



09/14/12

Technical Report for

XTO Energy

PCU 197-36A

1203-02

Accutest Job Number: D38480

Sampling Date: 09/05/12

Report to:

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Total number of pages in report: 222



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.


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Laboratory Director

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Certifications: CO, ID, NE, NM, ND (R-027) (PW), UT (NELAP CO00049), TX (T104704511-12-1)

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Test results relate only to samples analyzed.

Table of Contents

-1-

Section 1: Sample Summary	4
Section 2: Case Narrative/Conformance Summary	5
Section 3: Summary of Hits	8
Section 4: Sample Results	11
4.1: D38480-1: CUT 1 POST SOLIDIFICATION	12
4.2: D38480-1A: CUT 1 POST SOLIDIFICATION	18
4.3: D38480-2: CUT 2 POST SOLIDIFICATION	20
4.4: D38480-2A: CUT 2 POST SOLIDIFICATION	26
4.5: D38480-3: CUT 3 POST SOLIDIFICATION	28
4.6: D38480-3A: CUT 3 POST SOLIDIFICATION	34
Section 5: Misc. Forms	36
5.1: Chain of Custody	37
Section 6: GC/MS Volatiles - QC Data Summaries	39
6.1: Method Blank Summary	40
6.2: Blank Spike Summary	41
6.3: Matrix Spike/Matrix Spike Duplicate Summary	42
Section 7: GC/MS Volatiles - Raw Data	43
7.1: Samples	44
7.2: Method Blanks	69
Section 8: GC/MS Semi-volatiles - QC Data Summaries	73
8.1: Method Blank Summary	74
8.2: Blank Spike Summary	75
8.3: Matrix Spike/Matrix Spike Duplicate Summary	76
Section 9: GC/MS Semi-volatiles - Raw Data	77
9.1: Samples	78
9.2: Method Blanks	129
Section 10: GC Volatiles - QC Data Summaries	146
10.1: Method Blank Summary	147
10.2: Blank Spike Summary	148
10.3: Matrix Spike/Matrix Spike Duplicate Summary	149
Section 11: GC Volatiles - Raw Data	150
11.1: Samples	151
11.2: Method Blanks	166
Section 12: GC Semi-volatiles - QC Data Summaries	171
12.1: Method Blank Summary	172
12.2: Blank Spike Summary	173
12.3: Matrix Spike/Matrix Spike Duplicate Summary	174
Section 13: GC Semi-volatiles - Raw Data	175
13.1: Samples	176
13.2: Method Blanks	185
Section 14: Metals Analysis - QC Data Summaries	188
14.1: Prep QC MP8357: Hg	189

Table of Contents

-2-

14.2: Prep QC MP8358: Ba,Cd,Cr,Cu,Pb,Ni,Se,Ag,Zn 193

14.3: Prep QC MP8359: As 203

14.4: Prep QC MP8372: Ca,Mg,Na,Sodium Adsorption Ratio 208

Section 15: General Chemistry - QC Data Summaries 218

15.1: Method Blank and Spike Results Summary 219

15.2: Duplicate Results Summary 220

15.3: Matrix Spike Results Summary 221

15.4: Matrix Spike Duplicate Results Summary 222

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



Sample Summary

XTO Energy

Job No: D38480

PCU 197-36A
Project No: 1203-02

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
D38480-1	09/05/12	10:10 DS	09/07/12	SO	Soil	CUT 1 POST SOLIDIFICATION
D38480-1A	09/05/12	10:10 DS	09/07/12	SO	Soil	CUT 1 POST SOLIDIFICATION
D38480-2	09/05/12	10:00 DS	09/07/12	SO	Soil	CUT 2 POST SOLIDIFICATION
D38480-2A	09/05/12	10:00 DS	09/07/12	SO	Soil	CUT 2 POST SOLIDIFICATION
D38480-3	09/05/12	09:50 DS	09/07/12	SO	Soil	CUT 3 POST SOLIDIFICATION
D38480-3A	09/05/12	09:50 DS	09/07/12	SO	Soil	CUT 3 POST SOLIDIFICATION

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



CASE NARRATIVE / CONFORMANCE SUMMARY

Client: XTO Energy

Job No D38480

Site: PCU 197-36A

Report Date 9/14/2012 4:49:18 PM

On 09/07/2012, 3 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4.5 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D38480 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: V3V1182

- All samples were analyzed within the recommended method holding time.
- Sample(s) D38454-1MS, D38454-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO

Batch ID: OP6602

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) D38513-1MS, D38513-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Volatiles by GC By Method SW846 8015B

Matrix SO

Batch ID: GGB958

- All samples were analyzed within the recommended method holding time.
- Sample(s) D38454-1MS, D38454-1MSD 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: OP6603

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D38483-1MS, D38483-1MSD were used as the QC samples indicated.

Metals By Method SW846 6010C

Matrix AQ

Batch ID: MP8372

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D38518-1AMS, D38518-1AMSD, D38518-1ASDL were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Sodium 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 Magnesium are outside control limits for sample MP8372-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Matrix SO

Batch ID: MP8358

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D38480-1MS, D38480-1MSD, D38480-1SDL were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Copper 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 RPD(s) for the MS and MSD recoveries of Barium are outside control limits for sample MP8358-S2. High RPD due to possible sample matrix or nonhomogeneity.
- The serial dilution RPD(s) for Cadmium, Selenium, Silver, Copper are outside control limits for sample MP8358-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP8358-SD1 for Copper: Serial dilution indicates possible matrix interference.

Metals By Method SW846 6020A

Matrix SO

Batch ID: MP8359

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D38480-1MSD, D38480-1SDL, D38480-1MS were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Arsenic are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

Metals By Method SW846 7471B

Matrix SO

Batch ID: MP8357

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D38479-1MS, D38479-1MSD were used as the QC samples for the metals analysis.

Wet Chemistry By Method ASTM D1498-76M

Matrix SO

Batch ID: GN16683

- Sample(s) D38518-2DUP were used as the QC samples for the Redox Potential Vs H2 analysis.

Wet Chemistry By Method SM19 2540B M

Matrix SO

Batch ID: GN16673

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

Wet Chemistry By Method SM2510B-1997 MOD

Matrix SO	Batch ID: GP8183
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- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method SW846 3060/7196A M

Matrix SO	Batch ID: R14352
------------------	-------------------------

- The data for SW846 3060/7196A M meets quality control requirements.
- D38480-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix SO	Batch ID: R14353
------------------	-------------------------

- The data for SW846 3060/7196A M meets quality control requirements.
- D38480-2 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix SO	Batch ID: R14354
------------------	-------------------------

- The data for SW846 3060/7196A M meets quality control requirements.
- D38480-3 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Wet Chemistry By Method SW846 3060A/7196A

Matrix SO	Batch ID: GP8138
------------------	-------------------------

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D38513-IMS, D38513-1MSD, D38513-1DUP were used as the QC samples for the Chromium, Hexavalent analysis.
- The duplicate RPD(s) for Chromium, Hexavalent are outside control limits for sample GP8138-D1. RPD acceptable due to low duplicate and sample concentrations.

Wet Chemistry By Method SW846 9045D

Matrix SO	Batch ID: GN16667
------------------	--------------------------

- The following samples were run outside of holding time for method SW846 9045D: D38480-1, D38480-2, D38480-3

Wet Chemistry By Method USDA HANDBOOK 60

Matrix SO	Batch ID: MP8372
------------------	-------------------------

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

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

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

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

Summary of Hits

Job Number: D38480
Account: XTO Energy
Project: PCU 197-36A
Collected: 09/05/12



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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D38480-1 CUT 1 POST SOLIDIFICATION

Toluene	0.490	0.15	0.075	mg/kg	SW846 8260B
Ethylbenzene	0.131 J	0.15	0.029	mg/kg	SW846 8260B
Xylene (total)	0.567	0.30	0.15	mg/kg	SW846 8260B
Naphthalene	0.170	0.015	0.013	mg/kg	SW846 8270C BY SIM
TPH-GRO (C6-C10)	68.0	15	7.5	mg/kg	SW846 8015B
TPH-DRO (C10-C28)	842	17	11	mg/kg	SW846-8015B
Arsenic	16.8	0.13		mg/kg	SW846 6020A
Barium	1270	1.3		mg/kg	SW846 6010C
Chromium	28.9	1.3		mg/kg	SW846 6010C
Copper	28.8	1.3		mg/kg	SW846 6010C
Lead	15.0	6.3		mg/kg	SW846 6010C
Nickel	22.4	3.8		mg/kg	SW846 6010C
Zinc	51.8	3.8		mg/kg	SW846 6010C
Specific Conductivity	11400	1.0		umhos/cm	SM2510B-1997 MOD
Chromium, Trivalent ^a	28.9	2.3		mg/kg	SW846 3060/7196A M
Redox Potential Vs H2	146			mv	ASTM D1498-76M
pH	12.43			su	SW846 9045D

D38480-1A CUT 1 POST SOLIDIFICATION

Calcium	15.9	2.0		mg/l	SW846 6010C
Sodium	1360	2.0		mg/l	SW846 6010C
Sodium Adsorption Ratio ^b	93.8			ratio	USDA HANDBOOK 60

D38480-2 CUT 2 POST SOLIDIFICATION

Benzene	0.109	0.082	0.041	mg/kg	SW846 8260B
Toluene	0.240	0.16	0.082	mg/kg	SW846 8260B
Ethylbenzene	0.0507 J	0.16	0.031	mg/kg	SW846 8260B
Xylene (total)	0.270 J	0.33	0.16	mg/kg	SW846 8260B
Benzo(a)anthracene	0.0258	0.011	0.0057	mg/kg	SW846 8270C BY SIM
Benzo(a)pyrene	0.0275	0.011	0.0057	mg/kg	SW846 8270C BY SIM
Chrysene	0.0850	0.011	0.0057	mg/kg	SW846 8270C BY SIM
Fluoranthene	0.0377	0.011	0.0057	mg/kg	SW846 8270C BY SIM
Fluorene	0.131	0.011	0.0057	mg/kg	SW846 8270C BY SIM
Indeno(1,2,3-cd)pyrene	0.0110	0.011	0.0057	mg/kg	SW846 8270C BY SIM
Naphthalene	0.838	0.015	0.014	mg/kg	SW846 8270C BY SIM
Pyrene	0.0729	0.011	0.0057	mg/kg	SW846 8270C BY SIM
TPH-GRO (C6-C10)	27.3	16	8.2	mg/kg	SW846 8015B
TPH-DRO (C10-C28)	253	18	11	mg/kg	SW846-8015B
Arsenic	11.0	0.13		mg/kg	SW846 6020A
Barium	2590	1.3		mg/kg	SW846 6010C
Chromium	17.3	1.3		mg/kg	SW846 6010C

Summary of Hits

Job Number: D38480
Account: XTO Energy
Project: PCU 197-36A
Collected: 09/05/12



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Copper		163	1.3		mg/kg	SW846 6010C
Lead		33.3	6.4		mg/kg	SW846 6010C
Nickel		29.3	3.9		mg/kg	SW846 6010C
Zinc		100	3.9		mg/kg	SW846 6010C
Specific Conductivity		11900	1.0		umhos/cm	SM2510B-1997 MOD
Chromium, Trivalent ^a		17.3	2.3		mg/kg	SW846 3060/7196A M
Redox Potential Vs H2		160			mv	ASTM D1498-76M
pH		11.74			su	SW846 9045D

D38480-2A CUT 2 POST SOLIDIFICATION

Calcium	86.6	2.0		mg/l	SW846 6010C
Sodium	2270	2.0		mg/l	SW846 6010C
Sodium Adsorption Ratio ^b	67.0			ratio	USDA HANDBOOK 60

D38480-3 CUT 3 POST SOLIDIFICATION

Benzene	0.0957	0.072	0.036	mg/kg	SW846 8260B
Toluene	0.267	0.14	0.072	mg/kg	SW846 8260B
Ethylbenzene	0.0273 J	0.14	0.027	mg/kg	SW846 8260B
Xylene (total)	0.327	0.29	0.14	mg/kg	SW846 8260B
Benzo(a)anthracene	0.0310	0.010	0.0053	mg/kg	SW846 8270C BY SIM
Benzo(a)pyrene	0.0548	0.010	0.0053	mg/kg	SW846 8270C BY SIM
Benzo(b)fluoranthene	0.0440	0.010	0.0053	mg/kg	SW846 8270C BY SIM
Benzo(k)fluoranthene	0.0098 J	0.010	0.0053	mg/kg	SW846 8270C BY SIM
Chrysene	0.108	0.010	0.0053	mg/kg	SW846 8270C BY SIM
Dibenzo(a,h)anthracene	0.0141	0.010	0.0053	mg/kg	SW846 8270C BY SIM
Fluoranthene	0.0342	0.010	0.0053	mg/kg	SW846 8270C BY SIM
Fluorene	0.139	0.010	0.0053	mg/kg	SW846 8270C BY SIM
Indeno(1,2,3-cd)pyrene	0.0139	0.010	0.0053	mg/kg	SW846 8270C BY SIM
Naphthalene	0.482	0.014	0.013	mg/kg	SW846 8270C BY SIM
Pyrene	0.0689	0.010	0.0053	mg/kg	SW846 8270C BY SIM
TPH-GRO (C6-C10)	44.4	14	7.2	mg/kg	SW846 8015B
TPH-DRO (C10-C28)	434	16	11	mg/kg	SW846-8015B
Arsenic	9.1	0.12		mg/kg	SW846 6020A
Barium	5630	5.9		mg/kg	SW846 6010C
Chromium	16.6	1.2		mg/kg	SW846 6010C
Copper	28.0	1.2		mg/kg	SW846 6010C
Lead	28.8	5.9		mg/kg	SW846 6010C
Nickel	20.7	18		mg/kg	SW846 6010C
Zinc	56.2	18		mg/kg	SW846 6010C
Specific Conductivity	11400	1.0		umhos/cm	SM2510B-1997 MOD
Chromium, Trivalent ^a	16.6	2.2		mg/kg	SW846 3060/7196A M
Redox Potential Vs H2	145			mv	ASTM D1498-76M
pH	12.45			su	SW846 9045D

Summary of Hits

Job Number: D38480
Account: XTO Energy
Project: PCU 197-36A
Collected: 09/05/12



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Analyte						

D38480-3A CUT 3 POST SOLIDIFICATION

Calcium	2.95	2.0	mg/l	SW846 6010C
Sodium	2100	2.0	mg/l	SW846 6010C
Sodium Adsorption Ratio ^b	336		ratio	USDA HANDBOOK 60

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)
(b) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

Sample Results

Report of Analysis

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Report of Analysis

Page 1 of 1

Client Sample ID:	CUT 1 POST SOLIDIFICATION	
Lab Sample ID:	D38480-1	Date Sampled: 09/05/12
Matrix:	SO - Soil	Date Received: 09/07/12
Method:	SW846 8260B	Percent Solids: 79.4
Project:	PCU 197-36A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V20315.D	1	09/08/12	BD	n/a	n/a	V3V1182
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.06 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.075	0.038	mg/kg	
108-88-3	Toluene	0.490	0.15	0.075	mg/kg	
100-41-4	Ethylbenzene	0.131	0.15	0.029	mg/kg	J
1330-20-7	Xylene (total)	0.567	0.30	0.15	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	95%		64-130%
460-00-4	4-Bromofluorobenzene	103%		62-131%
17060-07-0	1,2-Dichloroethane-D4	115%		70-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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Report of Analysis

Page 1 of 1

Client Sample ID:	CUT 1 POST SOLIDIFICATION	
Lab Sample ID:	D38480-1	Date Sampled: 09/05/12
Matrix:	SO - Soil	Date Received: 09/07/12
Method:	SW846 8270C BY SIM SW846 3546	Percent Solids: 79.4
Project:	PCU 197-36A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G11215.D	1	09/13/12	DC	09/11/12	OP6602	E3G522
Run #2							

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

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.010	0.0055	mg/kg	
120-12-7	Anthracene	ND	0.010	0.0055	mg/kg	
56-55-3	Benzo(a)anthracene	ND	0.010	0.0055	mg/kg	
50-32-8	Benzo(a)pyrene	ND	0.010	0.0055	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND	0.010	0.0055	mg/kg	
207-08-9	Benzo(k)fluoranthene	ND	0.010	0.0055	mg/kg	
218-01-9	Chrysene	ND	0.010	0.0055	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	0.010	0.0055	mg/kg	
206-44-0	Fluoranthene	ND	0.010	0.0055	mg/kg	
86-73-7	Fluorene	ND	0.010	0.0055	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.010	0.0055	mg/kg	
91-20-3	Naphthalene	0.170	0.015	0.013	mg/kg	
129-00-0	Pyrene	ND	0.010	0.0055	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	64%		10-145%
321-60-8	2-Fluorobiphenyl	76%		10-130%
1718-51-0	Terphenyl-d14	65%		22-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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Report of Analysis

Page 1 of 1

Client Sample ID:	CUT 1 POST SOLIDIFICATION	Date Sampled:	09/05/12
Lab Sample ID:	D38480-1	Date Received:	09/07/12
Matrix:	SO - Soil	Percent Solids:	79.4
Method:	SW846 8015B		
Project:	PCU 197-36A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB17471.D	1	09/10/12	SK	n/a	n/a	GGB958
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	68.0	15	7.5	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	88%		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

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Report of Analysis

Page 1 of 1

Client Sample ID:	CUT 1 POST SOLIDIFICATION					Date Sampled:	09/05/12
Lab Sample ID:	D38480-1					Date Received:	09/07/12
Matrix:	SO - Soil					Percent Solids:	79.4
Method:	SW846-8015B SW846 3546						
Project:	PCU 197-36A						

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD17346.D	1	09/12/12	AW	09/11/12	OP6603	GFD891
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	842	17	11	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	74%		43-136%		

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

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

Report of Analysis

Client Sample ID: CUT 1 POST SOLIDIFICATION

Lab Sample ID: D38480-1

Matrix: SO - Soil

Project: PCU 197-36A

Date Sampled: 09/05/12

Date Received: 09/07/12

Percent Solids: 79.4

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	16.8	0.13	mg/kg	5	09/11/12	09/14/12 JB	SW846 6020A ³	SW846 3050B ⁶
Barium	1270	1.3	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Cadmium	< 1.3	1.3	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Chromium	28.9	1.3	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Copper	28.8	1.3	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Lead	15.0	6.3	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Mercury	< 0.12	0.12	mg/kg	1	09/11/12	09/11/12 JM	SW846 7471B ¹	SW846 7471B ⁴
Nickel	22.4	3.8	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Selenium	< 6.3	6.3	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Silver	< 3.8	3.8	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Zinc	51.8	3.8	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵

(1) Instrument QC Batch: MA2789

(2) Instrument QC Batch: MA2795

(3) Instrument QC Batch: MA2802

(4) Prep QC Batch: MP8357

(5) Prep QC Batch: MP8358

(6) Prep QC Batch: MP8359

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CUT 1 POST SOLIDIFICATION	Date Sampled:	09/05/12
Lab Sample ID:	D38480-1	Date Received:	09/07/12
Matrix:	SO - Soil	Percent Solids:	79.4
Project:	PCU 197-36A		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
prep: DEPT.OF AG, BOOK N9							
Specific Conductivity	11400	1.0	umhos/cm	1	09/14/12	JK	SM2510B-1997 MOD
Chromium, Hexavalent	< 1.0	1.0	mg/kg	1	09/11/12	CJ	SW846 3060A/7196A
Chromium, Trivalent ^a	28.9	2.3	mg/kg	1	09/12/12 18:04	JB	SW846 3060/7196A M
Redox Potential Vs H2	146		mv	1	09/10/12	CT	ASTM D1498-76M
Solids, Percent	79.4		%	1	09/10/12	SWT	SM19 2540B M
pH	12.43		su	1	09/07/12 14:30	JD	SW846 9045D

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

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CUT 1 POST SOLIDIFICATION	Date Sampled:	09/05/12
Lab Sample ID:	D38480-1A	Date Received:	09/07/12
Matrix:	SO - Soil	Percent Solids:	79.4
Project:	PCU 197-36A		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	15.9	2.0	mg/l	1	09/11/12	09/12/12 JB	SW846 6010C ¹	SW846 3010A/M ²
Magnesium	< 1.0	1.0	mg/l	1	09/11/12	09/12/12 JB	SW846 6010C ¹	SW846 3010A/M ²
Sodium	1360	2.0	mg/l	1	09/11/12	09/12/12 JB	SW846 6010C ¹	SW846 3010A/M ²

(1) Instrument QC Batch: MA2796
(2) Prep QC Batch: MP8372

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CUT 1 POST SOLIDIFICATION	Date Sampled:	09/05/12
Lab Sample ID:	D38480-1A	Date Received:	09/07/12
Matrix:	SO - Soil	Percent Solids:	79.4
Project:	PCU 197-36A		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	93.8		ratio	1	09/12/12 17:47	JB	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

Page 1 of 1

Client Sample ID:	CUT 2 POST SOLIDIFICATION	
Lab Sample ID:	D38480-2	Date Sampled: 09/05/12
Matrix:	SO - Soil	Date Received: 09/07/12
Method:	SW846 8260B	Percent Solids: 75.5
Project:	PCU 197-36A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V20316.D	1	09/08/12	BD	n/a	n/a	V3V1182
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.06 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.109	0.082	0.041	mg/kg	
108-88-3	Toluene	0.240	0.16	0.082	mg/kg	
100-41-4	Ethylbenzene	0.0507	0.16	0.031	mg/kg	J
1330-20-7	Xylene (total)	0.270	0.33	0.16	mg/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	96%		64-130%
460-00-4	4-Bromofluorobenzene	104%		62-131%
17060-07-0	1,2-Dichloroethane-D4	112%		70-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CUT 2 POST SOLIDIFICATION	
Lab Sample ID:	D38480-2	Date Sampled: 09/05/12
Matrix:	SO - Soil	Date Received: 09/07/12
Method:	SW846 8270C BY SIM SW846 3546	Percent Solids: 75.5
Project:	PCU 197-36A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G11216.D	1	09/13/12	DC	09/11/12	OP6602	E3G522
Run #2							

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

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.011	0.0057	mg/kg	
120-12-7	Anthracene	ND	0.011	0.0057	mg/kg	
56-55-3	Benzo(a)anthracene	0.0258	0.011	0.0057	mg/kg	
50-32-8	Benzo(a)pyrene	0.0275	0.011	0.0057	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND	0.011	0.0057	mg/kg	
207-08-9	Benzo(k)fluoranthene	ND	0.011	0.0057	mg/kg	
218-01-9	Chrysene	0.0850	0.011	0.0057	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	0.011	0.0057	mg/kg	
206-44-0	Fluoranthene	0.0377	0.011	0.0057	mg/kg	
86-73-7	Fluorene	0.131	0.011	0.0057	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	0.0110	0.011	0.0057	mg/kg	
91-20-3	Naphthalene	0.838	0.015	0.014	mg/kg	
129-00-0	Pyrene	0.0729	0.011	0.0057	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	70%		10-145%
321-60-8	2-Fluorobiphenyl	72%		10-130%
1718-51-0	Terphenyl-d14	77%		22-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	CUT 2 POST SOLIDIFICATION	Date Sampled:	09/05/12
Lab Sample ID:	D38480-2	Date Received:	09/07/12
Matrix:	SO - Soil	Percent Solids:	75.5
Method:	SW846 8015B		
Project:	PCU 197-36A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB17472.D	1	09/10/12	SK	n/a	n/a	GGB958
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	27.3	16	8.2	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	93%		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:	CUT 2 POST SOLIDIFICATION	
Lab Sample ID:	D38480-2	Date Sampled: 09/05/12
Matrix:	SO - Soil	Date Received: 09/07/12
Method:	SW846-8015B SW846 3546	Percent Solids: 75.5
Project:	PCU 197-36A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD17348.D	1	09/12/12	AW	09/11/12	OP6603	GFD891
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	253	18	11	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	77%		43-136%		

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

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

Report of Analysis

Client Sample ID:	CUT 2 POST SOLIDIFICATION	Date Sampled:	09/05/12
Lab Sample ID:	D38480-2	Date Received:	09/07/12
Matrix:	SO - Soil	Percent Solids:	75.5
Project:	PCU 197-36A		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	11.0	0.13	mg/kg	5	09/11/12	09/14/12 JB	SW846 6020A ³	SW846 3050B ⁶
Barium	2590	1.3	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Cadmium	< 1.3	1.3	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Chromium	17.3	1.3	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Copper	163	1.3	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Lead	33.3	6.4	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Mercury	< 0.12	0.12	mg/kg	1	09/11/12	09/11/12 JM	SW846 7471B ¹	SW846 7471B ⁴
Nickel	29.3	3.9	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Selenium	< 6.4	6.4	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Silver	< 3.9	3.9	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵
Zinc	100	3.9	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁵

(1) Instrument QC Batch: MA2789

(2) Instrument QC Batch: MA2795

(3) Instrument QC Batch: MA2802

(4) Prep QC Batch: MP8357

(5) Prep QC Batch: MP8358

(6) Prep QC Batch: MP8359

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CUT 2 POST SOLIDIFICATION	Date Sampled:	09/05/12
Lab Sample ID:	D38480-2	Date Received:	09/07/12
Matrix:	SO - Soil	Percent Solids:	75.5
Project:	PCU 197-36A		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
prep: DEPT.OF AG, BOOK N9							
Specific Conductivity	11900	1.0	umhos/cm	1	09/14/12	JK	SM2510B-1997 MOD
Chromium, Hexavalent	< 1.0	1.0	mg/kg	1	09/11/12	CJ	SW846 3060A/7196A
Chromium, Trivalent ^a	17.3	2.3	mg/kg	1	09/12/12 18:57	JB	SW846 3060/7196A M
Redox Potential Vs H2	160		mv	1	09/10/12	CT	ASTM D1498-76M
Solids, Percent	75.5		%	1	09/10/12	SWT	SM19 2540B M
pH	11.74		su	1	09/07/12 14:30	JD	SW846 9045D

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

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CUT 2 POST SOLIDIFICATION	Date Sampled:	09/05/12
Lab Sample ID:	D38480-2A	Date Received:	09/07/12
Matrix:	SO - Soil	Percent Solids:	75.5
Project:	PCU 197-36A		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	86.6	2.0	mg/l	1	09/11/12	09/12/12 JB	SW846 6010C ¹	SW846 3010A/M ²
Magnesium	< 1.0	1.0	mg/l	1	09/11/12	09/12/12 JB	SW846 6010C ¹	SW846 3010A/M ²
Sodium	2270	2.0	mg/l	1	09/11/12	09/12/12 JB	SW846 6010C ¹	SW846 3010A/M ²

(1) Instrument QC Batch: MA2796
(2) Prep QC Batch: MP8372

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CUT 2 POST SOLIDIFICATION	Date Sampled:	09/05/12
Lab Sample ID:	D38480-2A	Date Received:	09/07/12
Matrix:	SO - Soil	Percent Solids:	75.5
Project:	PCU 197-36A		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	67.0		ratio	1	09/12/12 17:57	JB	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

Page 1 of 1

Client Sample ID:	CUT 3 POST SOLIDIFICATION	
Lab Sample ID:	D38480-3	Date Sampled: 09/05/12
Matrix:	SO - Soil	Date Received: 09/07/12
Method:	SW846 8260B	Percent Solids: 81.6
Project:	PCU 197-36A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V20317.D	1	09/08/12	BD	n/a	n/a	V3V1182
Run #2							

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

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.0957	0.072	0.036	mg/kg	
108-88-3	Toluene	0.267	0.14	0.072	mg/kg	
100-41-4	Ethylbenzene	0.0273	0.14	0.027	mg/kg	J
1330-20-7	Xylene (total)	0.327	0.29	0.14	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	95%		64-130%
460-00-4	4-Bromofluorobenzene	104%		62-131%
17060-07-0	1,2-Dichloroethane-D4	109%		70-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	CUT 3 POST SOLIDIFICATION	
Lab Sample ID:	D38480-3	Date Sampled: 09/05/12
Matrix:	SO - Soil	Date Received: 09/07/12
Method:	SW846 8270C BY SIM SW846 3546	Percent Solids: 81.6
Project:	PCU 197-36A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G11217.D	1	09/13/12	DC	09/11/12	OP6602	E3G522
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.010	0.0053	mg/kg	
120-12-7	Anthracene	ND	0.010	0.0053	mg/kg	
56-55-3	Benzo(a)anthracene	0.0310	0.010	0.0053	mg/kg	
50-32-8	Benzo(a)pyrene	0.0548	0.010	0.0053	mg/kg	
205-99-2	Benzo(b)fluoranthene	0.0440	0.010	0.0053	mg/kg	
207-08-9	Benzo(k)fluoranthene	0.0098	0.010	0.0053	mg/kg	J
218-01-9	Chrysene	0.108	0.010	0.0053	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	0.0141	0.010	0.0053	mg/kg	
206-44-0	Fluoranthene	0.0342	0.010	0.0053	mg/kg	
86-73-7	Fluorene	0.139	0.010	0.0053	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	0.0139	0.010	0.0053	mg/kg	
91-20-3	Naphthalene	0.482	0.014	0.013	mg/kg	
129-00-0	Pyrene	0.0689	0.010	0.0053	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	83%		10-145%
321-60-8	2-Fluorobiphenyl	66%		10-130%
1718-51-0	Terphenyl-d14	77%		22-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	CUT 3 POST SOLIDIFICATION	Date Sampled:	09/05/12
Lab Sample ID:	D38480-3	Date Received:	09/07/12
Matrix:	SO - Soil	Percent Solids:	81.6
Method:	SW846 8015B		
Project:	PCU 197-36A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB17474.D	1	09/10/12	SK	n/a	n/a	GGB958
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	44.4	14	7.2	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	88%		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:	CUT 3 POST SOLIDIFICATION	
Lab Sample ID:	D38480-3	Date Sampled: 09/05/12
Matrix:	SO - Soil	Date Received: 09/07/12
Method:	SW846-8015B SW846 3546	Percent Solids: 81.6
Project:	PCU 197-36A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD17350.D	1	09/12/12	AW	09/11/12	OP6603	GFD891
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	434	16	11	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	91%		43-136%		

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

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

Report of Analysis

Client Sample ID: CUT 3 POST SOLIDIFICATION

Lab Sample ID: D38480-3

Matrix: SO - Soil

Project: PCU 197-36A

Date Sampled: 09/05/12

Date Received: 09/07/12

Percent Solids: 81.6

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	9.1	0.12	mg/kg	5	09/11/12	09/14/12 JB	SW846 6020A ⁴	SW846 3050B ⁷
Barium	5630	5.9	mg/kg	5	09/11/12	09/13/12 JM	SW846 6010C ³	SW846 3050B ⁶
Cadmium	< 1.2	1.2	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁶
Chromium	16.6	1.2	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁶
Copper	28.0	1.2	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁶
Lead	28.8	5.9	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁶
Mercury	< 0.12	0.12	mg/kg	1	09/11/12	09/11/12 JM	SW846 7471B ¹	SW846 7471B ⁵
Nickel	20.7	18	mg/kg	5	09/11/12	09/13/12 JM	SW846 6010C ³	SW846 3050B ⁶
Selenium	< 5.9	5.9	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁶
Silver	< 3.6	3.6	mg/kg	1	09/11/12	09/12/12 JB	SW846 6010C ²	SW846 3050B ⁶
Zinc	56.2	18	mg/kg	5	09/11/12	09/13/12 JM	SW846 6010C ³	SW846 3050B ⁶

(1) Instrument QC Batch: MA2789

(2) Instrument QC Batch: MA2795

(3) Instrument QC Batch: MA2799

(4) Instrument QC Batch: MA2802

(5) Prep QC Batch: MP8357

(6) Prep QC Batch: MP8358

(7) Prep QC Batch: MP8359

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CUT 3 POST SOLIDIFICATION	Date Sampled:	09/05/12
Lab Sample ID:	D38480-3	Date Received:	09/07/12
Matrix:	SO - Soil	Percent Solids:	81.6
Project:	PCU 197-36A		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
prep: DEPT.OF AG, BOOK N9							
Specific Conductivity	11400	1.0	umhos/cm	1	09/14/12	JK	SM2510B-1997 MOD
Chromium, Hexavalent	< 1.0	1.0	mg/kg	1	09/11/12	CJ	SW846 3060A/7196A
Chromium, Trivalent ^a	16.6	2.2	mg/kg	1	09/12/12 19:26	JB	SW846 3060/7196A M
Redox Potential Vs H2	145		mv	1	09/10/12	CT	ASTM D1498-76M
Solids, Percent	81.6		%	1	09/10/12	SWT	SM19 2540B M
pH	12.45		su	1	09/07/12 14:30	JD	SW846 9045D

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

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CUT 3 POST SOLIDIFICATION	Date Sampled:	09/05/12
Lab Sample ID:	D38480-3A	Date Received:	09/07/12
Matrix:	SO - Soil	Percent Solids:	81.6
Project:	PCU 197-36A		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	2.95	2.0	mg/l	1	09/11/12	09/12/12 JB	SW846 6010C ¹	SW846 3010A/M ²
Magnesium	< 1.0	1.0	mg/l	1	09/11/12	09/12/12 JB	SW846 6010C ¹	SW846 3010A/M ²
Sodium	2100	2.0	mg/l	1	09/11/12	09/12/12 JB	SW846 6010C ¹	SW846 3010A/M ²

(1) Instrument QC Batch: MA2796
(2) Prep QC Batch: MP8372

RL = Reporting Limit

Report of Analysis

Client Sample ID: CUT 3 POST SOLIDIFICATION
Lab Sample ID: D38480-3A
Matrix: SO - Soil
Project: PCU 197-36A

Date Sampled: 09/05/12
Date Received: 09/07/12
Percent Solids: 81.6

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	336		ratio	1	09/12/12 18:08	JB	USDA HANDBOOK 60

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

RL = Reporting Limit

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



CHAIN OF CUSTODY

PAGE 1 OF 1

4036 Youngfield Street, Wheat Ridge, CO 80033
TEL: 303-425-6021 FAX: 303-425-6854
www.accutest.com

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # D38480
Requested Analysis (see TEST CODE sheet)	
Matrix Codes	
DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank	
LAB USE ONLY	
C1	
C2	
C3	
/ 9/11	
Comments / Special Instructions	
Please email to: KRW Piceance Team	
Emergency & Rush T/A data available VIA Lablink	
Sample Custody must be documented below each time samples change possession, including courier delivery.	
Relinquished by Sampler: 1 LORI ALBAINSON	Received By: 2
Date/Time: 9-6-12 17:30	Date/Time: 9-7-12 12:30
Relinquished by Sampler: 3	Received By: 4
Date/Time: 9-6-12 17:30	Date/Time: 9-7-12 12:30
Relinquished by: 5	Received By: 6
Date/Time: 9-6-12 17:30	Date/Time: 9-7-12 12:30
Custody Seal # 1	Preserved where applicable <input checked="" type="checkbox"/>
On Ice <input checked="" type="checkbox"/>	Cooler Temp. 4.5

Client / Reporting Information		Project Information	
Company Name KRW Consulting	Project Name: PCU 197-36A XTO	Billing Information (if different from Report to)	
Street Address 8000 West 14th Street, Suite 200	Street	Company Name XTO Energy	
City Lakewood, CO 80214	City	Street Address 21459 CR 5	
Project Contact Dwayne Knudson	Project # 1203-02	City Rifle, CO 81650	
Phone # 970-488-1098	Client Purchase Order #	Attention: Jessica Dooling	
Sampler(s) Name(s) DAVID SANDERS	Project Manager Joe Hess	Number of preserved Bottles	
Field ID / Point of Collection	MECH/ID Vial #	Date	Time
CUT 1 POST SOLIDIFICATION		9-5-12	10:10
CUT 2 POST SOLIDIFICATION		9-5-12	10:00
CUT 3 POST SOLIDIFICATION		9-5-12	9:50
Turnaround Time (Business days)	Approved By (Accutest PM): / Date:	Data Deliverable Information	
<input type="checkbox"/> Std. 10 Business Days <input checked="" type="checkbox"/> Std. 6 Business Days (By contract only) <input type="checkbox"/> 3 Day Emergency <input type="checkbox"/> 2 Day Emergency <input type="checkbox"/> 1 Day Emergency	<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> COMMBN <input type="checkbox"/> COMMBN+ <input type="checkbox"/> Commercial "A" = Results Only <input type="checkbox"/> Commercial "B" = Results + QC Summary <input type="checkbox"/> Commercial BN = Results/QC Narrative (+ chromatograms)	<input type="checkbox"/> State Forms Required <input type="checkbox"/> Send Forms to State <input type="checkbox"/> Report by Fax <input checked="" type="checkbox"/> Report by PDF ONLY <input type="checkbox"/> EDD Format	
Sample Custody must be documented below each time samples change possession, including courier delivery.			
Relinquished by Sampler: 1 LORI ALBAINSON	Received By: 2	Date/Time: 9-6-12 17:30	
Relinquished by Sampler: 3	Received By: 4	Date/Time: 9-7-12 12:30	
Relinquished by: 5	Received By: 6	Date/Time: 9-7-12 12:30	
Custody Seal # 1			
Preserved where applicable <input checked="" type="checkbox"/>			
On Ice <input checked="" type="checkbox"/>			
Cooler Temp. 4.5			

D38480: Chain of Custody

Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D38480

Client: KRW CONSULTING

Immediate Client Services Action Required: No

Date / Time Received: 9/7/2012 12:30:00 PM

No. Coolers: 1

Client Service Action Required at Login: No

Project: PCU 197-36A XTO

Airbill #'s: HDCO

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

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

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

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

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

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

Comments

 Accutest Laboratories
 V:(303) 425-6021

 4036 Youngfield Street
 F: (303) 425-6854

 Wheat Ridge, CO
 www.accutest.com

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: D38480
Account: XTOKRWR XTO Energy
Project: PCU 197-36A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V1182-MB	3V20302.D	1	09/07/12	BD	n/a	n/a	V3V1182

The QC reported here applies to the following samples:

Method: SW846 8260B

D38480-1, D38480-2, D38480-3

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	50	25	ug/kg	
100-41-4	Ethylbenzene	ND	100	19	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	102% 64-130%
460-00-4	4-Bromofluorobenzene	97% 62-131%
17060-07-0	1,2-Dichloroethane-D4	115% 70-130%

Blank Spike Summary

Page 1 of 1

Job Number: D38480

Account: XTOKRWR XTO Energy

Project: PCU 197-36A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V1182-BS	3V20303.D	1	09/07/12	BD	n/a	n/a	V3V1182

The QC reported here applies to the following samples:

Method: SW846 8260B

D38480-1, D38480-2, D38480-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	48.5	97	70-130
100-41-4	Ethylbenzene	50	48.6	97	70-130
108-88-3	Toluene	50	45.6	91	70-130
1330-20-7	Xylene (total)	150	148	99	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	100%	64-130%
460-00-4	4-Bromofluorobenzene	102%	62-131%
17060-07-0	1,2-Dichloroethane-D4	111%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D38480
Account: XTOKRWR XTO Energy
Project: PCU 197-36A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D38454-1MS	3V20305.D	1	09/07/12	BD	n/a	n/a	V3V1182
D38454-1MSD	3V20306.D	1	09/07/12	BD	n/a	n/a	V3V1182
D38454-1	3V20304.D	1	09/07/12	BD	n/a	n/a	V3V1182

The QC reported here applies to the following samples:

Method: SW846 8260B

D38480-1, D38480-2, D38480-3

CAS No.	Compound	D38454-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		3820	2930	77	3610	95	21	64-139/30
100-41-4	Ethylbenzene	ND		3820	3060	80	3740	98	20	68-136/30
108-88-3	Toluene	108	J	3820	2760	69	3350	85	19	60-130/30
1330-20-7	Xylene (total)	ND		11500	9580	84	11600	101	19	58-142/30

CAS No.	Surrogate Recoveries	MS	MSD	D38454-1	Limits
2037-26-5	Toluene-D8	94%	93%	95%	64-130%
460-00-4	4-Bromofluorobenzene	109%	107%	101%	62-131%
17060-07-0	1,2-Dichloroethane-D4	109%	109%	111%	70-130%

* = Outside of Control Limits.

GC/MS Volatiles

Raw Data

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3090712.S\
Data File : 3V20315.D
Acq On : 8 Sep 2012 12:15 am
Operator : BRETD
Sample : D38480-1
Misc : MS4630,V3V1182,5.064,,100,5,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Sep 08 11:23:40 2012
Quant Method : C:\msdchem\1\METHODS\V3AP1160TVH1160SOIL.M
Quant Title : 8260
QLast Update : Fri Aug 24 10:57:50 2012
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.860	168	192918	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.655	114	320306	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.293	117	345598	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.282	152	201499	50.00	ug/l	0.00

System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	12.248	102	25013	57.59	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	115.18%
61) Toluene-d8	14.051	98	426392	47.26	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	94.52%
69) 4-Bromofluorobenzene	16.243	95	181735	51.47	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	102.94%

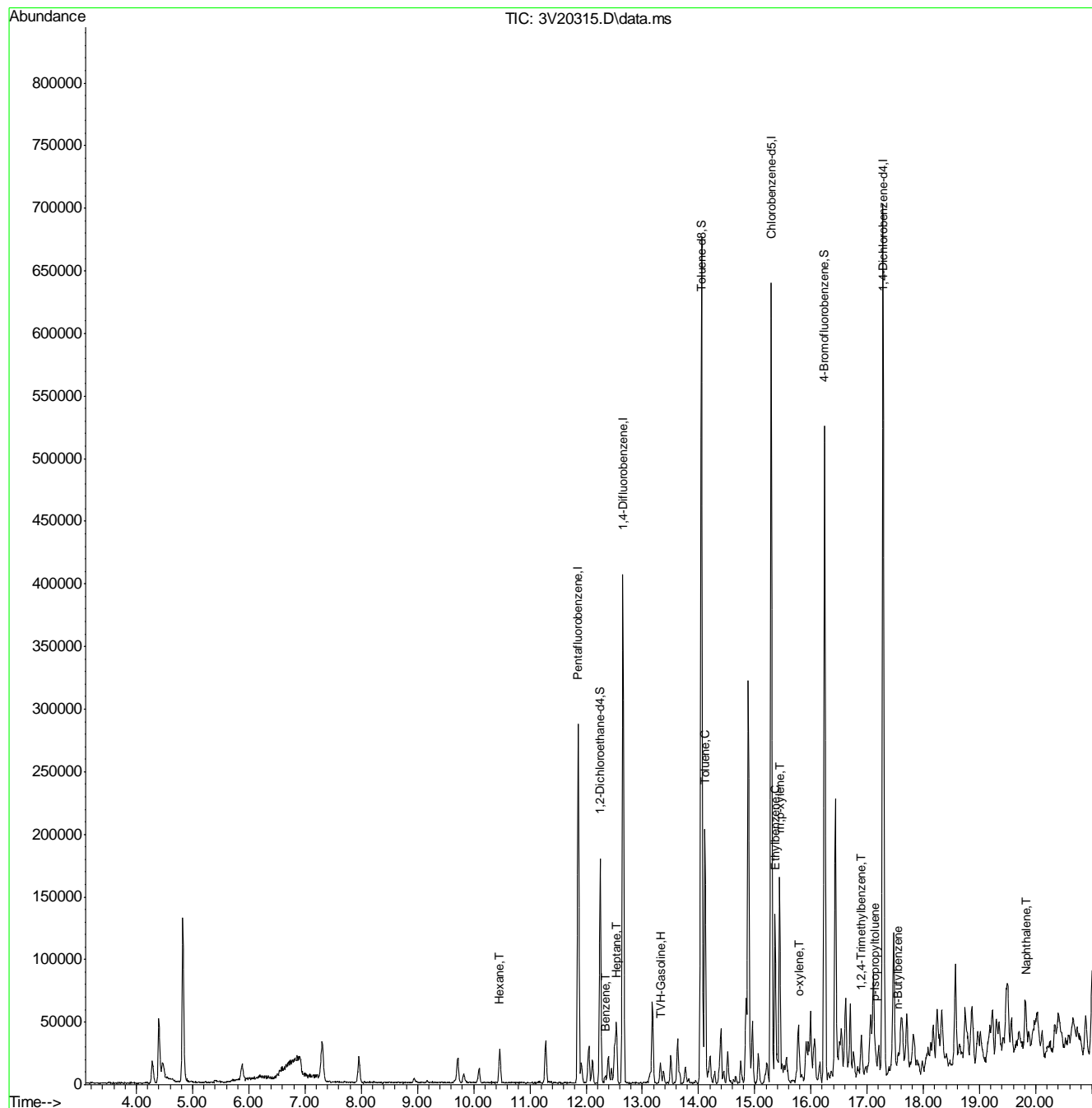
Target Compounds						Qvalue
1) TVH-Gasoline	13.329	TIC	4159379m	146.11	ug/l	
41) Hexane	10.467	57	14000	2.78	ug/l	100
43) Heptane	12.540	43	20614	3.21	ug/l	94
50) Benzene	12.347	78	3885	0.34	ug/l	100
62) Toluene	14.109	92	57037	6.52	ug/l	98
66) Ethylbenzene	15.360	91	28347	1.74	ug/l	94
72) m,p-xylene	15.444	106	44624	6.87	ug/l	92
73) o-xylene	15.794	106	3392	0.68	ug/l	80
82) 1,2,4-Trimethylbenzene	16.894	105	9623	0.71	ug/l	89
86) p-Isopropyltoluene	17.148	119	7683	0.55	ug/l #	88
88) n-Butylbenzene	17.539	91	4721	0.35	ug/l #	87
91) Naphthalene	19.840	128	4708	0.46	ug/l	100

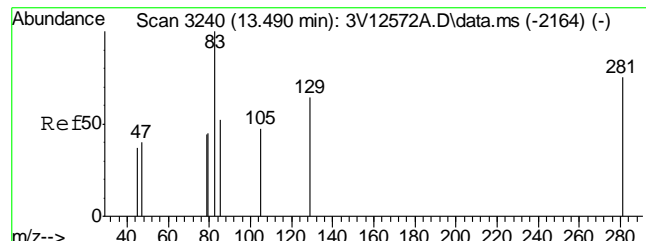
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

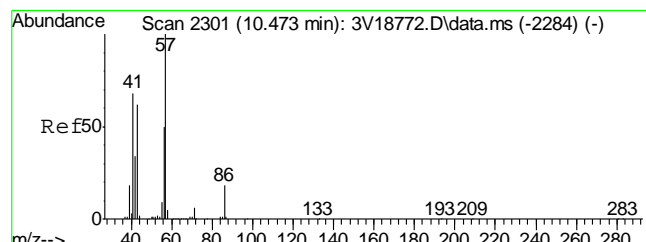
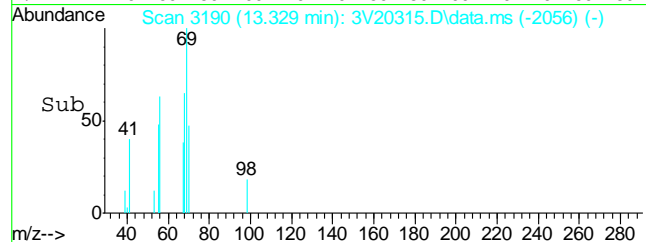
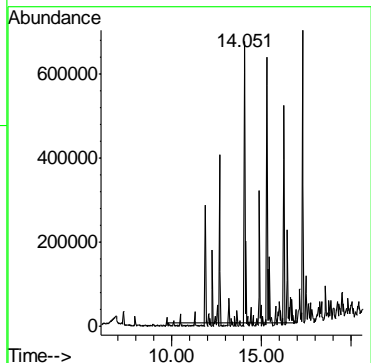
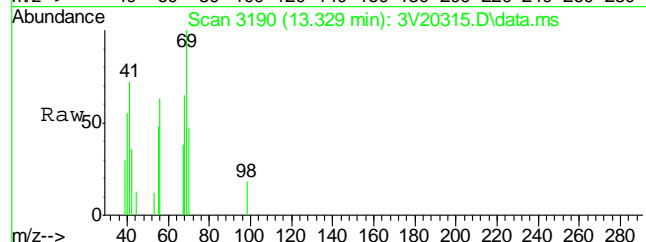
Data Path : C:\msdchem\1\DATA\V3090712.S\
Data File : 3V20315.D
Acq On : 8 Sep 2012 12:15 am
Operator : BRETD
Sample : D38480-1
Misc : MS4630,V3V1182,5.064,,100,5,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Sep 08 11:23:40 2012
Quant Method : C:\msdchem\1\METHODS\V3AP1160TVH1160SOIL.M
Quant Title : 8260
QLast Update : Fri Aug 24 10:57:50 2012
Response via : Initial Calibration

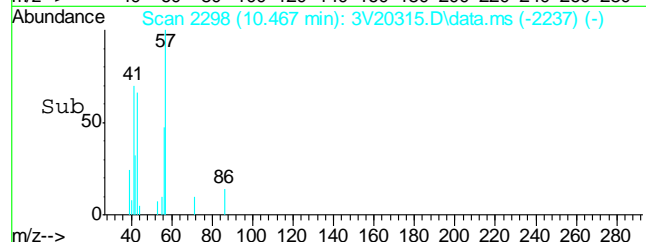
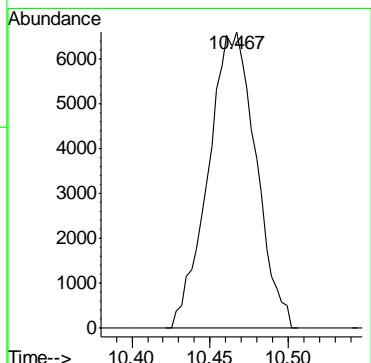
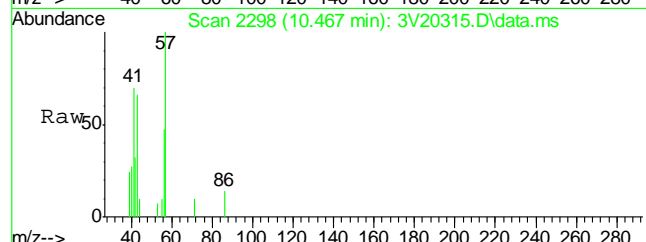


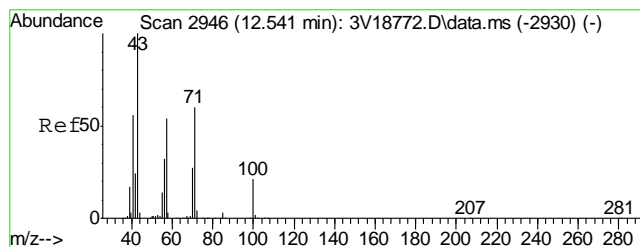


#1
TVH-Gasoline
Concen: 146.11 ug/l m
RT: 13.329 min Scan# 3190
Delta R.T. 0.000 min
Lab File: 3V20315.D
Acq: 8 Sep 2012 12:15 am
Tgt Ion:TIC Resp: 4159379

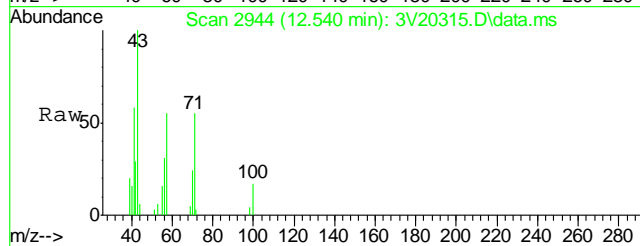


#41
Hexane
Concen: 2.78 ug/l
RT: 10.467 min Scan# 2298
Delta R.T. -0.004 min
Lab File: 3V20315.D
Acq: 8 Sep 2012 12:15 am
Tgt Ion: 57 Resp: 14000

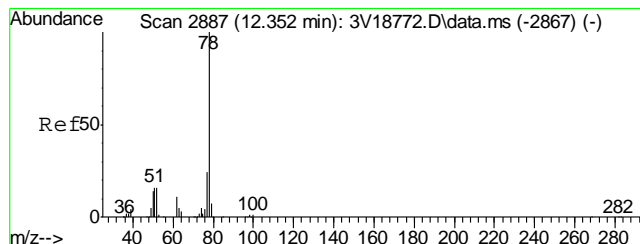
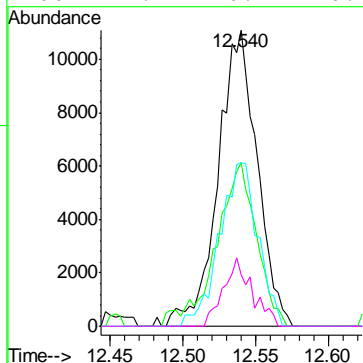
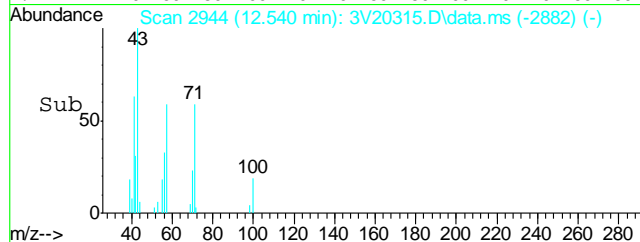




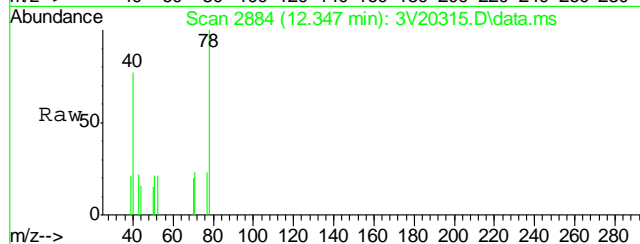
#43
Heptane
Concen: 3.21 ug/l
RT: 12.540 min Scan# 2944
Delta R.T. -0.001 min
Lab File: 3V20315.D
Acq: 8 Sep 2012 12:15 am



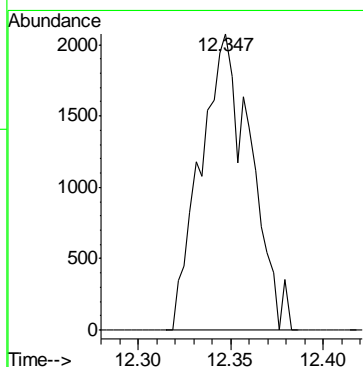
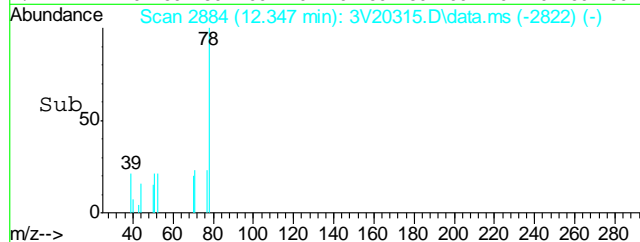
Tgt Ion: 43 Resp: 20614
Ion Ratio Lower Upper
43 100
57 55.5 32.1 72.1
71 54.4 39.6 79.6
100 17.1 0.1 40.1

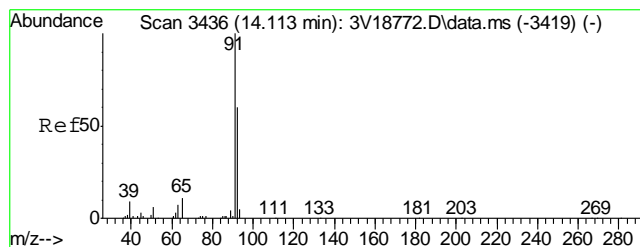


#50
Benzene
Concen: 0.34 ug/l
RT: 12.347 min Scan# 2884
Delta R.T. -0.001 min
Lab File: 3V20315.D
Acq: 8 Sep 2012 12:15 am



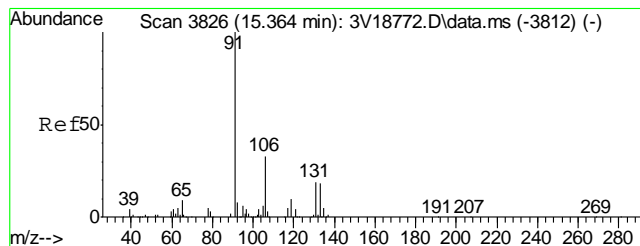
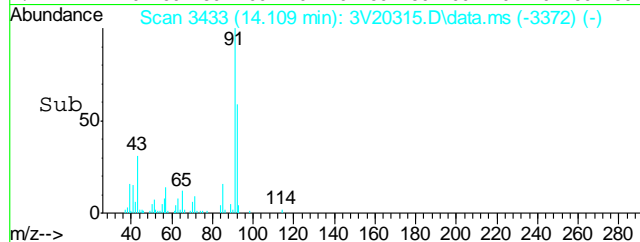
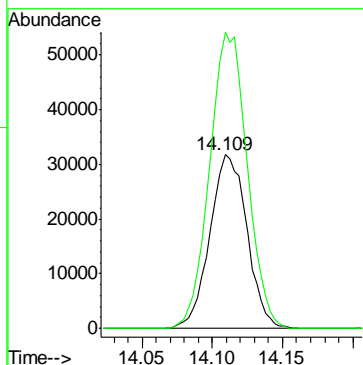
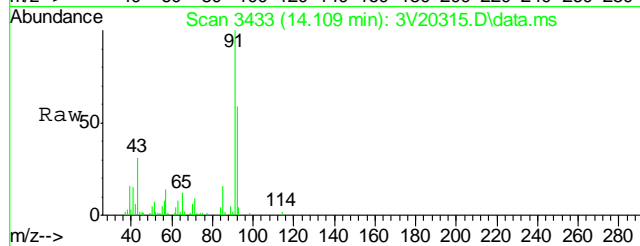
Tgt Ion: 78 Resp: 3885





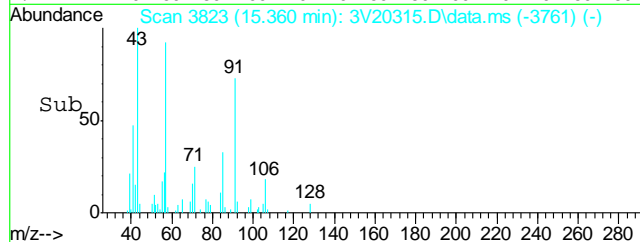
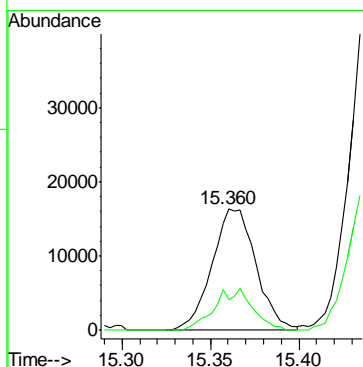
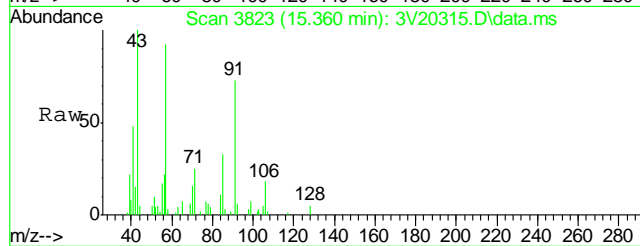
#62
Toluene
Concen: 6.52 ug/l
RT: 14.109 min Scan# 3433
Delta R.T. -0.004 min
Lab File: 3V20315.D
Acq: 8 Sep 2012 12:15 am

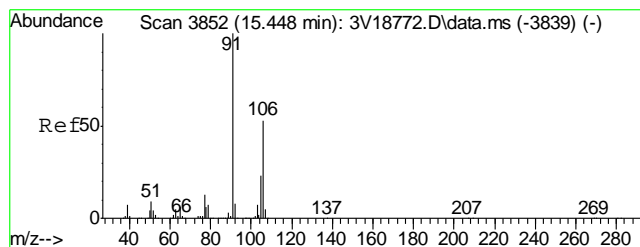
Tgt Ion: 92 Resp: 57037
Ion Ratio Lower Upper
92 100
91 172.8 150.2 190.2



#66
Ethylbenzene
Concen: 1.74 ug/l
RT: 15.360 min Scan# 3823
Delta R.T. -0.001 min
Lab File: 3V20315.D
Acq: 8 Sep 2012 12:15 am

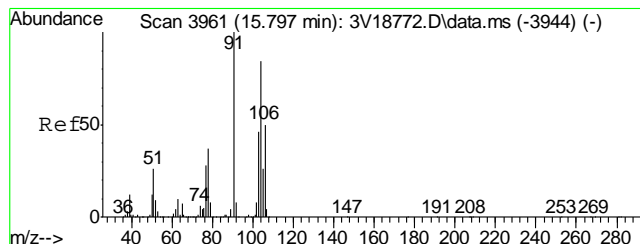
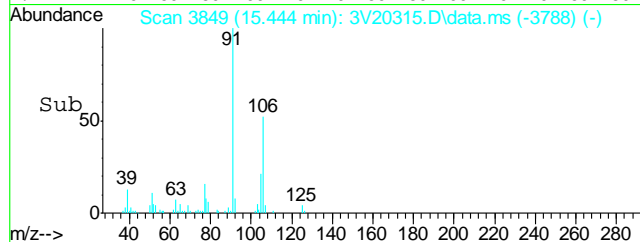
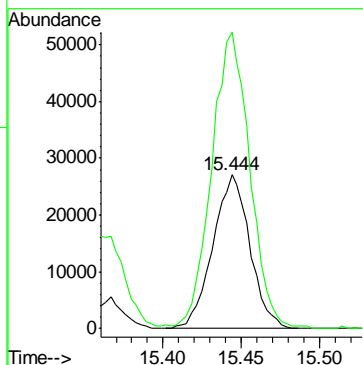
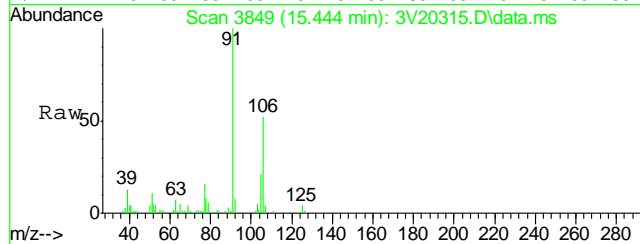
Tgt Ion: 91 Resp: 28347
Ion Ratio Lower Upper
91 100
106 29.5 13.2 53.2





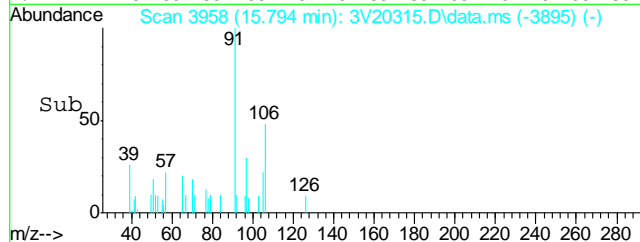
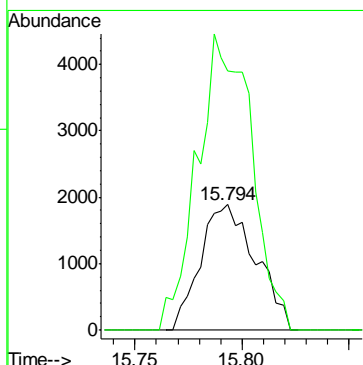
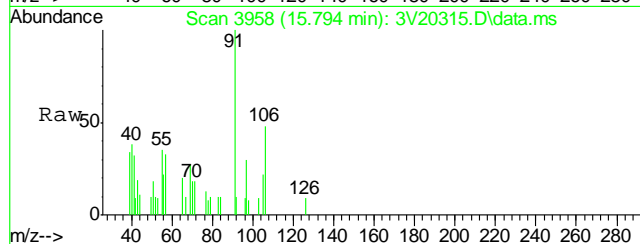
#72
m,p-xylene
Concen: 6.87 ug/l
RT: 15.444 min Scan# 3849
Delta R.T. -0.004 min
Lab File: 3V20315.D
Acq: 8 Sep 2012 12:15 am

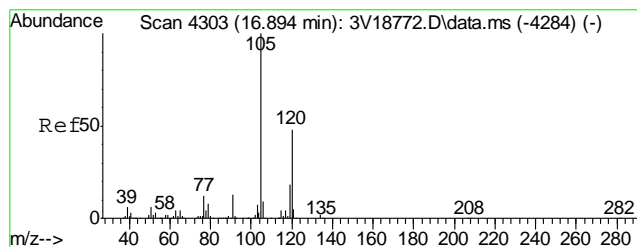
Tgt Ion:106 Resp: 44624
Ion Ratio Lower Upper
106 100
91 200.2 168.1 208.1



#73
o-xylene
Concen: 0.68 ug/l
RT: 15.794 min Scan# 3958
Delta R.T. 0.004 min
Lab File: 3V20315.D
Acq: 8 Sep 2012 12:15 am

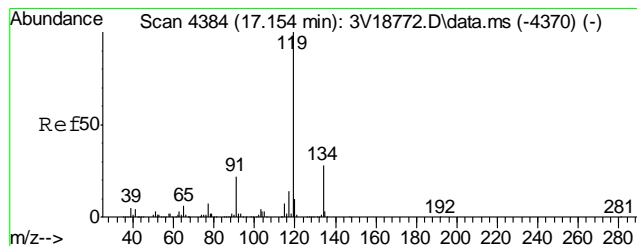
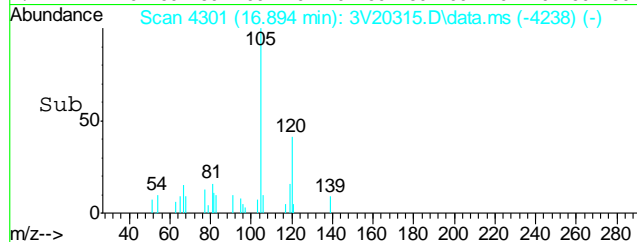
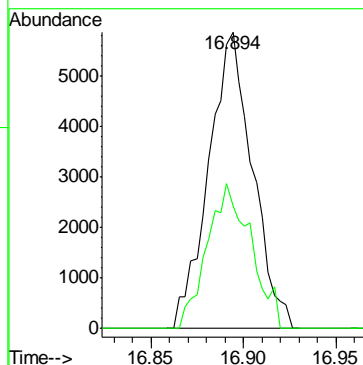
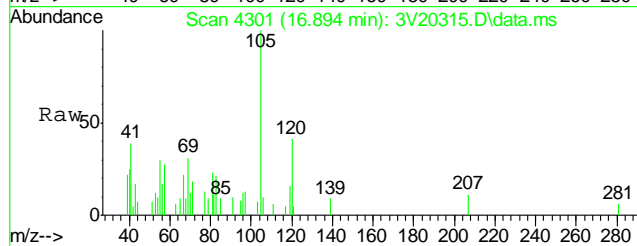
Tgt Ion:106 Resp: 3392
Ion Ratio Lower Upper
106 100
91 230.6 160.2 240.4





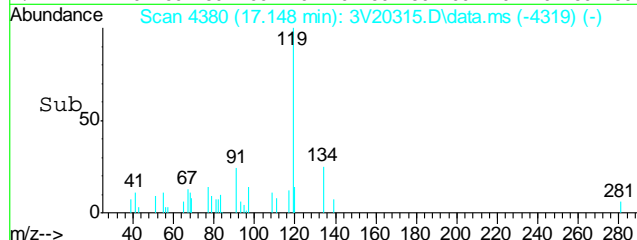
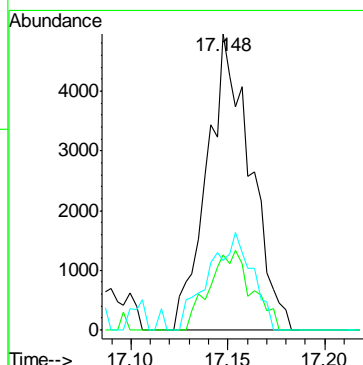
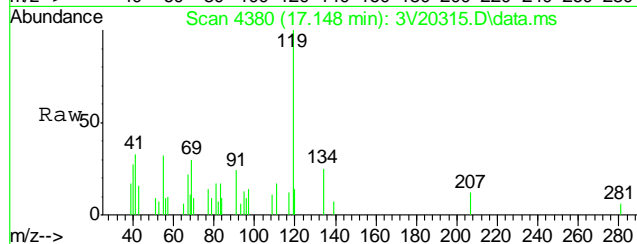
#82
1,2,4-Trimethylbenzene
Concen: 0.71 ug/l
RT: 16.894 min Scan# 4301
Delta R.T. 0.003 min
Lab File: 3V20315.D
Acq: 8 Sep 2012 12:15 am

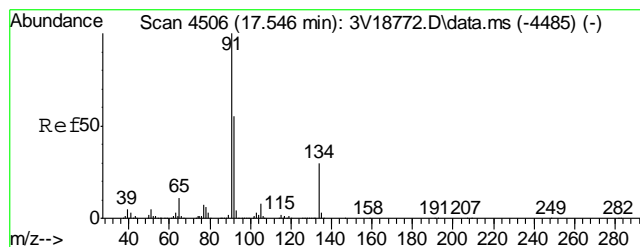
Tgt Ion	Ratio	Lower	Upper
105	100		
120	48.6	45.1	67.7



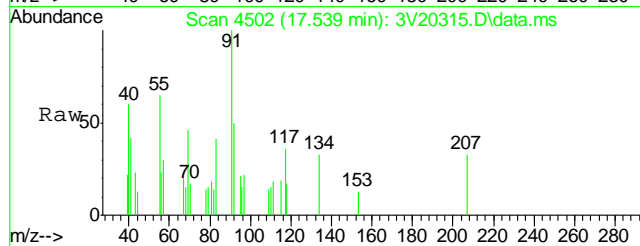
#86
p-Isopropyltoluene
Concen: 0.55 ug/l
RT: 17.148 min Scan# 4380
Delta R.T. -0.004 min
Lab File: 3V20315.D
Acq: 8 Sep 2012 12:15 am

Tgt Ion	Ratio	Lower	Upper
119	100		
134	26.3	22.3	33.5
91	33.1	17.4	26.2#

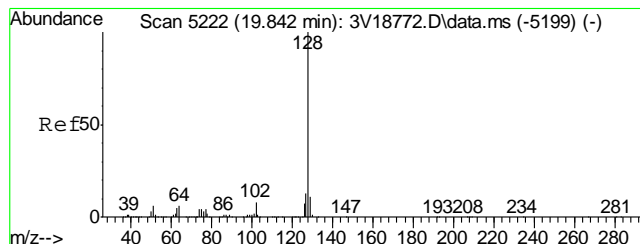
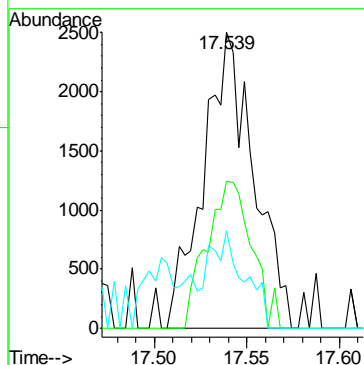
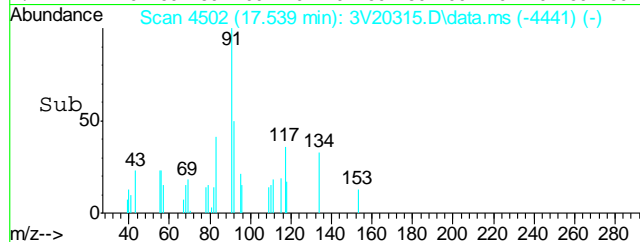




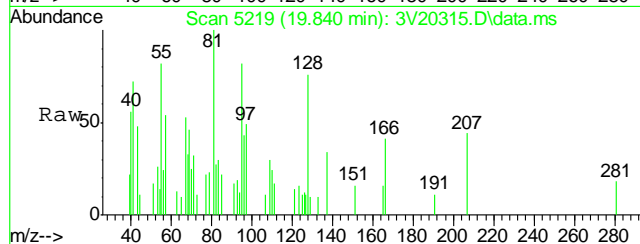
#88
n-Butylbenzene
Concen: 0.35 ug/l
RT: 17.539 min Scan# 4502
Delta R.T. -0.004 min
Lab File: 3V20315.D
Acq: 8 Sep 2012 12:15 am



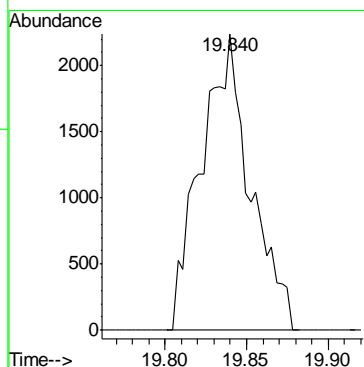
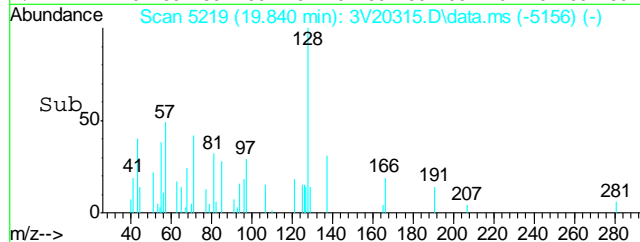
Tgt Ion	Ratio	Lower	Upper
91	100		
92	44.6	43.8	65.8
134	22.9	23.1	34.7#



#91
Naphthalene
Concen: 0.46 ug/l
RT: 19.840 min Scan# 5219
Delta R.T. 0.003 min
Lab File: 3V20315.D
Acq: 8 Sep 2012 12:15 am



Tgt Ion: 128 Resp: 4708



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3090712.S\
 Data File : 3V20316.D
 Acq On : 8 Sep 2012 12:46 am
 Operator : BRETD
 Sample : D38480-2
 Misc : MS4630,V3V1182,5.062,,100,5,1
 ALS Vial : 18 Sample Multiplier: 1

Quant Time: Sep 08 11:25:50 2012
 Quant Method : C:\msdchem\1\METHODS\V3AP1160TVH1160SOIL.M
 Quant Title : 8260
 QLast Update : Fri Aug 24 10:57:50 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.860	168	200277	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.656	114	329230	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.294	117	350955	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.283	152	204961	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.252	102	25231	55.95	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	111.90%
61) Toluene-d8	14.048	98	438053	47.81	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	95.62%
69) 4-Bromofluorobenzene	16.243	95	185826	51.83	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	103.66%

Target Compounds

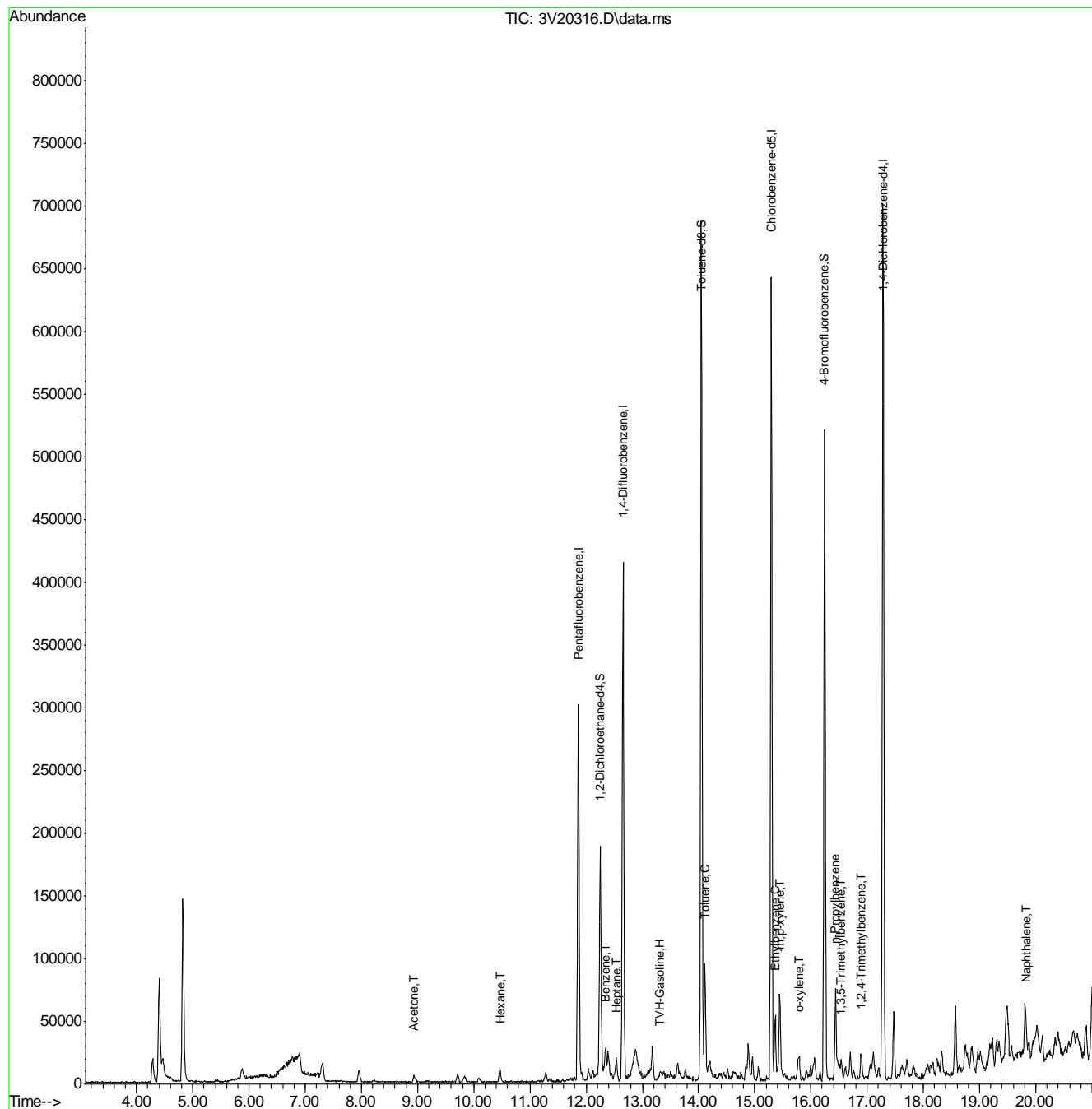
					Qvalue
1) TVH-Gasoline	13.329	TIC	1484752m	52.16	ug/l
15) Acetone	8.937	58	2228	1.21	ug/l # 51
41) Hexane	10.461	57	5795	1.12	ug/l 100
43) Heptane	12.540	43	7788	1.18	ug/l 93
50) Benzene	12.348	78	15941	1.34	ug/l 100
62) Toluene	14.109	92	26096	2.94	ug/l 96
66) Ethylbenzene	15.364	91	10250	0.62	ug/l 95
72) m,p-xylene	15.444	106	16544	2.51	ug/l # 78
73) o-xylene	15.791	106	4177	0.81	ug/l 94
77) n-Propylbenzene	16.426	91	4725	0.24	ug/l # 84
80) 1,3,5-Trimethylbenzene	16.532	105	5059m	0.37	ug/l
82) 1,2,4-Trimethylbenzene	16.891	105	9456	0.68	ug/l 88
91) Naphthalene	19.840	128	8208	0.78	ug/l 100

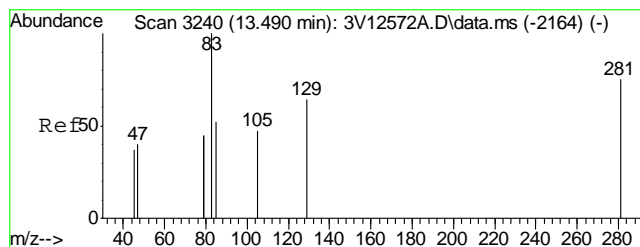
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3090712.S\
Data File : 3V20316.D
Acq On : 8 Sep 2012 12:46 am
Operator : BRETD
Sample : D38480-2
Misc : MS4630,V3V1182,5.062,,100,5,1
ALS Vial : 18 Sample Multiplier: 1

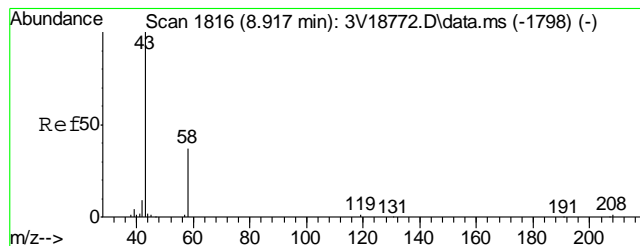
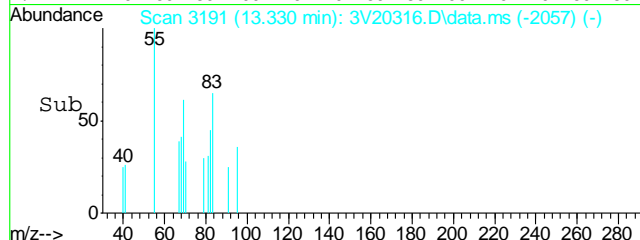
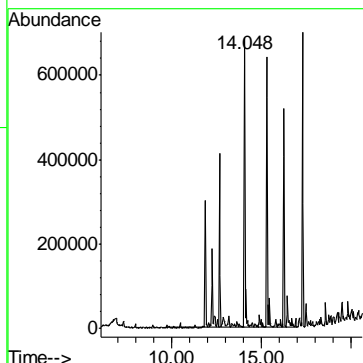
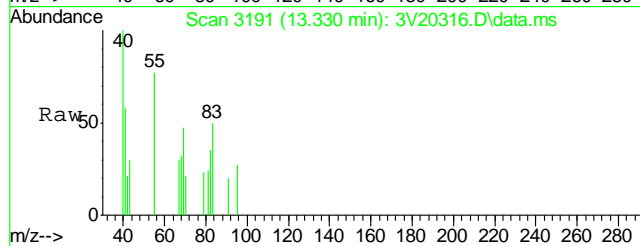
Quant Time: Sep 08 11:25:50 2012
Quant Method : C:\msdchem\1\METHODS\V3AP1160TVH1160SOIL.M
Quant Title : 8260
QLast Update : Fri Aug 24 10:57:50 2012
Response via : Initial Calibration





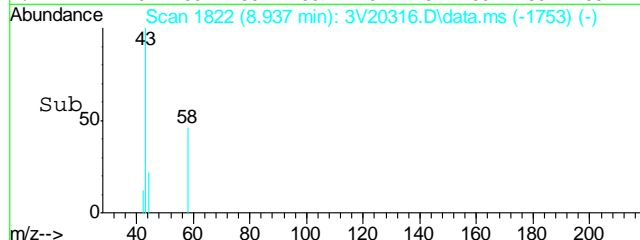
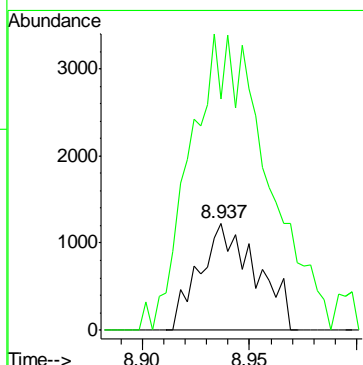
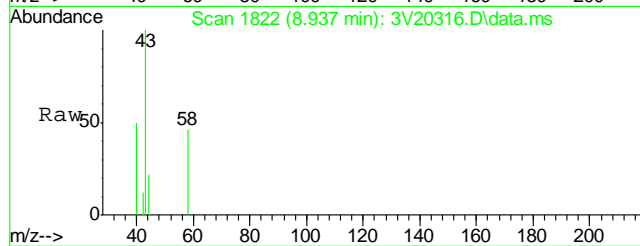
#1
TVH-Gasoline
Concen: 52.16 ug/l m
RT: 13.329 min Scan# 3191
Delta R.T. 0.000 min
Lab File: 3V20316.D
Acq: 8 Sep 2012 12:46 am

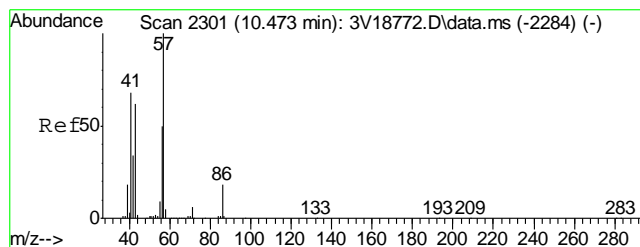
Tgt Ion:TIC Resp: 1484752



#15
Acetone
Concen: 1.21 ug/l
RT: 8.937 min Scan# 1822
Delta R.T. 0.023 min
Lab File: 3V20316.D
Acq: 8 Sep 2012 12:46 am

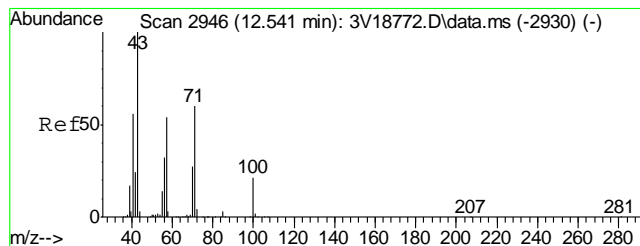
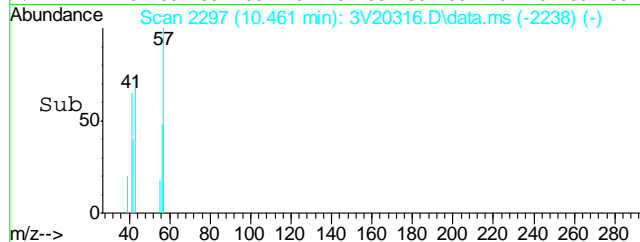
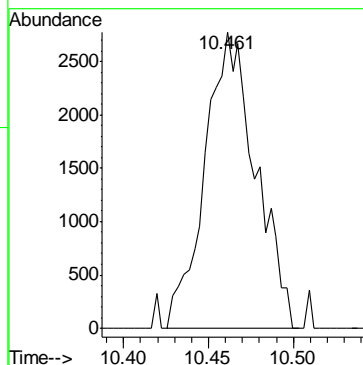
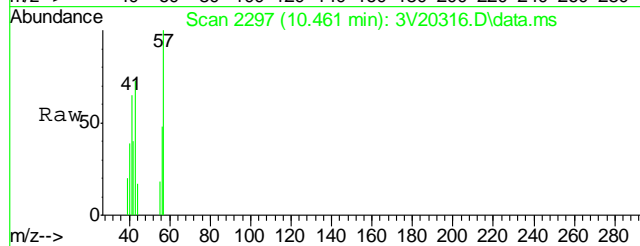
Tgt Ion: 58 Resp: 2228
Ion Ratio Lower Upper
58 100
43 381.0 267.0 307.0#





#41
Hexane
Concen: 1.12 ug/l
RT: 10.461 min Scan# 2297
Delta R.T. -0.010 min
Lab File: 3V20316.D
Acq: 8 Sep 2012 12:46 am

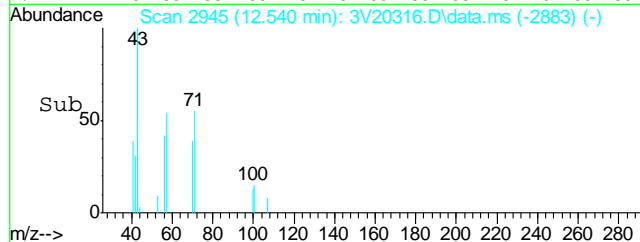
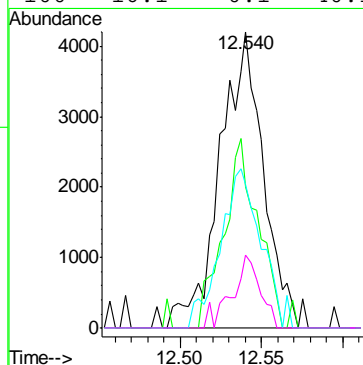
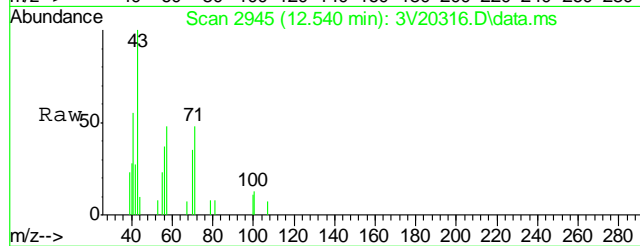
Tgt Ion: 57 Resp: 5795

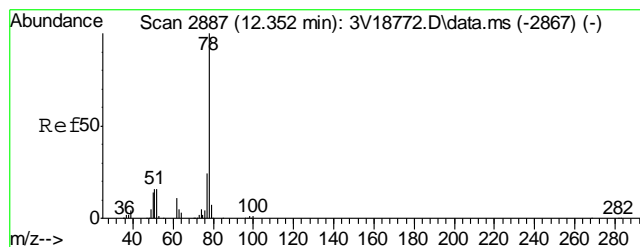


#43
Heptane
Concen: 1.18 ug/l
RT: 12.540 min Scan# 2945
Delta R.T. 0.000 min
Lab File: 3V20316.D
Acq: 8 Sep 2012 12:46 am

Tgt Ion: 43 Resp: 7788

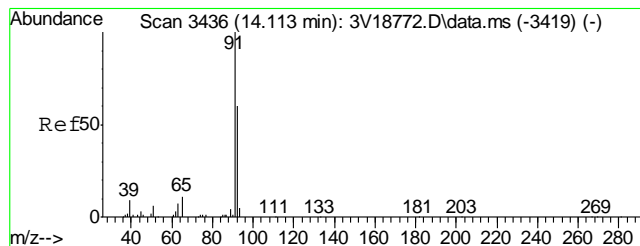
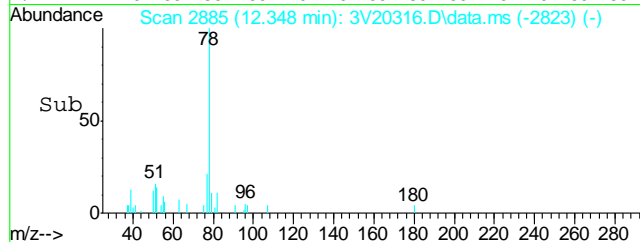
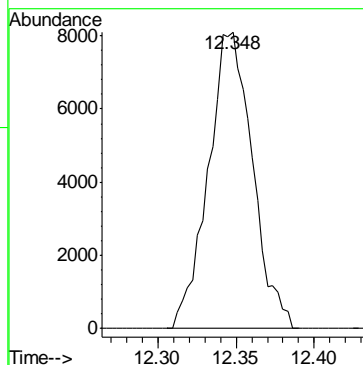
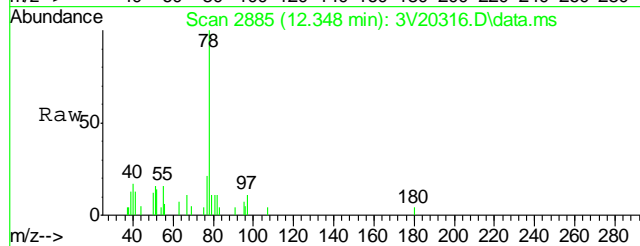
Ion	Ratio	Lower	Upper
43	100		
57	50.7	32.1	72.1
71	50.6	39.6	79.6
100	16.1	0.1	40.1





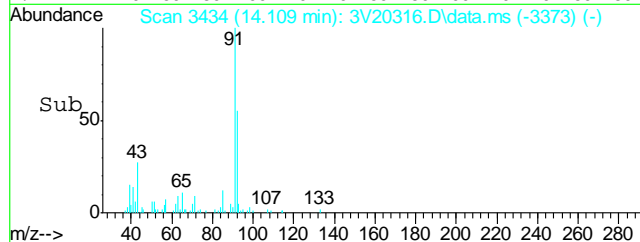
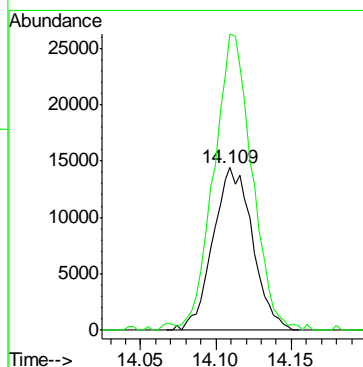
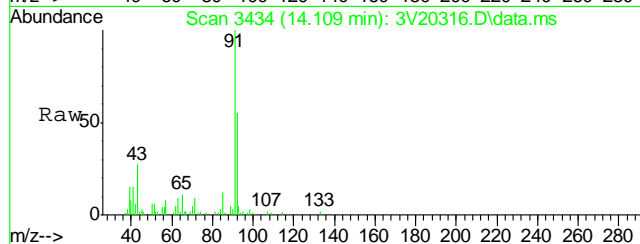
#50
Benzene
Concen: 1.34 ug/l
RT: 12.348 min Scan# 2885
Delta R.T. 0.000 min
Lab File: 3V20316.D
Acq: 8 Sep 2012 12:46 am

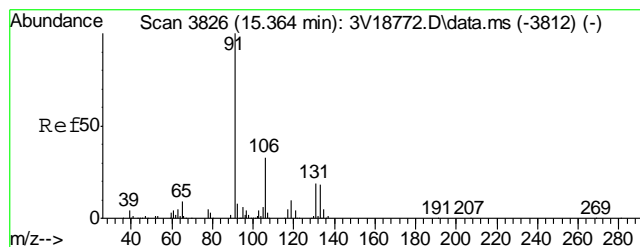
Tgt Ion: 78 Resp: 15941



#62
Toluene
Concen: 2.94 ug/l
RT: 14.109 min Scan# 3434
Delta R.T. -0.003 min
Lab File: 3V20316.D
Acq: 8 Sep 2012 12:46 am

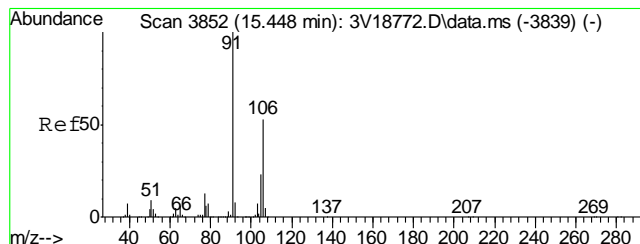
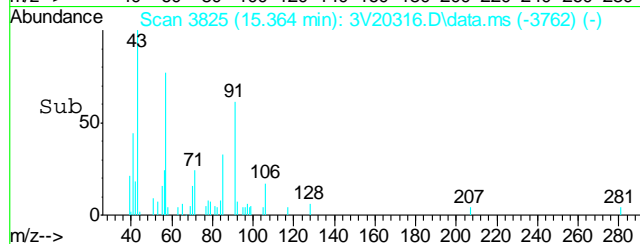
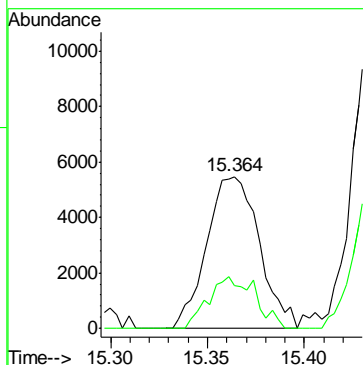
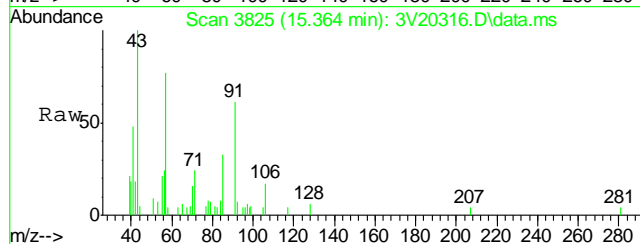
Tgt Ion: 92 Resp: 26096
Ion Ratio Lower Upper
92 100
91 175.7 150.2 190.2





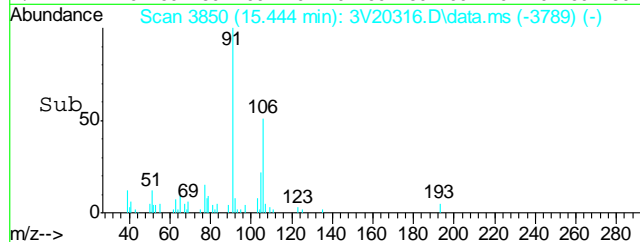
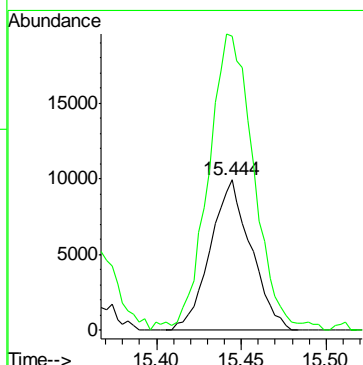
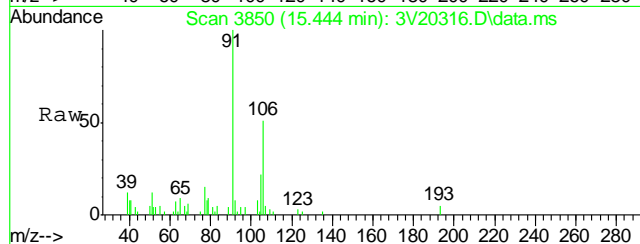
#66
Ethylbenzene
Concen: 0.62 ug/l
RT: 15.364 min Scan# 3825
Delta R.T. 0.003 min
Lab File: 3V20316.D
Acq: 8 Sep 2012 12:46 am

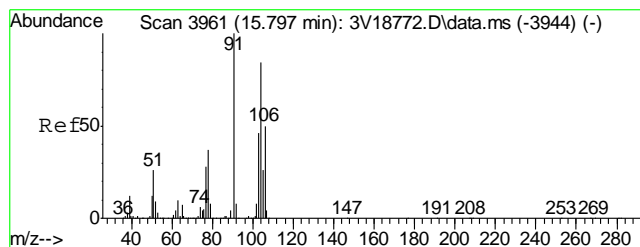
Tgt Ion: 91 Resp: 10250
Ion Ratio Lower Upper
91 100
106 30.2 13.2 53.2



#72
m,p-xylene
Concen: 2.51 ug/l
RT: 15.444 min Scan# 3850
Delta R.T. -0.003 min
Lab File: 3V20316.D
Acq: 8 Sep 2012 12:46 am

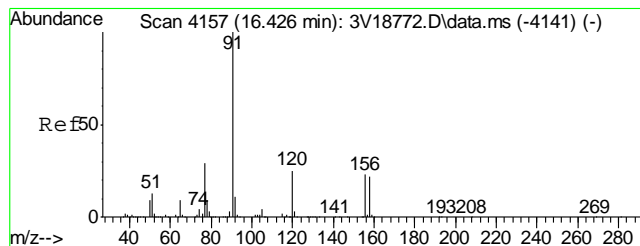
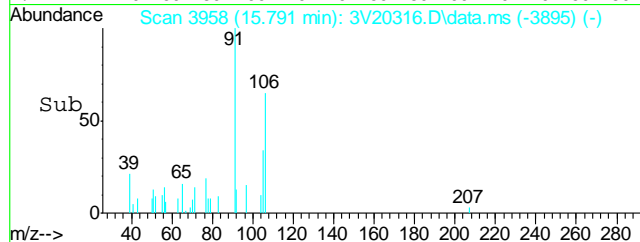
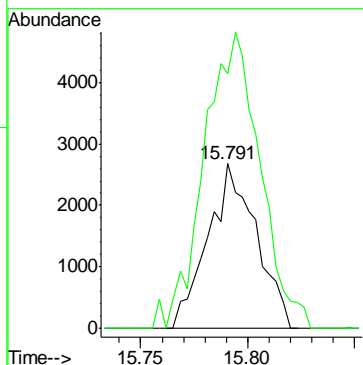
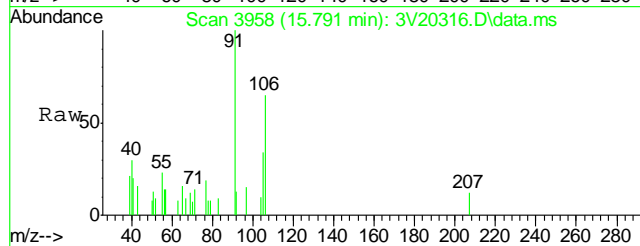
Tgt Ion: 106 Resp: 16544
Ion Ratio Lower Upper
106 100
91 220.6 168.1 208.1#





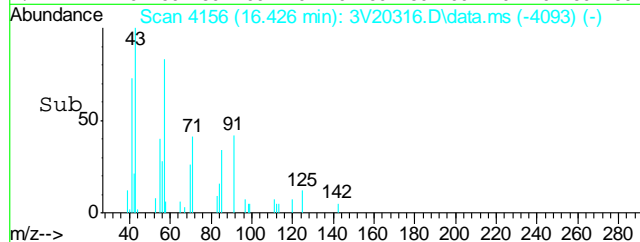
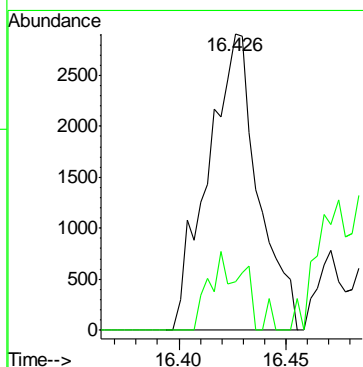
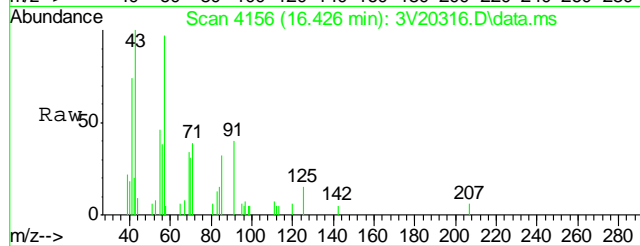
#73
o-xylene
Concen: 0.81 ug/l
RT: 15.791 min Scan# 3958
Delta R.T. 0.001 min
Lab File: 3V20316.D
Acq: 8 Sep 2012 12:46 am

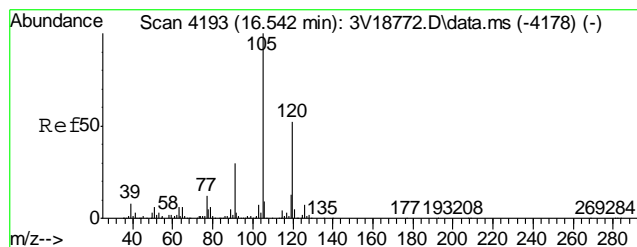
Tgt Ion: 106 Resp: 4177
Ion Ratio Lower Upper
106 100
91 209.5 160.2 240.4



#77
n-Propylbenzene
Concen: 0.24 ug/l
RT: 16.426 min Scan# 4156
Delta R.T. 0.003 min
Lab File: 3V20316.D
Acq: 8 Sep 2012 12:46 am

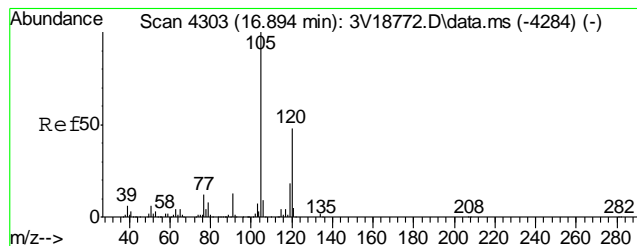
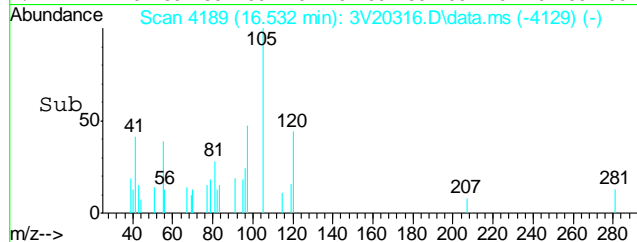
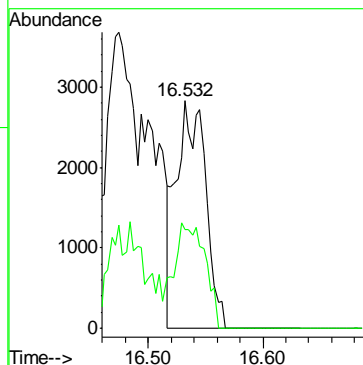
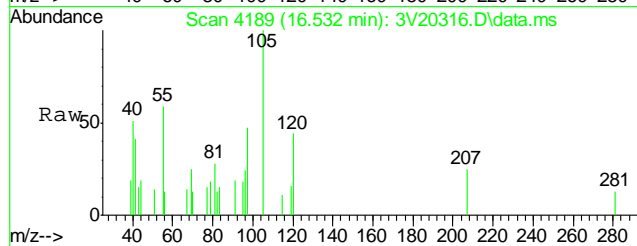
Tgt Ion: 91 Resp: 4725
Ion Ratio Lower Upper
91 100
120 16.7 19.9 29.9#





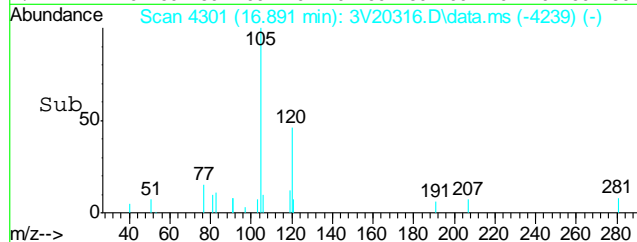
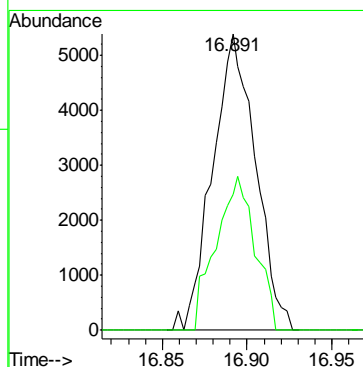
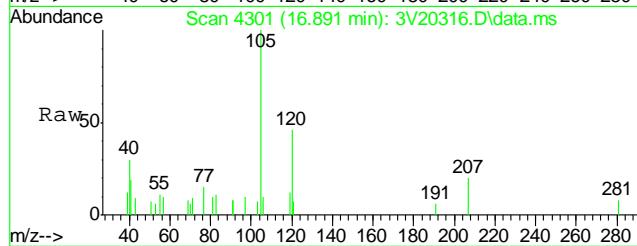
#80
1,3,5-Trimethylbenzene
Concen: 0.37 ug/l m
RT: 16.532 min Scan# 4189
Delta R.T. -0.006 min
Lab File: 3V20316.D
Acq: 8 Sep 2012 12:46 am

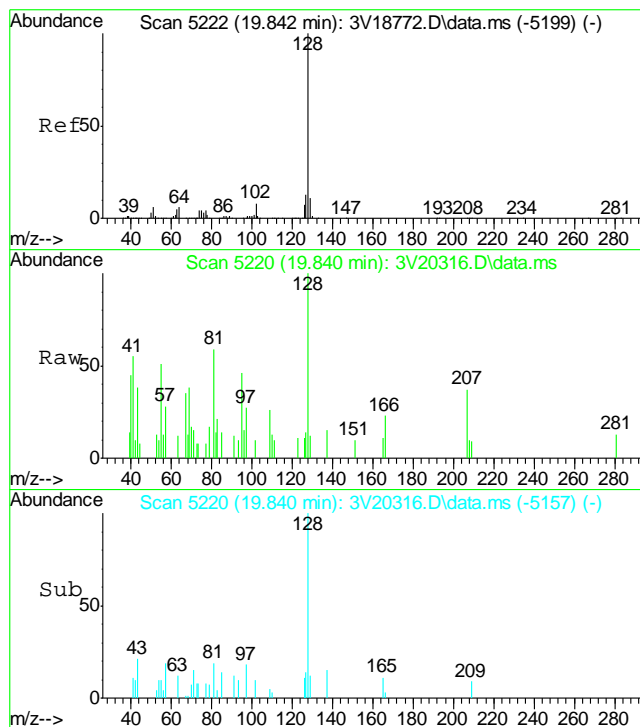
Tgt Ion:105 Resp: 5059
Ion Ratio Lower Upper
105 100
120 55.7 41.4 62.2



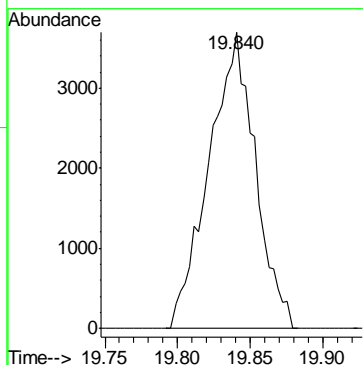
#82
1,2,4-Trimethylbenzene
Concen: 0.68 ug/l
RT: 16.891 min Scan# 4301
Delta R.T. 0.000 min
Lab File: 3V20316.D
Acq: 8 Sep 2012 12:46 am

Tgt Ion:105 Resp: 9456
Ion Ratio Lower Upper
105 100
120 47.5 45.1 67.7





#91
 Naphthalene
 Concen: 0.78 ug/l
 RT: 19.840 min Scan# 5220
 Delta R.T. 0.003 min
 Lab File: 3V20316.D
 Acq: 8 Sep 2012 12:46 am
 Tgt Ion:128 Resp: 8208



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3090712.S\
 Data File : 3V20317.D
 Acq On : 8 Sep 2012 1:17 am
 Operator : BRETD
 Sample : D38480-3
 Misc : MS4630,V3V1182,5.078,,100,5,1
 ALS Vial : 19 Sample Multiplier: 1

Quant Time: Sep 08 11:27:31 2012
 Quant Method : C:\msdchem\1\METHODS\V3AP1160TVH1160SOIL.M
 Quant Title : 8260
 QLast Update : Fri Aug 24 10:57:50 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.863	168	204526	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.659	114	333739	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.293	117	357536	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.282	152	207505	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.248	102	25137	54.59	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	109.18%
61) Toluene-d8	14.051	98	444203	47.59	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	95.18%
69) 4-Bromofluorobenzene	16.243	95	190372	52.12	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	104.24%

Target Compounds

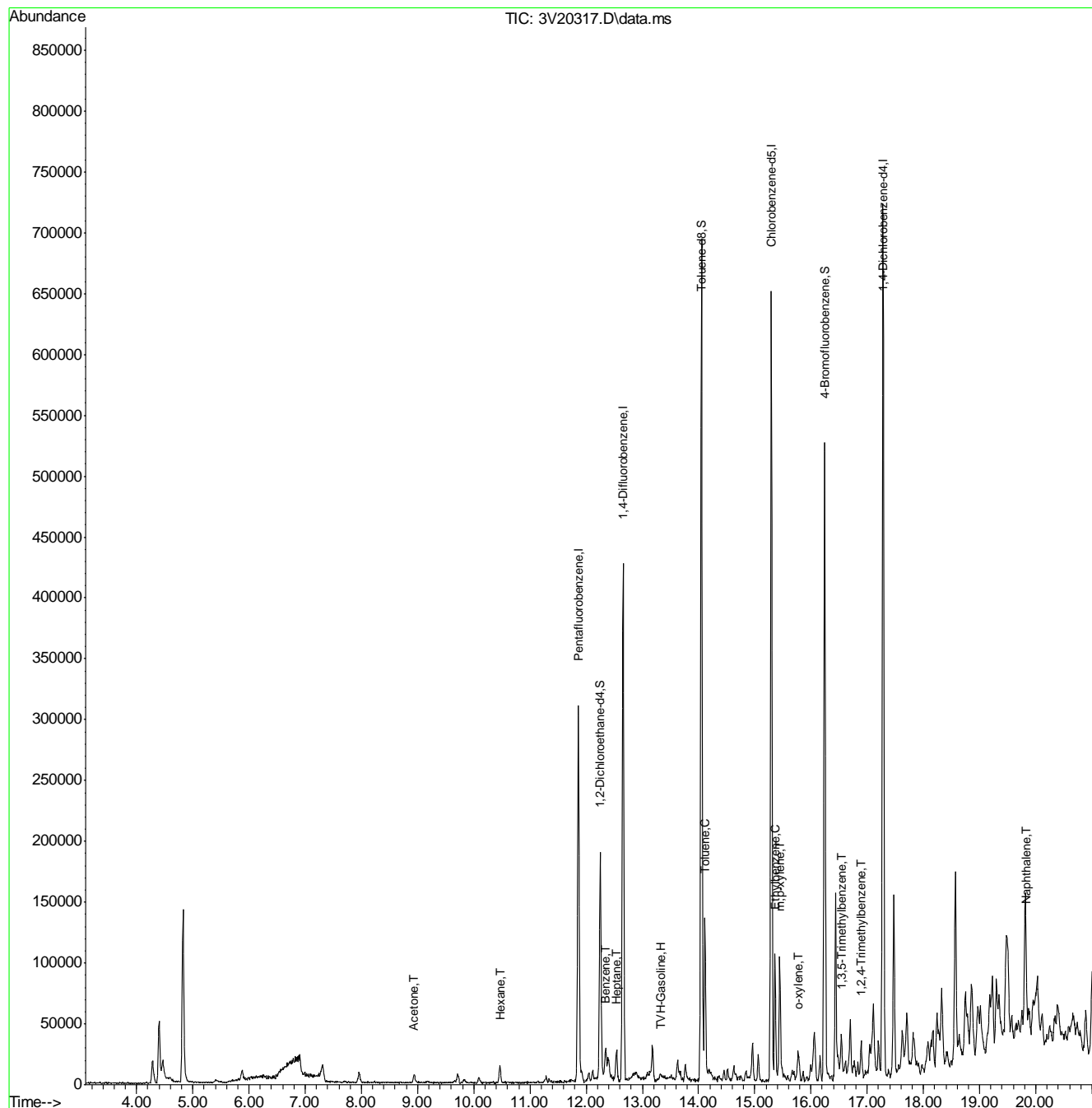
					Qvalue
1) TVH-Gasoline	13.329	TIC	2100016m	73.77	ug/l
15) Acetone	8.936	58	3167	4.45	ug/l # 71
41) Hexane	10.464	57	6518	1.24	ug/l 100
43) Heptane	12.533	43	12109	1.81	ug/l 95
50) Benzene	12.347	78	16105	1.34	ug/l 100
62) Toluene	14.112	92	33715	3.72	ug/l 98
66) Ethylbenzene	15.364	91	6397	0.38	ug/l 88
72) m,p-xylene	15.447	106	26731	3.98	ug/l 90
73) o-xylene	15.787	106	3013	0.59	ug/l # 71
80) 1,3,5-Trimethylbenzene	16.538	105	9176	0.66	ug/l 88
82) 1,2,4-Trimethylbenzene	16.894	105	13094	0.93	ug/l 87
91) Naphthalene	19.837	128	5929	0.56	ug/l 100

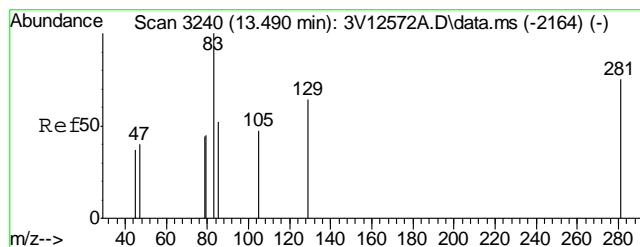
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3090712.S\
Data File : 3V20317.D
Acq On : 8 Sep 2012 1:17 am
Operator : BRETD
Sample : D38480-3
Misc : MS4630,V3V1182,5.078,,100,5,1
ALS Vial : 19 Sample Multiplier: 1

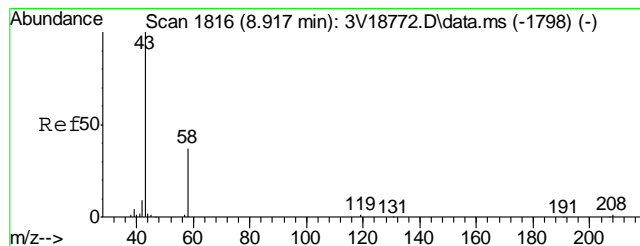
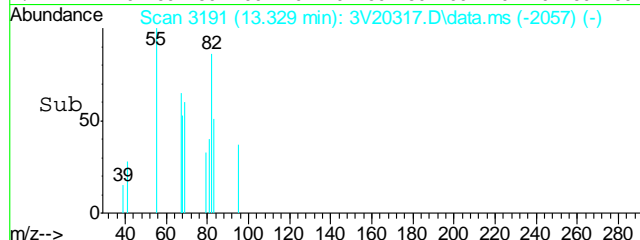
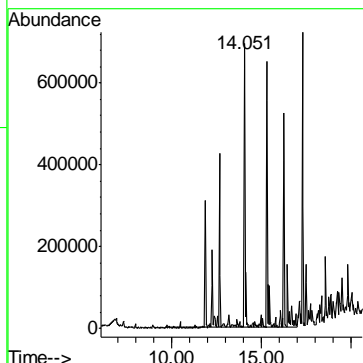
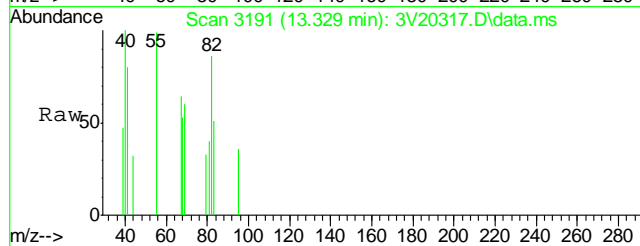
Quant Time: Sep 08 11:27:31 2012
Quant Method : C:\msdchem\1\METHODS\V3AP1160TVH1160SOIL.M
Quant Title : 8260
QLast Update : Fri Aug 24 10:57:50 2012
Response via : Initial Calibration





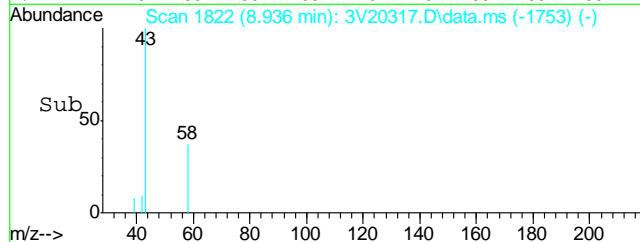
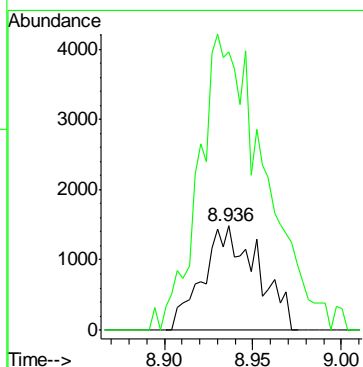
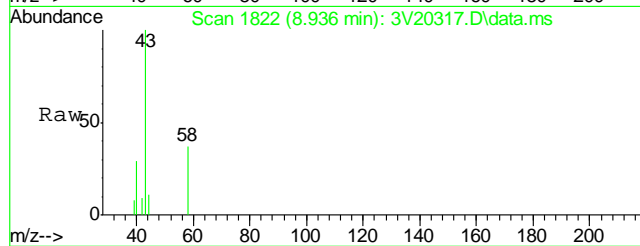
#1
TVH-Gasoline
Concen: 73.77 ug/l m
RT: 13.329 min Scan# 3191
Delta R.T. 0.000 min
Lab File: 3V20317.D
Acq: 8 Sep 2012 1:17 am

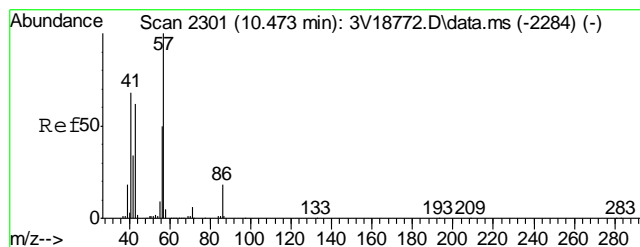
Tgt Ion:TIC Resp: 2100016



#15
Acetone
Concen: 4.45 ug/l
RT: 8.936 min Scan# 1822
Delta R.T. 0.022 min
Lab File: 3V20317.D
Acq: 8 Sep 2012 1:17 am

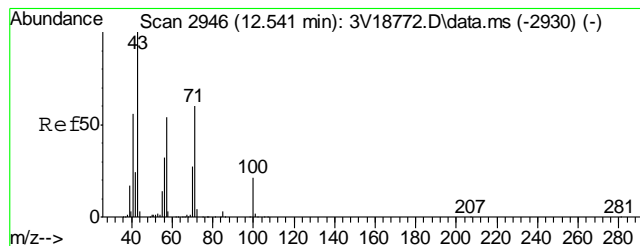
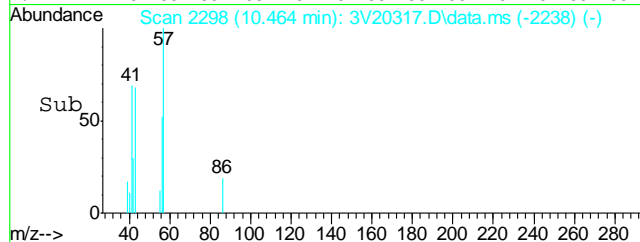
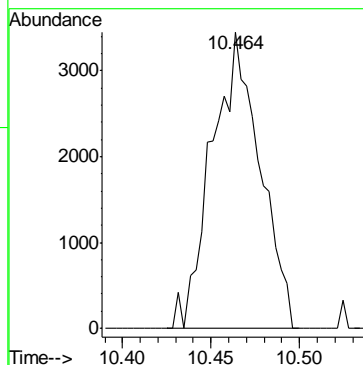
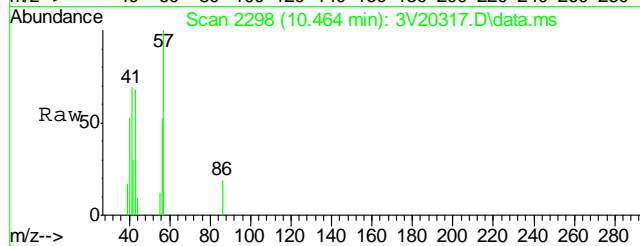
Tgt Ion: 58 Resp: 3167
Ion Ratio Lower Upper
58 100
43 343.0 267.0 307.0#





#41
Hexane
Concen: 1.24 ug/l
RT: 10.464 min Scan# 2298
Delta R.T. -0.007 min
Lab File: 3V20317.D
Acq: 8 Sep 2012 1:17 am

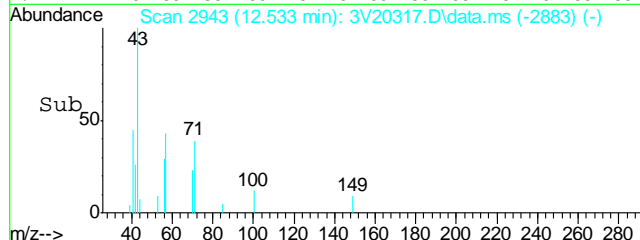
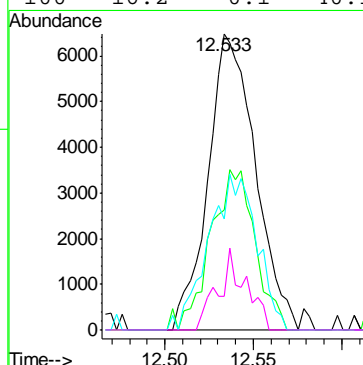
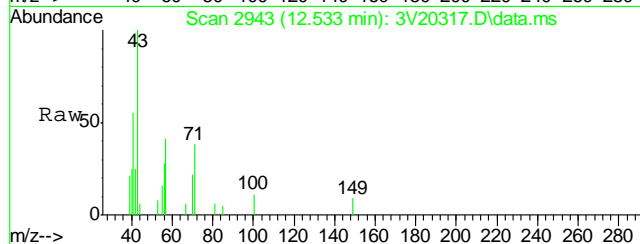
Tgt Ion: 57 Resp: 6518

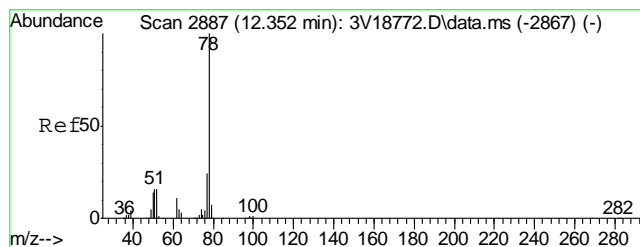


#43
Heptane
Concen: 1.81 ug/l
RT: 12.533 min Scan# 2943
Delta R.T. -0.007 min
Lab File: 3V20317.D
Acq: 8 Sep 2012 1:17 am

Tgt Ion: 43 Resp: 12109

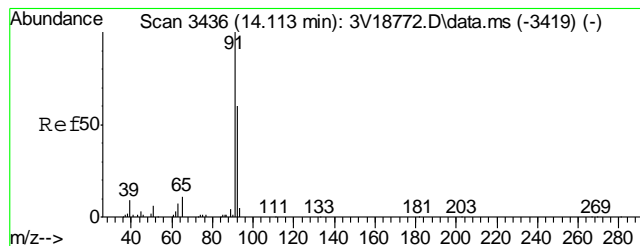
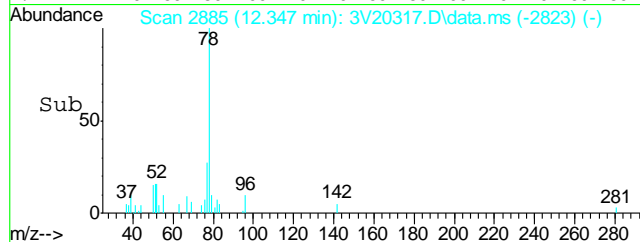
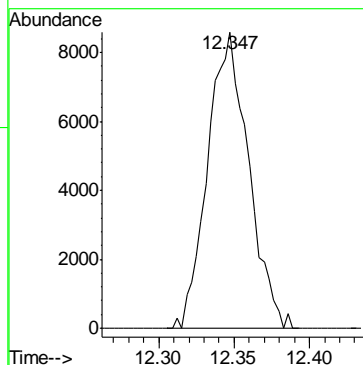
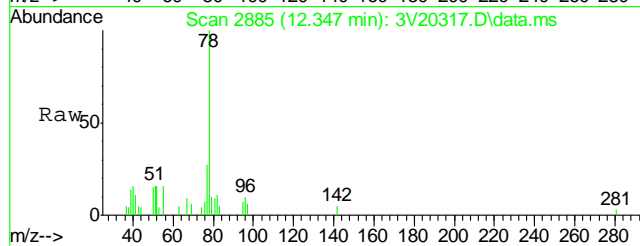
Ion	Ratio	Lower	Upper
43	100		
57	51.2	32.1	72.1
71	53.5	39.6	79.6
100	16.2	0.1	40.1





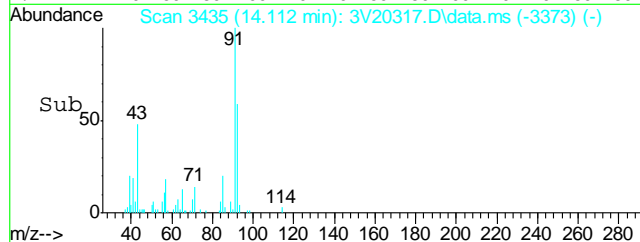
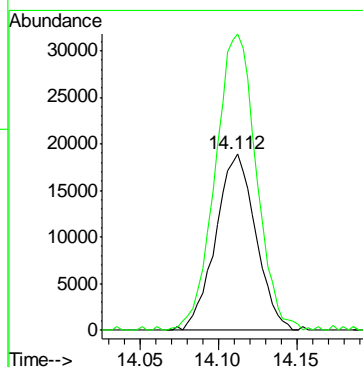
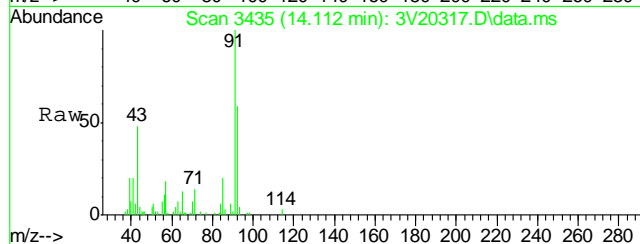
#50
Benzene
Concen: 1.34 ug/l
RT: 12.347 min Scan# 2885
Delta R.T. -0.000 min
Lab File: 3V20317.D
Acq: 8 Sep 2012 1:17 am

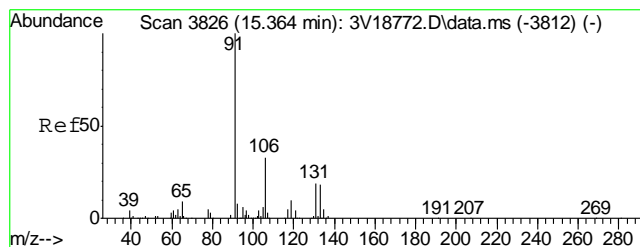
Tgt Ion: 78 Resp: 16105



#62
Toluene
Concen: 3.72 ug/l
RT: 14.112 min Scan# 3435
Delta R.T. -0.000 min
Lab File: 3V20317.D
Acq: 8 Sep 2012 1:17 am

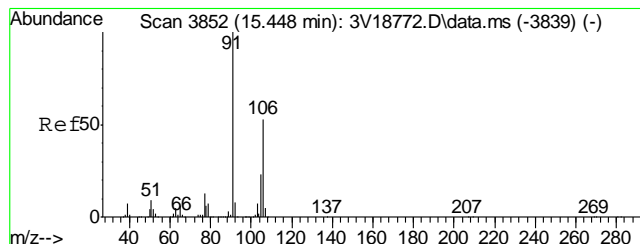
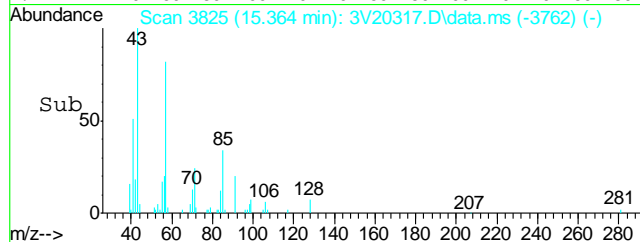
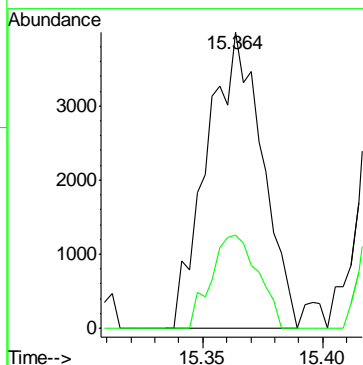
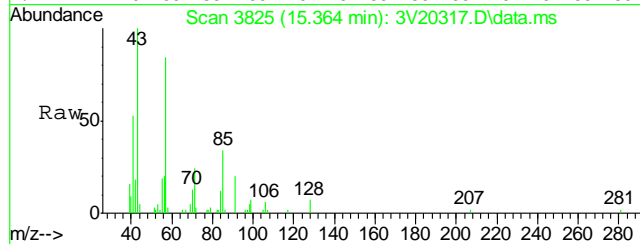
Tgt Ion: 92 Resp: 33715
Ion Ratio Lower Upper
92 100
91 172.8 150.2 190.2





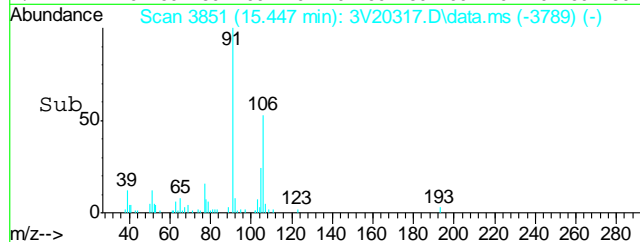
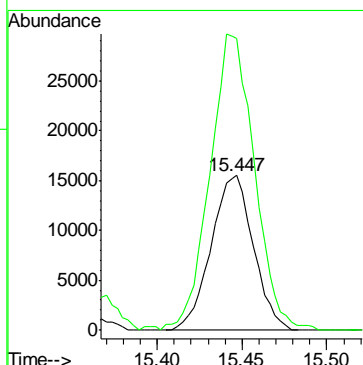
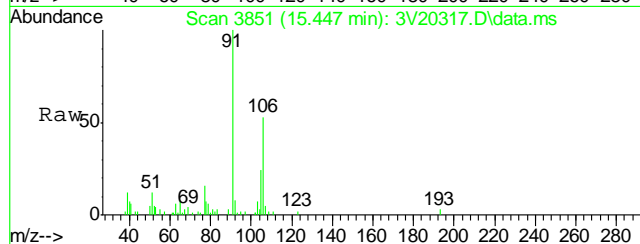
#66
Ethylbenzene
Concen: 0.38 ug/l
RT: 15.364 min Scan# 3825
Delta R.T. 0.003 min
Lab File: 3V20317.D
Acq: 8 Sep 2012 1:17 am

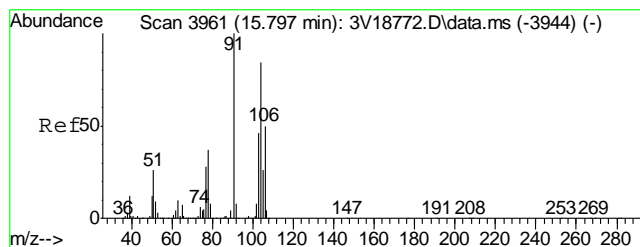
Tgt Ion: 91 Resp: 6397
Ion Ratio Lower Upper
91 100
106 26.6 13.2 53.2



#72
m,p-xylene
Concen: 3.98 ug/l
RT: 15.447 min Scan# 3851
Delta R.T. -0.000 min
Lab File: 3V20317.D
Acq: 8 Sep 2012 1:17 am

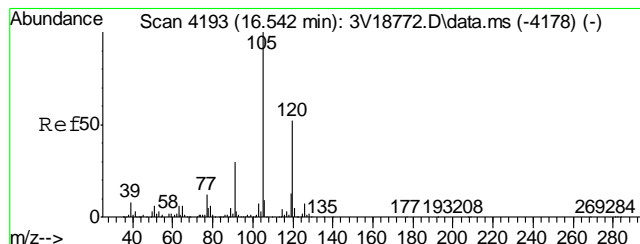
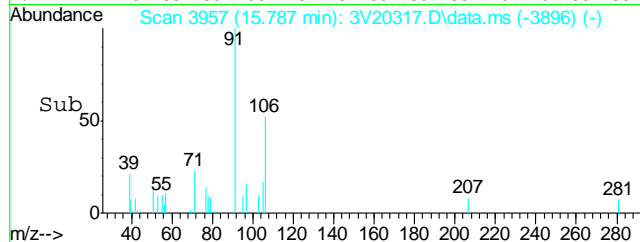
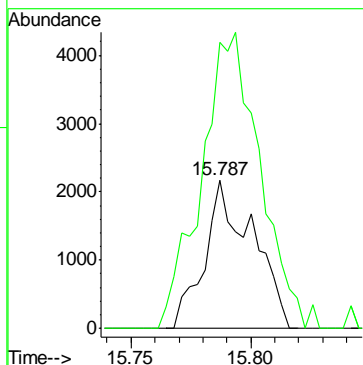
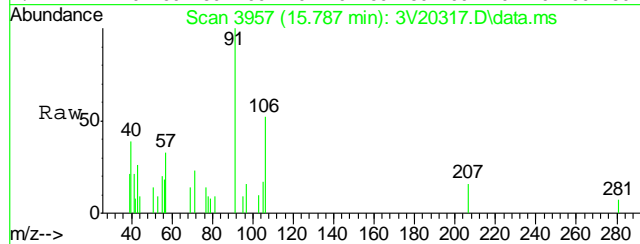
Tgt Ion: 106 Resp: 26731
Ion Ratio Lower Upper
106 100
91 202.1 168.1 208.1





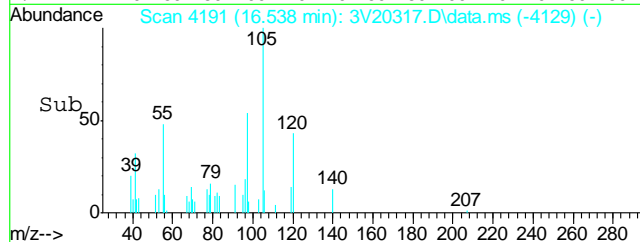
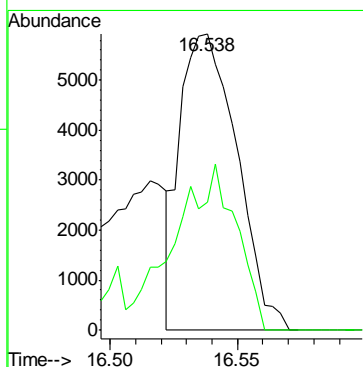
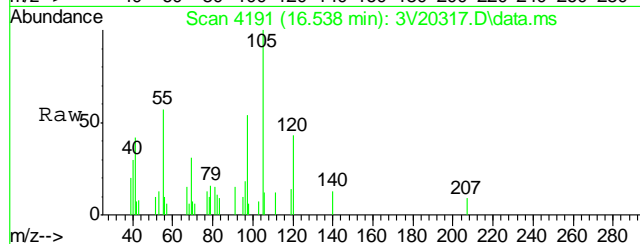
#73
o-xylene
Concen: 0.59 ug/l
RT: 15.787 min Scan# 3957
Delta R.T. -0.003 min
Lab File: 3V20317.D
Acq: 8 Sep 2012 1:17 am

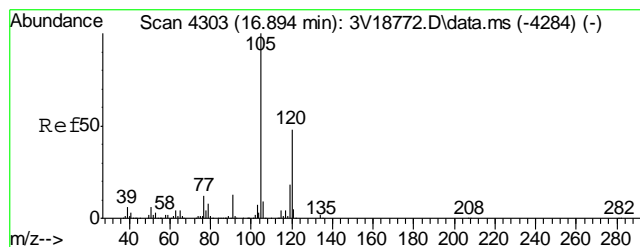
Tgt Ion:106 Resp: 3013
Ion Ratio Lower Upper
106 100
91 244.1 160.2 240.4#



#80
1,3,5-Trimethylbenzene
Concen: 0.66 ug/l
RT: 16.538 min Scan# 4191
Delta R.T. -0.000 min
Lab File: 3V20317.D
Acq: 8 Sep 2012 1:17 am

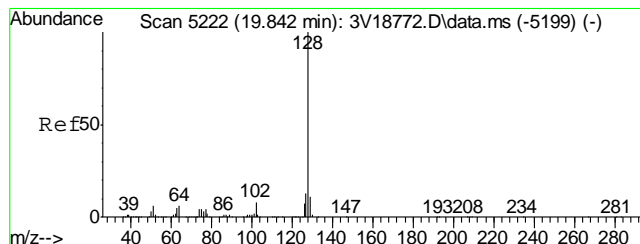
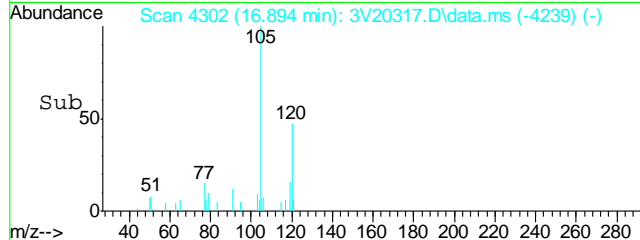
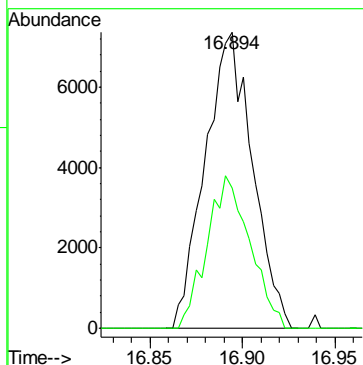
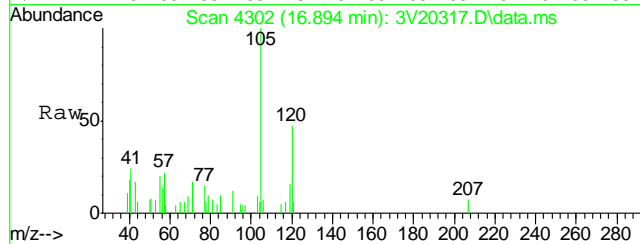
Tgt Ion:105 Resp: 9176
Ion Ratio Lower Upper
105 100
120 60.3 41.4 62.2





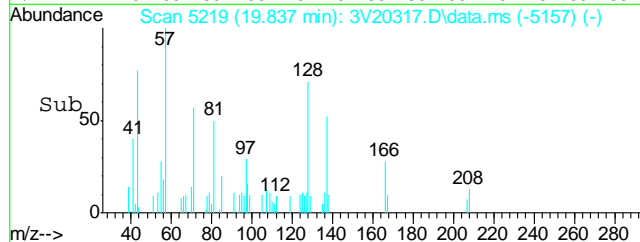
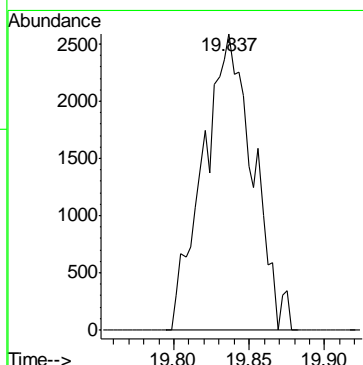
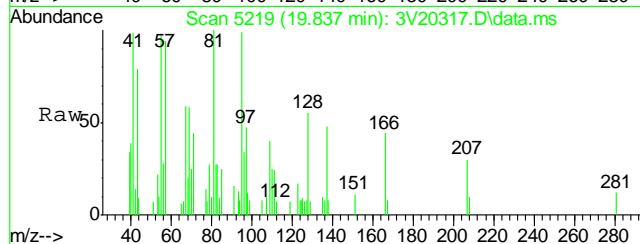
#82
1,2,4-Trimethylbenzene
Concen: 0.93 ug/l
RT: 16.894 min Scan# 4302
Delta R.T. 0.003 min
Lab File: 3V20317.D
Acq: 8 Sep 2012 1:17 am

Tgt Ion:105 Resp: 13094
Ion Ratio Lower Upper
105 100
120 46.7 45.1 67.7



#91
Naphthalene
Concen: 0.56 ug/l
RT: 19.837 min Scan# 5219
Delta R.T. -0.000 min
Lab File: 3V20317.D
Acq: 8 Sep 2012 1:17 am

Tgt Ion:128 Resp: 5929



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3090712.S\
Data File : 3V20302.D
Acq On : 7 Sep 2012 5:31 pm
Operator : BRETD
Sample : MB
Misc : MS4630,V3V1182,5.00,,100,5,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 08 10:51:42 2012
Quant Method : C:\msdchem\1\METHODS\V3AP1160TVH1160SOIL.M
Quant Title : 8260
QLast Update : Fri Aug 24 10:57:50 2012
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.863	168	214790	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.659	114	349912	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.294	117	344887	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.283	152	191769	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.255	102	27742	57.36	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	114.72%
61) Toluene-d8	14.052	98	460707	51.17	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	102.34%
69) 4-Bromofluorobenzene	16.243	95	170109	48.28	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	96.56%

Target Compounds

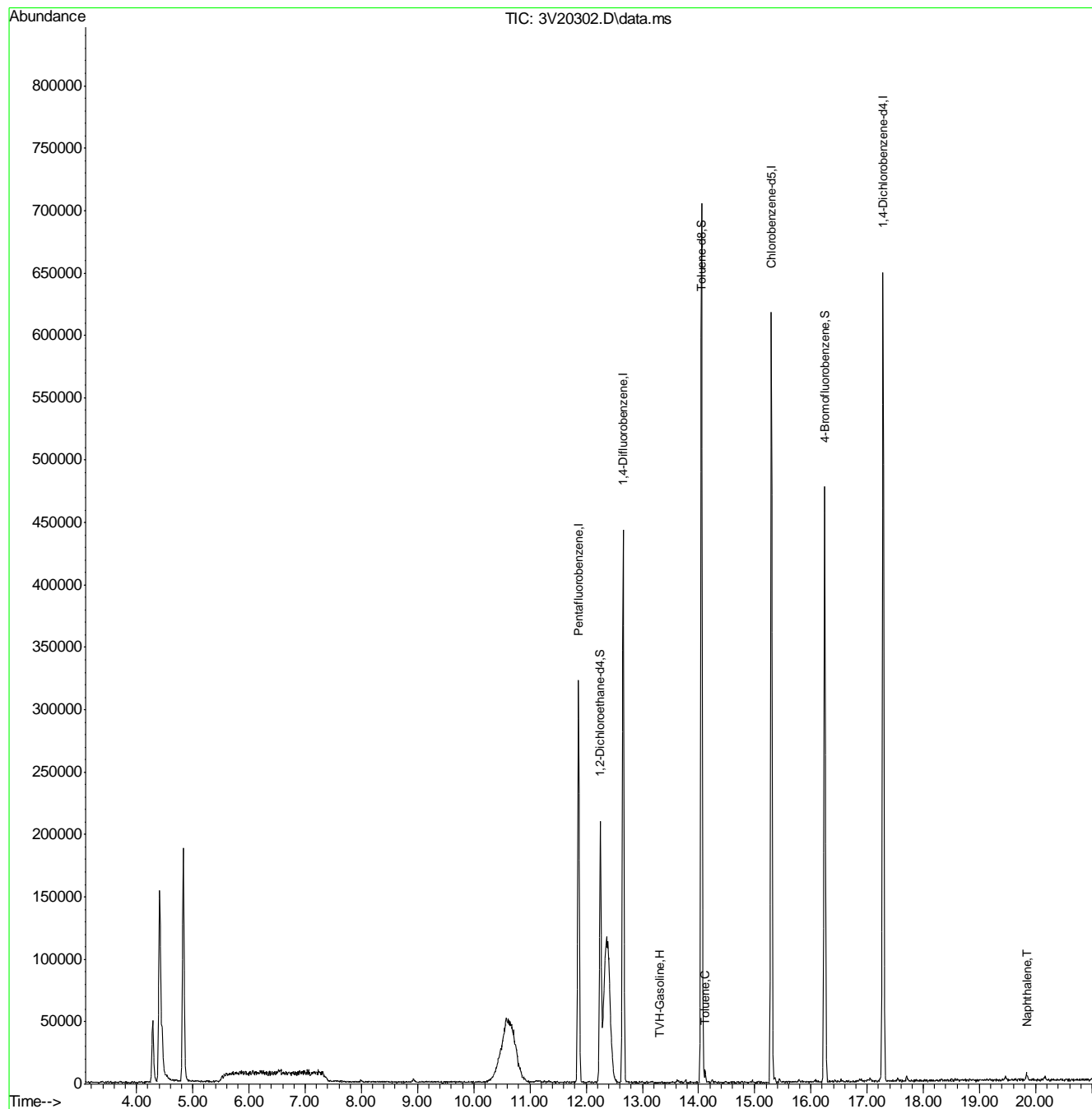
					Qvalue
1) TVH-Gasoline	13.329	TIC	1798871m	63.19	ug/l
62) Toluene	14.110	92	2192	0.25	ug/l
91) Naphthalene	19.847	128	8104	0.82	ug/l

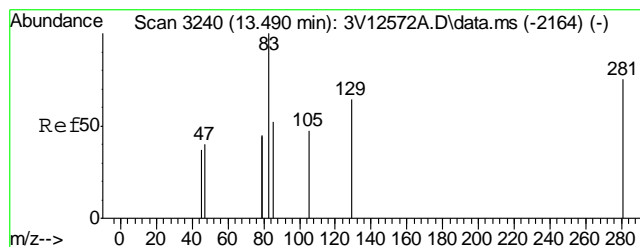
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3090712.S\
Data File : 3V20302.D
Acq On : 7 Sep 2012 5:31 pm
Operator : BRETD
Sample : MB
Misc : MS4630,V3V1182,5.00,,100,5,1
ALS Vial : 4 Sample Multiplier: 1

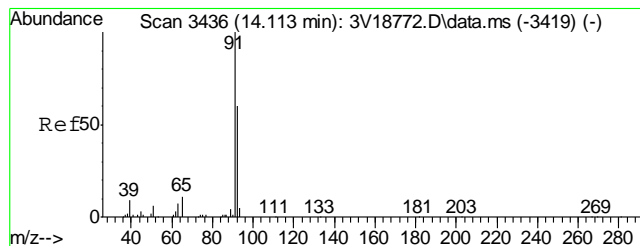
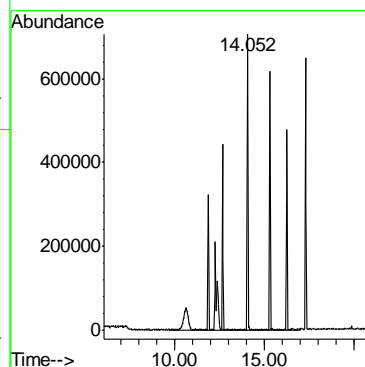
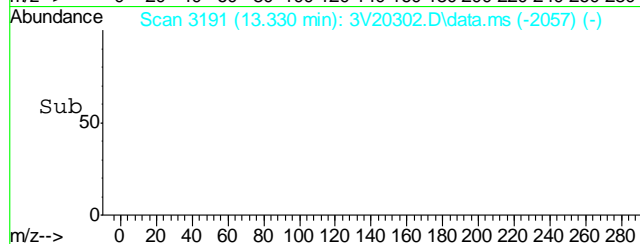
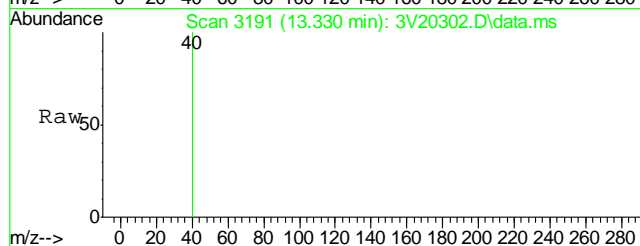
Quant Time: Sep 08 10:51:42 2012
Quant Method : C:\msdchem\1\METHODS\V3AP1160TVH1160SOIL.M
Quant Title : 8260
QLast Update : Fri Aug 24 10:57:50 2012
Response via : Initial Calibration





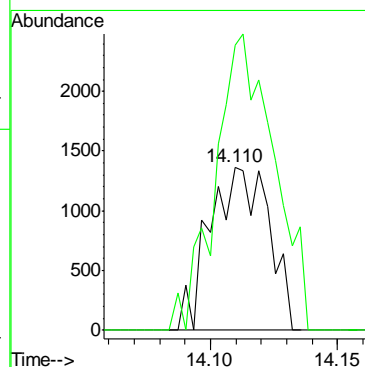
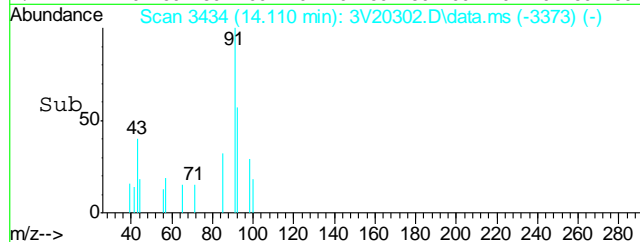
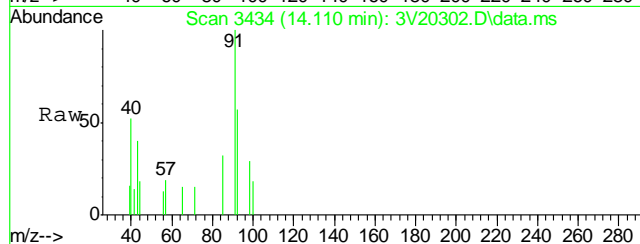
#1
TVH-Gasoline
Concen: 63.19 ug/l m
RT: 13.329 min Scan# 3191
Delta R.T. 0.000 min
Lab File: 3V20302.D
Acq: 7 Sep 2012 5:31 pm

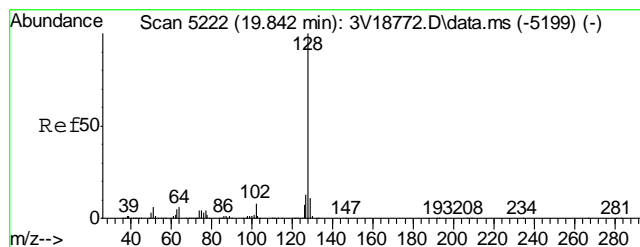
Tgt Ion:TIC Resp: 1798871



#62
Toluene
Concen: 0.25 ug/l
RT: 14.110 min Scan# 3434
Delta R.T. -0.003 min
Lab File: 3V20302.D
Acq: 7 Sep 2012 5:31 pm

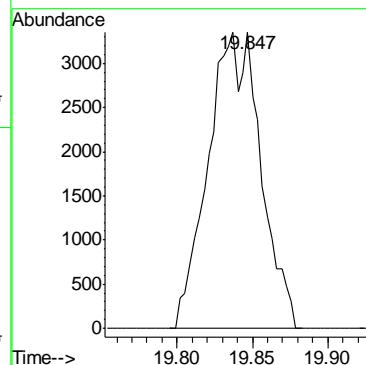
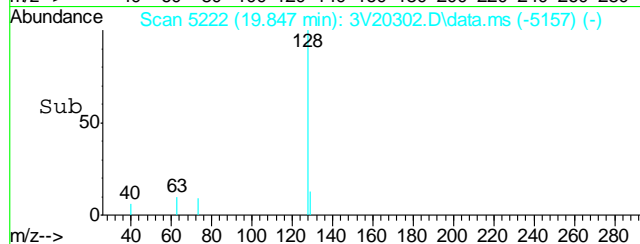
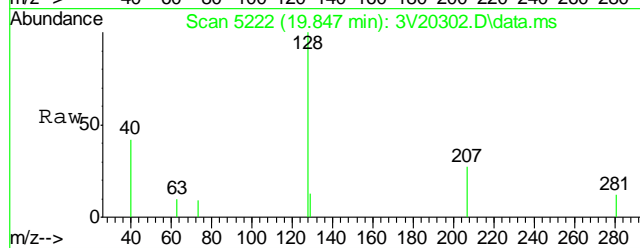
Tgt Ion: 92 Resp: 2192
Ion Ratio Lower Upper
92 100
91 181.0 150.2 190.2





#91
Naphthalene
Concen: 0.82 ug/l
RT: 19.847 min Scan# 5222
Delta R.T. 0.010 min
Lab File: 3V20302.D
Acq: 7 Sep 2012 5:31 pm

Tgt Ion: 128 Resp: 8104



7.2.1

7

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: D38480
Account: XTOKRWR XTO Energy
Project: PCU 197-36A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6602-MB	3G11149.D	1	09/11/12	DC	09/11/12	OP6602	E3G518

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

D38480-1, D38480-2, D38480-3

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	8.3	4.3	ug/kg	
120-12-7	Anthracene	ND	8.3	4.3	ug/kg	
56-55-3	Benzo(a)anthracene	ND	8.3	4.3	ug/kg	
50-32-8	Benzo(a)pyrene	ND	8.3	4.3	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	8.3	4.3	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	8.3	4.3	ug/kg	
218-01-9	Chrysene	ND	8.3	4.3	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	8.3	4.3	ug/kg	
206-44-0	Fluoranthene	ND	8.3	4.3	ug/kg	
86-73-7	Fluorene	ND	8.3	4.3	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	8.3	4.3	ug/kg	
91-20-3	Naphthalene	ND	12	10	ug/kg	
129-00-0	Pyrene	ND	8.3	4.3	ug/kg	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	96% 10-145%
321-60-8	2-Fluorobiphenyl	94% 10-130%
1718-51-0	Terphenyl-d14	95% 22-130%

8.1.1

8

Blank Spike Summary

Page 1 of 1

Job Number: D38480
Account: XTOKRWR XTO Energy
Project: PCU 197-36A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6602-BS	3G11150.D	1	09/11/12	DC	09/11/12	OP6602	E3G518

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D38480-1, D38480-2, D38480-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	77.8	93	34-130
120-12-7	Anthracene	83.3	81.6	98	35-130
56-55-3	Benzo(a)anthracene	83.3	79.3	95	36-130
50-32-8	Benzo(a)pyrene	83.3	71.7	86	36-130
205-99-2	Benzo(b)fluoranthene	83.3	89.7	108	35-130
207-08-9	Benzo(k)fluoranthene	83.3	68.2	82	37-130
218-01-9	Chrysene	83.3	73.0	88	40-130
53-70-3	Dibenzo(a,h)anthracene	83.3	63.5	76	32-130
206-44-0	Fluoranthene	83.3	75.7	91	38-130
86-73-7	Fluorene	83.3	76.3	92	35-130
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	62.7	75	28-130
91-20-3	Naphthalene	83.3	77.0	92	35-130
129-00-0	Pyrene	83.3	81.8	98	37-130

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	89%	10-145%
321-60-8	2-Fluorobiphenyl	87%	10-130%
1718-51-0	Terphenyl-d14	87%	22-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D38480
Account: XTOKRWR XTO Energy
Project: PCU 197-36A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6602-MS	3G11152.D	1	09/11/12	DC	09/11/12	OP6602	E3G518
OP6602-MSD	3G11153.D	1	09/11/12	DC	09/11/12	OP6602	E3G518
D38513-1	3G11151.D	1	09/11/12	DC	09/11/12	OP6602	E3G518

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D38480-1, D38480-2, D38480-3

CAS No.	Compound	D38513-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		92.5	83.8	91	79.6	86	5	10-155/30
120-12-7	Anthracene	ND		92.5	91.1	98	88.8	96	3	10-155/30
56-55-3	Benzo(a)anthracene	ND		92.5	90.0	97	89.7	97	0	10-175/30
50-32-8	Benzo(a)pyrene	ND		92.5	77.4	84	78.0	84	1	10-164/30
205-99-2	Benzo(b)fluoranthene	ND		92.5	97.3	105	98.1	106	1	10-165/30
207-08-9	Benzo(k)fluoranthene	ND		92.5	71.3	77	67.7	73	5	10-178/30
218-01-9	Chrysene	ND		92.5	81.5	88	80.1	87	2	10-147/30
53-70-3	Dibenzo(a,h)anthracene	ND		92.5	70.0	76	69.8	76	0	10-144/30
206-44-0	Fluoranthene	ND		92.5	88.0	95	86.8	94	1	10-207/30
86-73-7	Fluorene	ND		92.5	86.5	94	82.3	89	5	10-163/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		92.5	68.6	74	68.8	74	0	10-180/30
91-20-3	Naphthalene	ND		92.5	81.2	88	78.5	85	3	10-198/30
129-00-0	Pyrene	ND		92.5	94.3	102	93.1	101	1	10-189/30

CAS No.	Surrogate Recoveries	MS	MSD	D38513-1	Limits
4165-60-0	Nitrobenzene-d5	77%	77%	51%	10-145%
321-60-8	2-Fluorobiphenyl	75%	74%	49%	10-130%
1718-51-0	Terphenyl-d14	75%	78%	74%	22-130%

* = Outside of Control Limits.

GC/MS Semi-volatiles

Raw Data

6

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\091212\
 Data File : 3g11215.D
 Acq On : 13 Sep 2012 3:58 am
 Operator : DONC
 Sample : D38480-1
 Misc : OP6602,E3G522,30.04,,,1,1
 ALS Vial : 26 Sample Multiplier: 1

Quant Time: Sep 13 13:09:16 2012
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G511.M
 Quant Title : PAHSIM BASE
 QLast Update : Thu Sep 06 09:42:23 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.921	136	189738	4.0000	ug/mL	0.00
6) Acenaphthene-d10	7.639	164	98450	4.0000	ug/mL	0.00
15) Phenanthrene-d10	9.121	188	180850	4.0000	ug/mL	0.00
19) Chrysene-d12	11.759	240	108763	4.0000	ug/mL	0.00
24) Perylene-d12	13.199	264	47457	4.0000	ug/mL	0.02

System Monitoring Compounds

2) Nitrobenzene-d5	5.223	82	601257	32.2082	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery =	64.42%		
7) 2-Fluorobiphenyl	6.978	172	1558338	38.0521	ug/mL	0.01
Spiked Amount 50.000	Range 25 - 135		Recovery =	76.10%		
21) Terphenyl-d14	10.712	244	536591	32.7432	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery =	65.48%		

Target Compounds

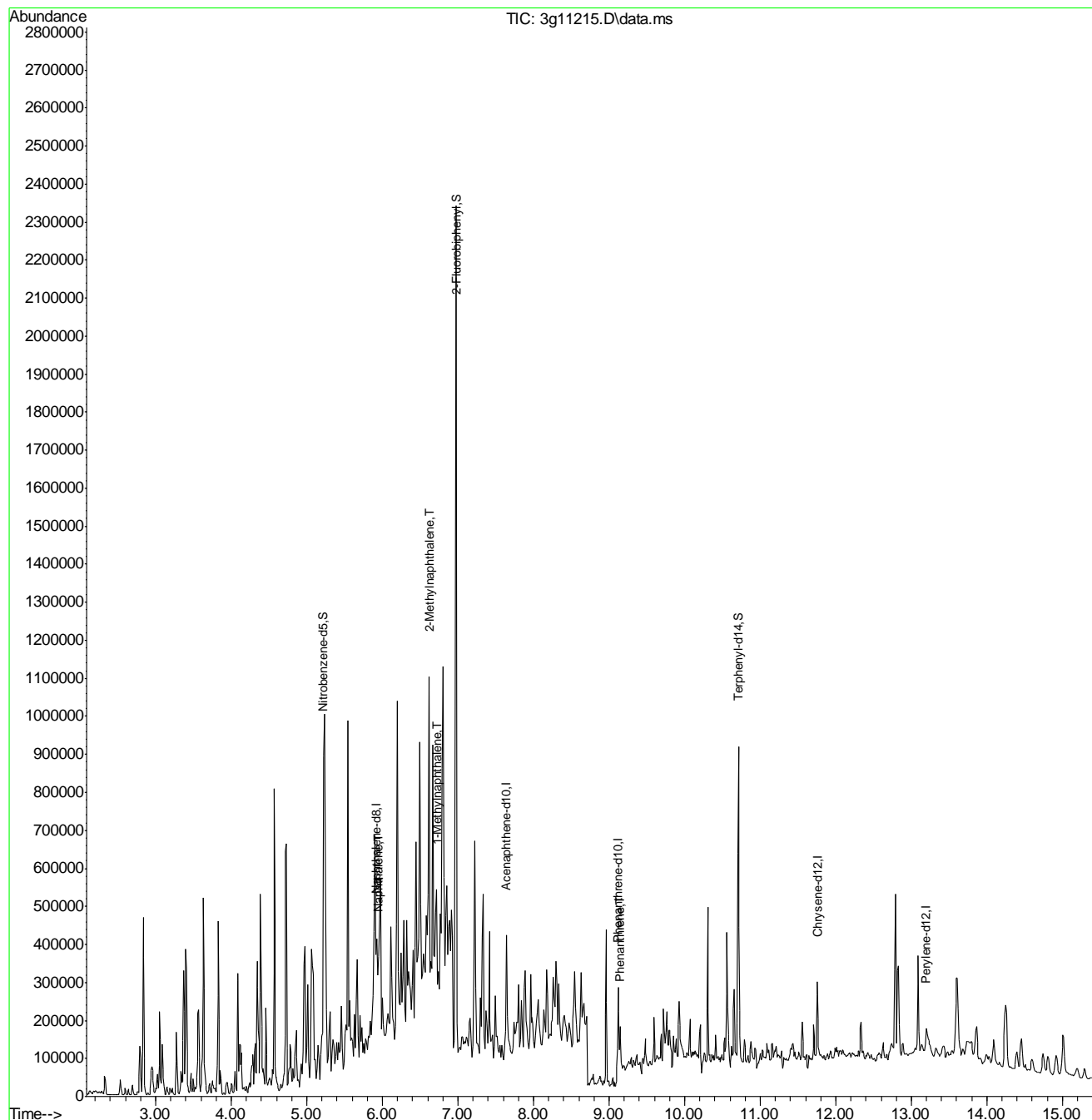
					Qvalue
3) N-Nitrosodimethylamine	0.000	74	0	N.D.	d
4) N-Nitrosodi-propylamine	0.000	70	0	N.D.	d
5) Naphthalene	5.946	128	213583	4.0450	ug/mL# 65
8) 2-Methylnaphthalene	6.620	142	383150	13.1640	ug/mL 94
9) 1-Methylnaphthalene	6.719	142	139593m	4.6345	ug/mL
10) Acenaphthylene	0.000	152	0	N.D.	d
11) Acenaphthene	0.000	154	0	N.D.	d
12) Dibenzofuran	0.000	168	0	N.D.	d
13) Fluorene	0.000	166	0	N.D.	d
14) Diphenylamine	0.000	169	0	N.D.	d
16) Phenanthrene	9.144	178	96156	1.5156	ug/mL# 12
17) Anthracene	0.000	178	0	N.D.	d
18) Fluoranthene	0.000	202	0	N.D.	d
20) Pyrene	0.000	202	0	N.D.	d
22) Benzo(a)anthracene	0.000	228	0	N.D.	d
23) Chrysene	0.000	228	0	N.D.	d
25) Benzo(b)fluoranthene	0.000	252	0	N.D.	d
26) Benzo(k)fluoranthene	0.000	252	0	N.D.	d
27) Benzo(a)pyrene	0.000	252	0	N.D.	d
28) Indeno(1,2,3-cd)pyrene	0.000	276	0	N.D.	d
29) Dibenz(a,h)anthracene	0.000	278	0	N.D.	d
30) Benzo(g,h,i)perylene	0.000	276	0	N.D.	d

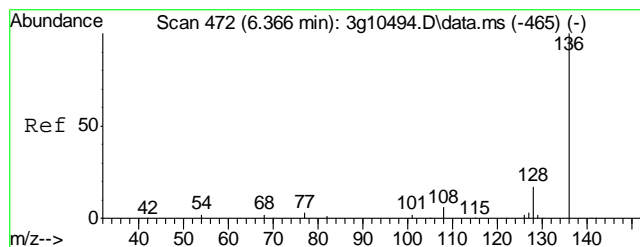
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\091212\
Data File : 3g11215.D
Acq On : 13 Sep 2012 3:58 am
Operator : DONC
Sample : D38480-1
Misc : OP6602,E3G522,30.04,,,1,1
ALS Vial : 26 Sample Multiplier: 1

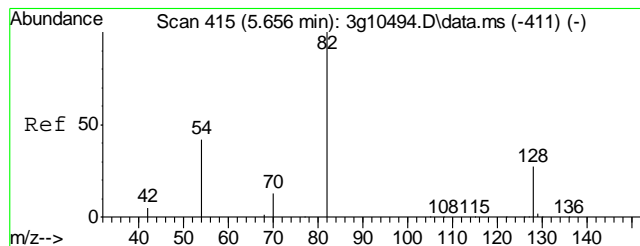
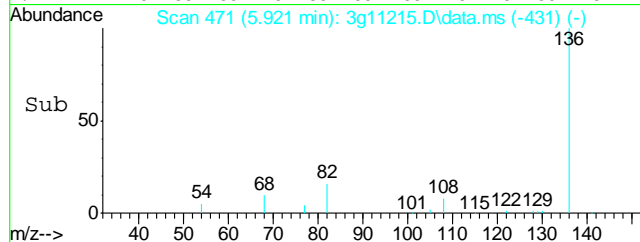
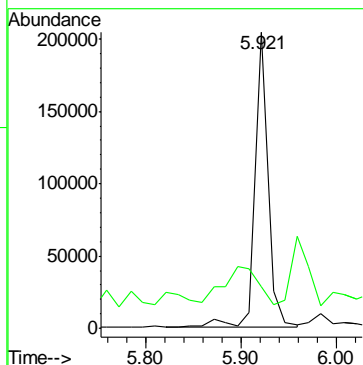
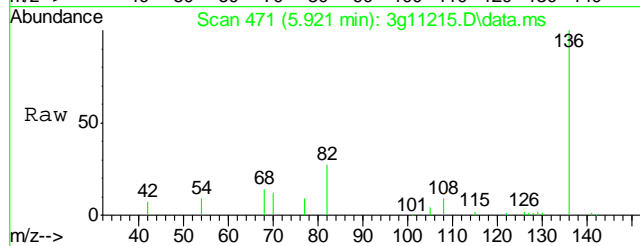
Quant Time: Sep 13 13:09:16 2012
Quant Method : C:\msdchem\1\METHODS\SIMPE3G511.M
Quant Title : PAHSIM BASE
QLast Update : Thu Sep 06 09:42:23 2012
Response via : Initial Calibration





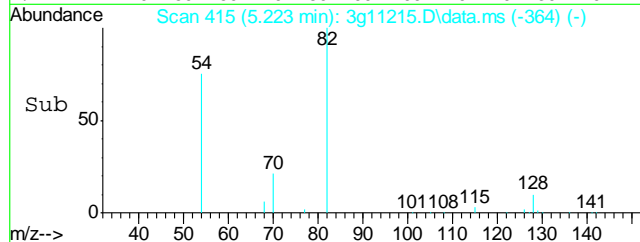
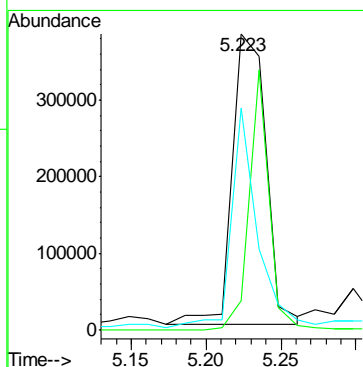
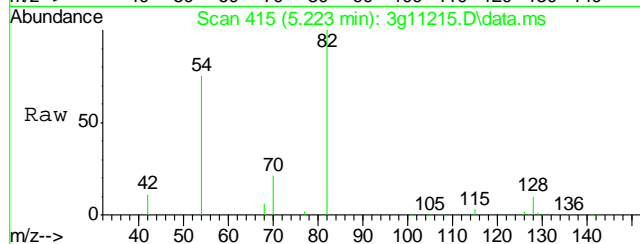
#1
Naphthalene-d8
Concen: 4.0000 ug/mL
RT: 5.921 min Scan# 471
Delta R.T. -0.000 min
Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

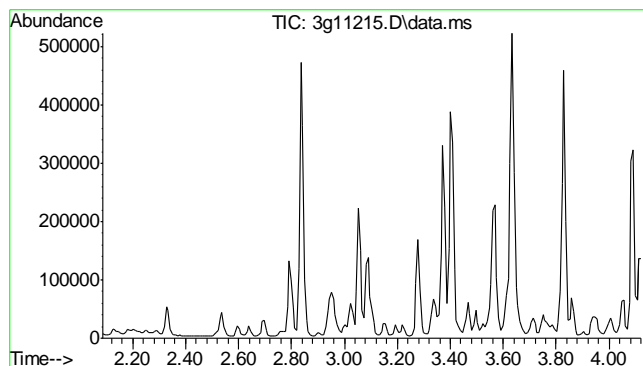
Tgt Ion	Ratio	Lower	Upper
136	100		
68	36.6	0.0	30.4#



#2
Nitrobenzene-d5
Concen: 32.2082 ug/mL
RT: 5.223 min Scan# 415
Delta R.T. 0.000 min
Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

Tgt Ion	Ratio	Lower	Upper
82	100		
128	53.1	19.7	59.7
54	57.5	28.6	68.6

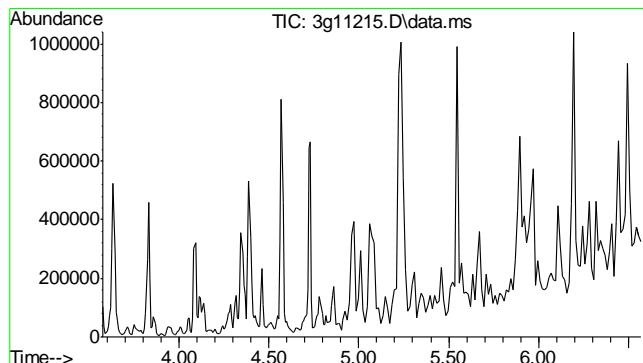
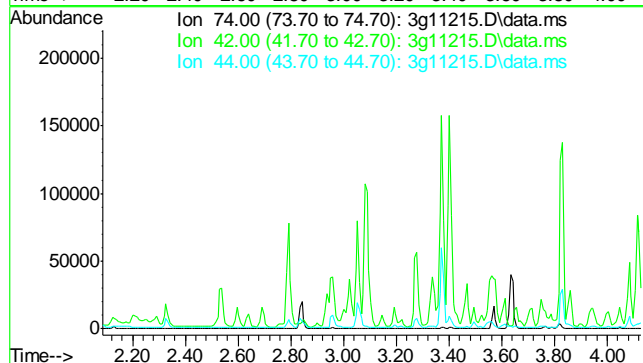




#3
N-Nitrosodimethylamine
Concen: N.D. ug/mL
Expected RT: 2.62 min

Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

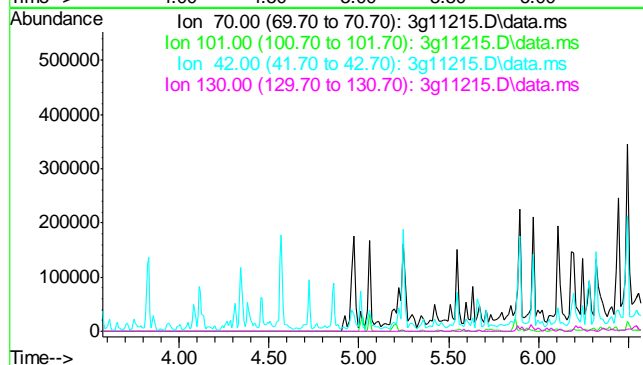
Tgt Ion	Exp Ratio
74	100
42	53.3
44	3.5

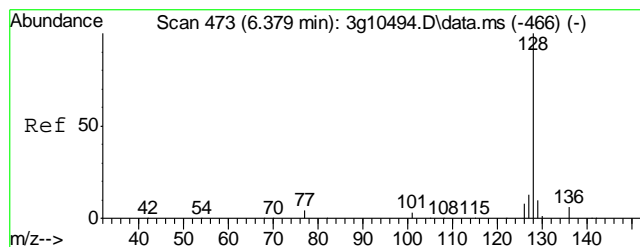


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 5.07 min

Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

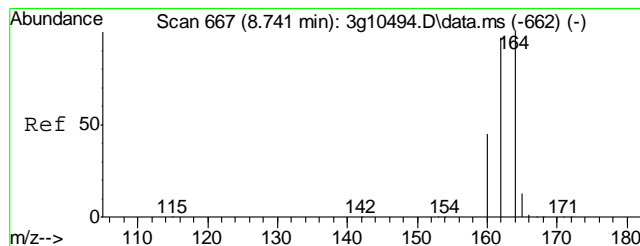
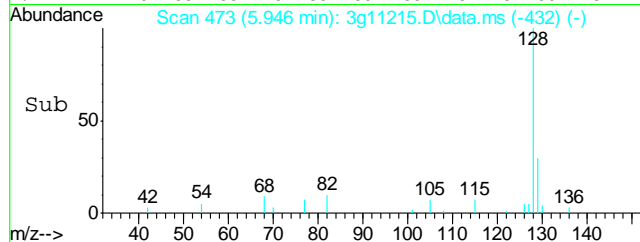
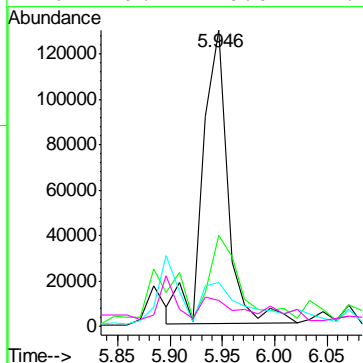
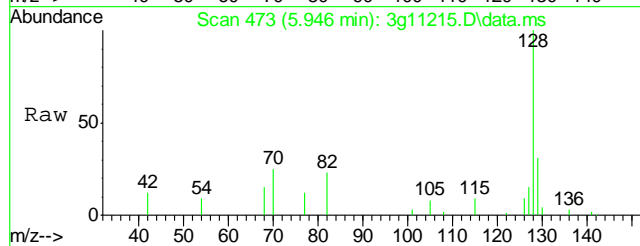
Tgt Ion	Exp Ratio
70	100
101	10.3
42	47.6
130	20.0





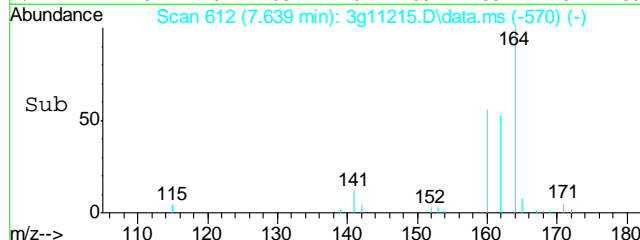
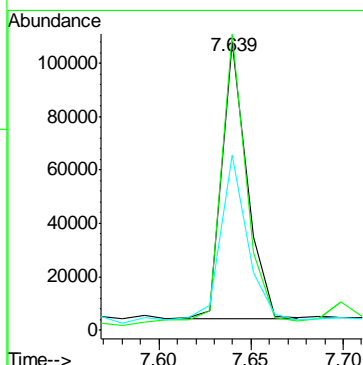
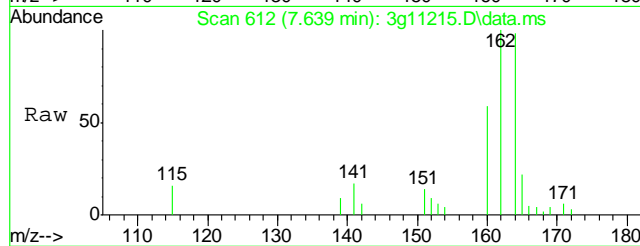
#5
Naphthalene
Concen: 4.0450 ug/mL
RT: 5.946 min Scan# 473
Delta R.T. 0.012 min
Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

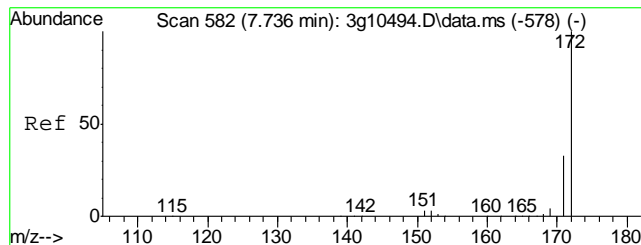
Tgt Ion:	128	Resp:	213583
Ion Ratio	Lower	Upper	
128	100		
129	33.9	0.0	30.8#
127	25.9	0.0	33.4
126	9.2	0.0	27.7



#6
Acenaphthene-d10
Concen: 4.0000 ug/mL
RT: 7.639 min Scan# 612
Delta R.T. -0.000 min
Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

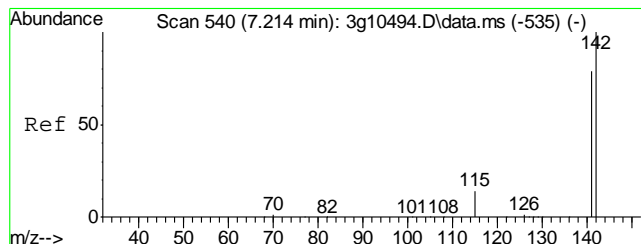
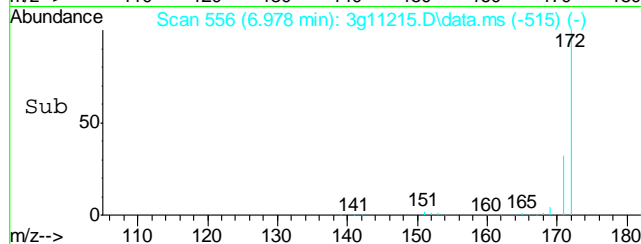
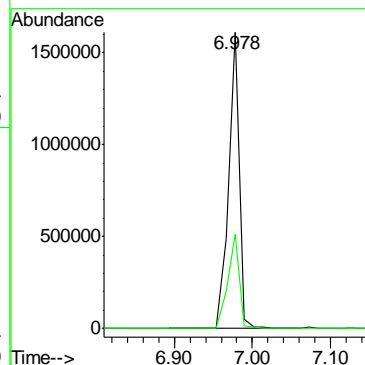
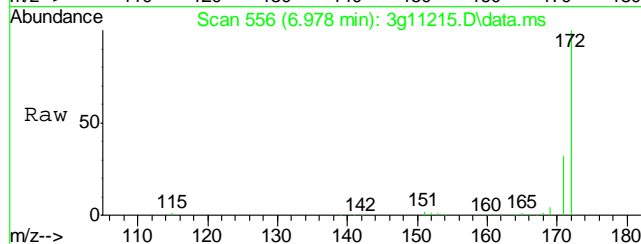
Tgt Ion:	164	Resp:	98450
Ion Ratio	Lower	Upper	
164	100		
162	110.4	73.5	113.5
160	71.7	21.8	61.8#





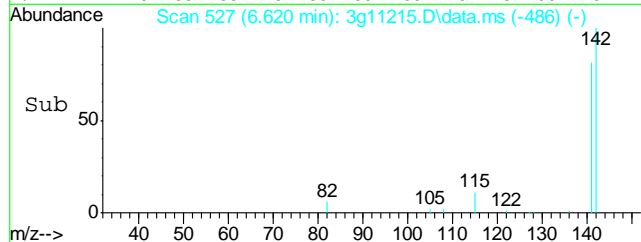
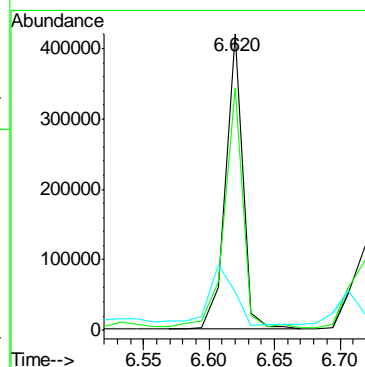
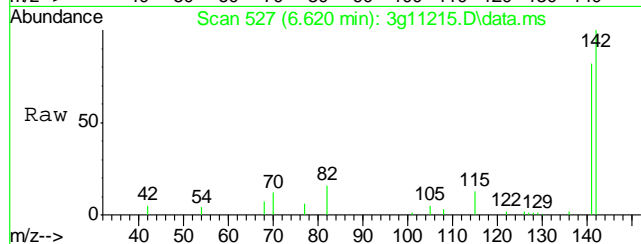
#7
2-Fluorobiphenyl
Concen: 38.0521 ug/mL
RT: 6.978 min Scan# 556
Delta R.T. 0.012 min
Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

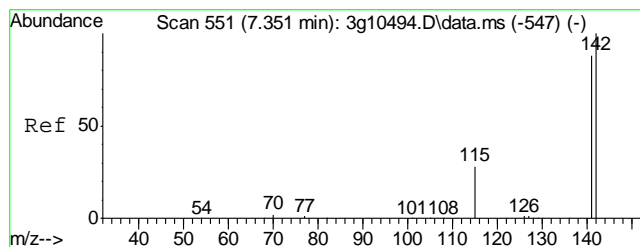
Tgt Ion:172	Resp: 1558338
Ion Ratio	Lower Upper
172	100
171	34.2 13.6 53.6



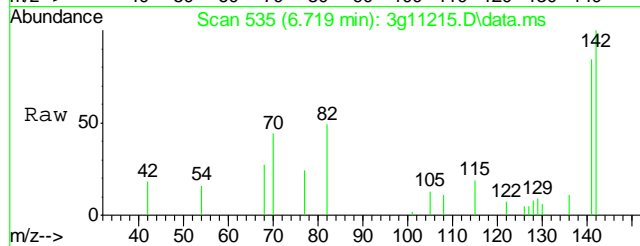
#8
2-Methylnaphthalene
Concen: 13.1640 ug/mL
RT: 6.620 min Scan# 527
Delta R.T. 0.012 min
Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

Tgt Ion:142	Resp: 383150
Ion Ratio	Lower Upper
142	100
141	87.9 64.5 104.5
115	27.5 13.6 53.6

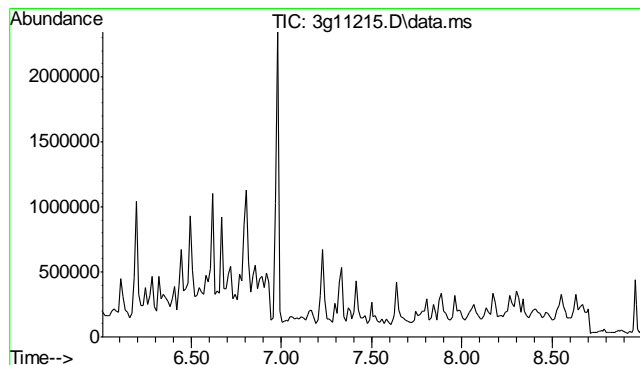
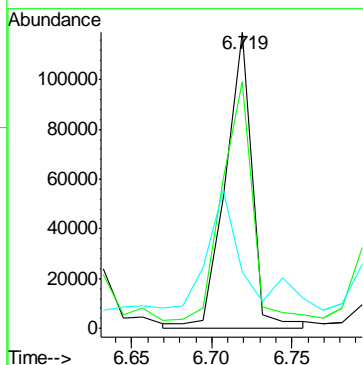
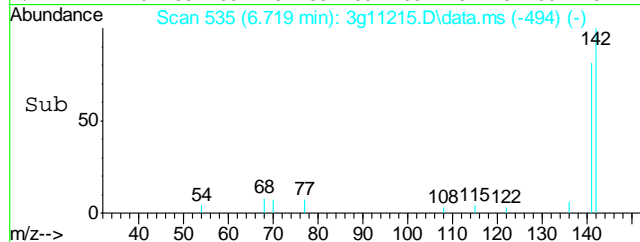




#9
1-Methylnaphthalene
Concen: 4.6345 ug/mL m
RT: 6.719 min Scan# 535
Delta R.T. 0.012 min
Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

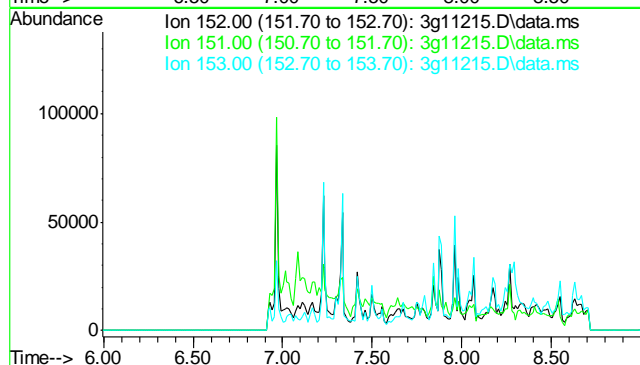


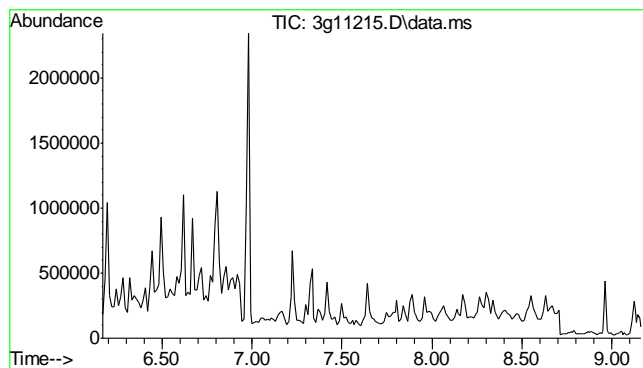
Tgt Ion	Ratio	Lower	Upper
142	100		
141	240.1	67.8	107.8#
115	75.5	11.0	51.0#



#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 7.50 min
Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

Tgt Ion	Sig	Exp Ratio
152	100	
151		19.2
153		13.2

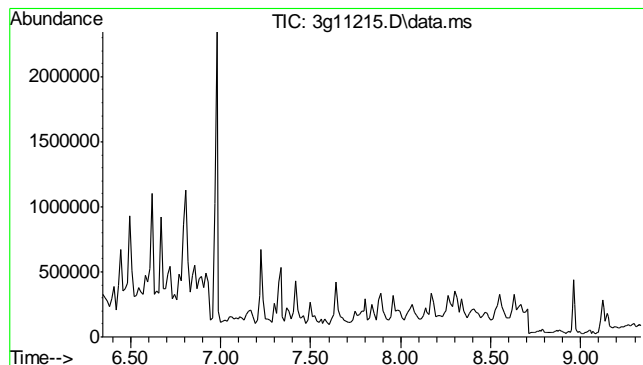
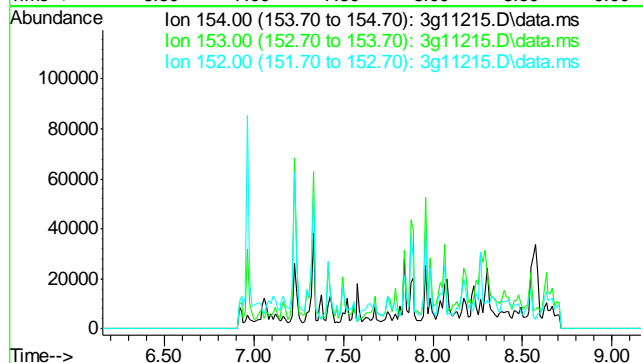




#11
 Acenaphthene
 Concen: N.D. ug/mL
 Expected RT: 7.66 min

Lab File: 3g11215.D
 Acq: 13 Sep 12 3:58 am

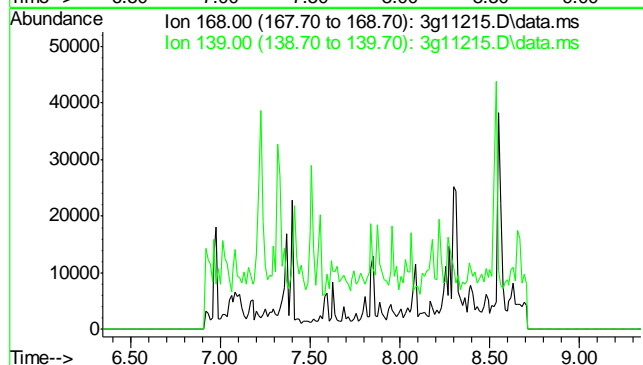
Tgt Ion	Exp Ratio
154	100
153	104.8
152	49.9

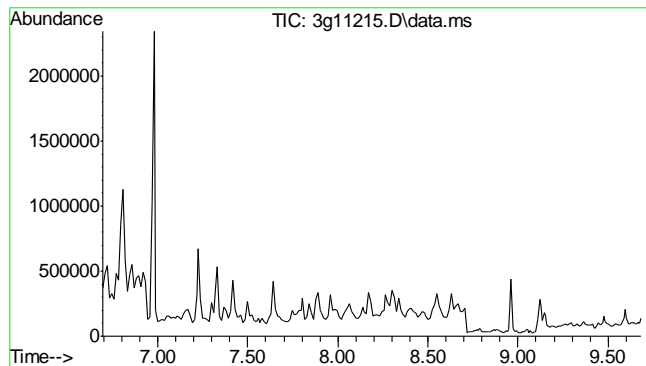


#12
 Dibenzofuran
 Concen: N.D. ug/mL
 Expected RT: 7.84 min

Lab File: 3g11215.D
 Acq: 13 Sep 12 3:58 am

Tgt Ion	Exp Ratio
168	100
139	27.6

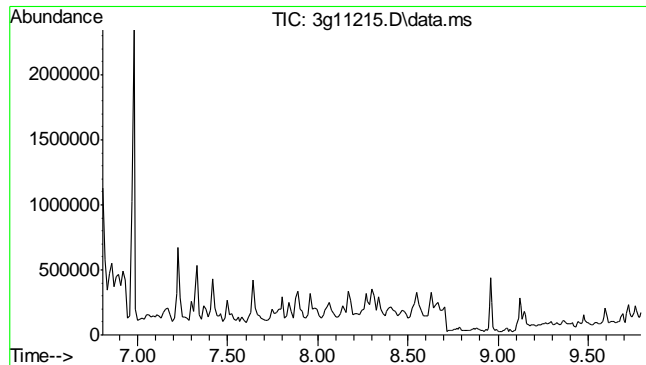
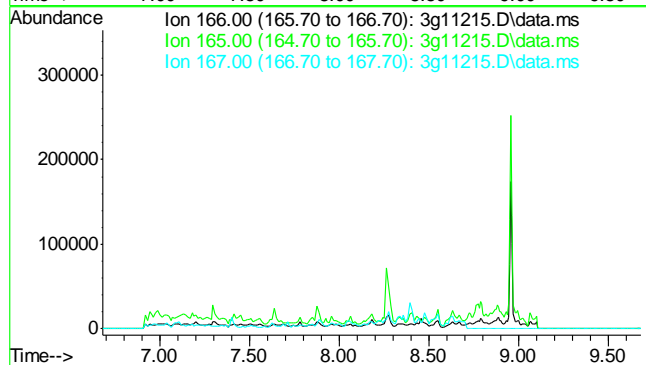




#13
Fluorene
Concen: N.D. ug/mL
Expected RT: 8.18 min

Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

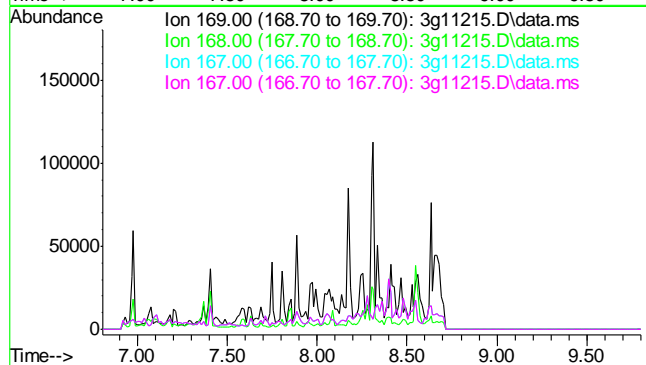
Tgt Ion:	166
Sig	Exp Ratio
166	100
165	91.1
167	13.3

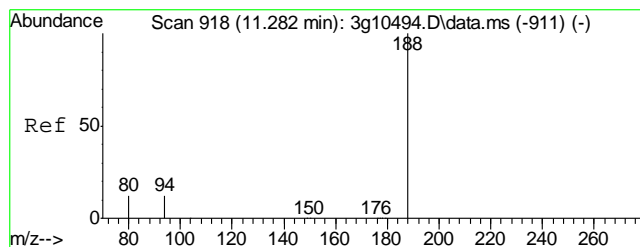


#14
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 8.30 min

Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

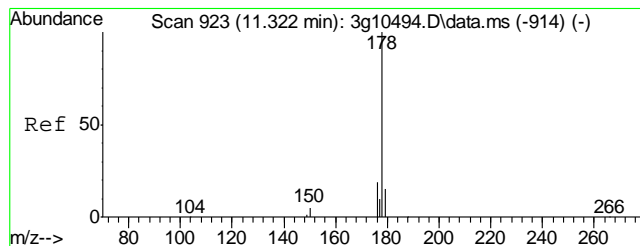
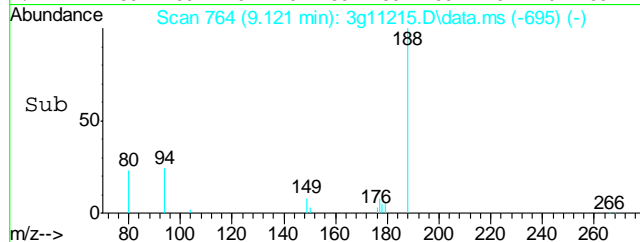
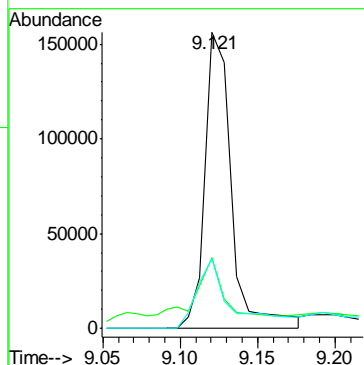
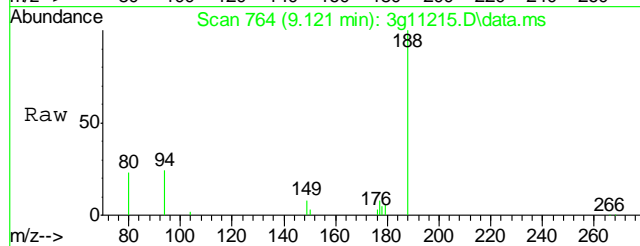
Tgt Ion:	169
Sig	Exp Ratio
169	100
168	61.0
167	32.9
167	32.9





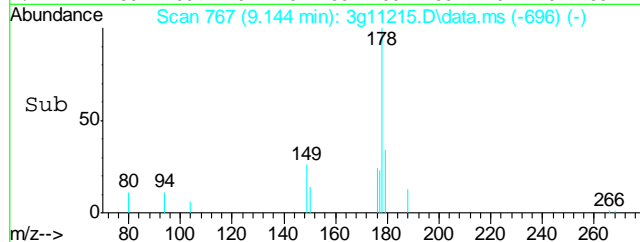
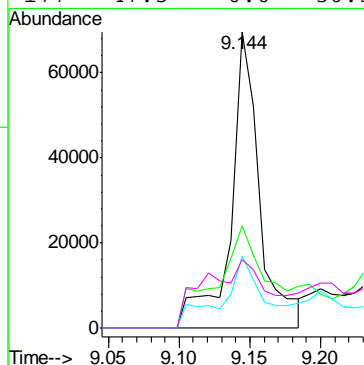
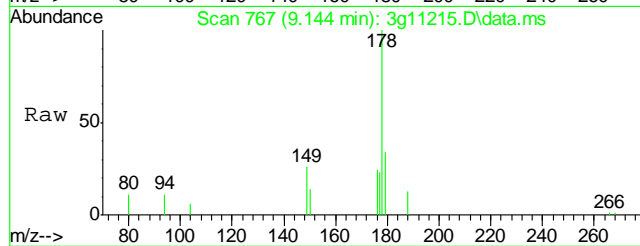
#15
Phenanthrene-d10
Concen: 4.0000 ug/mL
RT: 9.121 min Scan# 764
Delta R.T. -0.000 min
Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

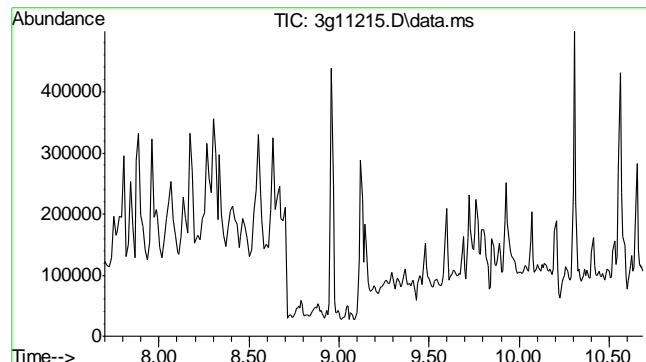
Tgt Ion:188	Resp: 180850
Ion Ratio	Lower Upper
188 100	
94 21.4	0.0 33.9
80 30.3	0.0 35.5



#16
Phenanthrene
Concen: 1.5156 ug/mL
RT: 9.144 min Scan# 767
Delta R.T. 0.008 min
Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

Tgt Ion:178	Resp: 96156
Ion Ratio	Lower Upper
178 100	
179 77.2	0.0 35.3#
176 32.6	0.0 38.5
177 47.5	0.0 30.5#

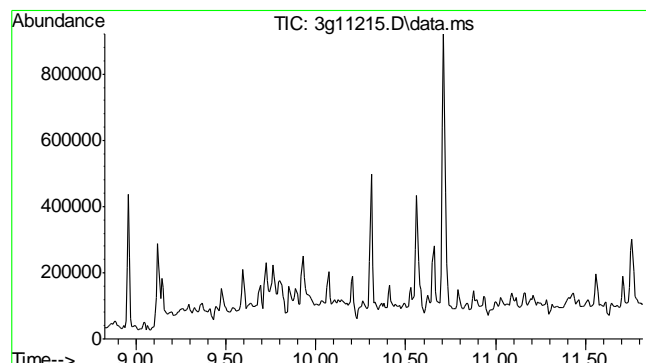
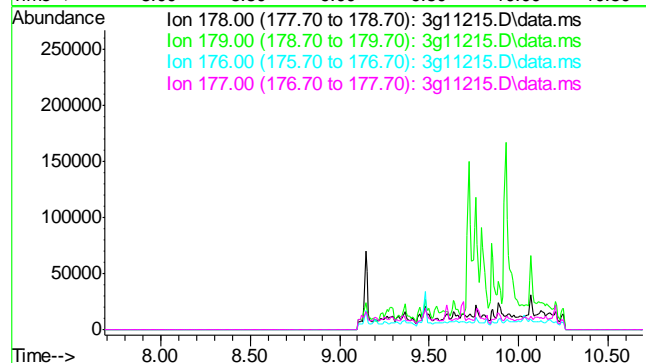




#17
Anthracene
Concen: N.D. ug/mL
Expected RT: 9.19 min

Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

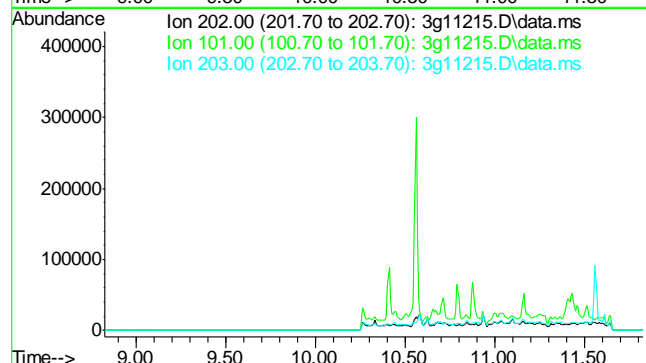
Tgt Ion: 178
Sig Exp Ratio
178 100
179 15.2
176 17.7
177 9.0

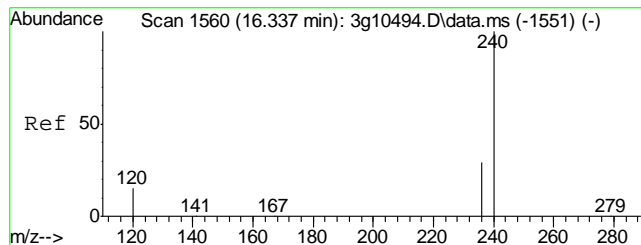


#18
Fluoranthene
Concen: N.D. ug/mL
Expected RT: 10.32 min

Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

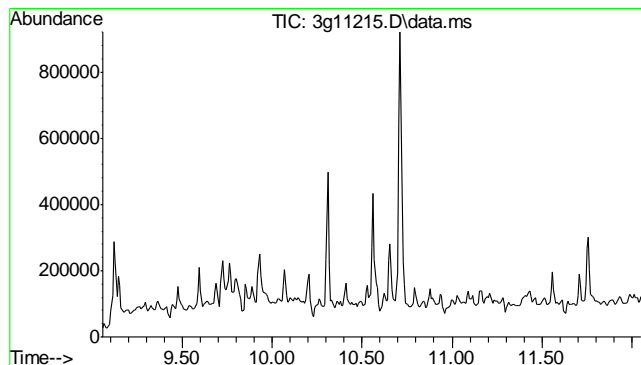
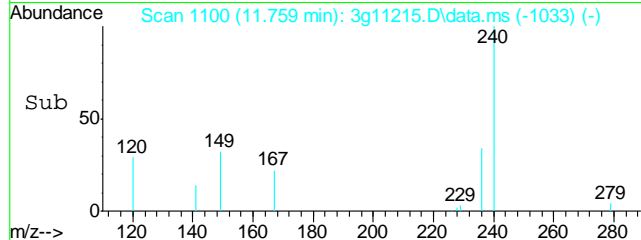
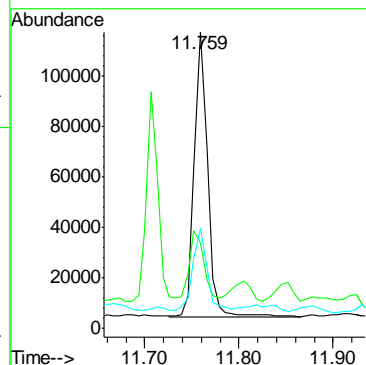
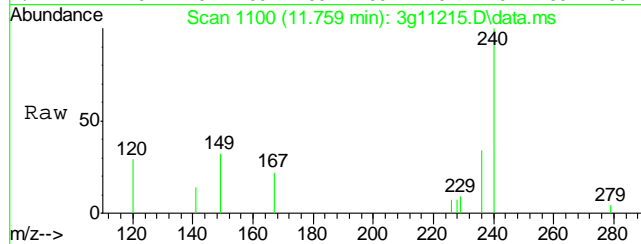
Tgt Ion: 202
Sig Exp Ratio
202 100
101 13.0
203 17.4





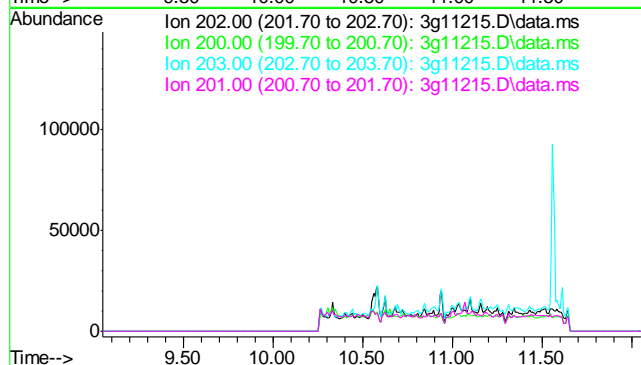
#19
Chrysene-d12
Concen: 4.0000 ug/mL
RT: 11.759 min Scan# 1100
Delta R.T. 0.006 min
Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

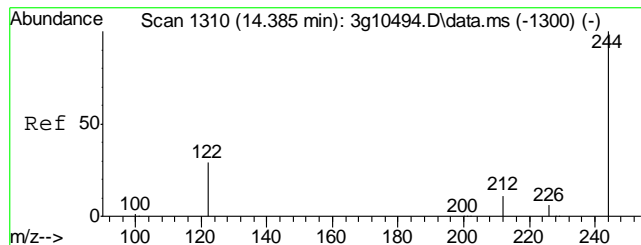
Tgt Ion:	240	Resp:	108763
Ion Ratio	Lower	Upper	
240	100		
120	40.5	0.0	36.2#
236	30.5	8.8	48.8



#20
Pyrene
Concen: N.D. ug/mL
Expected RT: 10.55 min
Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

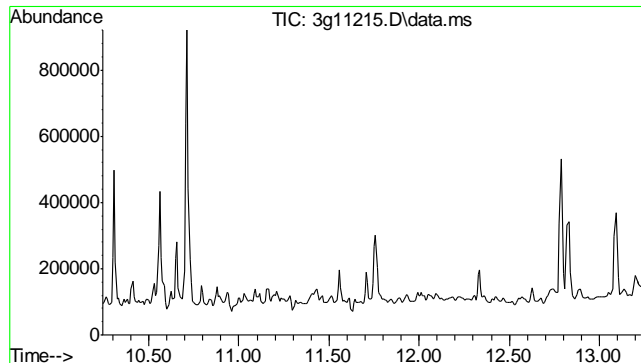
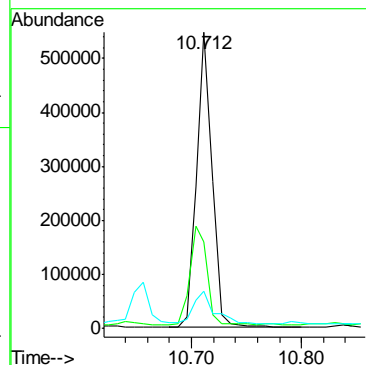
Tgt Ion:	202
Sig	Exp Ratio
202	100
200	20.1
203	17.8
201	16.6





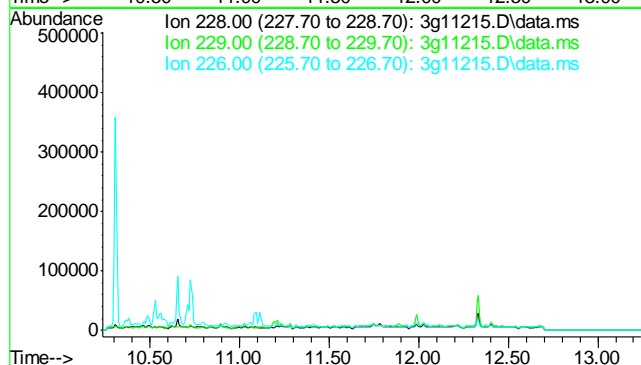
#21
Terphenyl-d14
Concen: 32.7432 ug/mL
RT: 10.712 min Scan# 965
Delta R.T. 0.008 min
Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

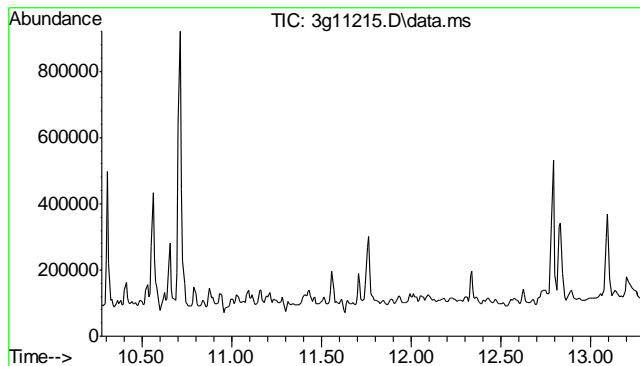
Tgt Ion	Ratio	Lower	Upper
244	100		
122	37.4	1.3	41.3
212	14.7	0.0	28.8



#22
Benzo(a)anthracene
Concen: N.D. ug/mL
Expected RT: 11.74 min
Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

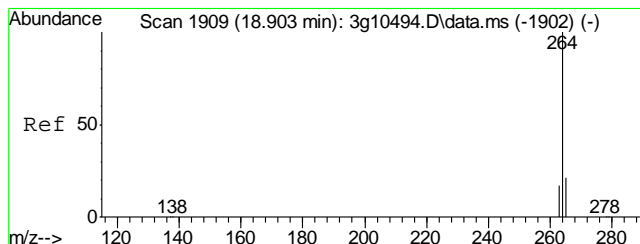
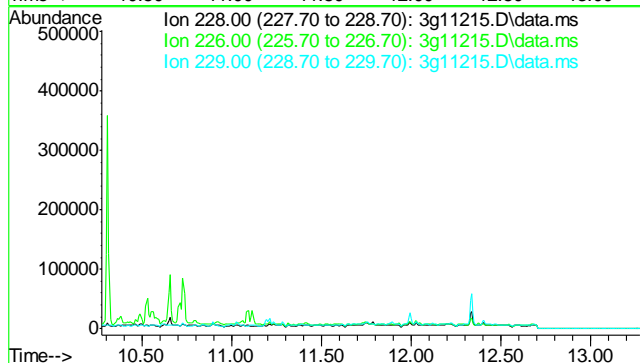
Tgt Ion	Sig	Exp Ratio
228	100	
229	19.6	
226	26.6	





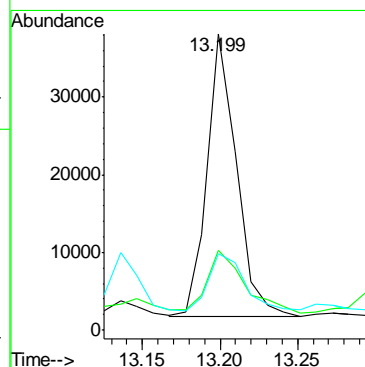
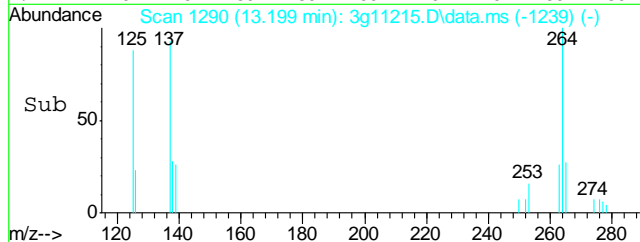
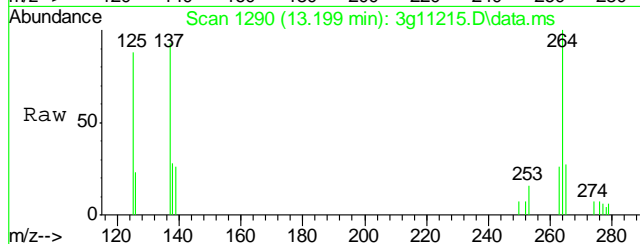
#23
 Chrysene
 Concen: N.D. ug/mL
 Expected RT: 11.77 min
 Lab File: 3g11215.D
 Acq: 13 Sep 12 3:58 am

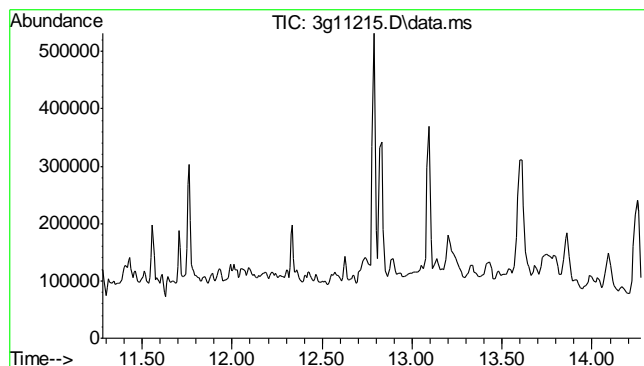
Tgt Ion: 228
 Sig Exp Ratio
 228 100
 226 28.6
 229 19.4



#24
 Perylene-d12
 Concen: 4.0000 ug/mL
 RT: 13.199 min Scan# 1290
 Delta R.T. 0.021 min
 Lab File: 3g11215.D
 Acq: 13 Sep 12 3:58 am

Tgt Ion: 264 Resp: 47457
 Ion Ratio Lower Upper
 264 100
 265 28.6 1.0 41.0
 263 24.7 0.0 39.0

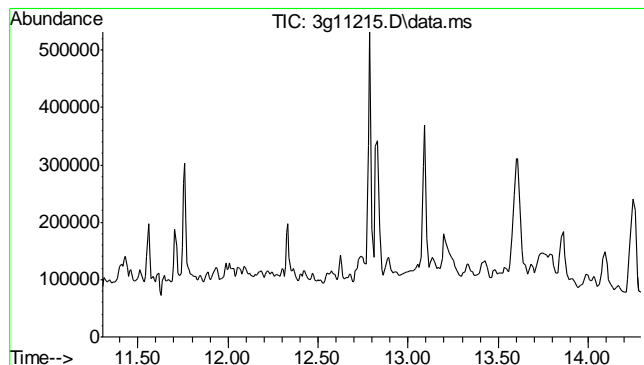
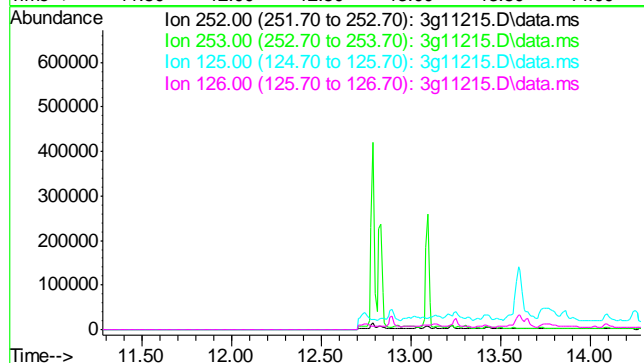




#25
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.78 min

Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

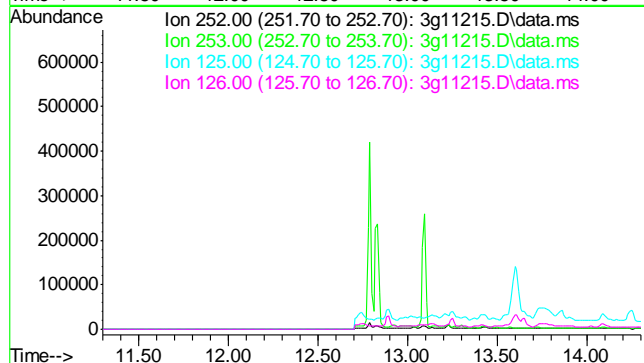
Tgt Ion	Sig	Exp Ratio
252	100	
253	22.9	
125	11.5	
126	14.7	

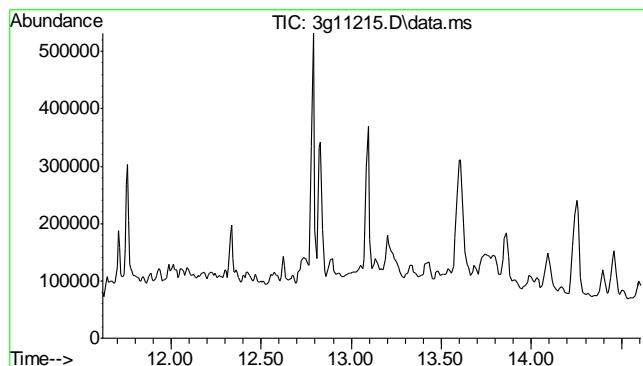


#26
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.80 min

Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

Tgt Ion	Sig	Exp Ratio
252	100	
253	21.8	
125	11.0	
126	14.0	

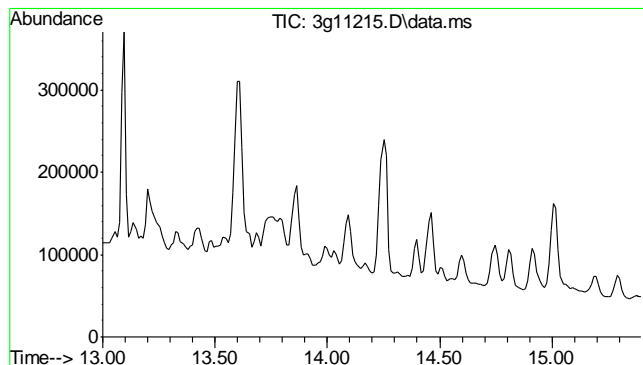
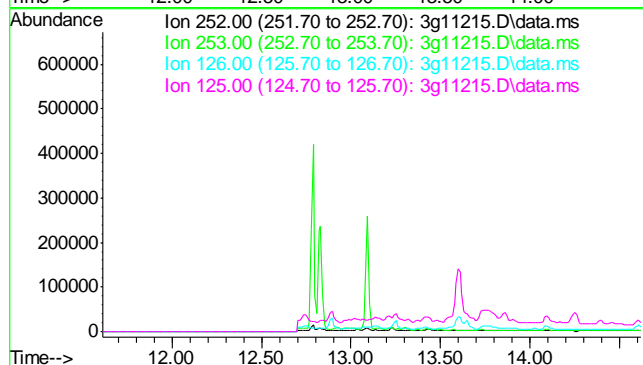




#27
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 13.11 min

Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

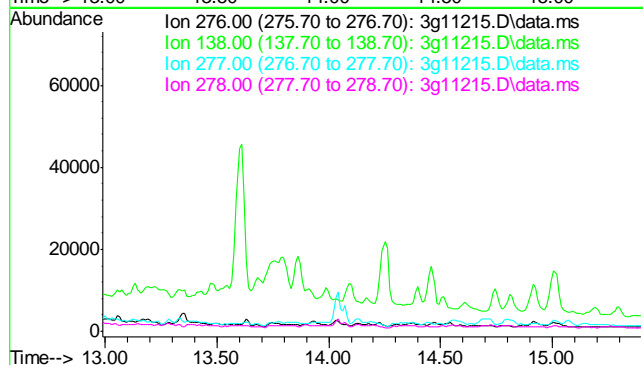
Tgt Ion	Exp Ratio
252	100
253	21.4
126	13.6
125	10.7

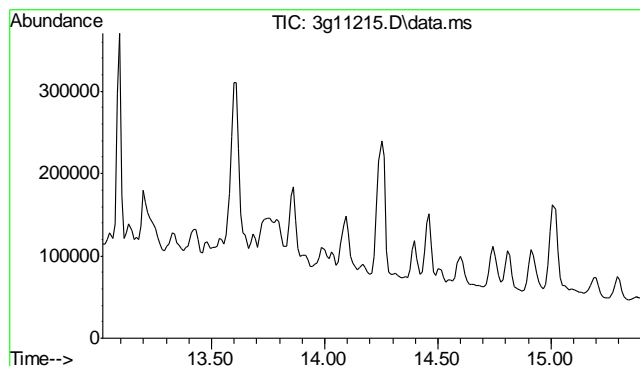


#28
Indeno(1,2,3-cd)pyrene
Concen: N.D. ug/mL
Expected RT: 14.49 min

Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

Tgt Ion	Exp Ratio
276	100
138	25.3
277	25.0
278	79.3

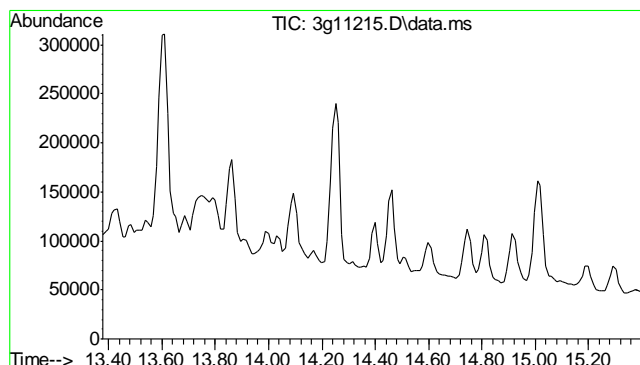
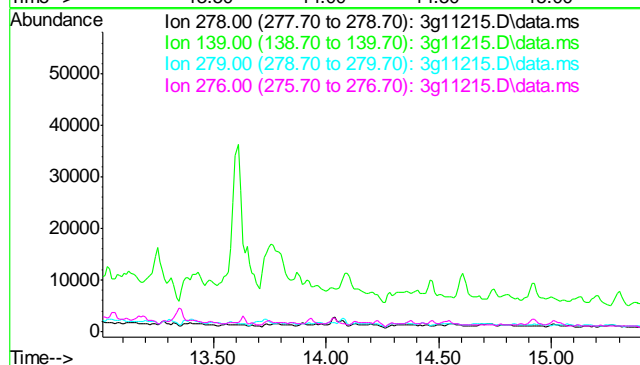




#29
Dibenz(a,h)anthracene
Concen: N.D. ug/mL
Expected RT: 14.51 min

Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

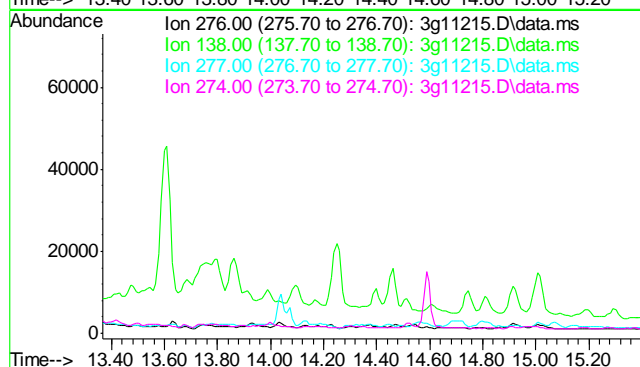
Tgt Ion	Exp Ratio
278	100
139	18.4
279	23.1
276	126.1



#30
Benzo(g,h,i)perylene
Concen: N.D. ug/mL
Expected RT: 14.87 min

Lab File: 3g11215.D
Acq: 13 Sep 12 3:58 am

Tgt Ion	Exp Ratio
276	100
138	21.3
277	23.4
274	21.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\091212\
 Data File : 3g11216.D
 Acq On : 13 Sep 2012 4:22 am
 Operator : DONC
 Sample : D38480-2
 Misc : OP6602,E3G522,30.05,,,1,1
 ALS Vial : 27 Sample Multiplier: 1

Quant Time: Sep 13 13:11:55 2012
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G511.M
 Quant Title : PAHSIM BASE
 QLast Update : Thu Sep 06 09:42:23 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.922	136	198213	4.0000	ug/mL	0.00
6) Acenaphthene-d10	7.640	164	109737	4.0000	ug/mL	0.00
15) Phenanthrene-d10	9.121	188	166923	4.0000	ug/mL	0.00
19) Chrysene-d12	11.759	240	103113	4.0000	ug/mL	0.00
24) Perylene-d12	13.188	264	57247	4.0000	ug/mL	0.01

System Monitoring Compounds

2) Nitrobenzene-d5	5.236	82	683832	35.0653	ug/mL	0.01
Spiked Amount 50.000	Range 25 - 135		Recovery =	70.14%		
7) 2-Fluorobiphenyl	6.978	172	1641448	35.9589	ug/mL	0.01
Spiked Amount 50.000	Range 25 - 135		Recovery =	71.92%		
21) Terphenyl-d14	10.712	244	597509	38.4583	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery =	76.92%		

Target Compounds

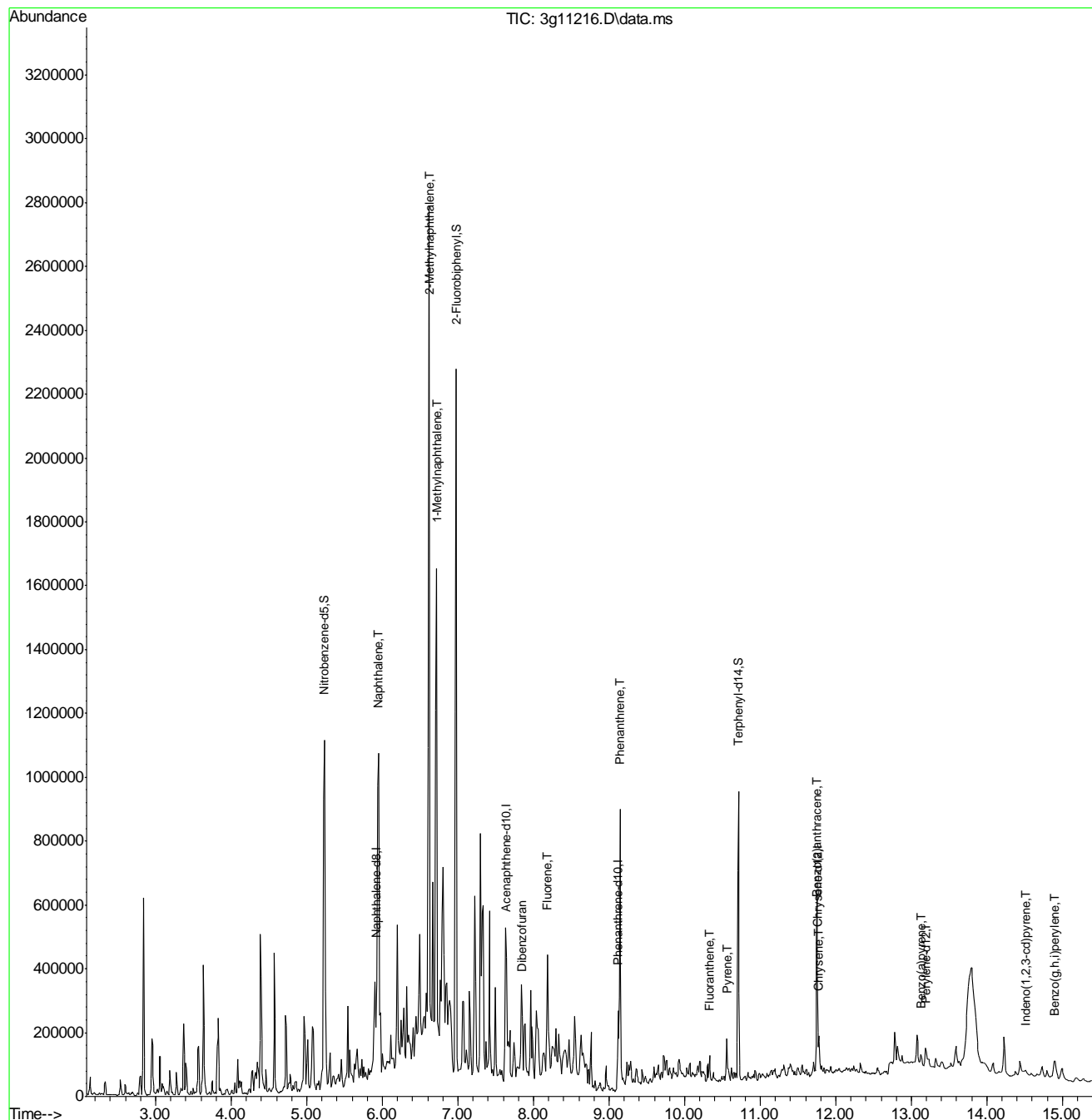
						Qvalue
3) N-Nitrosodimethylamine	0.000	74	0	N.D.	d	
4) N-Nitrosodi-propylamine	0.000	70	0	N.D.	d	
5) Naphthalene	5.946	128	1048115	19.0015	ug/mL	93
8) 2-Methylnaphthalene	6.620	142	1250975	38.5594	ug/mL	96
9) 1-Methylnaphthalene	6.719	142	832403	24.7935	ug/mL	99
10) Acenaphthylene	0.000	152	0	N.D.	d	
11) Acenaphthene	0.000	154	0	N.D.	d	
12) Dibenzofuran	7.852	168	140367	2.5062	ug/mL	85
13) Fluorene	8.183	166	132917	2.9657	ug/mL#	70
14) Diphenylamine	0.000	169	0	N.D.	d	
16) Phenanthrene	9.145	178	528163	9.0193	ug/mL	89
17) Anthracene	0.000	178	0	N.D.	d	
18) Fluoranthene	10.332	202	58840	0.8547	ug/mL	56
20) Pyrene	10.561	202	81603m	1.6532	ug/mL	
22) Benzo(a)anthracene	11.746	228	25631	0.5853	ug/mL#	66
23) Chrysene	11.779	228	89394	1.9284	ug/mL#	72
25) Benzo(b)fluoranthene	0.000	252	0	N.D.	d	
26) Benzo(k)fluoranthene	0.000	252	0	N.D.	d	
27) Benzo(a)pyrene	13.125	252	24979	0.6250	ug/mL#	68
28) Indeno(1,2,3-cd)pyrene	14.513	276	10764	0.2497	ug/mL#	72
29) Dibenz(a,h)anthracene	0.000	278	0	N.D.	d	
30) Benzo(g,h,i)perylene	14.903	276	34406	0.9346	ug/mL#	45

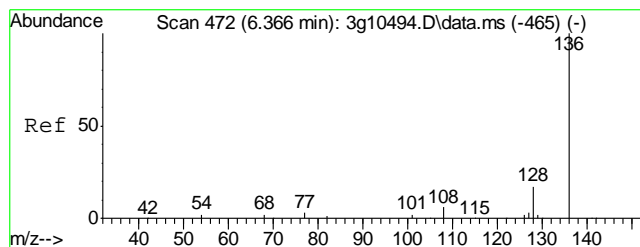
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\091212\
Data File : 3g11216.D
Acq On : 13 Sep 2012 4:22 am
Operator : DONC
Sample : D38480-2
Misc : OP6602,E3G522,30.05,,,1,1
ALS Vial : 27 Sample Multiplier: 1

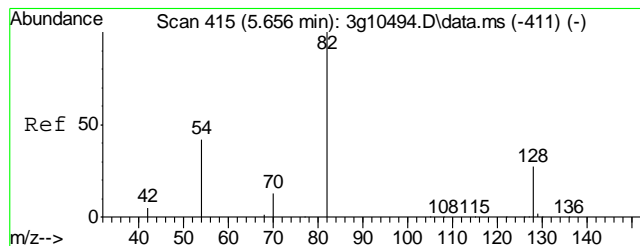
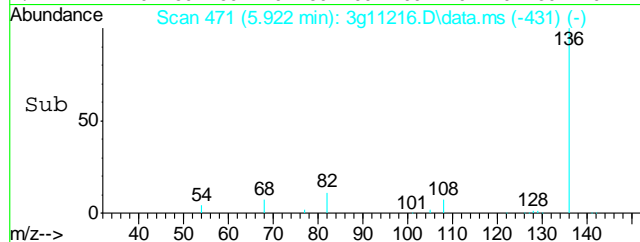
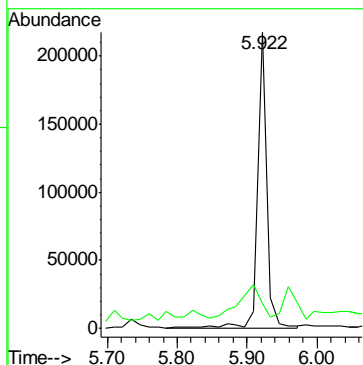
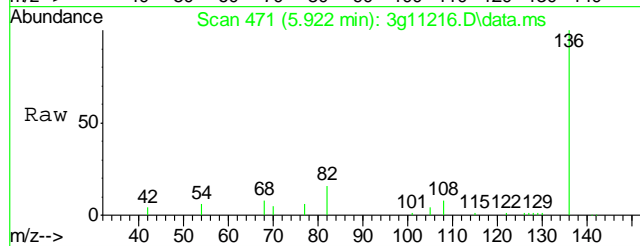
Quant Time: Sep 13 13:11:55 2012
Quant Method : C:\msdchem\1\METHODS\SIMPE3G511.M
Quant Title : PAHSIM BASE
QLast Update : Thu Sep 06 09:42:23 2012
Response via : Initial Calibration





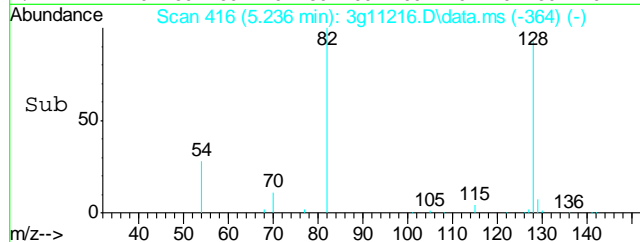
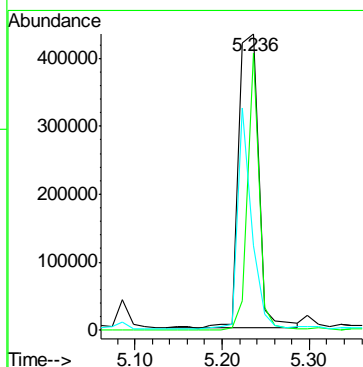
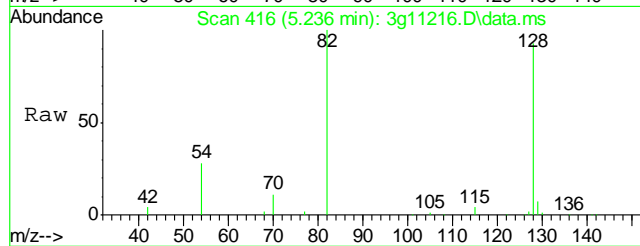
#1
Naphthalene-d8
Concen: 4.0000 ug/mL
RT: 5.922 min Scan# 471
Delta R.T. -0.000 min
Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

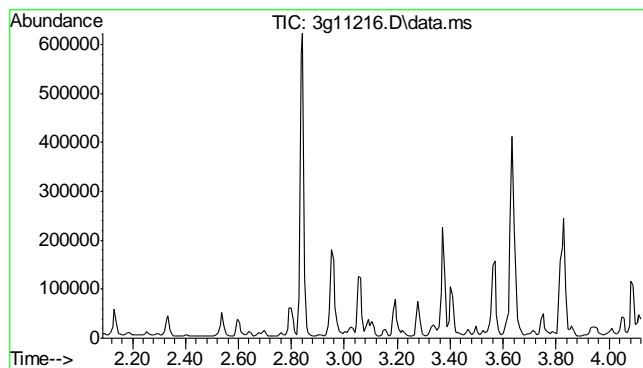
Tgt Ion	Ratio	Lower	Upper
136	100		
68	25.1	0.0	30.4



#2
Nitrobenzene-d5
Concen: 35.0653 ug/mL
RT: 5.236 min Scan# 416
Delta R.T. 0.013 min
Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

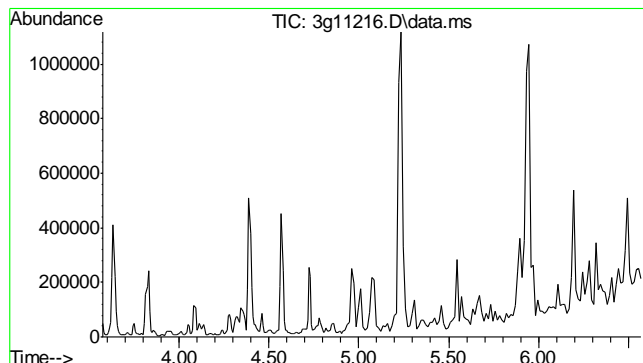
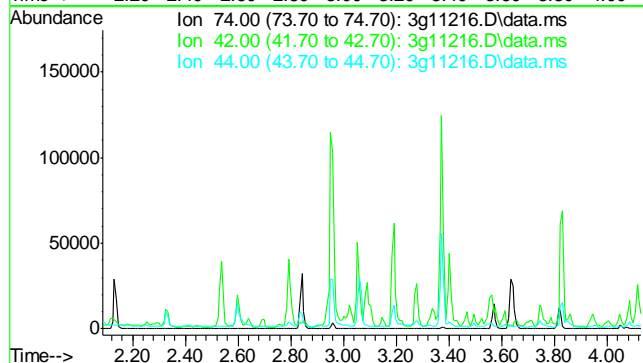
Tgt Ion	Ratio	Lower	Upper
82	100		
128	55.1	19.7	59.7
54	55.7	28.6	68.6





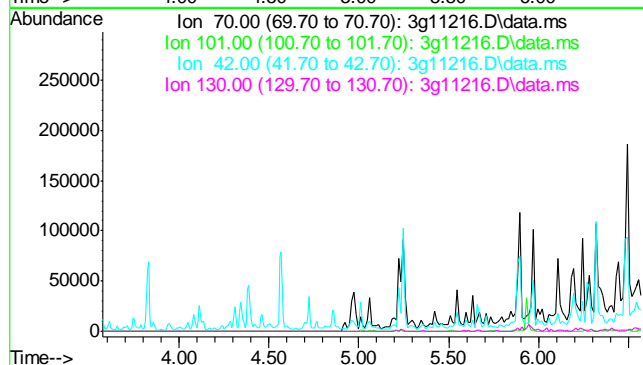
#3
 N-Nitrosodimethylamine
 Concen: N.D. ug/mL
 Expected RT: 2.62 min
 Lab File: 3g11216.D
 Acq: 13 Sep 12 4:22 am

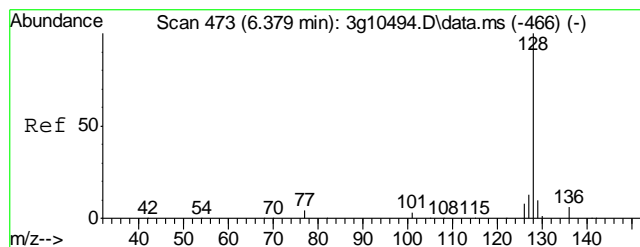
Tgt Ion	Exp Ratio
74	100
42	53.3
44	3.5



#4
 N-Nitrosodi-propylamine
 Concen: N.D. ug/mL
 Expected RT: 5.07 min
 Lab File: 3g11216.D
 Acq: 13 Sep 12 4:22 am

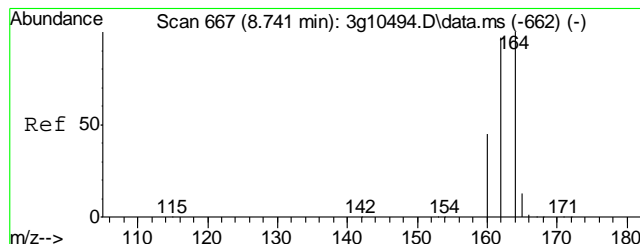
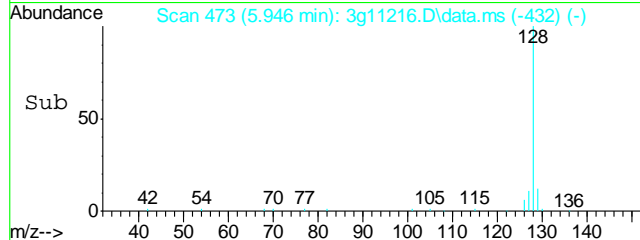
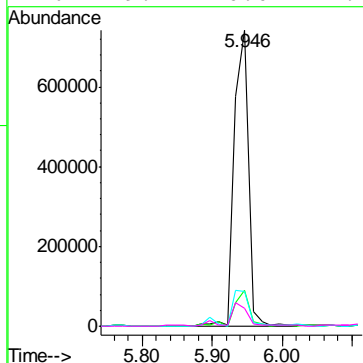
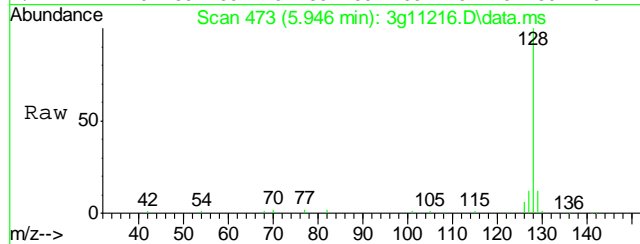
Tgt Ion	Exp Ratio
70	100
101	10.3
42	47.6
130	20.0





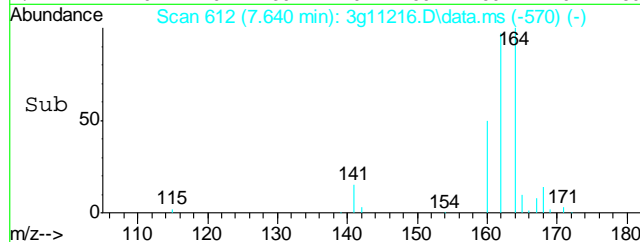
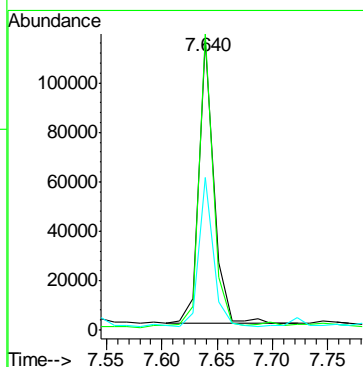
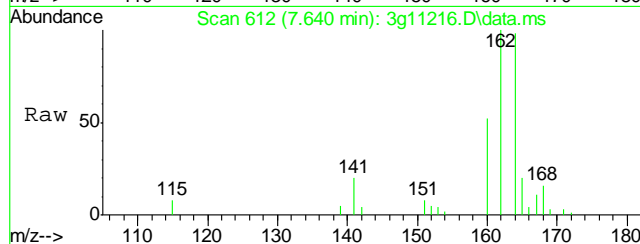
#5
Naphthalene
Concen: 19.0015 ug/mL
RT: 5.946 min Scan# 473
Delta R.T. 0.012 min
Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

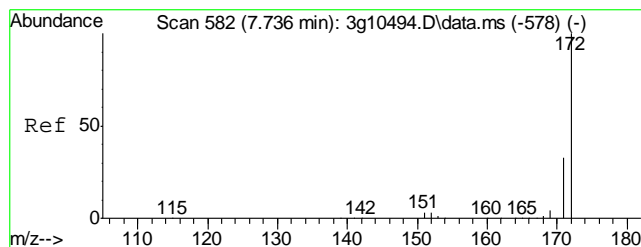
Tgt Ion	Ratio	Lower	Upper
128	100		
129	13.9	0.0	30.8
127	16.3	0.0	33.4
126	9.4	0.0	27.7



#6
Acenaphthene-d10
Concen: 4.0000 ug/mL
RT: 7.640 min Scan# 612
Delta R.T. -0.000 min
Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

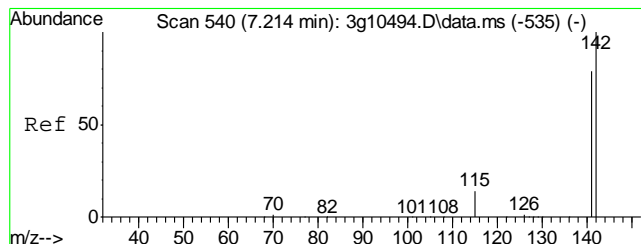
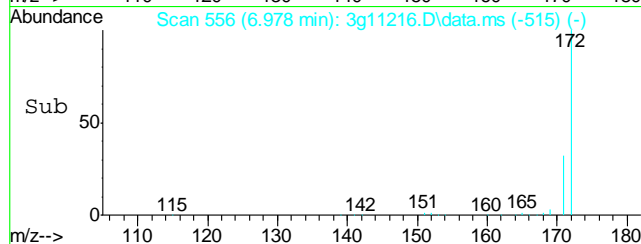
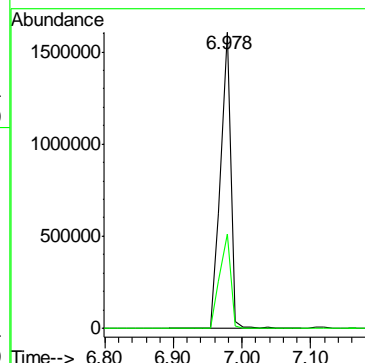
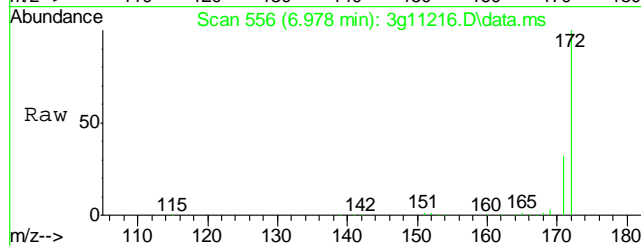
Tgt Ion	Ratio	Lower	Upper
164	100		
162	98.6	73.5	113.5
160	52.2	21.8	61.8





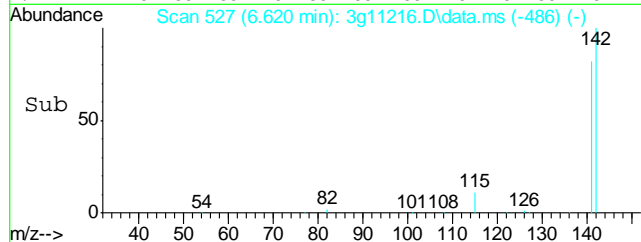
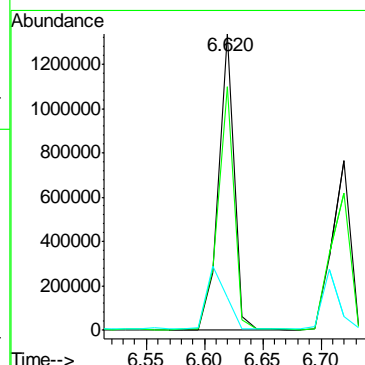
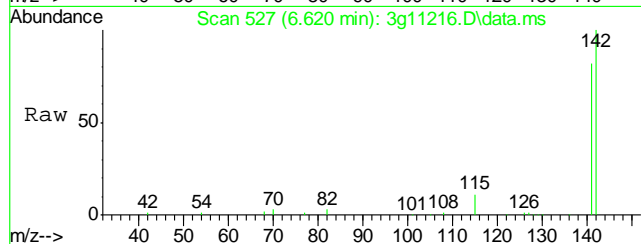
#7
2-Fluorobiphenyl
Concen: 35.9589 ug/mL
RT: 6.978 min Scan# 556
Delta R.T. 0.012 min
Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

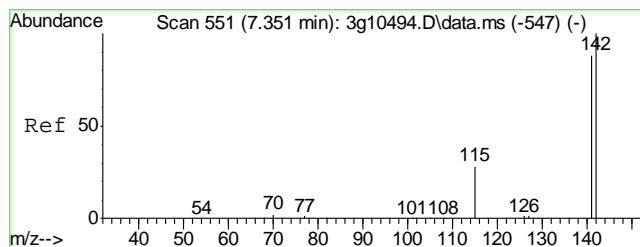
Tgt Ion	Ratio	Lower	Upper
172	100		
171	34.3	13.6	53.6



#8
2-Methylnaphthalene
Concen: 38.5594 ug/mL
RT: 6.620 min Scan# 527
Delta R.T. 0.012 min
Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

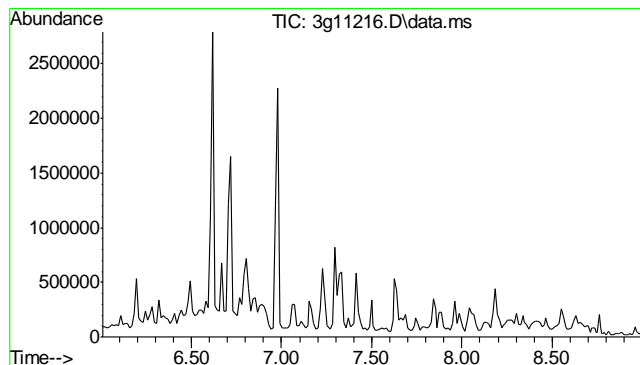
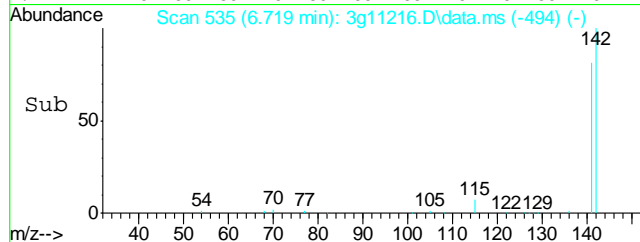
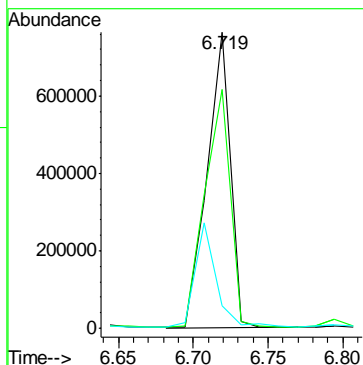
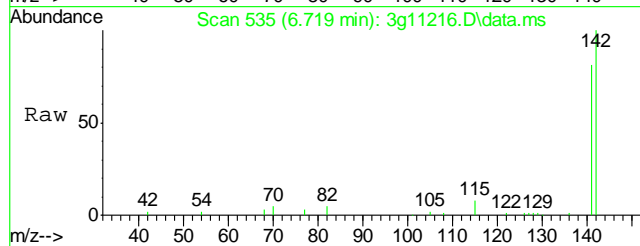
Tgt Ion	Ratio	Lower	Upper
142	100		
141	85.3	64.5	104.5
115	26.5	13.6	53.6





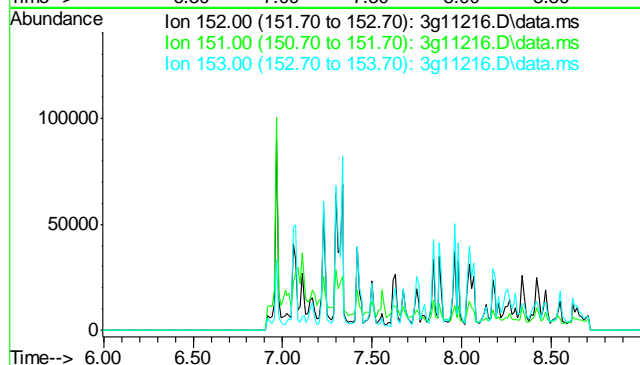
#9
1-Methylnaphthalene
Concen: 24.7935 ug/mL
RT: 6.719 min Scan# 535
Delta R.T. 0.012 min
Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

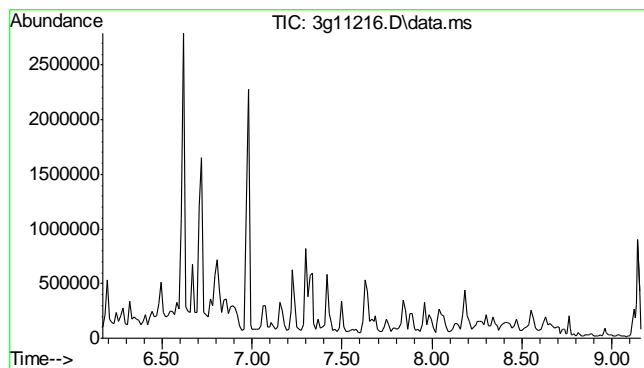
Tgt Ion	Ratio	Lower	Upper
142	100		
141	88.0	67.8	107.8
115	31.7	11.0	51.0



#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 7.50 min
Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

Tgt Ion	Exp Ratio
152	100
151	19.2
153	13.2

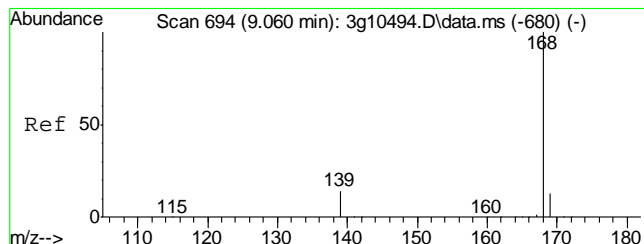
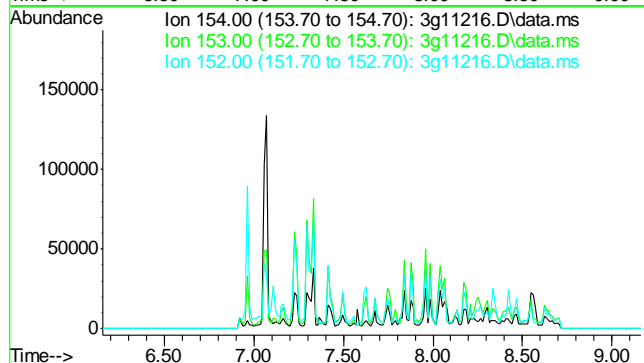




#11
Acenaphthene
Concen: N.D. ug/mL
Expected RT: 7.66 min

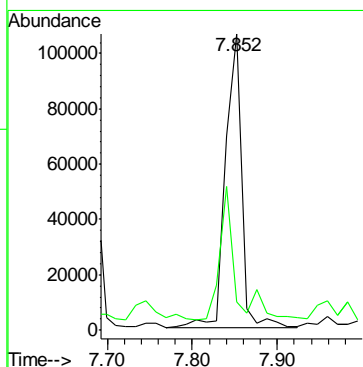
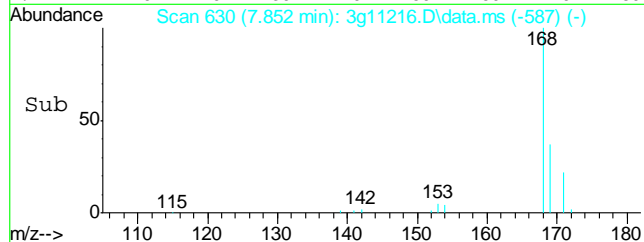
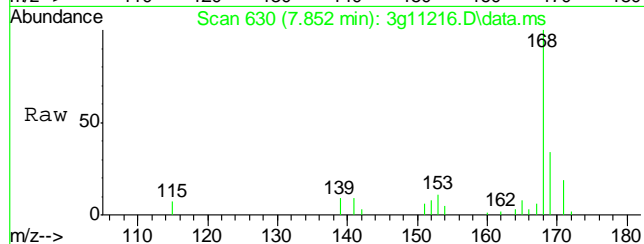
Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

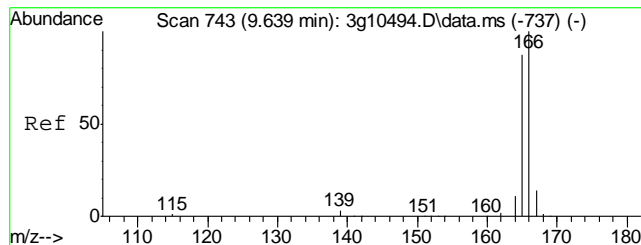
Tgt Ion: 154
Sig Exp Ratio
154 100
153 104.8
152 49.9



#12
Dibenzofuran
Concen: 2.5062 ug/mL
RT: 7.852 min Scan# 630
Delta R.T. 0.012 min
Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

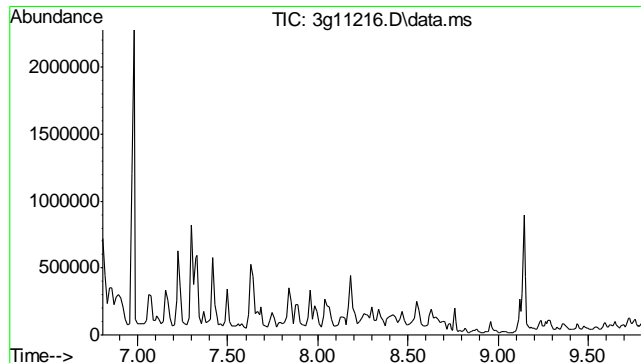
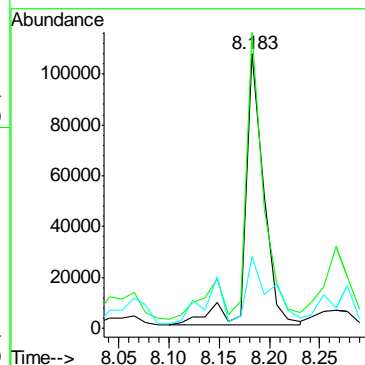
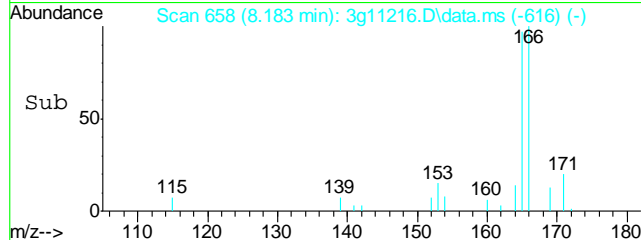
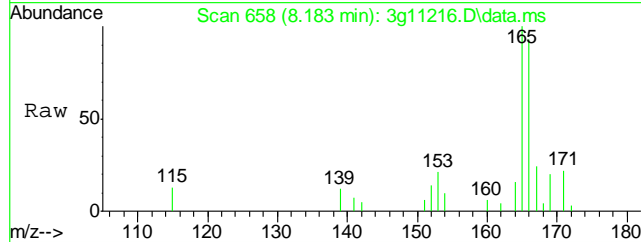
Tgt Ion: 168 Resp: 140367
Ion Ratio Lower Upper
168 100
139 35.2 7.6 47.6





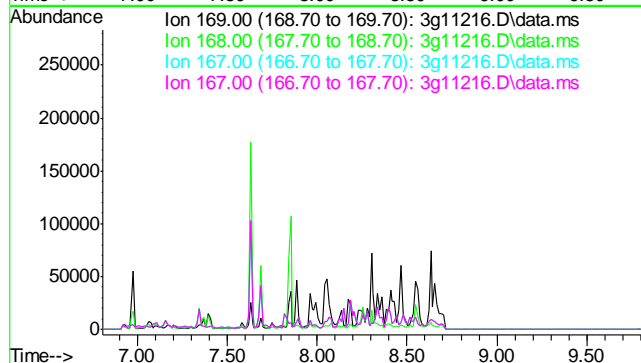
#13
Fluorene
Concen: 2.9657 ug/mL
RT: 8.183 min Scan# 658
Delta R.T. -0.000 min
Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

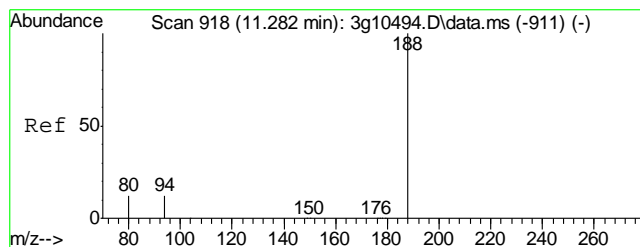
Tgt Ion	166	165	167
Resp	132917	117.0	32.0
Ratio	100	71.1	0.0
Lower			
Upper		111.1#	33.3



#14
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 8.30 min
Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

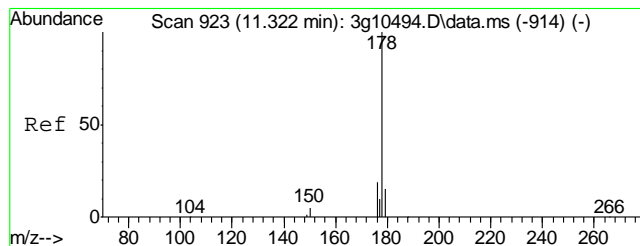
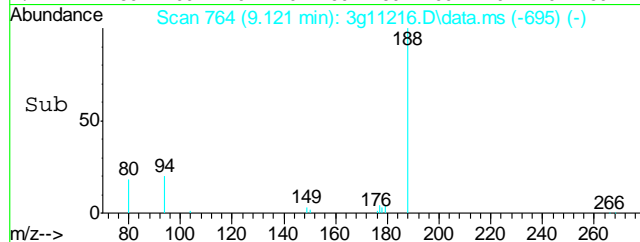
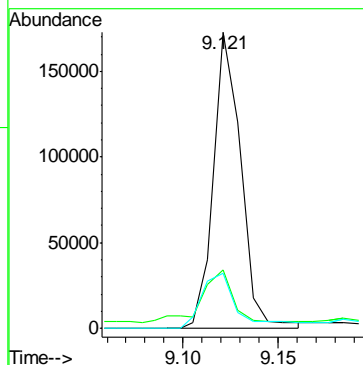
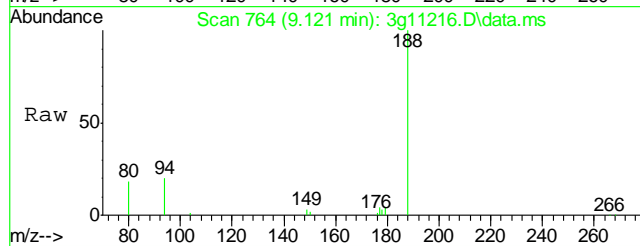
Tgt Ion	169	168	167	166
Sig				
Exp Ratio	100	61.0	32.9	32.9





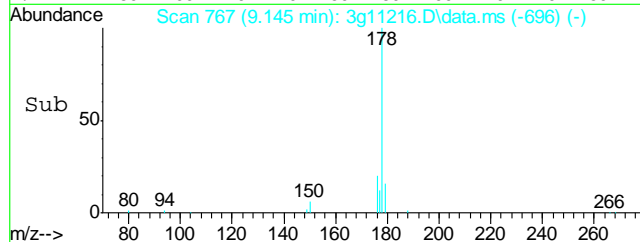
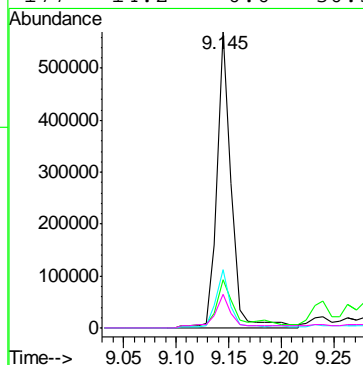
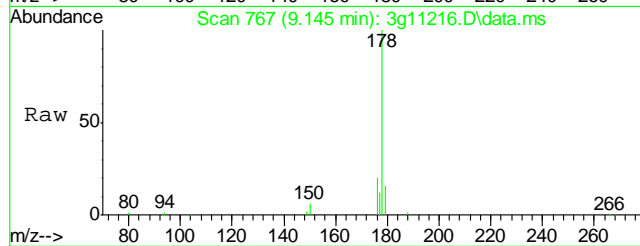
#15
Phenanthrene-d10
Concen: 4.0000 ug/mL
RT: 9.121 min Scan# 764
Delta R.T. -0.000 min
Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

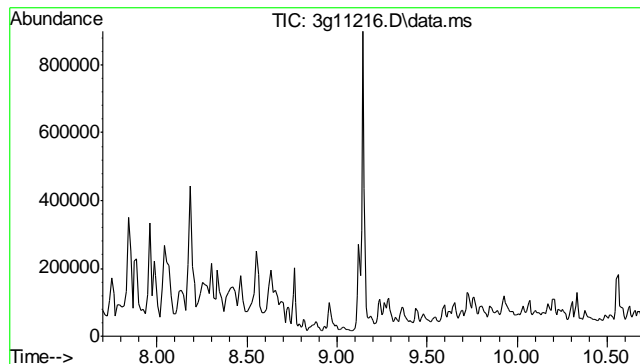
Tgt Ion:188	Resp: 166923
Ion Ratio	Lower Upper
188 100	
94 19.7	0.0 33.9
80 25.8	0.0 35.5



#16
Phenanthrene
Concen: 9.0193 ug/mL
RT: 9.145 min Scan# 767
Delta R.T. 0.008 min
Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

Tgt Ion:178	Resp: 528163
Ion Ratio	Lower Upper
178 100	
179 24.2	0.0 35.3
176 19.7	0.0 38.5
177 14.2	0.0 30.5

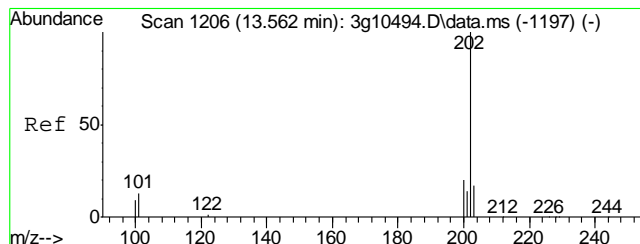
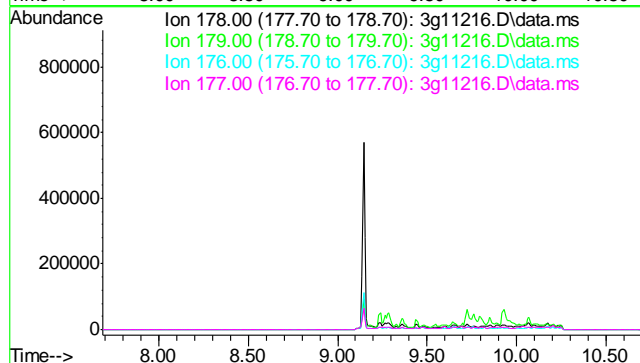




#17
 Anthracene
 Concen: N.D. ug/mL
 Expected RT: 9.19 min

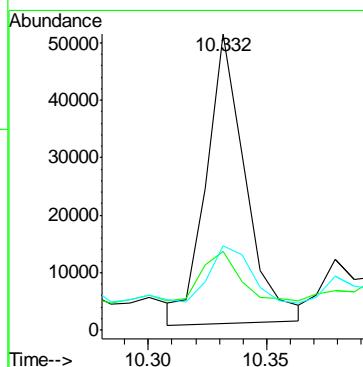
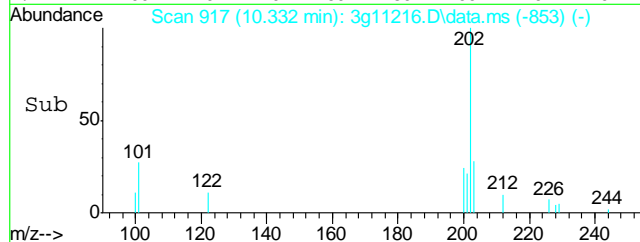
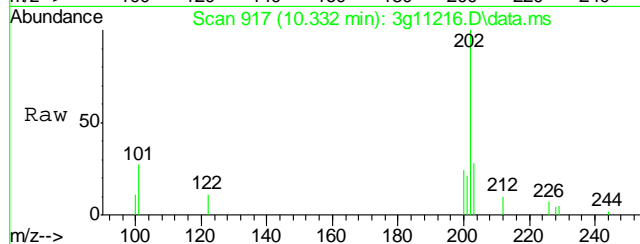
 Lab File: 3g11216.D
 Acq: 13 Sep 12 4:22 am

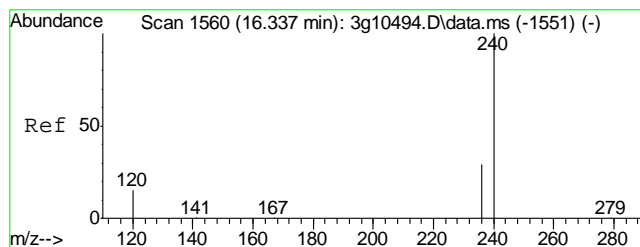
Tgt Ion: 178
 Sig Exp Ratio
 178 100
 179 15.2
 176 17.7
 177 9.0



#18
 Fluoranthene
 Concen: 0.8547 ug/mL
 RT: 10.332 min Scan# 917
 Delta R.T. 0.008 min
 Lab File: 3g11216.D
 Acq: 13 Sep 12 4:22 am

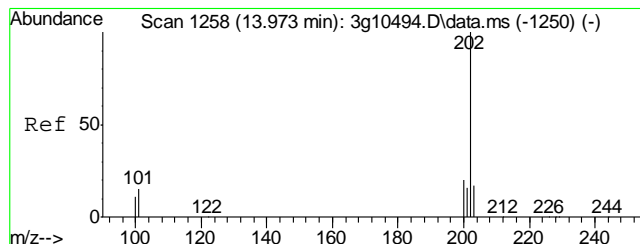
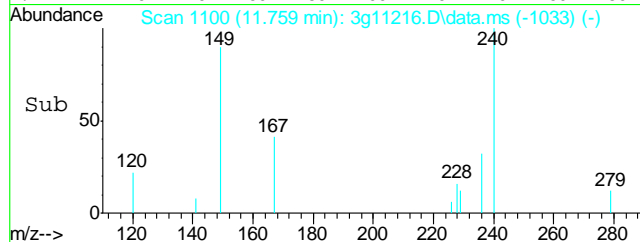
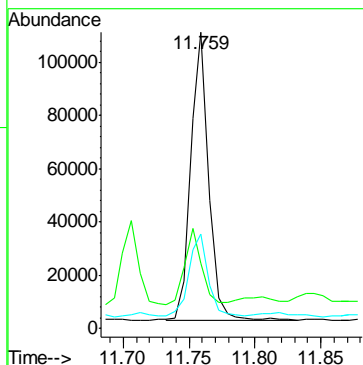
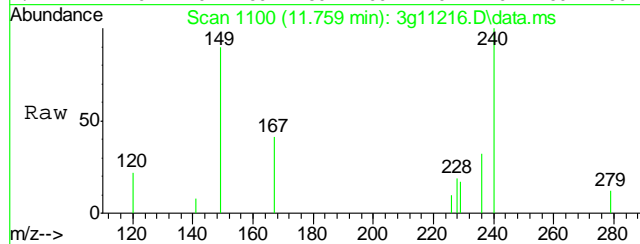
Tgt Ion: 202 Resp: 58840
 Ion Ratio Lower Upper
 202 100
 101 29.5 0.0 33.0
 203 37.1 0.0 37.4





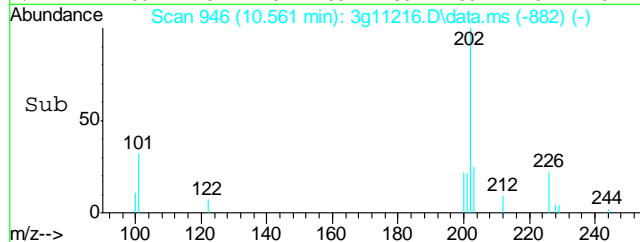
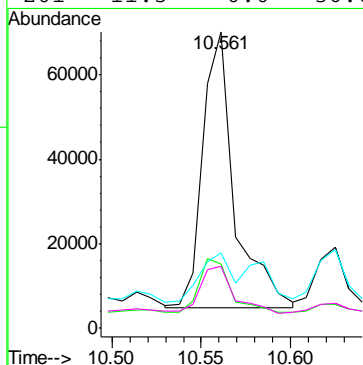
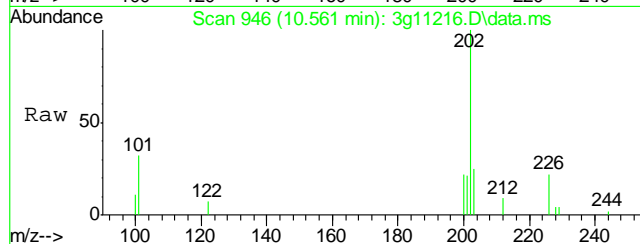
#19
Chrysene-d12
Concen: 4.0000 ug/mL
RT: 11.759 min Scan# 1100
Delta R.T. 0.006 min
Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

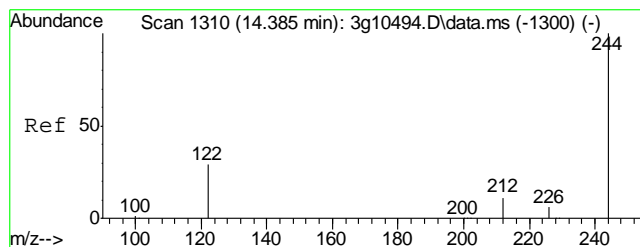
Tgt Ion:	240	Resp:	103113
Ion Ratio	Lower	Upper	
240	100		
120	28.3	0.0	36.2
236	33.1	8.8	48.8



#20
Pyrene
Concen: 1.6532 ug/mL m
RT: 10.561 min Scan# 946
Delta R.T. 0.008 min
Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

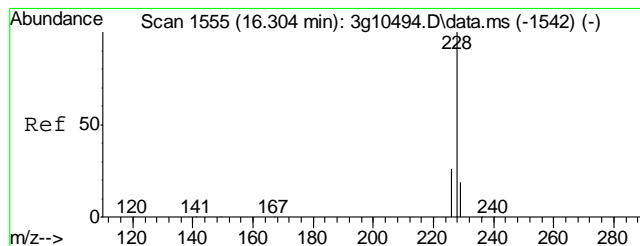
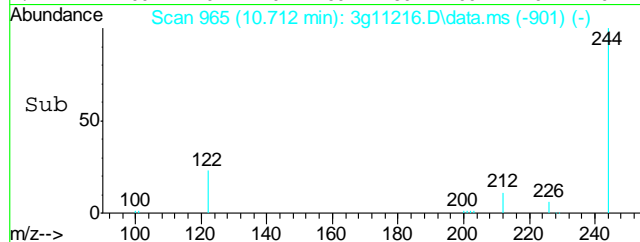
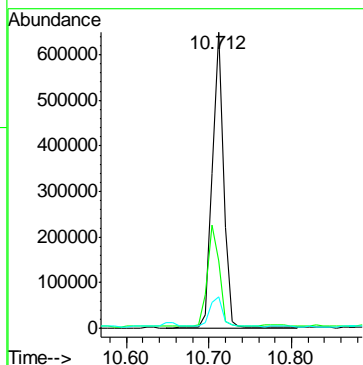
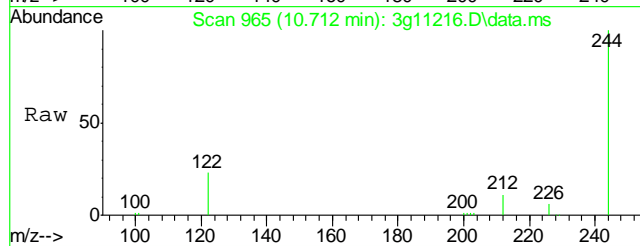
Tgt Ion:	202	Resp:	81603
Ion Ratio	Lower	Upper	
202	100		
200	14.7	0.1	40.1
203	26.8	0.0	37.8
201	11.5	0.0	36.6





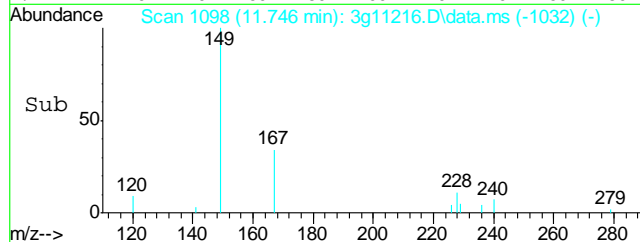
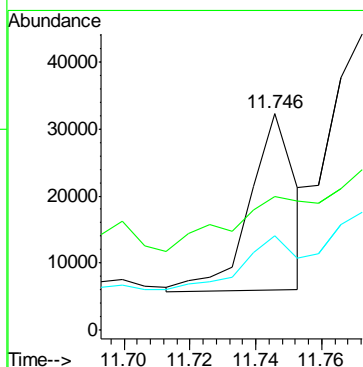
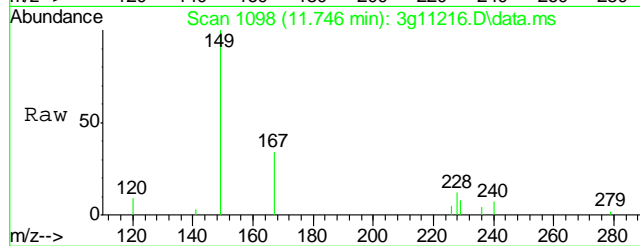
#21
Terphenyl-d14
Concen: 38.4583 ug/mL
RT: 10.712 min Scan# 965
Delta R.T. 0.008 min
Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

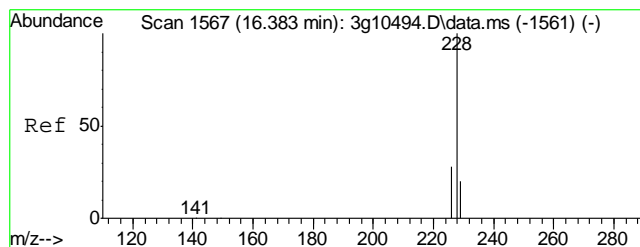
Tgt Ion:	244	Resp:	597509
Ion Ratio	Lower	Upper	
244	100		
122	36.1	1.3	41.3
212	11.7	0.0	28.8



#22
Benzo(a)anthracene
Concen: 0.5853 ug/mL
RT: 11.746 min Scan# 1098
Delta R.T. 0.006 min
Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

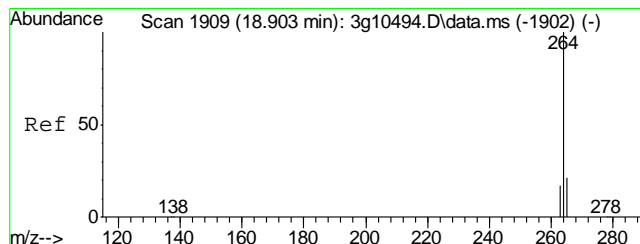
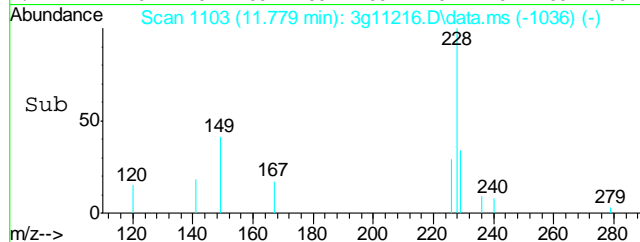
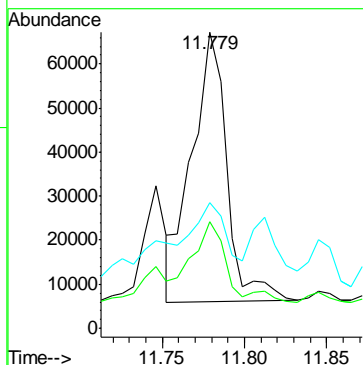
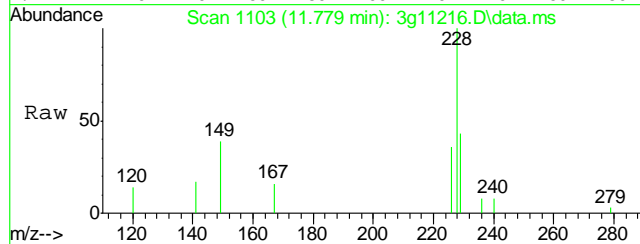
Tgt Ion:	228	Resp:	25631
Ion Ratio	Lower	Upper	
228	100		
229	0.0	0.0	39.6
226	40.7	6.6	46.6





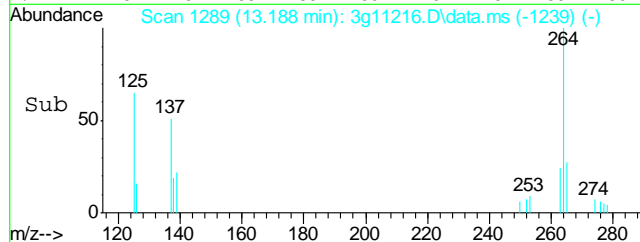
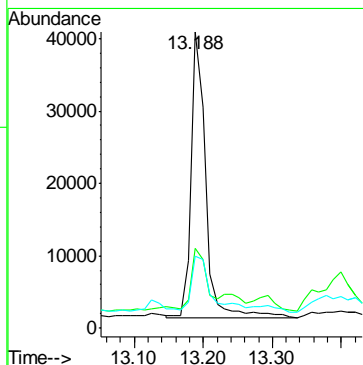
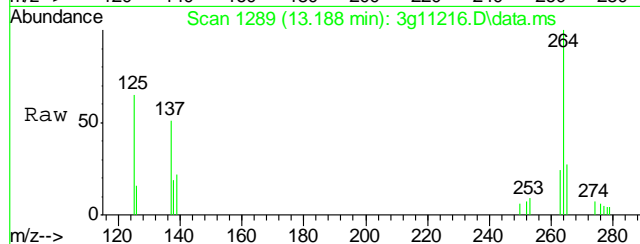
#23
Chrysene
Concen: 1.9284 ug/mL
RT: 11.779 min Scan# 1103
Delta R.T. 0.006 min
Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

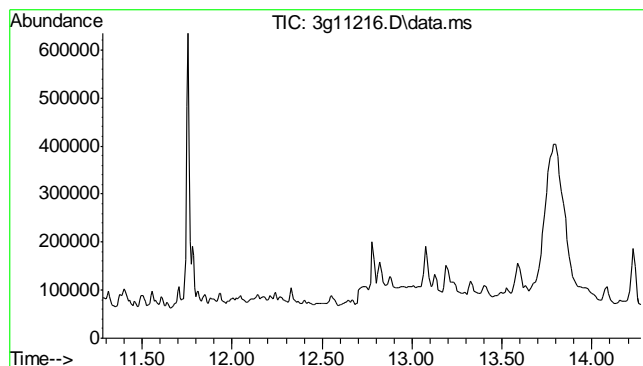
Tgt Ion:	228	Resp:	89394
Ion Ratio	Lower	Upper	
228	100		
226	32.8	8.6	48.6
229	46.0	0.0	39.4



#24
Perylene-d12
Concen: 4.0000 ug/mL
RT: 13.188 min Scan# 1289
Delta R.T. 0.010 min
Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

Tgt Ion:	264	Resp:	57247
Ion Ratio	Lower	Upper	
264	100		
265	21.7	1.0	41.0
263	25.1	0.0	39.0

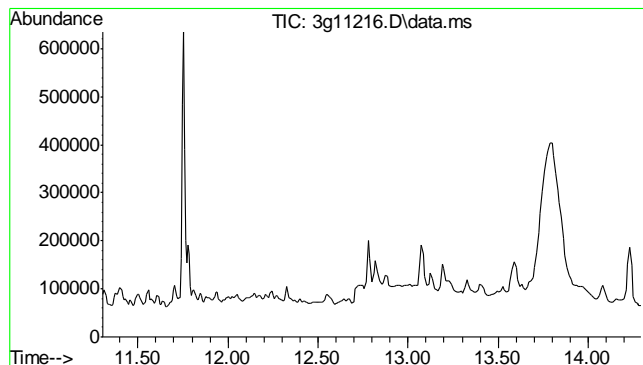
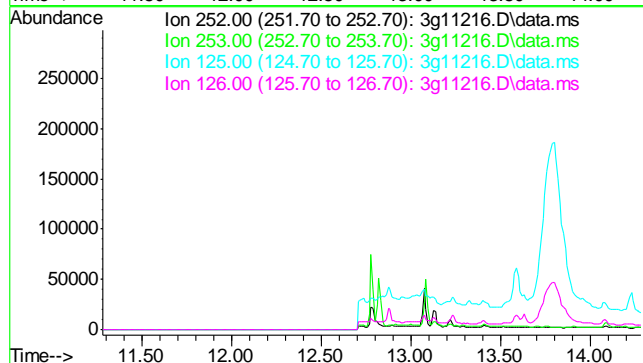




#25
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.78 min

Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

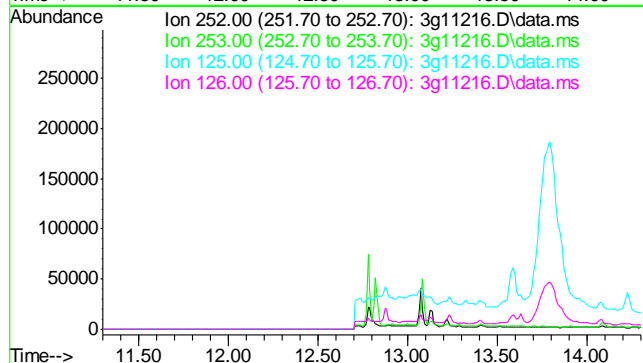
Tgt Ion	252	253	125	126
Sig	100	22.9	11.5	14.7
Exp Ratio				

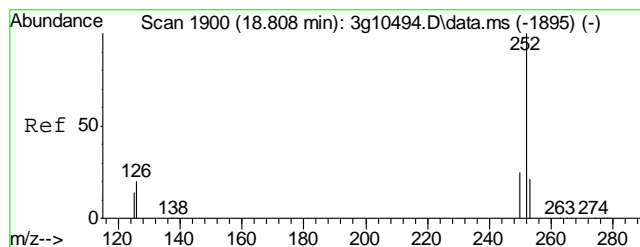


#26
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.80 min

Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

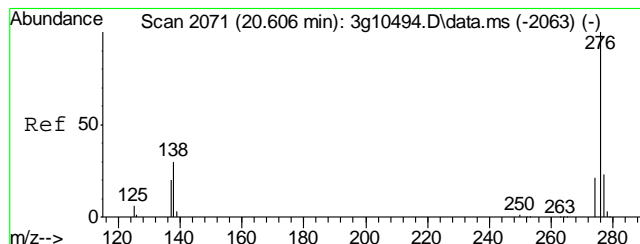
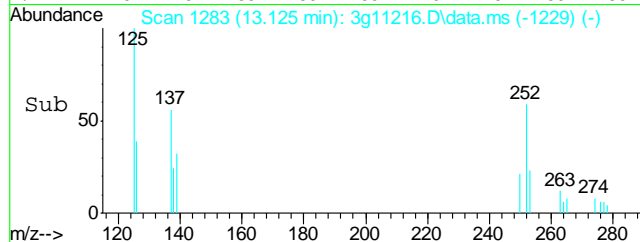
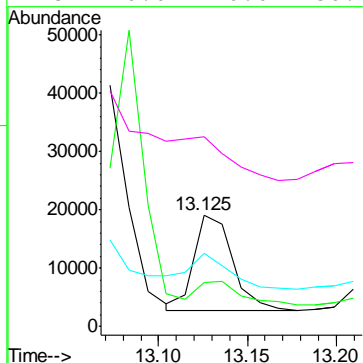
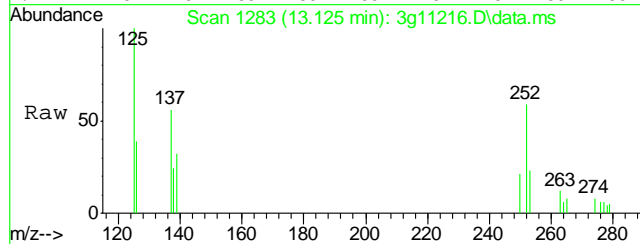
Tgt Ion	252	253	125	126
Sig	100	21.8	11.0	14.0
Exp Ratio				





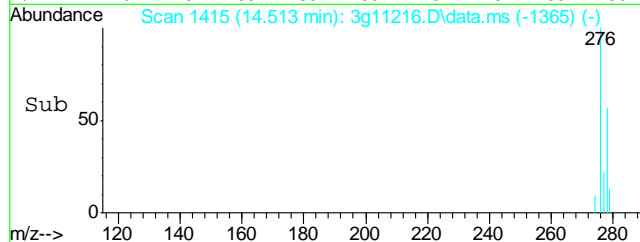
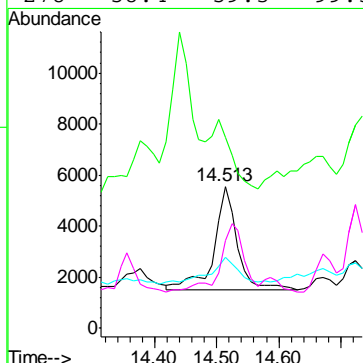
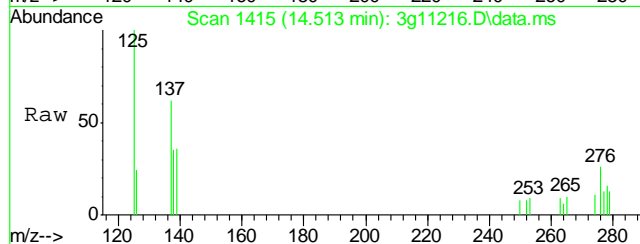
#27
Benzo(a)pyrene
Concen: 0.6250 ug/mL
RT: 13.125 min Scan# 1283
Delta R.T. 0.011 min
Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

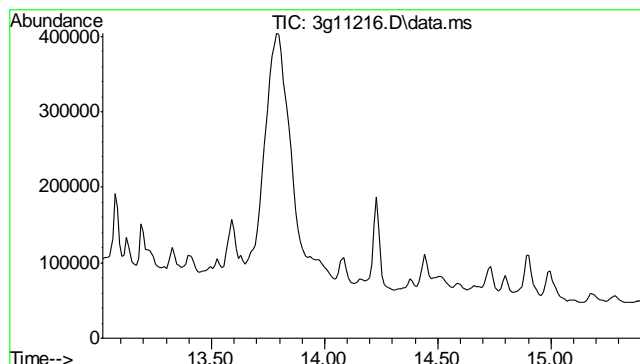
Tgt Ion:	252	Resp:	24979
Ion Ratio	Lower	Upper	
252	100		
253	28.6	1.4	41.4
126	38.3	0.0	33.6#
125	0.0	0.0	30.7



#28
Indeno(1,2,3-cd)pyrene
Concen: 0.2497 ug/mL
RT: 14.513 min Scan# 1415
Delta R.T. 0.021 min
Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

Tgt Ion:	276	Resp:	10764
Ion Ratio	Lower	Upper	
276	100		
138	53.3	5.3	45.3#
277	32.6	5.0	45.0
278	58.4	59.3	99.3#

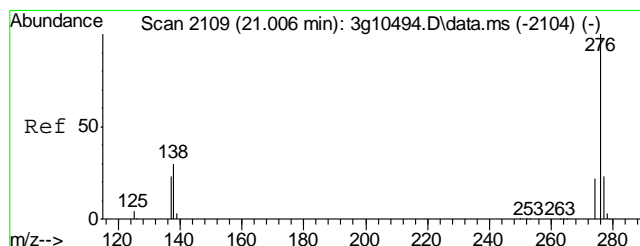
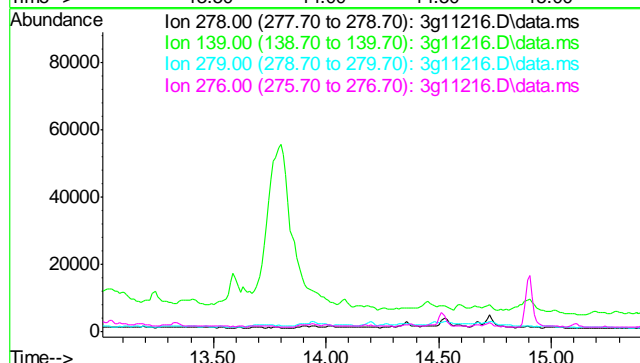




#29
Dibenz(a,h)anthracene
Concen: N.D. ug/mL
Expected RT: 14.51 min

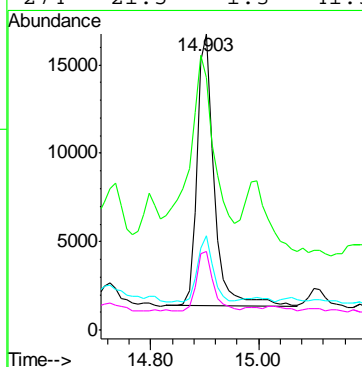
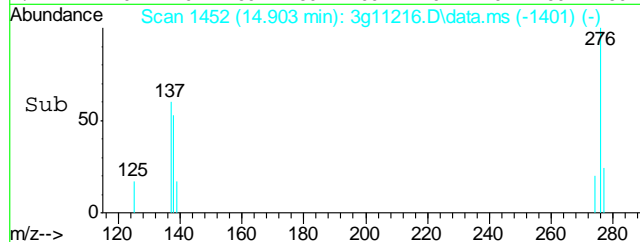
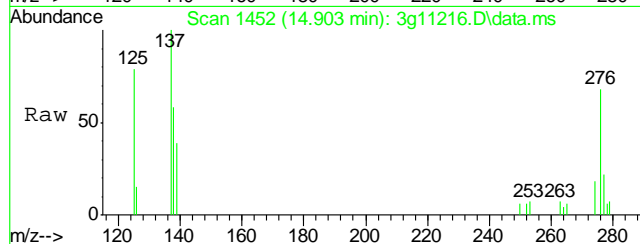
Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

Tgt Ion	Exp Ratio
278	100
139	18.4
279	23.1
276	126.1



#30
Benzo(g,h,i)perylene
Concen: 0.9346 ug/mL
RT: 14.903 min Scan# 1452
Delta R.T. 0.032 min
Lab File: 3g11216.D
Acq: 13 Sep 12 4:22 am

Tgt Ion	Ratio	Lower	Upper
276	100		
138	98.9	1.3	41.3#
277	21.4	3.4	43.4
274	21.5	1.3	41.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\091212\
 Data File : 3g11217.D
 Acq On : 13 Sep 2012 4:45 am
 Operator : DONC
 Sample : D38480-3
 Misc : OP6602,E3G522,30.17,,,1,1
 ALS Vial : 28 Sample Multiplier: 1

Quant Time: Sep 13 13:14:54 2012
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G511.M
 Quant Title : PAHSIM BASE
 QLast Update : Thu Sep 06 09:42:23 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.921	136	175953	4.0000	ug/mL	0.00
6) Acenaphthene-d10	7.639	164	109721	4.0000	ug/mL	0.00
15) Phenanthrene-d10	9.121	188	164625	4.0000	ug/mL	0.00
19) Chrysene-d12	11.759	240	101610	4.0000	ug/mL	0.00
24) Perylene-d12	13.188	264	58034	4.0000	ug/mL	0.01

System Monitoring Compounds

2) Nitrobenzene-d5	5.236	82	720817	41.6379	ug/mL	0.01
Spiked Amount 50.000	Range 25 - 135		Recovery =	83.28%		
7) 2-Fluorobiphenyl	6.978	172	1508827	33.0585	ug/mL	0.01
Spiked Amount 50.000	Range 25 - 135		Recovery =	66.12%		
21) Terphenyl-d14	10.712	244	588930	38.4668	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery =	76.94%		

Target Compounds

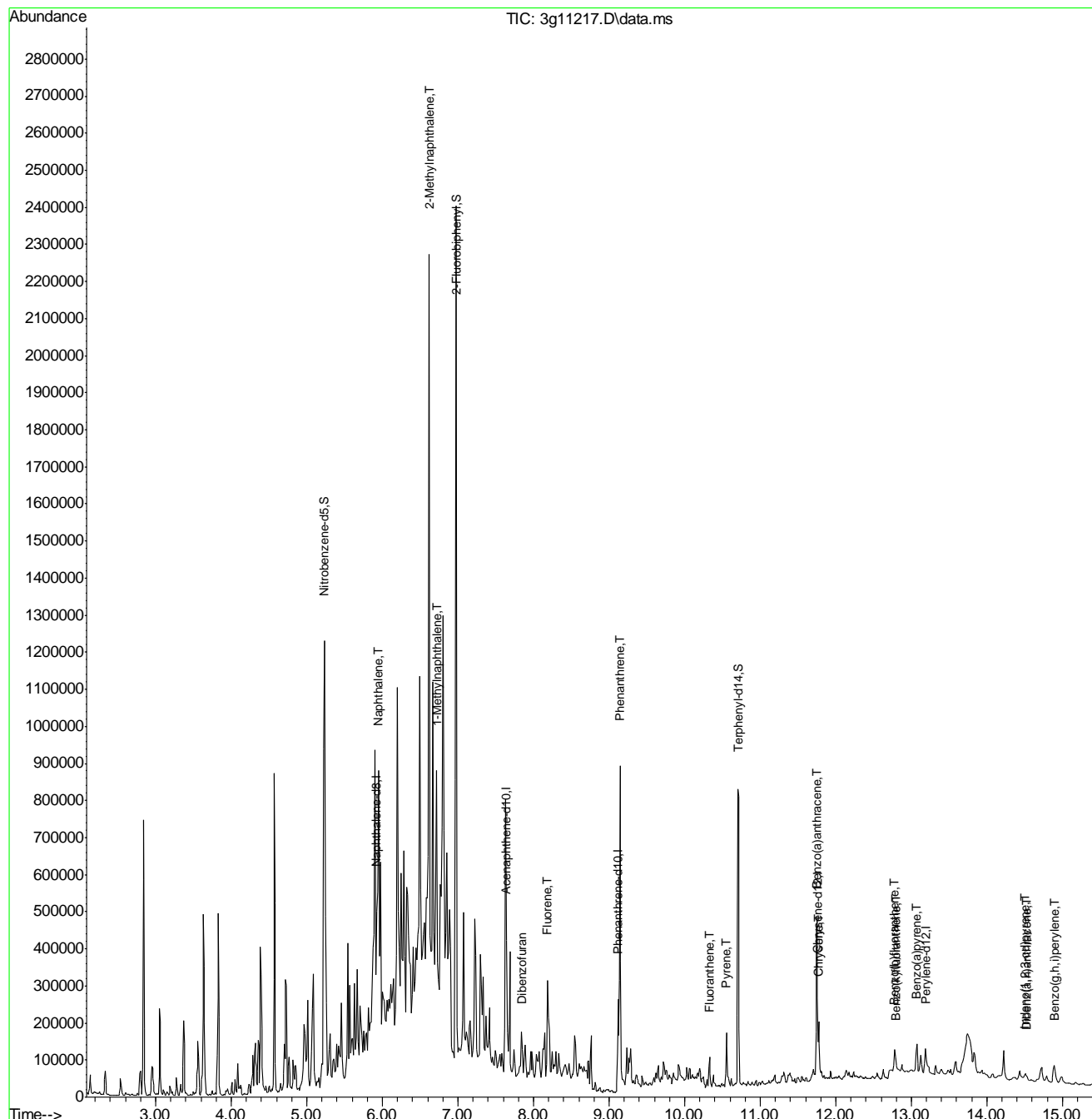
						Qvalue
3) N-Nitrosodimethylamine	0.000	74	0	N.D.	d	
4) N-Nitrosodi-propylamine	0.000	70	0	N.D.	d	
5) Naphthalene	5.946	128	581572	11.8773	ug/mL	97
8) 2-Methylnaphthalene	6.620	142	828664	25.5460	ug/mL	94
9) 1-Methylnaphthalene	6.719	142	253019	7.5374	ug/mL	96
10) Acenaphthylene	0.000	152	0	N.D.	d	
11) Acenaphthene	0.000	154	0	N.D.	d	
12) Dibenzofuran	7.852	168	35806	0.6394	ug/mL	88
13) Fluorene	8.183	166	153129	3.4171	ug/mL#	88
14) Diphenylamine	0.000	169	0	N.D.	d	
16) Phenanthrene	9.144	178	483183	8.3663	ug/mL	93
17) Anthracene	0.000	178	0	N.D.	d	
18) Fluoranthene	10.332	202	57097	0.8410	ug/mL	68
20) Pyrene	10.553	202	82508	1.6963	ug/mL	91
22) Benzo(a)anthracene	11.746	228	32939	0.7633	ug/mL	87
23) Chrysene	11.779	228	121299m	2.6553	ug/mL	
25) Benzo(b)fluoranthene	12.778	252	41820m	1.0834	ug/mL	
26) Benzo(k)fluoranthene	12.799	252	10297m	0.2413	ug/mL	
27) Benzo(a)pyrene	13.073	252	54669	1.3494	ug/mL	64
28) Indeno(1,2,3-cd)pyrene	14.503	276	14953	0.3421	ug/mL	92
29) Dibenz(a,h)anthracene	14.524	278	11882	0.3461	ug/mL#	82
30) Benzo(g,h,i)perylene	14.892	276	41127m	1.1020	ug/mL	

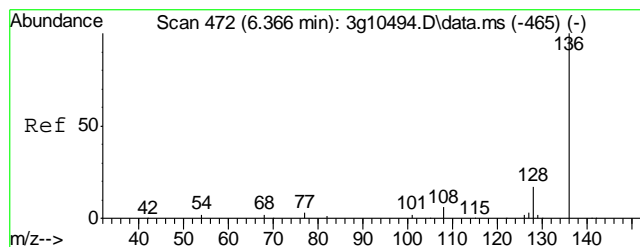
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\091212\
 Data File : 3g11217.D
 Acq On : 13 Sep 2012 4:45 am
 Operator : DONC
 Sample : D38480-3
 Misc : OP6602,E3G522,30.17,,,1,1
 ALS Vial : 28 Sample Multiplier: 1

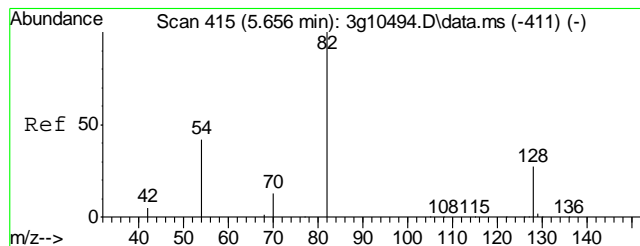
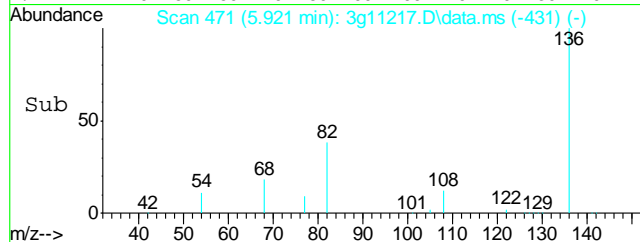
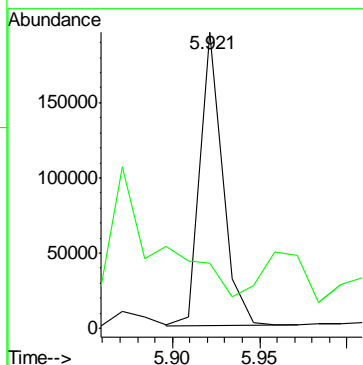
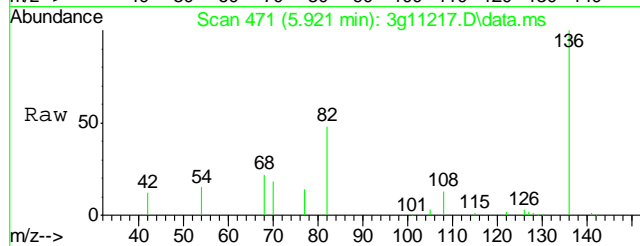
Quant Time: Sep 13 13:14:54 2012
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G511.M
 Quant Title : PAHSIM BASE
 QLast Update : Thu Sep 06 09:42:23 2012
 Response via : Initial Calibration





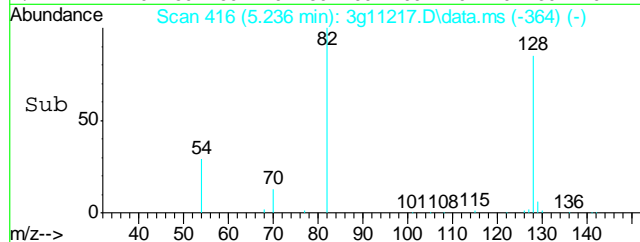
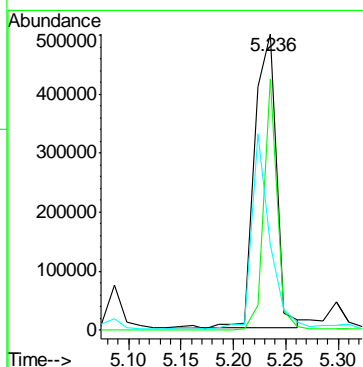
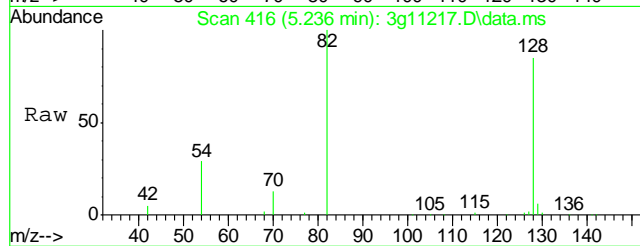
#1
Naphthalene-d8
Concen: 4.0000 ug/mL
RT: 5.921 min Scan# 471
Delta R.T. -0.000 min
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

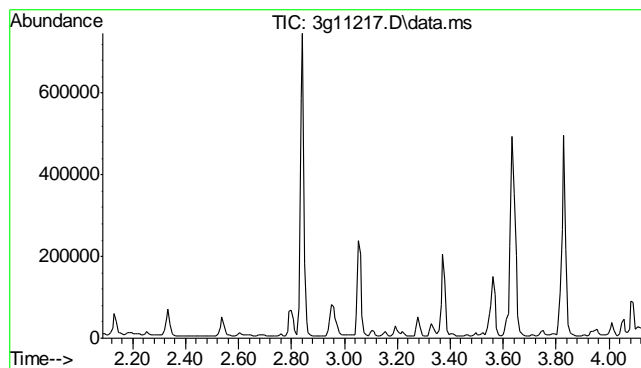
Tgt Ion	Ratio	Lower	Upper
136	100		
68	29.7	0.0	30.4



#2
Nitrobenzene-d5
Concen: 41.6379 ug/mL
RT: 5.236 min Scan# 416
Delta R.T. 0.013 min
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

Tgt Ion	Ratio	Lower	Upper
82	100		
128	53.6	19.7	59.7
54	57.8	28.6	68.6

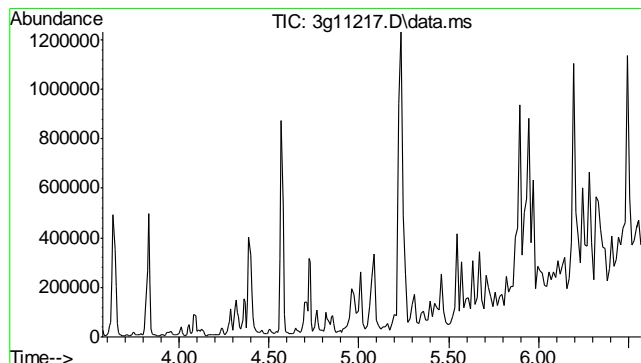
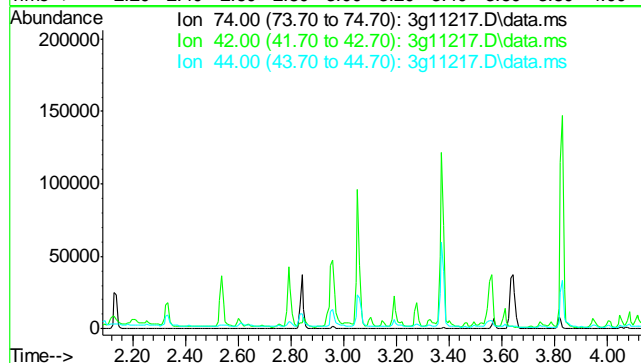




#3
N-Nitrosodimethylamine
Concen: N.D. ug/mL
Expected RT: 2.62 min

Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

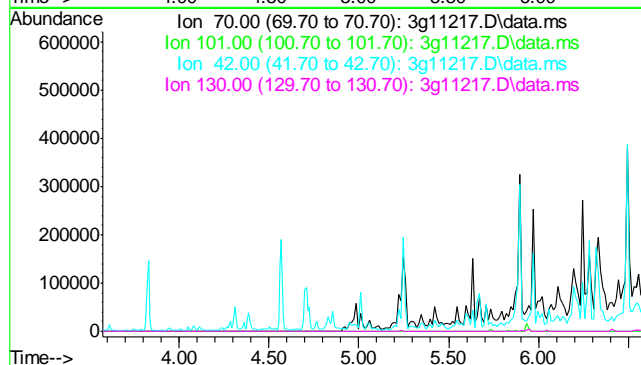
Tgt Ion	Exp Ratio
74	100
42	53.3
44	3.5

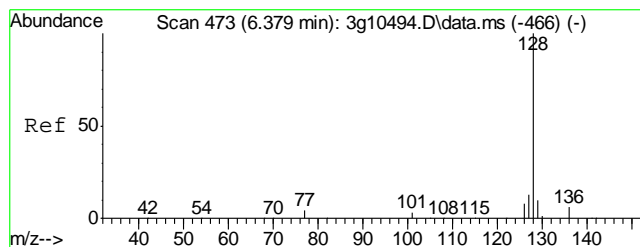


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 5.07 min

Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

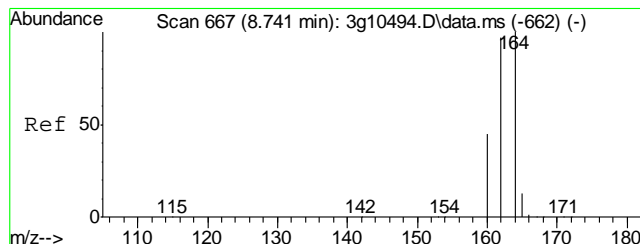
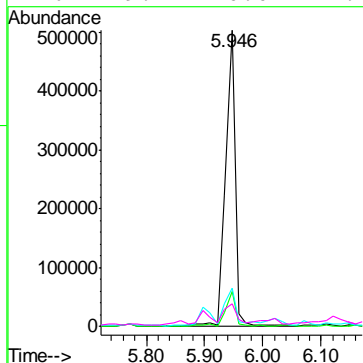
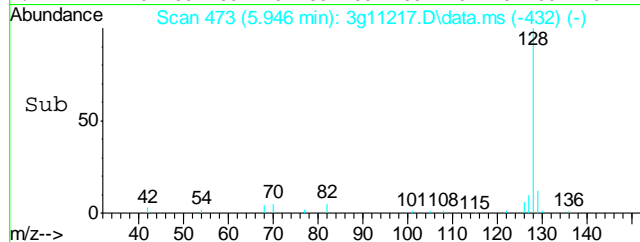
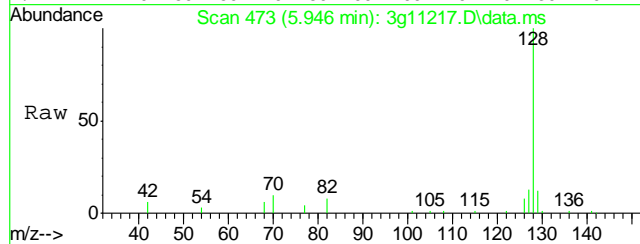
Tgt Ion	Exp Ratio
70	100
101	10.3
42	47.6
130	20.0





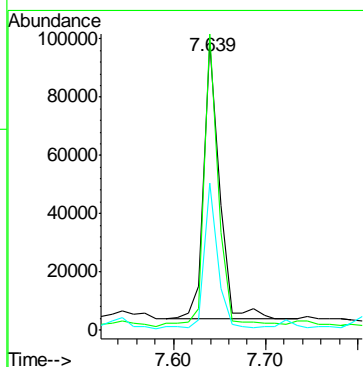
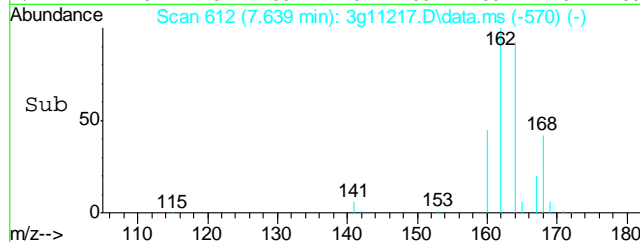
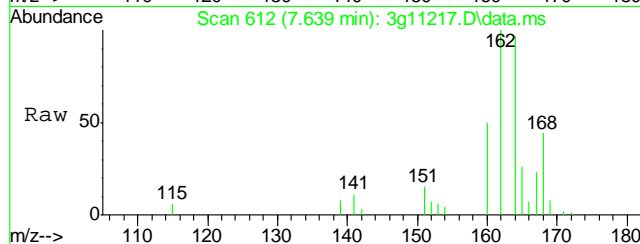
#5
Naphthalene
Concen: 11.8773 ug/mL
RT: 5.946 min Scan# 473
Delta R.T. 0.012 min
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

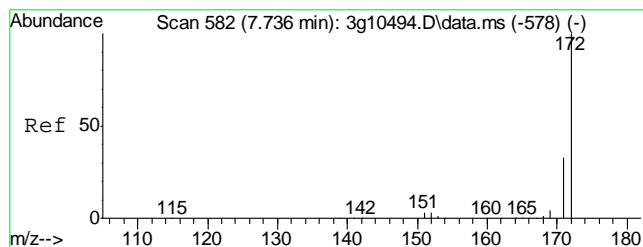
Tgt Ion:	128	Resp:	581572
Ion Ratio	Lower	Upper	
128	100		
129	12.4	0.0	30.8
127	13.9	0.0	33.4
126	9.1	0.0	27.7



#6
Acenaphthene-d10
Concen: 4.0000 ug/mL
RT: 7.639 min Scan# 612
Delta R.T. -0.000 min
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

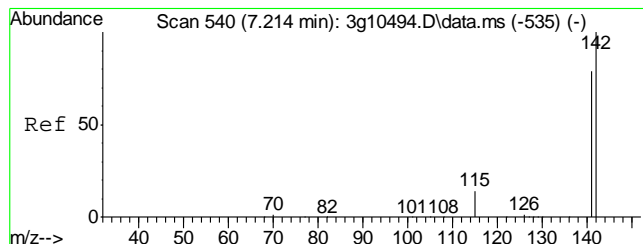
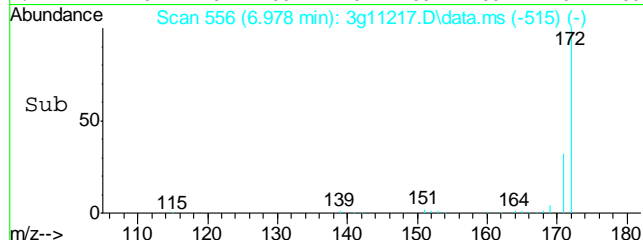
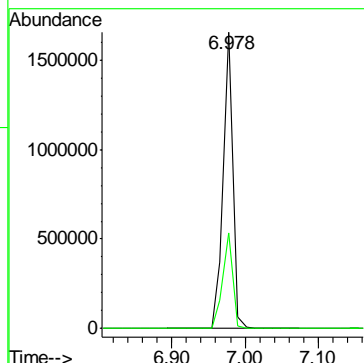
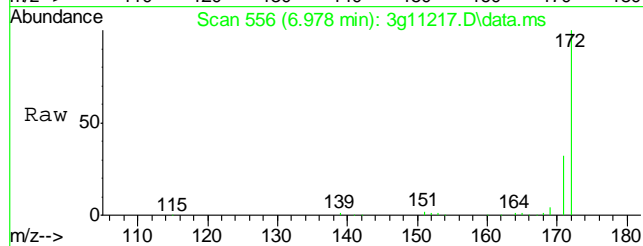
Tgt Ion:	164	Resp:	109721
Ion Ratio	Lower	Upper	
164	100		
162	97.4	73.5	113.5
160	45.3	21.8	61.8





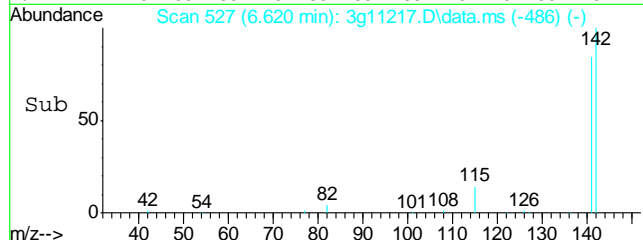
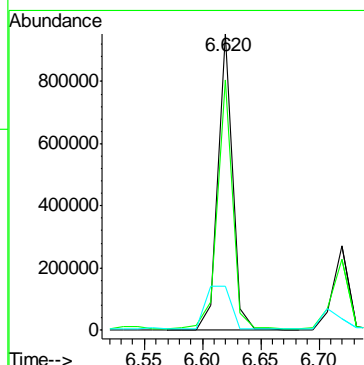
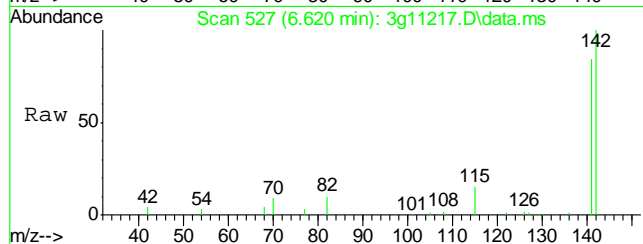
#7
2-Fluorobiphenyl
Concen: 33.0585 ug/mL
RT: 6.978 min Scan# 556
Delta R.T. 0.012 min
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

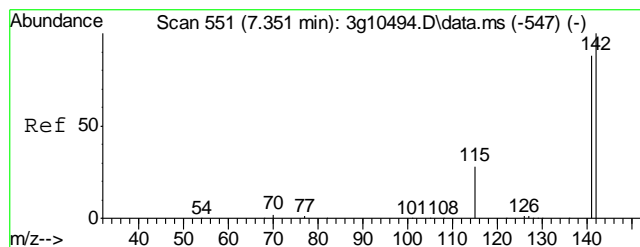
Tgt Ion	Ratio	Lower	Upper
172	100		
171	33.9	13.6	53.6



#8
2-Methylnaphthalene
Concen: 25.5460 ug/mL
RT: 6.620 min Scan# 527
Delta R.T. 0.012 min
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

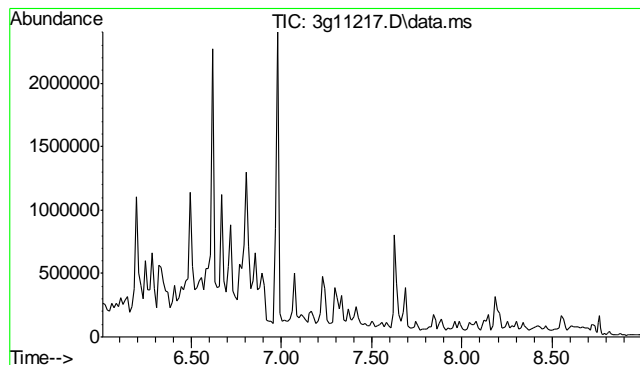
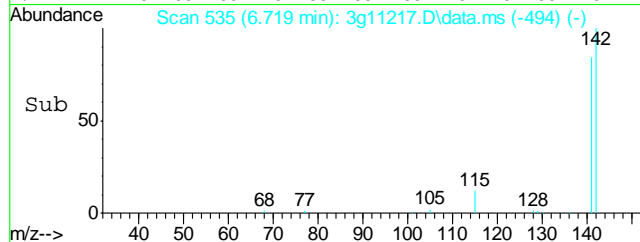
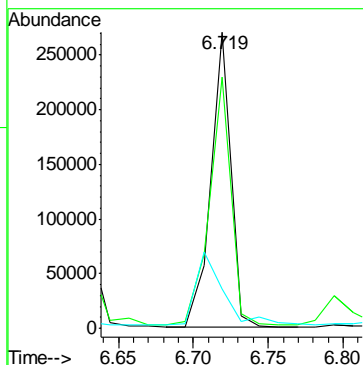
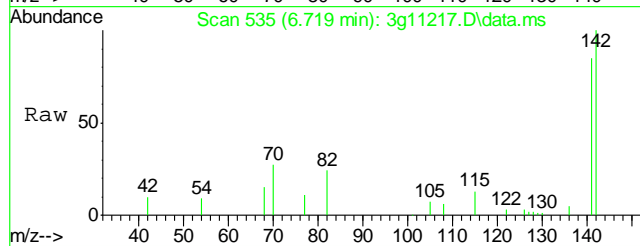
Tgt Ion	Ratio	Lower	Upper
142	100		
141	87.4	64.5	104.5
115	25.5	13.6	53.6





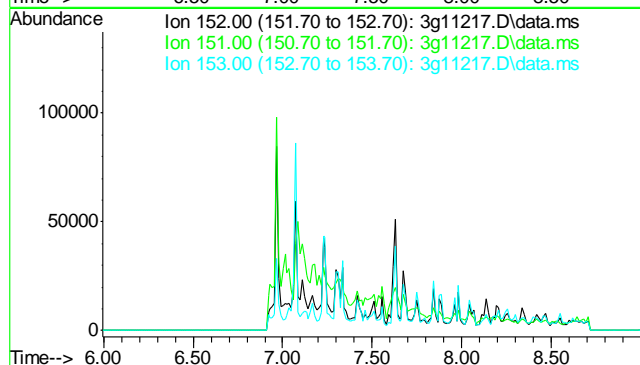
#9
1-Methylnaphthalene
Concen: 7.5374 ug/mL
RT: 6.719 min Scan# 535
Delta R.T. 0.012 min
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

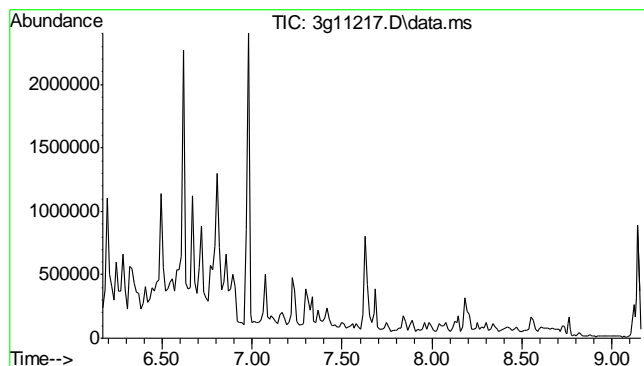
Tgt Ion:	142	Resp:	253019
Ion Ratio	Lower	Upper	
142	100		
141	90.9	67.8	107.8
115	34.7	11.0	51.0



#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 7.50 min
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

Tgt Ion:	152
Sig	Exp Ratio
152	100
151	19.2
153	13.2

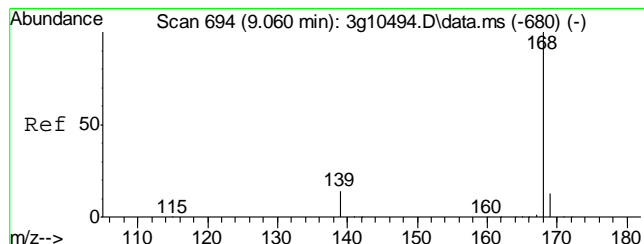
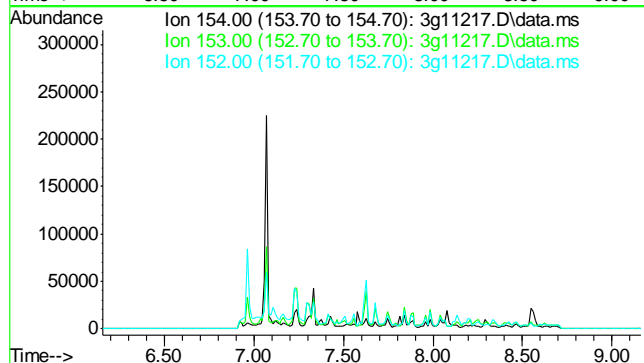




#11
Acenaphthene
Concen: N.D. ug/mL
Expected RT: 7.66 min

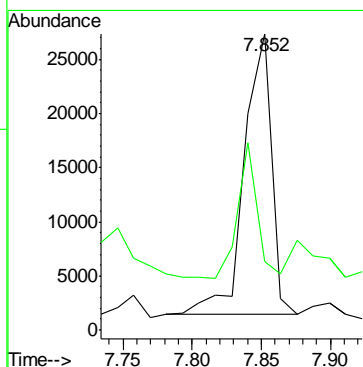
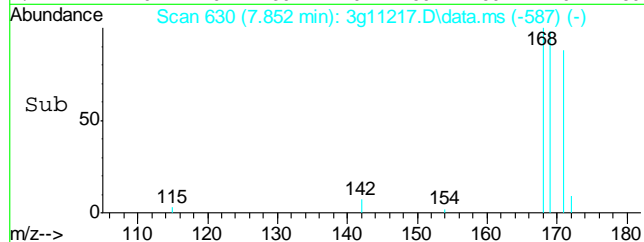
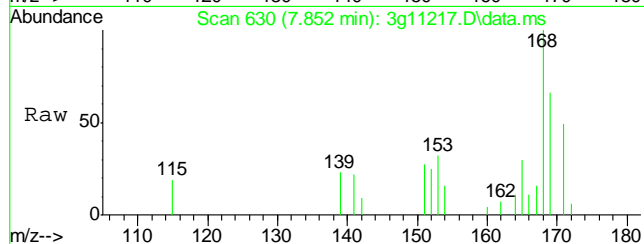
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

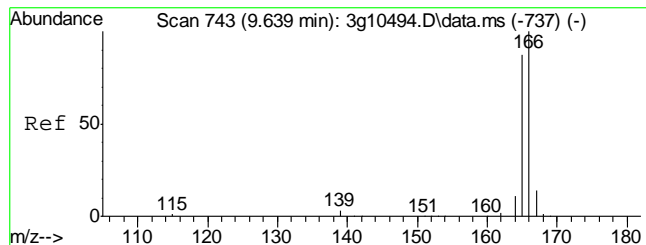
Tgt Ion: 154
Sig Exp Ratio
154 100
153 104.8
152 49.9



#12
Dibenzofuran
Concen: 0.6394 ug/mL
RT: 7.852 min Scan# 630
Delta R.T. 0.012 min
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

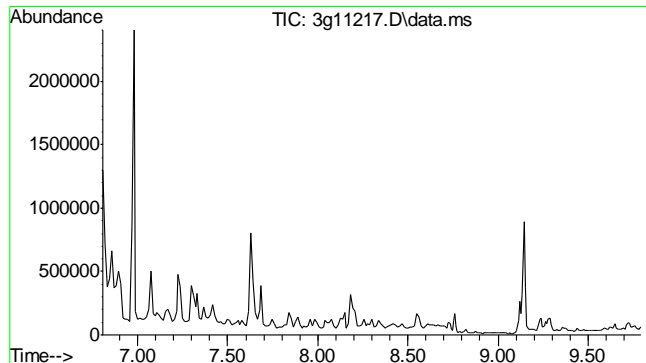
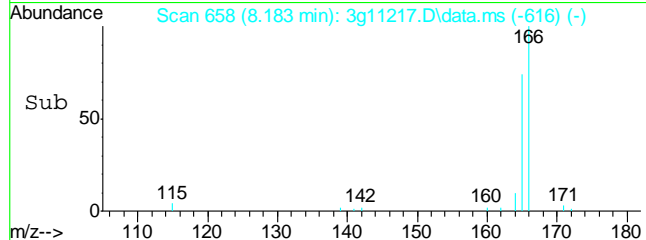
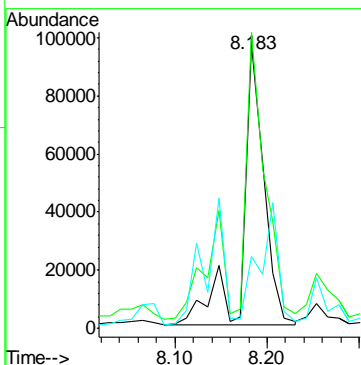
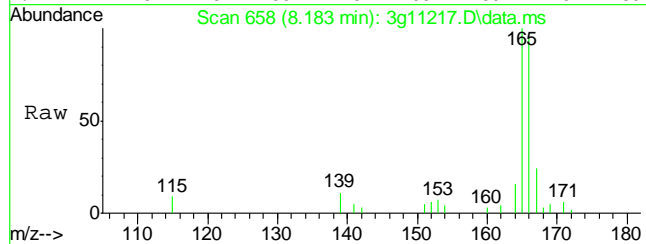
Tgt Ion: 168 Resp: 35806
Ion Ratio Lower Upper
168 100
139 33.9 7.6 47.6





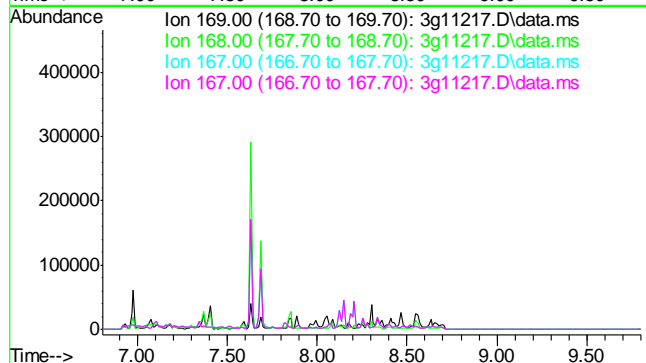
#13
Fluorene
Concen: 3.4171 ug/mL
RT: 8.183 min Scan# 658
Delta R.T. -0.000 min
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

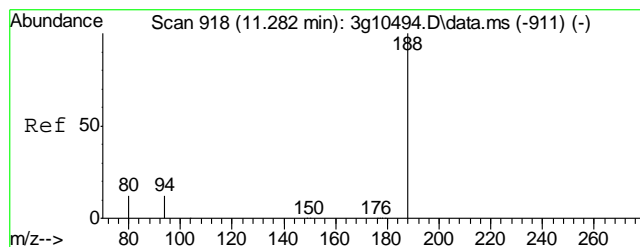
Tgt Ion:	166	Resp:	153129
Ion Ratio	Lower	Upper	
166	100		
165	86.6	71.1	111.1
167	38.0	0.0	33.3



#14
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 8.30 min
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

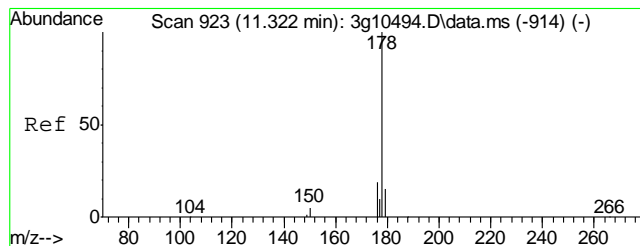
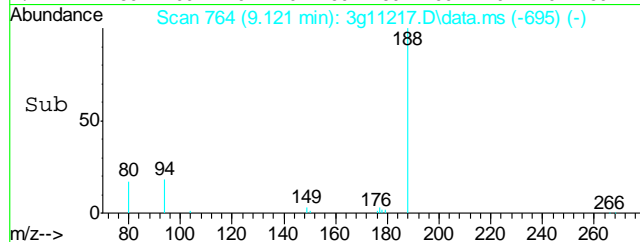
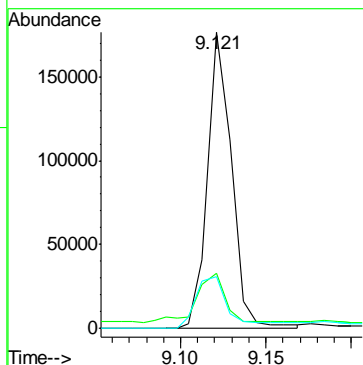
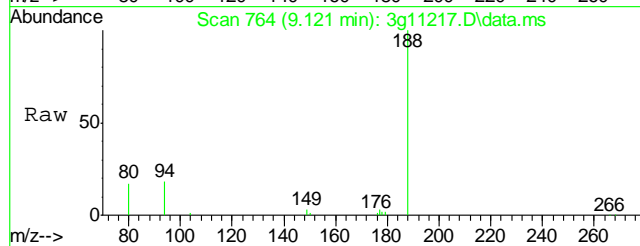
Tgt Ion:	169
Sig	Exp Ratio
169	100
168	61.0
167	32.9
167	32.9





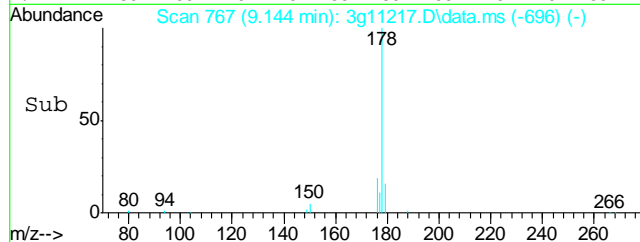
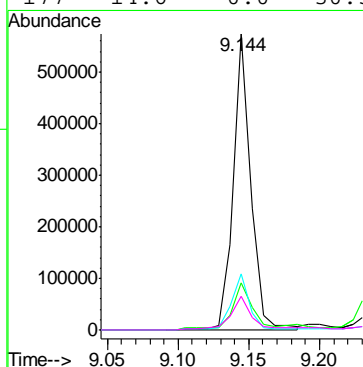
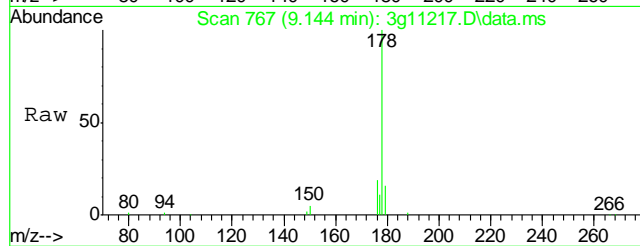
#15
Phenanthrene-d10
Concen: 4.0000 ug/mL
RT: 9.121 min Scan# 764
Delta R.T. -0.000 min
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

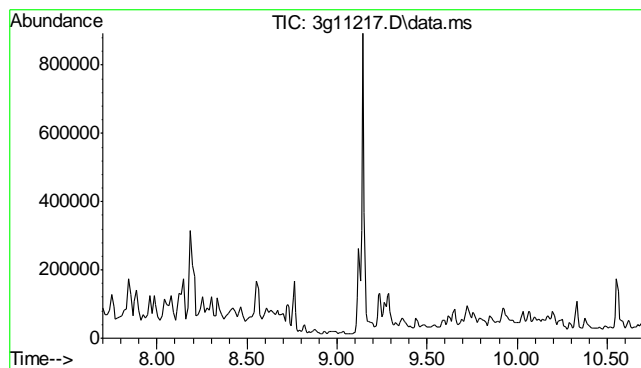
Tgt Ion:188	Resp: 164625
Ion Ratio	Lower Upper
188 100	
94 18.9	0.0 33.9
80 24.5	0.0 35.5



#16
Phenanthrene
Concen: 8.3663 ug/mL
RT: 9.144 min Scan# 767
Delta R.T. 0.008 min
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

Tgt Ion:178	Resp: 483183
Ion Ratio	Lower Upper
178 100	
179 18.7	0.0 35.3
176 19.9	0.0 38.5
177 14.6	0.0 30.5

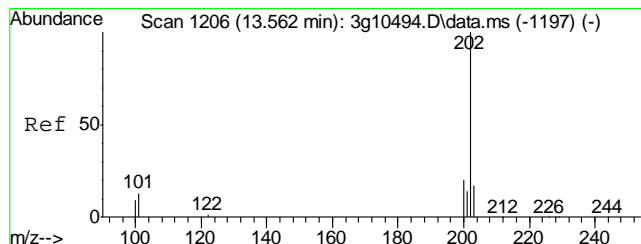
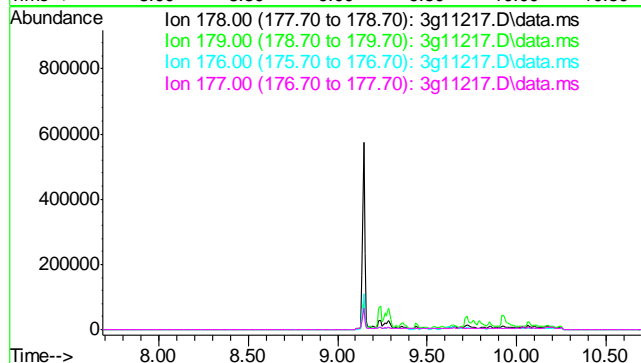




#17
 Anthracene
 Concen: N.D. ug/mL
 Expected RT: 9.19 min

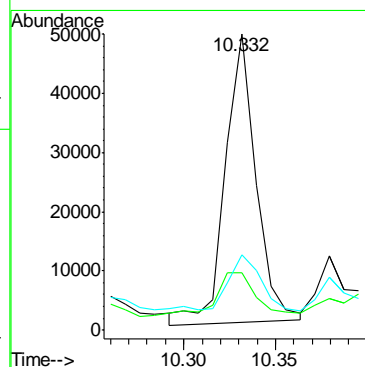
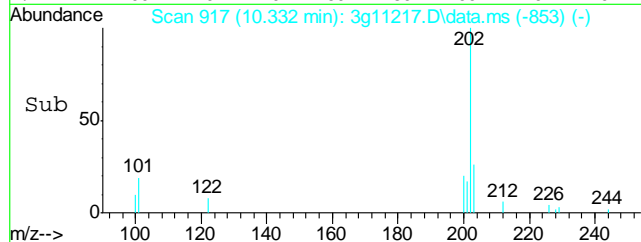
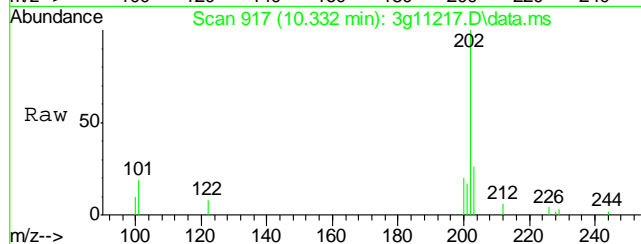
 Lab File: 3g11217.D
 Acq: 13 Sep 12 4:45 am

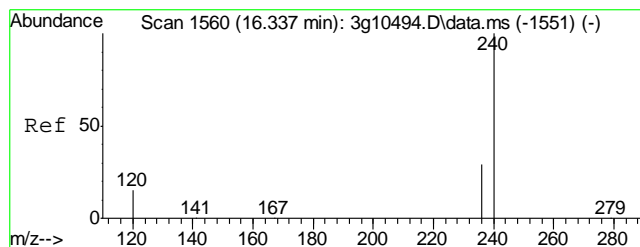
Tgt Ion: 178
 Sig Exp Ratio
 178 100
 179 15.2
 176 17.7
 177 9.0



#18
 Fluoranthene
 Concen: 0.8410 ug/mL
 RT: 10.332 min Scan# 917
 Delta R.T. 0.008 min
 Lab File: 3g11217.D
 Acq: 13 Sep 12 4:45 am

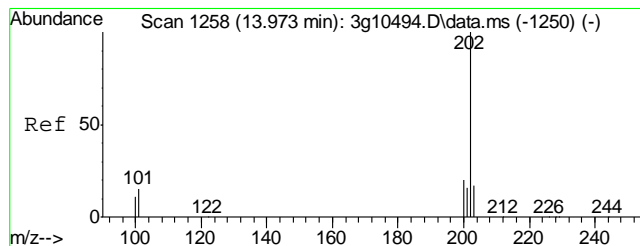
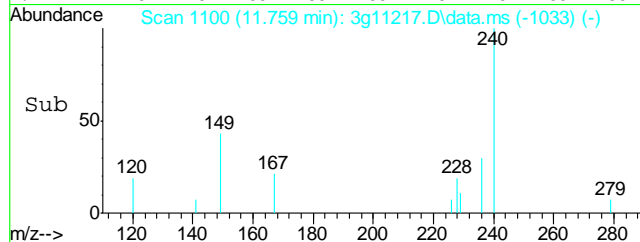
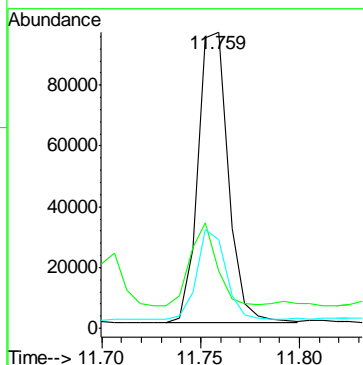
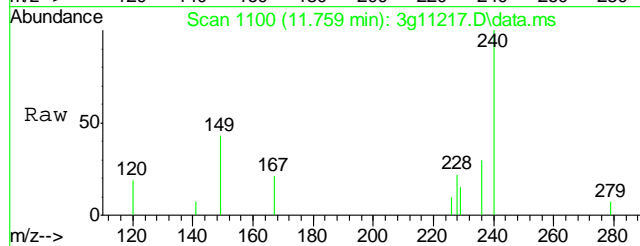
Tgt Ion: 202 Resp: 57097
 Ion Ratio Lower Upper
 202 100
 101 26.8 0.0 33.0
 203 30.6 0.0 37.4





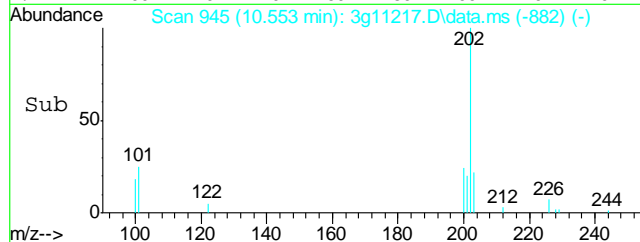
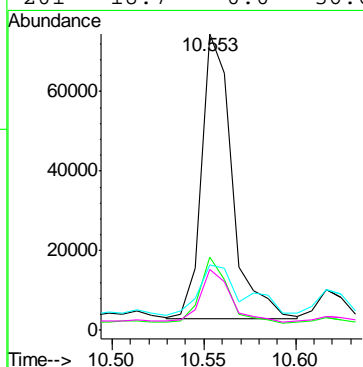
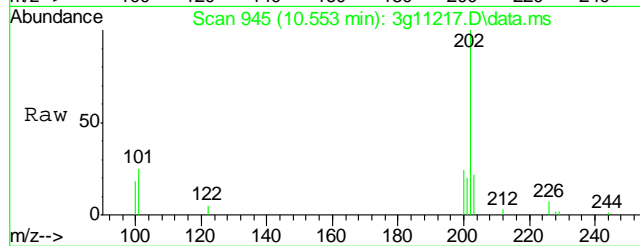
#19
Chrysene-d12
Concen: 4.0000 ug/mL
RT: 11.759 min Scan# 1100
Delta R.T. 0.006 min
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

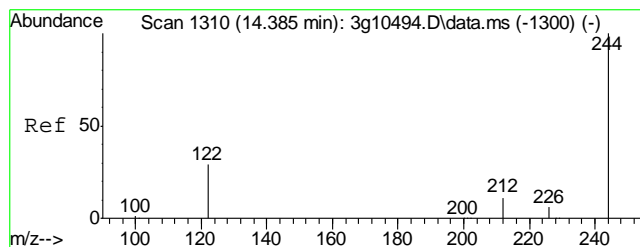
Tgt Ion:	240	Resp:	101610
Ion Ratio	Lower	Upper	
240	100		
120	29.6	0.0	36.2
236	31.7	8.8	48.8



#20
Pyrene
Concen: 1.6963 ug/mL
RT: 10.553 min Scan# 945
Delta R.T. 0.000 min
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

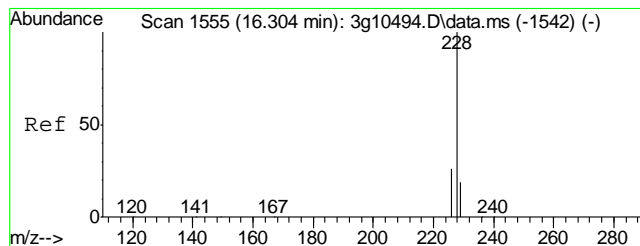
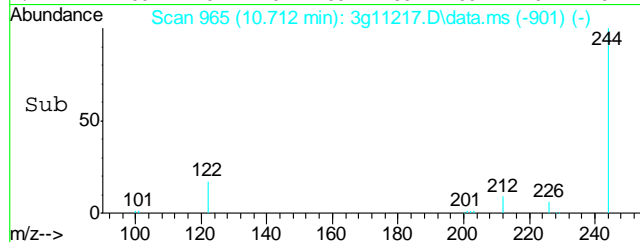
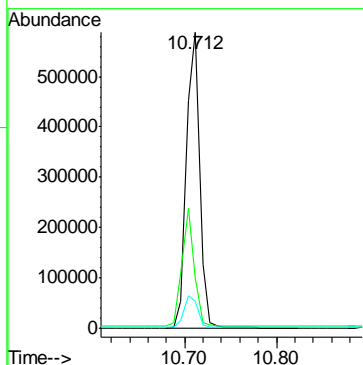
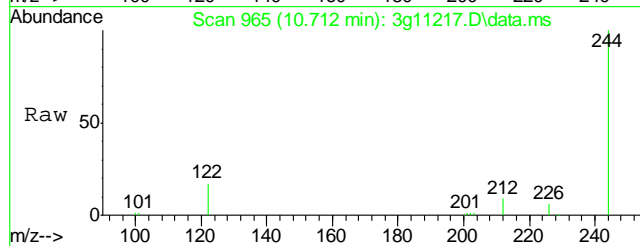
Tgt Ion:	202	Resp:	82508
Ion Ratio	Lower	Upper	
202	100		
200	21.9	0.1	40.1
203	25.9	0.0	37.8
201	18.7	0.0	36.6





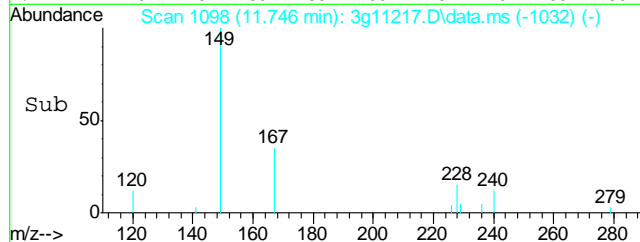
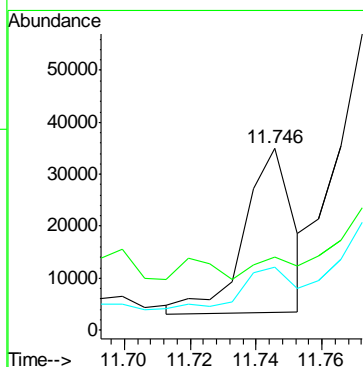
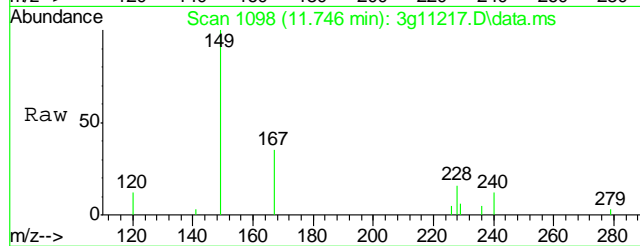
#21
Terphenyl-d14
Concen: 38.4668 ug/mL
RT: 10.712 min Scan# 965
Delta R.T. 0.008 min
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

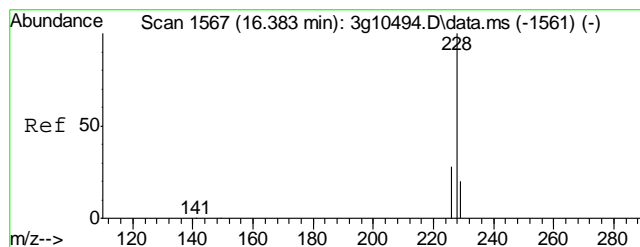
Tgt Ion	Ratio	Lower	Upper
244	100		
122	37.3	1.3	41.3
212	11.0	0.0	28.8



#22
Benzo(a)anthracene
Concen: 0.7633 ug/mL
RT: 11.746 min Scan# 1098
Delta R.T. 0.006 min
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

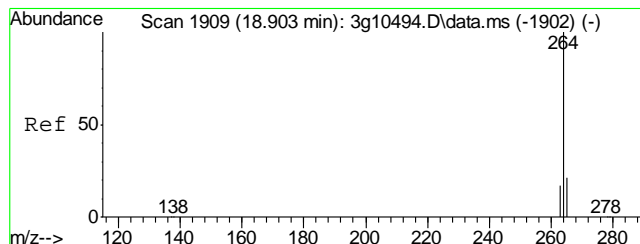
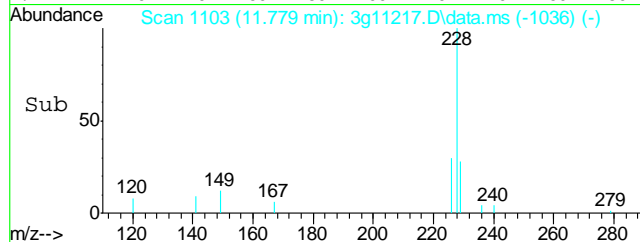
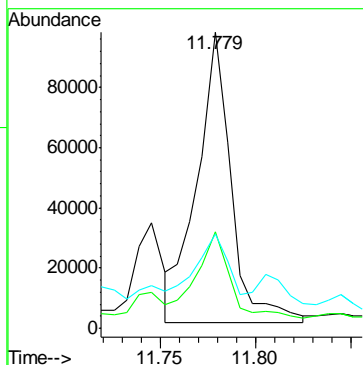
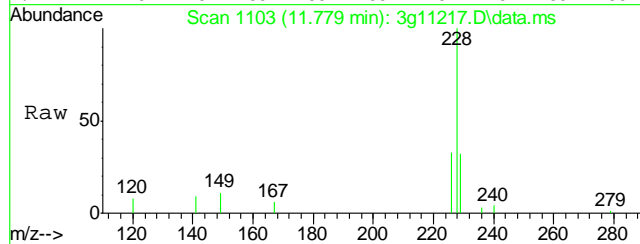
Tgt Ion	Ratio	Lower	Upper
228	100		
229	25.2	0.0	39.6
226	34.0	6.6	46.6





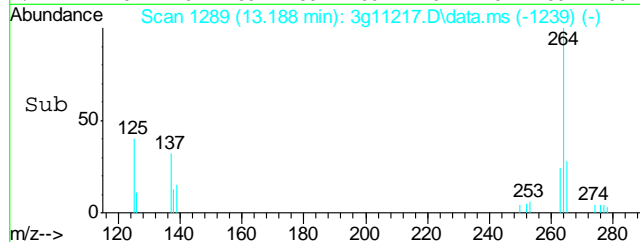
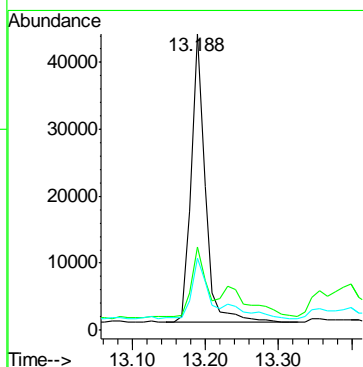
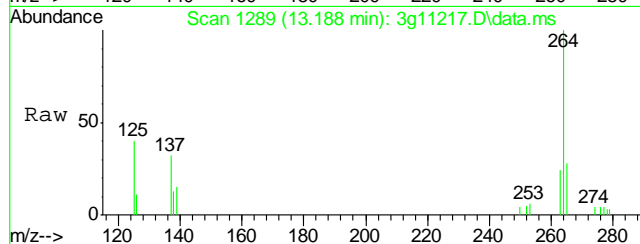
#23
Chrysene
Concen: 2.6553 ug/mL m
RT: 11.779 min Scan# 1103
Delta R.T. 0.006 min
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

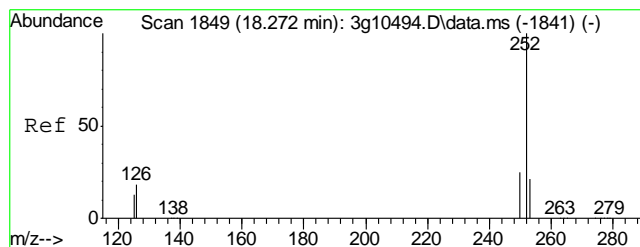
Tgt Ion	Ratio	Lower	Upper
228	100		
226	9.2	8.6	48.6
229	6.8	0.0	39.4



#24
Perylene-d12
Concen: 4.0000 ug/mL
RT: 13.188 min Scan# 1289
Delta R.T. 0.010 min
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

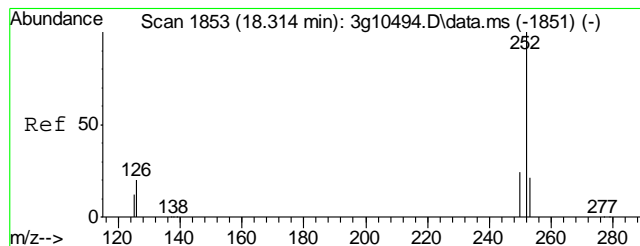
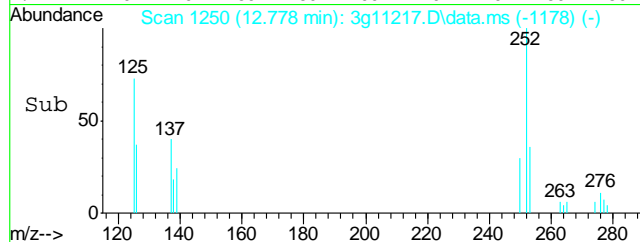
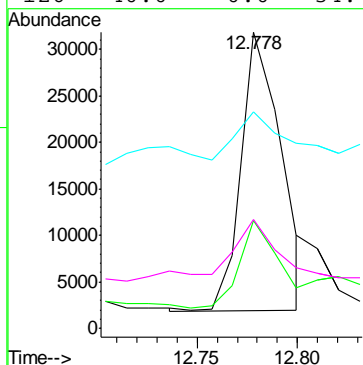
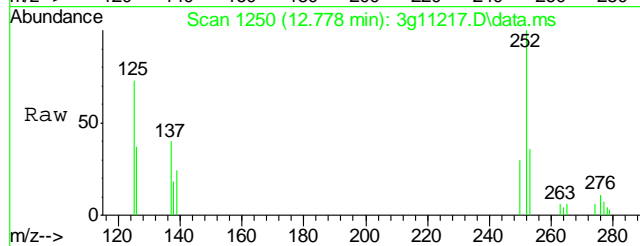
Tgt Ion	Ratio	Lower	Upper
264	100		
265	23.9	1.0	41.0
263	22.1	0.0	39.0





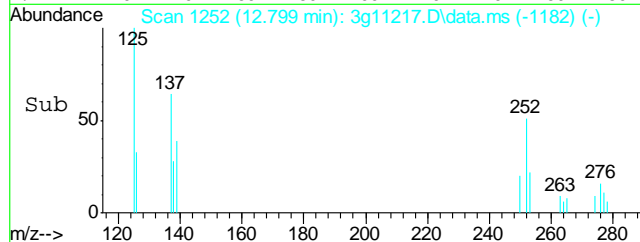
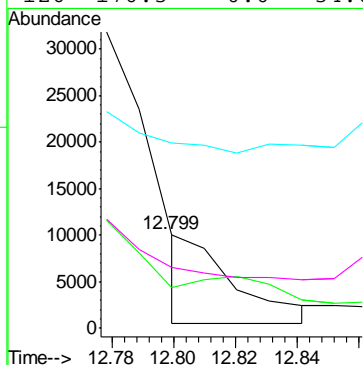
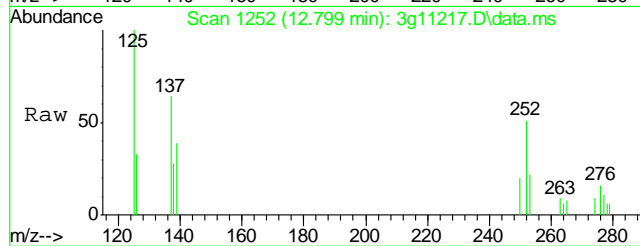
#25
Benzo(b)fluoranthene
Concen: 1.0834 ug/mL m
RT: 12.778 min Scan# 1250
Delta R.T. 0.000 min
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

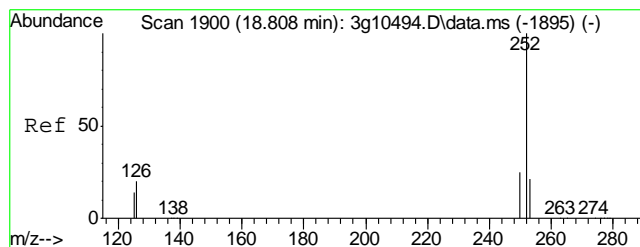
Tgt Ion	Ratio	Lower	Upper
252	100		
253	43.5	2.9	42.9#
125	31.4	0.0	31.5
126	40.0	0.0	34.7#



#26
Benzo(k)fluoranthene
Concen: 0.2413 ug/mL m
RT: 12.799 min Scan# 1252
Delta R.T. 0.000 min
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

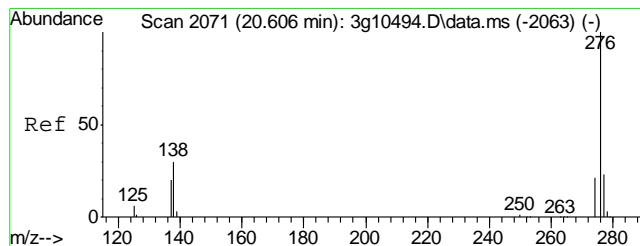
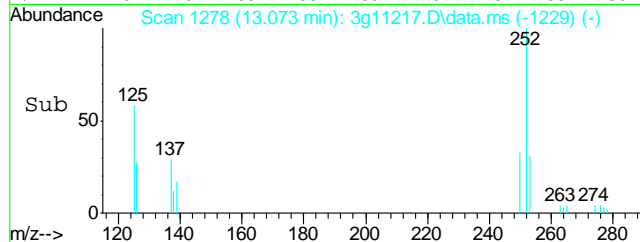
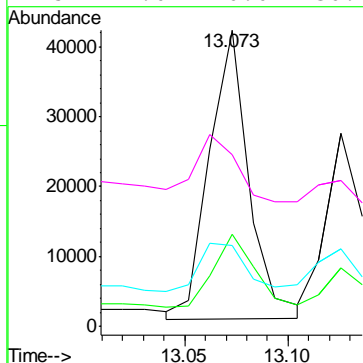
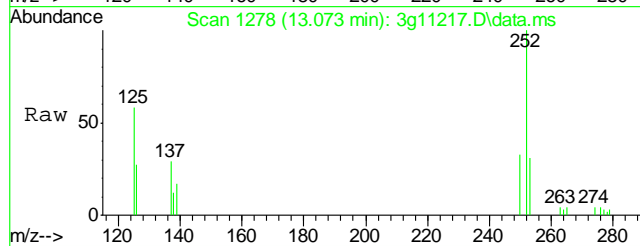
Tgt Ion	Ratio	Lower	Upper
252	100		
253	182.5	1.8	41.8#
125	127.5	0.0	31.0#
126	170.3	0.0	34.0#





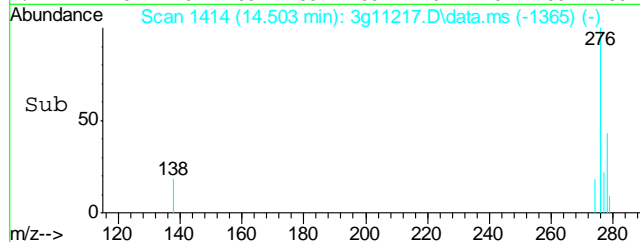
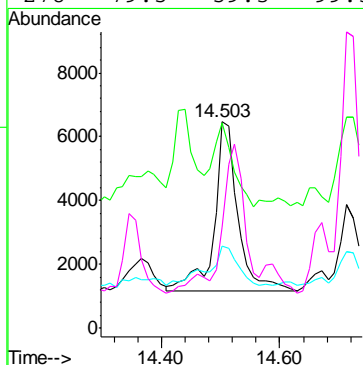
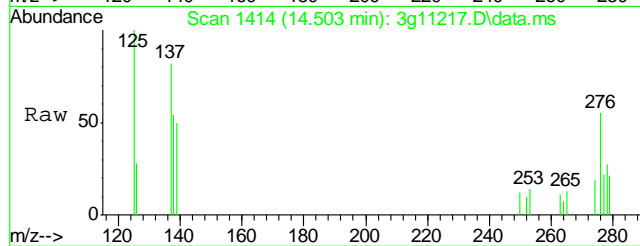
#27
Benzo(a)pyrene
Concen: 1.3494 ug/mL
RT: 13.073 min Scan# 1278
Delta R.T. -0.041 min
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

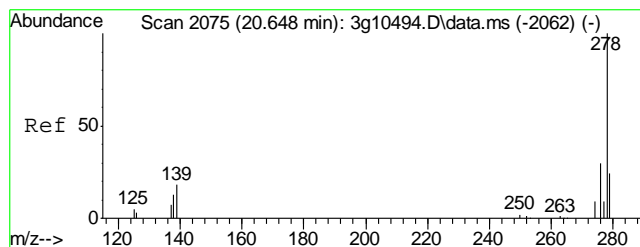
Tgt Ion:	252	Resp:	54669
Ion Ratio	100	Lower	Upper
252	100		
253	34.4	1.4	41.4
126	33.5	0.0	33.6
125	24.0	0.0	30.7



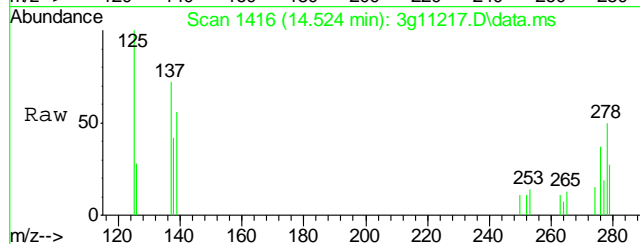
#28
Indeno(1,2,3-cd)pyrene
Concen: 0.3421 ug/mL
RT: 14.503 min Scan# 1414
Delta R.T. 0.011 min
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am

Tgt Ion:	276	Resp:	14953
Ion Ratio	100	Lower	Upper
276	100		
138	41.1	5.3	45.3
277	30.4	5.0	45.0
278	79.5	59.3	99.3

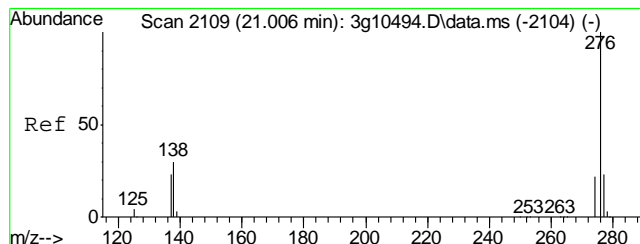
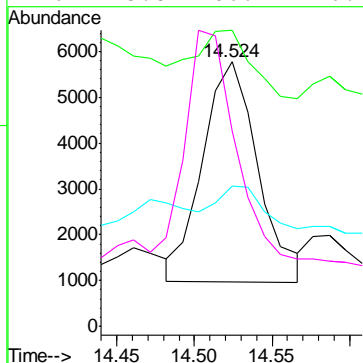
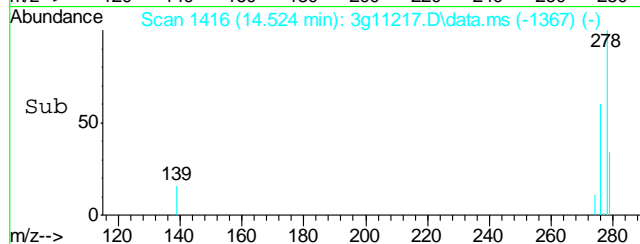




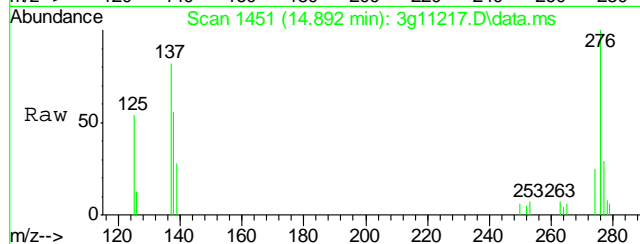
#29
Dibenz(a,h)anthracene
Concen: 0.3461 ug/mL
RT: 14.524 min Scan# 1416
Delta R.T. 0.011 min
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am



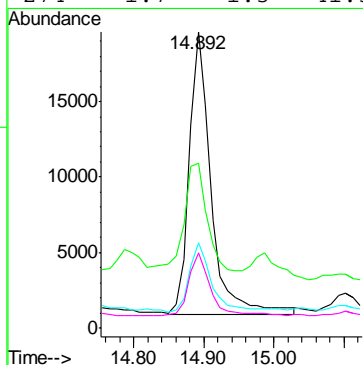
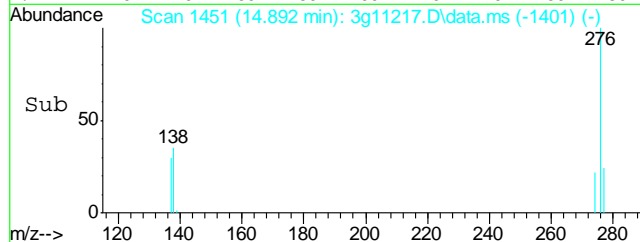
Tgt Ion: 278 Resp: 11882
Ion Ratio Lower Upper
278 100
139 29.6 0.0 38.4
279 77.2 3.1 43.1#
276 125.8 106.1 146.1



#30
Benzo(g,h,i)perylene
Concen: 1.1020 ug/mL m
RT: 14.892 min Scan# 1451
Delta R.T. 0.021 min
Lab File: 3g11217.D
Acq: 13 Sep 12 4:45 am



Tgt Ion: 276 Resp: 41127
Ion Ratio Lower Upper
276 100
138 2.1 1.3 41.3
277 3.0 3.4 43.4#
274 1.7 1.3 41.3



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\091112\
 Data File : 3g11149.D
 Acq On : 11 Sep 2012 7:39 pm
 Operator : DONC
 Sample : OP6602-MB
 Misc : OP6602,E3G518,30.00,,,1,1
 ALS Vial : 20 Sample Multiplier: 1

Quant Time: Sep 12 14:01:43 2012
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G511.M
 Quant Title : PAHSIM BASE
 QLast Update : Thu Sep 06 09:42:23 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.922	136	149108	4.0000	ug/mL	0.00
6) Acenaphthene-d10	7.640	164	88112	4.0000	ug/mL	0.00
15) Phenanthrene-d10	9.121	188	148358	4.0000	ug/mL	0.00
19) Chrysene-d12	11.759	240	119708	4.0000	ug/mL	0.00
24) Perylene-d12	13.189	264	64389	4.0000	ug/mL	0.01

System Monitoring Compounds

2) Nitrobenzene-d5	5.236	82	705385	48.0824	ug/mL	0.01
Spiked Amount 50.000	Range 25 - 135		Recovery =	96.16%		
7) 2-Fluorobiphenyl	6.978	172	1715263	46.7981	ug/mL	0.01
Spiked Amount 50.000	Range 25 - 135		Recovery =	93.60%		
21) Terphenyl-d14	10.712	244	853237	47.3048	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery =	94.60%		

Target Compounds

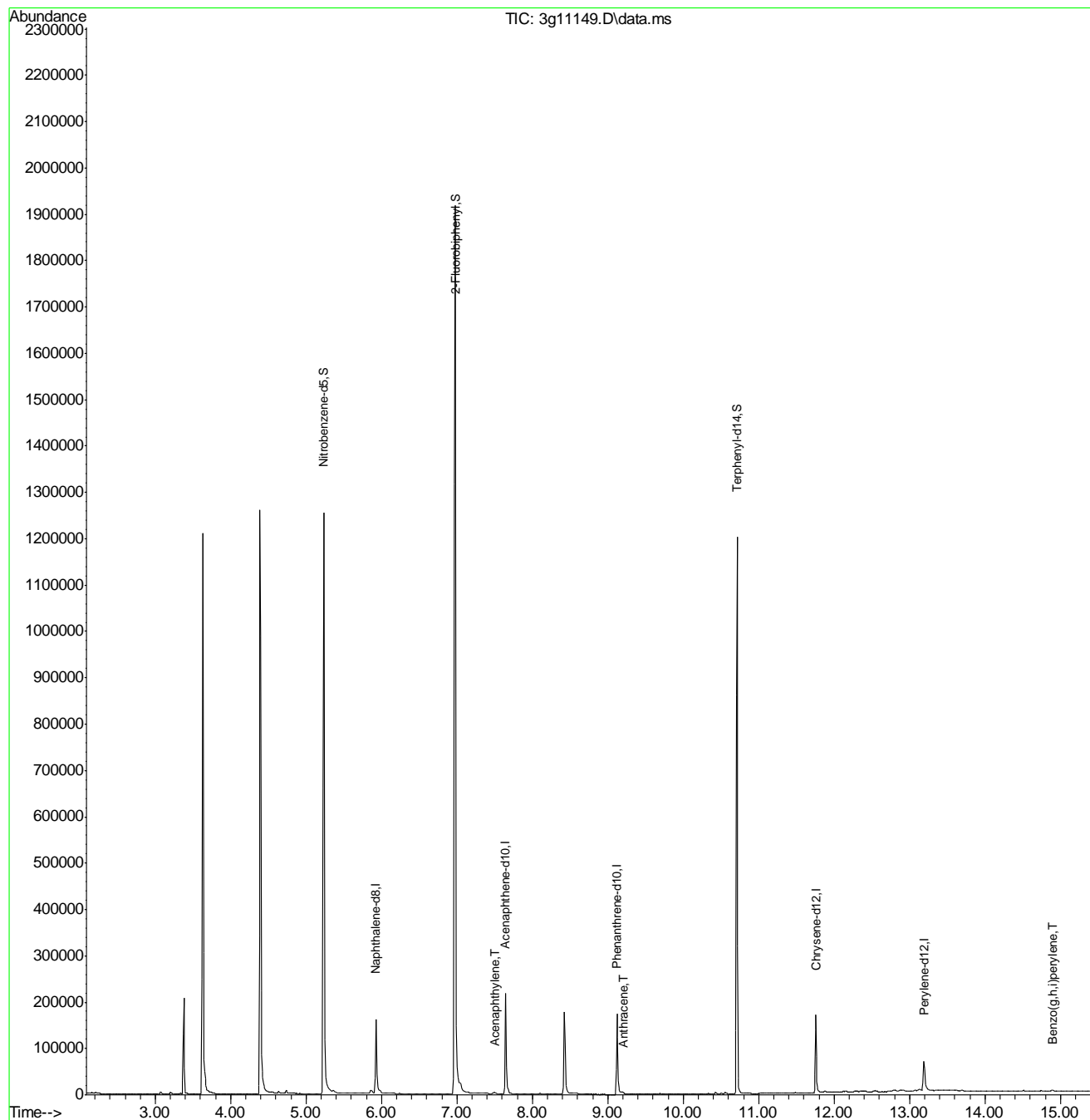
					Qvalue
3) N-Nitrosodimethylamine	2.625	74	12	N.D.	
4) N-Nitrosodi-propylamine	0.000	70	0	N.D. d	
5) Naphthalene	5.947	128	211	N.D.	
8) 2-Methylnaphthalene	6.632	142	159	N.D.	
9) 1-Methylnaphthalene	6.719	142	210	N.D.	
10) Acenaphthylene	7.498	152	4998m	0.1056	ug/mL
11) Acenaphthene	7.640	154	763	N.D.	
12) Dibenzofuran	7.959	168	504	N.D.	
13) Fluorene	0.000	166	0	N.D. d	
14) Diphenylamine	0.000	169	0	N.D. d	
16) Phenanthrene	0.000	178	0	N.D. d	
17) Anthracene	9.200	178	3285m	0.0599	ug/mL
18) Fluoranthene	10.332	202	1940	N.D.	
20) Pyrene	10.561	202	2753	N.D.	
22) Benzo(a)anthracene	0.000	228	0	N.D. d	
23) Chrysene	0.000	228	0	N.D. d	
25) Benzo(b)fluoranthene	0.000	252	0	N.D. d	
26) Benzo(k)fluoranthene	0.000	252	0	N.D. d	
27) Benzo(a)pyrene	13.125	252	1631	N.D.	
28) Indeno(1,2,3-cd)pyrene	14.514	276	2365	N.D.	
29) Dibenz(a,h)anthracene	14.524	278	420	N.D.	
30) Benzo(g,h,i)perylene	14.892	276	3754m	0.0907	ug/mL

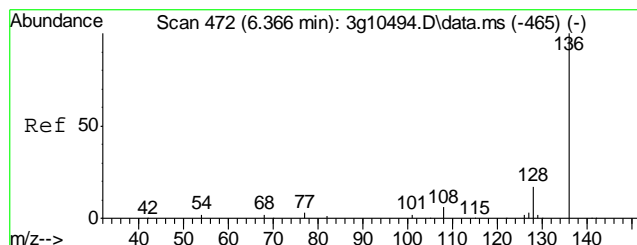
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\091112\
Data File : 3g11149.D
Acq On : 11 Sep 2012 7:39 pm
Operator : DONC
Sample : OP6602-MB
Misc : OP6602,E3G518,30.00,,,1,1
ALS Vial : 20 Sample Multiplier: 1

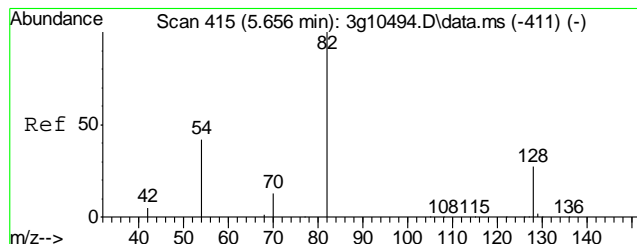
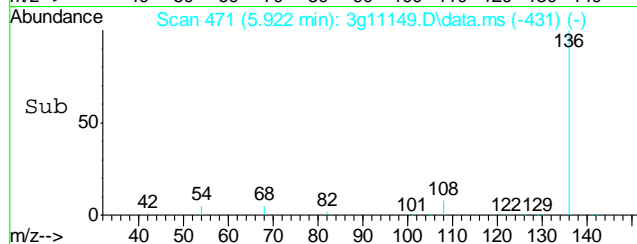
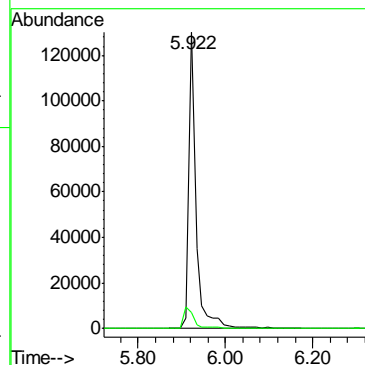
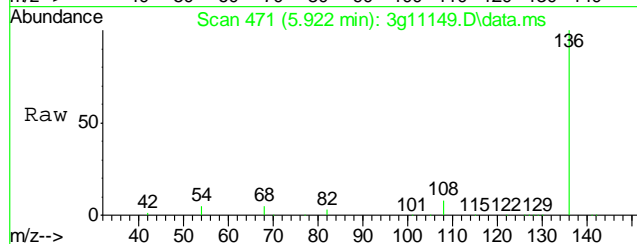
Quant Time: Sep 12 14:01:43 2012
Quant Method : C:\msdchem\1\METHODS\SIMPE3G511.M
Quant Title : PAHSIM BASE
QLast Update : Thu Sep 06 09:42:23 2012
Response via : Initial Calibration





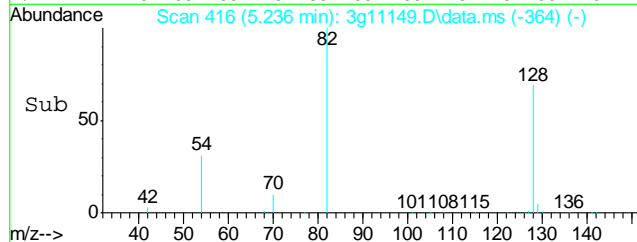
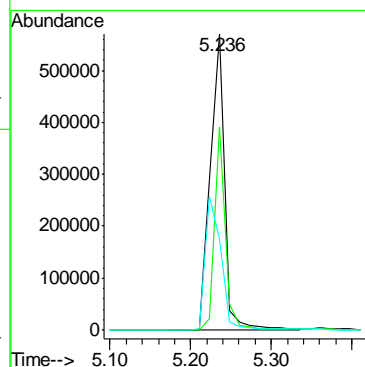
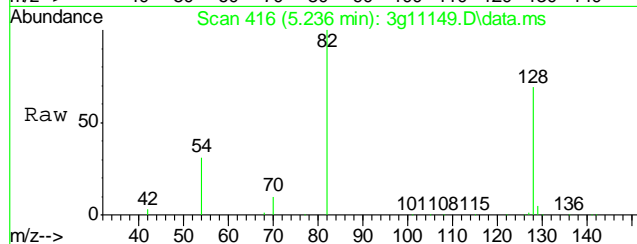
#1
Naphthalene-d8
Concen: 4.0000 ug/mL
RT: 5.922 min Scan# 471
Delta R.T. -0.000 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

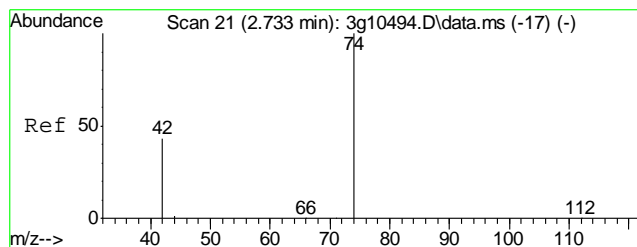
Tgt Ion: 136 Resp: 149108
Ion Ratio Lower Upper
136 100
68 9.9 0.0 30.4



#2
Nitrobenzene-d5
Concen: 48.0824 ug/mL
RT: 5.236 min Scan# 416
Delta R.T. 0.013 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

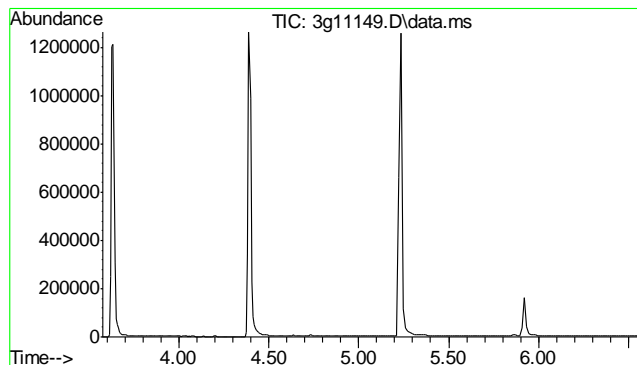
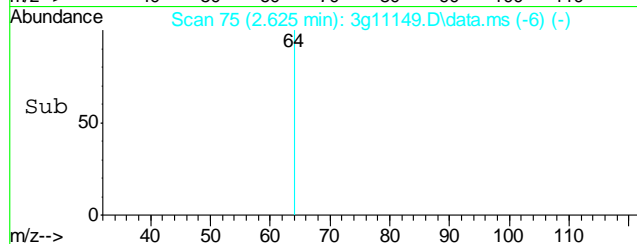
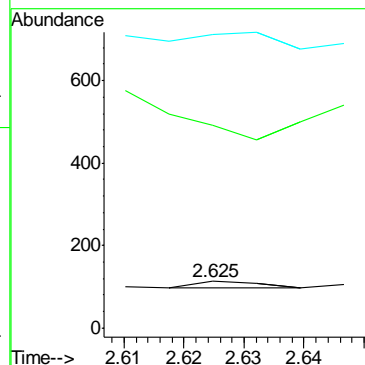
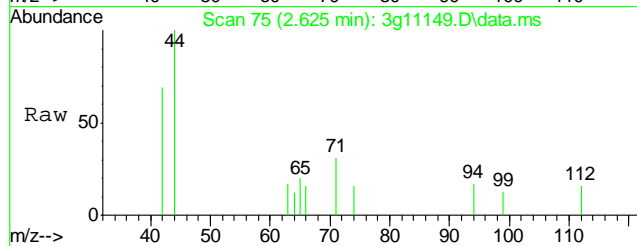
Tgt Ion: 82 Resp: 705385
Ion Ratio Lower Upper
82 100
128 53.1 19.7 59.7
54 49.7 28.6 68.6





#3
N-Nitrosodimethylamine
Concen: Below ug/mL
RT: 2.625 min Scan# 75
Delta R.T. -0.000 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

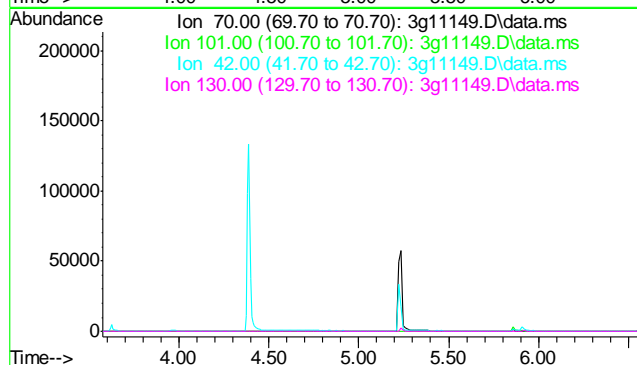
Tgt Ion: 74 Resp: 12
Ion Ratio Lower Upper
74 100
42 1400.0 33.3 73.3#
44 0.0 0.0 23.5

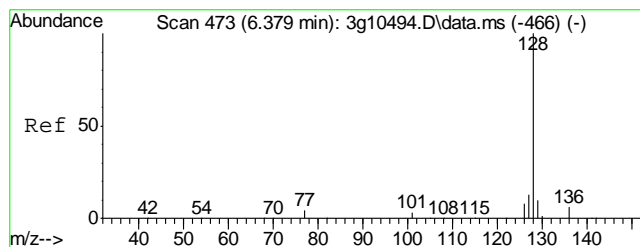


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 5.07 min

Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

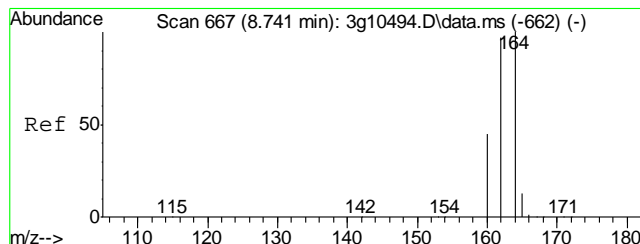
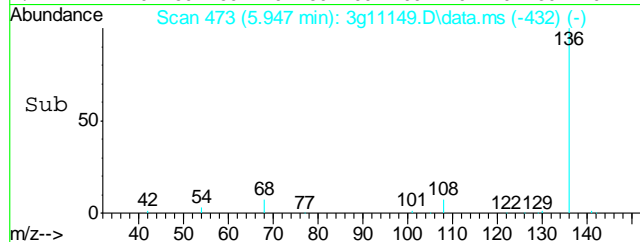
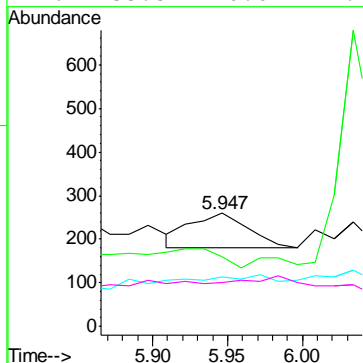
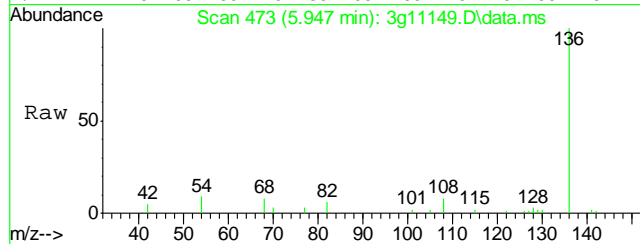
Tgt Ion: 70
Sig Exp Ratio
70 100
101 10.3
42 47.6
130 20.0





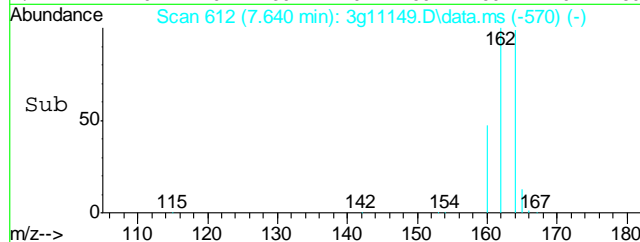
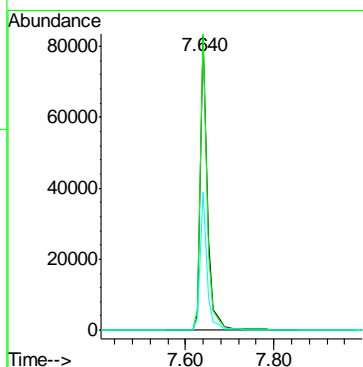
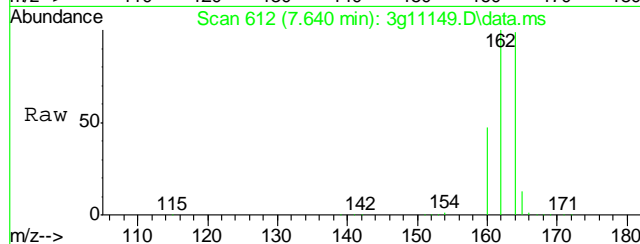
#5
Naphthalene
Concen: Below ug/mL
RT: 5.947 min Scan# 473
Delta R.T. 0.012 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

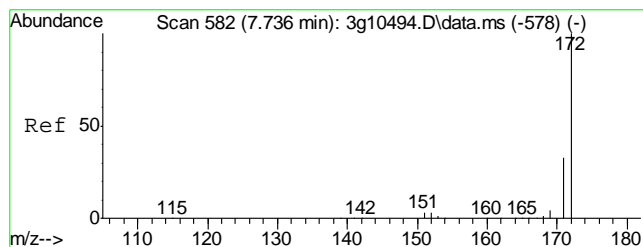
Tgt Ion	128	129	127	126
Ion	128	129	127	126
Ratio	100	52.1	69.2	155.5
Lower		0.0	0.0	0.0
Upper		30.8#	33.4#	27.7#



#6
Acenaphthene-d10
Concen: 4.0000 ug/mL
RT: 7.640 min Scan# 612
Delta R.T. -0.000 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

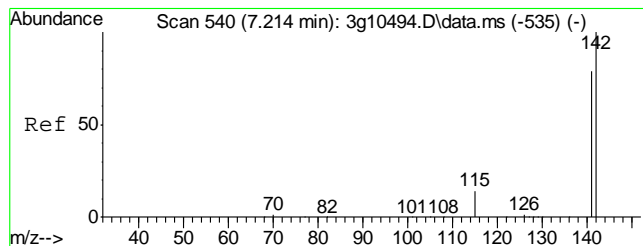
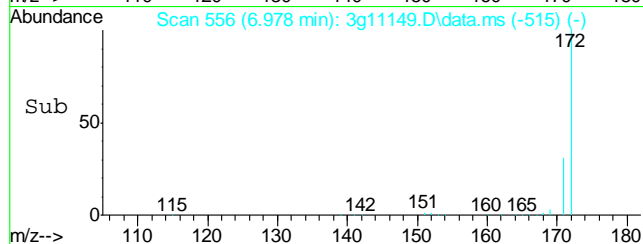
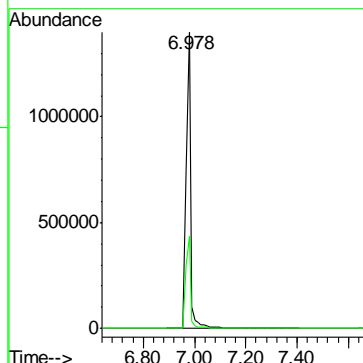
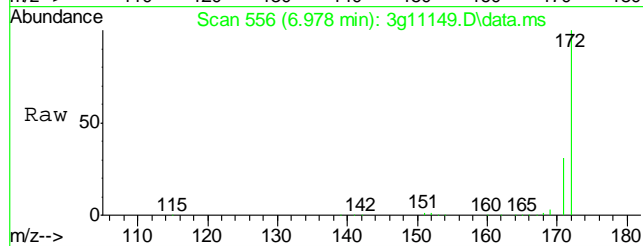
Tgt Ion	164	162	160
Ion	164 <td>162<td>160</td></td>	162 <td>160</td>	160
Ratio	100	97.6	45.1
Lower		73.5	21.8
Upper		113.5	61.8





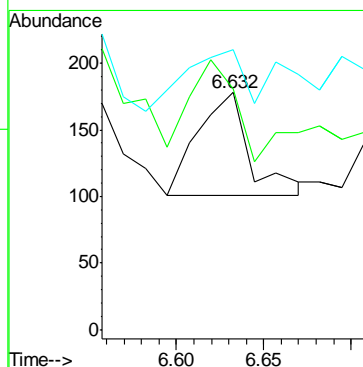
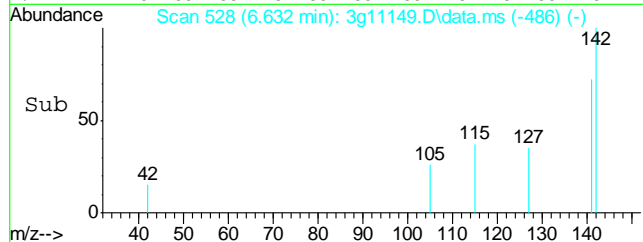
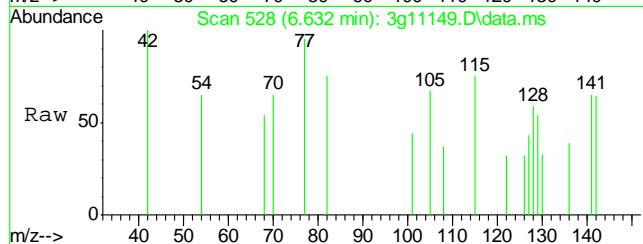
#7
2-Fluorobiphenyl
Concen: 46.7981 ug/mL
RT: 6.978 min Scan# 556
Delta R.T. 0.012 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

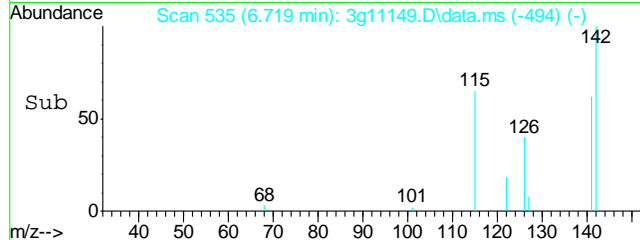
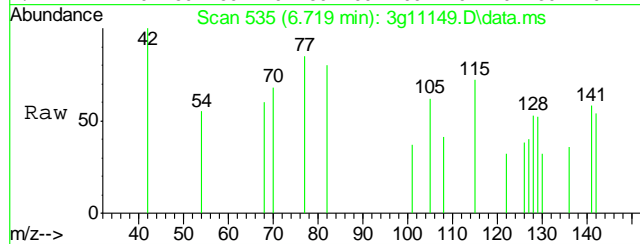
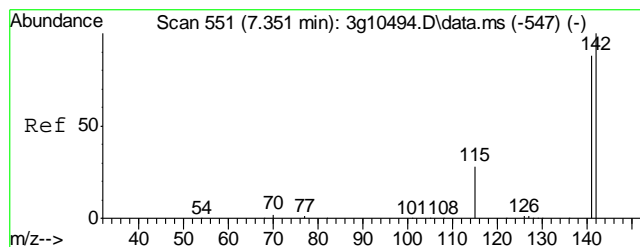
Tgt Ion:172 Resp: 1715263
Ion Ratio Lower Upper
172 100
171 34.0 13.6 53.6



#8
2-Methylnaphthalene
Concen: Below ug/mL
RT: 6.632 min Scan# 528
Delta R.T. 0.025 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

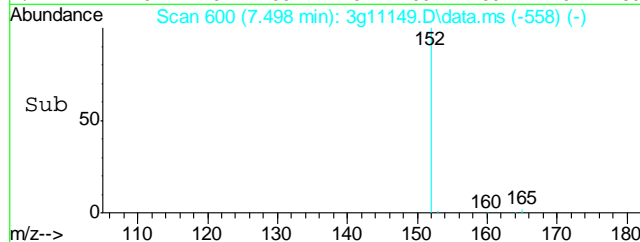
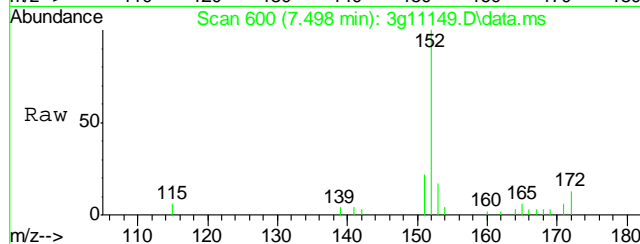
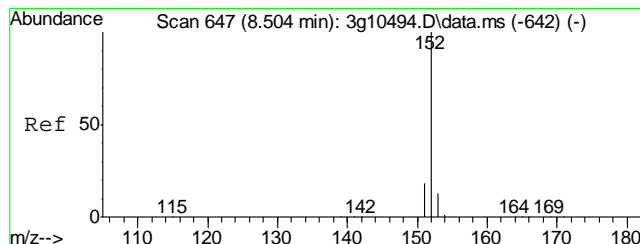
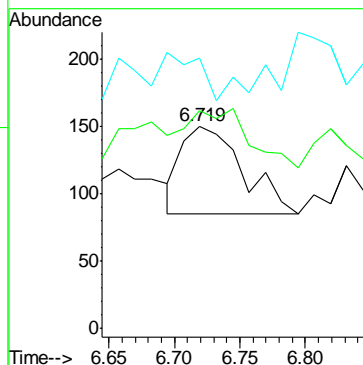
Tgt Ion:142 Resp: 159
Ion Ratio Lower Upper
142 100
141 94.3 64.5 104.5
115 0.0 13.6 53.6#





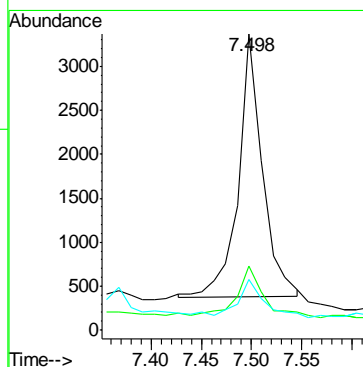
#9
1-Methylnaphthalene
Concen: Below ug/mL
RT: 6.719 min Scan# 535
Delta R.T. 0.012 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

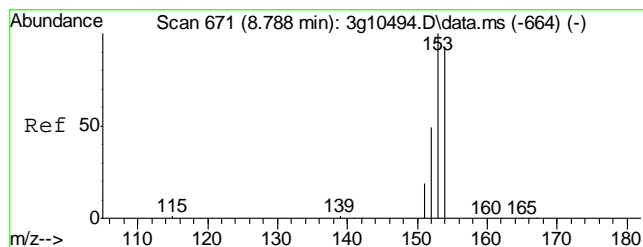
Tgt Ion:142 Resp: 210
Ion Ratio Lower Upper
142 100
141 68.6 67.8 107.8
115 0.0 11.0 51.0#



#10
Acenaphthylene
Concen: 0.1056 ug/mL m
RT: 7.498 min Scan# 600
Delta R.T. -0.000 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

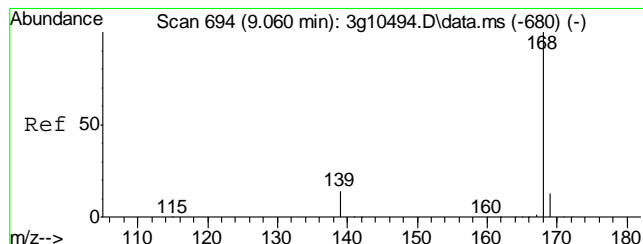
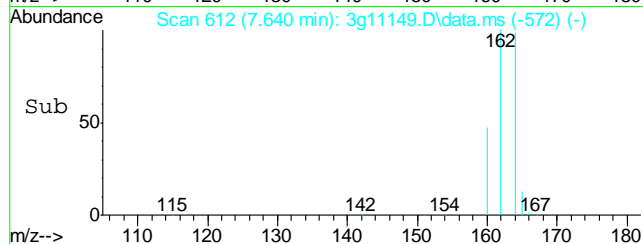
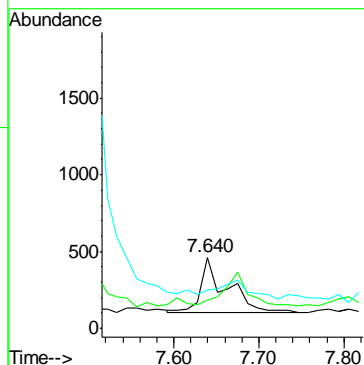
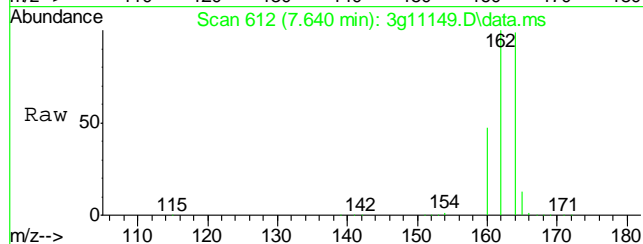
Tgt Ion:152 Resp: 4998
Ion Ratio Lower Upper
152 100
151 22.5 0.0 39.2
153 14.9 0.0 33.2





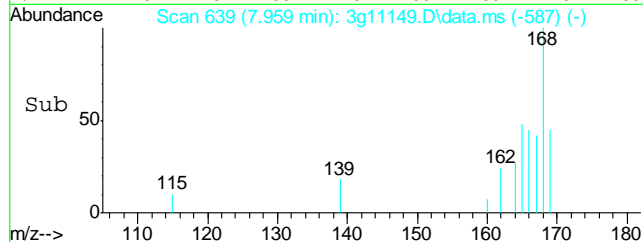
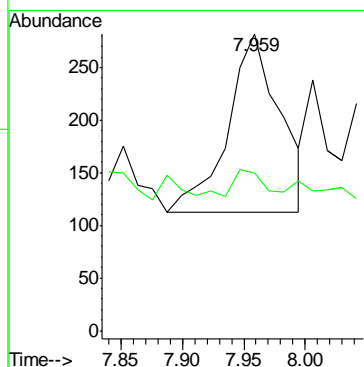
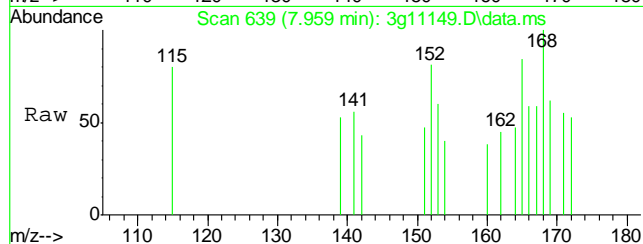
#11
Acenaphthene
Concen: Below ug/mL
RT: 7.640 min Scan# 612
Delta R.T. -0.024 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

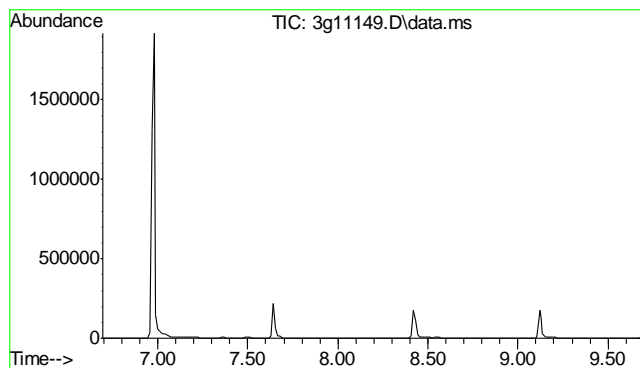
Tgt Ion:	154	Resp:	763
Ion Ratio	Lower	Upper	
154	100		
153	8.9	84.8	124.8#
152	0.0	29.9	69.9#



#12
Dibenzofuran
Concen: Below ug/mL
RT: 7.959 min Scan# 639
Delta R.T. 0.118 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

Tgt Ion:	168	Resp:	504
Ion Ratio	Lower	Upper	
168	100		
139	8.5	7.6	47.6

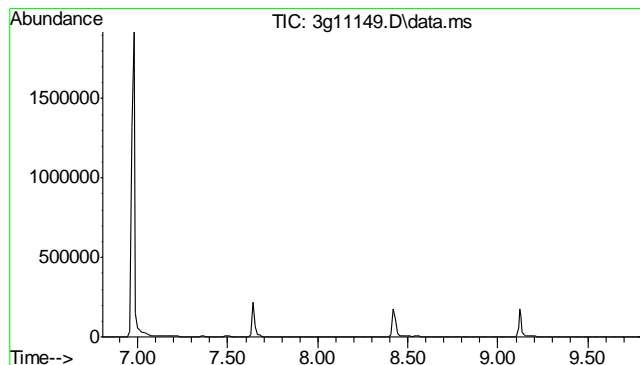
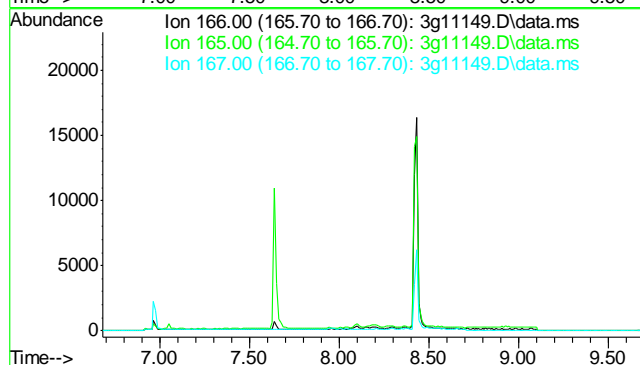




#13
Fluorene
Concen: N.D. ug/mL
Expected RT: 8.18 min

Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

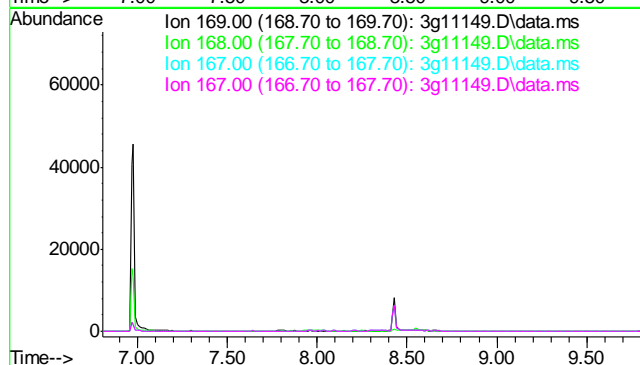
Tgt Ion:	166
Sig	Exp Ratio
166	100
165	91.1
167	13.3

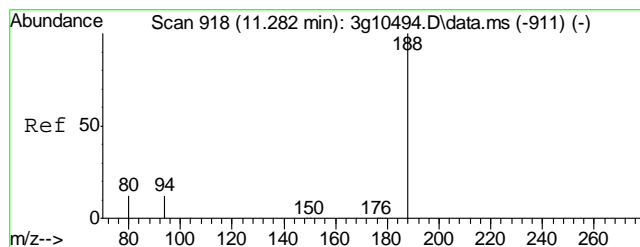


#14
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 8.30 min

Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

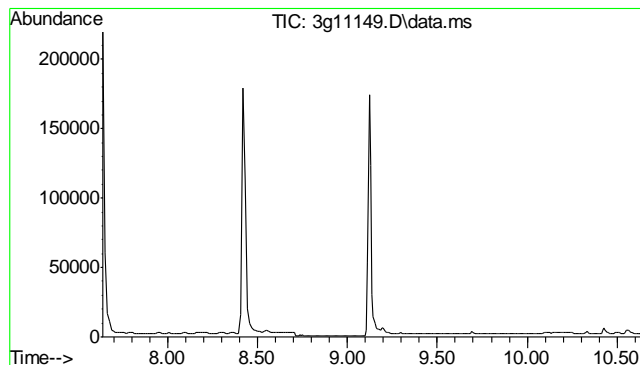
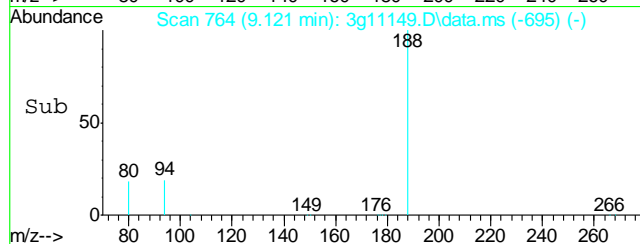
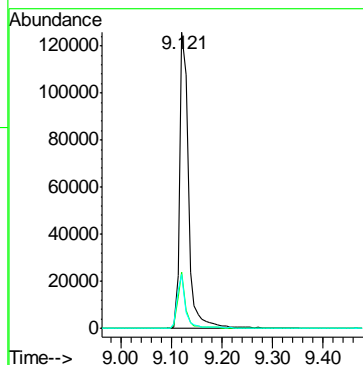
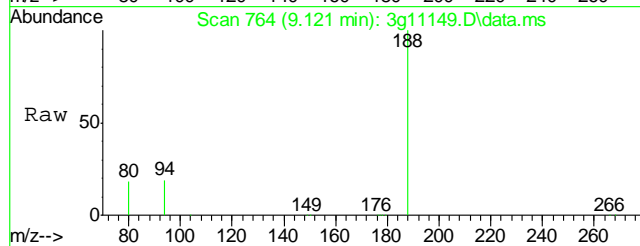
Tgt Ion:	169
Sig	Exp Ratio
169	100
168	61.0
167	32.9
167	32.9





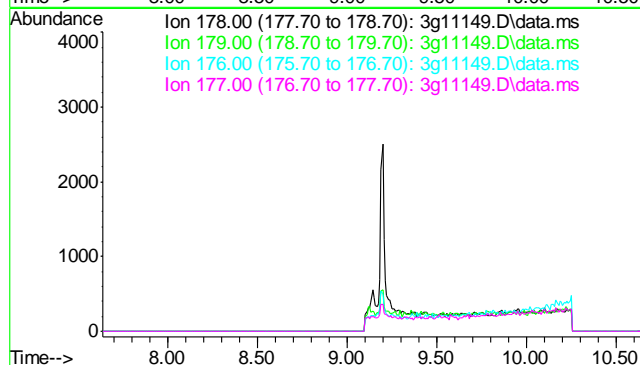
#15
Phenanthrene-d10
Concen: 4.0000 ug/mL
RT: 9.121 min Scan# 764
Delta R.T. -0.000 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

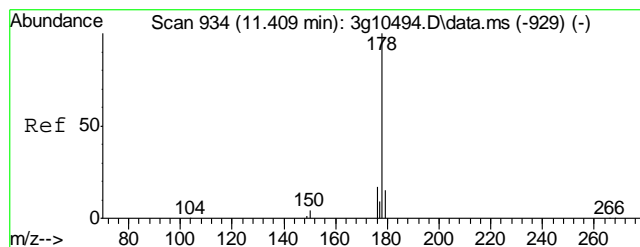
Tgt Ion	Ratio	Lower	Upper
188	100		
94	16.1	0.0	33.9
80	18.0	0.0	35.5



#16
Phenanthrene
Concen: N.D. ug/mL
Expected RT: 9.14 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

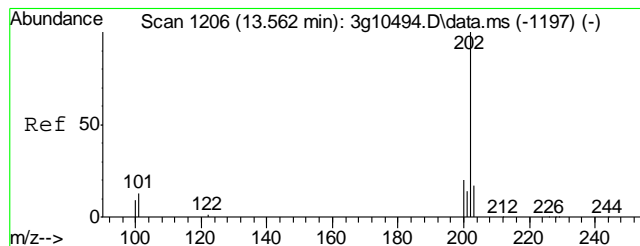
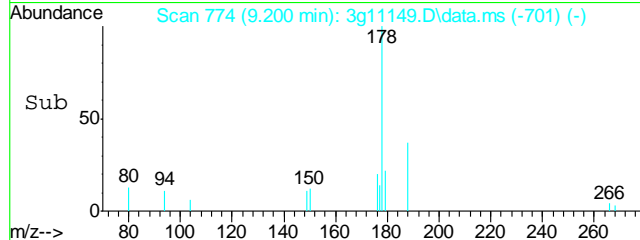
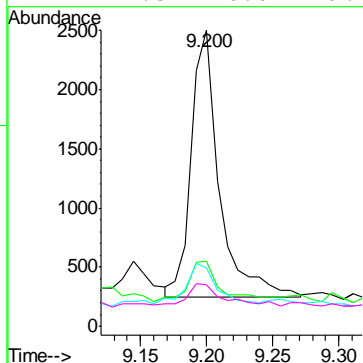
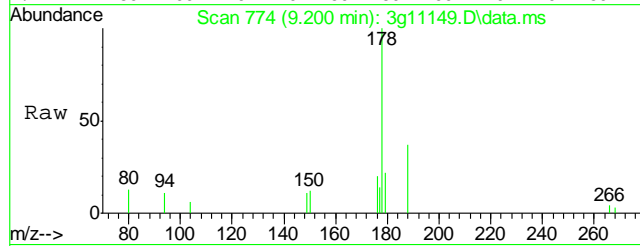
Tgt Ion	Sig	Exp Ratio
178	100	
179	15.3	
176	18.5	
177	10.5	





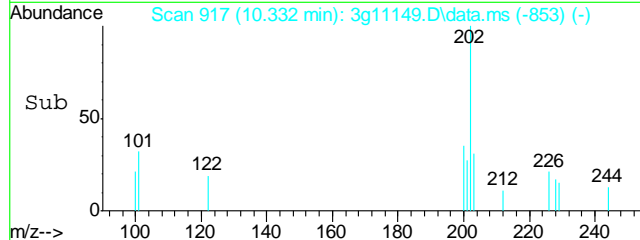
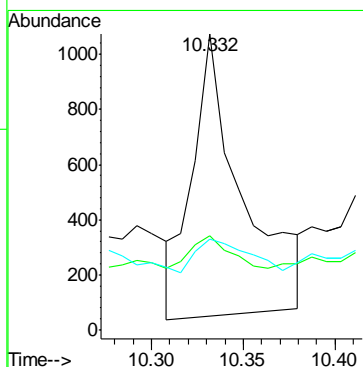
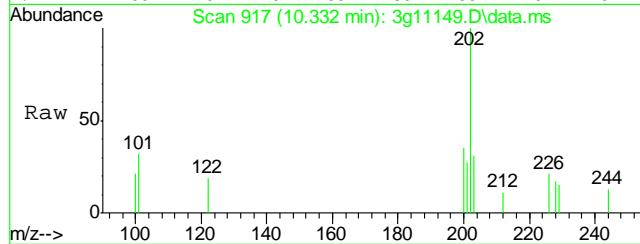
#17
Anthracene
Concen: 0.0599 ug/mL m
RT: 9.200 min Scan# 774
Delta R.T. 0.008 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

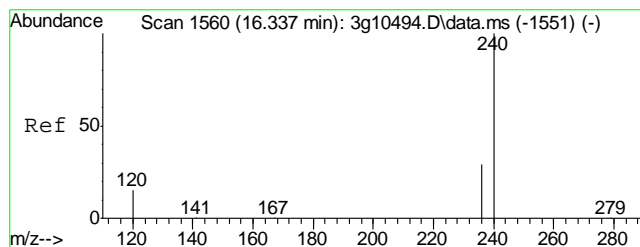
Tgt Ion	178	179	176	177
Resp	3285	18.9	23.1	17.3
Ratio	100			
Lower		0.0	0.0	0.0
Upper		35.2	37.7	29.0



#18
Fluoranthene
Concen: Below ug/mL
RT: 10.332 min Scan# 917
Delta R.T. 0.008 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

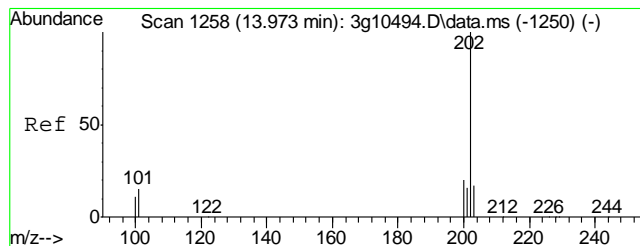
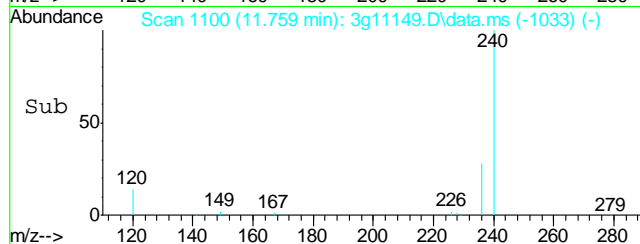
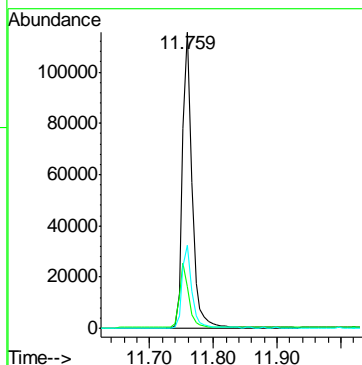
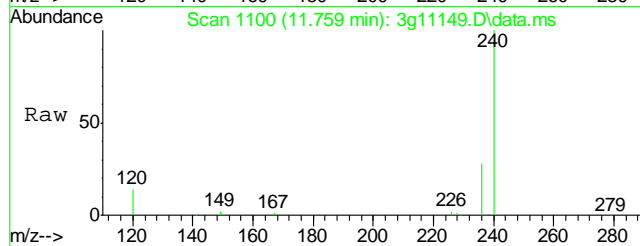
Tgt Ion	202	101	203
Resp	1940	17.3	34.9
Ratio	100		
Lower		0.0	0.0
Upper		33.0	37.4





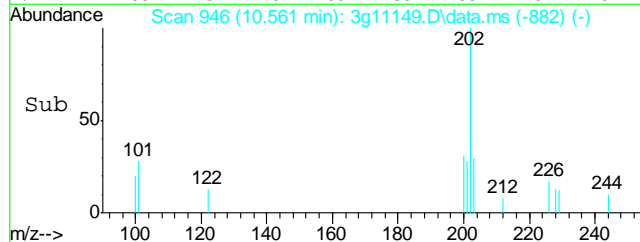
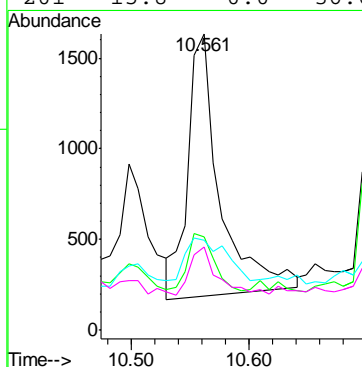
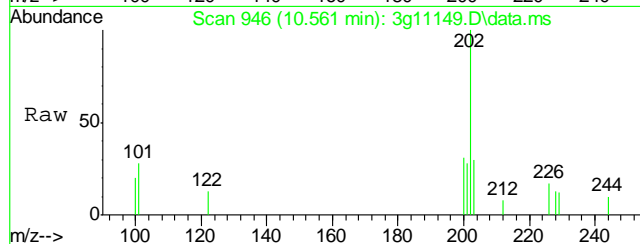
#19
Chrysene-d12
Concen: 4.0000 ug/mL
RT: 11.759 min Scan# 1100
Delta R.T. 0.007 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

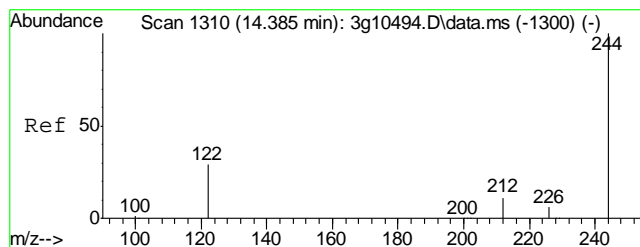
Tgt Ion:	240	Resp:	119708
Ion Ratio	Lower	Upper	
240	100		
120	21.6	0.0	36.2
236	28.6	8.8	48.8



#20
Pyrene
Concen: Below ug/mL
RT: 10.561 min Scan# 946
Delta R.T. 0.008 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

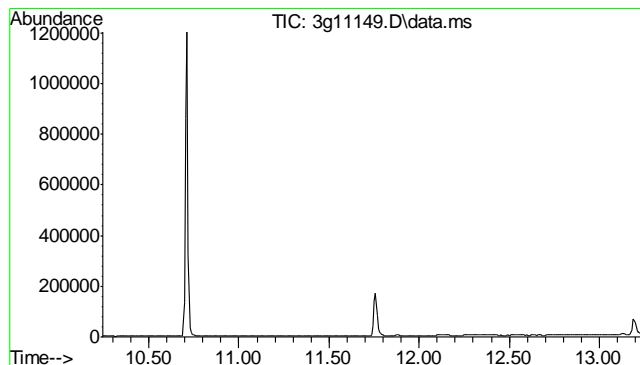
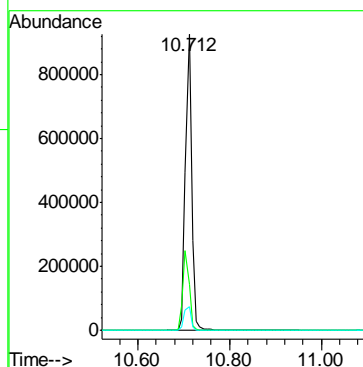
Tgt Ion:	202	Resp:	2753
Ion Ratio	Lower	Upper	
202	100		
200	19.8	0.1	40.1
203	24.3	0.0	37.8
201	15.8	0.0	36.6





#21
Terphenyl-d14
Concen: 47.3048 ug/mL
RT: 10.712 min Scan# 965
Delta R.T. 0.008 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

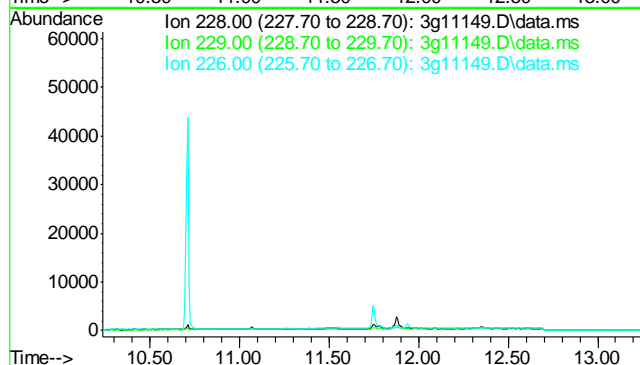
Tgt Ion	Ratio	Lower	Upper
244	100		
122	27.7	1.3	41.3
212	9.2	0.0	28.8

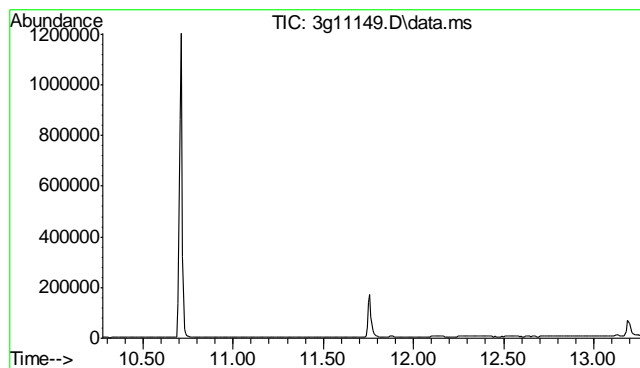


#22
Benzo(a)anthracene
Concen: N.D. ug/mL
Expected RT: 11.74 min

Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

Tgt Ion	Sig	Exp Ratio
228	100	
229	19.6	
226	26.6	

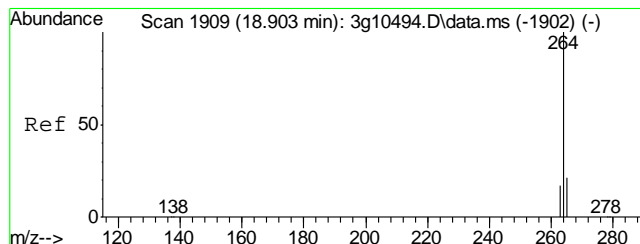
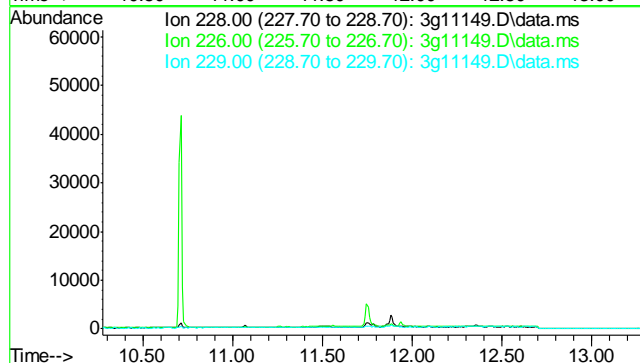




#23
Chrysene
Concen: N.D. ug/mL
Expected RT: 11.77 min

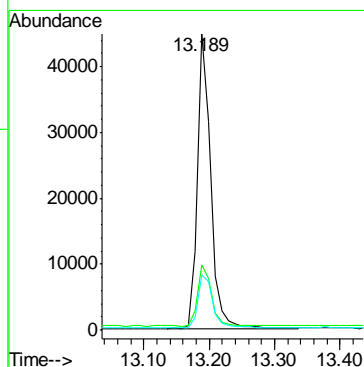
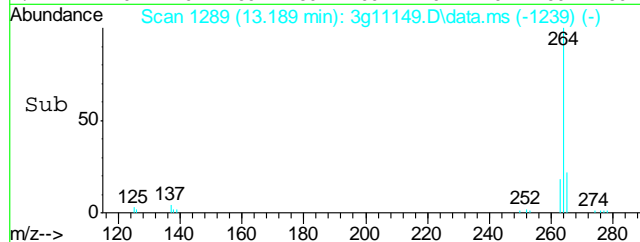
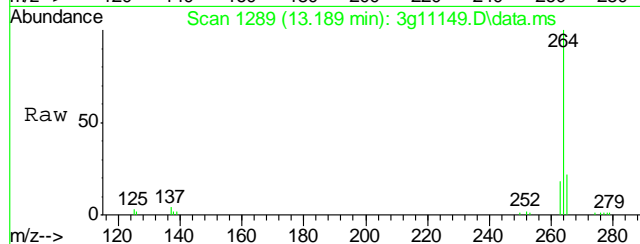
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

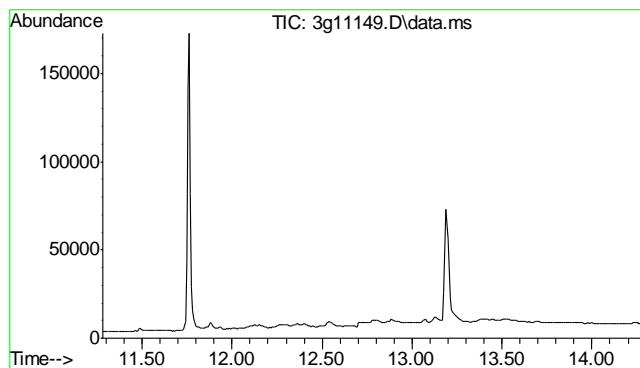
Tgt Ion:	228
Sig	Exp Ratio
228	100
226	28.6
229	19.4



#24
Perylene-d12
Concen: 4.0000 ug/mL
RT: 13.189 min Scan# 1289
Delta R.T. 0.010 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

Tgt Ion:	264	Resp:	64389
Ion	Ratio	Lower	Upper
264	100		
265	22.0	1.0	41.0
263	19.5	0.0	39.0

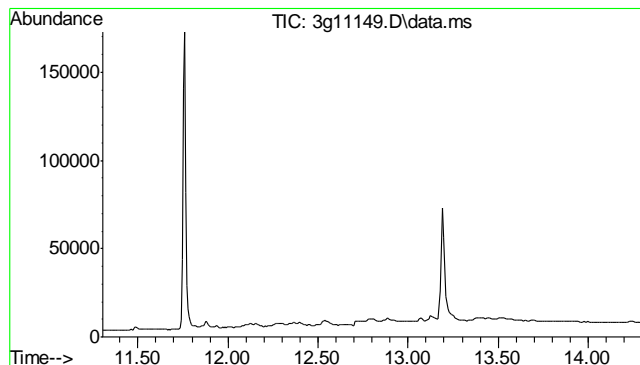
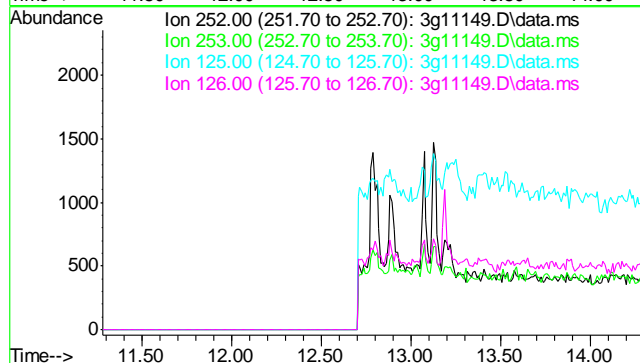




#25
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.78 min

Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

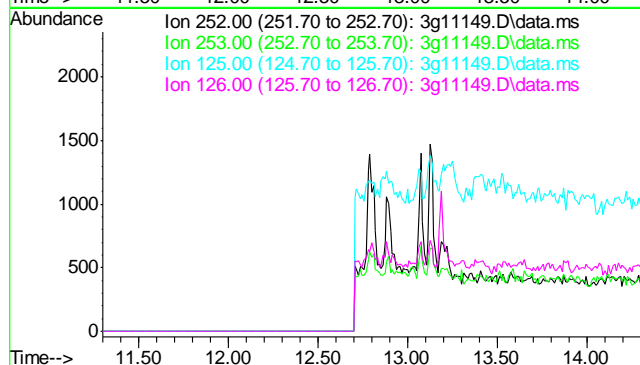
Tgt Ion:	252
Sig	Exp Ratio
252	100
253	22.9
125	11.5
126	14.7

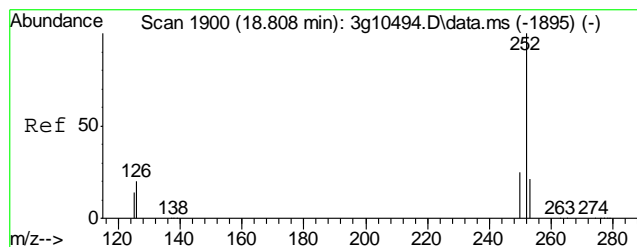


#26
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.80 min

Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

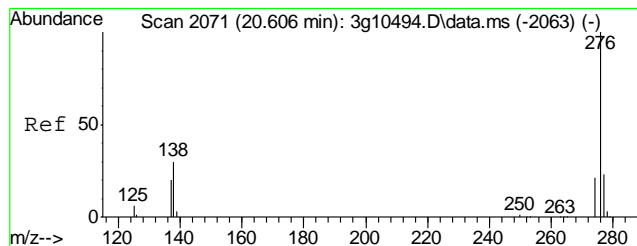
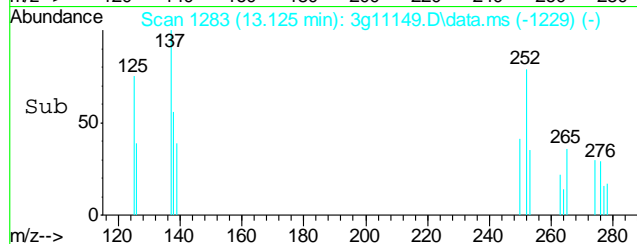
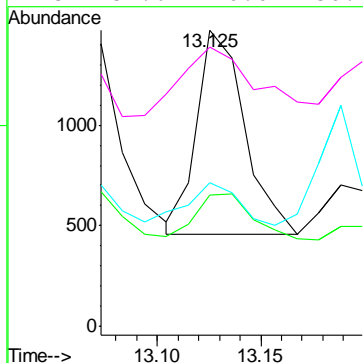
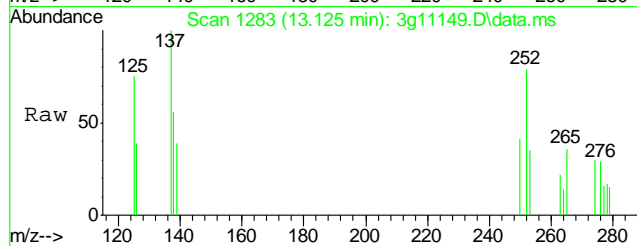
Tgt Ion:	252
Sig	Exp Ratio
252	100
253	21.8
125	11.0
126	14.0





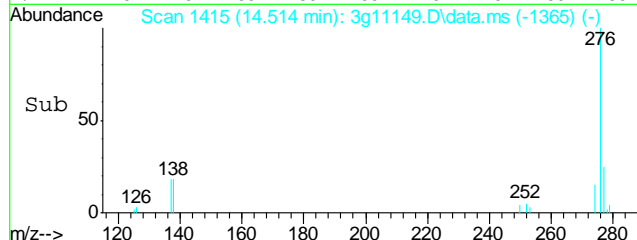
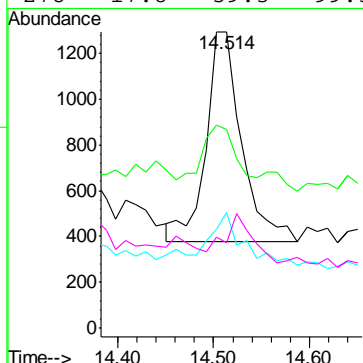
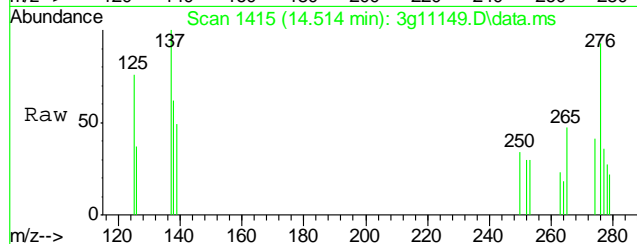
#27
Benzo(a)pyrene
Concen: Below ug/mL
RT: 13.125 min Scan# 1283
Delta R.T. 0.011 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

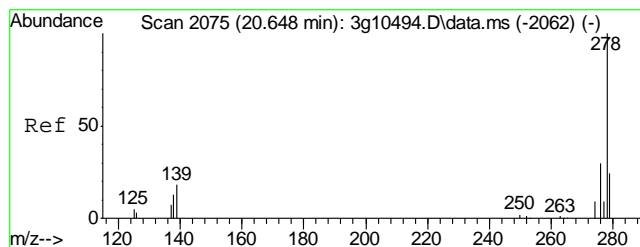
Tgt Ion	Ratio	Lower	Upper
252	100		
253	28.1	1.4	41.4
126	19.1	0.0	33.6
125	51.6	0.0	30.7#



#28
Indeno(1,2,3-cd)pyrene
Concen: Below ug/mL
RT: 14.514 min Scan# 1415
Delta R.T. 0.022 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

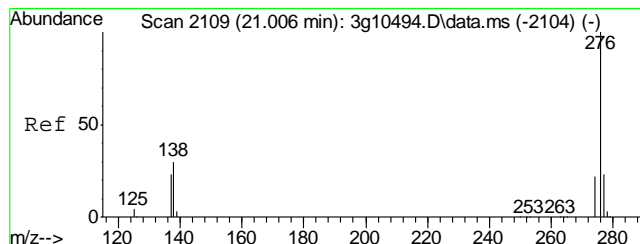
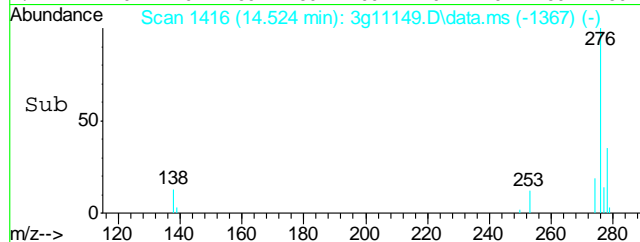
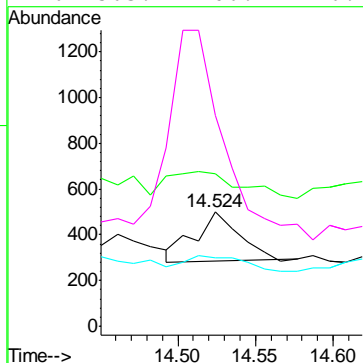
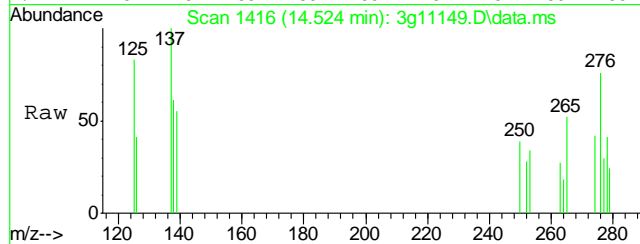
Tgt Ion	Ratio	Lower	Upper
276	100		
138	27.1	5.3	45.3
277	33.1	5.0	45.0
278	17.8	59.3	99.3#





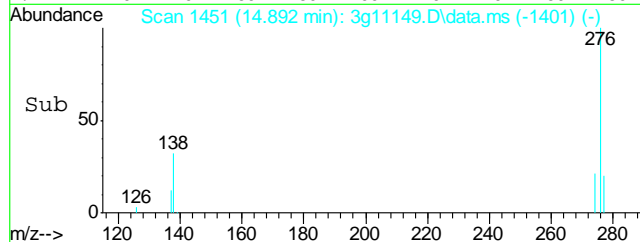
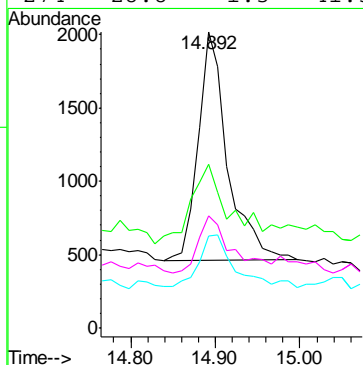
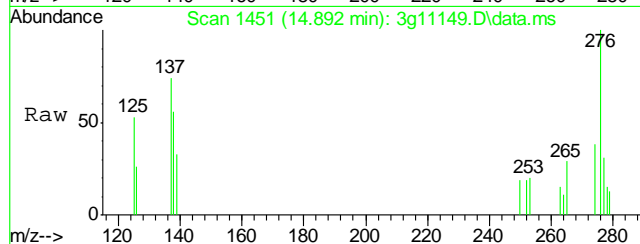
#29
Dibenzo(a,h)anthracene
Concen: Below ug/mL
RT: 14.524 min Scan# 1416
Delta R.T. 0.011 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

Tgt Ion: 278 Resp: 420
Ion Ratio Lower Upper
278 100
139 87.1 0.0 38.4#
279 42.1 3.1 43.1
276 563.1 106.1 146.1#



#30
Benzo(g,h,i)perylene
Concen: 0.0907 ug/mL m
RT: 14.892 min Scan# 1451
Delta R.T. 0.021 min
Lab File: 3g11149.D
Acq: 11 Sep 12 7:39 pm

Tgt Ion: 276 Resp: 3754
Ion Ratio Lower Upper
276 100
138 48.6 1.3 41.3#
277 31.5 3.4 43.4
274 28.8 1.3 41.3



GC Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: D38480
Account: XTOKRWR XTO Energy
Project: PCU 197-36A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB958-MB	GB17458.D	1	09/10/12	SK	n/a	n/a	GGB958

The QC reported here applies to the following samples: Method: SW846 8015B
D38480-1, D38480-2, D38480-3

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	100% 60-140%

10.1.1
10

Blank Spike Summary

Job Number: D38480
Account: XTOKRWR XTO Energy
Project: PCU 197-36A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB958-BS	GB17459.D	1	09/10/12	SK	n/a	n/a	GGB958

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

D38480-1, D38480-2, D38480-3

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	126	115	70-130

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

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D38480
Account: XTOKRWR XTO Energy
Project: PCU 197-36A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D38454-1MS	GB17461.D	1	09/10/12	SK	n/a	n/a	GGB958
D38454-1MSD	GB17462.D	1	09/10/12	SK	n/a	n/a	GGB958
D38454-1	GB17460.D	1	09/10/12	SK	n/a	n/a	GGB958

The QC reported here applies to the following samples:

Method: SW846 8015B

D38480-1, D38480-2, D38480-3

CAS No.	Compound	D38454-1 mg/kg	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	168	194	115	197	117	2	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D38454-1	Limits
120-82-1	1,2,4-Trichlorobenzene	106%	106%	94%	60-140%

* = Outside of Control Limits.

GC Volatiles

Raw Data



Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\091012\GB17471.D\FID1A.CH Vial: 17
Signal #2 : Y:\1\DATA\091012\GB17471.D\FID2B.CH
Acq On : 10 Sep 2012 7:14 pm Operator: StephK
Sample : D38480-1, 50X Inst : GC/MS Ins
Misc : GC3092,GGB958,5.064,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Sep 11 08:17:16 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Mon Sep 10 11:02:56 2012
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	14.36	2761265	88.124 %	m	
10) S	1,2,4-Trichlorobenzene (P)	14.36	19380807	119.246 %		
Target Compounds						
1) H	TVH-Gasoline	7.23	58975870	0.905 mg/L		
4) T	Methyl-t-butyl-ether	2.20	203058	1.564 ug/L		
5) T	Benzene	4.10	769084	1.908 ug/L		
6) T	Toluene	7.64	14054678	35.467 ug/L		
7) T	Ethylbenzene	10.28	3138365	9.278 ug/L		
8) T	m,p-Xylene	10.46	13337095	36.167 ug/L		
9) T	o-Xylene	10.96	1085060	3.304 ug/L		
11) T	Naphthalene	14.58	7766841	39.364 ug/L		

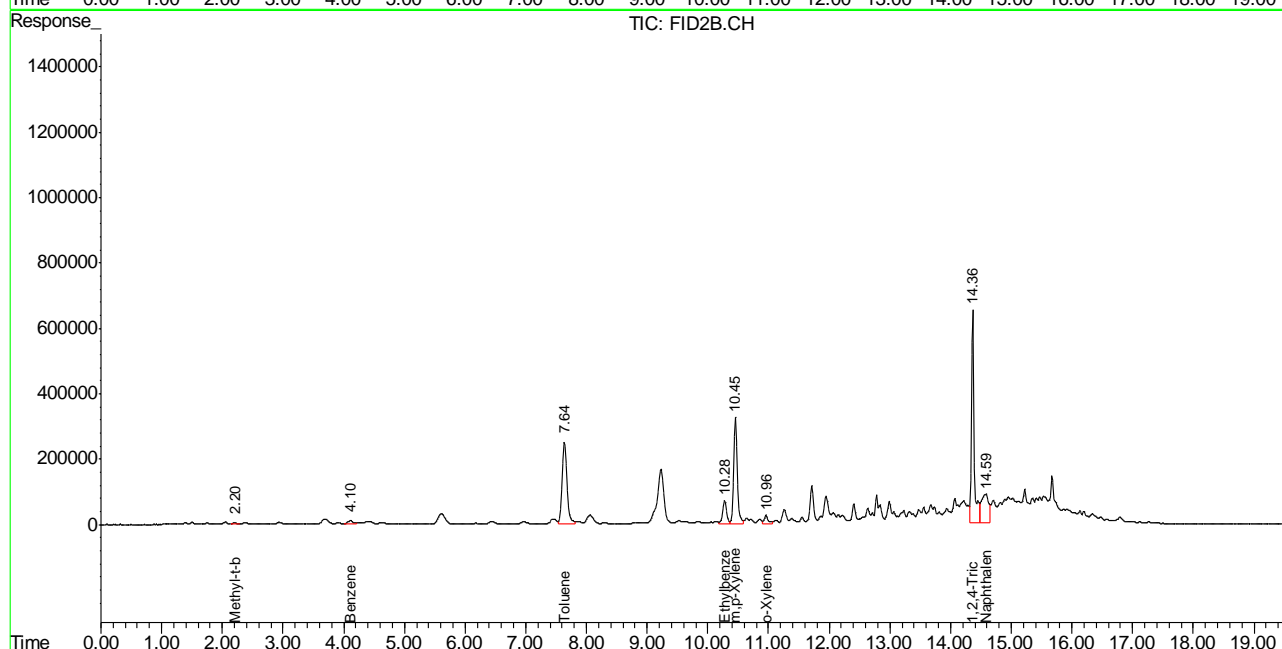
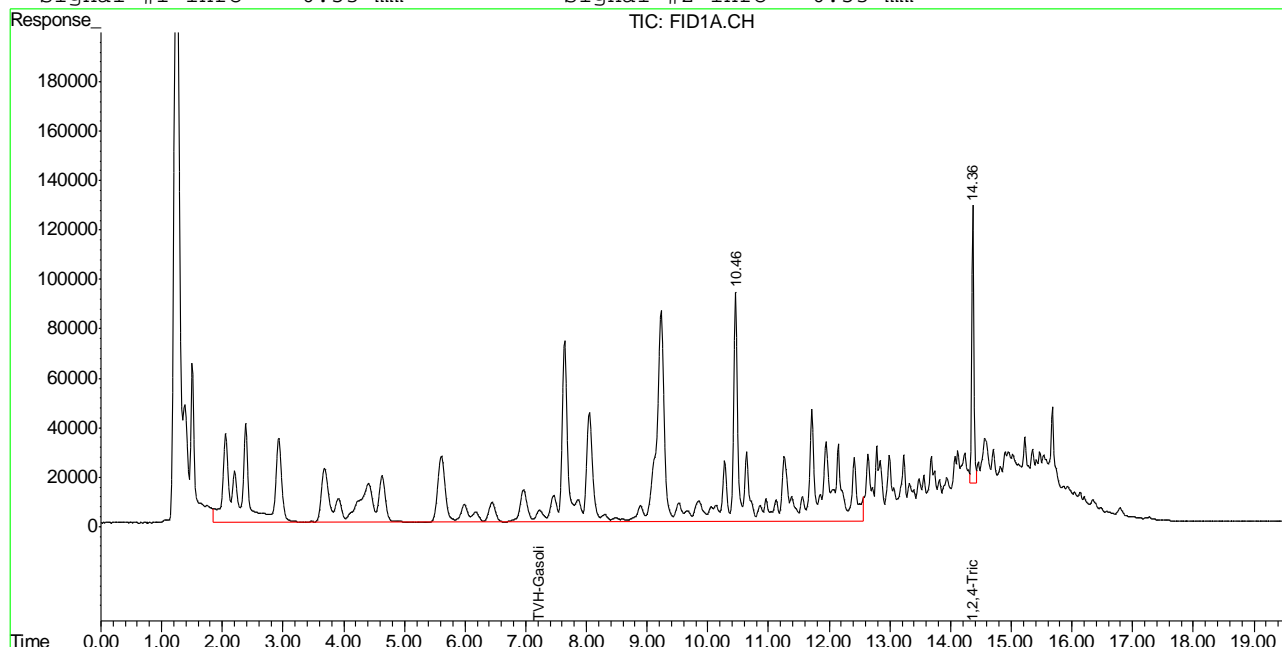
11.1.1
11

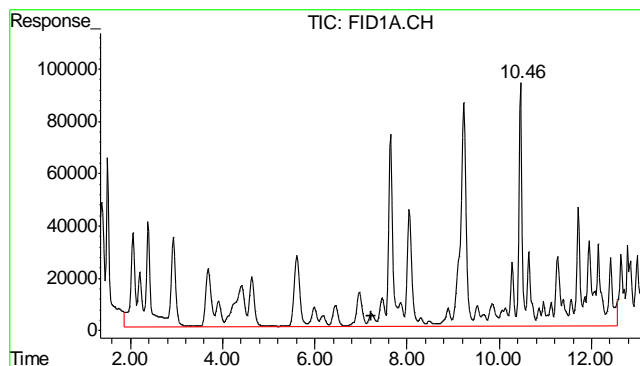
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\091012\GB17471.D\FID1A.CH Vial: 17
 Signal #2 : Y:\1\DATA\091012\GB17471.D\FID2B.CH
 Acq On : 10 Sep 2012 7:14 pm Operator: StephK
 Sample : D38480-1, 50X Inst : GC/MS Ins
 Misc : GC3092,GGB958,5.064,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Sep 11 7:28 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Mon Sep 10 11:02:56 2012
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB4.M

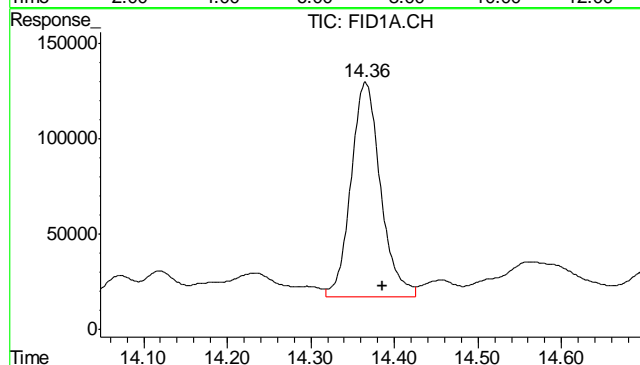
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





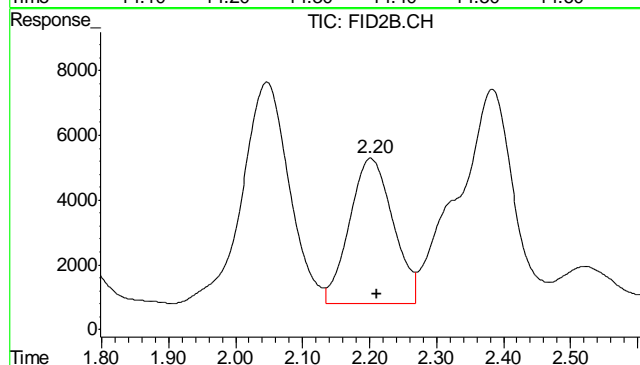
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 58975870
Conc: 0.90 mg/L m



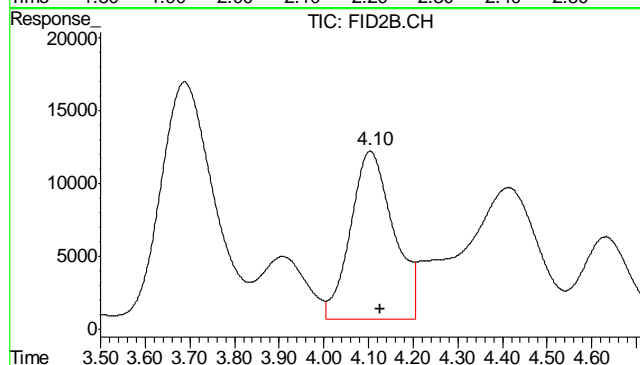
#2 1,2,4-Trichlorobenzene

R.T.: 14.365 min
Delta R.T.: -0.021 min
Response: 2761265
Conc: 88.12 % m



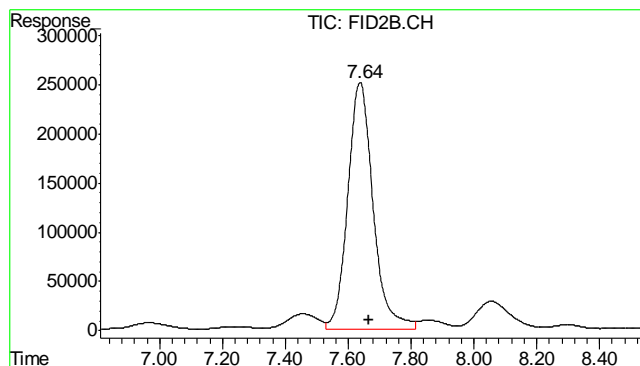
#4 Methyl-t-butyl-ether

R.T.: 2.202 min
Delta R.T.: -0.009 min
Response: 203058
Conc: 1.56 ug/L



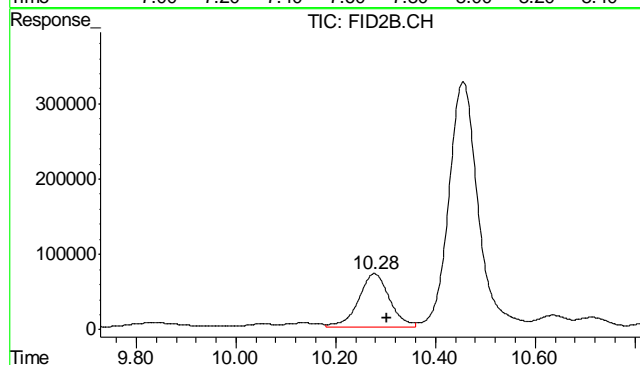
#5 Benzene

R.T.: 4.104 min
Delta R.T.: -0.023 min
Response: 769084
Conc: 1.91 ug/L



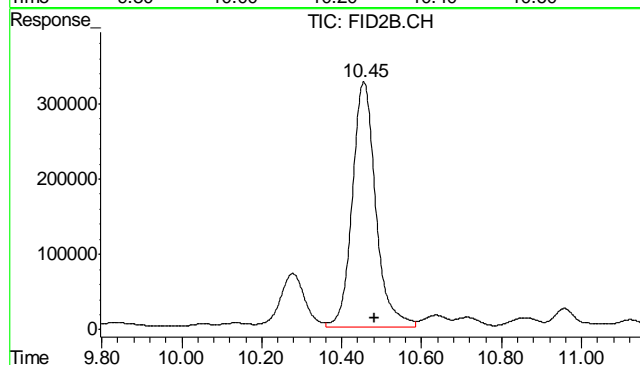
#6 Toluene

R.T.: 7.638 min
Delta R.T.: -0.029 min
Response: 14054678
Conc: 35.47 ug/L



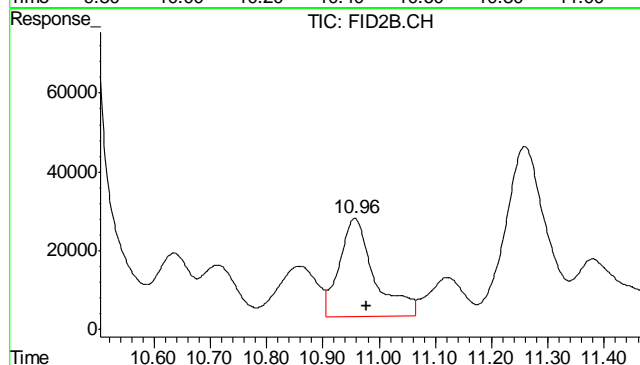
#7 Ethylbenzene

R.T.: 10.278 min
Delta R.T.: -0.024 min
Response: 3138365
Conc: 9.28 ug/L



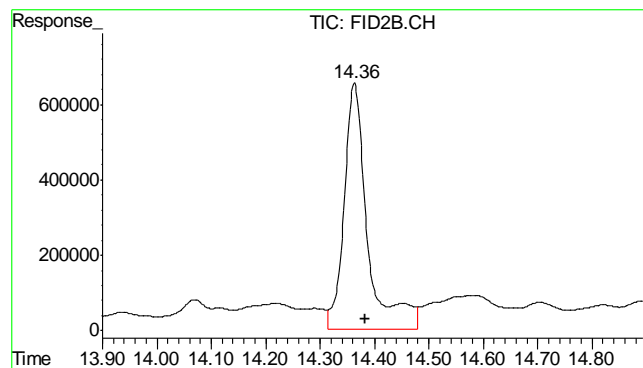
#8 m,p-Xylene

R.T.: 10.455 min
Delta R.T.: -0.026 min
Response: 13337095
Conc: 36.17 ug/L



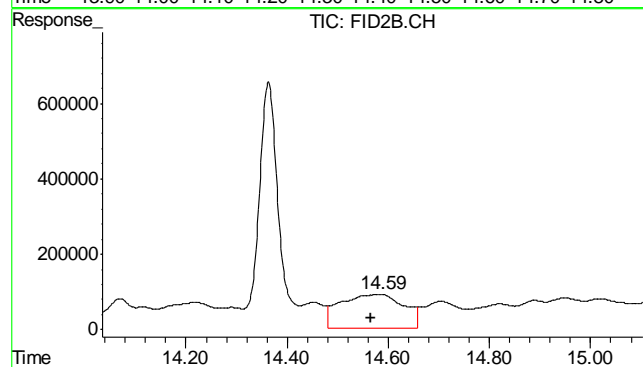
#9 o-Xylene

R.T.: 10.957 min
Delta R.T.: -0.021 min
Response: 1085060
Conc: 3.30 ug/L



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

R.T.: 14.363 min
Delta R.T.: -0.020 min
Response: 19380807
Conc: 119.25 %



#11 Naphthalene

R.T.: 14.580 min
Delta R.T.: 0.014 min
Response: 7766841
Conc: 39.36 ug/L

11.1.1

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\091012\GB17472.D\FID1A.CH Vial: 18
 Signal #2 : Y:\1\DATA\091012\GB17472.D\FID2B.CH
 Acq On : 10 Sep 2012 7:49 pm Operator: StephK
 Sample : D38480-2, 50X Inst : GC/MS Ins
 Misc : GC3092,GGB958,5.062,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Sep 11 08:17:20 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Mon Sep 10 11:02:56 2012
 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	14.36	2918282	93.135 %	m	
10) S	1,2,4-Trichlorobenzene (P)	14.36	16620672	102.264 %		
Target Compounds						
1) H	TVH-Gasoline	7.23	23151874	0.335 mg/L		
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d	
5) T	Benzene	4.09	3250042	8.065 ug/L		
6) T	Toluene	7.63	6638462	16.752 ug/L		
7) T	Ethylbenzene	10.27	1068341	3.158 ug/L		
8) T	m,p-Xylene	10.45	5433293	14.512 ug/L		
9) T	o-Xylene	10.95	1023567	3.117 ug/L		
11) T	Naphthalene	14.55	6179507	31.319 ug/L		

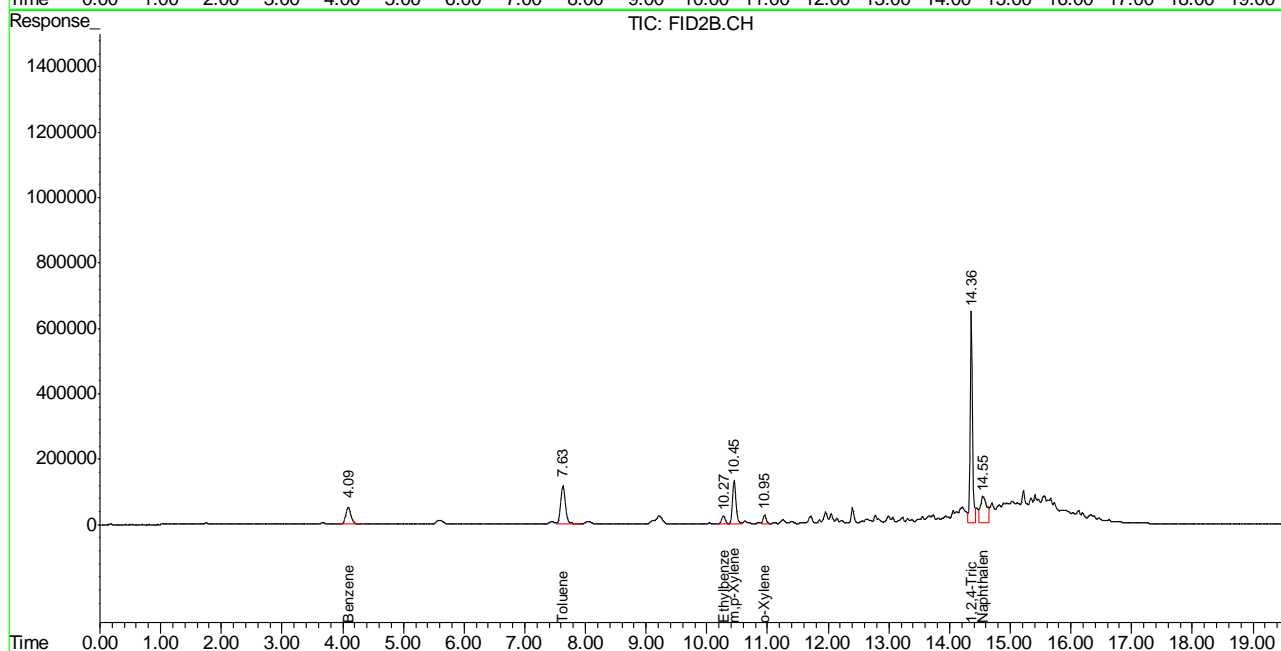
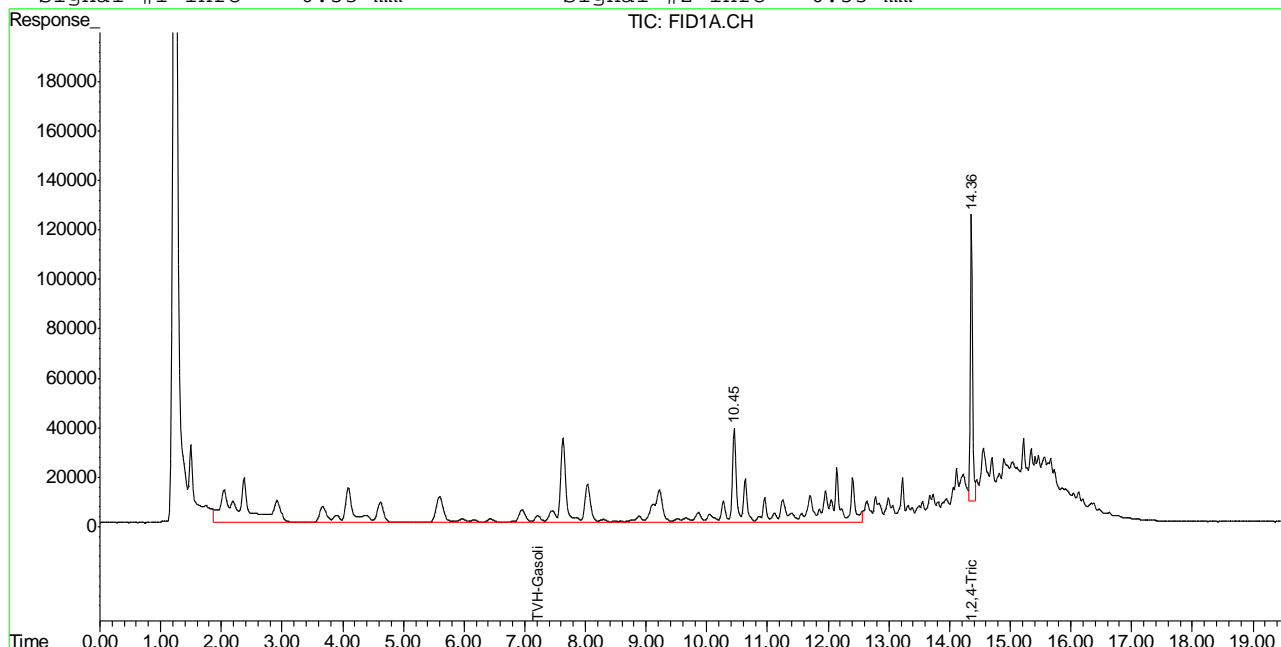
11.12
 11

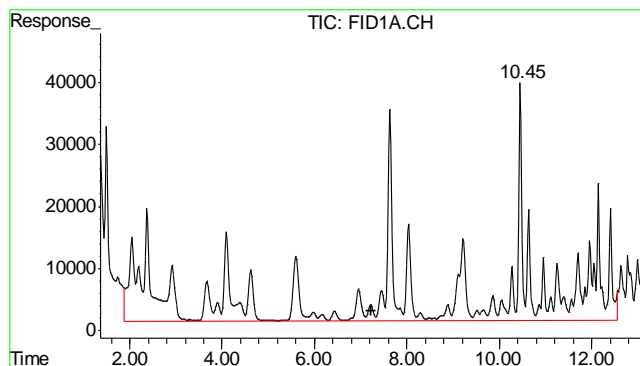
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\091012\GB17472.D\FID1A.CH Vial: 18
 Signal #2 : Y:\1\DATA\091012\GB17472.D\FID2B.CH
 Acq On : 10 Sep 2012 7:49 pm Operator: StephK
 Sample : D38480-2, 50X Inst : GC/MS Ins
 Misc : GC3092,GGB958,5.062,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Sep 11 7:28 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Mon Sep 10 11:02:56 2012
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB4.M

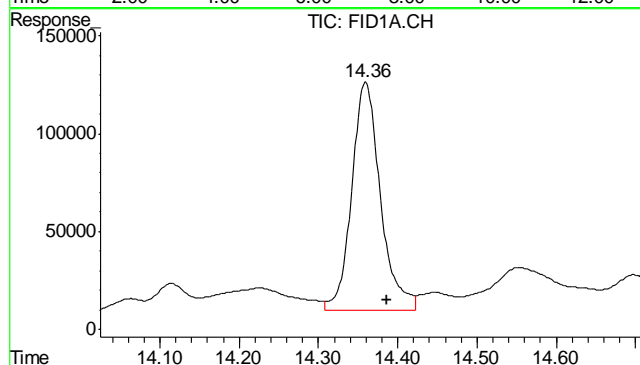
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





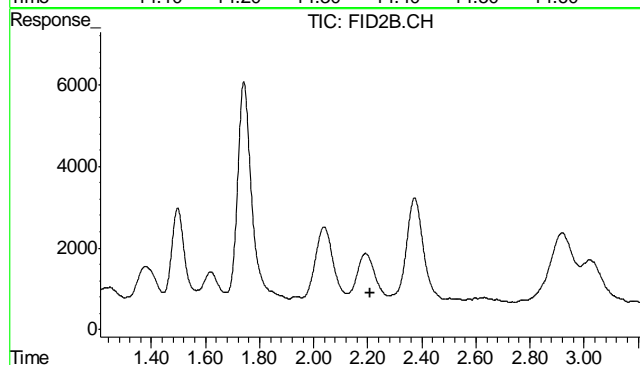
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 23151874
Conc: 0.33 mg/L m



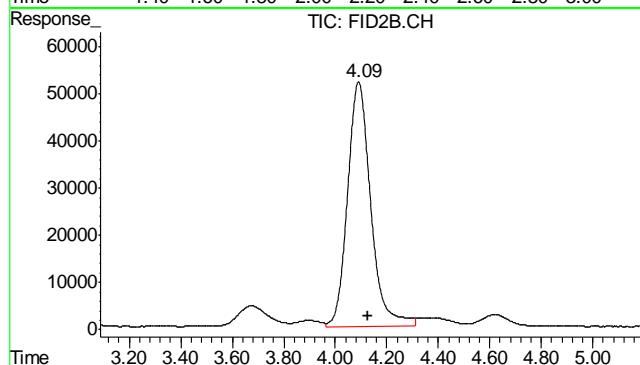
#2 1,2,4-Trichlorobenzene

R.T.: 14.359 min
Delta R.T.: -0.027 min
Response: 2918282
Conc: 93.13 % m



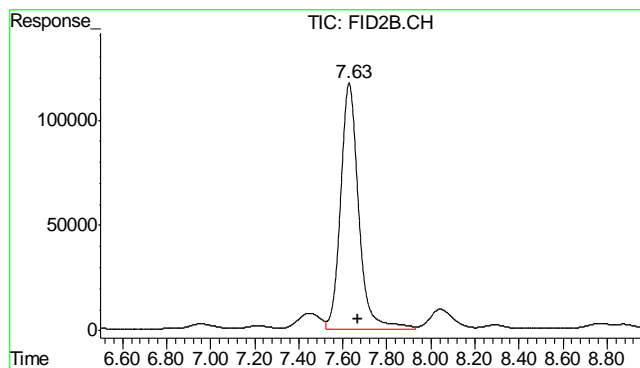
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T.: 2.211 min
Response: 0
Conc: N.D.



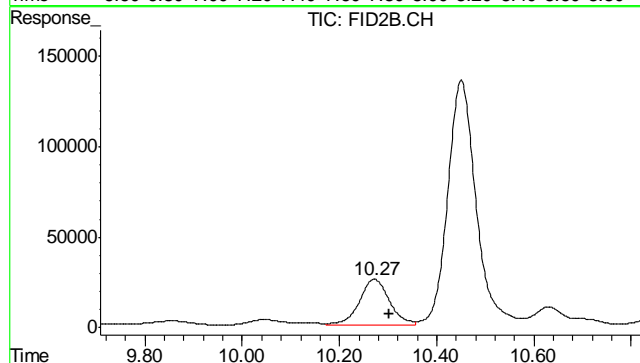
#5 Benzene

R.T.: 4.091 min
Delta R.T.: -0.036 min
Response: 3250042
Conc: 8.06 ug/L



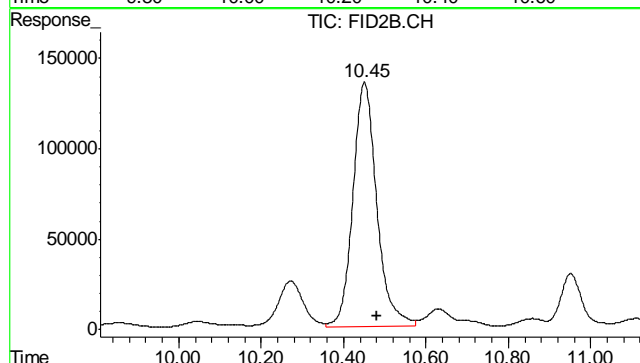
#6 Toluene

R.T.: 7.629 min
Delta R.T.: -0.037 min
Response: 6638462
Conc: 16.75 ug/L



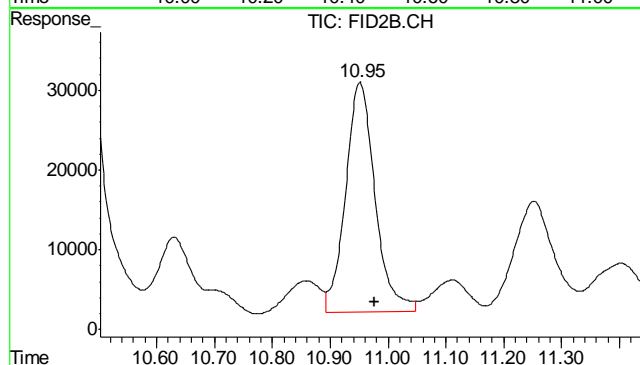
#7 Ethylbenzene

R.T.: 10.272 min
Delta R.T.: -0.030 min
Response: 1068341
Conc: 3.16 ug/L



#8 m,p-Xylene

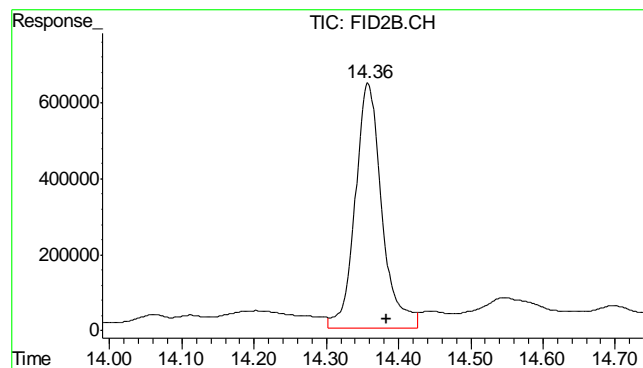
R.T.: 10.451 min
Delta R.T.: -0.031 min
Response: 5433293
Conc: 14.51 ug/L



#9 o-Xylene

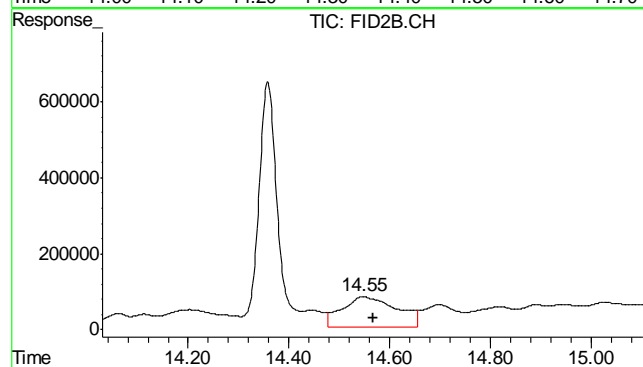
R.T.: 10.952 min
Delta R.T.: -0.026 min
Response: 1023567
Conc: 3.12 ug/L

11.12
11



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

R.T.: 14.358 min
Delta R.T.: -0.026 min
Response: 16620672
Conc: 102.26 %



#11 Naphthalene

R.T.: 14.547 min
Delta R.T.: -0.019 min
Response: 6179507
Conc: 31.32 ug/L

11.1.2
11

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\091012\GB17474.D\FID1A.CH Vial: 20
Signal #2 : Y:\1\DATA\091012\GB17474.D\FID2B.CH
Acq On : 10 Sep 2012 8:59 pm Operator: StephK
Sample : D38480-3, 50X Inst : GC/MS Ins
Misc : GC3092,GGB958,5.078,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Sep 11 08:18:01 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Tue Sep 11 08:17:43 2012
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	

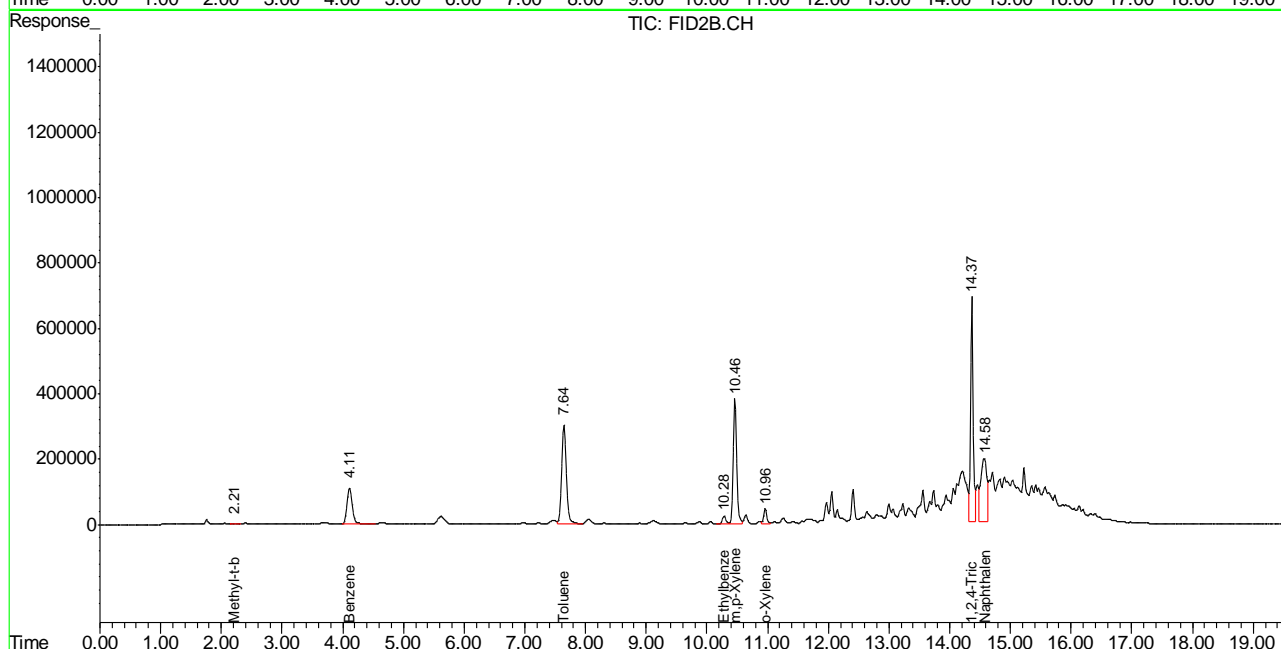
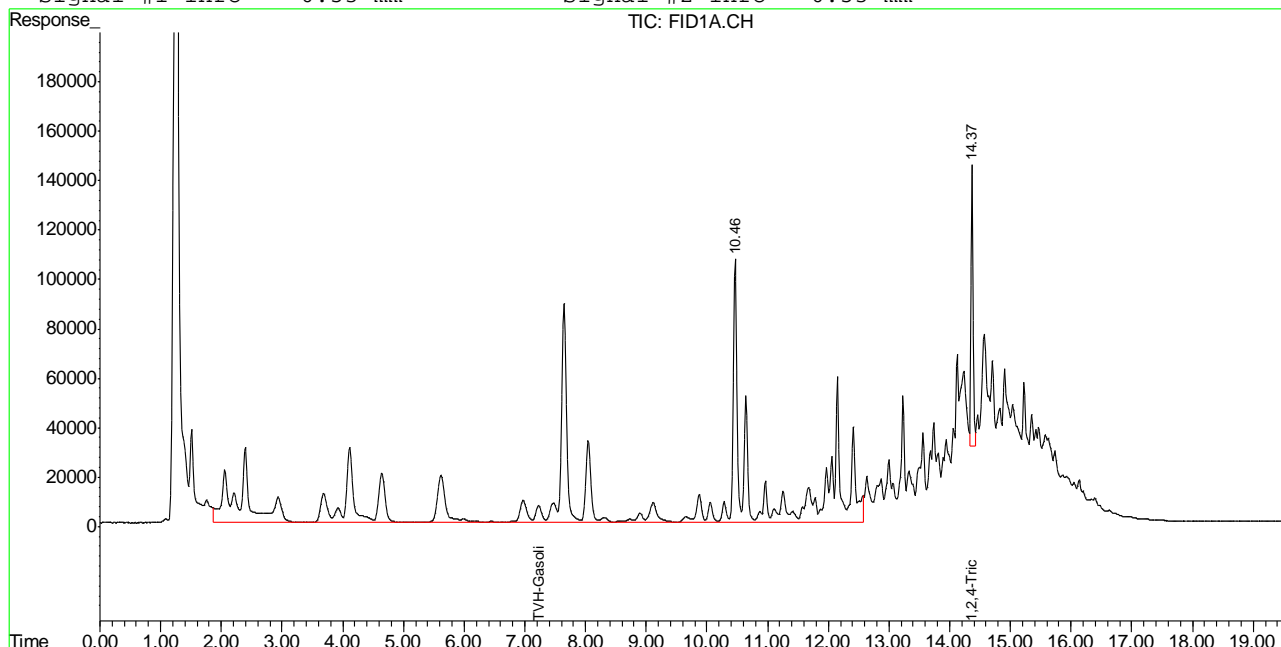
System Monitoring Compounds						
2) S	1,2,4-Trichlorobenzene	14.37	2772102	88.469 %	m	
10) S	1,2,4-Trichlorobenzene (P)	14.37	19645576	120.875 %		
Target Compounds						
1) H	TVH-Gasoline	7.23	41048209	0.620 mg/L		
4) T	Methyl-t-butyl-ether	2.21	90659	0.698 ug/L		
5) T	Benzene	4.11	7018387	17.416 ug/L		
6) T	Toluene	7.64	16859988	42.546 ug/L		
7) T	Ethylbenzene	10.28	1077039	3.184 ug/L		
8) T	m,p-Xylene	10.46	15160284	41.162 ug/L		
9) T	o-Xylene	10.96	1645166	5.010 ug/L		
11) T	Naphthalene	14.57	13438626	68.110 ug/L		

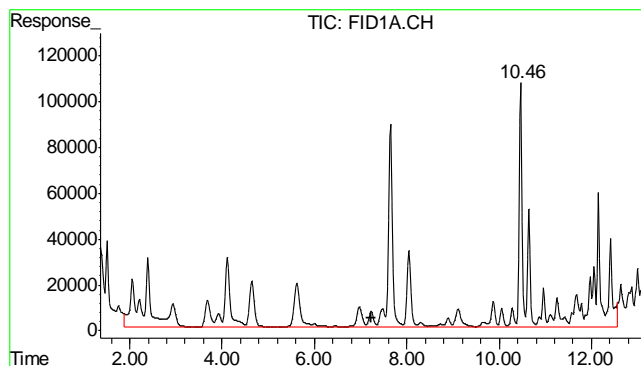
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\091012\GB17474.D\FID1A.CH Vial: 20
 Signal #2 : Y:\1\DATA\091012\GB17474.D\FID2B.CH
 Acq On : 10 Sep 2012 8:59 pm Operator: StephK
 Sample : D38480-3, 50X Inst : GC/MS Ins
 Misc : GC3092,GGB958,5.078,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Sep 11 7:29 2012 Quant Results File: TB868GB868SOIL.RES

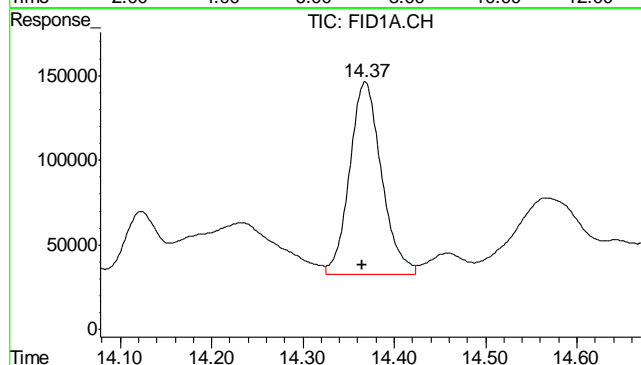
Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Tue Sep 11 08:17:43 2012
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB4.M

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

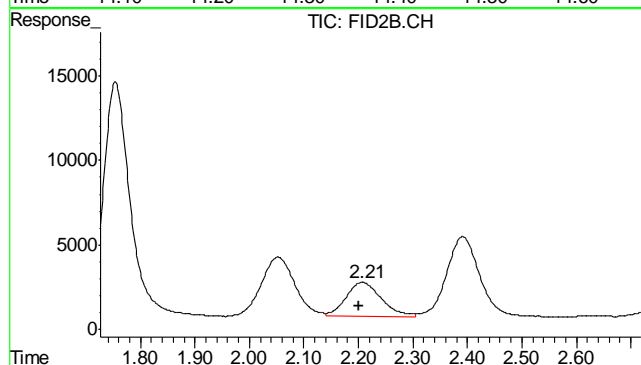




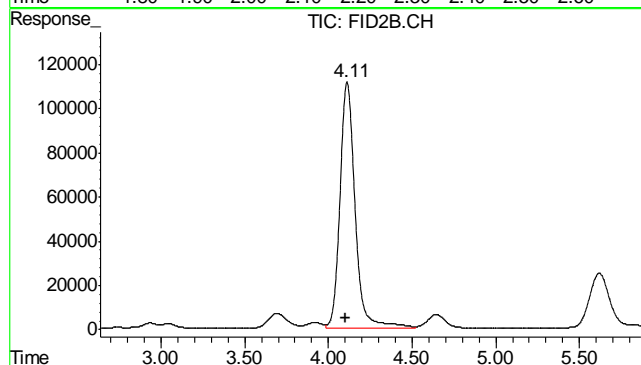
#1 TVH-Gasoline
 R.T.: 7.230 min
 Delta R.T.: 0.000 min
 Response: 41048209
 Conc: 0.62 mg/L m



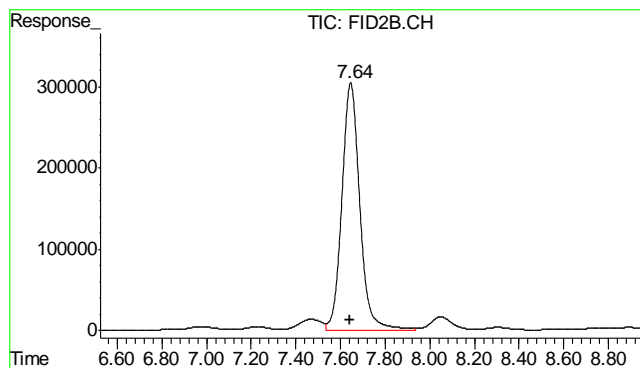
#2 1,2,4-Trichlorobenzene
 R.T.: 14.368 min
 Delta R.T.: 0.003 min
 Response: 2772102
 Conc: 88.47 % m



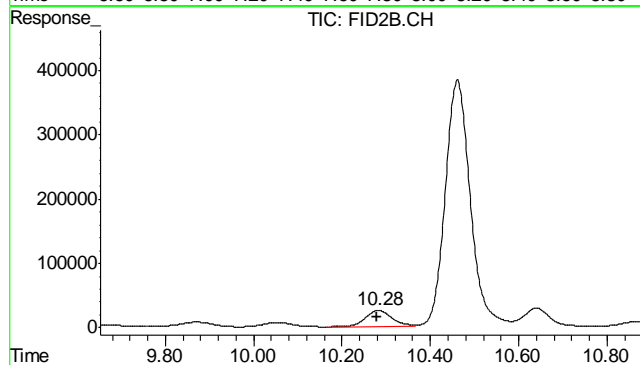
#4 Methyl-t-butyl-ether
 R.T.: 2.207 min
 Delta R.T.: 0.006 min
 Response: 90659
 Conc: 0.70 ug/L



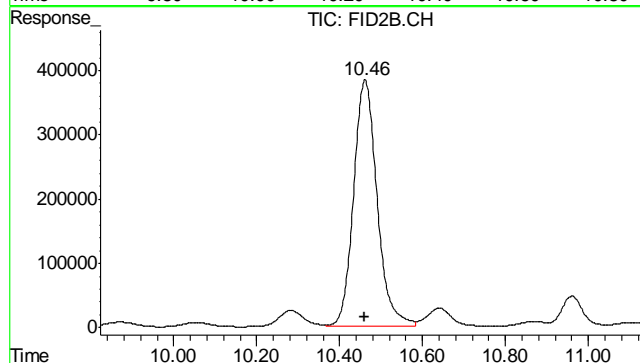
#5 Benzene
 R.T.: 4.112 min
 Delta R.T.: 0.008 min
 Response: 7018387
 Conc: 17.42 ug/L



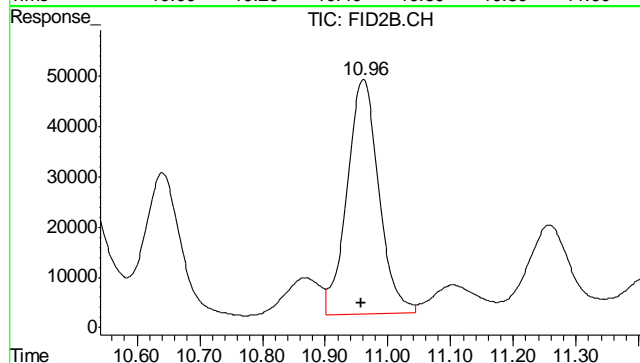
#6 Toluene
 R.T.: 7.645 min
 Delta R.T.: 0.003 min
 Response: 16859988
 Conc: 42.55 ug/L



#7 Ethylbenzene
 R.T.: 10.282 min
 Delta R.T.: 0.004 min
 Response: 1077039
 Conc: 3.18 ug/L

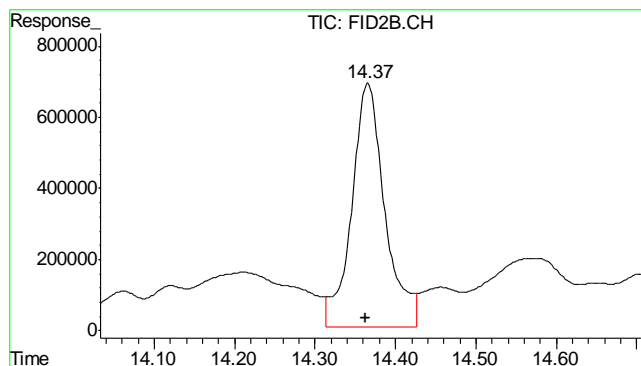


#8 m,p-Xylene
 R.T.: 10.461 min
 Delta R.T.: 0.002 min
 Response: 15160284
 Conc: 41.16 ug/L



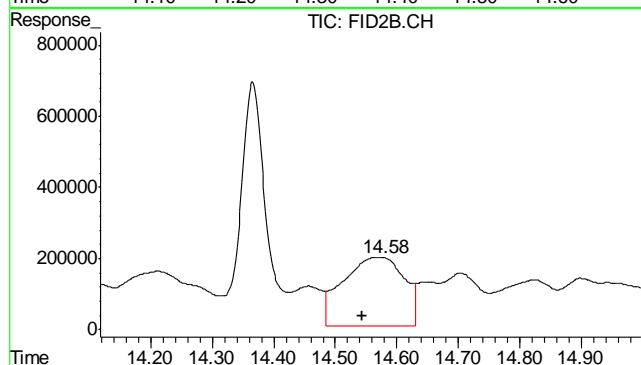
#9 o-Xylene
 R.T.: 10.961 min
 Delta R.T.: 0.003 min
 Response: 1645166
 Conc: 5.01 ug/L

11.13
 11



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

R.T.: 14.366 min
 Delta R.T.: 0.003 min
 Response: 19645576
 Conc: 120.88 %



#11 Naphthalene

R.T.: 14.572 min
 Delta R.T.: 0.028 min
 Response: 13438626
 Conc: 68.11 ug/L

11.1.3
11

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\091012\GB17458.D\FID1A.CH Vial: 4
Signal #2 : Y:\1\DATA\091012\GB17458.D\FID2B.CH
Acq On : 10 Sep 2012 11:26 am Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC3092,GGB958,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Sep 10 12:29:53 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Mon Sep 10 11:02:56 2012
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	14.37	3120564	99.590	%
10) S	1,2,4-Trichlorobenzene (P)	14.37	16470036	101.337	%
Target Compounds					
1) H	TVH-Gasoline	7.23	3428685	<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	7.66	125866	0.318	ug/L
7) T	Ethylbenzene	0.00	0	N.D.	ug/L d
8) T	m,p-Xylene	0.00	0	N.D.	ug/L d
9) T	o-Xylene	0.00	0	N.D.	ug/L d
11) T	Naphthalene	14.55	194561	0.986	ug/L

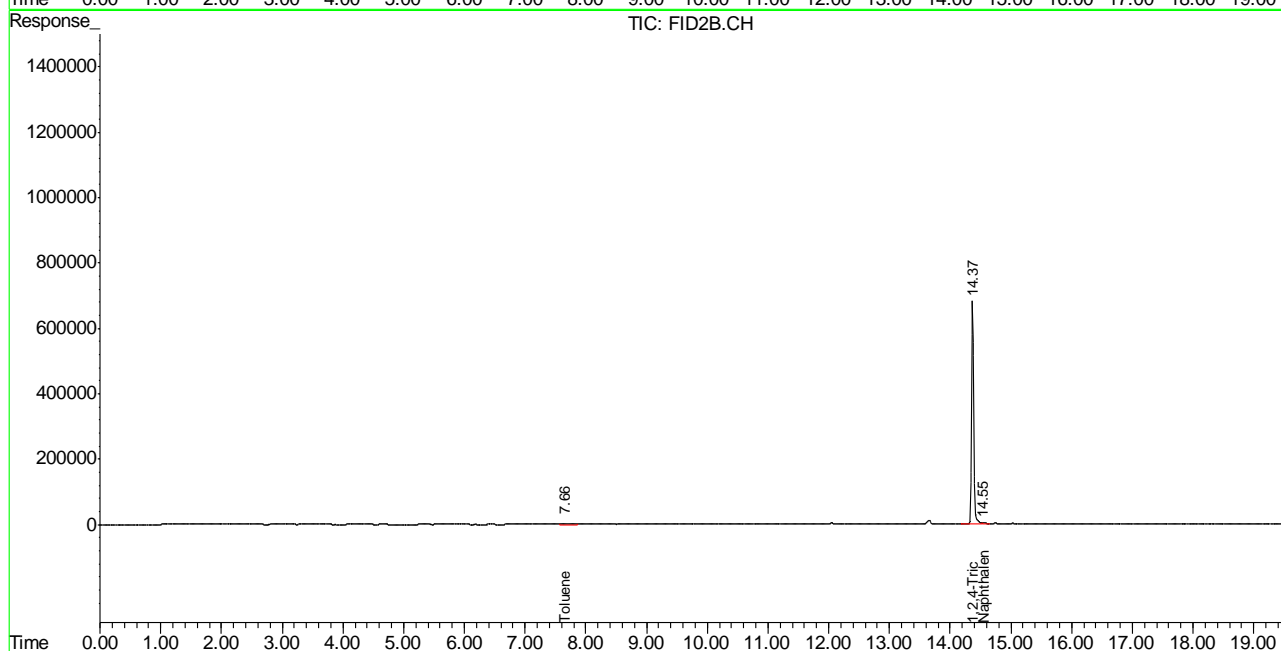
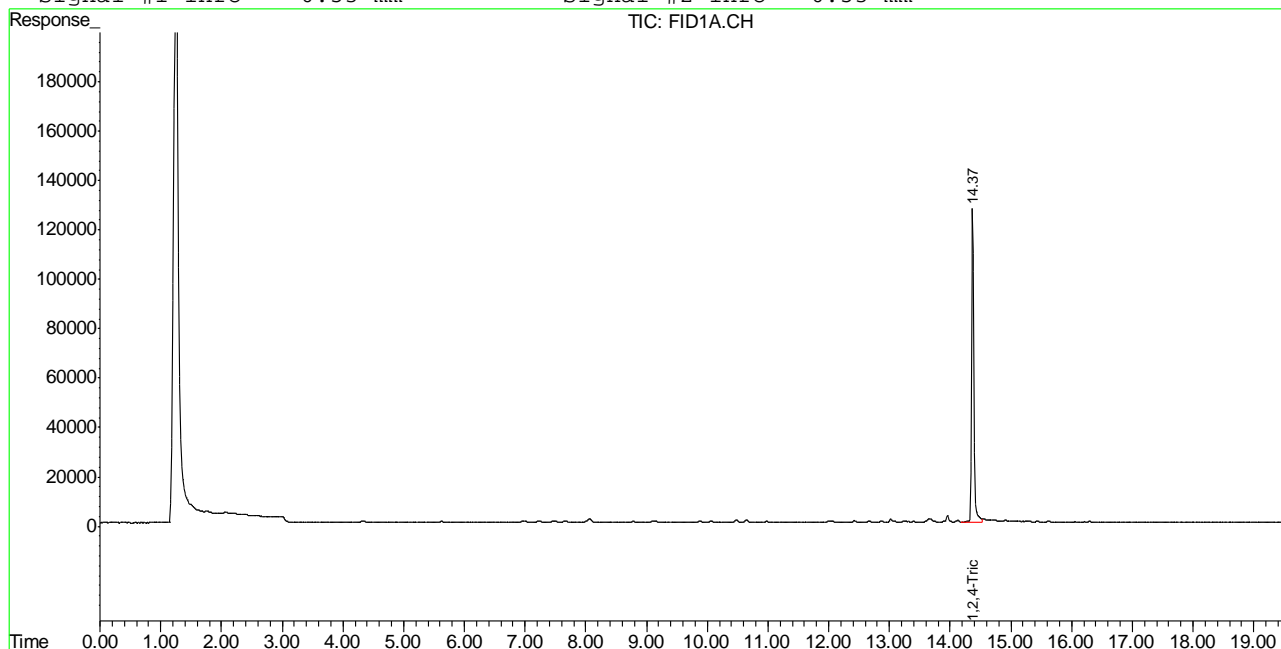
(f)=RT Delta > 1/2 Window (m)=manual int.
GB17458.D TB868GB868SOIL.M Tue Sep 11 08:25:34 2012 GC

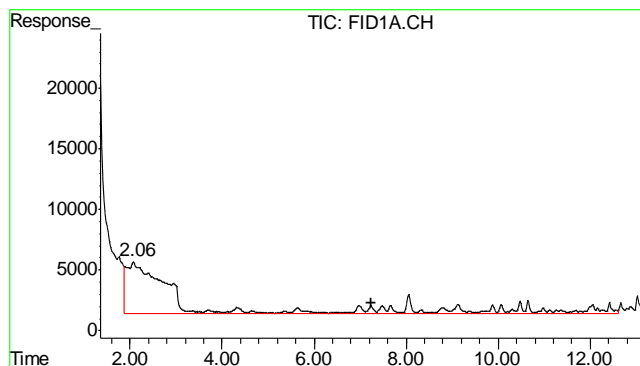
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\091012\GB17458.D\FID1A.CH Vial: 4
Signal #2 : Y:\1\DATA\091012\GB17458.D\FID2B.CH
Acq On : 10 Sep 2012 11:26 am Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC3092,GGB958,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Sep 10 11:44 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Mon Sep 10 11:02:56 2012
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

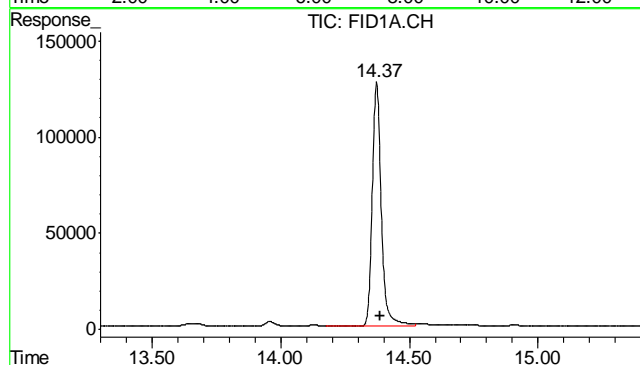
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





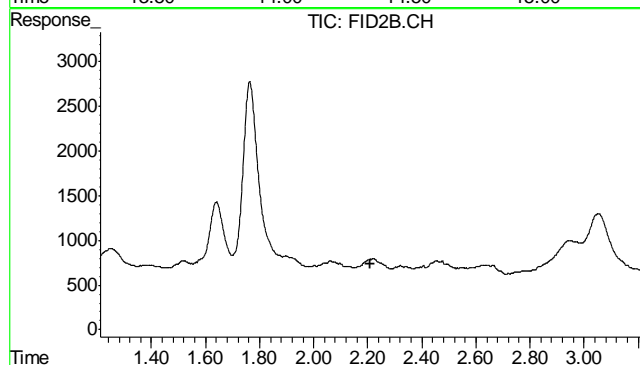
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 3428685
Conc: N.D.



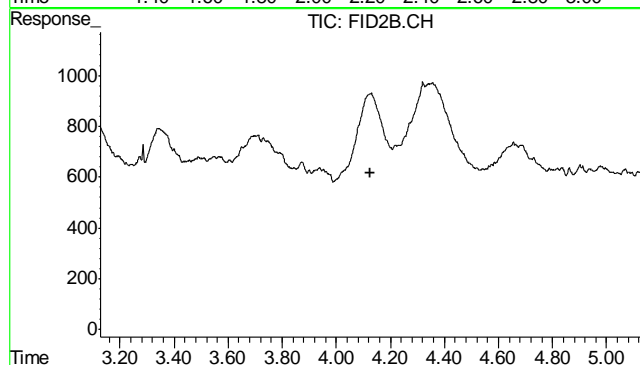
#2 1,2,4-Trichlorobenzene

R.T.: 14.372 min
Delta R.T.: -0.014 min
Response: 3120564
Conc: 99.59 %



#4 Methyl-t-butyl-ether

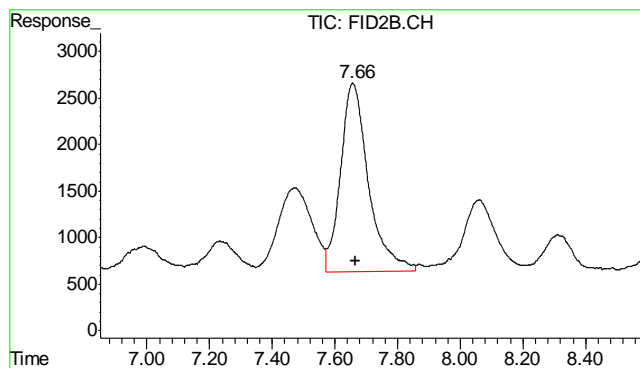
R.T.: 0.000 min
Exp R.T.: 2.211 min
Response: 0
Conc: N.D.



#5 Benzene

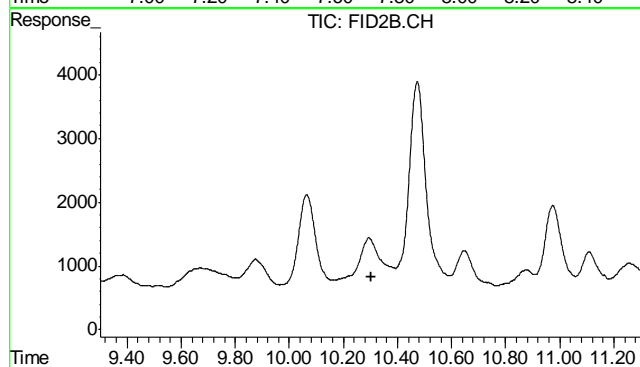
R.T.: 0.000 min
Exp R.T.: 4.127 min
Response: 0
Conc: N.D.

11.21
11



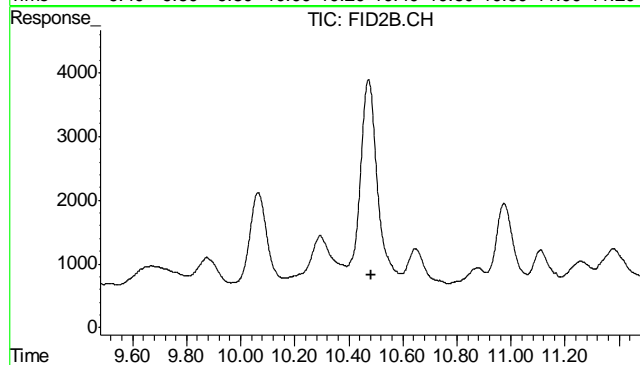
#6 Toluene

R.T.: 7.657 min
Delta R.T.: -0.009 min
Response: 125866
Conc: 0.32 ug/L



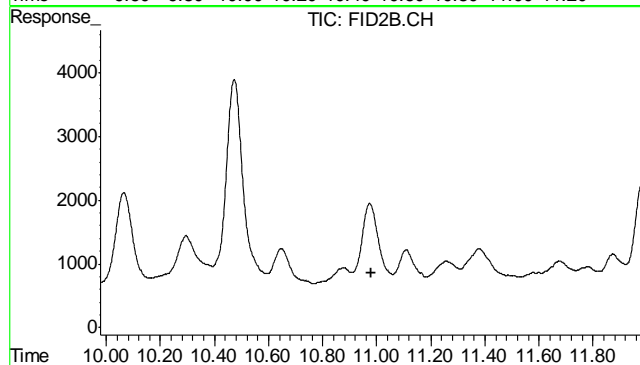
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T.: 10.302 min
Response: 0
Conc: N.D.



#8 m,p-Xylene

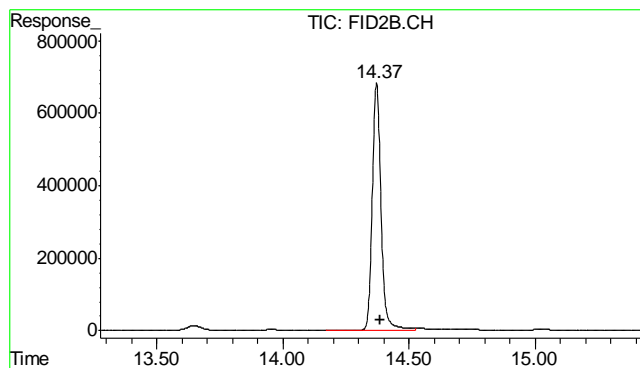
R.T.: 0.000 min
Exp R.T.: 10.482 min
Response: 0
Conc: N.D.



#9 o-Xylene

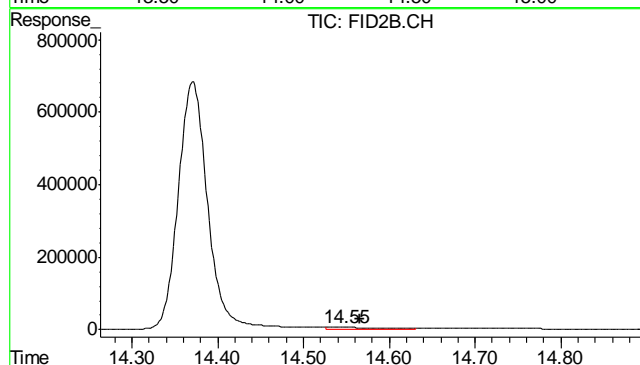
R.T.: 0.000 min
Exp R.T.: 10.978 min
Response: 0
Conc: N.D.

11.21 11



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

R.T.: 14.371 min
Delta R.T.: -0.013 min
Response: 16470036
Conc: 101.34 %



#11 Naphthalene

R.T.: 14.548 min
Delta R.T.: -0.018 min
Response: 194561
Conc: 0.99 ug/L

11.2.1
11

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: D38480
Account: XTOKRWR XTO Energy
Project: PCU 197-36A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6603-MB	FD17336.D	1	09/12/12	AW	09/11/12	OP6603	GFD891

The QC reported here applies to the following samples: Method: SW846-8015B
D38480-1, D38480-2, D38480-3

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

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	91% 43-136%

Blank Spike Summary

Page 1 of 1

Job Number: D38480
Account: XTOKRWR XTO Energy
Project: PCU 197-36A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6603-BS	FD17338.D	1	09/12/12	AW	09/11/12	OP6603	GFD891

The QC reported here applies to the following samples:

Method: SW846-8015B

D38480-1, D38480-2, D38480-3

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	555	83	58-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	86%	43-136%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D38480
Account: XTOKRWR XTO Energy
Project: PCU 197-36A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6603-MS	FD17340.D	1	09/12/12	AW	09/11/12	OP6603	GFD891
OP6603-MSD	FD17342.D	1	09/12/12	AW	09/11/12	OP6603	GFD891
D38483-1	FD17344.D	1	09/12/12	AW	09/11/12	OP6603	GFD891

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

D38480-1, D38480-2, D38480-3

CAS No.	Compound	D38483-1 mg/kg	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	213	739	766	75	753	73	2	20-183/43

CAS No.	Surrogate Recoveries	MS	MSD	D38483-1	Limits
84-15-1	o-Terphenyl	73%	67%	70%	43-136%

* = Outside of Control Limits.

GC Semi-volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\SEPTEMBER\FD091212.SEC\FD17346.D Vi
Acq On : 9-12-2012 04:08:23 PM Operator: alexwl
Sample : D38480-1 Inst : FID5
Misc : OP6603,GFD891,30.10,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Sep 13 09:06:27 2012 Quant Results File: DRO-GFD889R.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD889R.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Wed Sep 12 10:18:23 2012
Response via : Initial Calibration
DataAcq Meth : DRODUAL.M

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

Compound	R.T.	Response	Conc Units

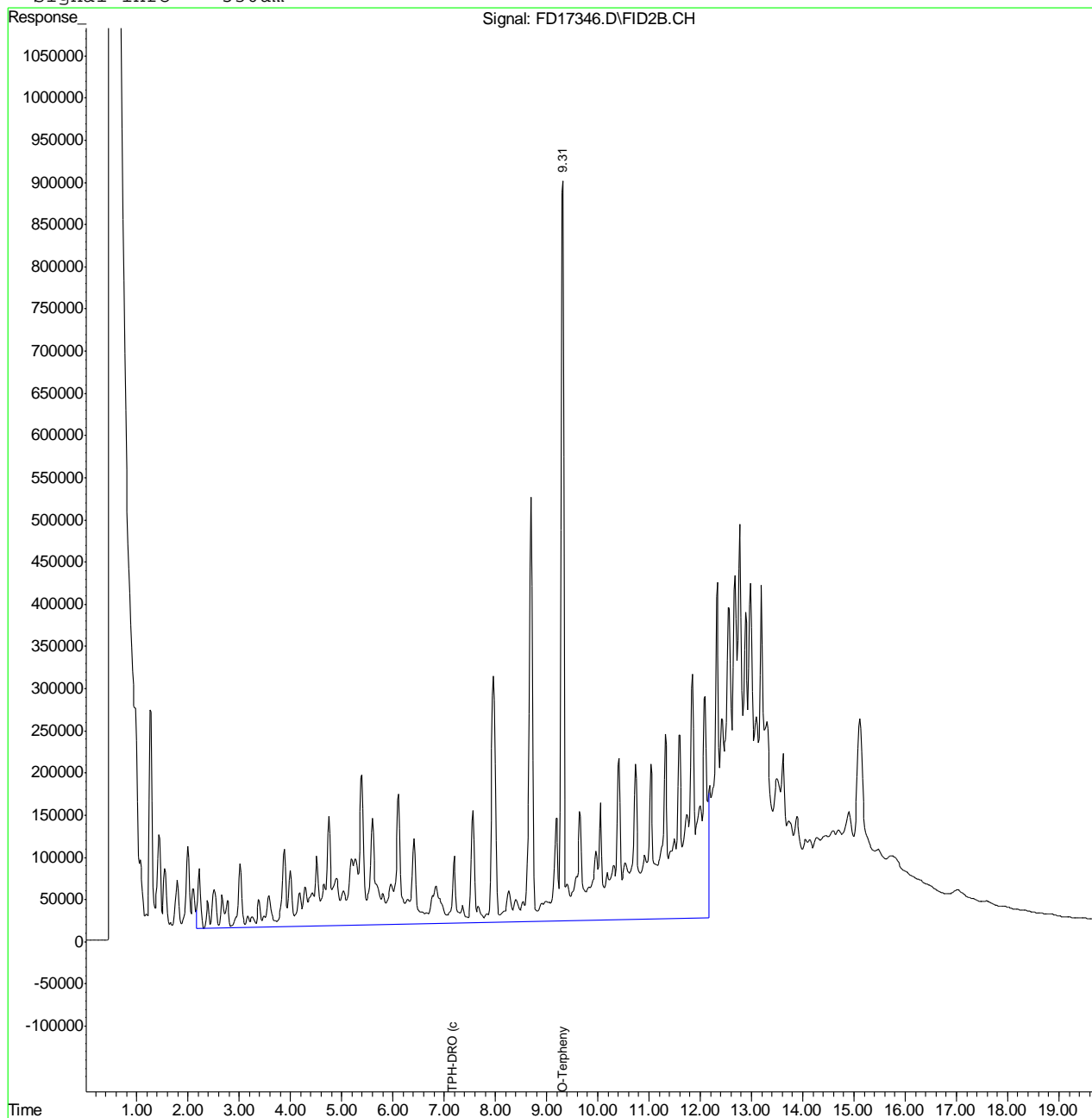
System Monitoring Compounds			
1) S O-Terphenyl	9.31	29405007	735.255 mg/L m
Target Compounds			
2) H TPH-DRO (c10-c28)	7.16	328605542	10065.119 mg/L

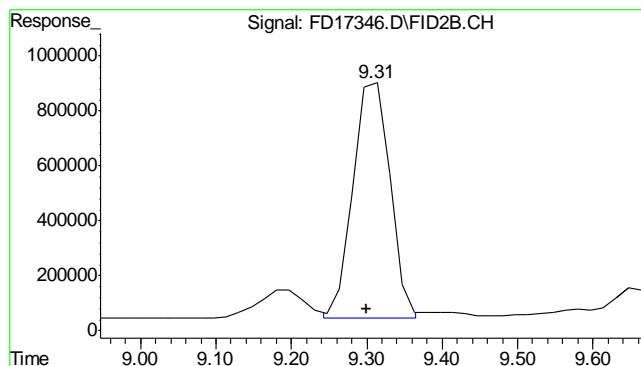
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\SEPTEMBER\FD091212.SEC\FD17346.D Vial: 58
Acq On : 9-12-2012 04:08:23 PM Operator: alexwl
Sample : D38480-1 Inst : FID5
Misc : OP6603,GFD891,30.10,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Sep 13 9:06 2012 Quant Results File: DRO-GFD889R.RES

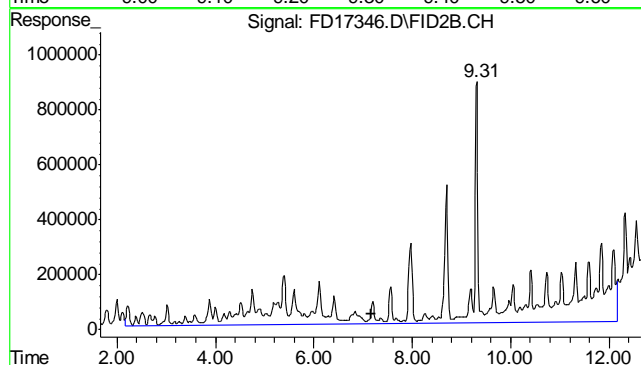
Quant Method : C:\MSDCHEM\2...\DRO-GFD889R.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Wed Sep 12 10:18:23 2012
Response via : Multiple Level Calibration
DataAcq Meth : DRODUAL.M

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





#1 O-Terphenyl
 R.T.: 9.306 min
 Delta R.T.: 0.006 min
 Response: 29405007
 Conc: 735.26 mg/L m



#2 TPH-DRO (c10-c28)
 R.T.: 7.160 min
 Delta R.T.: 0.000 min
 Response: 328605542
 Conc: 10065.12 mg/L m

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\SEPTEMBER\FD091212.SEC\FD17348.D Vial: 59
Acq On : 9-12-2012 04:34:24 PM Operator: alexwl
Sample : D38480-2 Inst : FID5
Misc : OP6603,GFD891,30.05,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Sep 13 09:07:00 2012 Quant Results File: DRO-GFD889R.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD889R.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Wed Sep 12 10:18:23 2012
Response via : Initial Calibration
DataAcq Meth : DRODUAL.M

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

Compound	R.T.	Response	Conc Units

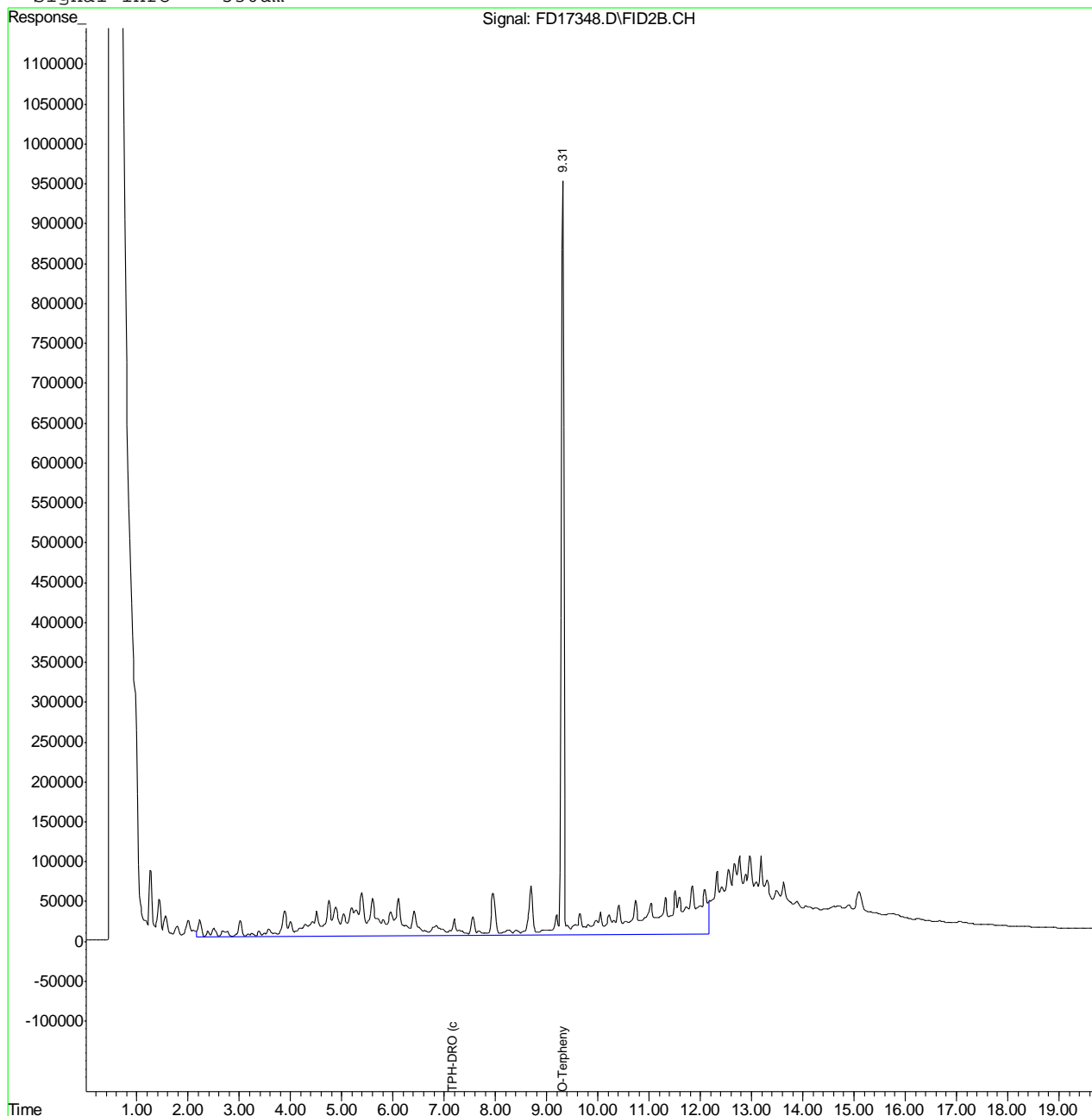
System Monitoring Compounds			
1) S O-Terphenyl	9.31	30713320	767.969 mg/L
Target Compounds			
2) H TPH-DRO (c10-c28)	7.16	93661576	2868.835 mg/L

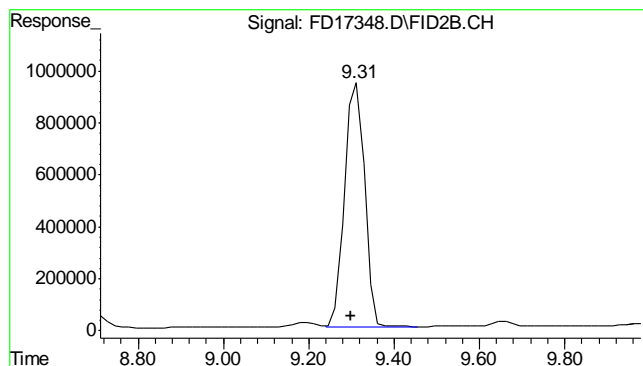
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\SEPTEMBER\FD091212.SEC\FD17348.D Vial: 59
 Acq On : 9-12-2012 04:34:24 PM Operator: alexwl
 Sample : D38480-2 Inst : FID5
 Misc : OP6603,GFD891,30.05,,,2,1 Multiplr: 1.00
 IntFile : autoint1.e
 Quant Time: Sep 13 9:07 2012 Quant Results File: DRO-GFD889R.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD889R.M (Chemstation Integrator)
 Title : 8015B TEH
 Last Update : Wed Sep 12 10:18:23 2012
 Response via : Multiple Level Calibration
 DataAcq Meth : DRODUAL.M

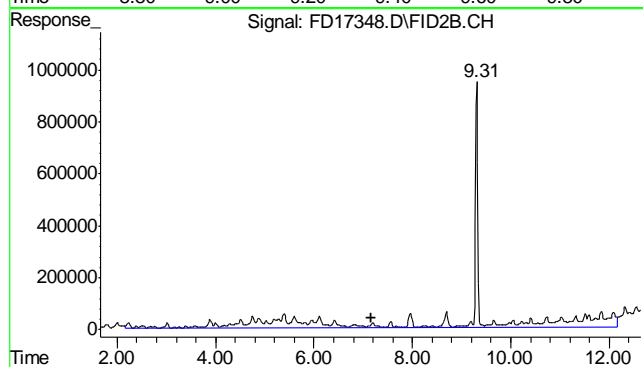
Volume Inj. : 1ul
 Signal Phase : RTX-5
 Signal Info : 530um





#1 O-Terphenyl

R.T.: 9.314 min
 Delta R.T.: 0.014 min
 Response: 30713320
 Conc: 767.97 mg/L



#2 TPH-DRO (c10-c28)

R.T.: 7.160 min
 Delta R.T.: 0.000 min
 Response: 93661576
 Conc: 2868.83 mg/L m

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\SEPTEMBER\FD091212.SEC\FD17350.D Vial: 60
Acq On : 9-12-2012 05:00:40 PM Operator: alexwl
Sample : D38480-3 Inst : FID5
Misc : OP6603,GFD891,30.11,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Sep 13 09:07:19 2012 Quant Results File: DRO-GFD889R.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD889R.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Wed Sep 12 10:18:23 2012
Response via : Initial Calibration
DataAcq Meth : DRODUAL.M

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

Compound	R.T.	Response	Conc Units

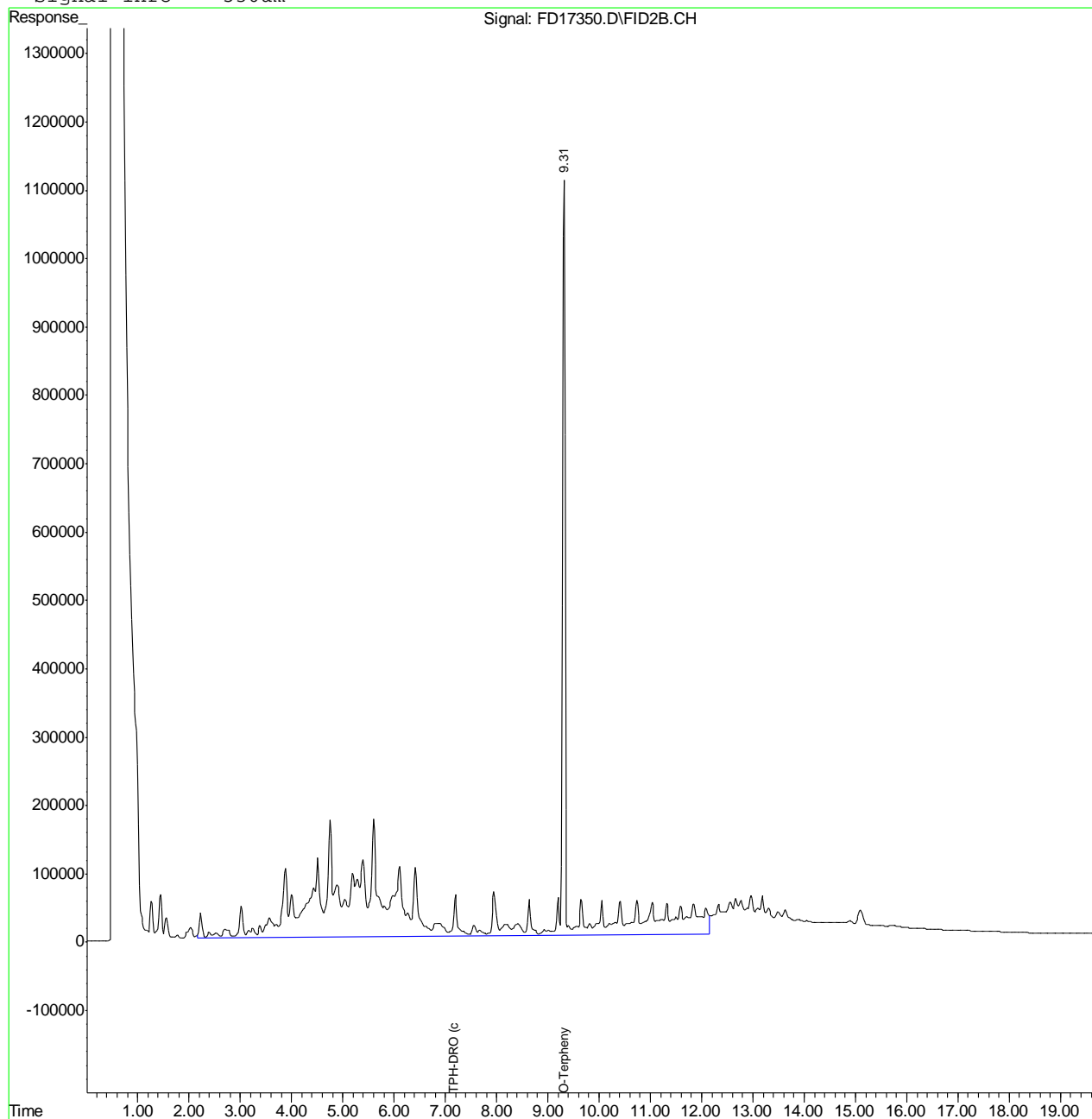
System Monitoring Compounds			
1) S O-Terphenyl	9.32	36257724	906.604 mg/L
Target Compounds			
2) H TPH-DRO (c10-c28)	7.16	174254545	5337.380 mg/L

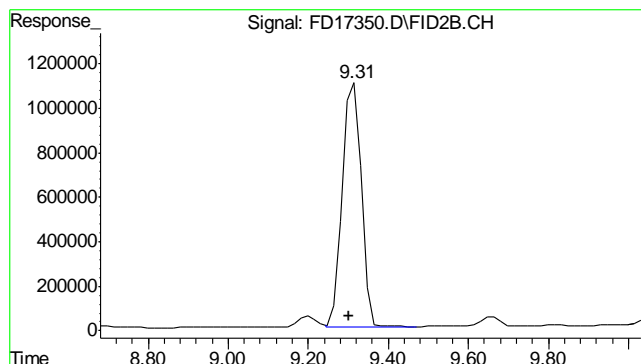
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\SEPTEMBER\FD091212.SEC\FD17350.D Vial: 60
Acq On : 9-12-2012 05:00:40 PM Operator: alexwl
Sample : D38480-3 Inst : FID5
Misc : OP6603,GFD891,30.11,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Sep 13 9:07 2012 Quant Results File: DRO-GFD889R.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD889R.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Wed Sep 12 10:18:23 2012
Response via : Multiple Level Calibration
DataAcq Meth : DRODUAL.M

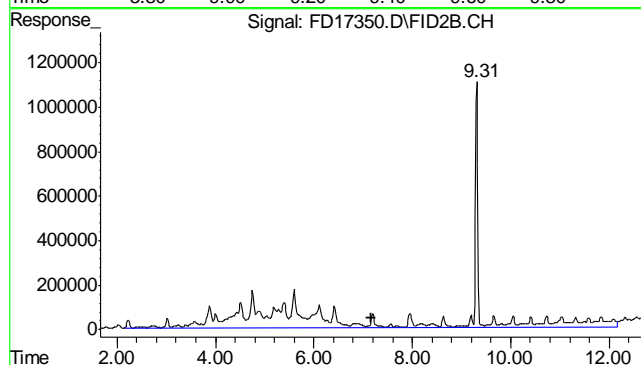
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





#1 O-Terphenyl

R.T.: 9.316 min
 Delta R.T.: 0.016 min
 Response: 36257724
 Conc: 906.60 mg/L



#2 TPH-DRO (c10-c28)

R.T.: 7.160 min
 Delta R.T.: 0.000 min
 Response: 174254545
 Conc: 5337.38 mg/L m

13.1.3
13

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\SEPTEMBER\FD091212.SEC\FD17336.D Vial: 53
Acq On : 9-12-2012 01:58:44 PM Operator: alexwl
Sample : OP6603-MB Inst : FID5
Misc : OP6603,GFD891,30.00,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Sep 13 09:04:14 2012 Quant Results File: DRO-GFD889R.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD889R.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Wed Sep 12 10:18:23 2012
Response via : Initial Calibration
DataAcq Meth : DRODUAL.M

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

Compound	R.T.	Response	Conc Units

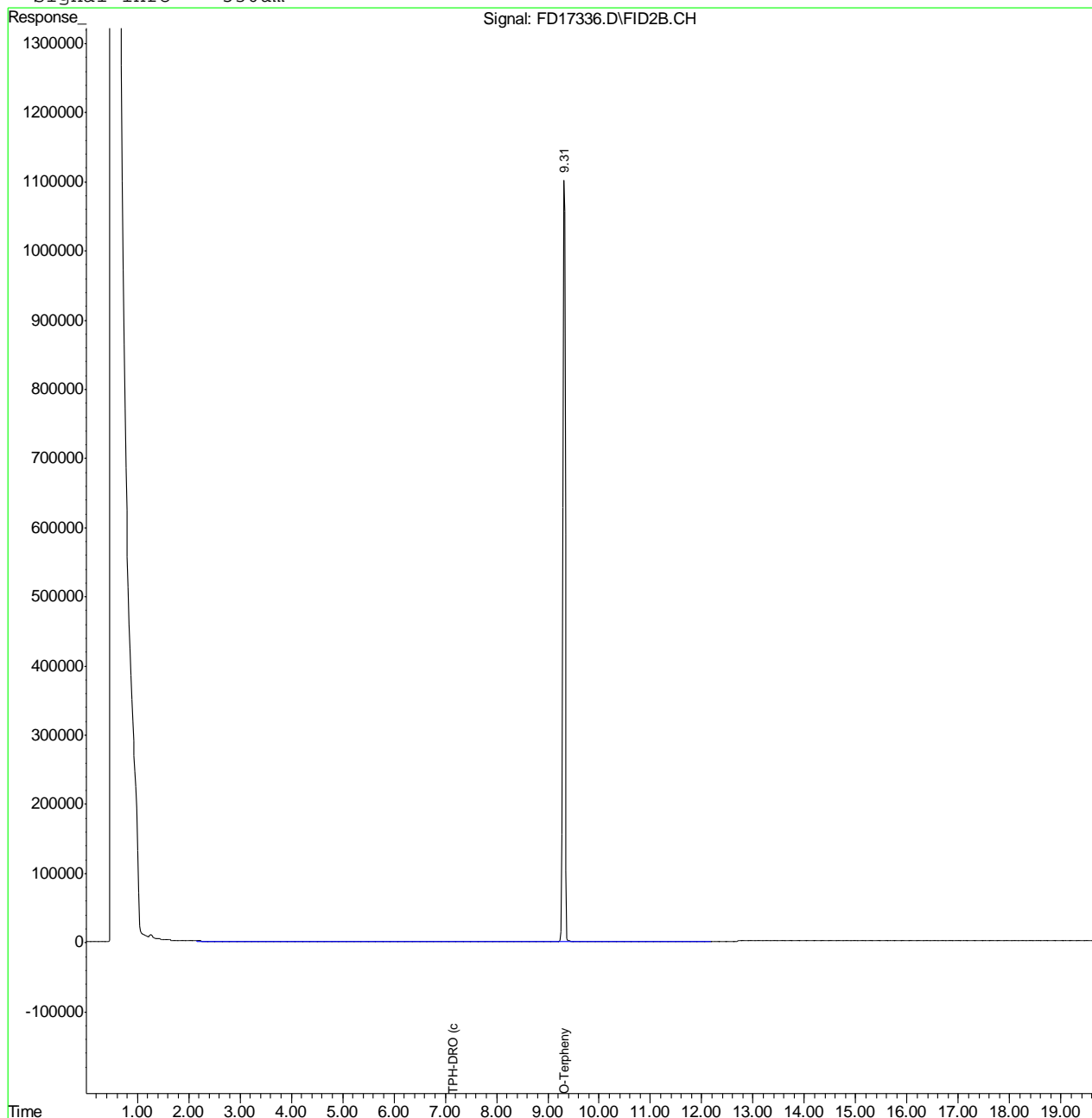
System Monitoring Compounds			
1) S O-Terphenyl	9.32	36449548	911.400 mg/L
Target Compounds			
2) H TPH-DRO (c10-c28)	7.16	588395	18.022 mg/L

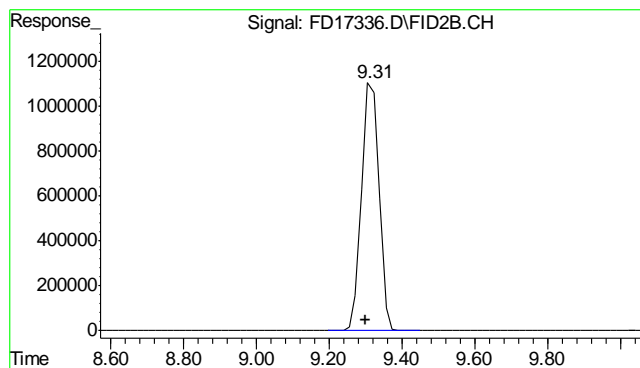
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\SEPTEMBER\FD091212.SEC\FD17336.D Vial: 53
Acq On : 9-12-2012 01:58:44 PM Operator: alexwl
Sample : OP6603-MB Inst : FID5
Misc : OP6603,GFD891,30.00,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Sep 13 9:04 2012 Quant Results File: DRO-GFD889R.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD889R.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Wed Sep 12 10:18:23 2012
Response via : Multiple Level Calibration
DataAcq Meth : DRODUAL.M

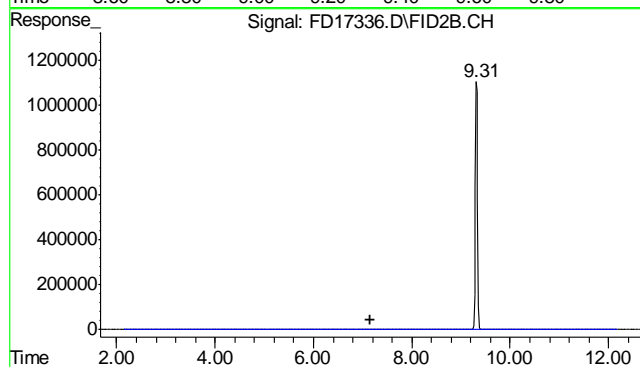
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





#1 O-Terphenyl

R.T.: 9.320 min
Delta R.T.: 0.020 min
Response: 36449548
Conc: 911.40 mg/L



#2 TPH-DRO (c10-c28)

R.T.: 7.160 min
Delta R.T.: 0.000 min
Response: 588395
Conc: 18.02 mg/L m

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: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8357
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 09/11/12

Metal	RL	IDL	MDL	MB	
				raw	final
Mercury	0.10	.0011	.0009	-0.0022	<0.10

Associated samples MP8357: D38480-1, D38480-2, D38480-3

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: D38480
 Account: XTOKRWR - XTO Energy
 Project: PCU 197-36A

QC Batch ID: MP8357
 Matrix Type: SOLID

Methods: SW846 7471B
 Units: mg/kg

Prep Date: 09/11/12

Metal	D38479-1		SpikeLot		QC
	Original	MS	HGWSR1	% Rec	Limits

Mercury	0.025	0.57	0.55	99.1	75-125
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Associated samples MP8357: D38480-1, D38480-2, D38480-3

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: D38480
 Account: XTOKRWR - XTO Energy
 Project: PCU 197-36A

QC Batch ID: MP8357
 Matrix Type: SOLID

Methods: SW846 7471B
 Units: mg/kg

Prep Date: 09/11/12

Metal	D38479-1		Spikelot		MSD	QC
	Original	MSD	HGWSR1	% Rec		
Mercury	0.025	0.53	0.509	99.3	7.3	

Associated samples MP8357: D38480-1, D38480-2, D38480-3

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: D38480
 Account: XTOKRWR - XTO Energy
 Project: PCU 197-36A

QC Batch ID: MP8357
 Matrix Type: SOLID

Methods: SW846 7471B
 Units: mg/kg

Prep Date: 09/11/12

Metal	BSP Result	Spikelot HGWSR1	% Rec	QC Limits
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Mercury	0.41	0.4	102.5	80-120
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Associated samples MP8357: D38480-1, D38480-2, D38480-3

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: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8358
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 09/11/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	2.1	.57		
Antimony	3.0	.36	.12		
Arsenic	2.5	.54	.56		
Barium	1.0	.08	.11	0.010	<1.0
Beryllium	1.0	.13	.15		
Boron	5.0	.43	.06		
Cadmium	1.0	.06	.036	-0.010	<1.0
Calcium	40	.84	9		
Chromium	1.0	.03	.03	-0.010	<1.0
Cobalt	0.50	.04	.07		
Copper	1.0	.12	.15	0.0	<1.0
Iron	7.0	.19	.87		
Lead	5.0	.24	.24	-0.030	<5.0
Lithium	0.20	.28	.054		
Magnesium	20	2.2	.98		
Manganese	0.50	.12	.022		
Molybdenum	1.0	.21	.08		
Nickel	3.0	.05	.026	0.030	<3.0
Phosphorus	10	1.4	1.9		
Potassium	200	15	7		
Selenium	5.0	.61	.36	0.35	<5.0
Silicon	5.0	.65	.37		
Silver	3.0	.05	.06	0.0	<3.0
Sodium	40	2.1	1.9		
Strontium	5.0	.02	.017		
Thallium	1.0	.29	.53		
Tin	5.0	1.2	2		
Titanium	1.0	.01	.038		
Uranium	5.0	.46	.26		
Vanadium	1.0	.03	.036		
Zinc	3.0	.08	.37	-0.070	<3.0

Associated samples MP8358: D38480-1, D38480-2, D38480-3

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8358
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8358
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 09/11/12

Metal	D38480-1 Original MS		Spikelot ICPAL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	1270	1790	240	216.8(a)	75-125
Beryllium					
Boron					
Cadmium	0.43	62.1	60	102.8	75-125
Calcium					
Chromium	28.9	85.4	60	94.2	75-125
Cobalt					
Copper	28.8	106	60	128.7N(b)	75-125
Iron					
Lead	15.0	135	120	100.0	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	22.4	78.1	60	92.9	75-125
Phosphorus	anr				
Potassium					
Selenium	1.5	118	120	97.1	75-125
Silicon					
Silver	0.30	25.7	24	105.9	75-125
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	51.8	111	60	98.7	75-125

Associated samples MP8358: D38480-1, D38480-2, D38480-3

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8358
Matrix Type: SOLID

Methods: SW846 6010C
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: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8358
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 09/11/12

Metal	D38480-1 Original	MSD	Spikelot ICPAL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	1270	2280	254	397.0(a)	24.1 (b)	20
Beryllium						
Boron						
Cadmium	0.43	65.6	63.6	102.5	5.5	20
Calcium						
Chromium	28.9	86.5	63.6	90.6	1.3	20
Cobalt						
Copper	28.8	102	63.6	115.1	3.8	20
Iron						
Lead	15.0	138	127	96.7	2.2	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	22.4	76.2	63.6	84.6	2.5	20
Phosphorus	anr					
Potassium						
Selenium	1.5	124	127	96.3	5.0	20
Silicon						
Silver	0.30	26.9	25.4	104.5	4.6	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	51.8	110	63.6	91.5	0.9	20

Associated samples MP8358: D38480-1, D38480-2, D38480-3

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8358
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8358
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 09/11/12

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	221	200	110.5	80-120
Beryllium				
Boron				
Cadmium	50.7	50	101.4	80-120
Calcium				
Chromium	51.0	50	102.0	80-120
Cobalt				
Copper	51.6	50	103.2	80-120
Iron				
Lead	100	100	100.0	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	48.5	50	97.0	80-120
Phosphorus	anr			
Potassium				
Selenium	94.7	100	94.7	80-120
Silicon				
Silver	20.4	20	102.0	80-120
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	50.4	50	100.8	80-120

Associated samples MP8358: D38480-1, D38480-2, D38480-3

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

14.2.3
14

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8358
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8358
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/l

Prep Date: 09/11/12

Metal	D38480-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	10100	10400	3.5	0-10
Beryllium				
Boron				
Cadmium	3.40	0.00	100.0(a)	0-10
Calcium				
Chromium	230	244	6.3	0-10
Cobalt				
Copper	228	200	12.7*(b)	0-10
Iron				
Lead	119	124	4.0	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	178	191	6.9	0-10
Phosphorus	anr			
Potassium				
Selenium	11.7	0.00	100.0(a)	0-10
Silicon				
Silver	2.40	4.00	66.7 (a)	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	411	439	6.7	0-10

Associated samples MP8358: D38480-1, D38480-2, D38480-3

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

14.2.4
14

SERIAL DILUTION RESULTS SUMMARY

Login Number: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8358
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8359
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 09/11/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	.22	.31		
Antimony	0.20	.0018	.0075		
Arsenic	0.10	.006	.06	0.0047	<0.10
Barium	1.0	.0065	.037		
Beryllium	0.10	.016	.09		
Boron	20	1.2	1.2		
Cadmium	0.050	.014	.021		
Calcium	200	7.9	8		
Chromium	1.0	.033	.19		
Cobalt	0.10	.0012	.015		
Copper	1.0	.017	.065		
Iron	20	.8	5		
Lead	0.25	.0011	.024		
Magnesium	50	.44	.85		
Manganese	0.50	.0043	.02		
Molybdenum	0.50	.018	.018		
Nickel	1.0	.0049	.011		
Phosphorus	30	1.4	3.6		
Potassium	100	9.8	10		
Selenium	0.20	.029	.14		
Silver	0.050	.0009	.0065		
Sodium	250	1.5	2.3		
Strontium	10	.036	.036		
Thallium	0.10	.00095	.0095		
Tin	5.0	.023	.34		
Titanium	1.0	.044	.1		
Uranium	0.25	.00085	.001		
Vanadium	2.0	.12	.21		
Zinc	5.0	.033	.35		

Associated samples MP8359: D38480-1, D38480-2, D38480-3

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: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8359
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 09/11/12

Metal	D38480-1 Original MS		Spikelot ICPALL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	16.8	168	120	126.1N(a)	75-125
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP8359: D38480-1, D38480-2, D38480-3

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8359
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 09/11/12

Metal	D38480-1 Original	MSD	SpikeLot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	16.8	172	127	122.0	2.4	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 MP8359: D38480-1, D38480-2, D38480-3

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: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8359
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 09/11/12

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	105	100	105.0	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 MP8359: D38480-1, D38480-2, D38480-3

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

14.3.3
14

SERIAL DILUTION RESULTS SUMMARY

Login Number: D38480
 Account: XTOKRWR - XTO Energy
 Project: PCU 197-36A

QC Batch ID: MP8359
 Matrix Type: SOLID

Methods: SW846 6020A
 Units: ug/l

Prep Date: 09/11/12

Metal	D38480-1			QC	
	Original	SDL 5:25	%DIF	Limits	
Aluminum					
Antimony					
Arsenic	134	137	2.3	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 MP8359: D38480-1, D38480-2, D38480-3

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

14.3.4
14

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8372
Matrix Type: AQUEOUS

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

Prep Date: 09/11/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	500	48	130		
Antimony	150	8.5	18		
Arsenic	130	22	42		
Barium	50	.5	9		
Beryllium	50	6.5	16		
Boron	250	5	22		
Cadmium	50	3	3		
Calcium	2000	27	80	930	<2000
Chromium	50	1.5	2.8		
Cobalt	25	2	2.1		
Copper	50	6	15		
Iron	350	6	100		
Lead	250	9.5	15		
Lithium	10	2.5			
Magnesium	1000	33	110	37.5	<1000
Manganese	25	6	6		
Molybdenum	50	11	11		
Nickel	150	2.5	2.9		
Phosphorus	500	70	300		
Potassium	5000	310	750		
Selenium	250	24	55		
Silicon	250	15			
Silver	150	2	4.9		
Sodium	2000	30	490	-71	<2000
Strontium	25	.2	7.5		
Thallium	50	15	43		
Tin	250	60			
Titanium	50	.5			
Uranium	250	11	23		
Vanadium	50	1	2.4		
Zinc	150	2.5	12		

Associated samples MP8372: D38480-1A, D38480-2A, D38480-3A

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8372
Matrix Type: AQUEOUS

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

Prep Date:

Metal

(anr) Analyte not requested

14.4.1

14

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8372
Matrix Type: AQUEOUS

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

Prep Date: 09/11/12

Metal	D38518-1A Original MS		Spikelot ICPAL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	129000	256000	125000	101.6	75-125
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	78.5	125000	125000	99.9	75-125
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	2590000	2490000	125000	-80.0(a)	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP8372: D38480-1A, D38480-2A, D38480-3A

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

14.4.2
14

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8372
Matrix Type: AQUEOUS

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

Prep Date:

Metal

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8372
Matrix Type: AQUEOUS

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

Prep Date: 09/11/12

Metal	D38518-1A Original	MSD	SpikeLot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium	129000	247000	125000	94.4	3.6	20
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Lithium						
Magnesium	78.5	125000	125000	99.9	0.0	20
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium	2590000	2290000	125000	-240.0(a	8.4	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP8372: D38480-1A, D38480-2A, D38480-3A

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

14.4.2
14

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8372
Matrix Type: AQUEOUS

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

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.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8372
Matrix Type: AQUEOUS

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

Prep Date: 09/11/12

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	132000	125000	105.6	80-120
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	122000	125000	97.6	80-120
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	125000	125000	100.0	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP8372: D38480-1A, D38480-2A, D38480-3A

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

14.4.3
14

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8372
Matrix Type: AQUEOUS

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

Prep Date:

Metal

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8372
Matrix Type: AQUEOUS

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

Prep Date: 09/11/12

Metal	D38518-1A Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	25700	26000	1.0	0-10
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	15.7	0.00	100.0(a)	0-10
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	517000	527000	1.9	0-10
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP8372: D38480-1A, D38480-2A, D38480-3A

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

14.4.4
14

SERIAL DILUTION RESULTS SUMMARY

Login Number: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8372
Matrix Type: AQUEOUS

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

Prep Date:

Metal

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

14.4.4
14

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: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP8138/GN16704	1.0	0.0	mg/kg	60.7	67.2	111.0	80-120%
Specific Conductivity	GP8183/GN16757	1.0	<1.0	umhos/cm	9989	9910	99.2	90-110%
pH	GN16667			su	8.00	8.01	100.1	99.3-100.7%

Associated Samples:

Batch GP8138: D38480-1, D38480-2, D38480-3
Batch GP8183: D38480-1, D38480-2, D38480-3
Batch GN16667: D38480-1, D38480-2, D38480-3
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP8138/GN16704	D38513-1	mg/kg	0.0	0.0	22.4(a)	0-20%
Redox Potential Vs H2	GN16683	D38518-2	mv	141	143	1.4	0-20%

Associated Samples:

Batch GP8138: D38480-1, D38480-2, D38480-3

Batch GN16683: D38480-1, D38480-2, D38480-3

(*) Outside of QC limits

(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP8138/GN16704	D38513-1	mg/kg	0.0	40	40.5	101.0	75-125%

Associated Samples:

Batch GP8138: D38480-1, D38480-2, D38480-3

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D38480
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chromium, Hexavalent	GP8138/GN16704	D38513-1	mg/kg	0.0	40	41.0	1.2	

Associated Samples:
Batch GP8138: D38480-1, D38480-2, D38480-3
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits