



11/26/12

Technical Report for

XTO Energy

PCU 197-36A

1203-02

Accutest Job Number: D40910

Sampling Date: 11/12/12

Report to:

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Total number of pages in report: 232



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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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.

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Sample Summary

XTO Energy

Job No: D40910

PCU 197-36A
Project No: 1203-02

Sample Number	Collected		Matrix Code	Type	Client Sample ID
	Date	Time By			
D40910-1	11/12/12	12:00 DS	11/14/12	SO Soil	CUT 2 POST SOLIDIFICATION
D40910-1A	11/12/12	12:00 DS	11/14/12	SO Soil	CUT 2 POST SOLIDIFICATION
D40910-2	11/12/12	12:30 DS	11/14/12	SO Soil	CUT 3 POST SOLIDIFICATION
D40910-2A	11/12/12	12:30 DS	11/14/12	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** D40910**Site:** PCU 197-36A**Report Date** 11/26/2012 12:38:51 P

On 11/14/2012, 2 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 3.1 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D40910 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

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

Volatiles by GCMS By Method SW846 8260B

Matrix: SO**Batch ID:** V5V1503

- All samples were analyzed within the recommended method holding time.
- Sample(s) D40910-1MS, D40910-1MSD 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:** OP6973

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) D40910-1MS, D40910-1MSD 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:** GGB1008

- All samples were analyzed within the recommended method holding time.
- Sample(s) D40868-1MS, D40868-1MSD 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:** OP6966

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) D40875-4MS, D40875-4MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Metals By Method SW846 6010C

Matrix: AQ

Batch ID: MP8908

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40910-1AMS, D40910-1AMSD, D40910-1ASDL were used as the QC samples for the metals analysis.

Matrix: SO

Batch ID: MP8890

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40910-1MSD, D40910-1MS, D40910-1MSD, D40910-1SDL were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Lead, Nickel are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- The matrix spike (MS) recovery(s) of Barium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- The serial dilution RPD(s) for Cadmium, Selenium, Silver, are outside control limits for sample MP8890-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP8890-SD1 for Barium, Chromium, Nickel, Zinc: Serial dilution indicates possible matrix interference.

Metals By Method SW846 6020A

Matrix: SO

Batch ID: MP8891

- All samples were digested and analyzed within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40910-1MS, D40910-1MSD, D40910-1SDL were used as the QC samples for the metals analysis.

Metals By Method SW846 7471B

Matrix: SO

Batch ID: MP8899

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40848-1MS, D40848-1MSD were used as the QC samples for the metals analysis.

Wet Chemistry By Method ASTM D1498-76M

Matrix: SO

Batch ID: GN17722

- Sample(s) D41014-1DUP were used as the QC samples for the Redox Potential Vs H2 analysis.

Wet Chemistry By Method SM19 2540B M

Matrix: SO

Batch ID: GN17684

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

Wet Chemistry By Method SW846 3060/7196A M

Matrix: SO

Batch ID: R15176

- The data for SW846 3060/7196A M meets quality control requirements.
- D40910-2 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: SO

Batch ID: R15177

- The data for SW846 3060/7196A M meets quality control requirements.
- D40910-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Wet Chemistry By Method SW846 3060A/7196A

Matrix: SO

Batch ID: GP8688

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D40911-1DUP, D40911-1MS, D40911-1MSD were used as the QC samples for the Chromium, Hexavalent analysis.

Wet Chemistry By Method SW846 9045D

Matrix: SO

Batch ID: GN17696

- The following samples were run outside of holding time for method SW846 9045D: D40910-1, D40910-2

Wet Chemistry By Method USDA HANDBOOK 60

Matrix: SO

Batch ID: MP8908

- D40910-1A, -2A 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: D40910
Account: XTO Energy
Project: PCU 197-36A
Collected: 11/12/12



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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D40910-1 CUT 2 POST SOLIDIFICATION

Benzene	0.162	0.071	0.036	mg/kg	SW846 8260B
Toluene	0.845	0.14	0.071	mg/kg	SW846 8260B
Ethylbenzene	0.197	0.14	0.027	mg/kg	SW846 8260B
Xylene (total)	0.926	0.29	0.14	mg/kg	SW846 8260B
Benzo(a)anthracene	0.0097 J	0.010	0.0053	mg/kg	SW846 8270C BY SIM
Benzo(a)pyrene	0.0092 J	0.010	0.0053	mg/kg	SW846 8270C BY SIM
Chrysene	0.0254	0.010	0.0053	mg/kg	SW846 8270C BY SIM
Fluoranthene	0.0147	0.010	0.0053	mg/kg	SW846 8270C BY SIM
Fluorene	0.0498	0.041	0.021	mg/kg	SW846 8270C BY SIM
Naphthalene	0.331	0.057	0.050	mg/kg	SW846 8270C BY SIM
Pyrene	0.0278	0.010	0.0053	mg/kg	SW846 8270C BY SIM
TPH-DRO (C10-C28)	407	16	11	mg/kg	SW846-8015B
Arsenic	6.6	0.12		mg/kg	SW846 6020A
Barium	4180	6.0		mg/kg	SW846 6010C
Chromium	21.7	1.2		mg/kg	SW846 6010C
Copper	18.2	1.2		mg/kg	SW846 6010C
Lead	17.9	6.0		mg/kg	SW846 6010C
Nickel	12.6	3.6		mg/kg	SW846 6010C
Zinc	39.3	3.6		mg/kg	SW846 6010C
Specific Conductivity	6230	1.0		umhos/cm	SM2510B-1997 MOD
Chromium, Trivalent ^a	21.7	2.2		mg/kg	SW846 3060/7196A M
Redox Potential Vs H2	70.1			mv	ASTM D1498-76M
pH	11.32			su	SW846 9045D

D40910-1A CUT 2 POST SOLIDIFICATION

Calcium	318	2.0		mg/l	SW846 6010C
Magnesium	92.1	1.0		mg/l	SW846 6010C
Sodium	1810	2.0		mg/l	SW846 6010C
Sodium Adsorption Ratio ^b	23.0			ratio	USDA HANDBOOK 60

D40910-2 CUT 3 POST SOLIDIFICATION

Benzene	0.636	0.071	0.036	mg/kg	SW846 8260B
Toluene	1.64	0.14	0.071	mg/kg	SW846 8260B
Ethylbenzene	0.148	0.14	0.027	mg/kg	SW846 8260B
Xylene (total)	1.65	0.28	0.14	mg/kg	SW846 8260B
Benzo(a)anthracene	0.0224	0.010	0.0052	mg/kg	SW846 8270C BY SIM
Benzo(b)fluoranthene	0.0335	0.010	0.0052	mg/kg	SW846 8270C BY SIM
Benzo(k)fluoranthene	0.0063 J	0.010	0.0052	mg/kg	SW846 8270C BY SIM
Benzo(a)pyrene	0.0231	0.010	0.0052	mg/kg	SW846 8270C BY SIM
Chrysene	0.0616	0.010	0.0052	mg/kg	SW846 8270C BY SIM
Dibenzo(a,h)anthracene	0.0083 J	0.010	0.0052	mg/kg	SW846 8270C BY SIM

Summary of Hits

Job Number: D40910
Account: XTO Energy
Project: PCU 197-36A
Collected: 11/12/12



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Fluoranthene		0.0244	0.010	0.0052	mg/kg	SW846 8270C BY SIM
Fluorene		0.106	0.040	0.021	mg/kg	SW846 8270C BY SIM
Indeno(1,2,3-cd)pyrene		0.0090 J	0.010	0.0052	mg/kg	SW846 8270C BY SIM
Naphthalene		0.461	0.014	0.013	mg/kg	SW846 8270C BY SIM
Pyrene		0.0443	0.010	0.0052	mg/kg	SW846 8270C BY SIM
TPH-DRO (C10-C28)		460	16	10	mg/kg	SW846-8015B
Arsenic		6.5	0.12		mg/kg	SW846 6020A
Barium		12700	6.1		mg/kg	SW846 6010C
Chromium		15.4	1.2		mg/kg	SW846 6010C
Copper		23.4	1.2		mg/kg	SW846 6010C
Lead		25.4	6.1		mg/kg	SW846 6010C
Nickel		13.4	3.6		mg/kg	SW846 6010C
Zinc		41.9	3.6		mg/kg	SW846 6010C
Specific Conductivity		14000	1.0		umhos/cm	SM2510B-1997 MOD
Chromium, Trivalent ^a		15.4	2.2		mg/kg	SW846 3060/7196A M
Redox Potential Vs H2		48.6			mv	ASTM D1498-76M
pH		12.36			su	SW846 9045D

D40910-2A CUT 3 POST SOLIDIFICATION

Calcium	220	2.0	mg/l	SW846 6010C
Magnesium	10.9	1.0	mg/l	SW846 6010C
Sodium	1740	2.0	mg/l	SW846 6010C
Sodium Adsorption Ratio ^b	31.0		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

Accutest Laboratories

Report of Analysis

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Client Sample ID:	CUT 2 POST SOLIDIFICATION	
Lab Sample ID:	D40910-1	Date Sampled: 11/12/12
Matrix:	SO - Soil	Date Received: 11/14/12
Method:	SW846 8260B	Percent Solids: 82.0
Project:	PCU 197-36A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V24626.D	1	11/15/12	BD	n/a	n/a	V5V1503
Run #2							

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

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.162	0.071	0.036	mg/kg	
108-88-3	Toluene	0.845	0.14	0.071	mg/kg	
100-41-4	Ethylbenzene	0.197	0.14	0.027	mg/kg	
1330-20-7	Xylene (total)	0.926	0.29	0.14	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	102%		64-130%
460-00-4	4-Bromofluorobenzene	102%		62-131%
17060-07-0	1,2-Dichloroethane-D4	94%		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 2 POST SOLIDIFICATION	Date Sampled:	11/12/12
Lab Sample ID:	D40910-1	Date Received:	11/14/12
Matrix:	SO - Soil	Percent Solids:	82.0
Method:	SW846 8270C BY SIM SW846 3546		
Project:	PCU 197-36A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G12207.D	1	11/21/12	SM	11/16/12	OP6973	E3G576
Run #2	3G12196.D	4	11/21/12	SM	11/16/12	OP6973	E3G576

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

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND ^a	0.041	0.021	mg/kg	
120-12-7	Anthracene	ND	0.010	0.0053	mg/kg	
56-55-3	Benzo(a)anthracene	0.0097	0.010	0.0053	mg/kg	J
205-99-2	Benzo(b)fluoranthene	ND	0.010	0.0053	mg/kg	
207-08-9	Benzo(k)fluoranthene	ND	0.010	0.0053	mg/kg	
50-32-8	Benzo(a)pyrene	0.0092	0.010	0.0053	mg/kg	J
218-01-9	Chrysene	0.0254	0.010	0.0053	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	0.010	0.0053	mg/kg	
206-44-0	Fluoranthene	0.0147	0.010	0.0053	mg/kg	
86-73-7	Fluorene	0.0498 ^a	0.041	0.021	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.010	0.0053	mg/kg	
91-20-3	Naphthalene	0.331 ^a	0.057	0.050	mg/kg	
129-00-0	Pyrene	0.0278	0.010	0.0053	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	80%	73%	10-159%
321-60-8	2-Fluorobiphenyl	79%	84%	19-131%
1718-51-0	Terphenyl-d14	88%	88%	18-150%

(a) Result is from Run# 2

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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Report of Analysis

Page 1 of 1

Client Sample ID:	CUT 2 POST SOLIDIFICATION	
Lab Sample ID:	D40910-1	Date Sampled: 11/12/12
Matrix:	SO - Soil	Date Received: 11/14/12
Method:	SW846 8015B	Percent Solids: 82.0
Project:	PCU 197-36A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB18469.D	1	11/14/12	SK	n/a	n/a	GGB1008
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)	ND	14	7.1	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	97%		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 2 POST SOLIDIFICATION					Date Sampled:	11/12/12
Lab Sample ID:	D40910-1					Date Received:	11/14/12
Matrix:	SO - Soil					Percent Solids:	82.0
Method:	SW846-8015B SW846 3546						
Project:	PCU 197-36A						

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD19657.D	1	11/17/12	AV	11/15/12	OP6966	GFD986
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	407	16	11	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	75%		35-130%		

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:** D40910-1**Matrix:** SO - Soil**Project:** PCU 197-36A**Date Sampled:** 11/12/12**Date Received:** 11/14/12**Percent Solids:** 82.0**Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	6.6	0.12	mg/kg	5	11/15/12	11/17/12 JM	SW846 6020A ³	SW846 3050B ⁵
Barium	4180	6.0	mg/kg	5	11/15/12	11/17/12 JM	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 1.2	1.2	mg/kg	1	11/15/12	11/16/12 JM	SW846 6010C ²	SW846 3050B ⁴
Chromium	21.7	1.2	mg/kg	1	11/15/12	11/16/12 JM	SW846 6010C ²	SW846 3050B ⁴
Copper	18.2	1.2	mg/kg	1	11/15/12	11/16/12 JM	SW846 6010C ²	SW846 3050B ⁴
Lead	17.9	6.0	mg/kg	1	11/15/12	11/16/12 JM	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.087	0.087	mg/kg	1	11/16/12	11/16/12 JM	SW846 7471B ¹	SW846 7471B ⁶
Nickel	12.6	3.6	mg/kg	1	11/15/12	11/16/12 JM	SW846 6010C ²	SW846 3050B ⁴
Selenium	< 6.0	6.0	mg/kg	1	11/15/12	11/16/12 JM	SW846 6010C ²	SW846 3050B ⁴
Silver	< 3.6	3.6	mg/kg	1	11/15/12	11/16/12 JM	SW846 6010C ²	SW846 3050B ⁴
Zinc	39.3	3.6	mg/kg	1	11/15/12	11/16/12 JM	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA3005

(2) Instrument QC Batch: MA3006

(3) Instrument QC Batch: MA3008

(4) Prep QC Batch: MP8890

(5) Prep QC Batch: MP8891

(6) Prep QC Batch: MP8899

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CUT 2 POST SOLIDIFICATION	Date Sampled:	11/12/12
Lab Sample ID:	D40910-1	Date Received:	11/14/12
Matrix:	SO - Soil	Percent Solids:	82.0
Project:	PCU 197-36A		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
prep: DEPT.OF AG, BOOK N9							
Specific Conductivity	6230	1.0	umhos/cm	1	11/19/12	JD	SM2510B-1997 MOD
Chromium, Hexavalent	< 1.0	1.0	mg/kg	1	11/15/12	KB	SW846 3060A/7196A
Chromium, Trivalent ^a	21.7	2.2	mg/kg	1	11/16/12 13:55	JM	SW846 3060/7196A M
Redox Potential Vs H2	70.1		mv	1	11/16/12	CT	ASTM D1498-76M
Solids, Percent	82		%	1	11/15/12	SWT	SM19 2540B M
pH	11.32		su	1	11/15/12 16:00	CT	SW846 9045D

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

RL = Reporting Limit

Report of Analysis

Client Sample ID: CUT 2 POST SOLIDIFICATION
Lab Sample ID: D40910-1A
Matrix: SO - Soil
Project: PCU 197-36A

Date Sampled: 11/12/12
Date Received: 11/14/12
Percent Solids: 82.0

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	318	2.0	mg/l	1	11/16/12	11/16/12 JM	SW846 6010C ¹	SW846 3010A/M ²
Magnesium	92.1	1.0	mg/l	1	11/16/12	11/16/12 JM	SW846 6010C ¹	SW846 3010A/M ²
Sodium	1810	2.0	mg/l	1	11/16/12	11/16/12 JM	SW846 6010C ¹	SW846 3010A/M ²

(1) Instrument QC Batch: MA3006
(2) Prep QC Batch: MP8908

RL = Reporting Limit

Report of Analysis

Client Sample ID: CUT 2 POST SOLIDIFICATION
Lab Sample ID: D40910-1A
Matrix: SO - Soil
Project: PCU 197-36A

Date Sampled: 11/12/12
Date Received: 11/14/12
Percent Solids: 82.0

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	23.0		ratio	1	11/16/12 17:28	JM	USDA HANDBOOK 60

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

RL = Reporting Limit

4.2
4

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	CUT 3 POST SOLIDIFICATION	
Lab Sample ID:	D40910-2	Date Sampled: 11/12/12
Matrix:	SO - Soil	Date Received: 11/14/12
Method:	SW846 8260B	Percent Solids: 82.3
Project:	PCU 197-36A	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V24629.D	1	11/15/12	BD	n/a	n/a	V5V1503
Run #2							

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

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.636	0.071	0.036	mg/kg	
108-88-3	Toluene	1.64	0.14	0.071	mg/kg	
100-41-4	Ethylbenzene	0.148	0.14	0.027	mg/kg	
1330-20-7	Xylene (total)	1.65	0.28	0.14	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	102%		64-130%
460-00-4	4-Bromofluorobenzene	104%		62-131%
17060-07-0	1,2-Dichloroethane-D4	96%		70-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	CUT 3 POST SOLIDIFICATION	Date Sampled:	11/12/12
Lab Sample ID:	D40910-2	Date Received:	11/14/12
Matrix:	SO - Soil	Percent Solids:	82.3
Method:	SW846 8270C BY SIM SW846 3546		
Project:	PCU 197-36A		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G12210.D	1	11/21/12	SM	11/16/12	OP6973	E3G576
Run #2	3G12204.D	4	11/21/12	SM	11/16/12	OP6973	E3G576

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

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND ^a	0.040	0.021	mg/kg	
120-12-7	Anthracene	ND	0.010	0.0052	mg/kg	
56-55-3	Benzo(a)anthracene	0.0224	0.010	0.0052	mg/kg	
205-99-2	Benzo(b)fluoranthene	0.0335	0.010	0.0052	mg/kg	
207-08-9	Benzo(k)fluoranthene	0.0063	0.010	0.0052	mg/kg	J
50-32-8	Benzo(a)pyrene	0.0231	0.010	0.0052	mg/kg	
218-01-9	Chrysene	0.0616	0.010	0.0052	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	0.0083	0.010	0.0052	mg/kg	J
206-44-0	Fluoranthene	0.0244	0.010	0.0052	mg/kg	
86-73-7	Fluorene	0.106 ^a	0.040	0.021	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	0.0090	0.010	0.0052	mg/kg	J
91-20-3	Naphthalene	0.461	0.014	0.013	mg/kg	
129-00-0	Pyrene	0.0443	0.010	0.0052	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	80%	81%	10-159%
321-60-8	2-Fluorobiphenyl	67%	87%	19-131%
1718-51-0	Terphenyl-d14	88%	97%	18-150%

(a) Result is from Run# 2

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

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

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	CUT 3 POST SOLIDIFICATION					Date Sampled:	11/12/12
Lab Sample ID:	D40910-2					Date Received:	11/14/12
Matrix:	SO - Soil					Percent Solids:	82.3
Method:	SW846 8015B						
Project:	PCU 197-36A						

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB18470.D	1	11/14/12	SK	n/a	n/a	GGB1008
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	14	7.1	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	97%		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					Date Sampled:	11/12/12
Lab Sample ID:	D40910-2					Date Received:	11/14/12
Matrix:	SO - Soil					Percent Solids:	82.3
Method:	SW846-8015B SW846 3546						
Project:	PCU 197-36A						

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD19659.D	1	11/17/12	AV	11/15/12	OP6966	GFD986
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)	460	16	10	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	80%		35-130%		

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 3 POST SOLIDIFICATION	Date Sampled:	11/12/12
Lab Sample ID:	D40910-2	Date Received:	11/14/12
Matrix:	SO - Soil	Percent Solids:	82.3
Project:	PCU 197-36A		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	6.5	0.12	mg/kg	5	11/15/12	11/17/12 JM	SW846 6020A ³	SW846 3050B ⁵
Barium	12700	6.1	mg/kg	5	11/15/12	11/17/12 JM	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 1.2	1.2	mg/kg	1	11/15/12	11/16/12 JM	SW846 6010C ²	SW846 3050B ⁴
Chromium	15.4	1.2	mg/kg	1	11/15/12	11/16/12 JM	SW846 6010C ²	SW846 3050B ⁴
Copper	23.4	1.2	mg/kg	1	11/15/12	11/16/12 JM	SW846 6010C ²	SW846 3050B ⁴
Lead	25.4	6.1	mg/kg	1	11/15/12	11/16/12 JM	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.10	0.10	mg/kg	1	11/16/12	11/16/12 JM	SW846 7471B ¹	SW846 7471B ⁶
Nickel	13.4	3.6	mg/kg	1	11/15/12	11/16/12 JM	SW846 6010C ²	SW846 3050B ⁴
Selenium	< 6.1	6.1	mg/kg	1	11/15/12	11/16/12 JM	SW846 6010C ²	SW846 3050B ⁴
Silver	< 3.6	3.6	mg/kg	1	11/15/12	11/16/12 JM	SW846 6010C ²	SW846 3050B ⁴
Zinc	41.9	3.6	mg/kg	1	11/15/12	11/16/12 JM	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA3005

(2) Instrument QC Batch: MA3006

(3) Instrument QC Batch: MA3008

(4) Prep QC Batch: MP8890

(5) Prep QC Batch: MP8891

(6) Prep QC Batch: MP8899

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CUT 3 POST SOLIDIFICATION	Date Sampled:	11/12/12
Lab Sample ID:	D40910-2	Date Received:	11/14/12
Matrix:	SO - Soil	Percent Solids:	82.3
Project:	PCU 197-36A		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
prep: DEPT.OF AG, BOOK N9							
Specific Conductivity	14000	1.0	umhos/cm	1	11/19/12	JD	SM2510B-1997 MOD
Chromium, Hexavalent	< 1.0	1.0	mg/kg	1	11/15/12	KB	SW846 3060A/7196A
Chromium, Trivalent ^a	15.4	2.2	mg/kg	1	11/16/12 15:59	JM	SW846 3060/7196A M
Redox Potential Vs H2	48.6		mv	1	11/16/12	CT	ASTM D1498-76M
Solids, Percent	82.3		%	1	11/15/12	SWT	SM19 2540B M
pH	12.36		su	1	11/15/12 16:00	CT	SW846 9045D

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

RL = Reporting Limit

Report of Analysis

Client Sample ID: CUT 3 POST SOLIDIFICATION
Lab Sample ID: D40910-2A
Matrix: SO - Soil
Project: PCU 197-36A

Date Sampled: 11/12/12
Date Received: 11/14/12
Percent Solids: 82.3

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	220	2.0	mg/l	1	11/16/12	11/16/12 JM	SW846 6010C ¹	SW846 3010A/M ²
Magnesium	10.9	1.0	mg/l	1	11/16/12	11/16/12 JM	SW846 6010C ¹	SW846 3010A/M ²
Sodium	1740	2.0	mg/l	1	11/16/12	11/16/12 JM	SW846 6010C ¹	SW846 3010A/M ²

(1) Instrument QC Batch: MA3006
(2) Prep QC Batch: MP8908

RL = Reporting Limit

Report of Analysis

Client Sample ID:	CUT 3 POST SOLIDIFICATION	Date Sampled:	11/12/12
Lab Sample ID:	D40910-2A	Date Received:	11/14/12
Matrix:	SO - Soil	Percent Solids:	82.3
Project:	PCU 197-36A		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio ^a	31.0		ratio	1	11/16/12 18:27	JM	USDA HANDBOOK 60

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

RL = Reporting Limit

Misc. Forms

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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 # D40910
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 WIP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank	
LAB USE ONLY	
01 02	
DR 11/14	

Client / Reporting Information		Project Information	
Company Name KRW Consulting		Project Name XTO PCU 197-36A	
Street Address 8000 West 14th Street, Suite 200		Street	
City Lakewood, CO 80214		Billing Information (If different from Report to)	
Project Contact Dwayne Knudson		Company Name XTO Energy	
Phone # 970-488-1098		Street Address 21455 CR 5	
Sampler(s) Name(s) DAVID SANDERS		City Rifle, CO 81650	
970-488-1098		Client Purchase Order #	
Project Manager Joe Hess		Attention: Jessica Dooling	
Field ID / Point of Collection		Collection	
MECH/DI Vial #		Date	
Time		Sampled by	
Matrix		# of bottles	
HCl		NaOH	
HNO3		H2SO4	
H2O2		H2O	
MCH		ENDORE	
Biolink			
CUT 2 POST SOLIDIFICATION		11-12-12 12:00 DS SO 5	
CUT 3 POST SOLIDIFICATION		11-12-12 12:30 DS SO 5	
Turnaround Time (Business days)		Data Deliverable Information	
Approved By (Accutest PM): / Date:		Comments / Special Instructions	
<input type="checkbox"/> Std. 10 Business Days <input checked="" type="checkbox"/> Std. 5 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"/> 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	
Emergency & Rush T/A data available VIA Lablink		Commercial "A" = Results Only Commercial "B" = Results + QC Summary Commercial BN = Results/QC/Narrative (+ chromatograms)	
Sample Custody must be documented below each time samples change possession, including courier delivery.			
Relinquished by Sampler: 1 David Sanders	Date Time: 11/13/12 16:35	Received By: 1 Rifle Service Center	Relinquished By: 2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4
Relinquished by: 5	Date Time:	Received By: 5	Relinquished By:
Custody Seal HBCO		Intact <input checked="" type="checkbox"/> Not Intact <input type="checkbox"/>	
Preserved where applicable <input type="checkbox"/>		On Ice <input checked="" type="checkbox"/>	
Cooler Temp. 3.1			

D40910: Chain of Custody

Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D40910

Client: KRW CONSULTING

Immediate Client Services Action Required: No

Date / Time Received: 11/14/2012 12:00:00 P

No. Coolers: 1

Client Service Action Required at Login: No

Project: XTO PCU 197-36A

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: D40910
Account: XTOKRWR XTO Energy
Project: PCU 197-36A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1503-MB	5V24624.D	1	11/15/12	BD	n/a	n/a	V5V1503

The QC reported here applies to the following samples:

Method: SW846 8260B

D40910-1, D40910-2

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	95% 62-131%
17060-07-0	1,2-Dichloroethane-D4	97% 70-130%

Blank Spike Summary

Page 1 of 1

Job Number: D40910

Account: XTOKRWR XTO Energy

Project: PCU 197-36A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1503-BS	5V24625.D	1	11/15/12	BD	n/a	n/a	V5V1503

The QC reported here applies to the following samples:

Method: SW846 8260B

D40910-1, D40910-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	48.1	96	70-130
100-41-4	Ethylbenzene	50	50.8	102	70-130
108-88-3	Toluene	50	49.4	99	70-130
1330-20-7	Xylene (total)	150	156	104	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	102%	64-130%
460-00-4	4-Bromofluorobenzene	98%	62-131%
17060-07-0	1,2-Dichloroethane-D4	98%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D40910
Account: XTOKRWR XTO Energy
Project: PCU 197-36A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D40910-1MS	5V24627.D	1	11/15/12	BD	n/a	n/a	V5V1503
D40910-1MSD	5V24628.D	1	11/15/12	BD	n/a	n/a	V5V1503
D40910-1	5V24626.D	1	11/15/12	BD	n/a	n/a	V5V1503

The QC reported here applies to the following samples:

Method: SW846 8260B

D40910-1, D40910-2

CAS No.	Compound	D40910-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	162		3570	3350	89	3520	94	5	64-139/30
100-41-4	Ethylbenzene	197		3570	3570	95	3740	99	5	68-136/30
108-88-3	Toluene	845		3570	3970	88	4100	91	3	60-130/30
1330-20-7	Xylene (total)	926		10700	11200	96	11800	102	5	58-142/30

CAS No.	Surrogate Recoveries	MS	MSD	D40910-1	Limits
2037-26-5	Toluene-D8	101%	100%	102%	64-130%
460-00-4	4-Bromofluorobenzene	106%	108%	102%	62-131%
17060-07-0	1,2-Dichloroethane-D4	97%	96%	94%	70-130%

* = Outside of Control Limits.

GC/MS Volatiles

Raw Data

7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5111512.S\
 Data File : 5V24626.D
 Acq On : 15 Nov 2012 2:58 pm
 Operator : BRETD
 Sample : D40910-1
 Misc : MS4976,V5V1503,5.051,,100,5,1
 ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 16 09:26:52 2012
 Quant Method : C:\msdchem\1\METHODS\V5AP1497TVH1497.M
 Quant Title : 8260
 QLast Update : Wed Nov 14 09:54:38 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.613	168	430059	50.00	ug/l	-0.01
35) 1,4-Difluorobenzene	12.412	114	524046	50.00	ug/l	-0.01
53) Chlorobenzene-d5	15.072	117	477674	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.036	152	353231	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.013	102	34536	47.18	ug/l	-0.01
Spiked Amount	50.000	Range	70 - 130	Recovery	=	94.36%
61) Toluene-d8	13.817	98	578399	51.11	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	102.22%
69) 4-Bromofluorobenzene	16.009	95	247771	50.80	ug/l	-0.01
Spiked Amount	50.000	Range	70 - 130	Recovery	=	101.60%

Target Compounds

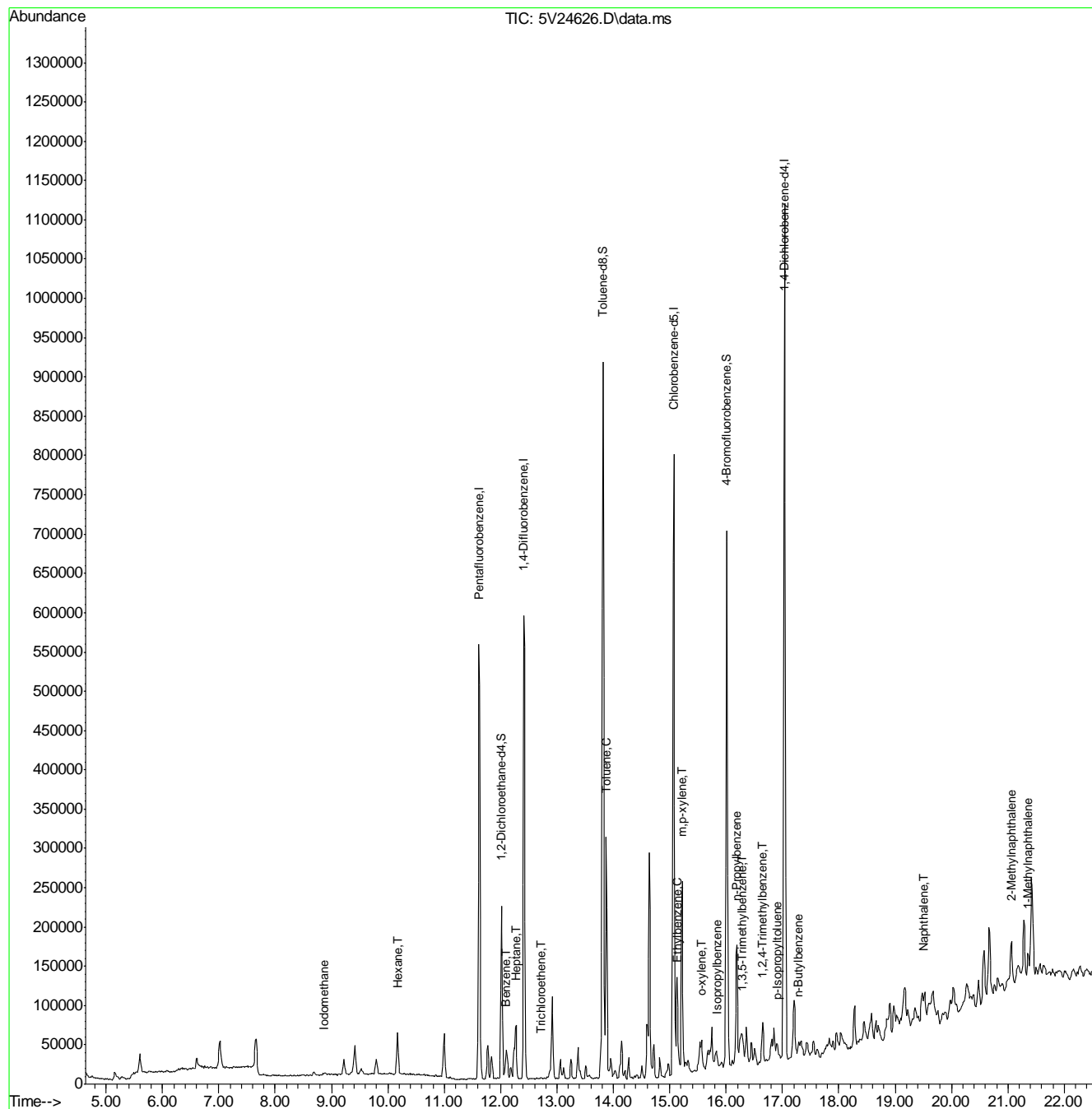
						Qvalue
12) Iodomethane	8.862	142	5024	1.26	ug/l	# 80
41) Hexane	10.175	57	28184	5.93	ug/l	100
43) Heptane	12.275	43	28428	5.21	ug/l	88
48) Trichloroethene	12.709	95	438	0.12	ug/l	# 57
50) Benzene	12.093	78	31637	2.27	ug/l	100
62) Toluene	13.874	92	104539	11.85	ug/l	99
66) Ethylbenzene	15.141	91	46527	2.76	ug/l	99
68) Isopropylbenzene	15.849	105	3914	0.23	ug/l	94
72) m,p-xylene	15.221	106	78606	11.62	ug/l	96
73) o-xylene	15.563	106	9092	1.36	ug/l	# 70
77) n-Propylbenzene	16.191	91	16020	0.76	ug/l	99
80) 1,3,5-Trimethylbenzene	16.283	105	7172m	0.45	ug/l	
82) 1,2,4-Trimethylbenzene	16.648	105	24360	1.45	ug/l	91
86) p-Isopropyltoluene	16.899	119	14219	0.73	ug/l	98
88) n-Butylbenzene	17.287	91	8443	0.47	ug/l	96
91) Naphthalene	19.514	128	25459	1.45	ug/l	100
94) 2-Methylnaphthalene	21.055	142	28219	7.63	ug/l	96
95) 1-Methylnaphthalene	21.352	142	20965	3.25	ug/l	89

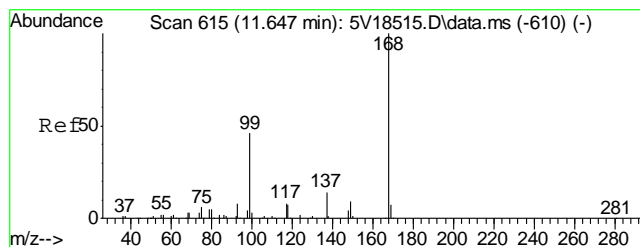
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5111512.S\
Data File : 5V24626.D
Acq On : 15 Nov 2012 2:58 pm
Operator : BRETD
Sample : D40910-1
Misc : MS4976,V5V1503,5.051,,100,5,1
ALS Vial : 10 Sample Multiplier: 1

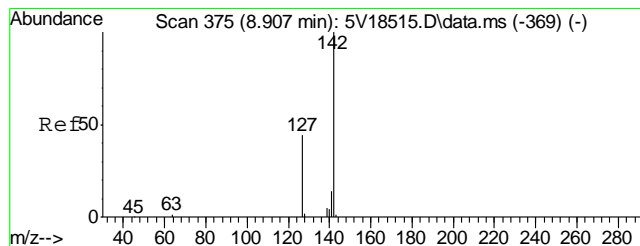
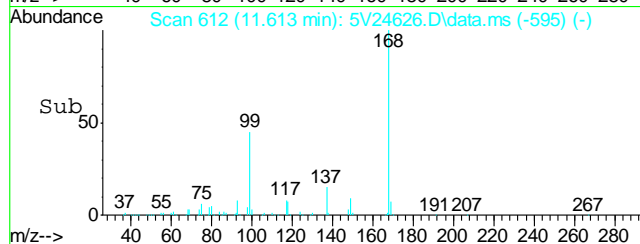
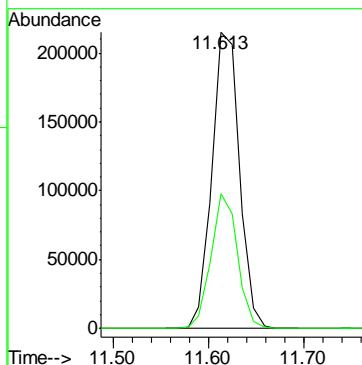
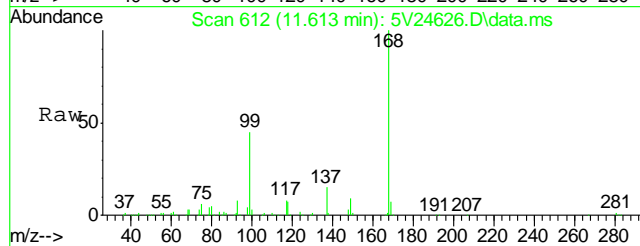
Quant Time: Nov 16 09:26:52 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1497TVH1497.M
Quant Title : 8260
QLast Update : Wed Nov 14 09:54:38 2012
Response via : Initial Calibration





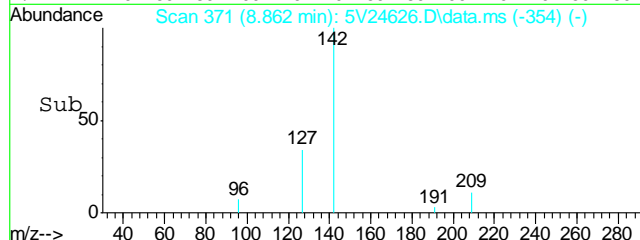
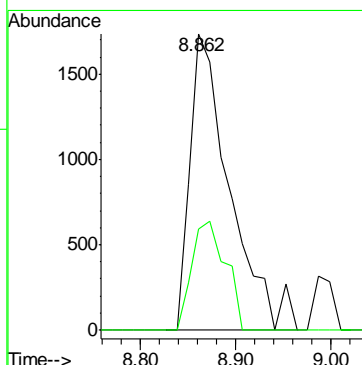
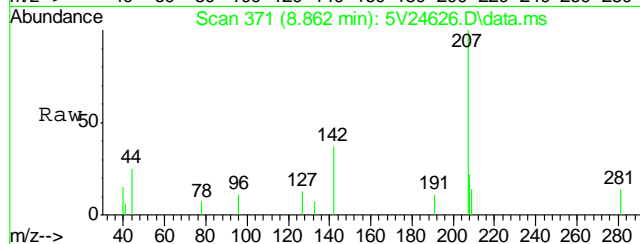
#2
Pentafluorobenzene
Concen: 50.00 ug/l
RT: 11.613 min Scan# 612
Delta R.T. -0.011 min
Lab File: 5V24626.D
Acq: 15 Nov 2012 2:58 pm

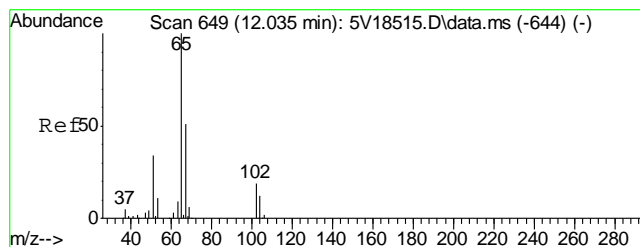
Tgt Ion	Ratio	Lower	Upper
168	100		
99	43.3	37.4	56.2



#12
Iodomethane
Concen: 1.26 ug/l
RT: 8.862 min Scan# 371
Delta R.T. -0.011 min
Lab File: 5V24626.D
Acq: 15 Nov 2012 2:58 pm

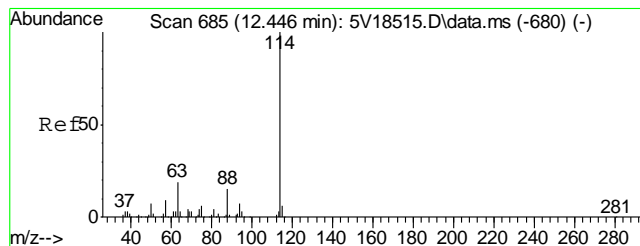
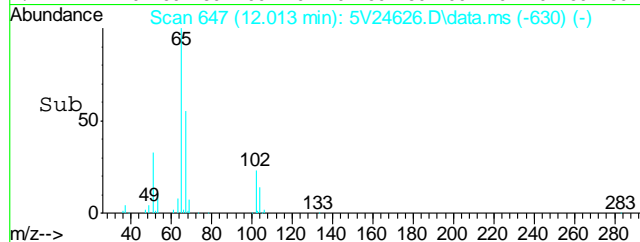
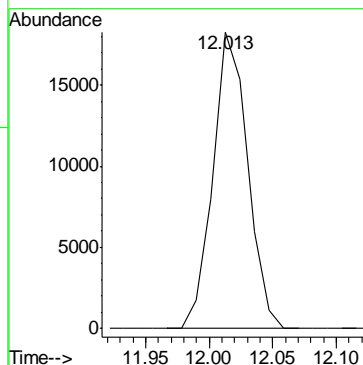
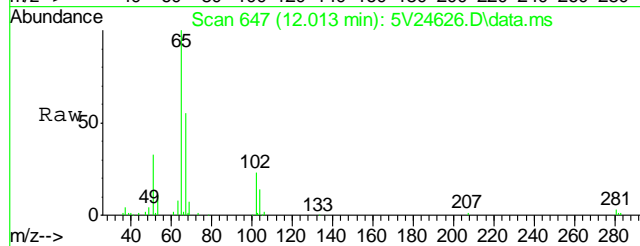
Tgt Ion	Ratio	Lower	Upper
142	100		
127	31.2	35.4	53.0#





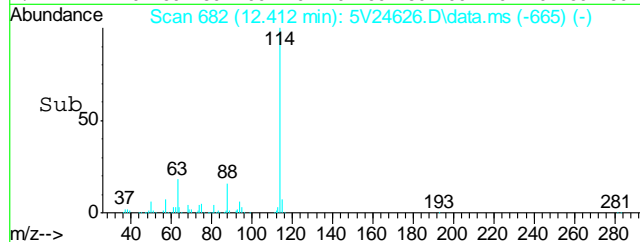
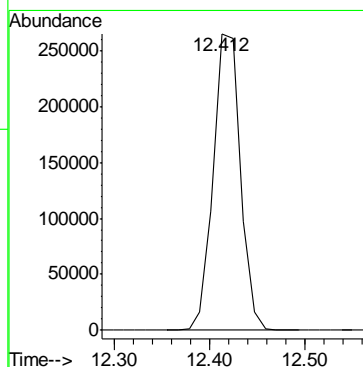
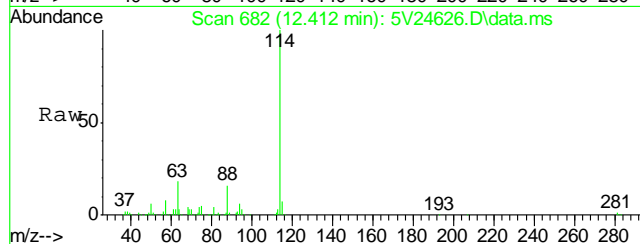
#33
1,2-Dichloroethane-d4
Concen: 47.18 ug/l
RT: 12.013 min Scan# 647
Delta R.T. -0.011 min
Lab File: 5V24626.D
Acq: 15 Nov 2012 2:58 pm

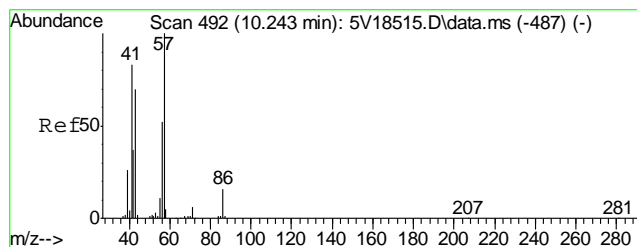
Tgt Ion:102 Resp: 34536



#35
1,4-Difluorobenzene
Concen: 50.00 ug/l
RT: 12.412 min Scan# 682
Delta R.T. -0.012 min
Lab File: 5V24626.D
Acq: 15 Nov 2012 2:58 pm

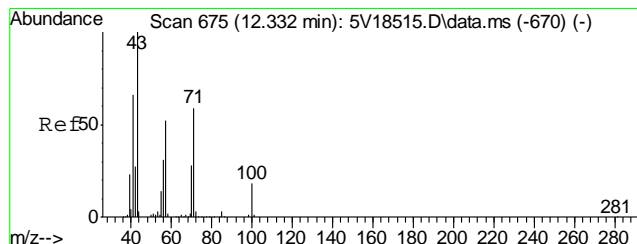
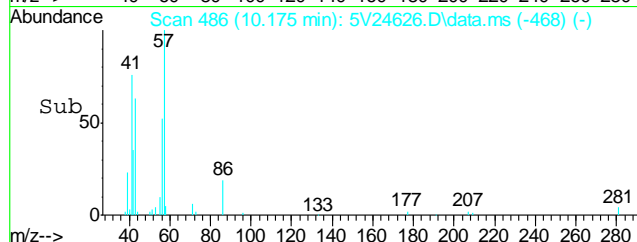
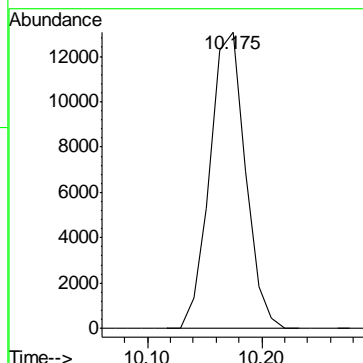
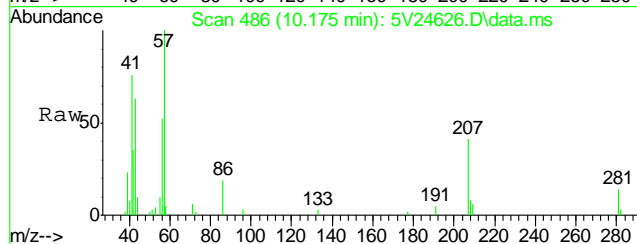
Tgt Ion:114 Resp: 524046





#41
Hexane
Concen: 5.93 ug/l
RT: 10.175 min Scan# 486
Delta R.T. -0.000 min
Lab File: 5V24626.D
Acq: 15 Nov 2012 2:58 pm

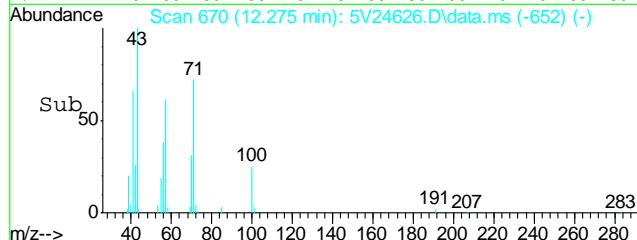
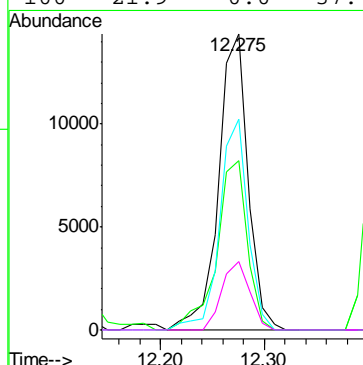
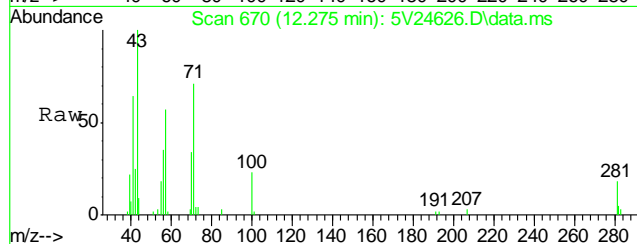
Tgt Ion: 57 Resp: 28184

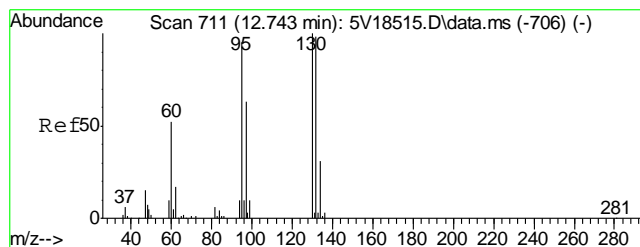


#43
Heptane
Concen: 5.21 ug/l
RT: 12.275 min Scan# 670
Delta R.T. -0.000 min
Lab File: 5V24626.D
Acq: 15 Nov 2012 2:58 pm

Tgt Ion: 43 Resp: 28428

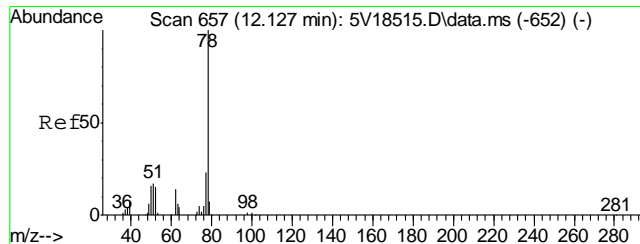
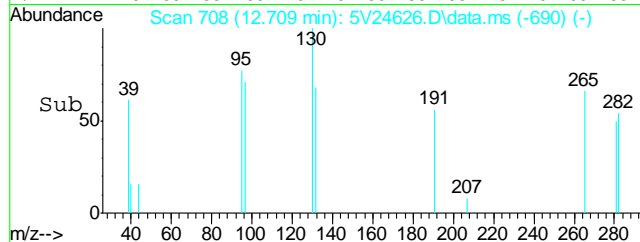
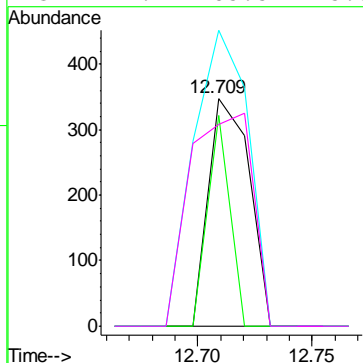
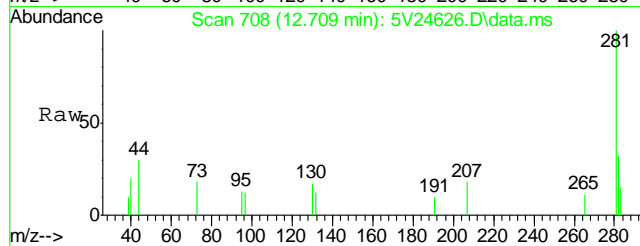
Ion	Ratio	Lower	Upper
43	100		
57	59.4	30.6	70.6
71	68.2	38.9	78.9
100	21.9	0.0	37.4





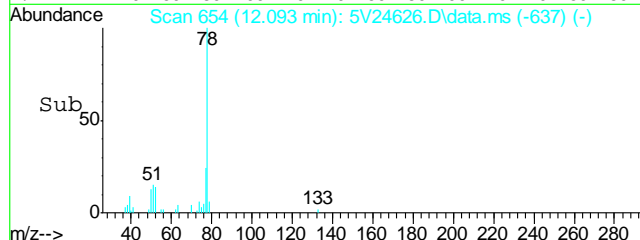
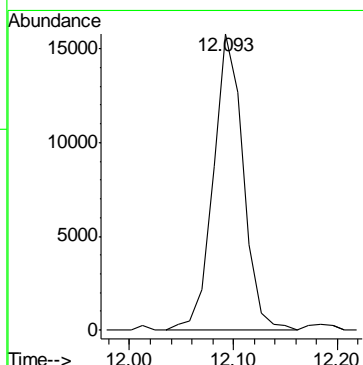
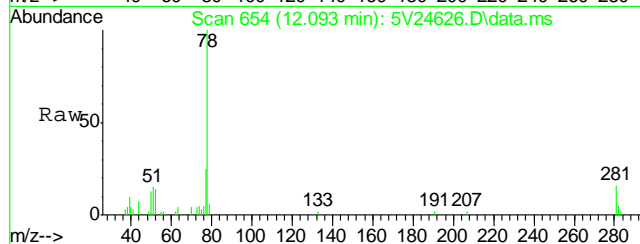
#48
Trichloroethene
Concen: 0.12 ug/l
RT: 12.709 min Scan# 708
Delta R.T. -0.000 min
Lab File: 5V24626.D
Acq: 15 Nov 2012 2:58 pm

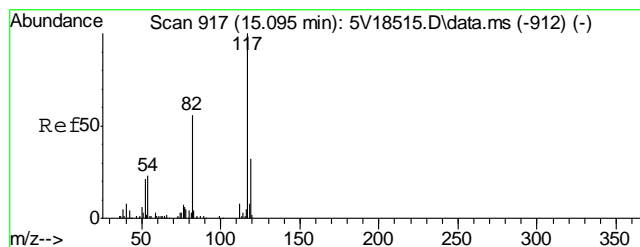
Tgt Ion: 95	Resp: 438
Ion Ratio	Lower Upper
95	100
97	50.2 47.1 87.1
130	171.9 85.2 125.2#
132	142.7 85.5 125.5#



#50
Benzene
Concen: 2.27 ug/l
RT: 12.093 min Scan# 654
Delta R.T. -0.011 min
Lab File: 5V24626.D
Acq: 15 Nov 2012 2:58 pm

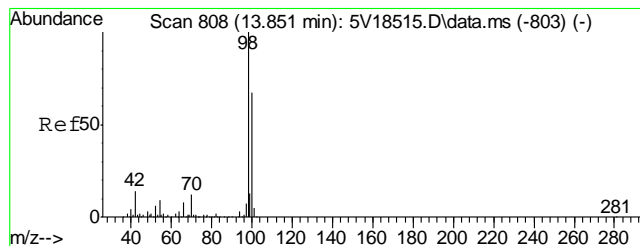
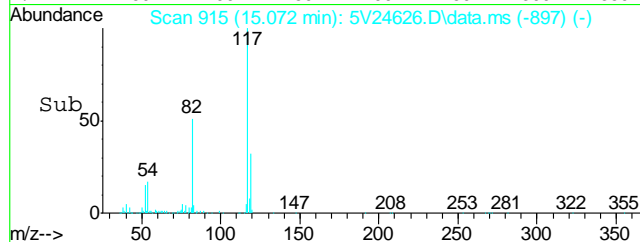
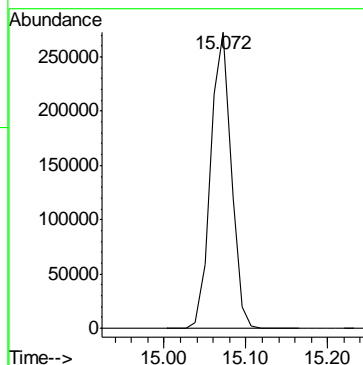
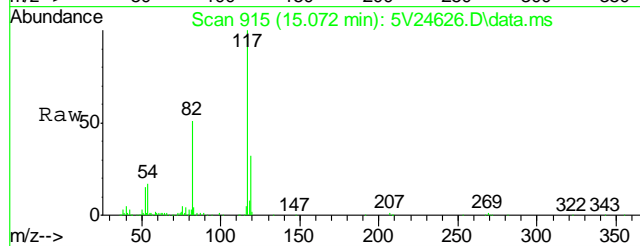
Tgt Ion: 78 Resp: 31637





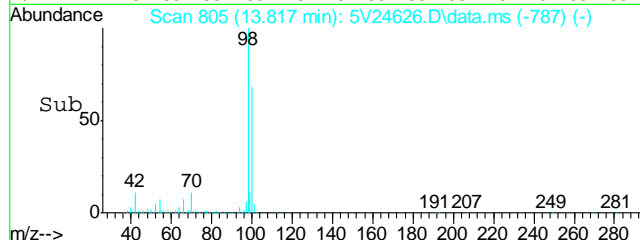
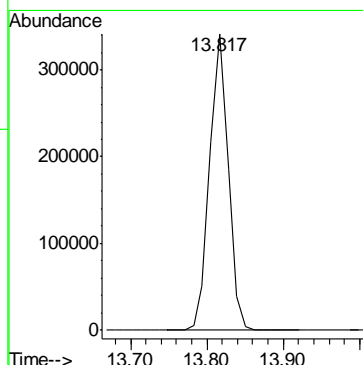
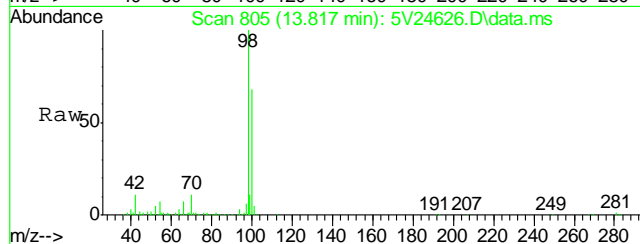
#53
Chlorobenzene-d5
Concen: 50.00 ug/l
RT: 15.072 min Scan# 915
Delta R.T. -0.000 min
Lab File: 5V24626.D
Acq: 15 Nov 2012 2:58 pm

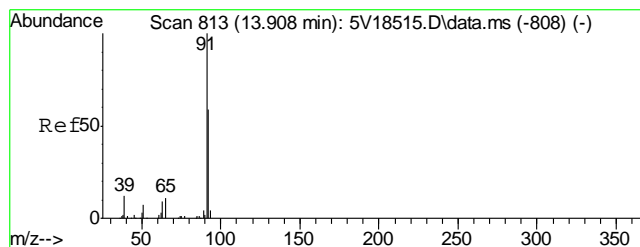
Tgt Ion:117 Resp: 477674



#61
Toluene-d8
Concen: 51.11 ug/l
RT: 13.817 min Scan# 805
Delta R.T. -0.000 min
Lab File: 5V24626.D
Acq: 15 Nov 2012 2:58 pm

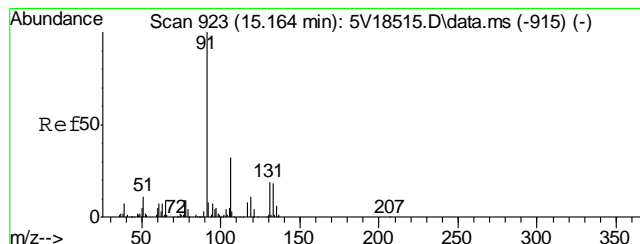
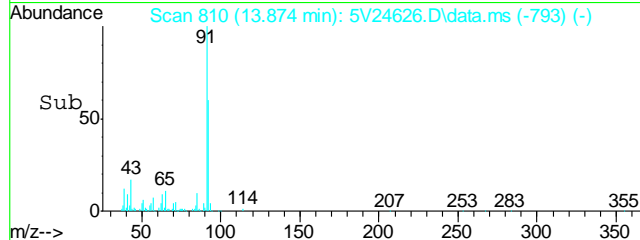
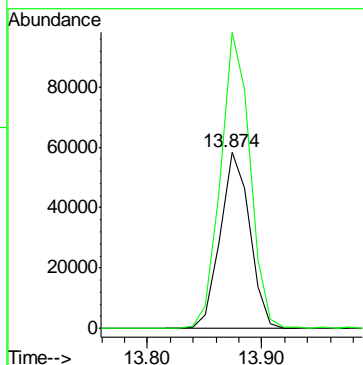
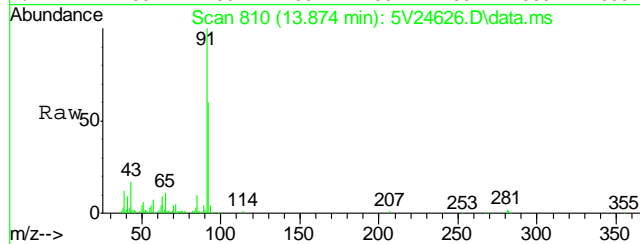
Tgt Ion: 98 Resp: 578399





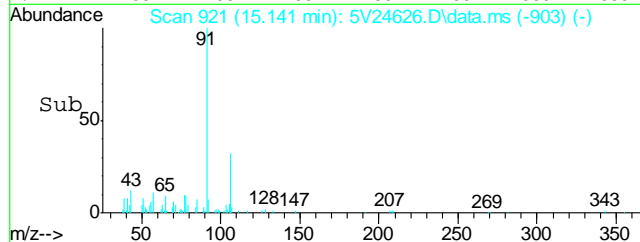
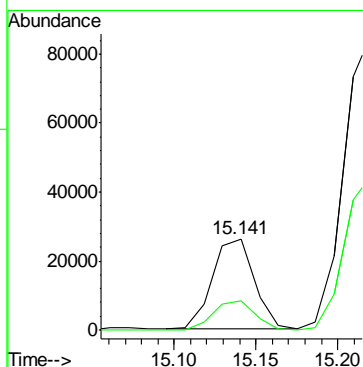
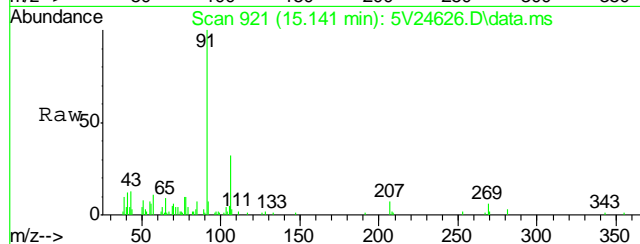
#62
Toluene
Concen: 11.85 ug/l
RT: 13.874 min Scan# 810
Delta R.T. -0.012 min
Lab File: 5V24626.D
Acq: 15 Nov 2012 2:58 pm

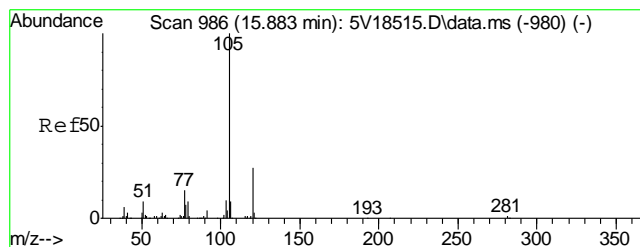
Tgt Ion	Ratio	Lower	Upper
92	100		
91	167.8	149.8	189.8



#66
Ethylbenzene
Concen: 2.76 ug/l
RT: 15.141 min Scan# 921
Delta R.T. -0.000 min
Lab File: 5V24626.D
Acq: 15 Nov 2012 2:58 pm

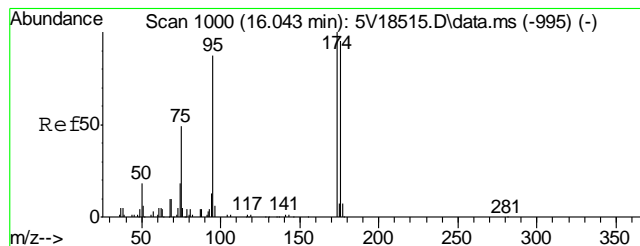
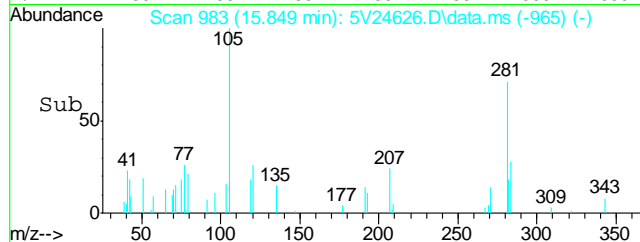
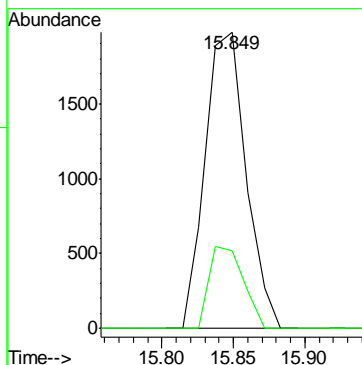
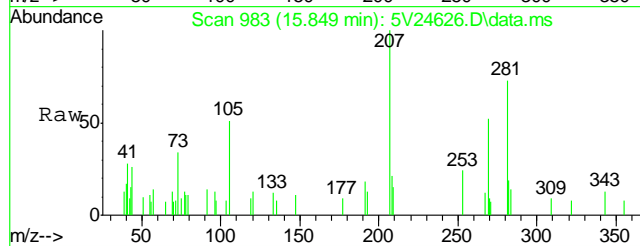
Tgt Ion	Ratio	Lower	Upper
91	100		
106	32.2	11.7	51.7





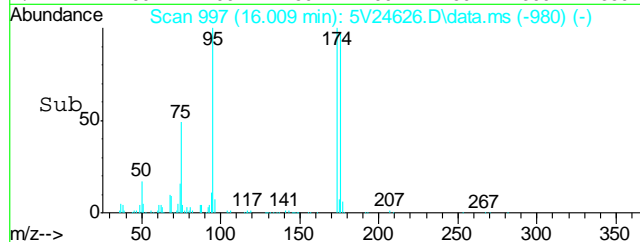
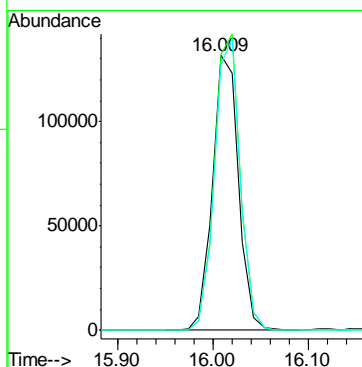
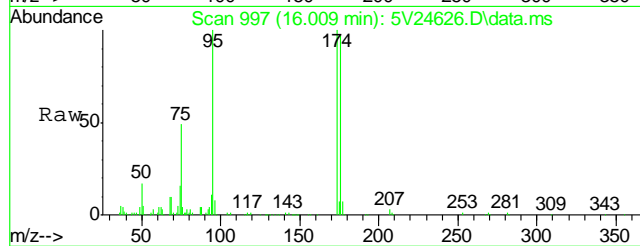
#68
Isopropylbenzene
Concen: 0.23 ug/l
RT: 15.849 min Scan# 983
Delta R.T. -0.000 min
Lab File: 5V24626.D
Acq: 15 Nov 2012 2:58 pm

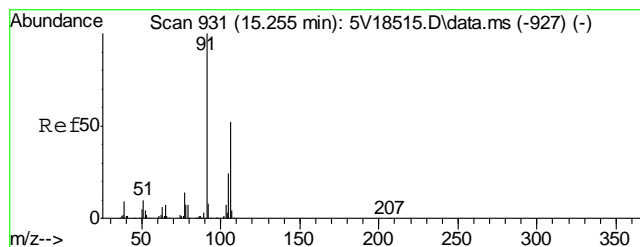
Tgt Ion: 105 Resp: 3914
Ion Ratio Lower Upper
105 100
120 23.1 21.0 31.4



#69
4-Bromofluorobenzene
Concen: 50.80 ug/l
RT: 16.009 min Scan# 997
Delta R.T. -0.011 min
Lab File: 5V24626.D
Acq: 15 Nov 2012 2:58 pm

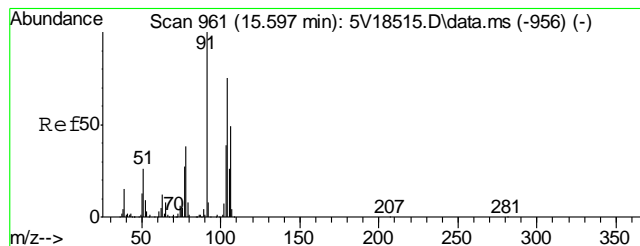
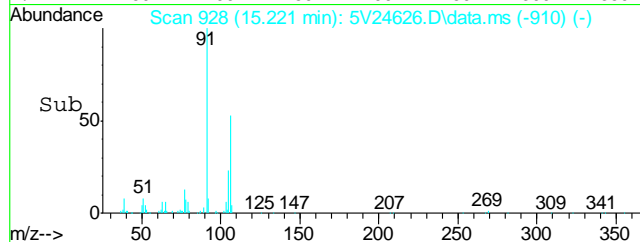
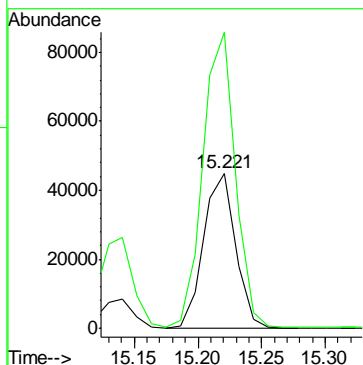
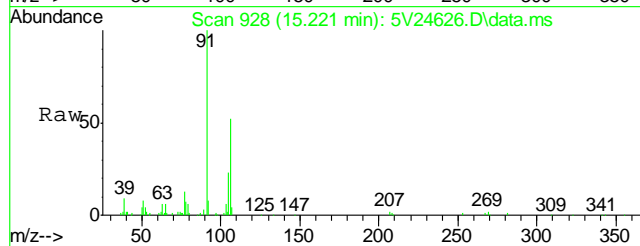
Tgt Ion: 95 Resp: 247771
Ion Ratio Lower Upper
95 100
174 107.1 77.1 117.1
176 104.6 73.4 113.4





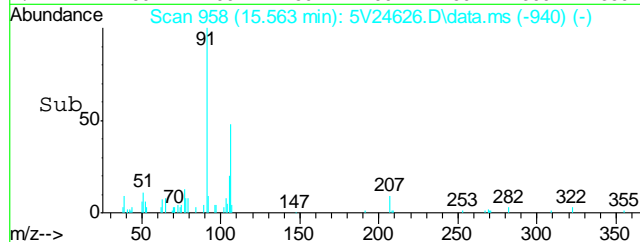
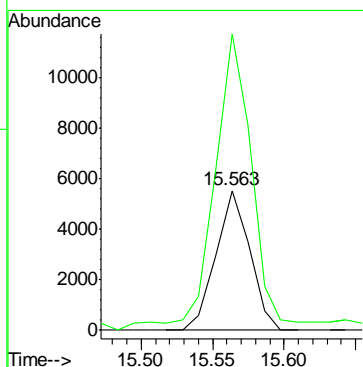
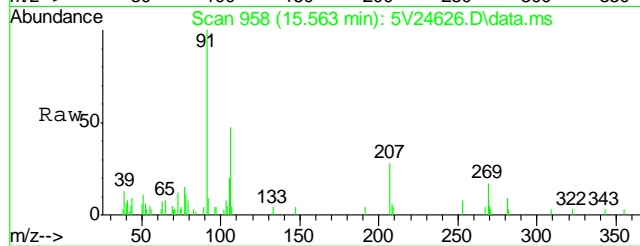
#72
m,p-xylene
Concen: 11.62 ug/l
RT: 15.221 min Scan# 928
Delta R.T. -0.000 min
Lab File: 5V24626.D
Acq: 15 Nov 2012 2:58 pm

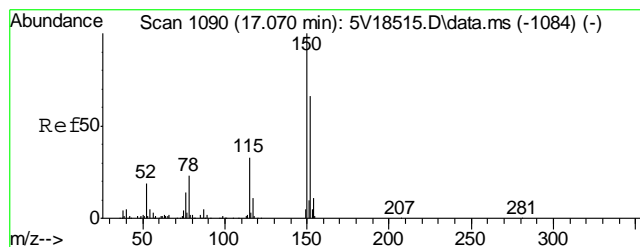
Tgt Ion	Ratio	Lower	Upper
106	100		
91	191.2	177.1	217.1



#73
o-xylene
Concen: 1.36 ug/l
RT: 15.563 min Scan# 958
Delta R.T. -0.000 min
Lab File: 5V24626.D
Acq: 15 Nov 2012 2:58 pm

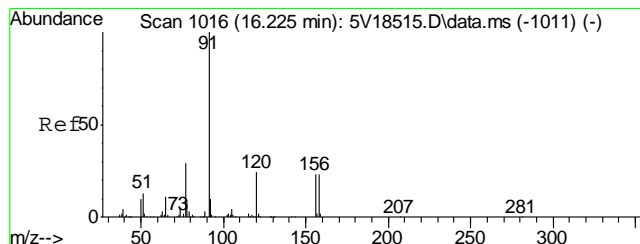
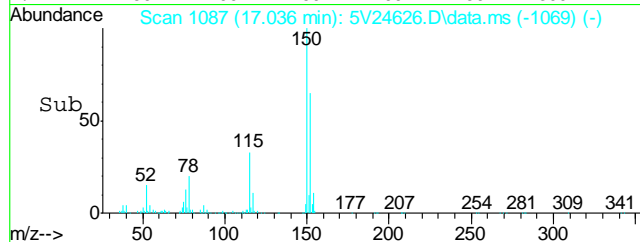
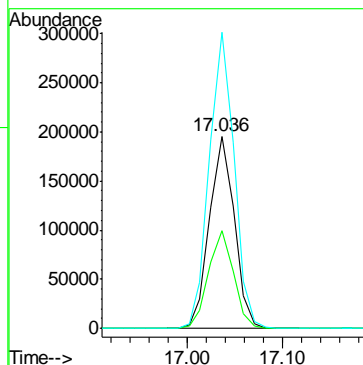
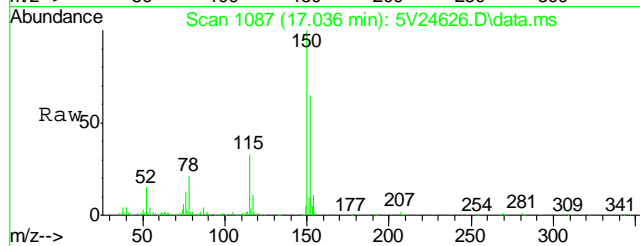
Tgt Ion	Ratio	Lower	Upper
106	100		
91	255.0	166.6	249.8#





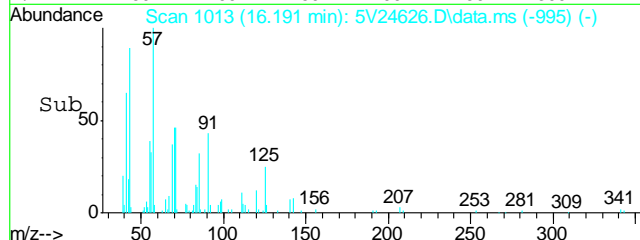
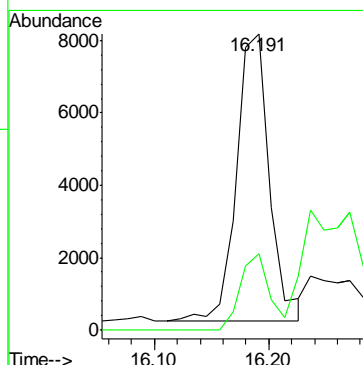
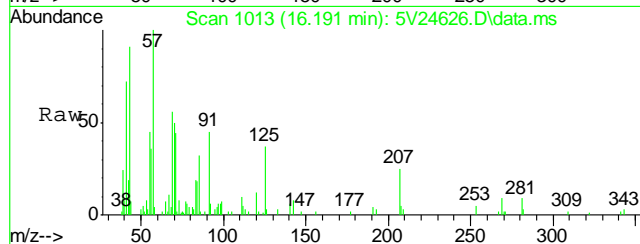
#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/l
RT: 17.036 min Scan# 1087
Delta R.T. -0.000 min
Lab File: 5V24626.D
Acq: 15 Nov 2012 2:58 pm

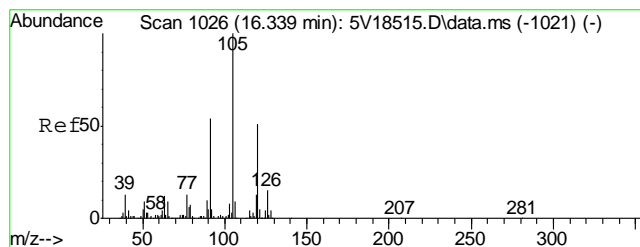
Tgt Ion	Ratio	Lower	Upper
152	100		
115	51.1	41.4	62.0
150	153.7	153.9	230.9#



#77
n-Propylbenzene
Concen: 0.76 ug/l
RT: 16.191 min Scan# 1013
Delta R.T. -0.000 min
Lab File: 5V24626.D
Acq: 15 Nov 2012 2:58 pm

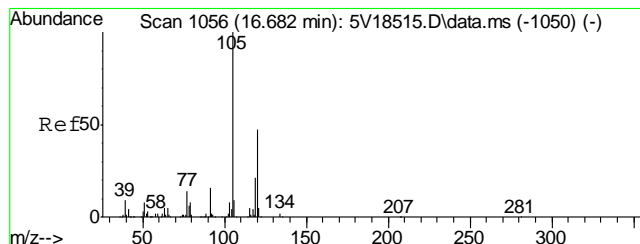
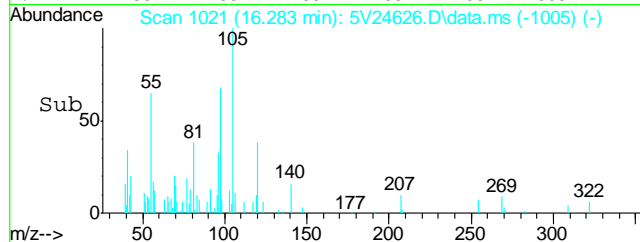
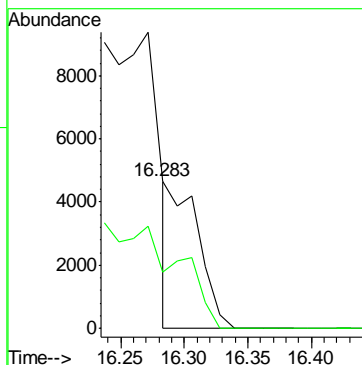
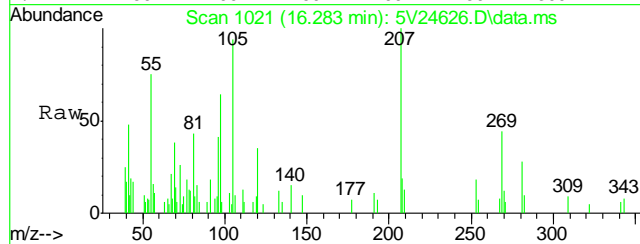
Tgt Ion	Ratio	Lower	Upper
91	100		
120	23.7	18.6	27.8





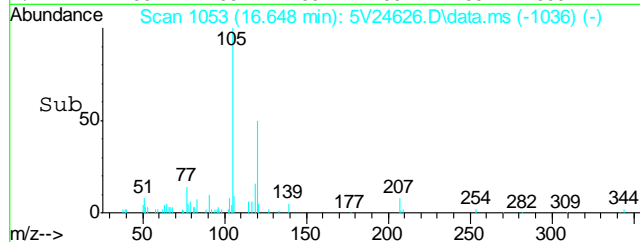
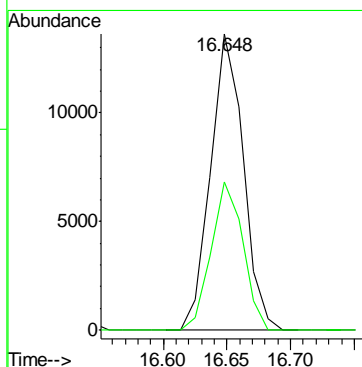
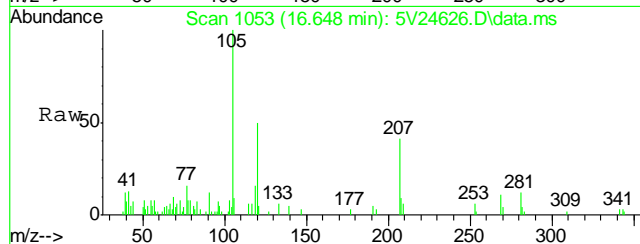
#80
1,3,5-Trimethylbenzene
Concen: 0.45 ug/l m
RT: 16.283 min Scan# 1021
Delta R.T. -0.023 min
Lab File: 5V24626.D
Acq: 15 Nov 2012 2:58 pm

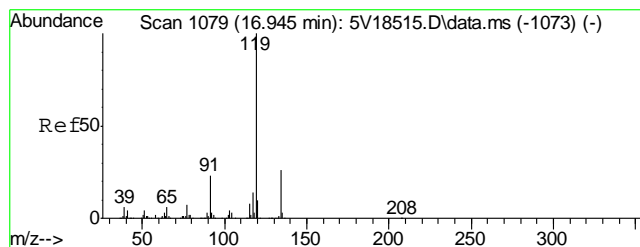
Tgt Ion:105 Resp: 7172
Ion Ratio Lower Upper
105 100
120 196.9 40.1 60.1#



#82
1,2,4-Trimethylbenzene
Concen: 1.45 ug/l
RT: 16.648 min Scan# 1053
Delta R.T. -0.012 min
Lab File: 5V24626.D
Acq: 15 Nov 2012 2:58 pm

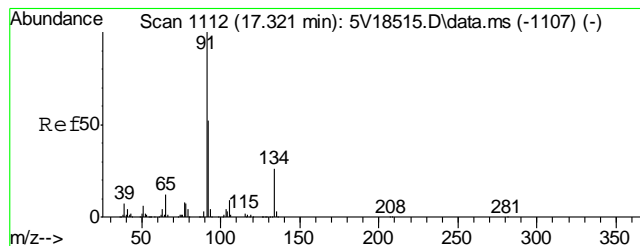
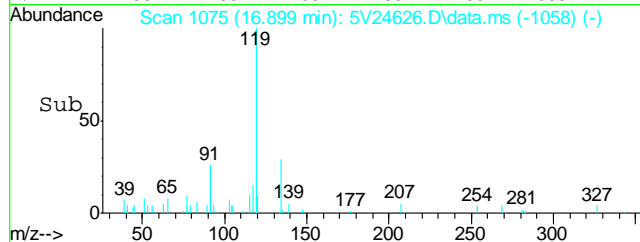
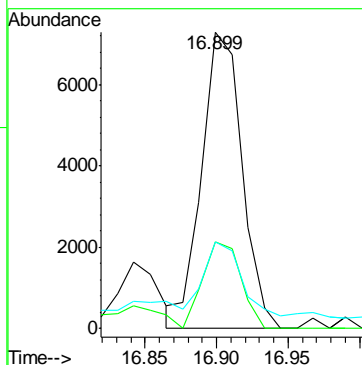
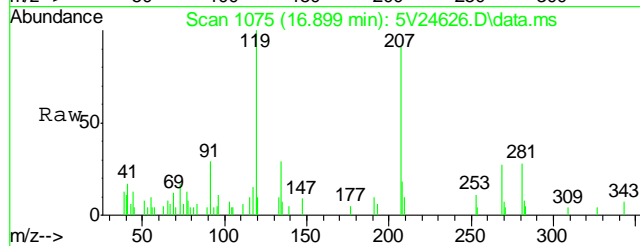
Tgt Ion:105 Resp: 24360
Ion Ratio Lower Upper
105 100
120 48.4 43.8 65.8





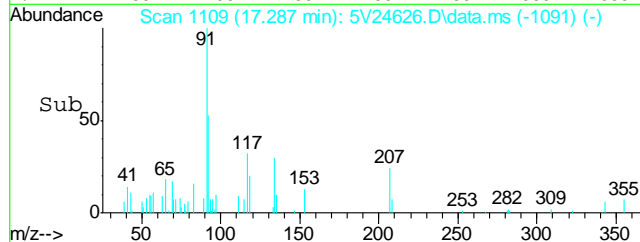
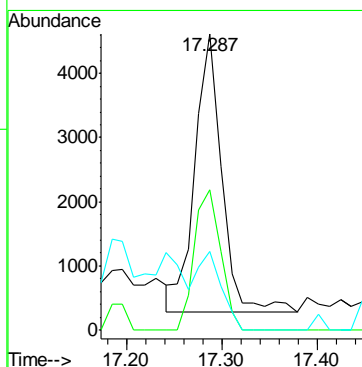
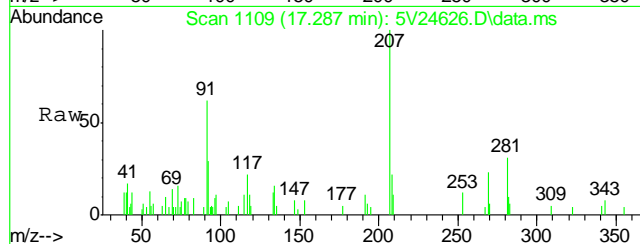
#86
p-Isopropyltoluene
Concen: 0.73 ug/l
RT: 16.899 min Scan# 1075
Delta R.T. -0.011 min
Lab File: 5V24626.D
Acq: 15 Nov 2012 2:58 pm

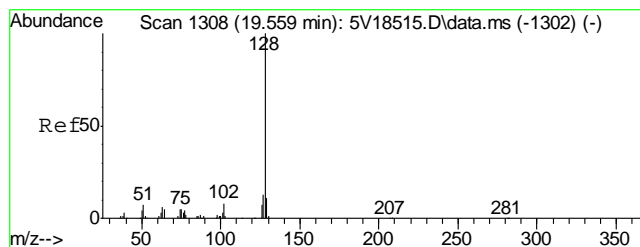
Tgt Ion:	119	Resp:	14219
Ion Ratio	100	Lower	Upper
119	100		
134	27.6	21.3	31.9
91	25.1	19.0	28.6



#88
n-Butylbenzene
Concen: 0.47 ug/l
RT: 17.287 min Scan# 1109
Delta R.T. -0.000 min
Lab File: 5V24626.D
Acq: 15 Nov 2012 2:58 pm

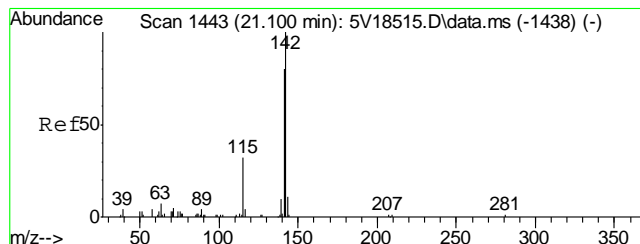
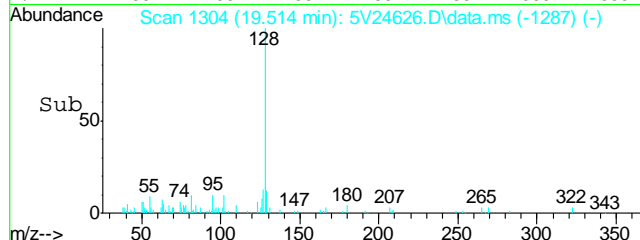
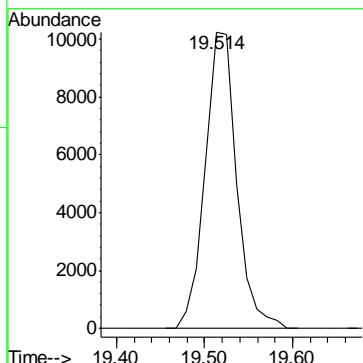
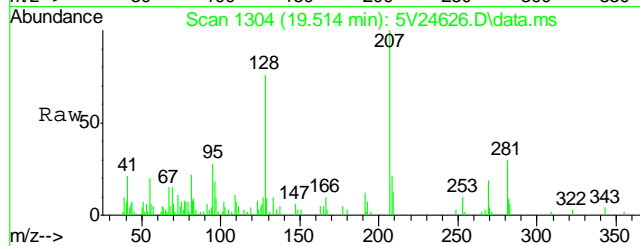
Tgt Ion:	91	Resp:	8443
Ion Ratio	100	Lower	Upper
91	100		
92	49.4	42.2	63.4
134	25.6	21.4	32.2





#91
Naphthalene
Concen: 1.45 ug/l
RT: 19.514 min Scan# 1304
Delta R.T. -0.011 min
Lab File: 5V24626.D
Acq: 15 Nov 2012 2:58 pm

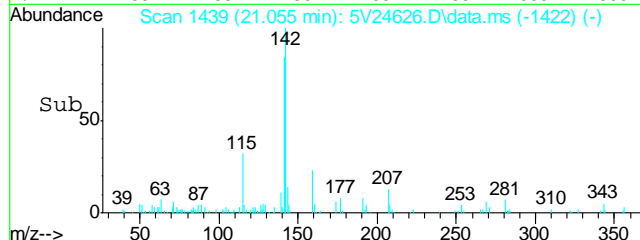
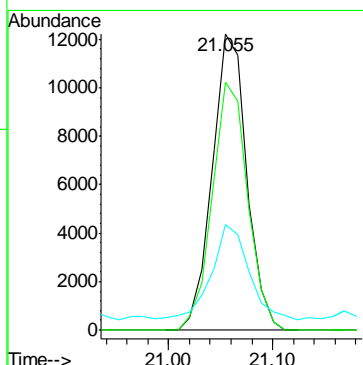
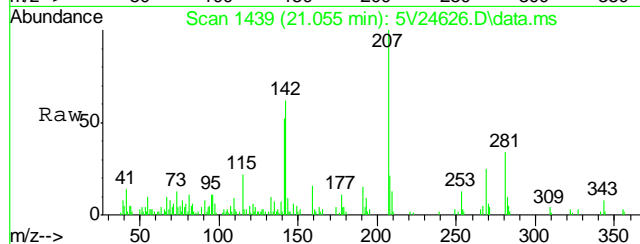
Tgt Ion:128 Resp: 25459

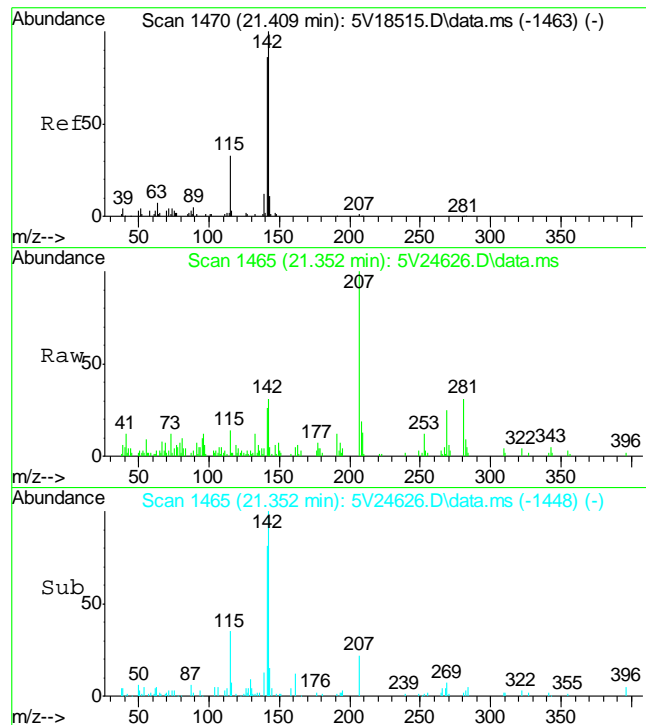


#94
2-Methylnaphthalene
Concen: 7.63 ug/l
RT: 21.055 min Scan# 1439
Delta R.T. -0.011 min
Lab File: 5V24626.D
Acq: 15 Nov 2012 2:58 pm

Tgt Ion:142 Resp: 28219

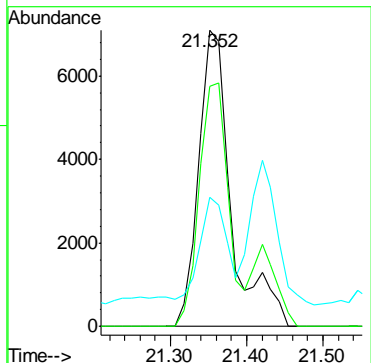
Ion	Ratio	Lower	Upper
142	100		
141	86.0	66.2	99.4
115	34.4	25.9	38.9





#95
1-Methylnaphthalene
Concen: 3.25 ug/l
RT: 21.352 min Scan# 1465
Delta R.T. -0.011 min
Lab File: 5V24626.D
Acq: 15 Nov 2012 2:58 pm

Tgt Ion:	142	Resp:	20965
Ion Ratio	Lower	Upper	
142	100		
141	74.1	68.9	103.3
115	30.6	27.3	40.9



7.1.1
7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5111512.S\
 Data File : 5V24629.D
 Acq On : 15 Nov 2012 4:34 pm
 Operator : BRETD
 Sample : D40910-2
 Misc : MS4976,V5V1503,5.023,,100,5,1
 ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 16 09:33:28 2012
 Quant Method : C:\msdchem\1\METHODS\V5AP1497TVH1497.M
 Quant Title : 8260
 QLast Update : Wed Nov 14 09:54:38 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.613	168	386769	50.00	ug/l	-0.01
35) 1,4-Difluorobenzene	12.423	114	471757	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.072	117	435516	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.036	152	330252	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.012	102	31743	48.22	ug/l	-0.01
Spiked Amount	50.000	Range	70 - 130	Recovery	=	96.44%
61) Toluene-d8	13.816	98	523889	50.78	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	101.56%
69) 4-Bromofluorobenzene	16.008	95	230186	51.76	ug/l	-0.01
Spiked Amount	50.000	Range	70 - 130	Recovery	=	103.52%

Target Compounds

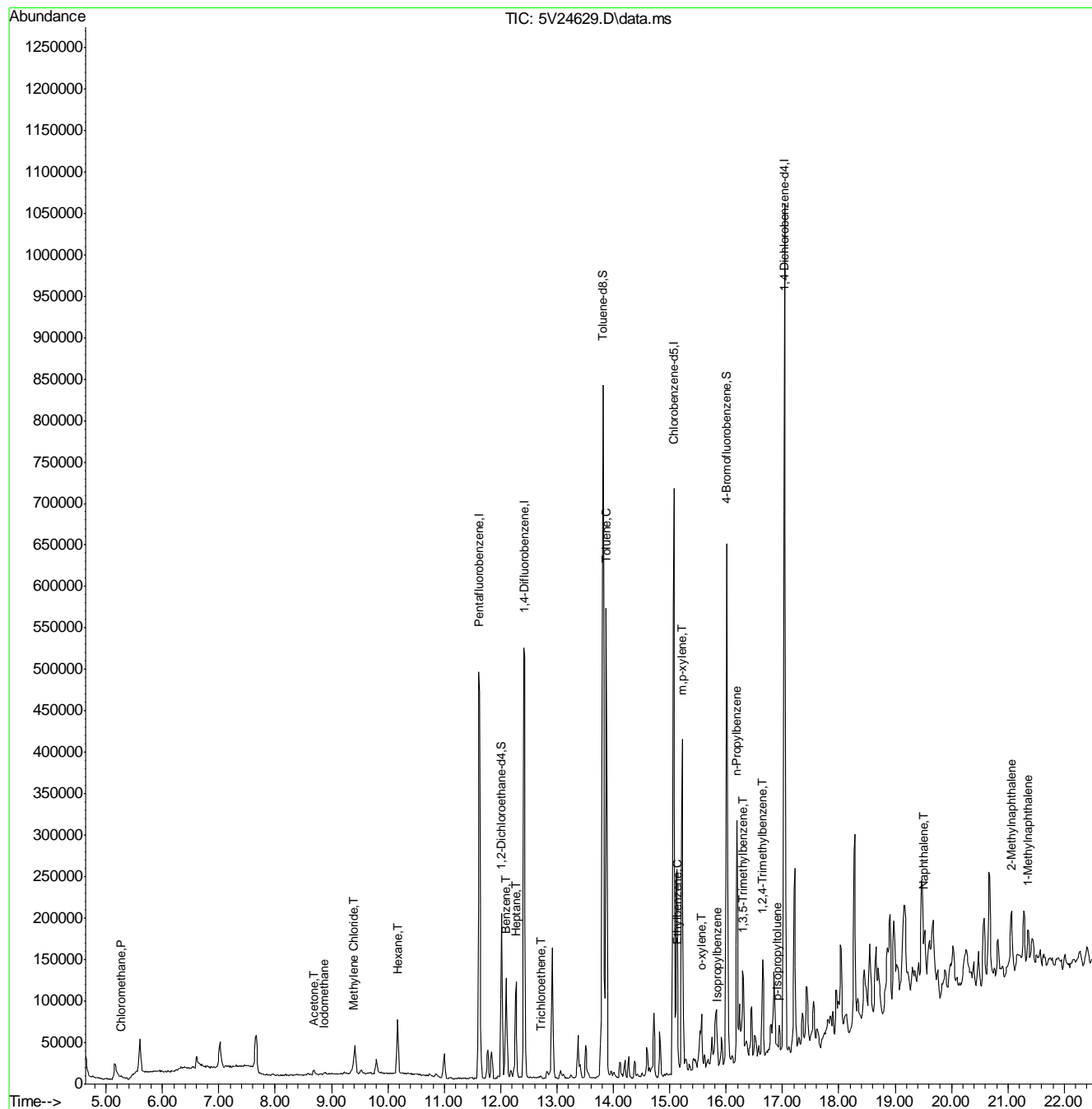
						Qvalue
4) Chloromethane	5.265	50	2075	0.48	ug/l	91
12) Iodomethane	8.873	142	4542	1.26	ug/l #	86
15) Acetone	8.690	58	2441	1.82	ug/l #	80
17) Methylene Chloride	9.398	84	2902	0.84	ug/l #	67
41) Hexane	10.174	57	33544	7.84	ug/l	100
43) Heptane	12.275	43	46079	9.37	ug/l	91
48) Trichloroethene	12.709	95	831	0.24	ug/l #	63
50) Benzene	12.092	78	111845	8.93	ug/l	100
62) Toluene	13.873	92	185171	23.01	ug/l	95
66) Ethylbenzene	15.140	91	31939	2.08	ug/l	98
68) Isopropylbenzene	15.848	105	5531	0.35	ug/l	97
72) m,p-xylene	15.220	106	125320	20.33	ug/l	95
73) o-xylene	15.563	106	17609	2.88	ug/l	85
77) n-Propylbenzene	16.191	91	13816	0.70	ug/l	92
80) 1,3,5-Trimethylbenzene	16.305	105	51089	3.39	ug/l	91
82) 1,2,4-Trimethylbenzene	16.648	105	66345	4.21	ug/l	92
86) p-Isopropyltoluene	16.899	119	6040	0.33	ug/l	97
91) Naphthalene	19.513	128	39337	2.40	ug/l	100
94) 2-Methylnaphthalene	21.054	142	43308	9.31	ug/l	96
95) 1-Methylnaphthalene	21.351	142	23406	3.70	ug/l	93

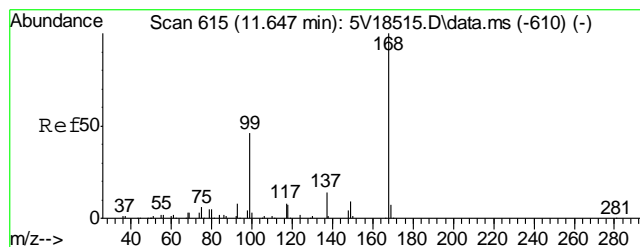
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5111512.S\
Data File : 5V24629.D
Acq On : 15 Nov 2012 4:34 pm
Operator : BRETD
Sample : D40910-2
Misc : MS4976,V5V1503,5.023,,100,5,1
ALS Vial : 13 Sample Multiplier: 1

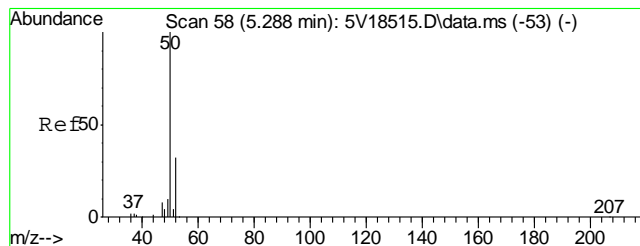
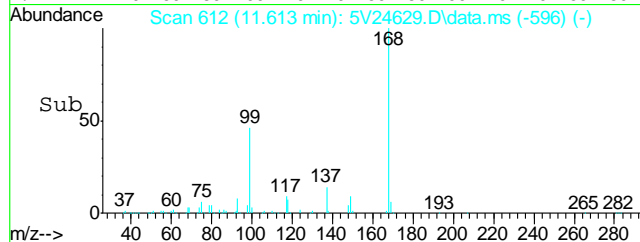
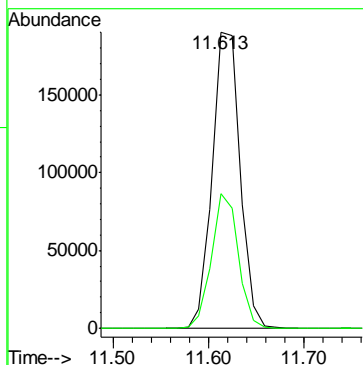
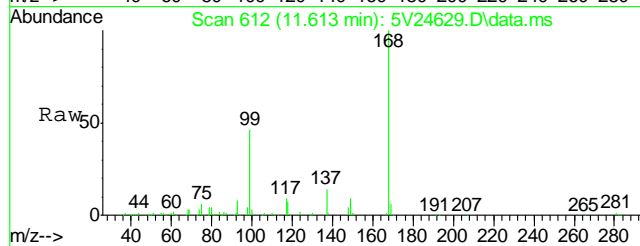
Quant Time: Nov 16 09:33:28 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1497TVH1497.M
Quant Title : 8260
QLast Update : Wed Nov 14 09:54:38 2012
Response via : Initial Calibration





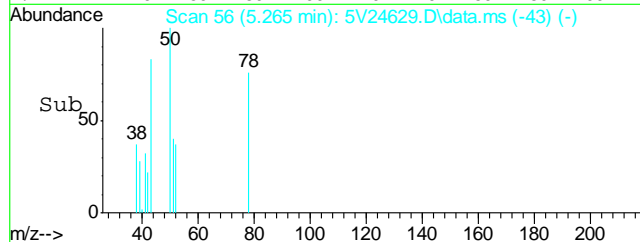
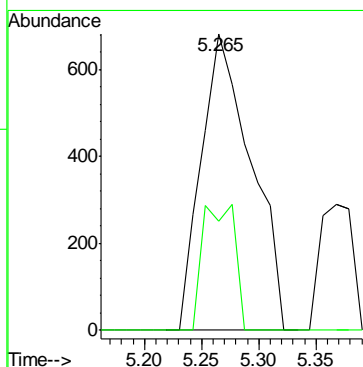
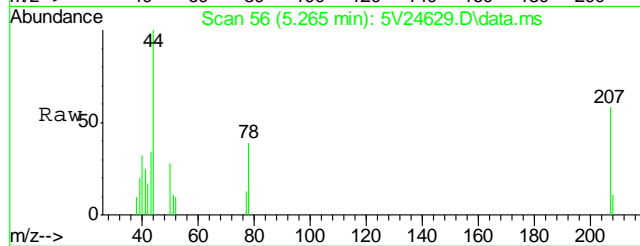
#2
Pentafluorobenzene
Concen: 50.00 ug/l
RT: 11.613 min Scan# 612
Delta R.T. -0.012 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

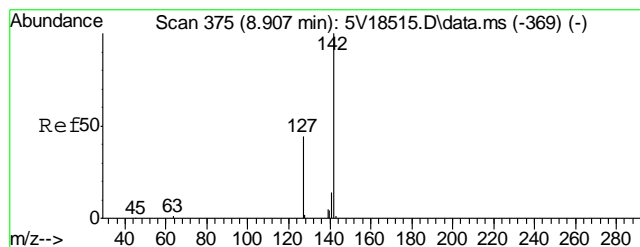
Tgt Ion: 168 Resp: 386769
Ion Ratio Lower Upper
168 100
99 43.5 37.4 56.2



#4
Chloromethane
Concen: 0.48 ug/l
RT: 5.265 min Scan# 56
Delta R.T. -0.000 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

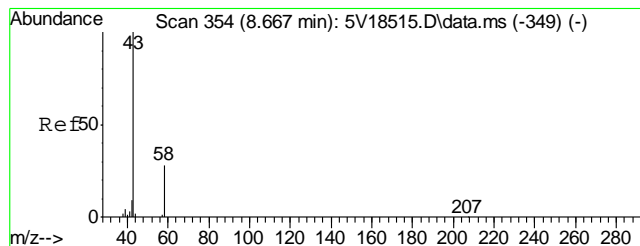
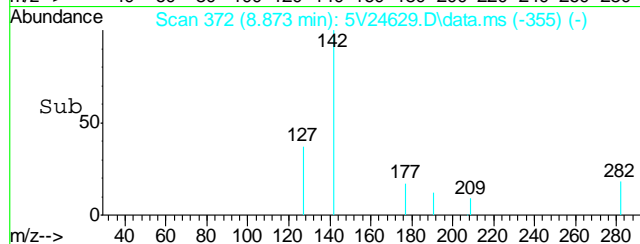
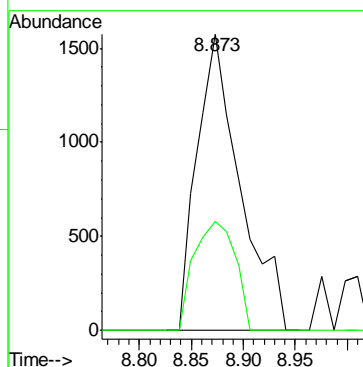
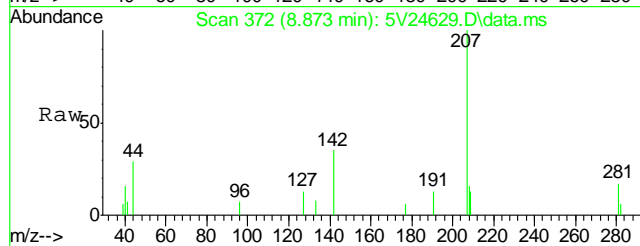
Tgt Ion: 50 Resp: 2075
Ion Ratio Lower Upper
50 100
52 27.3 12.1 52.1





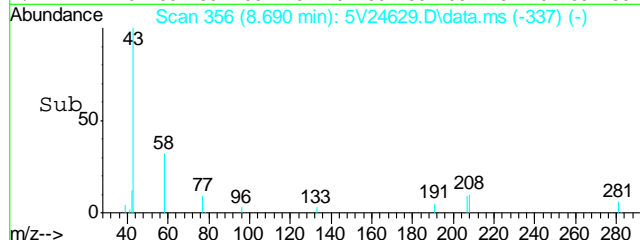
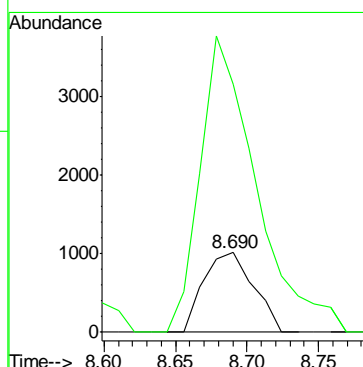
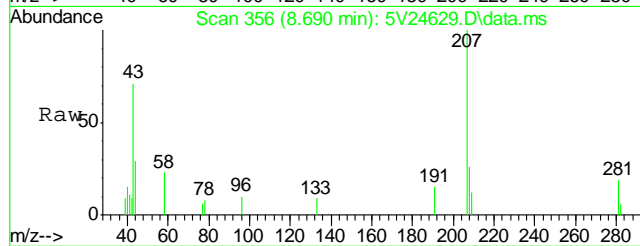
#12
Iodomethane
Concen: 1.26 ug/l
RT: 8.873 min Scan# 372
Delta R.T. -0.000 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

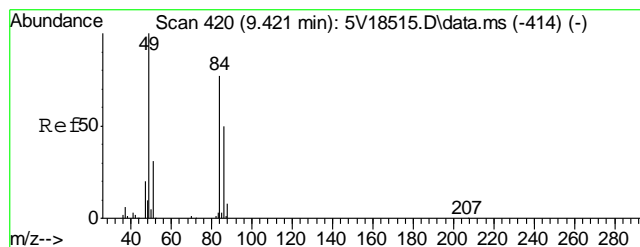
Tgt Ion: 142 Resp: 4542
Ion Ratio Lower Upper
142 100
127 35.1 35.4 53.0#



#15
Acetone
Concen: 1.82 ug/l
RT: 8.690 min Scan# 356
Delta R.T. 0.012 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

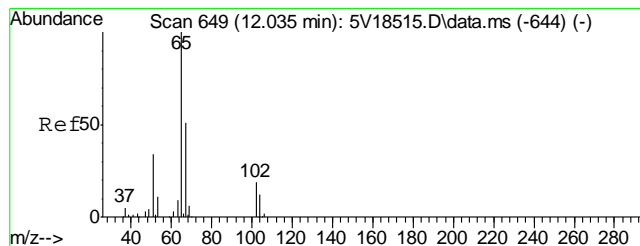
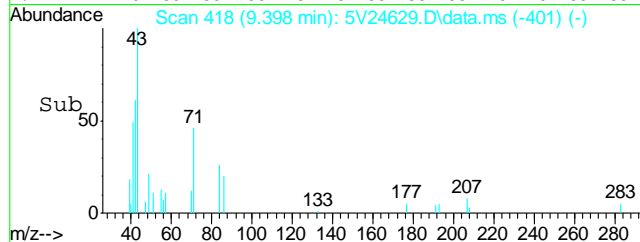
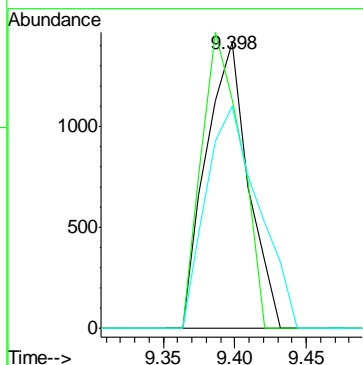
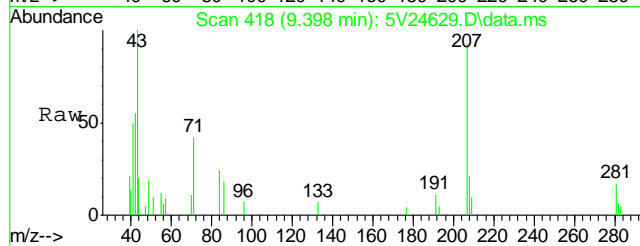
Tgt Ion: 58 Resp: 2441
Ion Ratio Lower Upper
58 100
43 418.7 353.6 393.6#





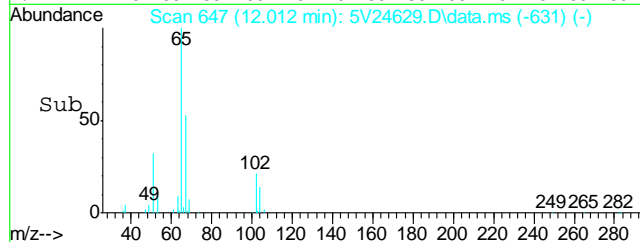
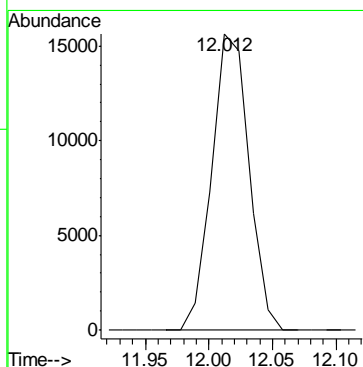
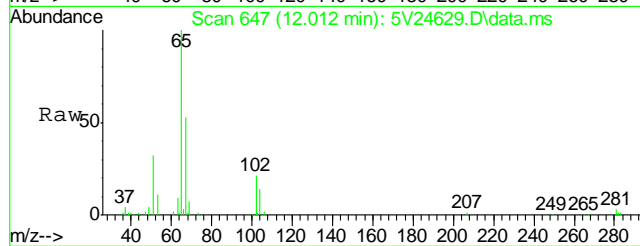
#17
Methylene Chloride
Concen: 0.84 ug/l
RT: 9.398 min Scan# 418
Delta R.T. -0.000 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

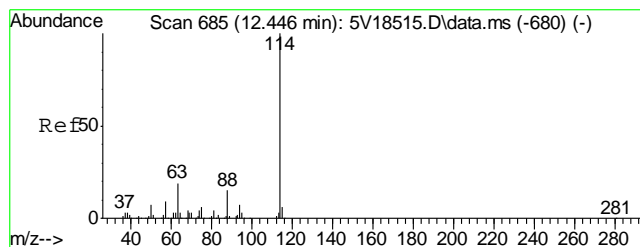
Tgt Ion: 84 Resp: 2902
Ion Ratio Lower Upper
84 100
49 96.6 110.4 150.4#
86 97.1 44.0 84.0#



#33
1,2-Dichloroethane-d4
Concen: 48.22 ug/l
RT: 12.012 min Scan# 647
Delta R.T. -0.012 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

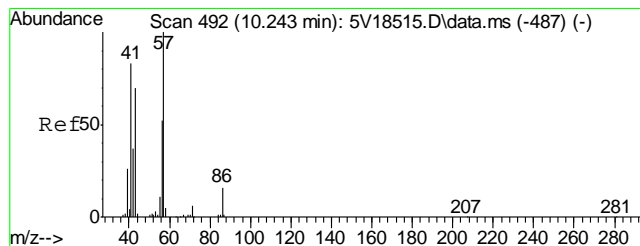
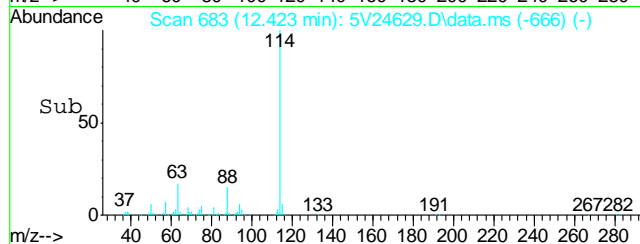
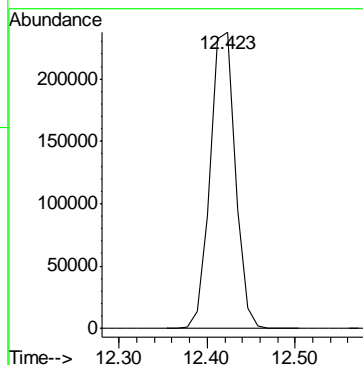
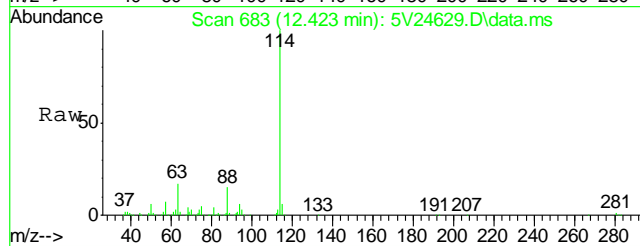
Tgt Ion: 102 Resp: 31743





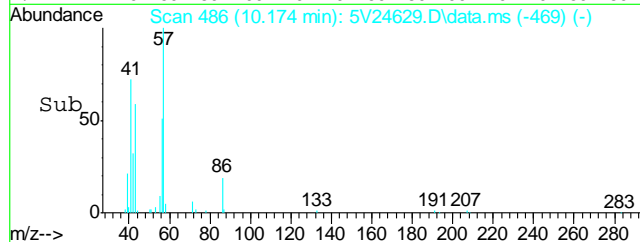
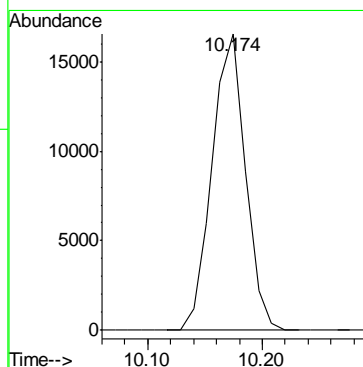
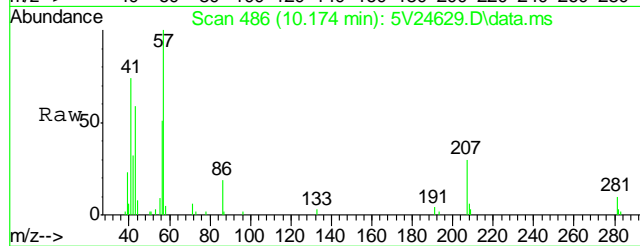
#35
1,4-Difluorobenzene
Concen: 50.00 ug/l
RT: 12.423 min Scan# 683
Delta R.T. -0.000 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

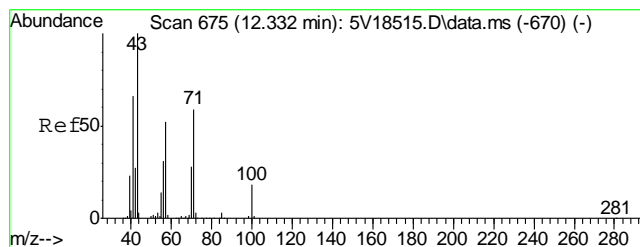
Tgt Ion:114 Resp: 471757



#41
Hexane
Concen: 7.84 ug/l
RT: 10.174 min Scan# 486
Delta R.T. -0.000 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

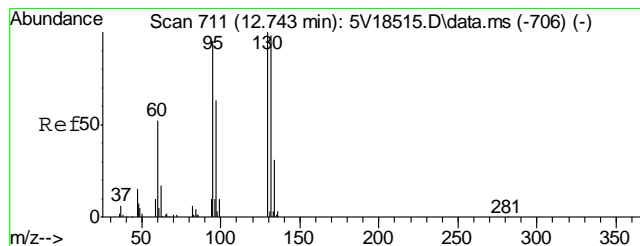
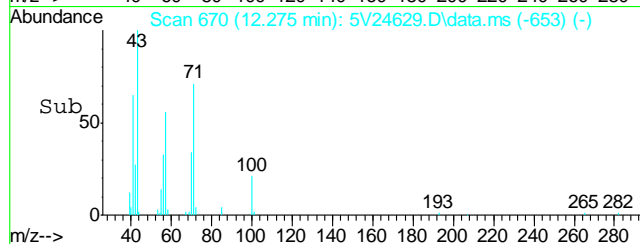
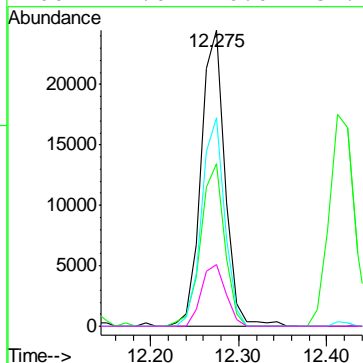
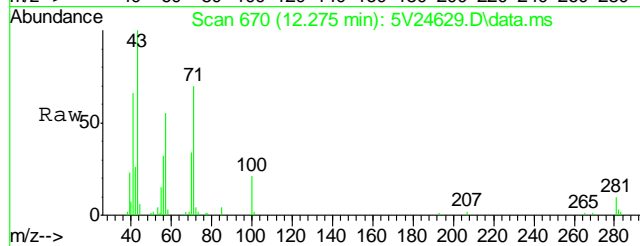
Tgt Ion: 57 Resp: 33544





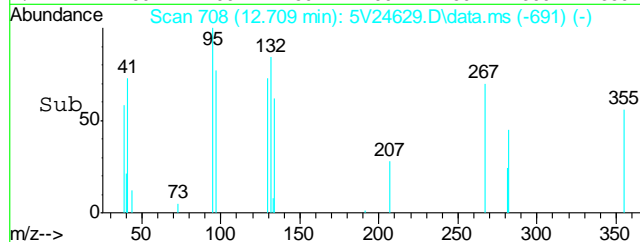
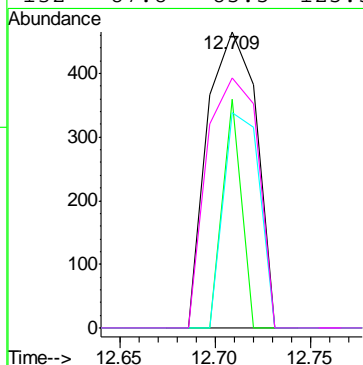
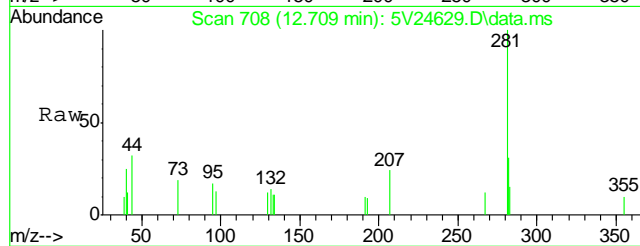
#43
Heptane
Concen: 9.37 ug/l
RT: 12.275 min Scan# 670
Delta R.T. -0.000 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

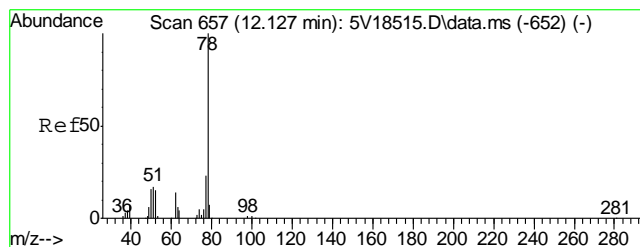
Tgt Ion:	43	Resp:	46079
Ion Ratio	Lower	Upper	
43	100		
57	54.7	30.6	70.6
71	67.7	38.9	78.9
100	21.0	0.0	37.4



#48
Trichloroethene
Concen: 0.24 ug/l
RT: 12.709 min Scan# 708
Delta R.T. -0.000 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

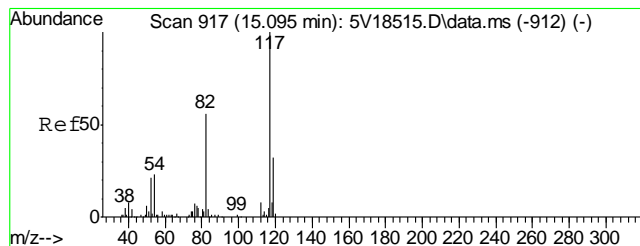
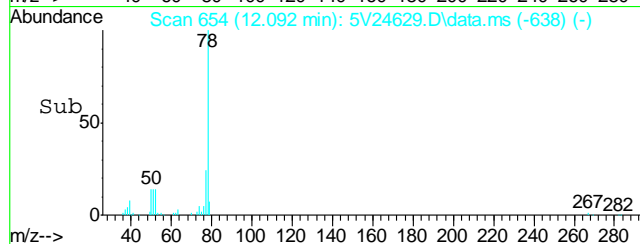
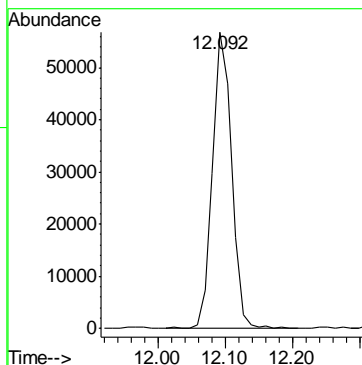
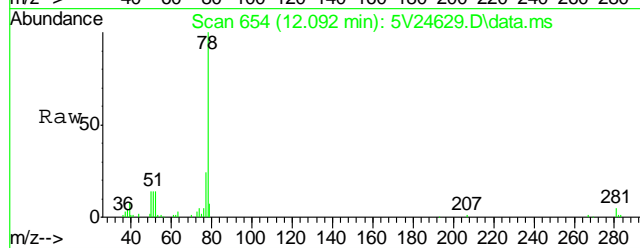
Tgt Ion:	95	Resp:	831
Ion Ratio	Lower	Upper	
95	100		
97	29.7	47.1	87.1#
130	54.0	85.2	125.2#
132	87.8	85.5	125.5





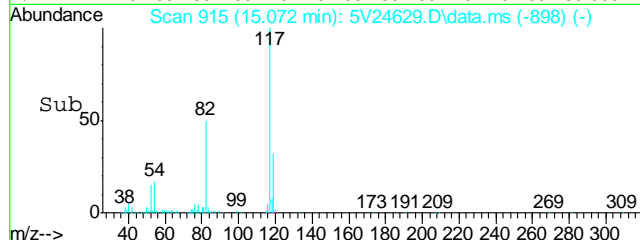
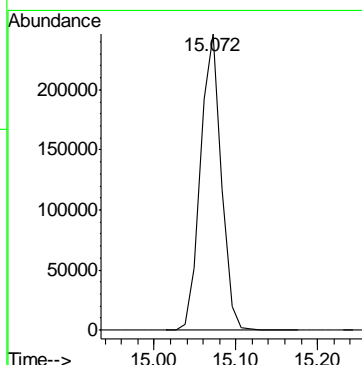
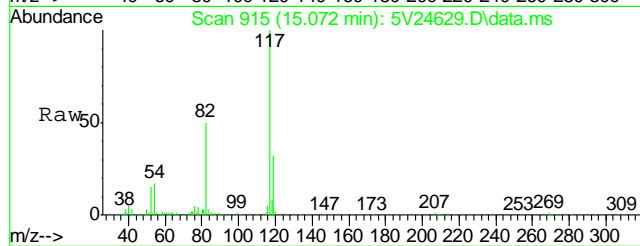
#50
Benzene
Concen: 8.93 ug/l
RT: 12.092 min Scan# 654
Delta R.T. -0.012 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

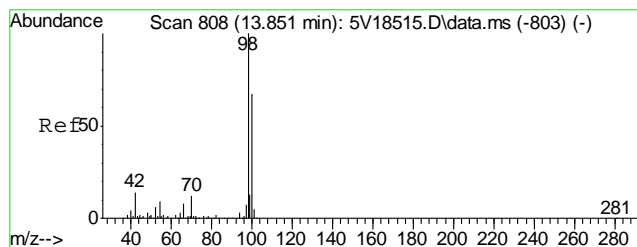
Tgt Ion: 78 Resp: 111845



#53
Chlorobenzene-d5
Concen: 50.00 ug/l
RT: 15.072 min Scan# 915
Delta R.T. -0.000 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

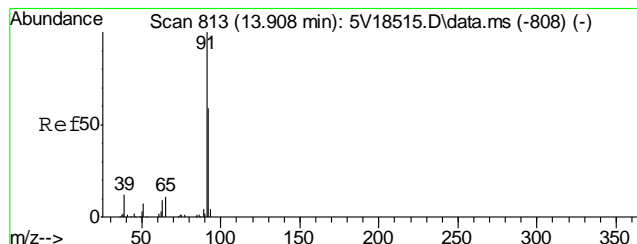
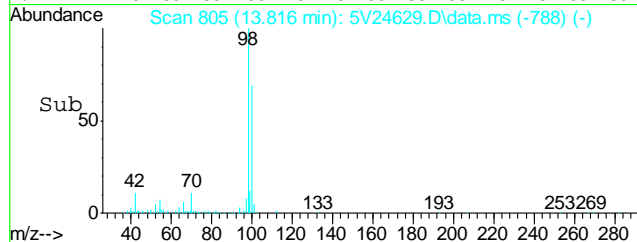
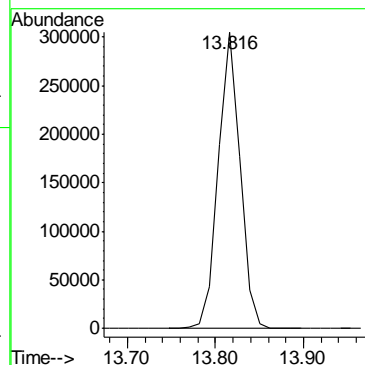
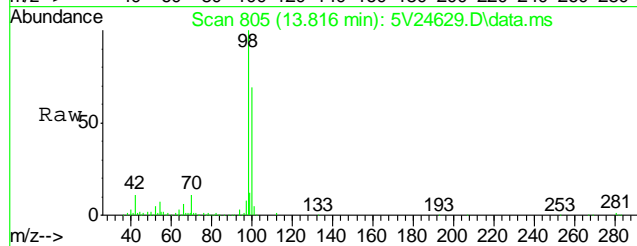
Tgt Ion: 117 Resp: 435516





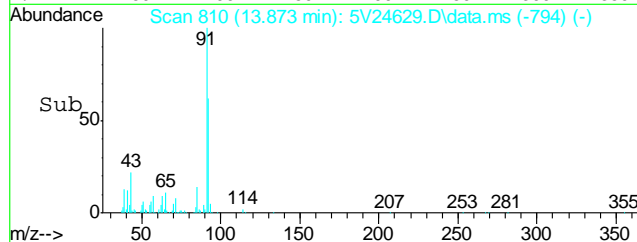
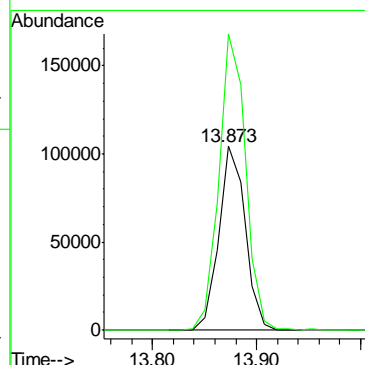
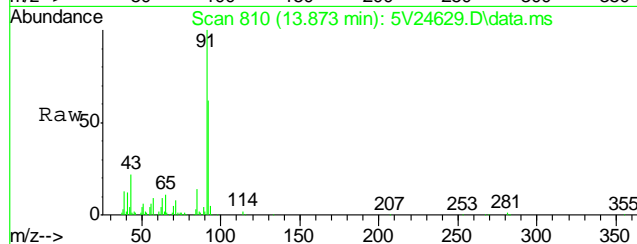
#61
Toluene-d8
Concen: 50.78 ug/l
RT: 13.816 min Scan# 805
Delta R.T. -0.000 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

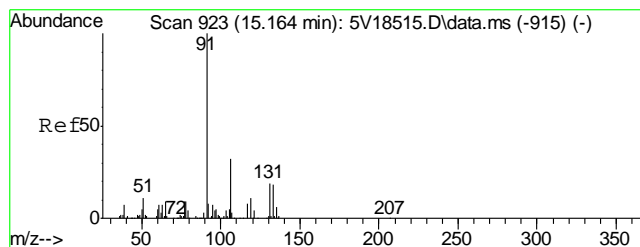
Tgt Ion: 98 Resp: 523889



#62
Toluene
Concen: 23.01 ug/l
RT: 13.873 min Scan# 810
Delta R.T. -0.012 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

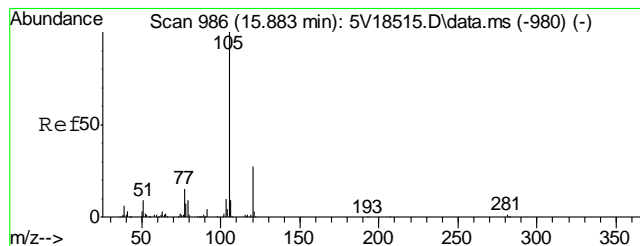
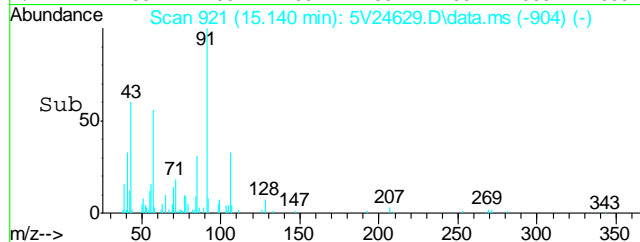
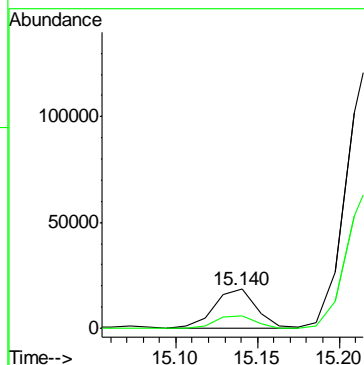
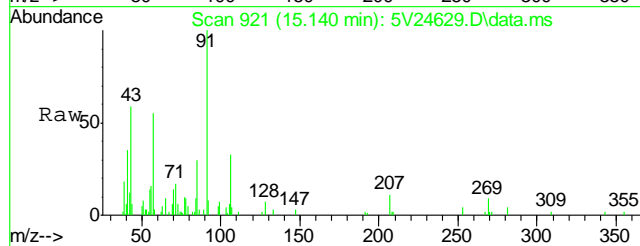
Tgt Ion: 92 Resp: 185171
Ion Ratio Lower Upper
92 100
91 163.1 149.8 189.8





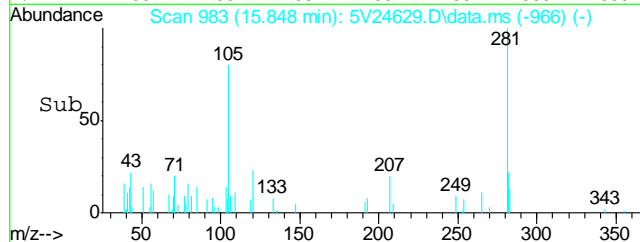
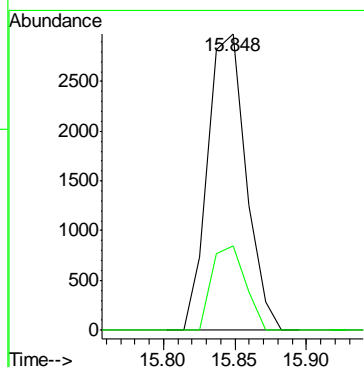
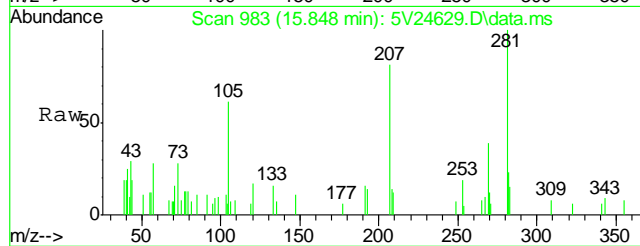
#66
Ethylbenzene
Concen: 2.08 ug/l
RT: 15.140 min Scan# 921
Delta R.T. -0.000 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

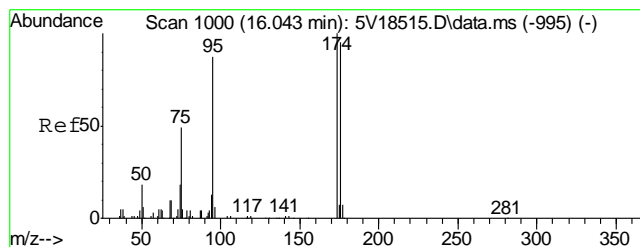
Tgt Ion: 91 Resp: 31939
Ion Ratio Lower Upper
91 100
106 32.7 11.7 51.7



#68
Isopropylbenzene
Concen: 0.35 ug/l
RT: 15.848 min Scan# 983
Delta R.T. -0.000 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

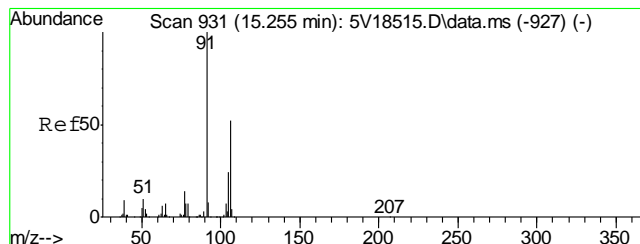
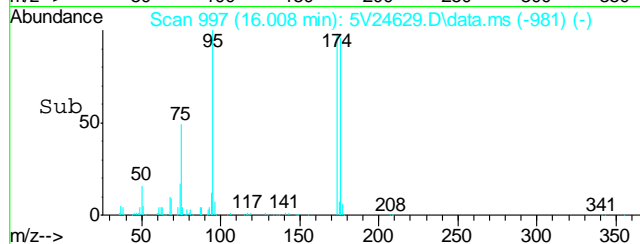
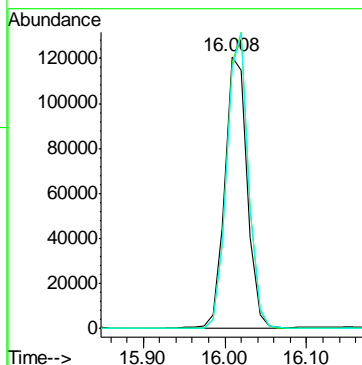
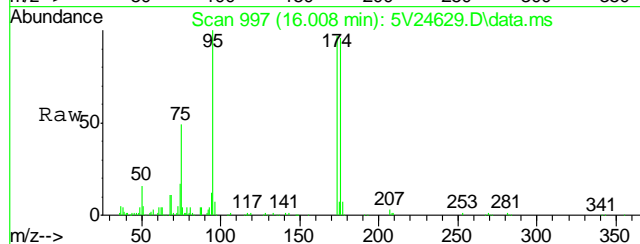
Tgt Ion: 105 Resp: 5531
Ion Ratio Lower Upper
105 100
120 24.8 21.0 31.4





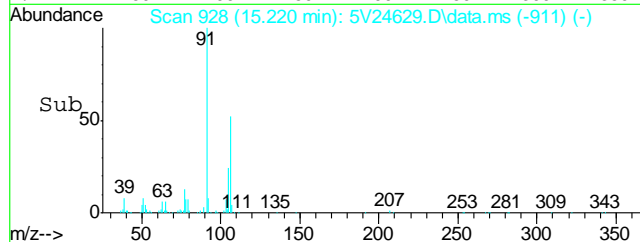
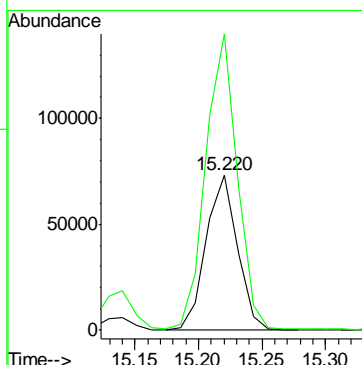
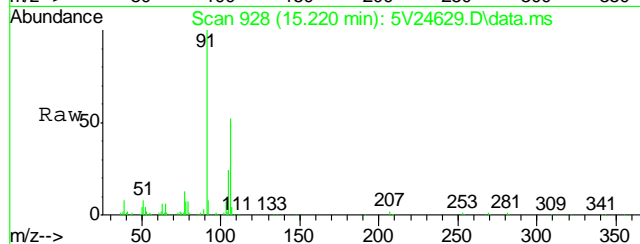
#69
4-Bromofluorobenzene
Concen: 51.76 ug/l
RT: 16.008 min Scan# 997
Delta R.T. -0.012 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

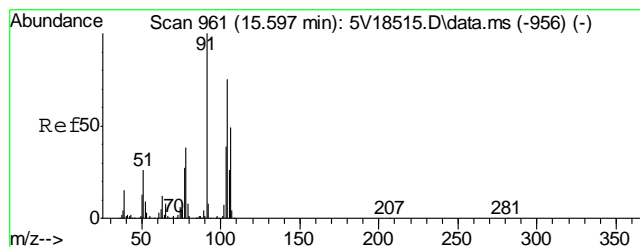
Tgt Ion	Ratio	Lower	Upper
95	100		
174	105.1	77.1	117.1
176	104.3	73.4	113.4



#72
m,p-xylene
Concen: 20.33 ug/l
RT: 15.220 min Scan# 928
Delta R.T. -0.000 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

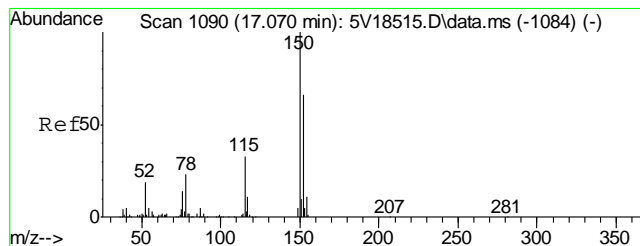
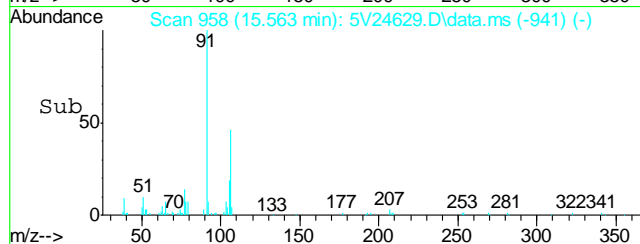
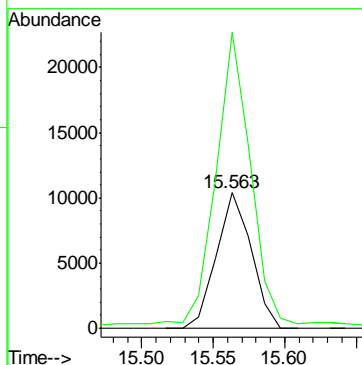
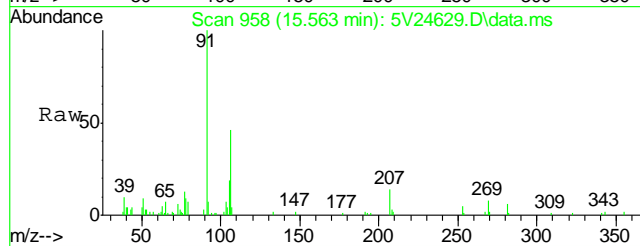
Tgt Ion	Ratio	Lower	Upper
106	100		
91	190.3	177.1	217.1





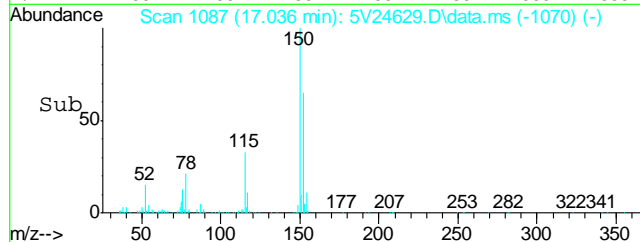
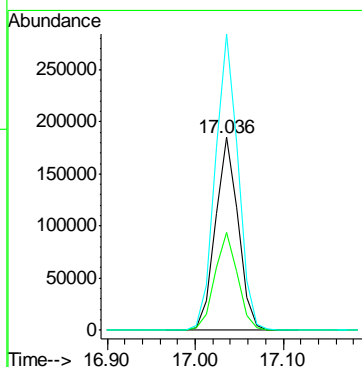
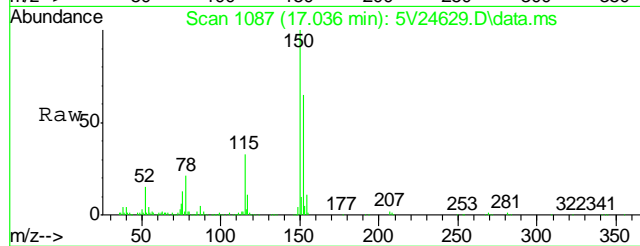
#73
o-xylene
Concen: 2.88 ug/l
RT: 15.563 min Scan# 958
Delta R.T. -0.000 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

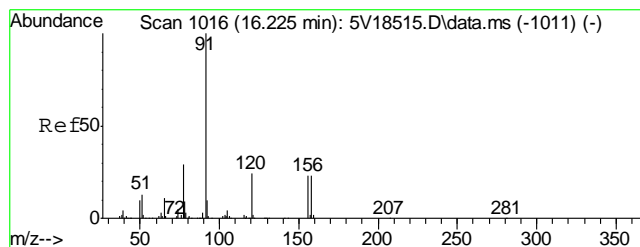
Tgt Ion	Ratio	Lower	Upper
106	100		
91	232.0	166.6	249.8



#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/l
RT: 17.036 min Scan# 1087
Delta R.T. -0.000 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

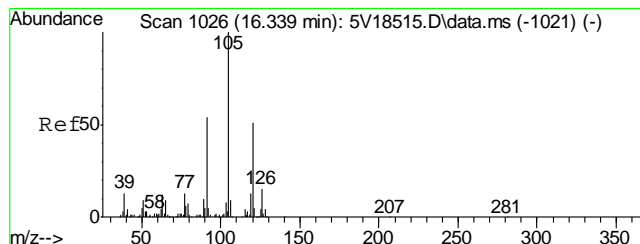
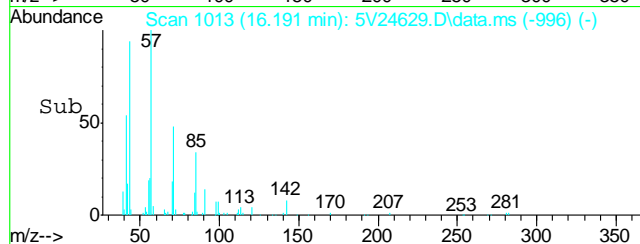
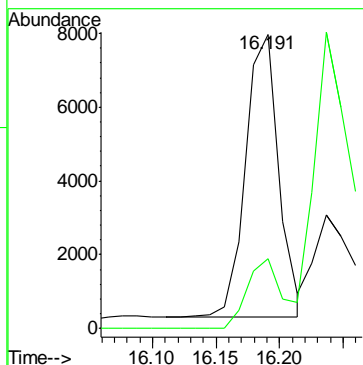
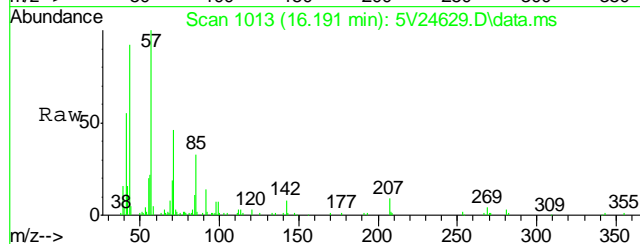
Tgt Ion	Ratio	Lower	Upper
152	100		
115	51.0	41.4	62.0
150	154.2	153.9	230.9





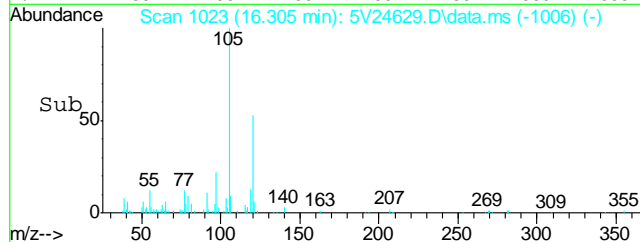
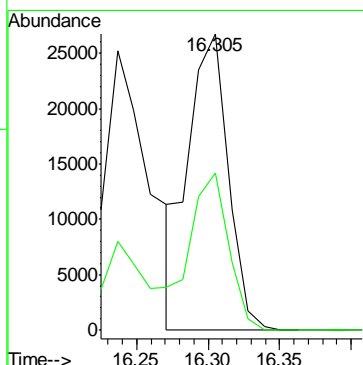
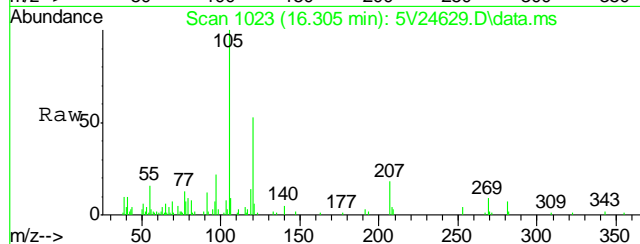
#77
n-Propylbenzene
Concen: 0.70 ug/l
RT: 16.191 min Scan# 1013
Delta R.T. -0.000 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

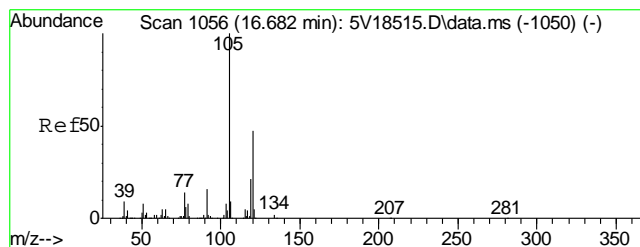
Tgt Ion: 91 Resp: 13816
Ion Ratio Lower Upper
91 100
120 27.0 18.6 27.8



#80
1,3,5-Trimethylbenzene
Concen: 3.39 ug/l
RT: 16.305 min Scan# 1023
Delta R.T. -0.000 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

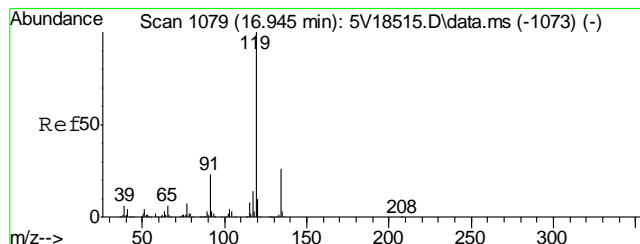
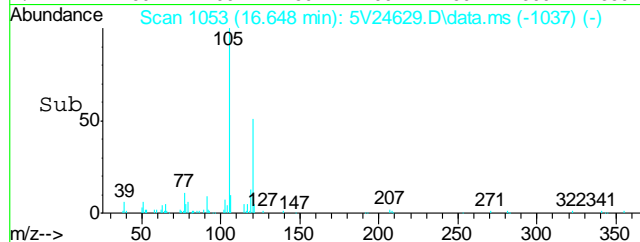
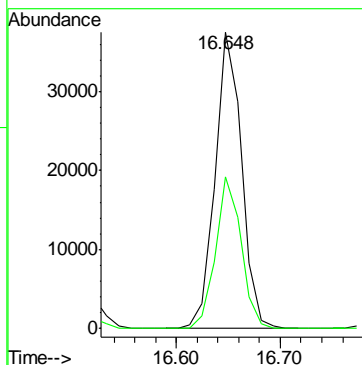
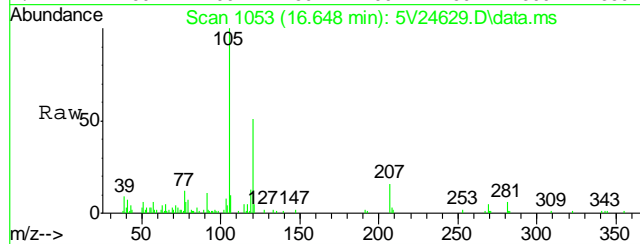
Tgt Ion: 105 Resp: 51089
Ion Ratio Lower Upper
105 100
120 56.0 40.1 60.1





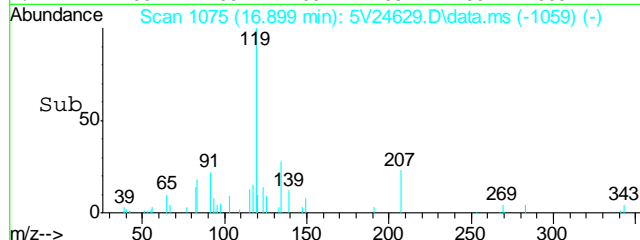
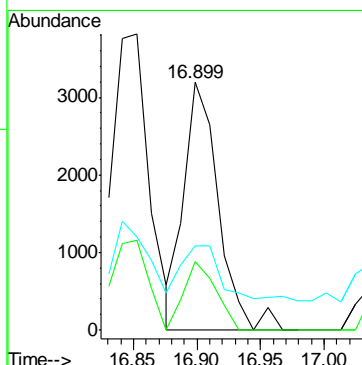
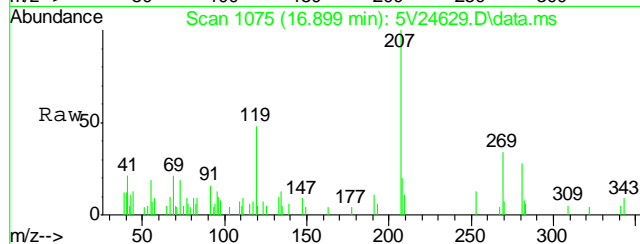
#82
1,2,4-Trimethylbenzene
Concen: 4.21 ug/l
RT: 16.648 min Scan# 1053
Delta R.T. -0.012 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

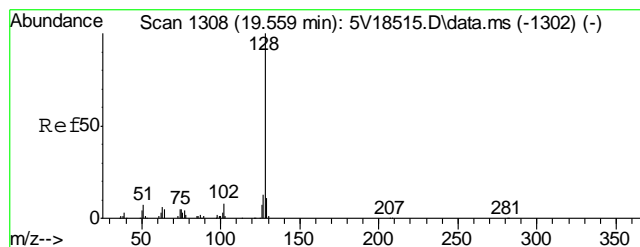
Tgt Ion	Ratio	Lower	Upper
105	100		
120	49.4	43.8	65.8



#86
p-Isopropyltoluene
Concen: 0.33 ug/l
RT: 16.899 min Scan# 1075
Delta R.T. -0.012 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

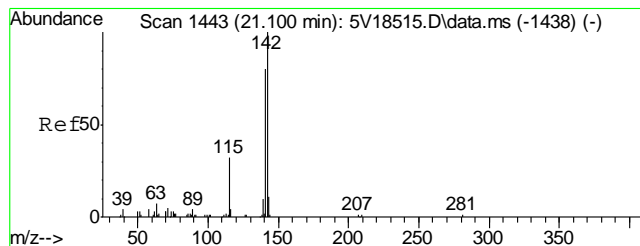
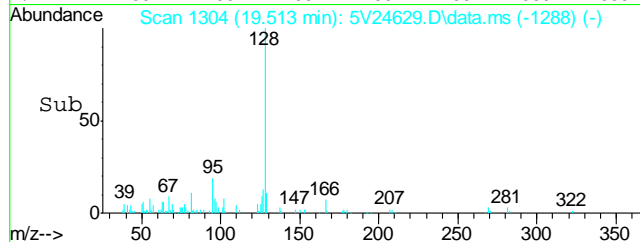
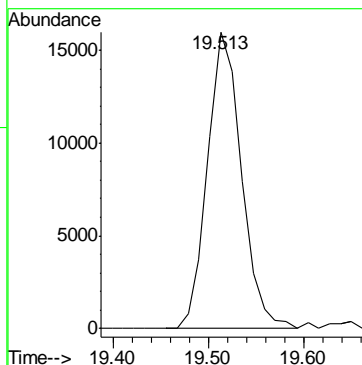
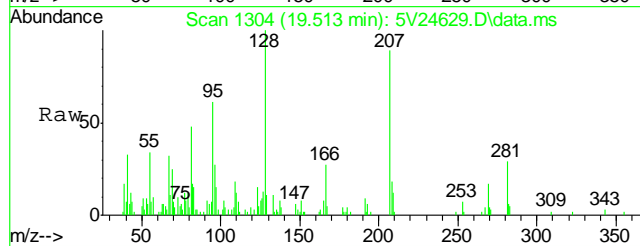
Tgt Ion	Ratio	Lower	Upper
119	100		
134	25.7	21.3	31.9
91	26.0	19.0	28.6





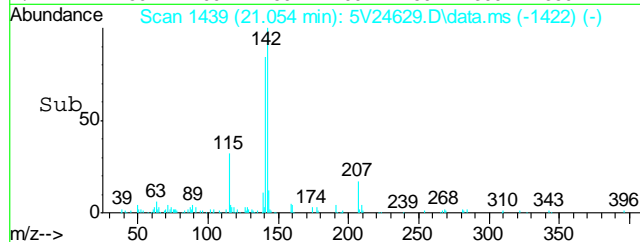
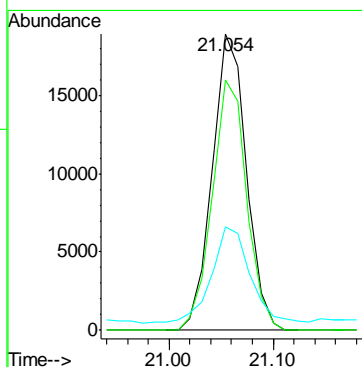
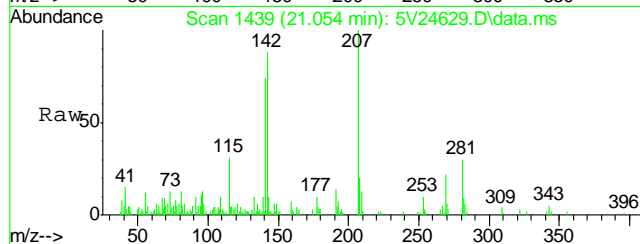
#91
Naphthalene
Concen: 2.40 ug/l
RT: 19.513 min Scan# 1304
Delta R.T. -0.012 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

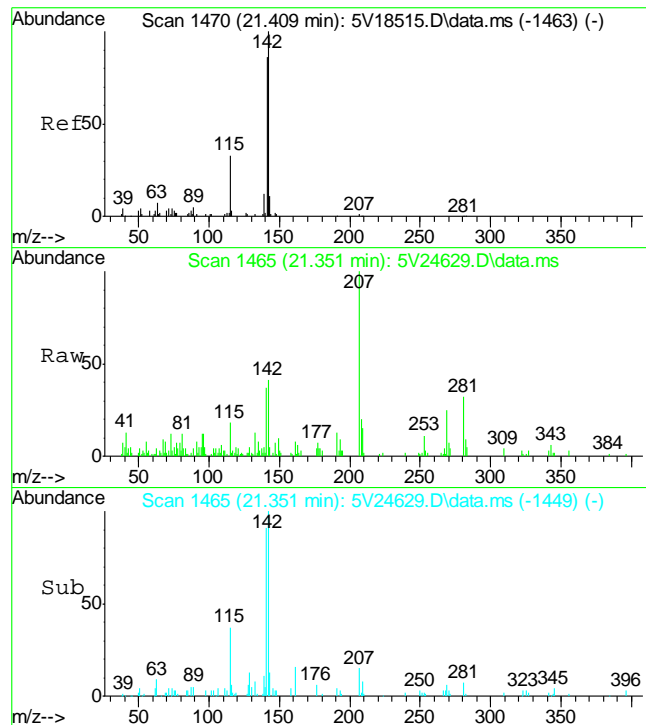
Tgt Ion:128 Resp: 39337



#94
2-Methylnaphthalene
Concen: 9.31 ug/l
RT: 21.054 min Scan# 1439
Delta R.T. -0.012 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

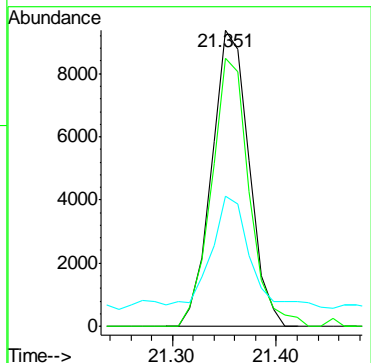
Tgt Ion:142 Resp: 43308
Ion Ratio Lower Upper
142 100
141 85.1 66.2 99.4
115 37.4 25.9 38.9





#95
1-Methylnaphthalene
Concen: 3.70 ug/l
RT: 21.351 min Scan# 1465
Delta R.T. -0.012 min
Lab File: 5V24629.D
Acq: 15 Nov 2012 4:34 pm

Tgt Ion:	142	Resp:	23406
Ion Ratio	Lower	Upper	
142	100		
141	91.6	68.9	103.3
115	40.2	27.3	40.9



7.1.2
7

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5111512.S\
Data File : 5V24624.D
Acq On : 15 Nov 2012 1:43 pm
Operator : BRETD
Sample : MB
Misc : MS4976,V5V1503,5.00,,100,5,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 16 15:51:40 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1497TVH1497.M
Quant Title : 8260
QLast Update : Wed Nov 14 09:54:38 2012
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.624	168	384332	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.423	114	464457	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.072	117	422151	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.036	152	289135	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.012	102	31697	48.46	ug/l	-0.01
Spiked Amount	50.000	Range	70 - 130	Recovery	=	96.92%
61) Toluene-d8	13.816	98	511967	51.19	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	102.38%
69) 4-Bromofluorobenzene	16.020	95	203738	47.27	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	94.54%

Target Compounds

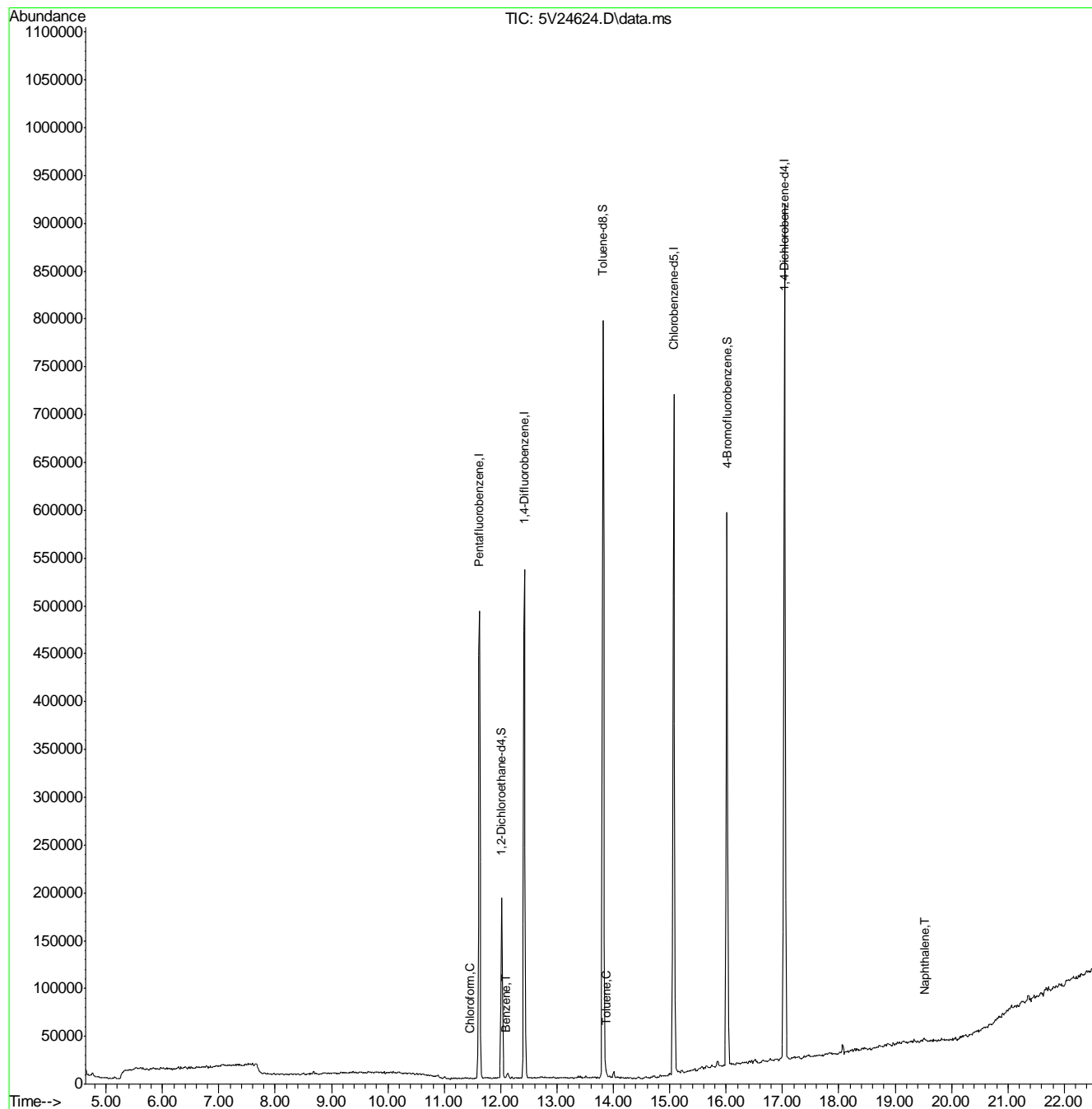
					Qvalue
1) TVH-Gasoline	13.102	TIC	183808m	Below Cal	
29) Chloroform	11.453	83	359	0.06 ug/l	84
50) Benzene	12.092	78	1456	0.12 ug/l	100
62) Toluene	13.873	92	2163	0.28 ug/l	85
91) Naphthalene	19.525	128	4487	0.31 ug/l	100

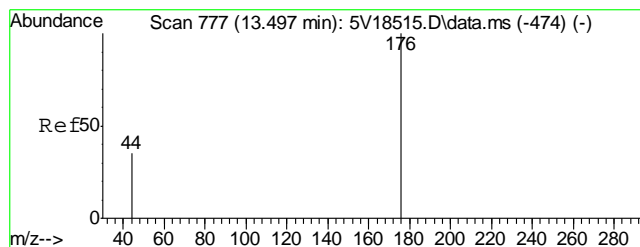
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V5111512.S\
Data File : 5V24624.D
Acq On : 15 Nov 2012 1:43 pm
Operator : BRETD
Sample : MB
Misc : MS4976,V5V1503,5.00,,100,5,1
ALS Vial : 8 Sample Multiplier: 1

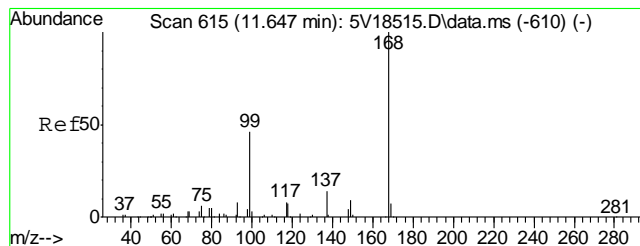
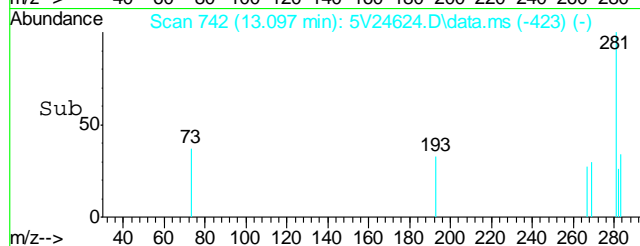
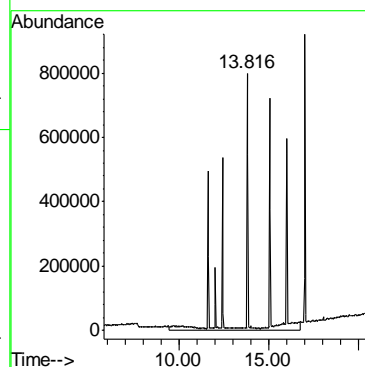
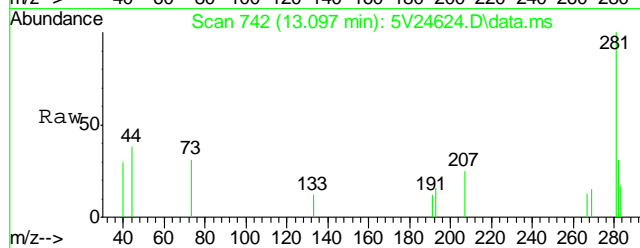
Quant Time: Nov 16 15:51:40 2012
Quant Method : C:\msdchem\1\METHODS\V5AP1497TVH1497.M
Quant Title : 8260
QLast Update : Wed Nov 14 09:54:38 2012
Response via : Initial Calibration





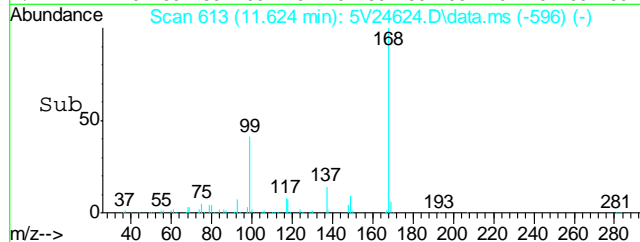
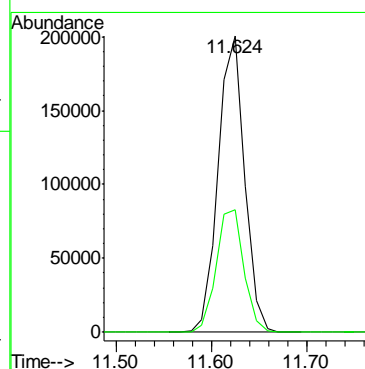
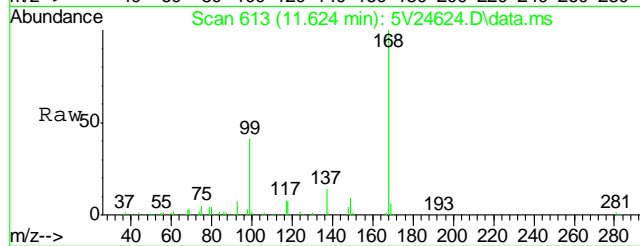
#1
TVH-Gasoline
Concen: Below Cal m
RT: 13.102 min Scan# 742
Delta R.T. 0.000 min
Lab File: 5V24624.D
Acq: 15 Nov 2012 1:43 pm

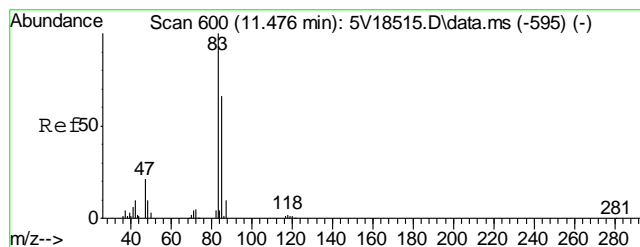
Tgt Ion:TIC Resp: 183808



#2
Pentafluorobenzene
Concen: 50.00 ug/l
RT: 11.624 min Scan# 613
Delta R.T. -0.000 min
Lab File: 5V24624.D
Acq: 15 Nov 2012 1:43 pm

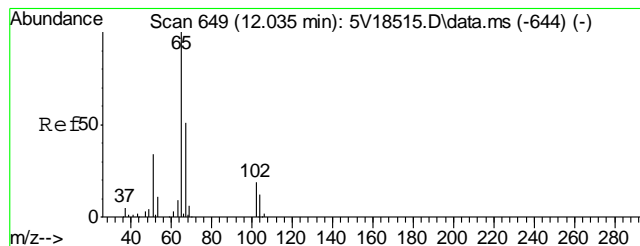
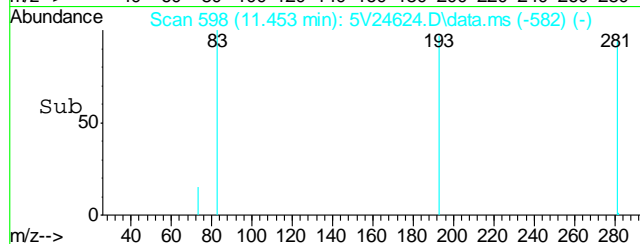
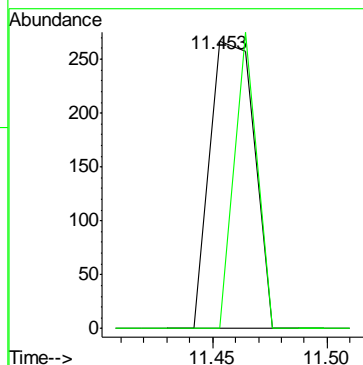
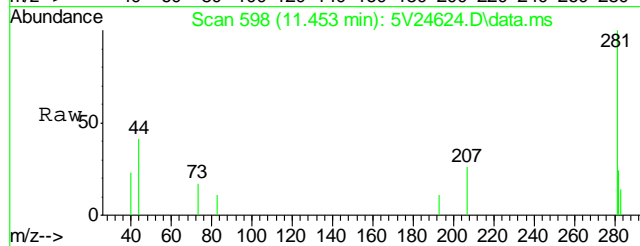
Tgt Ion:168 Resp: 384332
Ion Ratio Lower Upper
168 100
99 43.3 37.4 56.2





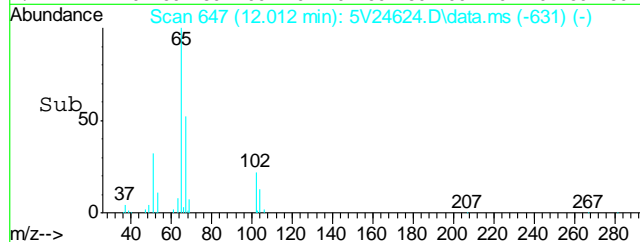
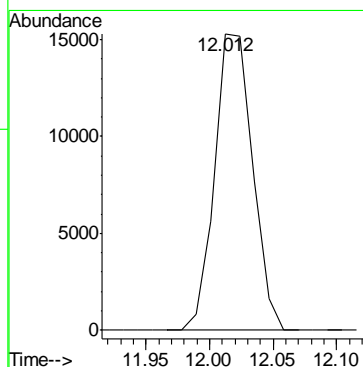
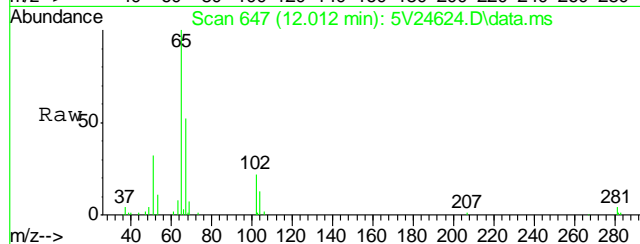
#29
Chloroform
Concen: 0.06 ug/l
RT: 11.453 min Scan# 598
Delta R.T. -0.012 min
Lab File: 5V24624.D
Acq: 15 Nov 2012 1:43 pm

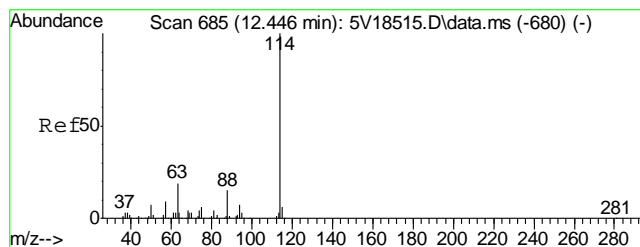
Tgt Ion: 83 Resp: 359
Ion Ratio Lower Upper
83 100
85 52.4 44.9 84.9



#33
1,2-Dichloroethane-d4
Concen: 48.46 ug/l
RT: 12.012 min Scan# 647
Delta R.T. -0.012 min
Lab File: 5V24624.D
Acq: 15 Nov 2012 1:43 pm

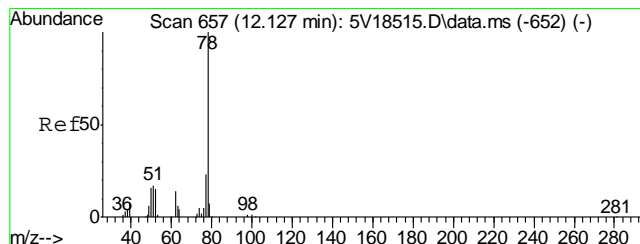
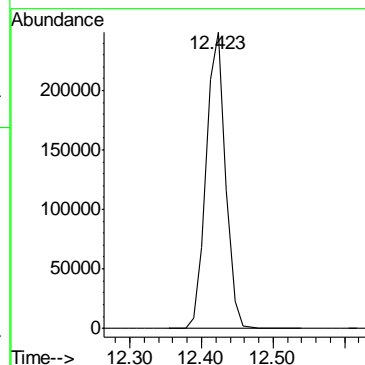
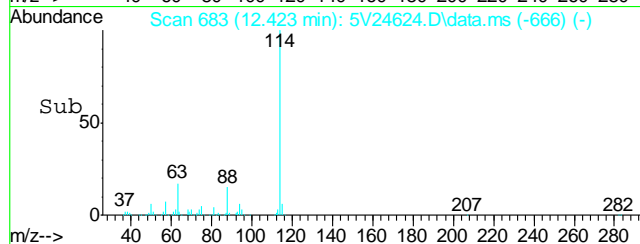
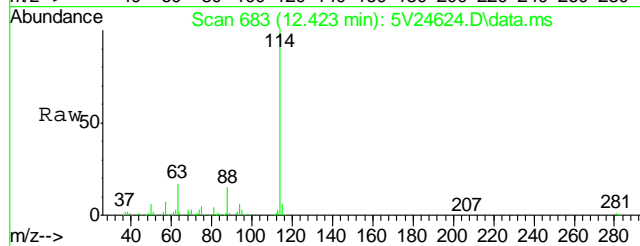
Tgt Ion: 102 Resp: 31697





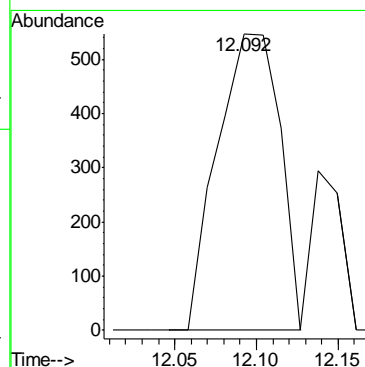
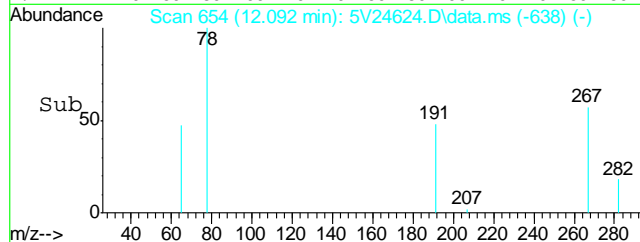
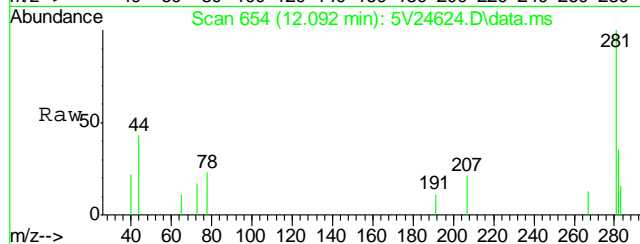
#35
1,4-Difluorobenzene
Concen: 50.00 ug/l
RT: 12.423 min Scan# 683
Delta R.T. -0.000 min
Lab File: 5V24624.D
Acq: 15 Nov 2012 1:43 pm

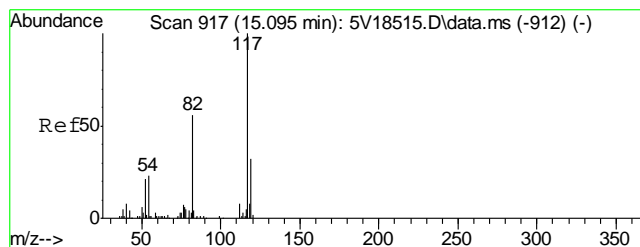
Tgt Ion: 114 Resp: 464457



#50
Benzene
Concen: 0.12 ug/l
RT: 12.092 min Scan# 654
Delta R.T. -0.012 min
Lab File: 5V24624.D
Acq: 15 Nov 2012 1:43 pm

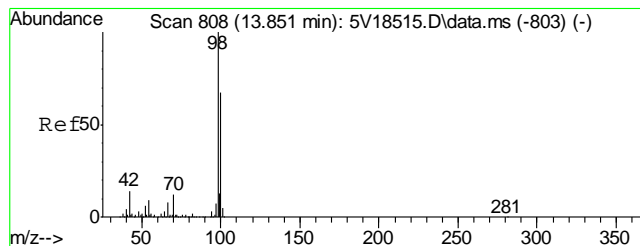
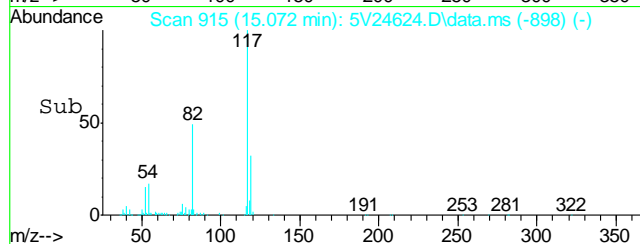
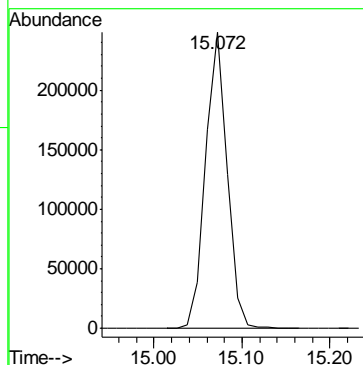
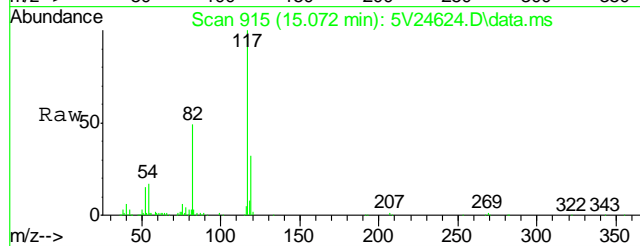
Tgt Ion: 78 Resp: 1456





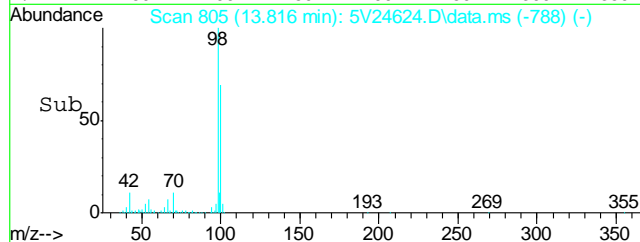
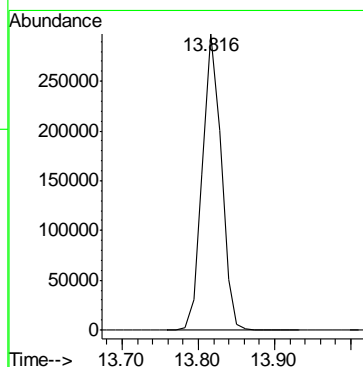
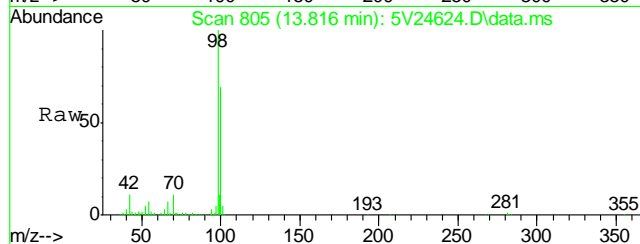
#53
Chlorobenzene-d5
Concen: 50.00 ug/l
RT: 15.072 min Scan# 915
Delta R.T. -0.000 min
Lab File: 5V24624.D
Acq: 15 Nov 2012 1:43 pm

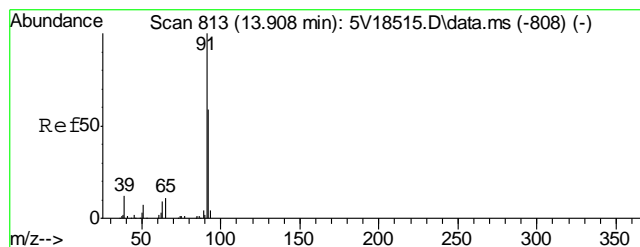
Tgt Ion:117 Resp: 422151



#61
Toluene-d8
Concen: 51.19 ug/l
RT: 13.816 min Scan# 805
Delta R.T. -0.000 min
Lab File: 5V24624.D
Acq: 15 Nov 2012 1:43 pm

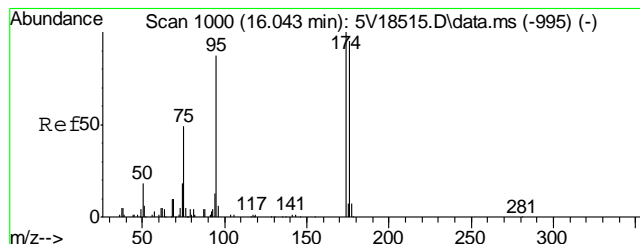
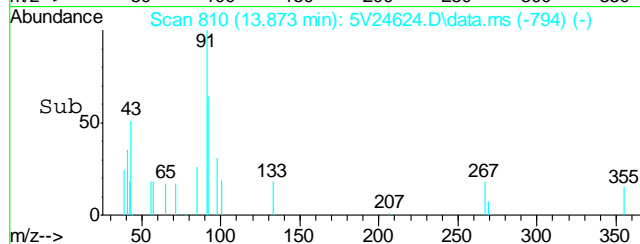
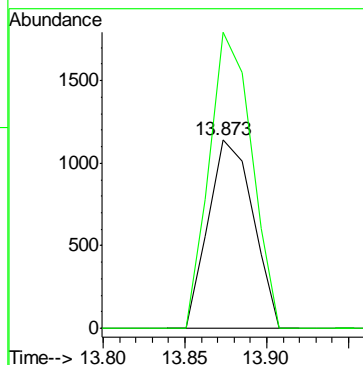
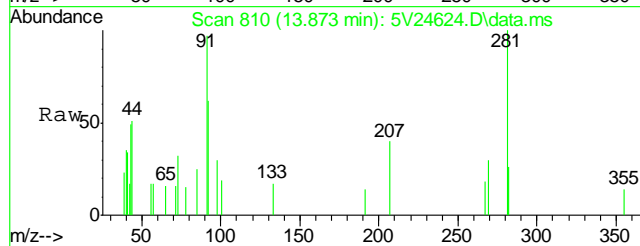
Tgt Ion: 98 Resp: 511967





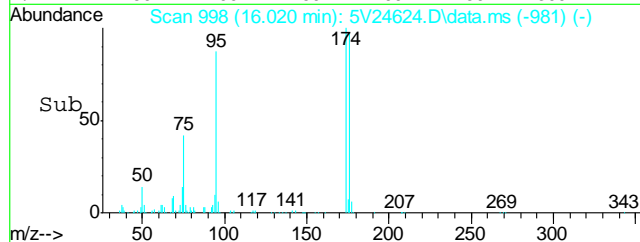
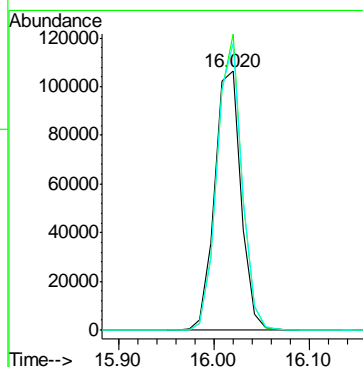
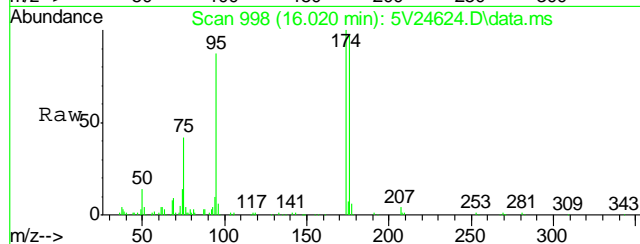
#62
Toluene
Concen: 0.28 ug/l
RT: 13.873 min Scan# 810
Delta R.T. -0.012 min
Lab File: 5V24624.D
Acq: 15 Nov 2012 1:43 pm

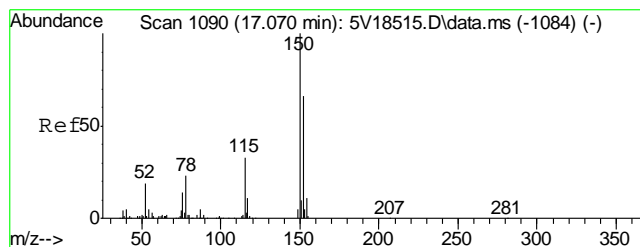
Tgt Ion: 92 Resp: 2163
Ion Ratio Lower Upper
92 100
91 149.8 149.8 189.8



#69
4-Bromofluorobenzene
Concen: 47.27 ug/l
RT: 16.020 min Scan# 998
Delta R.T. -0.000 min
Lab File: 5V24624.D
Acq: 15 Nov 2012 1:43 pm

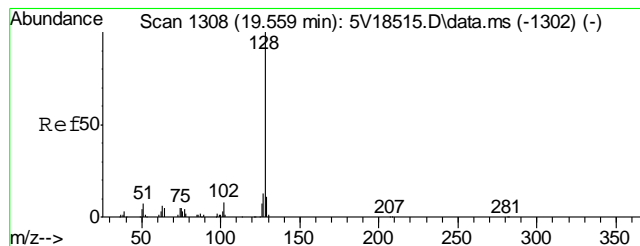
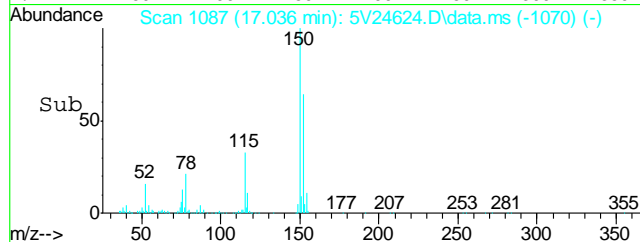
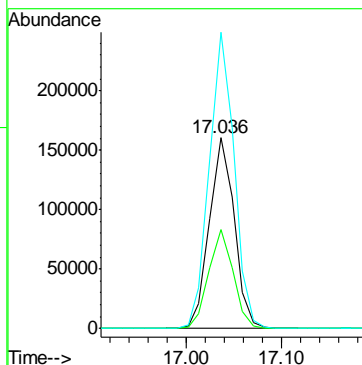
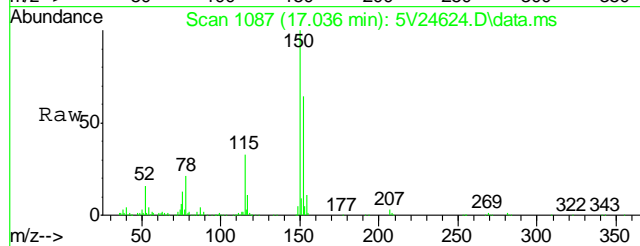
Tgt Ion: 95 Resp: 203738
Ion Ratio Lower Upper
95 100
174 106.4 77.1 117.1
176 105.5 73.4 113.4





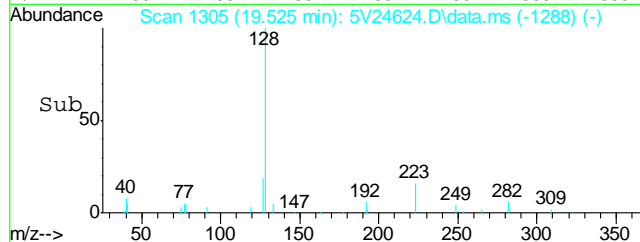
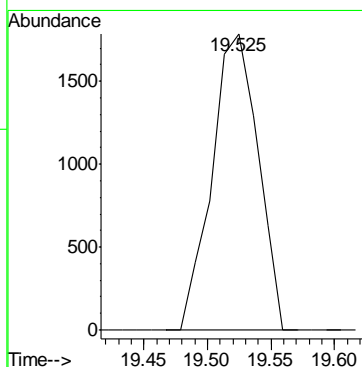
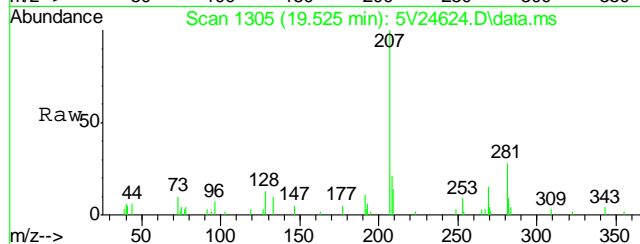
#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/l
RT: 17.036 min Scan# 1087
Delta R.T. -0.000 min
Lab File: 5V24624.D
Acq: 15 Nov 2012 1:43 pm

Tgt Ion:	152	Resp:	289135
Ion Ratio	Lower	Upper	
152	100		
115	51.0	41.4	62.0
150	155.1	153.9	230.9



#91
Naphthalene
Concen: 0.31 ug/l
RT: 19.525 min Scan# 1305
Delta R.T. -0.000 min
Lab File: 5V24624.D
Acq: 15 Nov 2012 1:43 pm

Tgt Ion:	128	Resp:	4487
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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: D40910
Account: XTOKRWR XTO Energy
Project: PCU 197-36A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6973-MB	3G12193.D	1	11/21/12	SM	11/16/12	OP6973	E3G576

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D40910-1, D40910-2

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	
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	
50-32-8	Benzo(a)pyrene	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	88% 10-159%
321-60-8	2-Fluorobiphenyl	89% 19-131%
1718-51-0	Terphenyl-d14	90% 18-150%

8.1.1

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Blank Spike Summary

Page 1 of 1

Job Number: D40910
Account: XTOKRWR XTO Energy
Project: PCU 197-36A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6973-BS	3G12194.D	1	11/21/12	SM	11/16/12	OP6973	E3G576

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D40910-1, D40910-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	89.1	107	68-130
120-12-7	Anthracene	83.3	80.8	97	67-130
56-55-3	Benzo(a)anthracene	83.3	79.9	96	65-130
205-99-2	Benzo(b)fluoranthene	83.3	72.0	86	44-130
207-08-9	Benzo(k)fluoranthene	83.3	75.1	90	56-131
50-32-8	Benzo(a)pyrene	83.3	79.8	96	62-130
218-01-9	Chrysene	83.3	74.4	89	70-130
53-70-3	Dibenzo(a,h)anthracene	83.3	81.4	98	55-130
206-44-0	Fluoranthene	83.3	78.6	94	70-130
86-73-7	Fluorene	83.3	78.1	94	70-130
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	81.0	97	56-130
91-20-3	Naphthalene	83.3	73.9	89	70-130
129-00-0	Pyrene	83.3	76.9	92	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	85%	10-159%
321-60-8	2-Fluorobiphenyl	91%	19-131%
1718-51-0	Terphenyl-d14	91%	18-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D40910
Account: XTOKRWR XTO Energy
Project: PCU 197-36A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6973-MS	3G12208.D	1	11/21/12	SM	11/16/12	OP6973	E3G576
OP6973-MSD	3G12209.D	1	11/21/12	SM	11/16/12	OP6973	E3G576
D40910-1	3G12207.D	1	11/21/12	SM	11/16/12	OP6973	E3G576
D40910-1	3G12196.D	4	11/21/12	SM	11/16/12	OP6973	E3G576

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D40910-1, D40910-2

CAS No.	Compound	D40910-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND ^a		102	102	100	109	107	7	25-151/30
120-12-7	Anthracene	ND		102	103	101	107	105	4	39-159/30
56-55-3	Benzo(a)anthracene	9.7	J	102	105	94	116	105	10	39-168/30
205-99-2	Benzo(b)fluoranthene	ND		102	91.8	90	123	121	29	24-163/30
207-08-9	Benzo(k)fluoranthene	ND		102	104	102	91.1	90	13	10-188/30
50-32-8	Benzo(a)pyrene	9.2	J	102	93.5	83	98.8	88	6	32-144/30
218-01-9	Chrysene	25.4		102	101	74	111	84	9	43-150/30
53-70-3	Dibenzo(a,h)anthracene	ND		102	75.1	74	79.5	78	6	21-152/30
206-44-0	Fluoranthene	14.7		102	113	97	117	101	3	36-157/30
86-73-7	Fluorene	49.8 ^a		102	144	93	153	102	6	10-182/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		102	71.0	70	75.2	74	6	20-154/30
91-20-3	Naphthalene	331 ^a		102	473	140	492	159	4	10-163/30
129-00-0	Pyrene	27.8		102	128	99	149	119	15	25-180/30

CAS No.	Surrogate Recoveries	MS	MSD	D40910-1	D40910-1	Limits
4165-60-0	Nitrobenzene-d5	80%	81%	80%	73%	10-159%
321-60-8	2-Fluorobiphenyl	77%	82%	79%	84%	19-131%
1718-51-0	Terphenyl-d14	91%	100%	88%	88%	18-150%

(a) Result is from Run #2.

* = Outside of Control Limits.

GC/MS Semi-volatiles

Raw Data

6

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\112112\
 Data File : 3g12196.D
 Acq On : 21 Nov 2012 2:28 pm
 Operator : SARAHM1
 Sample : D40910-1, 4X
 Misc : OP6973,E3G576,30.01,,,1,4
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 21 14:58:11 2012
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G574.M
 Quant Title : PAHSIM BASE
 QLast Update : Wed Nov 21 08:48:23 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.751	136	173939	4.0000	ug/mL	-0.04
6) Acenaphthene-d10	7.472	164	98495	4.0000	ug/mL	-0.04
15) Phenanthrene-d10	8.948	188	161804	4.0000	ug/mL	-0.04
19) Chrysene-d12	11.584	240	126921	4.0000	ug/mL	-0.05
24) Perylene-d12	12.983	264	75787	4.0000	ug/mL	-0.05

System Monitoring Compounds

2) Nitrobenzene-d5	5.066	82	153635	9.1871	ug/mL	-0.04
Spiked Amount	50.000	Range	25 - 135	Recovery	=	18.38%#
7) 2-Fluorobiphenyl	6.799	172	379432	10.4590	ug/mL	-0.03
Spiked Amount	50.000	Range	25 - 135	Recovery	=	20.92%#
21) Terphenyl-d14	10.539	244	182266	11.0183	ug/mL	-0.04
Spiked Amount	50.000	Range	25 - 135	Recovery	=	22.04%#

Target Compounds

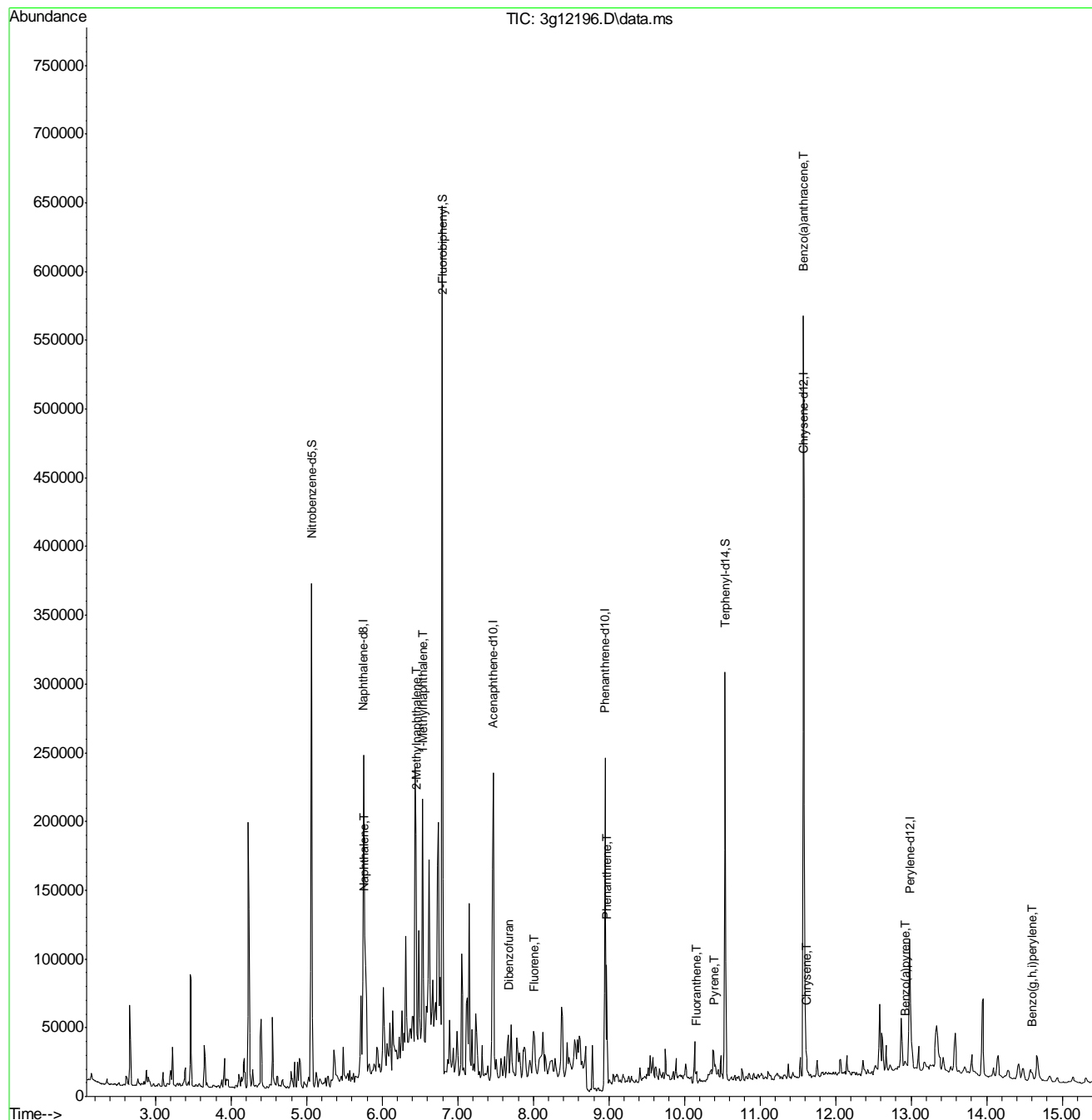
					Qvalue
3) N-Nitrosodimethylamine	2.451	74	71	N.D.	
4) N-Nitrosodi-propylamine	0.000	70	0	N.D. d	
5) Naphthalene	5.764	128	92753	2.0387	ug/mL 92
8) 2-Methylnaphthalene	6.450	142	117318	3.8151	ug/mL 92
9) 1-Methylnaphthalene	6.537	142	72809	2.5395	ug/mL 90
10) Acenaphthylene	7.330	152	2544	N.D.	
11) Acenaphthene	7.496	154	1202	Below Cal	# 1
12) Dibenzofuran	7.673	168	14660	0.2976	ug/mL 66
13) Fluorene	8.015	166	12330	0.3064	ug/mL# 68
14) Diphenylamine	0.000	169	0	N.D. d	
16) Phenanthrene	8.972	178	49452	0.8590	ug/mL 82
17) Anthracene	0.000	178	0	N.D. d	
18) Fluoranthene	10.159	202	5233m	0.0826	ug/mL
20) Pyrene	10.388	202	11628	0.1669	ug/mL 82
22) Benzo(a)anthracene	11.577	228	3674m	0.0649	ug/mL
23) Chrysene	11.610	228	9421	0.1526	ug/mL 86
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	12.919	252	3430	0.0658	ug/mL# 59
28) Indeno(1,2,3-cd)pyrene	14.234	276	1401	N.D.	
29) Dibenz(a,h)anthracene	14.255	278	1117	N.D.	
30) Benzo(g,h,i)perylene	14.602	276	4224	0.0811	ug/mL# 51

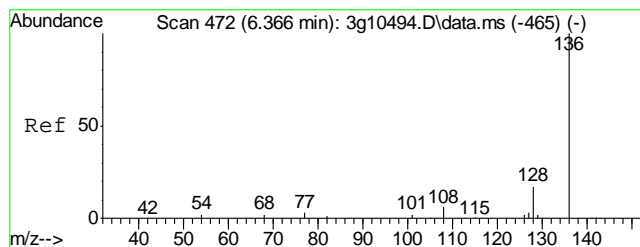
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\112112\
Data File : 3g12196.D
Acq On : 21 Nov 2012 2:28 pm
Operator : SARAHM1
Sample : D40910-1, 4X
Misc : OP6973,E3G576,30.01,,,1,4
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 21 14:58:11 2012
Quant Method : C:\msdchem\1\METHODS\SIMPE3G574.M
Quant Title : PAHSIM BASE
QLast Update : Wed Nov 21 08:48:23 2012
Response via : Initial Calibration





#1

Naphthalene-d8

Concen: 4.0000 ug/mL

RT: 5.751 min Scan# 454

Delta R.T. -0.037 min

Lab File: 3g12196.D

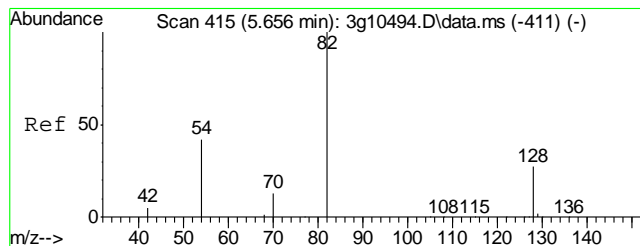
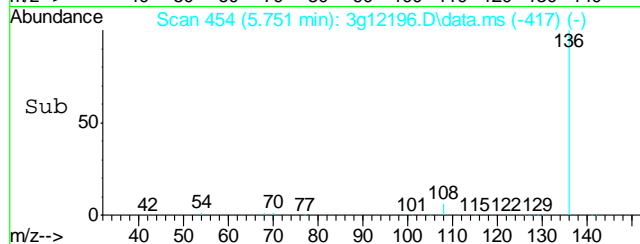
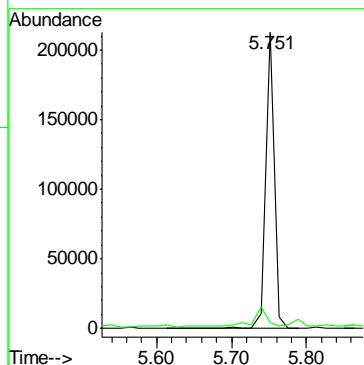
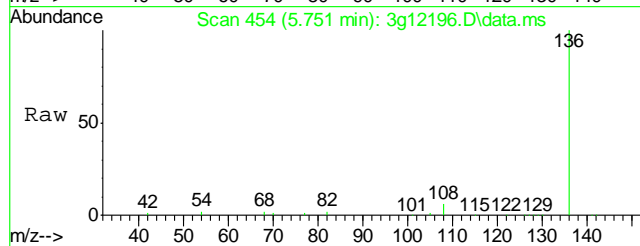
Acq: 21 Nov 12 2:28 pm

Tgt Ion: 136 Resp: 173939

Ion Ratio Lower Upper

136 100

68 10.1 0.0 27.8



#2

Nitrobenzene-d5

Concen: 9.1871 ug/mL

RT: 5.066 min Scan# 399

Delta R.T. -0.037 min

Lab File: 3g12196.D

Acq: 21 Nov 12 2:28 pm

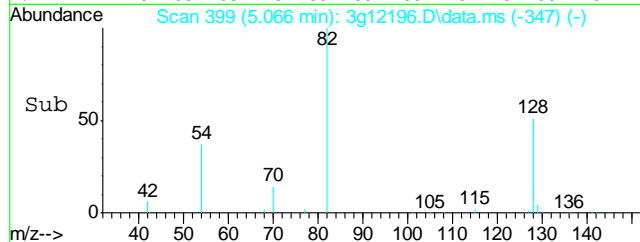
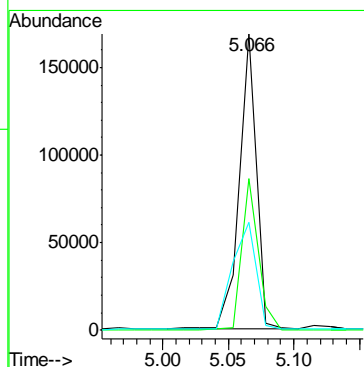
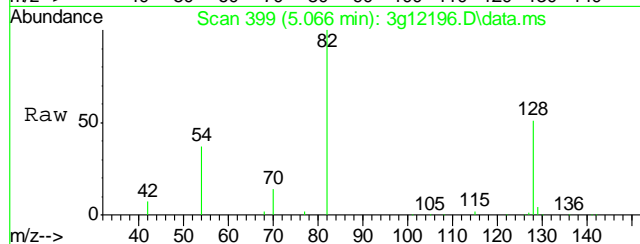
Tgt Ion: 82 Resp: 153635

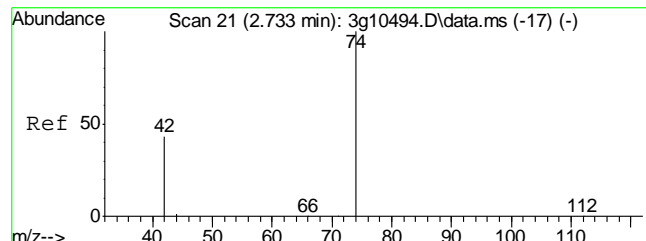
Ion Ratio Lower Upper

82 100

128 49.6 30.7 70.7

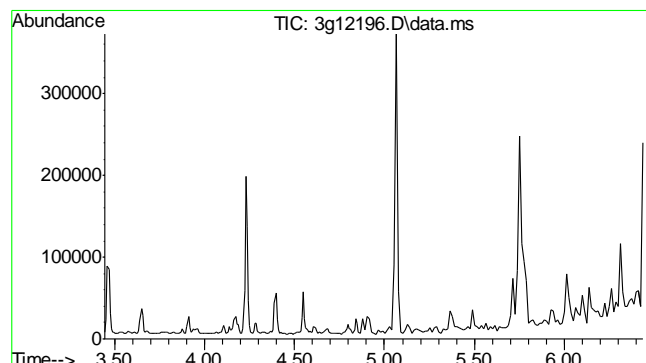
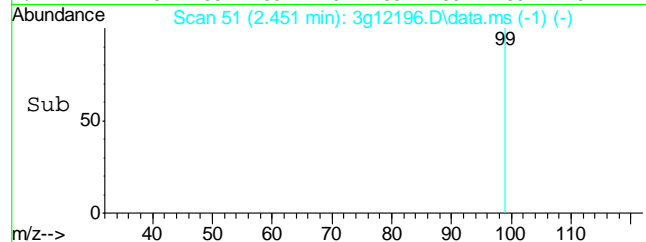
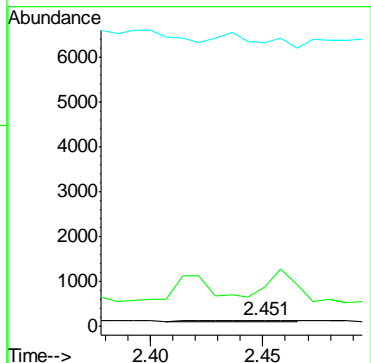
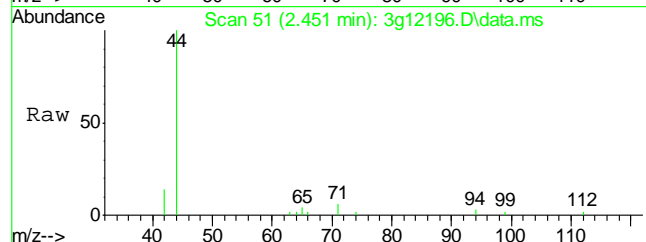
54 50.8 36.8 76.8





#3
 N-Nitrosodimethylamine
 Concen: Below ug/mL
 RT: 2.451 min Scan# 51
 Delta R.T. -0.036 min
 Lab File: 3g12196.D
 Acq: 21 Nov 12 2:28 pm

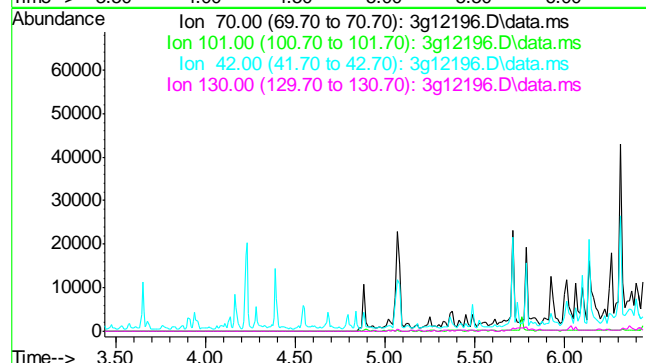
Tgt Ion:	74	Resp:	71
Ion Ratio	Lower	Upper	
74	100		
42	974.6	53.9	93.9#
44	0.0	0.0	24.2

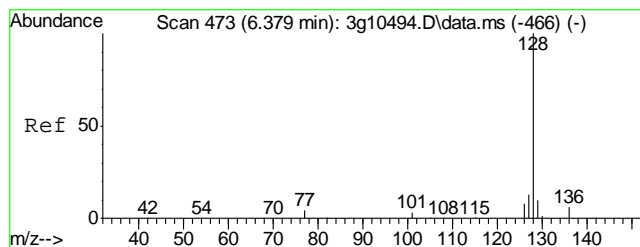


#4
 N-Nitrosodi-propylamine
 Concen: N.D. ug/mL
 Expected RT: 4.94 min

Lab File: 3g12196.D
 Acq: 21 Nov 12 2:28 pm

Tgt Ion:	70
Sig	Exp Ratio
70	100
101	13.9
42	52.4
130	27.1





#5

Naphthalene

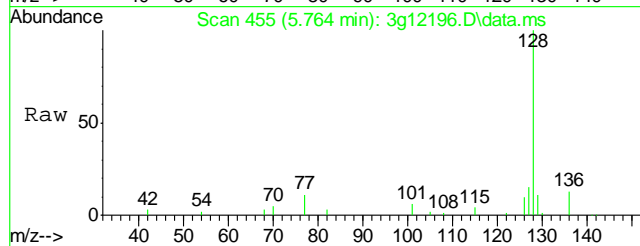
Concen: 2.0387 ug/mL

RT: 5.764 min Scan# 455

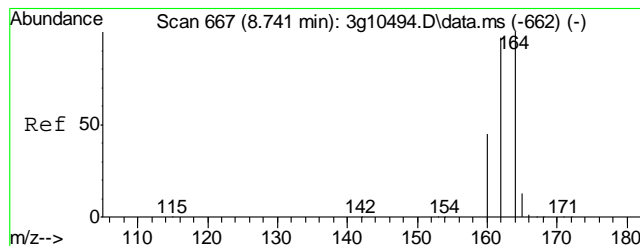
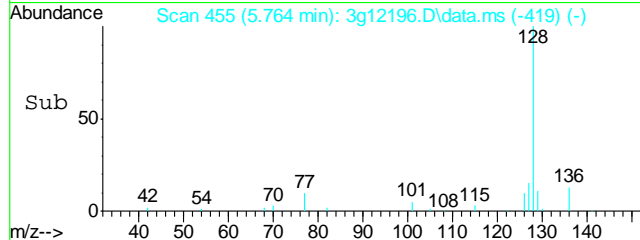
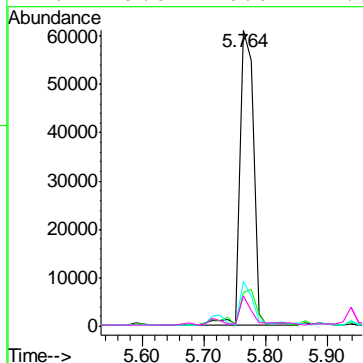
Delta R.T. -0.050 min

Lab File: 3g12196.D

Acq: 21 Nov 12 2:28 pm



Tgt Ion:	128	Resp:	92753
Ion Ratio	Lower	Upper	
128	100		
129	18.2	0.0	31.0
127	12.4	0.0	32.8
126	9.0	0.0	27.5



#6

Acenaphthene-d10

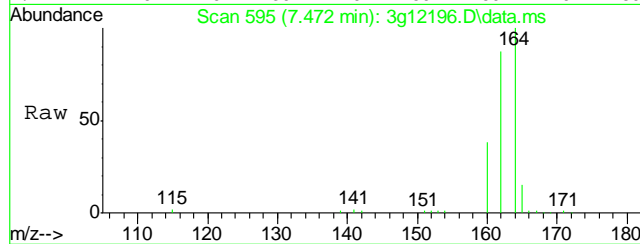
Concen: 4.0000 ug/mL

RT: 7.472 min Scan# 595

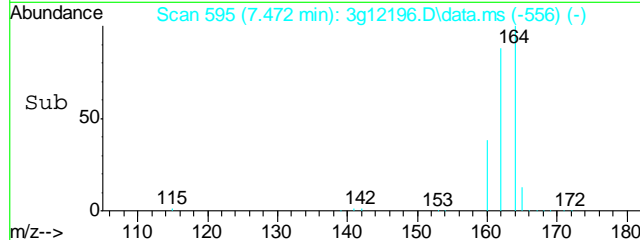
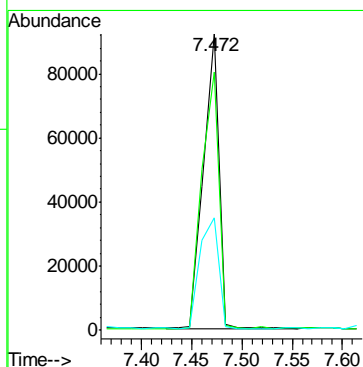
Delta R.T. -0.035 min

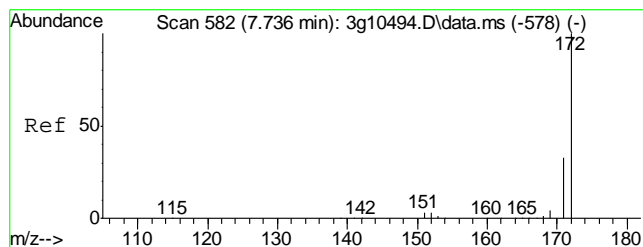
Lab File: 3g12196.D

Acq: 21 Nov 12 2:28 pm



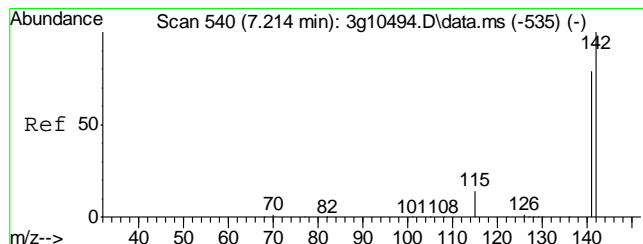
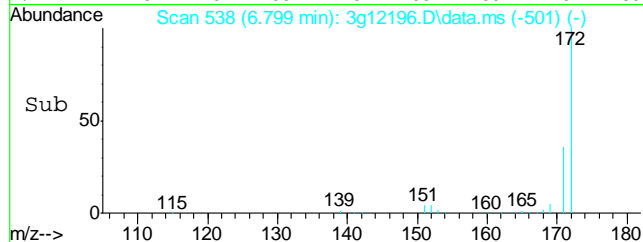
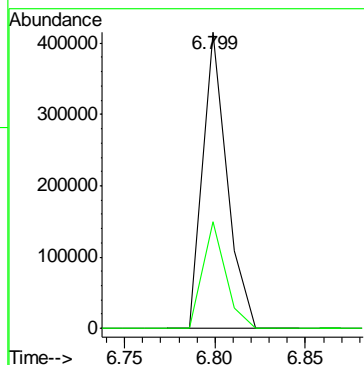
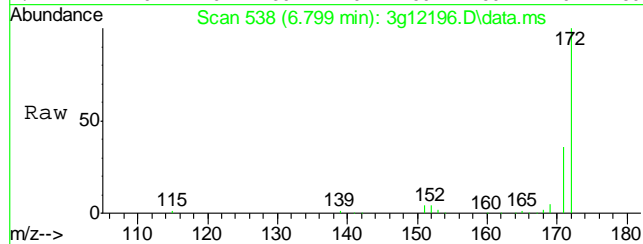
Tgt Ion:	164	Resp:	98495
Ion Ratio	Lower	Upper	
164	100		
162	95.3	78.1	118.1
160	46.1	28.0	68.0





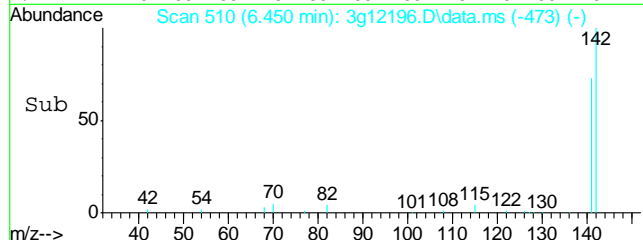
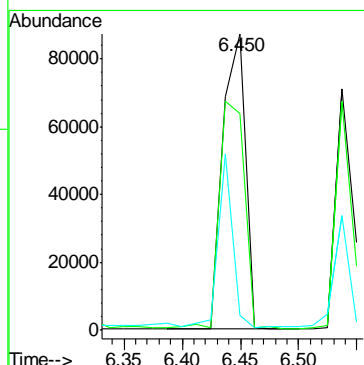
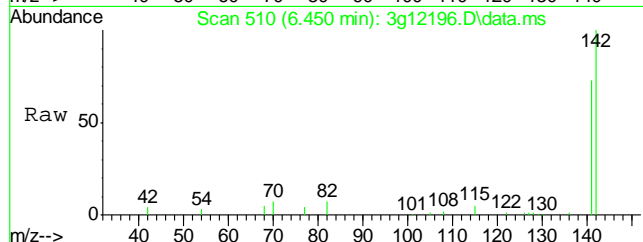
#7
2-Fluorobiphenyl
Concen: 10.4590 ug/mL
RT: 6.799 min Scan# 538
Delta R.T. -0.034 min
Lab File: 3g12196.D
Acq: 21 Nov 12 2:28 pm

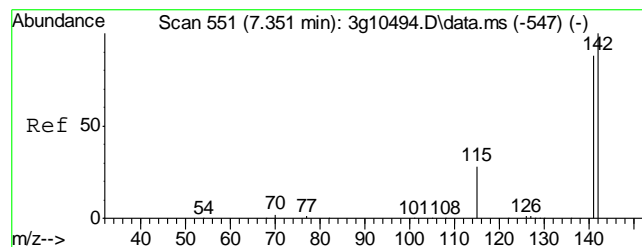
Tgt Ion:172 Resp: 379432
Ion Ratio Lower Upper
172 100
171 34.0 12.6 52.6



#8
2-Methylnaphthalene
Concen: 3.8151 ug/mL
RT: 6.450 min Scan# 510
Delta R.T. -0.037 min
Lab File: 3g12196.D
Acq: 21 Nov 12 2:28 pm

Tgt Ion:142 Resp: 117318
Ion Ratio Lower Upper
142 100
141 85.5 64.0 104.0
115 40.4 7.1 47.1





#9

1-Methylnaphthalene

Concen: 2.5395 ug/mL

RT: 6.537 min Scan# 517

Delta R.T. -0.037 min

Lab File: 3g12196.D

Acq: 21 Nov 12 2:28 pm

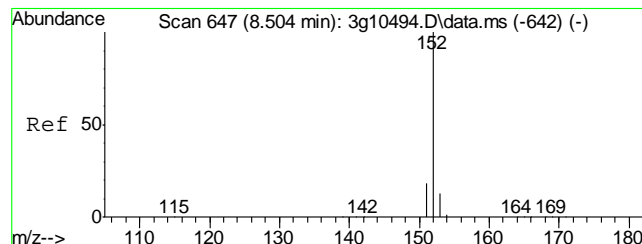
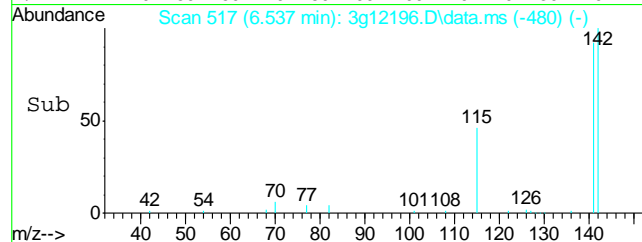
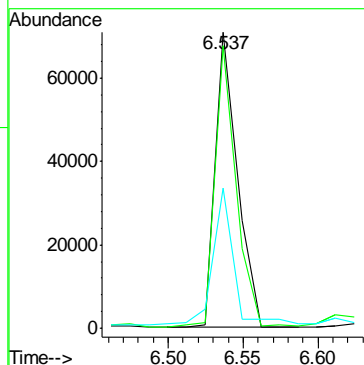
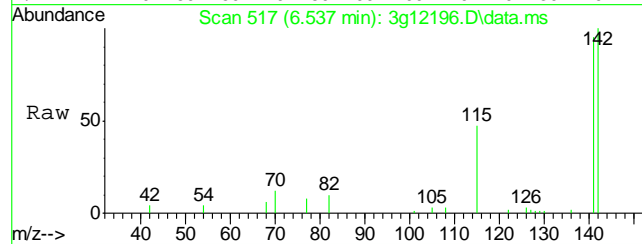
Tgt Ion: 142 Resp: 72809

Ion Ratio Lower Upper

142 100

141 90.7 65.4 105.4

115 42.1 9.7 49.7



#10

Acenaphthylene

Concen: Below ug/mL

RT: 7.330 min Scan# 583

Delta R.T. -0.035 min

Lab File: 3g12196.D

Acq: 21 Nov 12 2:28 pm

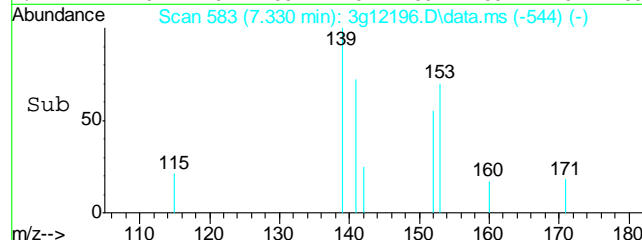
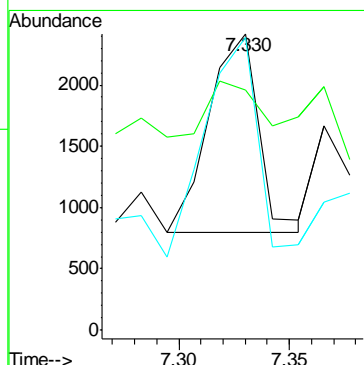
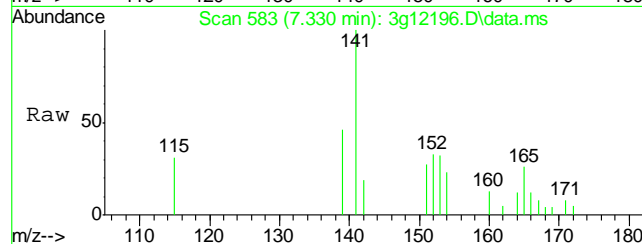
Tgt Ion: 152 Resp: 2544

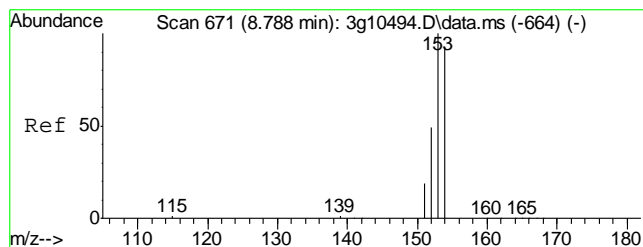
Ion Ratio Lower Upper

152 100

151 32.0 0.0 39.3

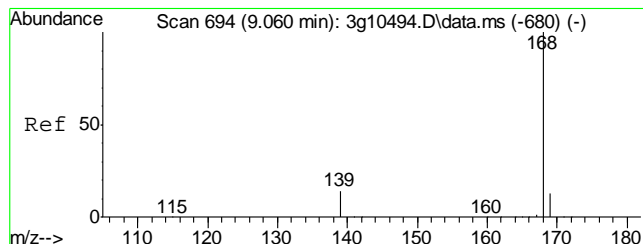
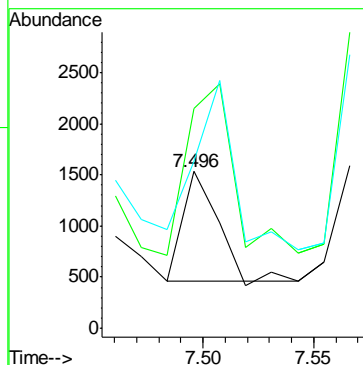
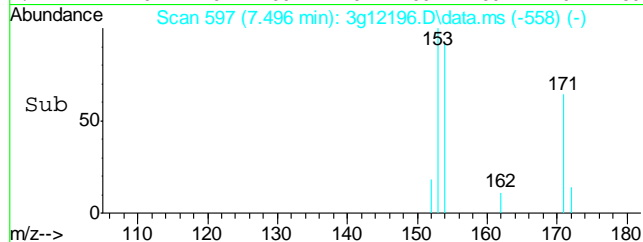
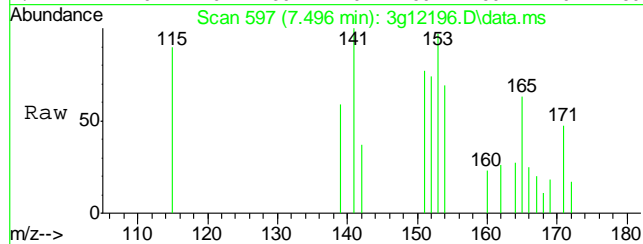
153 116.5 0.0 32.8#





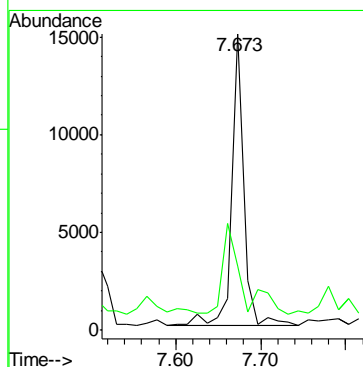
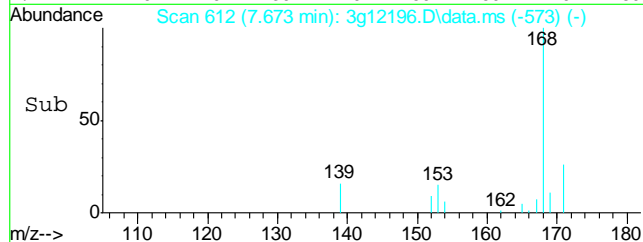
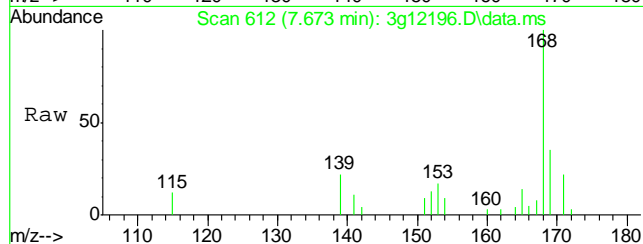
#11
Acenaphthene
Concen: Below ug/mL
RT: 7.496 min Scan# 597
Delta R.T. -0.035 min
Lab File: 3g12196.D
Acq: 21 Nov 12 2:28 pm

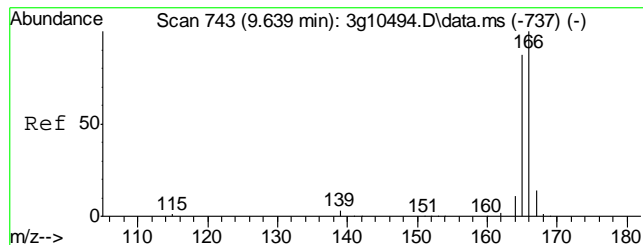
Tgt Ion:154	Resp:	1202
Ion Ratio	Lower	Upper
154	100	
153	203.9	84.1 124.1#
152	163.5	30.2 70.2#



#12
Dibenzofuran
Concen: 0.2976 ug/mL
RT: 7.673 min Scan# 612
Delta R.T. -0.035 min
Lab File: 3g12196.D
Acq: 21 Nov 12 2:28 pm

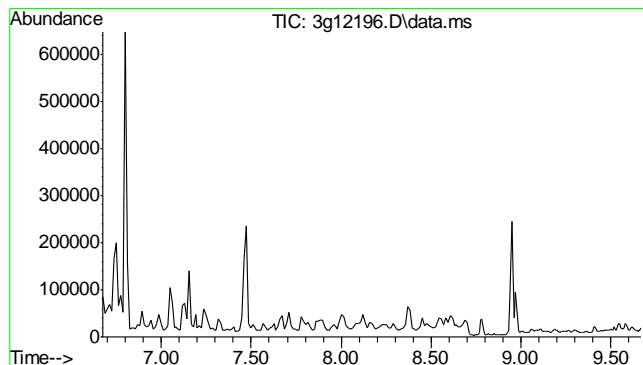
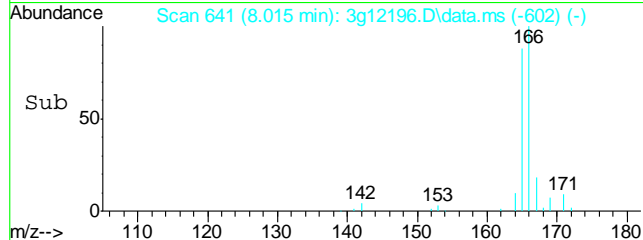
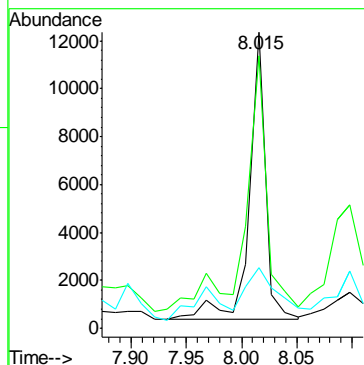
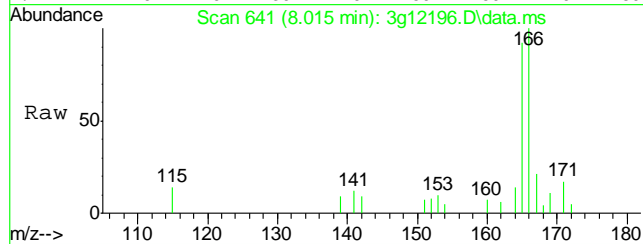
Tgt Ion:168	Resp:	14660
Ion Ratio	Lower	Upper
168	100	
139	49.7	10.9 50.9





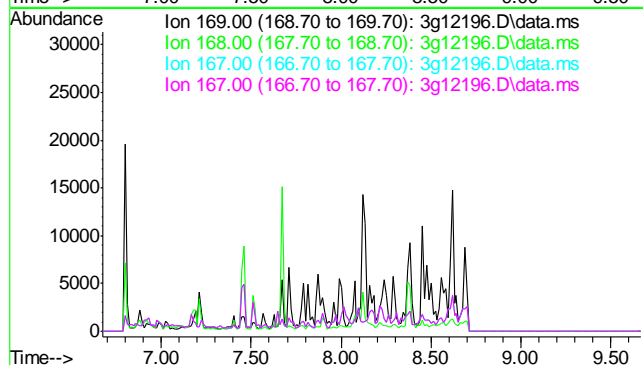
#13
Fluorene
Concen: 0.3064 ug/mL
RT: 8.015 min Scan# 641
Delta R.T. -0.035 min
Lab File: 3g12196.D
Acq: 21 Nov 12 2:28 pm

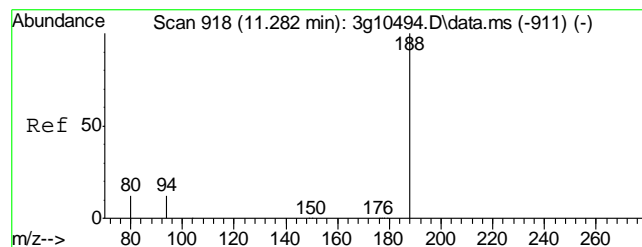
Tgt Ion	166	165	167
Resp	12330	119.9	25.2
Ratio	100	69.6	0.0
Lower			
Upper		109.6	33.5



#14
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 8.17 min
Lab File: 3g12196.D
Acq: 21 Nov 12 2:28 pm

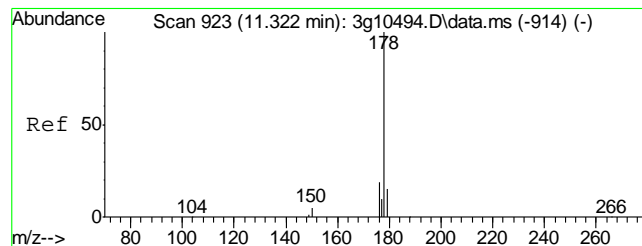
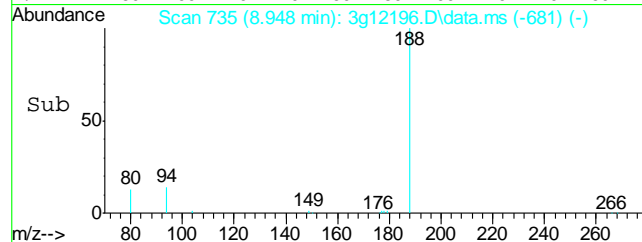
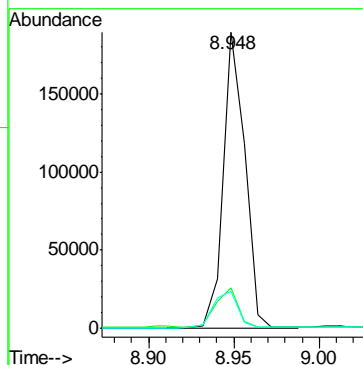
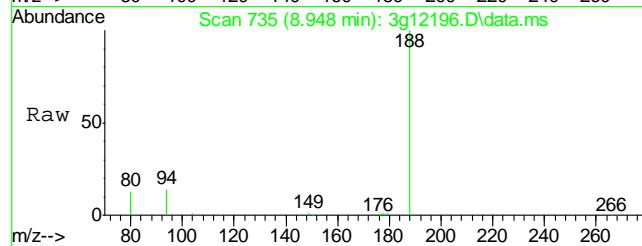
Tgt Ion	169	168	167
Sig	100	60.9	33.6
Exp Ratio			





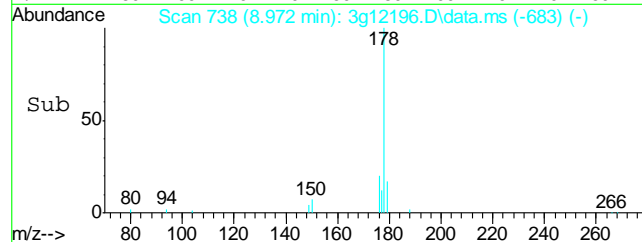
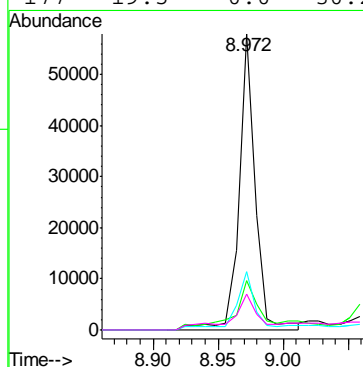
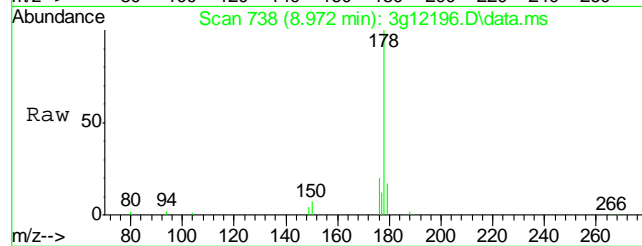
#15
Phenanthrene-d10
Concen: 4.0000 ug/mL
RT: 8.948 min Scan# 735
Delta R.T. -0.040 min
Lab File: 3g12196.D
Acq: 21 Nov 12 2:28 pm

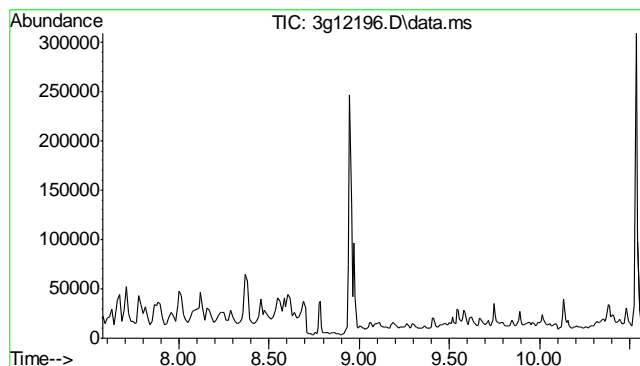
Tgt Ion:188	Resp:	161804
Ion Ratio	Lower	Upper
188	100	
94	13.7	0.0 31.6
80	15.3	0.0 32.0



#16
Phenanthrene
Concen: 0.8590 ug/mL
RT: 8.972 min Scan# 738
Delta R.T. -0.039 min
Lab File: 3g12196.D
Acq: 21 Nov 12 2:28 pm

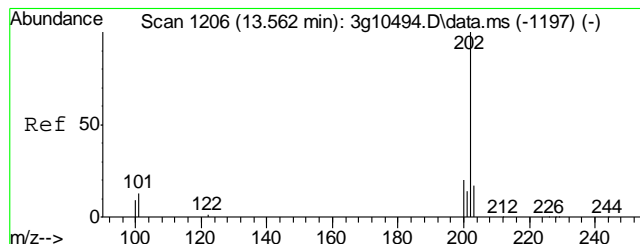
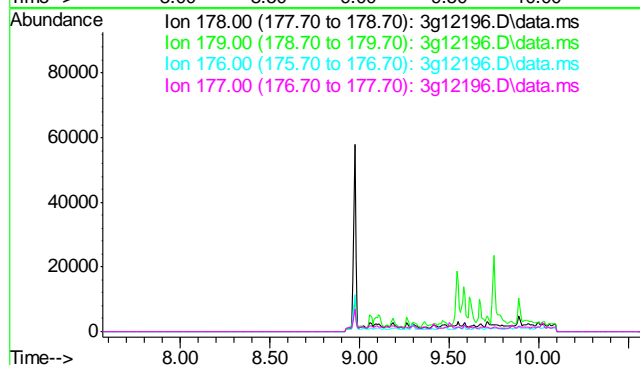
Tgt Ion:178	Resp:	49452
Ion Ratio	Lower	Upper
178	100	
179	25.7	0.0 35.2
176	22.9	0.0 38.7
177	19.5	0.0 30.2





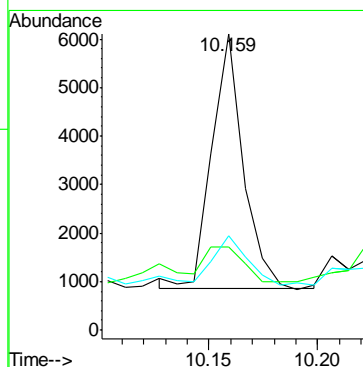
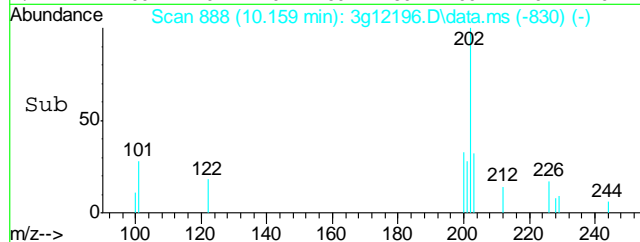
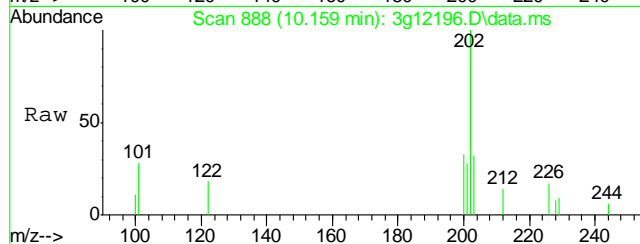
#17
 Anthracene
 Concen: N.D. ug/mL
 Expected RT: 9.07 min
 Lab File: 3g12196.D
 Acq: 21 Nov 12 2:28 pm

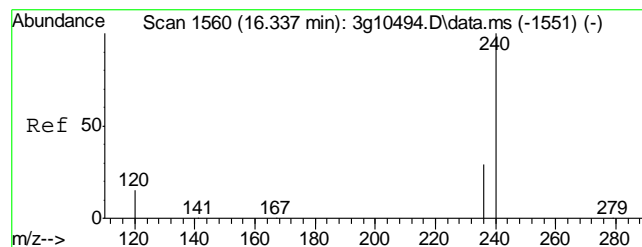
Tgt Ion: 178
 Sig Exp Ratio
 178 100
 179 15.3
 176 18.0
 177 8.7



#18
 Fluoranthene
 Concen: 0.0826 ug/mL m
 RT: 10.159 min Scan# 888
 Delta R.T. -0.040 min
 Lab File: 3g12196.D
 Acq: 21 Nov 12 2:28 pm

Tgt Ion: 202 Resp: 5233
 Ion Ratio Lower Upper
 202 100
 101 133.1 0.0 31.8#
 203 119.4 0.0 37.3#





#19

Chrysene-d12

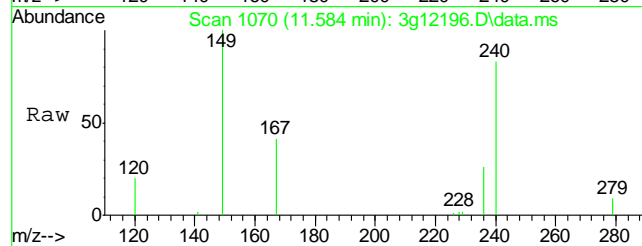
Concen: 4.0000 ug/mL

RT: 11.584 min Scan# 1070

Delta R.T. -0.046 min

Lab File: 3g12196.D

Acq: 21 Nov 12 2:28 pm



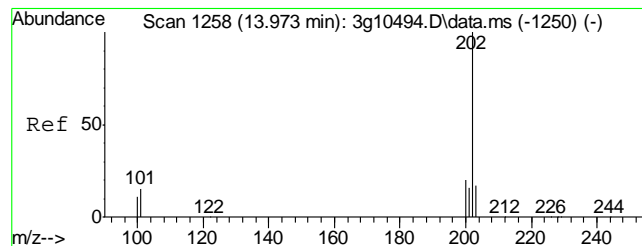
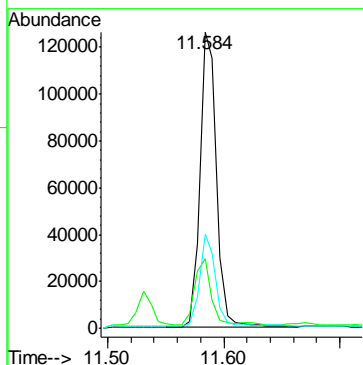
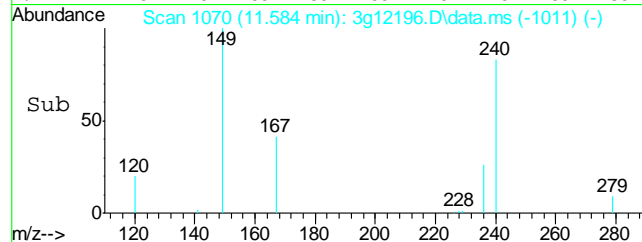
Tgt Ion: 240 Resp: 126921

Ion Ratio Lower Upper

240 100

120 22.1 0.0 38.3

236 30.6 10.7 50.7



#20

Pyrene

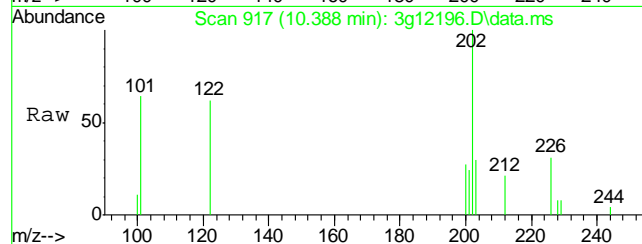
Concen: 0.1669 ug/mL

RT: 10.388 min Scan# 917

Delta R.T. -0.040 min

Lab File: 3g12196.D

Acq: 21 Nov 12 2:28 pm



Tgt Ion: 202 Resp: 11628

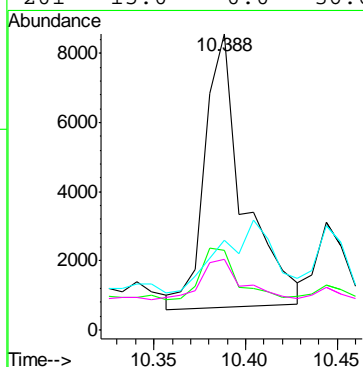
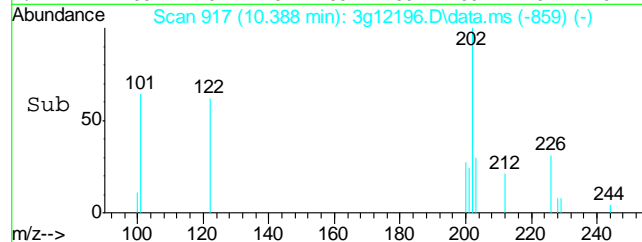
Ion Ratio Lower Upper

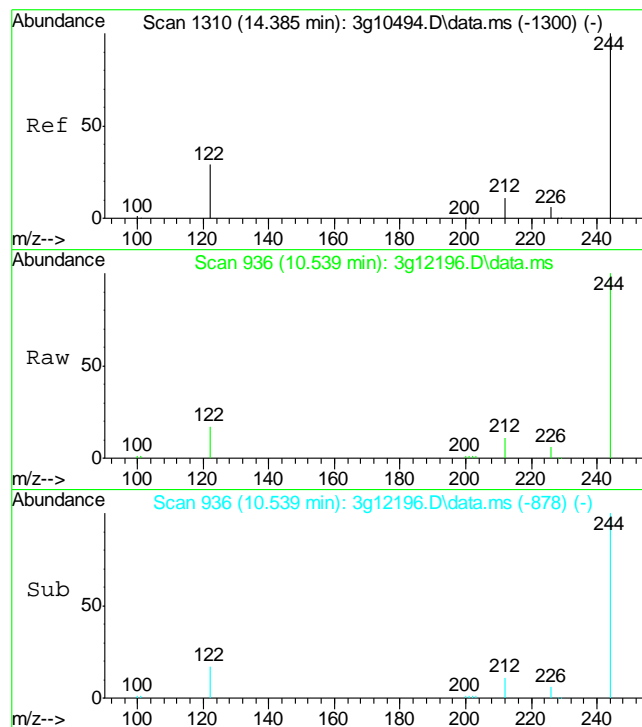
202 100

200 17.8 0.3 40.3

203 37.5 0.0 37.8

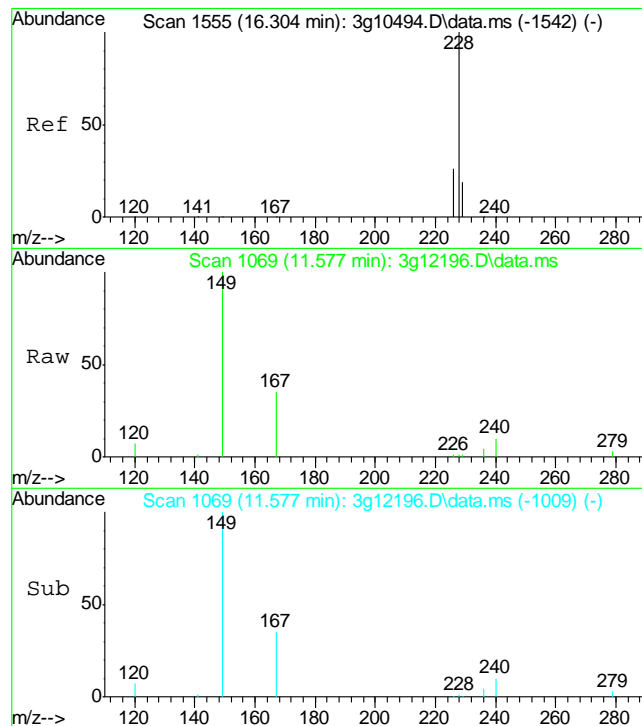
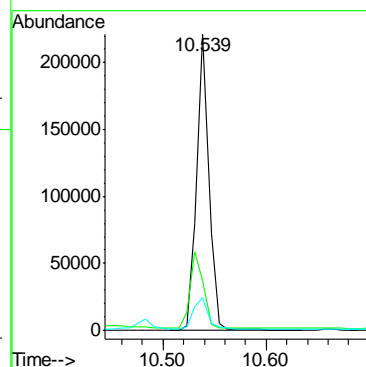
201 15.0 0.0 36.6





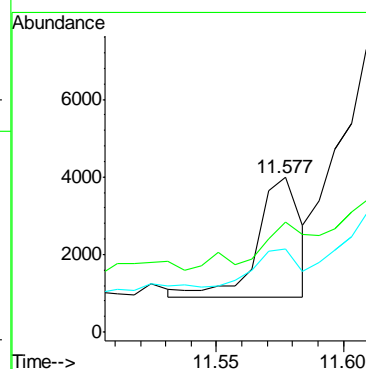
#21
Terphenyl-d14
Concen: 11.0183 ug/mL
RT: 10.539 min Scan# 936
Delta R.T. -0.040 min
Lab File: 3g12196.D
Acq: 21 Nov 12 2:28 pm

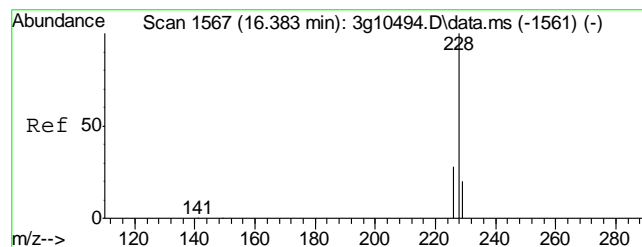
Tgt Ion	Ratio	Lower	Upper
244	100		
122	28.4	4.9	44.9
212	12.6	0.0	32.5



#22
Benzo(a)anthracene
Concen: 0.0649 ug/mL m
RT: 11.577 min Scan# 1069
Delta R.T. -0.040 min
Lab File: 3g12196.D
Acq: 21 Nov 12 2:28 pm

Tgt Ion	Ratio	Lower	Upper
228	100		
229	83.1	0.0	39.5#
226	68.8	6.8	46.8#





#23

Chrysene

Concen: 0.1526 ug/mL

RT: 11.610 min Scan# 1074

Delta R.T. -0.040 min

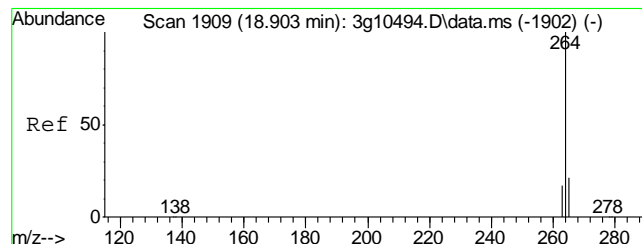
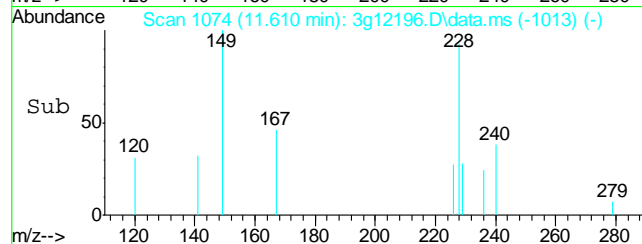
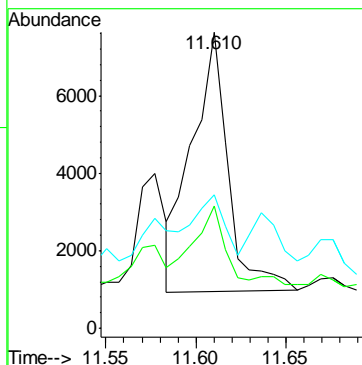
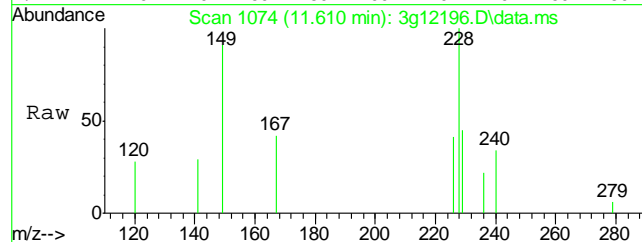
Lab File: 3g12196.D

Acq: 21 Nov 12 2:28 pm

Tgt Ion: 228 Resp: 9421

Ion	Ratio	Lower	Upper
228	100		
226	27.1	8.9	48.9
229	32.4	0.0	39.4

Ion	Ratio	Lower	Upper
228	100		
226	27.1	8.9	48.9
229	32.4	0.0	39.4



#24

Perylene-d12

Concen: 4.0000 ug/mL

RT: 12.983 min Scan# 1255

Delta R.T. -0.053 min

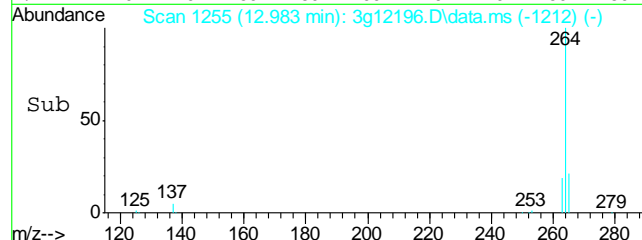
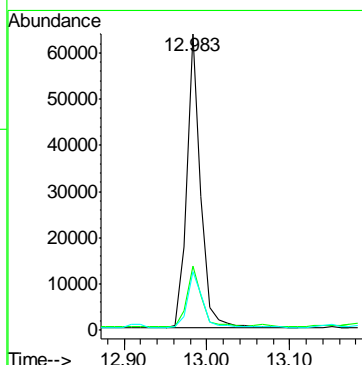
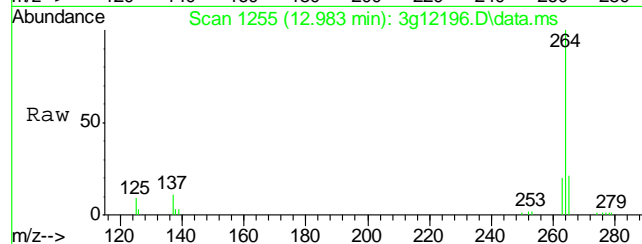
Lab File: 3g12196.D

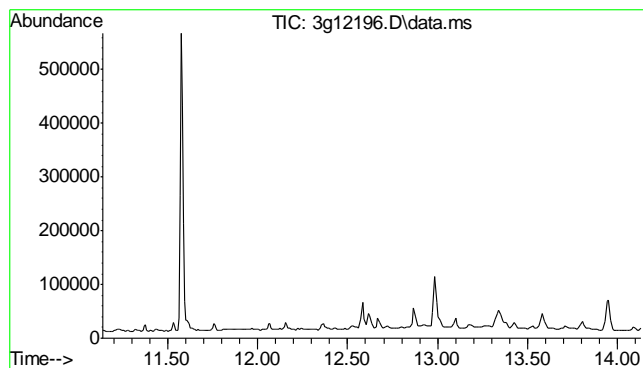
Acq: 21 Nov 12 2:28 pm

Tgt Ion: 264 Resp: 75787

Ion	Ratio	Lower	Upper
264	100		
265	21.3	1.5	41.5
263	20.7	0.0	39.4

Ion	Ratio	Lower	Upper
264	100		
265	21.3	1.5	41.5
263	20.7	0.0	39.4

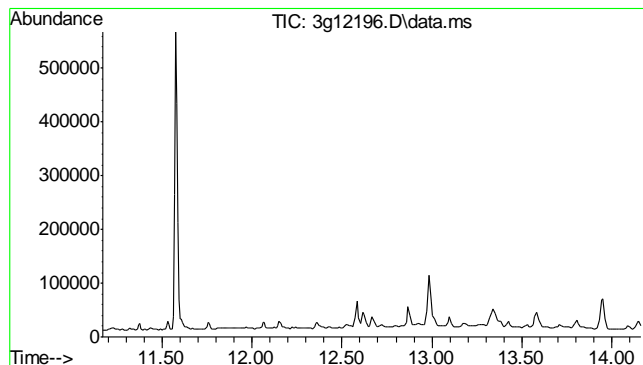
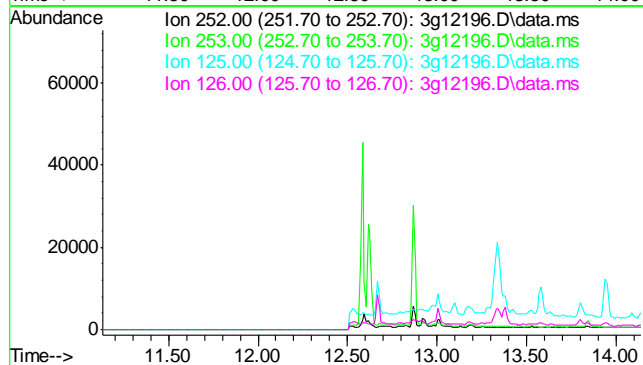




#25
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.64 min

Lab File: 3g12196.D
Acq: 21 Nov 12 2:28 pm

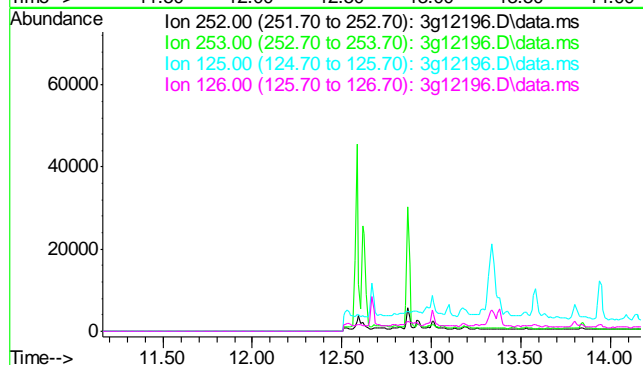
Tgt Ion:	252
Sig	Exp Ratio
252	100
253	46.7
125	13.5
126	18.7

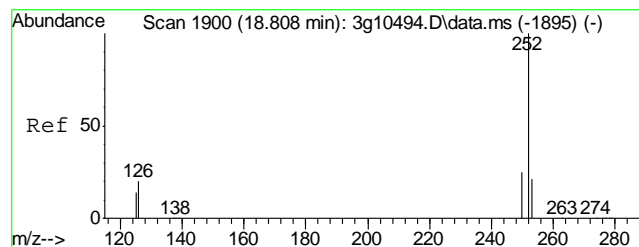


#26
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.67 min

Lab File: 3g12196.D
Acq: 21 Nov 12 2:28 pm

Tgt Ion:	252
Sig	Exp Ratio
252	100
253	40.8
125	11.8
126	16.4





#27

Benzo(a)pyrene

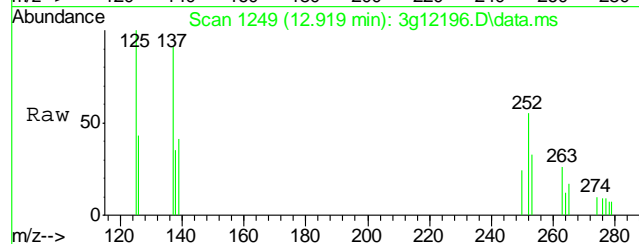
Concen: 0.0658 ug/mL

RT: 12.919 min Scan# 1249

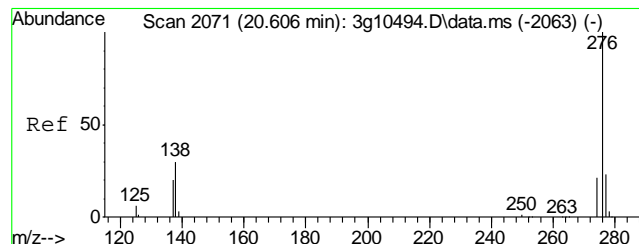
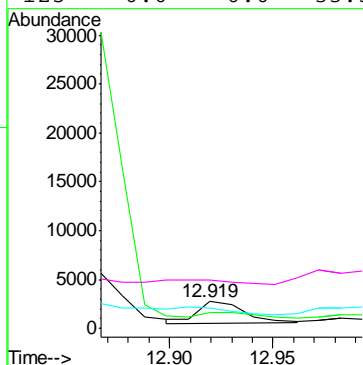
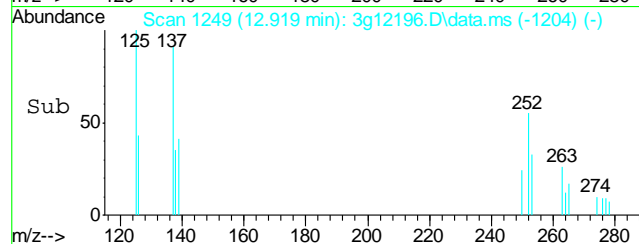
Delta R.T. -0.053 min

Lab File: 3g12196.D

Acq: 21 Nov 12 2:28 pm



Tgt Ion:	252	Resp:	3430
Ion Ratio	Lower	Upper	
252	100		
253	0.0	1.8	41.8#
126	0.0	0.0	38.6
125	0.0	0.0	33.5



#28

Indeno(1,2,3-cd)pyrene

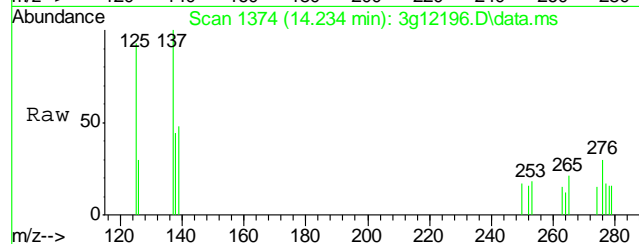
Concen: Below ug/mL

RT: 14.234 min Scan# 1374

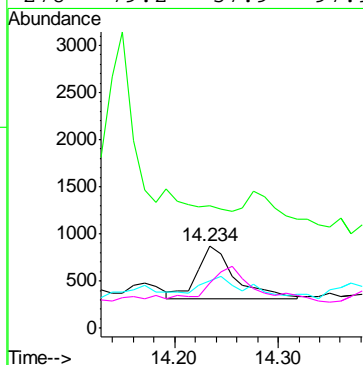
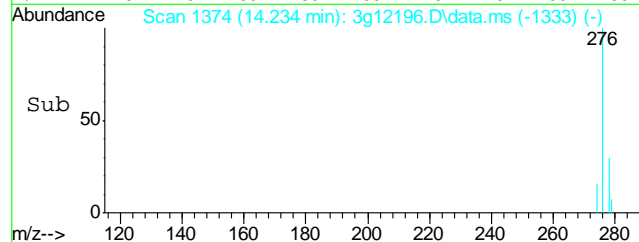
Delta R.T. -0.074 min

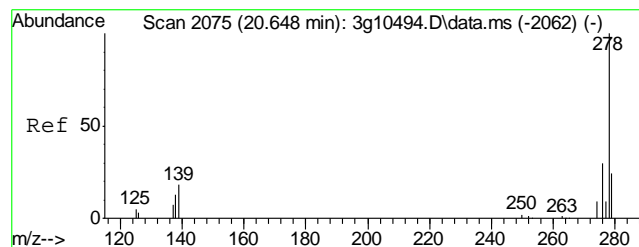
Lab File: 3g12196.D

Acq: 21 Nov 12 2:28 pm



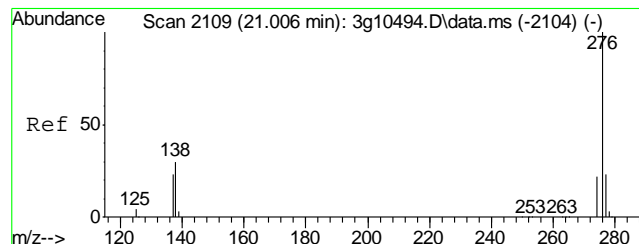
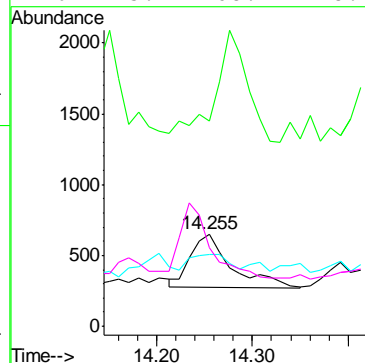
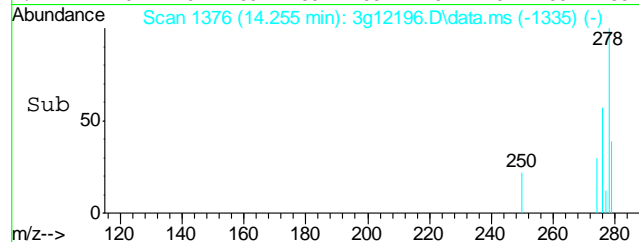
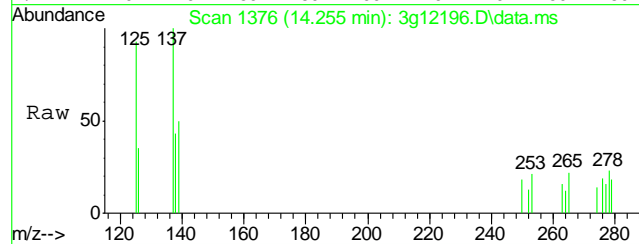
Tgt Ion:	276	Resp:	1401
Ion Ratio	Lower	Upper	
276	100		
138	66.6	16.6	56.6#
277	57.7	4.7	44.7#
278	79.2	57.9	97.9





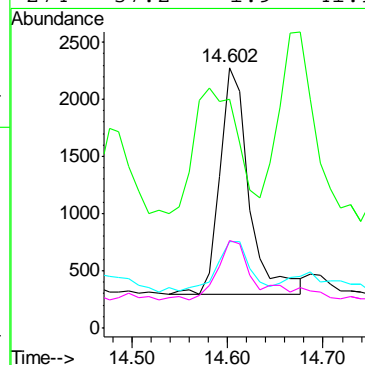
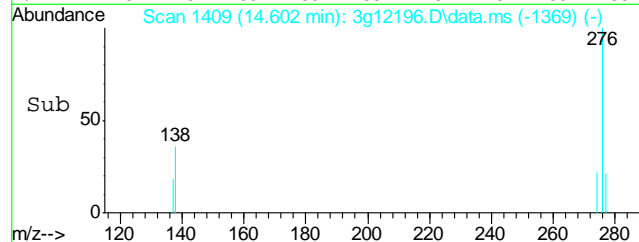
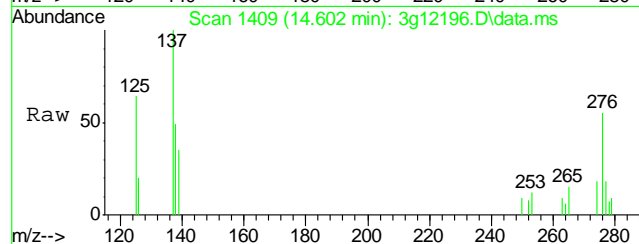
#29
Dibenzo(a,h)anthracene
Concen: Below ug/mL
RT: 14.255 min Scan# 1376
Delta R.T. -0.074 min
Lab File: 3g12196.D
Acq: 21 Nov 12 2:28 pm

Tgt Ion: 278 Resp: 1117
Ion Ratio Lower Upper
278 100
139 184.9 7.8 47.8#
279 29.2 2.3 42.3
276 125.4 108.4 148.4



#30
Benzo(g,h,i)perylene
Concen: 0.0811 ug/mL
RT: 14.602 min Scan# 1409
Delta R.T. -0.084 min
Lab File: 3g12196.D
Acq: 21 Nov 12 2:28 pm

Tgt Ion: 276 Resp: 4224
Ion Ratio Lower Upper
276 100
138 83.7 11.5 51.5#
277 23.7 2.9 42.9
274 37.2 1.9 41.9



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\112112\
 Data File : 3g12207.D
 Acq On : 21 Nov 2012 6:54 pm
 Operator : SARAHM1
 Sample : D40910-1
 Misc : OP6973,E3G576,30.01,,,1,1
 ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 26 09:02:15 2012
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G574.M
 Quant Title : PAHSIM BASE
 QLast Update : Wed Nov 21 08:48:23 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.751	136	229697	4.0000	ug/mL	-0.04
6) Acenaphthene-d10	7.472	164	122978	4.0000	ug/mL	-0.04
15) Phenanthrene-d10	8.956	188	190142	4.0000	ug/mL	-0.03
19) Chrysene-d12	11.590	240	117976	4.0000	ug/mL	-0.04
24) Perylene-d12	12.993	264	63718	4.0000	ug/mL	-0.04

System Monitoring Compounds

2) Nitrobenzene-d5	5.066	82	879273	39.8155	ug/mL	-0.04
Spiked Amount	50.000	Range	25 - 135	Recovery	=	79.64%
7) 2-Fluorobiphenyl	6.810	172	1780499	39.6967	ug/mL	-0.02
Spiked Amount	50.000	Range	25 - 135	Recovery	=	79.40%
21) Terphenyl-d14	10.547	244	679378	44.1836	ug/mL	-0.03
Spiked Amount	50.000	Range	25 - 135	Recovery	=	88.36%

Target Compounds

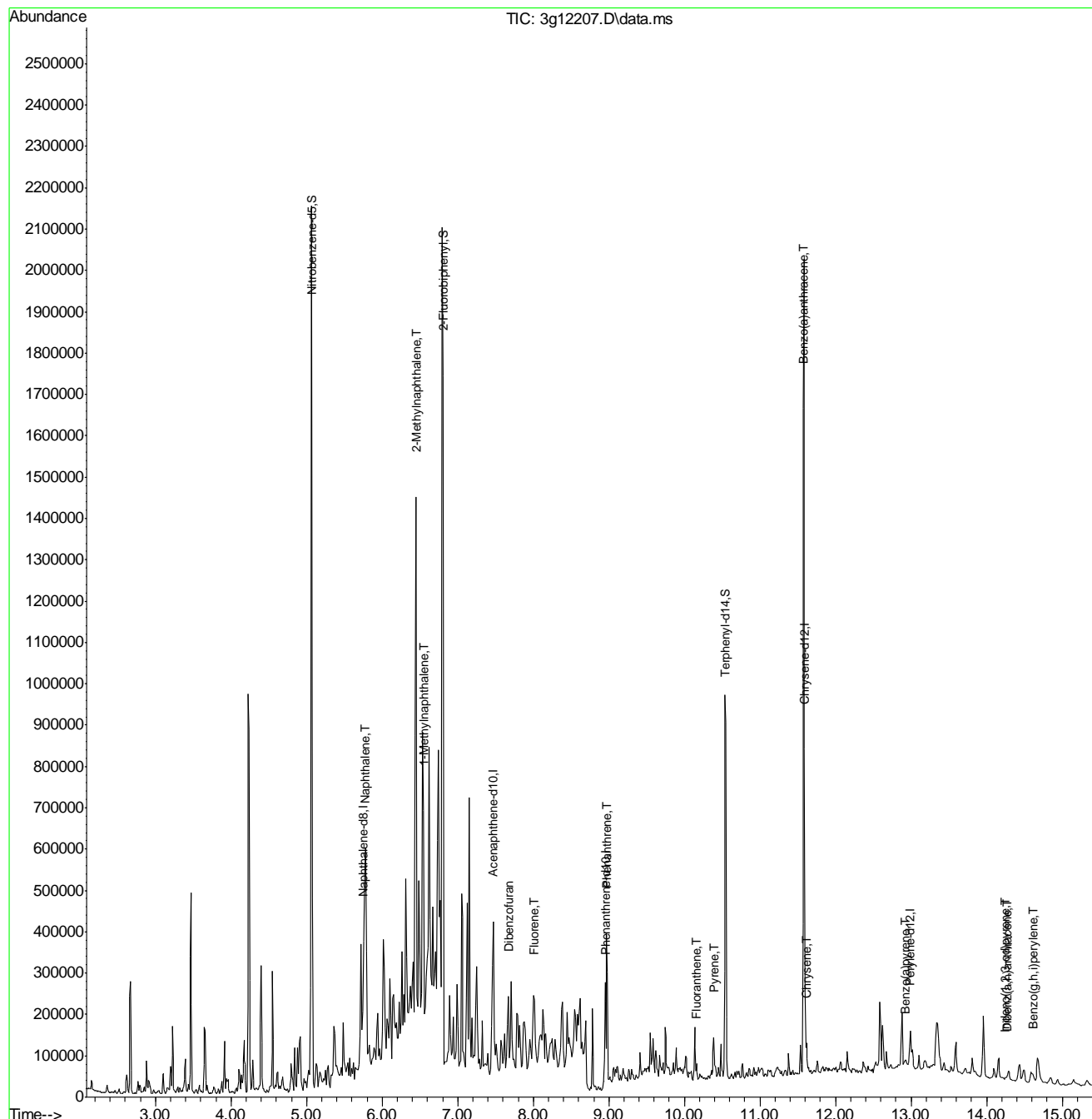
						Qvalue
3) N-Nitrosodimethylamine	0.000	74	0	N.D.	d	
4) N-Nitrosodi-propylamine	0.000	70	0	N.D.	d	
5) Naphthalene	5.776	128	526808	8.7684	ug/mL	86
8) 2-Methylnaphthalene	6.449	142	652268	16.9886	ug/mL	96
9) 1-Methylnaphthalene	6.549	142	374700	10.4673	ug/mL	91
10) Acenaphthylene	0.000	152	0	N.D.	d	
11) Acenaphthene	0.000	154	0	N.D.	d	
12) Dibenzofuran	7.673	168	72322	1.1759	ug/mL	74
13) Fluorene	8.015	166	63573	1.2651	ug/mL#	67
14) Diphenylamine	0.000	169	0	N.D.	d	
16) Phenanthrene	8.972	178	233037	3.5860	ug/mL	84
17) Anthracene	0.000	178	0	N.D.	d	
18) Fluoranthene	10.159	202	26851	0.3607	ug/mL#	1
20) Pyrene	10.388	202	44278	0.6837	ug/mL#	81
22) Benzo(a)anthracene	11.577	228	12551	0.2384	ug/mL#	1
23) Chrysene	11.617	228	35885	0.6253	ug/mL#	76
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	12.930	252	9965	0.2272	ug/mL#	59
28) Indeno(1,2,3-cd)pyrene	14.244	276	3728	0.0779	ug/mL#	61
29) Dibenz(a,h)anthracene	14.266	278	1974	0.0538	ug/mL#	1
30) Benzo(g,h,i)perylene	14.613	276	13010	0.2971	ug/mL#	47

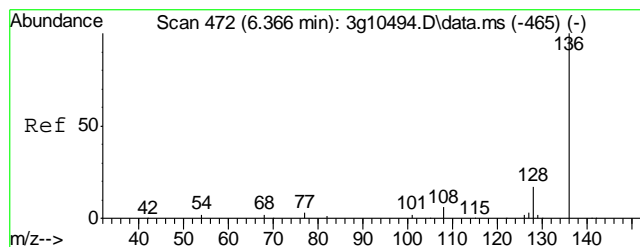
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\112112\
 Data File : 3g12207.D
 Acq On : 21 Nov 2012 6:54 pm
 Operator : SARAHM1
 Sample : D40910-1
 Misc : OP6973,E3G576,30.01,,,1,1
 ALS Vial : 14 Sample Multiplier: 1

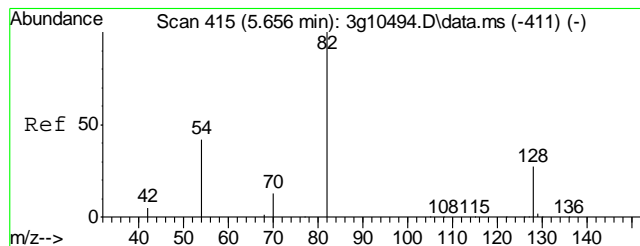
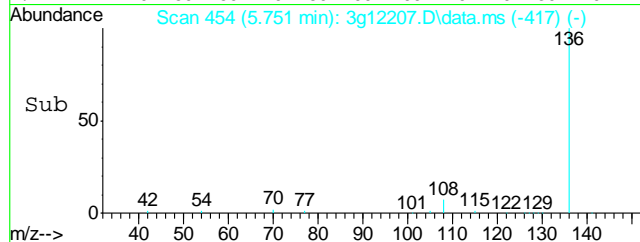
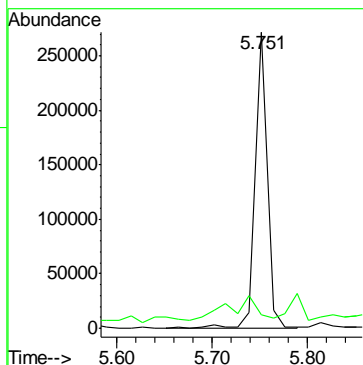
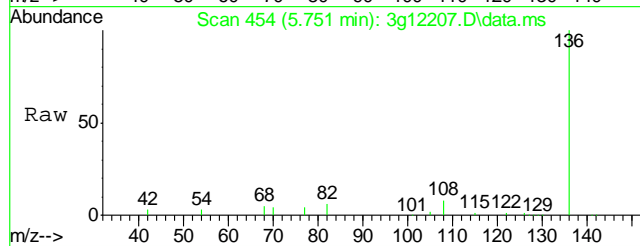
Quant Time: Nov 26 09:02:15 2012
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G574.M
 Quant Title : PAHSIM BASE
 QLast Update : Wed Nov 21 08:48:23 2012
 Response via : Initial Calibration





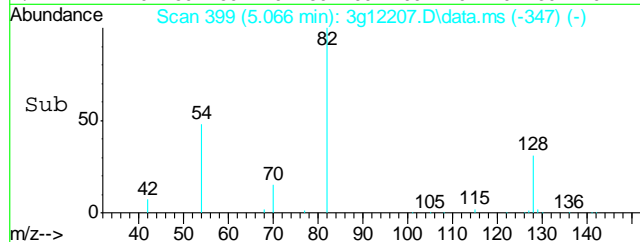
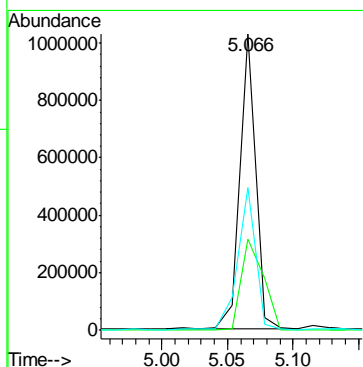
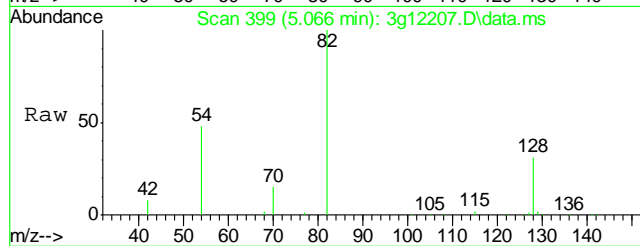
#1
Naphthalene-d8
Concen: 4.0000 ug/mL
RT: 5.751 min Scan# 454
Delta R.T. -0.037 min
Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

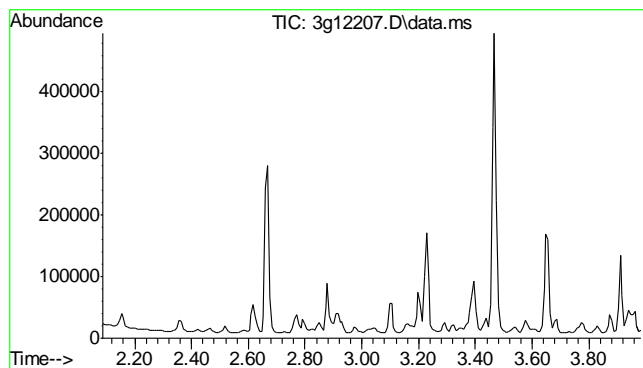
Tgt Ion	Ratio	Lower	Upper
136	100		
68	9.0	0.0	27.8



#2
Nitrobenzene-d5
Concen: 39.8155 ug/mL
RT: 5.066 min Scan# 399
Delta R.T. -0.037 min
Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

Tgt Ion	Ratio	Lower	Upper
82	100		
128	42.8	30.7	70.7
54	53.6	36.8	76.8

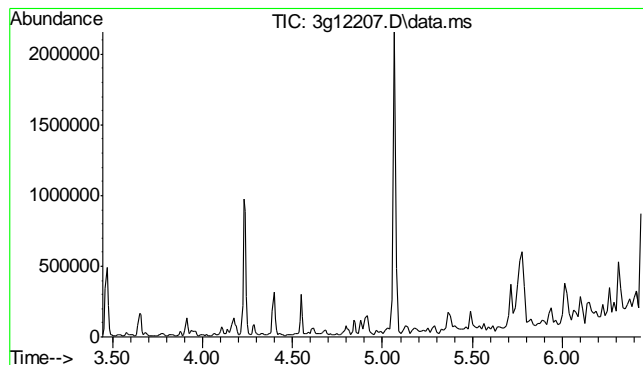
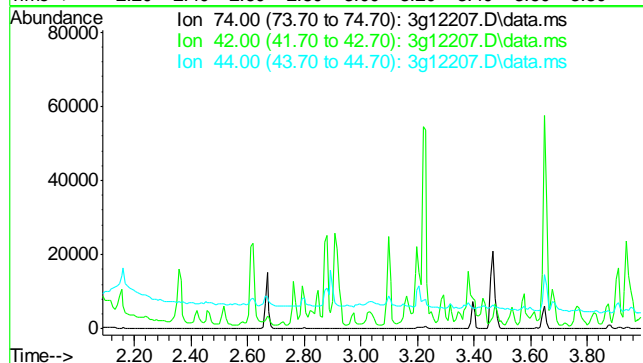




#3
N-Nitrosodimethylamine
Concen: N.D. ug/mL
Expected RT: 2.49 min

Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

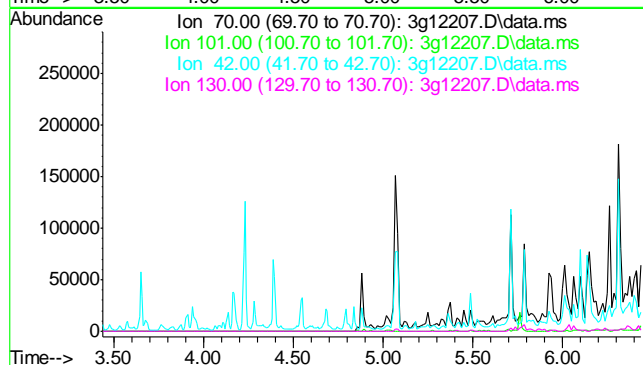
Tgt Ion	Exp Ratio
74	100
42	73.9
44	4.2

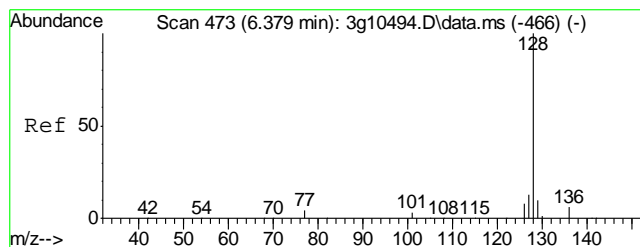


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 4.94 min

Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

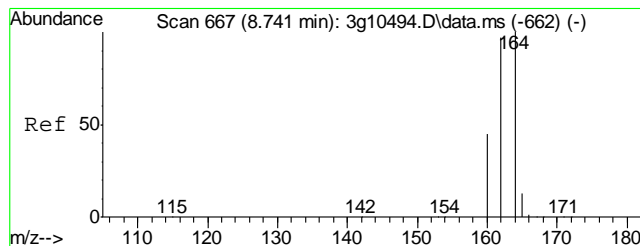
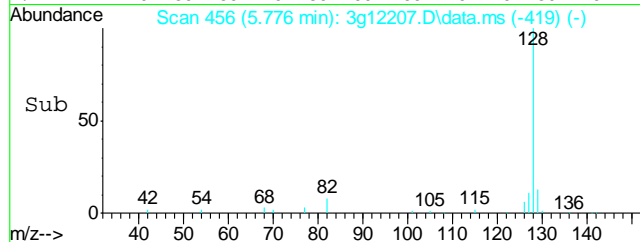
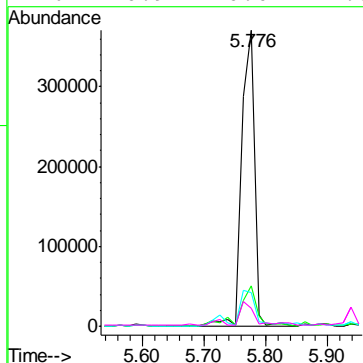
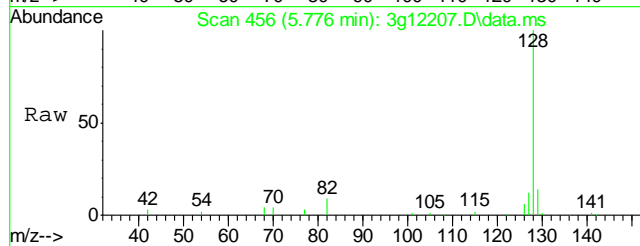
Tgt Ion	Exp Ratio
70	100
101	13.9
42	52.4
130	27.1





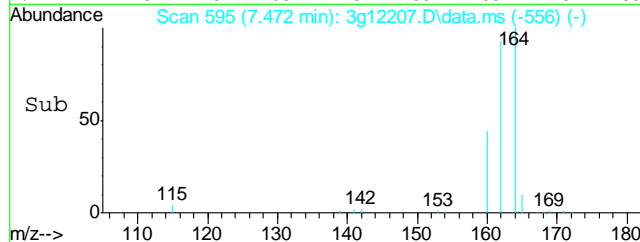
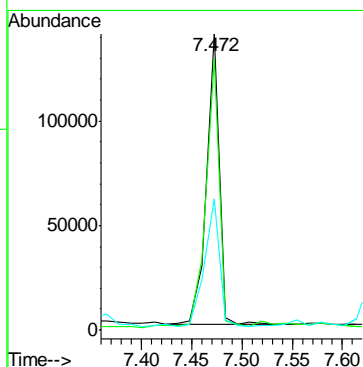
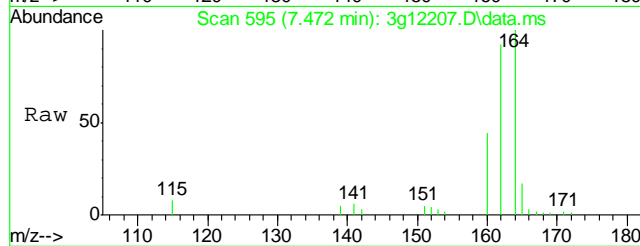
#5
Naphthalene
Concen: 8.7684 ug/mL
RT: 5.776 min Scan# 456
Delta R.T. -0.037 min
Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

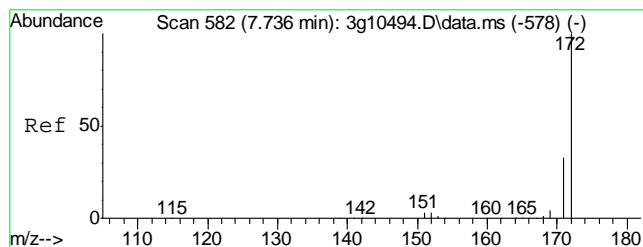
Tgt Ion	Ratio	Lower	Upper
128	100		
129	18.2	0.0	31.0
127	17.8	0.0	32.8
126	10.9	0.0	27.5



#6
Acenaphthene-d10
Concen: 4.0000 ug/mL
RT: 7.472 min Scan# 595
Delta R.T. -0.035 min
Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

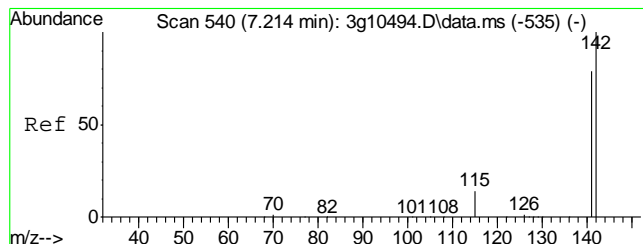
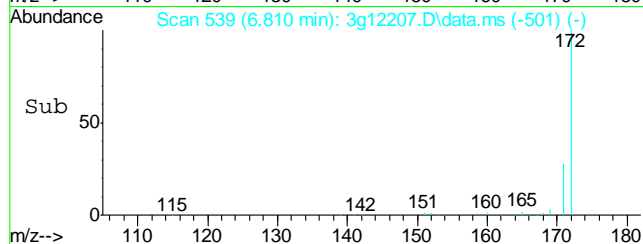
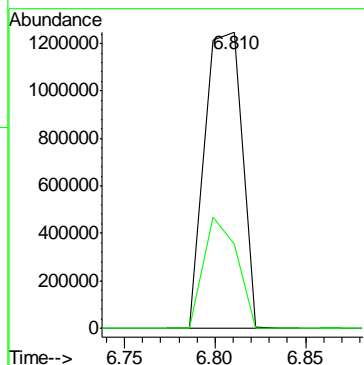
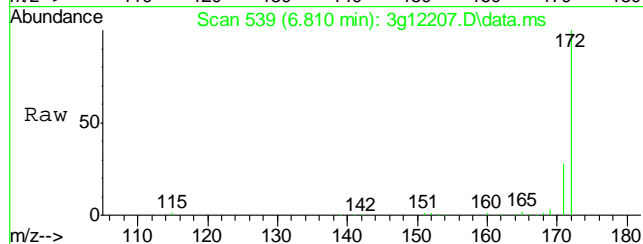
Tgt Ion	Ratio	Lower	Upper
164	100		
162	97.6	78.1	118.1
160	53.4	28.0	68.0





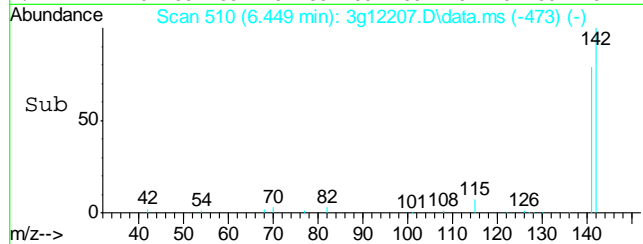
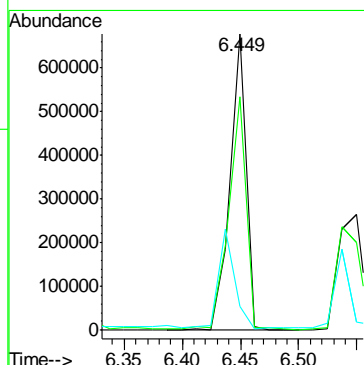
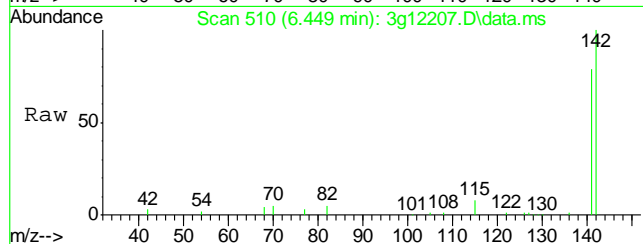
#7
2-Fluorobiphenyl
Concen: 39.6967 ug/mL
RT: 6.810 min Scan# 539
Delta R.T. -0.023 min
Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

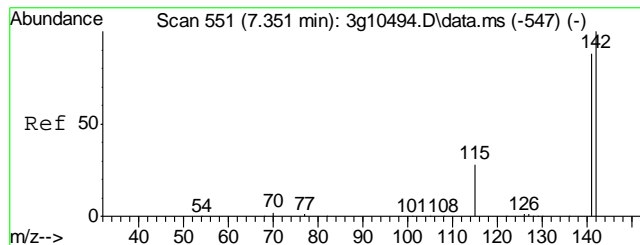
Tgt Ion: 172 Resp: 1780499
Ion Ratio Lower Upper
172 100
171 33.4 12.6 52.6



#8
2-Methylnaphthalene
Concen: 16.9886 ug/mL
RT: 6.449 min Scan# 510
Delta R.T. -0.037 min
Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

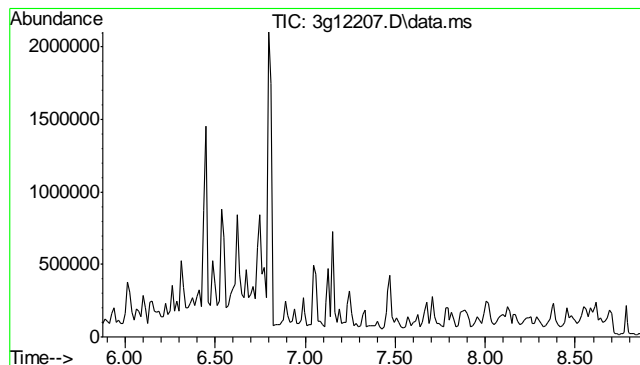
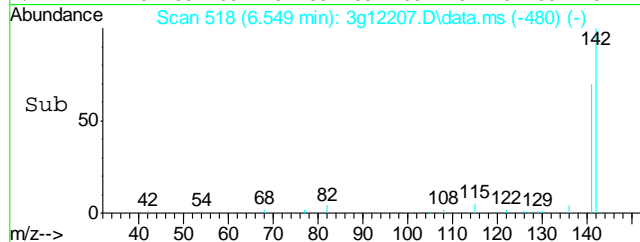
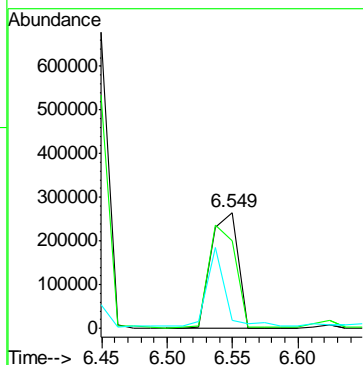
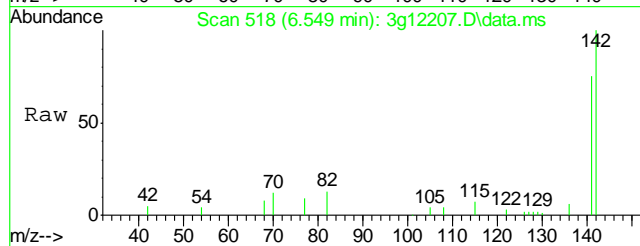
Tgt Ion: 142 Resp: 652268
Ion Ratio Lower Upper
142 100
141 85.1 64.0 104.0
115 33.5 7.1 47.1





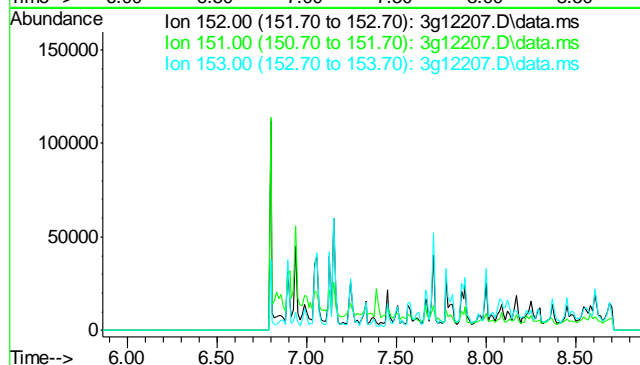
#9
1-Methylnaphthalene
Concen: 10.4673 ug/mL
RT: 6.549 min Scan# 518
Delta R.T. -0.025 min
Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

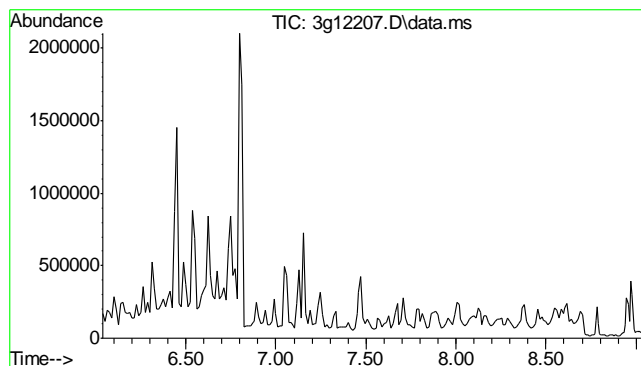
Tgt Ion	Ratio	Lower	Upper
142	100		
141	88.3	65.4	105.4
115	44.6	9.7	49.7



#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 7.37 min
Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

Tgt Ion	Sig	Exp Ratio
152	100	
151	19.3	
153	12.8	

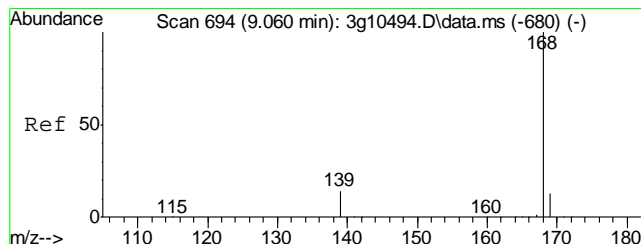
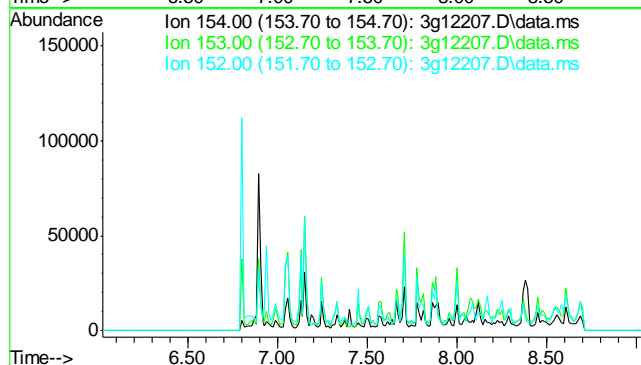




#11
 Acenaphthene
 Concen: N.D. ug/mL
 Expected RT: 7.53 min
 Lab File: 3g12207.D
 Acq: 21 Nov 12 6:54 pm

Tgt Ion: 154

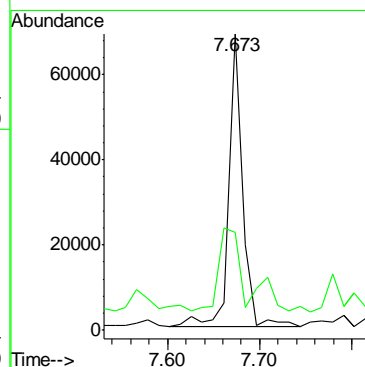
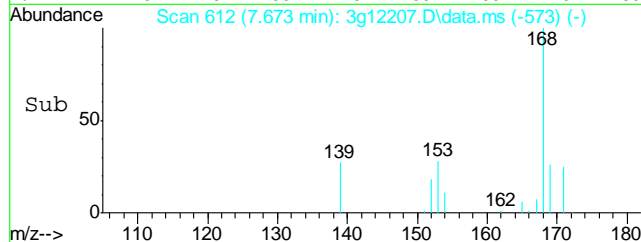
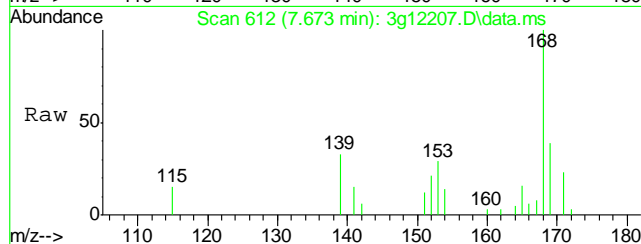
Sig	Exp Ratio
154	100
153	104.1
152	50.2

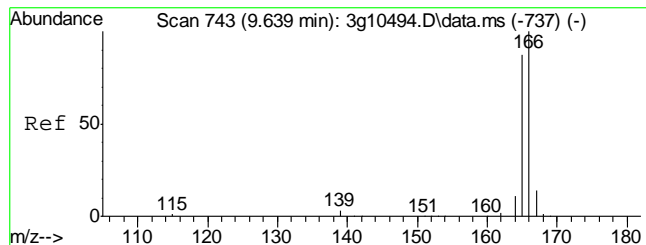


#12
 Dibenzofuran
 Concen: 1.1759 ug/mL
 RT: 7.673 min Scan# 612
 Delta R.T. -0.035 min
 Lab File: 3g12207.D
 Acq: 21 Nov 12 6:54 pm

Tgt Ion: 168 Resp: 72322

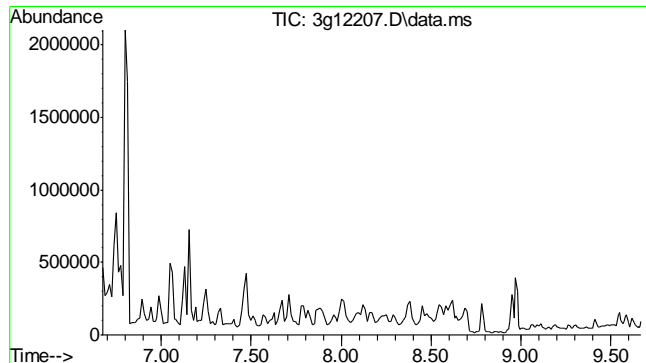
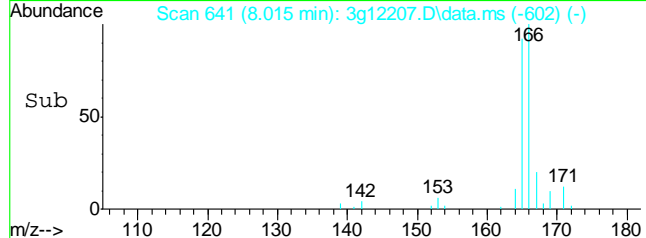
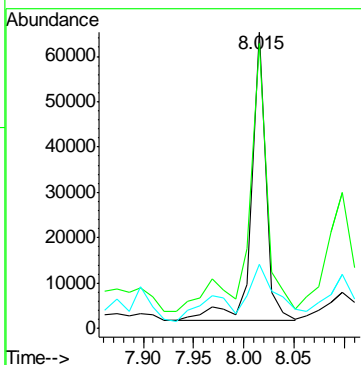
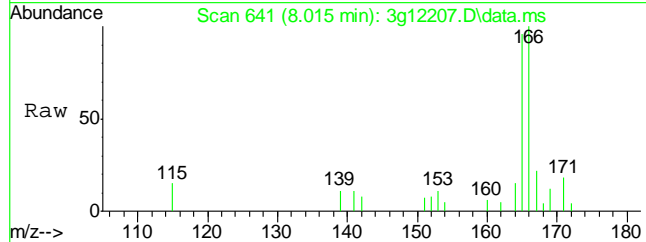
Ion	Ratio	Lower	Upper
168	100		
139	45.1	10.9	50.9





#13
Fluorene
Concen: 1.2651 ug/mL
RT: 8.015 min Scan# 641
Delta R.T. -0.035 min
Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

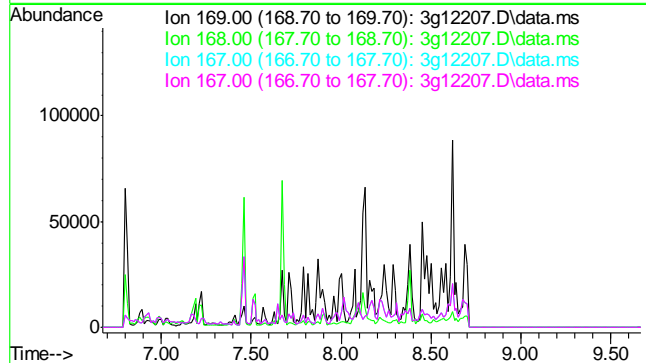
Tgt Ion:	166	Resp:	63573
Ion Ratio	Lower	Upper	
166	100		
165	120.2	69.6	109.6#
167	28.6	0.0	33.5

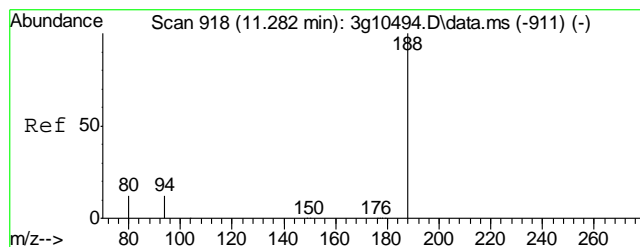


#14
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 8.17 min

Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

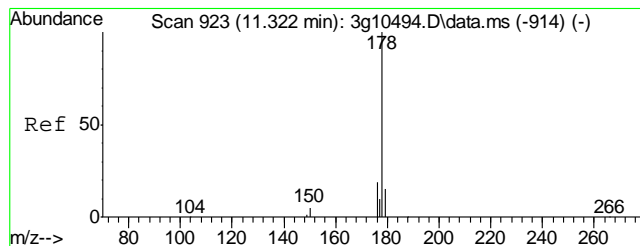
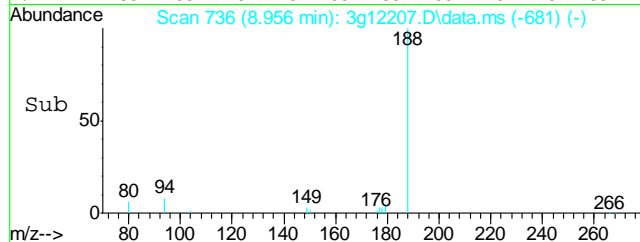
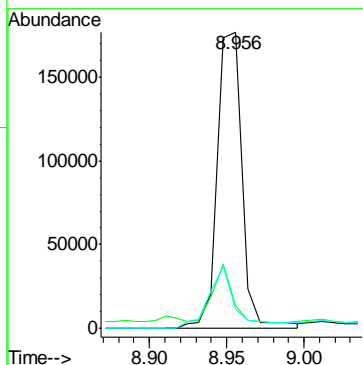
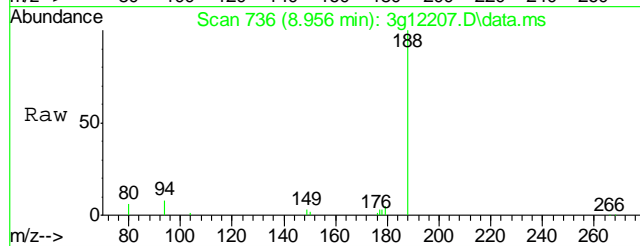
Tgt Ion:	169
Sig	Exp Ratio
169	100
168	60.9
167	33.6
167	33.6





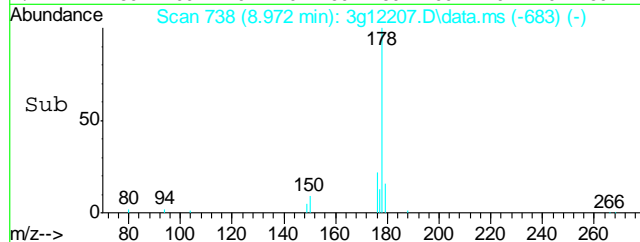
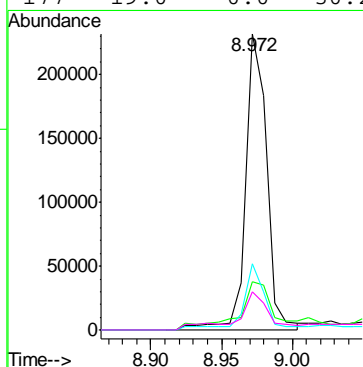
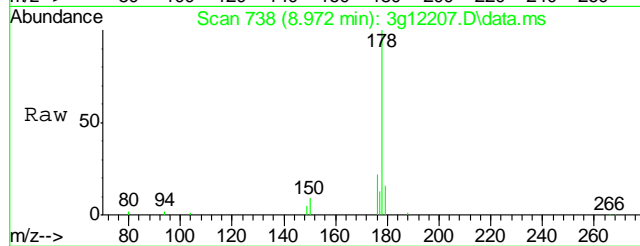
#15
Phenanthrene-d10
Concen: 4.0000 ug/mL
RT: 8.956 min Scan# 736
Delta R.T. -0.032 min
Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

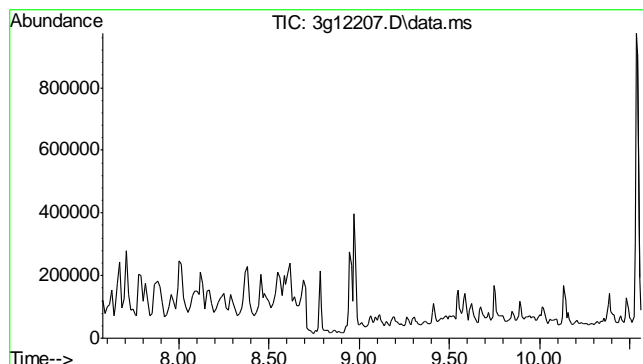
Tgt Ion:188	Resp:	190142
Ion Ratio	Lower	Upper
188 100		
94 16.5	0.0	31.6
80 22.9	0.0	32.0



#16
Phenanthrene
Concen: 3.5860 ug/mL
RT: 8.972 min Scan# 738
Delta R.T. -0.039 min
Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

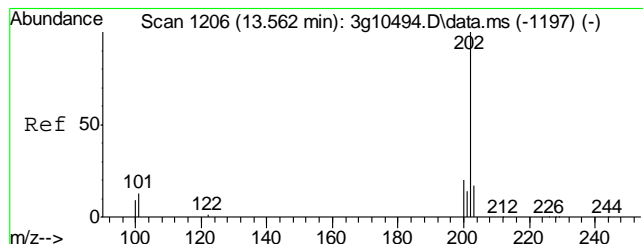
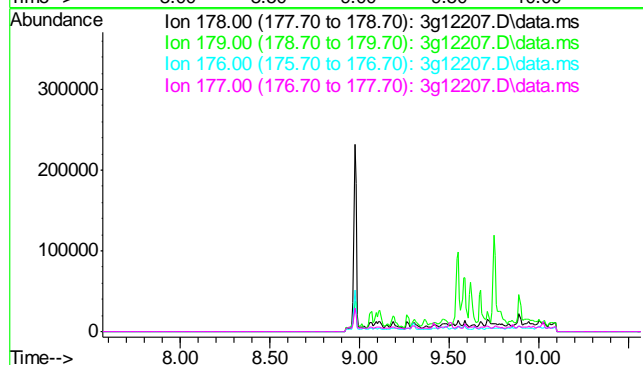
Tgt Ion:178	Resp:	233037
Ion Ratio	Lower	Upper
178 100		
179 27.1	0.0	35.2
176 19.7	0.0	38.7
177 19.0	0.0	30.2





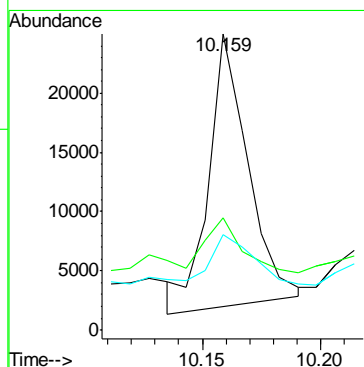
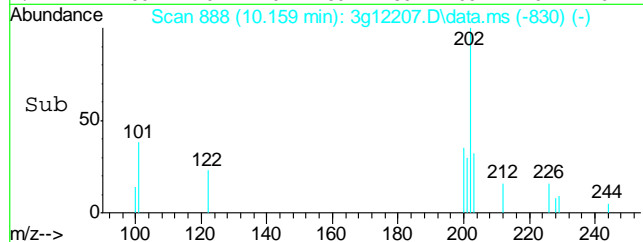
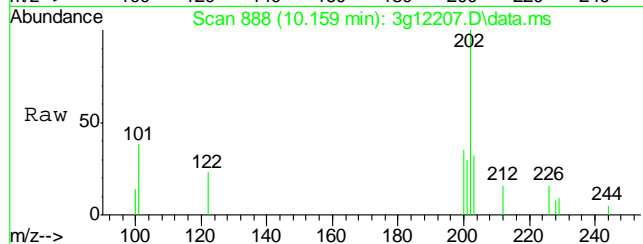
#17
 Anthracene
 Concen: N.D. ug/mL
 Expected RT: 9.07 min
 Lab File: 3g12207.D
 Acq: 21 Nov 12 6:54 pm

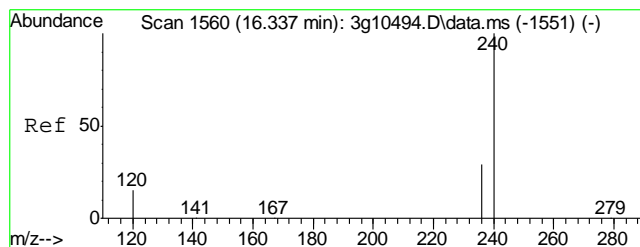
Tgt Ion: 178
 Sig Exp Ratio
 178 100
 179 15.3
 176 18.0
 177 8.7



#18
 Fluoranthene
 Concen: 0.3607 ug/mL
 RT: 10.159 min Scan# 888
 Delta R.T. -0.040 min
 Lab File: 3g12207.D
 Acq: 21 Nov 12 6:54 pm

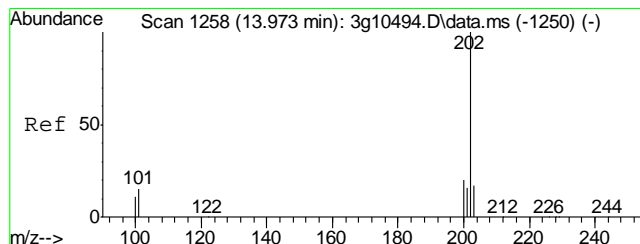
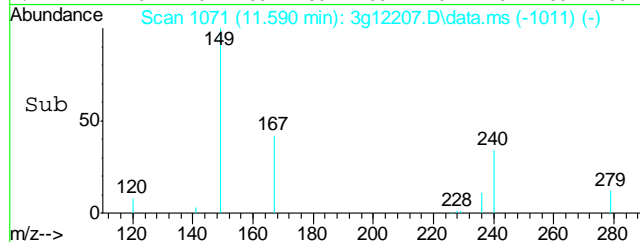
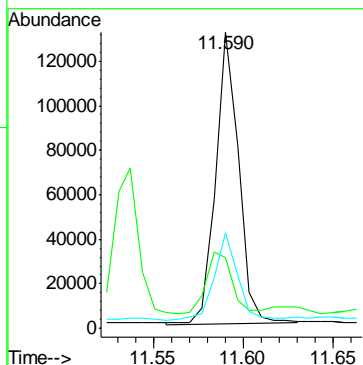
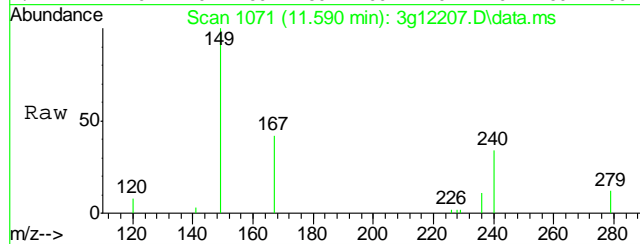
Tgt Ion: 202 Resp: 26851
 Ion Ratio Lower Upper
 202 100
 101 128.6 0.0 31.8#
 203 39.2 0.0 37.3#





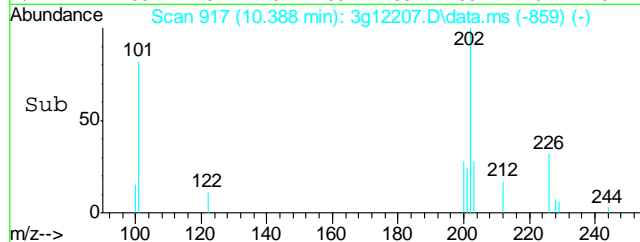
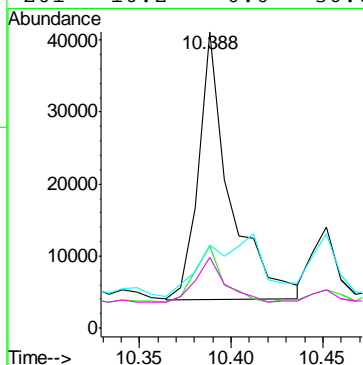
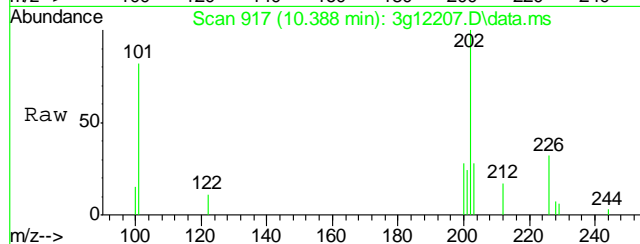
#19
Chrysene-d12
Concen: 4.0000 ug/mL
RT: 11.590 min Scan# 1071
Delta R.T. -0.040 min
Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

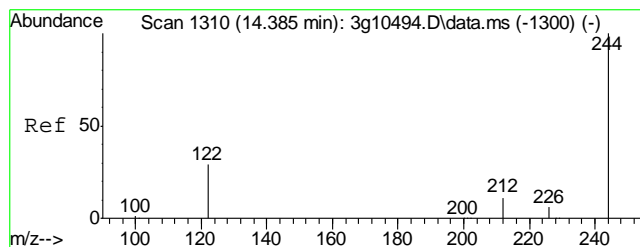
Tgt Ion:	240	Resp:	117976
Ion Ratio	Lower	Upper	
240	100		
120	25.5	0.0	38.3
236	32.6	10.7	50.7



#20
Pyrene
Concen: 0.6837 ug/mL
RT: 10.388 min Scan# 917
Delta R.T. -0.040 min
Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

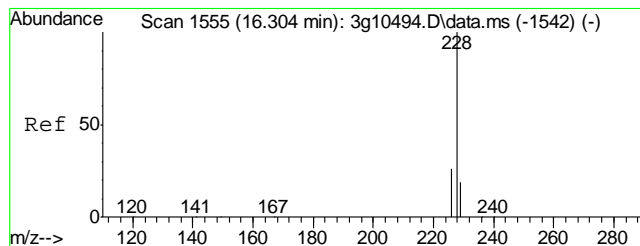
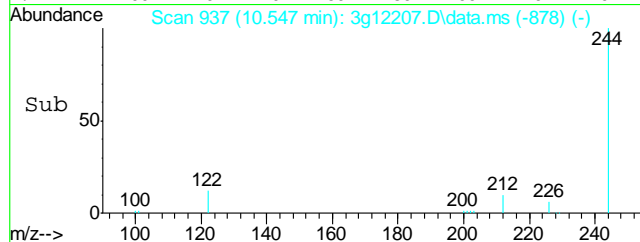
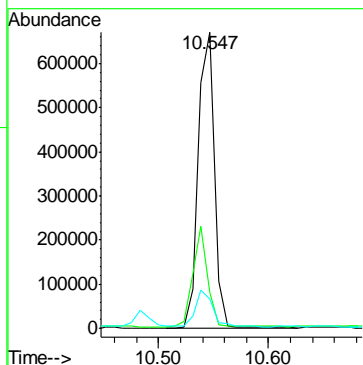
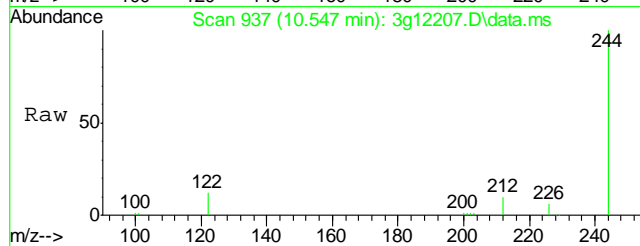
Tgt Ion:	202	Resp:	44278
Ion Ratio	Lower	Upper	
202	100		
200	18.6	0.3	40.3
203	40.6	0.0	37.8#
201	16.2	0.0	36.6





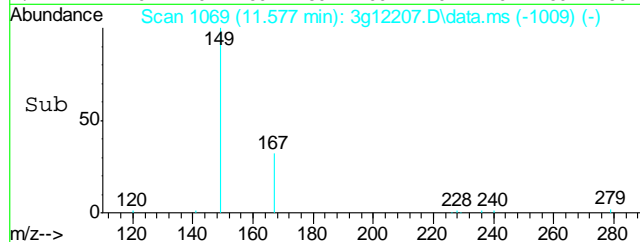
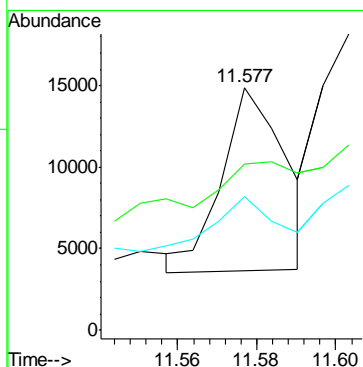
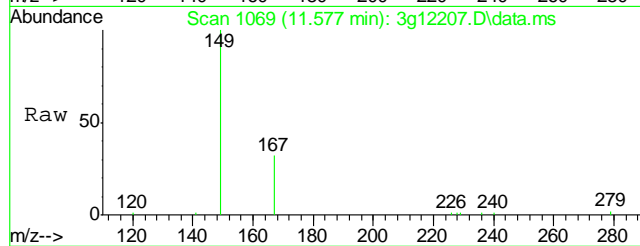
#21
Terphenyl-d14
Concen: 44.1836 ug/mL
RT: 10.547 min Scan# 937
Delta R.T. -0.032 min
Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

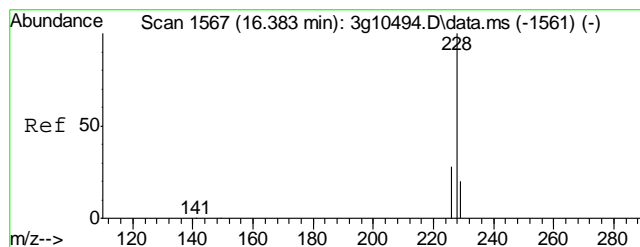
Tgt Ion:	244	Resp:	679378
Ion Ratio	Lower	Upper	
244	100		
122	31.1	4.9	44.9
212	13.3	0.0	32.5



#22
Benzo(a)anthracene
Concen: 0.2384 ug/mL
RT: 11.577 min Scan# 1069
Delta R.T. -0.040 min
Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

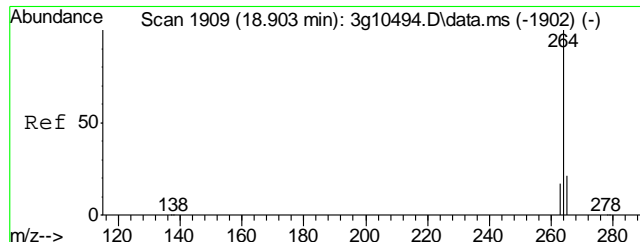
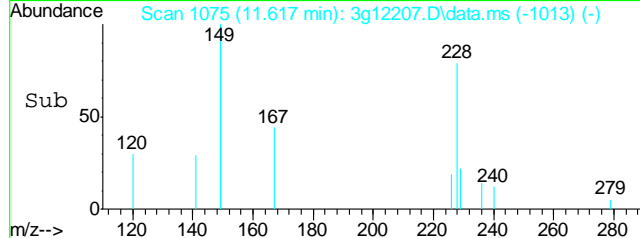
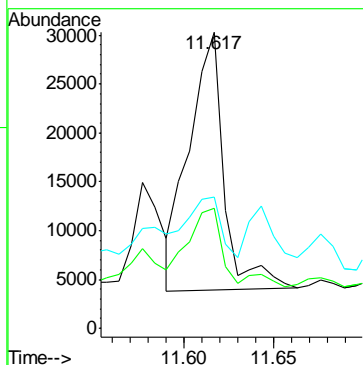
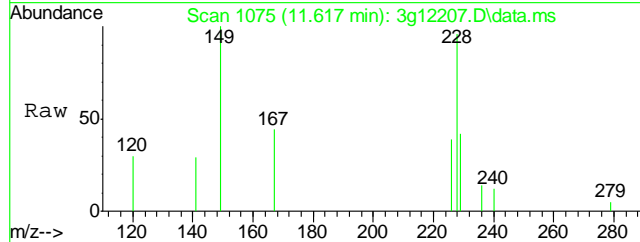
Tgt Ion:	228	Resp:	12551
Ion Ratio	Lower	Upper	
228	100		
229	101.7	0.0	39.5#
226	70.0	6.8	46.8#





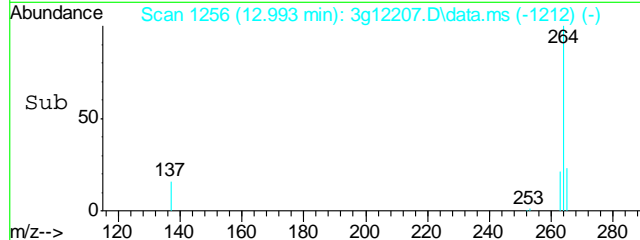
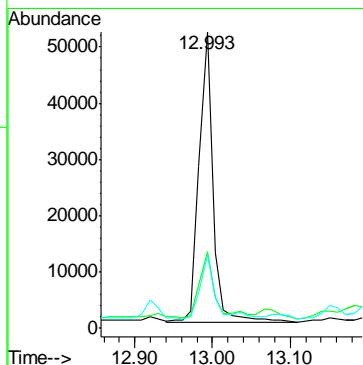
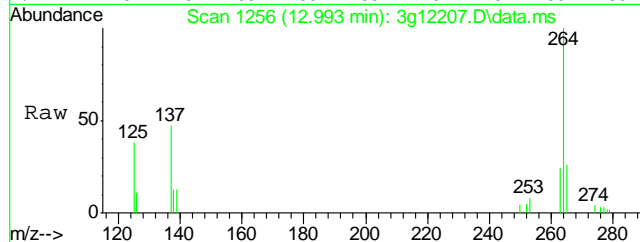
#23
Chrysene
Concen: 0.6253 ug/mL
RT: 11.617 min Scan# 1075
Delta R.T. -0.033 min
Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

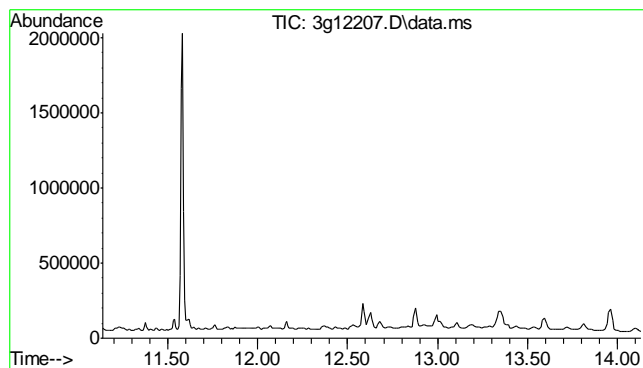
Tgt Ion:	228	Resp:	35885
Ion Ratio	Lower	Upper	
228	100		
226	33.4	8.9	48.9
229	41.3	0.0	39.4#



#24
Perylene-d12
Concen: 4.0000 ug/mL
RT: 12.993 min Scan# 1256
Delta R.T. -0.042 min
Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

Tgt Ion:	264	Resp:	63718
Ion Ratio	Lower	Upper	
264	100		
265	25.4	1.5	41.5
263	22.7	0.0	39.4

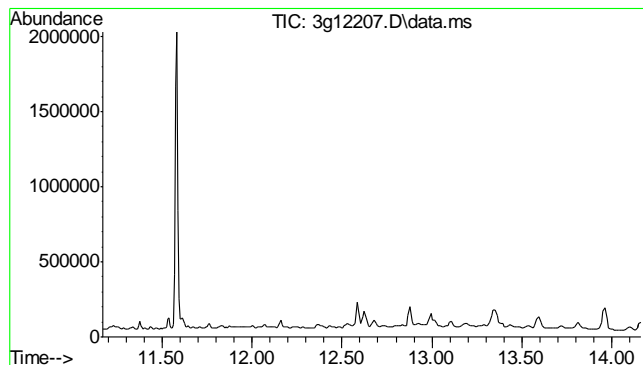
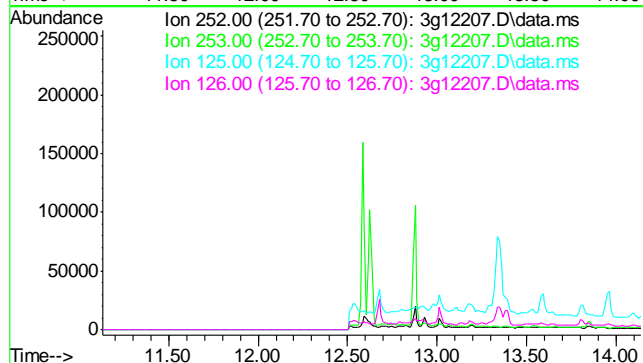




#25
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.64 min

Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

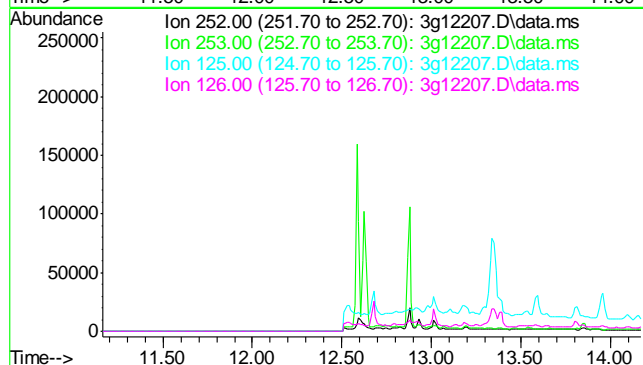
Tgt Ion	Exp Ratio
252	100
253	46.7
125	13.5
126	18.7

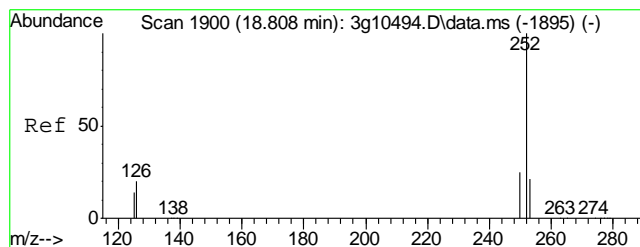


#26
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.67 min

Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

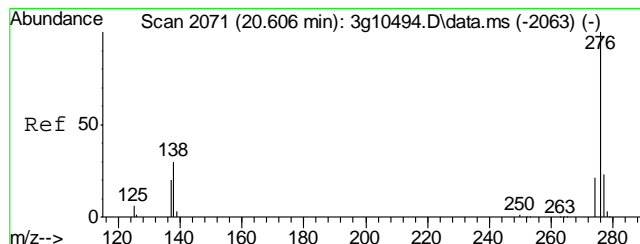
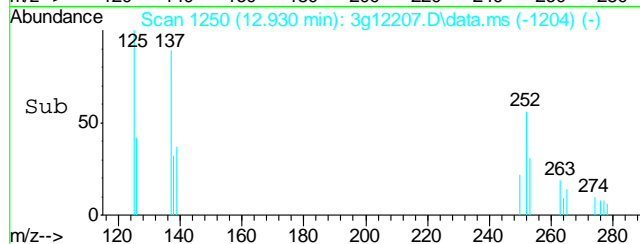
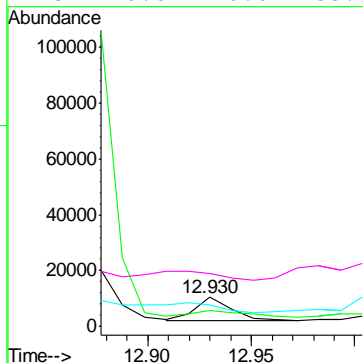
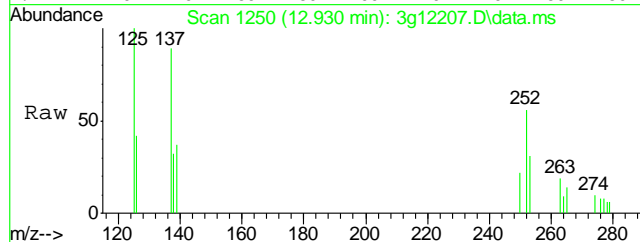
Tgt Ion	Exp Ratio
252	100
253	40.8
125	11.8
126	16.4





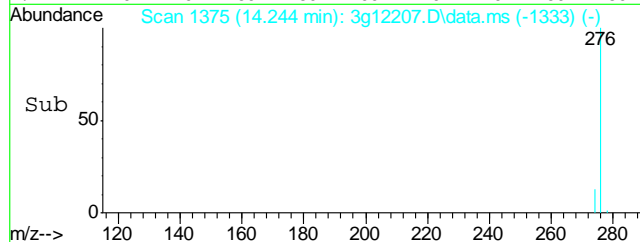
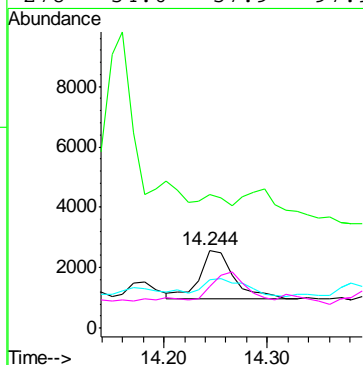
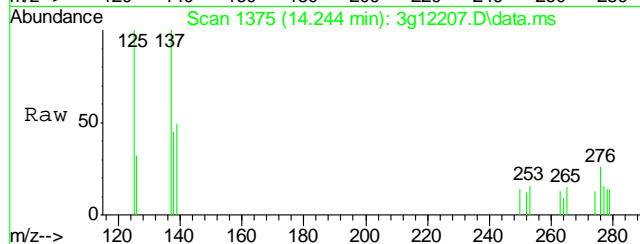
#27
Benzo(a)pyrene
Concen: 0.2272 ug/mL
RT: 12.930 min Scan# 1250
Delta R.T. -0.042 min
Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

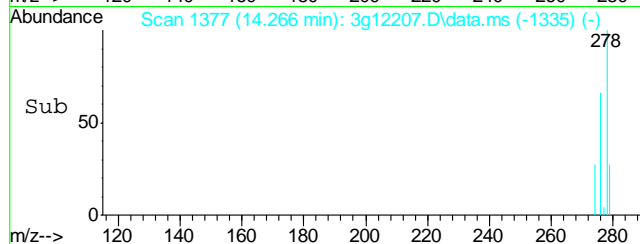
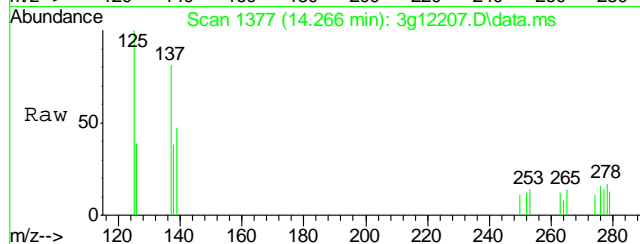
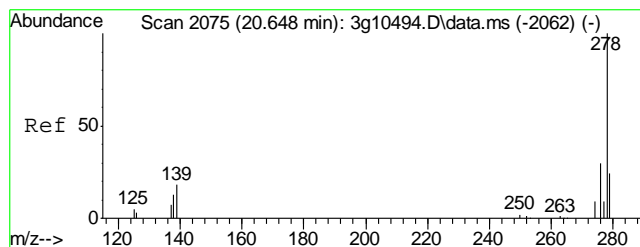
Tgt Ion:	252	Resp:	9965
Ion Ratio	Lower	Upper	
252	100		
253	0.0	1.8	41.8#
126	0.0	0.0	38.6
125	0.0	0.0	33.5



#28
Indeno(1,2,3-cd)pyrene
Concen: 0.0779 ug/mL
RT: 14.244 min Scan# 1375
Delta R.T. -0.063 min
Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

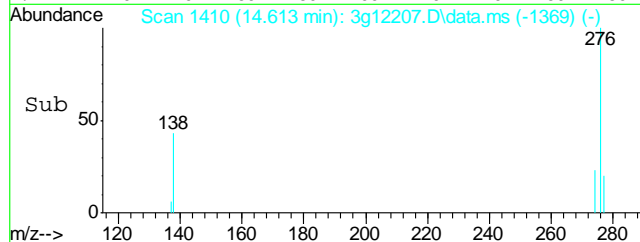
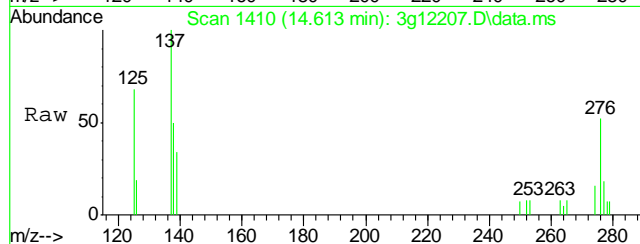
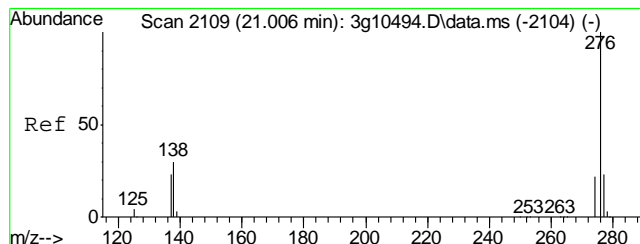
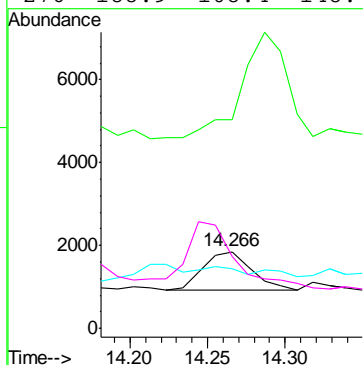
Tgt Ion:	276	Resp:	3728
Ion Ratio	Lower	Upper	
276	100		
138	0.0	16.6	56.6#
277	46.7	4.7	44.7#
278	54.0	57.9	97.9#





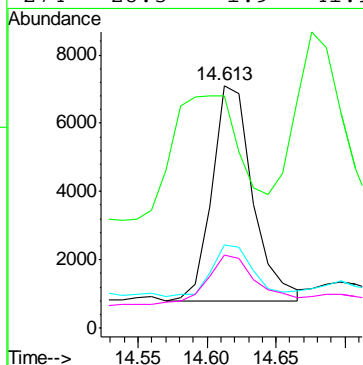
#29
Dibenz(a,h)anthracene
Concen: 0.0538 ug/mL
RT: 14.266 min Scan# 1377
Delta R.T. -0.063 min
Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

Tgt Ion:	278	Resp:	1974
Ion Ratio	Lower	Upper	
278	100		
139	445.7	7.8	47.8#
279	39.1	2.3	42.3
276	188.9	108.4	148.4#



#30
Benzo(g,h,i)perylene
Concen: 0.2971 ug/mL
RT: 14.613 min Scan# 1410
Delta R.T. -0.074 min
Lab File: 3g12207.D
Acq: 21 Nov 12 6:54 pm

Tgt Ion:	276	Resp:	13010
Ion Ratio	Lower	Upper	
276	100		
138	95.6	11.5	51.5#
277	24.5	2.9	42.9
274	28.3	1.9	41.9



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\112112\
 Data File : 3g12204.D
 Acq On : 21 Nov 2012 5:42 pm
 Operator : SARAHM1
 Sample : D40910-2, 4X
 Misc : OP6973,E3G576,30.12,,,1,4
 ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 26 08:55:38 2012
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G574.M
 Quant Title : PAHSIM BASE
 QLast Update : Wed Nov 21 08:48:23 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.751	136	185055	4.0000	ug/mL	-0.04
6) Acenaphthene-d10	7.472	164	99509	4.0000	ug/mL	-0.04
15) Phenanthrene-d10	8.948	188	153542	4.0000	ug/mL	-0.04
19) Chrysene-d12	11.590	240	114348	4.0000	ug/mL	-0.04
24) Perylene-d12	12.983	264	59358	4.0000	ug/mL	-0.05

System Monitoring Compounds

2) Nitrobenzene-d5	5.066	82	179450	10.0862	ug/mL	-0.04
Spiked Amount 50.000	Range 25 - 135		Recovery =	20.18%#		
7) 2-Fluorobiphenyl	6.799	172	399367	10.9022	ug/mL	-0.03
Spiked Amount 50.000	Range 25 - 135		Recovery =	21.80%#		
21) Terphenyl-d14	10.539	244	181062	12.1490	ug/mL	-0.04
Spiked Amount 50.000	Range 25 - 135		Recovery =	24.30%#		

Target Compounds

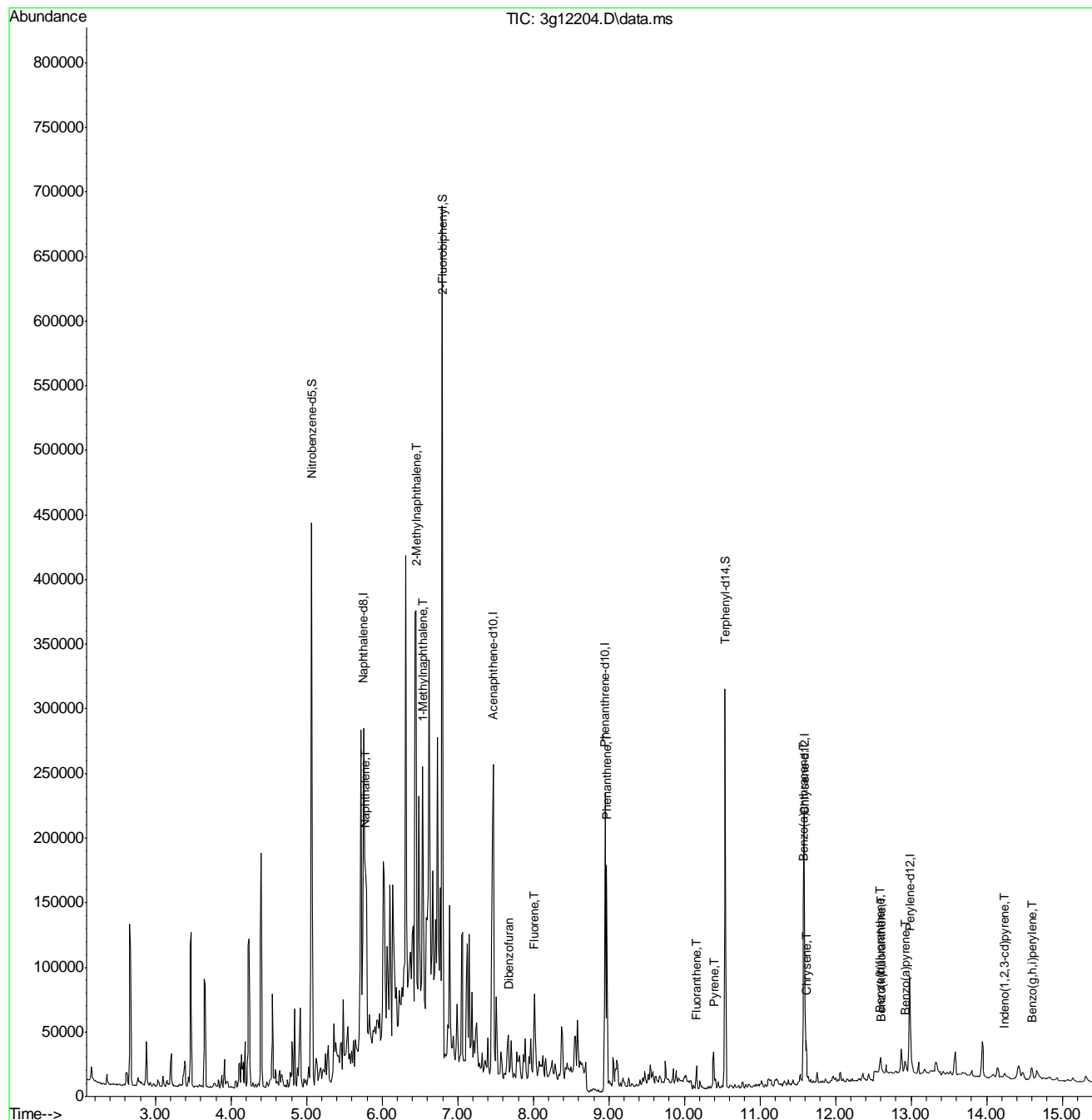
						Qvalue
3) N-Nitrosodimethylamine	0.000	74	0	N.D.	d	
4) N-Nitrosodi-propylamine	0.000	70	0	N.D.	d	
5) Naphthalene	5.776	128	136252	2.8149	ug/mL	95
8) 2-Methylnaphthalene	6.450	142	197219	6.3481	ug/mL	94
9) 1-Methylnaphthalene	6.537	142	78589	2.7132	ug/mL	89
10) Acenaphthylene	0.000	152	0	N.D.	d	
11) Acenaphthene	0.000	154	0	N.D.	d	
12) Dibenzofuran	7.673	168	12797	0.2572	ug/mL	74
13) Fluorene	8.015	166	26808	0.6593	ug/mL#	73
14) Diphenylamine	0.000	169	0	N.D.	d	
16) Phenanthrene	8.972	178	95649	1.7996	ug/mL	90
17) Anthracene	0.000	178	0	N.D.	d	
18) Fluoranthene	10.159	202	13840	0.2303	ug/mL#	38
20) Pyrene	10.388	202	17080	0.2721	ug/mL	89
22) Benzo(a)anthracene	11.577	228	7334	0.1437	ug/mL	94
23) Chrysene	11.610	228	23097	0.4152	ug/mL	94
25) Benzo(b)fluoranthene	12.593	252	8388m	0.2831	ug/mL	
26) Benzo(k)fluoranthene	12.604	252	3370m	0.0766	ug/mL	
27) Benzo(a)pyrene	12.919	252	6414	0.1570	ug/mL#	51
28) Indeno(1,2,3-cd)pyrene	14.234	276	2803	0.0629	ug/mL	85
29) Dibenz(a,h)anthracene	14.245	278	1634	N.D.		
30) Benzo(g,h,i)perylene	14.602	276	8424	0.2065	ug/mL	89

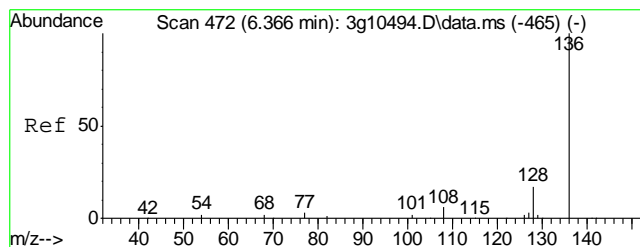
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\112112\
Data File : 3g12204.D
Acq On : 21 Nov 2012 5:42 pm
Operator : SARAHM1
Sample : D40910-2, 4X
Misc : OP6973,E3G576,30.12,,,1,4
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 26 08:55:38 2012
Quant Method : C:\msdchem\1\METHODS\SIMPE3G574.M
Quant Title : PAHSIM BASE
QLast Update : Wed Nov 21 08:48:23 2012
Response via : Initial Calibration





#1

Naphthalene-d8

Concen: 4.0000 ug/mL

RT: 5.751 min Scan# 454

Delta R.T. -0.037 min

Lab File: 3g12204.D

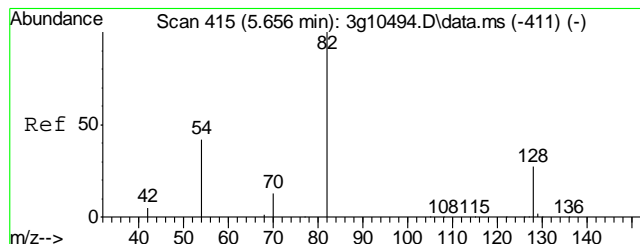
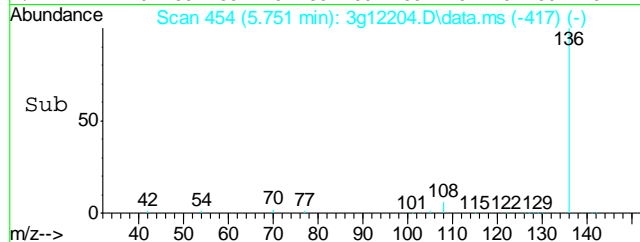
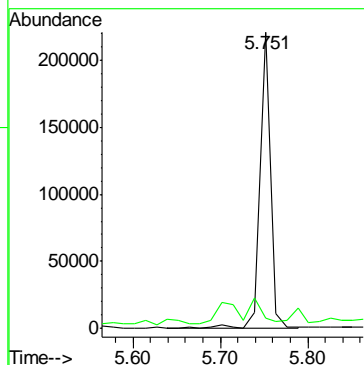
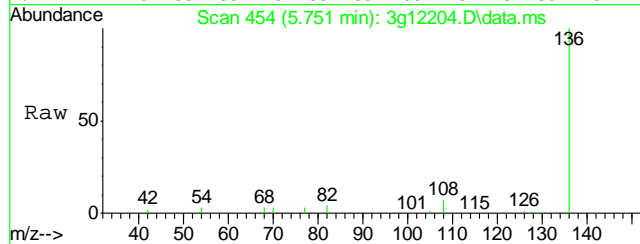
Acq: 21 Nov 12 5:42 pm

Tgt Ion: 136 Resp: 185055

Ion Ratio Lower Upper

136 100

68 5.6 0.0 27.8



#2

Nitrobenzene-d5

Concen: 10.0862 ug/mL

RT: 5.066 min Scan# 399

Delta R.T. -0.037 min

Lab File: 3g12204.D

Acq: 21 Nov 12 5:42 pm

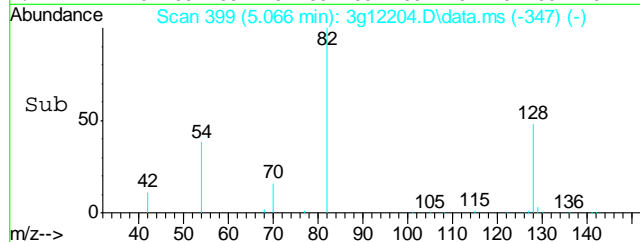
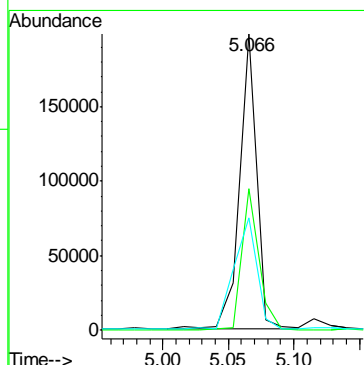
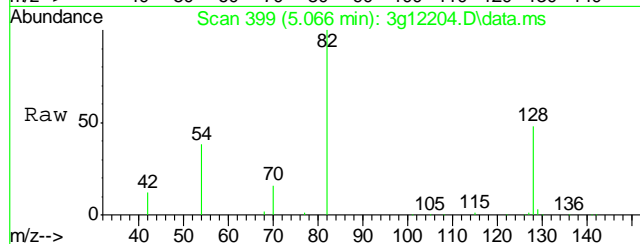
Tgt Ion: 82 Resp: 179450

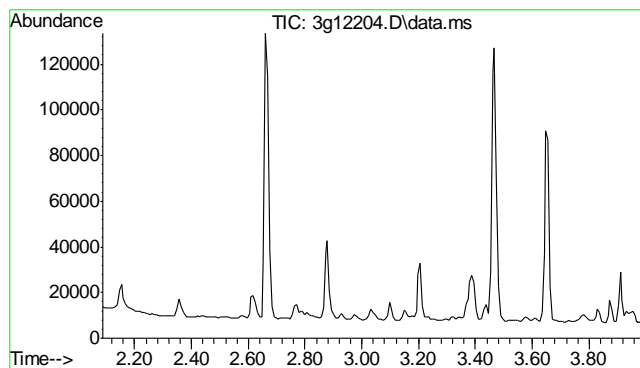
Ion Ratio Lower Upper

82 100

128 47.9 30.7 70.7

54 52.2 36.8 76.8

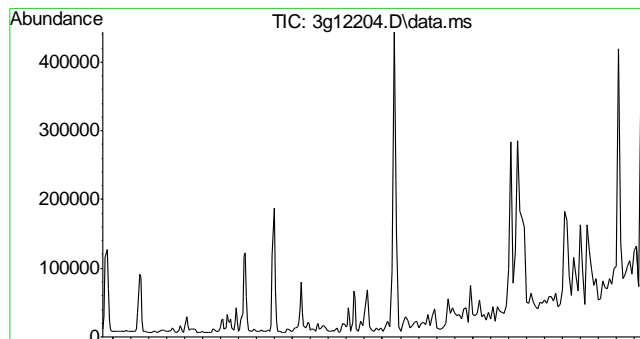
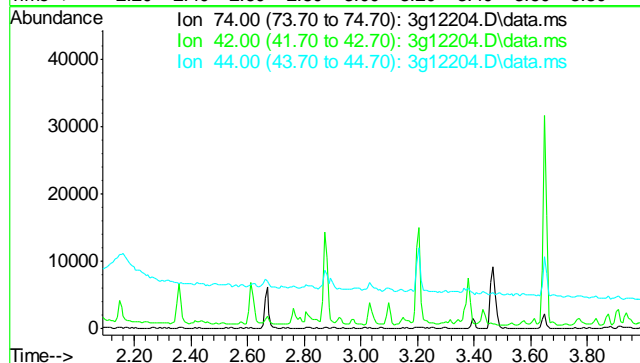




#3
N-Nitrosodimethylamine
Concen: N.D. ug/mL
Expected RT: 2.49 min

Lab File: 3g12204.D
Acq: 21 Nov 12 5:42 pm

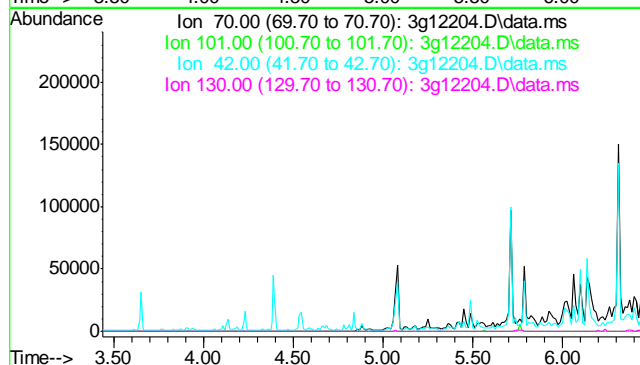
Tgt Ion:	74
Sig	Exp Ratio
74	100
42	73.9
44	4.2

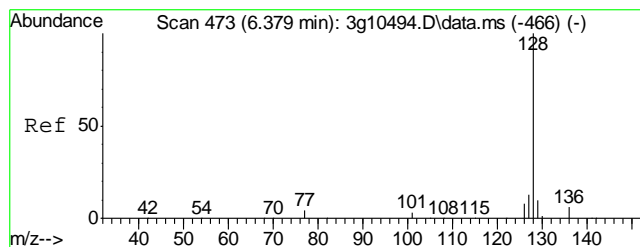


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 4.94 min

Lab File: 3g12204.D
Acq: 21 Nov 12 5:42 pm

Tgt Ion:	70
Sig	Exp Ratio
70	100
101	13.9
42	52.4
130	27.1





#5

Naphthalene

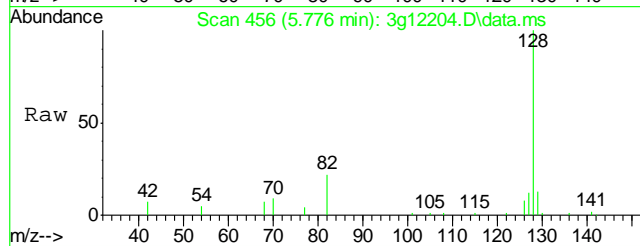
Concen: 2.8149 ug/mL

RT: 5.776 min Scan# 456

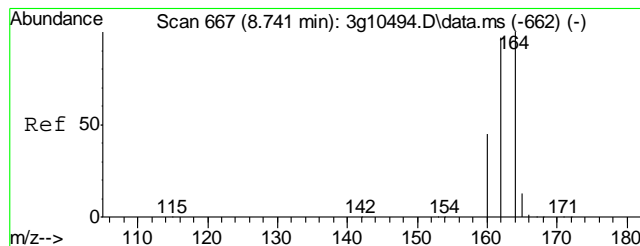
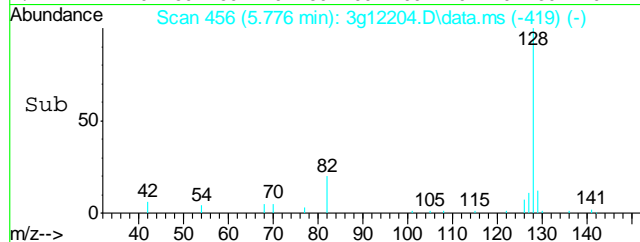
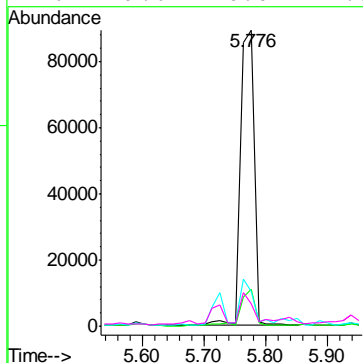
Delta R.T. -0.037 min

Lab File: 3g12204.D

Acq: 21 Nov 12 5:42 pm



Tgt Ion:	128	Resp:	136252
Ion Ratio	Lower	Upper	
128	100		
129	13.0	0.0	31.0
127	14.5	0.0	32.8
126	9.6	0.0	27.5



#6

Acenaphthene-d10

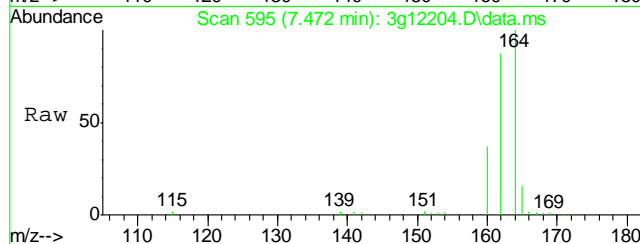
Concen: 4.0000 ug/mL

RT: 7.472 min Scan# 595

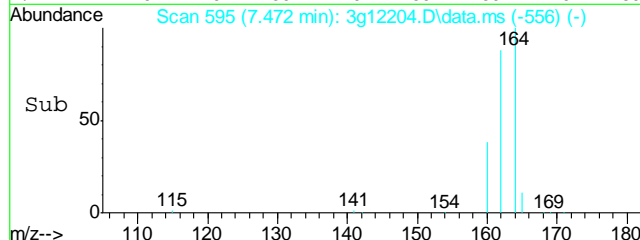
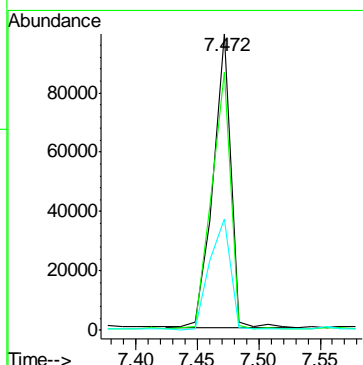
Delta R.T. -0.035 min

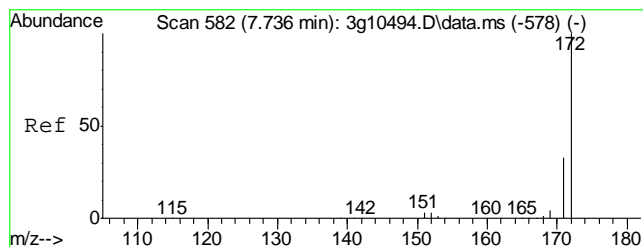
Lab File: 3g12204.D

Acq: 21 Nov 12 5:42 pm



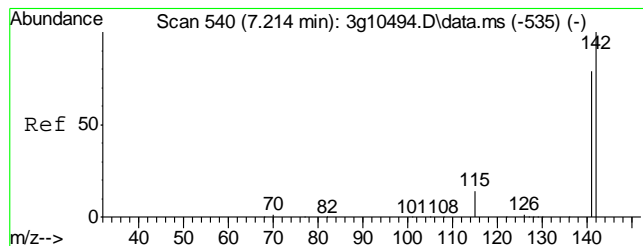
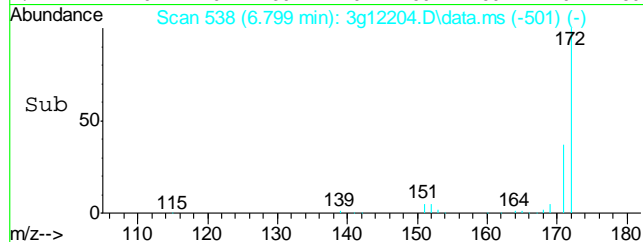
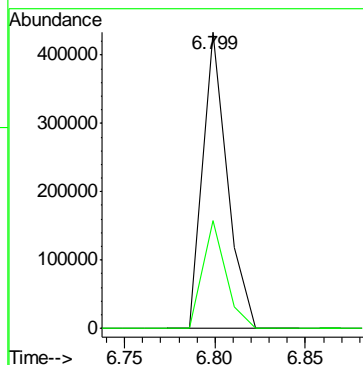
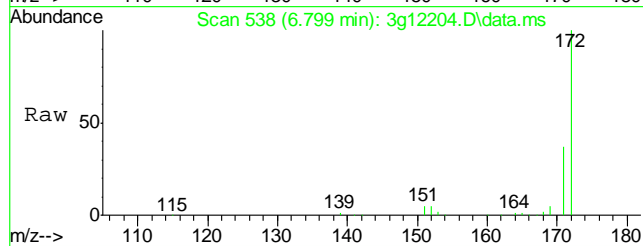
Tgt Ion:	164	Resp:	99509
Ion Ratio	Lower	Upper	
164	100		
162	93.3	78.1	118.1
160	44.0	28.0	68.0





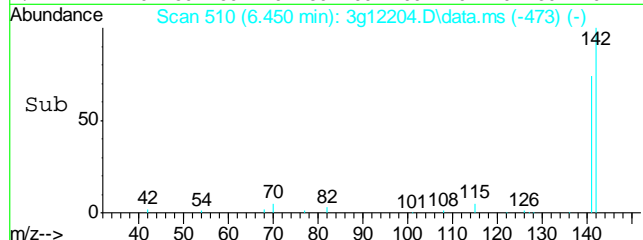
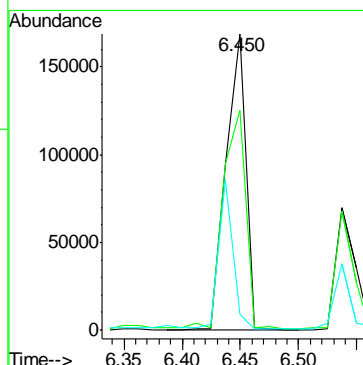
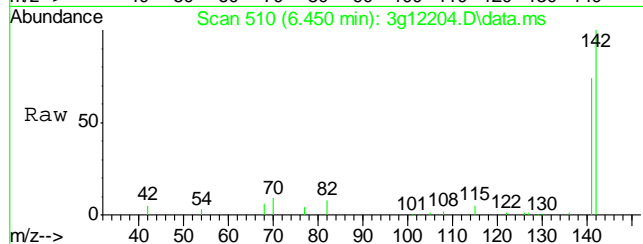
#7
2-Fluorobiphenyl
Concen: 10.9022 ug/mL
RT: 6.799 min Scan# 538
Delta R.T. -0.034 min
Lab File: 3g12204.D
Acq: 21 Nov 12 5:42 pm

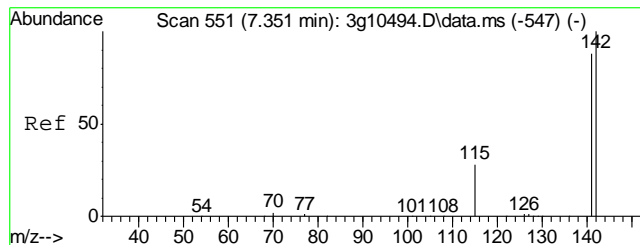
Tgt Ion:172 Resp: 399367
Ion Ratio Lower Upper
172 100
171 34.4 12.6 52.6



#8
2-Methylnaphthalene
Concen: 6.3481 ug/mL
RT: 6.450 min Scan# 510
Delta R.T. -0.037 min
Lab File: 3g12204.D
Acq: 21 Nov 12 5:42 pm

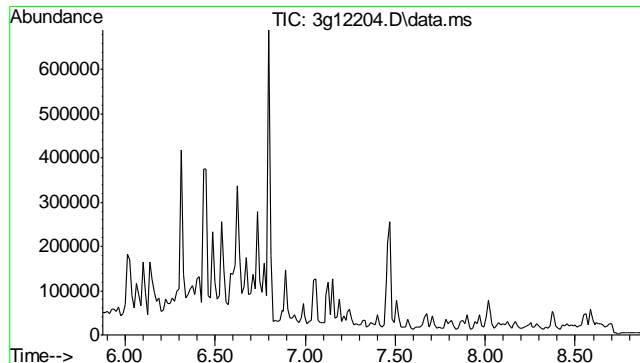
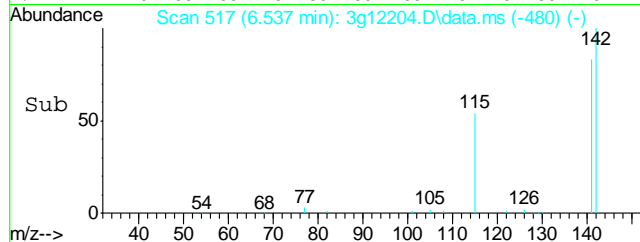
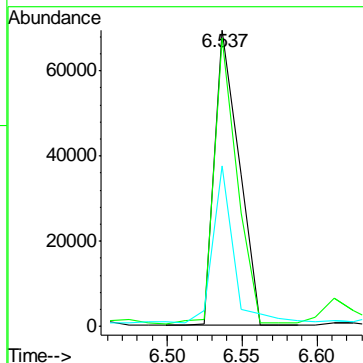
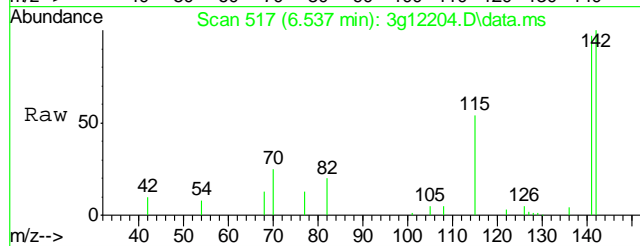
Tgt Ion:142 Resp: 197219
Ion Ratio Lower Upper
142 100
141 85.6 64.0 104.0
115 36.6 7.1 47.1





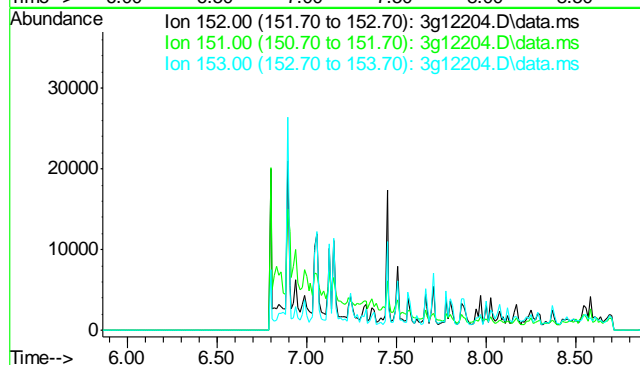
#9
1-Methylnaphthalene
Concen: 2.7132 ug/mL
RT: 6.537 min Scan# 517
Delta R.T. -0.037 min
Lab File: 3g12204.D
Acq: 21 Nov 12 5:42 pm

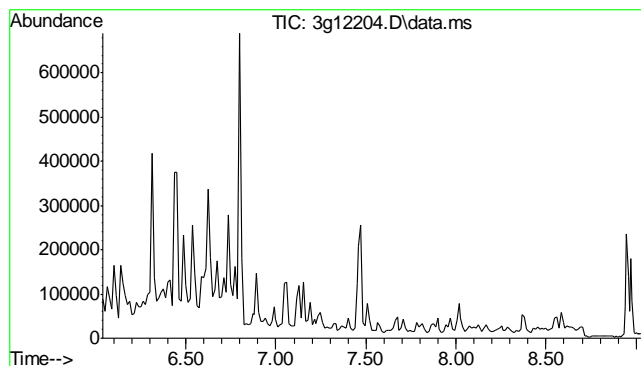
Tgt Ion	Ratio	Lower	Upper
142	100		
141	90.6	65.4	105.4
115	44.6	9.7	49.7



#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 7.37 min
Lab File: 3g12204.D
Acq: 21 Nov 12 5:42 pm

Tgt Ion	Sig	Exp Ratio
152	100	
151	19.3	
153	12.8	

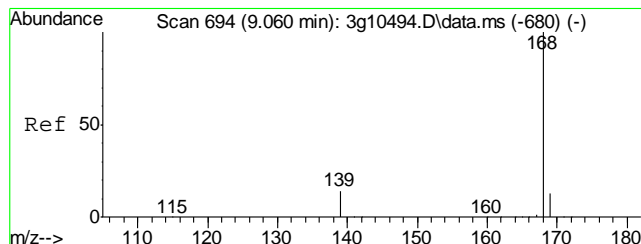
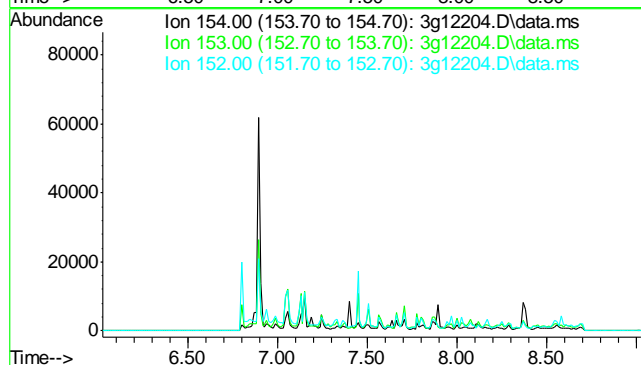




#11
Acenaphthene
Concen: N.D. ug/mL
Expected RT: 7.53 min

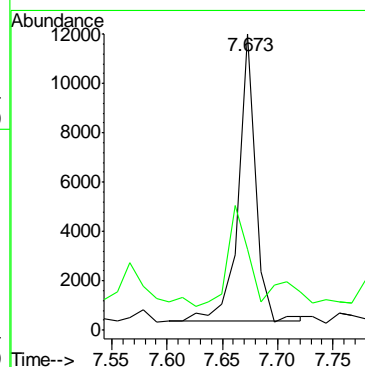
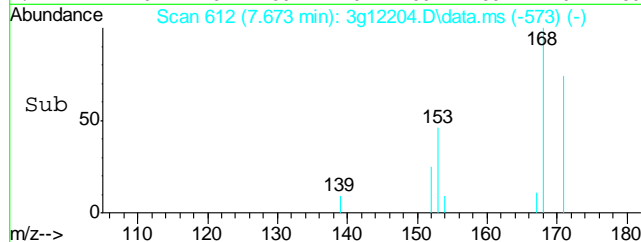
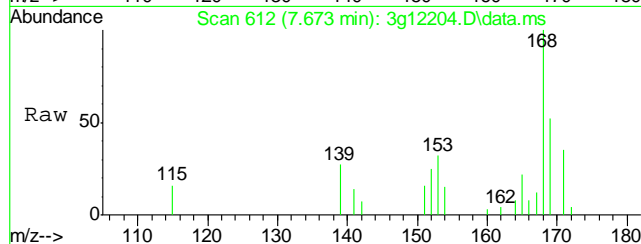
Lab File: 3g12204.D
Acq: 21 Nov 12 5:42 pm

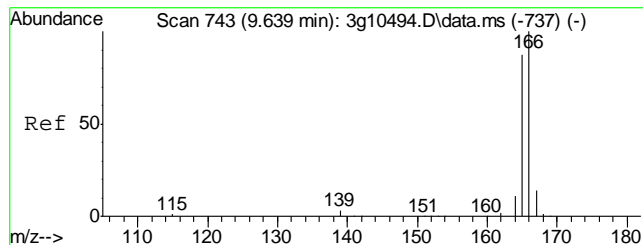
Tgt Ion: 154
Sig Exp Ratio
154 100
153 104.1
152 50.2



#12
Dibenzofuran
Concen: 0.2572 ug/mL
RT: 7.673 min Scan# 612
Delta R.T. -0.035 min
Lab File: 3g12204.D
Acq: 21 Nov 12 5:42 pm

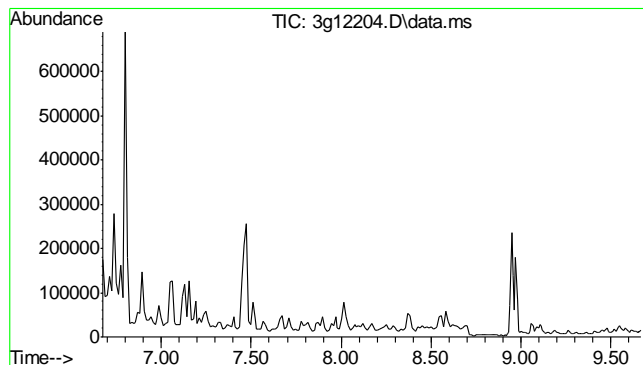
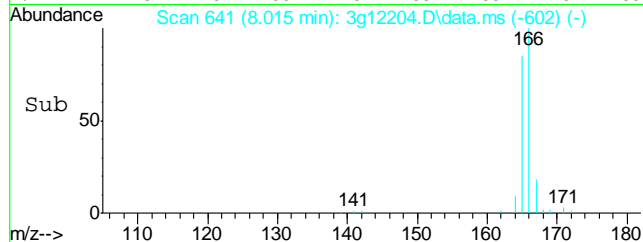
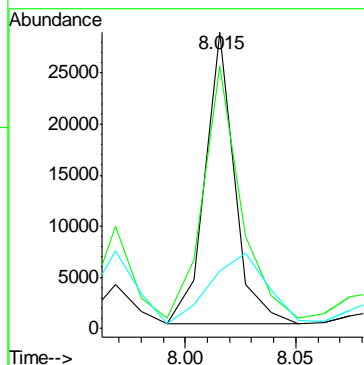
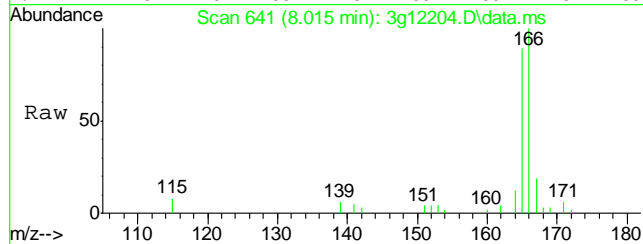
Tgt Ion: 168 Resp: 12797
Ion Ratio Lower Upper
168 100
139 45.1 10.9 50.9





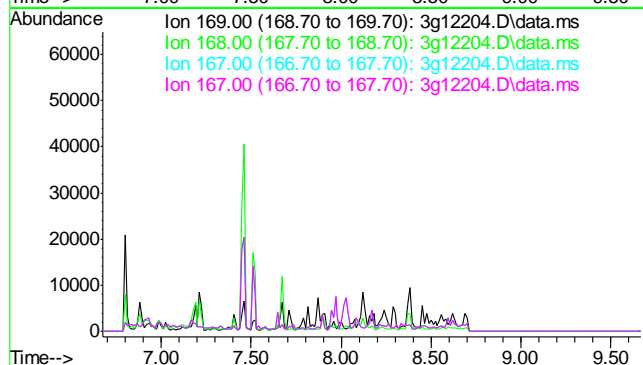
#13
Fluorene
Concen: 0.6593 ug/mL
RT: 8.015 min Scan# 641
Delta R.T. -0.035 min
Lab File: 3g12204.D
Acq: 21 Nov 12 5:42 pm

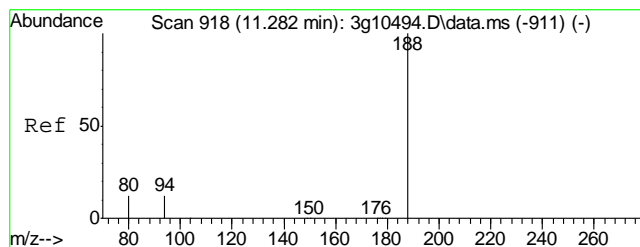
Tgt Ion	166	165	167
Resp	26808	106.9	46.6
Ratio	100	69.6	0.0
Lower			
Upper		109.6	33.5#



#14
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 8.17 min
Lab File: 3g12204.D
Acq: 21 Nov 12 5:42 pm

Tgt Ion	169	168	167
Sig	100	60.9	33.6
Exp Ratio			
		33.6	33.6





#15

Phenanthrene-d10

Concen: 4.0000 ug/mL

RT: 8.948 min Scan# 735

Delta R.T. -0.040 min

Lab File: 3g12204.D

Acq: 21 Nov 12 5:42 pm

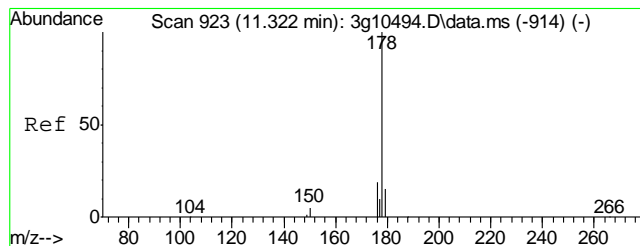
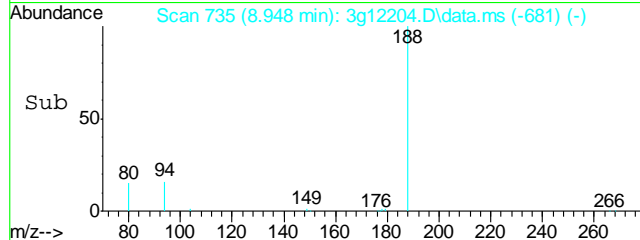
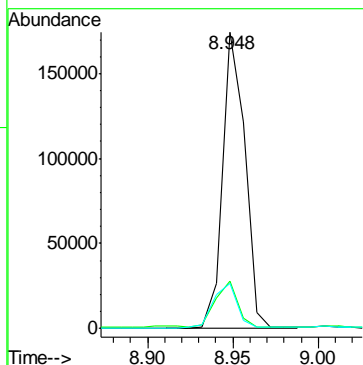
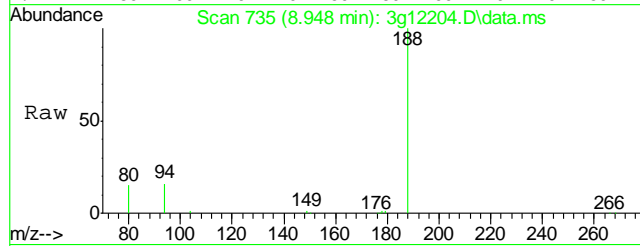
Tgt Ion:188 Resp: 153542

Ion Ratio Lower Upper

188 100

94 15.5 0.0 31.6

80 17.3 0.0 32.0



#16

Phenanthrene

Concen: 1.7996 ug/mL

RT: 8.972 min Scan# 738

Delta R.T. -0.039 min

Lab File: 3g12204.D

Acq: 21 Nov 12 5:42 pm

Tgt Ion:178 Resp: 95649

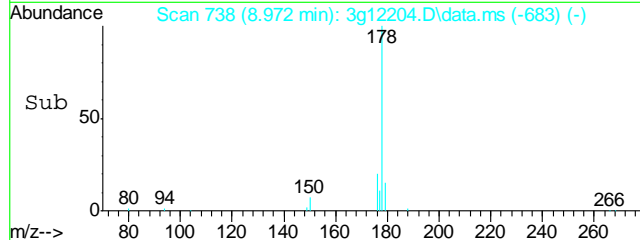
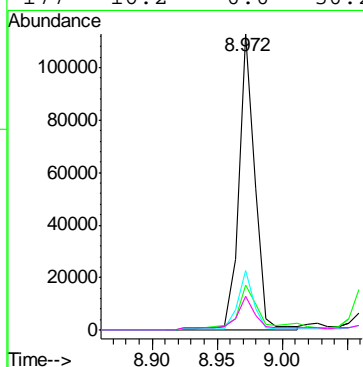
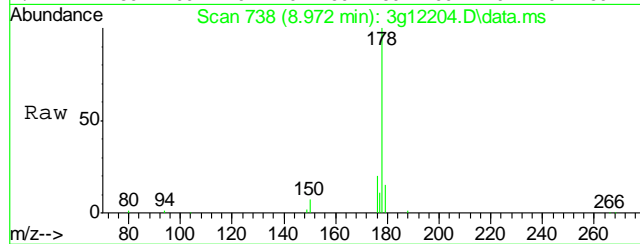
Ion Ratio Lower Upper

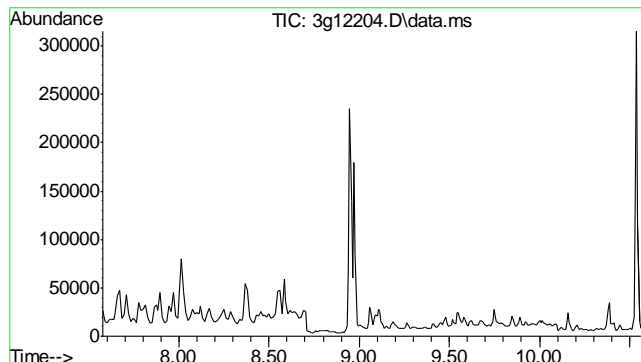
178 100

179 19.8 0.0 35.2

176 20.9 0.0 38.7

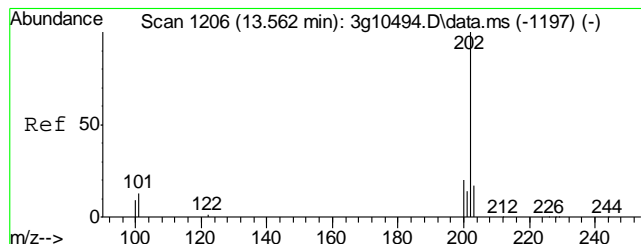
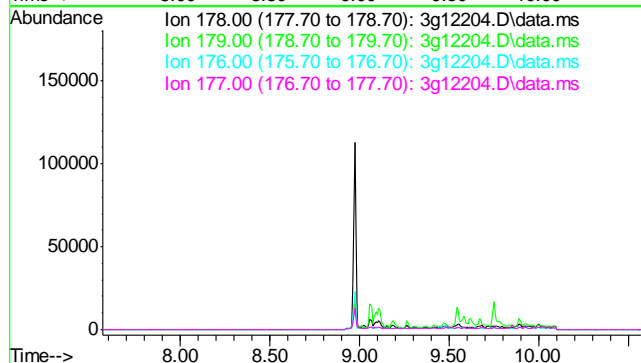
177 16.2 0.0 30.2





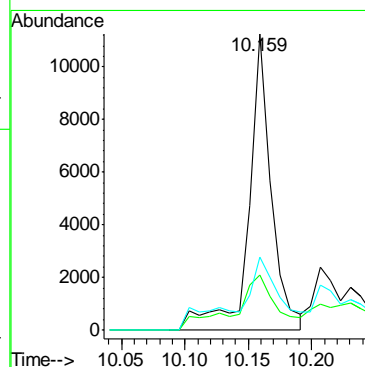
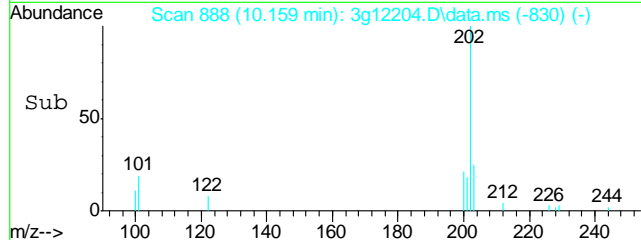
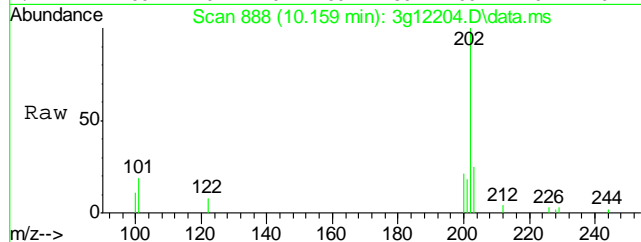
#17
 Anthracene
 Concen: N.D. ug/mL
 Expected RT: 9.07 min
 Lab File: 3g12204.D
 Acq: 21 Nov 12 5:42 pm

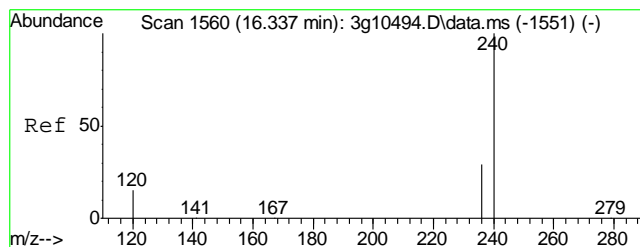
Tgt Ion: 178
 Sig Exp Ratio
 178 100
 179 15.3
 176 18.0
 177 8.7



#18
 Fluoranthene
 Concen: 0.2303 ug/mL
 RT: 10.159 min Scan# 888
 Delta R.T. -0.039 min
 Lab File: 3g12204.D
 Acq: 21 Nov 12 5:42 pm

Tgt Ion: 202 Resp: 13840
 Ion Ratio Lower Upper
 202 100
 101 34.4 0.0 31.8#
 203 45.5 0.0 37.3#





#19

Chrysene-d12

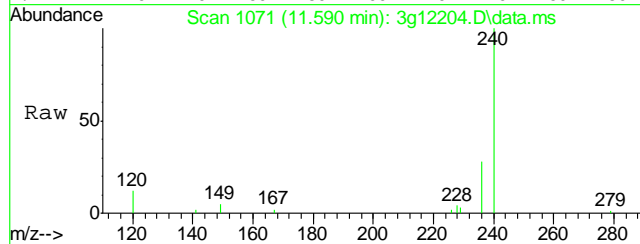
Concen: 4.0000 ug/mL

RT: 11.590 min Scan# 1071

Delta R.T. -0.040 min

Lab File: 3g12204.D

Acq: 21 Nov 12 5:42 pm



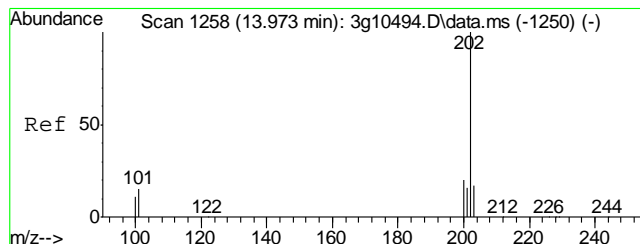
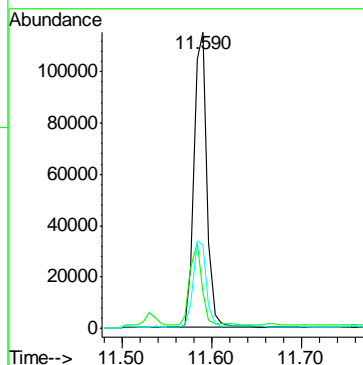
Tgt Ion: 240 Resp: 114348

Ion Ratio Lower Upper

240 100

120 28.0 0.0 38.3

236 31.0 10.7 50.7



#20

Pyrene

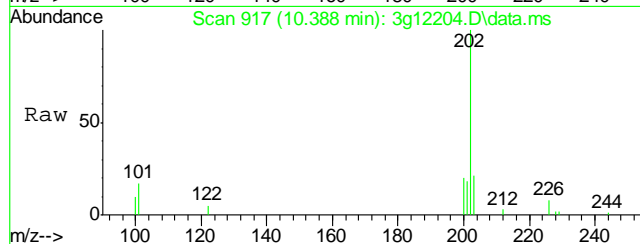
Concen: 0.2721 ug/mL

RT: 10.388 min Scan# 917

Delta R.T. -0.039 min

Lab File: 3g12204.D

Acq: 21 Nov 12 5:42 pm



Tgt Ion: 202 Resp: 17080

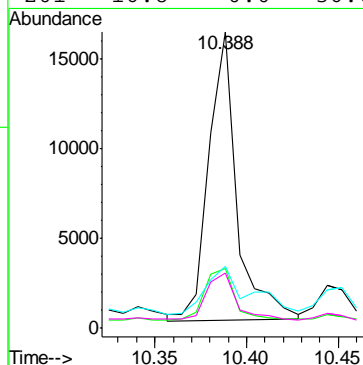
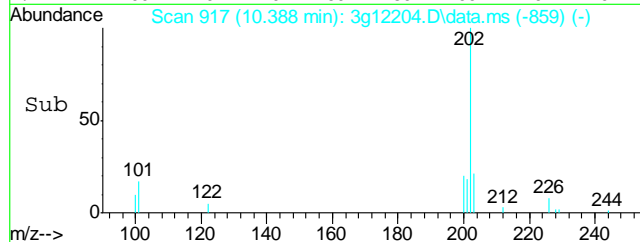
Ion Ratio Lower Upper

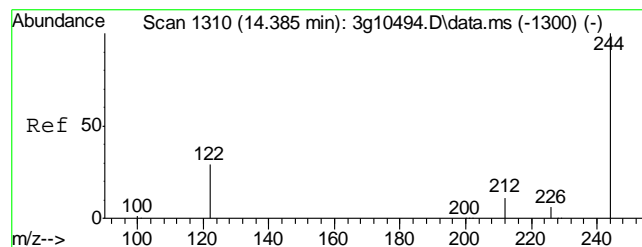
202 100

200 19.9 0.3 40.3

203 31.9 0.0 37.8

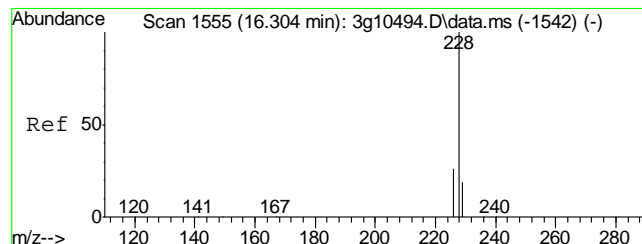
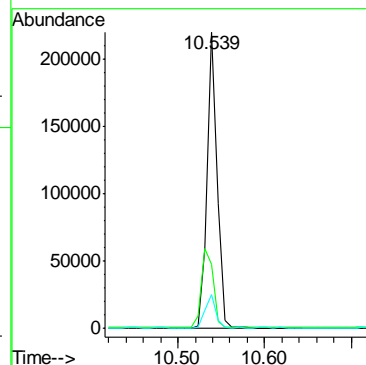
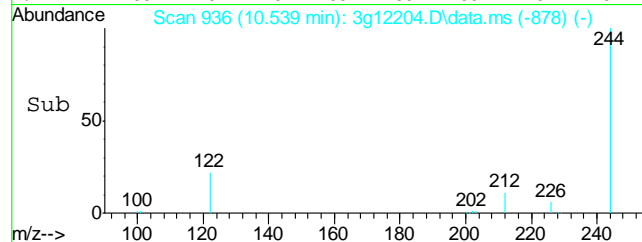
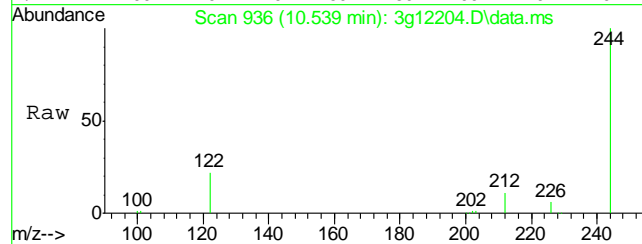
201 16.8 0.0 36.6





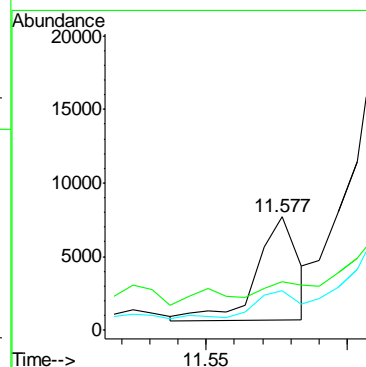
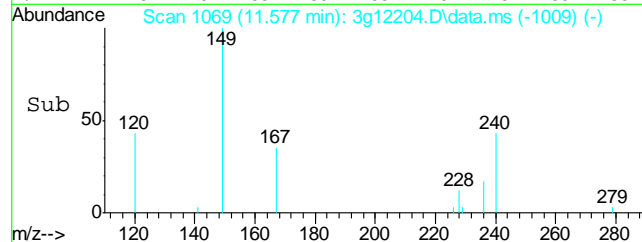
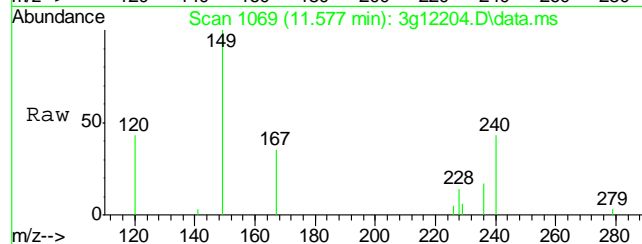
#21
Terphenyl-d14
Concen: 12.1490 ug/mL
RT: 10.539 min Scan# 936
Delta R.T. -0.040 min
Lab File: 3g12204.D
Acq: 21 Nov 12 5:42 pm

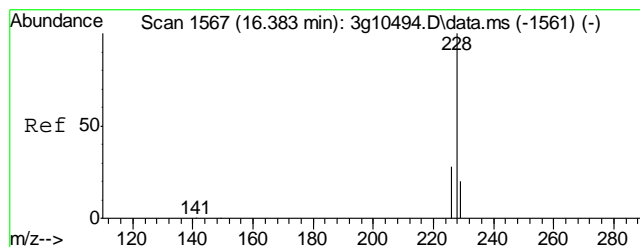
Tgt Ion:	244	Resp:	181062
Ion Ratio	Lower	Upper	
244	100		
122	31.4	4.9	44.9
212	11.4	0.0	32.5



#22
Benzo(a)anthracene
Concen: 0.1437 ug/mL
RT: 11.577 min Scan# 1069
Delta R.T. -0.040 min
Lab File: 3g12204.D
Acq: 21 Nov 12 5:42 pm

Tgt Ion:	228	Resp:	7334
Ion Ratio	Lower	Upper	
228	100		
229	14.6	0.0	39.5
226	28.0	6.8	46.8





#23

Chrysene

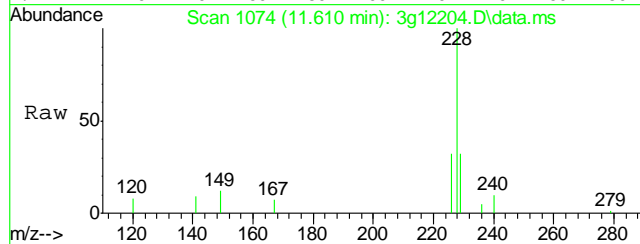
Concen: 0.4152 ug/mL

RT: 11.610 min Scan# 1074

Delta R.T. -0.040 min

Lab File: 3g12204.D

Acq: 21 Nov 12 5:42 pm



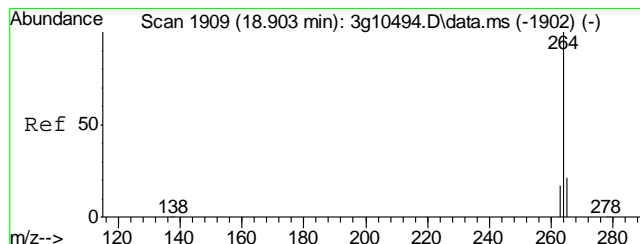
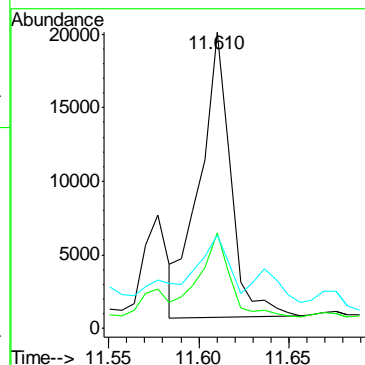
Tgt Ion: 228 Resp: 23097

Ion Ratio Lower Upper

228 100

226 29.9 8.9 48.9

229 25.3 0.0 39.4



#24

Perylene-d12

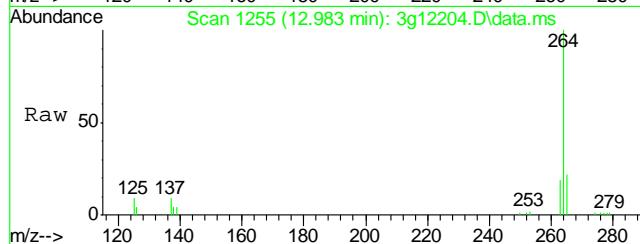
Concen: 4.0000 ug/mL

RT: 12.983 min Scan# 1255

Delta R.T. -0.053 min

Lab File: 3g12204.D

Acq: 21 Nov 12 5:42 pm



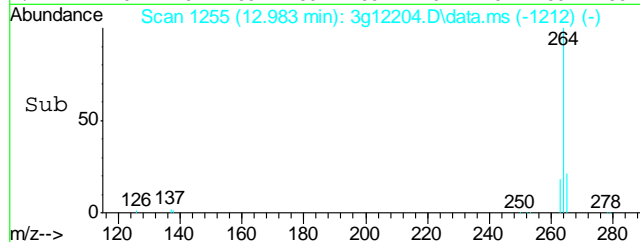
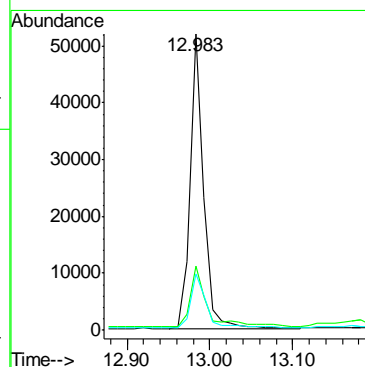
Tgt Ion: 264 Resp: 59358

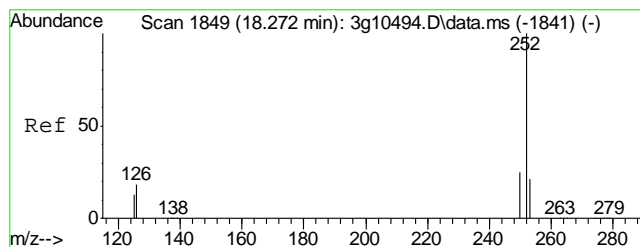
Ion Ratio Lower Upper

264 100

265 25.0 1.5 41.5

263 21.3 0.0 39.4





#25

Benzo(b)fluoranthene

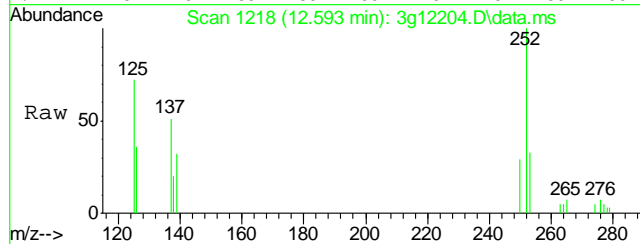
Concen: 0.2831 ug/mL m

RT: 12.593 min Scan# 1218

Delta R.T. -0.042 min

Lab File: 3g12204.D

Acq: 21 Nov 12 5:42 pm



Tgt Ion: 252 Resp: 8388

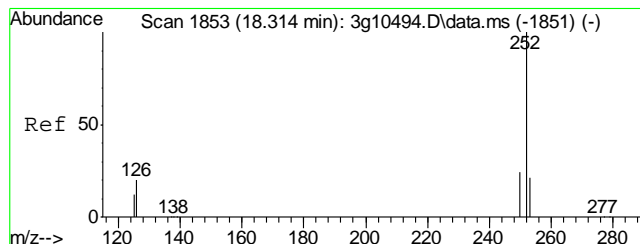
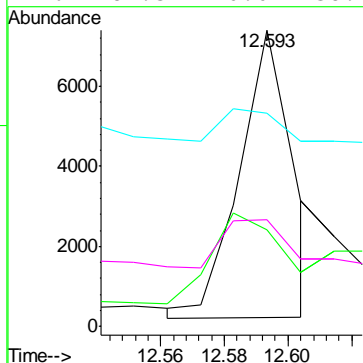
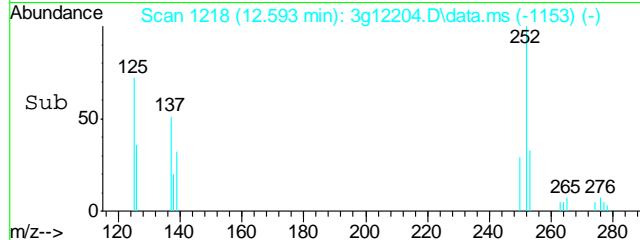
Ion Ratio Lower Upper

252 100

253 101.6 26.7 66.7#

125 0.0 0.0 33.5

126 82.3 0.0 38.7#



#26

Benzo(k)fluoranthene

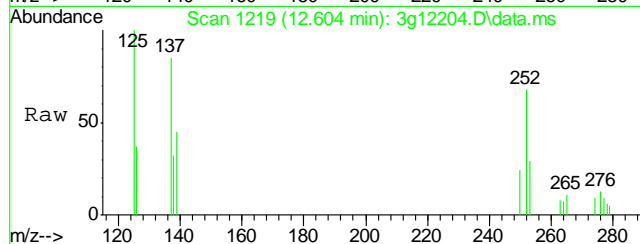
Concen: 0.0766 ug/mL m

RT: 12.604 min Scan# 1219

Delta R.T. -0.063 min

Lab File: 3g12204.D

Acq: 21 Nov 12 5:42 pm



Tgt Ion: 252 Resp: 3370

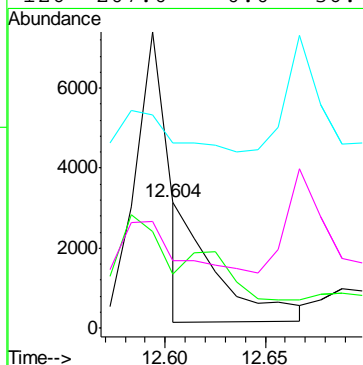
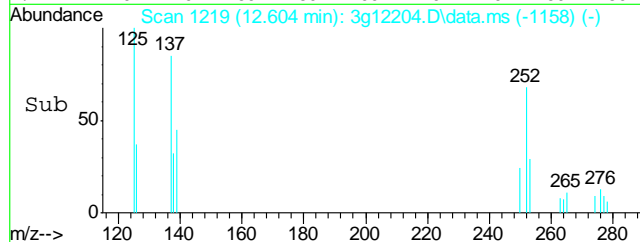
Ion Ratio Lower Upper

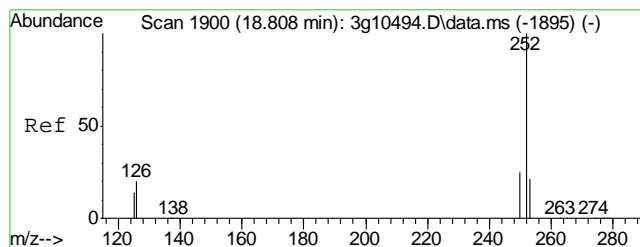
252 100

253 255.6 20.8 60.8#

125 0.0 0.0 31.8

126 207.0 0.0 36.4#





#27

Benzo(a)pyrene

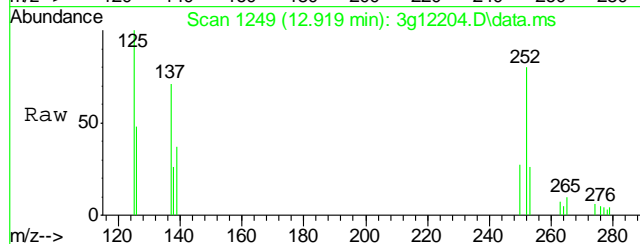
Concen: 0.1570 ug/mL

RT: 12.919 min Scan# 1249

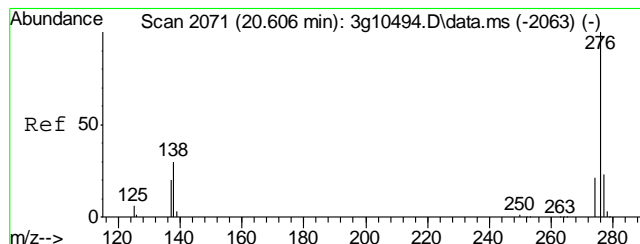
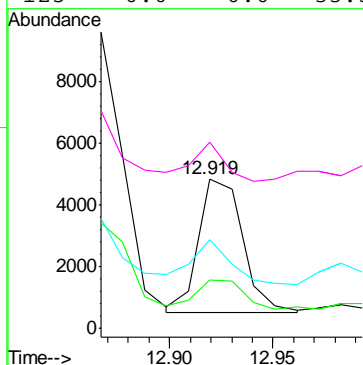
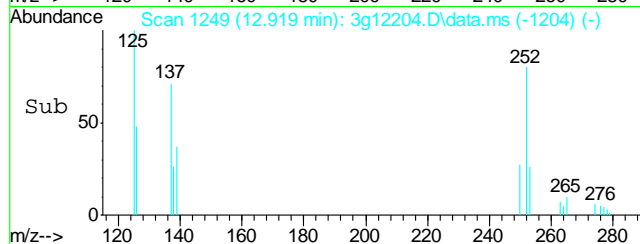
Delta R.T. -0.053 min

Lab File: 3g12204.D

Acq: 21 Nov 12 5:42 pm



Tgt Ion:	252	Resp:	6414
Ion Ratio	Lower	Upper	
252	100		
253	35.3	1.8	41.8
126	56.3	0.0	38.6#
125	0.0	0.0	33.5



#28

Indeno(1,2,3-cd)pyrene

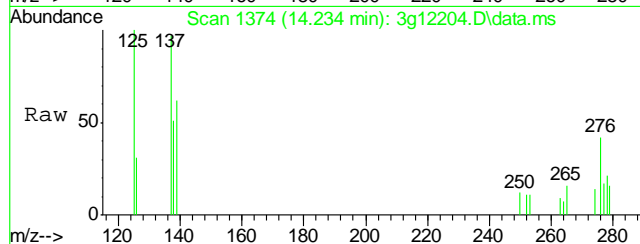
Concen: 0.0629 ug/mL

RT: 14.234 min Scan# 1374

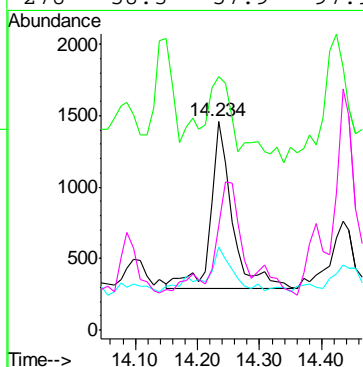
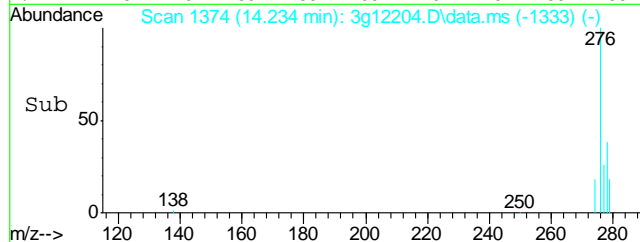
Delta R.T. -0.074 min

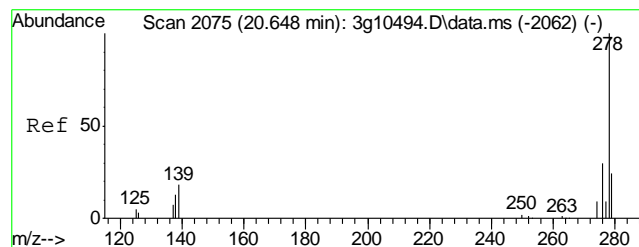
Lab File: 3g12204.D

Acq: 21 Nov 12 5:42 pm



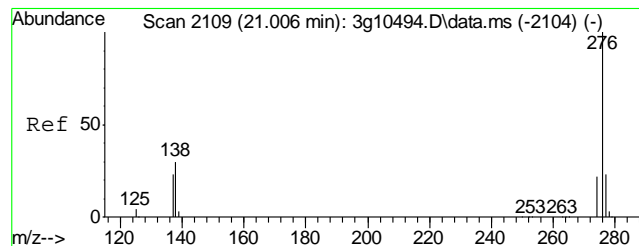
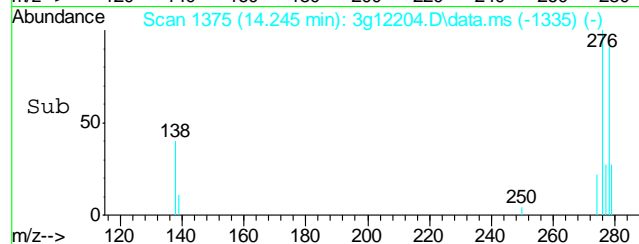
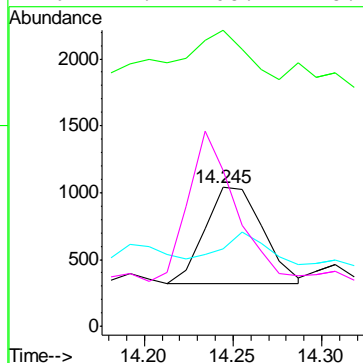
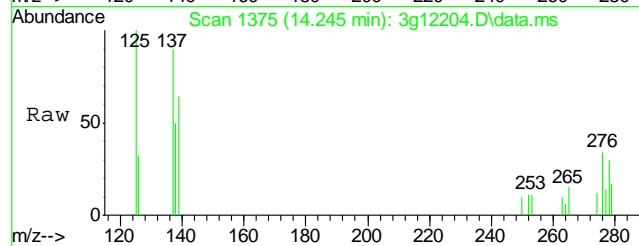
Tgt Ion:	276	Resp:	2803
Ion Ratio	Lower	Upper	
276	100		
138	41.1	16.6	56.6
277	24.2	4.7	44.7
278	58.3	57.9	97.9





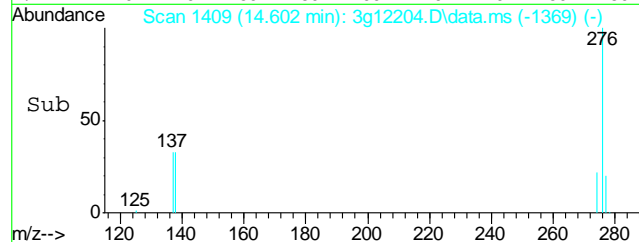
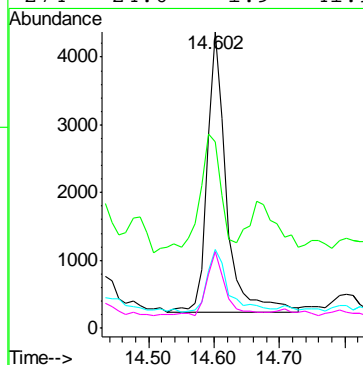
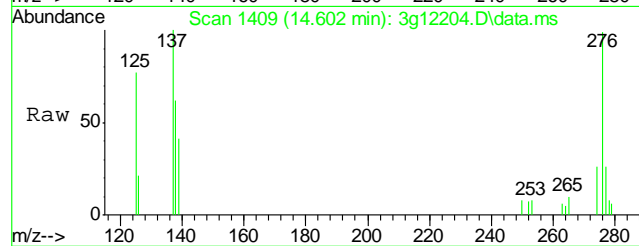
#29
Dibenzo(a,h)anthracene
Concen: Below ug/mL
RT: 14.245 min Scan# 1375
Delta R.T. -0.084 min
Lab File: 3g12204.D
Acq: 21 Nov 12 5:42 pm

Tgt Ion: 278 Resp: 1634
Ion Ratio Lower Upper
278 100
139 43.8 7.8 47.8
279 27.6 2.3 42.3
276 174.7 108.4 148.4#



#30
Benzo(g,h,i)perylene
Concen: 0.2065 ug/mL
RT: 14.602 min Scan# 1409
Delta R.T. -0.084 min
Lab File: 3g12204.D
Acq: 21 Nov 12 5:42 pm

Tgt Ion: 276 Resp: 8424
Ion Ratio Lower Upper
276 100
138 43.1 11.5 51.5
277 24.3 2.9 42.9
274 24.0 1.9 41.9



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\112112\
 Data File : 3g12210.D
 Acq On : 21 Nov 2012 8:06 pm
 Operator : SARAHM1
 Sample : D40910-2
 Misc : OP6973,E3G576,30.12,,,1,1
 ALS Vial : 17 Sample Multiplier: 1

Quant Time: Nov 26 09:06:51 2012
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G574.M
 Quant Title : PAHSIM BASE
 QLast Update : Wed Nov 21 08:48:23 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.751	136	214894	4.0000	ug/mL	-0.04
6) Acenaphthene-d10	7.472	164	132275	4.0000	ug/mL	-0.04
15) Phenanthrene-d10	8.956	188	169163	4.0000	ug/mL	-0.03
19) Chrysene-d12	11.590	240	102091	4.0000	ug/mL	-0.04
24) Perylene-d12	12.982	264	52335	4.0000	ug/mL	-0.05

System Monitoring Compounds

2) Nitrobenzene-d5	5.066	82	825618	39.9612	ug/mL	-0.04
Spiked Amount 50.000	Range 25 - 135		Recovery =	79.92%		
7) 2-Fluorobiphenyl	6.810	172	1624540	33.6525	ug/mL	-0.02
Spiked Amount 50.000	Range 25 - 135		Recovery =	67.30%		
21) Terphenyl-d14	10.547	244	584943	43.9612	ug/mL	-0.03
Spiked Amount 50.000	Range 25 - 135		Recovery =	87.92%		

Target Compounds

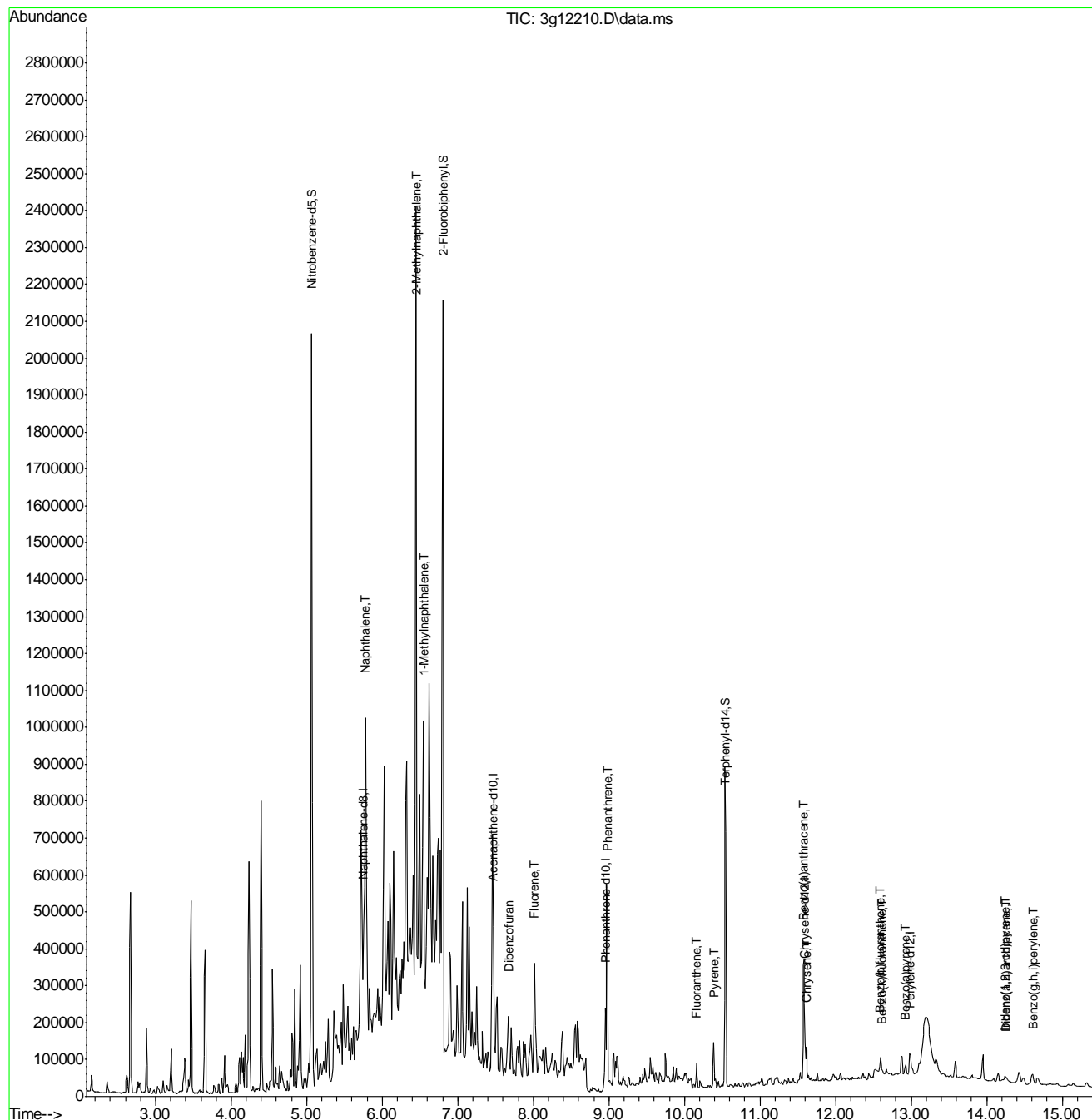
						Qvalue
3) N-Nitrosodimethylamine	0.000	74	0	N.D.	d	
4) N-Nitrosodi-propylamine	0.000	70	0	N.D.	d	
5) Naphthalene	5.776	128	642558	11.4317	ug/mL	96
8) 2-Methylnaphthalene	6.449	142	885961	21.4533	ug/mL	96
9) 1-Methylnaphthalene	6.549	142	336432	8.7377	ug/mL	92
10) Acenaphthylene	0.000	152	0	N.D.	d	
11) Acenaphthene	0.000	154	0	N.D.	d	
12) Dibenzofuran	7.673	168	51100	0.7725	ug/mL	77
13) Fluorene	8.015	166	114732	2.1227	ug/mL#	70
14) Diphenylamine	0.000	169	0	N.D.	d	
16) Phenanthrene	8.979	178	372456	6.4796	ug/mL	91
17) Anthracene	0.000	178	0	N.D.	d	
18) Fluoranthene	10.159	202	40033m	0.6045	ug/mL	
20) Pyrene	10.388	202	61613	1.0994	ug/mL	92
22) Benzo(a)anthracene	11.577	228	25349	0.5565	ug/mL	91
23) Chrysene	11.610	228	75799m	1.5262	ug/mL	
25) Benzo(b)fluoranthene	12.593	252	30590m	0.8296	ug/mL	
26) Benzo(k)fluoranthene	12.614	252	6058m	0.1562	ug/mL	
27) Benzo(a)pyrene	12.930	252	20659	0.5735	ug/mL#	73
28) Indeno(1,2,3-cd)pyrene	14.244	276	8751	0.2227	ug/mL#	39
29) Dibenz(a,h)anthracene	14.255	278	6227	0.2068	ug/mL#	57
30) Benzo(g,h,i)perylene	14.612	276	23547	0.6546	ug/mL#	84

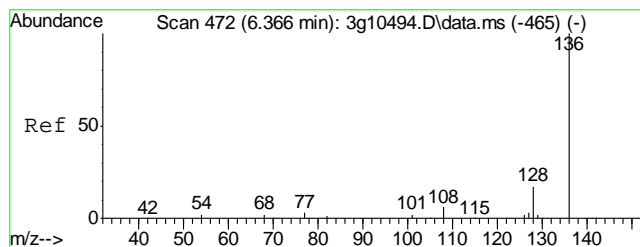
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\112112\
Data File : 3g12210.D
Acq On : 21 Nov 2012 8:06 pm
Operator : SARAHM1
Sample : D40910-2
Misc : OP6973,E3G576,30.12,,,1,1
ALS Vial : 17 Sample Multiplier: 1

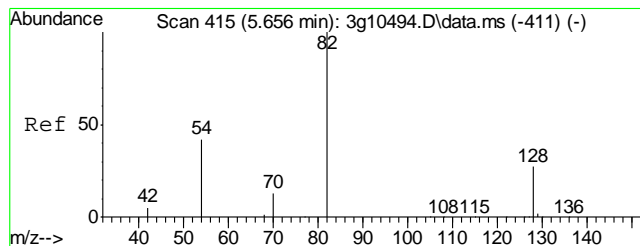
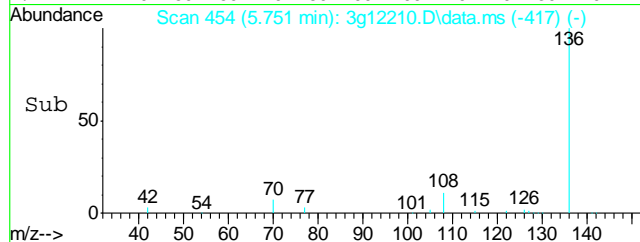
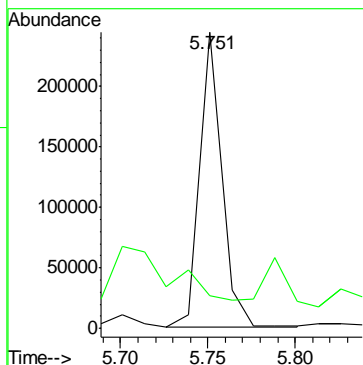
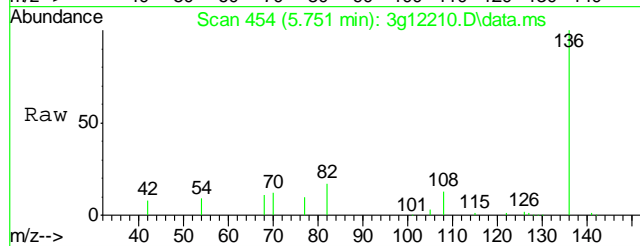
Quant Time: Nov 26 09:06:51 2012
Quant Method : C:\msdchem\1\METHODS\SIMPE3G574.M
Quant Title : PAHSIM BASE
QLast Update : Wed Nov 21 08:48:23 2012
Response via : Initial Calibration





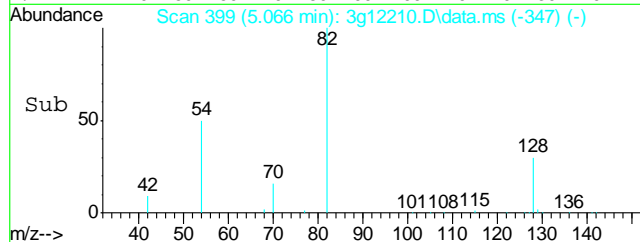
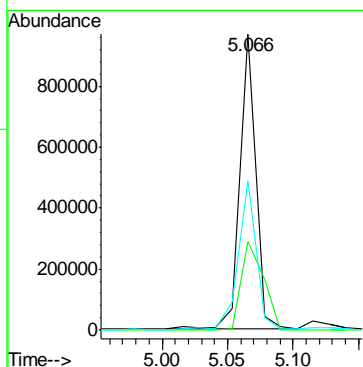
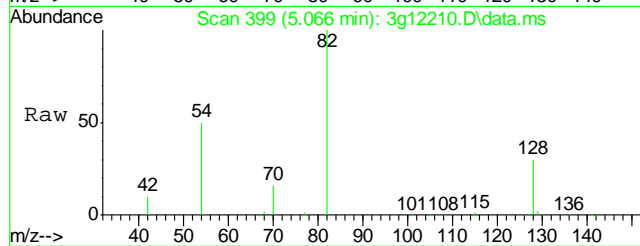
#1
Naphthalene-d8
Concen: 4.0000 ug/mL
RT: 5.751 min Scan# 454
Delta R.T. -0.038 min
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

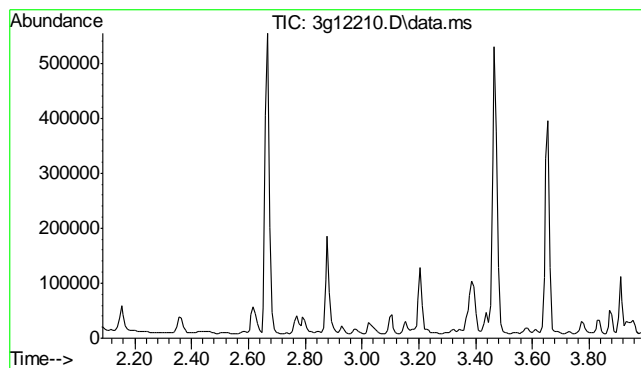
Tgt Ion	Ratio	Lower	Upper
136	100		
68	18.0	0.0	27.8



#2
Nitrobenzene-d5
Concen: 39.9612 ug/mL
RT: 5.066 min Scan# 399
Delta R.T. -0.037 min
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

Tgt Ion	Ratio	Lower	Upper
82	100		
128	41.9	30.7	70.7
54	57.2	36.8	76.8

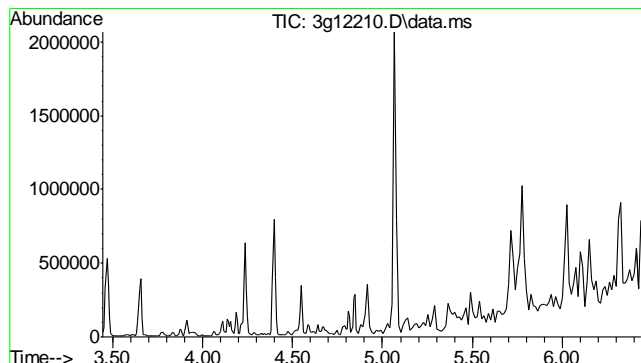
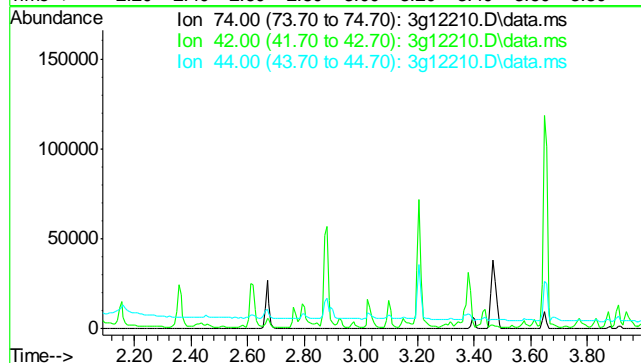




#3
N-Nitrosodimethylamine
Concen: N.D. ug/mL
Expected RT: 2.49 min

Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

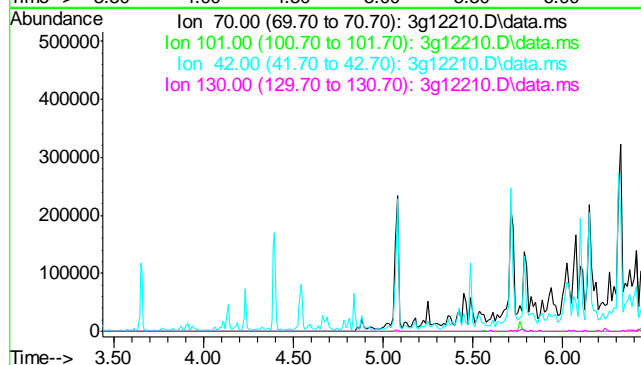
Tgt Ion	Exp Ratio
74	100
42	73.9
44	4.2

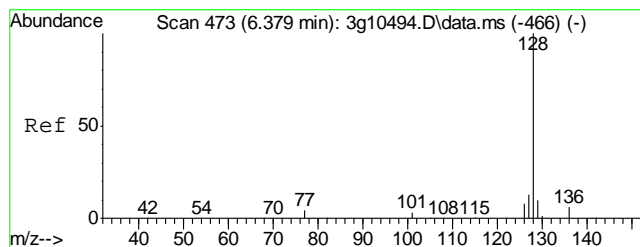


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 4.94 min

Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

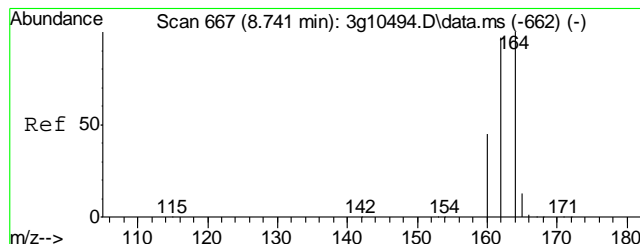
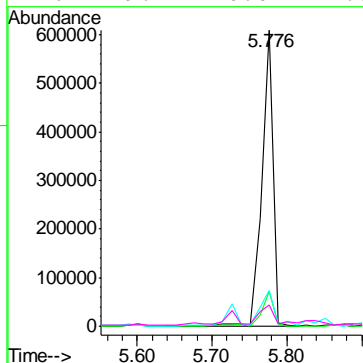
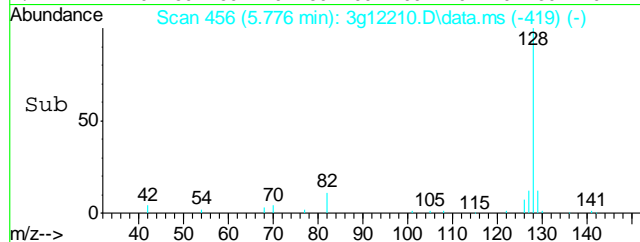
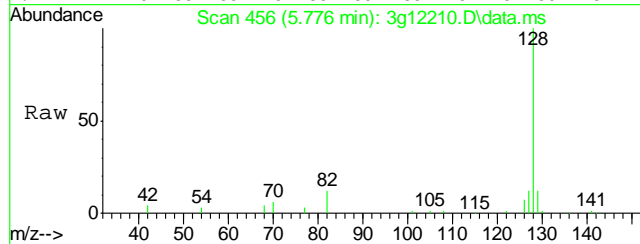
Tgt Ion	Exp Ratio
70	100
101	13.9
42	52.4
130	27.1





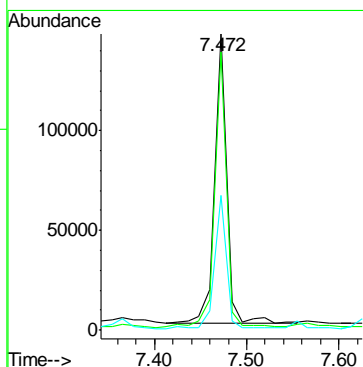
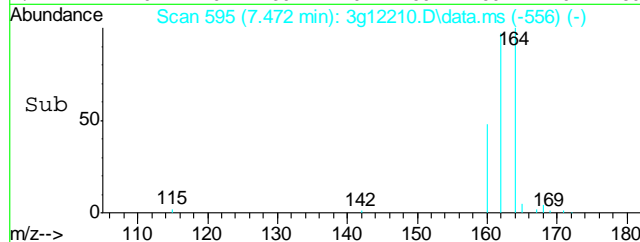
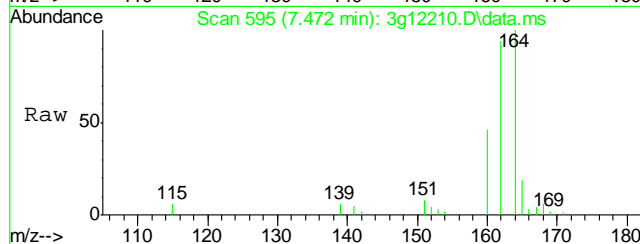
#5
Naphthalene
Concen: 11.4317 ug/mL
RT: 5.776 min Scan# 456
Delta R.T. -0.038 min
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

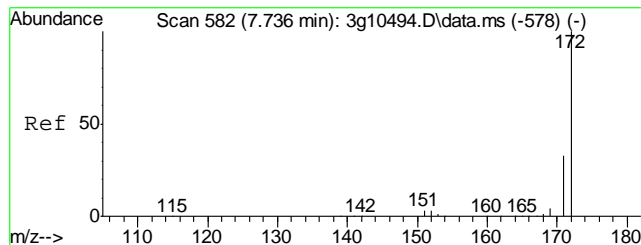
Tgt Ion:	128	Resp:	642558
Ion Ratio	Lower	Upper	
128	100		
129	12.9	0.0	31.0
127	14.2	0.0	32.8
126	9.1	0.0	27.5



#6
Acenaphthene-d10
Concen: 4.0000 ug/mL
RT: 7.472 min Scan# 595
Delta R.T. -0.036 min
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

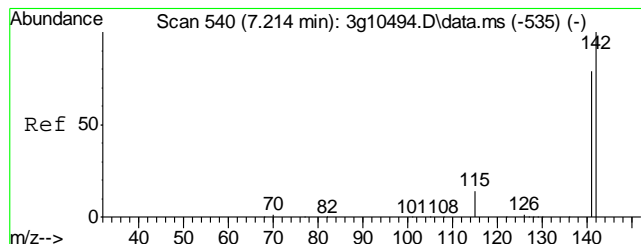
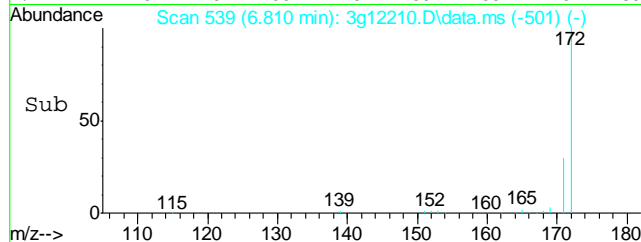
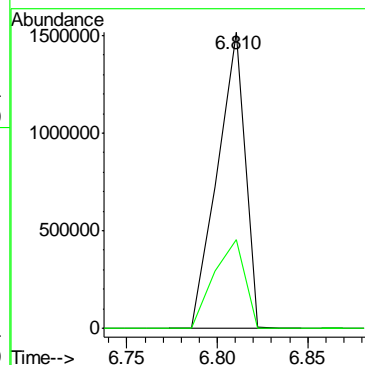
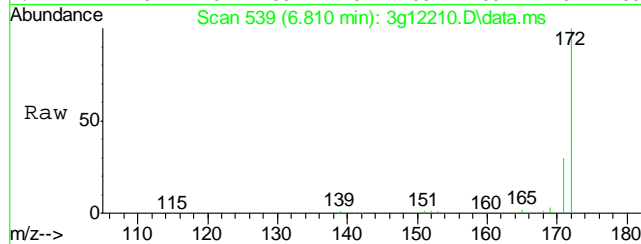
Tgt Ion:	164	Resp:	132275
Ion Ratio	Lower	Upper	
164	100		
162	90.2	78.1	118.1
160	43.9	28.0	68.0





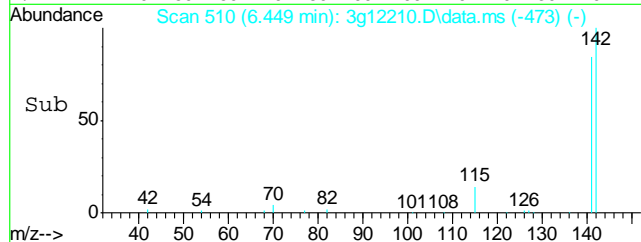
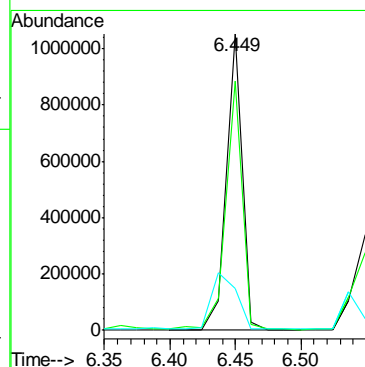
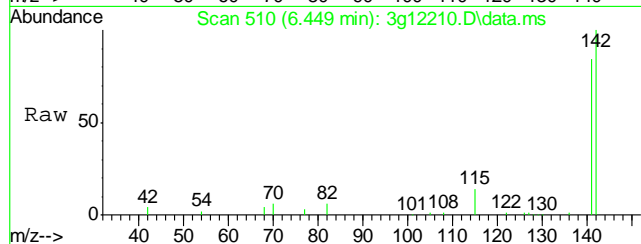
#7
2-Fluorobiphenyl
Concen: 33.6525 ug/mL
RT: 6.810 min Scan# 539
Delta R.T. -0.023 min
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

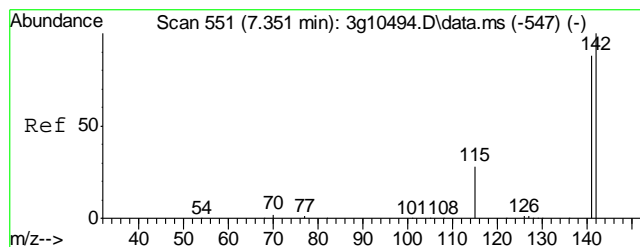
Tgt Ion:172 Resp: 1624540
Ion Ratio Lower Upper
172 100
171 33.4 12.6 52.6



#8
2-Methylnaphthalene
Concen: 21.4533 ug/mL
RT: 6.449 min Scan# 510
Delta R.T. -0.037 min
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

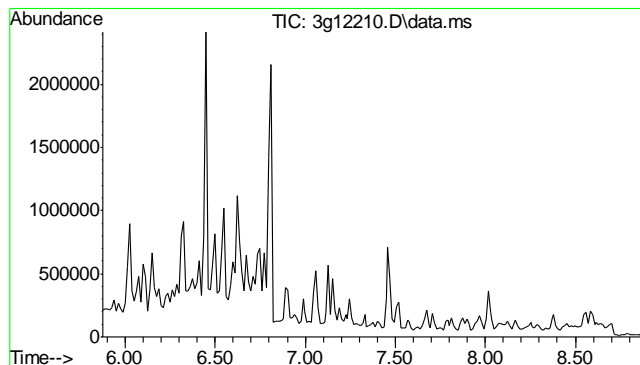
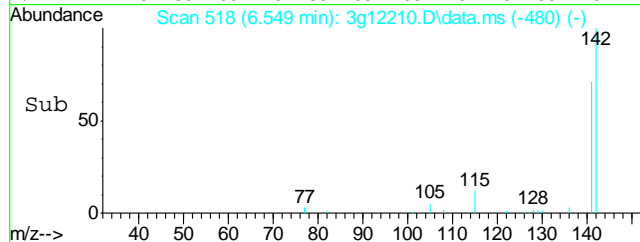
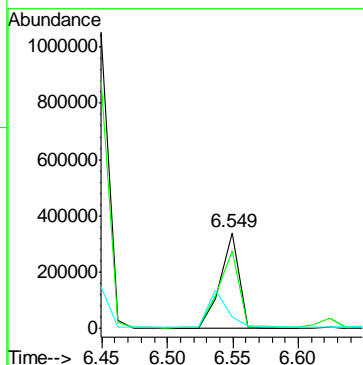
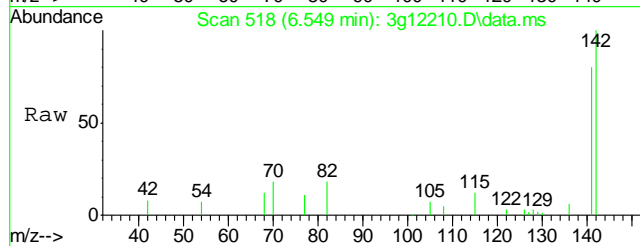
Tgt Ion:142 Resp: 885961
Ion Ratio Lower Upper
142 100
141 87.3 64.0 104.0
115 29.3 7.1 47.1





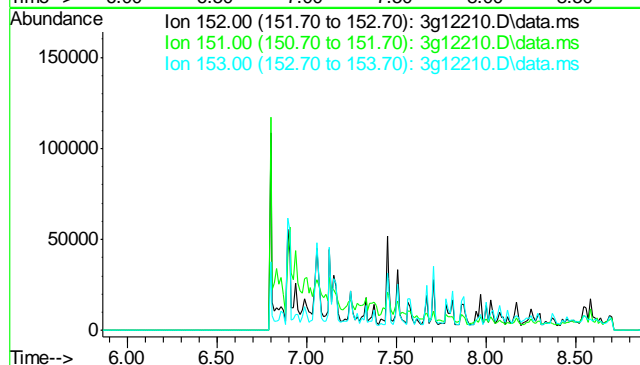
#9
1-Methylnaphthalene
Concen: 8.7377 ug/mL
RT: 6.549 min Scan# 518
Delta R.T. -0.025 min
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

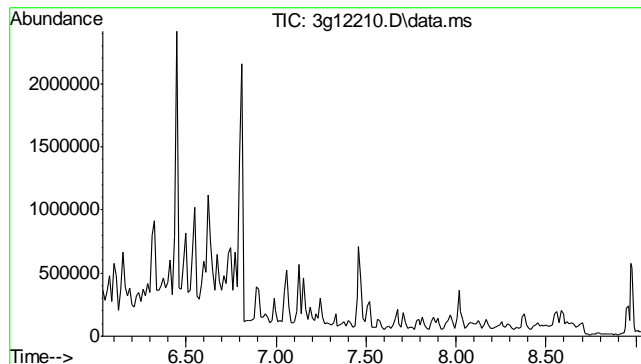
Tgt Ion	Ratio	Lower	Upper
142	100		
141	88.0	65.4	105.4
115	41.9	9.7	49.7



#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 7.37 min
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

Tgt Ion	Sig	Exp Ratio
152	100	
151	19.3	
153	12.8	

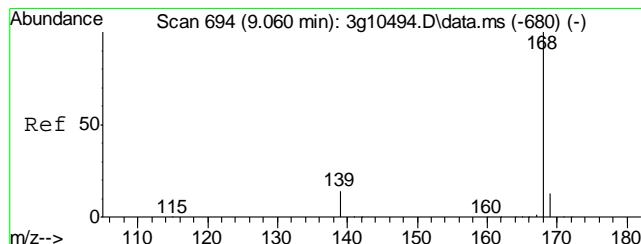
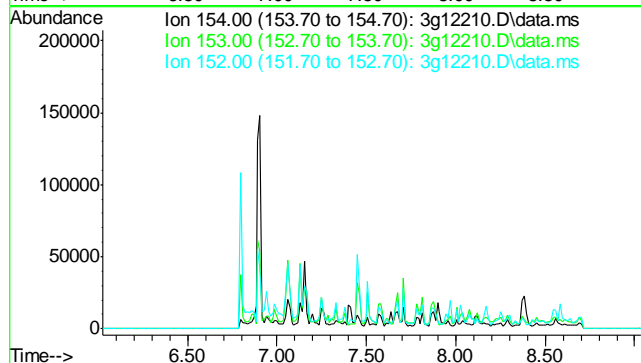




#11
Acenaphthene
Concen: N.D. ug/mL
Expected RT: 7.53 min

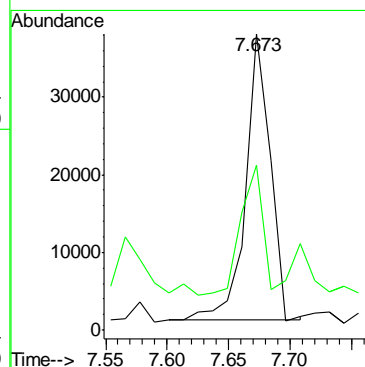
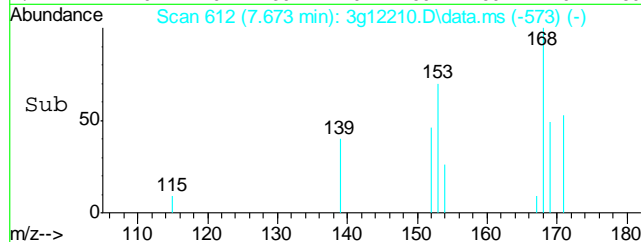
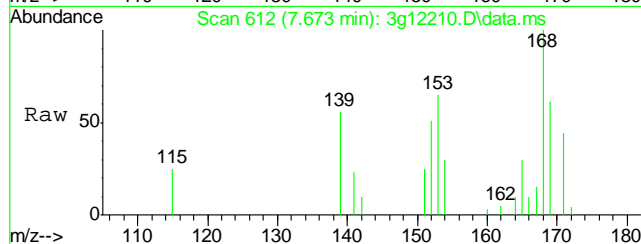
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

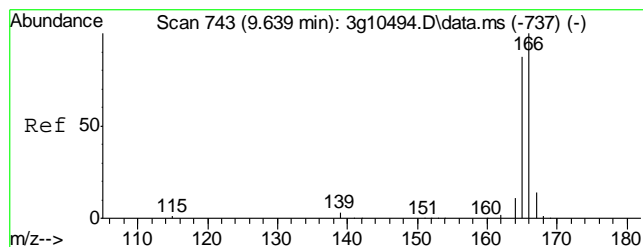
Tgt Ion: 154
Sig Exp Ratio
154 100
153 104.1
152 50.2



#12
Dibenzofuran
Concen: 0.7725 ug/mL
RT: 7.673 min Scan# 612
Delta R.T. -0.036 min
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

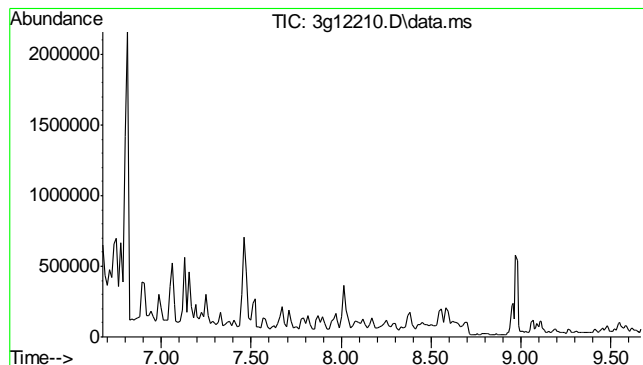
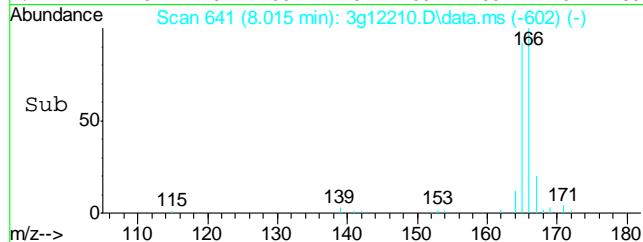
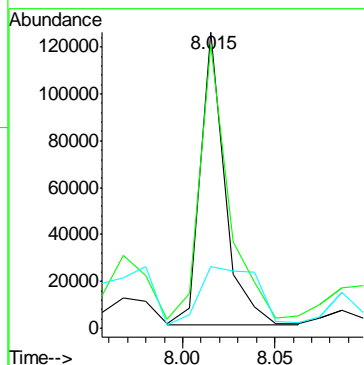
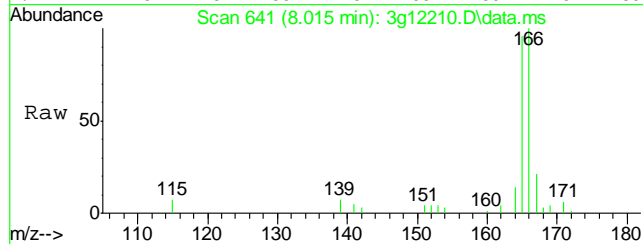
Tgt Ion: 168 Resp: 51100
Ion Ratio Lower Upper
168 100
139 43.4 10.9 50.9





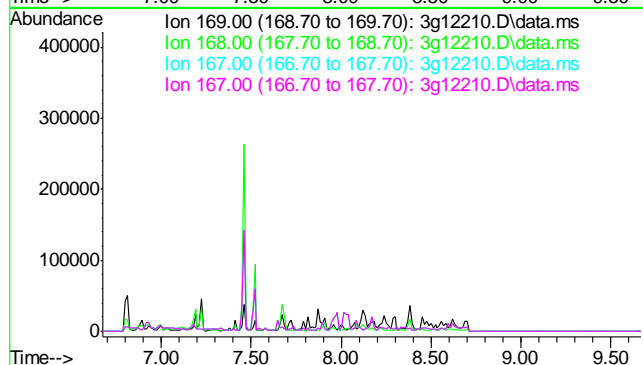
#13
 Fluorene
 Concen: 2.1227 ug/mL
 RT: 8.015 min Scan# 641
 Delta R.T. -0.036 min
 Lab File: 3g12210.D
 Acq: 21 Nov 12 8:06 pm

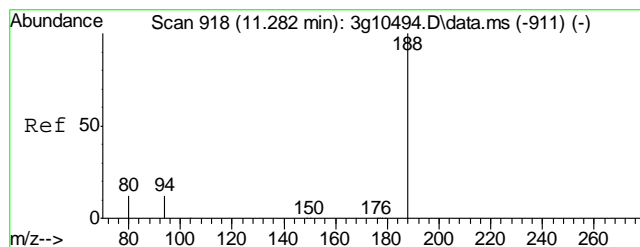
Tgt Ion:	166	Resp:	114732
Ion Ratio	Lower	Upper	
166	100		
165	109.9	69.6	109.6#
167	46.9	0.0	33.5#



#14
 Diphenylamine
 Concen: N.D. ug/mL
 Expected RT: 8.17 min
 Lab File: 3g12210.D
 Acq: 21 Nov 12 8:06 pm

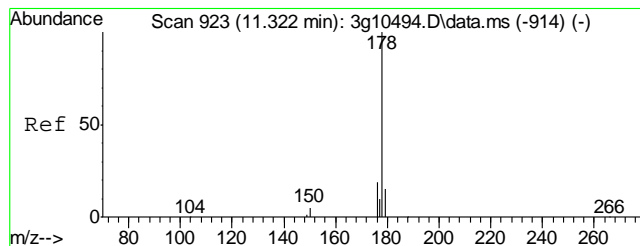
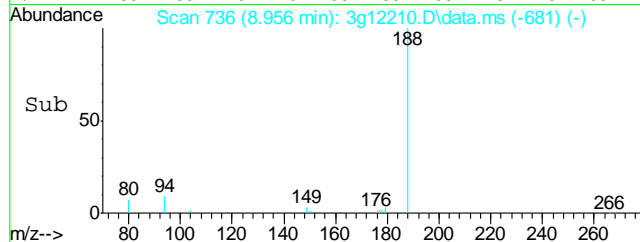
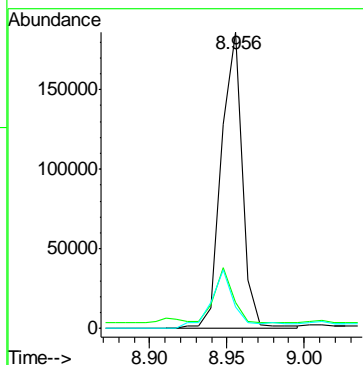
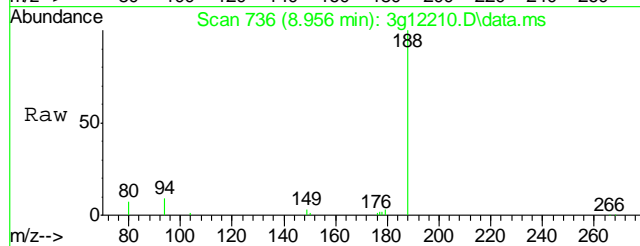
Tgt Ion:	169
Sig	Exp Ratio
169	100
168	60.9
167	33.6
167	33.6





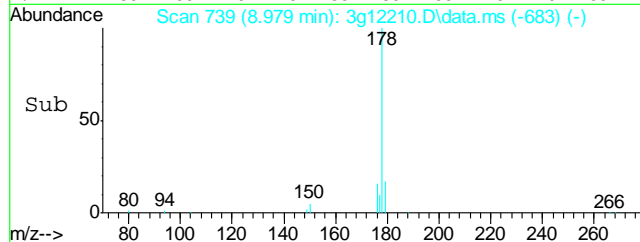
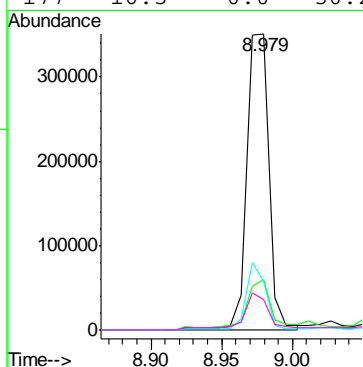
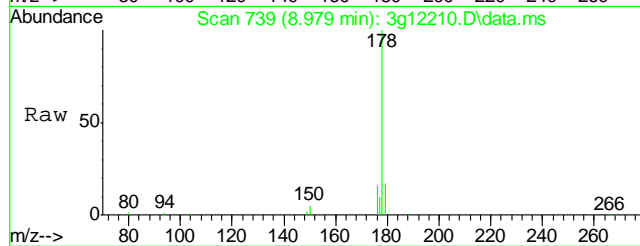
#15
Phenanthrene-d10
Concen: 4.0000 ug/mL
RT: 8.956 min Scan# 736
Delta R.T. -0.032 min
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

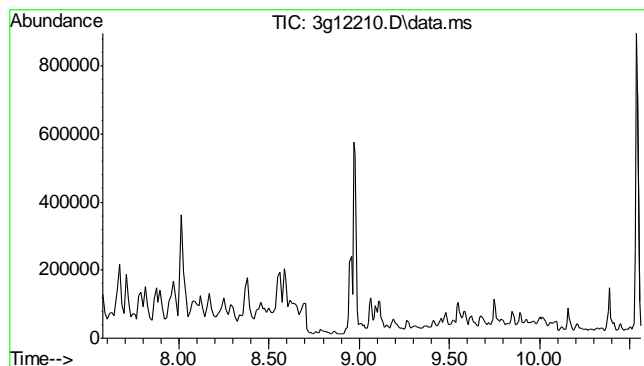
Tgt Ion:188	Resp:	169163
Ion Ratio	Lower	Upper
188	100	
94	16.6	0.0 31.6
80	23.7	0.0 32.0



#16
Phenanthrene
Concen: 6.4796 ug/mL
RT: 8.979 min Scan# 739
Delta R.T. -0.032 min
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

Tgt Ion:178	Resp:	372456
Ion Ratio	Lower	Upper
178	100	
179	20.9	0.0 35.2
176	19.5	0.0 38.7
177	16.5	0.0 30.2

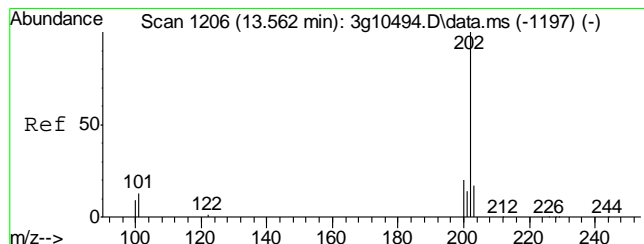
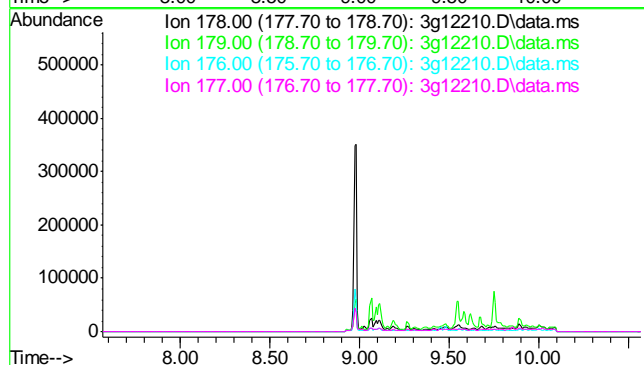




#17
Anthracene
Concen: N.D. ug/mL
Expected RT: 9.07 min

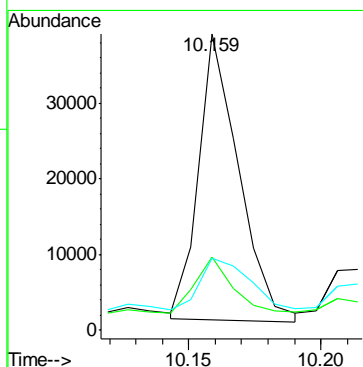
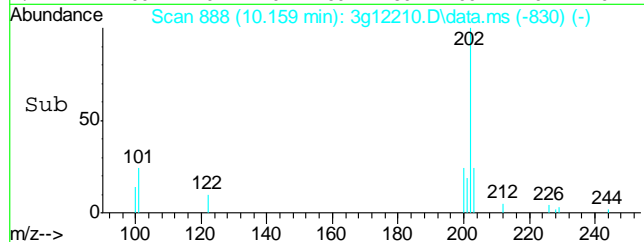
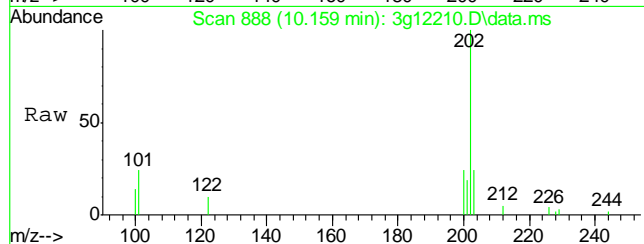
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

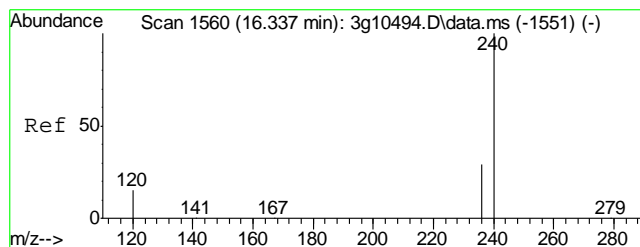
Tgt Ion: 178
Sig Exp Ratio
178 100
179 15.3
176 18.0
177 8.7



#18
Fluoranthene
Concen: 0.6045 ug/mL m
RT: 10.159 min Scan# 888
Delta R.T. -0.040 min
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

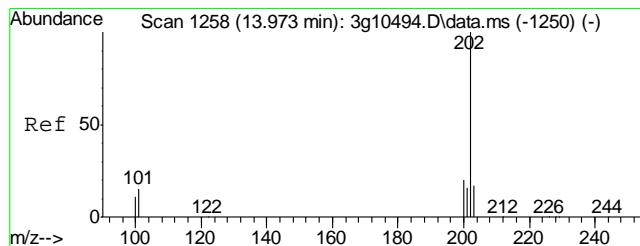
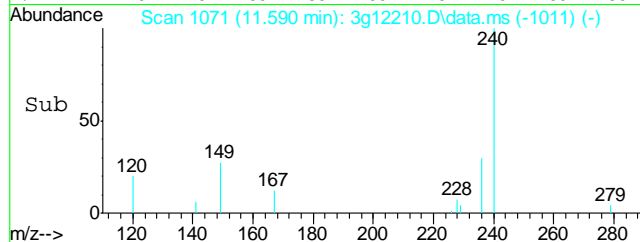
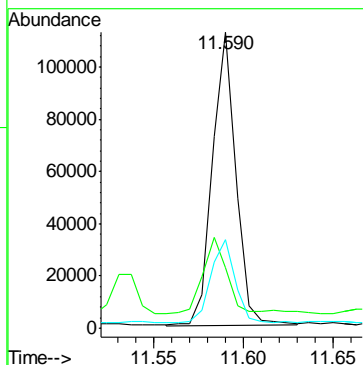
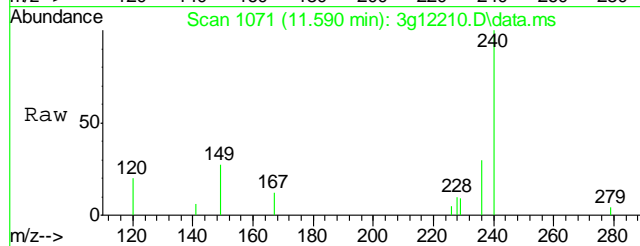
Tgt Ion: 202 Resp: 40033
Ion Ratio Lower Upper
202 100
101 35.6 0.0 31.8#
203 42.8 0.0 37.3#





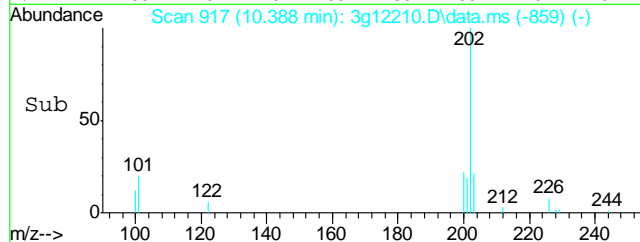
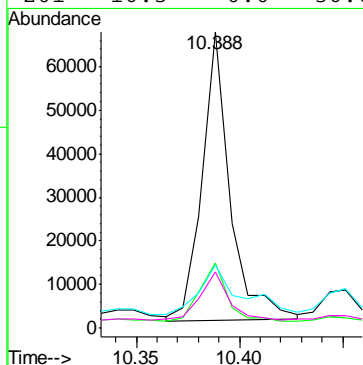
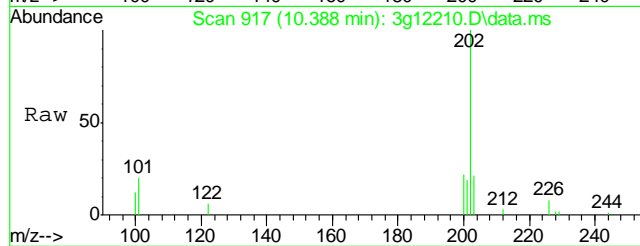
#19
Chrysene-d12
Concen: 4.0000 ug/mL
RT: 11.590 min Scan# 1071
Delta R.T. -0.040 min
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

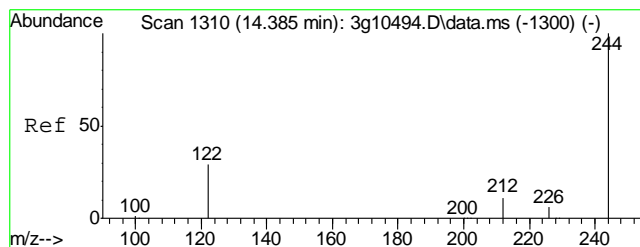
Tgt Ion:	240	Resp:	102091
Ion Ratio	Lower	Upper	
240	100		
120	29.3	0.0	38.3
236	28.9	10.7	50.7



#20
Pyrene
Concen: 1.0994 ug/mL
RT: 10.388 min Scan# 917
Delta R.T. -0.040 min
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

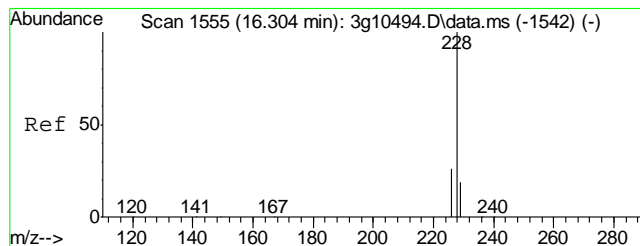
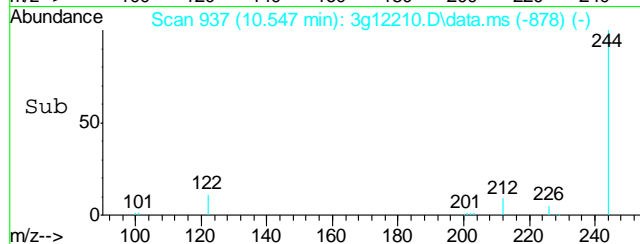
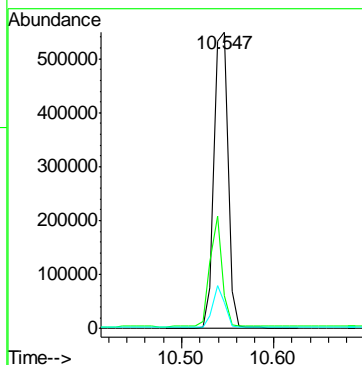
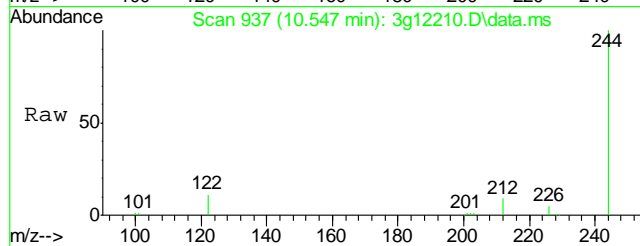
Tgt Ion:	202	Resp:	61613
Ion Ratio	Lower	Upper	
202	100		
200	20.0	0.3	40.3
203	27.8	0.0	37.8
201	16.5	0.0	36.6





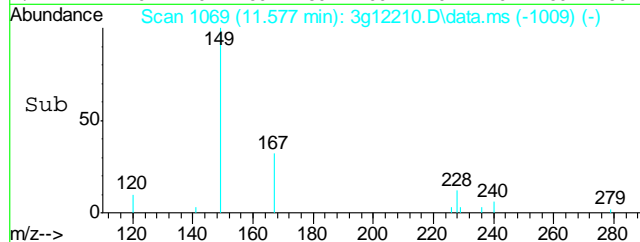
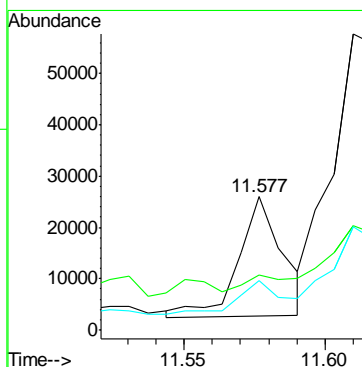
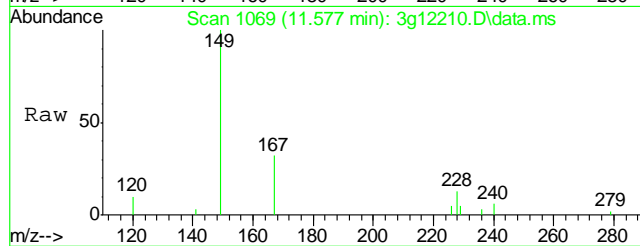
#21
Terphenyl-d14
Concen: 43.9612 ug/mL
RT: 10.547 min Scan# 937
Delta R.T. -0.032 min
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

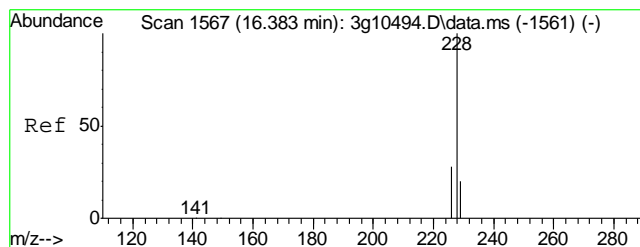
Tgt Ion	Ratio	Lower	Upper
244	100		
122	32.0	4.9	44.9
212	12.0	0.0	32.5



#22
Benzo(a)anthracene
Concen: 0.5565 ug/mL
RT: 11.577 min Scan# 1069
Delta R.T. -0.040 min
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

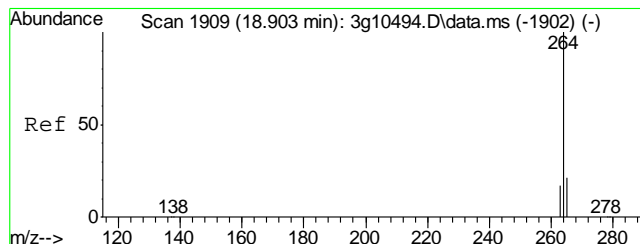
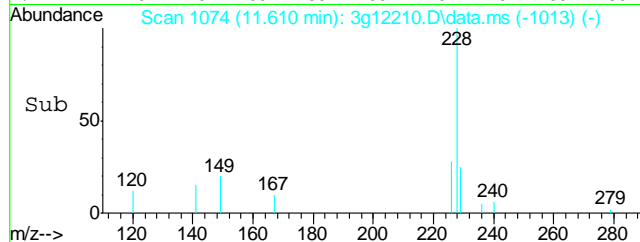
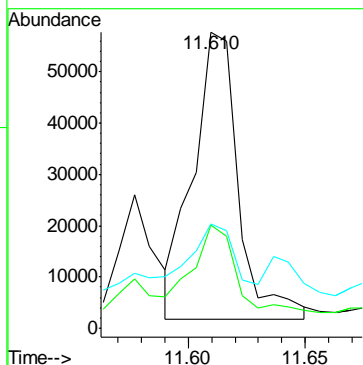
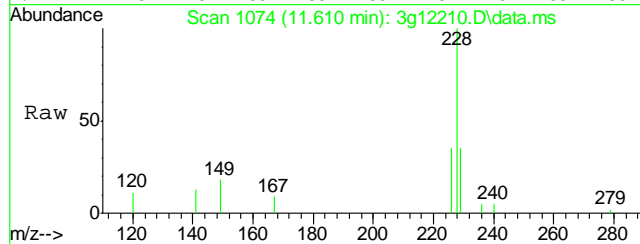
Tgt Ion	Ratio	Lower	Upper
228	100		
229	19.4	0.0	39.5
226	34.4	6.8	46.8





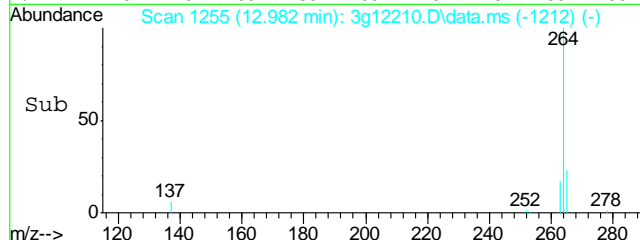
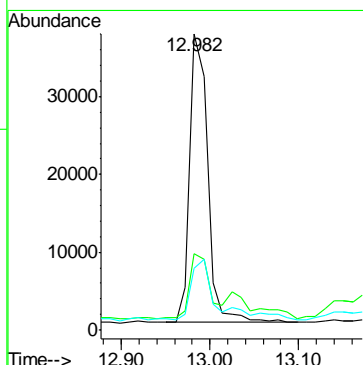
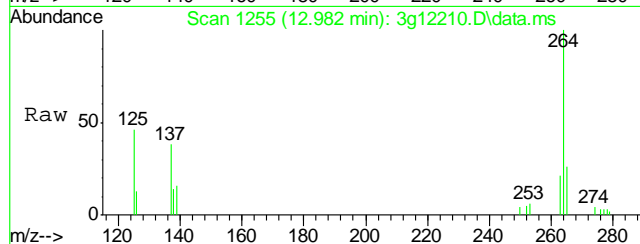
#23
Chrysene
Concen: 1.5262 ug/mL m
RT: 11.610 min Scan# 1074
Delta R.T. -0.040 min
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

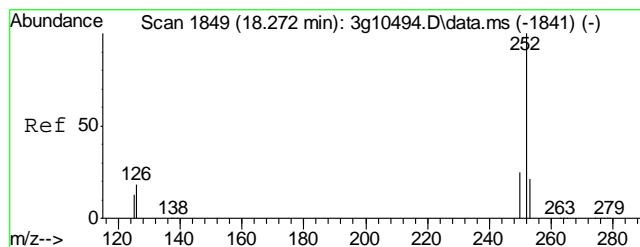
Tgt Ion	Ratio	Lower	Upper
228	100		
226	11.5	8.9	48.9
229	6.6	0.0	39.4



#24
Perylene-d12
Concen: 4.0000 ug/mL
RT: 12.982 min Scan# 1255
Delta R.T. -0.053 min
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

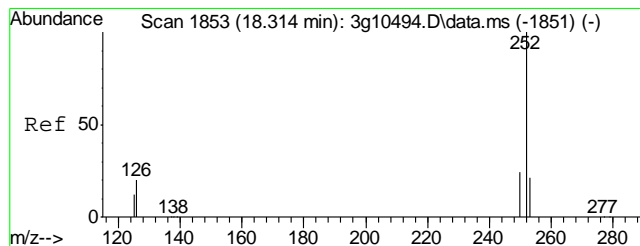
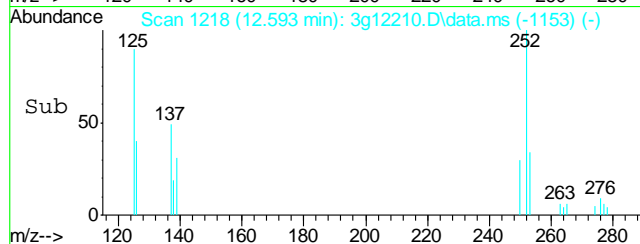
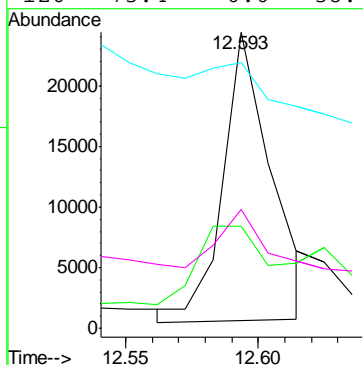
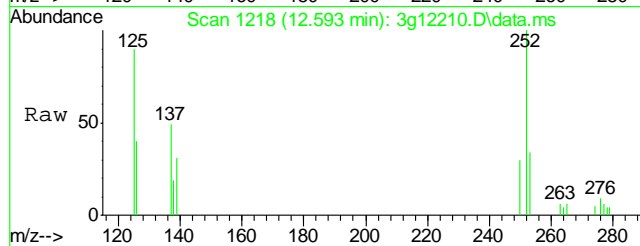
Tgt Ion	Ratio	Lower	Upper
264	100		
265	24.4	1.5	41.5
263	28.3	0.0	39.4





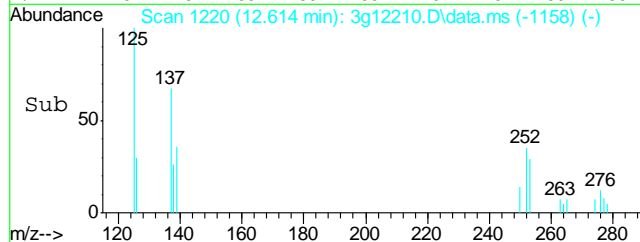
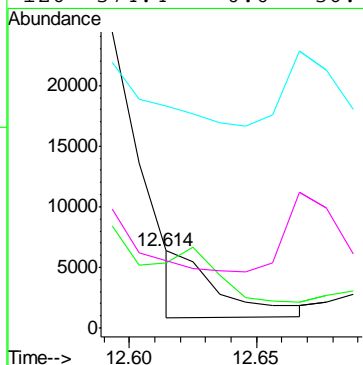
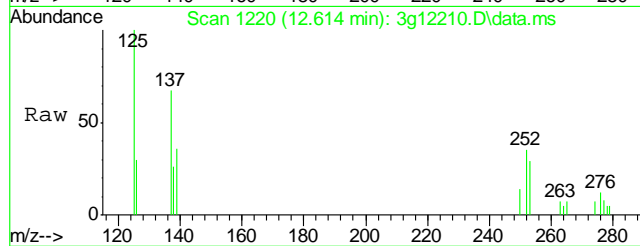
#25
Benzo(b)fluoranthene
Concen: 0.8296 ug/mL m
RT: 12.593 min Scan# 1218
Delta R.T. -0.042 min
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

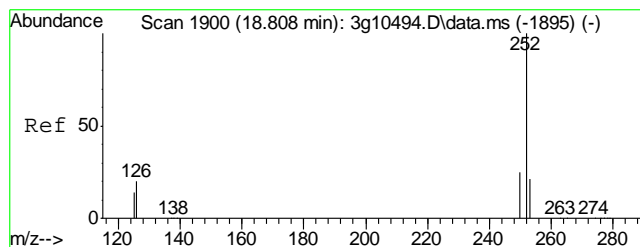
Tgt Ion	Ratio	Lower	Upper
252	100		
253	90.7	26.7	66.7#
125	0.0	0.0	33.5
126	73.4	0.0	38.7#



#26
Benzo(k)fluoranthene
Concen: 0.1562 ug/mL m
RT: 12.614 min Scan# 1220
Delta R.T. -0.053 min
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

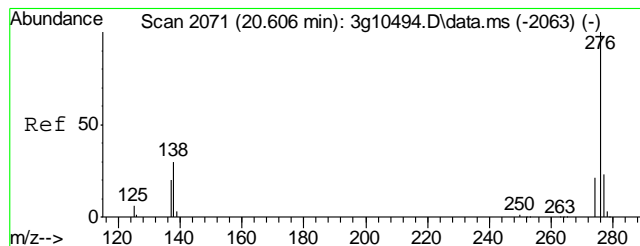
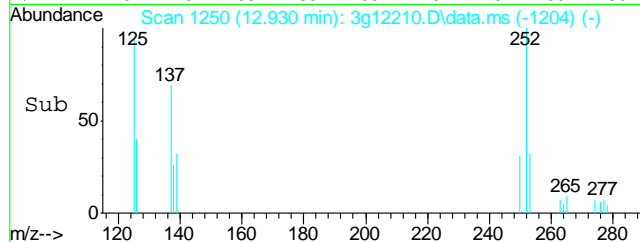
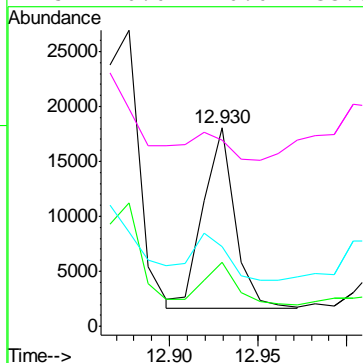
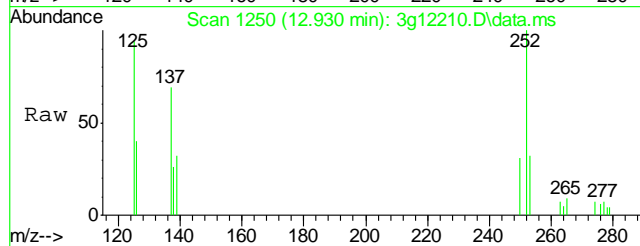
Tgt Ion	Ratio	Lower	Upper
252	100		
253	457.9	20.8	60.8#
125	0.0	0.0	31.8
126	374.4	0.0	36.4#





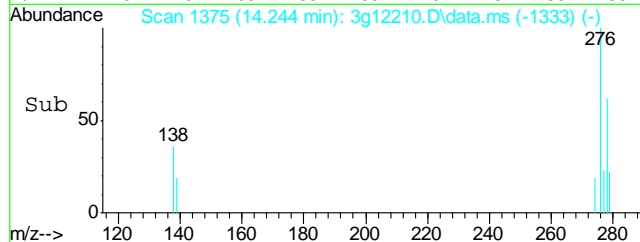
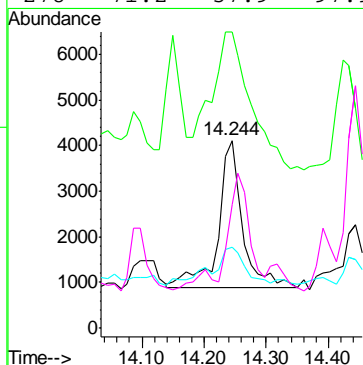
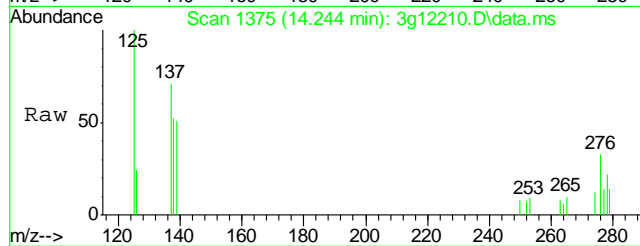
#27
Benzo(a)pyrene
Concen: 0.5735 ug/mL
RT: 12.930 min Scan# 1250
Delta R.T. -0.042 min
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

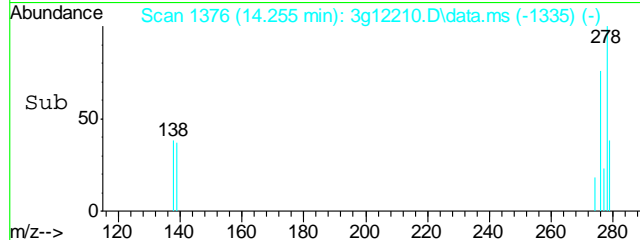
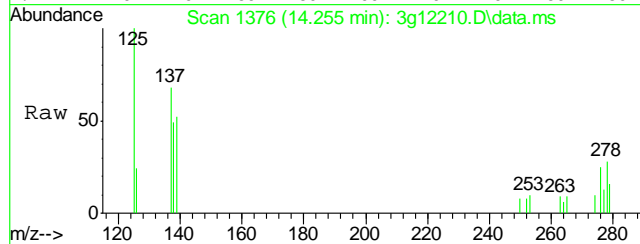
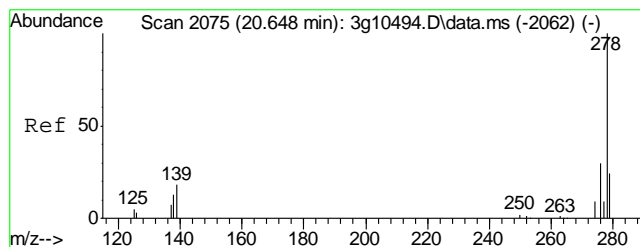
Tgt Ion:	252	Resp:	20659
Ion Ratio	Lower	Upper	
252	100		
253	31.0	1.8	41.8
126	32.2	0.0	38.6
125	0.0	0.0	33.5



#28
Indeno(1,2,3-cd)pyrene
Concen: 0.2227 ug/mL
RT: 14.244 min Scan# 1375
Delta R.T. -0.063 min
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

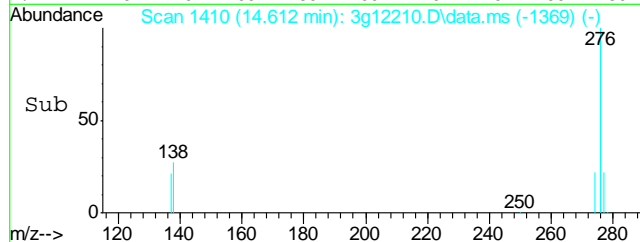
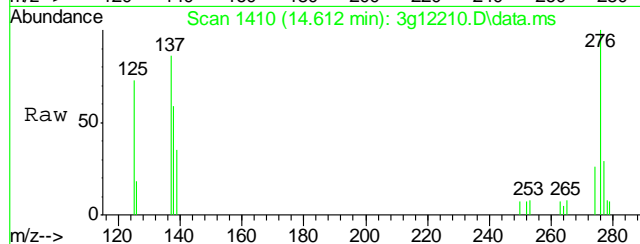
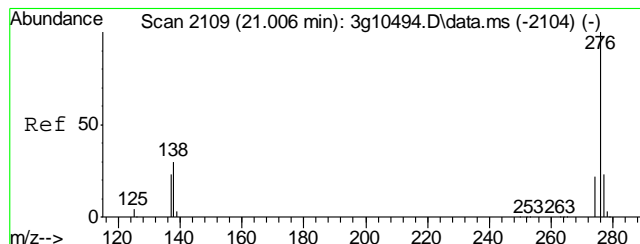
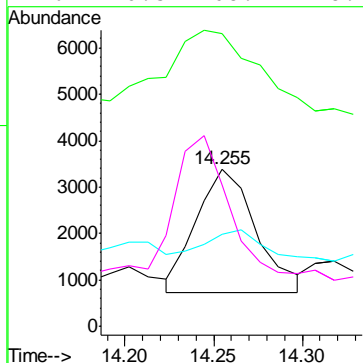
Tgt Ion:	276	Resp:	8751
Ion Ratio	Lower	Upper	
276	100		
138	153.8	16.6	56.6#
277	36.8	4.7	44.7
278	71.2	57.9	97.9





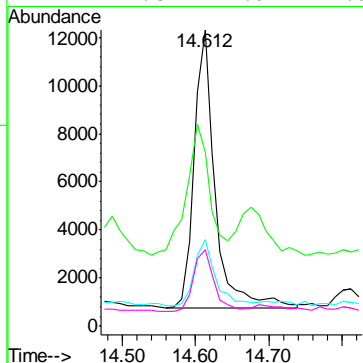
#29
Dibenz(a,h)anthracene
Concen: 0.2068 ug/mL
RT: 14.255 min Scan# 1376
Delta R.T. -0.074 min
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

Tgt Ion: 278	Resp: 6227
Ion Ratio	Lower Upper
278	100
139	143.9 7.8 47.8#
279	25.6 2.3 42.3
276	140.5 108.4 148.4



#30
Benzo(g,h,i)perylene
Concen: 0.6546 ug/mL
RT: 14.612 min Scan# 1410
Delta R.T. -0.074 min
Lab File: 3g12210.D
Acq: 21 Nov 12 8:06 pm

Tgt Ion: 276	Resp: 23547
Ion Ratio	Lower Upper
276	100
138	52.0 11.5 51.5#
277	23.3 2.9 42.9
274	21.5 1.9 41.9



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\112112\
 Data File : 3g12193.D
 Acq On : 21 Nov 2012 1:15 pm
 Operator : SARAHM1
 Sample : OP6973-MB
 Misc : OP6973,E3G576,30.00,,,1,1
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 21 14:21:47 2012
 Quant Method : C:\msdchem\1\METHODS\SIMPE3G574.M
 Quant Title : PAHSIM BASE
 QLast Update : Wed Nov 21 08:48:23 2012
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.751	136	177222	4.0000	ug/mL	-0.04
6) Acenaphthene-d10	7.472	164	92844	4.0000	ug/mL	-0.04
15) Phenanthrene-d10	8.948	188	149278	4.0000	ug/mL	-0.04
19) Chrysene-d12	11.584	240	117782	4.0000	ug/mL	-0.05
24) Perylene-d12	12.982	264	72955	4.0000	ug/mL	-0.05

System Monitoring Compounds

2) Nitrobenzene-d5	5.066	82	746977	43.8402	ug/mL	-0.04
Spiked Amount 50.000	Range 25 - 135		Recovery =	87.68%		
7) 2-Fluorobiphenyl	6.798	172	1508935	44.5784	ug/mL	-0.03
Spiked Amount 50.000	Range 25 - 135		Recovery =	89.16%		
21) Terphenyl-d14	10.539	244	691533	45.0482	ug/mL	-0.04
Spiked Amount 50.000	Range 25 - 135		Recovery =	90.10%		

Target Compounds

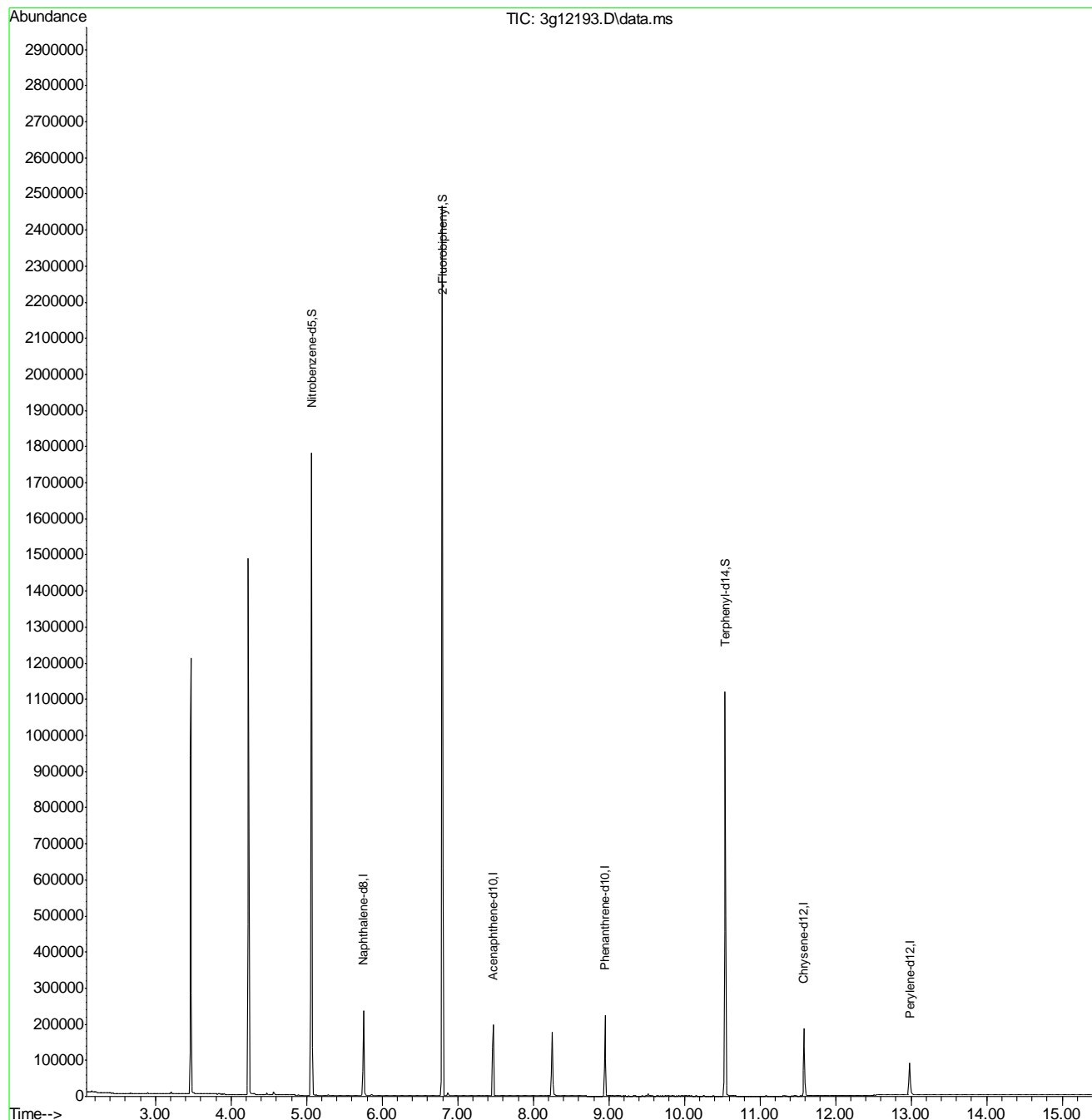
					Qvalue
3) N-Nitrosodimethylamine	2.494	74	12	N.D.	
4) N-Nitrosodi-propylamine	0.000	70	0	N.D.	d
5) Naphthalene	5.764	128	617	N.D.	
8) 2-Methylnaphthalene	6.449	142	221	N.D.	
9) 1-Methylnaphthalene	6.537	142	121	N.D.	
10) Acenaphthylene	7.330	152	128	N.D.	
11) Acenaphthene	7.460	154	567	Below Cal	# 20
12) Dibenzofuran	7.673	168	124	N.D.	
13) Fluorene	0.000	166	0	N.D.	d
14) Diphenylamine	0.000	169	0	N.D.	d
16) Phenanthrene	8.972	178	1009	Below Cal	# 4
17) Anthracene	9.027	178	239	N.D.	
18) Fluoranthene	10.388	202	526	N.D.	
20) Pyrene	10.388	202	526	N.D.	
22) Benzo(a)anthracene	11.577	228	833	N.D.	
23) Chrysene	11.577	228	833	N.D.	
25) Benzo(b)fluoranthene	0.000	252	0	N.D.	d
26) Benzo(k)fluoranthene	12.593	252	1158	N.D.	
27) Benzo(a)pyrene	12.919	252	449	N.D.	
28) Indeno(1,2,3-cd)pyrene	14.234	276	561	N.D.	
29) Dibenz(a,h)anthracene	14.255	278	296	N.D.	
30) Benzo(g,h,i)perylene	14.602	276	331	N.D.	

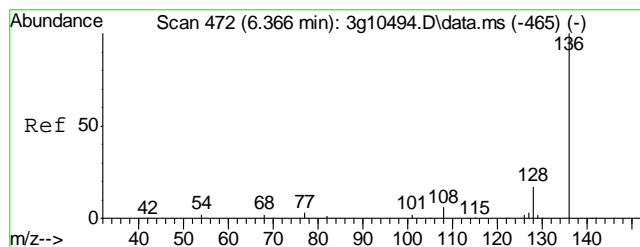
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\112112\
Data File : 3g12193.D
Acq On : 21 Nov 2012 1:15 pm
Operator : SARAHM1
Sample : OP6973-MB
Misc : OP6973,E3G576,30.00,,,1,1
ALS Vial : 4 Sample Multiplier: 1

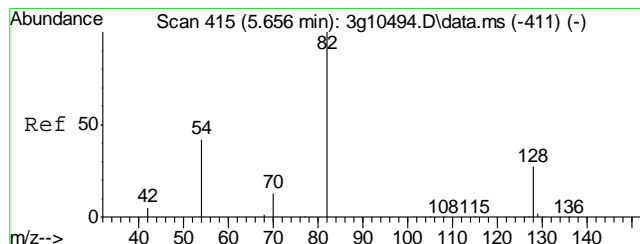
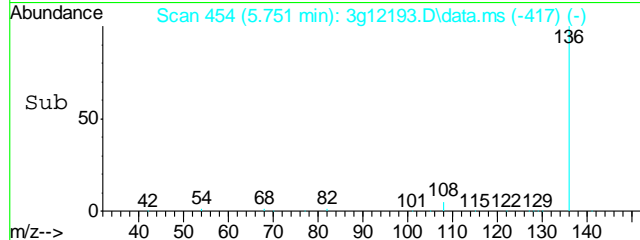
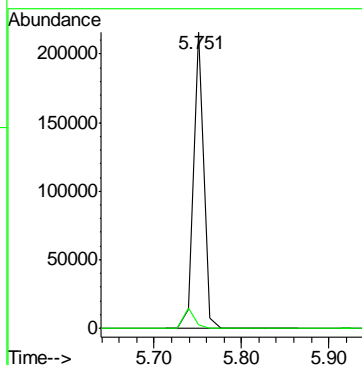
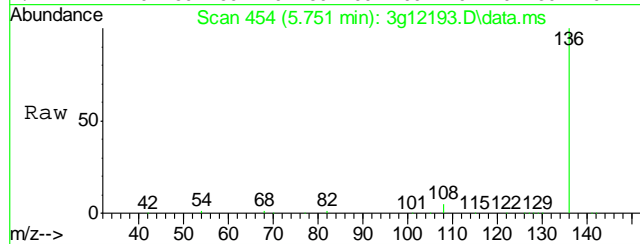
Quant Time: Nov 21 14:21:47 2012
Quant Method : C:\msdchem\1\METHODS\SIMPE3G574.M
Quant Title : PAHSIM BASE
QLast Update : Wed Nov 21 08:48:23 2012
Response via : Initial Calibration





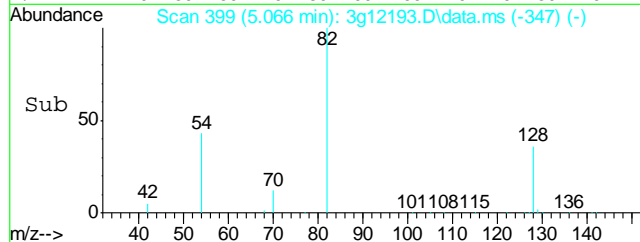
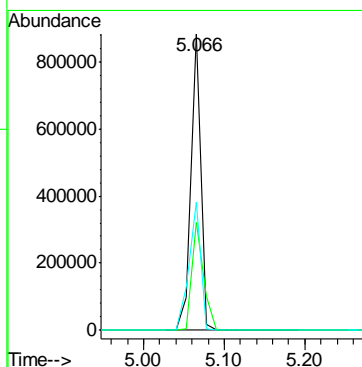
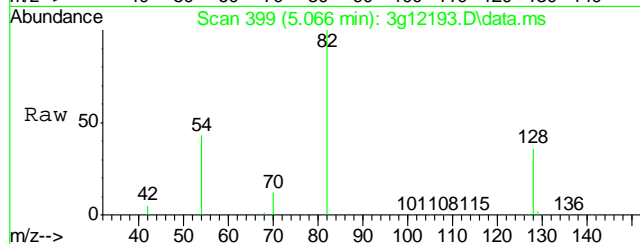
#1
Naphthalene-d8
Concen: 4.0000 ug/mL
RT: 5.751 min Scan# 454
Delta R.T. -0.037 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

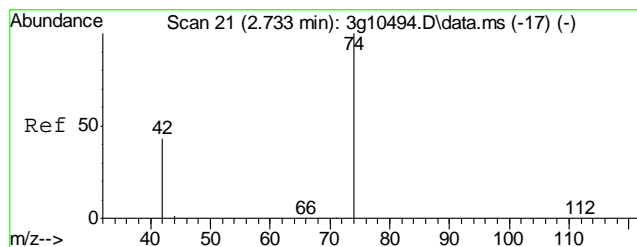
Tgt Ion: 136 Resp: 177222
Ion Ratio Lower Upper
136 100
68 7.5 0.0 27.8



#2
Nitrobenzene-d5
Concen: 43.8402 ug/mL
RT: 5.066 min Scan# 399
Delta R.T. -0.037 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

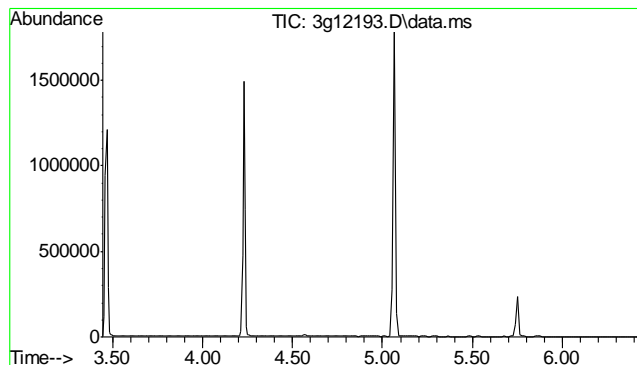
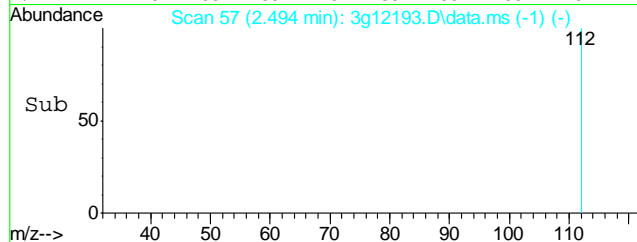
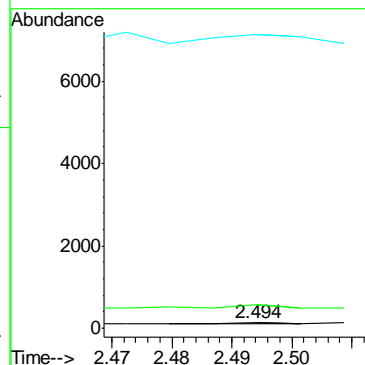
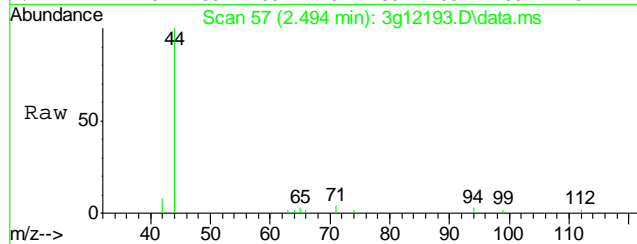
Tgt Ion: 82 Resp: 746977
Ion Ratio Lower Upper
82 100
128 42.6 30.7 70.7
54 51.4 36.8 76.8





#3
N-Nitrosodimethylamine
Concen: Below ug/mL
RT: 2.494 min Scan# 57
Delta R.T. 0.007 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

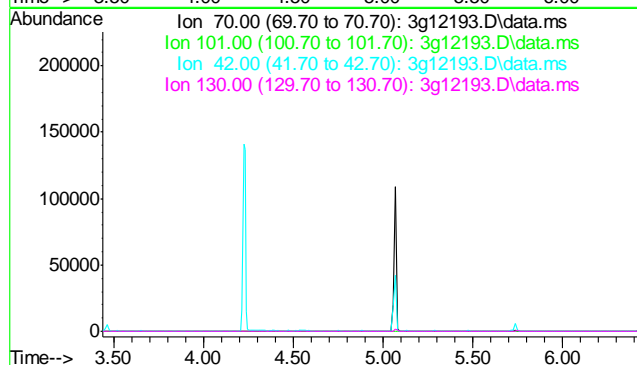
Tgt Ion: 74 Resp: 12
Ion Ratio Lower Upper
74 100
42 716.7 53.9 93.9#
44 0.0 0.0 24.2

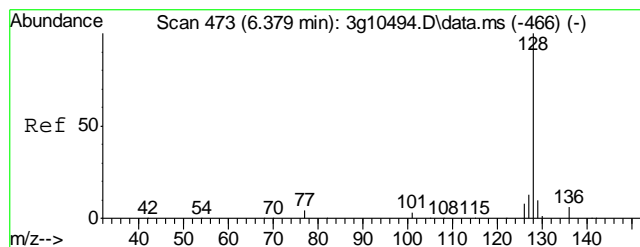


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 4.94 min

Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

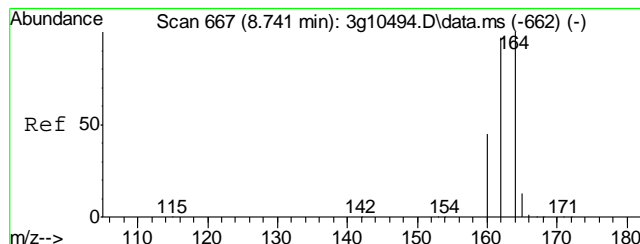
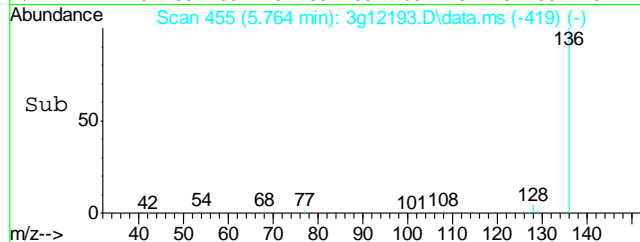
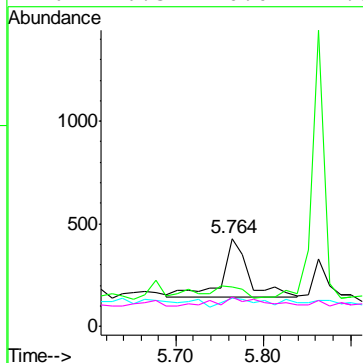
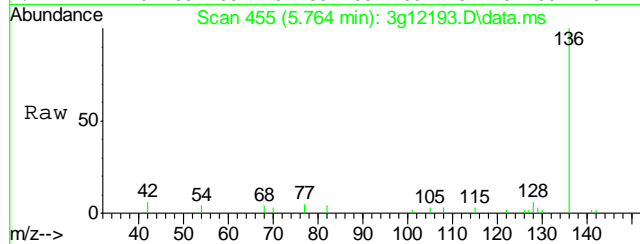
Tgt Ion: 70
Sig Exp Ratio
70 100
101 13.9
42 52.4
130 27.1





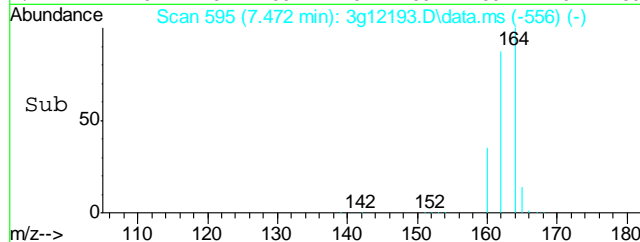
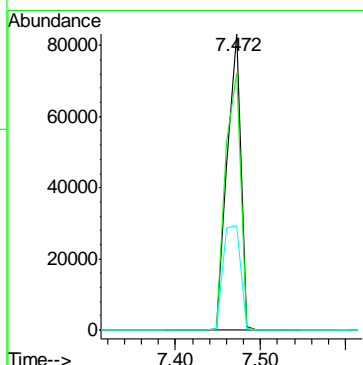
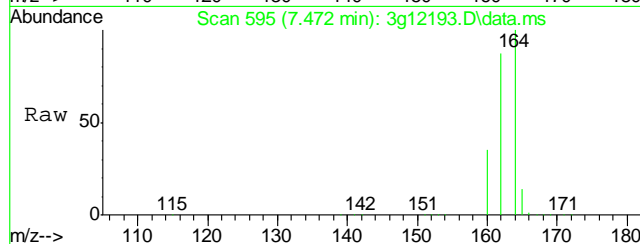
#5
Naphthalene
Concen: Below ug/mL
RT: 5.764 min Scan# 455
Delta R.T. -0.050 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

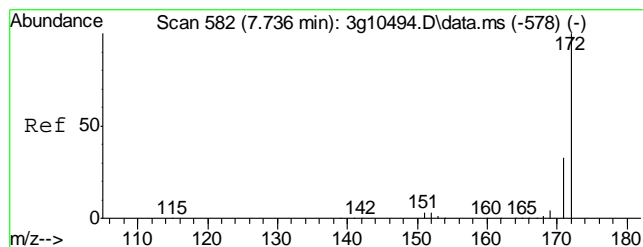
Tgt Ion:128	Resp:	617
Ion Ratio	Lower	Upper
128	100	
129	18.0	0.0 31.0
127	18.5	0.0 32.8
126	26.3	0.0 27.5



#6
Acenaphthene-d10
Concen: 4.0000 ug/mL
RT: 7.472 min Scan# 595
Delta R.T. -0.035 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

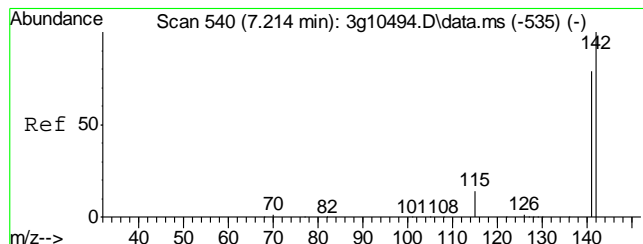
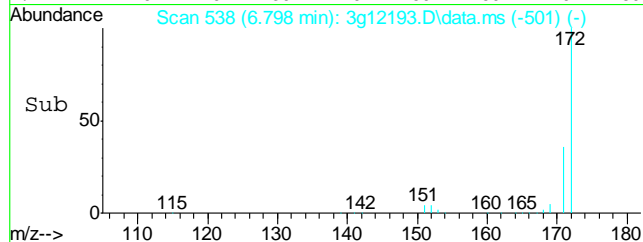
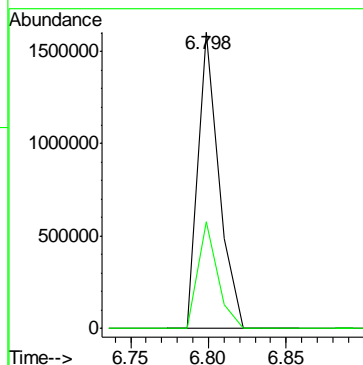
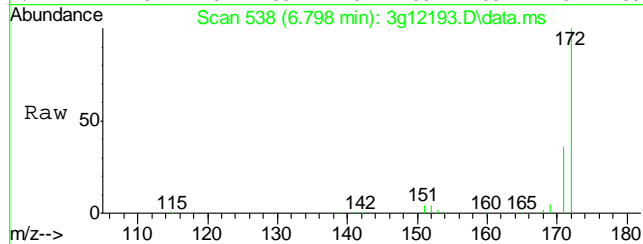
Tgt Ion:164	Resp:	92844
Ion Ratio	Lower	Upper
164	100	
162	96.3	78.1 118.1
160	44.7	28.0 68.0





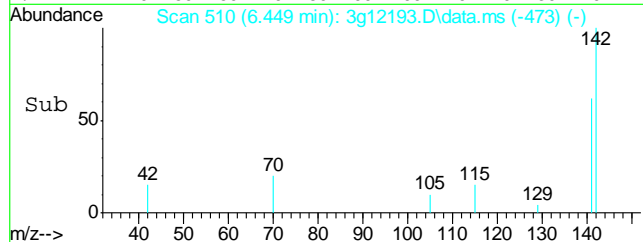
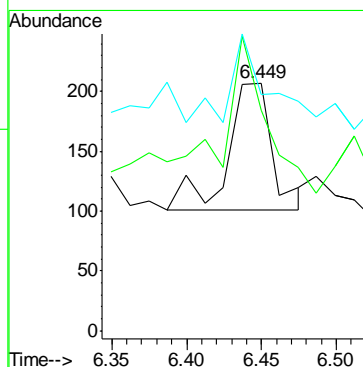
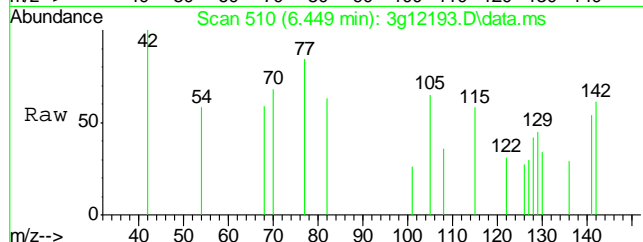
#7
2-Fluorobiphenyl
Concen: 44.5784 ug/mL
RT: 6.798 min Scan# 538
Delta R.T. -0.035 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

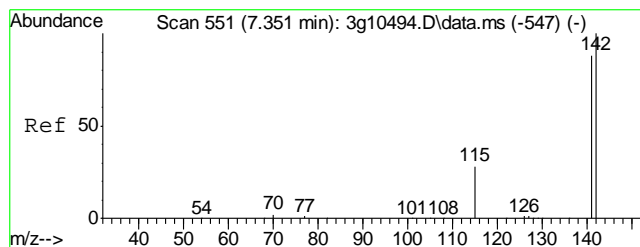
Tgt Ion:172 Resp: 1508935
Ion Ratio Lower Upper
172 100
171 33.8 12.6 52.6



#8
2-Methylnaphthalene
Concen: Below ug/mL
RT: 6.449 min Scan# 510
Delta R.T. -0.037 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

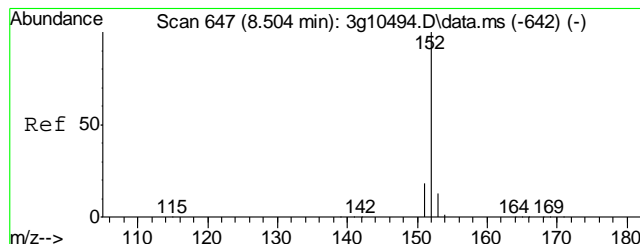
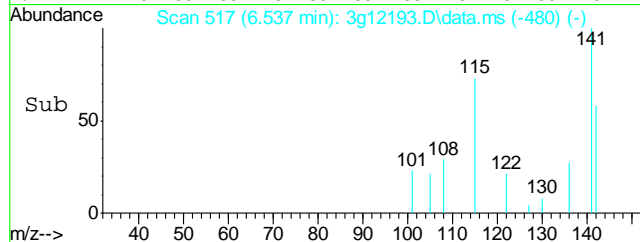
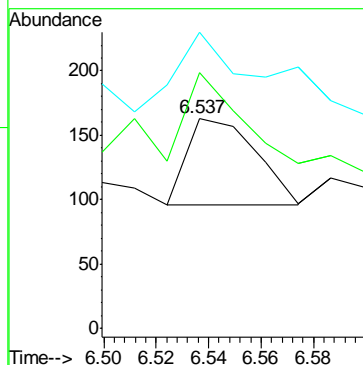
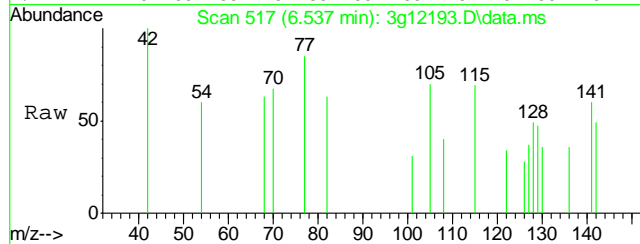
Tgt Ion:142 Resp: 221
Ion Ratio Lower Upper
142 100
141 147.1 64.0 104.0#
115 77.4 7.1 47.1#





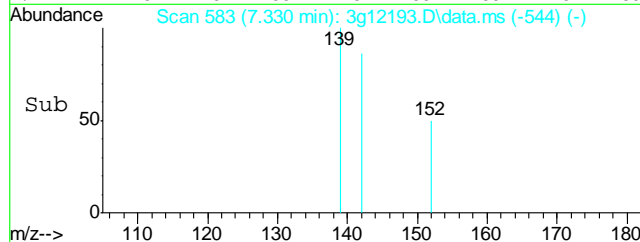
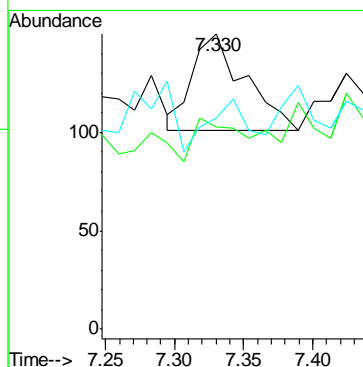
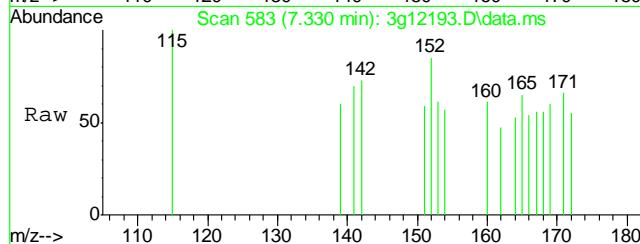
#9
1-Methylnaphthalene
Concen: Below ug/mL
RT: 6.537 min Scan# 517
Delta R.T. -0.037 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

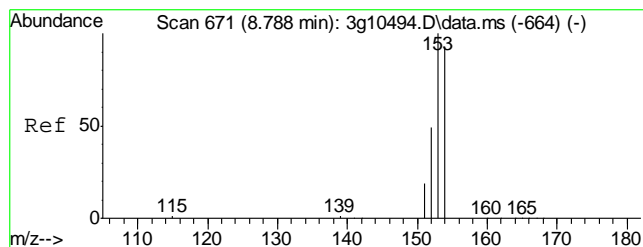
Tgt Ion:142 Resp: 121
Ion Ratio Lower Upper
142 100
141 180.2 65.4 105.4#
115 121.5 9.7 49.7#



#10
Acenaphthylene
Concen: Below ug/mL
RT: 7.330 min Scan# 583
Delta R.T. -0.035 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

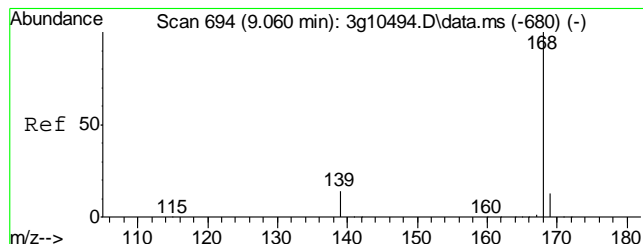
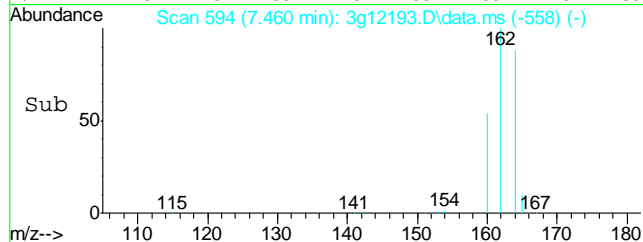
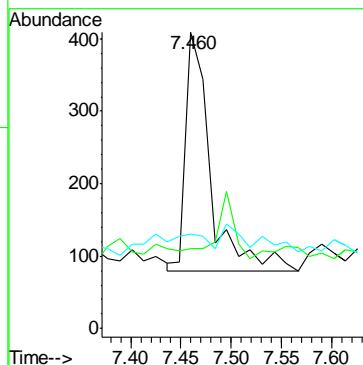
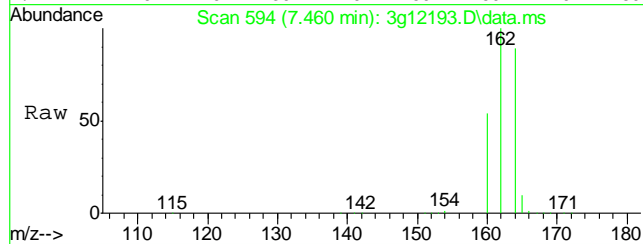
Tgt Ion:152 Resp: 128
Ion Ratio Lower Upper
152 100
151 38.3 0.0 39.3
153 43.0 0.0 32.8#





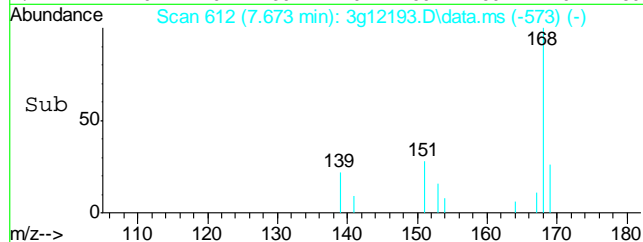
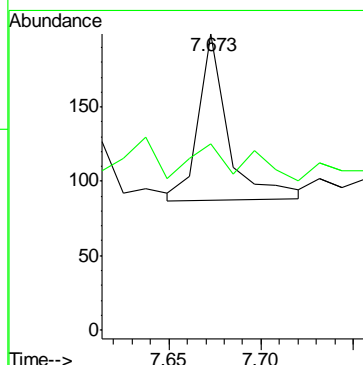
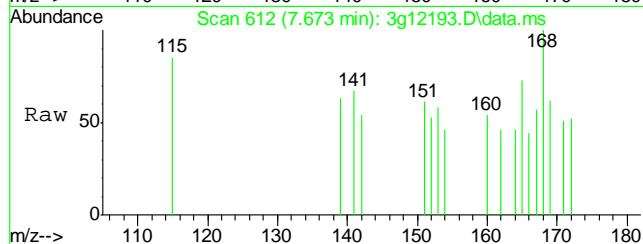
#11
Acenaphthene
Concen: Below ug/mL
RT: 7.460 min Scan# 594
Delta R.T. -0.071 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

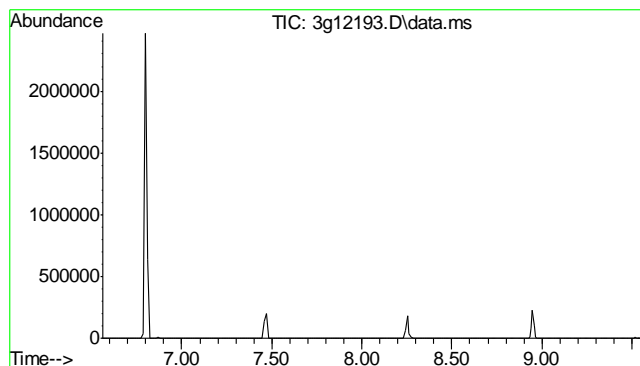
Tgt Ion:154 Resp: 567
Ion Ratio Lower Upper
154 100
153 3.9 84.1 124.1#
152 21.3 30.2 70.2#



#12
Dibenzofuran
Concen: Below ug/mL
RT: 7.673 min Scan# 612
Delta R.T. -0.035 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:168 Resp: 124
Ion Ratio Lower Upper
168 100
139 0.0 10.9 50.9#

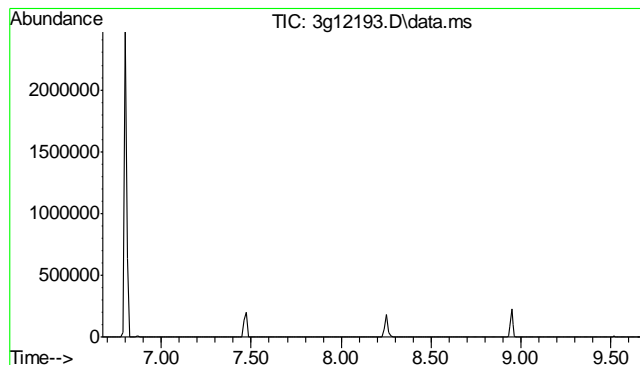
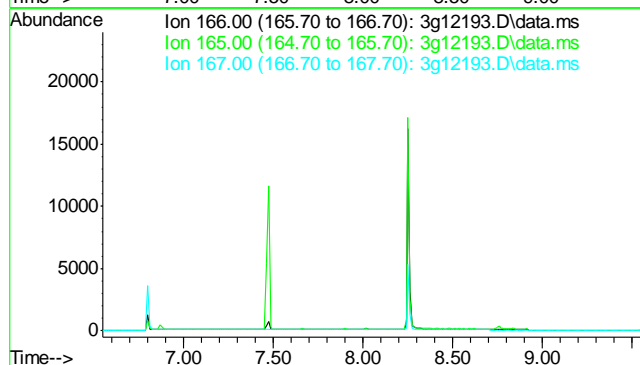




#13
Fluorene
Concen: N.D. ug/mL
Expected RT: 8.05 min

Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

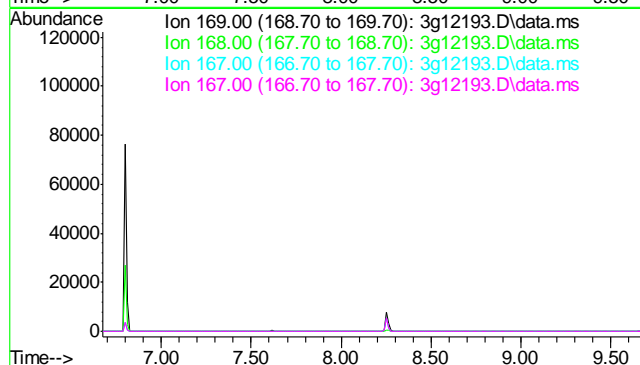
Tgt Ion	166
Sig	Exp Ratio
166	100
165	89.6
167	13.5

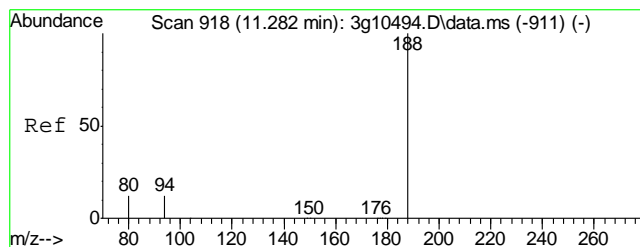


#14
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 8.17 min

Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

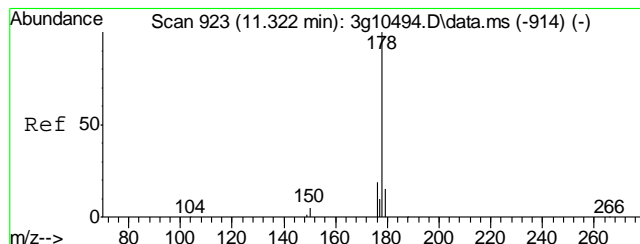
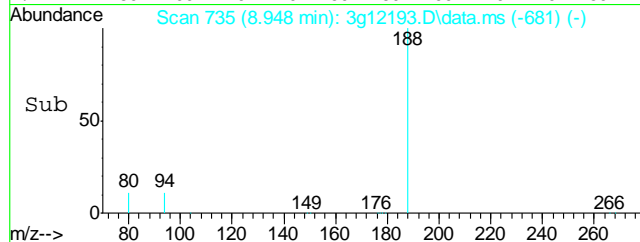
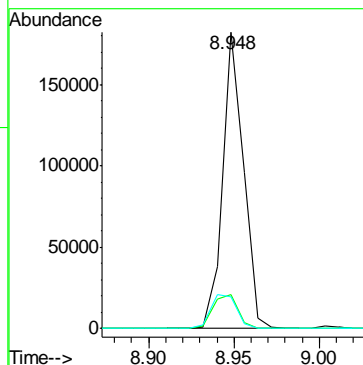
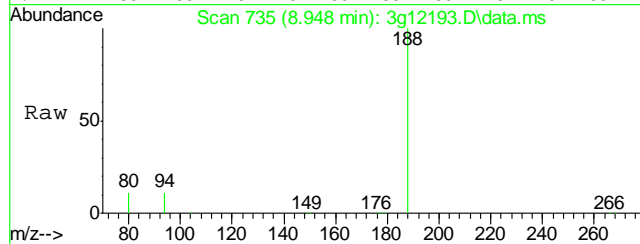
Tgt Ion	169
Sig	Exp Ratio
169	100
168	60.9
167	33.6
167	33.6





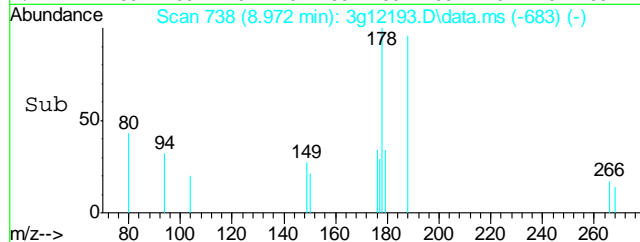
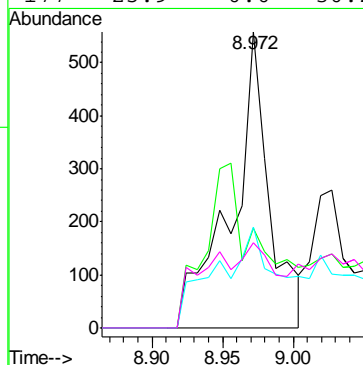
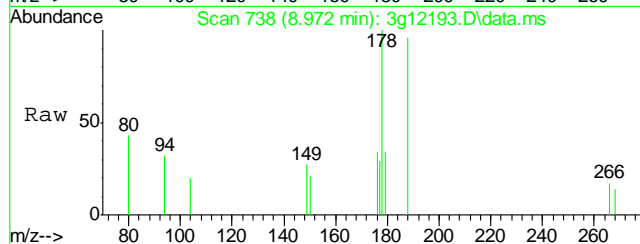
#15
Phenanthrene-d10
Concen: 4.0000 ug/mL
RT: 8.948 min Scan# 735
Delta R.T. -0.040 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

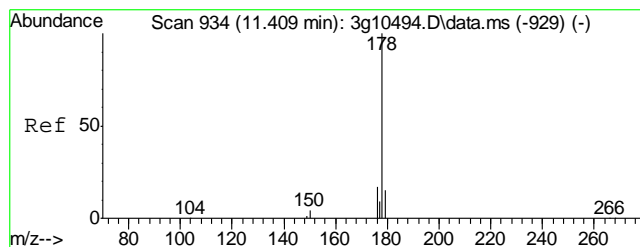
Tgt Ion	Ratio	Lower	Upper
188	100		
94	13.3	0.0	31.6
80	14.3	0.0	32.0



#16
Phenanthrene
Concen: Below ug/mL
RT: 8.972 min Scan# 738
Delta R.T. -0.039 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

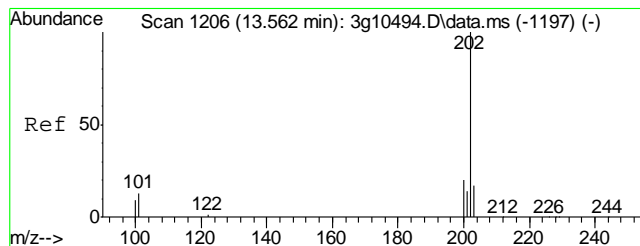
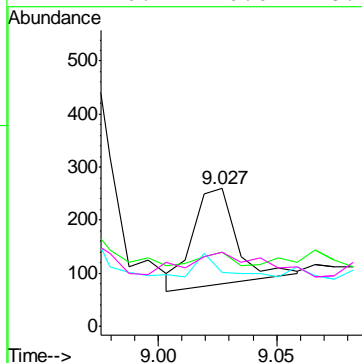
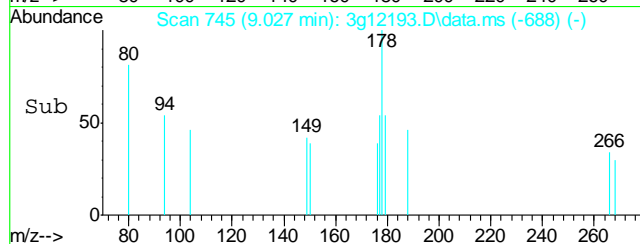
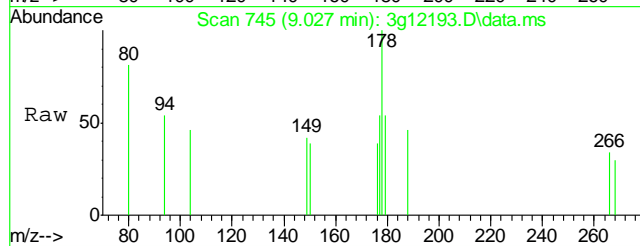
Tgt Ion	Ratio	Lower	Upper
178	100		
179	82.7	0.0	35.2#
176	51.1	0.0	38.7#
177	25.9	0.0	30.2





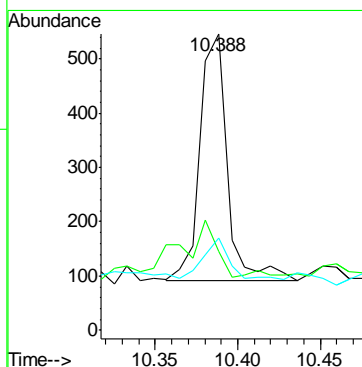
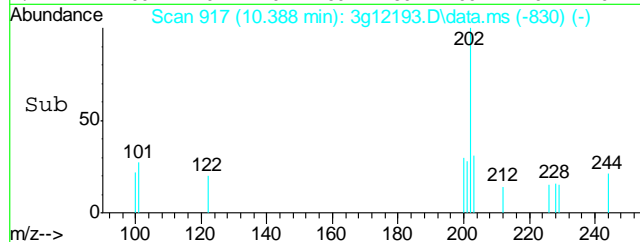
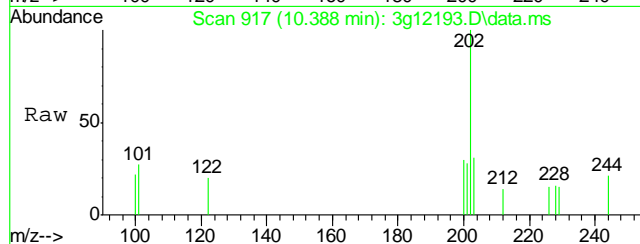
#17
Anthracene
Concen: Below ug/mL
RT: 9.027 min Scan# 745
Delta R.T. -0.040 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

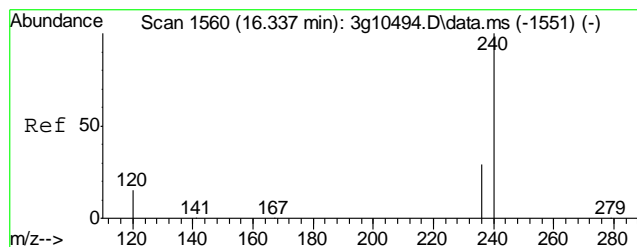
Tgt Ion	178	179	176	177
Resp	239	0.0	0.0	20.1
Ratio	100	0.0	0.0	20.1
Lower		0.0	0.0	0.0
Upper		35.3	38.0	28.7



#18
Fluoranthene
Concen: Below ug/mL
RT: 10.388 min Scan# 917
Delta R.T. 0.190 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

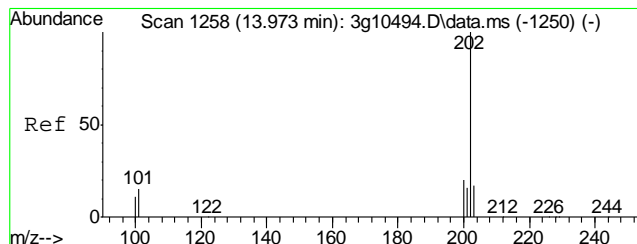
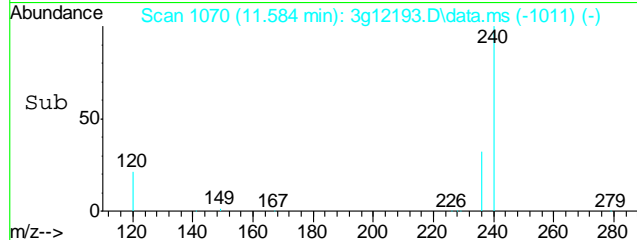
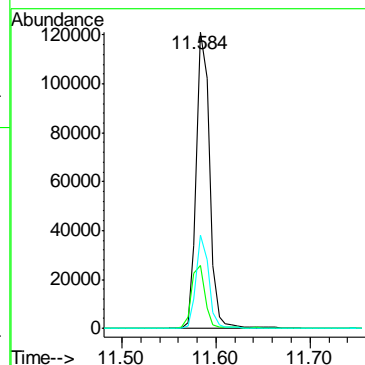
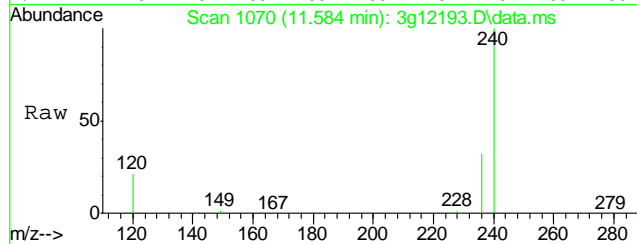
Tgt Ion	202	101	203
Resp	526	27.0	14.1
Ratio	100	27.0	14.1
Lower		0.0	0.0
Upper		31.8	37.3





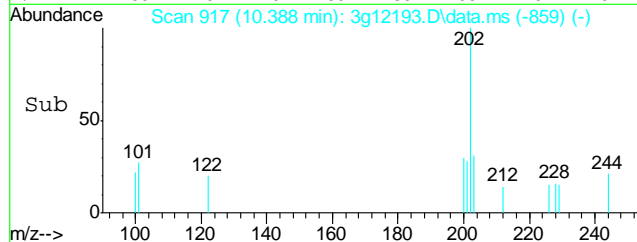
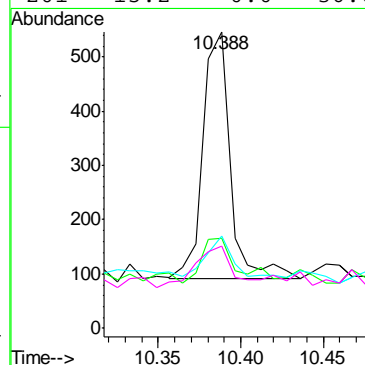
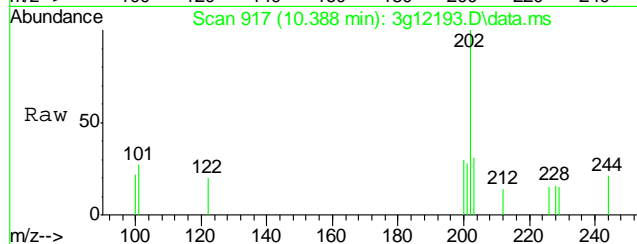
#19
Chrysene-d12
Concen: 4.0000 ug/mL
RT: 11.584 min Scan# 1070
Delta R.T. -0.046 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

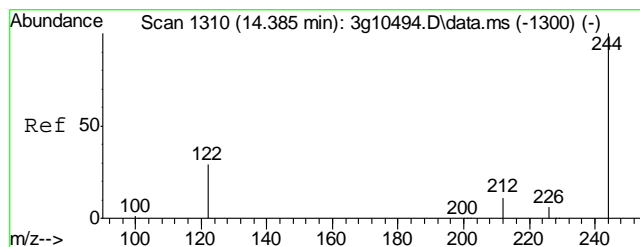
Tgt Ion:	240	Resp:	117782
Ion Ratio	Lower	Upper	
240	100		
120	21.6	0.0	38.3
236	29.9	10.7	50.7



#20
Pyrene
Concen: Below ug/mL
RT: 10.388 min Scan# 917
Delta R.T. -0.040 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

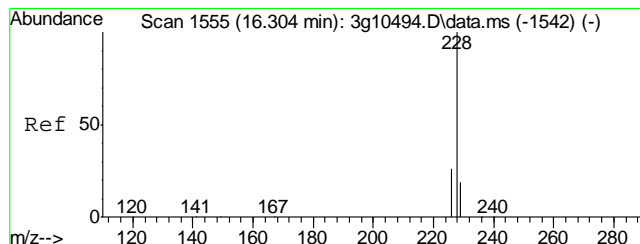
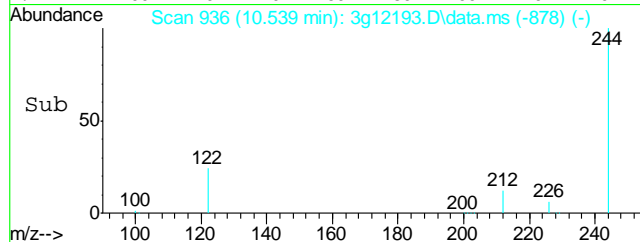
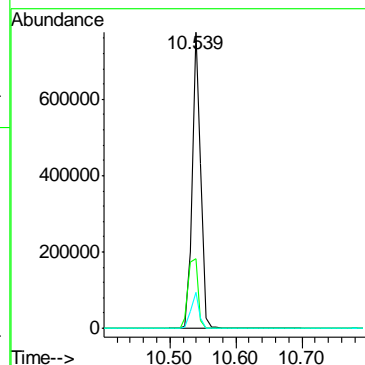
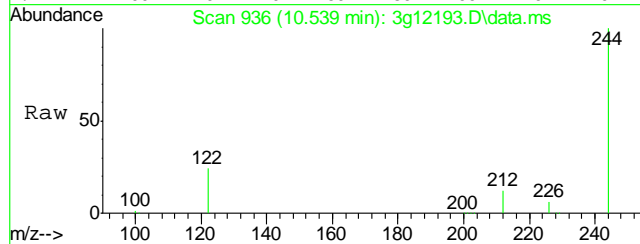
Tgt Ion:	202	Resp:	526
Ion Ratio	Lower	Upper	
202	100		
200	23.8	0.3	40.3
203	14.1	0.0	37.8
201	15.2	0.0	36.6





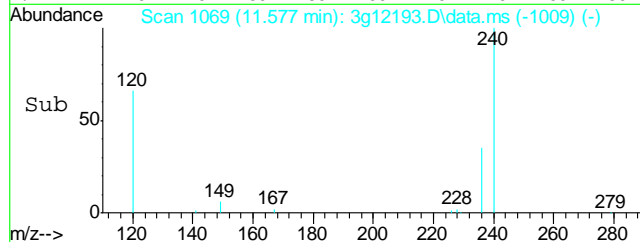
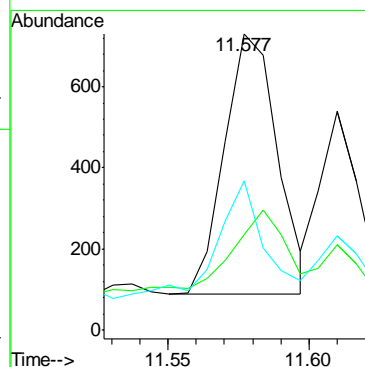
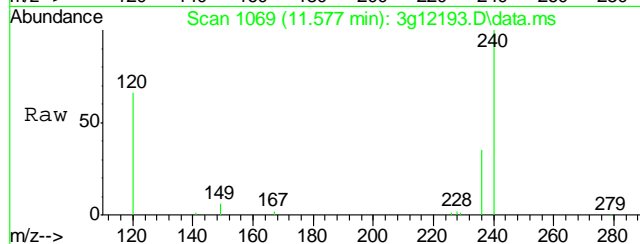
#21
Terphenyl-d14
Concen: 45.0482 ug/mL
RT: 10.539 min Scan# 936
Delta R.T. -0.040 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

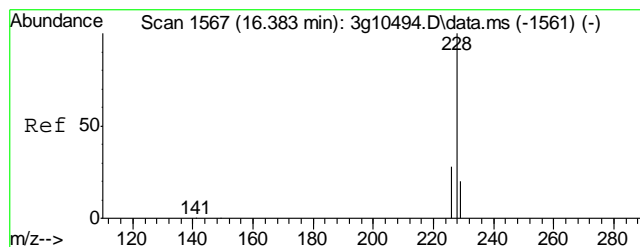
Tgt Ion:	244	Resp:	691533
Ion Ratio	Lower	Upper	
244	100		
122	28.1	4.9	44.9
212	11.8	0.0	32.5



#22
Benzo(a)anthracene
Concen: Below ug/mL
RT: 11.577 min Scan# 1069
Delta R.T. -0.040 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

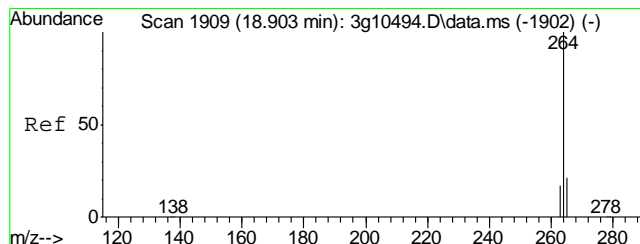
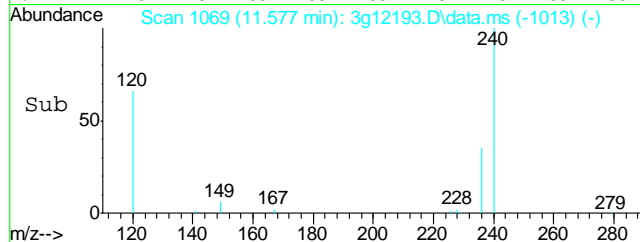
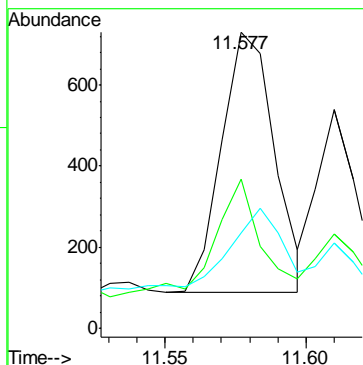
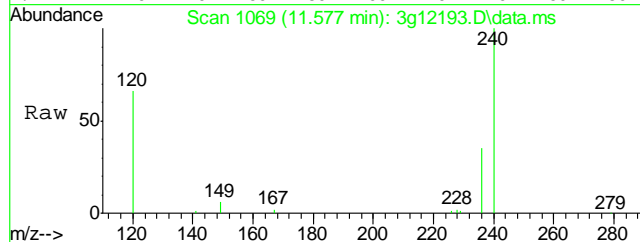
Tgt Ion:	228	Resp:	833
Ion Ratio	Lower	Upper	
228	100		
229	37.0	0.0	39.5
226	41.9	6.8	46.8





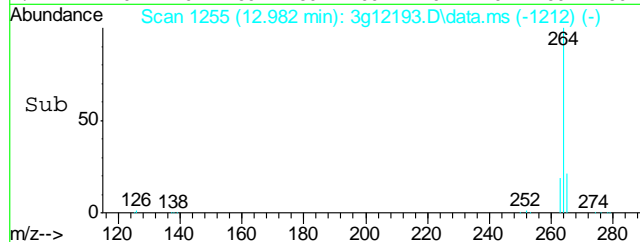
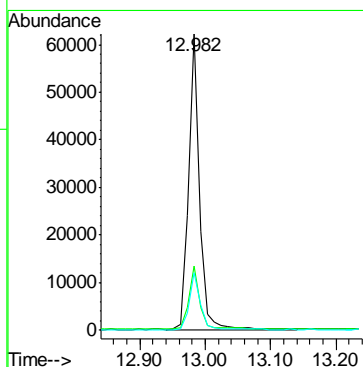
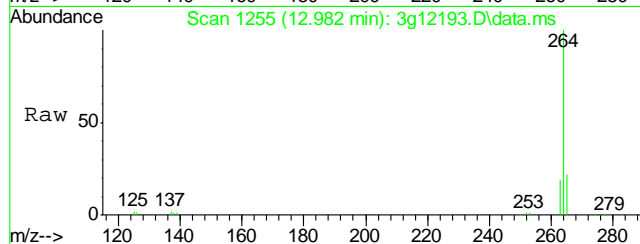
#23
Chrysene
Concen: Below ug/mL
RT: 11.577 min Scan# 1069
Delta R.T. -0.073 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

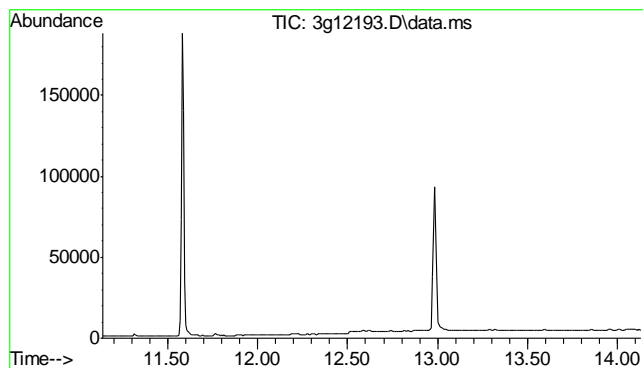
Tgt Ion:	228	Resp:	833
Ion Ratio	Lower	Upper	
228	100		
226	41.9	8.9	48.9
229	36.4	0.0	39.4



#24
Perylene-d12
Concen: 4.0000 ug/mL
RT: 12.982 min Scan# 1255
Delta R.T. -0.053 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion:	264	Resp:	72955
Ion Ratio	Lower	Upper	
264	100		
265	21.0	1.5	41.5
263	19.9	0.0	39.4

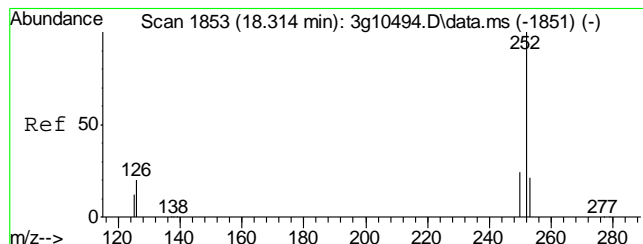
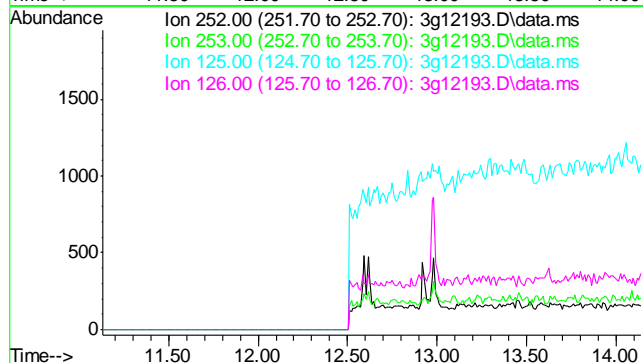




#25
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.64 min

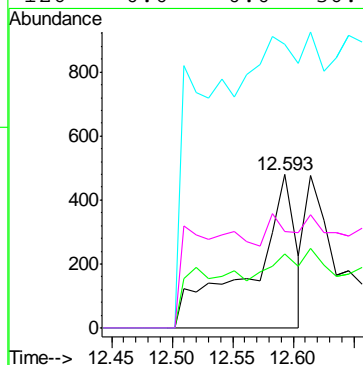
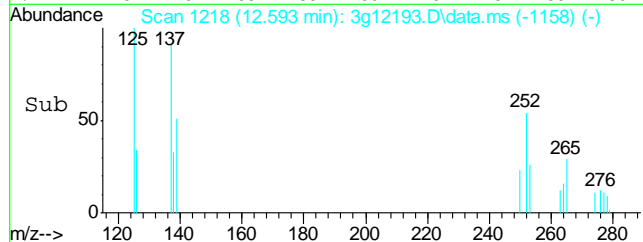
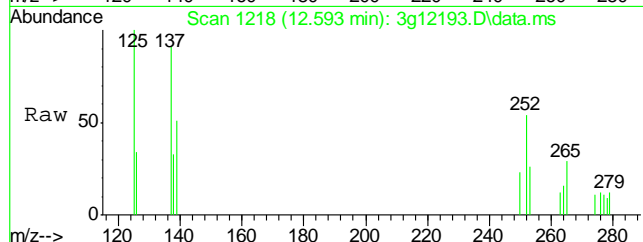
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

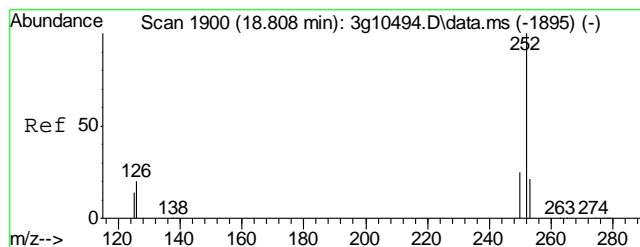
Tgt Ion: 252
Sig Exp Ratio
252 100
253 46.7
125 13.5
126 18.7



#26
Benzo(k)fluoranthene
Concen: Below ug/mL
RT: 12.593 min Scan# 1218
Delta R.T. -0.074 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

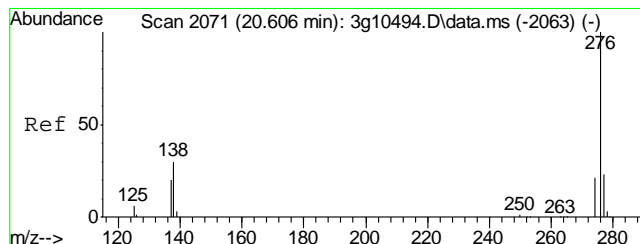
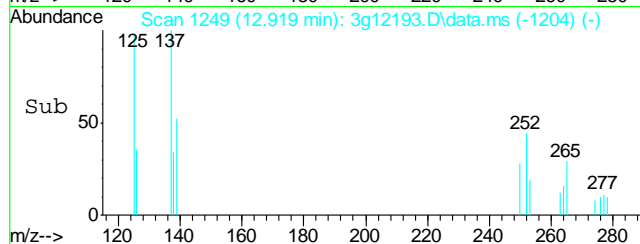
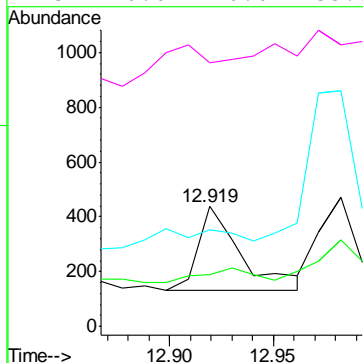
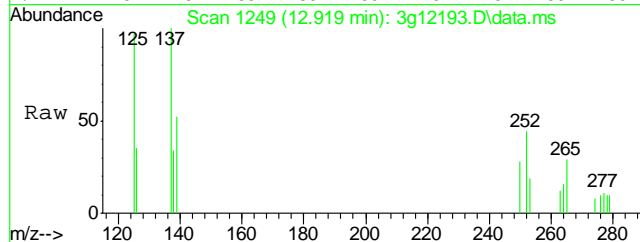
Tgt Ion: 252 Resp: 1158
Ion Ratio Lower Upper
252 100
253 33.2 20.8 60.8
125 0.0 0.0 31.8
126 0.0 0.0 36.4





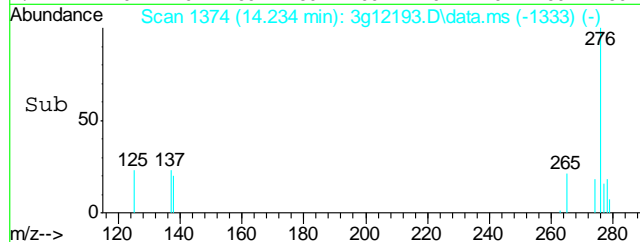
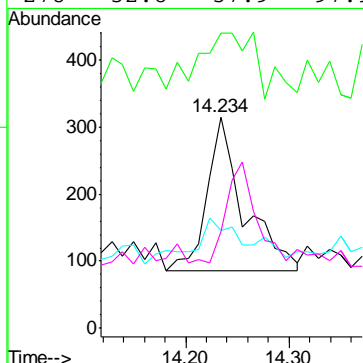
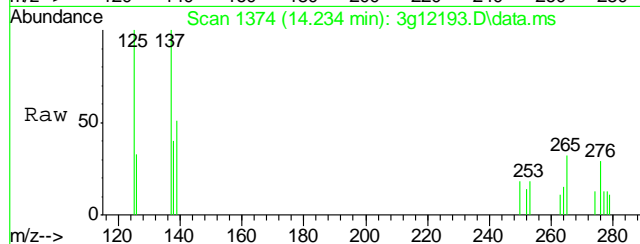
#27
Benzo(a)pyrene
Concen: Below ug/mL
RT: 12.919 min Scan# 1249
Delta R.T. -0.053 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

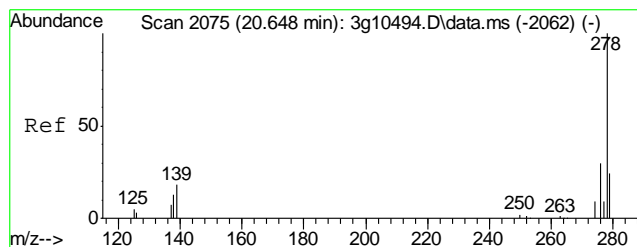
Tgt Ion:	252	Resp:	449
Ion Ratio	100	Lower	Upper
252	100		
253	20.9	1.8	41.8
126	0.0	0.0	38.6
125	0.0	0.0	33.5



#28
Indeno(1,2,3-cd)pyrene
Concen: Below ug/mL
RT: 14.234 min Scan# 1374
Delta R.T. -0.074 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

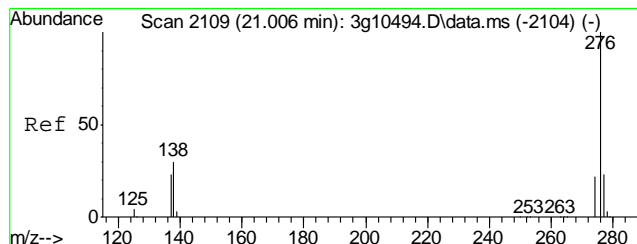
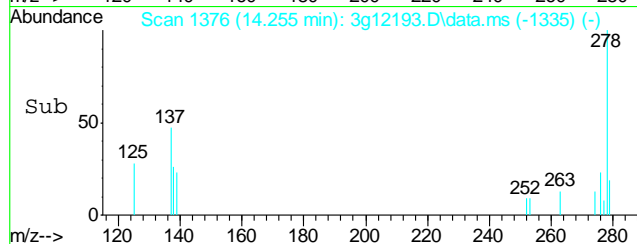
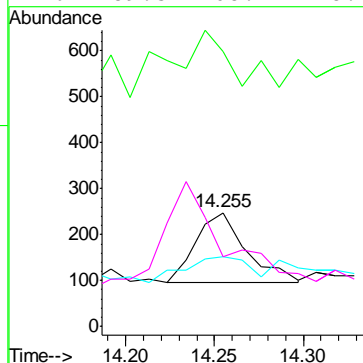
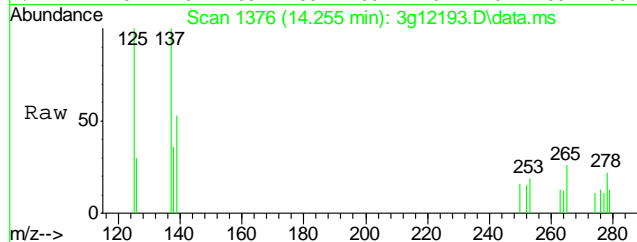
Tgt Ion:	276	Resp:	561
Ion Ratio	100	Lower	Upper
276	100		
138	64.7	16.6	56.6#
277	45.3	4.7	44.7#
278	52.8	57.9	97.9#





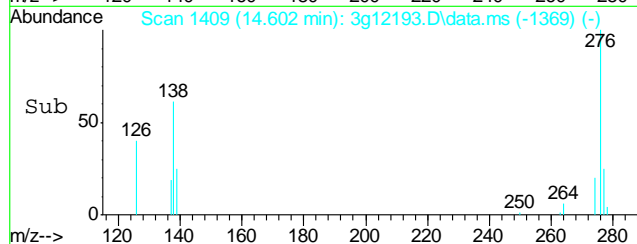
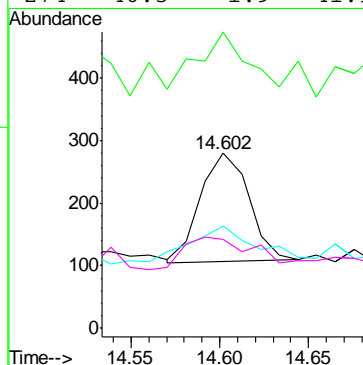
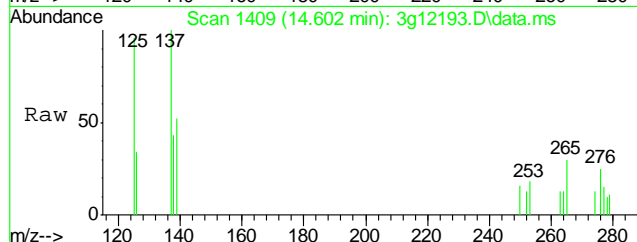
#29
Dibenzo(a,h)anthracene
Concen: Below ug/mL
RT: 14.255 min Scan# 1376
Delta R.T. -0.074 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion: 278 Resp: 296
Ion Ratio Lower Upper
278 100
139 109.1 7.8 47.8#
279 47.0 2.3 42.3#
276 189.5 108.4 148.4#



#30
Benzo(g,h,i)perylene
Concen: Below ug/mL
RT: 14.602 min Scan# 1409
Delta R.T. -0.084 min
Lab File: 3g12193.D
Acq: 21 Nov 12 1:15 pm

Tgt Ion: 276 Resp: 331
Ion Ratio Lower Upper
276 100
138 108.5 11.5 51.5#
277 57.1 2.9 42.9#
274 46.5 1.9 41.9#



GC Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: D40910
Account: XTOKRWR XTO Energy
Project: PCU 197-36A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1008-MB	GB18455.D	1	11/14/12	SK	n/a	n/a	GGB1008

The QC reported here applies to the following samples: Method: SW846 8015B
D40910-1, D40910-2

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

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	87% 60-140%

10.1.1
10

Blank Spike Summary

Page 1 of 1

Job Number: D40910
Account: XTOKRWR XTO Energy
Project: PCU 197-36A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1008-BS	GB18456.D	1	11/14/12	SK	n/a	n/a	GGB1008

The QC reported here applies to the following samples:

Method: SW846 8015B

D40910-1, D40910-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	121	110	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	104%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D40910
Account: XTOKRWR XTO Energy
Project: PCU 197-36A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D40868-1MS	GB18458.D	1	11/14/12	SK	n/a	n/a	GGB1008
D40868-1MSD	GB18459.D	1	11/14/12	SK	n/a	n/a	GGB1008
D40868-1	GB18457.D	1	11/14/12	SK	n/a	n/a	GGB1008

The QC reported here applies to the following samples:

Method: SW846 8015B

D40910-1, D40910-2

CAS No.	Compound	D40868-1 mg/kg	Spike Q	mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	139	153	110	152	109	1	70-130/30	

CAS No.	Surrogate Recoveries	MS	MSD	D40868-1	Limits
120-82-1	1,2,4-Trichlorobenzene	101%	96%	88%	60-140%

* = Outside of Control Limits.

GC Volatiles

Raw Data



Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\111412\GB18469.D\FID1A.CH Vial: 17
Signal #2 : Y:\1\DATA\111412\GB18469.D\FID2B.CH
Acq On : 14 Nov 2012 7:23 pm Operator: StephK
Sample : D40910-1, 50X Inst : GC/MS Ins
Misc : GC3237,GGB1008,5.051,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 15 08:25:53 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Thu Nov 15 08:25:26 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

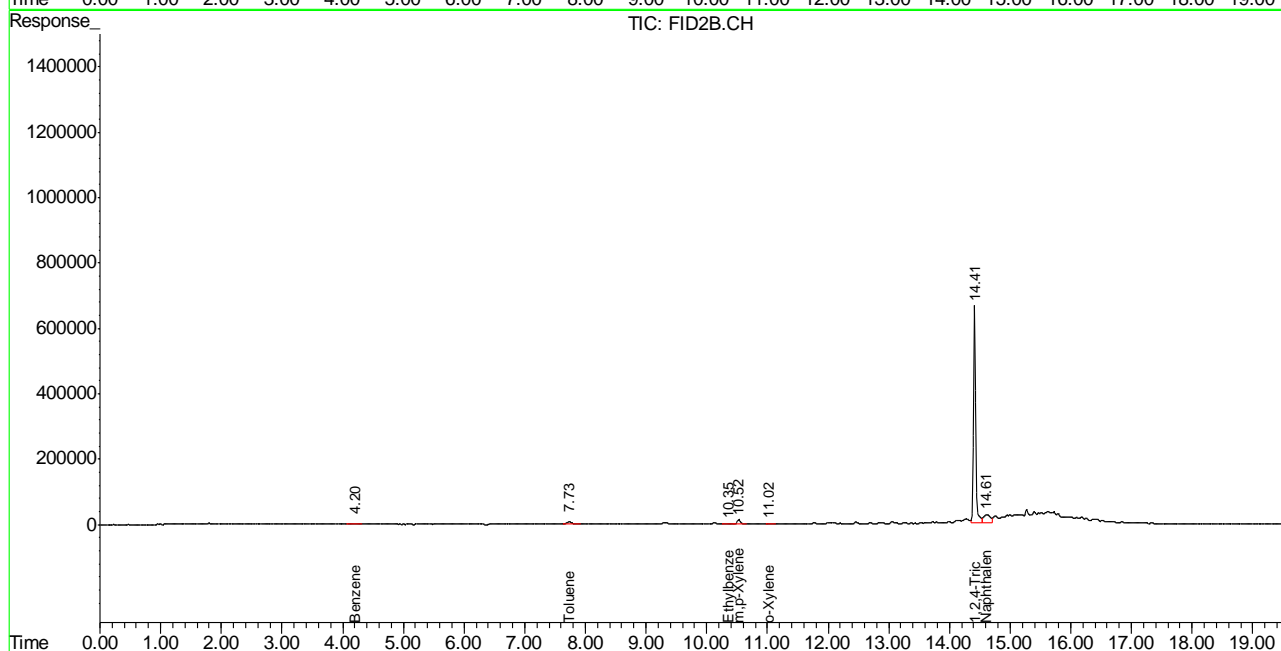
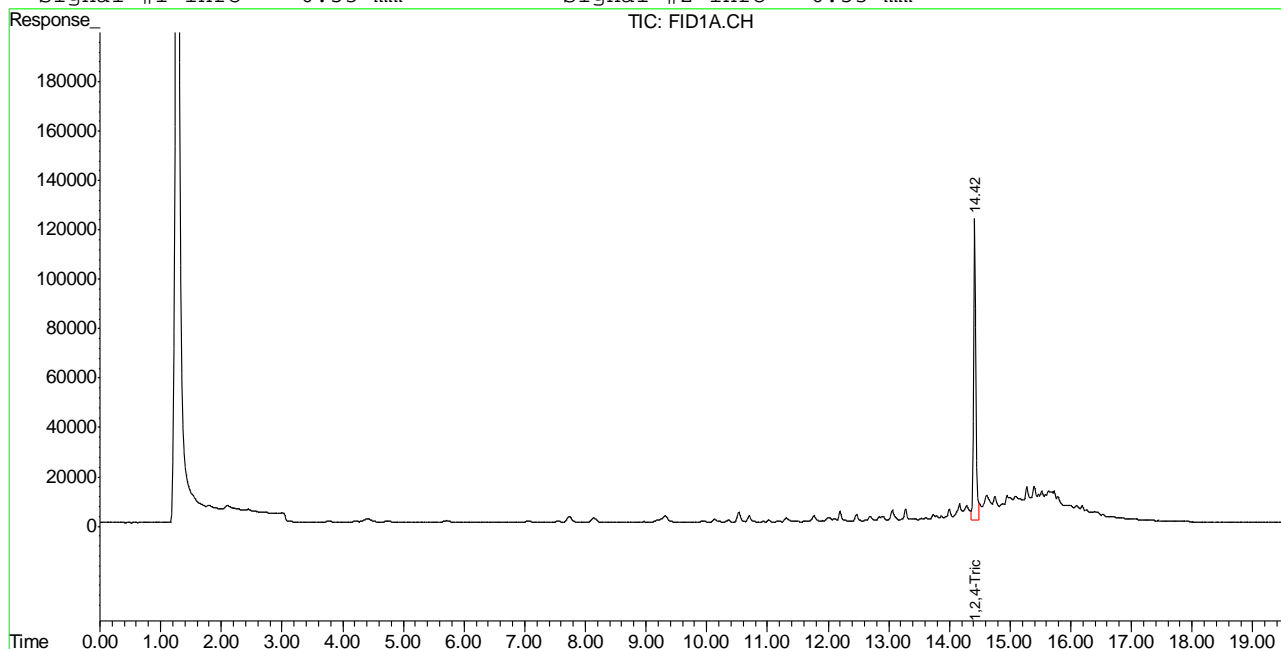
System Monitoring Compounds				
2) S 1,2,4-Trichlorobenzene	14.42	3051864	97.398 %	m
10) S 1,2,4-Trichlorobenzene (P)	14.41	16267735	100.092 %	
Target Compounds				
1) H TVH-Gasoline	7.23	6589597	<MDL	mg/L
4) T Methyl-t-butyl-ether	0.00	0	N.D.	ug/L d
5) T Benzene	4.20	112448	0.279	ug/L
6) T Toluene	7.73	494960	1.249	ug/L
7) T Ethylbenzene	10.35	122686	0.363	ug/L
8) T m,p-Xylene	10.52	586381	1.233	ug/L
9) T o-Xylene	11.02	102655	0.313	ug/L
11) T Naphthalene	14.61	1869337	9.474	ug/L

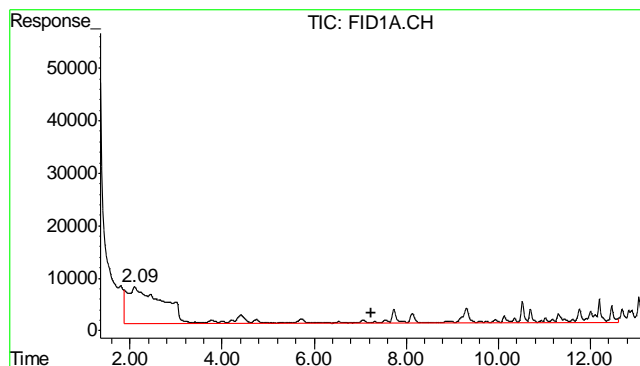
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\111412\GB18469.D\FID1A.CH Vial: 17
 Signal #2 : Y:\1\DATA\111412\GB18469.D\FID2B.CH
 Acq On : 14 Nov 2012 7:23 pm Operator: StephK
 Sample : D40910-1, 50X Inst : GC/MS Ins
 Misc : GC3237,GGB1008,5.051,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Nov 15 8:28 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Thu Nov 15 08:25:26 2012
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB4.M

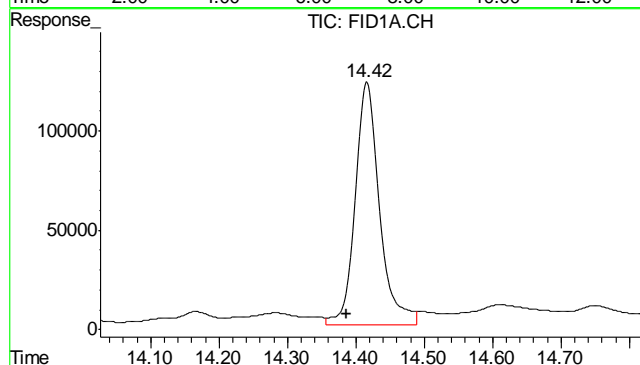
Volume Inj. :
 Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
 Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





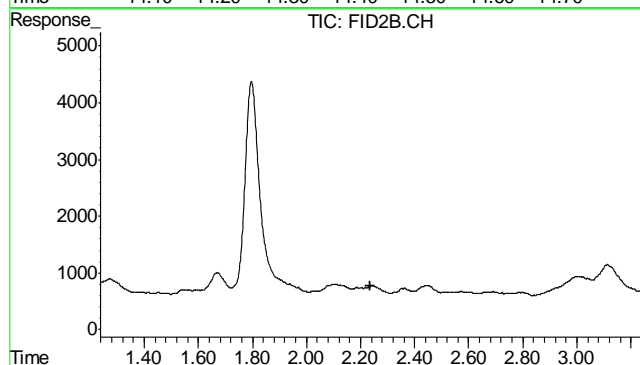
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 6589597
Conc: N.D.



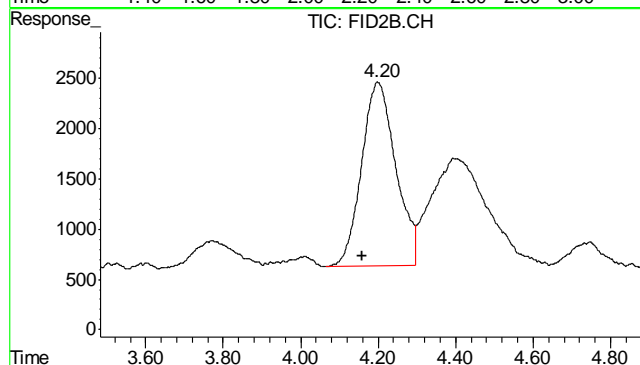
#2 1,2,4-Trichlorobenzene

R.T.: 14.416 min
Delta R.T.: 0.029 min
Response: 3051864
Conc: 97.40 % m



#4 Methyl-t-butyl-ether

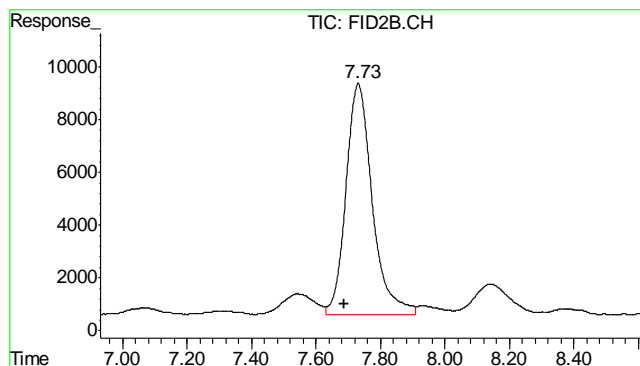
R.T.: 0.000 min
Exp R.T.: 2.237 min
Response: 0
Conc: N.D.



#5 Benzene

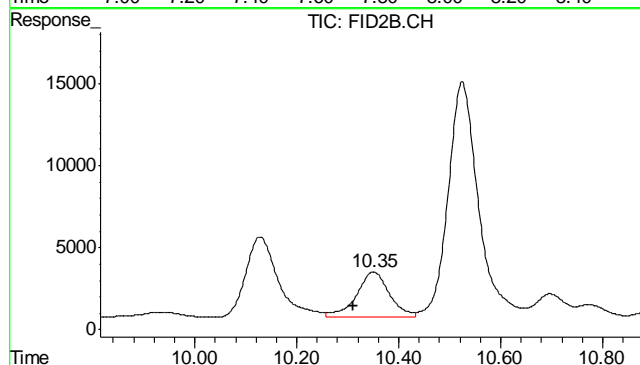
R.T.: 4.198 min
Delta R.T.: 0.038 min
Response: 112448
Conc: 0.28 ug/L

11.1.1
11



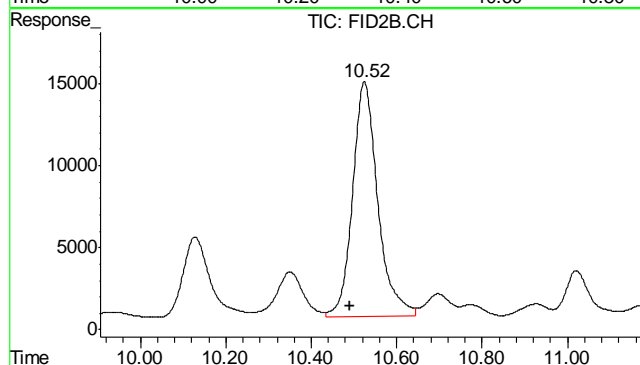
#6 Toluene

R.T.: 7.732 min
Delta R.T.: 0.044 min
Response: 494960
Conc: 1.25 ug/L



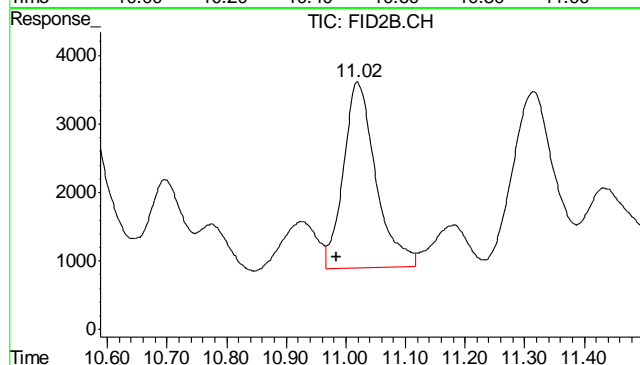
#7 Ethylbenzene

R.T.: 10.350 min
Delta R.T.: 0.039 min
Response: 122686
Conc: 0.36 ug/L



#8 m,p-Xylene

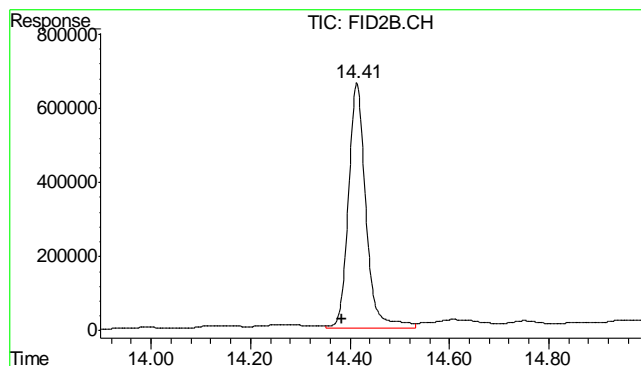
R.T.: 10.525 min
Delta R.T.: 0.034 min
Response: 586381
Conc: 1.23 ug/L



#9 o-Xylene

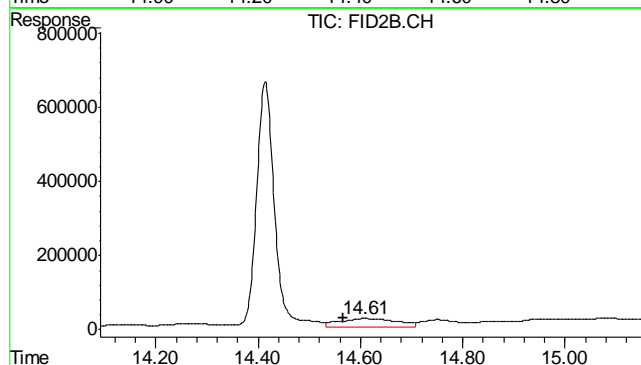
R.T.: 11.020 min
Delta R.T.: 0.035 min
Response: 102655
Conc: 0.31 ug/L

11.11



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

R.T.: 14.414 min
 Delta R.T.: 0.030 min
 Response: 16267735
 Conc: 100.09 %



#11 Naphthalene

R.T.: 14.608 min
 Delta R.T.: 0.042 min
 Response: 1869337
 Conc: 9.47 ug/L

11.1.1

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\111412\GB18470.D\FID1A.CH Vial: 18
Signal #2 : Y:\1\DATA\111412\GB18470.D\FID2B.CH
Acq On : 14 Nov 2012 7:59 pm Operator: StephK
Sample : D40910-2, 50X Inst : GC/MS Ins
Misc : GC3237,GGB1008,5.023,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 15 08:25:57 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Thu Nov 15 08:25:26 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	14.40	3048036	97.276 %	m
10) S	1,2,4-Trichlorobenzene (P)	14.40	16856388	103.714 %	
Target Compounds					
1) H	TVH-Gasoline	7.23	7968737	0.093 mg/L	
4) T	Methyl-t-butyl-ether	0.00	0	N.D. ug/L	d
5) T	Benzene	4.18	154558	0.384 ug/L	
6) T	Toluene	7.71	557845	1.408 ug/L	
7) T	Ethylbenzene	10.33	80382	0.238 ug/L	
8) T	m,p-Xylene	10.51	745751	1.670 ug/L	
9) T	o-Xylene	11.00	141470	0.431 ug/L	
11) T	Naphthalene	14.60	3094163	15.682 ug/L	

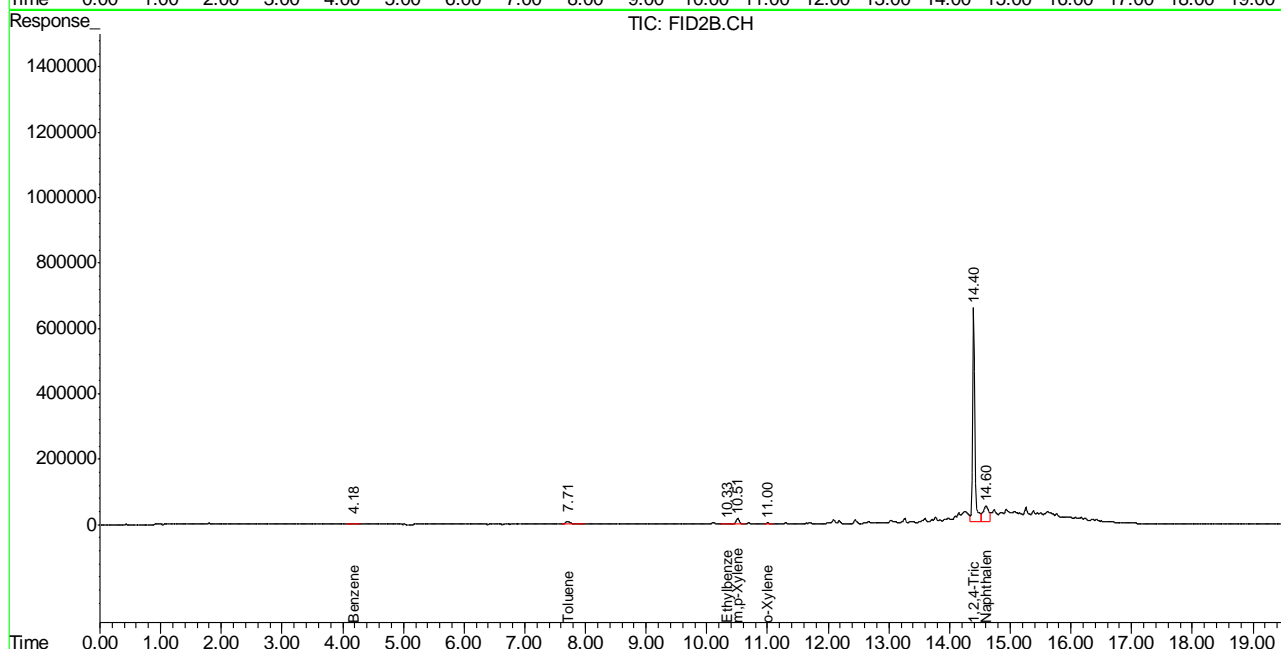
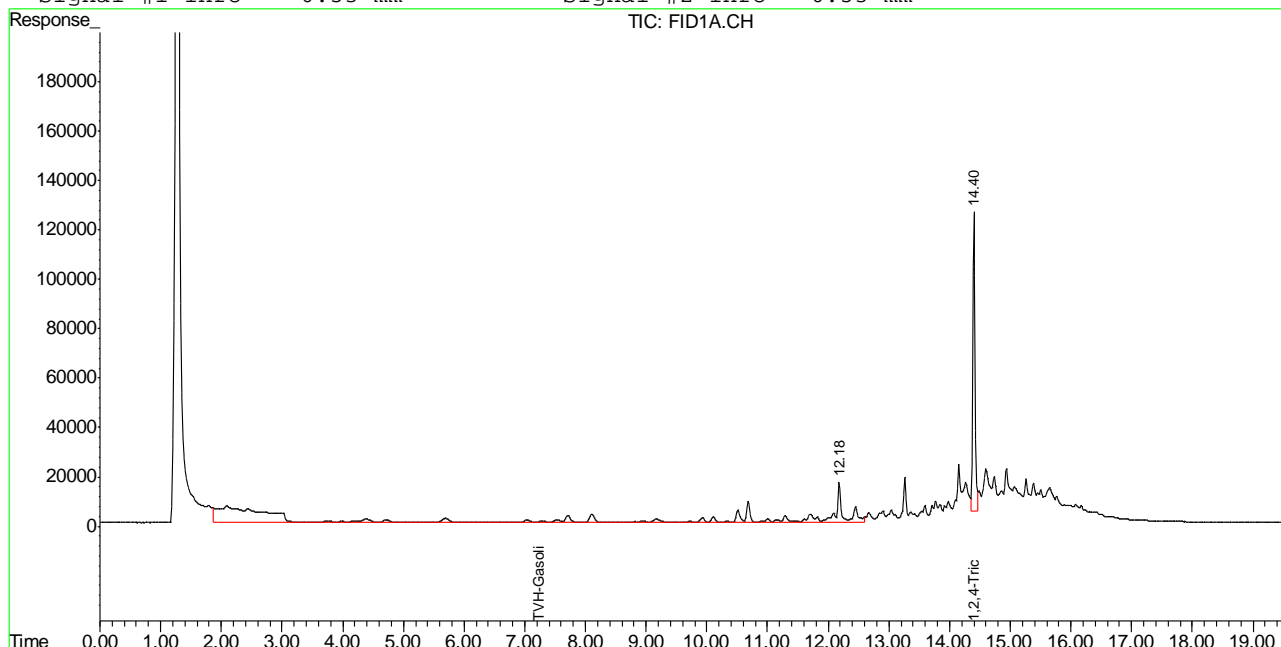
11.12
11

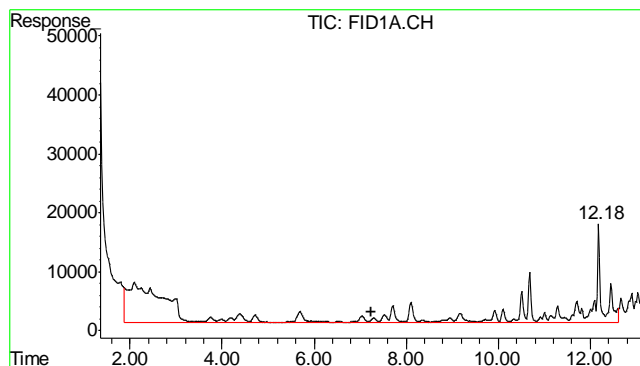
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\111412\GB18470.D\FID1A.CH Vial: 18
 Signal #2 : Y:\1\DATA\111412\GB18470.D\FID2B.CH
 Acq On : 14 Nov 2012 7:59 pm Operator: StephK
 Sample : D40910-2, 50X Inst : GC/MS Ins
 Misc : GC3237,GGB1008,5.023,,100,5,1 Multiplr: 1.00
 IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
 Quant Time: Nov 15 8:28 2012 Quant Results File: TB868GB868SOIL.RES

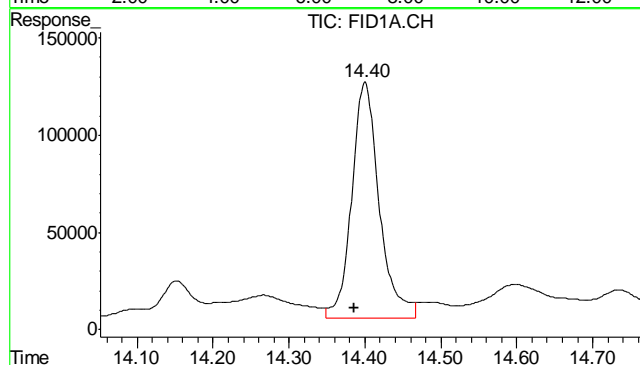
Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
 Title : 8015B/8021B TVH/BTEX
 Last Update : Thu Nov 15 08:25:26 2012
 Response via : Multiple Level Calibration
 DataAcq Meth : TVB4.M

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

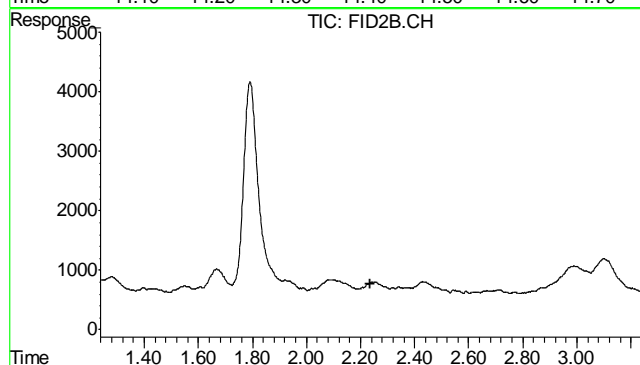




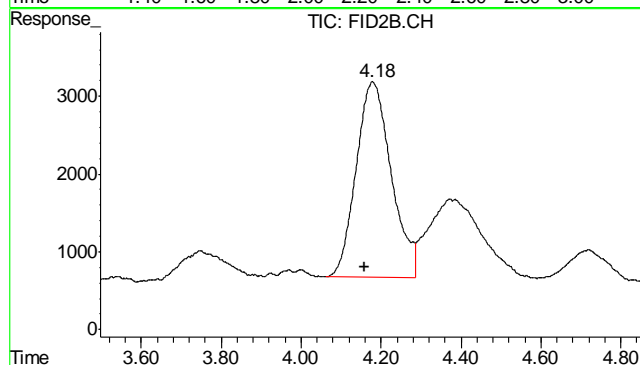
#1 TVH-Gasoline
 R.T.: 7.230 min
 Delta R.T.: 0.000 min
 Response: 7968737
 Conc: 0.09 mg/L m



#2 1,2,4-Trichlorobenzene
 R.T.: 14.400 min
 Delta R.T.: 0.013 min
 Response: 3048036
 Conc: 97.28 % m

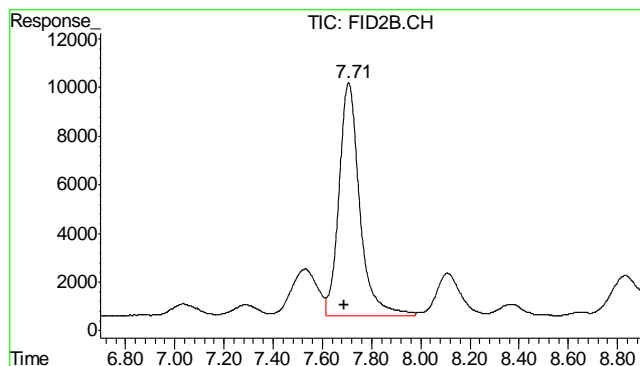


#4 Methyl-t-butyl-ether
 R.T.: 0.000 min
 Exp R.T.: 2.237 min
 Response: 0
 Conc: N.D.



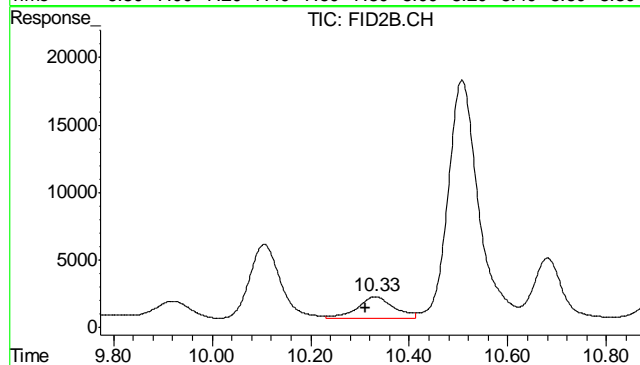
#5 Benzene
 R.T.: 4.179 min
 Delta R.T.: 0.020 min
 Response: 154558
 Conc: 0.38 ug/L

11.12
11



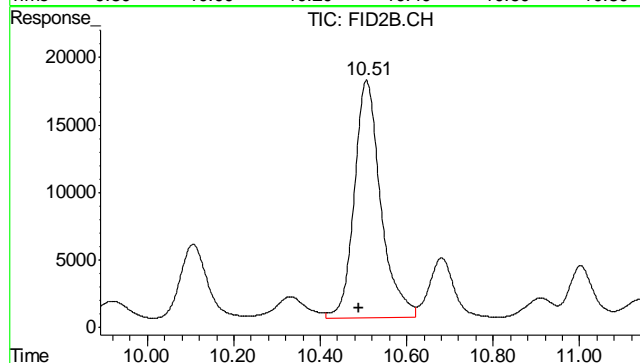
#6 Toluene

R.T.: 7.707 min
Delta R.T.: 0.020 min
Response: 557845
Conc: 1.41 ug/L



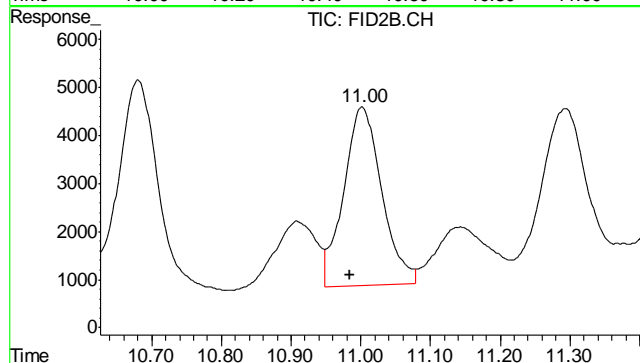
#7 Ethylbenzene

R.T.: 10.331 min
Delta R.T.: 0.020 min
Response: 80382
Conc: 0.24 ug/L



#8 m,p-Xylene

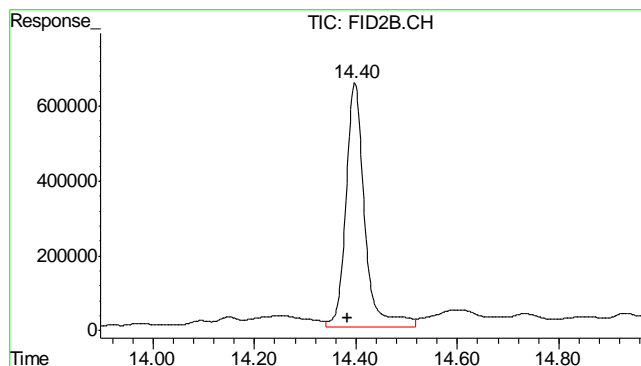
R.T.: 10.507 min
Delta R.T.: 0.016 min
Response: 745751
Conc: 1.67 ug/L



#9 o-Xylene

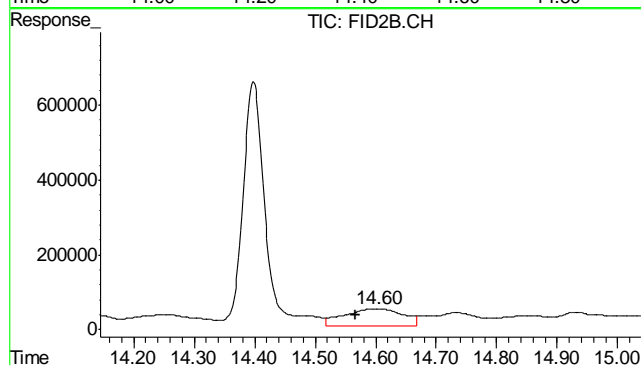
R.T.: 11.002 min
Delta R.T.: 0.017 min
Response: 141470
Conc: 0.43 ug/L

11.12
11



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

R.T.: 14.398 min
 Delta R.T.: 0.014 min
 Response: 16856388
 Conc: 103.71 %



#11 Naphthalene

R.T.: 14.601 min
 Delta R.T.: 0.035 min
 Response: 3094163
 Conc: 15.68 ug/L

11.1.2
11

Judy Melson
11/15/12 08:53

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\111412\GB18455.D\FID1A.CH Vial: 3
Signal #2 : Y:\1\DATA\111412\GB18455.D\FID2B.CH
Acq On : 14 Nov 2012 11:09 am Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC3237,GGB1008,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 14 12:11:50 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Nov 14 12:11:33 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	14.38	2725437	86.980 %	m
10) S	1,2,4-Trichlorobenzene (P)	14.38	14555844	89.559 %	
Target Compounds					
1) H	TVH-Gasoline	7.23	5101069	<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	7.68	208741	0.527	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	14.56	178471	0.905	ug/L

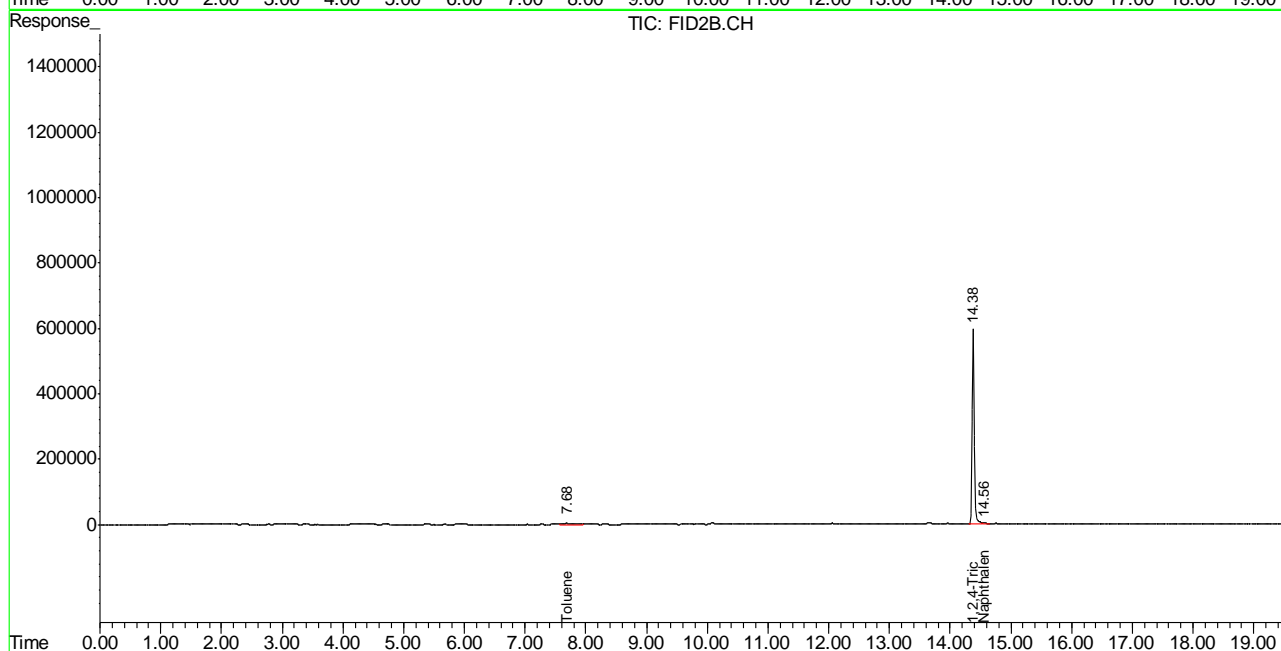
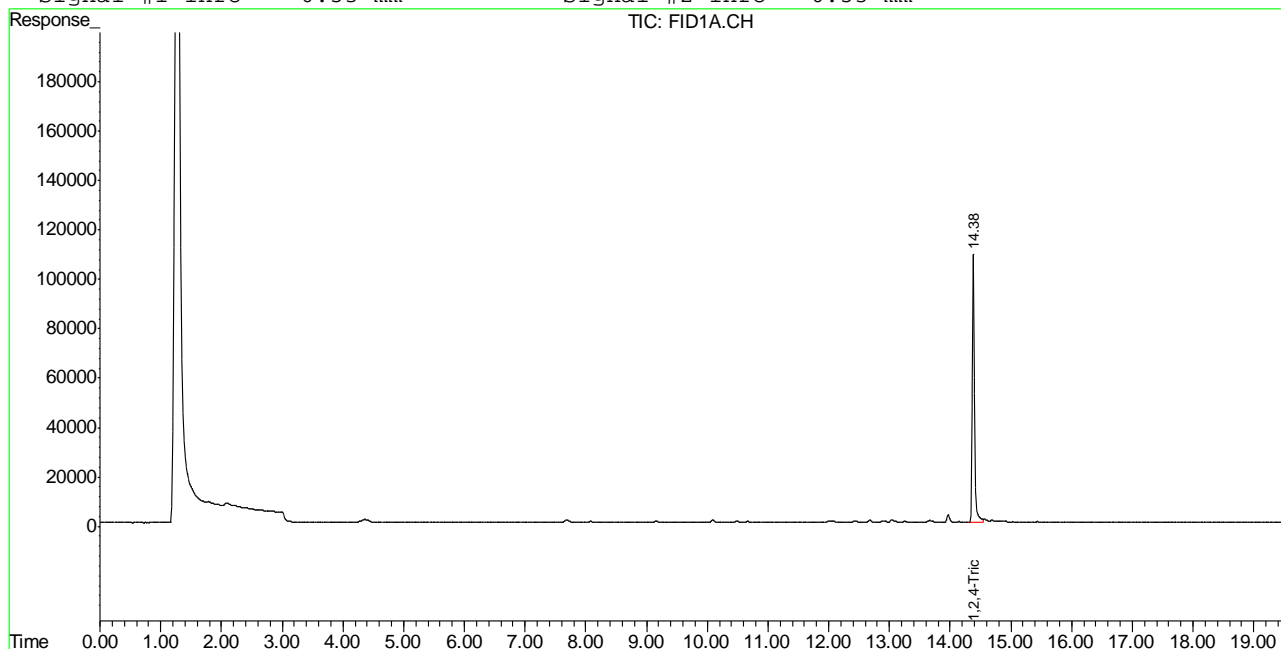
(f)=RT Delta > 1/2 Window (m)=manual int.
GB18455.D TB868GB868SOIL.M Thu Nov 15 08:30:17 2012 GC

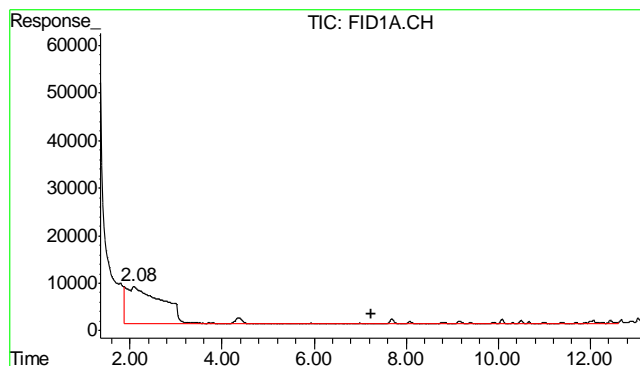
Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\111412\GB18455.D\FID1A.CH Vial: 3
Signal #2 : Y:\1\DATA\111412\GB18455.D\FID2B.CH
Acq On : 14 Nov 2012 11:09 am Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC3237,GGB1008,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 14 12:12 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Wed Nov 14 12:11:33 2012
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

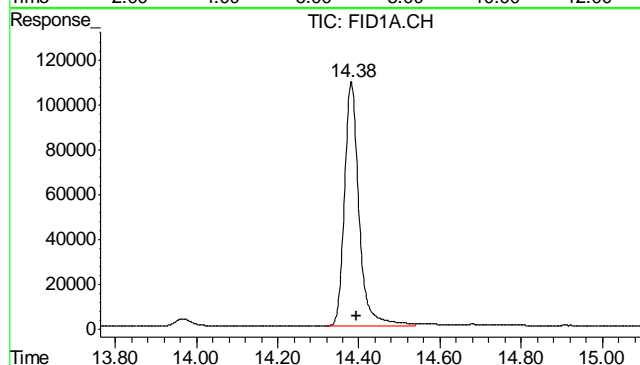
Volume Inj. :
Signal #1 Phase : DB-624 Signal #2 Phase: DB-624
Signal #1 Info : 0.53 mm Signal #2 Info : 0.53 mm





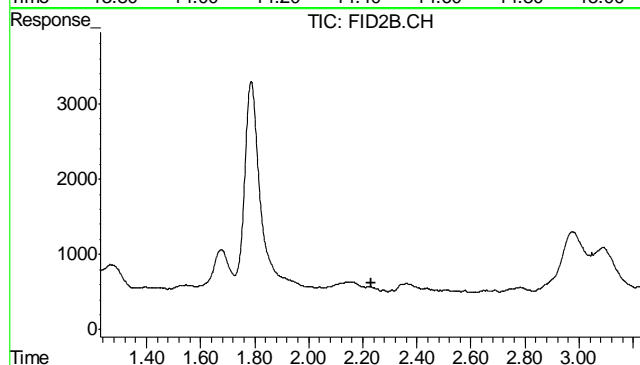
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 5101069
Conc: N.D.



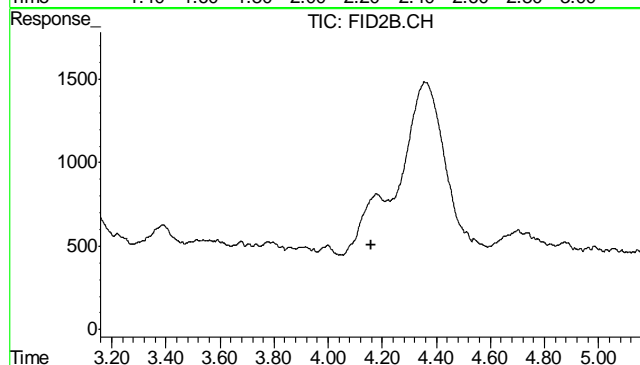
#2 1,2,4-Trichlorobenzene

R.T.: 14.381 min
Delta R.T.: -0.014 min
Response: 2725437
Conc: 86.98 % m



#4 Methyl-t-butyl-ether

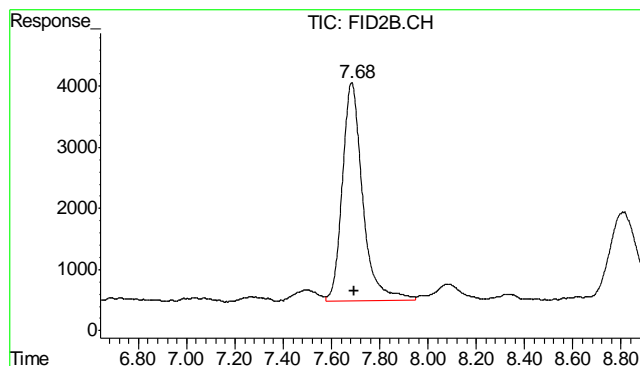
R.T.: 0.000 min
Exp R.T.: 2.230 min
Response: 0
Conc: N.D.



#5 Benzene

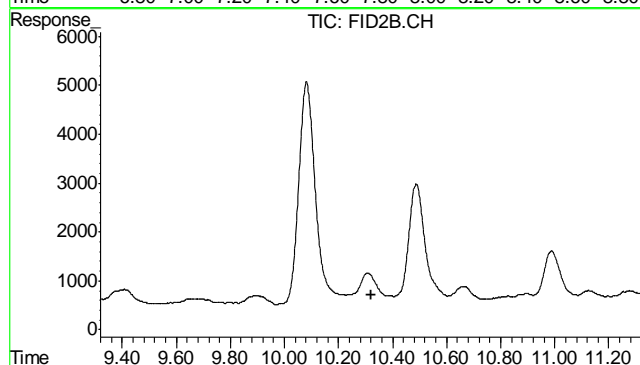
R.T.: 0.000 min
Exp R.T.: 4.158 min
Response: 0
Conc: N.D.

11.21
11



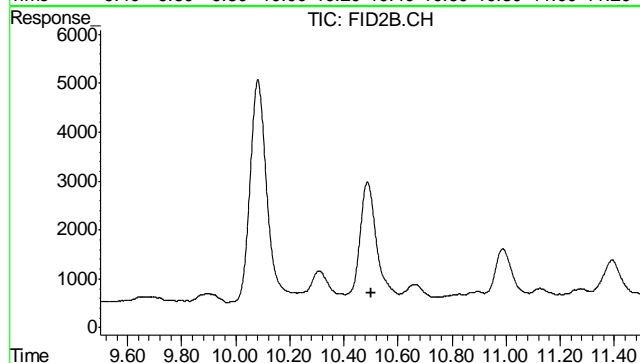
#6 Toluene

R.T.: 7.683 min
Delta R.T.: -0.010 min
Response: 208741
Conc: 0.53 ug/L



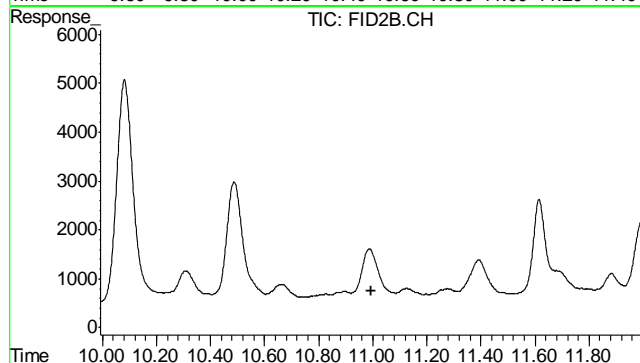
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T.: 10.320 min
Response: 0
Conc: N.D.



#8 m,p-Xylene

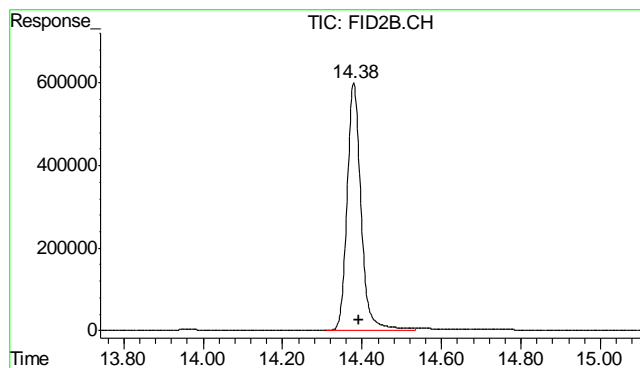
R.T.: 0.000 min
Exp R.T.: 10.499 min
Response: 0
Conc: N.D.



#9 o-Xylene

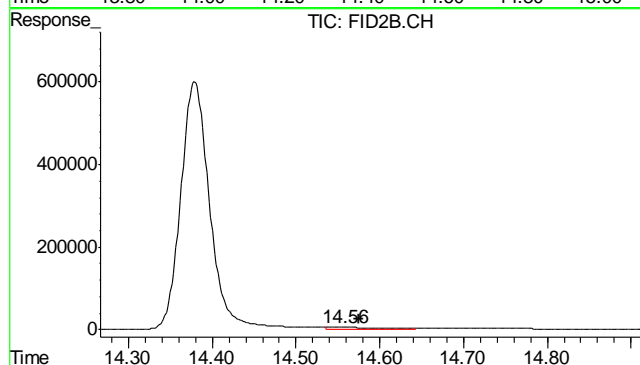
R.T.: 0.000 min
Exp R.T.: 10.993 min
Response: 0
Conc: N.D.

11.21
11



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

R.T.: 14.379 min
Delta R.T.: -0.013 min
Response: 14555844
Conc: 89.56 %



#11 Naphthalene

R.T.: 14.557 min
Delta R.T.: -0.018 min
Response: 178471
Conc: 0.90 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

Page 1 of 1

Job Number: D40910
Account: XTOKRWR XTO Energy
Project: PCU 197-36A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6966-MB	FD19619.D	1	11/16/12	AV	11/15/12	OP6966	GFD986

The QC reported here applies to the following samples:

Method: SW846-8015B

D40910-1, D40910-2

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

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	85% 35-130%

12.1.1
12

Blank Spike Summary

Page 1 of 1

Job Number: D40910
Account: XTOKRWR XTO Energy
Project: PCU 197-36A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6966-BS	FD19621.D	1	11/16/12	AV	11/15/12	OP6966	GFD986

The QC reported here applies to the following samples:

Method: SW846-8015B

D40910-1, D40910-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	669	100	48-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	93%	35-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D40910
Account: XTOKRWR XTO Energy
Project: PCU 197-36A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6966-MS	FD19623.D	1	11/16/12	AV	11/15/12	OP6966	GFD986
OP6966-MSD	FD19625.D	1	11/16/12	AV	11/15/12	OP6966	GFD986
D40875-4	FD19643.D	1	11/16/12	AV	11/15/12	OP6966	GFD986

The QC reported here applies to the following samples:

Method: SW846-8015B

D40910-1, D40910-2

CAS No.	Compound	D40875-4 mg/kg	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	168	799	584	52	562	49	4	20-168/30

CAS No.	Surrogate Recoveries	MS	MSD	D40875-4	Limits
84-15-1	o-Terphenyl	64%	65%	73%	35-130%

* = Outside of Control Limits.

GC Semi-volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD111612\FD19657.D Vial: 23
Acq On : 11-17-2012 02:37:49 AM Operator: ashleyv
Sample : D40910-1 Inst : FID5
Misc : OP6966,GFD986,30.04,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Nov 19 08:25:53 2012 Quant Results File: DRO-GFD982F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD982F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Fri Nov 16 10:24:56 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

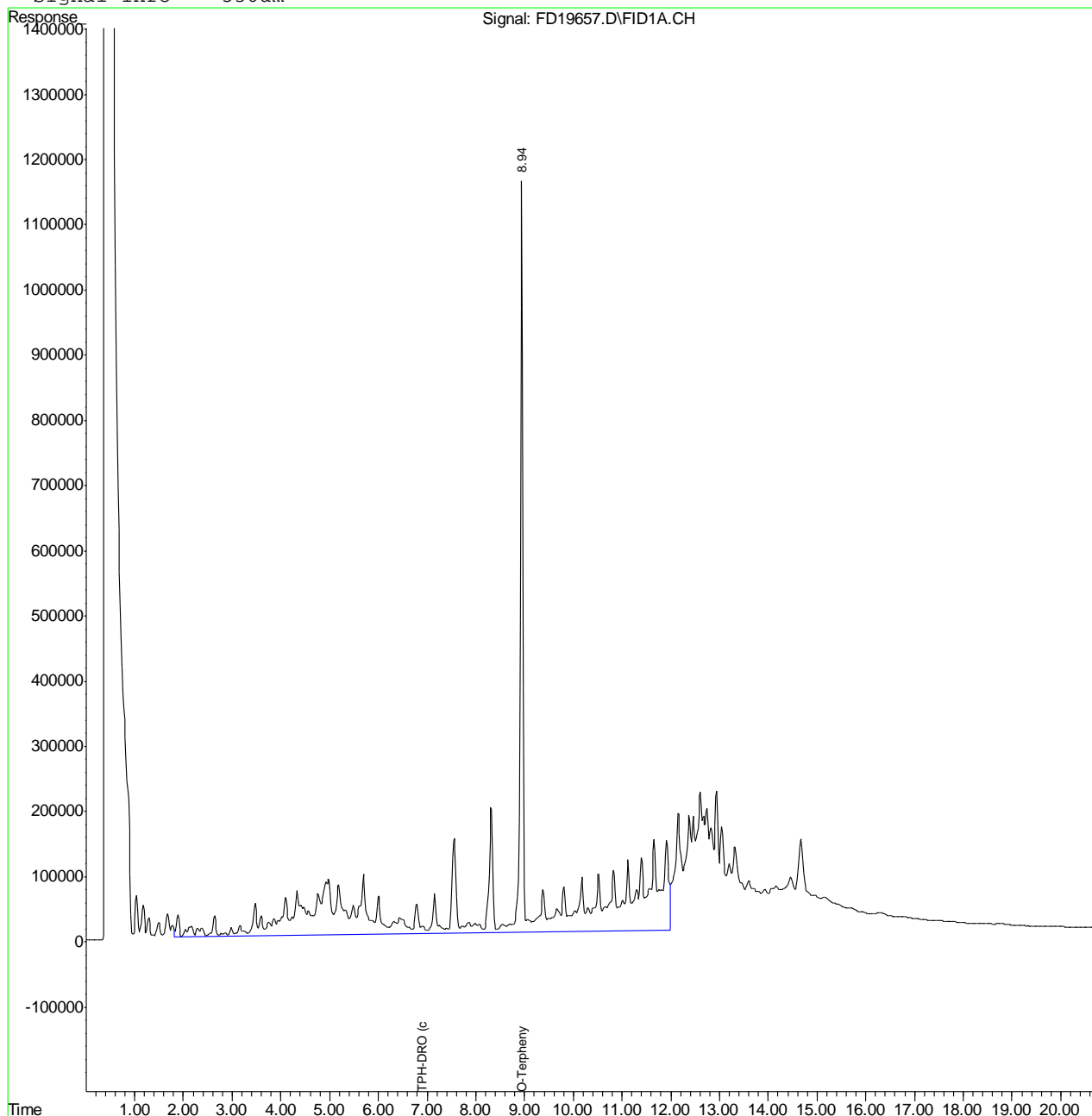
System Monitoring Compounds			
1) S O-Terphenyl	8.95	41751418	754.584 mg/L
Target Compounds			
2) H TPH-DRO (c10-c28)	6.89	190380913	5013.232 mg/L

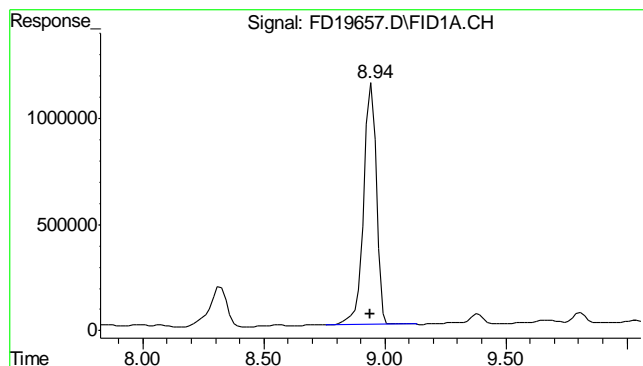
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD111612\FD19657.D Vial: 23
 Acq On : 11-17-2012 02:37:49 AM Operator: ashleyv
 Sample : D40910-1 Inst : FID5
 Misc : OP6966,GFD986,30.04,,,2,1 Multiplr: 1.00
 IntFile : autoint1.e
 Quant Time: Nov 19 8:25 2012 Quant Results File: DRO-GFD982F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD982F.M (Chemstation Integrator)
 Title : 8015B TEH
 Last Update : Fri Nov 16 10:24:56 2012
 Response via : Multiple Level Calibration
 DataAcq Meth : DRODUAL.M

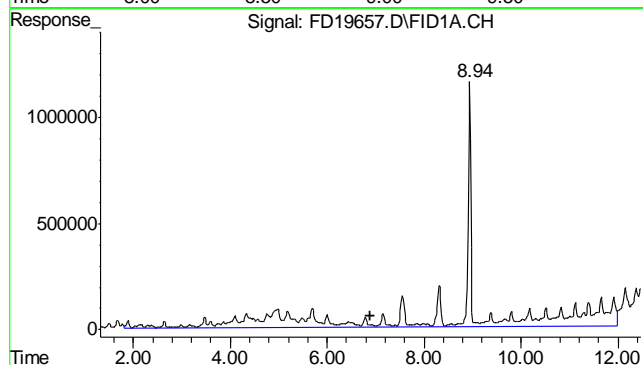
Volume Inj. : 1ul
 Signal Phase : RTX-5
 Signal Info : 530um





#1 O-Terphenyl

R.T.: 8.947 min
 Delta R.T.: 0.007 min
 Response: 41751418
 Conc: 754.58 mg/L



#2 TPH-DRO (c10-c28)

R.T.: 6.895 min
 Delta R.T.: 0.000 min
 Response: 190380913
 Conc: 5013.23 mg/L m

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD111612\FD19659.D Vial: 24
Acq On : 11-17-2012 03:04:43 AM Operator: ashleyv
Sample : D40910-2 Inst : FID5
Misc : OP6966,GFD986,30.14,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Nov 19 08:25:54 2012 Quant Results File: DRO-GFD982F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD982F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Fri Nov 16 10:24:56 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

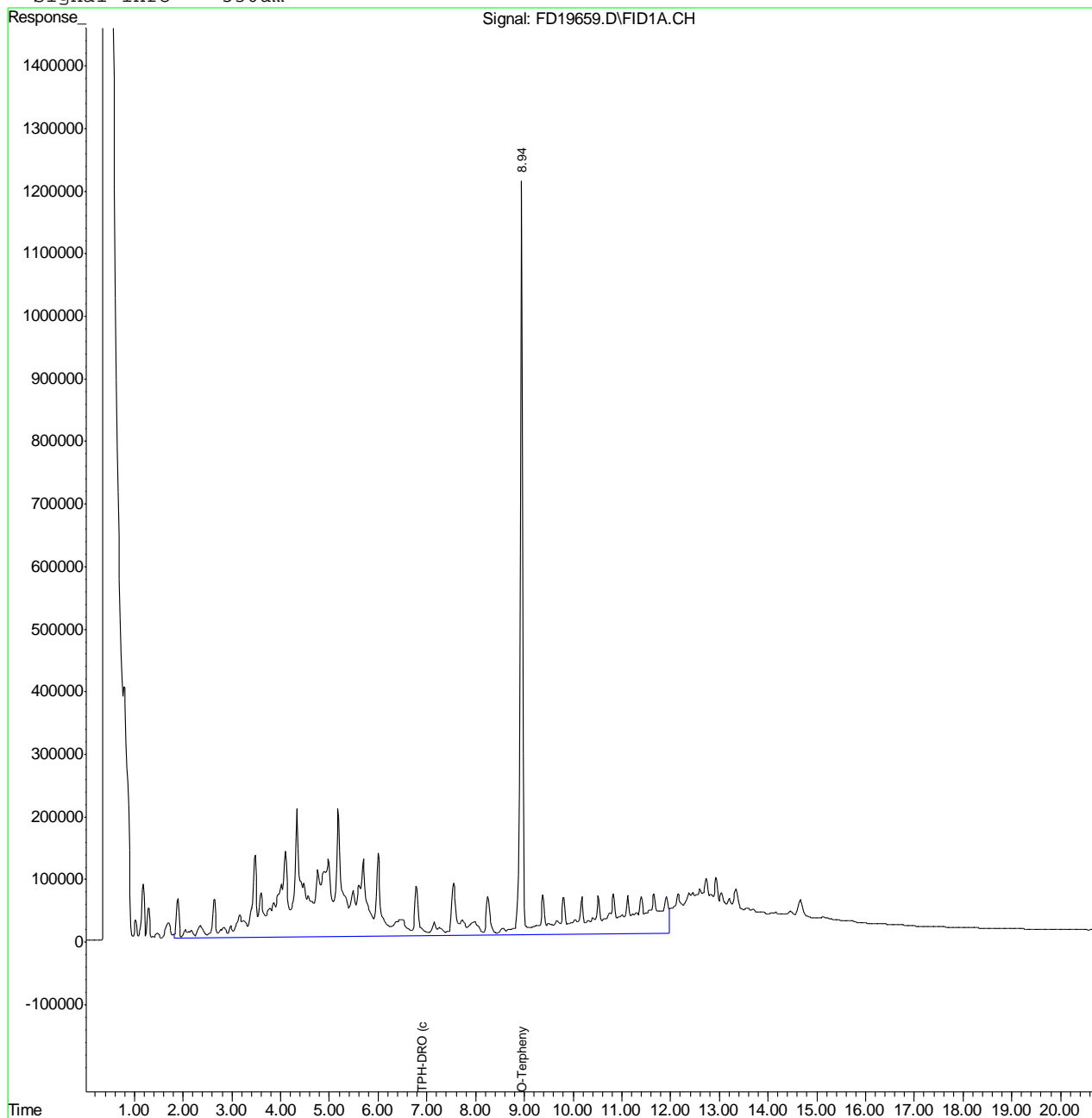
System Monitoring Compounds			
1) S O-Terphenyl	8.95	44128109	797.538 mg/L
Target Compounds			
2) H TPH-DRO (c10-c28)	6.89	216732504	5707.139 mg/L

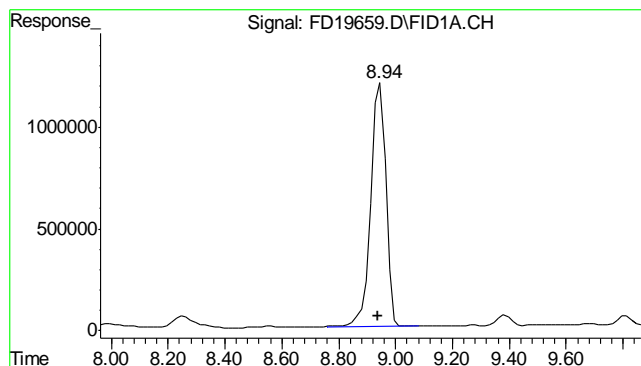
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD111612\FD19659.D Vial: 24
Acq On : 11-17-2012 03:04:43 AM Operator: ashleyv
Sample : D40910-2 Inst : FID5
Misc : OP6966,GFD986,30.14,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Nov 19 8:25 2012 Quant Results File: DRO-GFD982F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD982F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Fri Nov 16 10:24:56 2012
Response via : Multiple Level Calibration
DataAcq Meth : DRODUAL.M

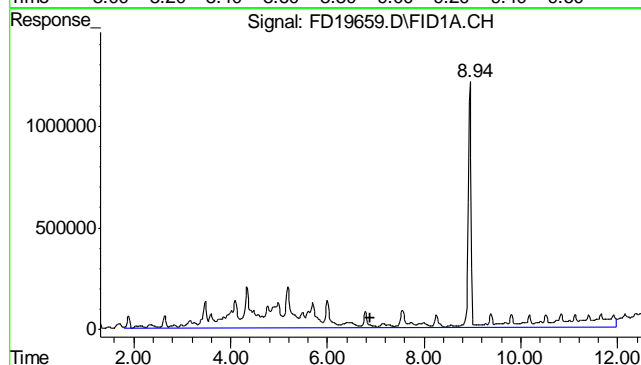
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





#1 O-Terphenyl

R.T.: 8.948 min
 Delta R.T.: 0.008 min
 Response: 44128109
 Conc: 797.54 mg/L



#2 TPH-DRO (c10-c28)

R.T.: 6.895 min
 Delta R.T.: 0.000 min
 Response: 216732504
 Conc: 5707.14 mg/L m

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD111612\FD19619.D Vial: 4
Acq On : 11-16-2012 06:06:11 PM Operator: ashleyv
Sample : OP6966-MB Inst : FID5
Misc : OP6966,GFD986,30.00,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Nov 19 08:25:35 2012 Quant Results File: DRO-GFD982F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD982F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Fri Nov 16 10:24:56 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

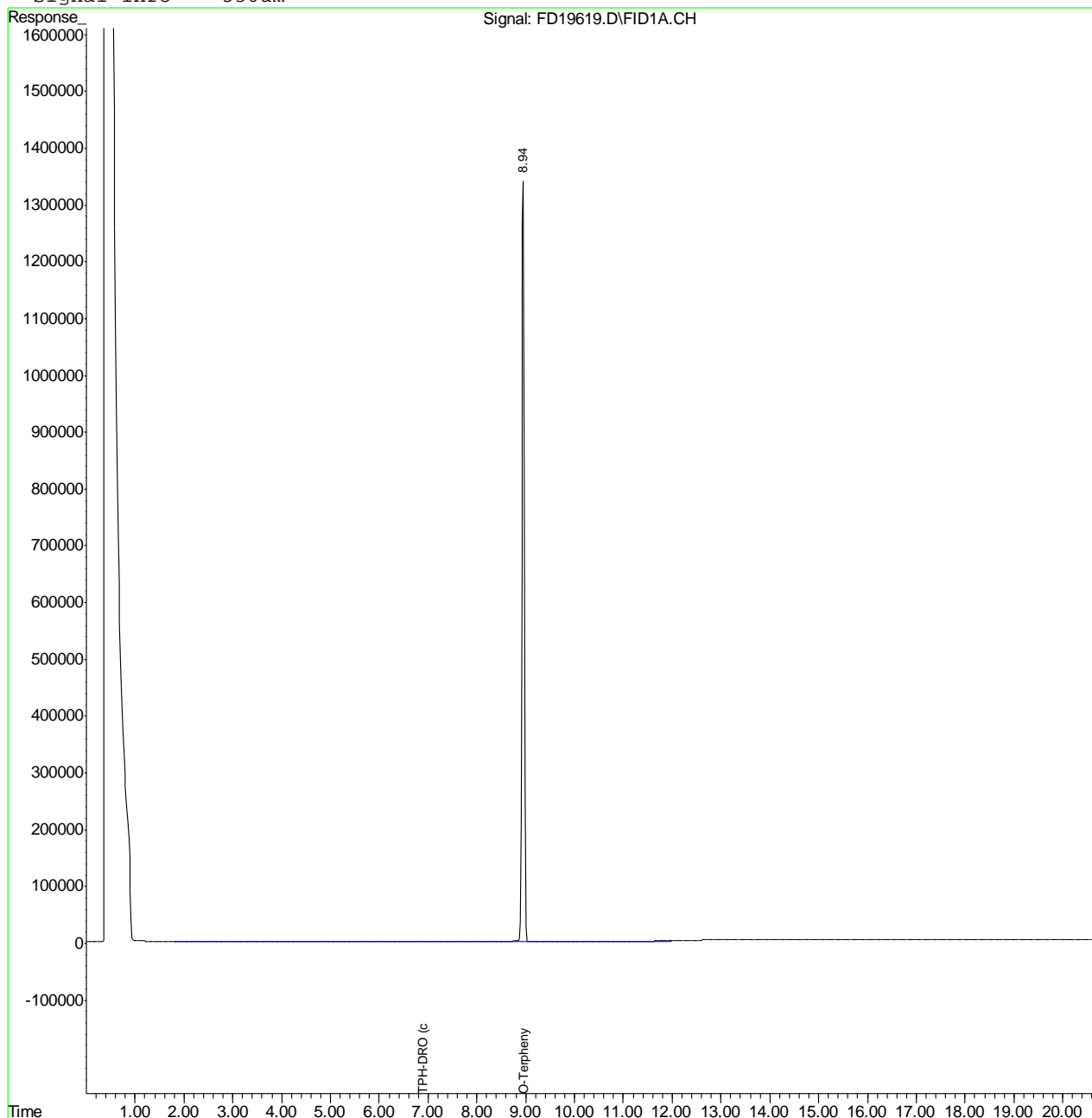
System Monitoring Compounds			
1) S O-Terphenyl	8.95	47024008	849.877 mg/L
Target Compounds			
2) H TPH-DRO (c10-c28)	6.89	941886	24.802 mg/L

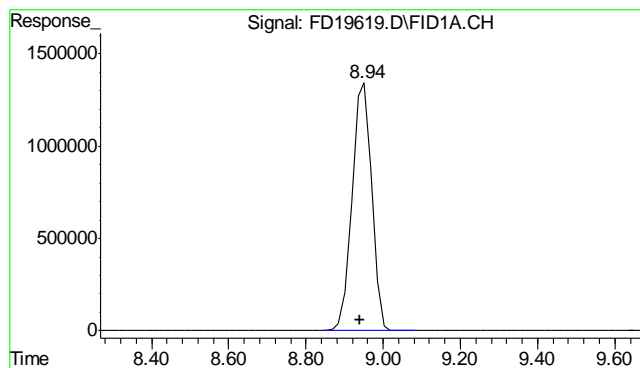
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD111612\FD19619.D Vial: 4
Acq On : 11-16-2012 06:06:11 PM Operator: ashleyv
Sample : OP6966-MB Inst : FID5
Misc : OP6966,GFD986,30.00,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Nov 19 8:25 2012 Quant Results File: DRO-GFD982F.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD982F.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Fri Nov 16 10:24:56 2012
Response via : Multiple Level Calibration
DataAcq Meth : DRODUAL.M

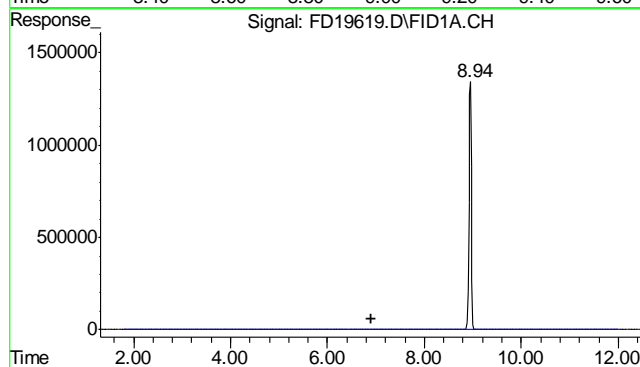
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





#1 O-Terphenyl

R.T.: 8.952 min
Delta R.T.: 0.012 min
Response: 47024008
Conc: 849.88 mg/L



#2 TPH-DRO (c10-c28)

R.T.: 6.895 min
Delta R.T.: 0.000 min
Response: 941886
Conc: 24.80 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: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8890
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 11/15/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.96	.57		
Antimony	3.0	.17	.12		
Arsenic	2.5	.44	.56		
Barium	1.0	.01	.11	0.050	<1.0
Beryllium	1.0	.13	.15		
Boron	5.0	.1	.06		
Cadmium	1.0	.06	.036	0.010	<1.0
Calcium	40	.54	9		
Chromium	1.0	.03	.03	0.040	<1.0
Cobalt	0.50	.04	.07		
Copper	1.0	.12	.15	0.030	<1.0
Iron	7.0	.12	.87		
Lead	5.0	.19	.24	0.13	<5.0
Lithium	0.20	.05	.054		
Magnesium	20	.65	.98		
Manganese	0.50	.12	.022		
Molybdenum	1.0	.21	.08		
Nickel	3.0	.05	.026	0.050	<3.0
Phosphorus	10	1.4	1.9		
Potassium	200	6.1	7		
Selenium	5.0	.48	.36	0.31	<5.0
Silicon	5.0	.29	.37		
Silver	3.0	.04	.06	-0.010	<3.0
Sodium	40	.59	1.9		
Strontium	5.0	.004	.017		
Thallium	1.0	.29	.53		
Tin	5.0	1.2	2		
Titanium	1.0	.01	.038		
Uranium	5.0	.22	.26		
Vanadium	1.0	.02	.036		
Zinc	3.0	.05	.37	0.33	<3.0

Associated samples MP8890: D40910-1, D40910-2

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8890
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8890
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 11/15/12

Metal	D40910-1 Original MS		Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	anr				
Barium	4180	5160	254	385.7(a)	75-125
Beryllium	anr				
Boron					
Cadmium	0.35	49.0	63.5	76.6	75-125
Calcium	anr				
Chromium	21.7	71.5	63.5	78.4	75-125
Cobalt	anr				
Copper	18.2	70.8	63.5	82.8	75-125
Iron	anr				
Lead	17.9	113	127	74.9N(b)	75-125
Lithium					
Magnesium	anr				
Manganese	anr				
Molybdenum	anr				
Nickel	12.6	59.2	63.5	73.4N(b)	75-125
Phosphorus	anr				
Potassium	anr				
Selenium	2.4	102	127	78.4	75-125
Silicon					
Silver	0.060	20.6	25.4	80.8	75-125
Sodium	anr				
Strontium					
Thallium	anr				
Tin					
Titanium					
Uranium					
Vanadium	anr				
Zinc	39.3	88.0	63.5	76.7	75-125

Associated samples MP8890: D40910-1, D40910-2

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8890
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 and/or sample nonhomogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8890
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 11/15/12

Metal	D40910-1 Original MSD		Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	anr					
Barium	4180	6100	251	763.6(a)	16.7	20
Beryllium	anr					
Boron						
Cadmium	0.35	52.5	62.9	83.0	6.9	20
Calcium	anr					
Chromium	21.7	72.1	62.9	80.2	0.8	20
Cobalt	anr					
Copper	18.2	76.9	62.9	93.4	8.3	20
Iron	anr					
Lead	17.9	138	126	95.5	19.9	20
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum	anr					
Nickel	12.6	61.5	62.9	77.8	3.8	20
Phosphorus	anr					
Potassium	anr					
Selenium	2.4	108	126	84.0	5.7	20
Silicon						
Silver	0.060	22.1	25.1	87.7	7.0	20
Sodium	anr					
Strontium						
Thallium	anr					
Tin						
Titanium						
Uranium						
Vanadium	anr					
Zinc	39.3	96.1	62.9	90.4	8.8	20

Associated samples MP8890: D40910-1, D40910-2

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8890
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.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8890
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 11/15/12

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	203	200	101.5	80-120
Beryllium	anr			
Boron				
Cadmium	46.9	50	93.8	80-120
Calcium	anr			
Chromium	49.2	50	98.4	80-120
Cobalt	anr			
Copper	47.6	50	95.2	80-120
Iron	anr			
Lead	95.2	100	95.2	80-120
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum	anr			
Nickel	46.6	50	93.2	80-120
Phosphorus	anr			
Potassium	anr			
Selenium	93.6	100	93.6	80-120
Silicon				
Silver	19.7	20	98.5	80-120
Sodium	anr			
Strontium				
Thallium	anr			
Tin				
Titanium				
Uranium				
Vanadium	anr			
Zinc	48.2	50	96.4	80-120

Associated samples MP8890: D40910-1, D40910-2

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

14.1.3
14

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8890
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8890
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/l

Prep Date: 11/15/12

Metal	D40910-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	31100	30000	13.4*(a)	0-10
Beryllium	anr			
Boron				
Cadmium	0.00	0.00	NC (b)	0-10
Calcium	anr			
Chromium	180	206	14.8*(a)	0-10
Cobalt	anr			
Copper	151	149	1.5	0-10
Iron	anr			
Lead	154	158	6.8	0-10
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum	anr			
Nickel	104	122	16.7*(a)	0-10
Phosphorus	anr			
Potassium	anr			
Selenium	0.00	0.00	NC (b)	0-10
Silicon				
Silver	3.00	2.50	400.0(b)	0-10
Sodium	anr			
Strontium				
Thallium	anr			
Tin				
Titanium				
Uranium				
Vanadium	anr			
Zinc	393	403	23.5*(a)	0-10

Associated samples MP8890: D40910-1, D40910-2

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8890
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/l

Prep Date:

Metal

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8891
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 11/15/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	.22	.31		
Antimony	0.20	.0018	.0075		
Arsenic	0.10	.006	.06	0.015	<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 MP8891: D40910-1, D40910-2

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8891
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 11/15/12

Metal	D40910-1 Original MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	6.6	117	127	86.9 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 MP8891: D40910-1, D40910-2

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

14.2.2
14

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8891
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 11/15/12

Metal	D40910-1 Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	6.6	112	126	83.8	4.4	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 MP8891: D40910-1, D40910-2

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

14.2.2
14

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8891
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 11/15/12

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	91.5	100	91.5	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 MP8891: D40910-1, D40910-2

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

14.2.3
14

SERIAL DILUTION RESULTS SUMMARY

Login Number: D40910
 Account: XTOKRWR - XTO Energy
 Project: PCU 197-36A

QC Batch ID: MP8891
 Matrix Type: SOLID

Methods: SW846 6020A
 Units: ug/l

Prep Date: 11/15/12

Metal	D40910-1			QC	
	Original	SDL 5:25	%DIF	Limits	
Aluminum					
Antimony					
Arsenic	54.3	53.0	2.4	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 MP8891: D40910-1, D40910-2

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

14.2.4
14

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8899
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 11/16/12

Metal	RL	IDL	MDL	MB	
				raw	final
Mercury	0.083	.00088	.00075	-0.0016	<0.083

Associated samples MP8899: D40910-1, D40910-2

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40910
 Account: XTOKRWR - XTO Energy
 Project: PCU 197-36A

QC Batch ID: MP8899
 Matrix Type: SOLID

Methods: SW846 7471B
 Units: mg/kg

Prep Date: 11/16/12

Metal	D40848-1		Spikelot		QC
	Original	MS	HGWSR1	% Rec	Limits
Mercury	0.44	2.4	1.94	101.2	75-125

Associated samples MP8899: D40910-1, D40910-2

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40910
 Account: XTOKRWR - XTO Energy
 Project: PCU 197-36A

QC Batch ID: MP8899
 Matrix Type: SOLID

Methods: SW846 7471B
 Units: mg/kg

Prep Date: 11/16/12

Metal	D40848-1 Original	MSD	Spikelot HGWSR1	% Rec	MSD RPD	QC Limit
Mercury	0.44	2.4	1.78	109.9	0.0	20

Associated samples MP8899: D40910-1, D40910-2

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D40910
 Account: XTOKRWR - XTO Energy
 Project: PCU 197-36A

QC Batch ID: MP8899
 Matrix Type: SOLID

Methods: SW846 7471B
 Units: mg/kg

Prep Date: 11/16/12

Metal	BSP Result	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.34	0.333	102.0	80-120

Associated samples MP8899: D40910-1, D40910-2

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8908
Matrix Type: AQUEOUS

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

Prep Date: 11/16/12

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	32.0	<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	6.5	<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	-120	<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 MP8908: D40910-1A, D40910-2A

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8908
Matrix Type: AQUEOUS

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

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8908
Matrix Type: AQUEOUS

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

Prep Date: 11/16/12

Metal	D40910-1A Original MS		Spikelot ICPAL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	318000	446000	125000	102.4	75-125
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	92100	217000	125000	99.9	75-125
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	1810000	1940000	125000	104.0	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP8908: D40910-1A, D40910-2A

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: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8908
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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8908
Matrix Type: AQUEOUS

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

Prep Date: 11/16/12

Metal	D40910-1A Original	MSD	SpikeLot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium	318000	445000	125000	101.6	0.2	20
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Lithium						
Magnesium	92100	213000	125000	96.7	1.9	20
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium	1810000	1900000	125000	72.0 (a)	2.1	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP8908: D40910-1A, D40910-2A

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: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8908
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: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8908
Matrix Type: AQUEOUS

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

Prep Date: 11/16/12

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	139000	125000	111.2	80-120
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	126000	125000	100.8	80-120
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	126000	125000	100.8	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP8908: D40910-1A, D40910-2A

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: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8908
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: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8908
Matrix Type: AQUEOUS

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

Prep Date: 11/16/12

Metal	D40910-1A Original SDL 1:5		%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	63700	65100	2.1	0-10
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	18400	18900	2.6	0-10
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	362000	377000	4.0	0-10
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP8908: D40910-1A, D40910-2A

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

14.4.4
14

SERIAL DILUTION RESULTS SUMMARY

Login Number: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

QC Batch ID: MP8908
Matrix Type: AQUEOUS

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

Prep Date:

Metal

(anr) Analyte not requested

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: D40910
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	GP8688/GN17692	1.0	0.0	mg/kg	176.0	162	92.0	80-120%
Specific Conductivity	GP8712/GN17742			umhos/cm	9991	9990	100.0	90-110%
pH	GN17696			su	8.00	7.96	99.5	99.3-100.7%

Associated Samples:
Batch GP8688: D40910-1, D40910-2
Batch GP8712: D40910-1, D40910-2
Batch GN17696: D40910-1, D40910-2
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D40910
Account: XTOKRWR - XTO Energy
Project: PCU 197-36A

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP8688/GN17692	D40911-1	mg/kg	0.0	0.0	0.0	0-20%
Redox Potential Vs H2	GN17722	D41014-1	mv	94.2	93.7	0.5	0-20%

Associated Samples:

Batch GP8688: D40910-1, D40910-2

Batch GN17722: D40910-1, D40910-2

(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D40910
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	GP8688/GN17692	D40911-1	mg/kg	0.0	40.0	33.0	82.5	75-125%

Associated Samples:

Batch GP8688: D40910-1, D40910-2

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D40910
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	GP8688/GN17692	D40911-1	mg/kg	0.0	40.0	32.2	2.3	20%

Associated Samples:
Batch GP8688: D40910-1, D40910-2
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

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