT: 15.164 min Scan# 923
Delta R.T. -0.000 min
Lab File: 5V17108.D
Acq: 22 Aug 2011 5:52 pm

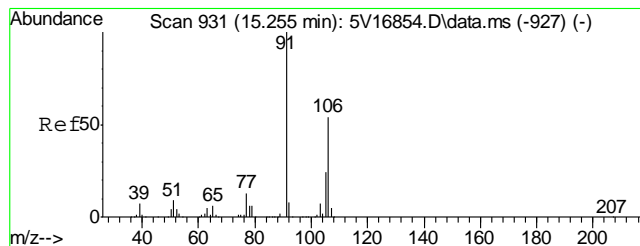
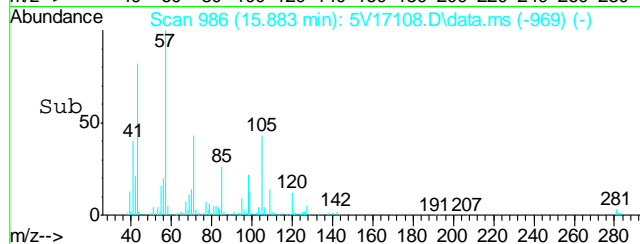
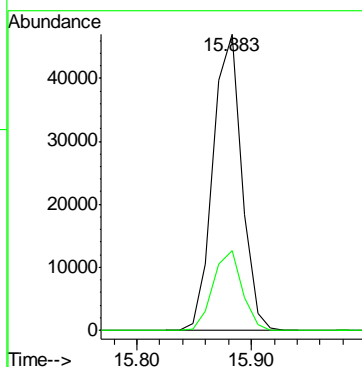
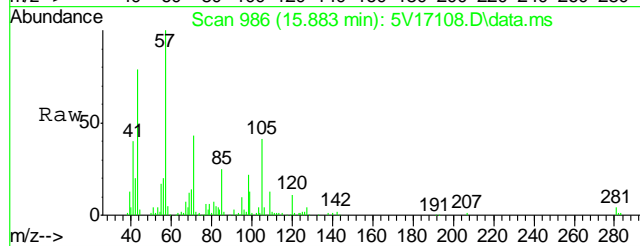
Tgt Ion: 91 Resp: 324341
Ion Ratio Lower Upper
91 100
106 33.5 13.0 53.0





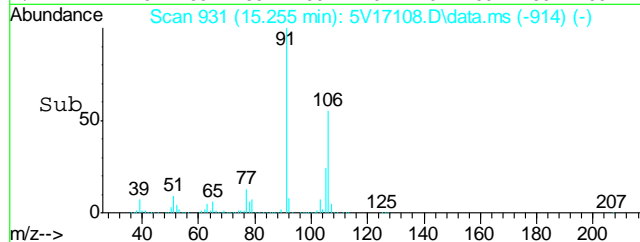
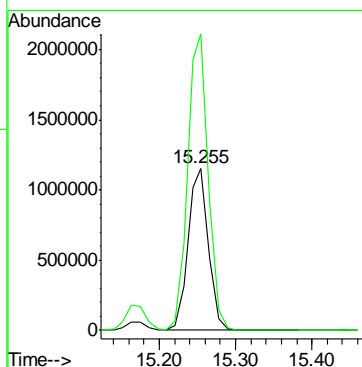
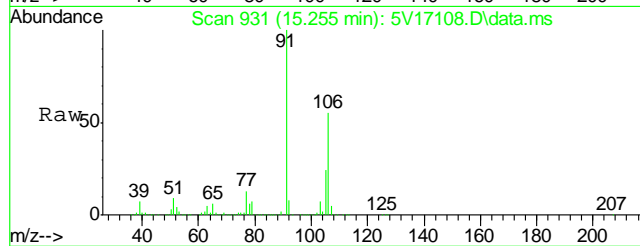
#68
Isopropylbenzene
Concen: 4.08 ug/l
RT: 15.883 min Scan# 986
Delta R.T. -0.000 min
Lab File: 5V17108.D
Acq: 22 Aug 2011 5:52 pm

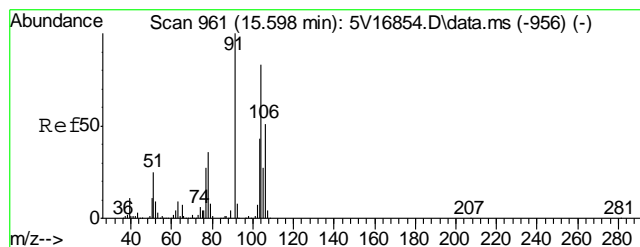
Tgt Ion	Ratio	Lower	Upper
105	100		
120	27.3	22.6	33.8



#72
m,p-xylene
Concen: 257.85 ug/l
RT: 15.255 min Scan# 931
Delta R.T. -0.000 min
Lab File: 5V17108.D
Acq: 22 Aug 2011 5:52 pm

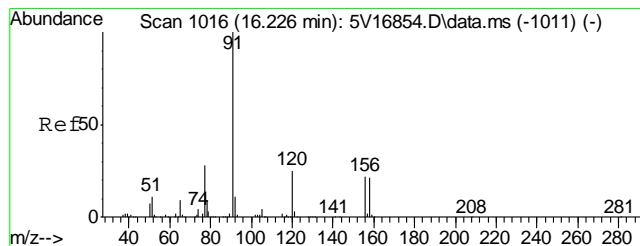
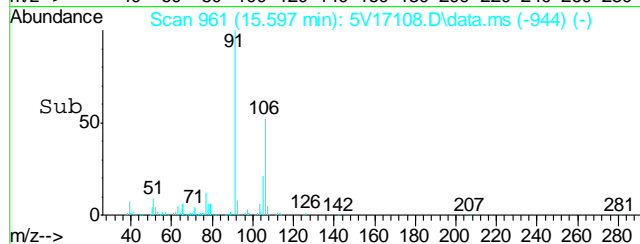
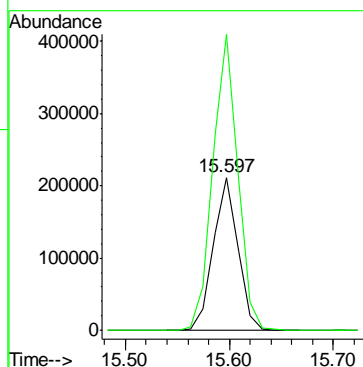
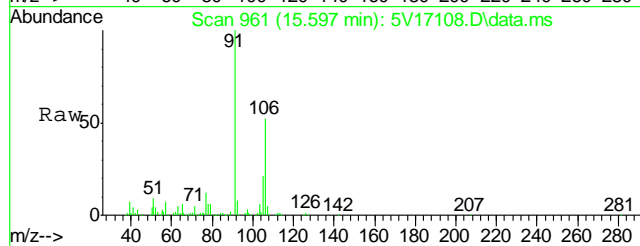
Tgt Ion	Ratio	Lower	Upper
106	100		
91	185.5	165.9	205.9





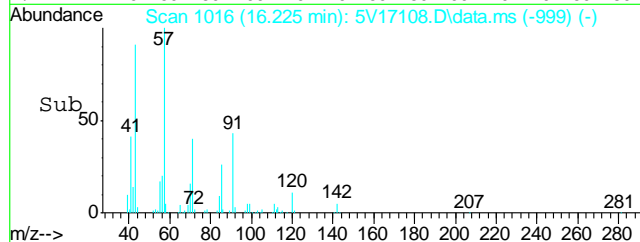
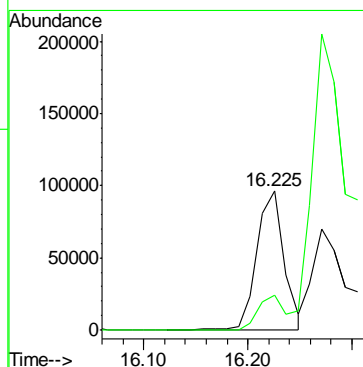
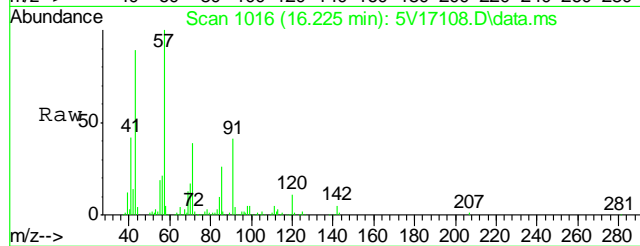
#73
o-xylene
Concen: 43.11 ug/l
RT: 15.597 min Scan# 961
Delta R.T. -0.000 min
Lab File: 5V17108.D
Acq: 22 Aug 2011 5:52 pm

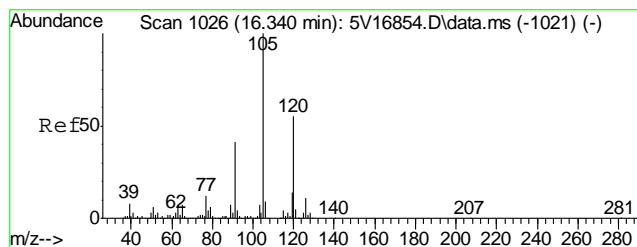
Tgt Ion	Ratio	Lower	Upper
106	100		
91	196.4	157.4	236.2



#77
n-Propylbenzene
Concen: 7.23 ug/l
RT: 16.225 min Scan# 1016
Delta R.T. -0.000 min
Lab File: 5V17108.D
Acq: 22 Aug 2011 5:52 pm

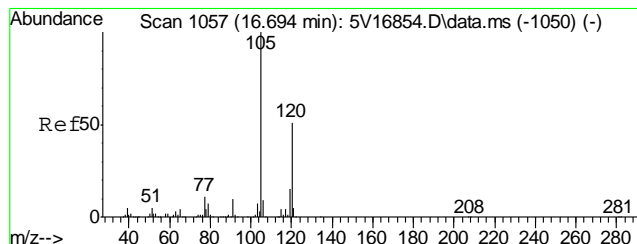
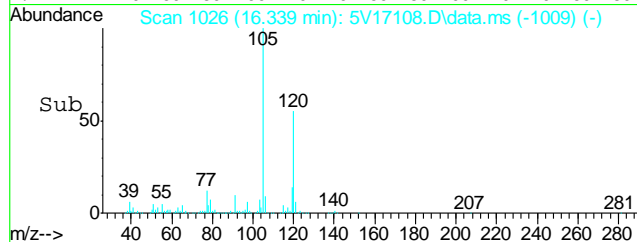
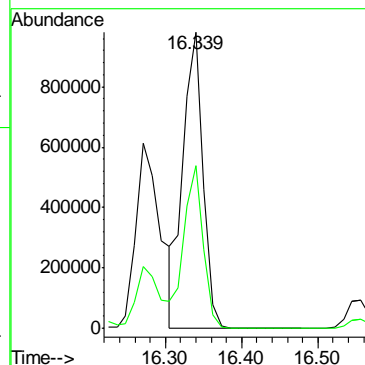
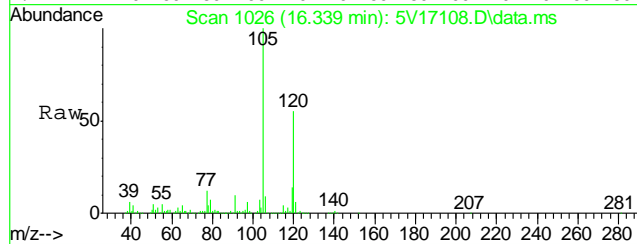
Tgt Ion	Ratio	Lower	Upper
91	100		
120	0.0	19.9	29.9#





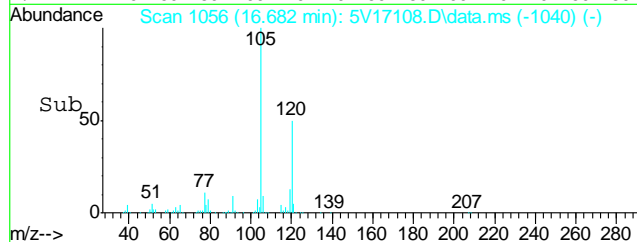
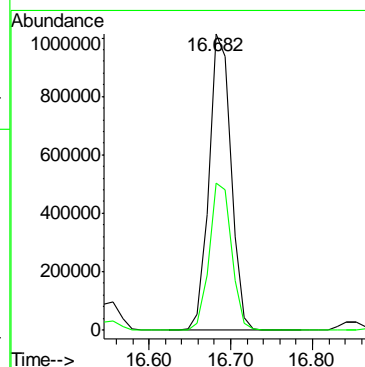
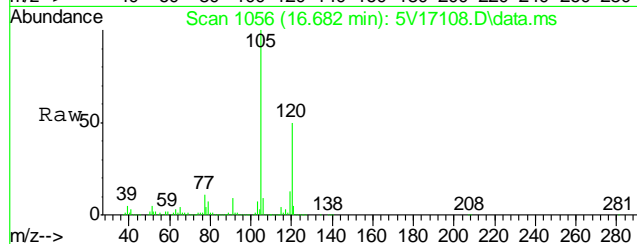
#80
1,3,5-Trimethylbenzene
Concen: 104.21 ug/l
RT: 16.339 min Scan# 1026
Delta R.T. -0.000 min
Lab File: 5V17108.D
Acq: 22 Aug 2011 5:52 pm

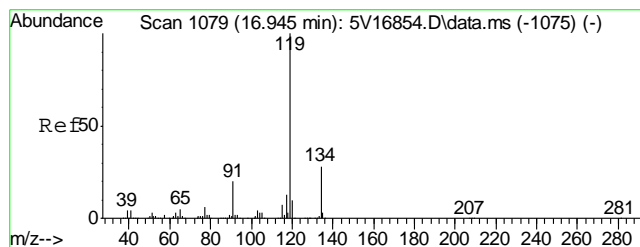
Tgt Ion:105 Resp: 1787732
Ion Ratio Lower Upper
105 100
120 53.2 43.1 64.7



#82
1,2,4-Trimethylbenzene
Concen: 107.63 ug/l
RT: 16.682 min Scan# 1056
Delta R.T. -0.012 min
Lab File: 5V17108.D
Acq: 22 Aug 2011 5:52 pm

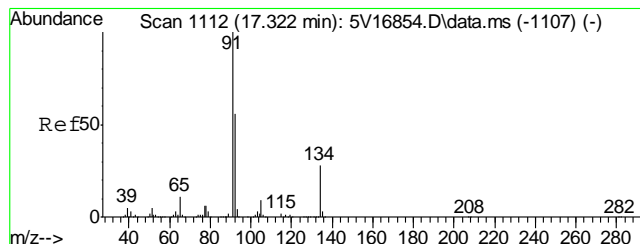
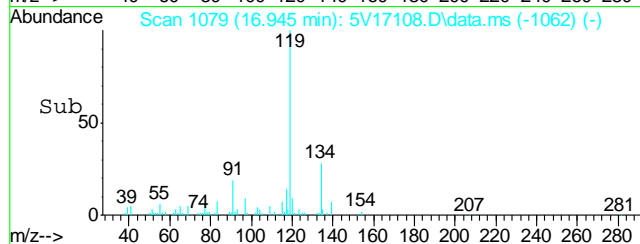
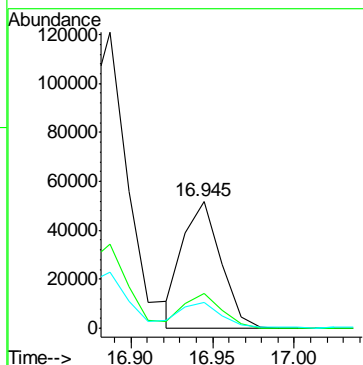
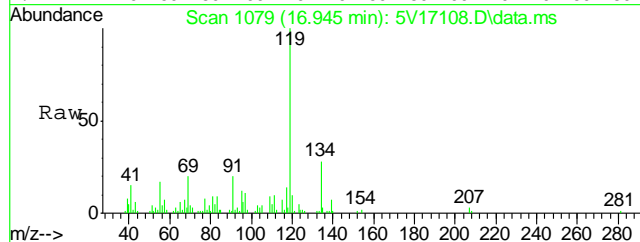
Tgt Ion:105 Resp: 1898806
Ion Ratio Lower Upper
105 100
120 50.4 46.8 70.2





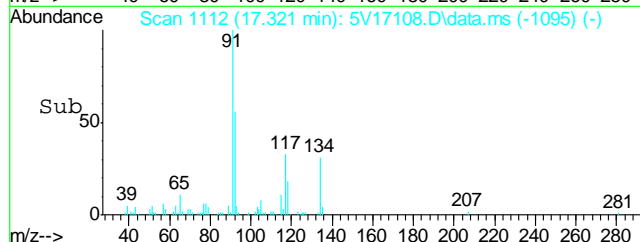
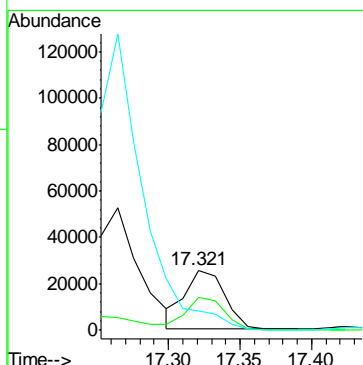
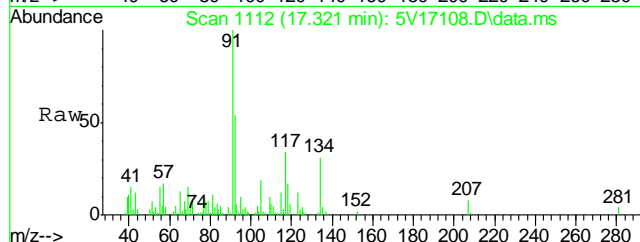
#86
p-Isopropyltoluene
Concen: 4.27 ug/l
RT: 16.945 min Scan# 1079
Delta R.T. -0.000 min
Lab File: 5V17108.D
Acq: 22 Aug 2011 5:52 pm

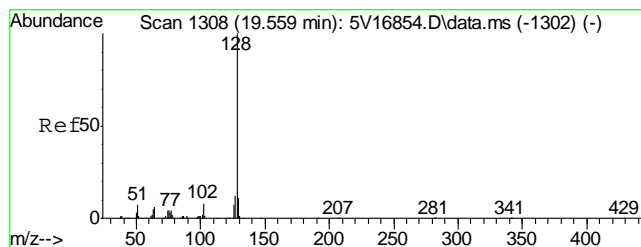
Tgt Ion:	119	Resp:	83501
Ion Ratio	Lower	Upper	
119	100		
134	27.3	22.1	33.1
91	22.9	15.9	23.9



#88
n-Butylbenzene
Concen: 2.64 ug/l
RT: 17.321 min Scan# 1112
Delta R.T. -0.000 min
Lab File: 5V17108.D
Acq: 22 Aug 2011 5:52 pm

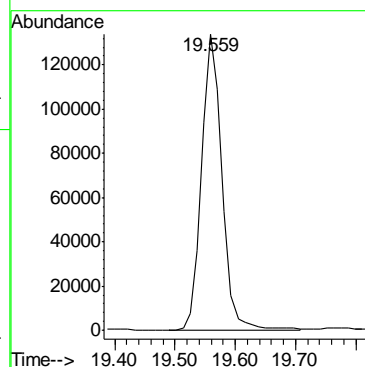
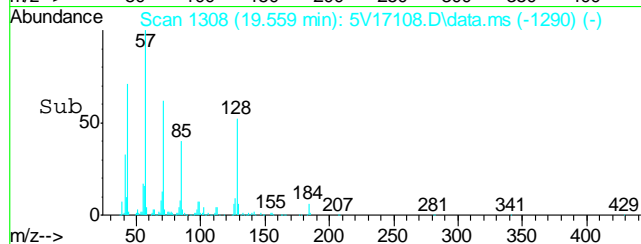
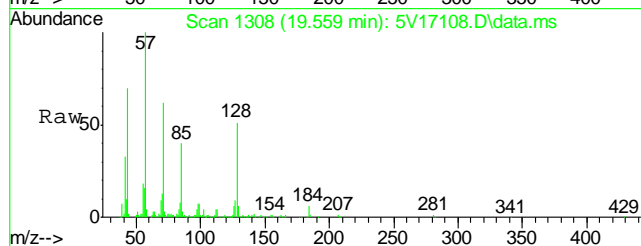
Tgt Ion:	91	Resp:	48564
Ion Ratio	Lower	Upper	
91	100		
92	53.6	44.6	67.0
134	0.0	23.4	35.0#





#91
Naphthalene
Concen: 22.30 ug/l
RT: 19.559 min Scan# 1308
Delta R.T. 0.000 min
Lab File: 5V17108.D
Acq: 22 Aug 2011 5:52 pm

Tgt Ion:128 Resp: 321888



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5082211.S\
 Data File : 5V17109.D
 Acq On : 22 Aug 2011 6:23 pm
 Operator : DONC
 Sample : D26811-2, 100x
 Misc : MS2608,V5V1014,5.126,,50,5,1
 ALS Vial : 20 Sample Multiplier: 1

Quant Time: Aug 23 09:12:29 2011
 Quant Method : C:\msdchem\1\METHODS\V5AP998TVH998.M
 Quant Title : 8260
 QLast Update : Wed Aug 10 06:49:20 2011
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	261660	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.446	114	412518	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.095	117	485514	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.070	152	322701	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.035	102	47492	56.42	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	112.84%
61) Toluene-d8	13.851	98	945949	58.93	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	117.86%
69) 4-Bromofluorobenzene	16.043	95	369539	56.10	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	112.20%

Target Compounds

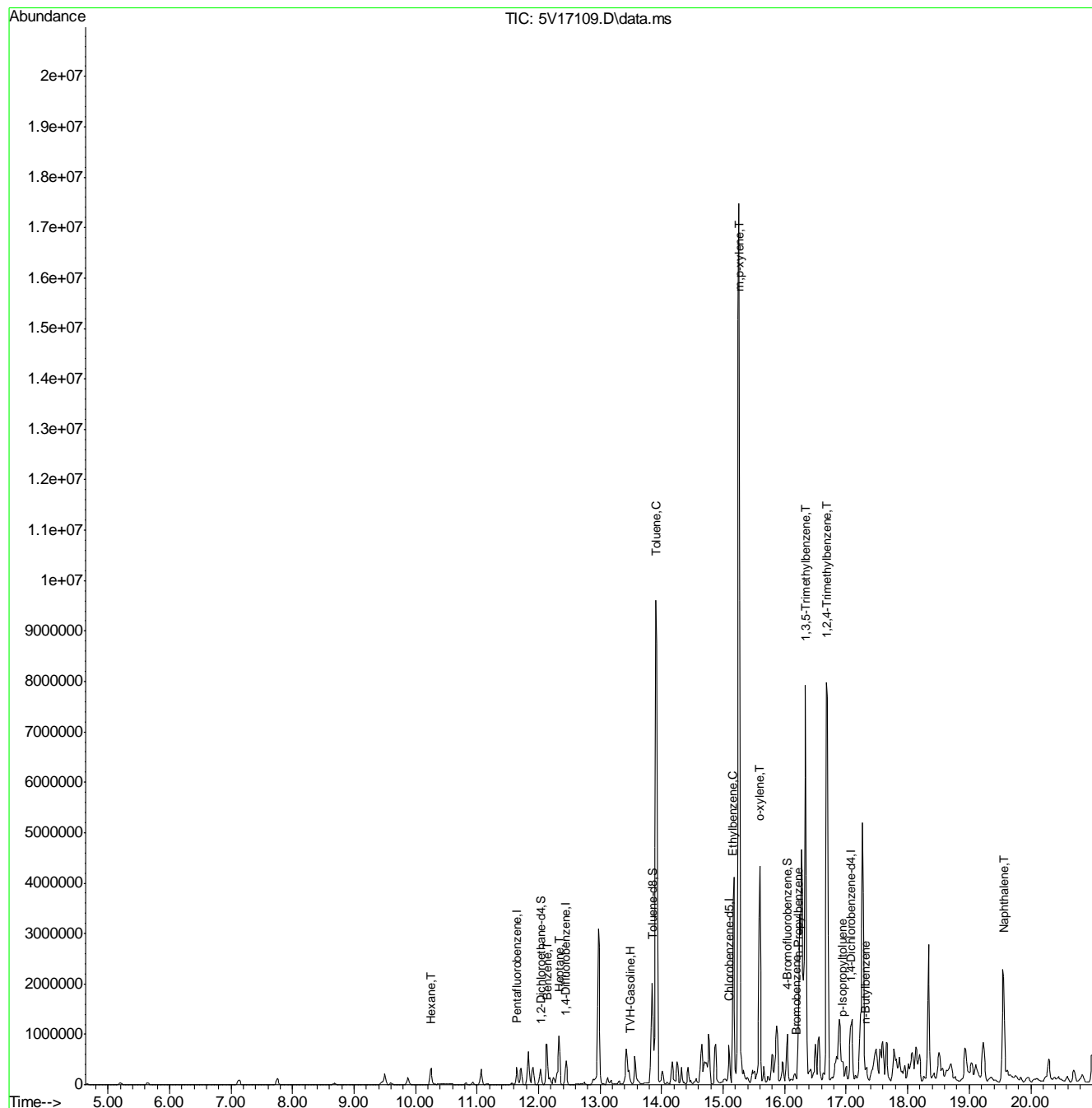
					Qvalue
1) TVH-Gasoline	13.491	TIC	143384086m	6691.94	ug/l
41) Hexane	10.254	57	188348	34.17	ug/l 100
43) Heptane	12.332	43	372939	61.33	ug/l 98
50) Benzene	12.138	78	800356	50.39	ug/l 100
62) Toluene	13.908	92	4293693	371.70	ug/l 99
66) Ethylbenzene	15.163	91	1216072	56.21	ug/l 99
70) Bromobenzene	16.191	156	14610	2.49	ug/l # 1
72) m,p-xylene	15.255	106	6370666	714.06	ug/l 98
73) o-xylene	15.597	106	1302569	149.21	ug/l 99
77) n-Propylbenzene	16.225	91	543278	20.21	ug/l # 50
80) 1,3,5-Trimethylbenzene	16.339	105	5030347	263.17	ug/l 99
82) 1,2,4-Trimethylbenzene	16.682	105	5513072	280.48	ug/l 90
86) p-Isopropyltoluene	16.945	119	214982	9.88	ug/l 99
88) n-Butylbenzene	17.321	91	119273	5.82	ug/l # 78
91) Naphthalene	19.559	128	1247793	76.01	ug/l 100

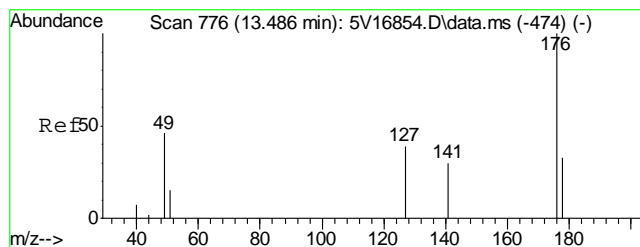
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5082211.S\
Data File : 5V17109.D
Acq On : 22 Aug 2011 6:23 pm
Operator : DONC
Sample : D26811-2, 100x
Misc : MS2608,V5V1014,5.126,,50,5,1
ALS Vial : 20 Sample Multiplier: 1

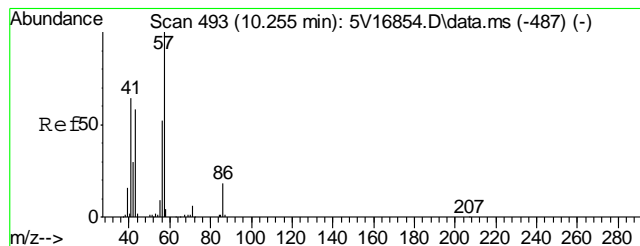
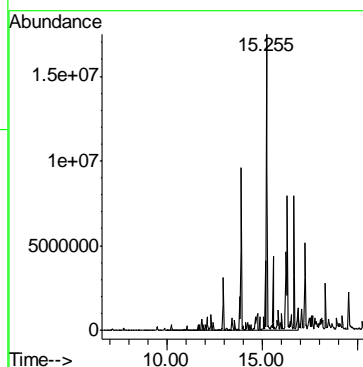
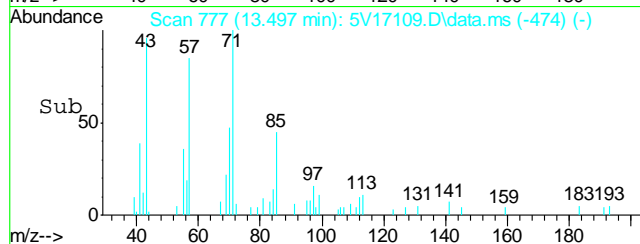
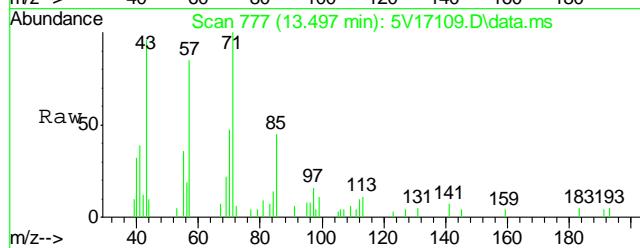
Quant Time: Aug 23 09:12:29 2011
Quant Method : C:\msdchem\1\METHODS\V5AP998TVH998.M
Quant Title : 8260
QLast Update : Wed Aug 10 06:49:20 2011
Response via : Initial Calibration





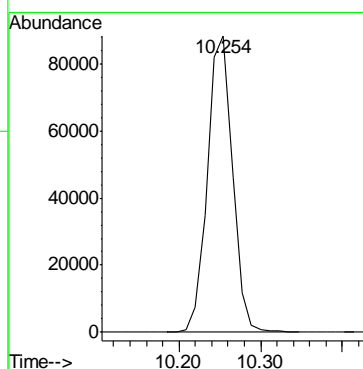
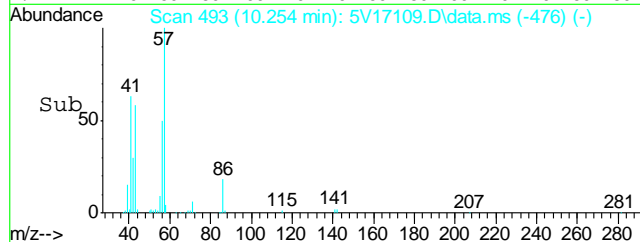
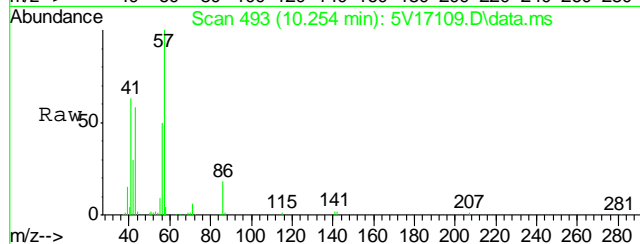
#1
TVH-Gasoline
Concen: 6691.94 ug/l m
RT: 13.491 min Scan# 777
Delta R.T. 0.000 min
Lab File: 5V17109.D
Acq: 22 Aug 2011 6:23 pm

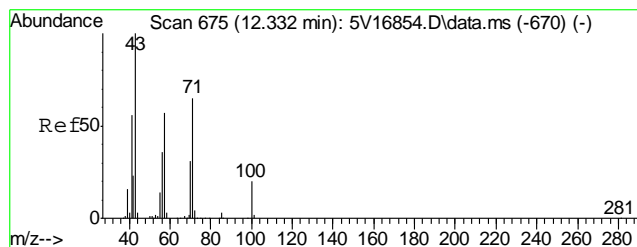
Tgt Ion:TIC Resp:143384086



#41
Hexane
Concen: 34.17 ug/l
RT: 10.254 min Scan# 493
Delta R.T. -0.000 min
Lab File: 5V17109.D
Acq: 22 Aug 2011 6:23 pm

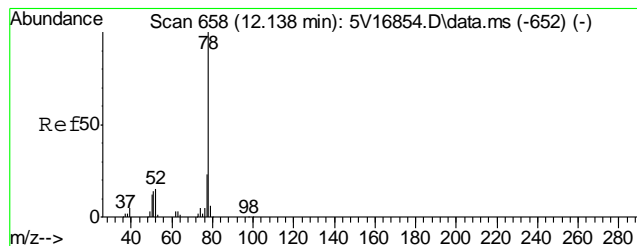
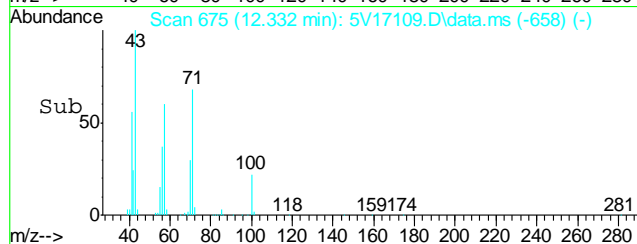
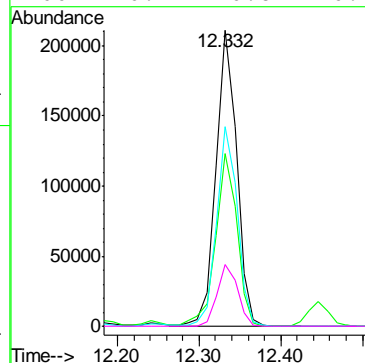
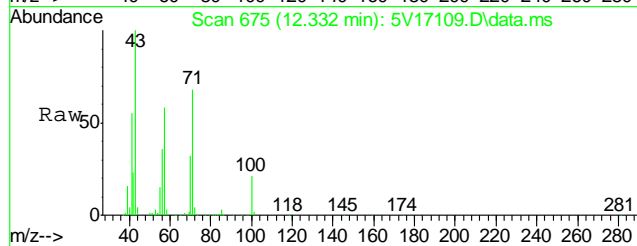
Tgt Ion: 57 Resp: 188348





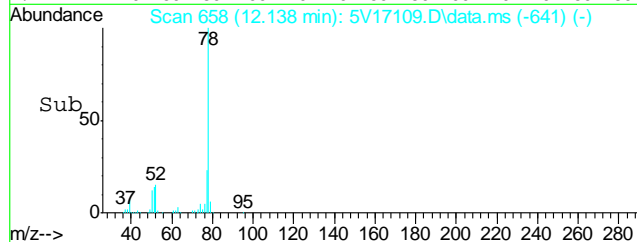
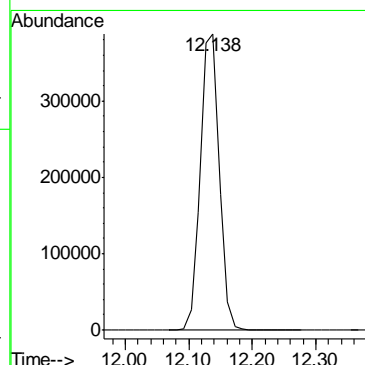
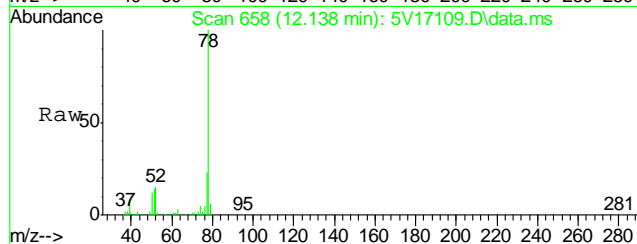
#43
Heptane
Concen: 61.33 ug/l
RT: 12.332 min Scan# 675
Delta R.T. -0.000 min
Lab File: 5V17109.D
Acq: 22 Aug 2011 6:23 pm

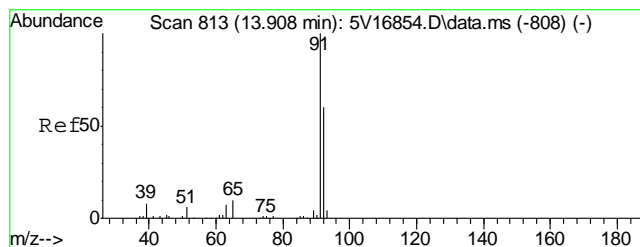
Tgt Ion	Ratio	Lower	Upper
43	100		
57	60.3	37.4	77.4
71	67.4	46.4	86.4
100	20.7	0.8	40.8



#50
Benzene
Concen: 50.39 ug/l
RT: 12.138 min Scan# 658
Delta R.T. -0.000 min
Lab File: 5V17109.D
Acq: 22 Aug 2011 6:23 pm

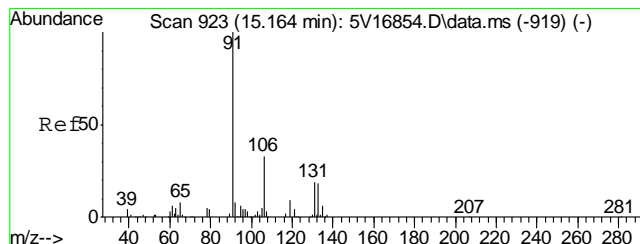
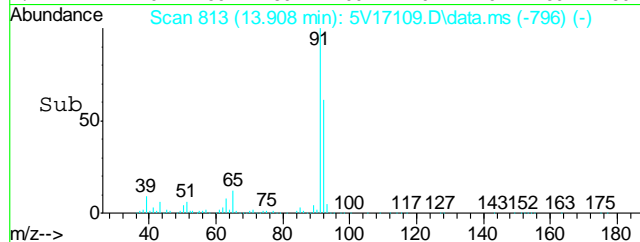
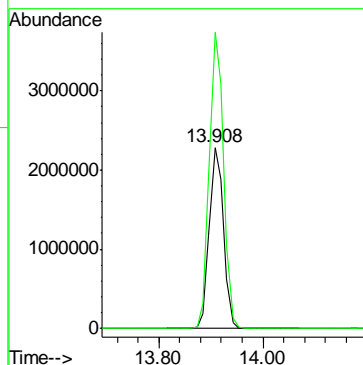
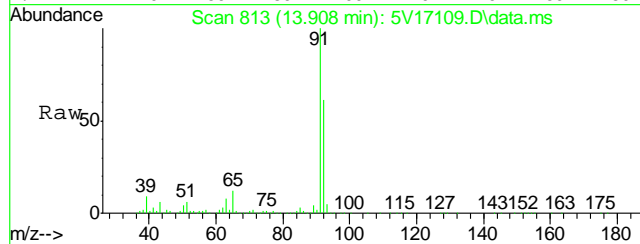
Tgt Ion: 78 Resp: 800356





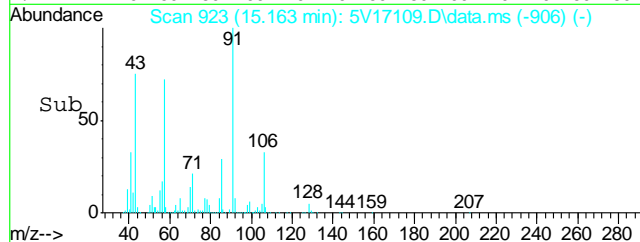
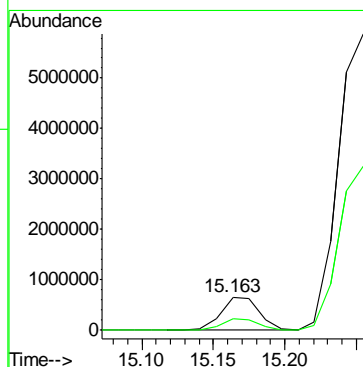
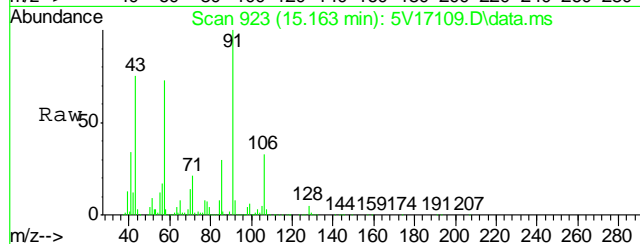
#62
Toluene
Concen: 371.70 ug/l
RT: 13.908 min Scan# 813
Delta R.T. -0.000 min
Lab File: 5V17109.D
Acq: 22 Aug 2011 6:23 pm

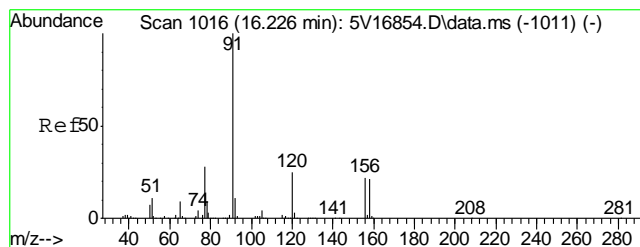
Tgt Ion: 92 Resp: 4293693
Ion Ratio Lower Upper
92 100
91 164.2 146.1 186.1



#66
Ethylbenzene
Concen: 56.21 ug/l
RT: 15.163 min Scan# 923
Delta R.T. -0.000 min
Lab File: 5V17109.D
Acq: 22 Aug 2011 6:23 pm

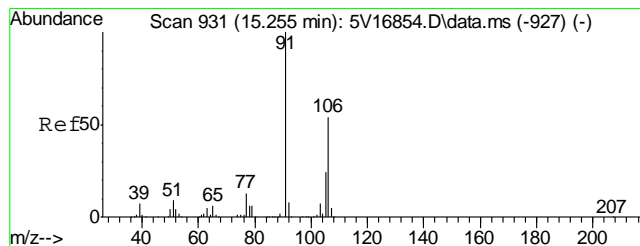
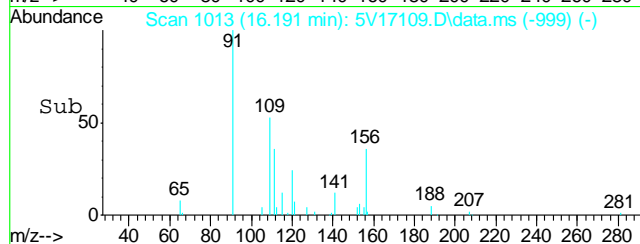
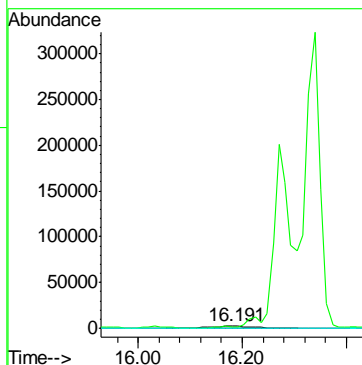
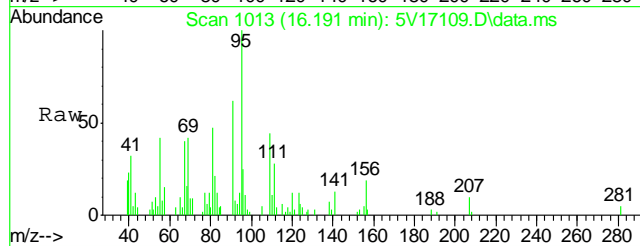
Tgt Ion: 91 Resp: 1216072
Ion Ratio Lower Upper
91 100
106 33.4 13.0 53.0





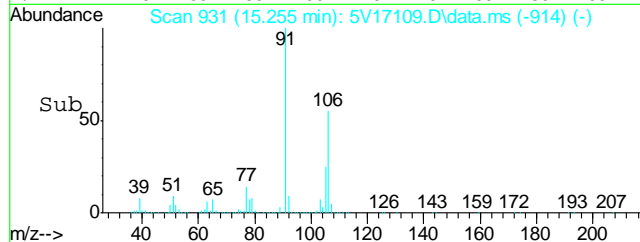
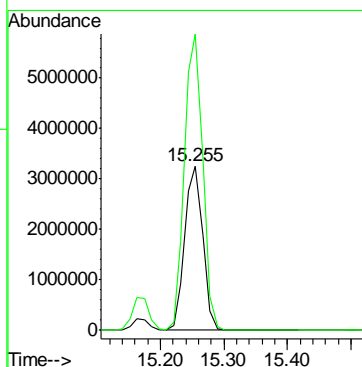
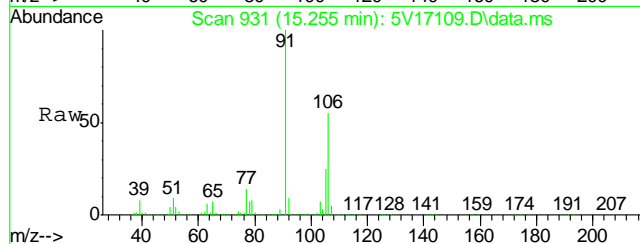
#70
Bromobenzene
Concen: 2.49 ug/l
RT: 16.191 min Scan# 1013
Delta R.T. -0.035 min
Lab File: 5V17109.D
Acq: 22 Aug 2011 6:23 pm

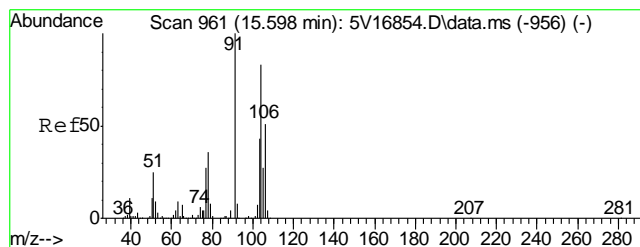
Tgt Ion	Ratio	Lower	Upper
156	100		
77	0.0	118.1	177.1#
158	0.0	77.9	116.9#



#72
m,p-xylene
Concen: 714.06 ug/l
RT: 15.255 min Scan# 931
Delta R.T. -0.000 min
Lab File: 5V17109.D
Acq: 22 Aug 2011 6:23 pm

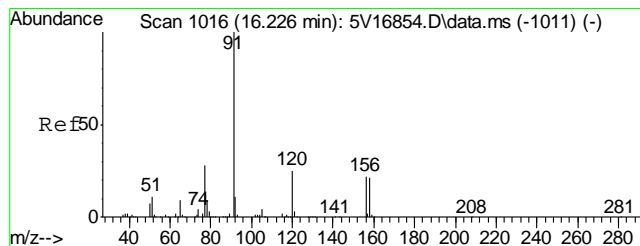
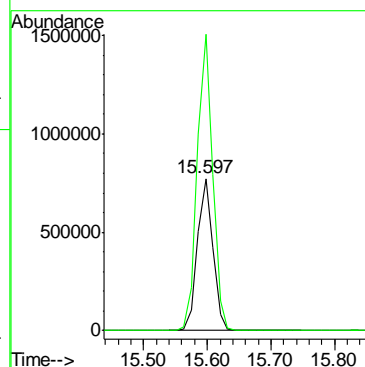
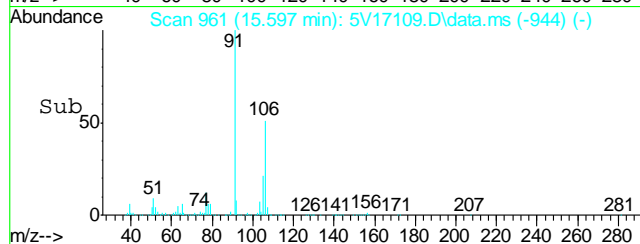
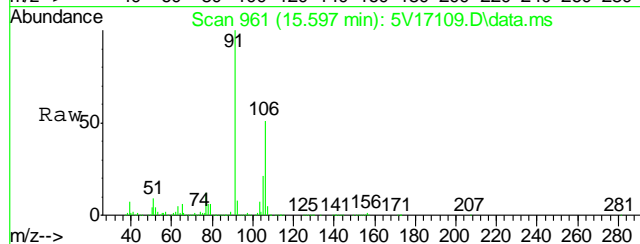
Tgt Ion	Ratio	Lower	Upper
106	100		
91	183.5	165.9	205.9





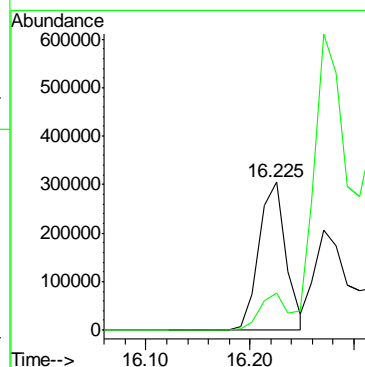
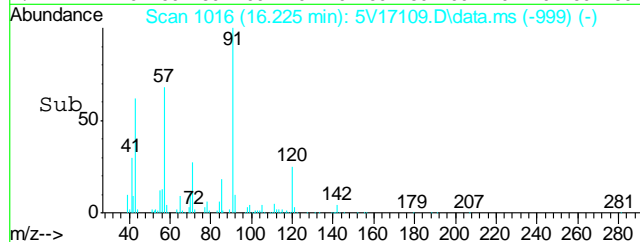
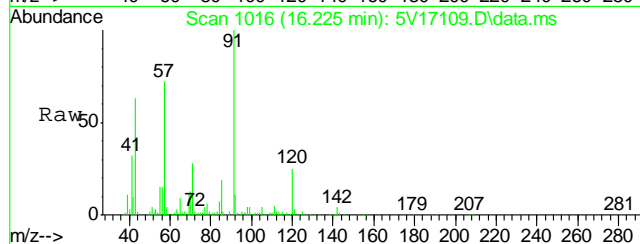
#73
o-xylene
Concen: 149.21 ug/l
RT: 15.597 min Scan# 961
Delta R.T. -0.000 min
Lab File: 5V17109.D
Acq: 22 Aug 2011 6:23 pm

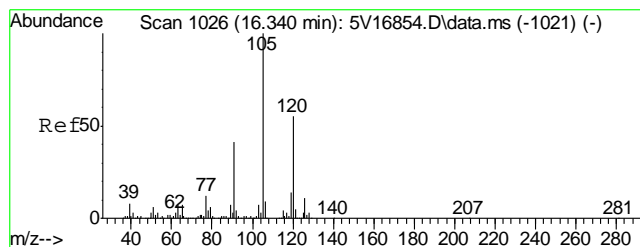
Tgt Ion: 106 Resp: 1302569
Ion Ratio Lower Upper
106 100
91 194.8 157.4 236.2



#77
n-Propylbenzene
Concen: 20.21 ug/l
RT: 16.225 min Scan# 1016
Delta R.T. -0.000 min
Lab File: 5V17109.D
Acq: 22 Aug 2011 6:23 pm

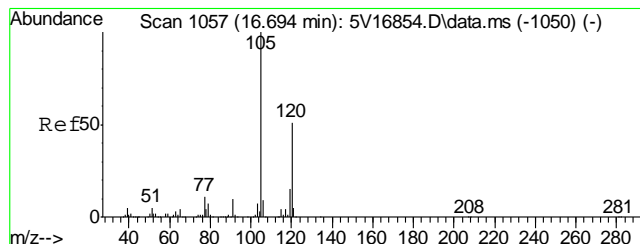
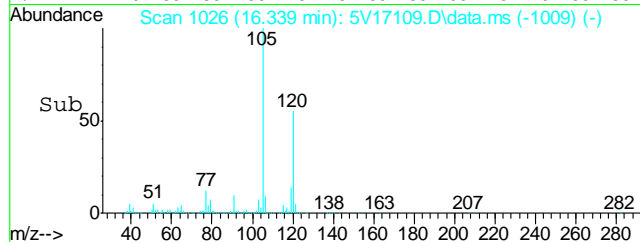
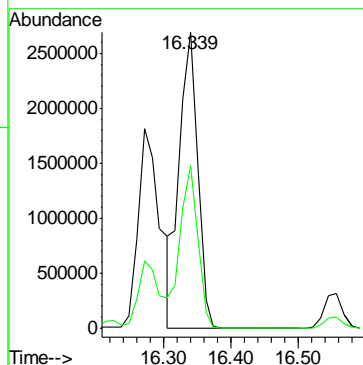
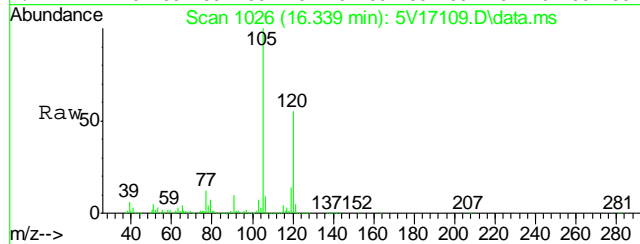
Tgt Ion: 91 Resp: 543278
Ion Ratio Lower Upper
91 100
120 0.0 19.9 29.9#





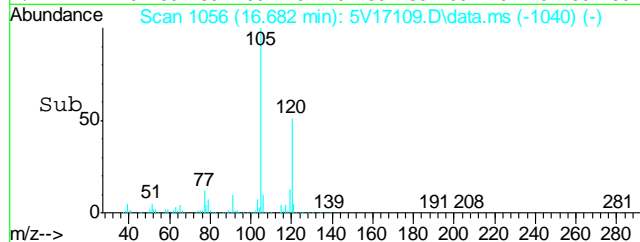
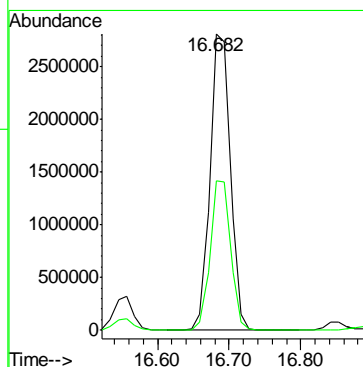
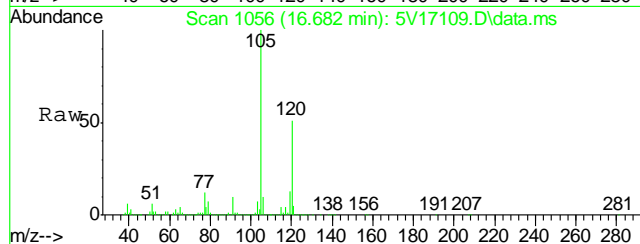
#80
1,3,5-Trimethylbenzene
Concen: 263.17 ug/l
RT: 16.339 min Scan# 1026
Delta R.T. -0.000 min
Lab File: 5V17109.D
Acq: 22 Aug 2011 6:23 pm

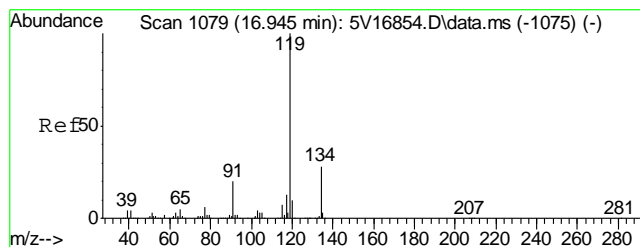
Tgt Ion:105 Resp: 5030347
Ion Ratio Lower Upper
105 100
120 53.2 43.1 64.7



#82
1,2,4-Trimethylbenzene
Concen: 280.48 ug/l
RT: 16.682 min Scan# 1056
Delta R.T. -0.012 min
Lab File: 5V17109.D
Acq: 22 Aug 2011 6:23 pm

Tgt Ion:105 Resp: 5513072
Ion Ratio Lower Upper
105 100
120 50.9 46.8 70.2





#86

p-Isopropyltoluene

Concen: 9.88 ug/l

RT: 16.945 min Scan# 1079

Delta R.T. -0.000 min

Lab File: 5V17109.D

Acq: 22 Aug 2011 6:23 pm

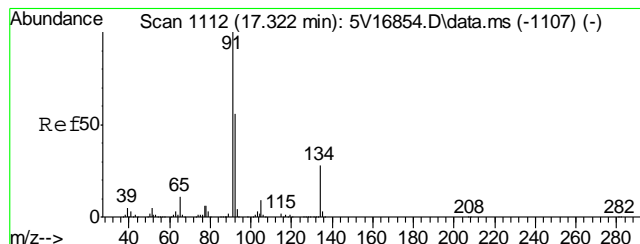
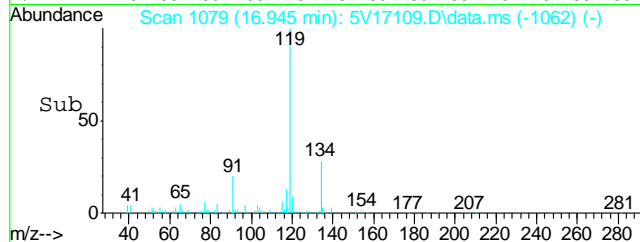
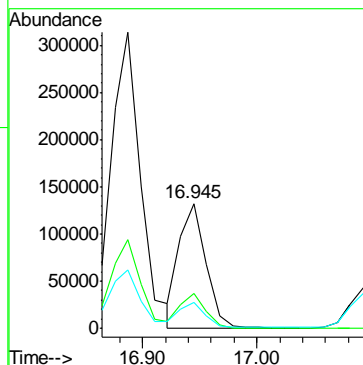
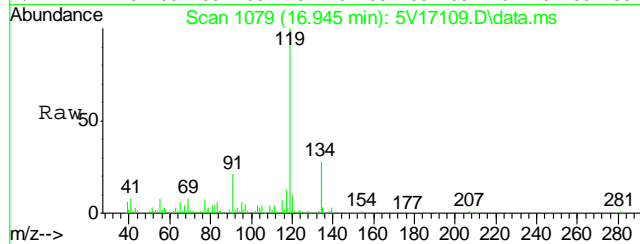
Tgt Ion: 119 Resp: 214982

Ion Ratio Lower Upper

119 100

134 27.2 22.1 33.1

91 19.8 15.9 23.9



#88

n-Butylbenzene

Concen: 5.82 ug/l

RT: 17.321 min Scan# 1112

Delta R.T. -0.000 min

Lab File: 5V17109.D

Acq: 22 Aug 2011 6:23 pm

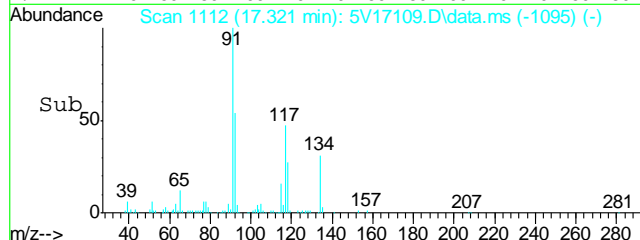
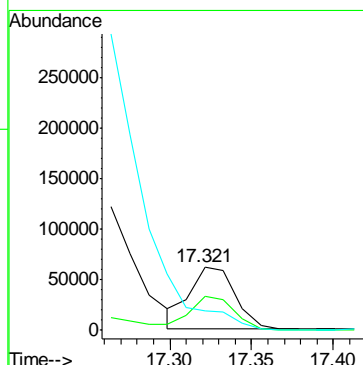
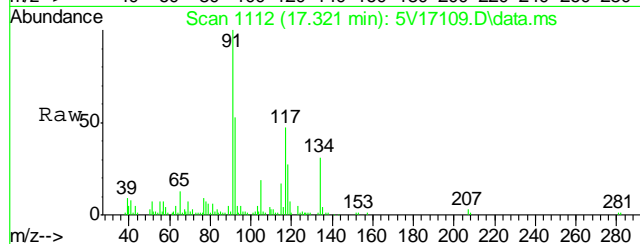
Tgt Ion: 91 Resp: 119273

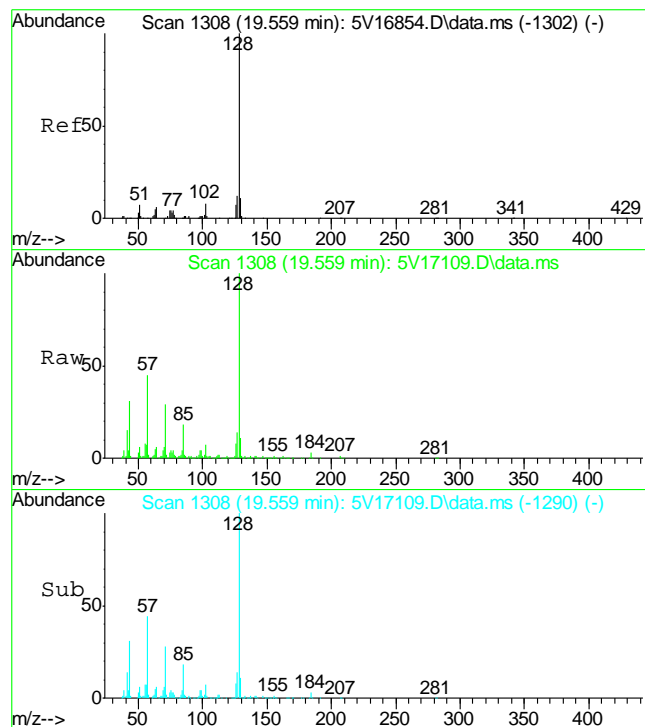
Ion Ratio Lower Upper

91 100

92 52.2 44.6 67.0

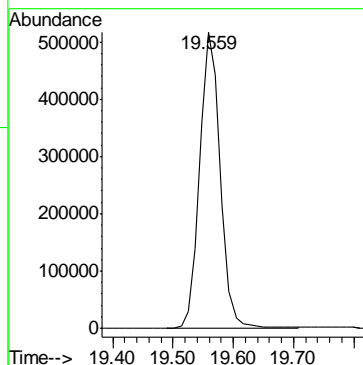
134 0.0 23.4 35.0#





#91
Naphthalene
Concen: 76.01 ug/l
RT: 19.559 min Scan# 1308
Delta R.T. 0.000 min
Lab File: 5V17109.D
Acq: 22 Aug 2011 6:23 pm

Tgt Ion:128 Resp: 1247793



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5082211.S\
Data File : 5V17094A.D
Acq On : 22 Aug 2011 10:28 am
Operator : DONC
Sample : MB
Misc : MS2608,V5V1014,5,,100,5,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 23 08:25:47 2011
Quant Method : C:\msdchem\1\METHODS\V5AP998TVH998.M
Quant Title : 8260
QLast Update : Wed Aug 10 06:49:20 2011
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	266971	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.446	114	417974	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.095	117	488119	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.070	152	309027	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.035	102	47923	55.80	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	111.60%
61) Toluene-d8	13.850	98	920569	57.04	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	114.08%
69) 4-Bromofluorobenzene	16.043	95	332528	50.21	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	100.42%

Target Compounds

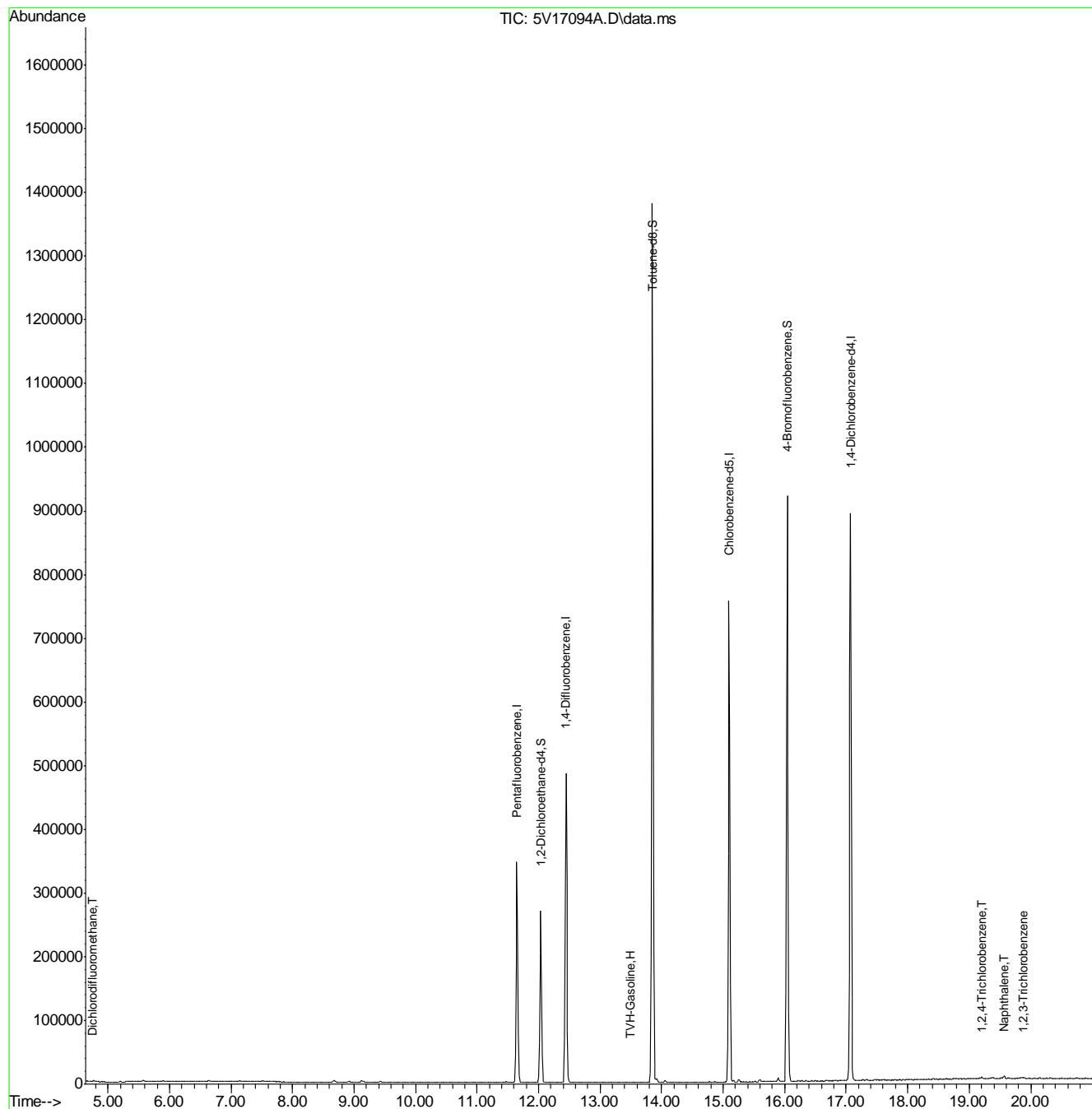
						Qvalue
1) TVH-Gasoline	13.491	TIC	4391m	0.20	ug/l	
3) Dichlorodifluoromethane	4.751	85	2286	0.49	ug/l	76
90) 1,2,4-Trichlorobenzene	19.205	180	1898	0.22	ug/l #	91
91) Naphthalene	19.570	128	7653	1.12	ug/l	100
93) 1,2,3-Trichlorobenzene	19.879	180	2121	0.27	ug/l #	73

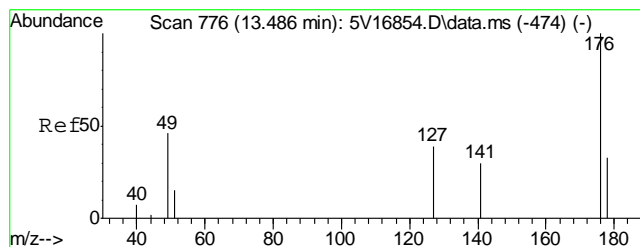
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5082211.S\
Data File : 5V17094A.D
Acq On : 22 Aug 2011 10:28 am
Operator : DONC
Sample : MB
Misc : MS2608,V5V1014,5,,100,5,1
ALS Vial : 5 Sample Multiplier: 1

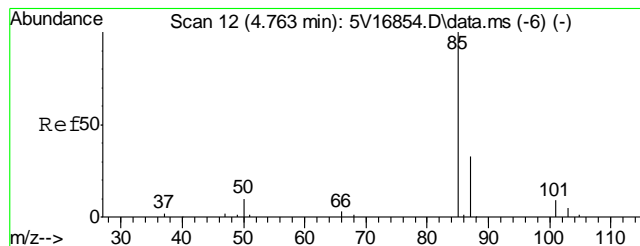
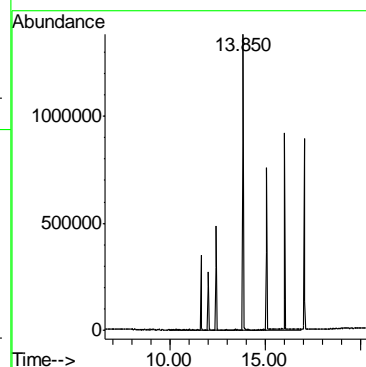
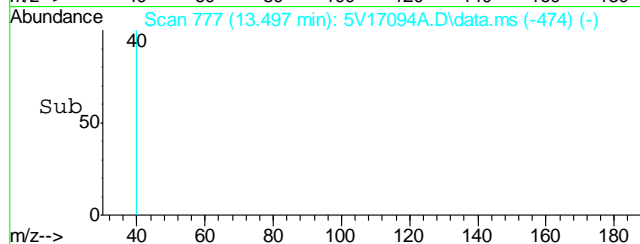
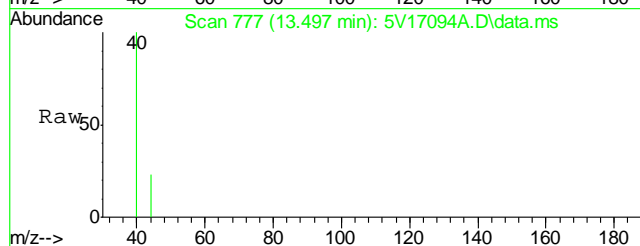
Quant Time: Aug 23 08:25:47 2011
Quant Method : C:\msdchem\1\METHODS\V5AP998TVH998.M
Quant Title : 8260
QLast Update : Wed Aug 10 06:49:20 2011
Response via : Initial Calibration





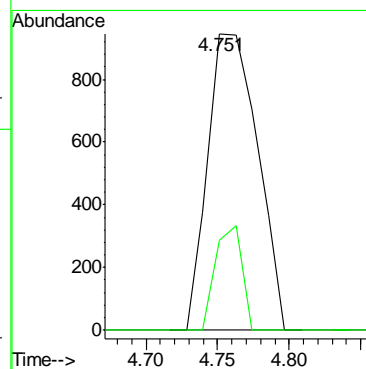
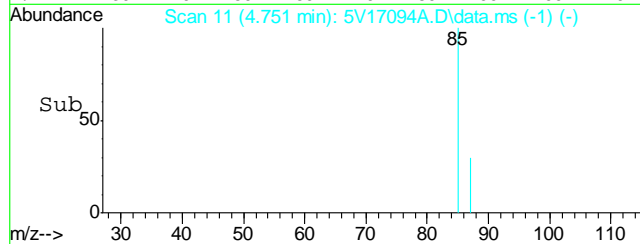
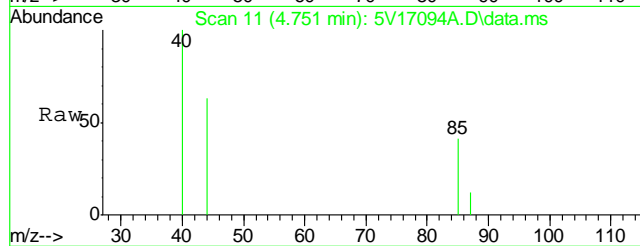
#1
TVH-Gasoline
Concen: 0.20 ug/l m
RT: 13.491 min Scan# 777
Delta R.T. 0.000 min
Lab File: 5V17094A.D
Acq: 22 Aug 2011 10:28 am

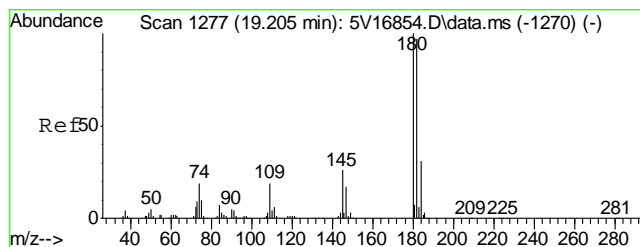
Tgt Ion:TIC Resp: 4391



#3
Dichlorodifluoromethane
Concen: 0.49 ug/l
RT: 4.751 min Scan# 11
Delta R.T. -0.012 min
Lab File: 5V17094A.D
Acq: 22 Aug 2011 10:28 am

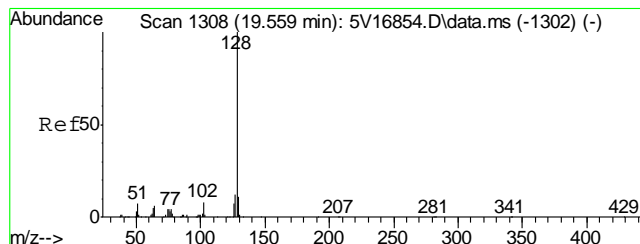
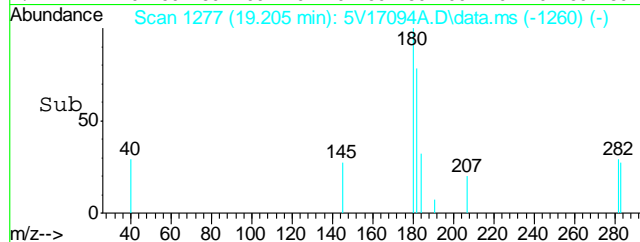
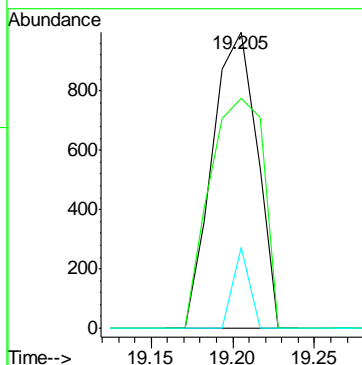
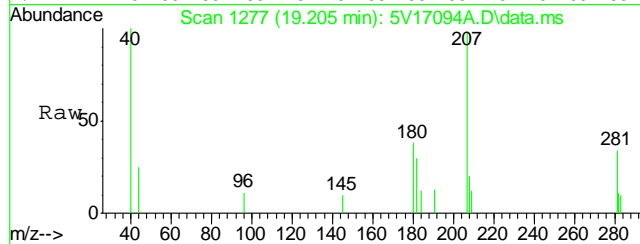
Tgt Ion: 85 Resp: 2286
Ion Ratio Lower Upper
85 100
87 18.6 12.2 52.2





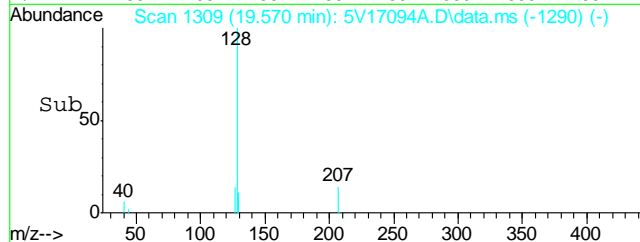
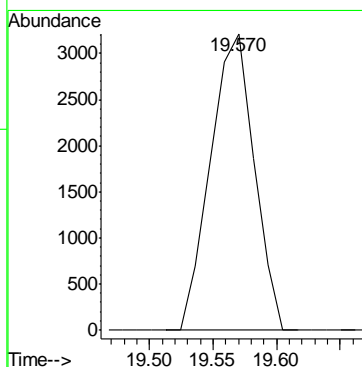
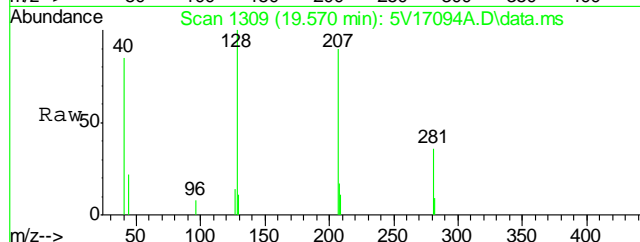
#90
1,2,4-Trichlorobenzene
Concen: 0.22 ug/l
RT: 19.205 min Scan# 1277
Delta R.T. -0.000 min
Lab File: 5V17094A.D
Acq: 22 Aug 2011 10:28 am

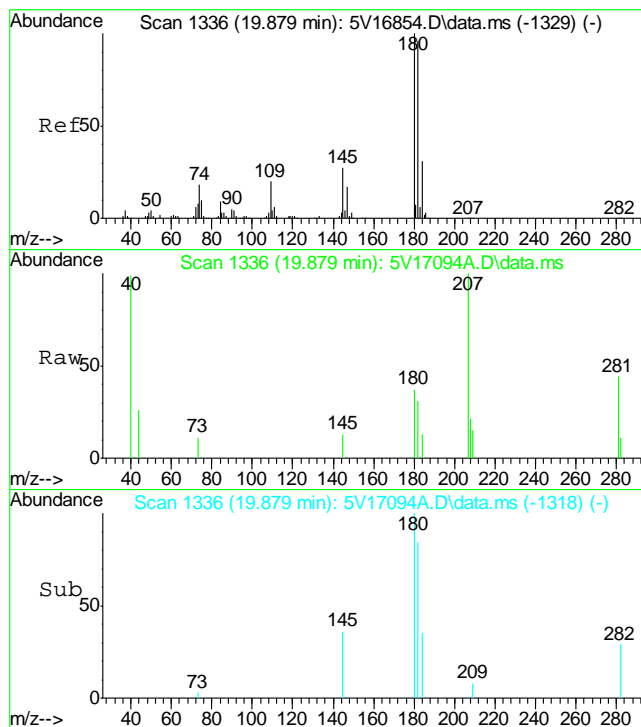
Tgt Ion:180	Resp:	1898
Ion Ratio	Lower	Upper
180	100	
182	93.6	76.7 115.1
145	9.8	20.7 31.1#



#91
Naphthalene
Concen: 1.12 ug/l
RT: 19.570 min Scan# 1309
Delta R.T. 0.011 min
Lab File: 5V17094A.D
Acq: 22 Aug 2011 10:28 am

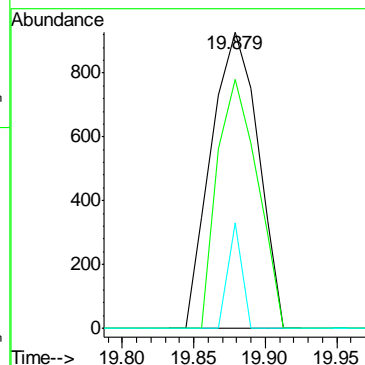
Tgt Ion:128	Resp:	7653
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#93
1,2,3-Trichlorobenzene
Concen: 0.27 ug/l
RT: 19.879 min Scan# 1336
Delta R.T. 0.001 min
Lab File: 5V17094A.D
Acq: 22 Aug 2011 10:28 am

Tgt Ion	Ratio	Lower	Upper
180	100		
182	71.5	77.6	116.4#
145	10.7	22.2	33.4#



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5082311.S\
Data File : 5V17119.D
Acq On : 23 Aug 2011 10:03 am
Operator : DONC
Sample : MB
Misc : MS2609,V5V1015,5,,100,5,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 24 08:41:36 2011
Quant Method : C:\msdchem\1\METHODS\V5AP998TVH998.M
Quant Title : 8260
QLast Update : Wed Aug 10 06:49:20 2011
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.647	168	257274	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.446	114	404282	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.095	117	468519	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.070	152	292215	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.035	102	47705	57.64	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	115.28%
61) Toluene-d8	13.850	98	912482	58.90	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	117.80%
69) 4-Bromofluorobenzene	16.042	95	328464	51.68	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	103.36%

Target Compounds

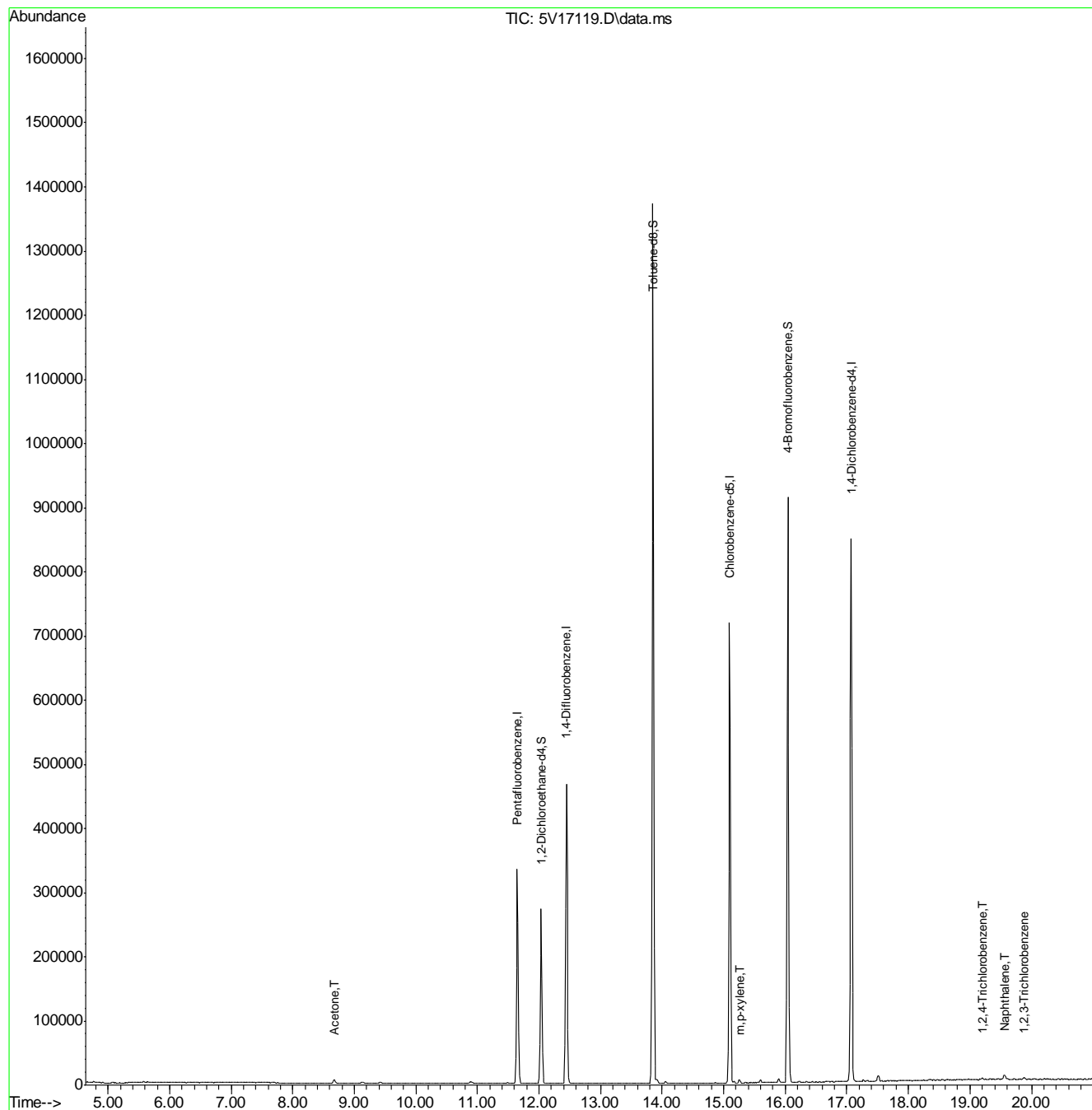
						Qvalue
15) Acetone	8.678	58	2796	1.14	ug/l	90
72) m,p-xylene	15.255	106	2297	0.27	ug/l	98
90) 1,2,4-Trichlorobenzene	19.205	180	1834	0.23	ug/l #	91
91) Naphthalene	19.559	128	7774	1.16	ug/l	100
93) 1,2,3-Trichlorobenzene	19.878	180	2004	0.27	ug/l #	85

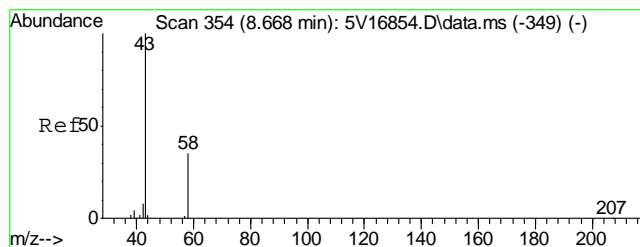
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5082311.S\
Data File : 5V17119.D
Acq On : 23 Aug 2011 10:03 am
Operator : DONC
Sample : MB
Misc : MS2609,V5V1015,5,,100,5,1
ALS Vial : 5 Sample Multiplier: 1

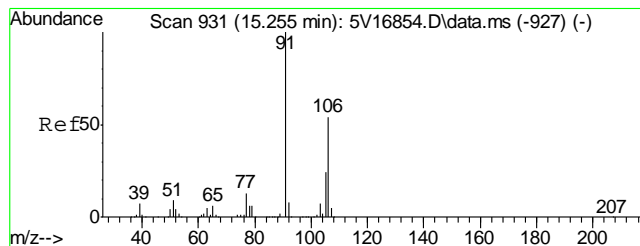
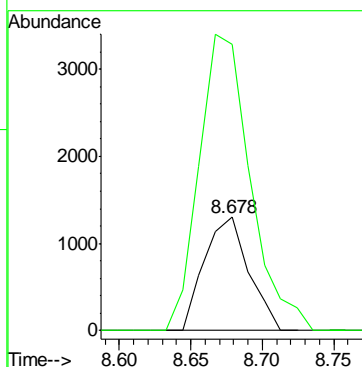
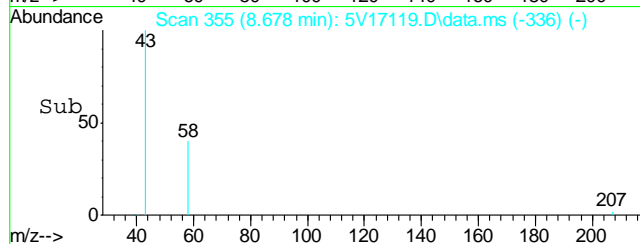
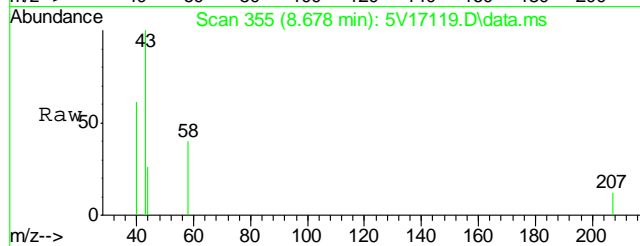
Quant Time: Aug 24 08:41:36 2011
Quant Method : C:\msdchem\1\METHODS\V5AP998TVH998.M
Quant Title : 8260
QLast Update : Wed Aug 10 06:49:20 2011
Response via : Initial Calibration





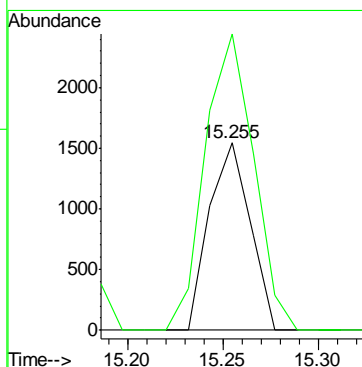
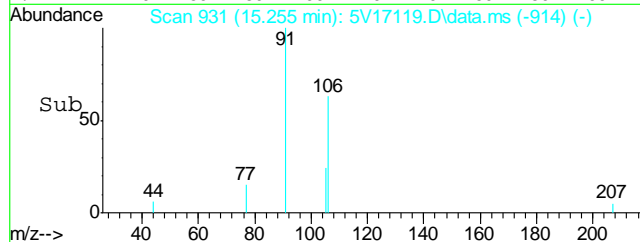
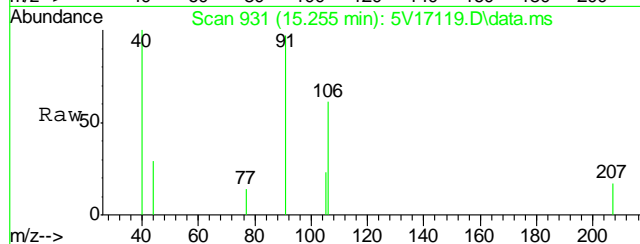
#15
Acetone
Concen: 1.14 ug/l
RT: 8.678 min Scan# 355
Delta R.T. 0.011 min
Lab File: 5V17119.D
Acq: 23 Aug 2011 10:03 am

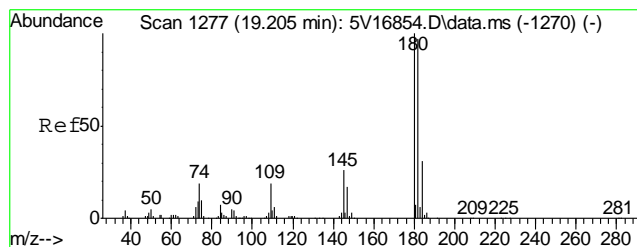
Tgt Ion: 58 Resp: 2796
Ion Ratio Lower Upper
58 100
43 301.7 262.1 302.1



#72
m,p-xylene
Concen: 0.27 ug/l
RT: 15.255 min Scan# 931
Delta R.T. -0.000 min
Lab File: 5V17119.D
Acq: 23 Aug 2011 10:03 am

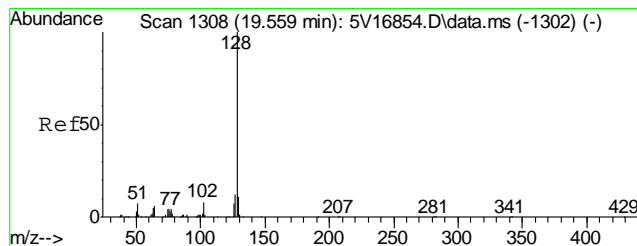
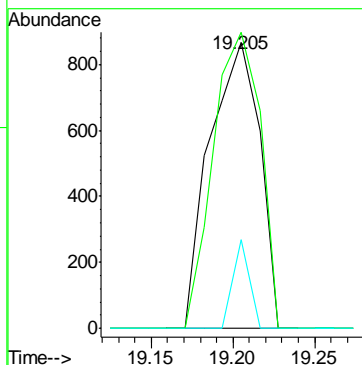
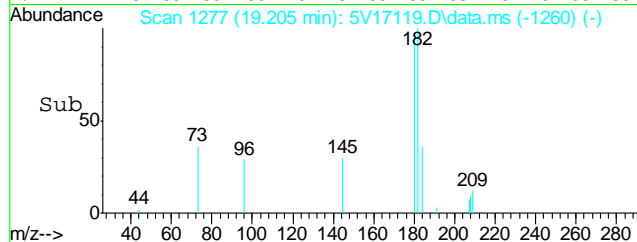
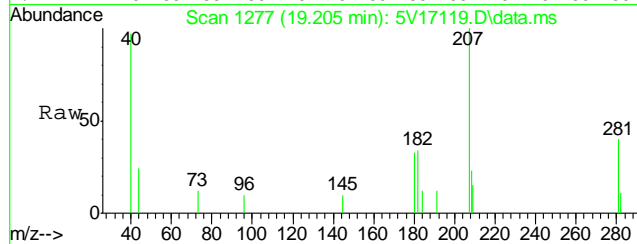
Tgt Ion: 106 Resp: 2297
Ion Ratio Lower Upper
106 100
91 189.2 165.9 205.9





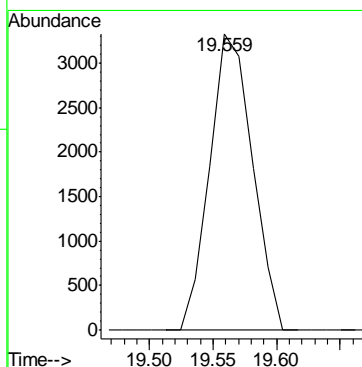
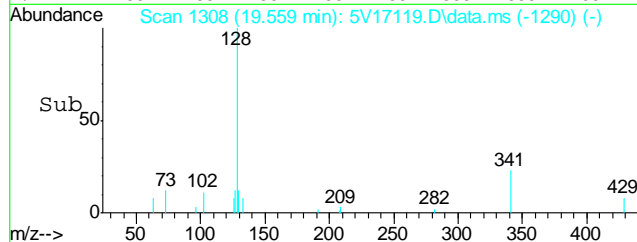
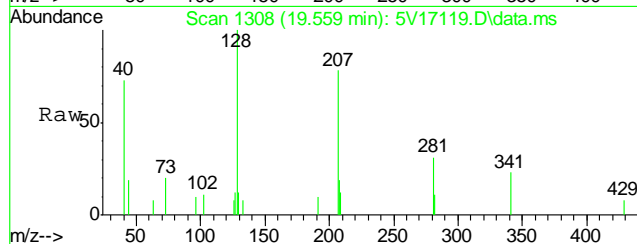
#90
1,2,4-Trichlorobenzene
Concen: 0.23 ug/l
RT: 19.205 min Scan# 1277
Delta R.T. -0.000 min
Lab File: 5V17119.D
Acq: 23 Aug 2011 10:03 am

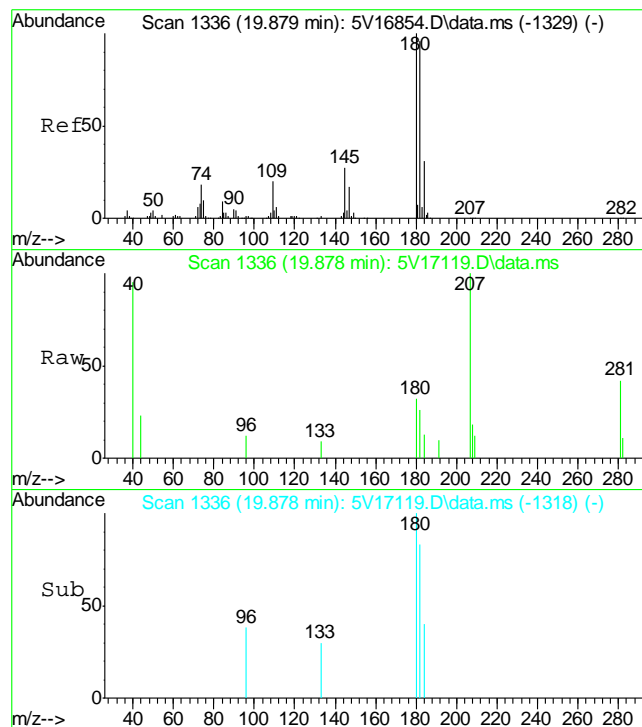
Tgt Ion:	180	Resp:	1834
Ion Ratio	Lower	Upper	
180	100		
182	98.4	76.7	115.1
145	10.0	20.7	31.1#



#91
Naphthalene
Concen: 1.16 ug/l
RT: 19.559 min Scan# 1308
Delta R.T. -0.000 min
Lab File: 5V17119.D
Acq: 23 Aug 2011 10:03 am

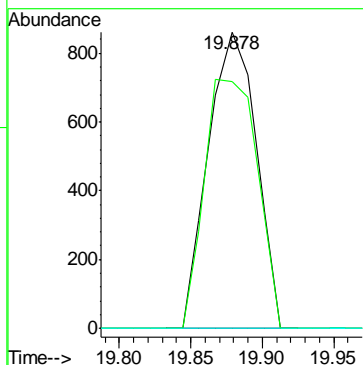
Tgt Ion:	128	Resp:	7774
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#93
1,2,3-Trichlorobenzene
Concen: 0.27 ug/l
RT: 19.878 min Scan# 1336
Delta R.T. 0.000 min
Lab File: 5V17119.D
Acq: 23 Aug 2011 10:03 am

Tgt Ion	180	Resp	2004
Ion Ratio	Lower	Upper	
180	100		
182	92.9	77.6	116.4
145	0.0	22.2	33.4#



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: D26811
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4330-MB	3G05627.D	1	08/23/11	TMB	08/23/11	OP4330	E3G204

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

D26811-1, D26811-2

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

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	161% * a 10-145%
321-60-8	2-Fluorobiphenyl	109% 10-130%
1718-51-0	Terphenyl-d14	138% * a 22-130%

(a) Surrogate recovery is above control limits. The method blank is non-detect for target analytes, so no further action is needed.

Blank Spike Summary

Page 1 of 1

Job Number: D26811
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4330-BS	3G05675.D	1	08/25/11	TMB	08/23/11	OP4330	E3G206

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D26811-1, D26811-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	60.2	72	34-130
120-12-7	Anthracene	83.3	74.0	89	35-130
56-55-3	Benzo(a)anthracene	83.3	99.2	119	36-130
50-32-8	Benzo(a)pyrene	83.3	80.0	96	36-130
205-99-2	Benzo(b)fluoranthene	83.3	104	125	35-130
207-08-9	Benzo(k)fluoranthene	83.3	66.6	80	37-130
218-01-9	Chrysene	83.3	69.6	84	40-130
53-70-3	Dibenzo(a,h)anthracene	83.3	76.9	92	32-130
206-44-0	Fluoranthene	83.3	88.9	107	38-130
86-73-7	Fluorene	83.3	71.3	86	35-130
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	90.3	108	28-130
91-20-3	Naphthalene	83.3	60.5	73	35-130
129-00-0	Pyrene	83.3	72.6	87	37-130

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	116%	10-145%
321-60-8	2-Fluorobiphenyl	73%	10-130%
1718-51-0	Terphenyl-d14	90%	22-130%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D26811
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4330-MS	3G05632.D	10	08/23/11	TMB	08/23/11	OP4330	E3G204
OP4330-MSD	3G05633.D	10	08/24/11	TMB	08/23/11	OP4330	E3G204
D26816-1	3G05698.D	10	08/26/11	TMB	08/23/11	OP4330	E3G206

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D26811-1, D26811-2

CAS No.	Compound	D26816-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		104	90.2	87	88.0	85	2	10-155/30
120-12-7	Anthracene	ND		104	144	139	133	128	8	10-155/30
56-55-3	Benzo(a)anthracene	ND		104	268	258* a	232	224* a	14	10-175/30
50-32-8	Benzo(a)pyrene	ND		104	197	190* a	185	178* a	6	10-164/30
205-99-2	Benzo(b)fluoranthene	ND		104	207	199* a	190	183* a	9	10-165/30
207-08-9	Benzo(k)fluoranthene	ND		104	131	126	125	121	5	10-178/30
218-01-9	Chrysene	ND		104	113	109	96.0	93	16	10-147/30
53-70-3	Dibenzo(a,h)anthracene	ND		104	ND	0* a	ND	0* a	nc	10-144/30
206-44-0	Fluoranthene	84.6		104	370	241* a	261	136	35* a	10-207/30
86-73-7	Fluorene	ND		104	123	119	117	113	5	10-163/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		104	ND	0* a	ND	0* a	nc	10-180/30
91-20-3	Naphthalene	ND		104	319	307* a	150	145	72* b	10-198/30
129-00-0	Pyrene	ND		104	201	194* a	148	143	30	10-189/30

CAS No.	Surrogate Recoveries	MS	MSD	D26816-1	Limits
4165-60-0	Nitrobenzene-d5	138%	143%	145%	10-145%
321-60-8	2-Fluorobiphenyl	81%	82%	65%	10-130%
1718-51-0	Terphenyl-d14	83%	80%	70%	22-130%

(a) Outside control limits due to matrix interference.

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

GC/MS Semi-volatiles

Raw Data

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Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\082411\
 Data File : 3g05654.D
 Acq On : 24 Aug 2011 10:42 pm
 Operator : TamiB
 Sample : D26811-1,100x
 Misc : OP4330,E3G205,30.04,,,4,100
 ALS Vial : 16 Sample Multiplier: 1

Quant Time: Aug 25 09:27:47 2011
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G205.M
 Quant Title : PAHSIM BASE
 QLast Update : Thu Aug 25 09:23:03 2011
 Response via : Initial Calibration

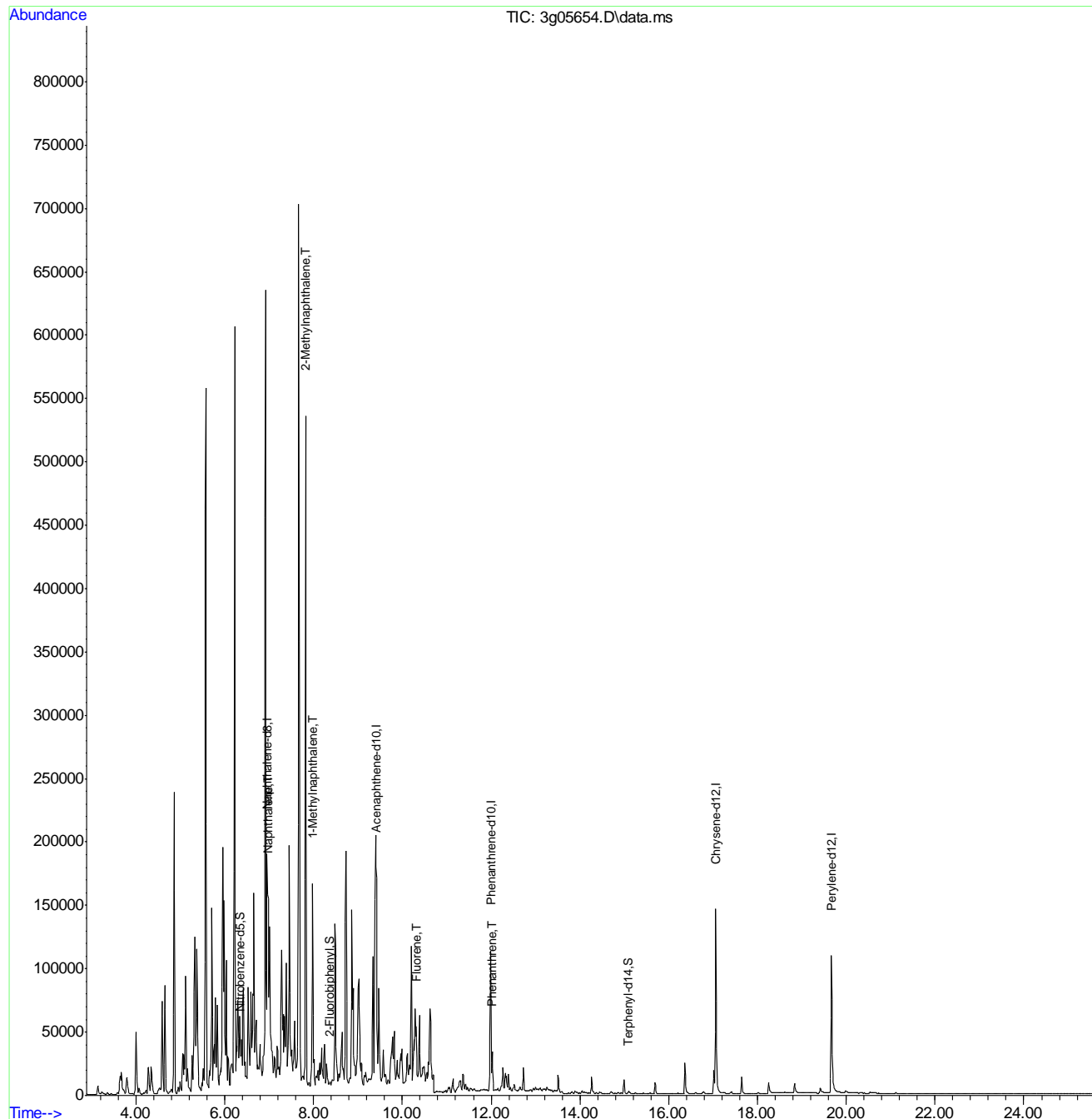
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	6.955	136	177789	4.00	ug/mL	0.00
6) Acenaphthene-d10	9.416	164	100304	4.00	ug/mL	0.00
14) Phenanthrene-d10	11.989	188	136264	4.00	ug/mL	0.00
18) Chrysene-d12	17.060	240	172901	4.00	ug/mL	0.00
23) Perylene-d12	19.666	264	154240	4.00	ug/mL	0.00
System Monitoring Compounds						
2) Nitrobenzene-d5	6.356	82	5174	1.97	ug/mL	0.12
7) 2-Fluorobiphenyl	8.365	172	4317	0.13	ug/mL	-0.01
20) Terphenyl-d14	15.099	244	2543	0.10	ug/mL	0.00
Target Compounds						
					Qvalue	
3) N-Nitrosodimethylamine	0.000		0	N.D.	d	
4) N-Nitrosodi-propylamine	0.000		0	N.D.	d	
5) Naphthalene	6.980	128	104487	1.91	ug/mL	90
8) 2-Methylnaphthalene	7.821	142	301012	8.88	ug/mL	98
9) 1-Methylnaphthalene	7.975	142	86451m	2.62	ug/mL	
10) Acenaphthylene	0.000		0	N.D.	d	
11) Acenaphthene	0.000		0	N.D.	d	
12) Fluorene	10.314	166	41831	1.44	ug/mL#	33
13) Diphenylamine	0.000		0	N.D.	d	
15) Phenanthrene	12.029	178	29249	0.63	ug/mL	99
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	

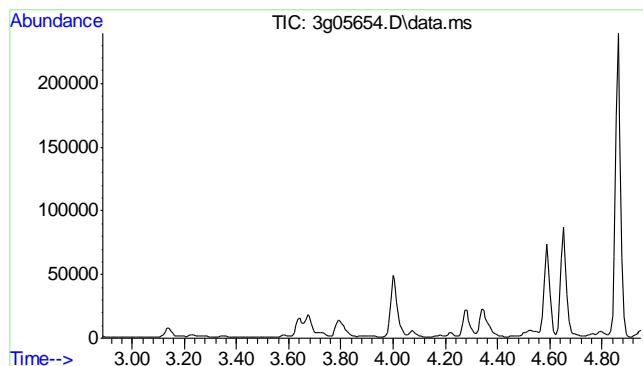
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\082411\
Data File : 3g05654.D
Acq On : 24 Aug 2011 10:42 pm
Operator : TamiB
Sample : D26811-1,100x
Misc : OP4330,E3G205,30.04,,,4,100
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Aug 25 09:27:47 2011
Quant Method : C:\msdchem\1\METHODS\SIMPE3G205.M
Quant Title : PAHSIM BASE
QLast Update : Thu Aug 25 09:23:03 2011
Response via : Initial Calibration

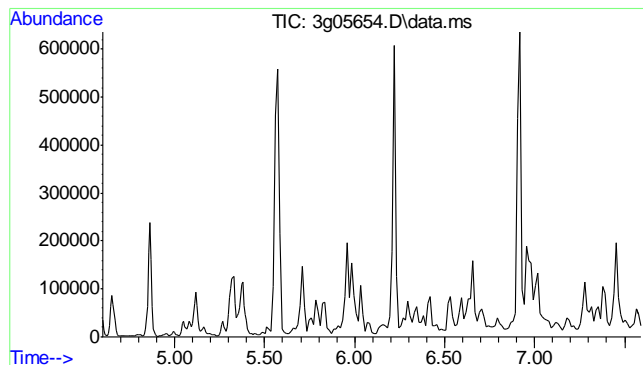
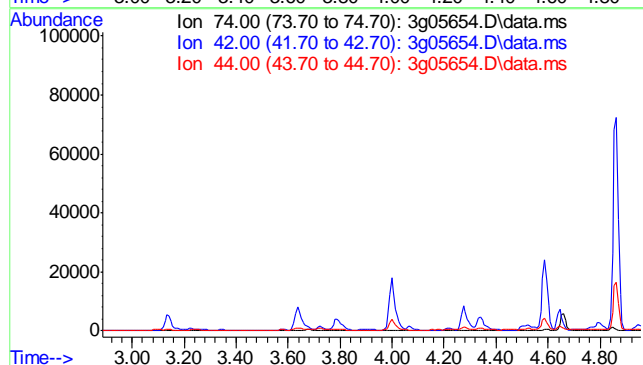




#3
N-Nitrosodimethylamine
Concen: N.D. ug/mL
Expected RT: 3.45 min

Lab File: 3g05654.D
Acq: 24 Aug 11 10:42 pm

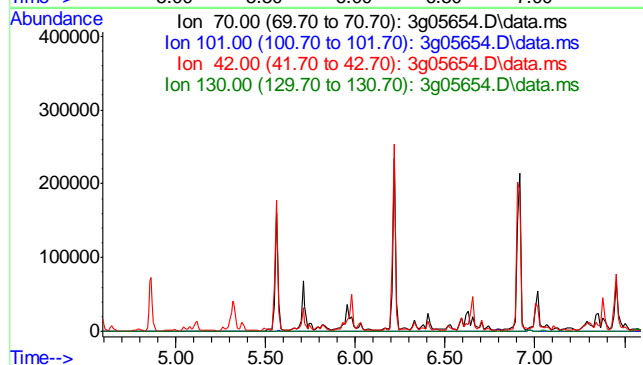
Tgt Ion	Exp Ratio
74	100
42	73.0
44	5.8

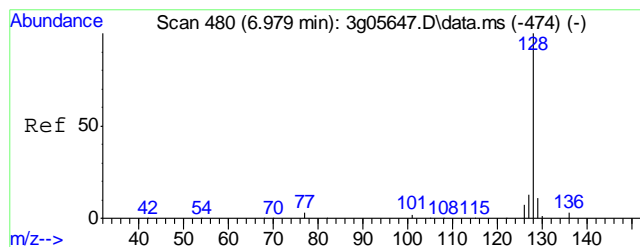


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 6.09 min

Lab File: 3g05654.D
Acq: 24 Aug 11 10:42 pm

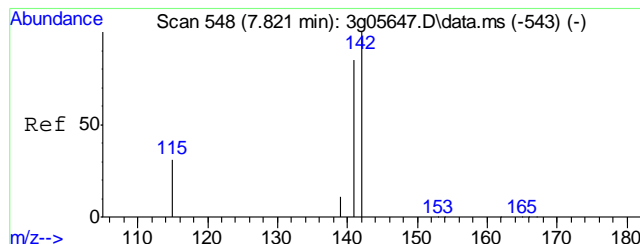
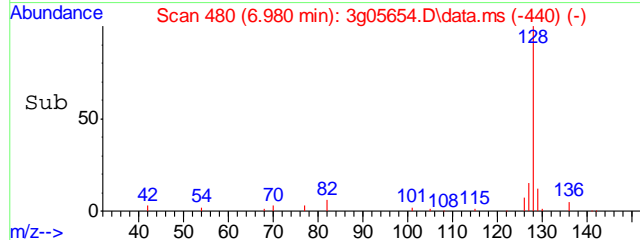
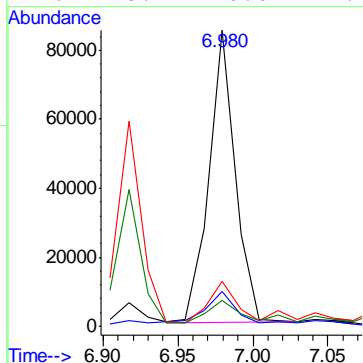
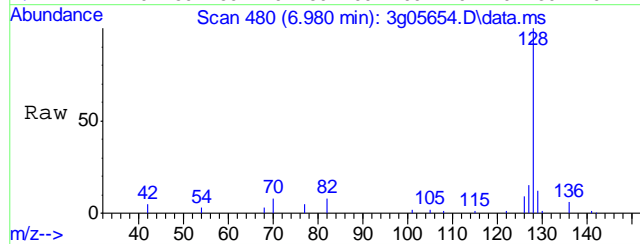
Tgt Ion	Exp Ratio
70	100
101	11.2
42	56.0
130	26.5





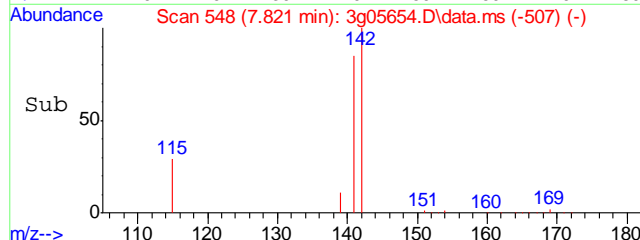
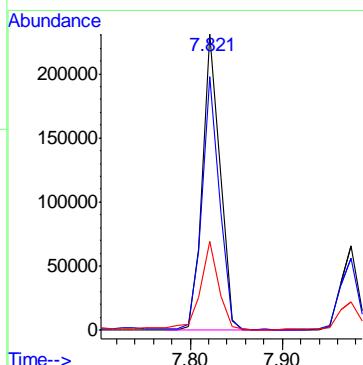
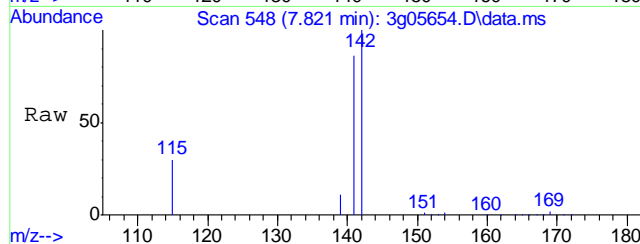
#5
Naphthalene
Concen: 1.91 ug/mL
RT: 6.980 min Scan# 480
Delta R.T. 0.000 min
Lab File: 3g05654.D
Acq: 24 Aug 11 10:42 pm

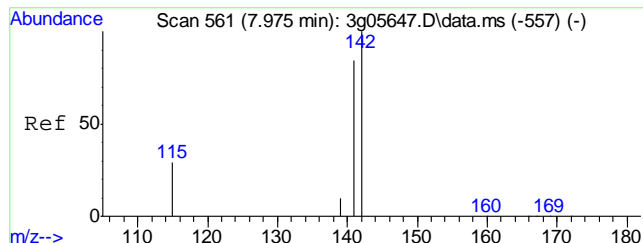
Tgt Ion	Ratio	Lower	Upper
128	100		
129	18.9	0.0	31.0
127	14.5	0.0	32.9
126	8.7	0.0	27.1



#8
2-Methylnaphthalene
Concen: 8.88 ug/mL
RT: 7.821 min Scan# 548
Delta R.T. 0.000 min
Lab File: 3g05654.D
Acq: 24 Aug 11 10:42 pm

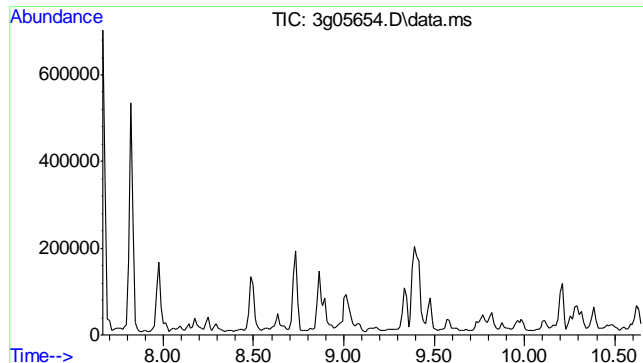
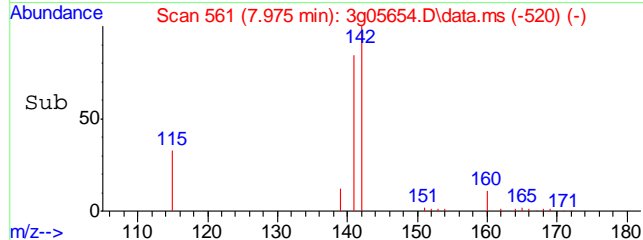
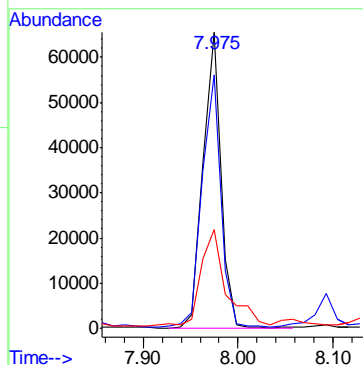
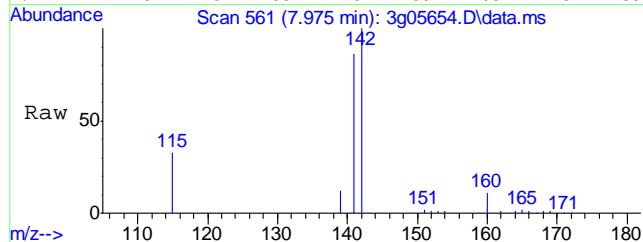
Tgt Ion	Ratio	Lower	Upper
142	100		
141	85.3	63.3	103.3
115	31.6	10.4	50.4





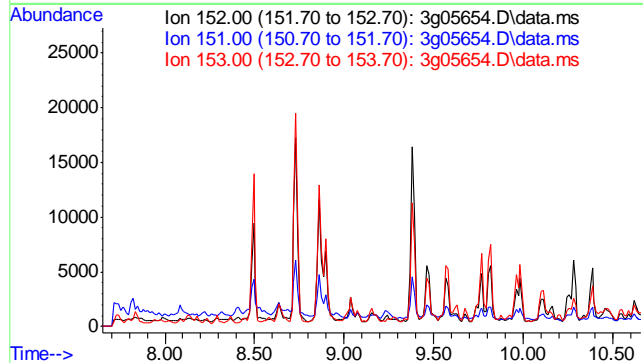
#9
1-Methylnaphthalene
Concen: 2.62 ug/mL m
RT: 7.975 min Scan# 561
Delta R.T. 0.000 min
Lab File: 3g05654.D
Acq: 24 Aug 11 10:42 pm

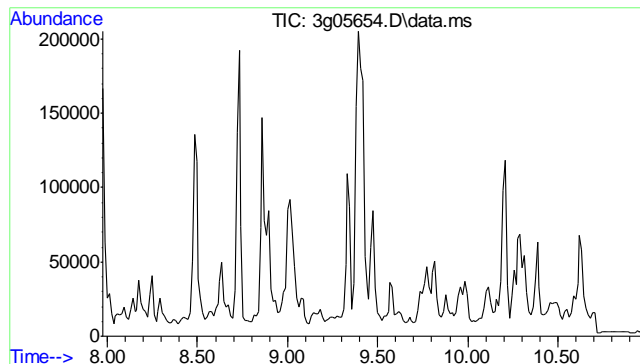
Tgt Ion	Ratio	Lower	Upper
142	100		
141	296.9	69.0	103.4#
115	109.9	25.8	38.8#



#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 9.16 min
Lab File: 3g05654.D
Acq: 24 Aug 11 10:42 pm

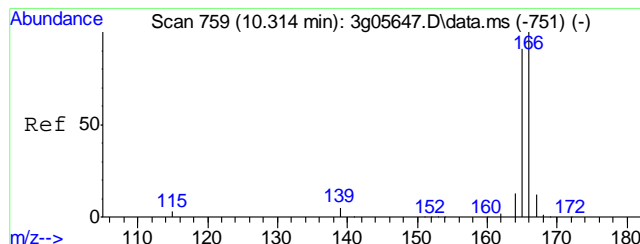
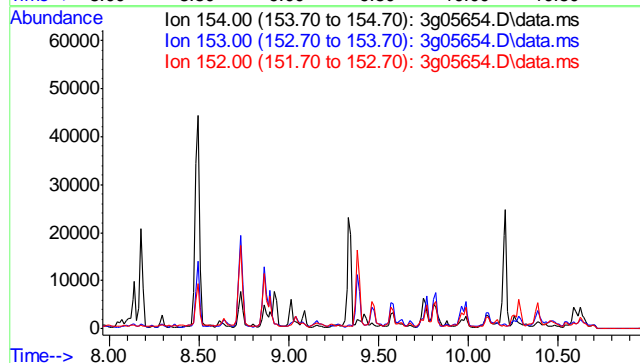
Tgt Ion	Sig	Exp Ratio
152	100	
151	19.1	
153	13.0	





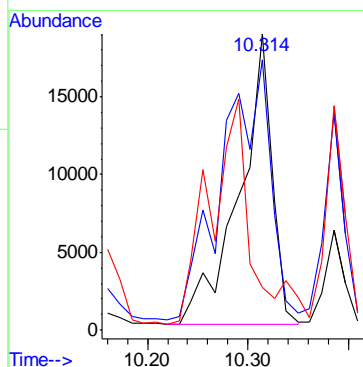
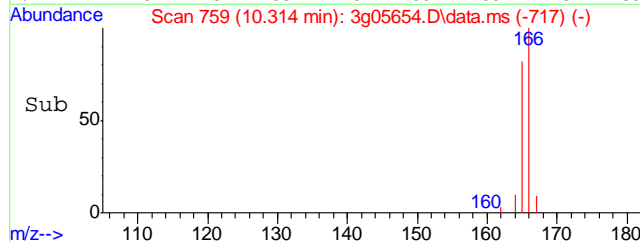
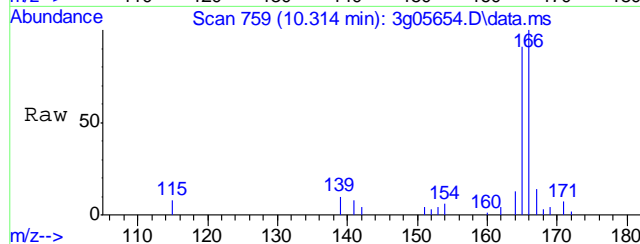
#11
 Acenaphthene
 Concen: N.D. ug/mL
 Expected RT: 9.46 min
 Lab File: 3g05654.D
 Acq: 24 Aug 11 10:42 pm

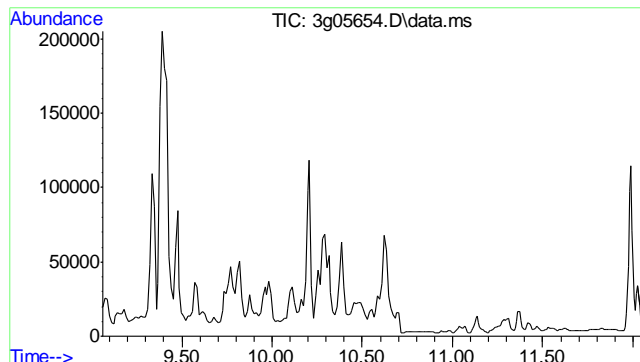
Tgt Ion: 154
 Sig Exp Ratio
 154 100
 153 104.1
 152 49.6



#12
 Fluorene
 Concen: 1.44 ug/mL
 RT: 10.314 min Scan# 759
 Delta R.T. 0.000 min
 Lab File: 3g05654.D
 Acq: 24 Aug 11 10:42 pm

Tgt Ion: 166 Resp: 41831
 Ion Ratio Lower Upper
 166 100
 165 132.7 70.6 110.6#
 167 103.9 0.0 32.4#

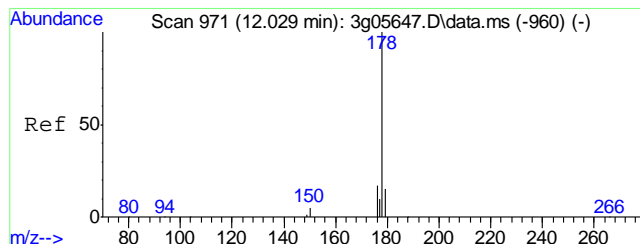
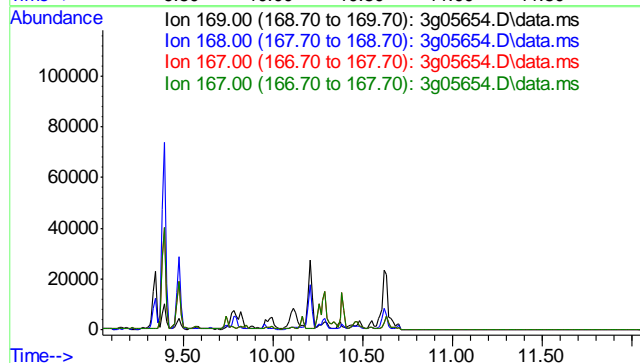




#13
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 10.55 min

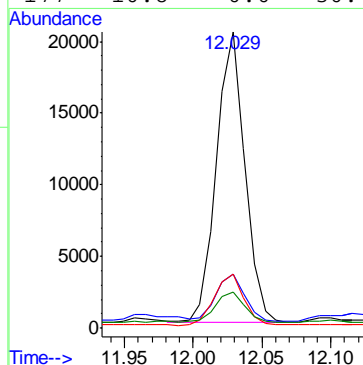
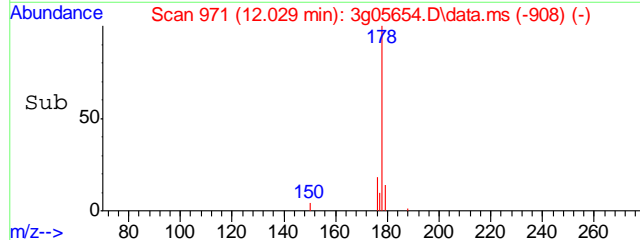
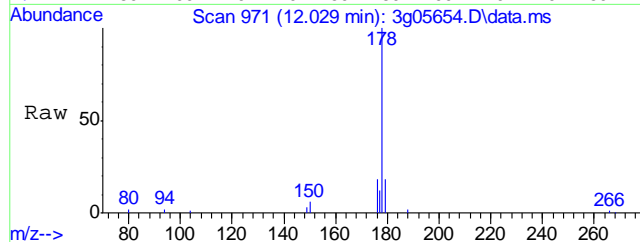
Lab File: 3g05654.D
Acq: 24 Aug 11 10:42 pm

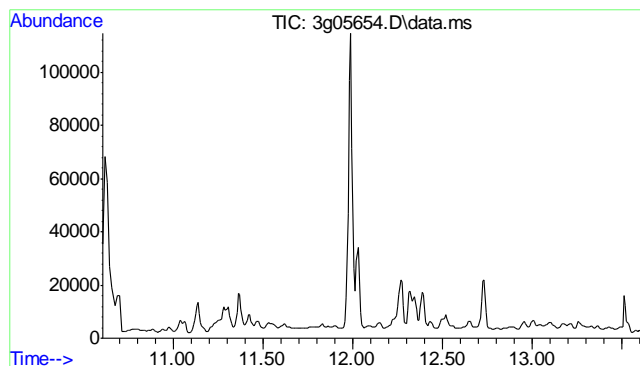
Tgt Ion: 169
Sig Exp Ratio
169 100
168 61.3
167 32.9
167 32.9



#15
Phenanthrene
Concen: 0.63 ug/mL
RT: 12.029 min Scan# 971
Delta R.T. 0.000 min
Lab File: 3g05654.D
Acq: 24 Aug 11 10:42 pm

Tgt Ion: 178 Resp: 29249
Ion Ratio Lower Upper
178 100
179 16.1 0.0 35.2
176 17.9 0.0 38.0
177 10.8 0.0 30.4

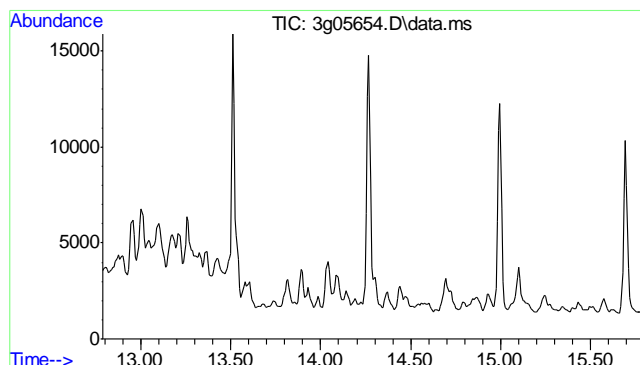
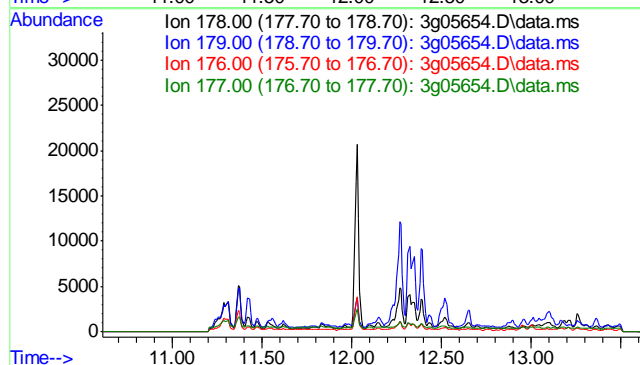




#16
 Anthracene
 Concen: N.D. ug/mL
 Expected RT: 12.11 min

 Lab File: 3g05654.D
 Acq: 24 Aug 11 10:42 pm

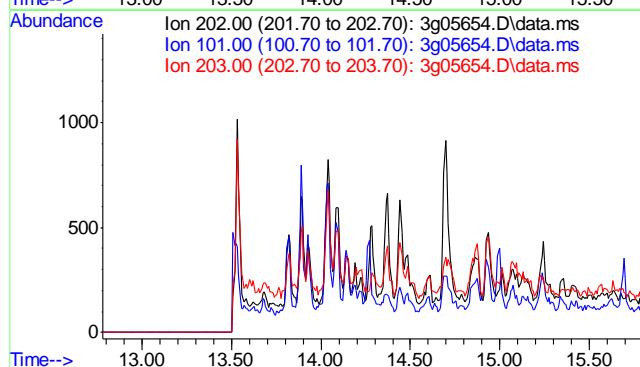
Tgt Ion	Sig	Exp Ratio
178	100	
179	15.3	
176	17.2	
177	8.9	

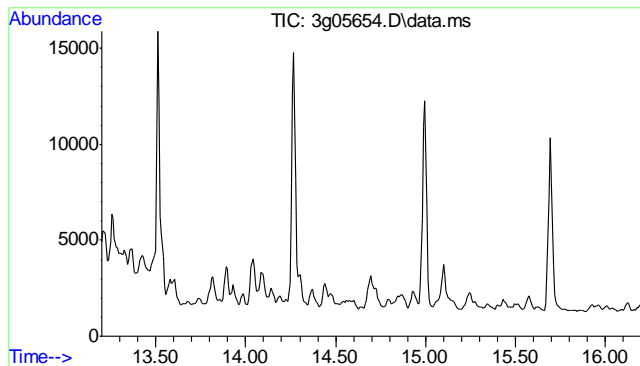


#17
 Fluoranthene
 Concen: N.D. ug/mL
 Expected RT: 14.28 min

 Lab File: 3g05654.D
 Acq: 24 Aug 11 10:42 pm

Tgt Ion	Sig	Exp Ratio
202	100	
101	19.6	
203	17.1	

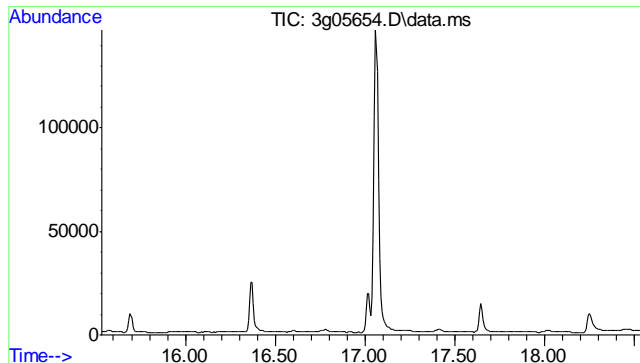
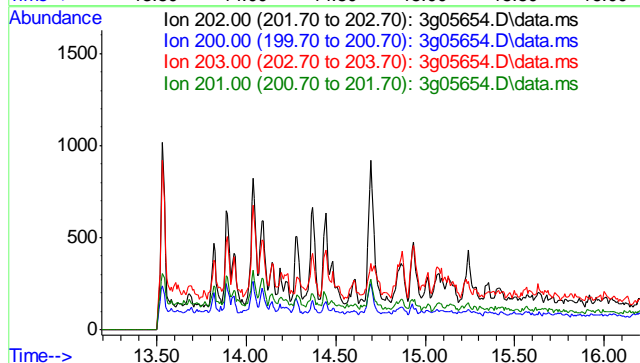




#19
 Pyrene
 Concen: N.D. ug/mL
 Expected RT: 14.70 min

 Lab File: 3g05654.D
 Acq: 24 Aug 11 10:42 pm

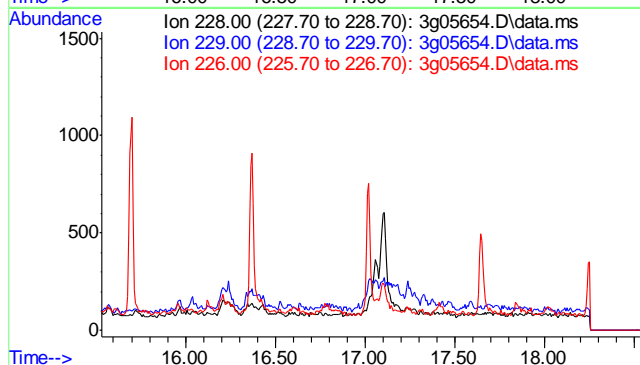
Tgt Ion	Sig	Exp Ratio
202	100	
200	21.3	
203	17.5	
201	17.9	

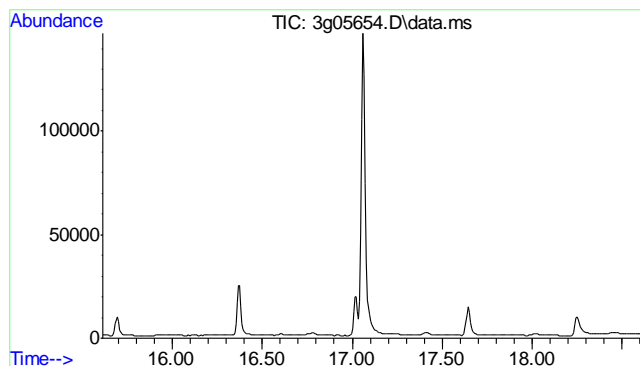


#21
 Benzo(a)anthracene
 Concen: N.D. ug/mL
 Expected RT: 17.03 min

 Lab File: 3g05654.D
 Acq: 24 Aug 11 10:42 pm

Tgt Ion	Sig	Exp Ratio
228	100	
229	19.5	
226	25.7	

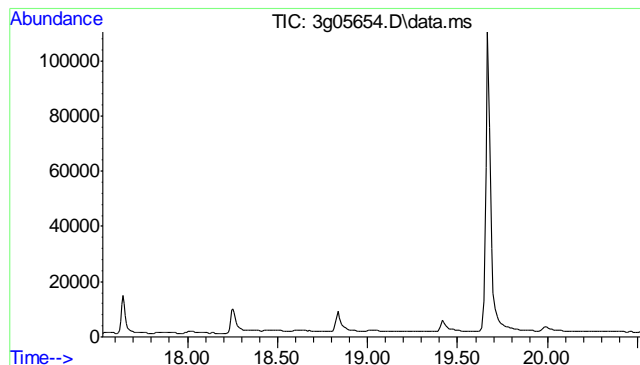
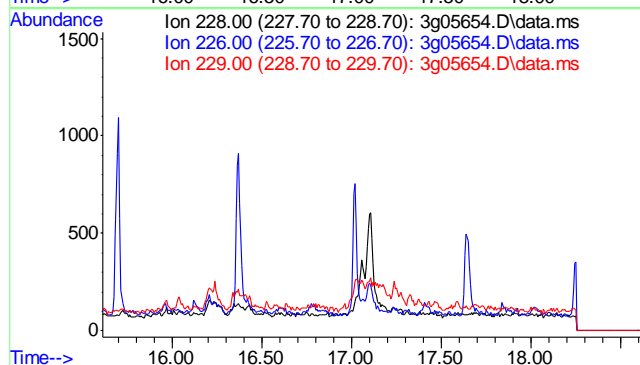




#22
 Chrysene
 Concen: N.D. ug/mL
 Expected RT: 17.11 min

Lab File: 3g05654.D
 Acq: 24 Aug 11 10:42 pm

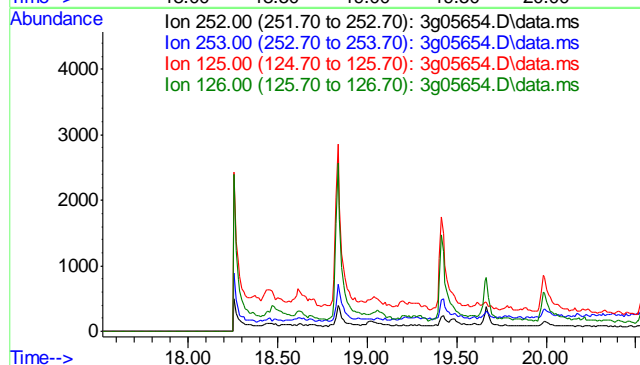
Tgt Ion	Exp Ratio
228	100
226	27.4
229	19.2

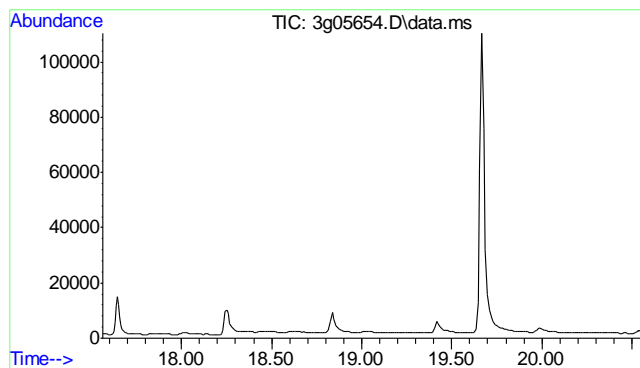


#24
 Benzo(b)fluoranthene
 Concen: N.D. ug/mL
 Expected RT: 19.02 min

Lab File: 3g05654.D
 Acq: 24 Aug 11 10:42 pm

Tgt Ion	Exp Ratio
252	100
253	21.6
125	18.7
126	25.5

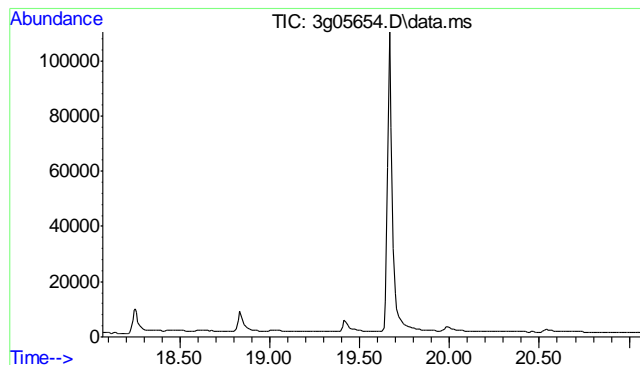
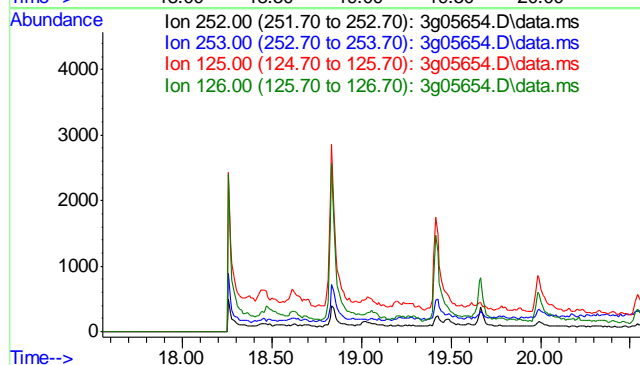




#25
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 19.06 min

Lab File: 3g05654.D
Acq: 24 Aug 11 10:42 pm

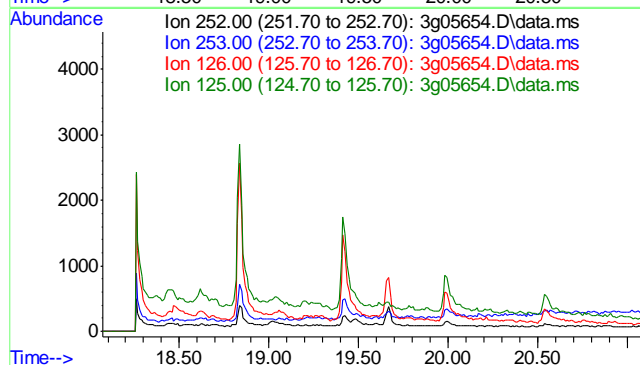
Tgt Ion	Exp Ratio
252	100
253	21.3
125	16.4
126	24.4

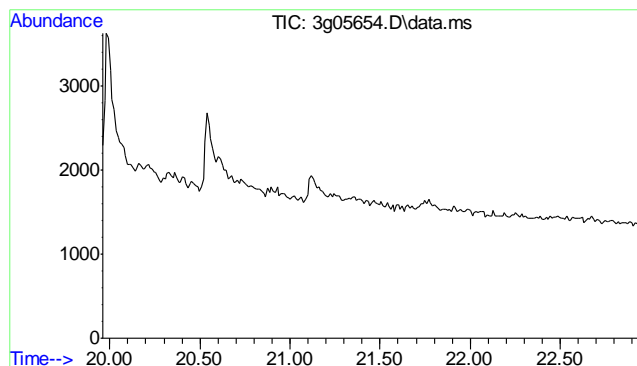


#26
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 19.57 min

Lab File: 3g05654.D
Acq: 24 Aug 11 10:42 pm

Tgt Ion	Exp Ratio
252	100
253	21.8
126	24.9
125	18.7

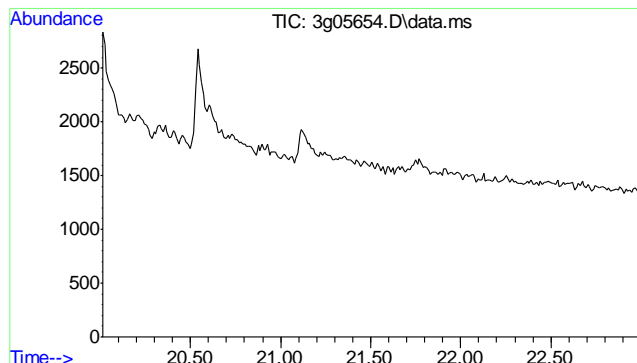
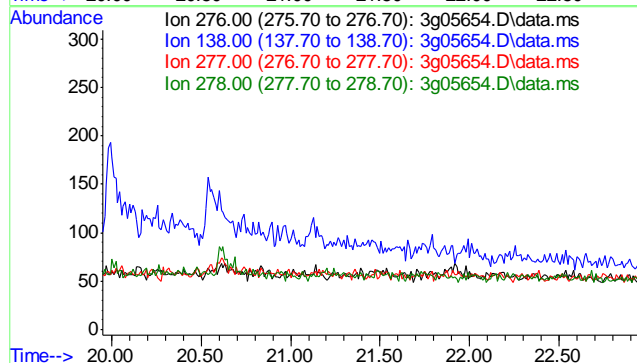




#27
 Indeno(1,2,3-cd)pyrene
 Concen: N.D. ug/mL
 Expected RT: 21.45 min

 Lab File: 3g05654.D
 Acq: 24 Aug 11 10:42 pm

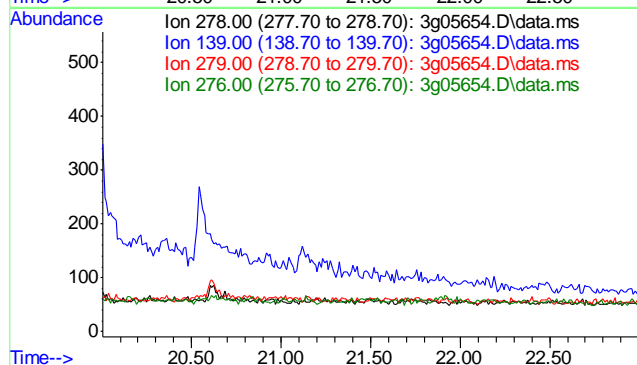
Tgt Ion	Exp Ratio
276	100
138	26.6
277	45.6
278	0.0

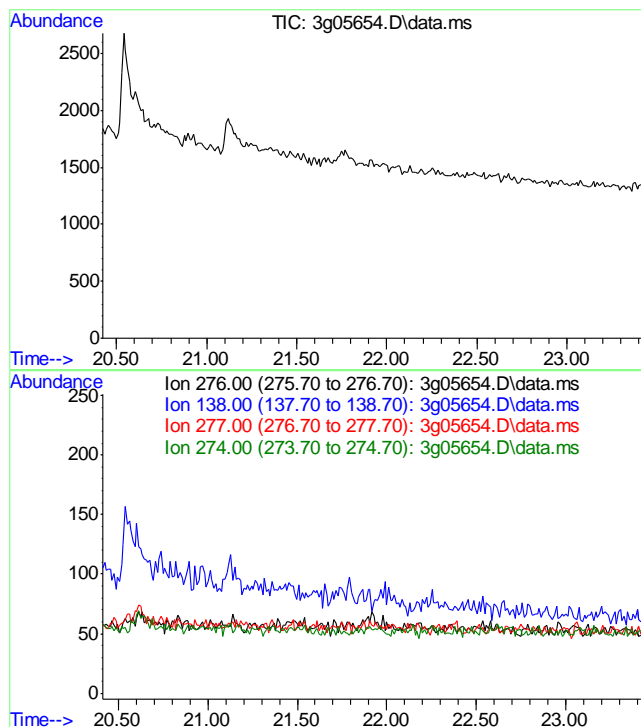


#28
 Dibenzo(a,h)anthracene
 Concen: N.D. ug/mL
 Expected RT: 21.51 min

 Lab File: 3g05654.D
 Acq: 24 Aug 11 10:42 pm

Tgt Ion	Exp Ratio
278	100
139	27.3
279	23.3
276	124.9





#29
 Benzo(g,h,i)perylene
 Concen: N.D. ug/mL
 Expected RT: 21.92 min

Lab File: 3g05654.D
 Acq: 24 Aug 11 10:42 pm

Tgt Ion	Sig	Exp Ratio
276	100	
138	36.4	
277	23.0	
274	20.5	

8.1.1

8

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\082211\
 Data File : 3g05630.D
 Acq On : 23 Aug 2011 10:38 pm
 Operator : TamiB
 Sample : D26811-2,10x
 Misc : OP4330,E3G204,30.08,,,1,10
 ALS Vial : 43 Sample Multiplier: 1

Quant Time: Aug 24 13:39:30 2011
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G203.M
 Quant Title : PAHSIM BASE
 QLast Update : Tue Aug 23 10:55:33 2011
 Response via : Initial Calibration

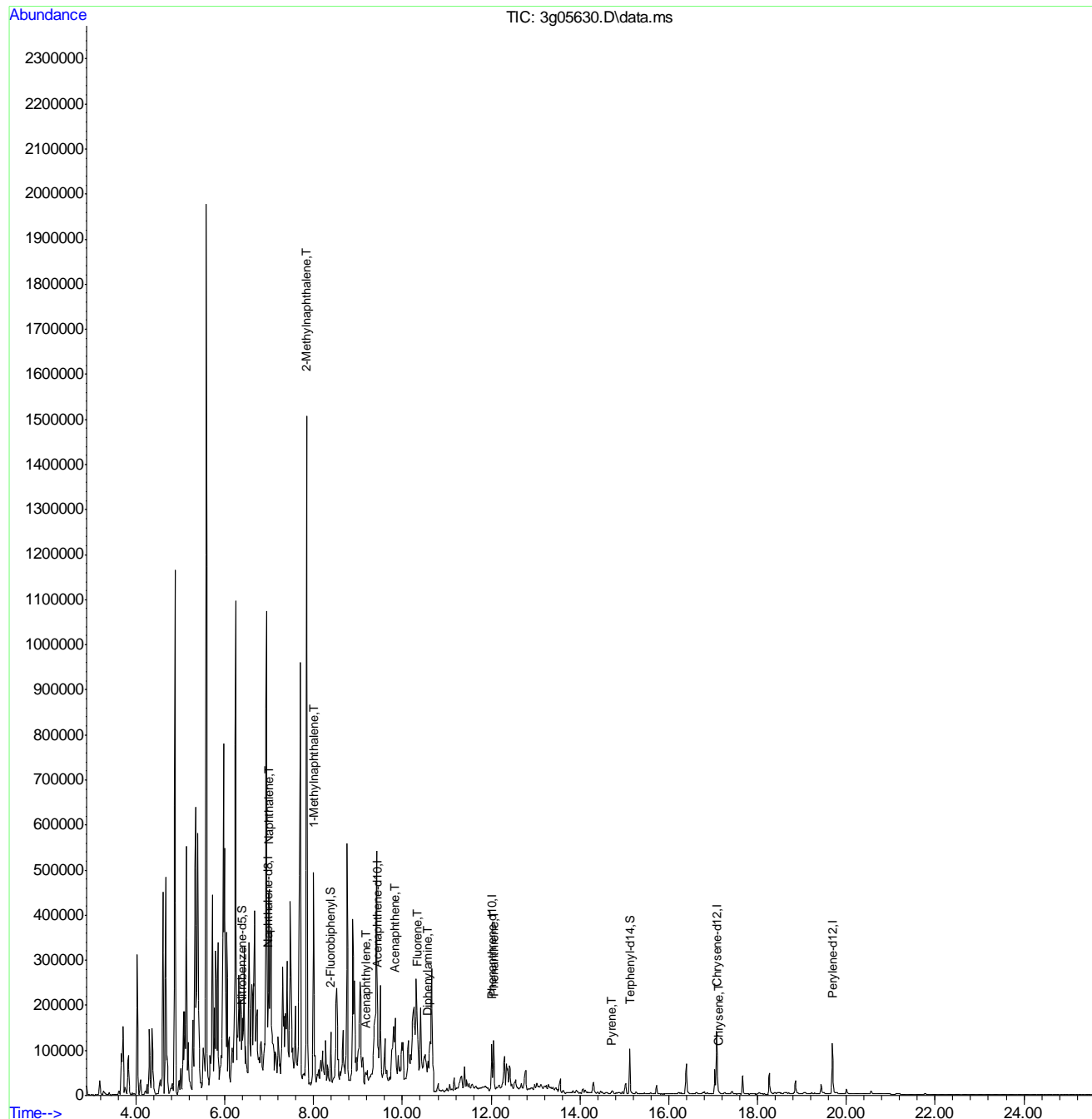
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	6.979	136	128886	4.00	ug/mL	0.00
6) Acenaphthene-d10	9.440	164	81226	4.00	ug/mL	0.01
14) Phenanthrene-d10	12.013	188	129356	4.00	ug/mL	0.00
18) Chrysene-d12	17.080	240	168270	4.00	ug/mL	0.00
23) Perylene-d12	19.687	264	143467	4.00	ug/mL	0.00
System Monitoring Compounds						
2) Nitrobenzene-d5	6.381	82	16965	8.58	ug/mL	0.14
7) 2-Fluorobiphenyl	8.388	172	113202	4.48	ug/mL	0.00
20) Terphenyl-d14	15.123	244	114344	4.86	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	7.004	128	452313	13.78	ug/mL	92
8) 2-Methylnaphthalene	7.845	142	965856	42.34	ug/mL	98
9) 1-Methylnaphthalene	7.999	142	282225m	12.60	ug/mL	
10) Acenaphthylene	9.180	152	7928	0.38	ug/mL#	1
11) Acenaphthene	9.842	154	33925	1.77	ug/mL	84
12) Fluorene	10.338	166	130281	6.41	ug/mL#	26
13) Diphenylamine	10.574	169	18118	1.27	ug/mL#	80
15) Phenanthrene	12.060	178	111474	3.19	ug/mL	96
16) Anthracene	0.000		0	N.D.	d	
17) Fluoranthene	0.000		0	N.D.	d	
19) Pyrene	14.719	202	6761	0.24	ug/mL#	82
21) Benzo(a)anthracene	0.000		0	N.D.	d	
22) Chrysene	17.120	228	4849	0.11	ug/mL#	78
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	

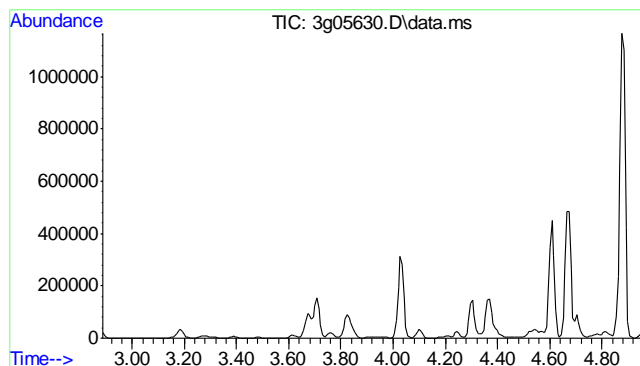
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\082211\
Data File : 3g05630.D
Acq On : 23 Aug 2011 10:38 pm
Operator : TamiB
Sample : D26811-2,10x
Misc : OP4330,E3G204,30.08,,,1,10
ALS Vial : 43 Sample Multiplier: 1

Quant Time: Aug 24 13:39:30 2011
Quant Method : C:\msdchem\1\METHODS\SIMPE3G203.M
Quant Title : PAHSIM BASE
QLast Update : Tue Aug 23 10:55:33 2011
Response via : Initial Calibration

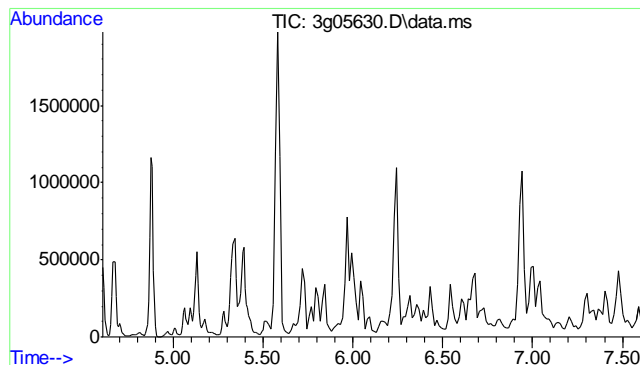
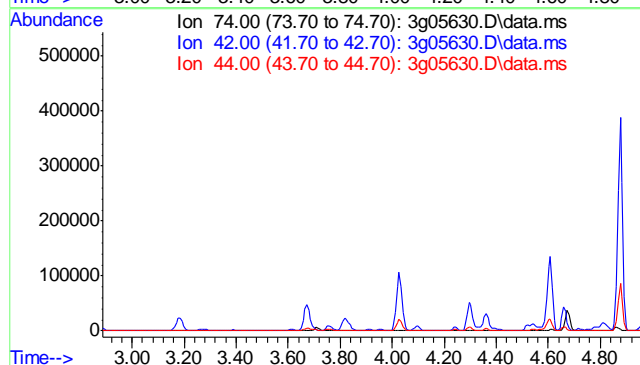




#3
N-Nitrosodimethylamine
Concen: N.D. ug/mL
Expected RT: 3.45 min

Lab File: 3g05630.D
Acq: 23 Aug 11 10:38 pm

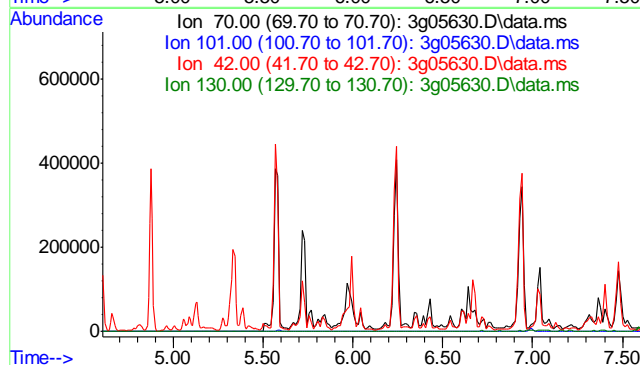
Tgt Ion	Exp Ratio
74	100
42	68.2
44	5.3

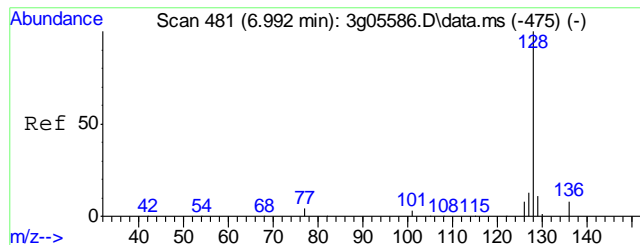


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 6.11 min

Lab File: 3g05630.D
Acq: 23 Aug 11 10:38 pm

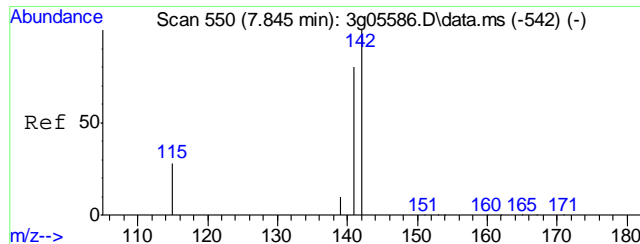
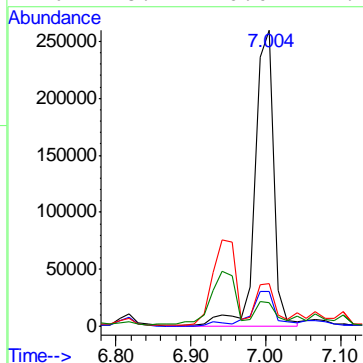
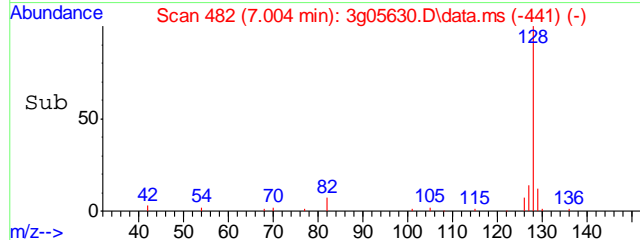
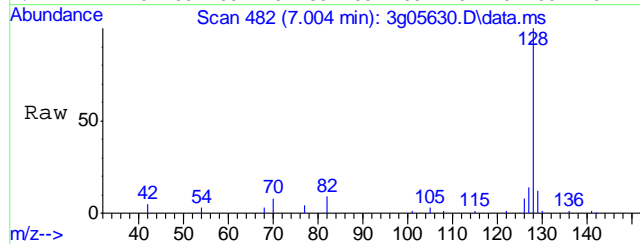
Tgt Ion	Exp Ratio
70	100
101	10.1
42	48.8
130	21.6





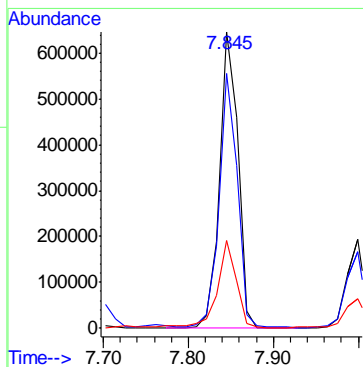
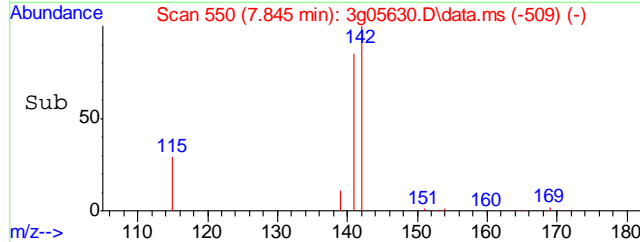
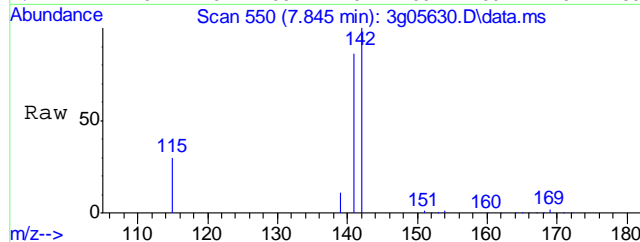
#5
Naphthalene
Concen: 13.78 ug/mL
RT: 7.004 min Scan# 482
Delta R.T. 0.012 min
Lab File: 3g05630.D
Acq: 23 Aug 11 10:38 pm

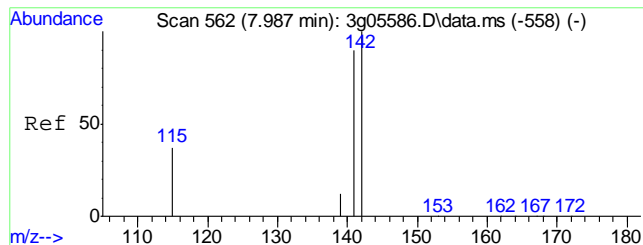
Tgt Ion	Ratio	Lower	Upper
128	100		
129	15.9	0.0	30.8
127	10.6	0.0	32.6
126	8.2	0.0	27.1



#8
2-Methylnaphthalene
Concen: 42.34 ug/mL
RT: 7.845 min Scan# 550
Delta R.T. -0.000 min
Lab File: 3g05630.D
Acq: 23 Aug 11 10:38 pm

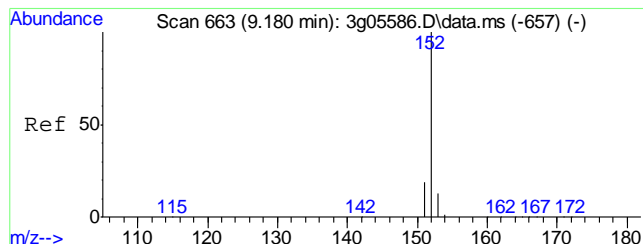
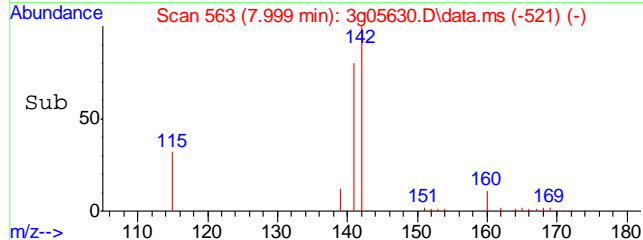
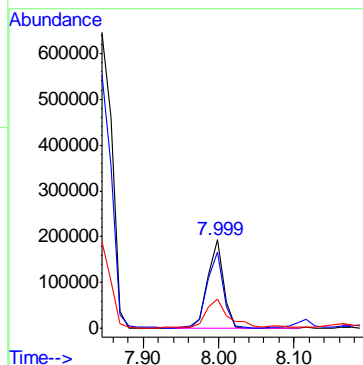
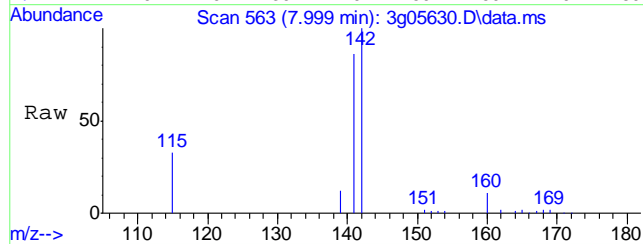
Tgt Ion	Ratio	Lower	Upper
142	100		
141	84.9	63.6	103.6
115	30.4	13.2	53.2





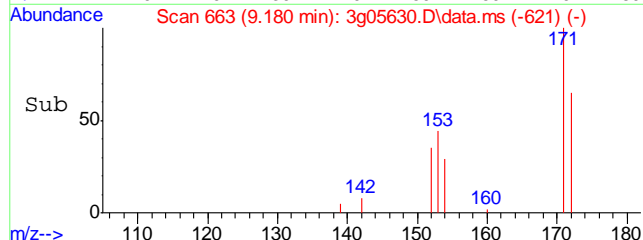
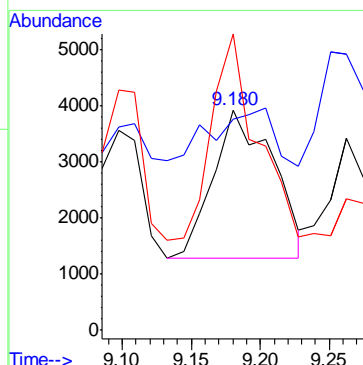
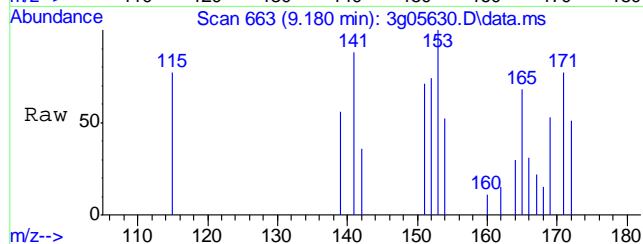
#9
1-Methylnaphthalene
Concen: 12.60 ug/mL m
RT: 7.999 min Scan# 563
Delta R.T. 0.012 min
Lab File: 3g05630.D
Acq: 23 Aug 11 10:38 pm

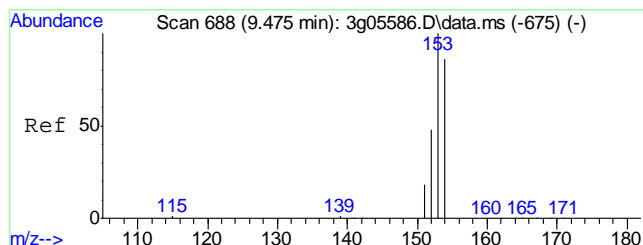
Tgt Ion	Ratio	Lower	Upper
142	100		
141	290.5	69.7	104.5#
115	104.1	27.8	41.8#



#10
Acenaphthylene
Concen: 0.38 ug/mL
RT: 9.180 min Scan# 663
Delta R.T. -0.000 min
Lab File: 3g05630.D
Acq: 23 Aug 11 10:38 pm

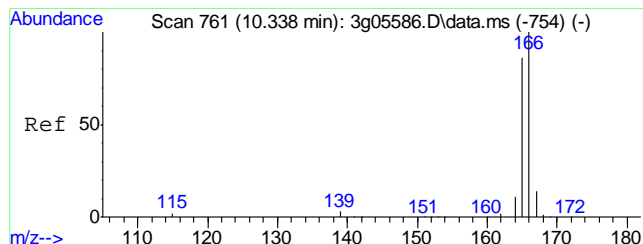
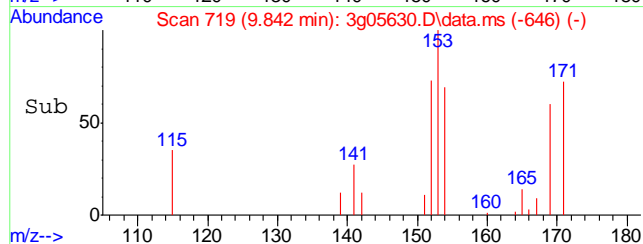
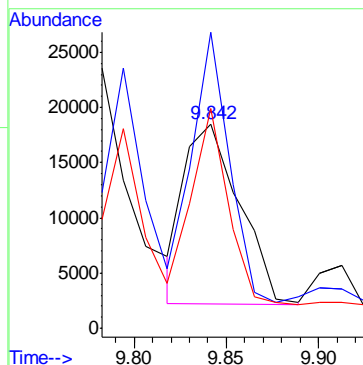
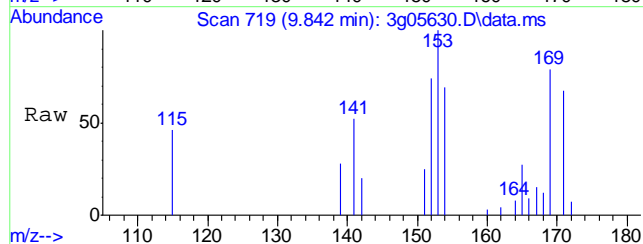
Tgt Ion	Ratio	Lower	Upper
152	100		
151	53.4	0.0	39.1#
153	106.7	0.0	32.9#





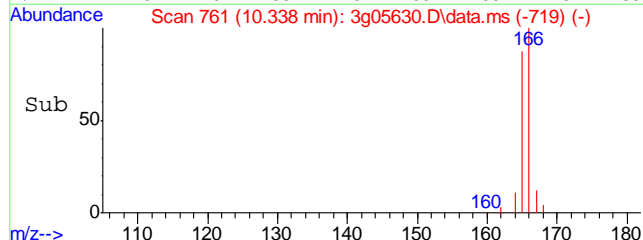
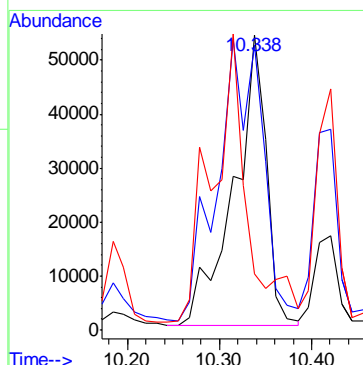
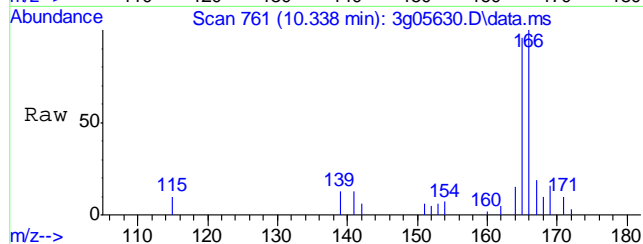
#11
Acenaphthene
Concen: 1.77 ug/mL
RT: 9.842 min Scan# 719
Delta R.T. 0.366 min
Lab File: 3g05630.D
Acq: 23 Aug 11 10:38 pm

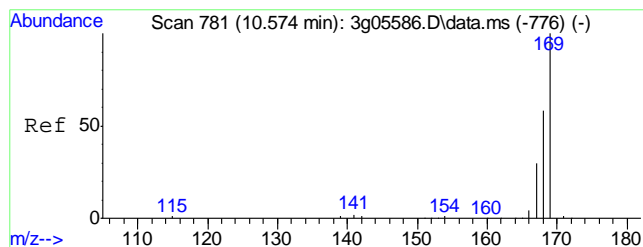
Tgt Ion	Ratio	Lower	Upper
154	100		
153	100.5	91.9	131.9
152	72.9	33.3	73.3



#12
Fluorene
Concen: 6.41 ug/mL
RT: 10.338 min Scan# 761
Delta R.T. -0.000 min
Lab File: 3g05630.D
Acq: 23 Aug 11 10:38 pm

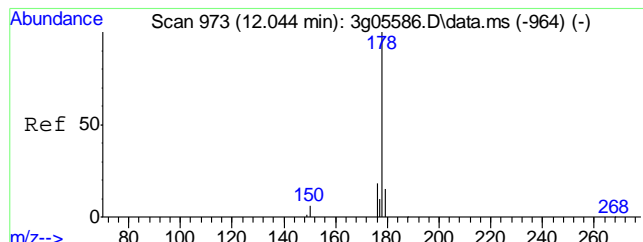
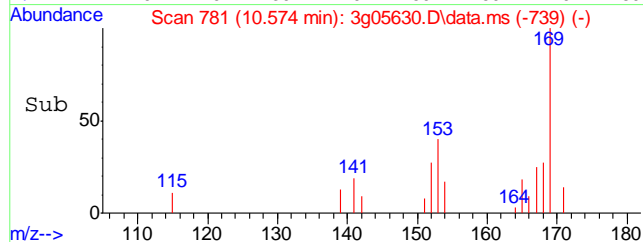
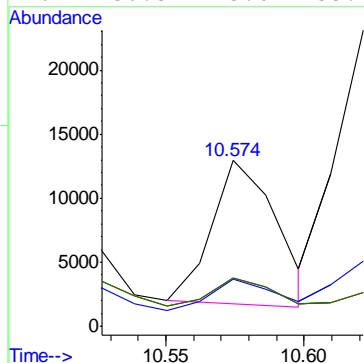
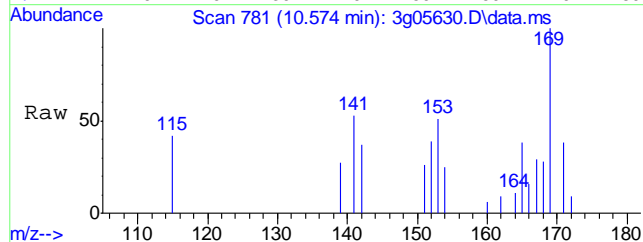
Tgt Ion	Ratio	Lower	Upper
166	100		
165	135.6	70.5	110.5#
167	115.6	0.0	33.3#





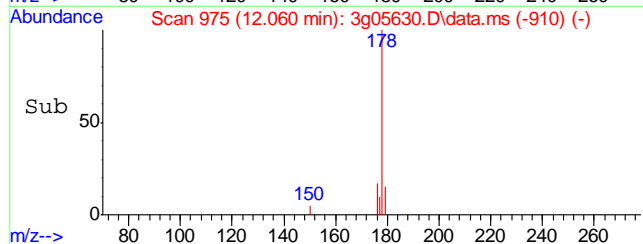
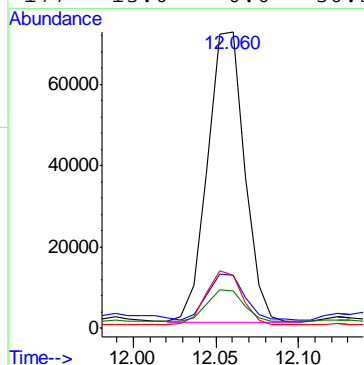
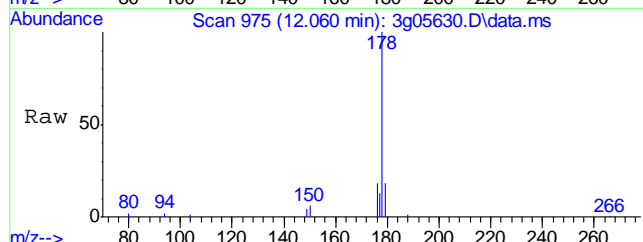
#13
Diphenylamine
Concen: 1.27 ug/mL
RT: 10.574 min Scan# 781
Delta R.T. -0.000 min
Lab File: 3g05630.D
Acq: 23 Aug 11 10:38 pm

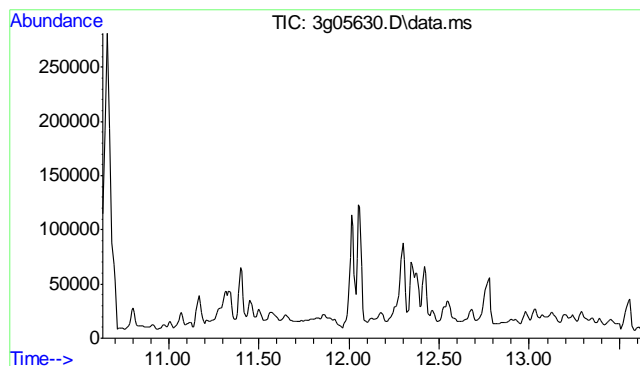
Tgt Ion:	169	Resp:	18118
Ion Ratio	Lower	Upper	
169	100		
168	34.4	41.1	81.1#
167	36.3	13.0	53.0
167	36.3	13.0	53.0



#15
Phenanthrene
Concen: 3.19 ug/mL
RT: 12.060 min Scan# 975
Delta R.T. 0.016 min
Lab File: 3g05630.D
Acq: 23 Aug 11 10:38 pm

Tgt Ion:	178	Resp:	111474
Ion Ratio	Lower	Upper	
178	100		
179	18.0	0.0	35.2
176	18.5	0.0	38.4
177	13.0	0.0	30.5

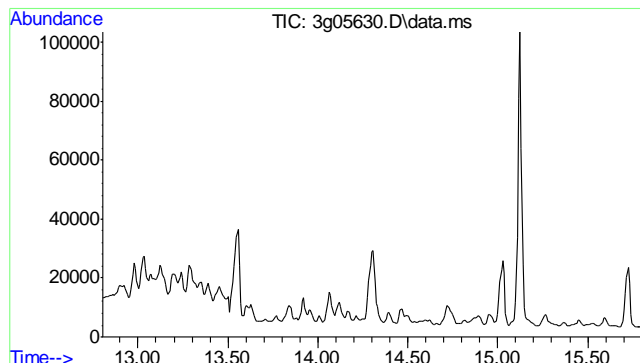
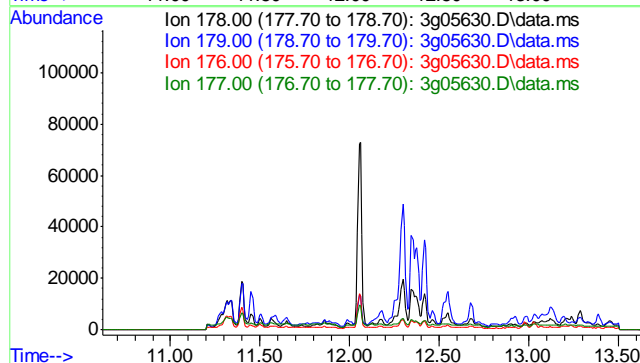




#16
 Anthracene
 Concen: N.D. ug/mL
 Expected RT: 12.12 min

Lab File: 3g05630.D
 Acq: 23 Aug 11 10:38 pm

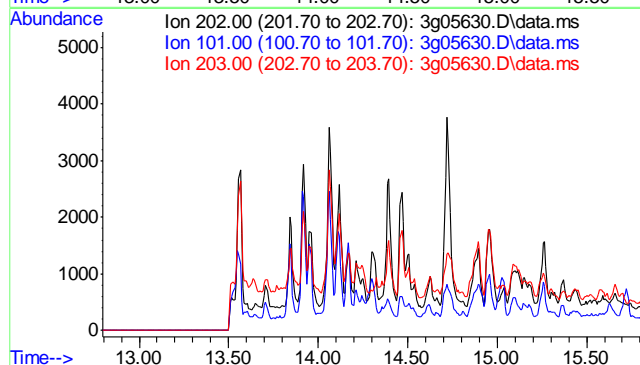
Tgt Ion	Sig	Exp Ratio
178	100	
179	15.0	
176	17.7	
177	8.9	

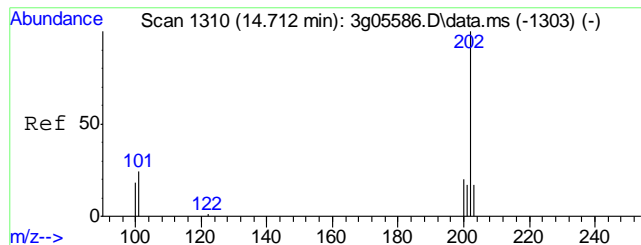


#17
 Fluoranthene
 Concen: N.D. ug/mL
 Expected RT: 14.30 min

Lab File: 3g05630.D
 Acq: 23 Aug 11 10:38 pm

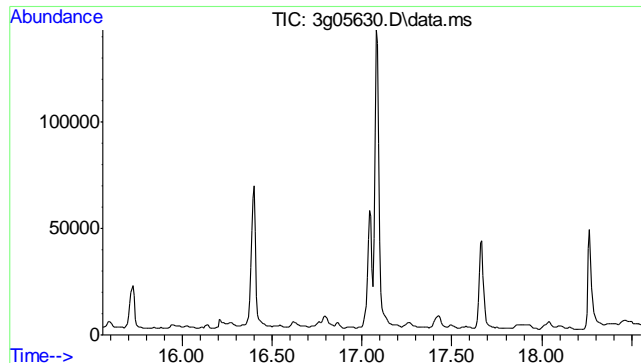
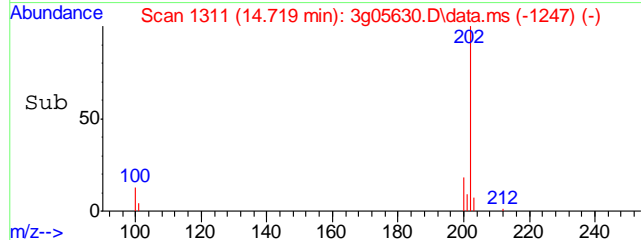
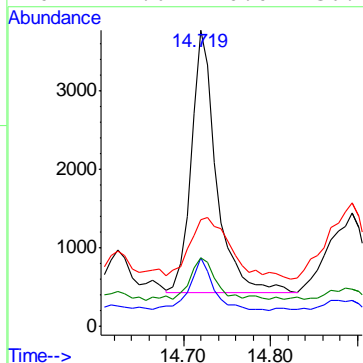
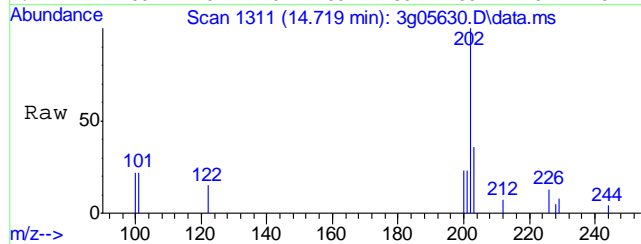
Tgt Ion	Sig	Exp Ratio
202	100	
101	20.2	
203	17.3	





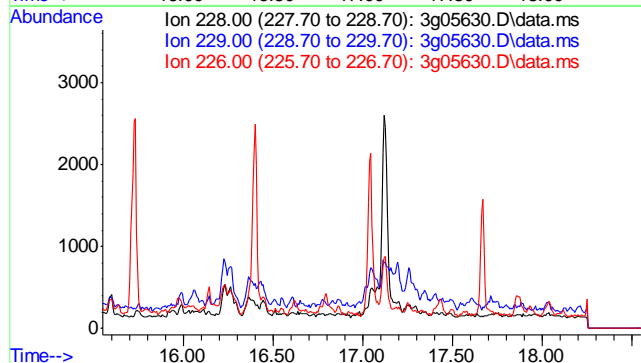
#19
Pyrene
Concen: 0.24 ug/mL
RT: 14.719 min Scan# 1311
Delta R.T. 0.008 min
Lab File: 3g05630.D
Acq: 23 Aug 11 10:38 pm

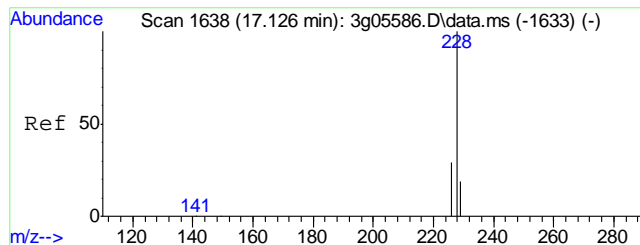
Tgt Ion	Ratio	Lower	Upper
202	100		
200	17.4	0.0	40.0
203	37.9	0.0	37.4#
201	17.6	0.0	36.6



#21
Benzo(a)anthracene
Concen: N.D. ug/mL
Expected RT: 17.05 min
Lab File: 3g05630.D
Acq: 23 Aug 11 10:38 pm

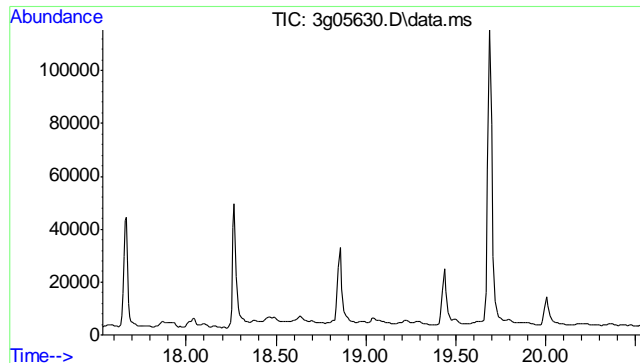
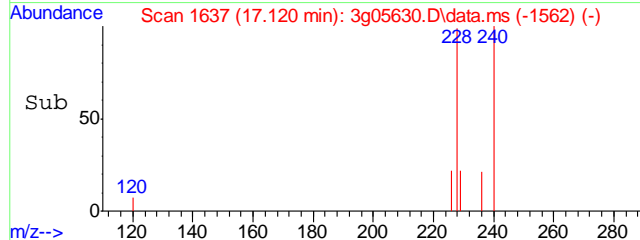
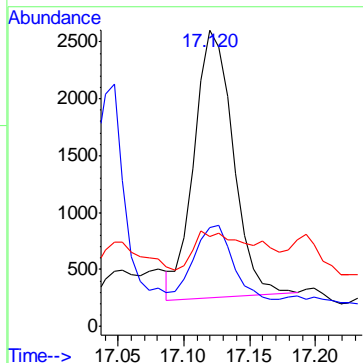
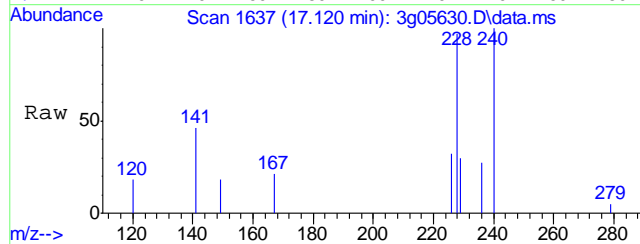
Tgt Ion	Sig	Exp Ratio
228	100	
229	19.6	
226	25.9	





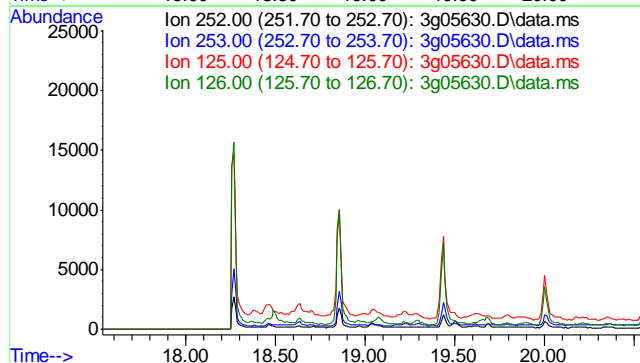
#22
Chrysene
Concen: 0.11 ug/mL
RT: 17.120 min Scan# 1637
Delta R.T. -0.007 min
Lab File: 3g05630.D
Acq: 23 Aug 11 10:38 pm

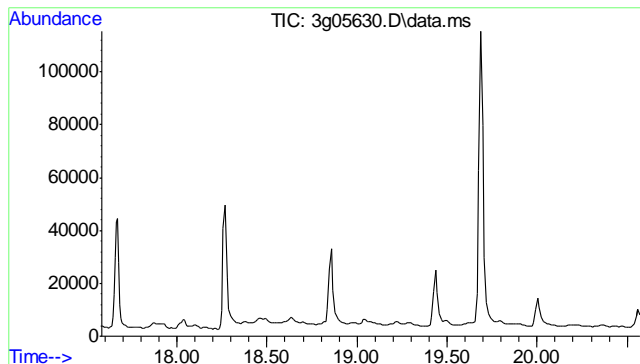
Tgt Ion: 228 Resp: 4849
Ion Ratio Lower Upper
228 100
226 29.7 7.9 47.9
229 41.3 0.0 39.1#



#24
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 19.04 min
Lab File: 3g05630.D
Acq: 23 Aug 11 10:38 pm

Tgt Ion: 252
Sig Exp Ratio
252 100
253 65.7
125 30.6
126 45.1

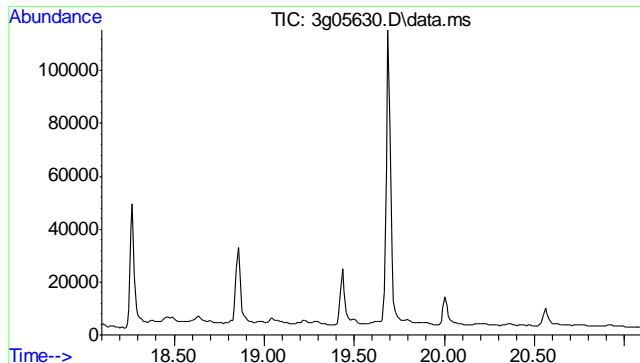
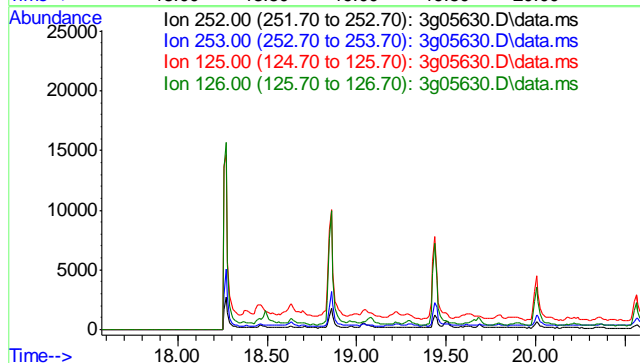




#25
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 19.08 min

Lab File: 3g05630.D
Acq: 23 Aug 11 10:38 pm

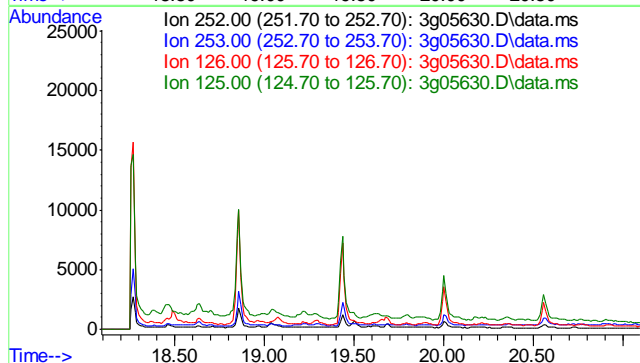
Tgt Ion	Exp Ratio
252	100
253	32.4
125	15.1
126	22.2

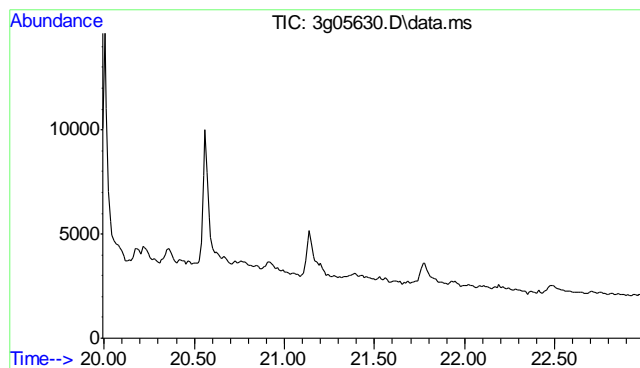


#26
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 19.59 min

Lab File: 3g05630.D
Acq: 23 Aug 11 10:38 pm

Tgt Ion	Exp Ratio
252	100
253	21.2
126	23.4
125	17.3

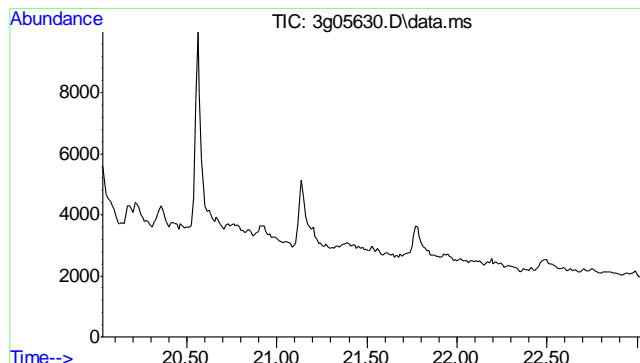
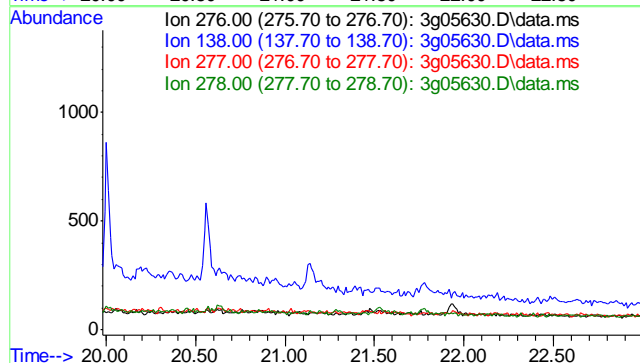




#27
 Indeno(1,2,3-cd)pyrene
 Concen: N.D. ug/mL
 Expected RT: 21.49 min

 Lab File: 3g05630.D
 Acq: 23 Aug 11 10:38 pm

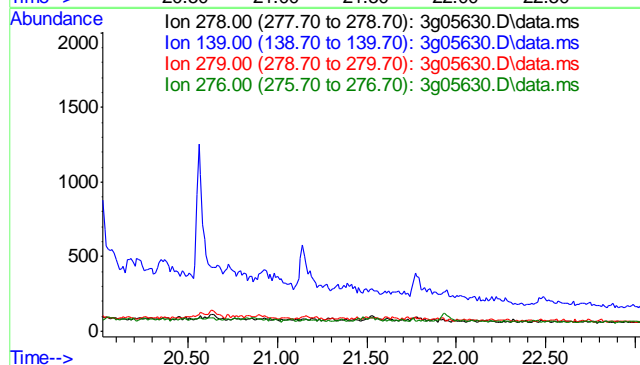
Tgt Ion	Exp Ratio
276	100
138	72.2
277	46.7
278	159.5

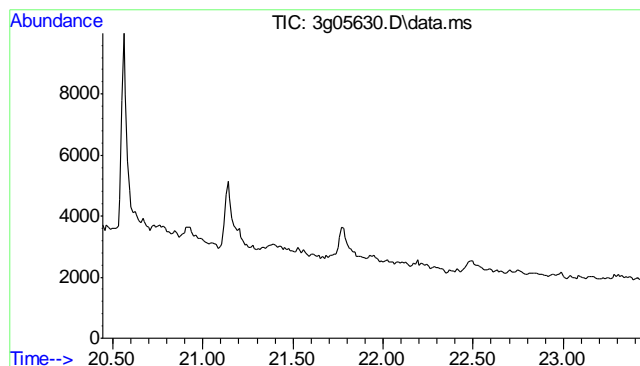


#28
 Dibenzo(a,h)anthracene
 Concen: N.D. ug/mL
 Expected RT: 21.53 min

 Lab File: 3g05630.D
 Acq: 23 Aug 11 10:38 pm

Tgt Ion	Exp Ratio
278	100
139	25.1
279	23.5
276	117.6

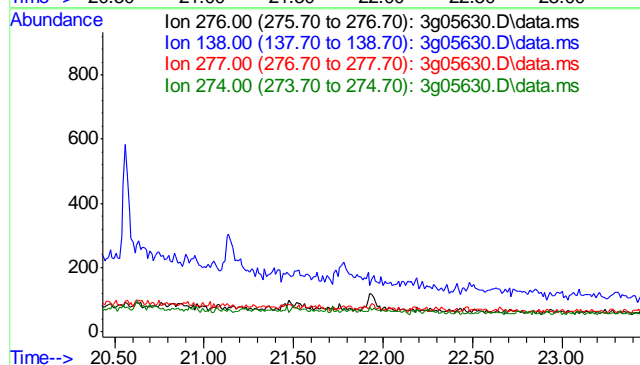




#29
 Benzo(g,h,i)perylene
 Concen: N.D. ug/mL
 Expected RT: 21.94 min

Lab File: 3g05630.D
 Acq: 23 Aug 11 10:38 pm

Tgt Ion	Sig	Exp Ratio
276	100	
138	31.5	
277	23.3	
274	21.0	



8.1.2
 8

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\082211\
 Data File : 3g05627.D
 Acq On : 23 Aug 2011 8:42 pm
 Operator : TamiB
 Sample : OP4330-MB
 Misc : OP4330,E3G204,30,,,1,1
 ALS Vial : 40 Sample Multiplier: 1

Quant Time: Aug 24 13:36:51 2011
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G203.M
 Quant Title : PAHSIM BASE
 QLast Update : Tue Aug 23 10:55:33 2011
 Response via : Initial Calibration

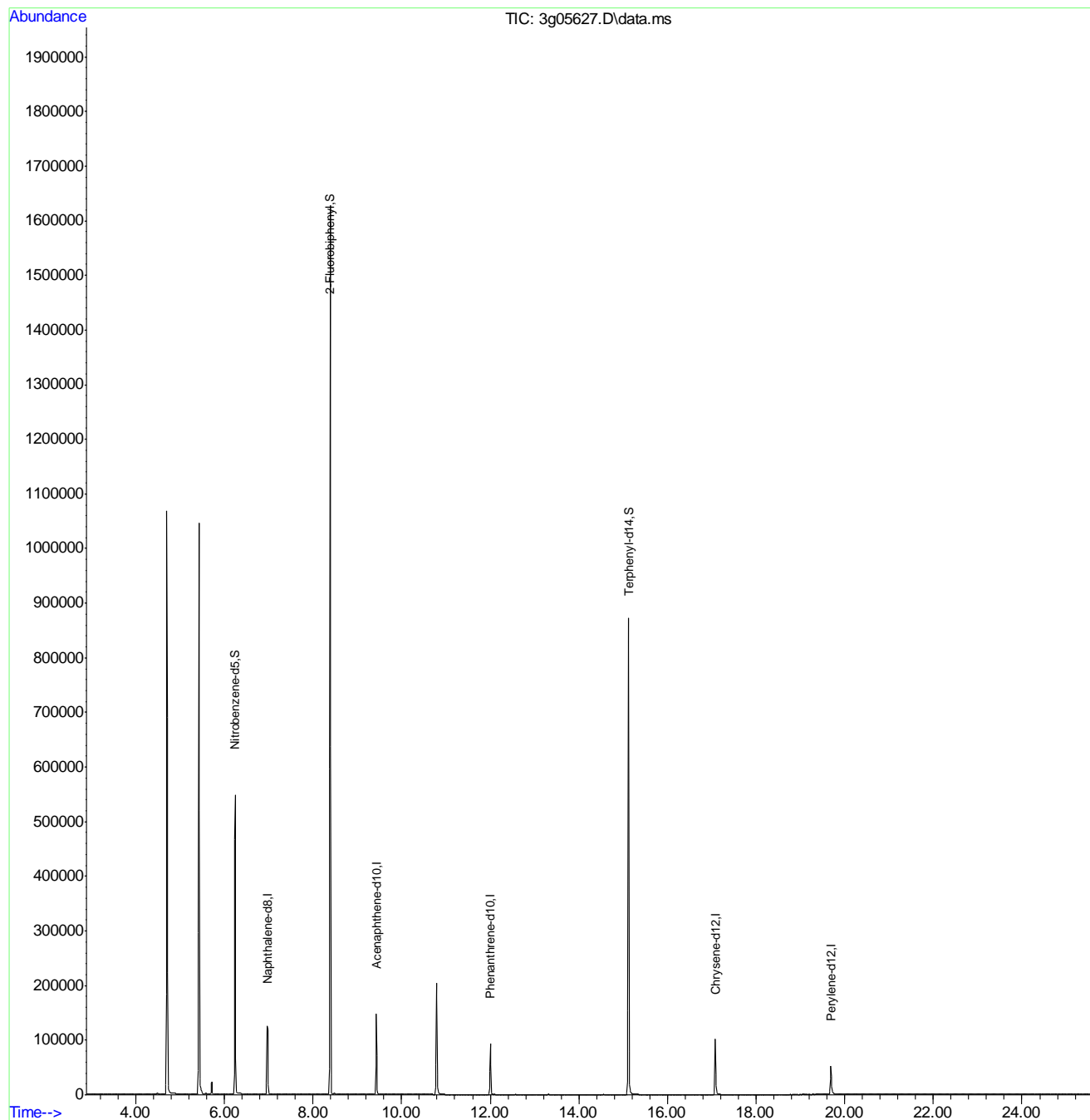
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Naphthalene-d8	6.980	136	160608	4.00	ug/mL	0.00
6) Acenaphthene-d10	9.428	164	81185	4.00	ug/mL	0.00
14) Phenanthrene-d10	12.005	188	116668	4.00	ug/mL	0.00
18) Chrysene-d12	17.080	240	119894	4.00	ug/mL	0.00
23) Perylene-d12	19.687	264	70883	4.00	ug/mL	0.00
System Monitoring Compounds						
2) Nitrobenzene-d5	6.244	82	362660	80.39	ug/mL	0.00
7) 2-Fluorobiphenyl	8.389	172	1381845	54.71	ug/mL	0.00
20) Terphenyl-d14	15.123	244	1049106	69.12	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	

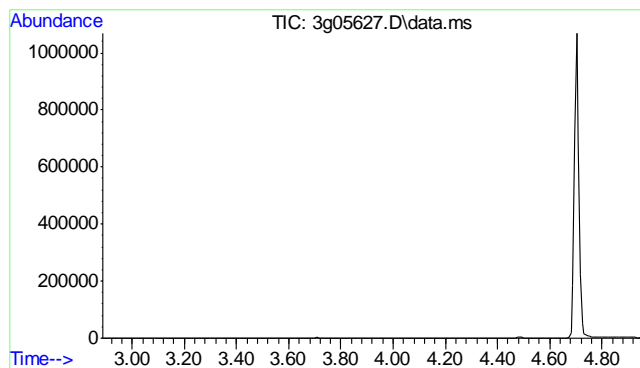
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\082211\
Data File : 3g05627.D
Acq On : 23 Aug 2011 8:42 pm
Operator : TamiB
Sample : OP4330-MB
Misc : OP4330,E3G204,30,,,1,1
ALS Vial : 40 Sample Multiplier: 1

Quant Time: Aug 24 13:36:51 2011
Quant Method : C:\msdchem\1\METHODS\SIMPE3G203.M
Quant Title : PAHSIM BASE
QLast Update : Tue Aug 23 10:55:33 2011
Response via : Initial Calibration

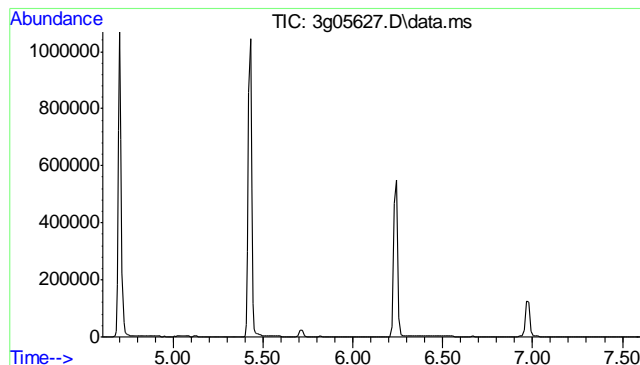
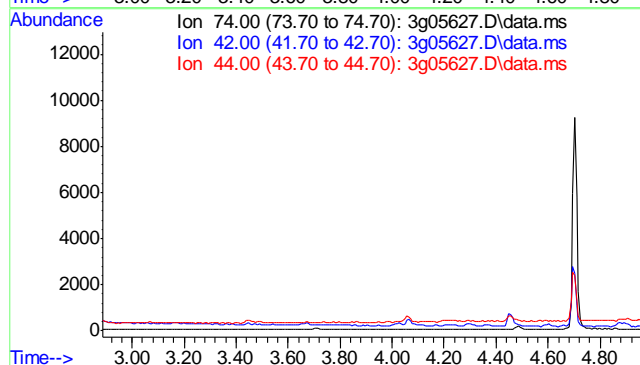




#3
N-Nitrosodimethylamine
Concen: N.D. ug/mL
Expected RT: 3.45 min

Lab File: 3g05627.D
Acq: 23 Aug 11 8:42 pm

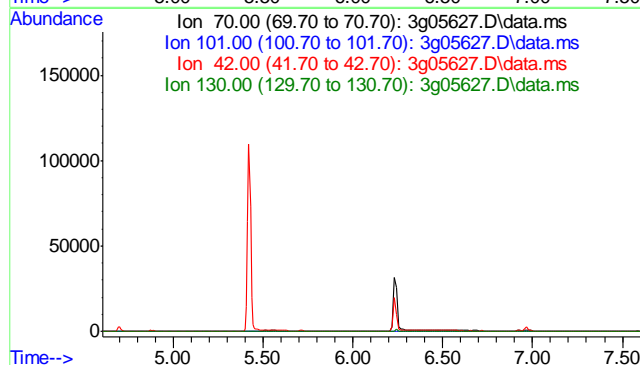
Tgt Ion:	74
Sig	Exp Ratio
74	100
42	68.2
44	5.3

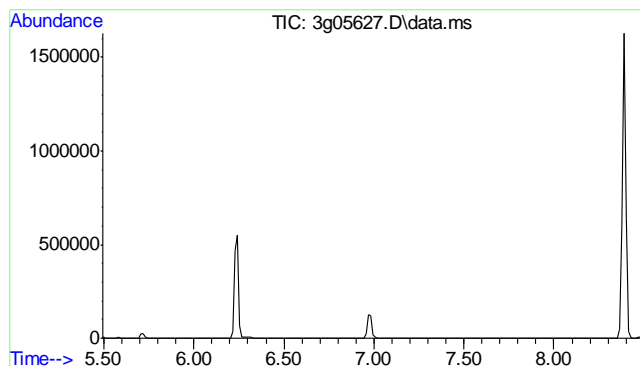


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 6.11 min

Lab File: 3g05627.D
Acq: 23 Aug 11 8:42 pm

Tgt Ion:	70
Sig	Exp Ratio
70	100
101	10.1
42	48.8
130	21.6

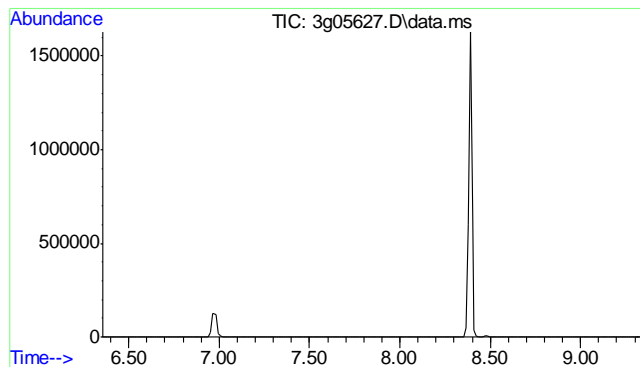
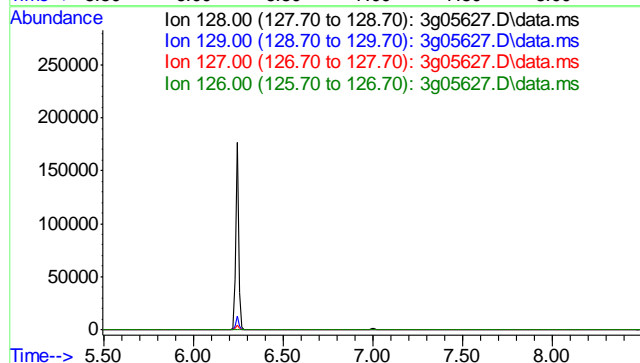




#5
Naphthalene
Concen: N.D. ug/mL
Expected RT: 6.99 min

Lab File: 3g05627.D
Acq: 23 Aug 11 8:42 pm

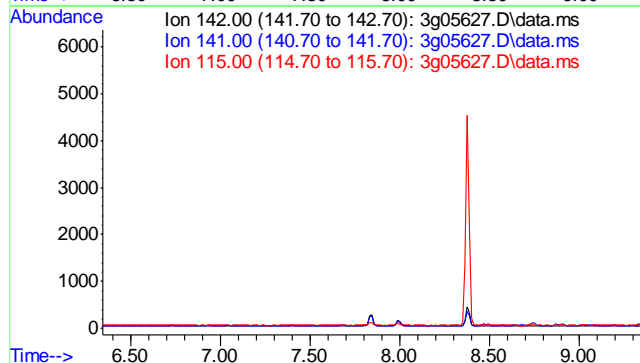
Tgt Ion:	128
Sig	Exp Ratio
128	100
129	10.8
127	12.6
126	7.1

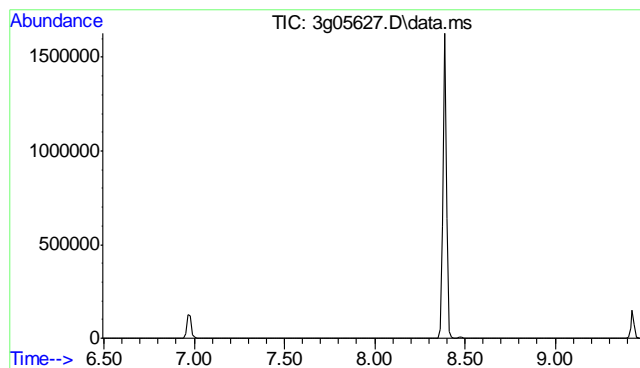


#8
2-Methylnaphthalene
Concen: N.D. ug/mL
Expected RT: 7.85 min

Lab File: 3g05627.D
Acq: 23 Aug 11 8:42 pm

Tgt Ion:	142
Sig	Exp Ratio
142	100
141	83.6
115	33.2

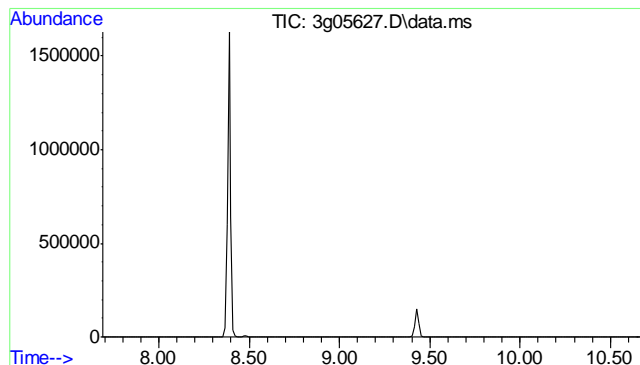
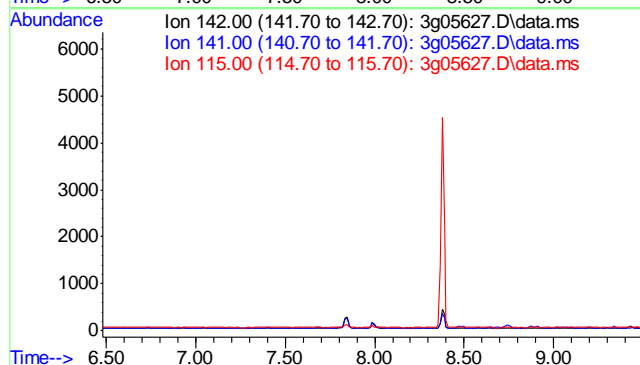




#9
1-Methylnaphthalene
Concen: N.D. ug/mL
Expected RT: 7.99 min

Lab File: 3g05627.D
Acq: 23 Aug 11 8:42 pm

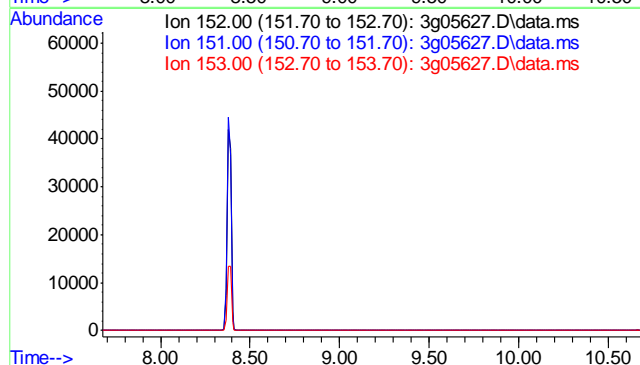
Tgt Ion:	142
Sig	Exp Ratio
142	100
141	87.1
115	34.8

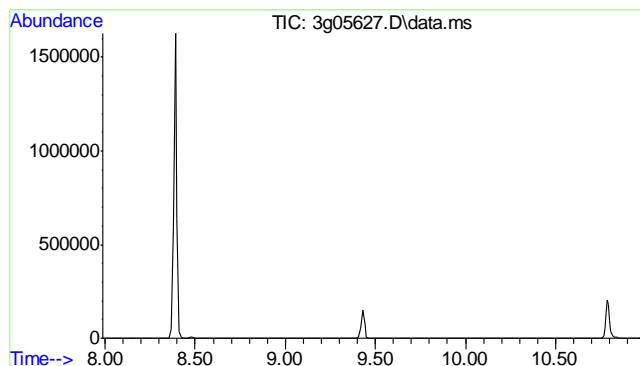


#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 9.18 min

Lab File: 3g05627.D
Acq: 23 Aug 11 8:42 pm

Tgt Ion:	152
Sig	Exp Ratio
152	100
151	19.1
153	12.9

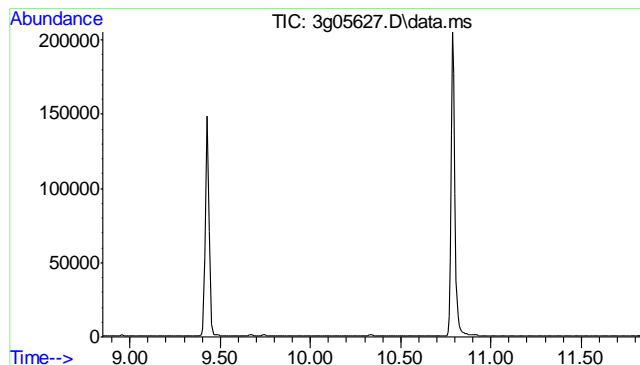
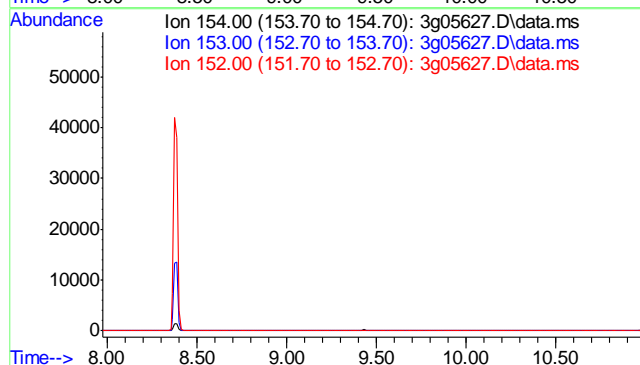




#11
Acenaphthene
Concen: N.D. ug/mL
Expected RT: 9.48 min

Lab File: 3g05627.D
Acq: 23 Aug 11 8:42 pm

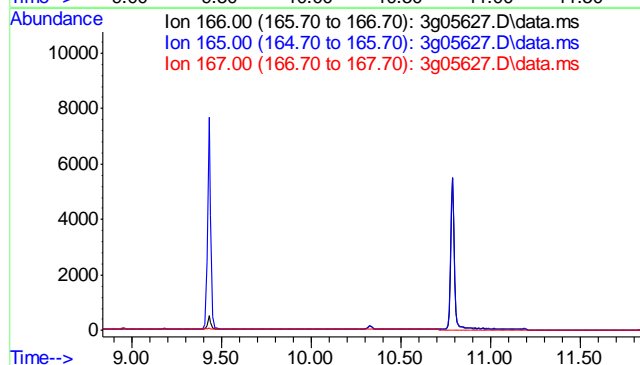
Tgt Ion: 154
Sig Exp Ratio
154 100
153 111.9
152 53.3

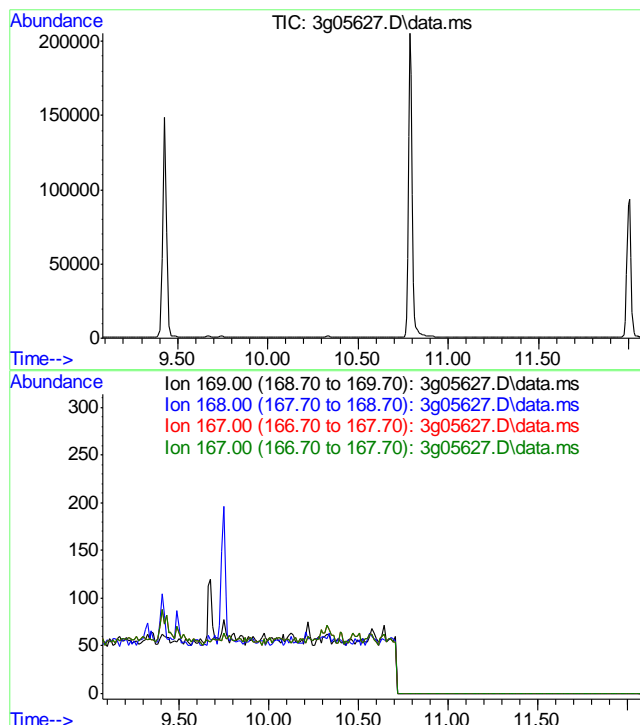


#12
Fluorene
Concen: N.D. ug/mL
Expected RT: 10.34 min

Lab File: 3g05627.D
Acq: 23 Aug 11 8:42 pm

Tgt Ion: 166
Sig Exp Ratio
166 100
165 90.5
167 13.3

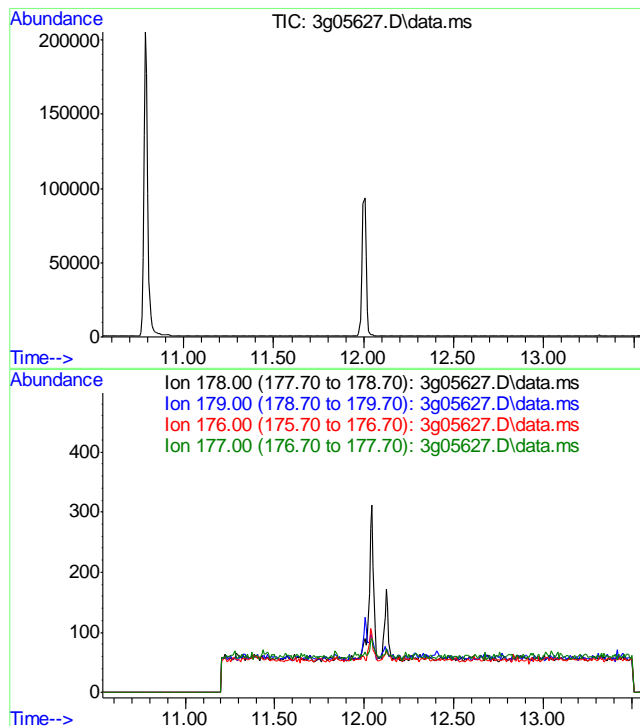




#13
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 10.57 min

Lab File: 3g05627.D
Acq: 23 Aug 11 8:42 pm

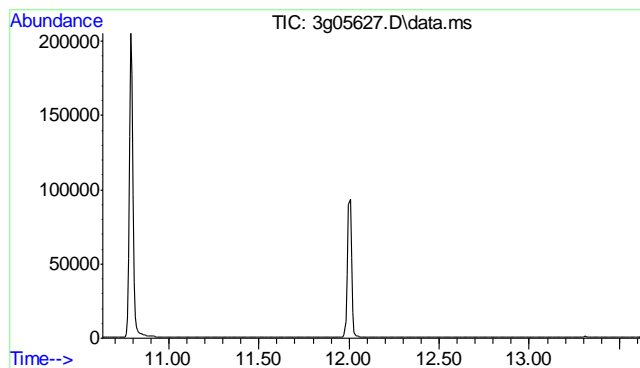
Tgt Ion: 169
Sig Exp Ratio
169 100
168 61.1
167 33.0
167 33.0



#15
Phenanthrene
Concen: N.D. ug/mL
Expected RT: 12.04 min

Lab File: 3g05627.D
Acq: 23 Aug 11 8:42 pm

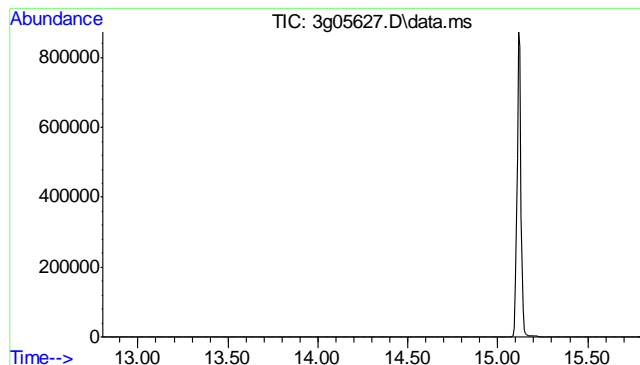
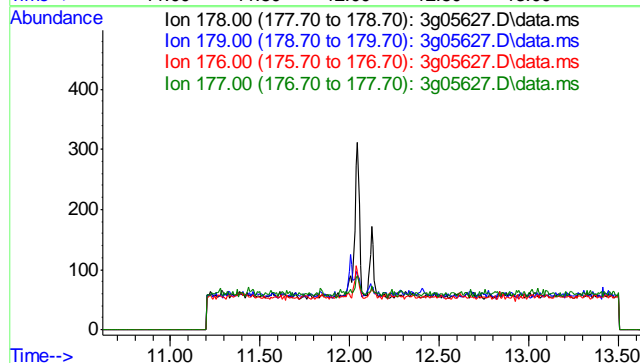
Tgt Ion: 178
Sig Exp Ratio
178 100
179 15.2
176 18.4
177 10.5



#16
Anthracene
Concen: N.D. ug/mL
Expected RT: 12.12 min

Lab File: 3g05627.D
Acq: 23 Aug 11 8:42 pm

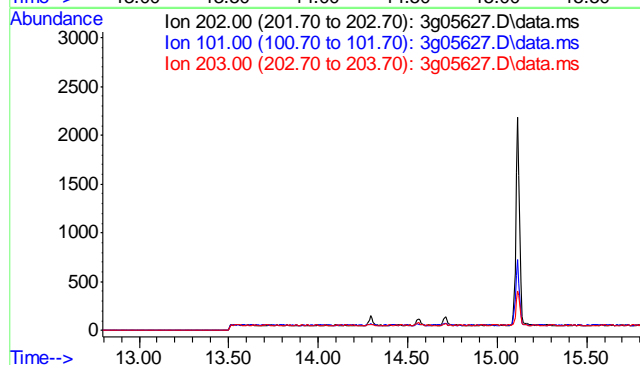
Tgt Ion: 178
Sig Exp Ratio
178 100
179 15.0
176 17.7
177 8.9

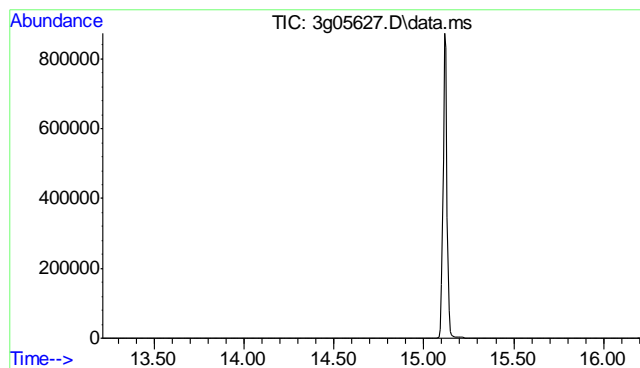


#17
Fluoranthene
Concen: N.D. ug/mL
Expected RT: 14.30 min

Lab File: 3g05627.D
Acq: 23 Aug 11 8:42 pm

Tgt Ion: 202
Sig Exp Ratio
202 100
101 20.2
203 17.3

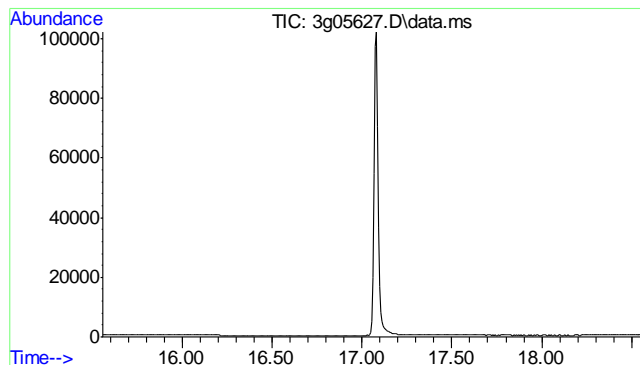
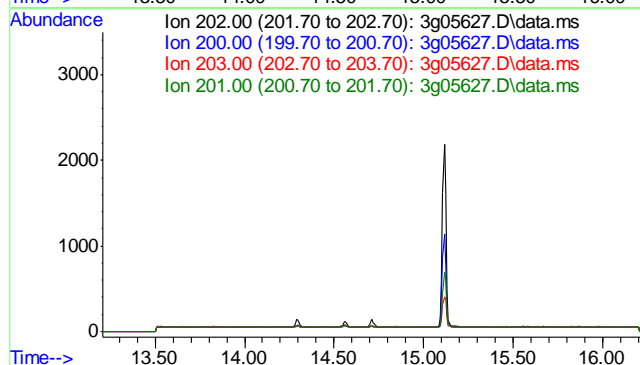




#19
Pyrene
Concen: N.D. ug/mL
Expected RT: 14.71 min

Lab File: 3g05627.D
Acq: 23 Aug 11 8:42 pm

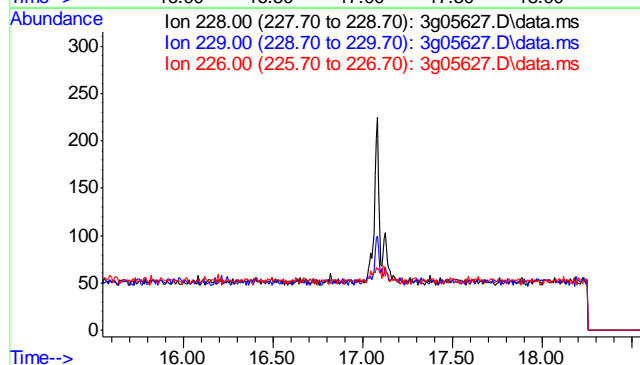
Tgt Ion:	202
Sig	Exp Ratio
202	100
200	20.0
203	17.4
201	16.6

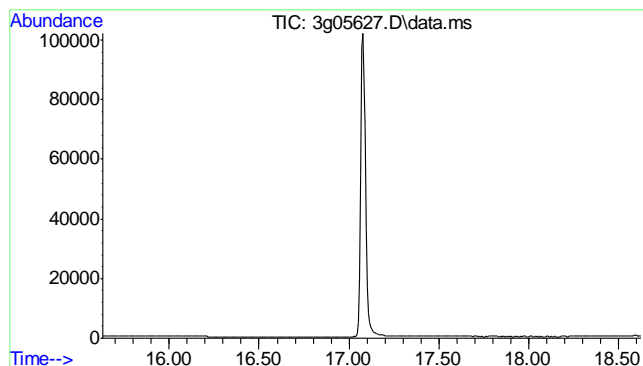


#21
Benzo(a)anthracene
Concen: N.D. ug/mL
Expected RT: 17.05 min

Lab File: 3g05627.D
Acq: 23 Aug 11 8:42 pm

Tgt Ion:	228
Sig	Exp Ratio
228	100
229	19.6
226	25.9

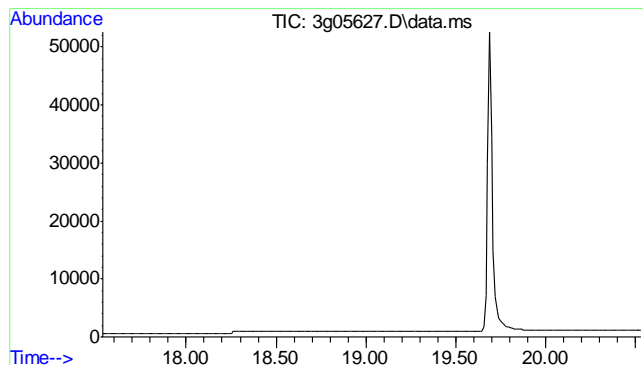
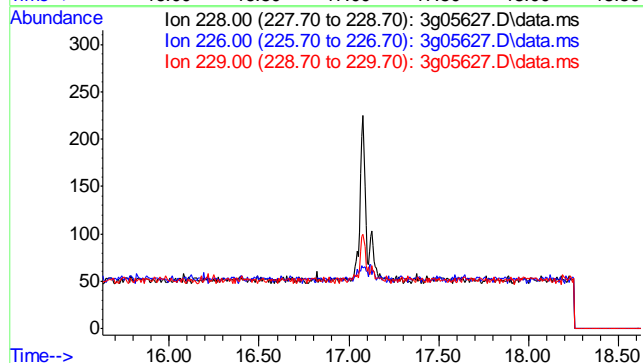




#22
Chrysene
Concen: N.D. ug/mL
Expected RT: 17.13 min

Lab File: 3g05627.D
Acq: 23 Aug 11 8:42 pm

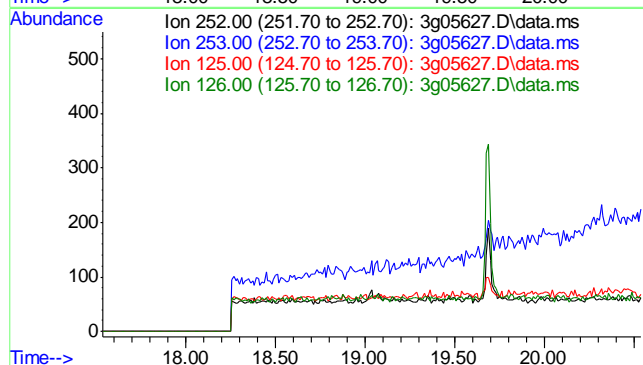
Tgt Ion:	228
Sig	Exp Ratio
228	100
226	27.9
229	19.1

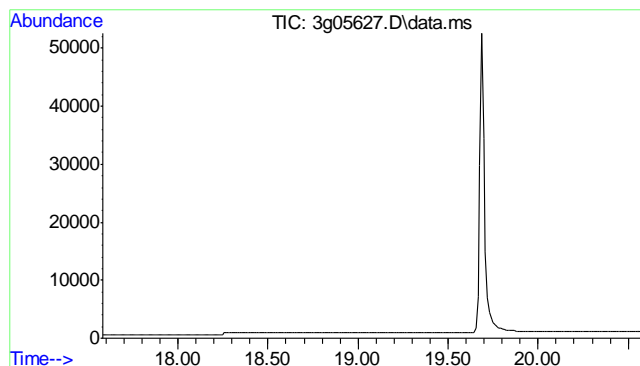


#24
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 19.04 min

Lab File: 3g05627.D
Acq: 23 Aug 11 8:42 pm

Tgt Ion:	252
Sig	Exp Ratio
252	100
253	65.7
125	30.6
126	45.1

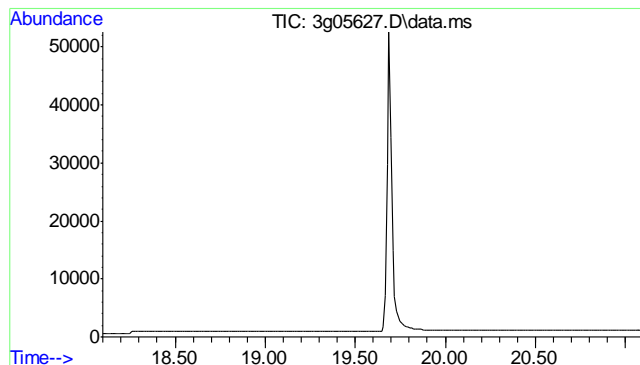
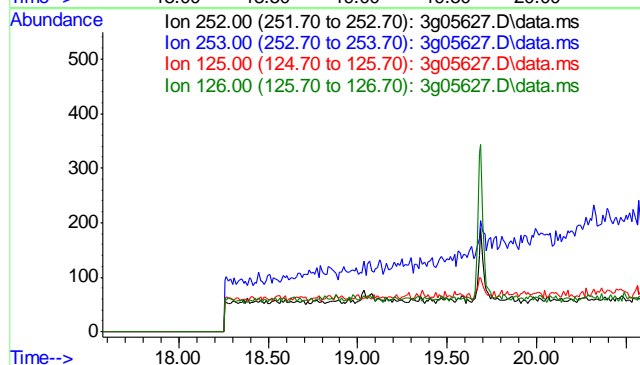




#25
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 19.08 min

Lab File: 3g05627.D
Acq: 23 Aug 11 8:42 pm

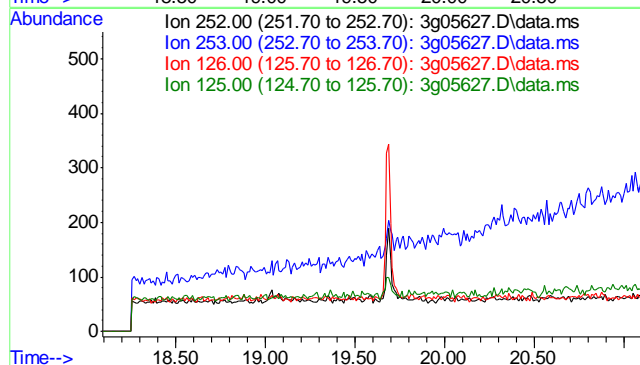
Tgt Ion:	252
Sig	Exp Ratio
252	100
253	32.4
125	15.1
126	22.2

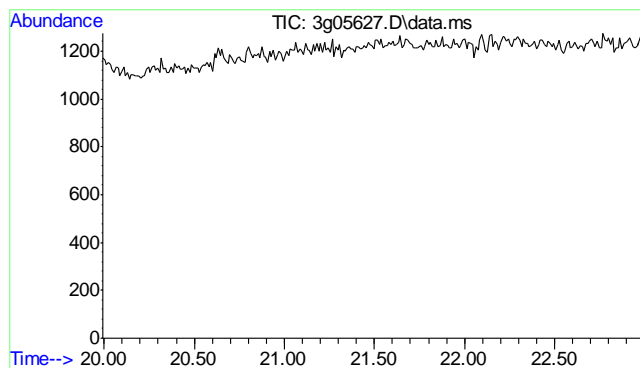


#26
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 19.59 min

Lab File: 3g05627.D
Acq: 23 Aug 11 8:42 pm

Tgt Ion:	252
Sig	Exp Ratio
252	100
253	21.2
126	23.4
125	17.3

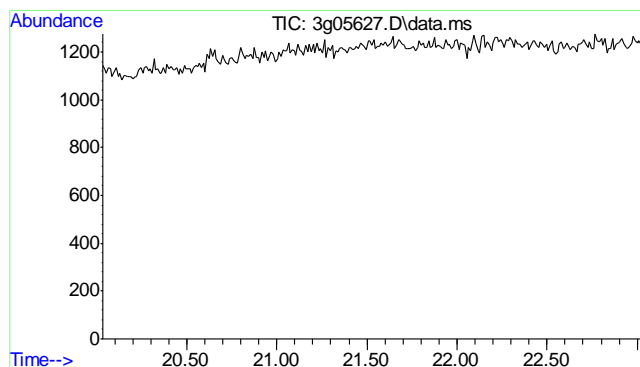
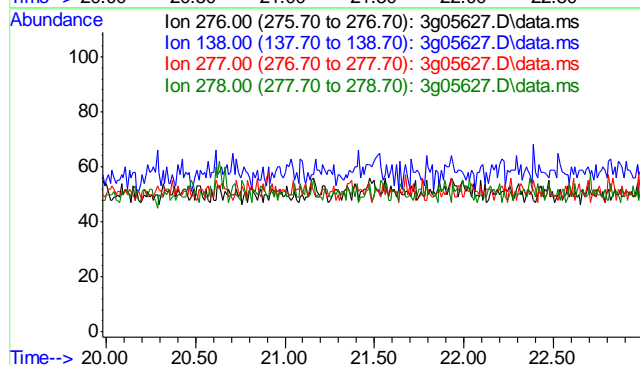




#27
Indeno(1,2,3-cd)pyrene
Concen: N.D. ug/mL
Expected RT: 21.49 min

Lab File: 3g05627.D
Acq: 23 Aug 11 8:42 pm

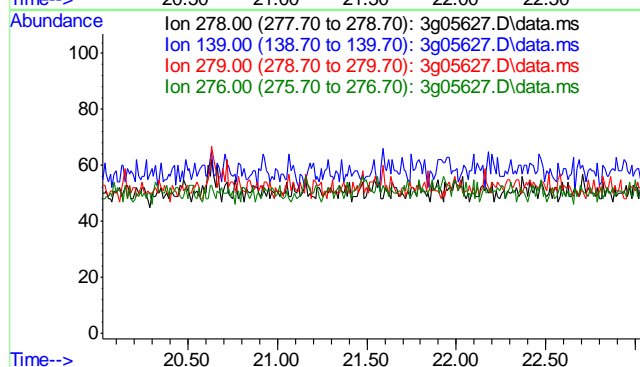
Tgt Ion:	276
Sig	Exp Ratio
276	100
138	72.2
277	46.7
278	159.5

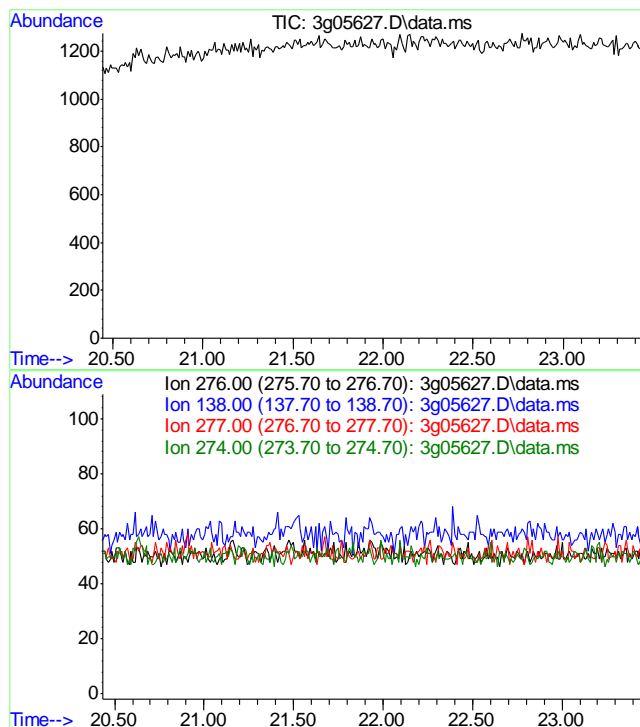


#28
Dibenz(a,h)anthracene
Concen: N.D. ug/mL
Expected RT: 21.53 min

Lab File: 3g05627.D
Acq: 23 Aug 11 8:42 pm

Tgt Ion:	278
Sig	Exp Ratio
278	100
139	25.1
279	23.5
276	117.6





#29

Benzo(g,h,i)perylene

Concen: N.D. ug/mL

Expected RT: 21.94 min

Lab File: 3g05627.D

Acq: 23 Aug 11 8:42 pm

Tgt Ion: 276

Sig Exp Ratio

276 100

138 31.5

277 23.3

274 21.0

8.2.1

8

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: D26811
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB710-MB	GB12483.D	1	08/22/11	SK	n/a	n/a	GGB710

The QC reported here applies to the following samples: Method: SW846 8015B
D26811-1, D26811-2

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	96% 60-140%

9.1.1
9

Blank Spike Summary

Job Number: D26811
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB710-BS	GB12484.D	1	08/22/11	SK	n/a	n/a	GGB710

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

D26811-1, D26811-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	117	106	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	103%	60-140%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D26811
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D26812-1MS	GB12486.D	1	08/22/11	SK	n/a	n/a	GGB710
D26812-1MSD	GB12487.D	1	08/22/11	SK	n/a	n/a	GGB710
D26812-1	GB12485.D	1	08/22/11	SK	n/a	n/a	GGB710

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

D26811-1, D26811-2

CAS No.	Compound	D26812-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	65.9		163	224	97	230	101	3	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D26812-1	Limits
120-82-1	1,2,4-Trichlorobenzene	103%	105%	105%	60-140%

GC Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\082211\GB12506.D\FID1A.CH Vial: 26
Signal #2 : Y:\1\DATA\082211\GB12506.D\FID2B.CH
Acq On : 23 Aug 2011 4:38 am Operator: StephK
Sample : D26811-1, 2000X Inst : GC/MS Ins
Misc : GC2157,GGB710,5.103,,5,10,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Aug 23 08:28:49 2011 Quant Results File: TB630GB630SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB630GB630SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Tue Aug 09 08:19:25 2011
Response via : Initial Calibration
DataAcq Meth : TVB4.M

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

Compound	R.T.	Response	Conc	Units

System Monitoring Compounds				
2) S 1,2,4-Trichlorobenzene	14.31	3643780	94.141 %	m
10) S 1,2,4-Trichlorobenzene (P)	14.31	33382665	101.200 %	
Target Compounds				
1) H TVH-Gasoline	7.21	130292817	1.911 mg/L	
4) T Methyl-t-butyl-ether	2.19	202436	0.857 ug/L	
5) T Benzene	4.03	8115342	11.963 ug/L	
6) T Toluene	7.53	71419833	109.362 ug/L	
7) T Ethylbenzene	10.19	9449579	16.482 ug/L	
8) T m,p-Xylene	10.38	147421657	217.575 ug/L	
9) T o-Xylene	10.88	24114670	42.456 ug/L	
11) T Naphthalene	14.49	11799261	36.853 ug/L	

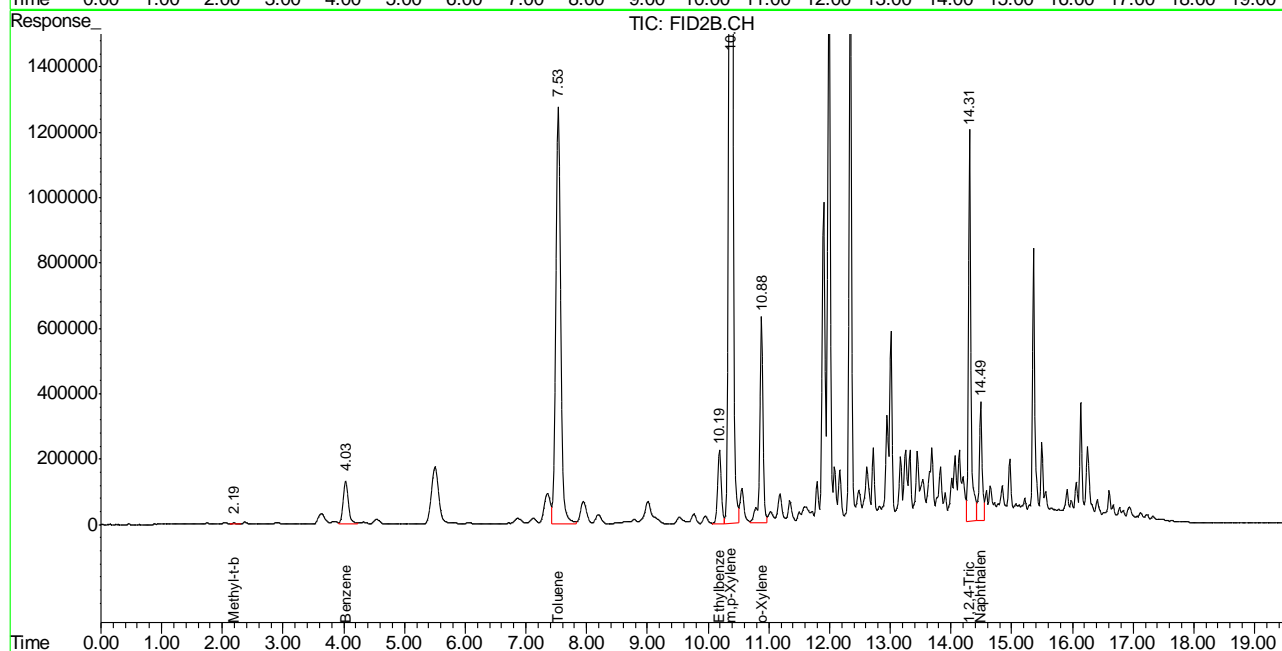
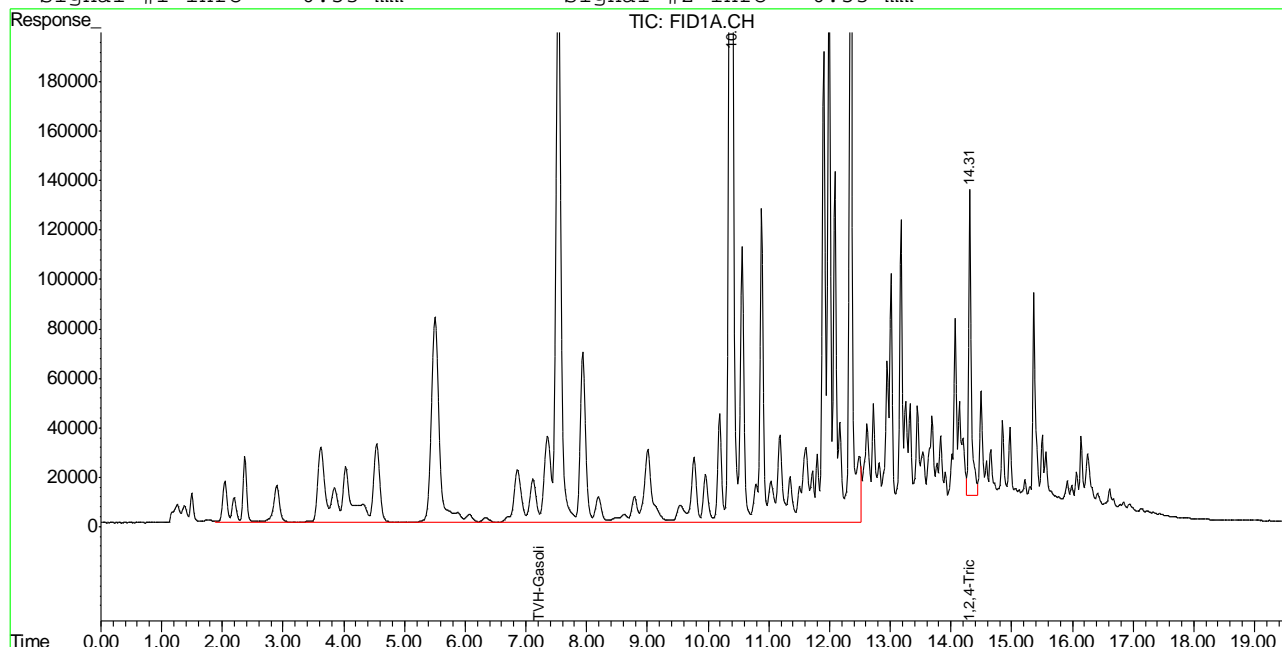
10.1.1
10

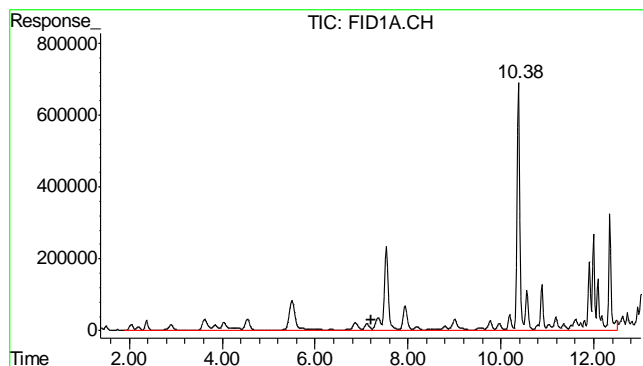
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\082211\GB12506.D\FID1A.CH Vial: 26
 Signal #2 : Y:\1\DATA\082211\GB12506.D\FID2B.CH
 Acq On : 23 Aug 2011 4:38 am Operator: StephK
 Sample : D26811-1, 2000X Inst : GC/MS Ins
 Misc : GC2157,GGB710,5.103,,5,10,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Aug 23 7:39 2011 Quant Results File: TB630GB630SOIL.RES

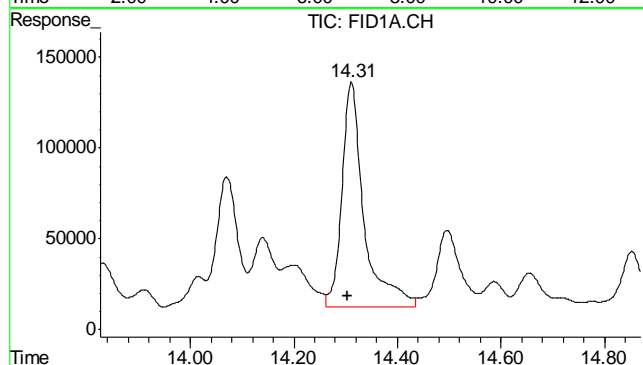
Quant Method : C:\MSDCHEM\1...\TB630GB630SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Tue Aug 09 08:19:25 2011
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB4.M

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

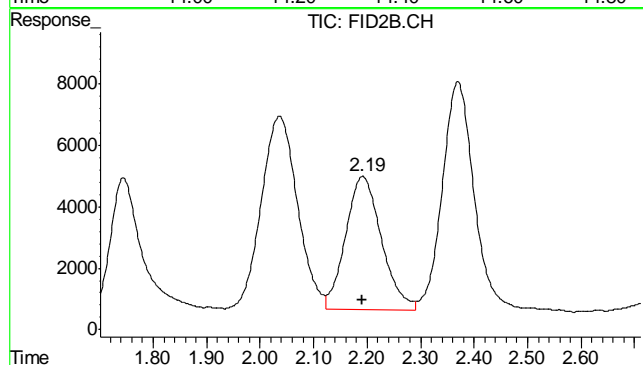




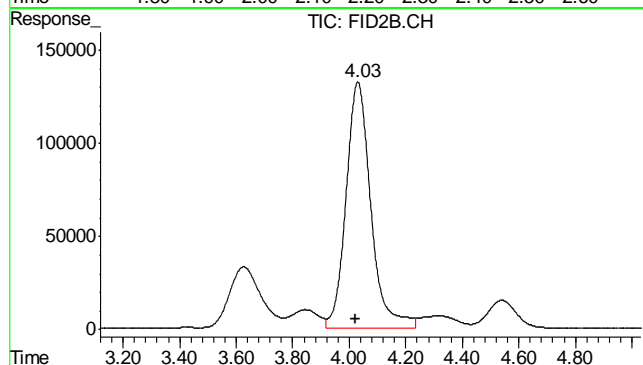
#1 TVH-Gasoline
 R.T.: 7.215 min
 Delta R.T.: 0.000 min
 Response: 130292817
 Conc: 1.91 mg/L m



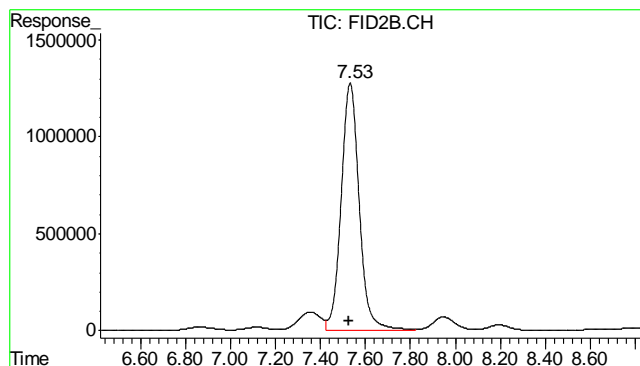
#2 1,2,4-Trichlorobenzene
 R.T.: 14.310 min
 Delta R.T.: 0.005 min
 Response: 3643780
 Conc: 94.14 % m



#4 Methyl-t-butyl-ether
 R.T.: 2.192 min
 Delta R.T.: 0.001 min
 Response: 202436
 Conc: 0.86 ug/L

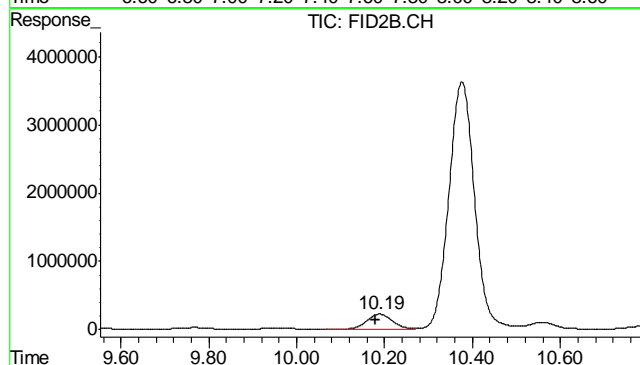


#5 Benzene
 R.T.: 4.031 min
 Delta R.T.: 0.007 min
 Response: 8115342
 Conc: 11.96 ug/L



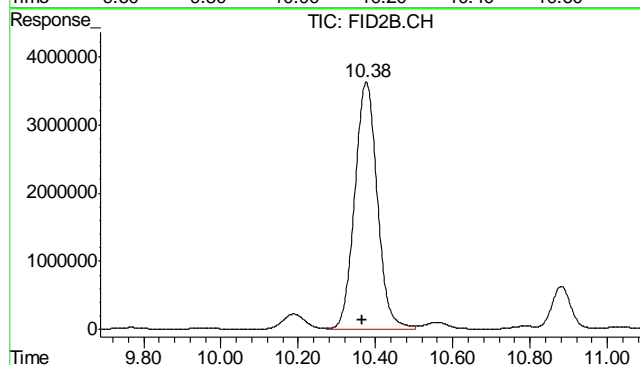
#6 Toluene

R.T.: 7.533 min
Delta R.T.: 0.008 min
Response: 71419833
Conc: 109.36 ug/L



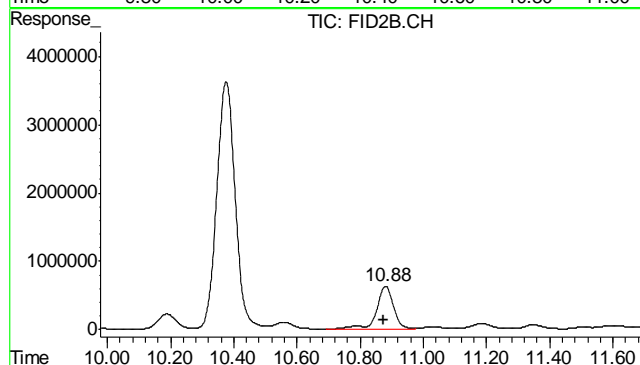
#7 Ethylbenzene

R.T.: 10.188 min
Delta R.T.: 0.008 min
Response: 9449579
Conc: 16.48 ug/L



#8 m,p-Xylene

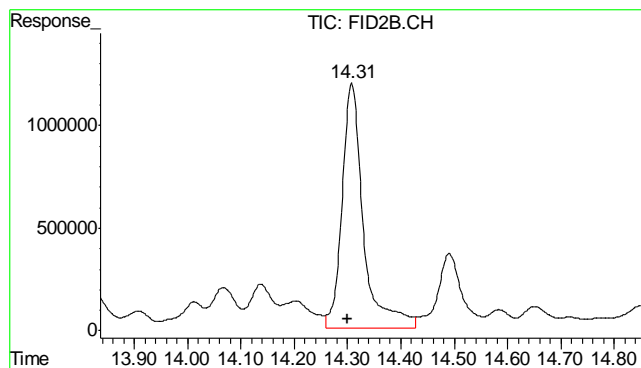
R.T.: 10.376 min
Delta R.T.: 0.009 min
Response: 147421657
Conc: 217.58 ug/L



#9 o-Xylene

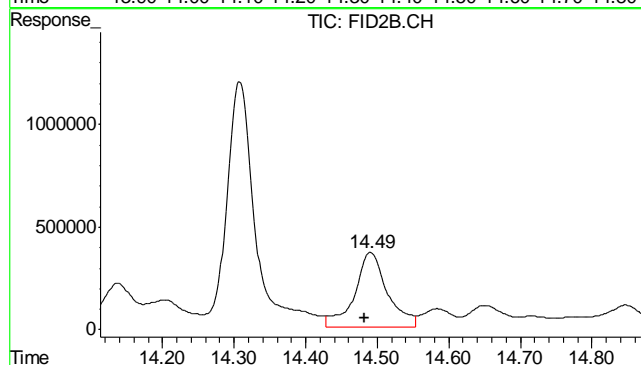
R.T.: 10.881 min
Delta R.T.: 0.007 min
Response: 24114670
Conc: 42.46 ug/L

10.1.1
10



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

R.T.: 14.308 min
Delta R.T.: 0.008 min
Response: 33382665
Conc: 101.20 %



#11 Naphthalene

R.T.: 14.491 min
Delta R.T.: 0.009 min
Response: 11799261
Conc: 36.85 ug/L

10.1.1
10

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\082211\GB12507.D\FID1A.CH Vial: 27
Signal #2 : Y:\1\DATA\082211\GB12507.D\FID2B.CH
Acq On : 23 Aug 2011 5:14 am Operator: StephK
Sample : D26811-2, 250X Inst : GC/MS Ins
Misc : GC2157,GGB710,5.126,,20,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Aug 23 08:28:53 2011 Quant Results File: TB630GB630SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB630GB630SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Tue Aug 09 08:19:25 2011
Response via : Initial Calibration
DataAcq Meth : TVB4.M

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

	Compound	R.T.	Response	Conc	Units	

System Monitoring Compounds						
2) S	1,2,4-Trichlorobenzene	14.31	3483137	89.991 %	m	
10) S	1,2,4-Trichlorobenzene (P)	14.31	50127093	157.242 %		
Target Compounds						
1) H	TVH-Gasoline	7.21	322566245	4.789 mg/L		
4) T	Methyl-t-butyl-ether	2.20	320850	1.359 ug/L		
5) T	Benzene	4.04	13527846	19.941 ug/L		
6) T	Toluene	7.54	112864039	172.823 ug/L		
7) T	Ethylbenzene	10.19	16064510	28.020 ug/L		
8) T	m,p-Xylene	10.38	234587559	346.221 ug/L		
9) T	o-Xylene	10.88	41564218	73.177 ug/L		
11) T	Naphthalene	14.49	50890683	158.947 ug/L		

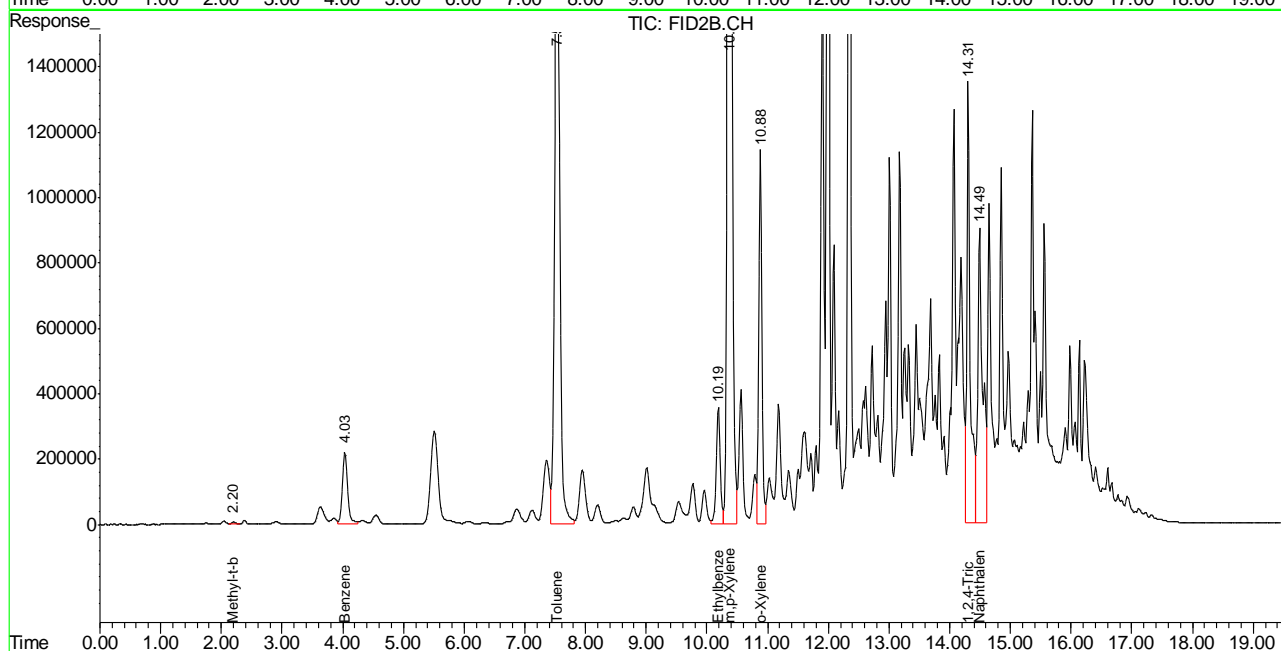
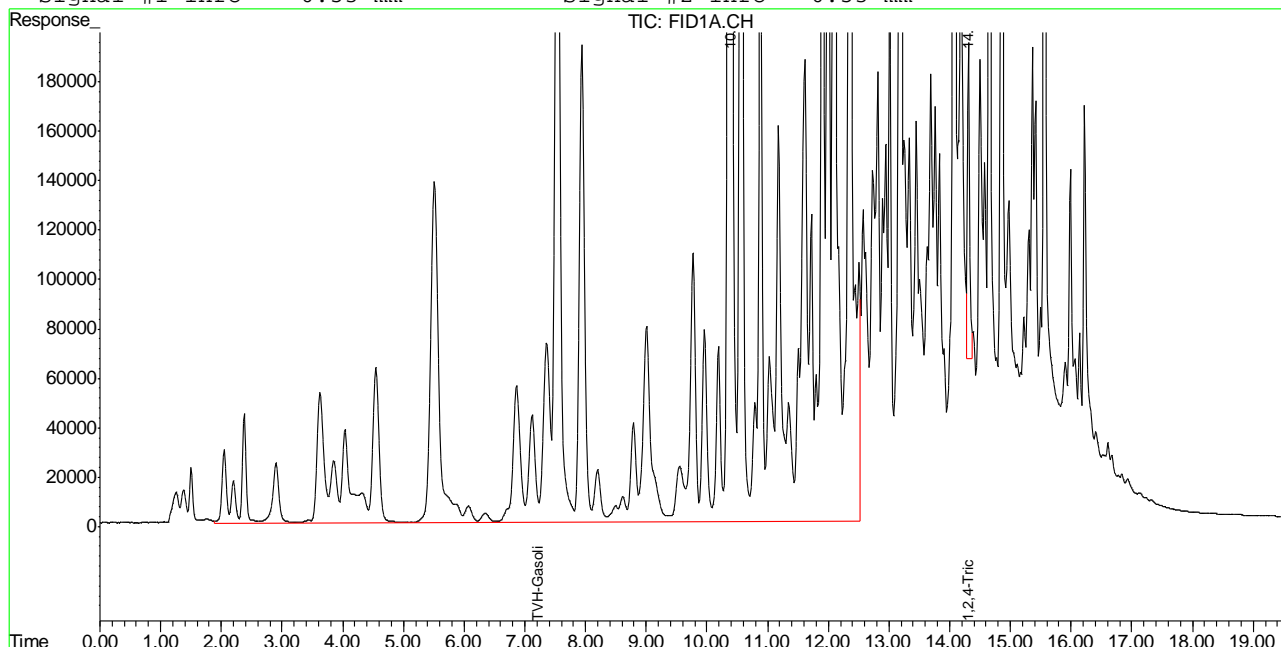
10.12
10

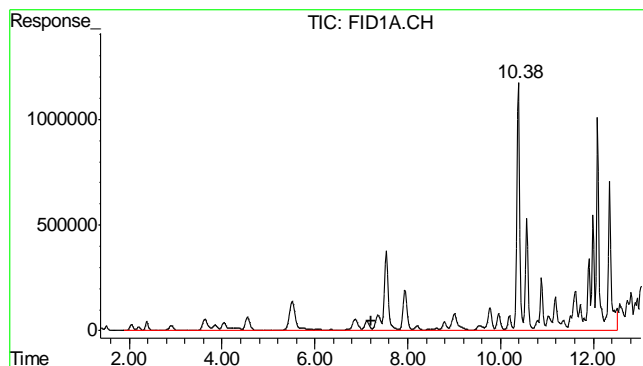
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\082211\GB12507.D\FID1A.CH Vial: 27
 Signal #2 : Y:\1\DATA\082211\GB12507.D\FID2B.CH
 Acq On : 23 Aug 2011 5:14 am Operator: StephK
 Sample : D26811-2, 250X Inst : GC/MS Ins
 Misc : GC2157,GGB710,5.126,,20,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Aug 23 7:40 2011 Quant Results File: TB630GB630SOIL.RES

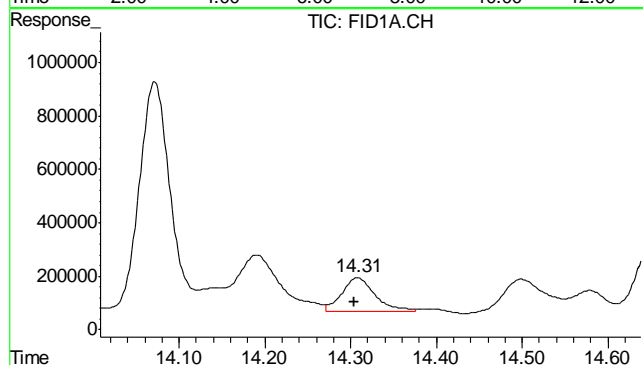
Quant Method : C:\MSDCHEM\1...\TB630GB630SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Tue Aug 09 08:19:25 2011
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB4.M

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

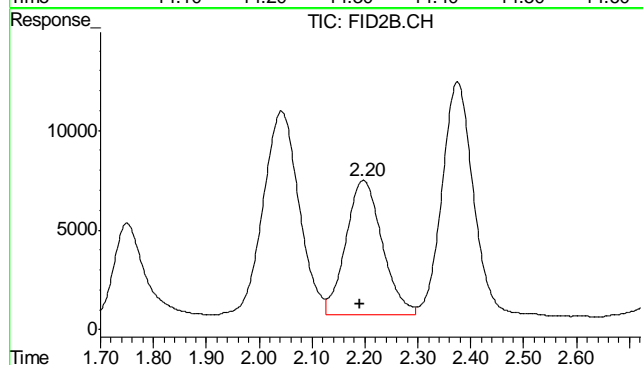




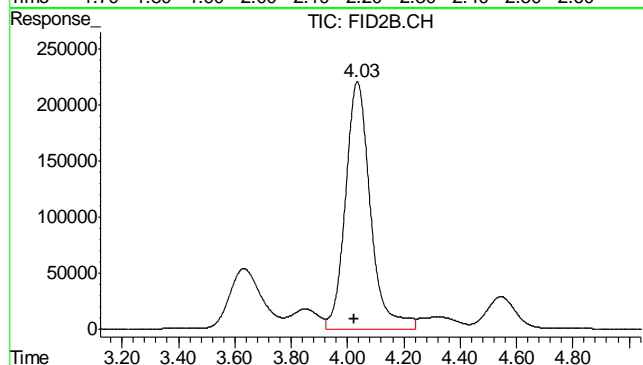
#1 TVH-Gasoline
 R.T.: 7.215 min
 Delta R.T.: 0.000 min
 Response: 322566245
 Conc: 4.79 mg/L m



#2 1,2,4-Trichlorobenzene
 R.T.: 14.307 min
 Delta R.T.: 0.003 min
 Response: 3483137
 Conc: 89.99 % m

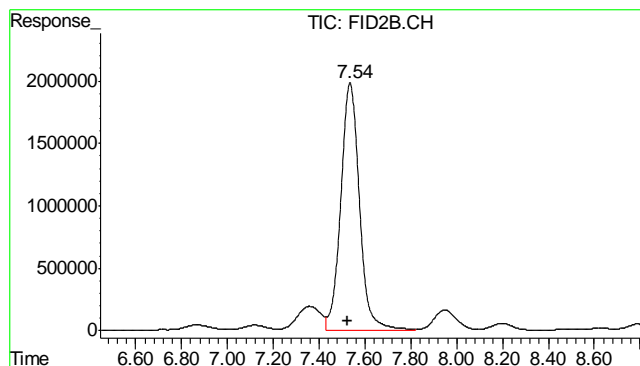


#4 Methyl-t-butyl-ether
 R.T.: 2.197 min
 Delta R.T.: 0.007 min
 Response: 320850
 Conc: 1.36 ug/L



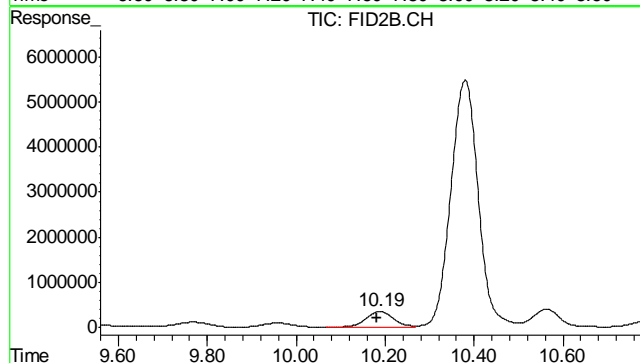
#5 Benzene
 R.T.: 4.035 min
 Delta R.T.: 0.011 min
 Response: 13527846
 Conc: 19.94 ug/L

10.12 10



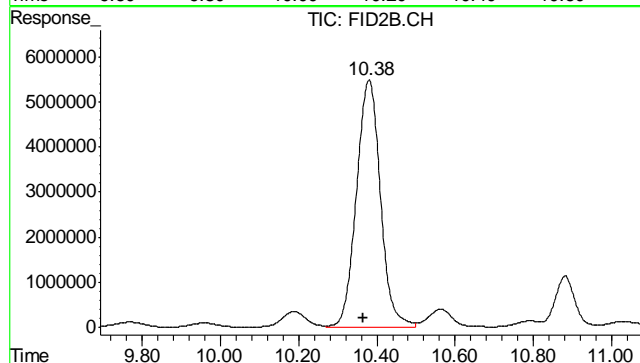
#6 Toluene

R.T.: 7.535 min
Delta R.T.: 0.010 min
Response: 112864039
Conc: 172.82 ug/L



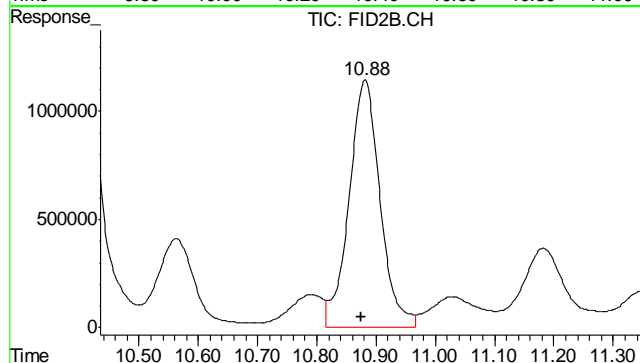
#7 Ethylbenzene

R.T.: 10.188 min
Delta R.T.: 0.008 min
Response: 16064510
Conc: 28.02 ug/L



#8 m,p-Xylene

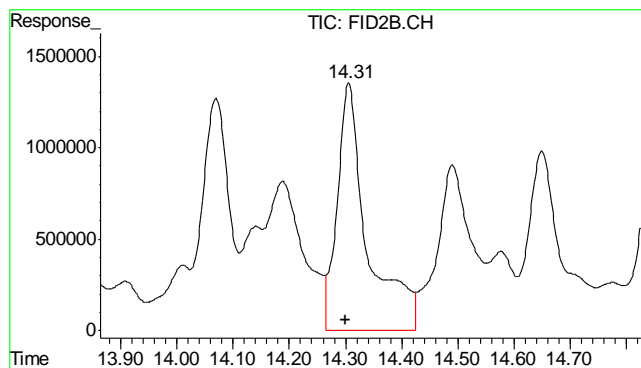
R.T.: 10.380 min
Delta R.T.: 0.013 min
Response: 234587559
Conc: 346.22 ug/L



#9 o-Xylene

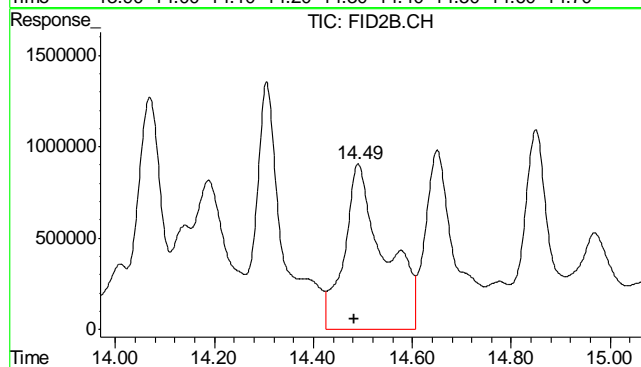
R.T.: 10.881 min
Delta R.T.: 0.007 min
Response: 41564218
Conc: 73.18 ug/L

10.12 10



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

R.T.: 14.306 min
 Delta R.T.: 0.006 min
 Response: 50127093
 Conc: 157.24 %



#11 Naphthalene

R.T.: 14.492 min
 Delta R.T.: 0.010 min
 Response: 50890683
 Conc: 158.95 ug/L

10.1.2
10

Judy Melson
08/23/11 10:44

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\082211\GB12483.D\FID1A.CH Vial: 3
Signal #2 : Y:\1\DATA\082211\GB12483.D\FID2B.CH
Acq On : 22 Aug 2011 2:55 pm Operator: StephK
Sample : MB, S Inst : GC/MS Ins
Misc : GC2157,GGB710,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Aug 22 15:28:23 2011 Quant Results File: TB630GB630SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB630GB630SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Tue Aug 09 08:19:25 2011
Response via : Initial Calibration
DataAcq Meth : TVB4.M

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

Compound	R.T.	Response	Conc	Units

System Monitoring Compounds				
2) S 1,2,4-Trichlorobenzene	14.31	3726621	96.281 %	m
10) S 1,2,4-Trichlorobenzene (P)	14.31	32701778	98.921 %	
Target Compounds				
1) H TVH-Gasoline	7.21	3063035	<MDL	mg/L
4) T Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T Benzene	0.00	0	N.D.	ug/L d
6) T Toluene	7.53	402914	0.617	ug/L
7) T Ethylbenzene	10.19	133572	0.233	ug/L
8) T m,p-Xylene	10.38	1165235	1.720	ug/L
9) T o-Xylene	10.88	481486	0.848	ug/L
11) T Naphthalene	14.49	472628	1.476	ug/L

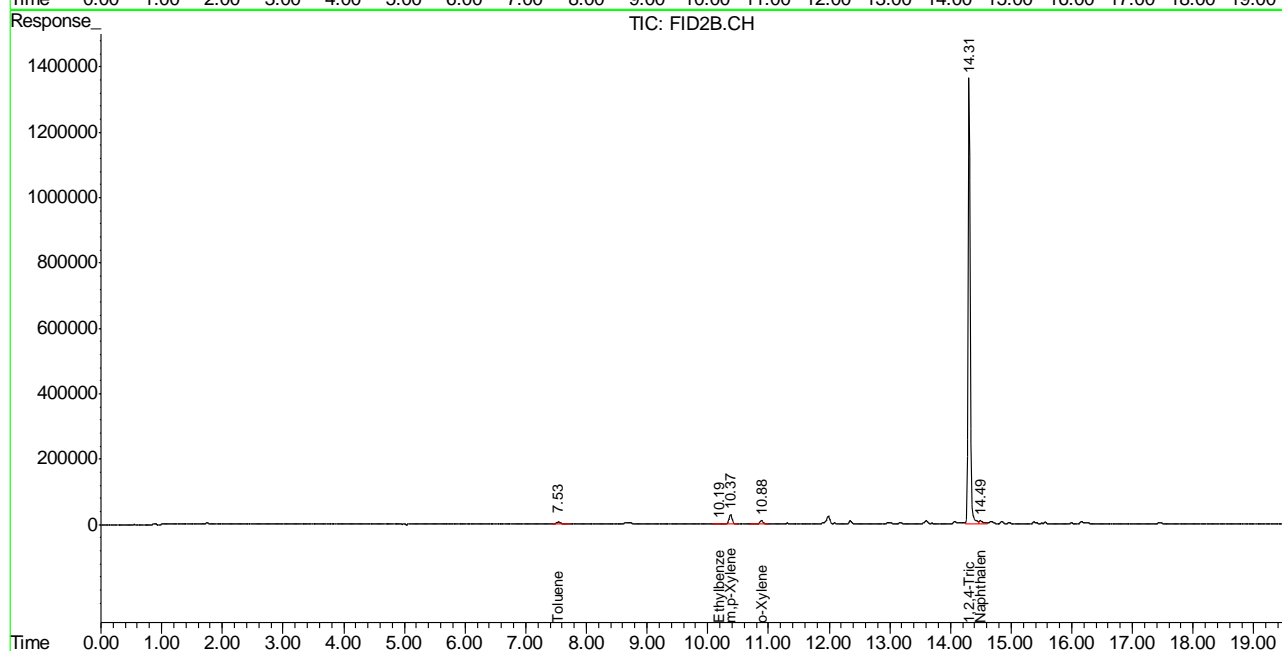
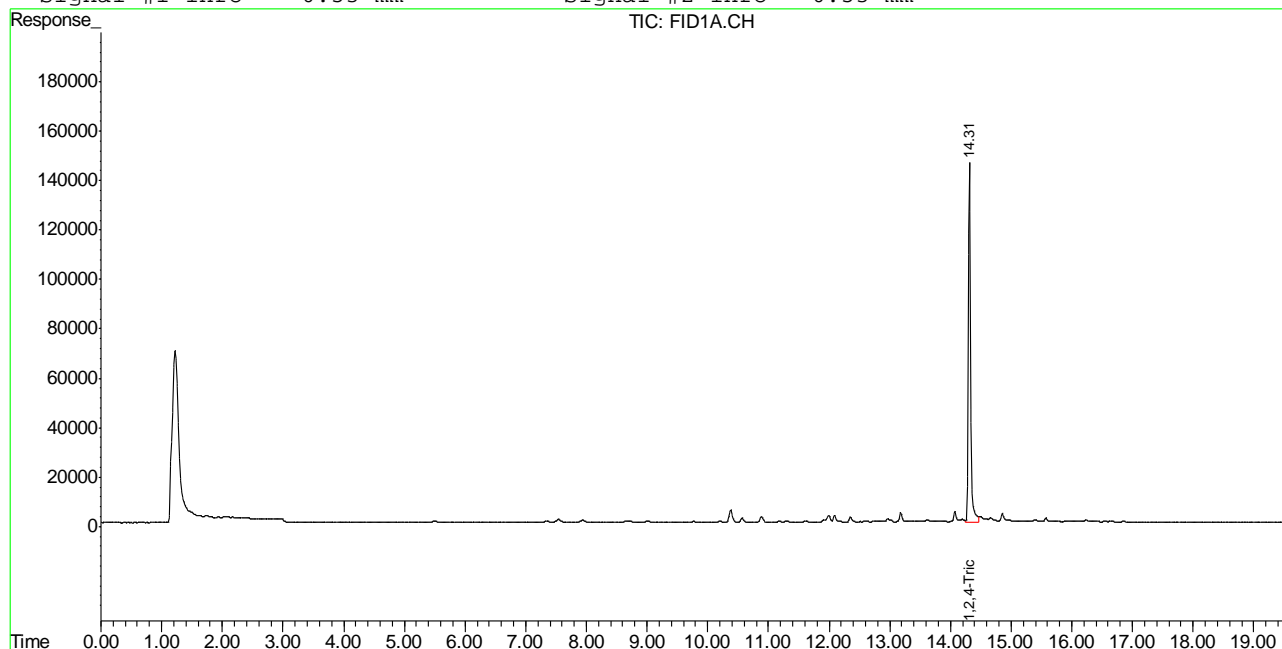
(f)=RT Delta > 1/2 Window (m)=manual int.
GB12483.D TB630GB630SOIL.M Tue Aug 23 08:41:08 2011 GC

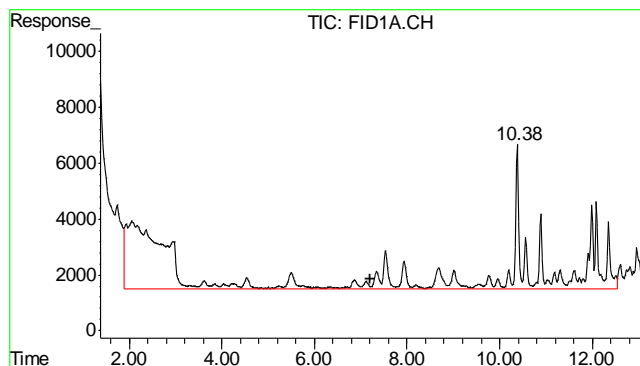
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\082211\GB12483.D\FID1A.CH Vial: 3
Signal #2 : Y:\1\DATA\082211\GB12483.D\FID2B.CH
Acq On : 22 Aug 2011 2:55 pm Operator: StephK
Sample : MB, S Inst : GC/MS Ins
Misc : GC2157,GGB710,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Aug 22 14:28 2011 Quant Results File: TB630GB630SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB630GB630SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Tue Aug 09 08:19:25 2011
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

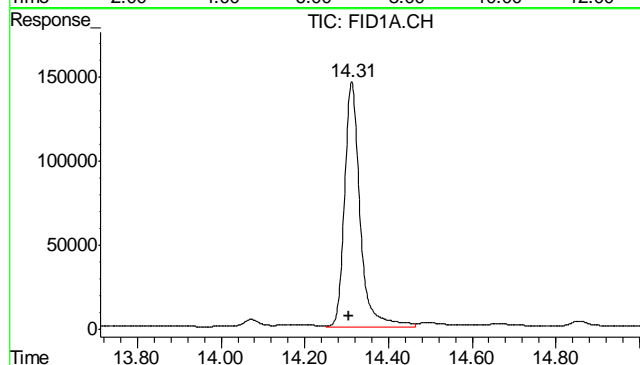
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





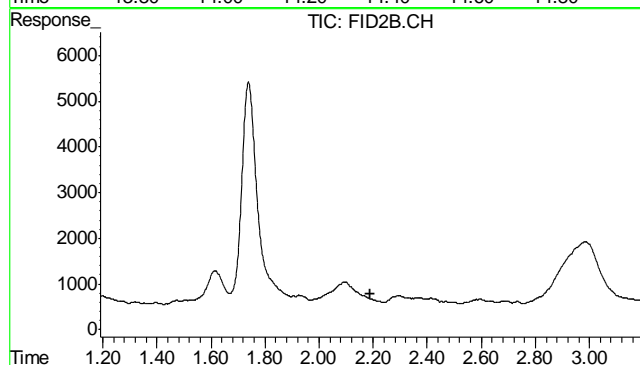
#1 TVH-Gasoline

R.T.: 7.215 min
Delta R.T.: 0.000 min
Response: 3063035
Conc: N.D.



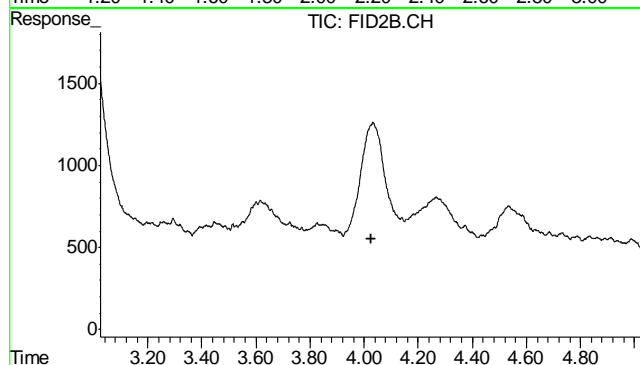
#2 1,2,4-Trichlorobenzene

R.T.: 14.312 min
Delta R.T.: 0.007 min
Response: 3726621
Conc: 96.28 % m



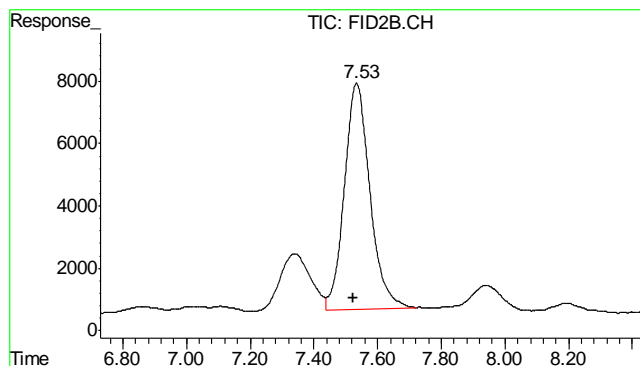
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.190 min
Response: 0
Conc: N.D.



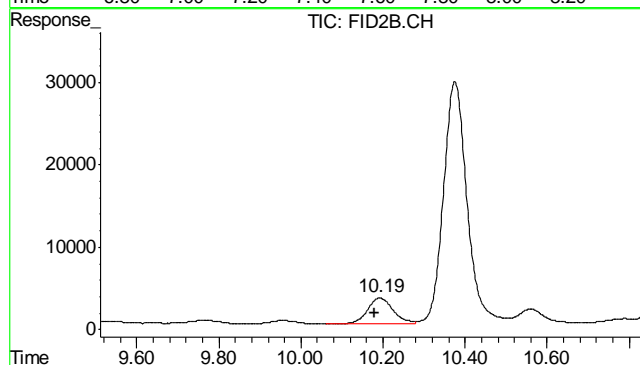
#5 Benzene

R.T.: 0.000 min
Exp R.T.: 4.024 min
Response: 0
Conc: N.D.



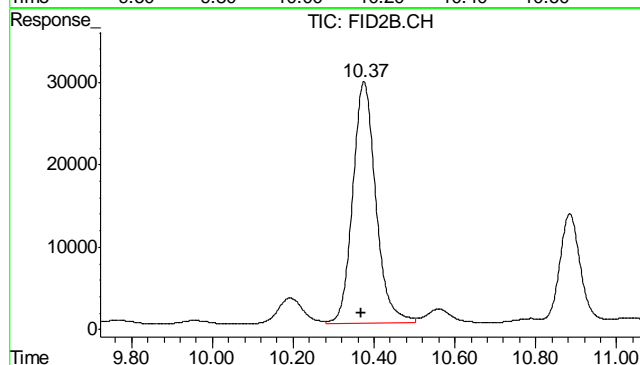
#6 Toluene

R.T.: 7.534 min
Delta R.T.: 0.009 min
Response: 402914
Conc: 0.62 ug/L



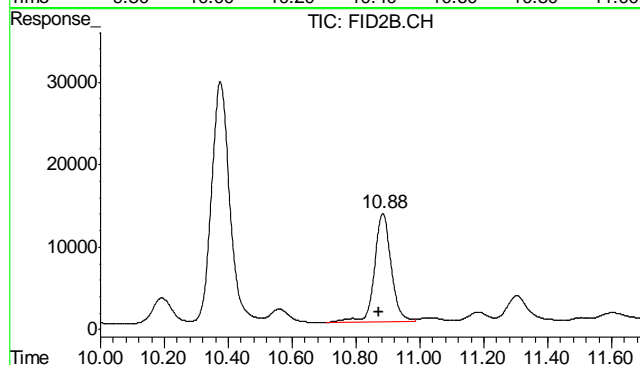
#7 Ethylbenzene

R.T.: 10.192 min
Delta R.T.: 0.011 min
Response: 133572
Conc: 0.23 ug/L



#8 m,p-Xylene

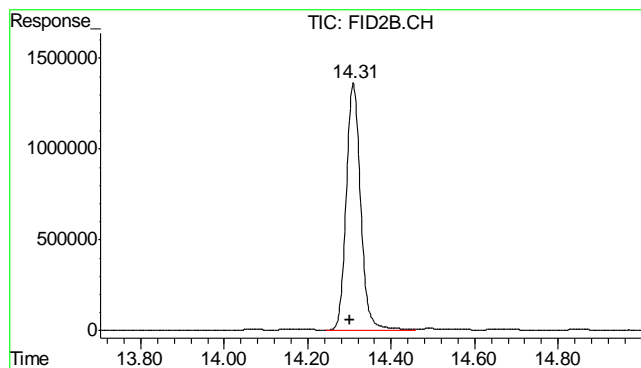
R.T.: 10.375 min
Delta R.T.: 0.008 min
Response: 1165235
Conc: 1.72 ug/L



#9 o-Xylene

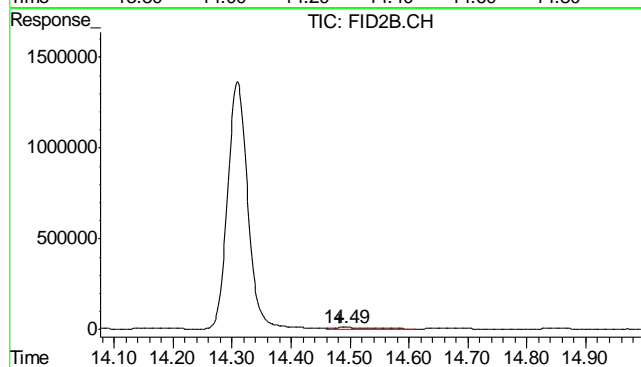
R.T.: 10.884 min
Delta R.T.: 0.010 min
Response: 481486
Conc: 0.85 ug/L

10.2.1 10



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

R.T.: 14.309 min
Delta R.T.: 0.009 min
Response: 32701778
Conc: 98.92 %



#11 Naphthalene

R.T.: 14.492 min
Delta R.T.: 0.009 min
Response: 472628
Conc: 1.48 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

Job Number: D26811
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4324-MB	FD09413.D	1	08/22/11	KV	08/22/11	OP4324	GFD407

The QC reported here applies to the following samples: Method: SW846-8015B
D26811-1, D26811-2

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	88% 61-142%

11.1.1
11

Blank Spike Summary

Job Number: D26811
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4324-BS	FD09414.D	1	08/22/11	KV	08/22/11	OP4324	GFD407

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

D26811-1, D26811-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	517	78	60-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	88%	61-142%

11.2.1
11

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D26811
Account: KRWCCOL KRW Consulting, Inc.
Project: XOM FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP4324-MS	FD09415.D	1	08/22/11	KV	08/22/11	OP4324	GFD407
OP4324-MSD	FD09416.D	1	08/22/11	KV	08/22/11	OP4324	GFD407
D26817-7	FD09431.D	1	08/22/11	KV	08/22/11	OP4324	GFD407

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

D26811-1, D26811-2

CAS No.	Compound	D26817-7 mg/kg	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	1310	750	1720	55	1730	56	1	24-157/35

CAS No.	Surrogate Recoveries	MS	MSD	D26817-7	Limits
84-15-1	o-Terphenyl	76%	79%	83%	61-142%

11.3.1
11

GC Semi-volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2011\AUG\FD082511\FD09498.D Vial: 3
Acq On : 8-25-2011 09:51:17 AM Operator: chavalit
Sample : D26811-1, 20X Inst : FID5
Misc : OP4324,GFD414,30.00,,,4,20 Multiplr: 1.00
IntFile : DF-GFC101.E
Quant Time: Aug 25 10:22:20 2011 Quant Results File: GFD356.RES

Quant Method : C:\MSDCHEM\2\METHODS\GFD356.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Thu Aug 11 11:51:33 2011
Response via : Initial Calibration
DataAcq Meth : JH080911.M

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

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
1) S O-Terphenyl	9.44	262180	5.734 mg/L m
Target Compounds			
2) H TPH-DRO (c10-c28)	7.43	1167046571	26528.730 mg/L

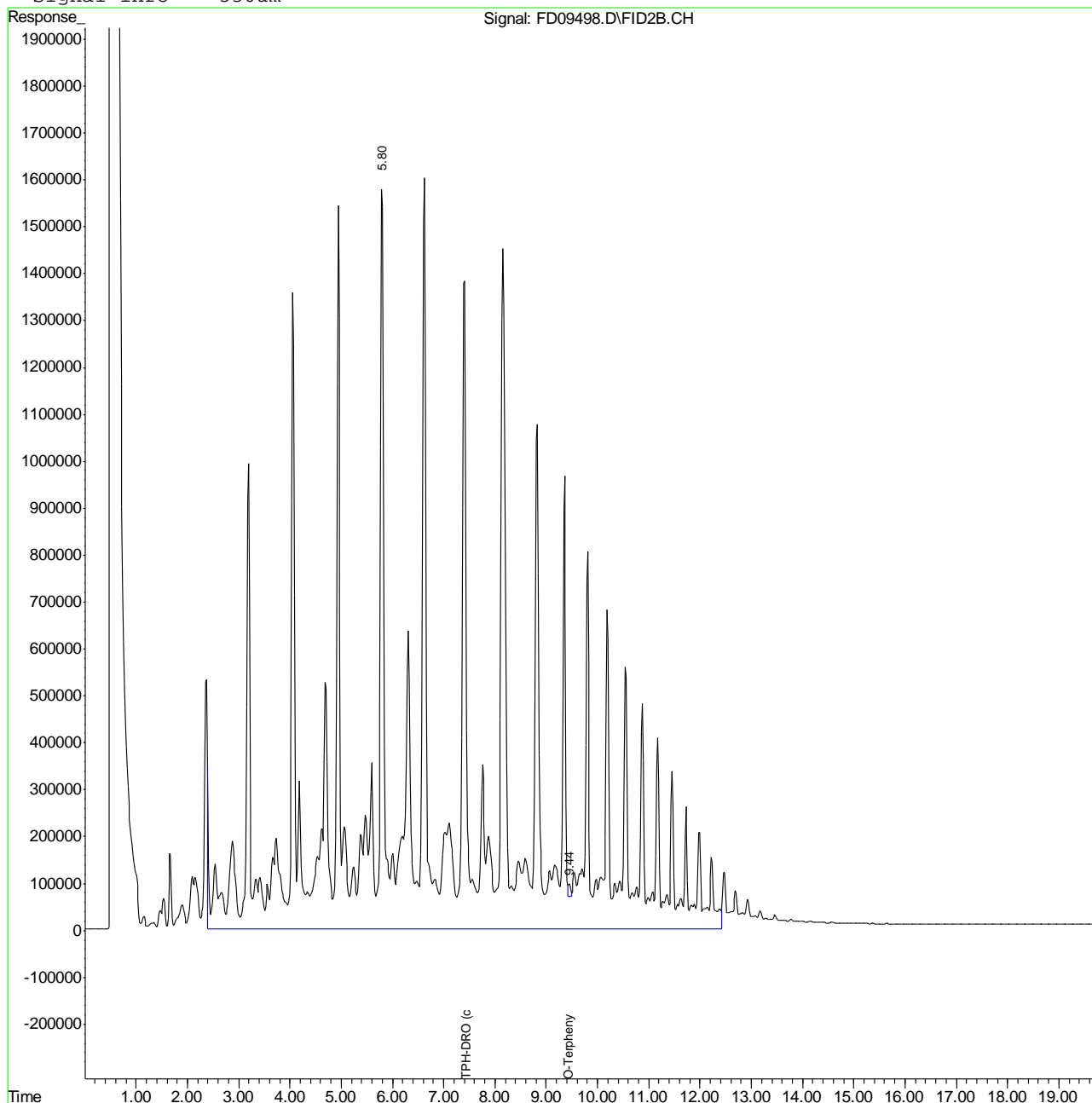
12.1.1
12

Quantitation Report (QT Reviewed)

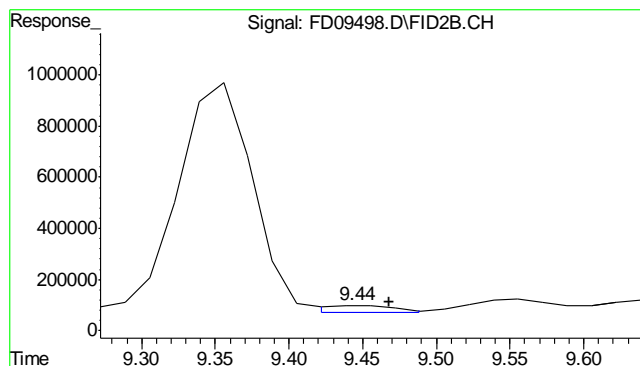
Data File : C:\MSDCHEM\2\DATA\2011\AUG\FD082511\FD09498.D Vial: 3
 Acq On : 8-25-2011 09:51:17 AM Operator: chavalit
 Sample : D26811-1, 20X Inst : FID5
 Misc : OP4324,GFD414,30.00,,,4,20 Multiplr: 1.00
 IntFile : DF-GFC101.E
 Quant Time: Aug 25 10:22 2011 Quant Results File: GFD356.RES

Quant Method : C:\MSDCHEM\2\METHODS\GFD356.M (Chemstation Integrator)
 Title : 8015B TEH
 Last Update : Thu Aug 11 11:51:33 2011
 Response via : Multiple Level Calibration
 DataAcq Meth : JH080911.M

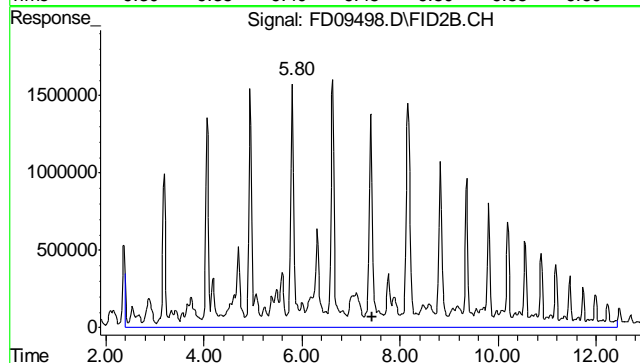
Volume Inj. : 1ul
 Signal Phase : RTX-5
 Signal Info : 530um



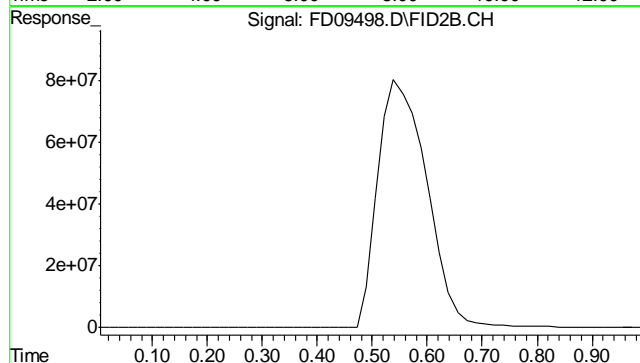
12.1.1
12



#1 O-Terphenyl
 R.T.: 9.443 min
 Delta R.T.: -0.025 min
 Response: 262180
 Conc: 5.73 mg/L m



#2 TPH-DRO (c10-c28)
 R.T.: 7.435 min
 Delta R.T.: 0.000 min
 Response: 1167046571
 Conc: 26528.73 mg/L m



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

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2011\AUG\FD082411\FD09491.D Vial: 21
Acq On : 8-24-2011 07:41:10 PM Operator: koroushv
Sample : D26811-2, 250X Inst : FID5
Misc : OP4324,GFD413,30.06,,,4,250 Multiplr: 1.00
IntFile : DF-GFC101.E
Quant Time: Aug 25 08:40:25 2011 Quant Results File: GFD356.RES

Quant Method : C:\MSDCHEM\2\METHODS\GFD356.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Thu Aug 11 11:51:33 2011
Response via : Initial Calibration
DataAcq Meth : JH080911.M

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

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
1) S O-Terphenyl	9.44	96214	2.104 mg/L m
Target Compounds			
2) H TPH-DRO (c10-c28)	7.43	86879968	1974.913 mg/L

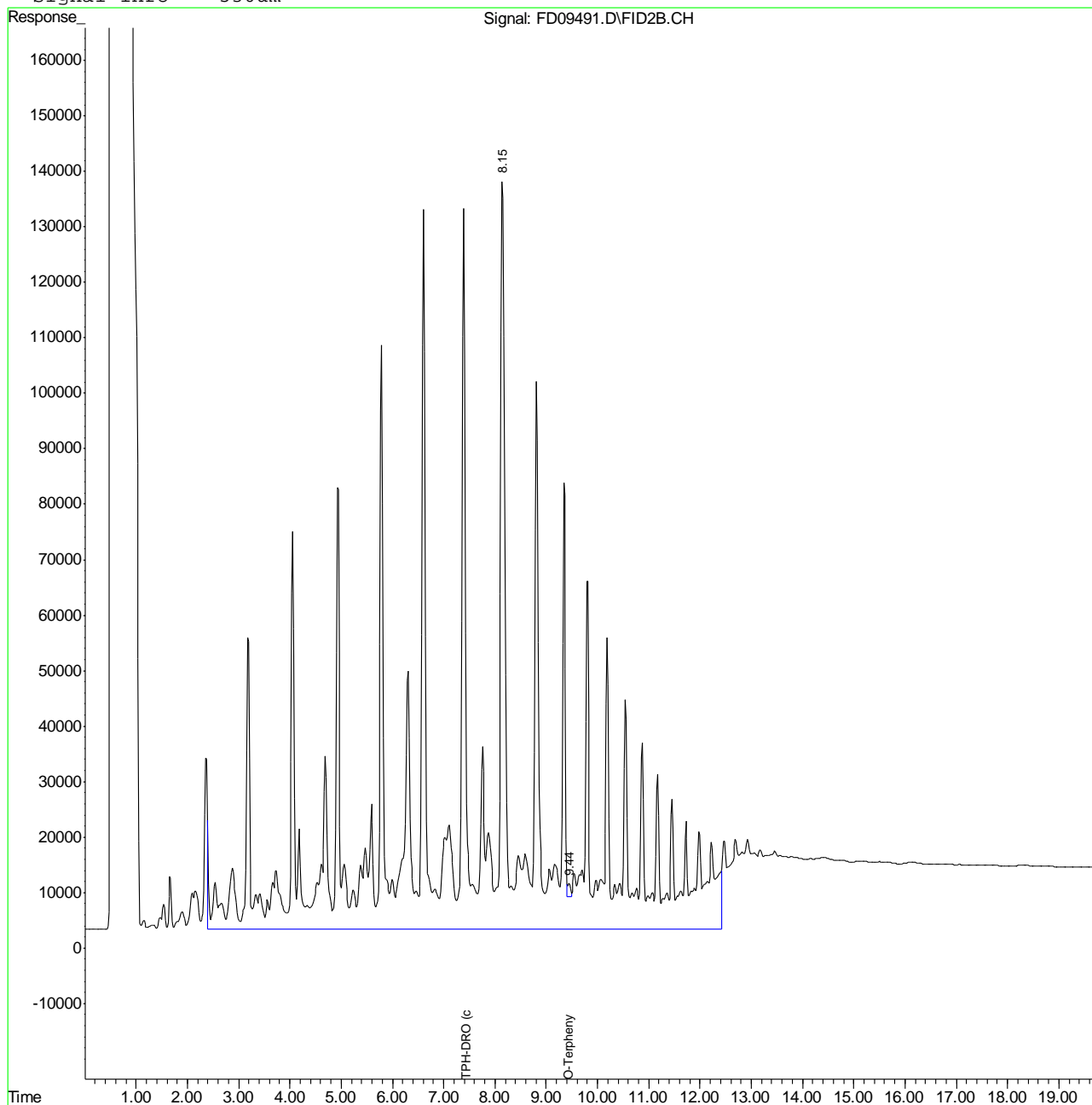
12.1.2
12

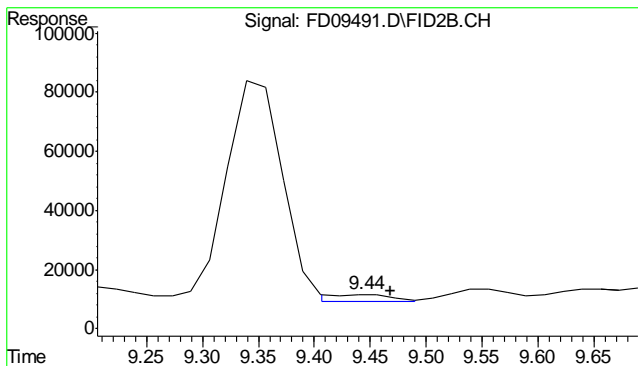
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2011\AUG\FD082411\FD09491.D Vial: 21
Acq On : 8-24-2011 07:41:10 PM Operator: koroushv
Sample : D26811-2, 250X Inst : FID5
Misc : OP4324,GFD413,30.06,,,4,250 Multiplr: 1.00
IntFile : DF-GFC101.E
Quant Time: Aug 25 8:40 2011 Quant Results File: GFD356.RES

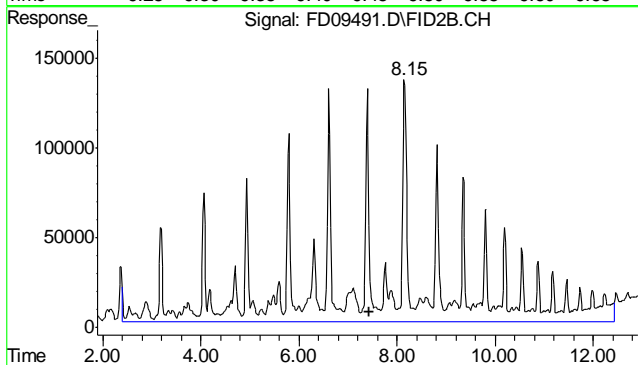
Quant Method : C:\MSDCHEM\2\METHODS\GFD356.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Thu Aug 11 11:51:33 2011
Response via : Multiple Level Calibration
DataAcq Meth : JH080911.M

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

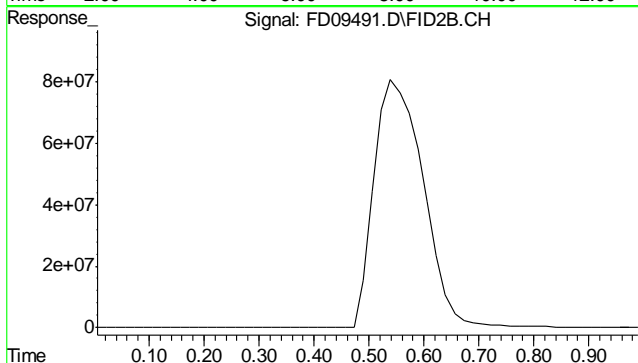




#1 O-Terphenyl
R.T.: 9.442 min
Delta R.T.: -0.026 min
Response: 96214
Conc: 2.10 mg/L m



#2 TPH-DRO (c10-c28)
R.T.: 7.435 min
Delta R.T.: 0.000 min
Response: 86879968
Conc: 1974.91 mg/L m



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

12.1.2
12

Koroush Vaziri
08/23/11 14:33

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2011\AUG\FD082211\FD09413.D Vial: 2
Acq On : 8-22-2011 03:59:17 PM Operator: koroushv
Sample : OP4324-MB Inst : FID5
Misc : OP4324,GFD407,,,,,2,1 Multiplr: 1.00
IntFile : DF-GFC101.E
Quant Time: Aug 23 08:56:47 2011 Quant Results File: GFD356.RES

Quant Method : C:\MSDCHEM\2\METHODS\GFD356.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Thu Aug 11 11:51:33 2011
Response via : Initial Calibration
DataAcq Meth : JH080911.M

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

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
1) S O-Terphenyl	9.46	40227790	879.825 mg/L m
Target Compounds			
2) H TPH-DRO (c10-c28)	7.43	2128258	48.379 mg/L

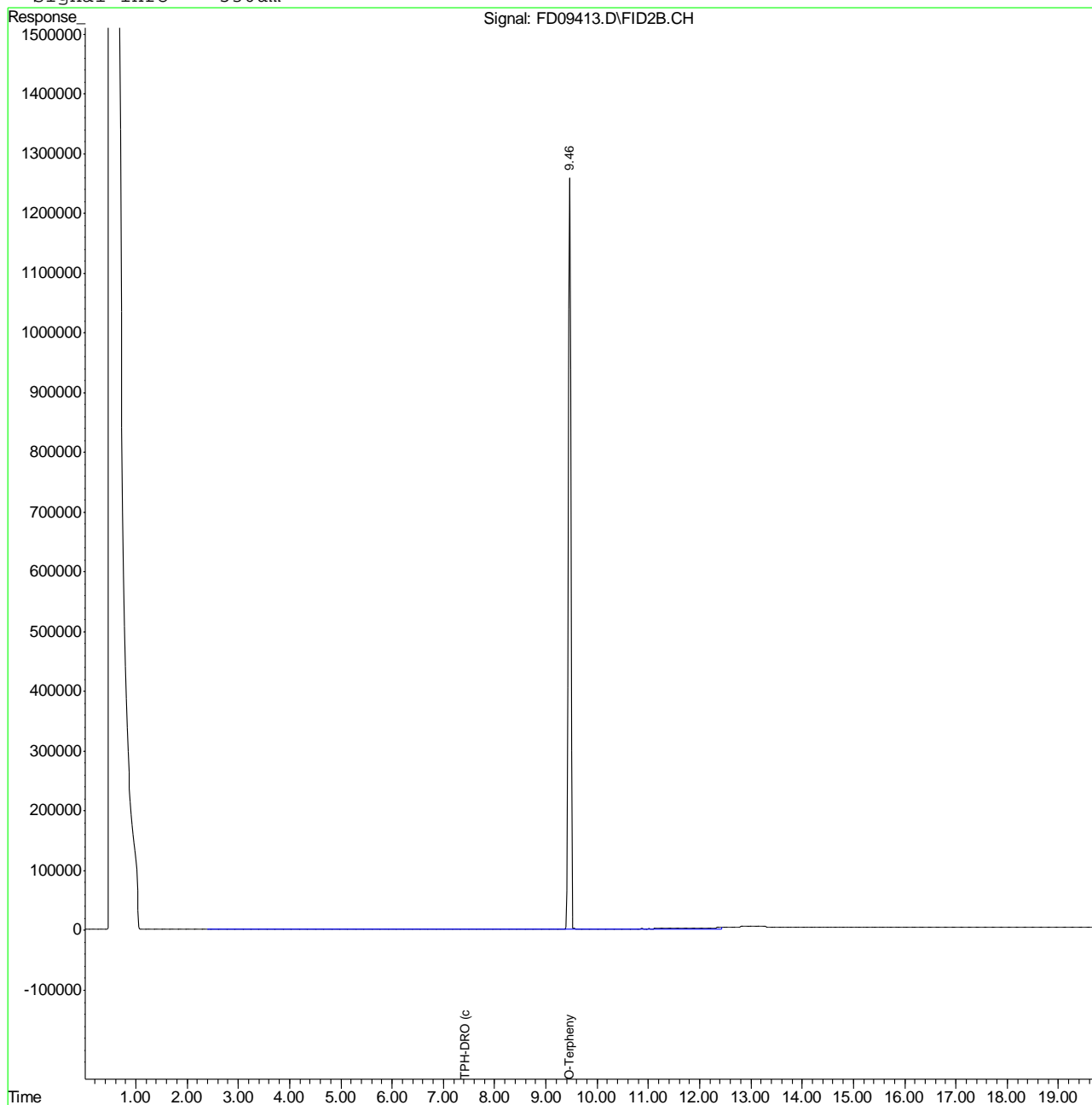
(f)=RT Delta > 1/2 Window (m)=manual int.
FD09413.D GFD356.M Tue Aug 23 08:57:14 2011 GC

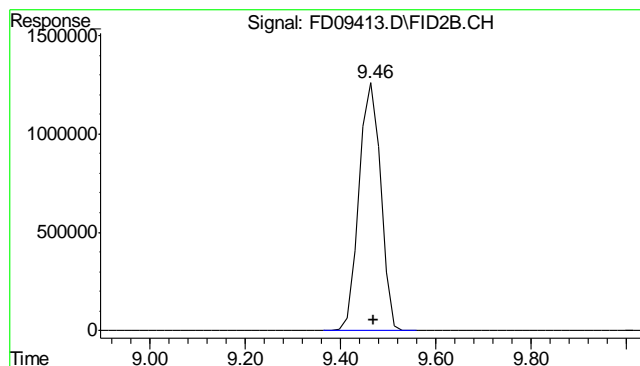
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2011\AUG\FD082211\FD09413.D Vial: 2
Acq On : 8-22-2011 03:59:17 PM Operator: koroushv
Sample : OP4324-MB Inst : FID5
Misc : OP4324,GFD407,,,,,2,1 Multiplr: 1.00
IntFile : DF-GFC101.E
Quant Time: Aug 23 8:57 2011 Quant Results File: GFD356.RES

Quant Method : C:\MSDCHEM\2\METHODS\GFD356.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Thu Aug 11 11:51:33 2011
Response via : Multiple Level Calibration
DataAcq Meth : JH080911.M

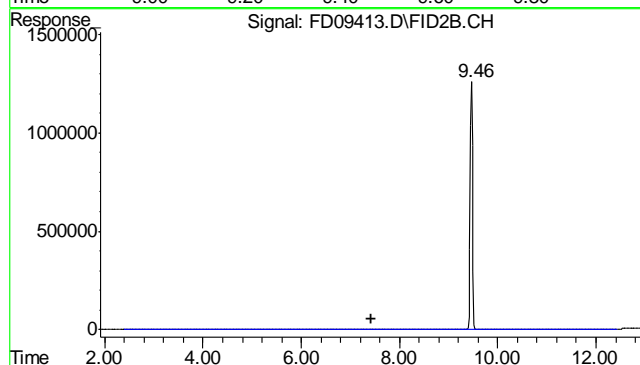
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





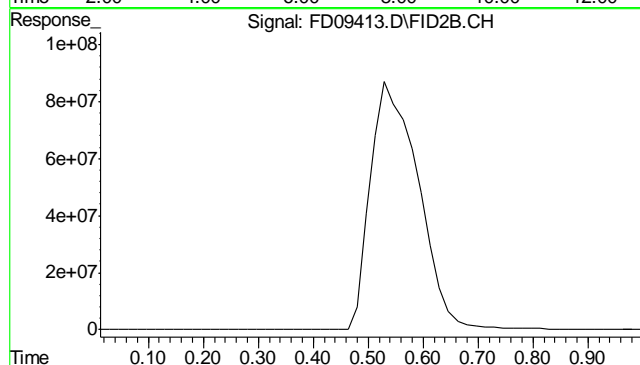
#1 O-Terphenyl

R.T.: 9.461 min
Delta R.T.: -0.007 min
Response: 40227790
Conc: 879.82 mg/L m



#2 TPH-DRO (c10-c28)

R.T.: 7.435 min
Delta R.T.: 0.000 min
Response: 2128258
Conc: 48.38 mg/L m



#9 5a-Androstane

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

12.2.1
12

Metals Analysis

QC Data Summaries

Includes the following where applicable:

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D26811
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 197-33A

QC Batch ID: MP5531
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 08/22/11

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	0.15	<1.0
Beryllium	1.0	.044	.1		
Boron	5.0	.48	.48		
Cadmium	1.0	.027	.27	0.030	<1.0
Calcium	40	.96	1.1		
Chromium	1.0	.018	.031	0.050	<1.0
Cobalt	0.50	.035	.035		
Copper	1.0	.085	.16	-0.050	<1.0
Iron	7.0	.34	2		
Lead	5.0	.16	.21	-0.040	<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	-0.21	<5.0
Silicon	5.0	.38	.51		
Silver	3.0	.018	.051	-0.030	<3.0
Sodium	40	11	11		
Strontium	5.0		.017		
Thallium	1.0	.29	.34		
Tin	5.0	.55	1.3		
Titanium	1.0	.011	.1		
Uranium	5.0	.15	.2		
Vanadium	1.0	.016	.025		
Zinc	3.0	.028	.06	0.47	<3.0

Associated samples MP5531: D26811-1, D26811-2

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D26811
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 197-33A

QC Batch ID: MP5531
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D26811
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 197-33A

QC Batch ID: MP5531
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 08/22/11

Metal	D26783-1 Original MS		Spikelot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic					
Barium	2130	2270	224	62.4 (a)	75-125
Beryllium					
Boron					
Cadmium	0.23	50.8	56.1	90.1	75-125
Calcium					
Chromium	28.1	77.1	56.1	87.3	75-125
Cobalt					
Copper	16.4	66.6	56.1	89.5	75-125
Iron					
Lead	13.7	110	112	85.8	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	16.2	63.3	56.1	83.9	75-125
Phosphorus					
Potassium					
Selenium	2.3	96.7	112	84.1	75-125
Silicon					
Silver	0.075	20.4	22.4	90.5	75-125
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	37.0	78.0	56.1	73.1N(b)	75-125

Associated samples MP5531: D26811-1, D26811-2

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D26811
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 197-33A

QC Batch ID: MP5531
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D26811
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 197-33A

QC Batch ID: MP5531
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 08/22/11

Metal	D26783-1 Original	MSD	Spikelot MPICPAL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium	2130	2450	235	136.2(a)	7.6	20
Beryllium						
Boron						
Cadmium	0.23	55.7	58.7	94.5	9.2	20
Calcium						
Chromium	28.1	82.1	58.7	92.0	6.3	20
Cobalt						
Copper	16.4	72.1	58.7	94.8	7.9	20
Iron						
Lead	13.7	120	117	90.5	8.7	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	16.2	67.7	58.7	87.7	6.7	20
Phosphorus						
Potassium						
Selenium	2.3	105	117	87.4	8.2	20
Silicon						
Silver	0.075	22.4	23.5	95.0	9.3	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	37.0	80.8	58.7	74.6N(b)	3.5	20

Associated samples MP5531: D26811-1, D26811-2

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D26811
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 197-33A

QC Batch ID: MP5531
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

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

13.1.2
13

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D26811
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 197-33A

QC Batch ID: MP5531
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 08/22/11

Metal	BSP Result	Spikelot MPICPAL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	187	200	93.5	80-120
Beryllium				
Boron				
Cadmium	50.8	50	101.6	80-120
Calcium				
Chromium	50.9	50	101.8	80-120
Cobalt				
Copper	49.3	50	98.6	80-120
Iron				
Lead	101	100	101.0	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	50.3	50	100.6	80-120
Phosphorus				
Potassium				
Selenium	96.3	100	96.3	80-120
Silicon				
Silver	20.6	20	103.0	80-120
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	51.8	50	103.6	80-120

Associated samples MP5531: D26811-1, D26811-2

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D26811
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 197-33A

QC Batch ID: MP5531
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

13.1.3

13

SERIAL DILUTION RESULTS SUMMARY

Login Number: D26811
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM FRU 197-33A

QC Batch ID: MP5531
 Matrix Type: SOLID

Methods: SW846 6010B
 Units: ug/l

Prep Date: 08/22/11

Metal	D26783-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	22700	27800	22.1*(a)	0-10
Beryllium				
Boron				
Cadmium	2.50	0.00	100.0(b)	0-10
Calcium				
Chromium	301	366	21.5*(a)	0-10
Cobalt				
Copper	176	195	11.1*(a)	0-10
Iron				
Lead	147	158	7.6	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	173	218	26.2*(a)	0-10
Phosphorus				
Potassium				
Selenium	24.2	26.5	9.5	0-10
Silicon				
Silver	0.800	3.00	275.0(b)	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	466	517	30.4*(a)	0-10

Associated samples MP5531: D26811-1, D26811-2

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: D26811
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 197-33A

QC Batch ID: MP5531
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: D26811
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 197-33A

QC Batch ID: MP5532
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 08/22/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	.14	1.2		
Antimony	0.20	.001	.0095		
Arsenic	0.40	.049	.22	0.018	<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 MP5532: D26811-1, D26811-2

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: D26811
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM FRU 197-33A

QC Batch ID: MP5532
 Matrix Type: SOLID

Methods: SW846 6020
 Units: mg/kg

Prep Date: 08/22/11

Metal	D26783-1 Original MS	Spikelot MPICPALL % Rec	QC Limits
Aluminum			
Antimony			
Arsenic	9.0	112	91.8 60-119
Barium			
Beryllium			
Boron			
Cadmium			
Calcium			
Chromium			
Cobalt			
Copper			
Iron			
Lead			
Magnesium			
Manganese			
Molybdenum			
Nickel			
Phosphorus			
Potassium			
Selenium			
Silver			
Sodium			
Strontium			
Thallium			
Tin			
Titanium			
Uranium			
Vanadium			
Zinc			

Associated samples MP5532: D26811-1, D26811-2

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: D26811
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM FRU 197-33A

QC Batch ID: MP5532
 Matrix Type: SOLID

Methods: SW846 6020
 Units: mg/kg

Prep Date: 08/22/11

Metal	D26783-1 Original	MSD	Spikelot MPICPAL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	9.0	129	117	102.2	14.1	20
Barium						
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP5532: D26811-1, D26811-2

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: D26811
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 197-33A

QC Batch ID: MP5532
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 08/22/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	106	100	106.0	80-120
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP5532: D26811-1, D26811-2

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: D26811
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM FRU 197-33A

QC Batch ID: MP5532
 Matrix Type: SOLID

Methods: SW846 6020
 Units: ug/l

Prep Date: 08/22/11

Metal	D26783-1			QC	
	Original	SDL 5:25	%DIF	Limits	
Aluminum					
Antimony					
Arsenic	96.1	110	14.2*(a)	0-10	
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP5532: D26811-1, D26811-2

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

13.2.4
 13

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D26811
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 197-33A

QC Batch ID: MP5540
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 08/23/11

Metal	RL	IDL	MDL	MB	
				raw	final
Mercury	0.10	.0011	.013	-0.0020	<0.10

Associated samples MP5540: D26811-1, D26811-2

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: D26811
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM FRU 197-33A

QC Batch ID: MP5540
 Matrix Type: SOLID

Methods: SW846 7471A
 Units: mg/kg

Prep Date: 08/23/11

Metal	D26397-1 Original MS	Spikelot HGWSR1	% Rec	QC Limits
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Mercury	0.0062	0.47	0.463	100.2	85-115
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Associated samples MP5540: D26811-1, D26811-2

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: D26811
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM FRU 197-33A

QC Batch ID: MP5540
 Matrix Type: SOLID

Methods: SW846 7471A
 Units: mg/kg

Prep Date: 08/23/11

Metal	D26397-1 Original MSD	Spikelot HGWSR1	% Rec	MSD RPD	QC Limit
Mercury	0.0062 0.46	0.454	100.0	2.2	20

Associated samples MP5540: D26811-1, D26811-2

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

13.3.2
13

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D26811
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM FRU 197-33A

QC Batch ID: MP5540
 Matrix Type: SOLID

Methods: SW846 7471A
 Units: mg/kg

Prep Date: 08/23/11

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

Associated samples MP5540: D26811-1, D26811-2

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: D26811
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 197-33A

QC Batch ID: MP5544
Matrix Type: AQUEOUS

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

Prep Date: 08/23/11

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	138	<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	45.0	<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	184	<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 MP5544: D26811-1A, D26811-2A

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D26811
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 197-33A

QC Batch ID: MP5544
Matrix Type: AQUEOUS

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

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D26811
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM FRU 197-33A

QC Batch ID: MP5544
 Matrix Type: AQUEOUS

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

Prep Date: 08/23/11

Metal	D26784-1A Original MS		Spikelot MPICPAL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	17300	146000	125000	103.0	75-125
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	5970	130000	125000	99.2	75-125
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	212000	341000	125000	103.2	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP5544: D26811-1A, D26811-2A

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: D26811
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 197-33A

QC Batch ID: MP5544
Matrix Type: AQUEOUS

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

Prep Date:

Metal

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

13.4.2
13

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D26811
 Account: KRWCCOL - KRW Consulting, Inc.
 Project: XOM FRU 197-33A

QC Batch ID: MP5544
 Matrix Type: AQUEOUS

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

Prep Date: 08/23/11

Metal	D26784-1A Original MSD	Spikelot MPICPAL % Rec	MSD RPD	QC Limit
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	17300	147000	125000	103.8
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	5970	132000	125000	100.8
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	212000	341000	125000	103.2
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP5544: D26811-1A, D26811-2A

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

13.4.2
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MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D26811
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 197-33A

QC Batch ID: MP5544
Matrix Type: AQUEOUS

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

Prep Date:

Metal

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D26811
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 197-33A

QC Batch ID: MP5544
Matrix Type: AQUEOUS

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

Prep Date: 08/23/11

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	129000	125000	103.2	80-120
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	122000	125000	97.6	80-120
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	124000	125000	99.2	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP5544: D26811-1A, D26811-2A

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D26811
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 197-33A

QC Batch ID: MP5544
Matrix Type: AQUEOUS

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

Prep Date:

Metal

(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

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

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D26811
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 197-33A

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Specific Conductivity	GP5269/GN11223			umhos/cm	9986	10000	100.5	90-110%
pH	GN11185			su	8.00	7.99	99.9	99.3-100.7%

Associated Samples:
Batch GN11185: D26811-1, D26811-2
Batch GP5269: D26811-1, D26811-2
(*) Outside of QC limits

14.1
14

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D26811
Account: KRWCCOL - KRW Consulting, Inc.
Project: XOM FRU 197-33A

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Redox Potential Vs H2	GN11192	D26814-1	mv	320	324	0.3	0-20%

Associated Samples:

Batch GN11192: D26811-1, D26811-2

(*) Outside of QC limits

14.2
14

Misc. Forms

Custody Documents and Other Forms

(Accutest Labs of New England, Inc.)

Includes the following where applicable:

- Chain of Custody

[illegible]

15.1

D26811: Chain of Custody
Page 1 of 2
Accutest Labs of New England, Inc.

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D26811

Client: AMS

Immediate Client Services Action Required: No

Date / Time Received: 8/23/2011

Delivery Method:

Client Service Action Required at Login: No

Project:

No. Coolers: 1

Airbill #'s:

Cooler Security

Y or N

Y or N

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler Temperature

Y or N

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

Quality Control Preservation

Y or N

N/A

- | | | | |
|---------------------------------|-------------------------------------|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Trip Blank listed on COC: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Sample Integrity - Documentation

Y or N

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

Sample Integrity - Condition

Y or N

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

Sample Integrity - Instructions

Y or N N/A

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

Comments

General Chemistry

QC Data Summaries

(Accutest Labs of New England, Inc.)

Includes the following where applicable:

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

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D26811
Account: ALMS - Accutest Mountain States
Project: KRWCCOL: XOM FRU 197-33A

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP13404/GN35907	0.40	0.0	mg/kg	40	47.5	118.8	80-120%
Chromium, Hexavalent	GP13404/GN35907			mg/kg	1080	1130	104.6	80-120%

Associated Samples:
Batch GP13404: D26811-1, D26811-2
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D26811
Account: ALMS - Accutest Mountain States
Project: KRWCCOL: XOM FRU 197-33A

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP13404/GN35907	D26814-1	mg/kg	0.0	0.0	0.0	0-20%

Associated Samples:

Batch GP13404: D26811-1, D26811-2

(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D26811
Account: ALMS - Accutest Mountain States
Project: KRWCCOL: XOM FRU 197-33A

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP13404/GN35907	D26814-1	mg/kg	0.0	41.2	34.9	84.8	75-125%
Chromium, Hexavalent	GP13404/GN35907	D26814-1	mg/kg	0.0	766	945	123.4	75-125%

Associated Samples:

Batch GP13404: D26811-1, D26811-2

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits