Mountain States ACCUTEST LABORATORIES

01/11/13

Technical Report for

XTO Energy

XTO Love Ranch 8

1108-07A

Accutest Job Number: D42316

Sampling Date: 01/03/13

Report to:

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

Total number of pages in report: **169**

ACCREDITED IN ACCORDANCE WITH nelac

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.

Brad Madadian
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

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

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

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Accutest Laboratories

Sample Summary

XTO Energy

Job No: D42316

XTO Love Ranch 8
Project No: 1108-07A

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D42316-1	01/03/13	10:00	DS	01/05/13	SO	Soil	RP POST SOLIDIFICATION
D42316-1A	01/03/13	10:00	DS	01/05/13	SO	Soil	RP 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**	D42316
Site:	XTO Love Ranch 8	**Report Dat**	1/11/2013 1:28:14 PM

On 01/05/2013, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D42316 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:** V3V1321

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D42318-1MS, D42318-1MSD were used as the QC samples indicated.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO **Batch ID:** OP7200

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) D42316-1MS, D42316-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- The matrix spike (MS) recovery(s) of Fluorene are outside control limits. Outside control limits due to high level in sample relative to spike amount.
- The matrix spike duplicate (MSD) recovery(s) of Acenaphthene are outside control limits. Variability of recovery may be due to sample matrix/homogeneity.
- The matrix spike (MS) recovery(s) of Naphthalene are outside control limits. Outside control limits due to high level in sample relative to spike amount.
- The RPD(s) for the MS and MSD recoveries of Acenaphthene are outside control limits for sample OP7200-MSD. Variability of recovery may be due to sample matrix/homogeneity.
- Sample(s) OP7200-MB have surrogates outside control limits. Probable cause due to matrix interference.
- OP7200-MB for Terphenyl-d14: Outside of control limits. Since the bias is high and the method blank is ND for target analytes, no further action is required.

Volatiles by GC By Method SW846 8015B

Matrix SO **Batch ID:** GGB1042

- All samples were analyzed within the recommended method holding time.
- Sample(s) D42317-1MS, D42317-1MSD 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:	OP7201

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D42316-1MS, D42316-1MSD were used as the QC samples indicated.
- The matrix spike (MS) recovery(s) of TPH-DRO (C10-C28) are outside control limits. Outside control limits due to high level in sample relative to spike amount.

Metals By Method SW846 6010C

Matrix	AQ	Batch ID:	MP9206

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D42292-1AMS, D42292-1AMSD, D42292-1ASDL were used as the QC samples for the metals analysis.

Matrix	SO	Batch ID:	MP9199

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D42292-1MS, D42292-1MSD, D42292-1SDL were used as the QC samples for the metals analysis.
- The serial dilution RPD(s) for Cadmium, Copper, Lead, Barium, Zinc are outside control limits for sample MP9199-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP9199-SD1 for Zinc: Serial dilution indicates possible matrix interference.
- MP9199-SD1 for Barium: Serial dilution indicates possible matrix interference.

Metals By Method SW846 6020A

Matrix	SO	Batch ID:	MP9200

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D42292-1MS, D42292-1MSD, D42292-1SDL were used as the QC samples for the metals analysis.

Metals By Method SW846 7471B

Matrix	SO	Batch ID:	MP9202

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D42292-1MS, D42292-1MSD were used as the QC samples for the metals analysis.

Wet Chemistry By Method ASTM D1498-76M

Matrix	SO	Batch ID:	GN18332

- Sample(s) D42316-1DUP were used as the QC samples for the Redox Potential Vs H2 analysis.

Wet Chemistry By Method SM19 2540B M

Matrix	SO	Batch ID:	GN18327

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

Wet Chemistry By Method SW846 3060A/7196A

Matrix	SO	Batch ID:	GP9044

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D42316-1DUP, D42316-1MS, D42316-1MSD were used as the QC samples for the Chromium, Hexavalent analysis.
- D42316-1 for Chromium, Hexavalent: Dilution required due to matrix interference.

Wet Chemistry By Method SW846 3060A/7196A M

Matrix	SO	Batch ID:	R15651

- The data for SW846 3060A/7196A M meets quality control requirements.
- D42316-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Wet Chemistry By Method SW846 9045D

Matrix	SO	Batch ID:	GN18331

- The following samples were run outside of holding time for method SW846 9045D: D42316-1

Wet Chemistry By Method USDA HANDBOOK 60

Matrix	SO	Batch ID:	MP9206

- D42316-1A for Sodium Adsorption Ratio: Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+(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: D42316
Account: XTO Energy
Project: XTO Love Ranch 8
Collected: 01/03/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D42316-1	**RP POST SOLIDIFICATION**					
Toluene		0.378	0.22	0.11	mg/kg	SW846 8260B
Ethylbenzene		0.336	0.22	0.041	mg/kg	SW846 8260B
Xylene (total)		9.32	0.43	0.22	mg/kg	SW846 8260B
Fluorene		0.437	0.013	0.0068	mg/kg	SW846 8270C BY SIM
Naphthalene		1.19	0.074	0.065	mg/kg	SW846 8270C BY SIM
Pyrene		0.0800	0.013	0.0068	mg/kg	SW846 8270C BY SIM
TPH-GRO (C6-C10)		225	22	11	mg/kg	SW846 8015B
TPH-DRO (C10-C28)		5850	110	63	mg/kg	SW846-8015B
Arsenic		8.8	0.15		mg/kg	SW846 6020A
Barium		8260	7.7		mg/kg	SW846 6010C
Chromium		20.0	1.5		mg/kg	SW846 6010C
Copper		25.2	1.5		mg/kg	SW846 6010C
Lead		8.9	7.7		mg/kg	SW846 6010C
Nickel		86.2	4.6		mg/kg	SW846 6010C
Zinc		38.5	4.6		mg/kg	SW846 6010C
Specific Conductivity		12400	1.0		umhos/cm	SM 2510B-2011 MOD
Chromium, Trivalent [a]		20.0	6.5		mg/kg	SW846 3060A/7196A M
Redox Potential Vs H2		36.3			mv	ASTM D1498-76M
pH		11.33			su	SW846 9045D
D42316-1A	**RP POST SOLIDIFICATION**					
Calcium		623	2.0		mg/l	SW846 6010C
Sodium		1470	2.0		mg/l	SW846 6010C
Sodium Adsorption Ratio [b]		16.2			ratio	USDA HANDBOOK 60

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

Mountain States ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Client Sample ID:	RP POST SOLIDIFICATION		
Lab Sample ID:	D42316-1	**Date Sampled:**	01/03/13
Matrix:	SO - Soil	**Date Received:**	01/05/13
Method:	SW846 8260B	**Percent Solids:**	63.3
Project:	XTO Love Ranch 8		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V22448.D	1	01/08/13	BD	n/a	n/a	V3V1321
Run #2							

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

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.11	0.054	mg/kg	
108-88-3	Toluene	0.378	0.22	0.11	mg/kg	
100-41-4	Ethylbenzene	0.336	0.22	0.041	mg/kg	
1330-20-7	Xylene (total)	9.32	0.43	0.22	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	90%		64-130%
460-00-4	4-Bromofluorobenzene	120%		62-131%
17060-07-0	1,2-Dichloroethane-D4	101%		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

Client Sample ID:	RP POST SOLIDIFICATION		
Lab Sample ID:	D42316-1	**Date Sampled:**	01/03/13
Matrix:	SO - Soil	**Date Received:**	01/05/13
Method:	SW846 8270C BY SIM SW846 3546	**Percent Solids:**	63.3
Project:	XTO Love Ranch 8		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G12922.D	1	01/10/13	DC	01/09/13	OP7200	E3G618
Run #2	3G12912.D	4	01/10/13	DC	01/09/13	OP7200	E3G618

	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	0.013	0.0068	mg/kg	
120-12-7	Anthracene	ND	0.013	0.0068	mg/kg	
56-55-3	Benzo(a)anthracene	ND	0.013	0.0068	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND	0.013	0.0068	mg/kg	
207-08-9	Benzo(k)fluoranthene	ND	0.013	0.0068	mg/kg	
50-32-8	Benzo(a)pyrene	ND	0.013	0.0068	mg/kg	
218-01-9	Chrysene	ND	0.013	0.0068	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	0.013	0.0068	mg/kg	
206-44-0	Fluoranthene	ND	0.013	0.0068	mg/kg	
86-73-7	Fluorene	0.437	0.013	0.0068	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.013	0.0068	mg/kg	
91-20-3	Naphthalene	1.19 [a]	0.074	0.065	mg/kg	
129-00-0	Pyrene	0.0800	0.013	0.0068	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	84%	42%	10-159%
321-60-8	2-Fluorobiphenyl	50%	48%	19-131%
1718-51-0	Terphenyl-d14	73%	107%	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

Client Sample ID:	RP POST SOLIDIFICATION		
Lab Sample ID:	D42316-1	**Date Sampled:**	01/03/13
Matrix:	SO - Soil	**Date Received:**	01/05/13
Method:	SW846 8015B	**Percent Solids:**	63.3
Project:	XTO Love Ranch 8		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB19081.D	1	01/07/13	SK	n/a	n/a	GGB1042
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)	225	22	11	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	123%		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

Client Sample ID: RP POST SOLIDIFICATION
Lab Sample ID: D42316-1
Matrix: SO - Soil
Method: SW846-8015B SW846 3546
Project: XTO Love Ranch 8

Date Sampled: 01/03/13
Date Received: 01/05/13
Percent Solids: 63.3

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD21072.D	10	01/10/13	AV	01/09/13	OP7201	GFD1060
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	5850	110	63	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	69%		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: RP POST SOLIDIFICATION
Lab Sample ID: D42316-1
Matrix: SO - Soil
Project: XTO Love Ranch 8

Date Sampled: 01/03/13
Date Received: 01/05/13
Percent Solids: 63.3

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	8.8	0.15	mg/kg	5	01/07/13	01/08/13	JB	SW846 6020A [1]	SW846 3050B [5]
Barium	8260	7.7	mg/kg	5	01/07/13	01/09/13	JB	SW846 6010C [3]	SW846 3050B [4]
Cadmium	< 1.5	1.5	mg/kg	1	01/07/13	01/08/13	JB	SW846 6010C [3]	SW846 3050B [4]
Chromium	20.0	1.5	mg/kg	1	01/07/13	01/08/13	JB	SW846 6010C [3]	SW846 3050B [4]
Copper	25.2	1.5	mg/kg	1	01/07/13	01/08/13	JB	SW846 6010C [3]	SW846 3050B [4]
Lead	8.9	7.7	mg/kg	1	01/07/13	01/08/13	JB	SW846 6010C [3]	SW846 3050B [4]
Mercury	< 0.12	0.12	mg/kg	1	01/08/13	01/08/13	JM	SW846 7471B [2]	SW846 7471B [6]
Nickel	86.2	4.6	mg/kg	1	01/07/13	01/08/13	JB	SW846 6010C [3]	SW846 3050B [4]
Selenium	< 7.7	7.7	mg/kg	1	01/07/13	01/08/13	JB	SW846 6010C [3]	SW846 3050B [4]
Silver	< 4.6	4.6	mg/kg	1	01/07/13	01/08/13	JB	SW846 6010C [3]	SW846 3050B [4]
Zinc	38.5	4.6	mg/kg	1	01/07/13	01/08/13	JB	SW846 6010C [3]	SW846 3050B [4]

(1) Instrument QC Batch: MA3150
(2) Instrument QC Batch: MA3152
(3) Instrument QC Batch: MA3153
(4) Prep QC Batch: MP9199
(5) Prep QC Batch: MP9200
(6) Prep QC Batch: MP9202

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RP POST SOLIDIFICATION		
Lab Sample ID:	D42316-1	**Date Sampled:**	01/03/13
Matrix:	SO - Soil	**Date Received:**	01/05/13
		Percent Solids:	63.3
Project:	XTO Love Ranch 8		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
prep: DEPT.OF AG, BOOK N9							
Specific Conductivity	12400	1.0	umhos/cm	1	01/09/13	JD	SM 2510B-2011 MOD
Chromium, Hexavalent [a]	< 5.0	5.0	mg/kg	5	01/07/13	KB	SW846 3060A/7196A
Chromium, Trivalent [b]	20.0	6.5	mg/kg	1	01/08/13 21:55	JB	SW846 3060A/7196A M
Redox Potential Vs H2	36.3		mv	1	01/07/13	CT	ASTM D1498-76M
Solids, Percent	63.3		%	1	01/07/13	SWT	SM19 2540B M
pH	11.33		su	1	01/07/13 13:00	CT	SW846 9045D

(a) Dilution required due to matrix interference.
(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RP POST SOLIDIFICATION		
Lab Sample ID:	D42316-1A	**Date Sampled:**	01/03/13
Matrix:	SO - Soil	**Date Received:**	01/05/13
		Percent Solids:	63.3
Project:	XTO Love Ranch 8		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	623	2.0	mg/l	1	01/08/13	01/08/13	JB	SW846 6010C [1]	SW846 3010A/M [2]
Magnesium	< 1.0	1.0	mg/l	1	01/08/13	01/08/13	JB	SW846 6010C [1]	SW846 3010A/M [2]
Sodium	1470	2.0	mg/l	1	01/08/13	01/08/13	JB	SW846 6010C [1]	SW846 3010A/M [2]

(1) Instrument QC Batch: MA3153
(2) Prep QC Batch: MP9206

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RP POST SOLIDIFICATION		
Lab Sample ID:	D42316-1A	**Date Sampled:**	01/03/13
Matrix:	SO - Soil	**Date Received:**	01/05/13
		Percent Solids:	63.3
Project:	XTO Love Ranch 8		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	16.2		ratio	1	01/08/13 18:13	JB	USDA HANDBOOK 60

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

RL = Reporting Limit

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

ACCUTEST LABORATORIES

CHAIN OF CUSTODY

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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 # D42316

Client / Reporting Information

Company Name: KRW Consulting
Street Address: 8000 West 14th Street; Suite 200
City: Lakewood, CO 80214
Project Contact: Dwayne Knudson
Phone #: 970-488-1098
Sampler(s) Name(s): DAVID SANDERS 970-488-1098

Project Information

Project Name: XTO LOVE RANCH 8
Street:
City: State:
Project #: 1108-07A
Client Purchase Order #:
Project Manager: Joe Hess

Billing Information (if different from Report to)

Company Name: XTO Energy
Street Address: 21459 CR 5
City: Rifle, CO 81650
Attention: Jessica Dooling

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Bisulfite	8260-TCL-10	LAB USE ONLY
	RP POST SOLIDIFICATION		1-3-12	10:00	DS	SO	5					X					X	01

Turnaround Time (Business days)

- [ ] Std. 10 Business Days
- [x] Std. 5 Business Days (By contract only)
- [ ] 3 Day Emergency
- [ ] 2 Day Emergency
- [ ] 1 Day Emergency
- [ ]

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] COMMBN
- [ ] COMMBN+
- [ ]
- [ ] State Forms Required
- [ ] Send Forms to State
- [ ] Report by Fax
- [x] Report by PDF ONLY
- [ ] EDD Format

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial BN = Results/QC/Narrative (+ = chromatograms)

Comments / Special Instructions

Please email to: KRW Piceance Team

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Lori Albinder	1/4/13 12:00	Rifle Service Center	2		2
3	Relinquished by Sampler:	Date Time:	Received By: 3	Relinquished By: 4	Date Time: 1/5/13 1105	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal # FX [x] Intact [ ] Not Intact	Preserved where applicable [x]	On Ice [x] Cooler Temp. 4.0°C

D42316: Chain of Custody
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Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D42316 **Client:** KRW **Immediate Client Services Action Required:** No

Date / Time Received: 1/5/2013 11:05:00 AM **No. Coolers:** 1 **Client Service Action Required at Login:** No

Project: XTO LOVE RANCH 8 **Airbill #'s:** FX

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	Infared gun		
3. Cooler media:	Ice (bag)		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☐	
2. Trip Blank listed on COC:	☐		☐	
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume rec'd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Accutest Laboratories
V:(303) 425-6021
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F: (303) 425-6854
Wheat Ridge, CO
www/accutest.com

5.1

5

D42316: Chain of Custody

Page 2 of 2

Mountain States ACCUTEST LABORATORIES

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

Job Number: D42316
Account: XTOKRWR XTO Energy
Project: XTO Love Ranch 8

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V1321-MB	3V22443.D	1	01/08/13	BD	n/a	n/a	V3V1321

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

D42316-1

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	85%	64-130%
460-00-4	4-Bromofluorobenzene	95%	62-131%
17060-07-0	1,2-Dichloroethane-D4	109%	70-130%

Blank Spike Summary

Job Number: D42316
Account: XTOKRWR XTO Energy
Project: XTO Love Ranch 8

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V1321-BS	3V22444.D	1	01/08/13	BD	n/a	n/a	V3V1321

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

D42316-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	52.4	105	70-130
100-41-4	Ethylbenzene	50	50.4	101	70-130
108-88-3	Toluene	50	49.0	98	70-130
1330-20-7	Xylene (total)	150	155	103	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	94%	64-130%
460-00-4	4-Bromofluorobenzene	104%	62-131%
17060-07-0	1,2-Dichloroethane-D4	102%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D42316
Account: XTOKRWR XTO Energy
Project: XTO Love Ranch 8

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D42318-1MS	3V22446.D	1	01/08/13	BD	n/a	n/a	V3V1321
D42318-1MSD	3V22447.D	1	01/08/13	BD	n/a	n/a	V3V1321
D42318-1	3V22445.D	1	01/08/13	BD	n/a	n/a	V3V1321

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

D42316-1

CAS No.	Compound	D42318-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	195		3310	3600	103	3540	101	2	64-139/30
100-41-4	Ethylbenzene	65.4	J	3310	3370	100	3310	98	2	68-136/30
108-88-3	Toluene	385		3310	3330	89	3330	89	0	60-130/30
1330-20-7	Xylene (total)	343		9920	10500	102	10300	100	2	58-142/30

CAS No.	Surrogate Recoveries	MS	MSD	D42318-1	Limits
2037-26-5	Toluene-D8	87%	88%	86%	64-130%
460-00-4	4-Bromofluorobenzene	108%	107%	99%	62-131%
17060-07-0	1,2-Dichloroethane-D4	98%	97%	106%	70-130%

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC/MS Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3010813.S\
Data File : 3V22448.D
Acq On : 8 Jan 2013 1:25 pm
Operator : BRETD
Sample : D42316-1
Misc : MS5203,V3V1321,5.022,,100,5,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jan 09 09:15:40 2013
Quant Method : C:\msdchem\1\METHODS\V3AP1299TVH1299SOIL.M
Quant Title : 8260
QLast Update : Thu Jan 03 11:40:16 2013
Response via : Initial Calibration

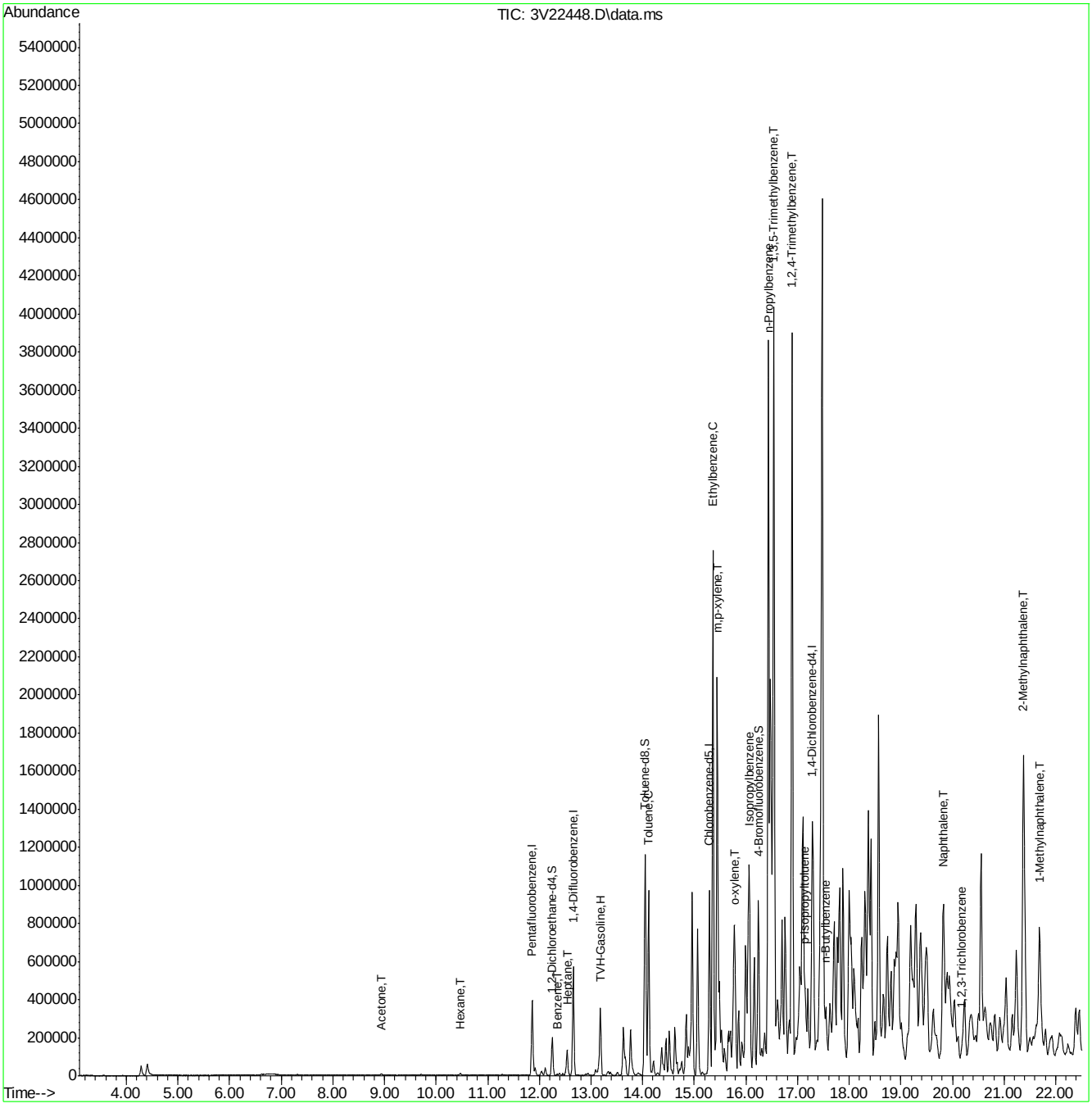
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.860	168	304850	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.656	114	490467	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.295	117	611188	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.284	152	392865	50.00	ug/l	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	12.251	102	34391	50.41	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 100.82%			
61) Toluene-d8	14.051	98	661180	44.93	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 89.86%			
69) 4-Bromofluorobenzene	16.245	95	379777	59.91	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 119.82%			
Target Compounds						Qvalue
1) TVH-Gasoline	13.200	TIC	60115550m	2048.51	ug/l	
15) Acetone	8.931	43	13321	6.95	ug/l	95
41) Hexane	10.465	57	4893	0.85	ug/l	100
43) Heptane	12.540	43	55500	8.43	ug/l	94
50) Benzene	12.348	78	6269	0.46	ug/l	100
62) Toluene	14.112	92	46727	3.51	ug/l	96
66) Ethylbenzene	15.366	91	69483	3.12	ug/l	98
68) Isopropylbenzene	16.078	105	65517	2.95	ug/l	97
72) m,p-xylene	15.446	106	683541	72.86	ug/l	98
73) o-xylene	15.796	106	124940	13.71	ug/l	98
77) n-Propylbenzene	16.425	91	251640	9.31	ug/l	95
80) 1,3,5-Trimethylbenzene	16.540	105	2232151	110.37	ug/l	93
82) 1,2,4-Trimethylbenzene	16.896	105	2462767	119.39	ug/l	93
86) p-Isopropyltoluene	17.153	119	166175	7.21	ug/l	99
88) n-Butylbenzene	17.541	91	103887	5.56	ug/l #	79
91) Naphthalene	19.841	128	621381	30.16	ug/l	100
93) 1,2,3-Trichlorobenzene	20.162	180	12733	1.55	ug/l	96
94) 2-Methylnaphthalene	21.377	142	1128845	123.72	ug/l	96
95) 1-Methylnaphthalene	21.685	142	403057	46.58	ug/l	95

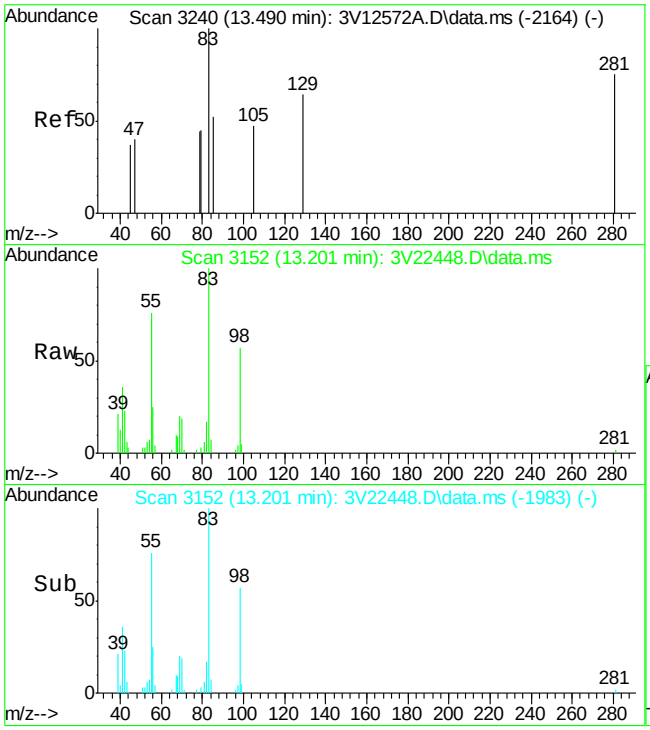
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3010813.S\
Data File : 3V22448.D
Acq On : 8 Jan 2013 1:25 pm
Operator : BRETD
Sample : D42316-1
Misc : MS5203,V3V1321,5.022,,100,5,1
ALS Vial : 8 Sample Multiplier: 1

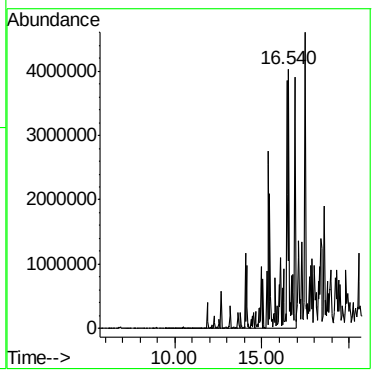
Quant Time: Jan 09 09:15:40 2013
Quant Method : C:\msdchem\1\METHODS\V3AP1299TVH1299SOIL.M
Quant Title : 8260
QLast Update : Thu Jan 03 11:40:16 2013
Response via : Initial Calibration

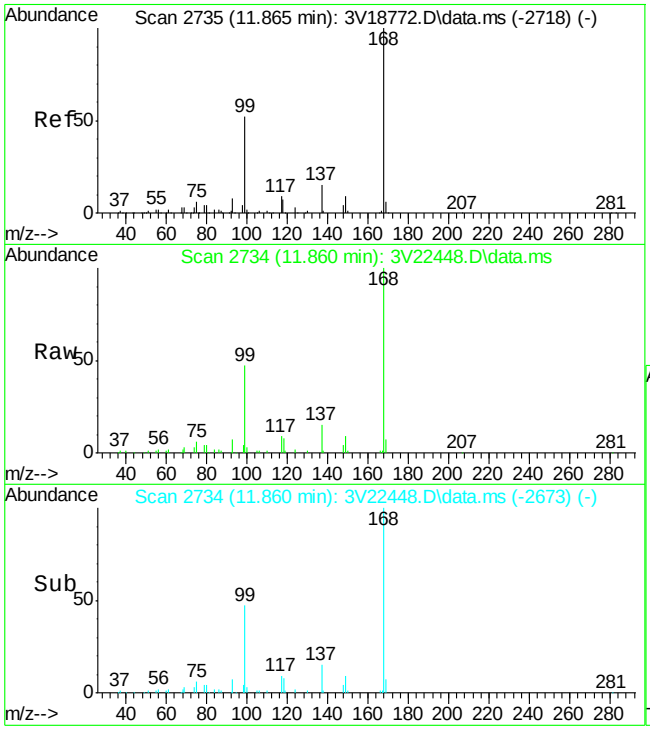




#1
TVH-Gasoline
Concen: 2048.51 ug/l m
RT: 13.200 min Scan# 3152
Delta R.T. 0.000 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

Tgt Ion:TIC Resp:60115550

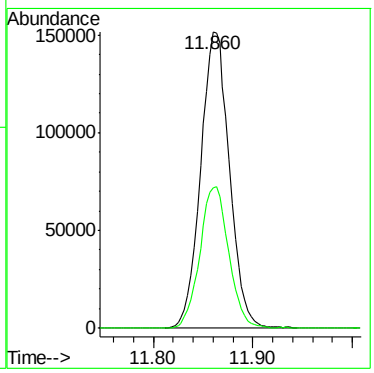


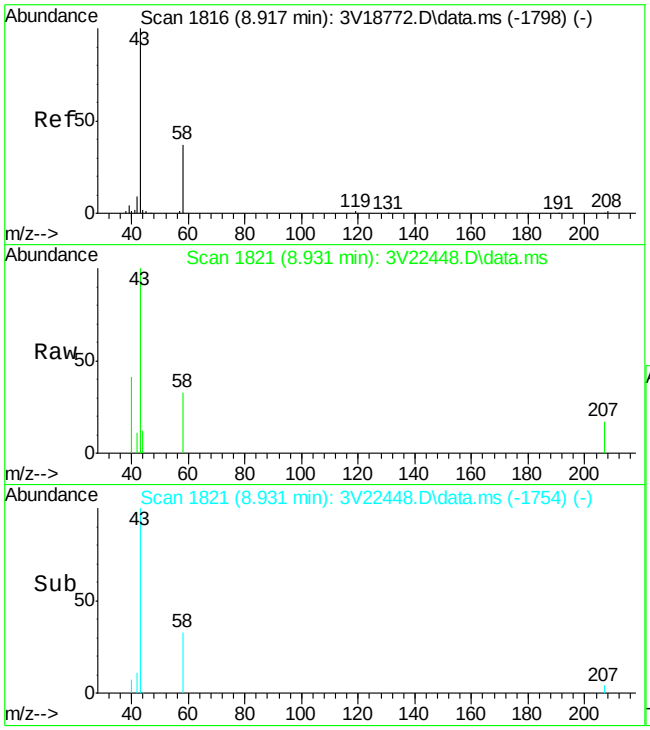


#2
Pentafluorobenzene
Concen: 50.00 ug/l
RT: 11.860 min Scan# 2734
Delta R.T. -0.003 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

Tgt Ion:168 Resp: 304850

Ion	Ratio	Lower	Upper
168	100		
99	47.9	29.0	69.0

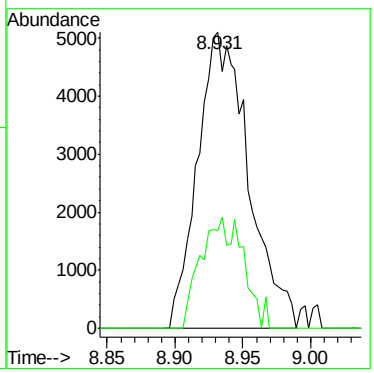


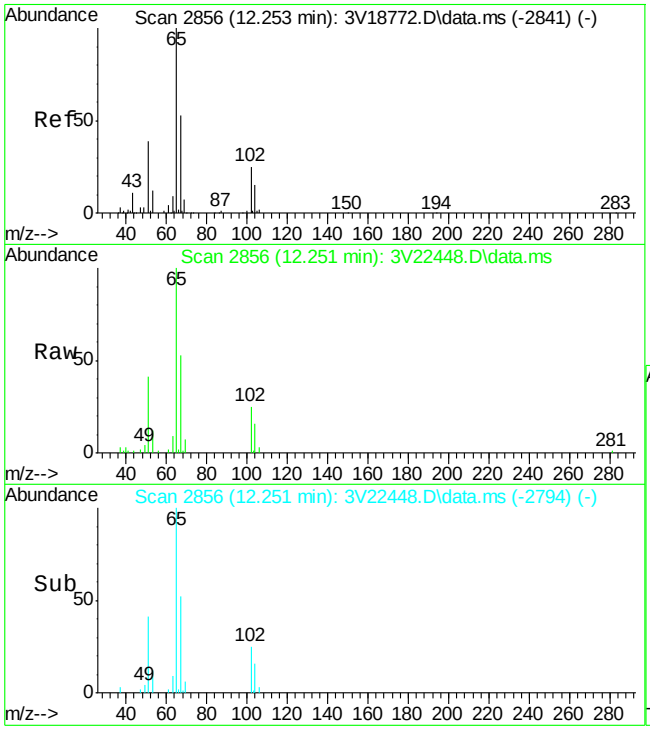


#15
Acetone
Concen: 6.95 ug/l
RT: 8.931 min Scan# 1821
Delta R.T. 0.016 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

Tgt Ion: 43 Resp: 13321

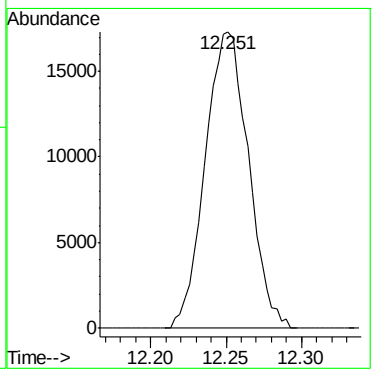
Ion	Ratio	Lower	Upper
43	100		
58	31.3	8.7	48.7

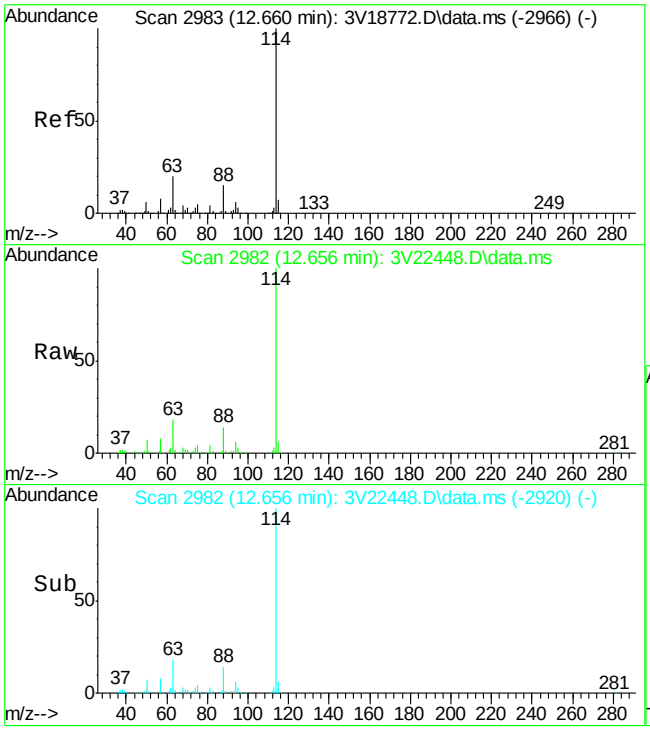




#33
1,2-Dichloroethane-d4
Concen: 50.41 ug/l
RT: 12.251 min Scan# 2856
Delta R.T. 0.000 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

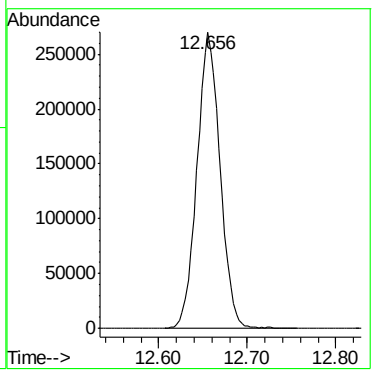
Tgt Ion:102 Resp: 34391

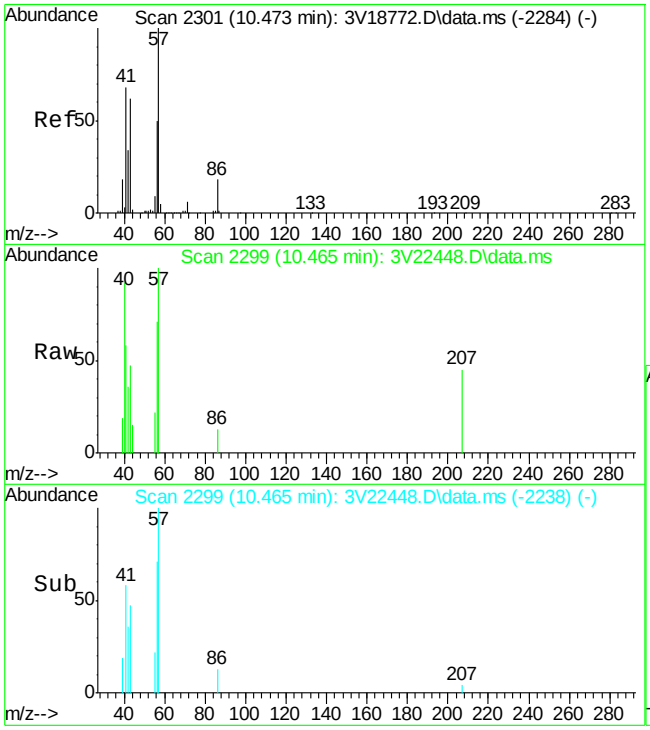




#35
1,4-Difluorobenzene
Concen: 50.00 ug/l
RT: 12.656 min Scan# 2982
Delta R.T. 0.000 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

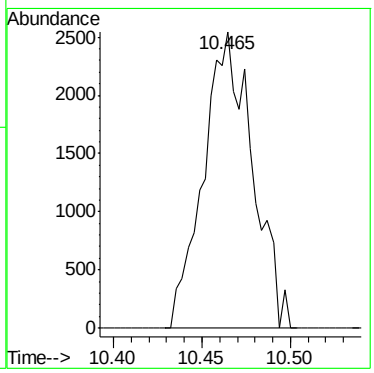
Tgt Ion:114 Resp: 490467

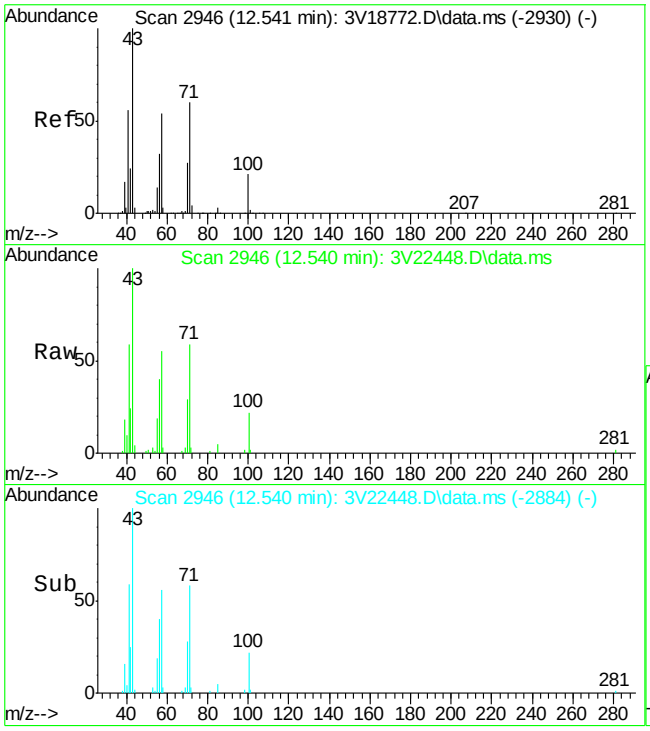




#41
Hexane
Concen: 0.85 ug/l
RT: 10.465 min Scan# 2299
Delta R.T. -0.003 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

Tgt Ion: 57 Resp: 4893

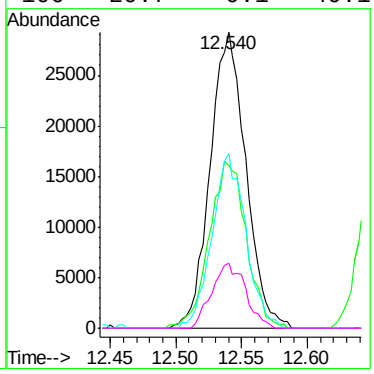


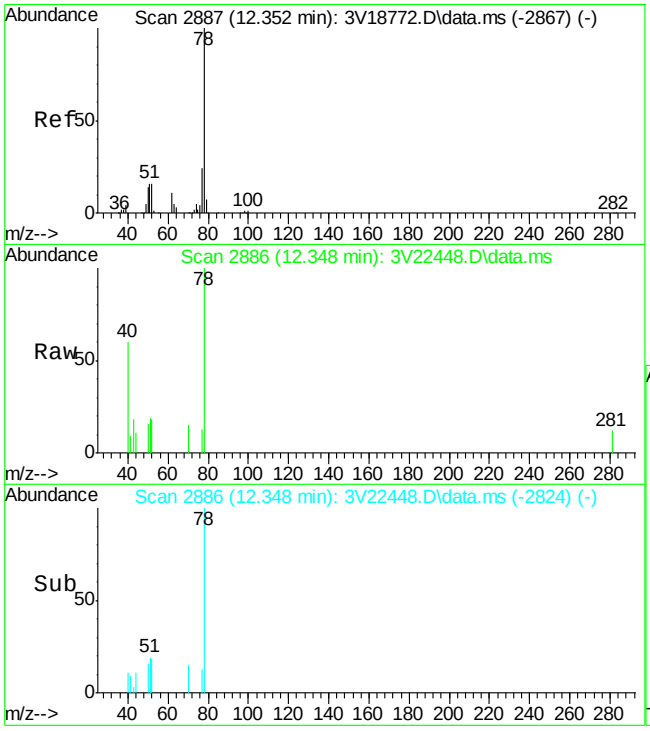


#43
Heptane
Concen: 8.43 ug/l
RT: 12.540 min Scan# 2946
Delta R.T. 0.000 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

Tgt Ion: 43 Resp: 55500

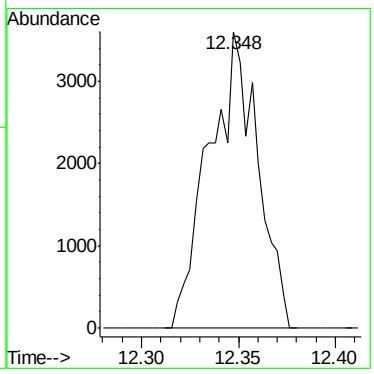
Ion	Ratio	Lower	Upper
43	100		
57	58.4	32.1	72.1
71	55.7	39.6	79.6
100	20.7	0.1	40.1

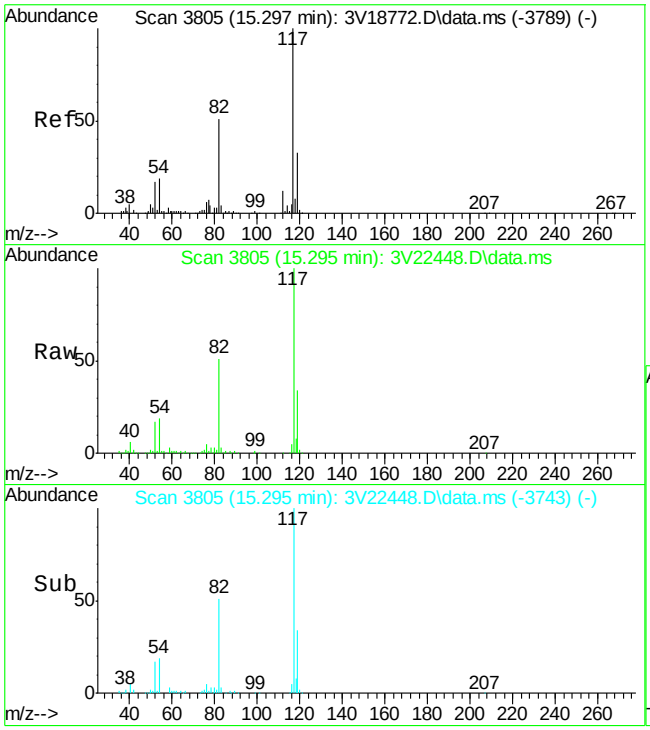




#50
Benzene
Concen: 0.46 ug/l
RT: 12.348 min Scan# 2886
Delta R.T. 0.000 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

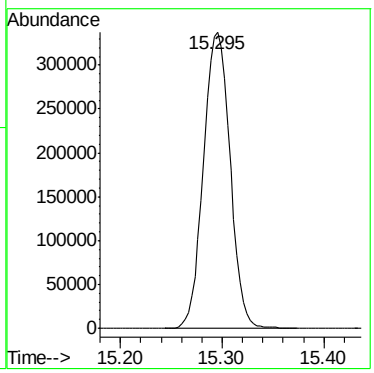
Tgt Ion: 78 Resp: 6269

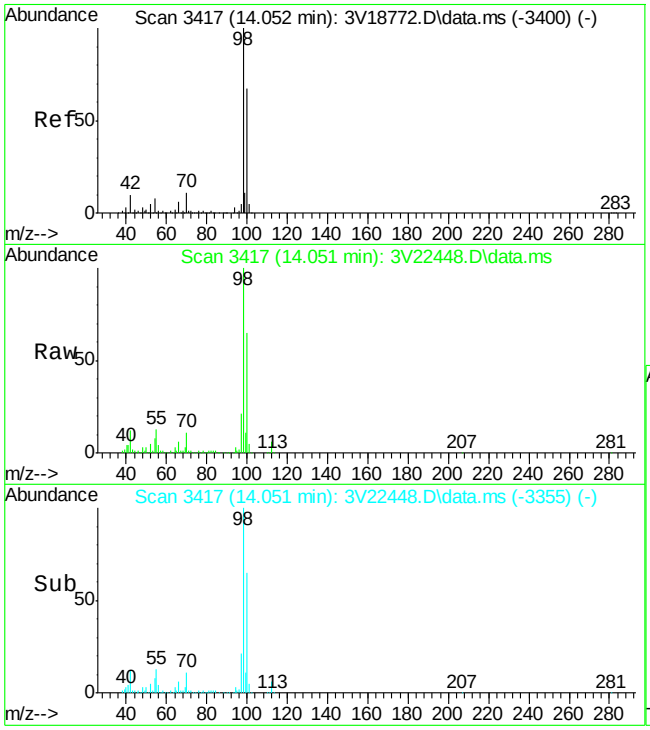




#53
Chlorobenzene-d5
Concen: 50.00 ug/l
RT: 15.295 min Scan# 3805
Delta R.T. 0.000 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

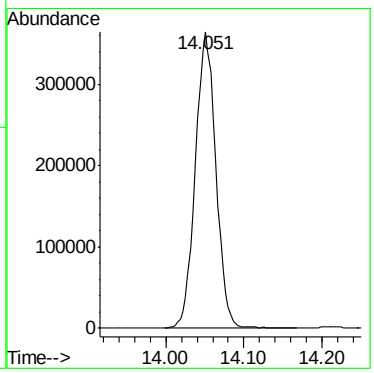
Tgt Ion:117 Resp: 611188

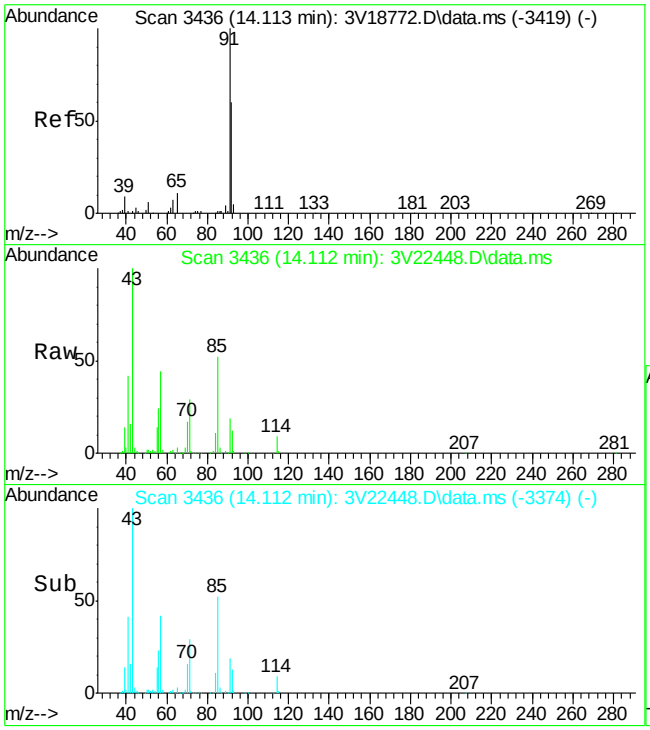




#61
Toluene-d8
Concen: 44.93 ug/l
RT: 14.051 min Scan# 3417
Delta R.T. 0.000 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

Tgt Ion: 98 Resp: 661180

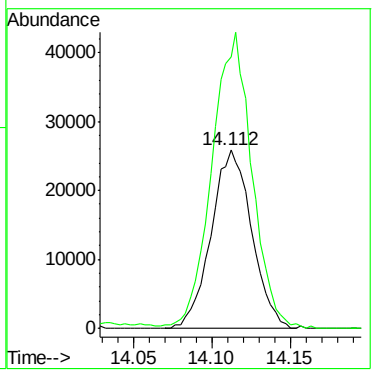


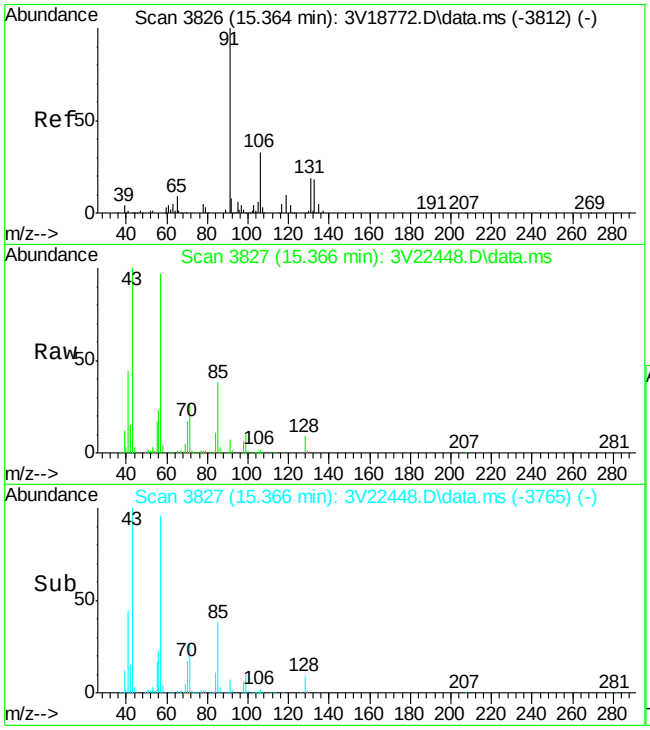


#62
Toluene
Concen: 3.51 ug/l
RT: 14.112 min Scan# 3436
Delta R.T. -0.002 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

Tgt Ion: 92 Resp: 46727

Ion	Ratio	Lower	Upper
92	100		
91	164.5	150.2	190.2

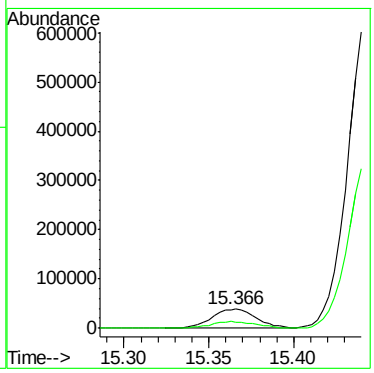


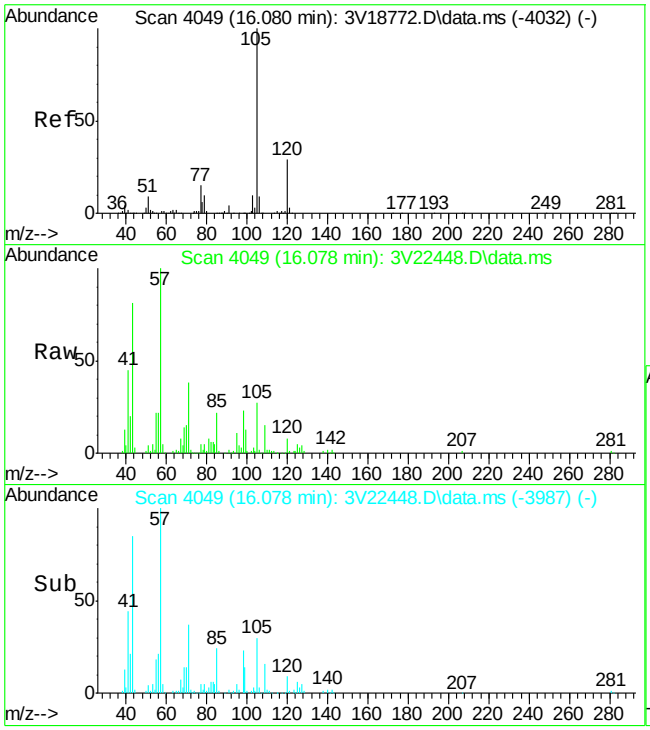


#66
Ethylbenzene
Concen: 3.12 ug/l
RT: 15.366 min Scan# 3827
Delta R.T. 0.000 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

Tgt Ion: 91 Resp: 69483

Ion	Ratio	Lower	Upper
91	100		
106	34.6	13.2	53.2

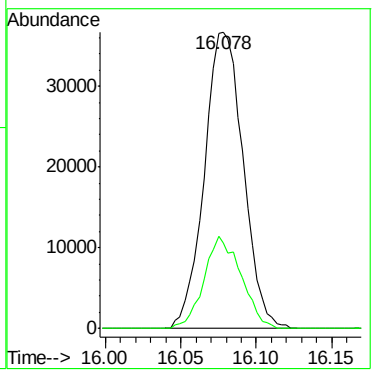


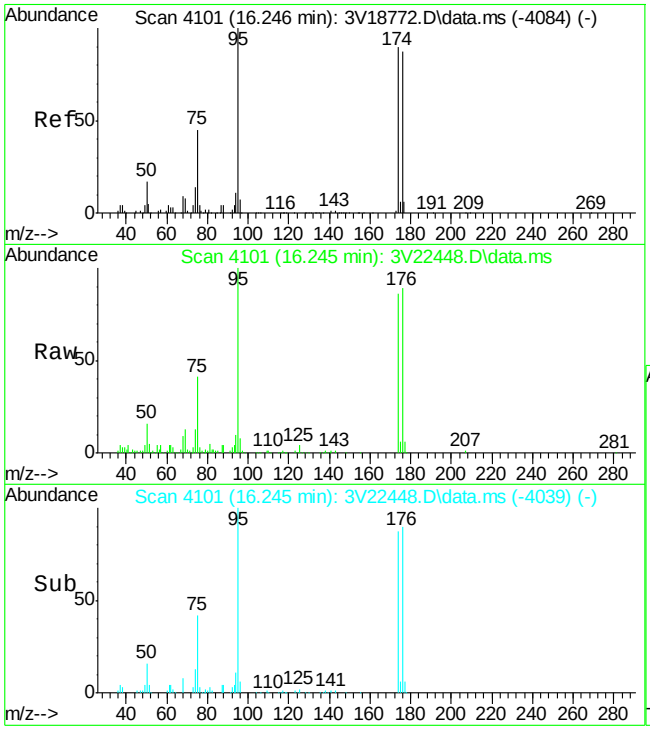


#68
Isopropylbenzene
Concen: 2.95 ug/l
RT: 16.078 min Scan# 4049
Delta R.T. 0.000 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

Tgt Ion:105 Resp: 65517

Ion	Ratio	Lower	Upper
105	100		
120	29.7	8.3	48.3

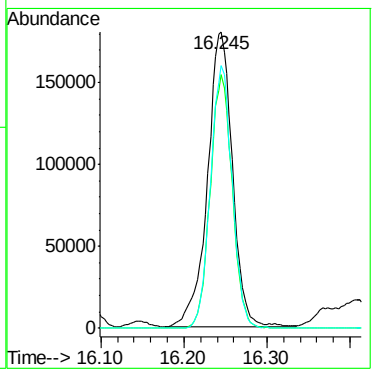


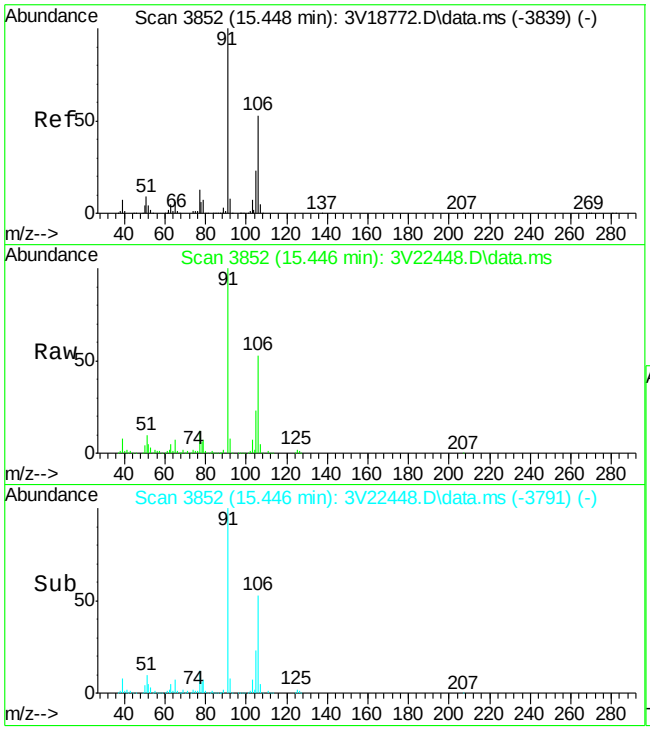


#69
4-Bromofluorobenzene
Concen: 59.91 ug/l
RT: 16.245 min Scan# 4101
Delta R.T. 0.000 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

Tgt Ion: 95 Resp: 379777

Ion	Ratio	Lower	Upper
95	100		
174	74.6	0.0	20.0#
176	76.5	0.0	20.0#

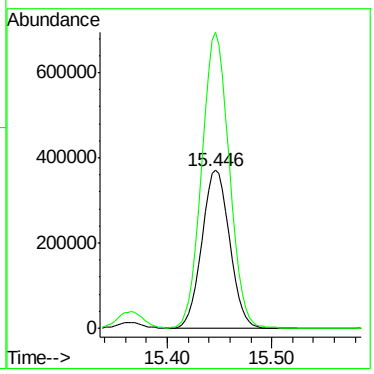


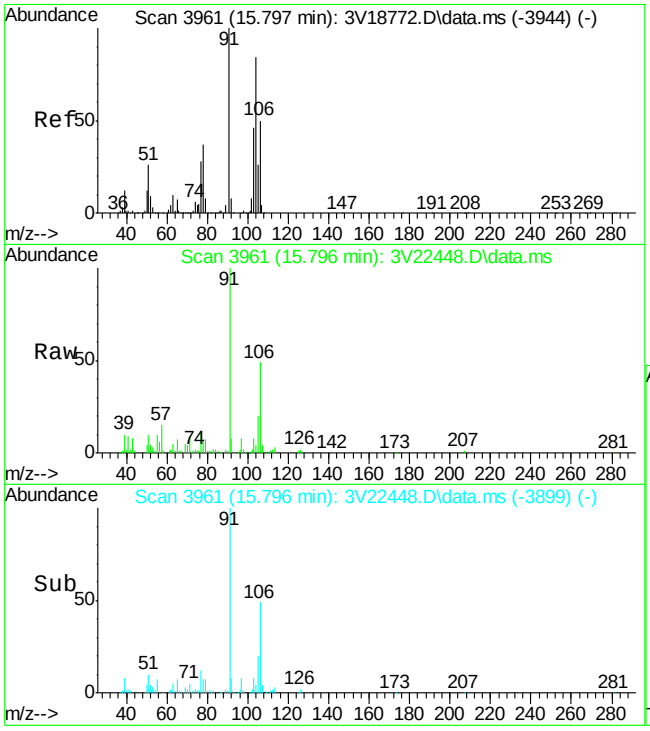


#72
m,p-xylene
Concen: 72.86 ug/l
RT: 15.446 min Scan# 3852
Delta R.T. -0.003 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

Tgt Ion:106 Resp: 683541

Ion	Ratio	Lower	Upper
106	100		
91	185.4	168.1	208.1

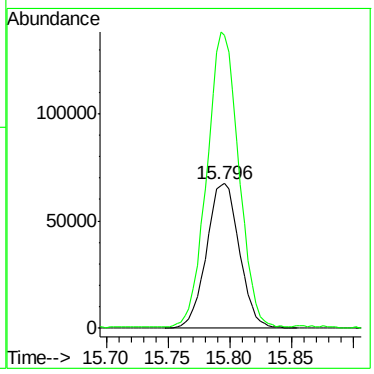


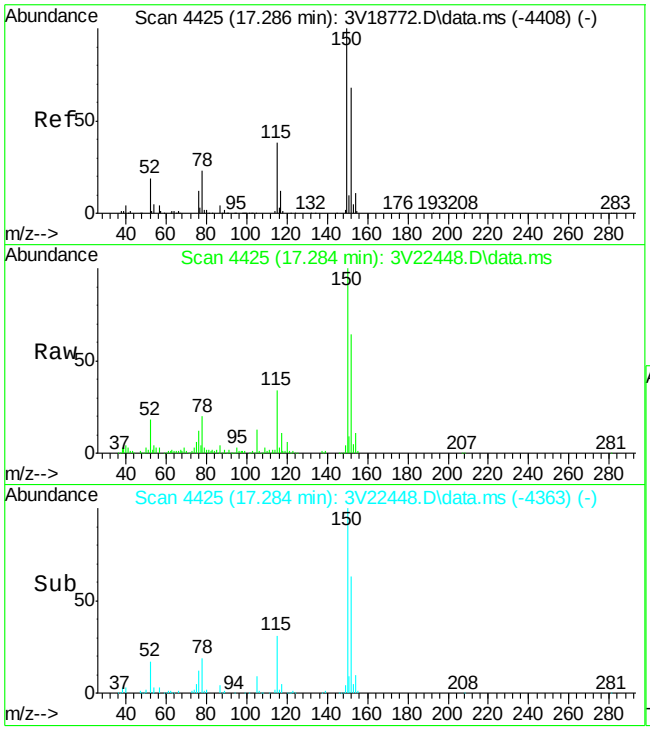


#73
o-xylene
Concen: 13.71 ug/l
RT: 15.796 min Scan# 3961
Delta R.T. 0.000 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

Tgt Ion:106 Resp: 124940

Ion	Ratio	Lower	Upper
106	100		
91	197.1	180.3	220.3

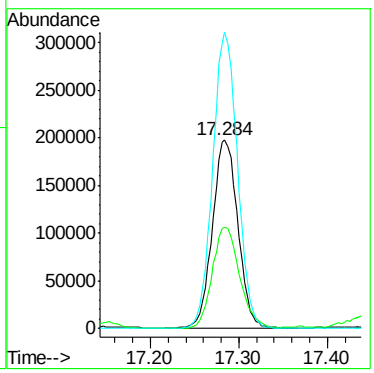


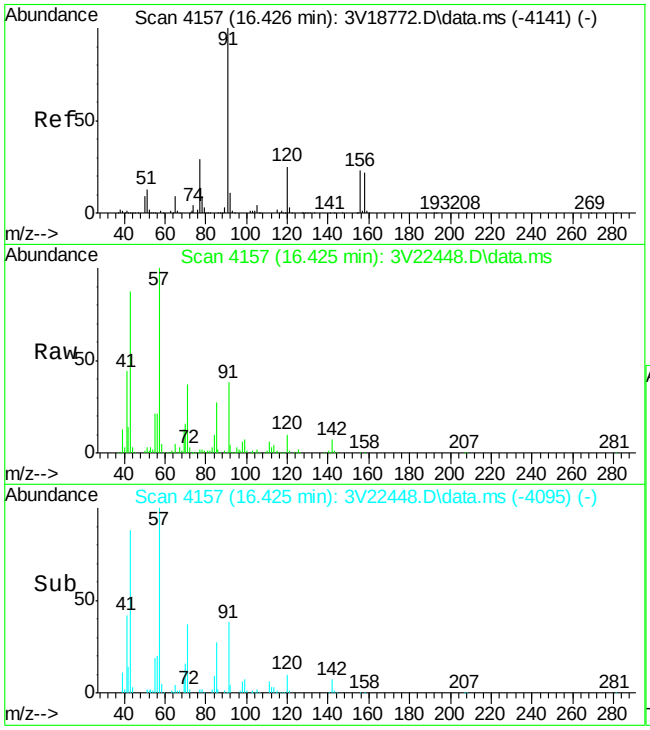


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/l
RT: 17.284 min Scan# 4425
Delta R.T. 0.000 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

Tgt Ion:152 Resp: 392865

Ion	Ratio	Lower	Upper
152	100		
115	57.7	34.6	74.6
150	152.5	152.1	192.1

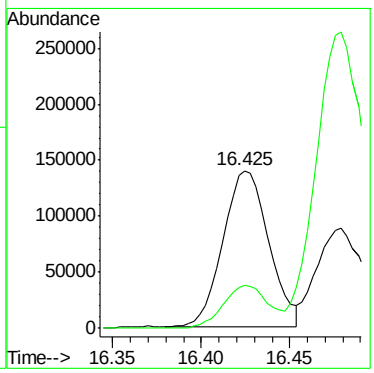


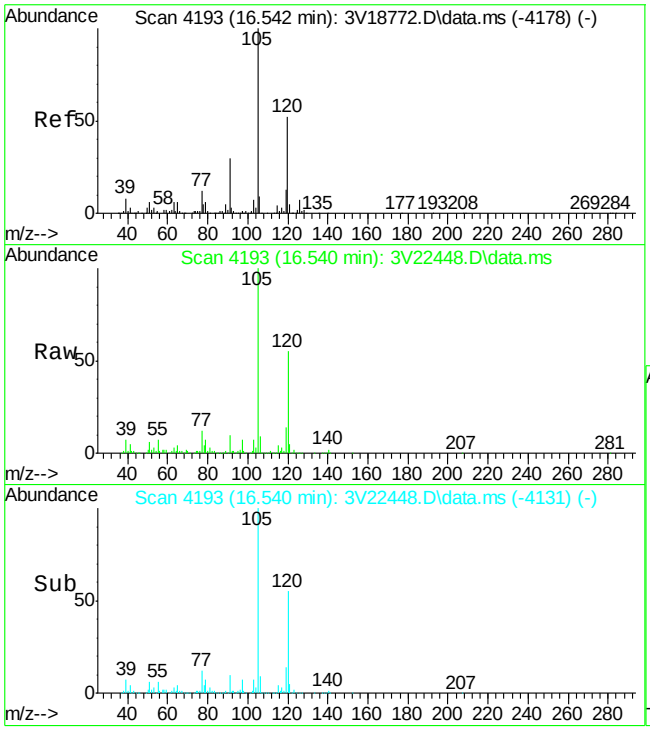


#77
n-Propylbenzene
Concen: 9.31 ug/l
RT: 16.425 min Scan# 4157
Delta R.T. 0.000 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

Tgt Ion: 91 Resp: 251640

Ion	Ratio	Lower	Upper
91	100		
120	27.3	4.9	44.9

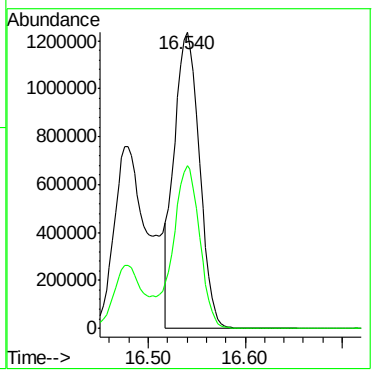


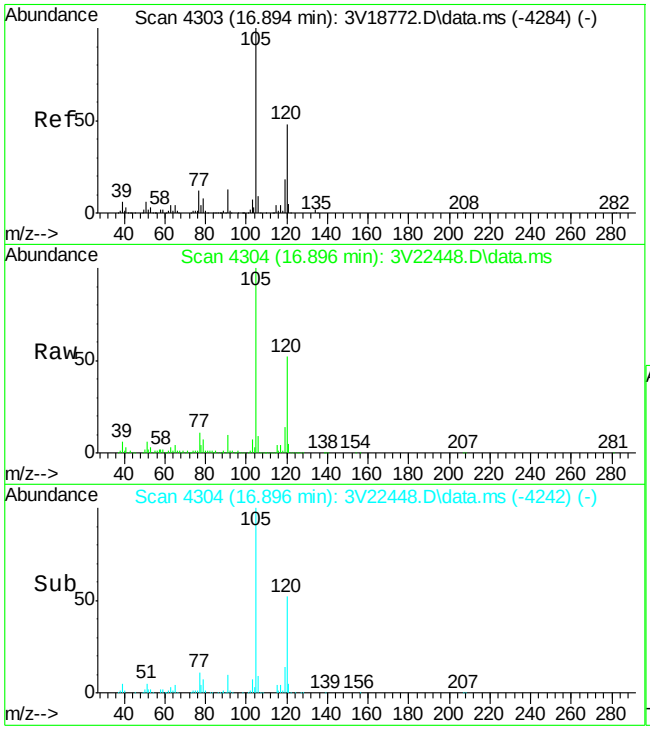


#80
1,3,5-Trimethylbenzene
Concen: 110.37 ug/l
RT: 16.540 min Scan# 4193
Delta R.T. 0.000 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

Tgt Ion:105 Resp: 2232151

Ion	Ratio	Lower	Upper
105	100		
120	56.9	31.8	71.8

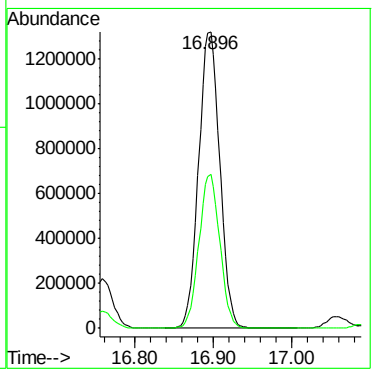


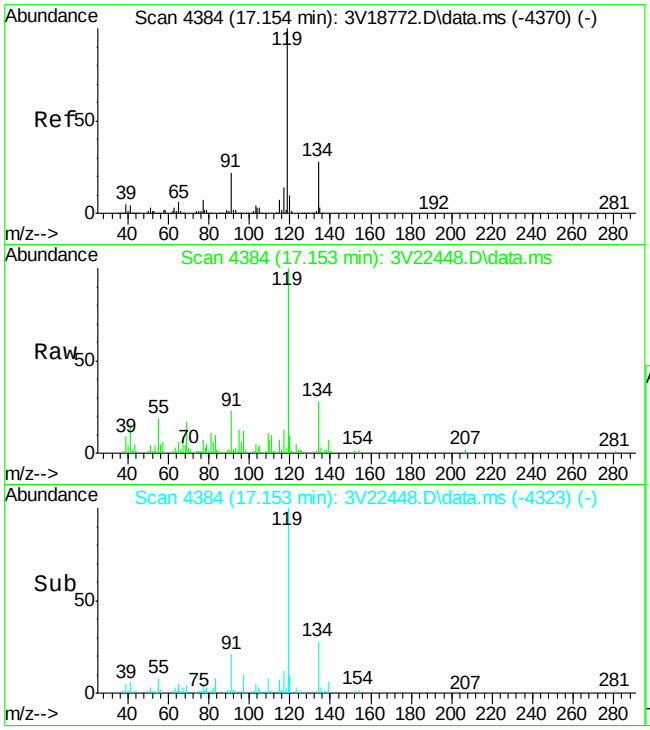


#82
1,2,4-Trimethylbenzene
Concen: 119.39 ug/l
RT: 16.896 min Scan# 4304
Delta R.T. 0.000 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

Tgt Ion:105 Resp: 2462767

Ion	Ratio	Lower	Upper
105	100		
120	51.4	36.4	76.4

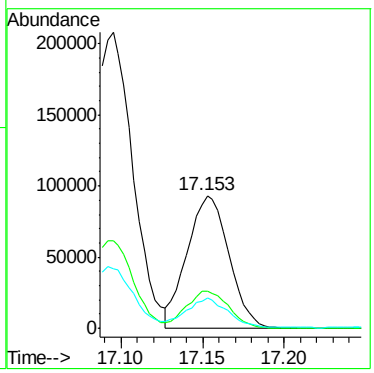


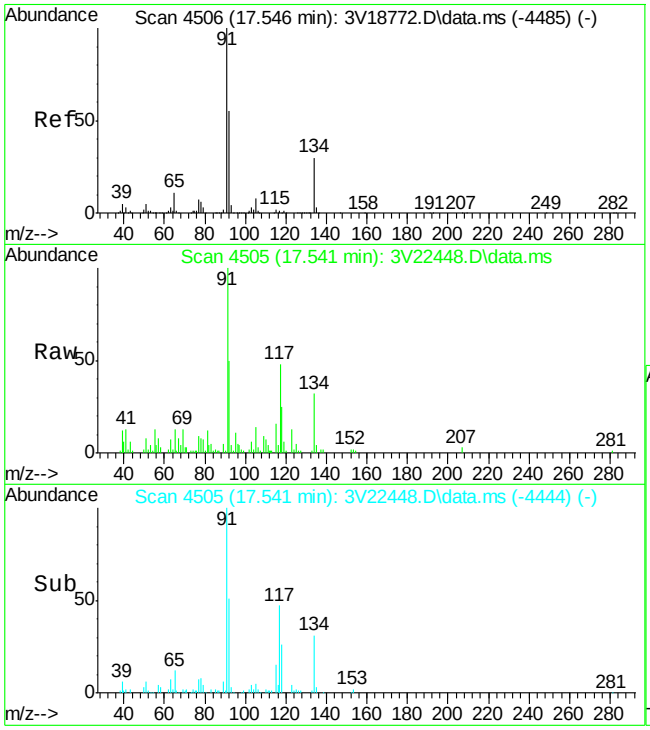


#86
p-Isopropyltoluene
Concen: 7.21 ug/l
RT: 17.153 min Scan# 4384
Delta R.T. -0.003 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

Tgt Ion:119 Resp: 166175

Ion	Ratio	Lower	Upper
119	100		
134	28.3	7.9	47.9
91	22.2	1.8	41.8

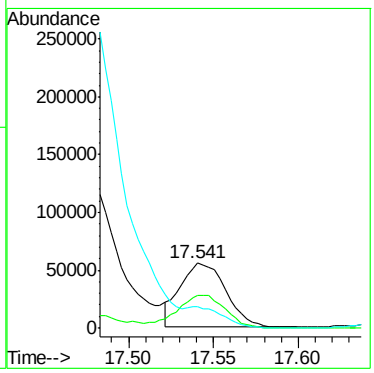


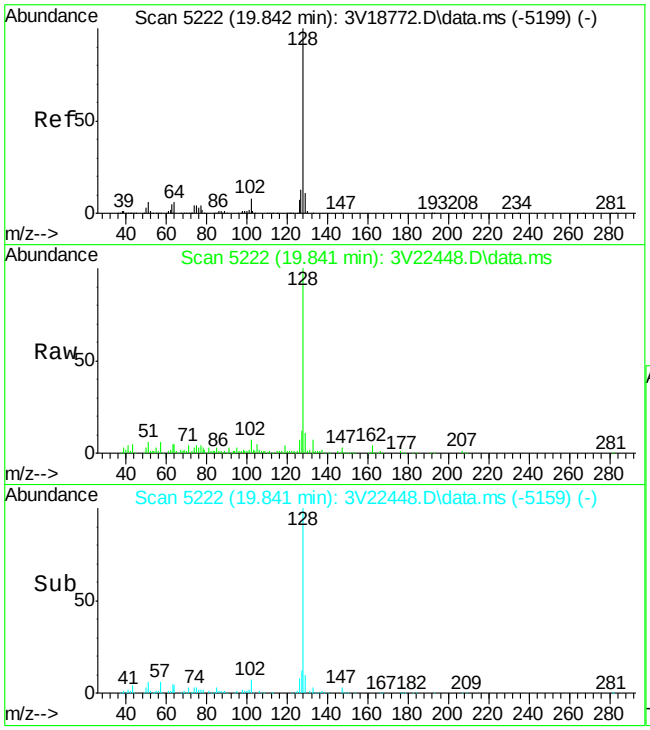


#88
n-Butylbenzene
Concen: 5.56 ug/l
RT: 17.541 min Scan# 4505
Delta R.T. -0.003 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

Tgt Ion: 91 Resp: 103887

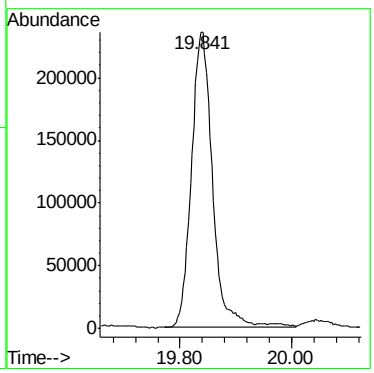
Ion	Ratio	Lower	Upper
91	100		
92	52.8	34.8	74.8
134	0.0	8.9	48.9#

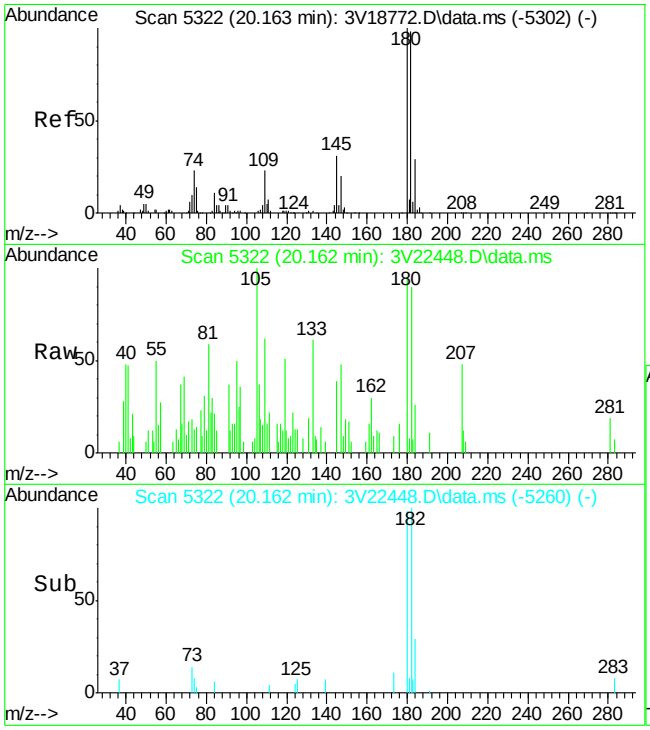




#91
Naphthalene
Concen: 30.16 ug/l
RT: 19.841 min Scan# 5222
Delta R.T. 0.001 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

Tgt Ion:128 Resp: 621381

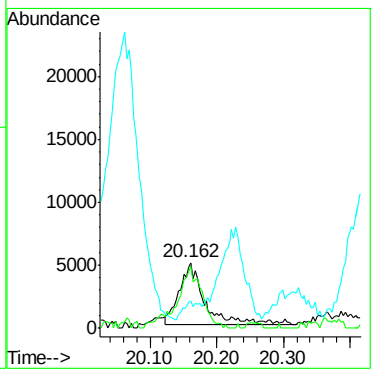


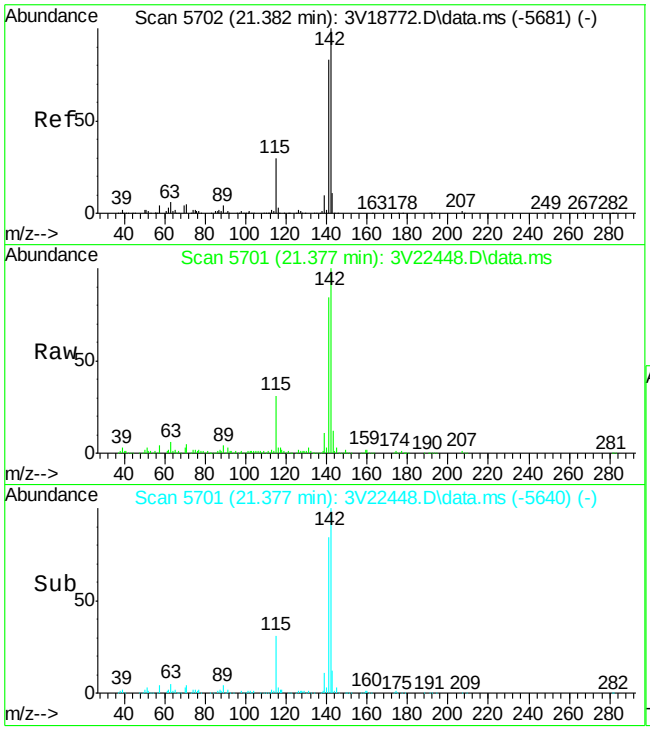


#93
1,2,3-Trichlorobenzene
Concen: 1.55 ug/l
RT: 20.162 min Scan# 5322
Delta R.T. 0.000 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

Tgt Ion:180 Resp: 12733

Ion	Ratio	Lower	Upper
180	100		
182	99.5	75.6	115.6
145	28.0	10.3	50.3

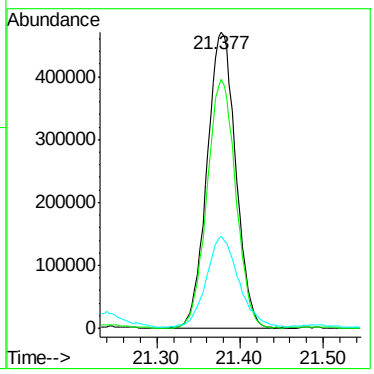


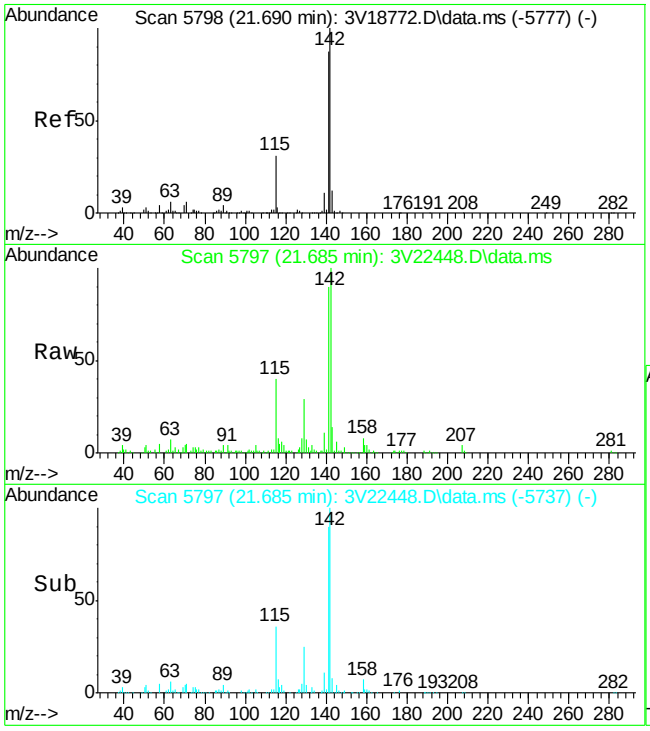


#94
2-Methylnaphthalene
Concen: 123.72 ug/l
RT: 21.377 min Scan# 5701
Delta R.T. -0.003 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

Tgt Ion:142 Resp: 1128845

Ion	Ratio	Lower	Upper
142	100		
141	84.3	65.8	105.8
115	34.6	9.7	49.7

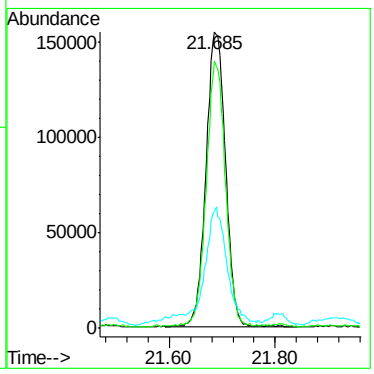




#95
1-Methylnaphthalene
Concen: 46.58 ug/l
RT: 21.685 min Scan# 5797
Delta R.T. -0.006 min
Lab File: 3V22448.D
Acq: 8 Jan 2013 1:25 pm

Tgt Ion:142 Resp: 403057

Ion	Ratio	Lower	Upper
142	100		
141	86.8	68.3	108.3
115	40.2	11.8	51.8



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3010813.S\
Data File : 3V22443.D
Acq On : 8 Jan 2013 10:48 am
Operator : BRETD
Sample : MB
Misc : MS5203,V3V1321,5.00,,100,5,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jan 09 08:42:31 2013
Quant Method : C:\msdchem\1\METHODS\V3AP1299TVH1299SOIL.M
Quant Title : 8260
QLast Update : Thu Jan 03 11:40:16 2013
Response via : Initial Calibration

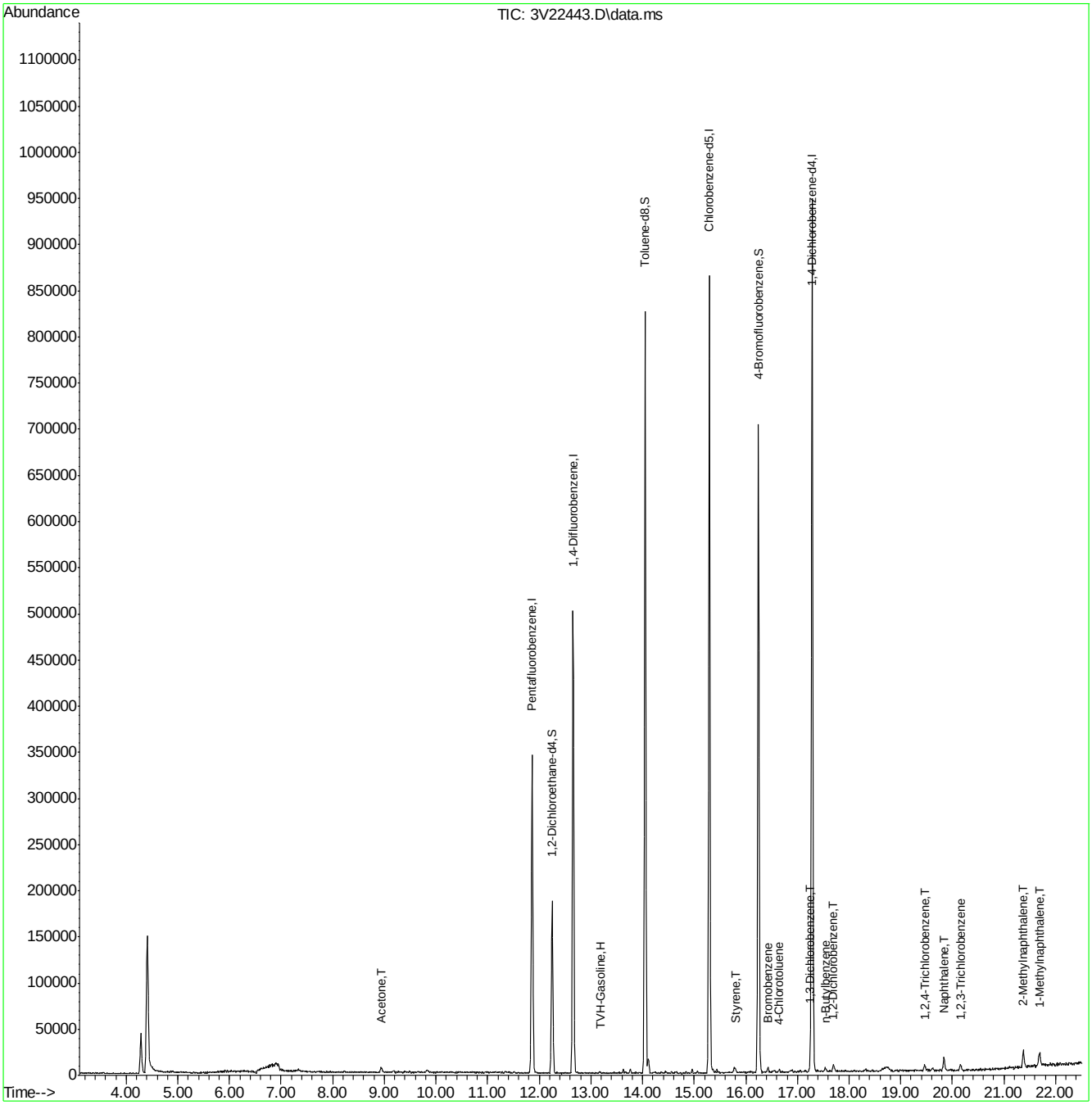
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.863	168	268628	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.656	114	434746	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.296	117	540657	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.285	152	324831	50.00	ug/l	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	12.255	102	32637	54.29	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 108.58%			
61) Toluene-d8	14.051	98	556286	42.74	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 85.48%			
69) 4-Bromofluorobenzene	16.242	95	267407	47.69	ug/l	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 95.38%			
Target Compounds						Qvalue
1) TVH-Gasoline	13.200	TIC	87958m	3.00	ug/l	
15) Acetone	8.932	43	9364	4.35	ug/l	100
70) Bromobenzene	16.431	156	1458	0.25	ug/l #	84
71) Styrene	15.793	104	2183	0.57	ug/l	94
79) 4-Chlorotoluene	16.646	91	2958	0.20	ug/l	94
84) 1,3-Dichlorobenzene	17.240	146	3389	0.30	ug/l	89
87) 1,2-Dichlorobenzene	17.692	146	3642	0.33	ug/l	98
88) n-Butylbenzene	17.551	91	3434	0.22	ug/l	95
90) 1,2,4-Trichlorobenzene	19.463	180	3957	0.57	ug/l	98
91) Naphthalene	19.841	128	19171	2.11	ug/l	100
93) 1,2,3-Trichlorobenzene	20.159	180	4031	0.59	ug/l	94
94) 2-Methylnaphthalene	21.371	142	14756	1.96	ug/l	98
95) 1-Methylnaphthalene	21.689	142	12687	1.77	ug/l	97

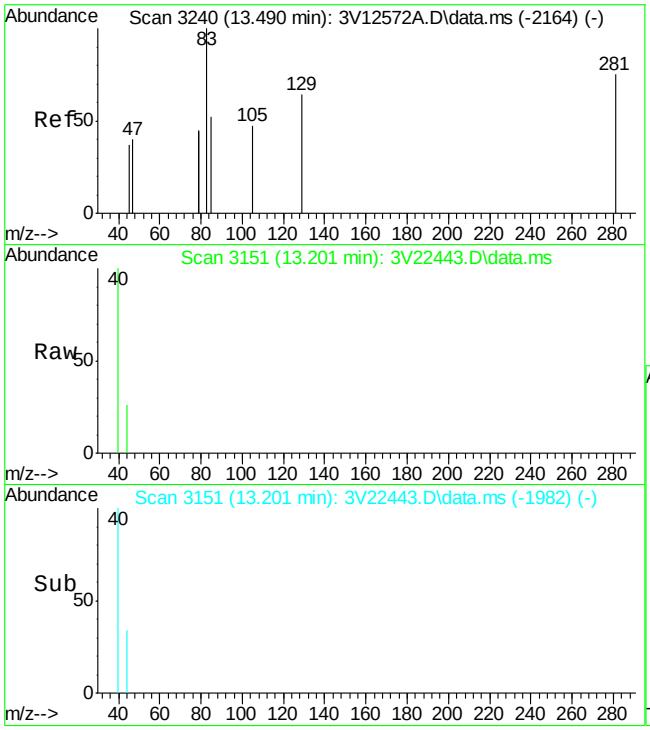
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3010813.S\
Data File : 3V22443.D
Acq On : 8 Jan 2013 10:48 am
Operator : BRETD
Sample : MB
Misc : MS5203,V3V1321,5.00,,100,5,1
ALS Vial : 3 Sample Multiplier: 1

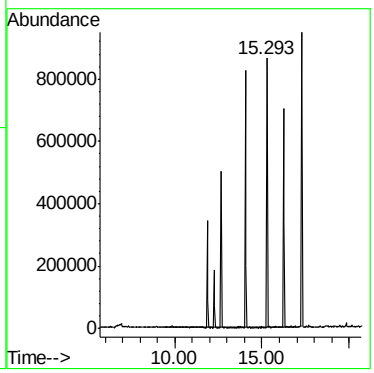
Quant Time: Jan 09 08:42:31 2013
Quant Method : C:\msdchem\1\METHODS\V3AP1299TVH1299SOIL.M
Quant Title : 8260
QLast Update : Thu Jan 03 11:40:16 2013
Response via : Initial Calibration

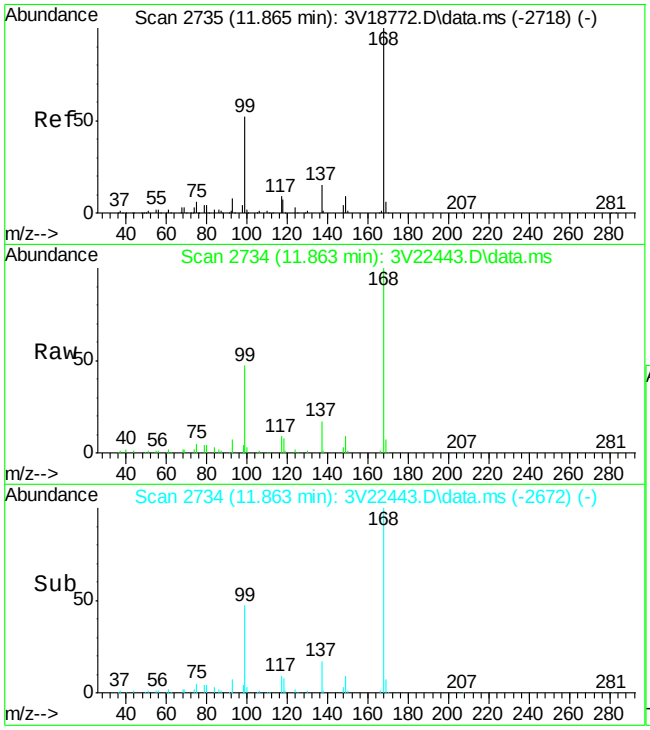




#1
TVH-Gasoline
Concen: 3.00 ug/l m
RT: 13.200 min Scan# 3151
Delta R.T. 0.000 min
Lab File: 3V22443.D
Acq: 8 Jan 2013 10:48 am

Tgt Ion:TIC Resp: 87958

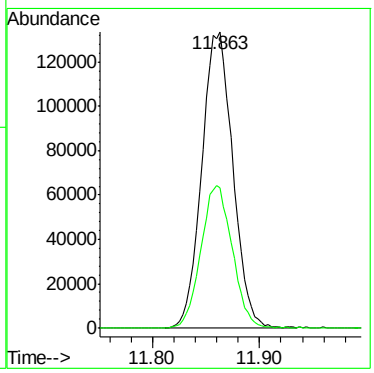


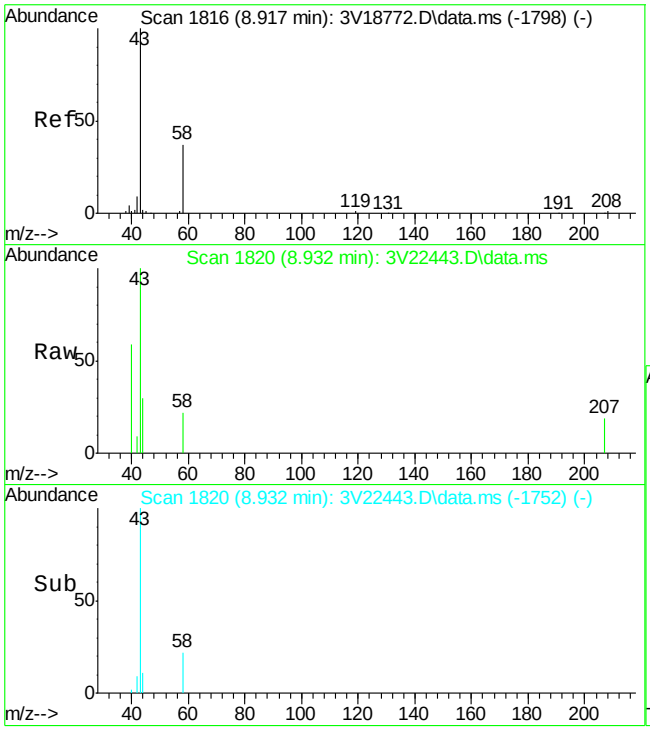


#2
Pentafluorobenzene
Concen: 50.00 ug/l
RT: 11.863 min Scan# 2734
Delta R.T. 0.000 min
Lab File: 3V22443.D
Acq: 8 Jan 2013 10:48 am

Tgt Ion:168 Resp: 268628

Ion	Ratio	Lower	Upper
168	100		
99	48.4	29.0	69.0

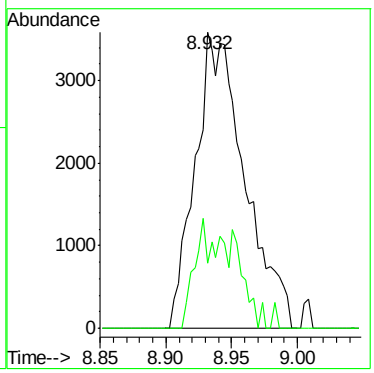


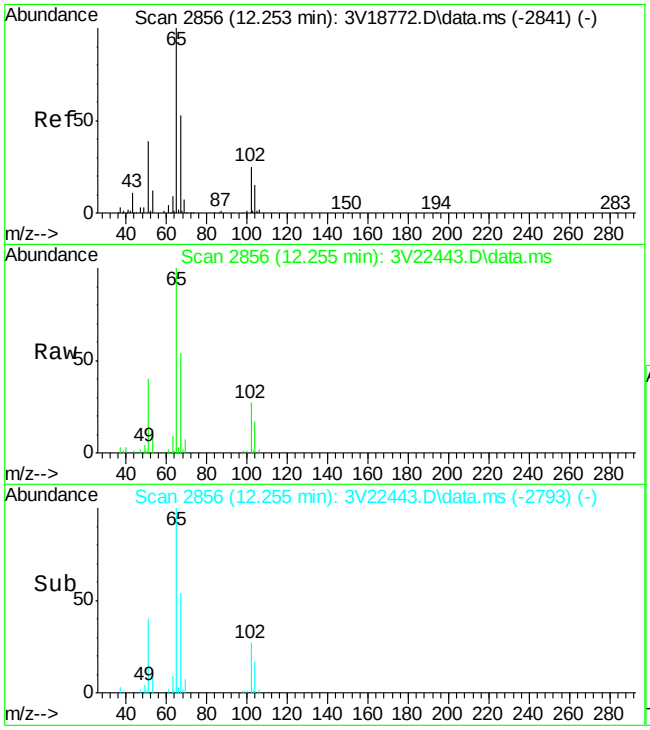


#15
Acetone
Concen: 4.35 ug/l
RT: 8.932 min Scan# 1820
Delta R.T. 0.017 min
Lab File: 3V22443.D
Acq: 8 Jan 2013 10:48 am

Tgt Ion: 43 Resp: 9364

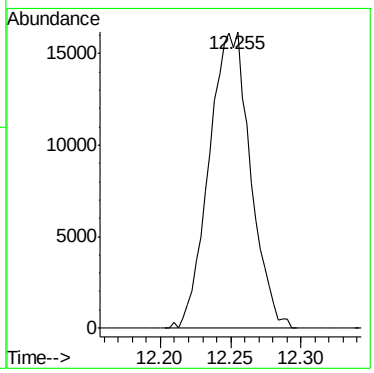
Ion	Ratio	Lower	Upper
43	100		
58	28.8	8.7	48.7

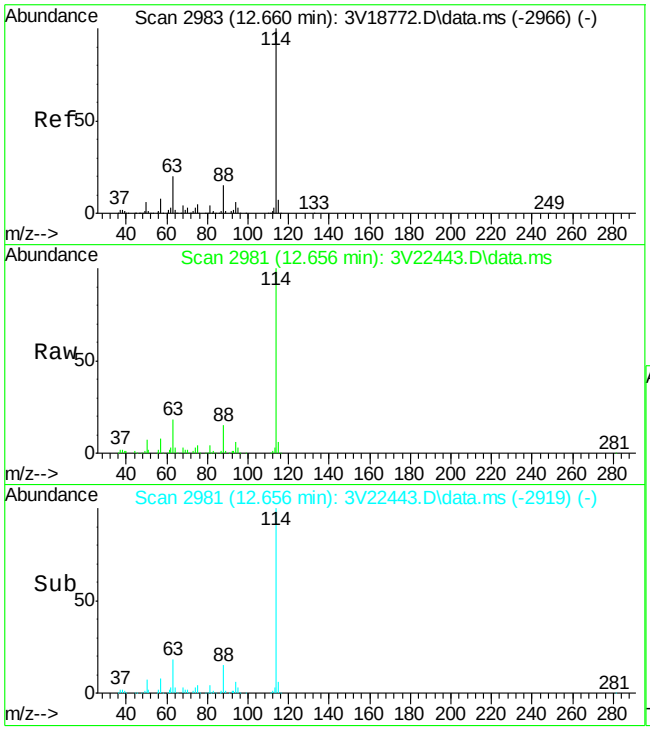




#33
1,2-Dichloroethane-d4
Concen: 54.29 ug/l
RT: 12.255 min Scan# 2856
Delta R.T. 0.004 min
Lab File: 3V22443.D
Acq: 8 Jan 2013 10:48 am

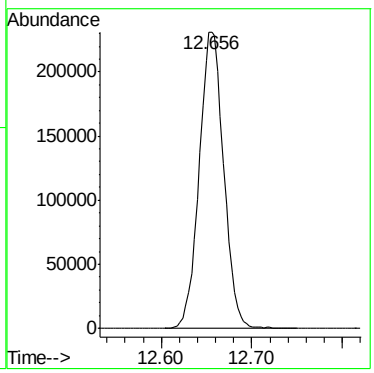
Tgt Ion:102 Resp: 32637

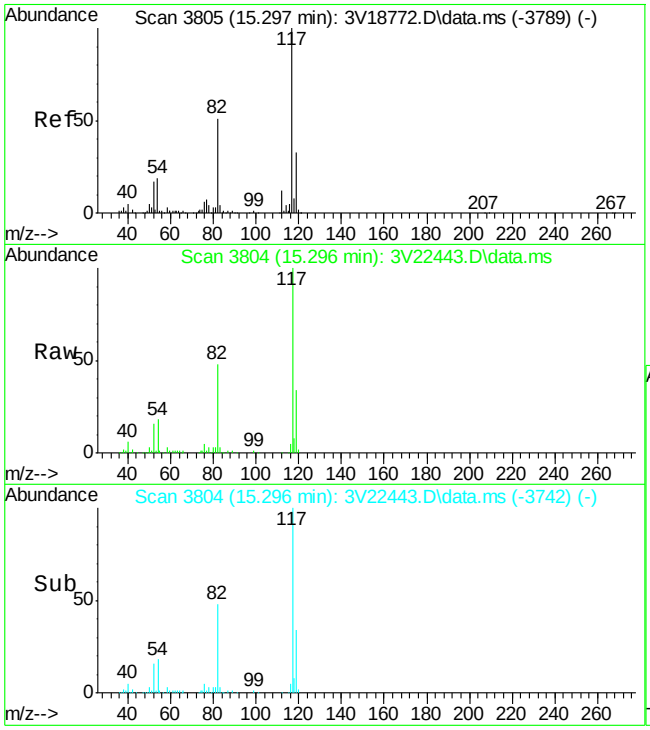




#35
1,4-Difluorobenzene
Concen: 50.00 ug/l
RT: 12.656 min Scan# 2981
Delta R.T. 0.000 min
Lab File: 3V22443.D
Acq: 8 Jan 2013 10:48 am

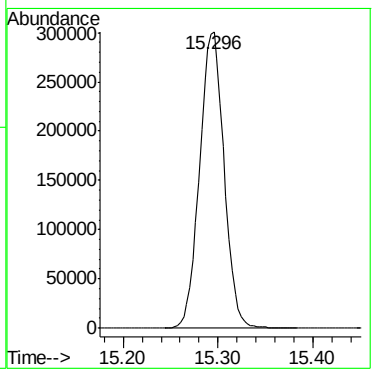
Tgt Ion:114 Resp: 434746

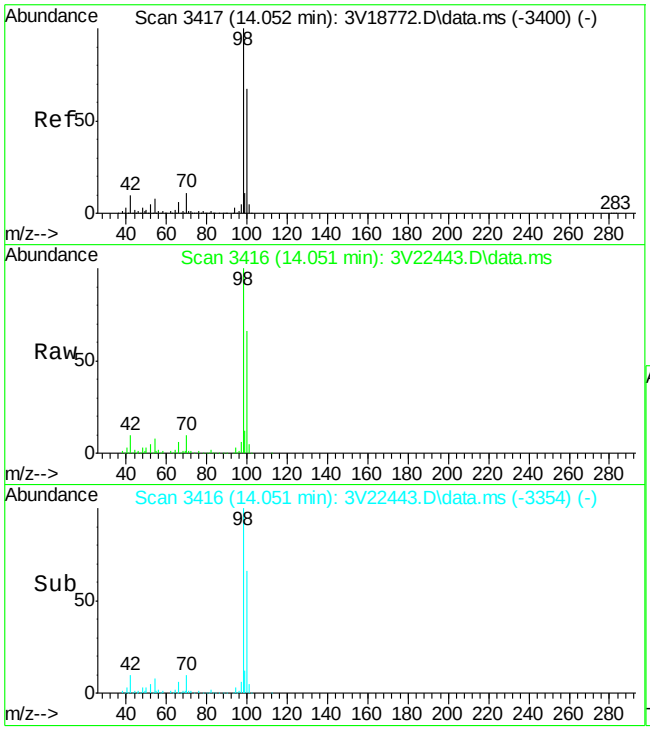




#53
Chlorobenzene-d5
Concen: 50.00 ug/l
RT: 15.296 min Scan# 3804
Delta R.T. 0.000 min
Lab File: 3V22443.D
Acq: 8 Jan 2013 10:48 am

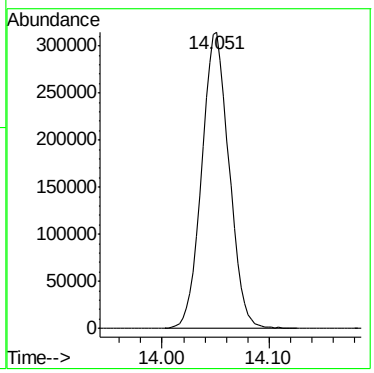
Tgt Ion:117 Resp: 540657

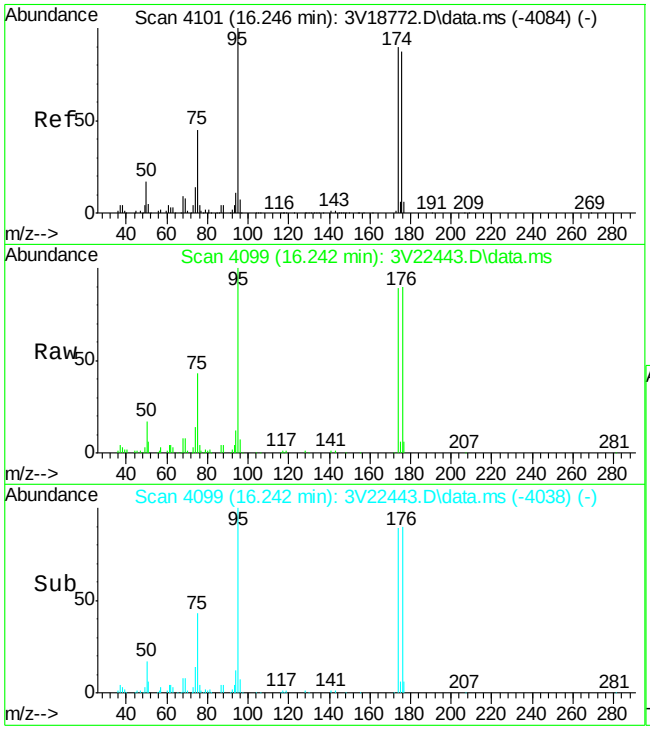




#61
Toluene-d8
Concen: 42.74 ug/l
RT: 14.051 min Scan# 3416
Delta R.T. 0.000 min
Lab File: 3V22443.D
Acq: 8 Jan 2013 10:48 am

Tgt Ion: 98 Resp: 556286

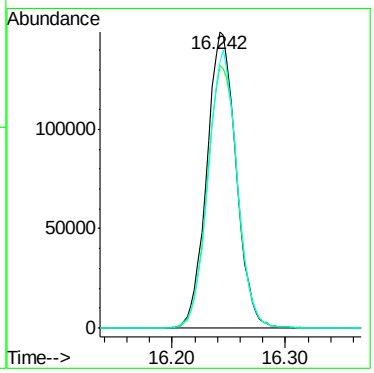


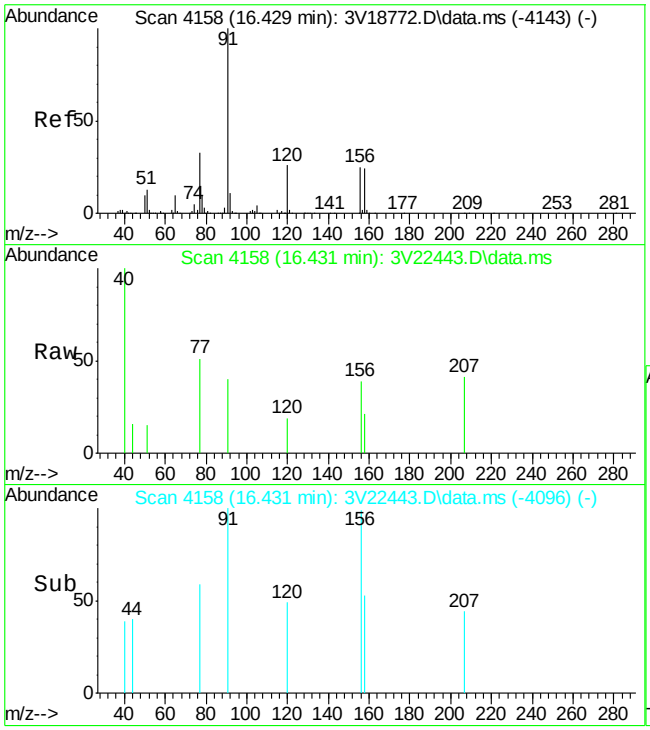


#69
4-Bromofluorobenzene
Concen: 47.69 ug/l
RT: 16.242 min Scan# 4099
Delta R.T. -0.003 min
Lab File: 3V22443.D
Acq: 8 Jan 2013 10:48 am

Tgt Ion: 95 Resp: 267407

Ion	Ratio	Lower	Upper
95	100		
174	91.8	0.0	20.0#
176	92.9	0.0	20.0#

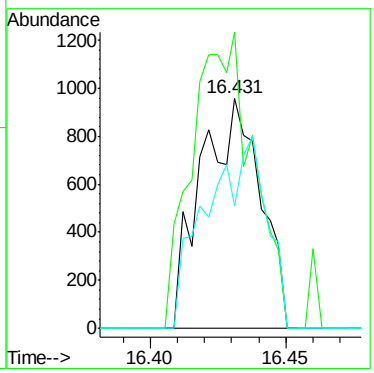


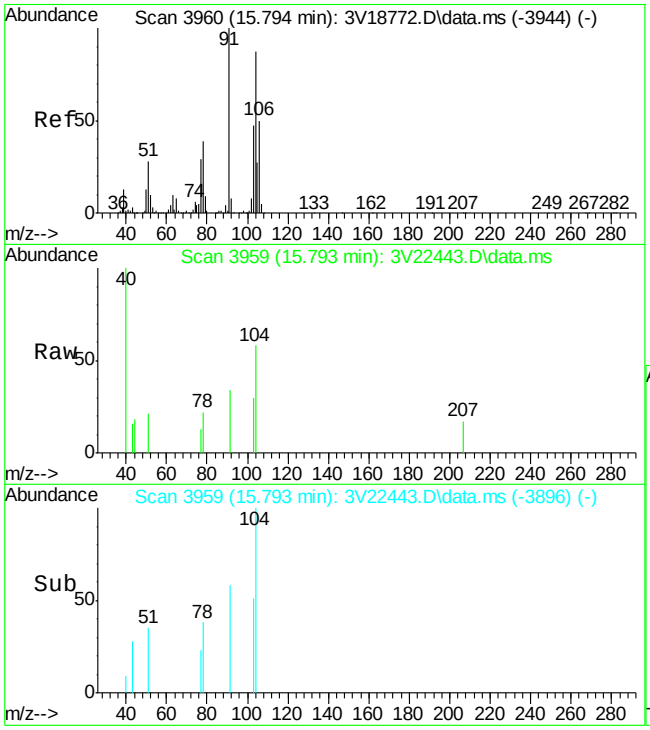


#70
Bromobenzene
Concen: 0.25 ug/l
RT: 16.431 min Scan# 4158
Delta R.T. 0.000 min
Lab File: 3V22443.D
Acq: 8 Jan 2013 10:48 am

Tgt Ion:156 Resp: 1458

Ion	Ratio	Lower	Upper
156	100		
77	131.9	135.4	175.4#
158	83.7	77.3	117.3

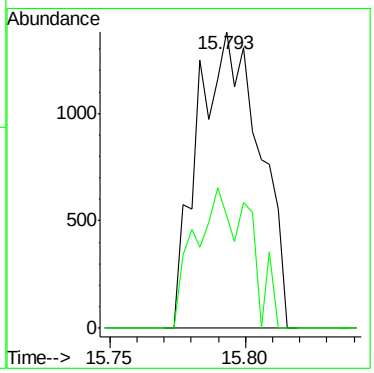


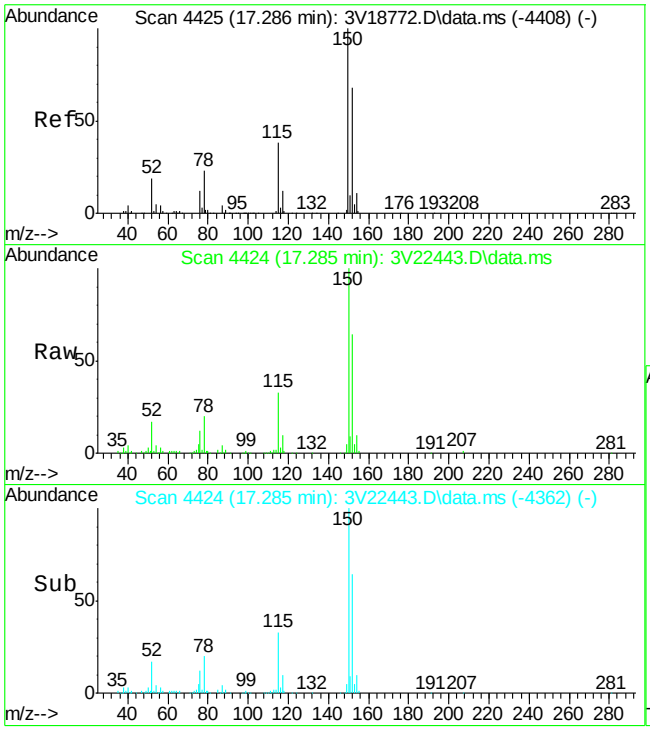


#71
Styrene
Concen: 0.57 ug/l
RT: 15.793 min Scan# 3959
Delta R.T. 0.001 min
Lab File: 3V22443.D
Acq: 8 Jan 2013 10:48 am

Tgt Ion:104 Resp: 2183

Ion	Ratio	Lower	Upper
104	100		
78	41.7	25.4	65.4

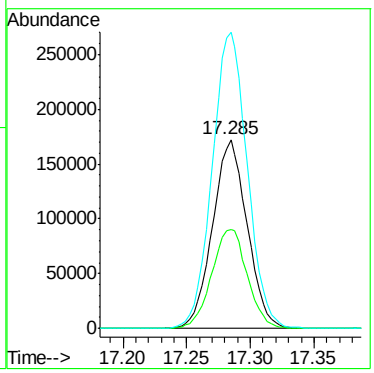


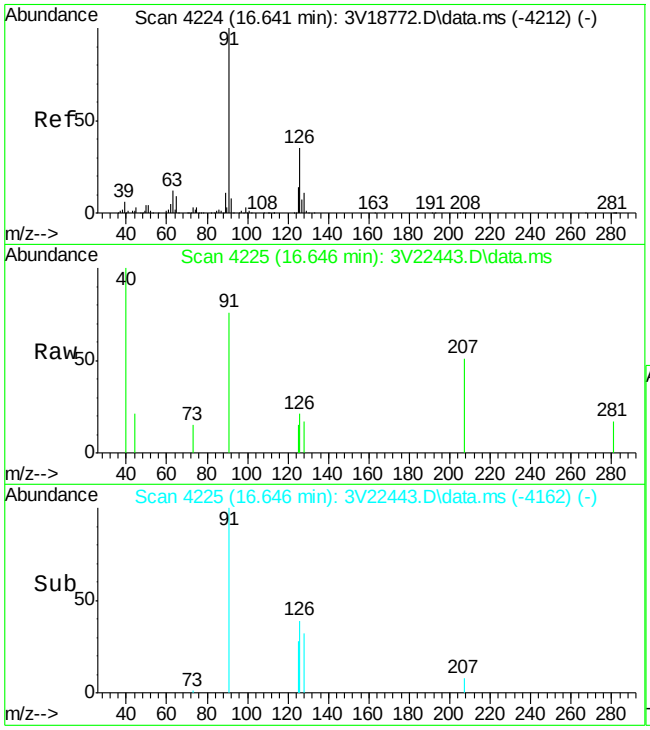


#74
1,4-Dichlorobenzene-d4
Concen: 50.00 ug/l
RT: 17.285 min Scan# 4424
Delta R.T. 0.000 min
Lab File: 3V22443.D
Acq: 8 Jan 2013 10:48 am

Tgt Ion:152 Resp: 324831

Ion	Ratio	Lower	Upper
152	100		
115	53.8	34.6	74.6
150	159.4	152.1	192.1

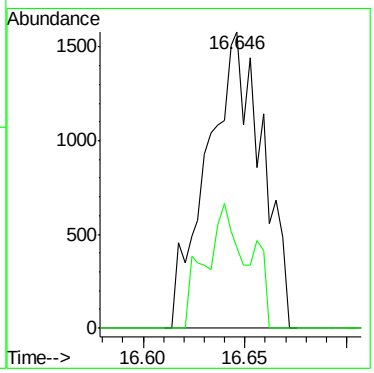


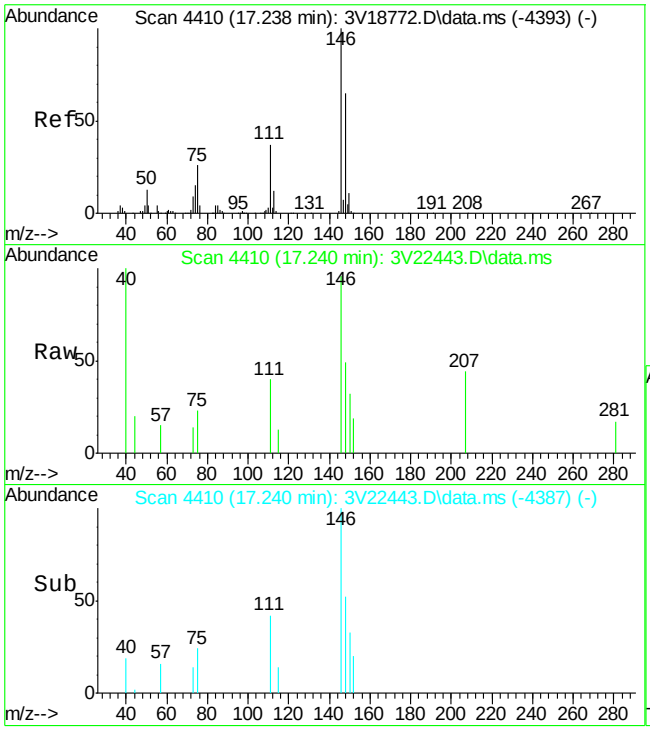


#79
4-Chlorotoluene
Concen: 0.20 ug/l
RT: 16.646 min Scan# 4225
Delta R.T. 0.004 min
Lab File: 3V22443.D
Acq: 8 Jan 2013 10:48 am

Tgt Ion: 91 Resp: 2958

Ion	Ratio	Lower	Upper
91	100		
126	33.1	16.4	56.4

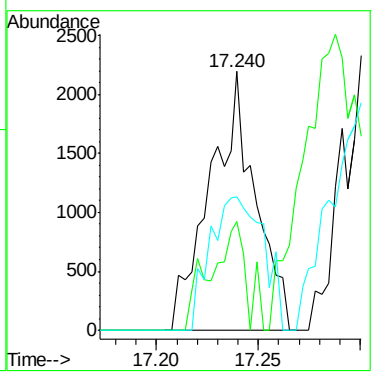


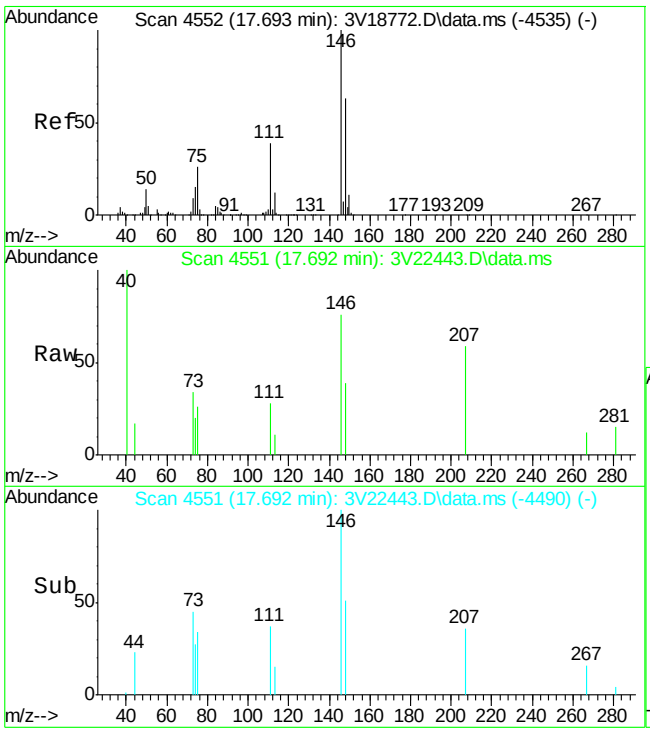


#84
1,3-Dichlorobenzene
Concen: 0.30 ug/l
RT: 17.240 min Scan# 4410
Delta R.T. 0.005 min
Lab File: 3V22443.D
Acq: 8 Jan 2013 10:48 am

Tgt Ion:146 Resp: 3389

Ion	Ratio	Lower	Upper
146	100		
111	23.5	17.1	57.1
148	61.1	44.2	84.2

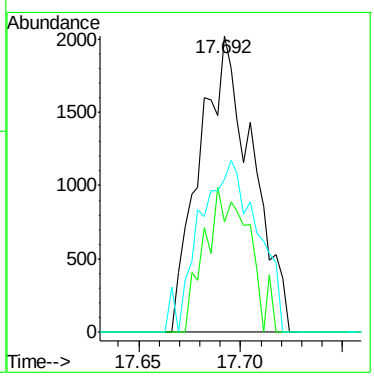


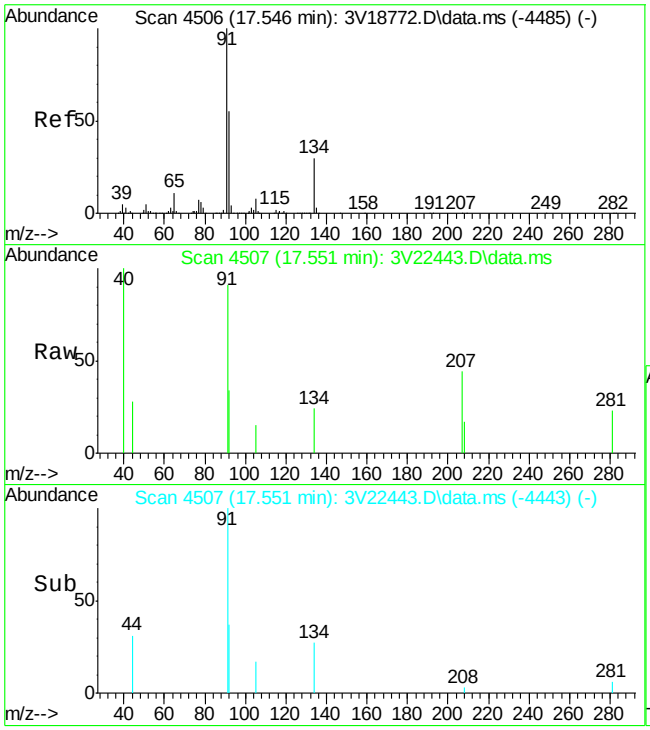


#87
1,2-Dichlorobenzene
Concen: 0.33 ug/l
RT: 17.692 min Scan# 4551
Delta R.T. -0.003 min
Lab File: 3V22443.D
Acq: 8 Jan 2013 10:48 am

Tgt Ion:146 Resp: 3642

Ion	Ratio	Lower	Upper
146	100		
111	40.9	18.8	58.8
148	63.4	44.3	84.3

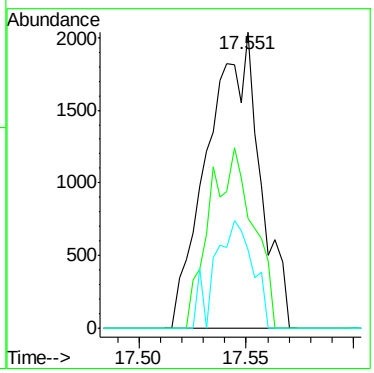


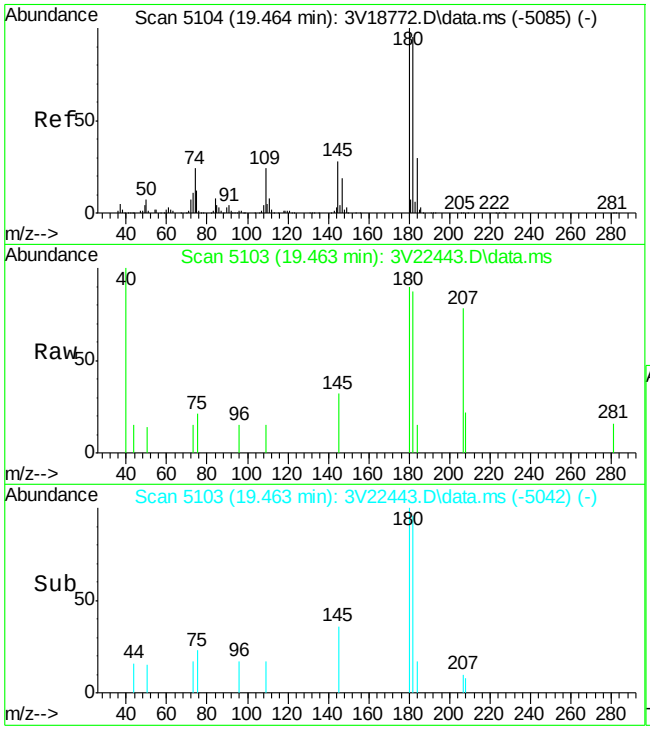


#88
n-Butylbenzene
Concen: 0.22 ug/l
RT: 17.551 min Scan# 4507
Delta R.T. 0.007 min
Lab File: 3V22443.D
Acq: 8 Jan 2013 10:48 am

Tgt Ion: 91 Resp: 3434

Ion	Ratio	Lower	Upper
91	100		
92	51.3	34.8	74.8
134	26.4	8.9	48.9

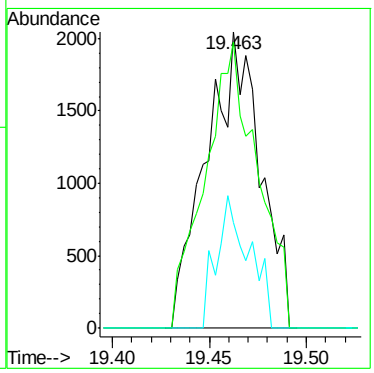


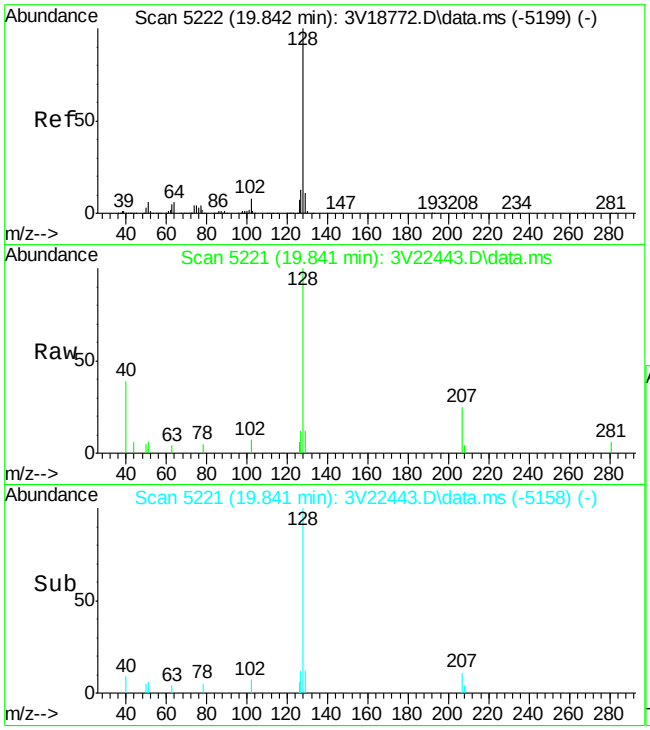


#90
1,2,4-Trichlorobenzene
Concen: 0.57 ug/l
RT: 19.463 min Scan# 5103
Delta R.T. -0.003 min
Lab File: 3V22443.D
Acq: 8 Jan 2013 10:48 am

Tgt Ion:180 Resp: 3957

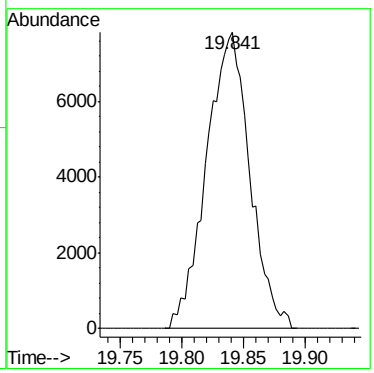
Ion	Ratio	Lower	Upper
180	100		
182	93.8	75.5	115.5
145	27.0	8.6	48.6

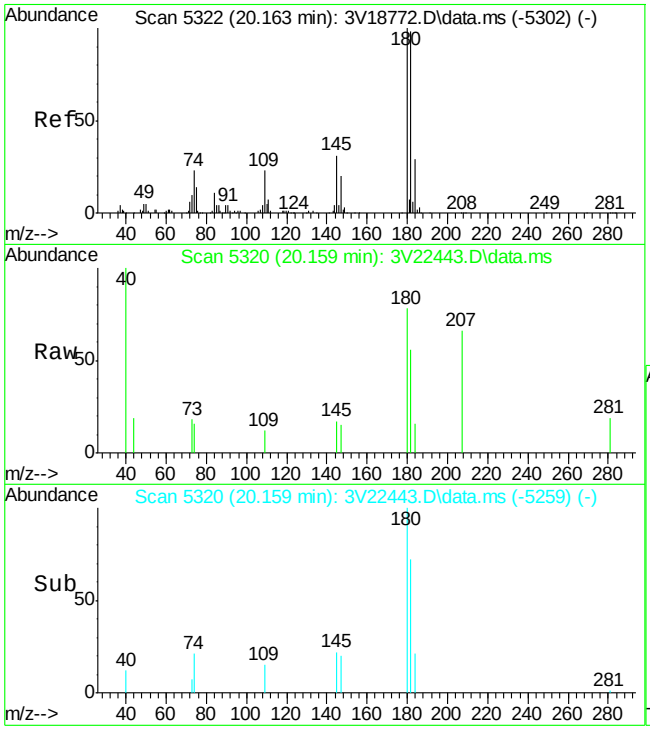




#91
Naphthalene
Concen: 2.11 ug/l
RT: 19.841 min Scan# 5221
Delta R.T. 0.001 min
Lab File: 3V22443.D
Acq: 8 Jan 2013 10:48 am

Tgt Ion:128 Resp: 19171

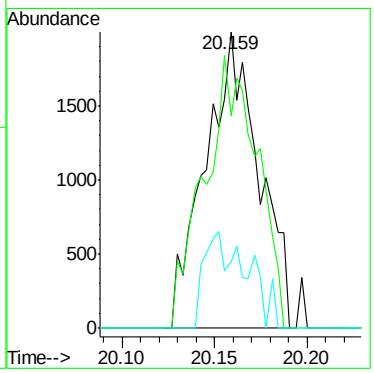


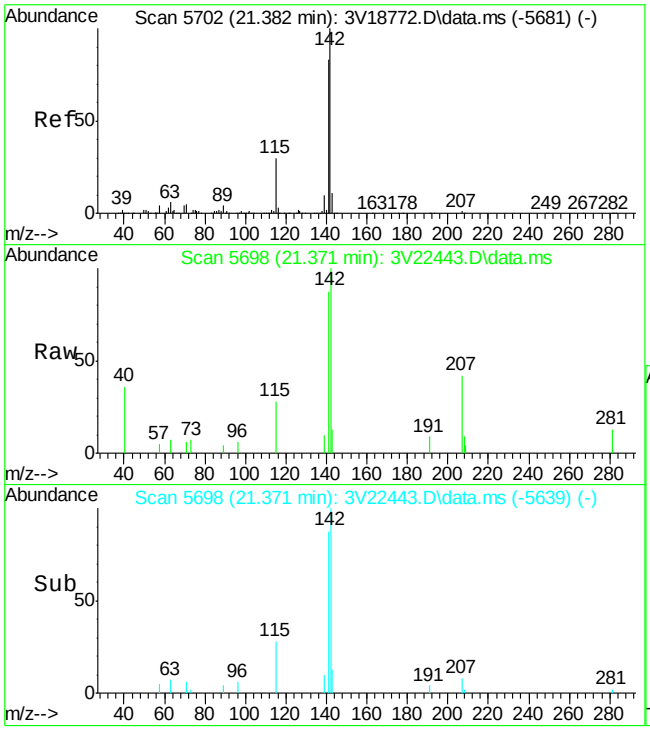


#93
1,2,3-Trichlorobenzene
Concen: 0.59 ug/l
RT: 20.159 min Scan# 5320
Delta R.T. -0.003 min
Lab File: 3V22443.D
Acq: 8 Jan 2013 10:48 am

Tgt Ion:180 Resp: 4031

Ion	Ratio	Lower	Upper
180	100		
182	90.9	75.6	115.6
145	25.9	10.3	50.3

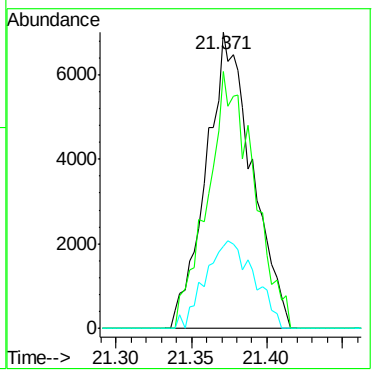


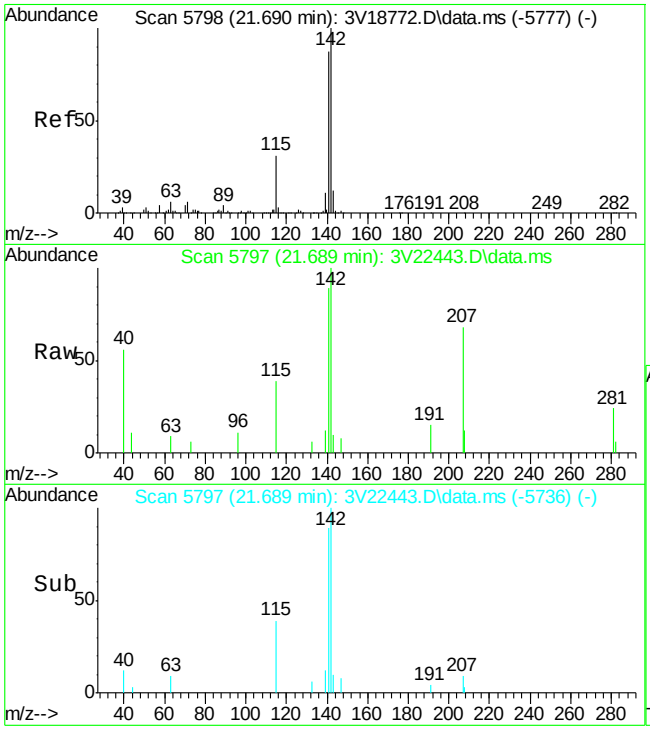


#94
2-Methylnaphthalene
Concen: 1.96 ug/l
RT: 21.371 min Scan# 5698
Delta R.T. -0.009 min
Lab File: 3V22443.D
Acq: 8 Jan 2013 10:48 am

Tgt Ion:142 Resp: 14756

Ion	Ratio	Lower	Upper
142	100		
141	87.6	65.8	105.8
115	31.4	9.7	49.7

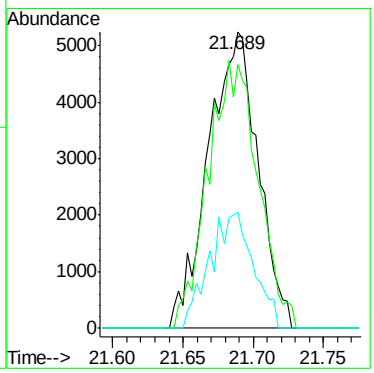




#95
1-Methylnaphthalene
Concen: 1.77 ug/l
RT: 21.689 min Scan# 5797
Delta R.T. -0.003 min
Lab File: 3V22443.D
Acq: 8 Jan 2013 10:48 am

Tgt Ion:142 Resp: 12687

Ion	Ratio	Lower	Upper
142	100		
141	91.1	68.3	108.3
115	34.5	11.8	51.8



Mountain States ACCUTEST LABORATORIES

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

Job Number: D42316
Account: XTOKRWR XTO Energy
Project: XTO Love Ranch 8

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7200-MB	3G12911.D	1	01/10/13	DC	01/09/13	OP7200	E3G618

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

D42316-1

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	105%	10-159%
321-60-8	2-Fluorobiphenyl	101%	19-131%
1718-51-0	Terphenyl-d14	160%* [a]	18-150%

(a) Outside of control limits. Since the bias is high and the method blank is ND for target analytes, no further action is required.

Blank Spike Summary

Job Number: D42316
Account: XTOKRWR XTO Energy
Project: XTO Love Ranch 8

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7200-BS	3G12910.D	1	01/10/13	DC	01/09/13	OP7200	E3G618

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

D42316-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	84.9	102	68-130
120-12-7	Anthracene	83.3	73.4	88	67-130
56-55-3	Benzo(a)anthracene	83.3	61.0	73	65-130
205-99-2	Benzo(b)fluoranthene	83.3	73.0	88	44-130
207-08-9	Benzo(k)fluoranthene	83.3	72.0	86	56-131
50-32-8	Benzo(a)pyrene	83.3	76.2	91	62-130
218-01-9	Chrysene	83.3	79.5	95	70-130
53-70-3	Dibenzo(a,h)anthracene	83.3	53.8	65	55-130
206-44-0	Fluoranthene	83.3	64.8	78	70-130
86-73-7	Fluorene	83.3	70.2	84	70-130
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	57.5	69	56-130
91-20-3	Naphthalene	83.3	74.2	89	70-130
129-00-0	Pyrene	83.3	79.4	95	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	101%	10-159%
321-60-8	2-Fluorobiphenyl	98%	19-131%
1718-51-0	Terphenyl-d14	130%	18-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D42316
Account: XTOKRWR XTO Energy
Project: XTO Love Ranch 8

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7200-MS	3G12915.D	4	01/10/13	DC	01/09/13	OP7200	E3G618
OP7200-MSD	3G12914.D	4	01/10/13	DC	01/09/13	OP7200	E3G618
D42316-1	3G12922.D	1	01/10/13	DC	01/09/13	OP7200	E3G618
D42316-1	3G12912.D	4	01/10/13	DC	01/09/13	OP7200	E3G618

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

D42316-1

CAS No.	Compound	D42316-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		131	141	107	215	163* [a]	42* [b]	25-151/30
120-12-7	Anthracene	ND		131	164	125	168	128	2	39-159/30
56-55-3	Benzo(a)anthracene	ND		131	122	93	127	97	4	39-168/30
205-99-2	Benzo(b)fluoranthene	ND		131	133	101	129	98	3	24-163/30
207-08-9	Benzo(k)fluoranthene	ND		131	94.4	72	111	84	16	10-188/30
50-32-8	Benzo(a)pyrene	ND		131	107	81	113	86	5	32-144/30
218-01-9	Chrysene	ND		131	161	123	168	128	4	43-150/30
53-70-3	Dibenzo(a,h)anthracene	ND		131	89.6	68	90.5	69	1	21-152/30
206-44-0	Fluoranthene	ND		131	173	132	178	135	3	36-157/30
86-73-7	Fluorene	437		131	845	311* [c]	829	298* [c]	2	10-182/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		131	87.8	67	89.5	68	2	20-154/30
91-20-3	Naphthalene	1190 [d]		131	1480	221* [c]	1510	243* [c]	2	10-163/30
129-00-0	Pyrene	80.0		131	216	104	227	112	5	25-180/30

CAS No.	Surrogate Recoveries	MS	MSD	D42316-1	D42316-1	Limits
4165-60-0	Nitrobenzene-d5	34%	42%	84%	42%	10-159%
321-60-8	2-Fluorobiphenyl	52%	70%	50%	48%	19-131%
1718-51-0	Terphenyl-d14	104%	110%	73%	107%	18-150%

(a) Outside control limits due to possible matrix interference.
(b) Variability of recovery may be due to sample matrix/homogeneity.
(c) Outside control limits due to high level in sample relative to spike amount.
(d) Result is from Run #2.

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC/MS Semi-volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson 01/11/13 11:06

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\011013\
Data File : 3g12912.D
Acq On : 10 Jan 13 3:08 pm
Operator : DONC
Sample : D42316-1, 4x
Misc : OP7200,E3G618,30.03,,,1,4
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 11 09:02:28 2013
Quant Method : C:\msdchem\1\METHODS\SIMPE3G611.M
Quant Title : PAHSIM BASE
QLast Update : Thu Jan 10 14:18:35 2013
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.621	136	135536	4.0000	ug/mL	0.00
6) Acenaphthene-d10	7.337	164	92581	4.0000	ug/mL	0.01
15) Phenanthrene-d10	8.819	188	129785	4.0000	ug/mL	0.00
19) Chrysene-d12	11.450	240	89785	4.0000	ug/mL	0.00
24) Perylene-d12	12.810	264	68780	4.0000	ug/mL	0.00
System Monitoring Compounds						
2) Nitrobenzene-d5	4.935	82	63983m	5.2483	ug/mL	-0.01
Spiked Amount 50.000	Range 25 - 135		Recovery = 10.50%#			
7) 2-Fluorobiphenyl	6.676	172	236998	6.0253	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery = 12.06%#			
21) Terphenyl-d14	10.402	244	163950	13.4198	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery = 26.84%			
Target Compounds						Qvalue
3) N-Nitrosodimethylamine	2.363	74	35	N.D.		
4) N-Nitrosodi-propylamine	0.000	70	0	N.D. d		
5) Naphthalene	5.633	128	220836	5.6665	ug/mL	90
8) 2-Methylnaphthalene	6.319	142	538416	18.0980	ug/mL	95
9) 1-Methylnaphthalene	6.406	142	184588m	7.0939	ug/mL	
10) Acenaphthylene	0.000	152	0	N.D. d		
11) Acenaphthene	0.000	154	0	N.D. d		
12) Dibenzofuran	0.000	168	0	N.D. d		
13) Fluorene	7.881	166	97530m	2.6190	ug/mL	
14) Diphenylamine	0.000	169	0	N.D. d		
16) Phenanthrene	8.835	178	186818	3.7249	ug/mL	68
17) Anthracene	0.000	178	0	N.D. d		
18) Fluoranthene	0.000	202	0	N.D. d		
20) Pyrene	10.244	202	20757	0.4329	ug/mL#	40
22) Benzo(a)anthracene	0.000	228	0	N.D. d		
23) Chrysene	0.000	228	0	N.D. d		
25) Benzo(b)fluoranthene	0.000	252	0	N.D. d		
26) Benzo(k)fluoranthene	0.000	252	0	N.D. d		
27) Benzo(a)pyrene	0.000	252	0	N.D. d		
28) Indeno(1,2,3-cd)pyrene	0.000	276	0	N.D. d		
29) Dibenz(a,h)anthracene	0.000	278	0	N.D. d		
30) Benzo(g,h,i)perylene	14.345	276	805	N.D.		

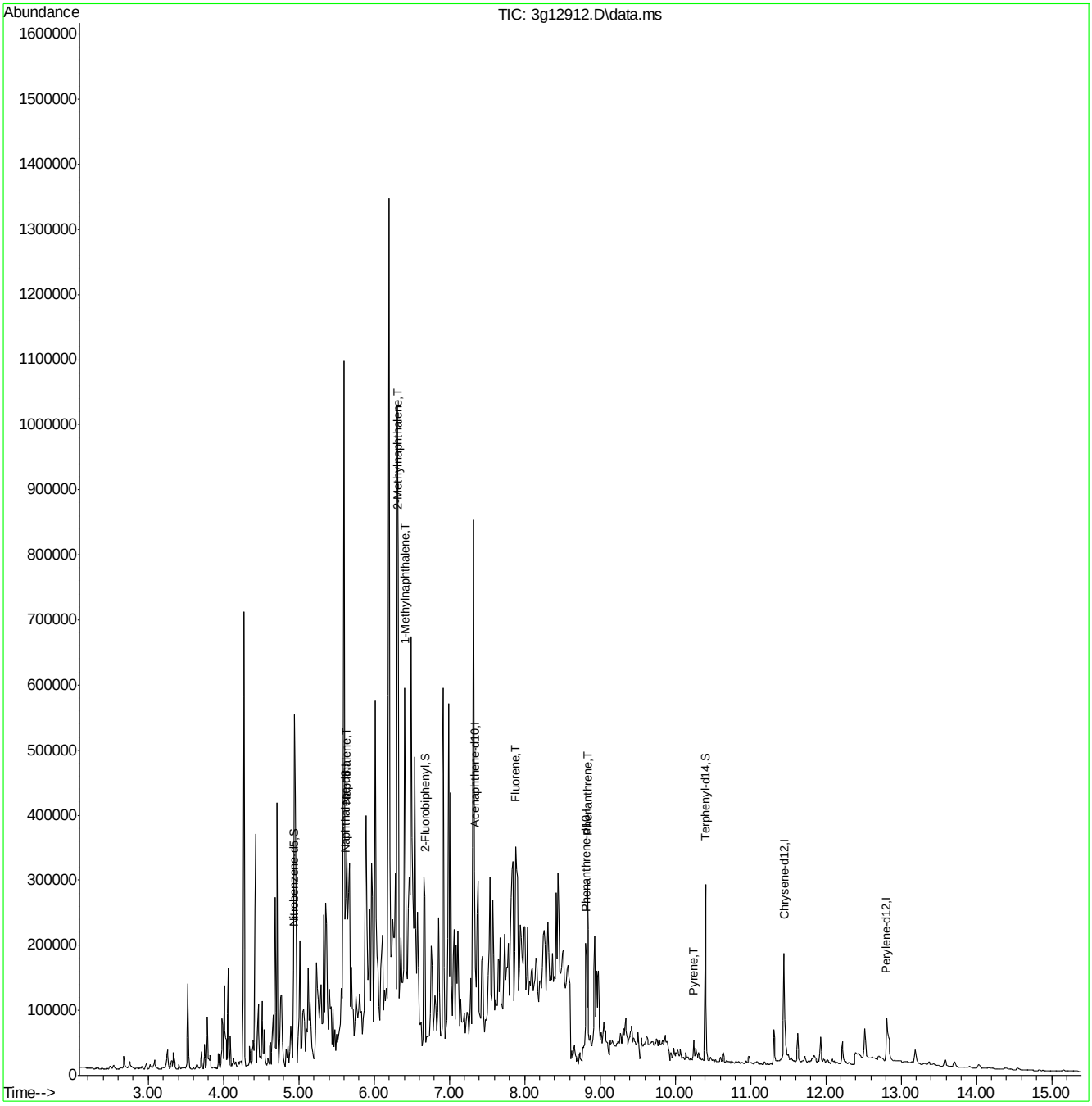
(#) = qualifier out of range (m) = manual integration (+) = signals summed

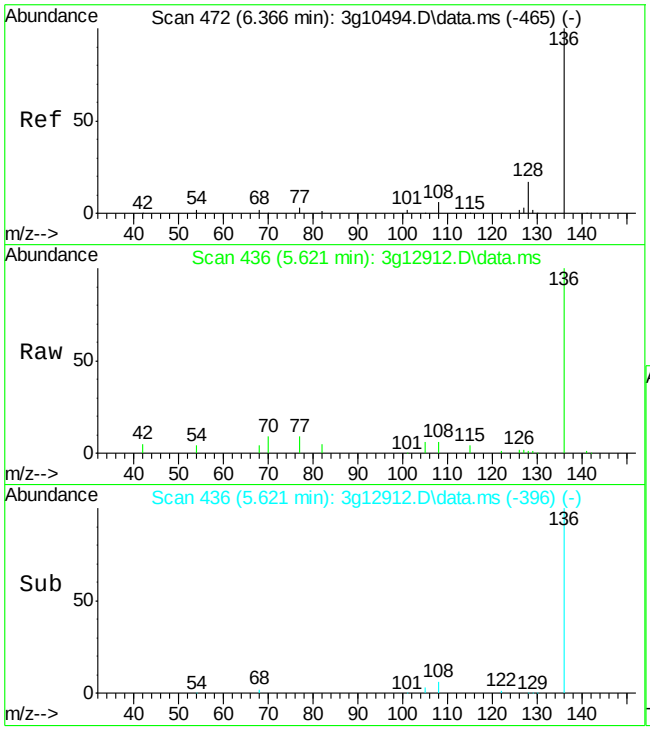
9.1.1
9

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\011013\
Data File : 3g12912.D
Acq On : 10 Jan 13 3:08 pm
Operator : DONC
Sample : D42316-1, 4x
Misc : OP7200,E3G618,30.03,,,1,4
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jan 11 09:02:28 2013
Quant Method : C:\msdchem\1\METHODS\SIMPE3G611.M
Quant Title : PAHSIM BASE
QLast Update : Thu Jan 10 14:18:35 2013
Response via : Initial Calibration

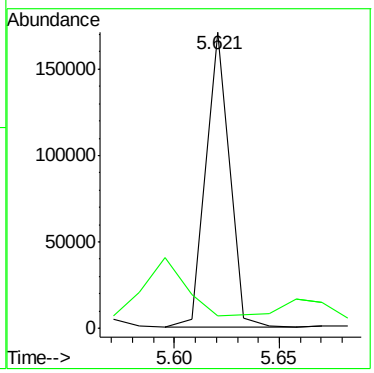


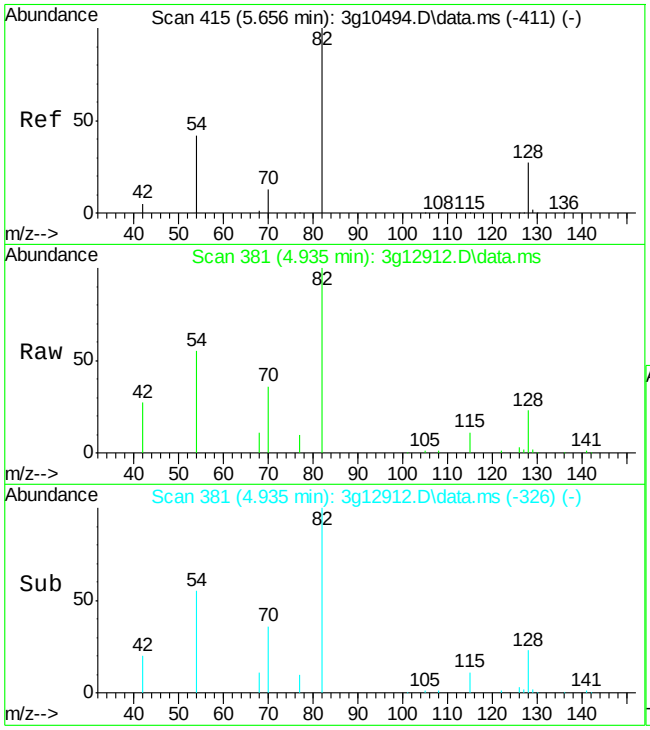


#1
Naphthalene-d8
Concen: 4.0000 ug/mL
RT: 5.621 min Scan# 436
Delta R.T. 0.000 min
Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion:136 Resp: 135536

Ion	Ratio	Lower	Upper
136	100		
68	47.7	0.0	20.8#

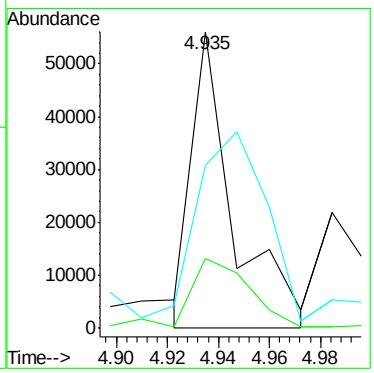


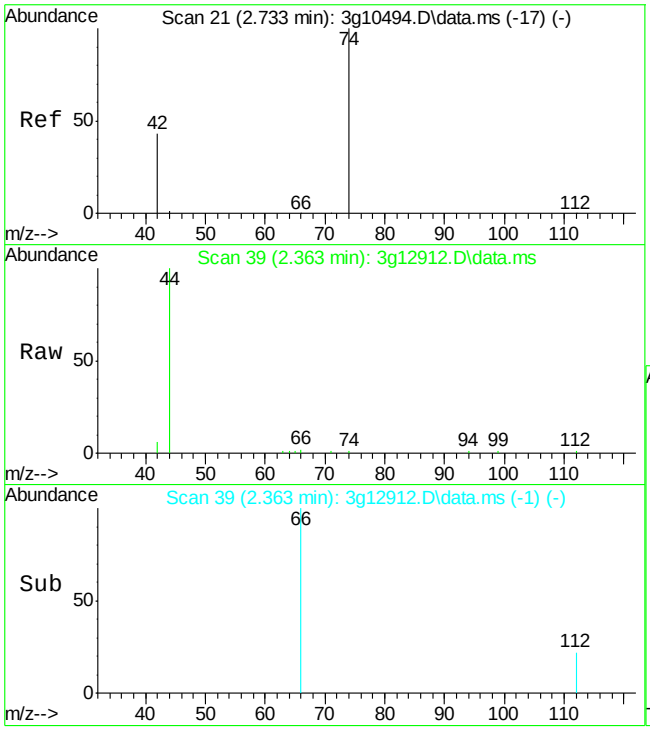


#2
Nitrobenzene-d5
Concen: 5.2483 ug/mL m
RT: 4.935 min Scan# 381
Delta R.T. -0.014 min
Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion: 82 Resp: 63983

Ion	Ratio	Lower	Upper
82	100		
128	0.0	36.8	76.8#
54	0.0	40.5	80.5#

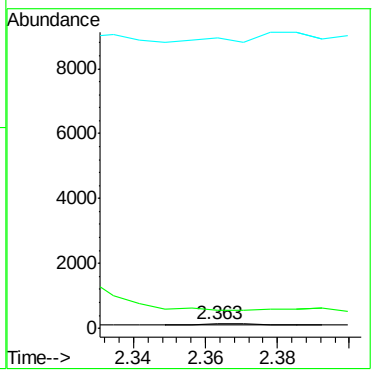


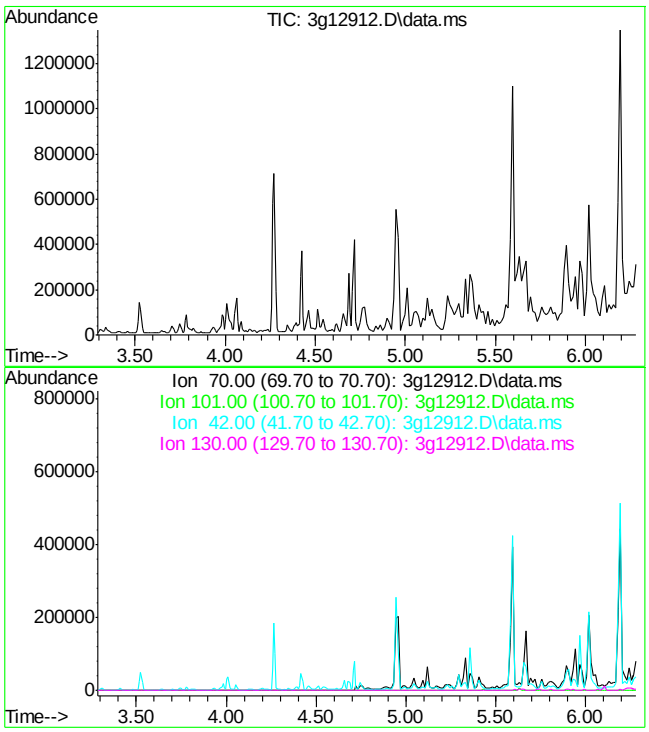


#3
N-Nitrosodimethylamine
Concen: Below ug/mL
RT: 2.363 min Scan# 39
Delta R.T. 0.027 min
Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion: 74 Resp: 35

Ion	Ratio	Lower	Upper
74	100		
42	0.0	58.5	98.5#
44	1342.9	0.0	24.0#



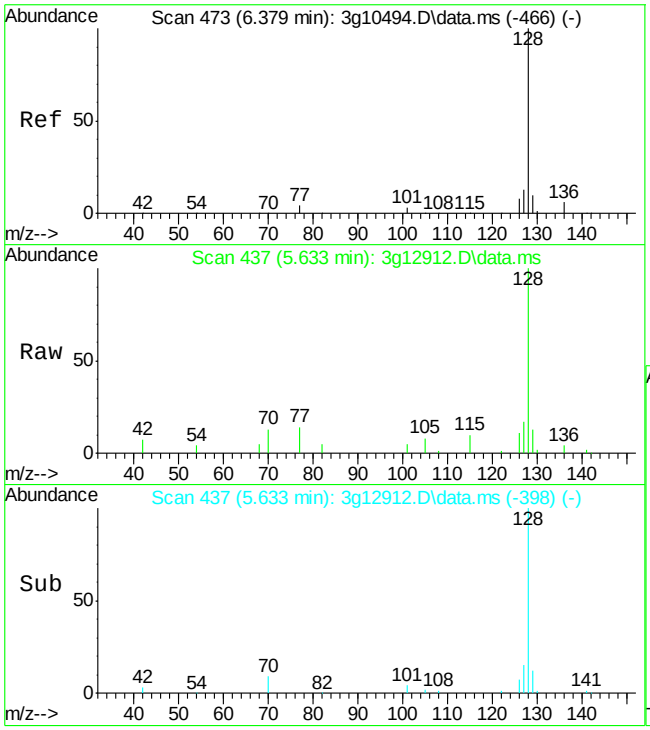


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 4.79 min

Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion: 70

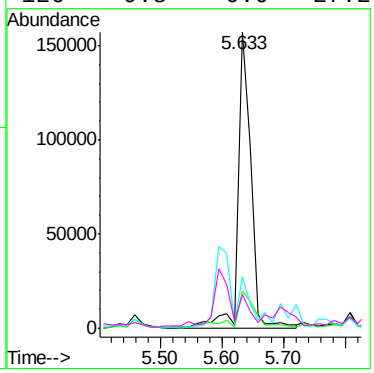
Sig	Exp Ratio
70	100
101	11.9
42	57.4
130	21.7

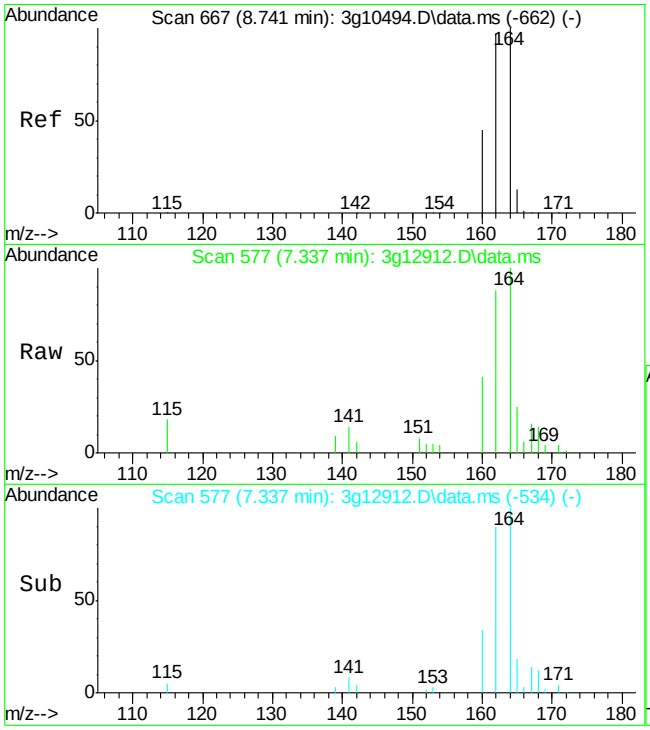


#5
Naphthalene
Concen: 5.6665 ug/mL
RT: 5.633 min Scan# 437
Delta R.T. -0.011 min
Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion:128 Resp: 220836

Ion	Ratio	Lower	Upper
128	100		
129	16.9	0.0	31.2
127	10.0	0.0	32.4
126	9.8	0.0	27.2

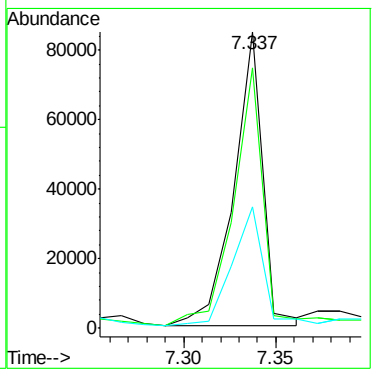


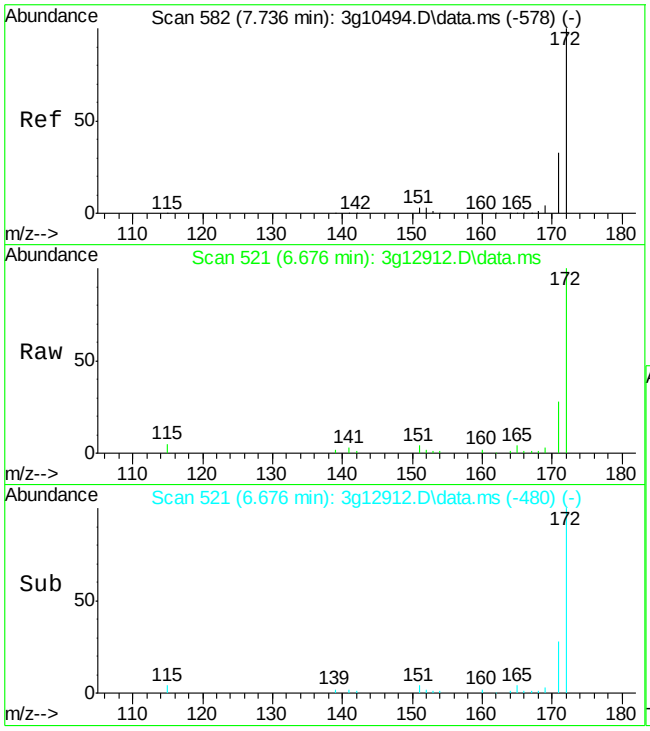


#6
Acenaphthene-d10
Concen: 4.0000 ug/mL
RT: 7.337 min Scan# 577
Delta R.T. 0.012 min
Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion:164 Resp: 92581

Ion	Ratio	Lower	Upper
164	100		
162	91.4	88.1	128.1
160	44.0	38.8	78.8

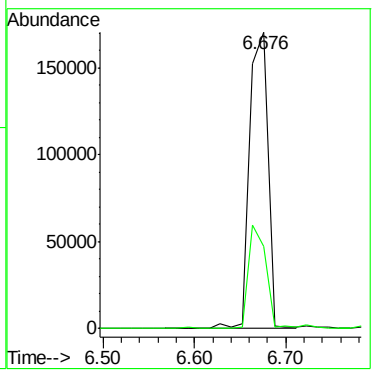


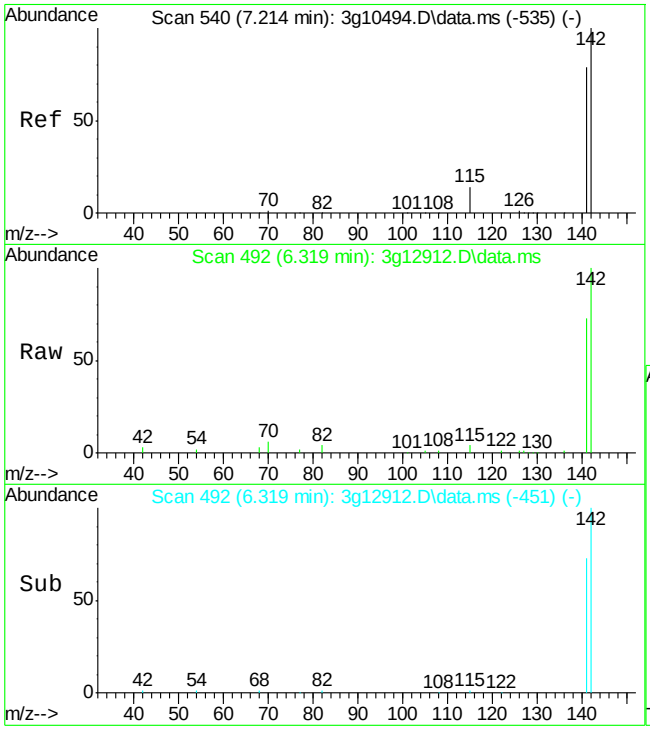


#7
2-Fluorobiphenyl
Concen: 6.0253 ug/mL
RT: 6.676 min Scan# 521
Delta R.T. 0.010 min
Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion:172 Resp: 236998

Ion	Ratio	Lower	Upper
172	100		
171	32.3	12.2	52.2

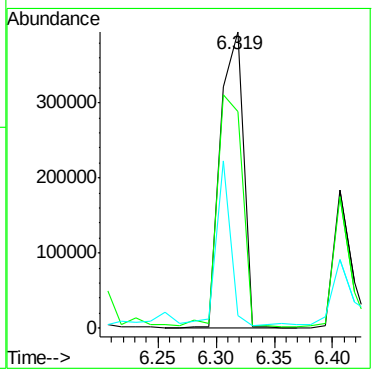


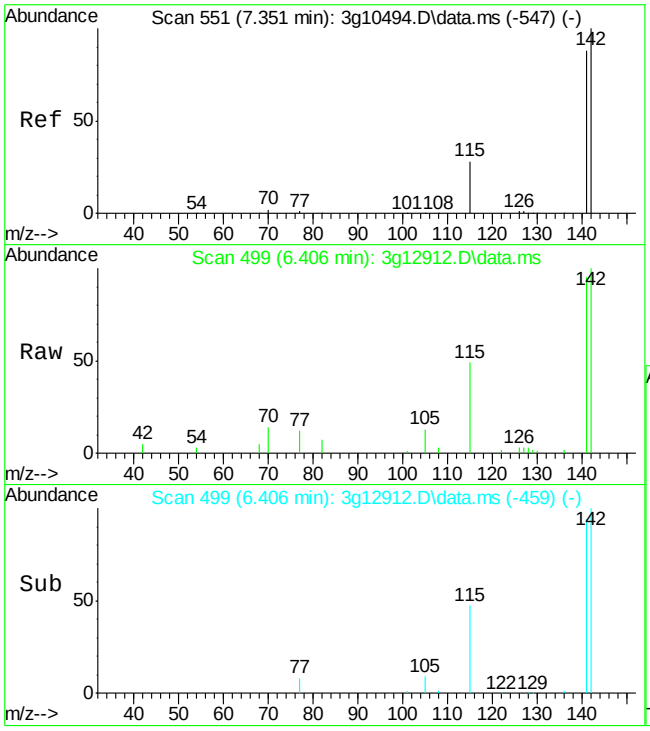


#8
2-Methylnaphthalene
Concen: 18.0980 ug/mL
RT: 6.319 min Scan# 492
Delta R.T. 0.008 min
Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion:142 Resp: 538416

Ion	Ratio	Lower	Upper
142	100		
141	85.7	62.0	102.0
115	34.5	11.3	51.3

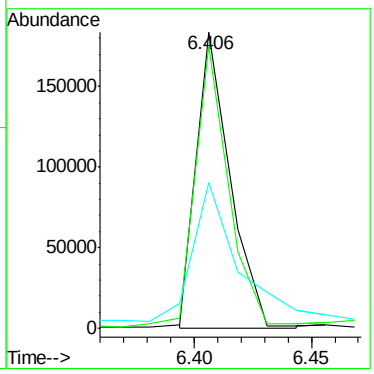


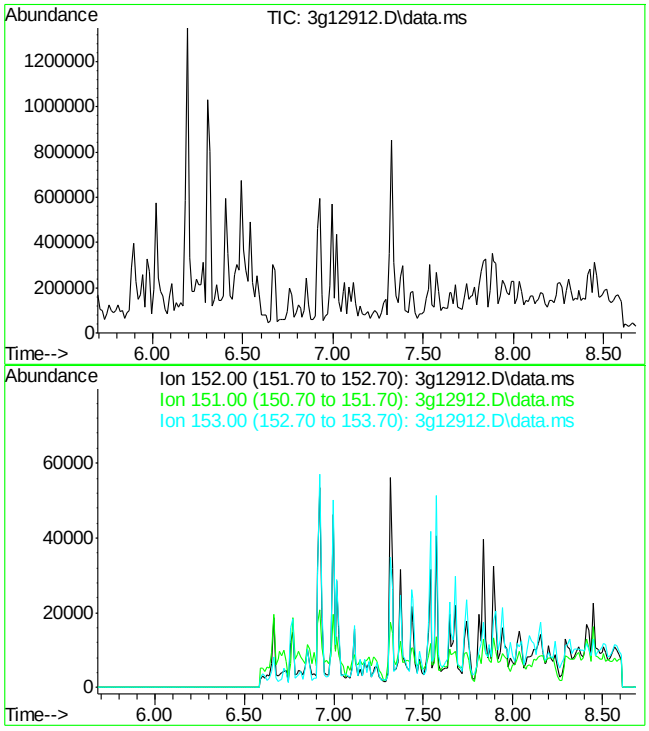


#9
1-Methylnaphthalene
Concen: 7.0939 ug/mL m
RT: 6.406 min Scan# 499
Delta R.T. -0.004 min
Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion:142 Resp: 184588

Ion	Ratio	Lower	Upper
142	100		
141	249.9	67.5	107.5#
115	98.7	19.4	59.4#



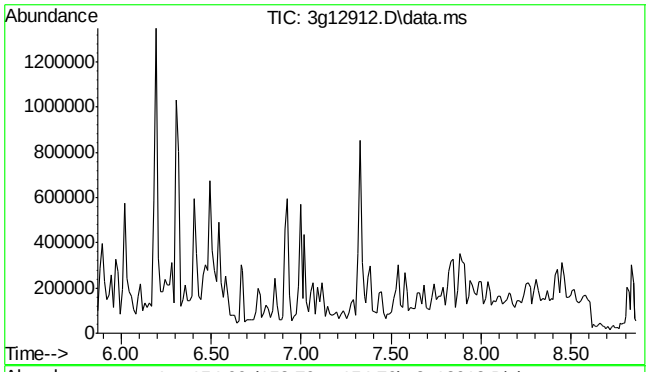


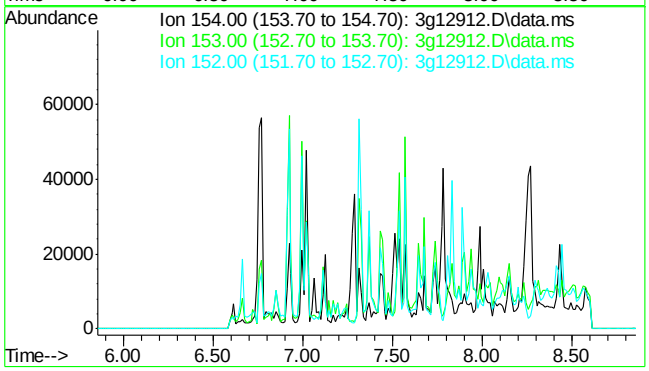
#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 7.18 min

Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion: 152

Sig	Exp Ratio
152	100
151	19.2
153	12.9



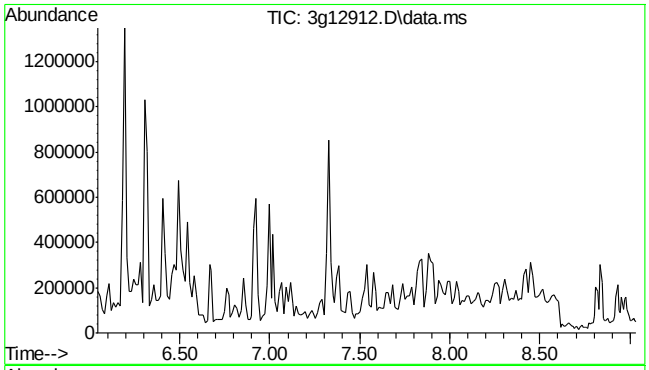


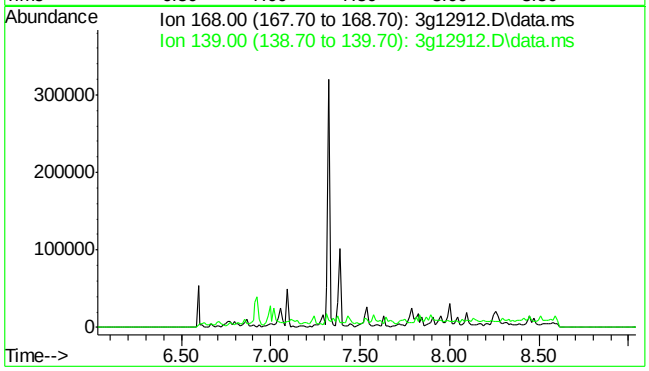
#11
Acenaphthene
Concen: N.D. ug/mL
Expected RT: 7.36 min

Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion: 154

Sig	Exp Ratio
154	100
153	102.4
152	50.0



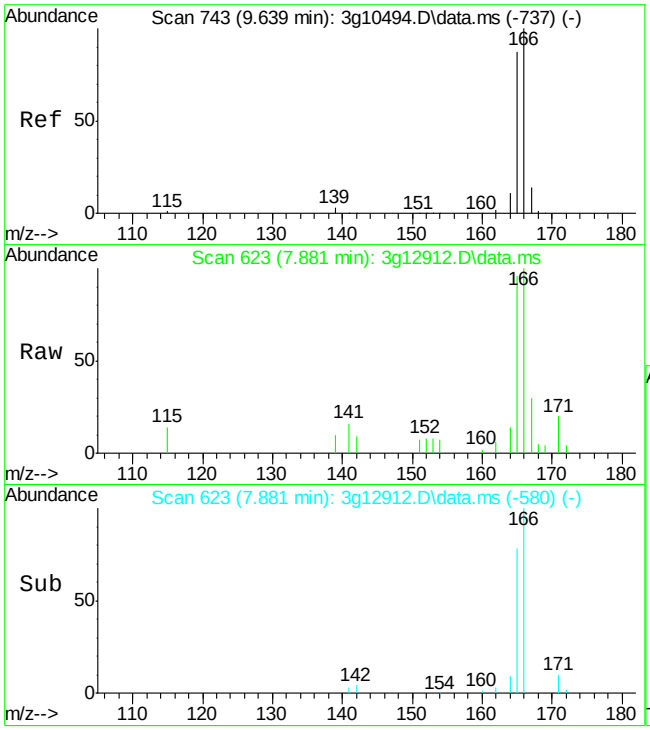


#12
Dibenzofuran
Concen: N.D. ug/mL
Expected RT: 7.54 min

Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion: 168

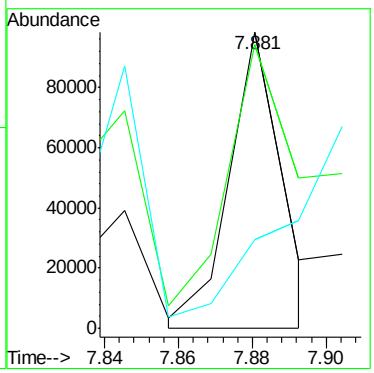
Sig	Exp Ratio
168	100
139	33.4

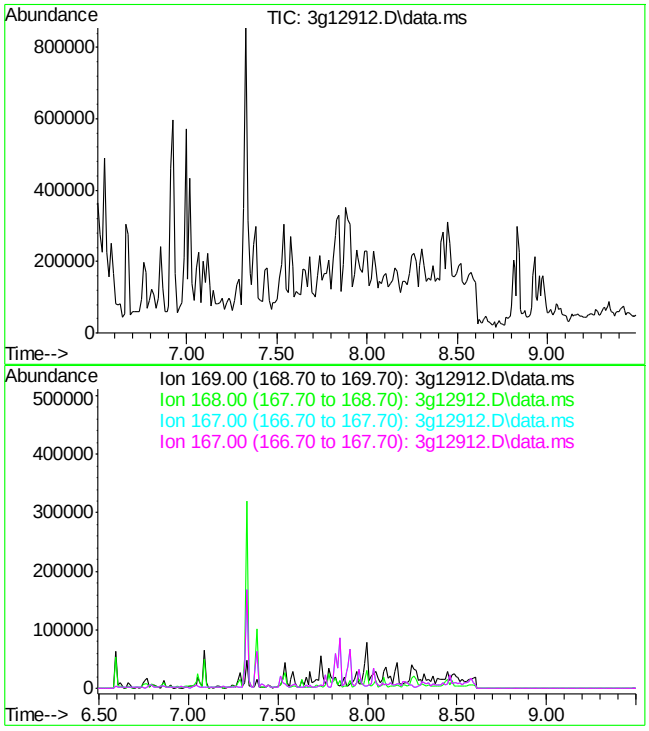


#13
Fluorene
Concen: 2.6190 ug/mL m
RT: 7.881 min Scan# 623
Delta R.T. 0.014 min
Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion:166 Resp: 97530

Ion	Ratio	Lower	Upper
166	100		
165	0.0	72.0	112.0#
167	0.0	0.0	33.1



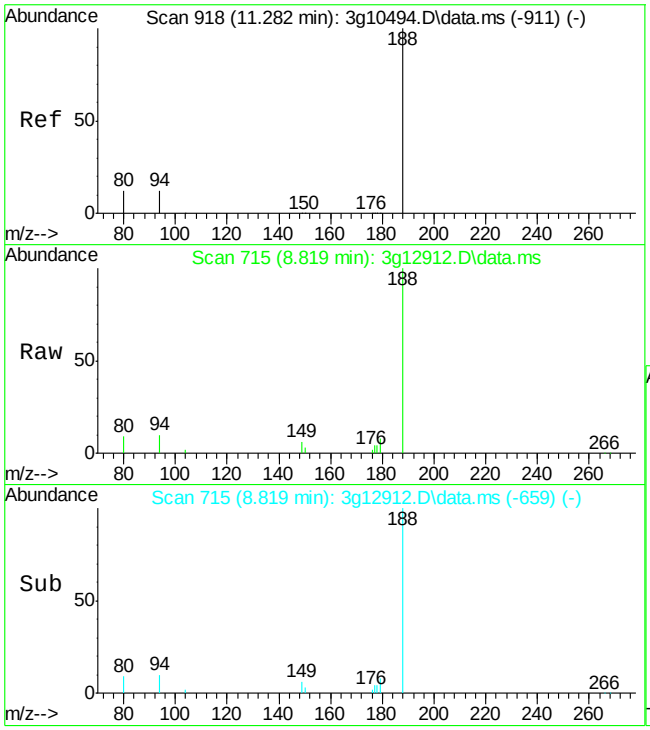


#14
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 8.00 min

Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion: 169

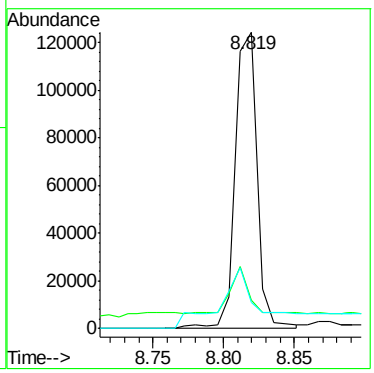
Sig	Exp Ratio
169	100
168	61.7
167	34.1
167	34.1

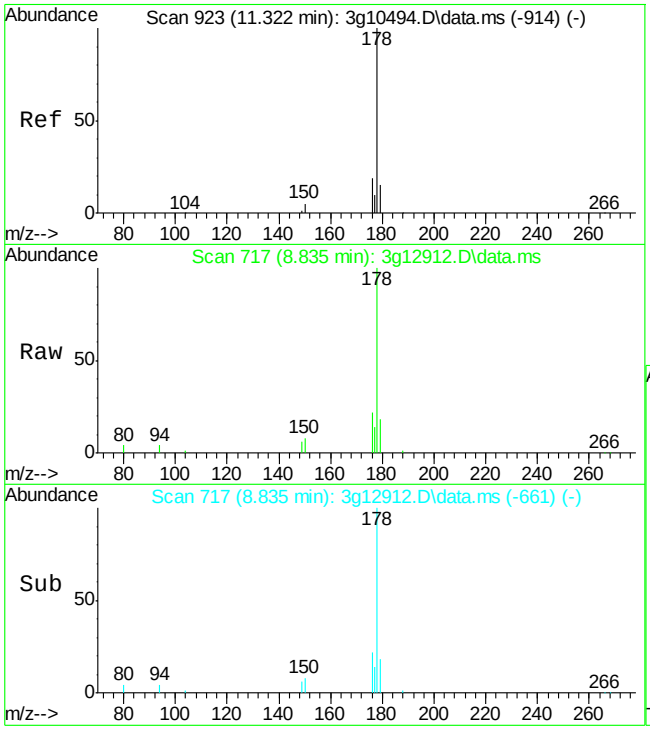


#15
Phenanthrene-d10
Concen: 4.0000 ug/mL
RT: 8.819 min Scan# 715
Delta R.T. 0.008 min
Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion:188 Resp: 129785

Ion	Ratio	Lower	Upper
188	100		
94	15.5	0.0	26.9
80	39.2	0.0	26.3#

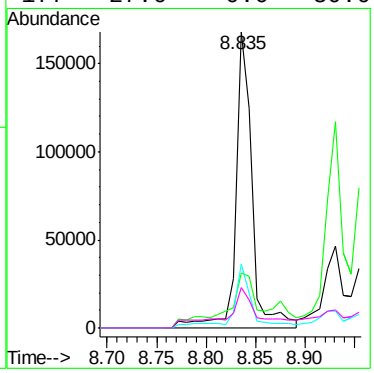


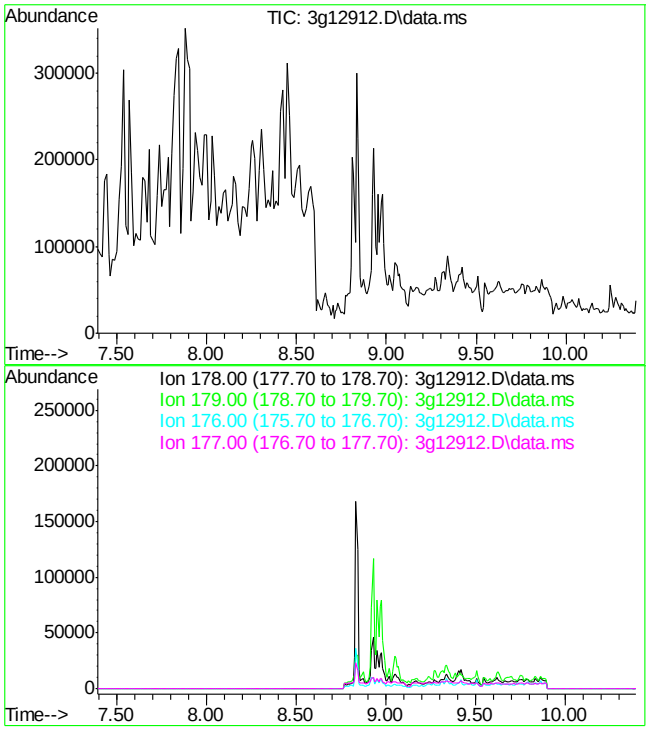


#16
Phenanthrene
Concen: 3.7249 ug/mL
RT: 8.835 min Scan# 717
Delta R.T. 0.000 min
Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion:178 Resp: 186818

Ion	Ratio	Lower	Upper
178	100		
179	34.2	0.0	35.2
176	24.6	0.0	38.6
177	27.6	0.0	30.0



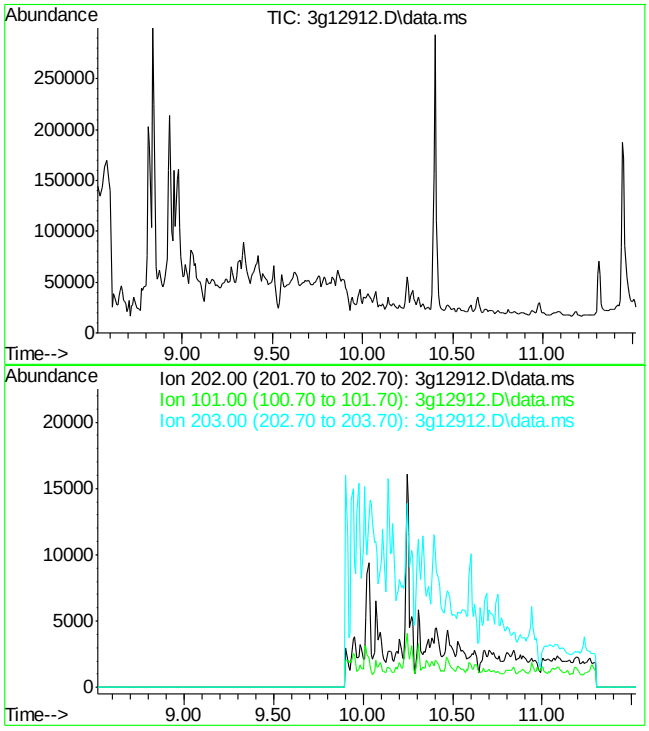


#17
Anthracene
Concen: N.D. ug/mL
Expected RT: 8.89 min

Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion: 178

Sig	Exp Ratio
178	100
179	15.1
176	18.2
177	8.7

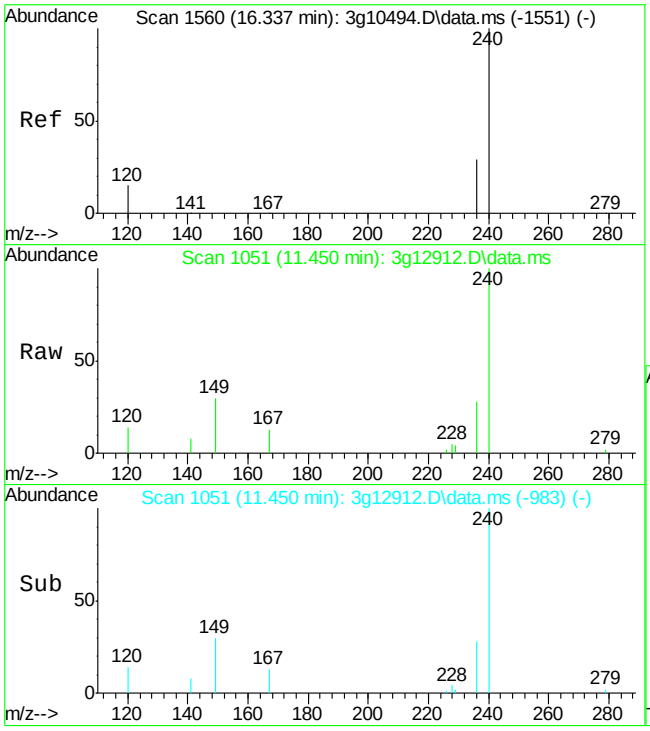


#18
Fluoranthene
Concen: N.D. ug/mL
Expected RT: 10.02 min

Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion: 202

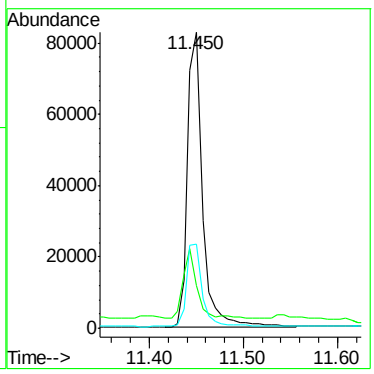
Sig	Exp Ratio
202	100
101	12.6
203	17.4

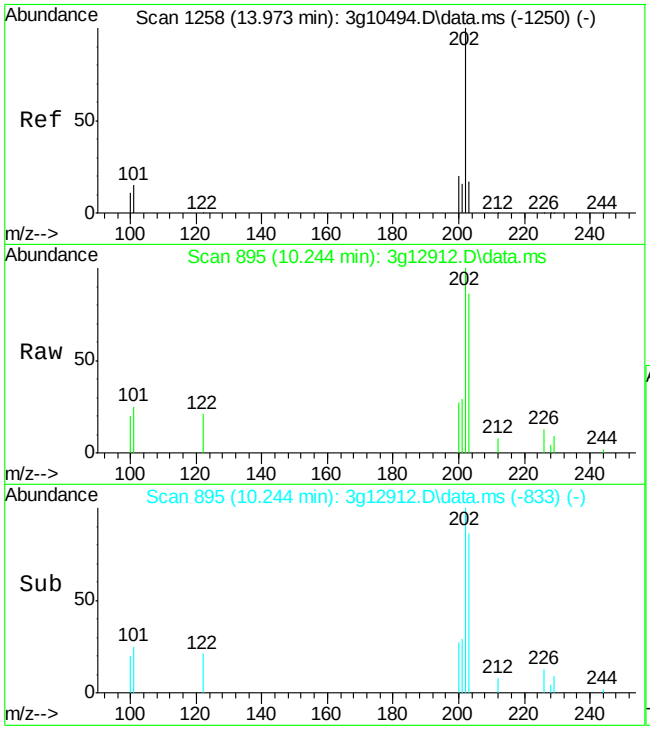


#19
Chrysene-d12
Concen: 4.0000 ug/mL
RT: 11.450 min Scan# 1051
Delta R.T. 0.007 min
Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion:240 Resp: 89785

Ion	Ratio	Lower	Upper
240	100		
120	22.2	0.0	37.3
236	29.8	11.2	51.2

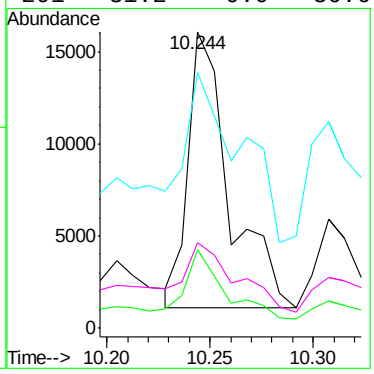


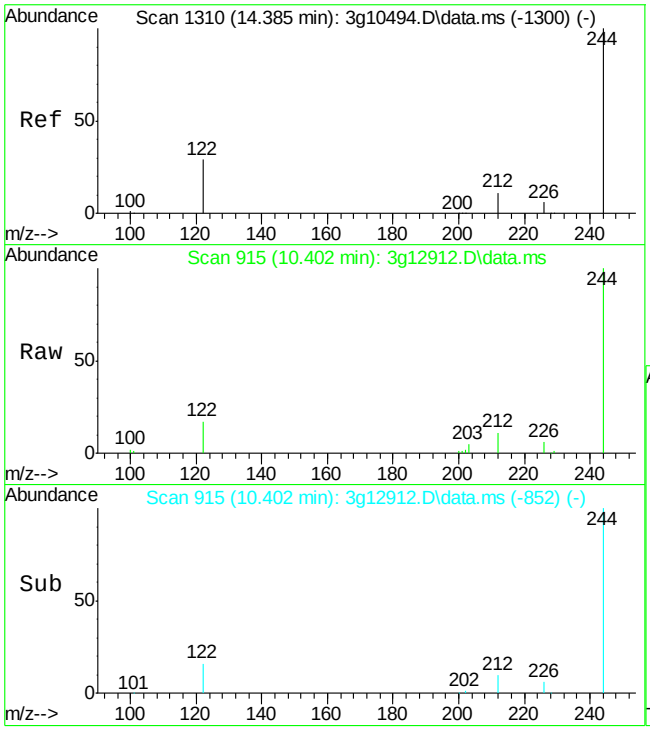


#20
Pyrene
Concen: 0.4329 ug/mL
RT: 10.244 min Scan# 895
Delta R.T. -0.006 min
Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion:202 Resp: 20757

Ion	Ratio	Lower	Upper
202	100		
200	24.3	0.2	40.2
203	80.9	0.0	37.8#
201	31.2	0.0	36.6

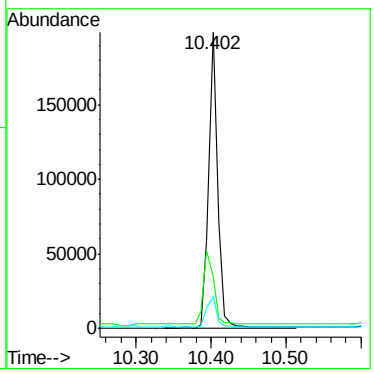


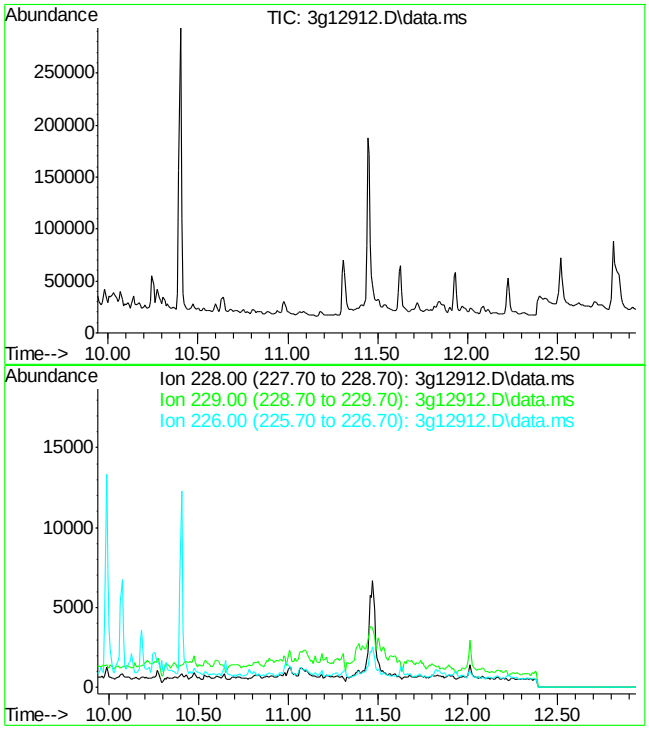


#21
Terphenyl-d14
Concen: 13.4198 ug/mL
RT: 10.402 min Scan# 915
Delta R.T. 0.002 min
Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion:244 Resp: 163950

Ion	Ratio	Lower	Upper
244	100		
122	29.5	7.8	47.8
212	11.3	0.0	32.8



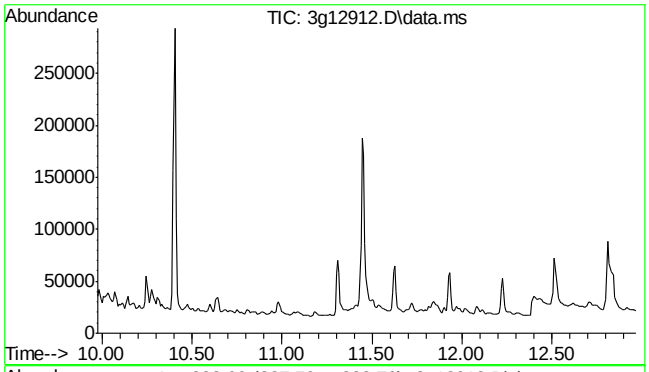


#22
Benzo(a)anthracene
Concen: N.D. ug/mL
Expected RT: 11.44 min

Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion: 228

Sig	Exp Ratio
228	100
229	19.4
226	26.6

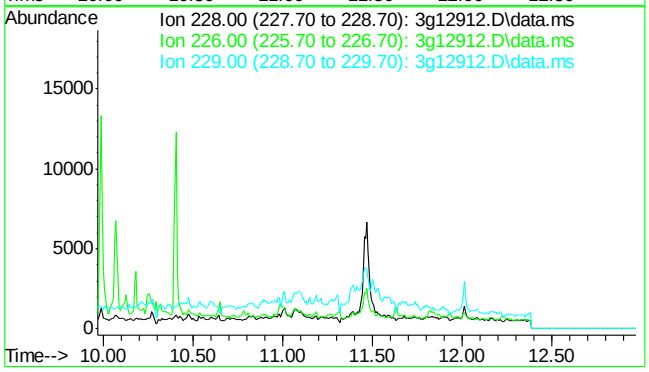


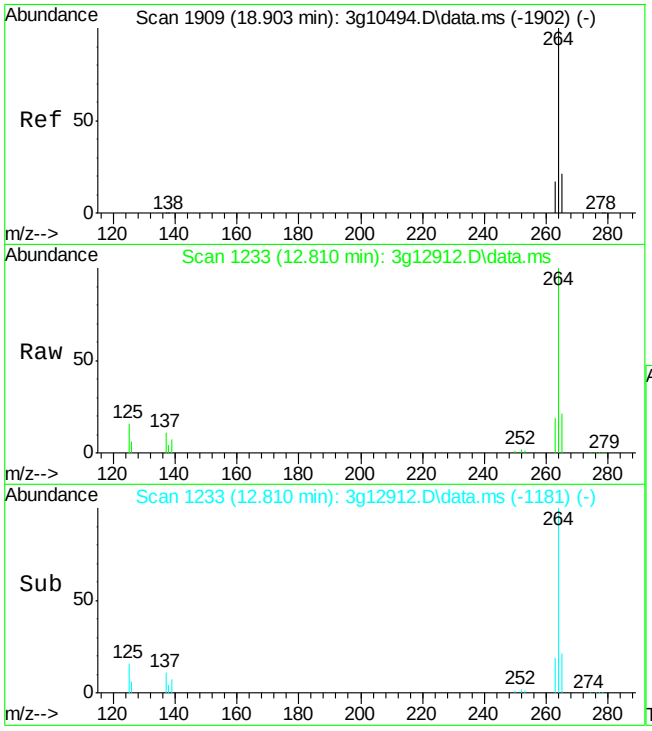
#23
Chrysene
Concen: N.D. ug/mL
Expected RT: 11.47 min

Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion: 228

Sig	Exp Ratio
228	100
226	28.6
229	19.4

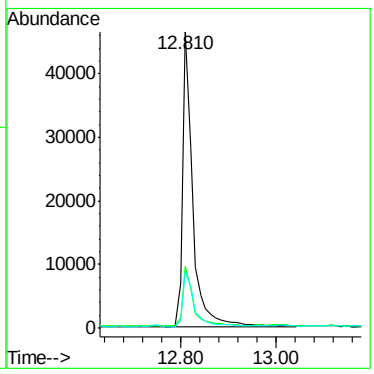


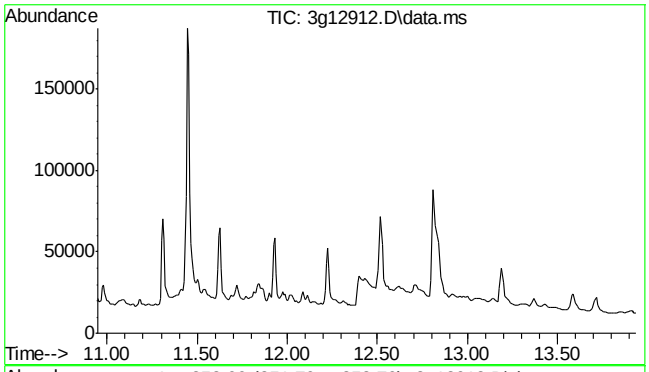


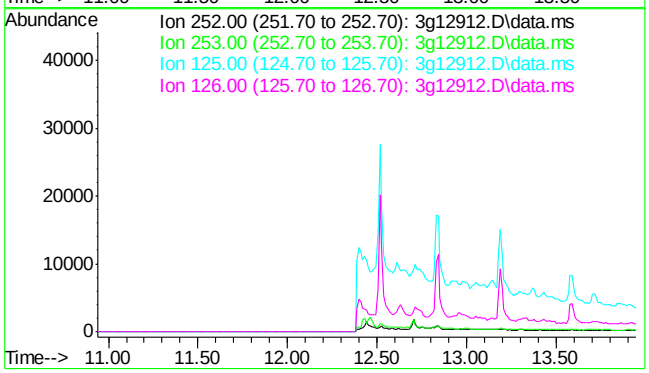
#24
Perylene-d12
Concen: 4.0000 ug/mL
RT: 12.810 min Scan# 1233
Delta R.T. 0.000 min
Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion:264 Resp: 68780

Ion	Ratio	Lower	Upper
264	100		
265	20.9	0.6	40.6
263	20.8	0.0	38.8





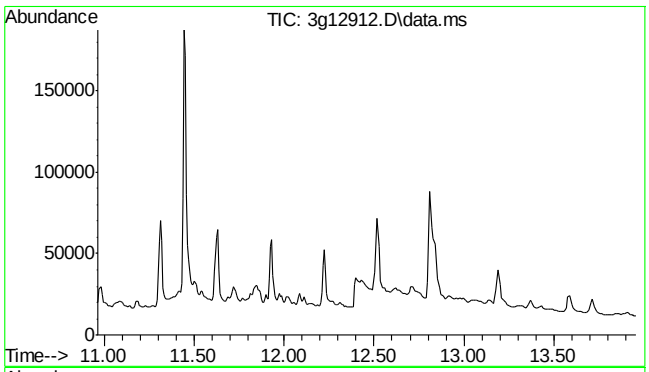


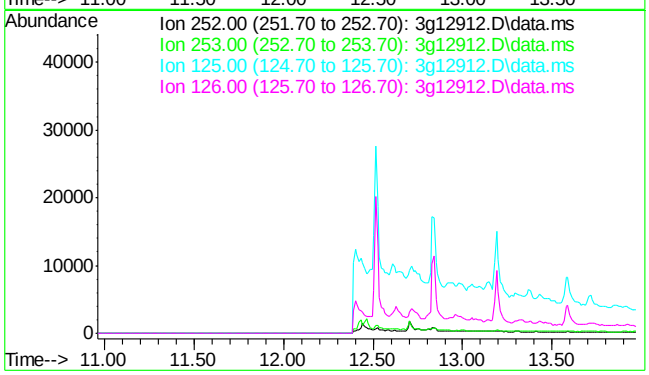
#25
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.44 min

Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion: 252

Sig	Exp Ratio
252	100
253	51.5
125	13.2
126	46.9



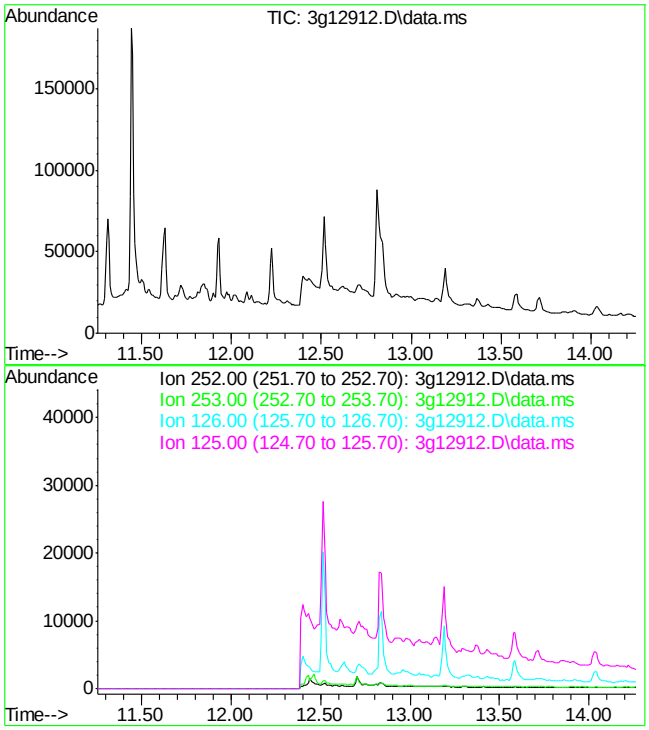


#26
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.46 min

Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion: 252

Sig	Exp Ratio
252	100
253	37.3
125	9.6
126	34.1

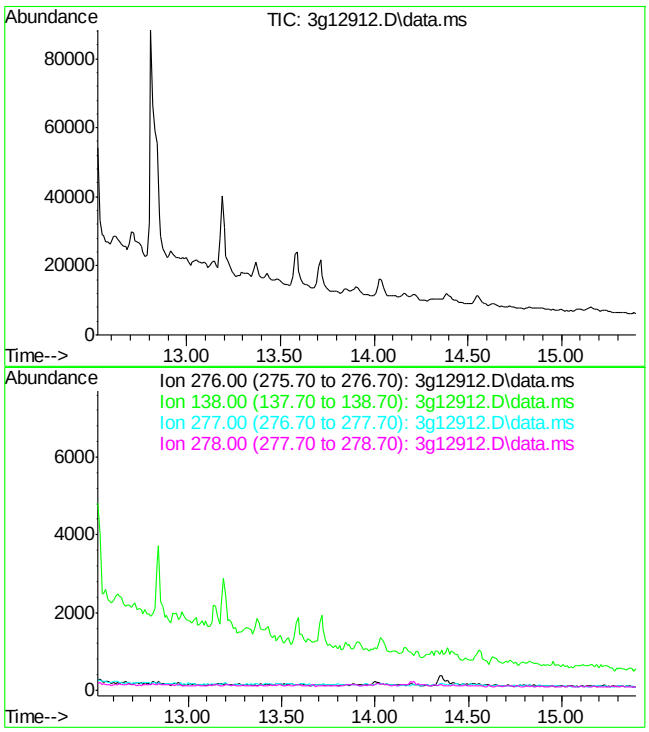


#27
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 12.76 min

Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion: 252

Sig	Exp Ratio
252	100
253	21.5
126	20.4
125	14.5

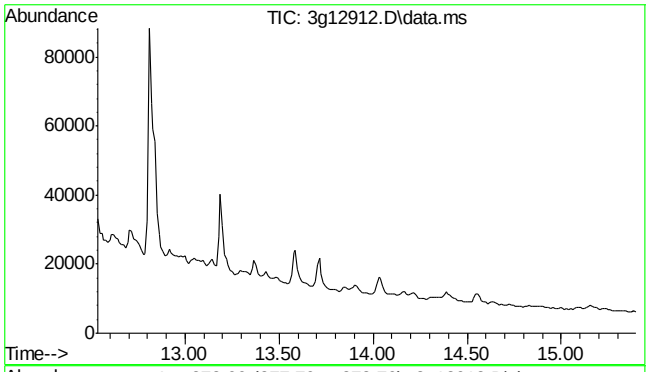


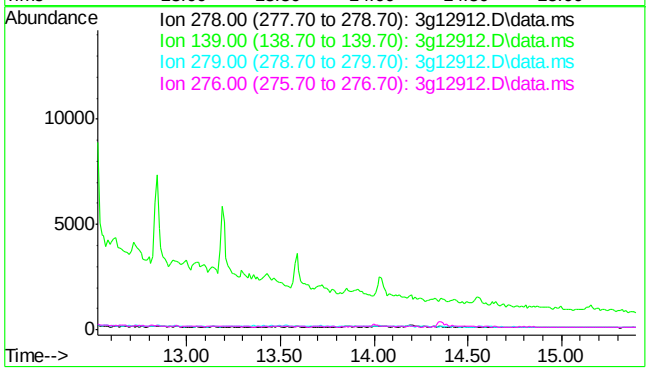
#28
Indeno(1,2,3-cd)pyrene
Concen: N.D. ug/mL
Expected RT: 14.02 min

Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion: 276

Sig	Exp Ratio
276	100
138	40.0
277	24.8
278	76.2



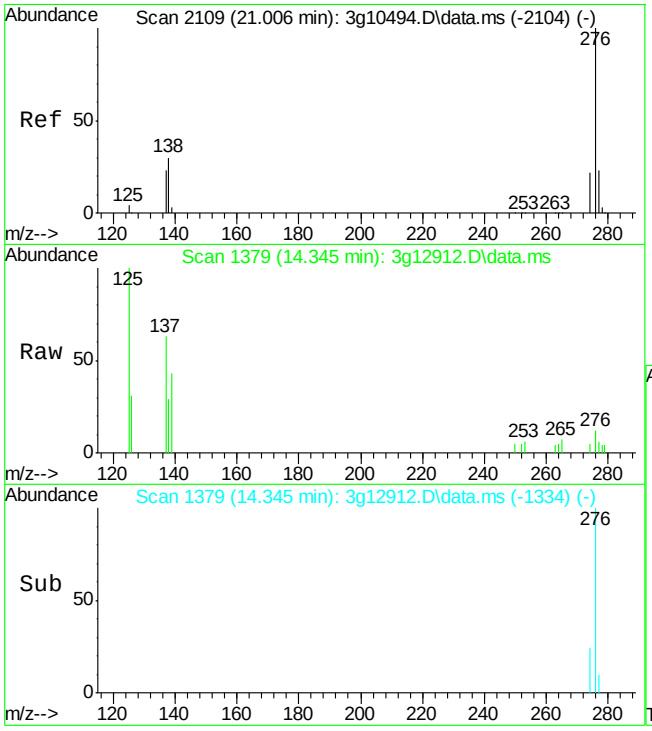


#29
Dibenz(a,h)anthracene
Concen: N.D. ug/mL
Expected RT: 14.03 min

Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion: 278

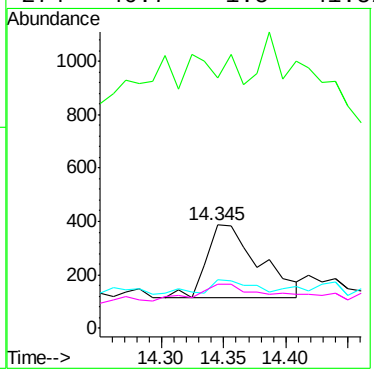
Sig	Exp Ratio
278	100
139	30.8
279	22.9
276	131.2



#30
Benzo(g,h,i)perylene
Concen: Below ug/mL
RT: 14.345 min Scan# 1379
Delta R.T. -0.029 min
Lab File: 3g12912.D
Acq: 10 Jan 13 3:08 pm

Tgt Ion:276 Resp: 805

Ion	Ratio	Lower	Upper
276	100		
138	39.8	15.1	55.1
277	14.7	3.3	43.3
274	46.7	1.5	41.5#



Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson 01/11/13 11:06

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\011013\
Data File : 3g12922.D
Acq On : 10 Jan 2013 7:08 pm
Operator : DONC
Sample : D42316-1
Misc : OP7200,E3G618,30.03,,,1,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jan 11 08:43:25 2013
Quant Method : C:\msdchem\1\METHODS\SIMPE3G611.M
Quant Title : PAHSIM BASE
QLast Update : Thu Jan 10 14:18:35 2013
Response via : Initial Calibration

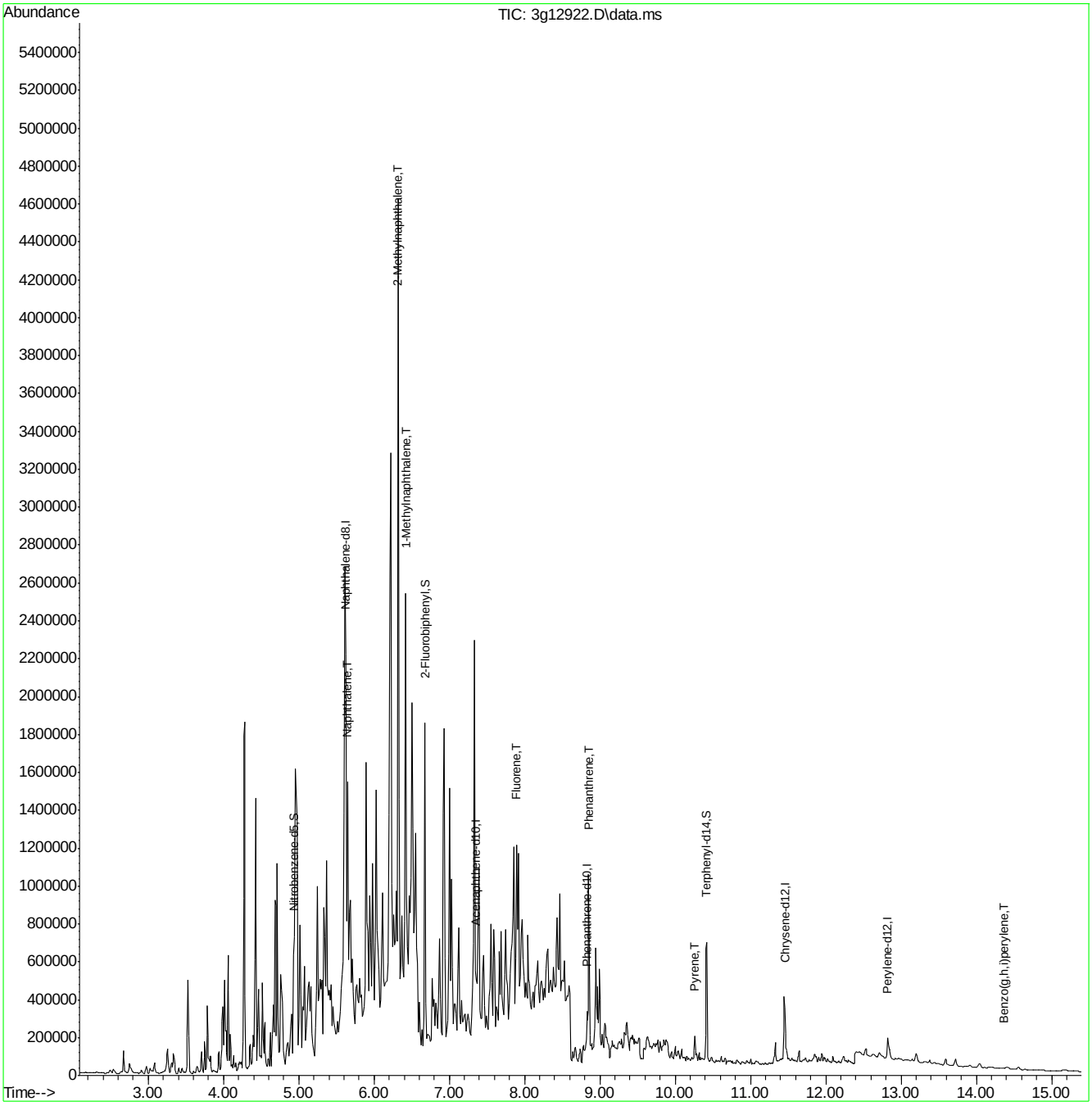
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.621	136	62972	4.0000	ug/mL	0.00
6) Acenaphthene-d10	7.349	164	97434m	4.0000	ug/mL	0.02
15) Phenanthrene-d10	8.828	188	152006	4.0000	ug/mL	0.02
19) Chrysene-d12	11.457	240	93621	4.0000	ug/mL	0.01
24) Perylene-d12	12.820	264	94494	4.0000	ug/mL	0.01
System Monitoring Compounds						
2) Nitrobenzene-d5	4.935	82	238176	42.0496	ug/mL	-0.01
Spiked Amount 50.000	Range 25 - 135		Recovery = 84.10%			
7) 2-Fluorobiphenyl	6.676	172	979998	25.0126	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery = 50.02%			
21) Terphenyl-d14	10.418	244	462700	36.3216	ug/mL	0.02
Spiked Amount 50.000	Range 25 - 135		Recovery = 72.64%			
Target Compounds						Qvalue
3) N-Nitrosodimethylamine	2.385	74	102	N.D.		
4) N-Nitrosodi-propylamine	0.000	70	0	N.D.	d	
5) Naphthalene	5.646	128	911543	50.4507	ug/mL#	57
8) 2-Methylnaphthalene	6.319	142	1841396	58.8127	ug/mL	95
9) 1-Methylnaphthalene	6.419	142	786800m	28.7316	ug/mL	
10) Acenaphthylene	0.000	152	0	N.D.	d	
11) Acenaphthene	0.000	154	0	N.D.	d	
12) Dibenzofuran	0.000	168	0	N.D.	d	
13) Fluorene	7.893	166	325715m	8.3108	ug/mL	
14) Diphenylamine	0.000	169	0	N.D.	d	
16) Phenanthrene	8.851	178	623923	10.6215	ug/mL	80
17) Anthracene	0.000	178	0	N.D.	d	
18) Fluoranthene	0.000	202	0	N.D.	d	
20) Pyrene	10.260	202	76001	1.5201	ug/mL#	57
22) Benzo(a)anthracene	0.000	228	0	N.D.	d	
23) Chrysene	0.000	228	0	N.D.	d	
25) Benzo(b)fluoranthene	0.000	252	0	N.D.	d	
26) Benzo(k)fluoranthene	0.000	252	0	N.D.	d	
27) Benzo(a)pyrene	0.000	252	0	N.D.	d	
28) Indeno(1,2,3-cd)pyrene	0.000	276	0	N.D.	d	
29) Dibenz(a,h)anthracene	0.000	278	0	N.D.	d	
30) Benzo(g,h,i)perylene	14.366	276	4649	0.1067	ug/mL#	80

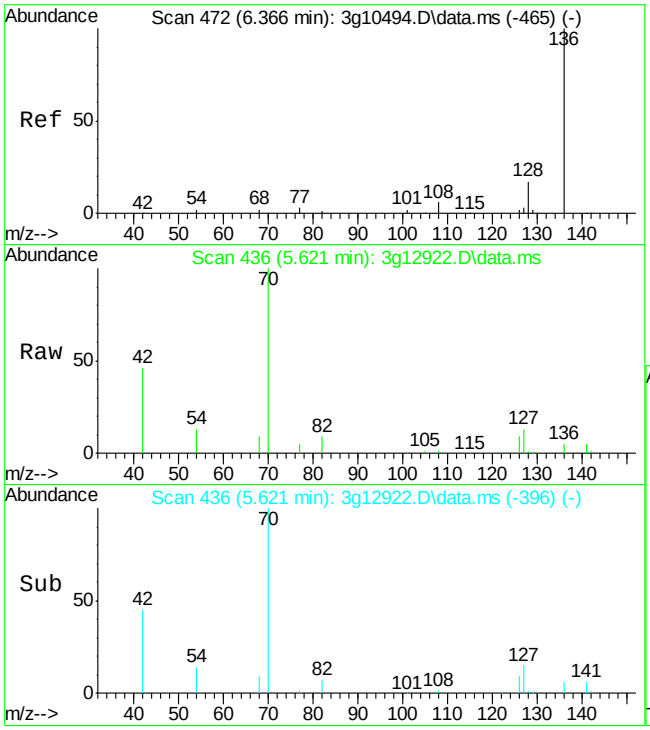
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\011013\
Data File : 3g12922.D
Acq On : 10 Jan 2013 7:08 pm
Operator : DONC
Sample : D42316-1
Misc : OP7200,E3G618,30.03,,,1,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jan 11 08:43:25 2013
Quant Method : C:\msdchem\1\METHODS\SIMPE3G611.M
Quant Title : PAHSIM BASE
QLast Update : Thu Jan 10 14:18:35 2013
Response via : Initial Calibration

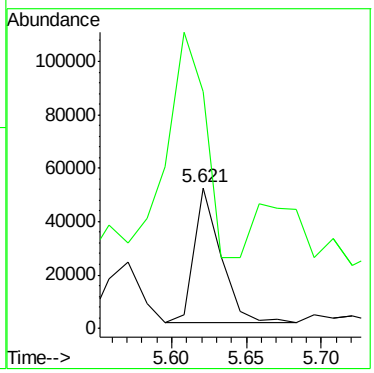


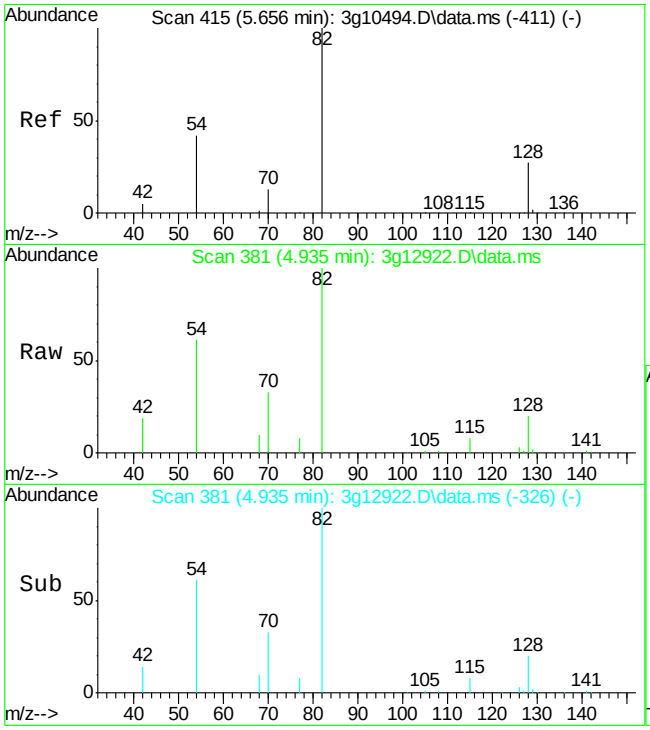


#1
Naphthalene-d8
Concen: 4.0000 ug/mL
RT: 5.621 min Scan# 436
Delta R.T. 0.000 min
Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion:136 Resp: 62972

Ion	Ratio	Lower	Upper
136	100		
68	336.9	0.0	20.8#

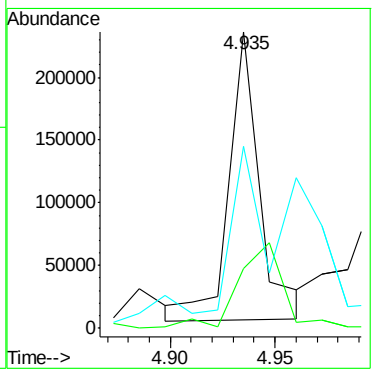


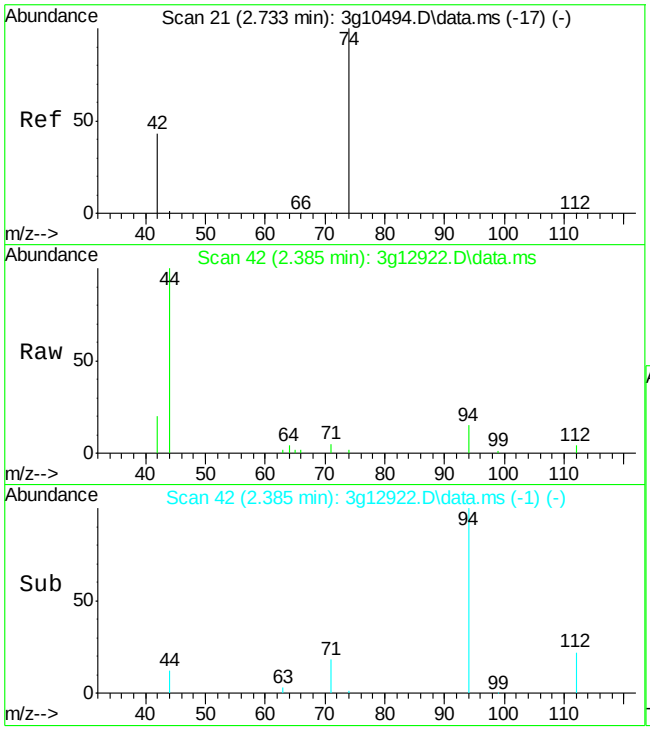


#2
Nitrobenzene-d5
Concen: 42.0496 ug/mL
RT: 4.935 min Scan# 381
Delta R.T. -0.014 min
Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion: 82 Resp: 238176

Ion	Ratio	Lower	Upper
82	100		
128	42.1	36.8	76.8
54	155.8	40.5	80.5#

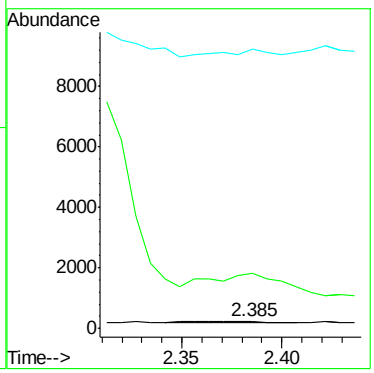


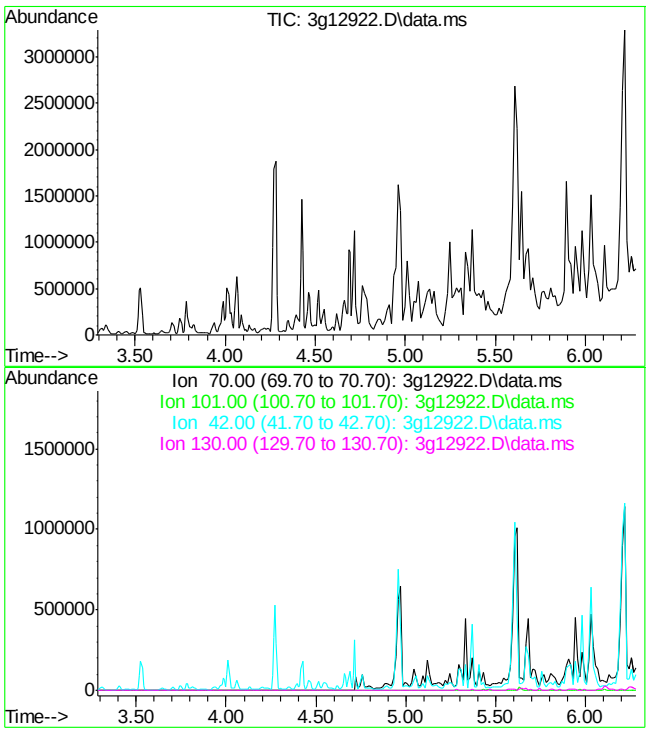


#3
N-Nitrosodimethylamine
Concen: Below ug/mL
RT: 2.385 min Scan# 42
Delta R.T. 0.049 min
Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion: 74 Resp: 102

Ion	Ratio	Lower	Upper
74	100		
42	6889.2	58.5	98.5#
44	1183.3	0.0	24.0#



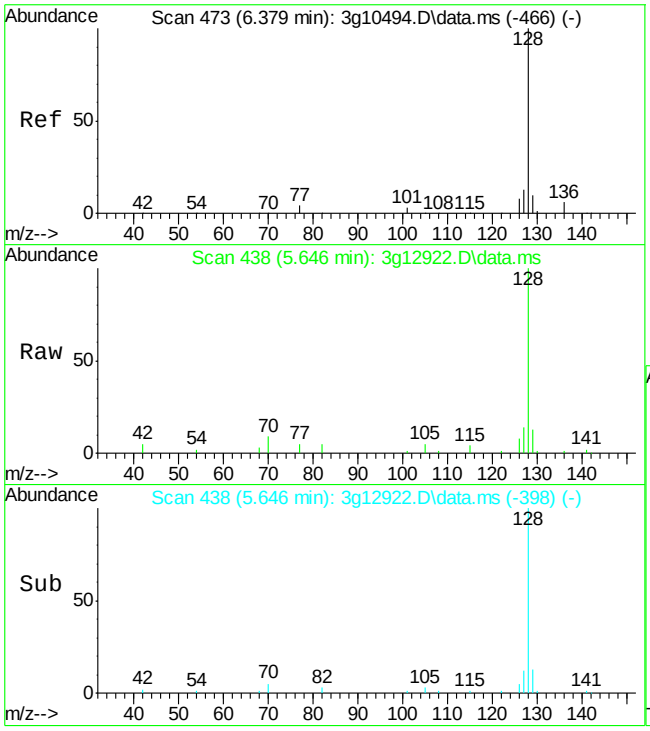


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 4.79 min

Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion: 70

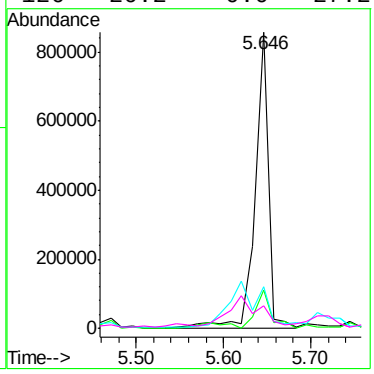
Sig	Exp Ratio
70	100
101	11.9
42	57.4
130	21.7

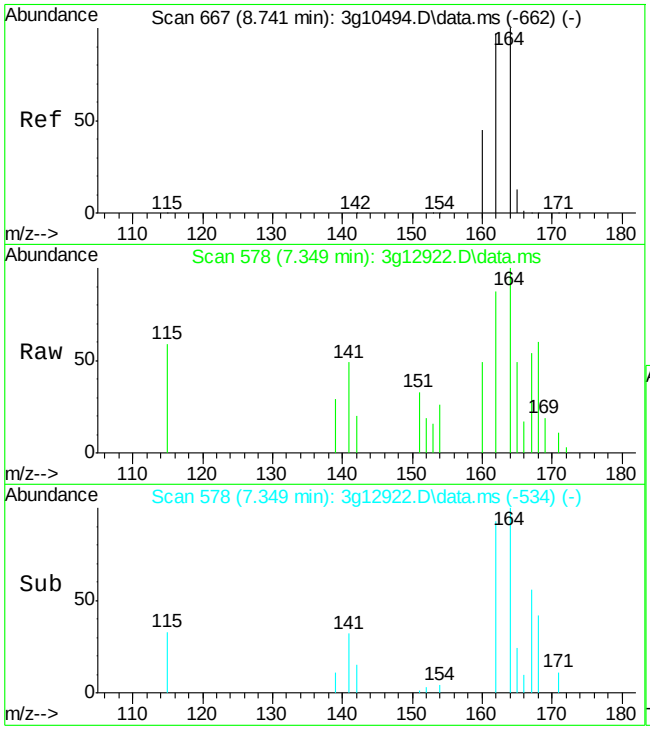


#5
Naphthalene
Concen: 50.4507 ug/mL
RT: 5.646 min Scan# 438
Delta R.T. 0.001 min
Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion:128 Resp: 911543

Ion	Ratio	Lower	Upper
128	100		
129	15.4	0.0	31.2
127	38.0	0.0	32.4#
126	26.2	0.0	27.2

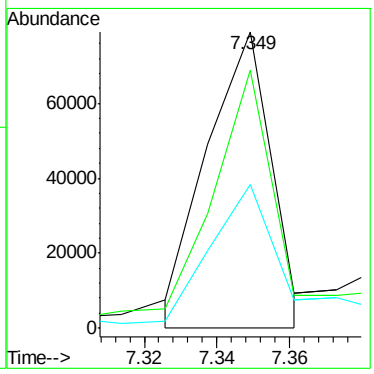


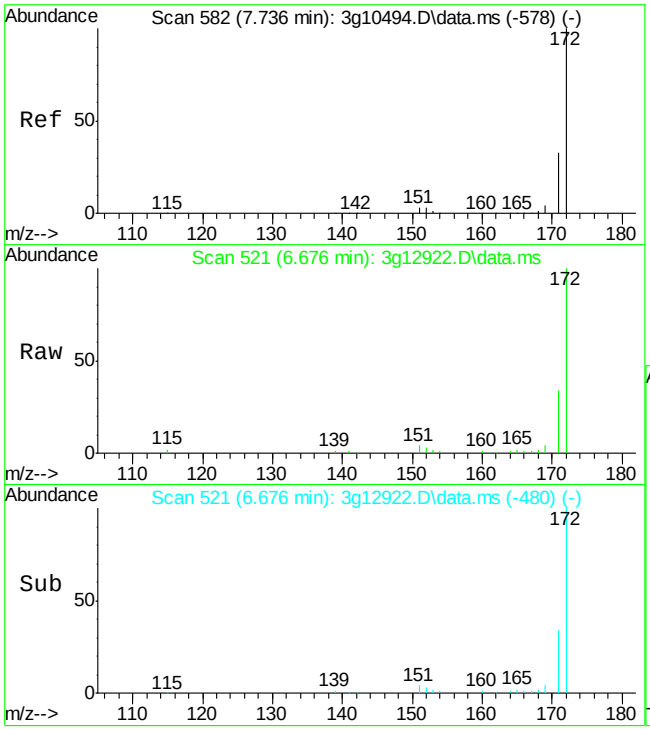


#6
Acenaphthene-d10
Concen: 4.0000 ug/mL m
RT: 7.349 min Scan# 578
Delta R.T. 0.024 min
Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion:164 Resp: 97434

Ion	Ratio	Lower	Upper
164	100		
162	34.5	88.1	128.1#
160	14.5	38.8	78.8#

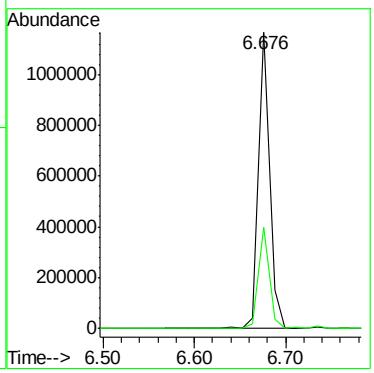


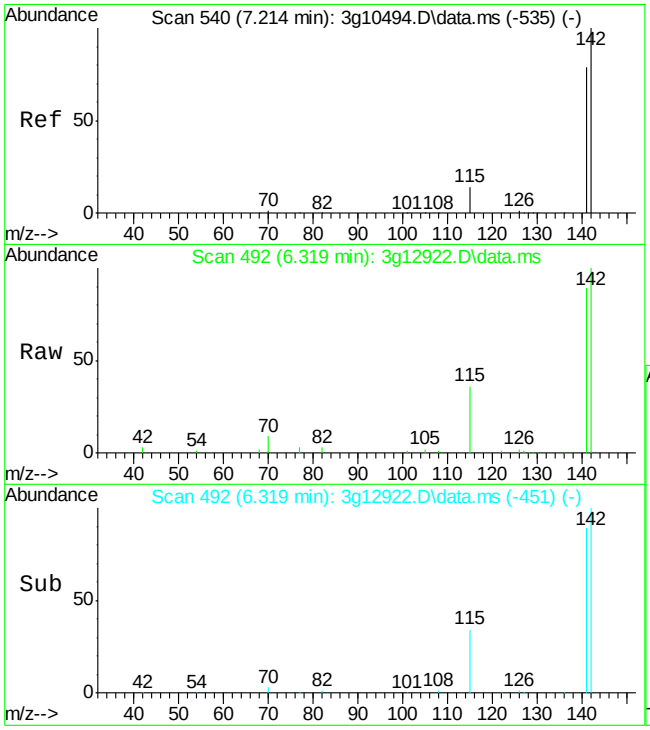


#7
2-Fluorobiphenyl
Concen: 25.0126 ug/mL
RT: 6.676 min Scan# 521
Delta R.T. 0.010 min
Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion:172 Resp: 979998

Ion	Ratio	Lower	Upper
172	100		
171	33.1	12.2	52.2

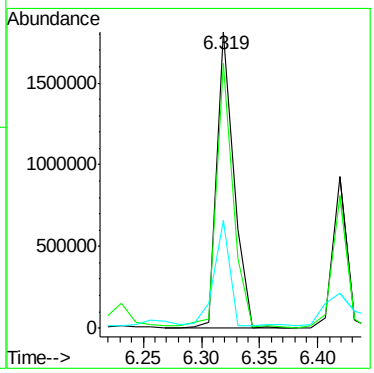


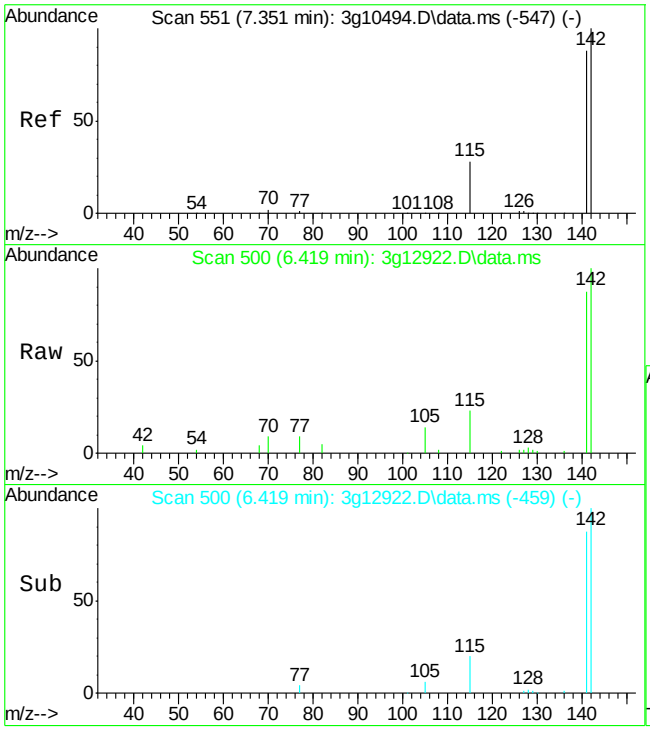


#8
2-Methylnaphthalene
Concen: 58.8127 ug/mL
RT: 6.319 min Scan# 492
Delta R.T. 0.008 min
Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion:142 Resp: 1841396

Ion	Ratio	Lower	Upper
142	100		
141	86.8	62.0	102.0
115	33.0	11.3	51.3

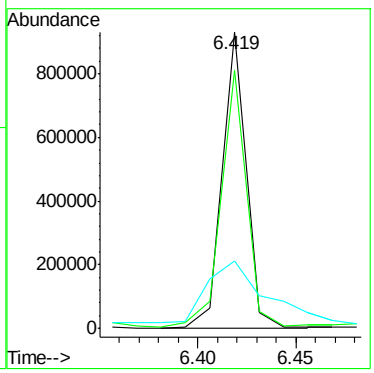


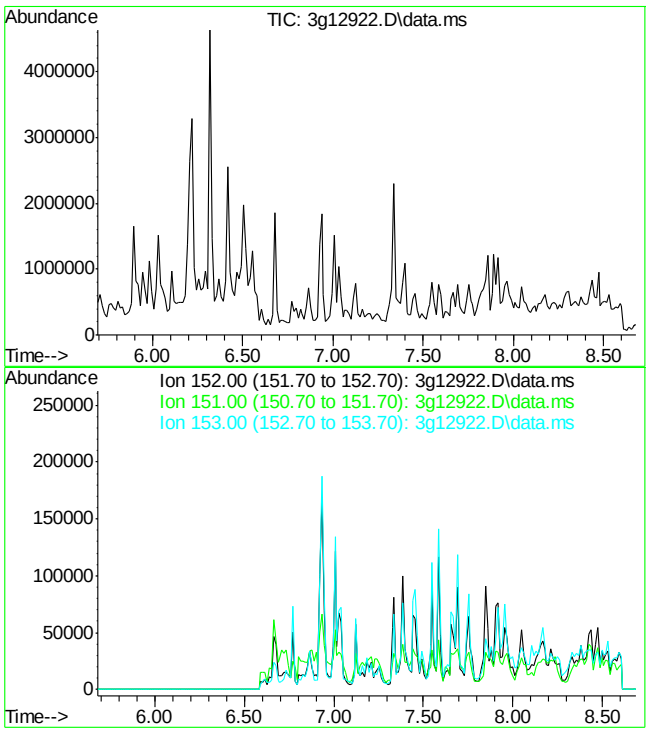


#9
1-Methylnaphthalene
Concen: 28.7316 ug/mL m
RT: 6.419 min Scan# 500
Delta R.T. 0.008 min
Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion:142 Resp: 786800

Ion	Ratio	Lower	Upper
142	100		
141	203.2	67.5	107.5#
115	79.6	19.4	59.4#



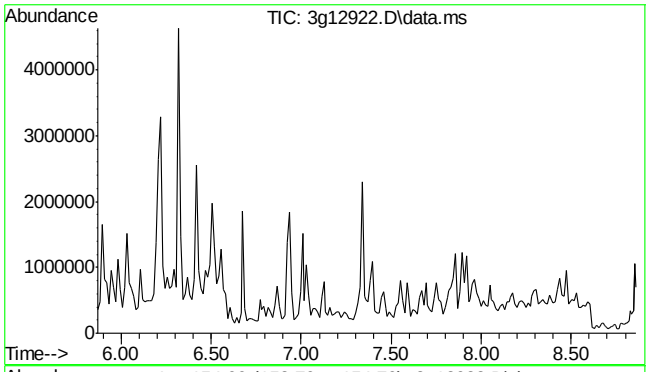


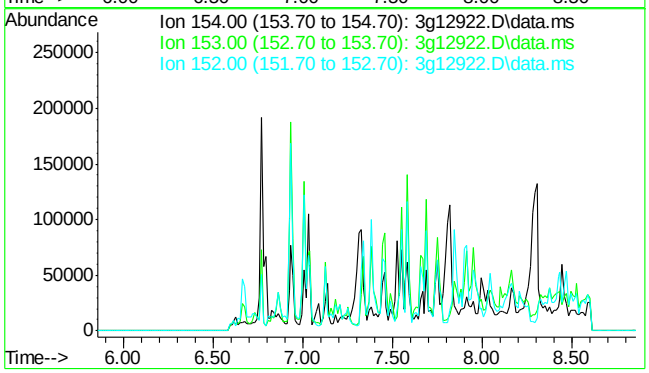
#10
Acenaphthylene
Concen: N.D. ug/mL
Expected RT: 7.18 min

Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion: 152

Sig	Exp Ratio
152	100
151	19.2
153	12.9



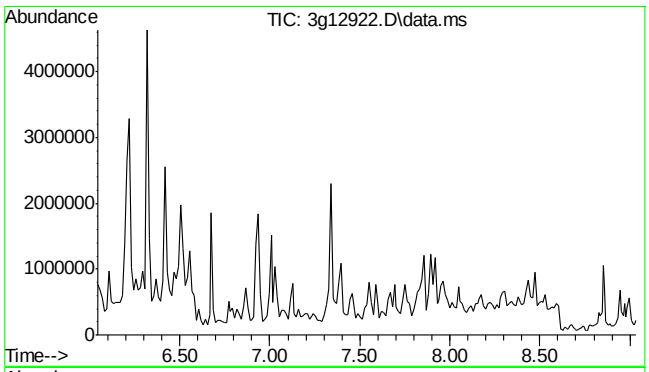


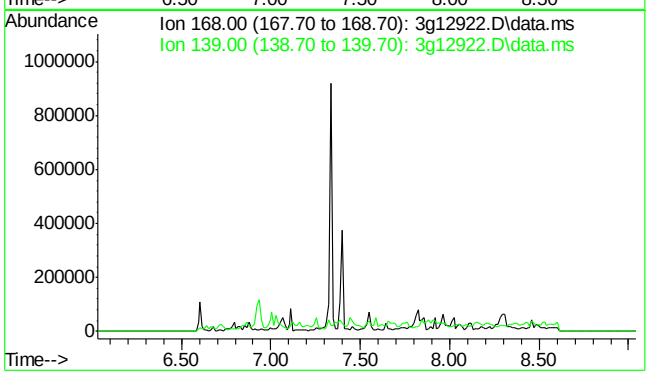
#11
Acenaphthene
Concen: N.D. ug/mL
Expected RT: 7.36 min

Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion: 154

Sig	Exp Ratio
154	100
153	102.4
152	50.0



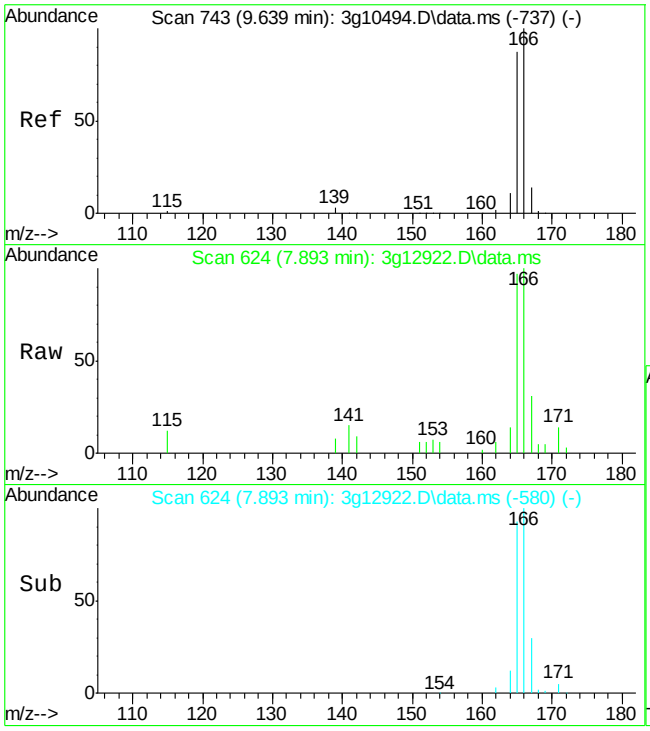


#12
Dibenzofuran
Concen: N.D. ug/mL
Expected RT: 7.54 min

Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion: 168

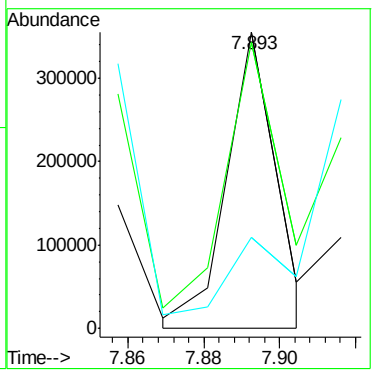
Sig	Exp Ratio
168	100
139	33.4

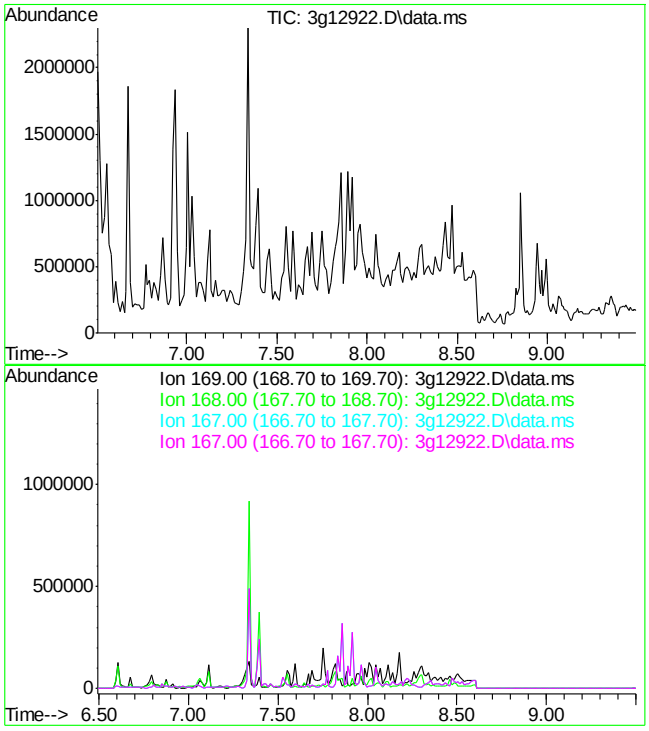


#13
Fluorene
Concen: 8.3108 ug/mL m
RT: 7.893 min Scan# 624
Delta R.T. 0.026 min
Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion:166 Resp: 325715

Ion	Ratio	Lower	Upper
166	100		
165	16.5	72.0	112.0#
167	21.5	0.0	33.1



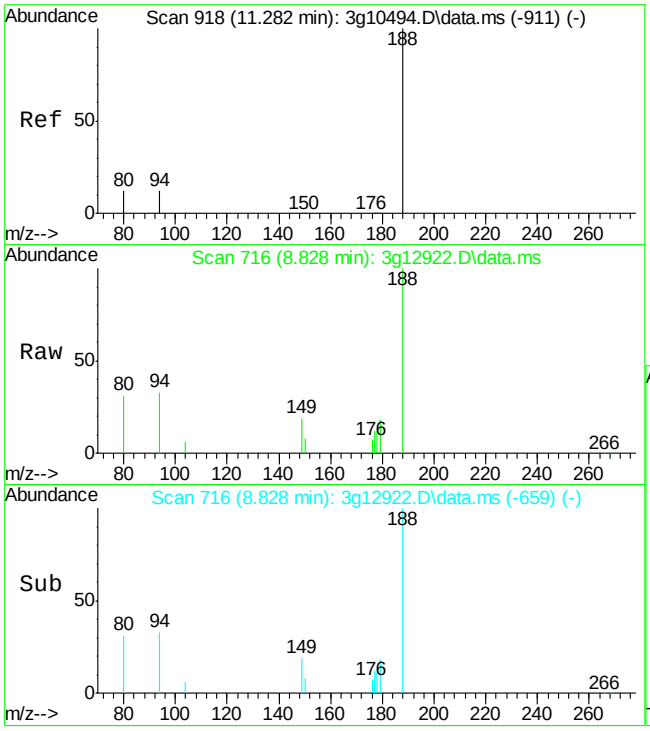


#14
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 8.00 min

Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion: 169

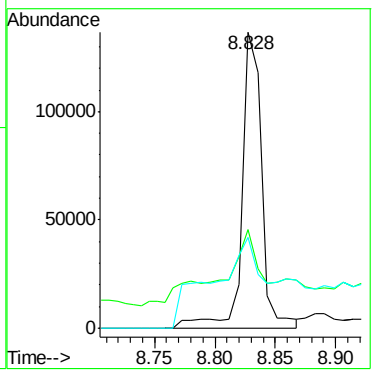
Sig	Exp Ratio
169	100
168	61.7
167	34.1
167	34.1

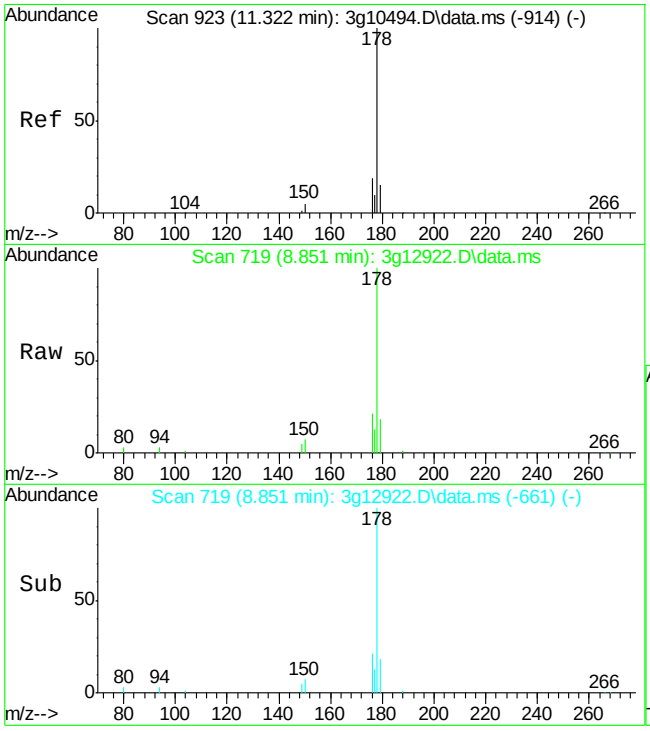


#15
Phenanthrene-d10
Concen: 4.0000 ug/mL
RT: 8.828 min Scan# 716
Delta R.T. 0.016 min
Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion:188 Resp: 152006

Ion	Ratio	Lower	Upper
188	100		
94	45.5	0.0	26.9#
80	81.7	0.0	26.3#

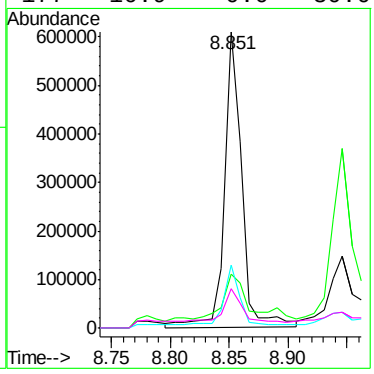


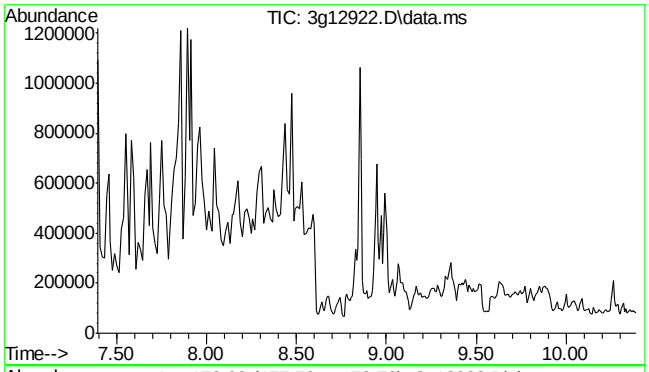


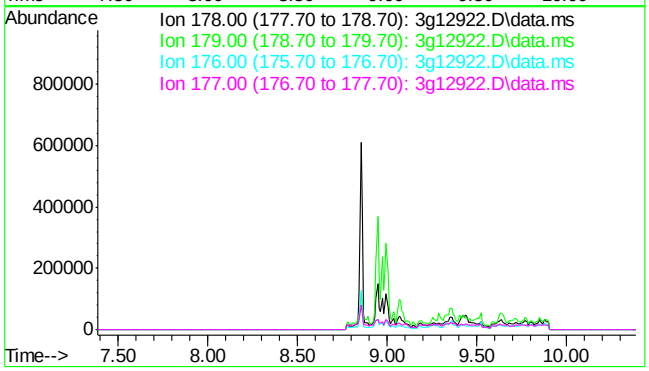
#16
Phenanthrene
Concen: 10.6215 ug/mL
RT: 8.851 min Scan# 719
Delta R.T. 0.016 min
Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion:178 Resp: 623923

Ion	Ratio	Lower	Upper
178	100		
179	29.4	0.0	35.2
176	22.5	0.0	38.6
177	16.9	0.0	30.0





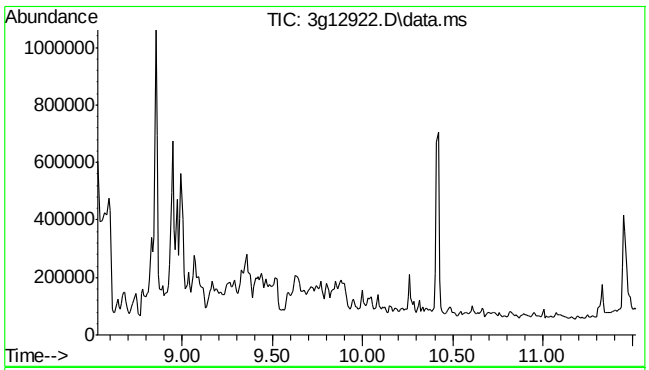


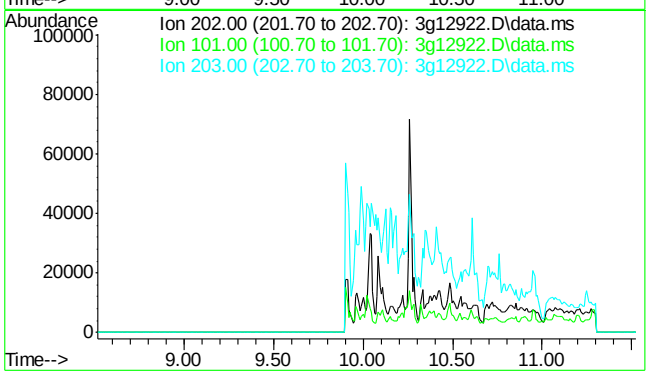
#17
Anthracene
Concen: N.D. ug/mL
Expected RT: 8.89 min

Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion: 178

Sig	Exp Ratio
178	100
179	15.1
176	18.2
177	8.7



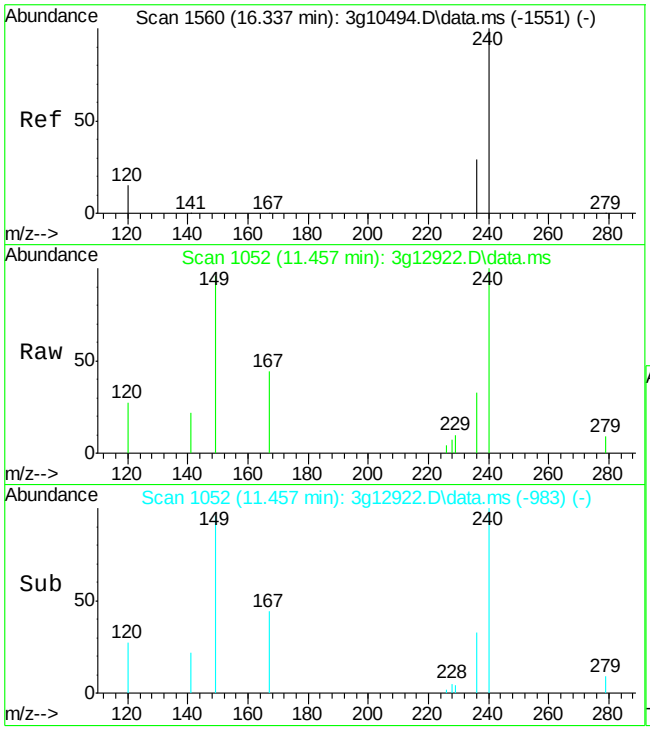


#18
Fluoranthene
Concen: N.D. ug/mL
Expected RT: 10.02 min

Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion: 202

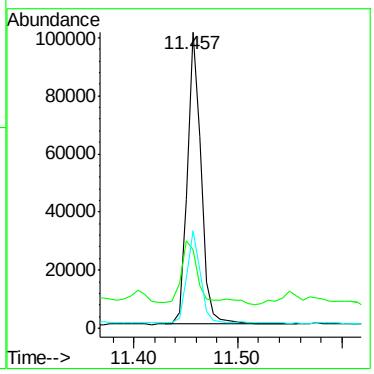
Sig	Exp Ratio
202	100
101	12.6
203	17.4

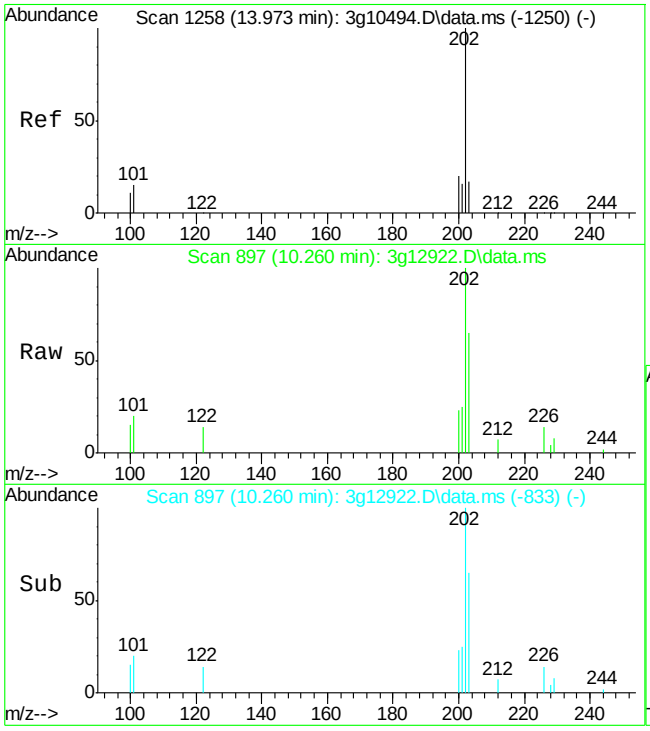


#19
Chrysene-d12
Concen: 4.0000 ug/mL
RT: 11.457 min Scan# 1052
Delta R.T. 0.013 min
Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion:240 Resp: 93621

Ion	Ratio	Lower	Upper
240	100		
120	26.4	0.0	37.3
236	30.7	11.2	51.2

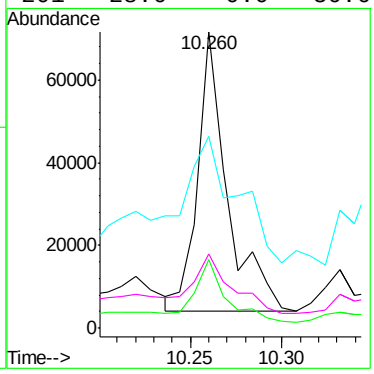


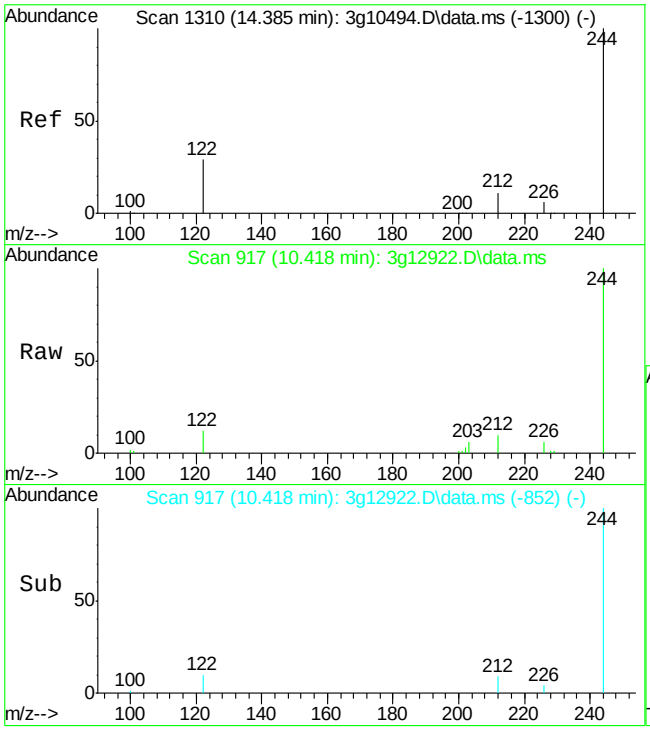


#20
Pyrene
Concen: 1.5201 ug/mL
RT: 10.260 min Scan# 897
Delta R.T. 0.010 min
Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion:202 Resp: 76001

Ion	Ratio	Lower	Upper
202	100		
200	23.6	0.2	40.2
203	60.4	0.0	37.8#
201	28.6	0.0	36.6

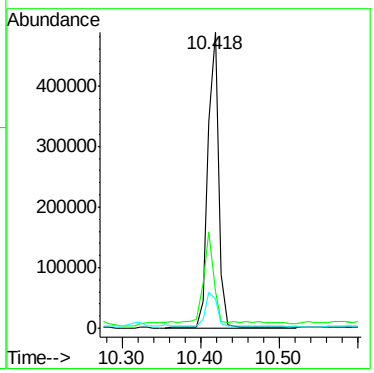


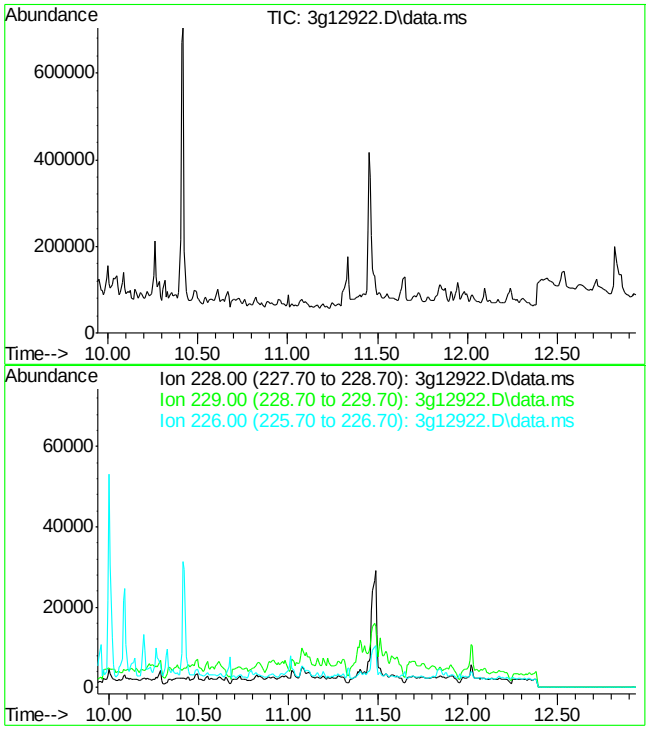


#21
Terphenyl-d14
Concen: 36.3216 ug/mL
RT: 10.418 min Scan# 917
Delta R.T. 0.018 min
Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion:244 Resp: 462700

Ion	Ratio	Lower	Upper
244	100		
122	38.2	7.8	47.8
212	12.2	0.0	32.8



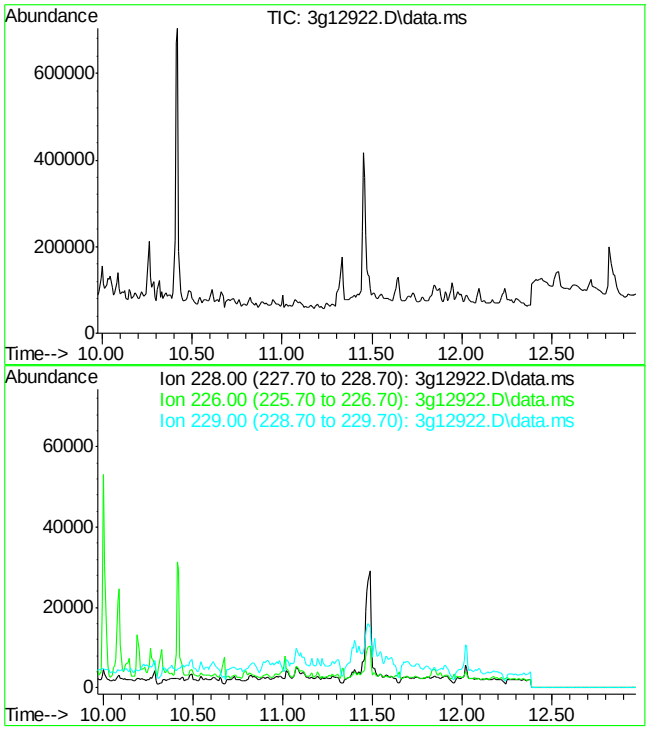


#22
Benzo(a)anthracene
Concen: N.D. ug/mL
Expected RT: 11.44 min

Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion: 228

Sig	Exp Ratio
228	100
229	19.4
226	26.6

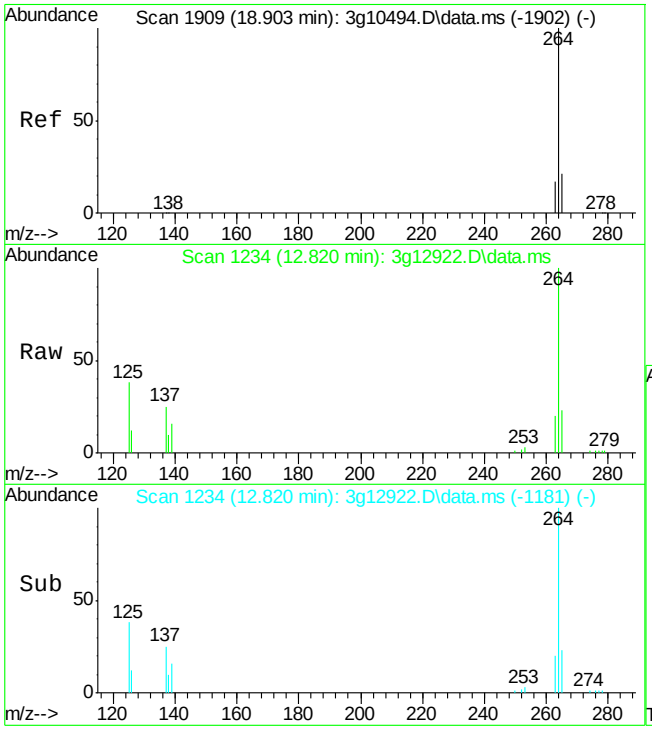


#23
Chrysene
Concen: N.D. ug/mL
Expected RT: 11.47 min

Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion: 228

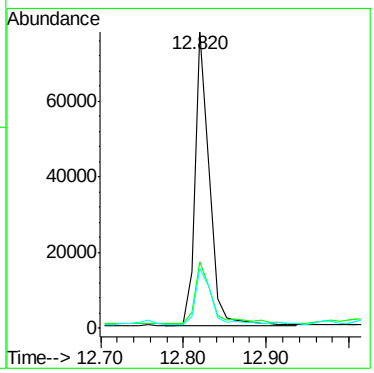
Sig	Exp Ratio
228	100
226	28.6
229	19.4

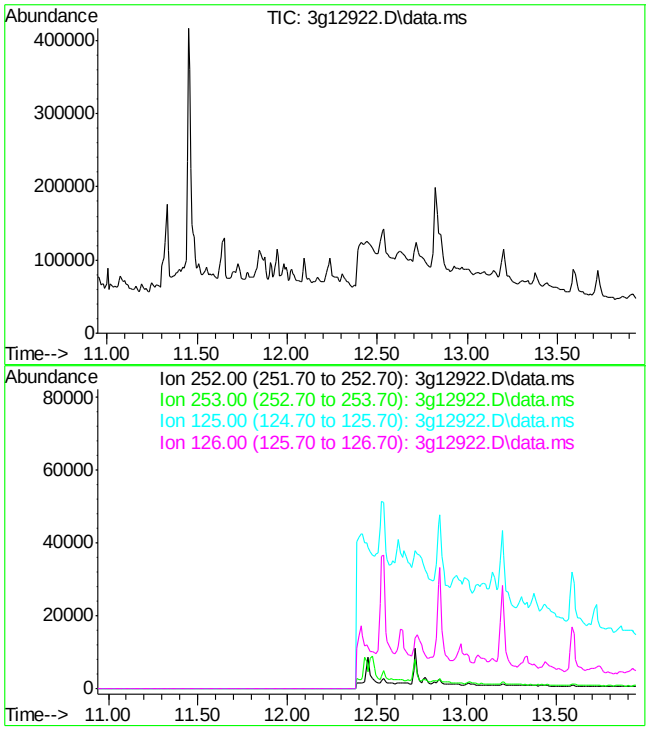


#24
Perylene-d12
Concen: 4.0000 ug/mL
RT: 12.820 min Scan# 1234
Delta R.T. 0.011 min
Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion:264 Resp: 94494

Ion	Ratio	Lower	Upper
264	100		
265	25.0	0.6	40.6
263	24.5	0.0	38.8



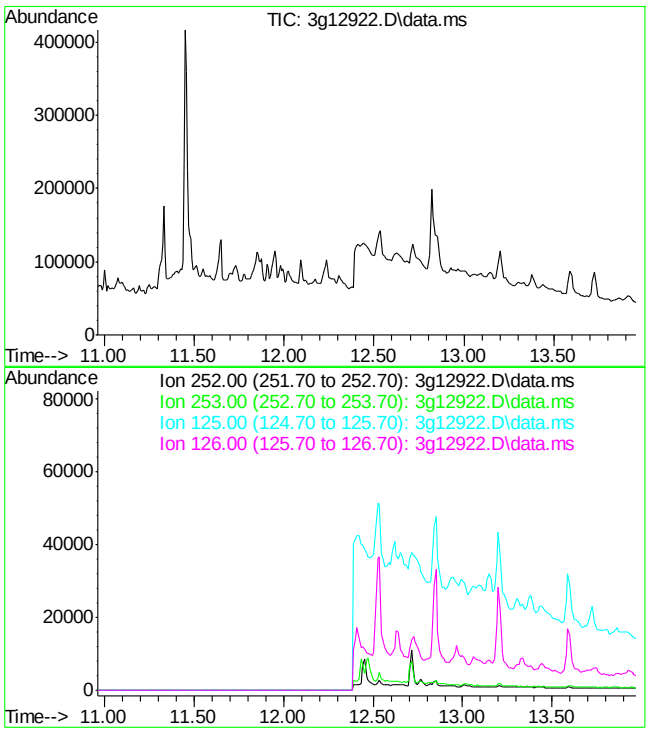


#25
Benzo(b)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.44 min

Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion: 252

Sig	Exp Ratio
252	100
253	51.5
125	13.2
126	46.9

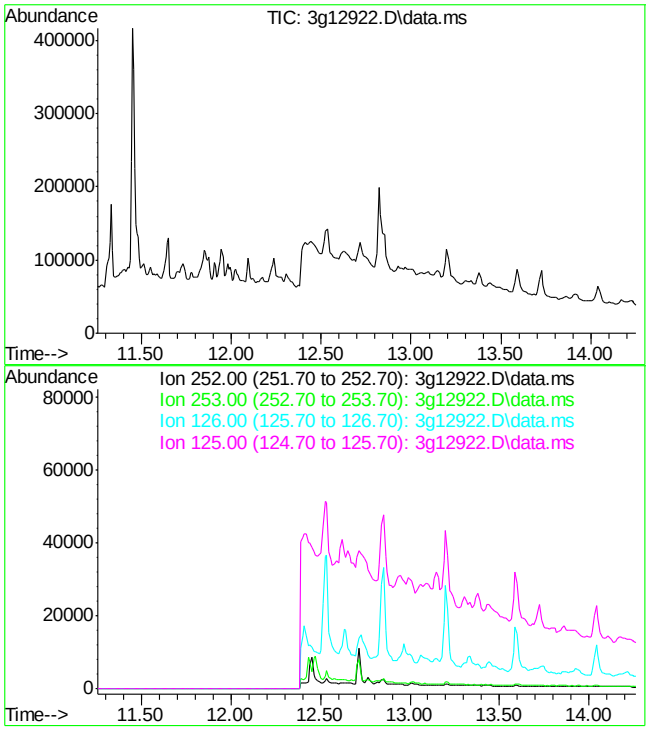


#26
Benzo(k)fluoranthene
Concen: N.D. ug/mL
Expected RT: 12.46 min

Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion: 252

Sig	Exp Ratio
252	100
253	37.3
125	9.6
126	34.1

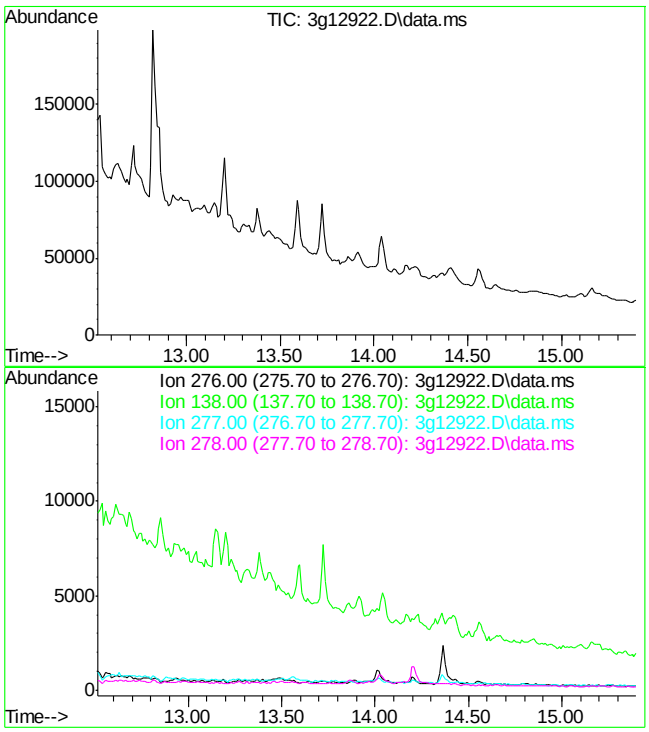


#27
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 12.76 min

Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion: 252

Sig	Exp Ratio
252	100
253	21.5
126	20.4
125	14.5

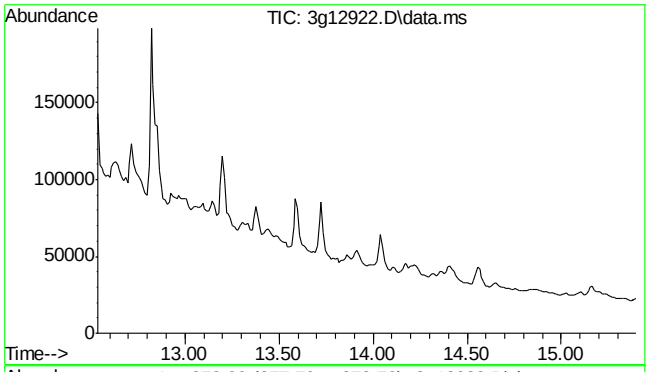


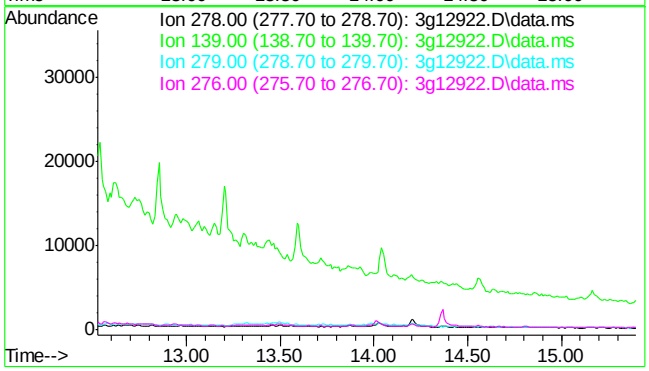
#28
Indeno(1,2,3-cd)pyrene
Concen: N.D. ug/mL
Expected RT: 14.02 min

Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion: 276

Sig	Exp Ratio
276	100
138	40.0
277	24.8
278	76.2



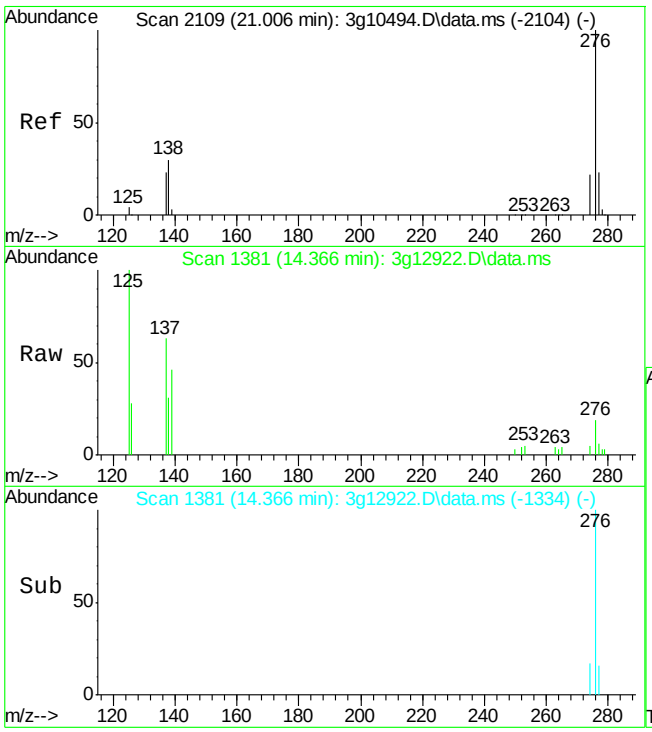


#29
Dibenz(a,h)anthracene
Concen: N.D. ug/mL
Expected RT: 14.03 min

Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion: 278

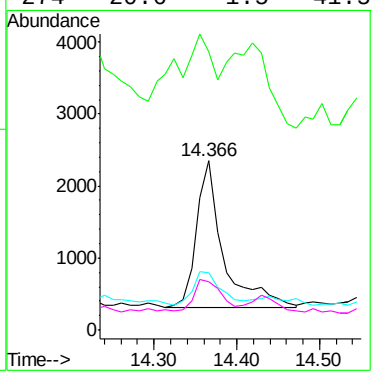
Sig	Exp Ratio
278	100
139	30.8
279	22.9
276	131.2



#30
Benzo(g,h,i)perylene
Concen: 0.1067 ug/mL
RT: 14.366 min Scan# 1381
Delta R.T. -0.008 min
Lab File: 3g12922.D
Acq: 10 Jan 13 7:08 pm

Tgt Ion:276 Resp: 4649

Ion	Ratio	Lower	Upper
276	100		
138	61.0	15.1	55.1#
277	23.9	3.3	43.3
274	20.6	1.5	41.5



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\011013\
Data File : 3g12911.D
Acq On : 10 Jan 2013 2:44 pm
Operator : DONC
Sample : OP7200-MB
Misc : OP7200,E3G618,30.00,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 10 15:58:55 2013
Quant Method : C:\msdchem\1\METHODS\SIMPE3G611.M
Quant Title : PAHSIM BASE
QLast Update : Thu Jan 10 14:18:35 2013
Response via : Initial Calibration

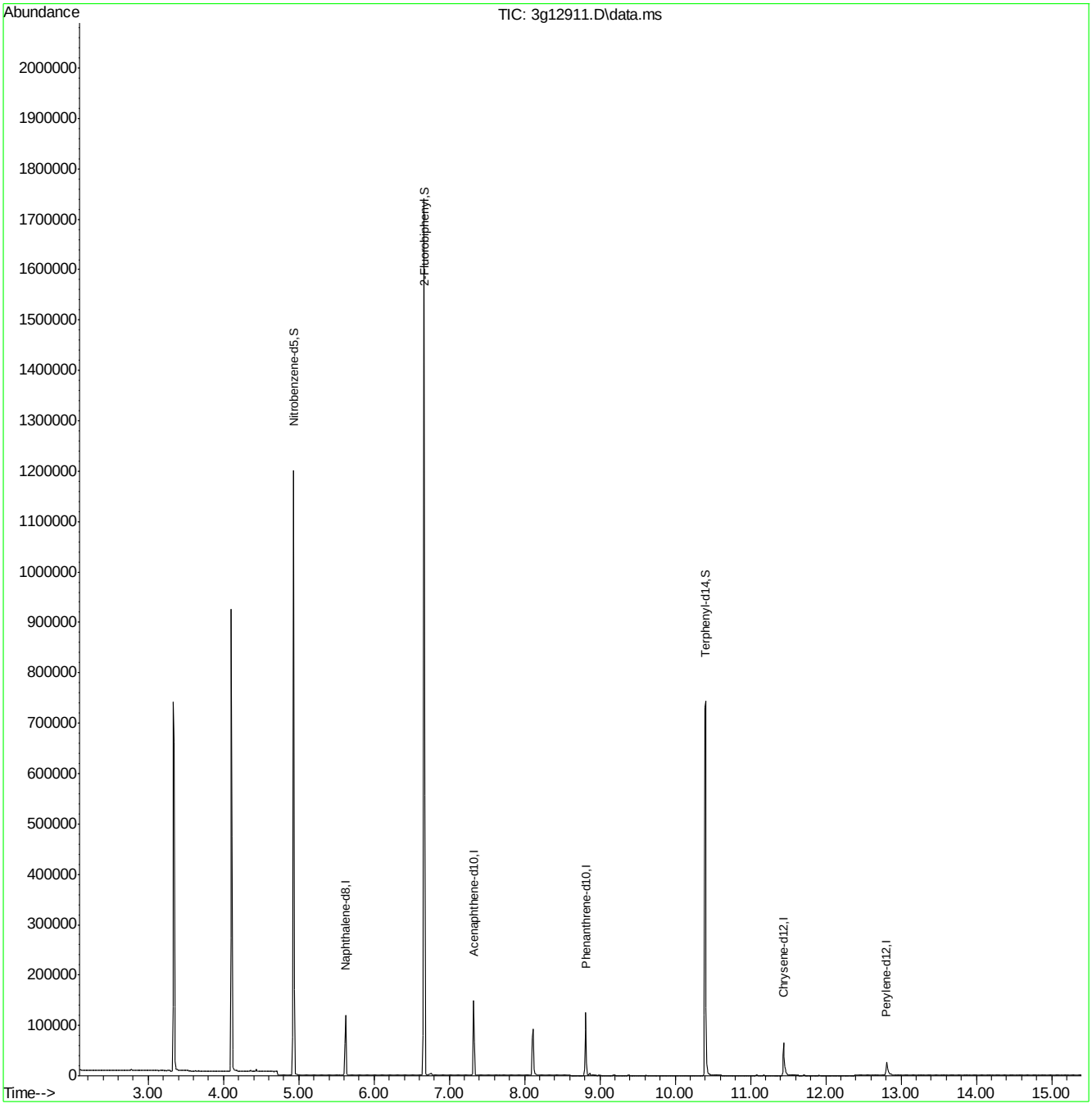
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.621	136	104180	4.0000	ug/mL	0.00
6) Acenaphthene-d10	7.326	164	59648	4.0000	ug/mL	0.00
15) Phenanthrene-d10	8.812	188	94038	4.0000	ug/mL	0.00
19) Chrysene-d12	11.444	240	52962	4.0000	ug/mL	0.00
24) Perylene-d12	12.810	264	32109	4.0000	ug/mL	0.00
System Monitoring Compounds						
2) Nitrobenzene-d5	4.935	82	491377	52.4375	ug/mL	-0.01
Spiked Amount 50.000	Range 25 - 135		Recovery = 104.88%			
7) 2-Fluorobiphenyl	6.664	172	1123238	50.4729	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery = 100.94%			
21) Terphenyl-d14	10.403	244	575142	79.8087	ug/mL	0.00
Spiked Amount 50.000	Range 25 - 135		Recovery = 159.62%#			
Target Compounds						Qvalue
3) N-Nitrosodimethylamine	2.291	74	47	N.D.		
4) N-Nitrosodi-propylamine	0.000	70	0	N.D.		d
5) Naphthalene	5.633	128	455	N.D.		
8) 2-Methylnaphthalene	6.306	142	230	N.D.		
9) 1-Methylnaphthalene	6.406	142	73	N.D.		
10) Acenaphthylene	7.385	152	128	N.D.		
11) Acenaphthene	7.326	154	304	N.D.		
12) Dibenzofuran	7.538	168	61	N.D.		
13) Fluorene	0.000	166	0	N.D.		d
14) Diphenylamine	0.000	169	0	N.D.		d
16) Phenanthrene	8.835	178	183	N.D.		
17) Anthracene	8.875	178	102	N.D.		
18) Fluoranthene	9.928	202	200	N.D.		
20) Pyrene	0.000	202	0	N.D.		d
22) Benzo(a)anthracene	11.444	228	289	N.D.		
23) Chrysene	11.444	228	289	N.D.		
25) Benzo(b)fluoranthene	12.484	252	140	N.D.		
26) Benzo(k)fluoranthene	12.484	252	140	N.D.		
27) Benzo(a)pyrene	0.000	252	0	N.D.		d
28) Indeno(1,2,3-cd)pyrene	14.040	276	37	N.D.		
29) Dibenz(a,h)anthracene	0.000	278	0	N.D.		d
30) Benzo(g,h,i)perylene	14.345	276	50	N.D.		

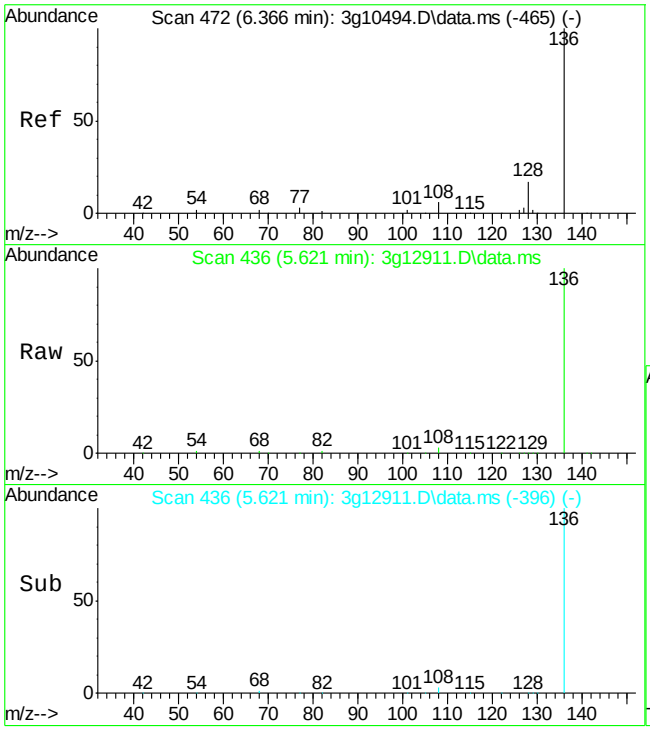
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\011013\
Data File : 3g12911.D
Acq On : 10 Jan 2013 2:44 pm
Operator : DONC
Sample : OP7200-MB
Misc : OP7200,E3G618,30.00,,,1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jan 10 15:58:55 2013
Quant Method : C:\msdchem\1\METHODS\SIMPE3G611.M
Quant Title : PAHSIM BASE
QLast Update : Thu Jan 10 14:18:35 2013
Response via : Initial Calibration

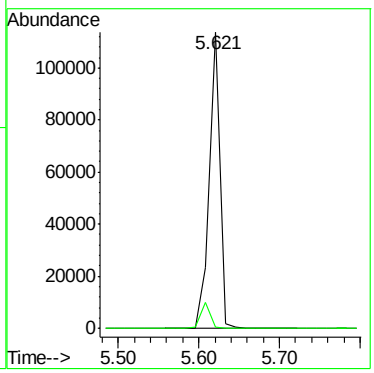


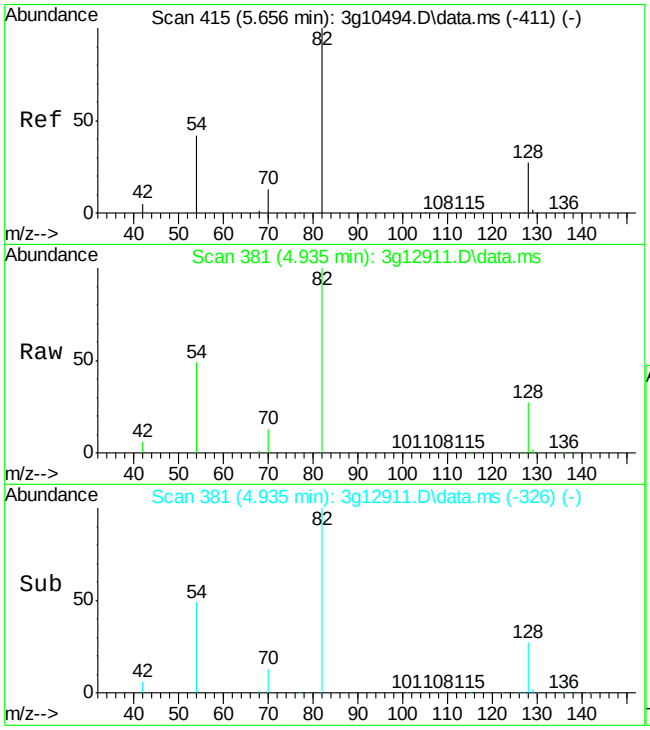


#1
Naphthalene-d8
Concen: 4.0000 ug/mL
RT: 5.621 min Scan# 436
Delta R.T. 0.000 min
Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion:136 Resp: 104180

Ion	Ratio	Lower	Upper
136	100		
68	7.9	0.0	20.8

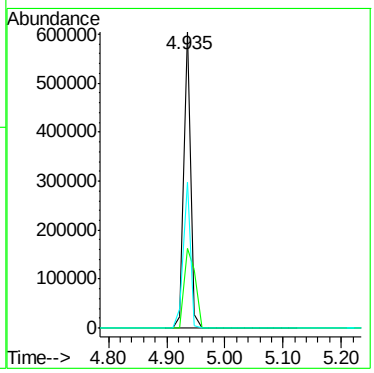


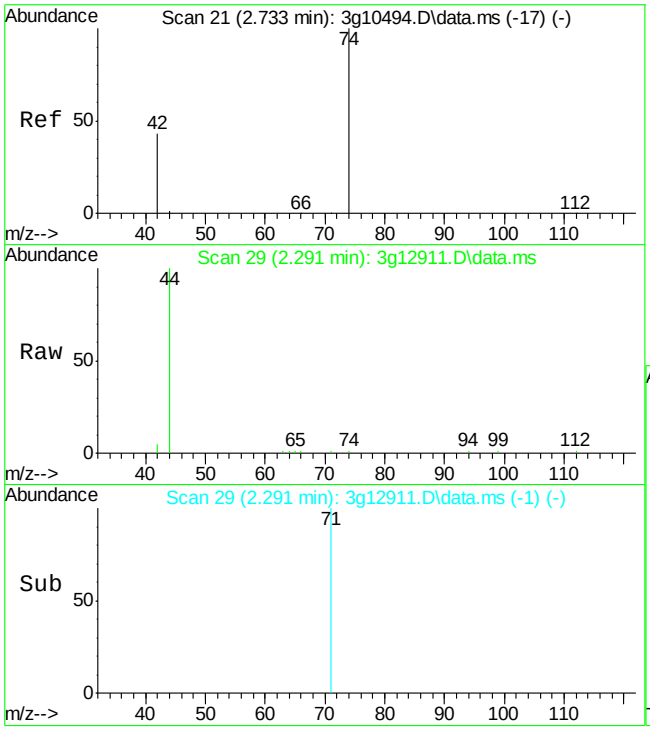


#2
Nitrobenzene-d5
Concen: 52.4375 ug/mL
RT: 4.935 min Scan# 381
Delta R.T. -0.014 min
Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion: 82 Resp: 491377

Ion	Ratio	Lower	Upper
82	100		
128	43.5	36.8	76.8
54	52.2	40.5	80.5

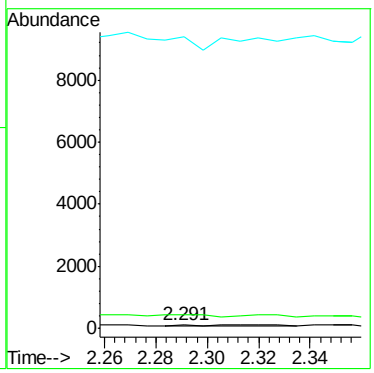


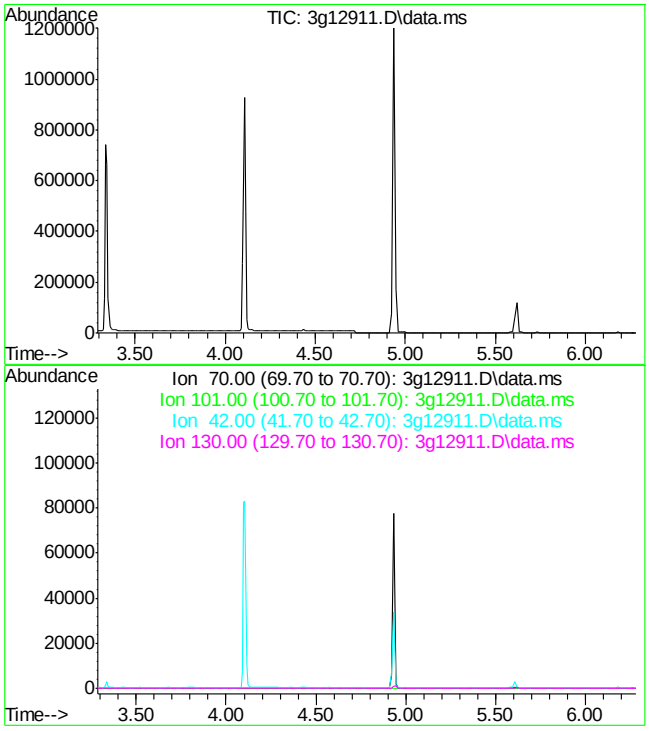


#3
N-Nitrosodimethylamine
Concen: Below ug/mL
RT: 2.291 min Scan# 29
Delta R.T. -0.045 min
Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion: 74 Resp: 47

Ion	Ratio	Lower	Upper
74	100		
42	0.0	58.5	98.5#
44	2453.2	0.0	24.0#



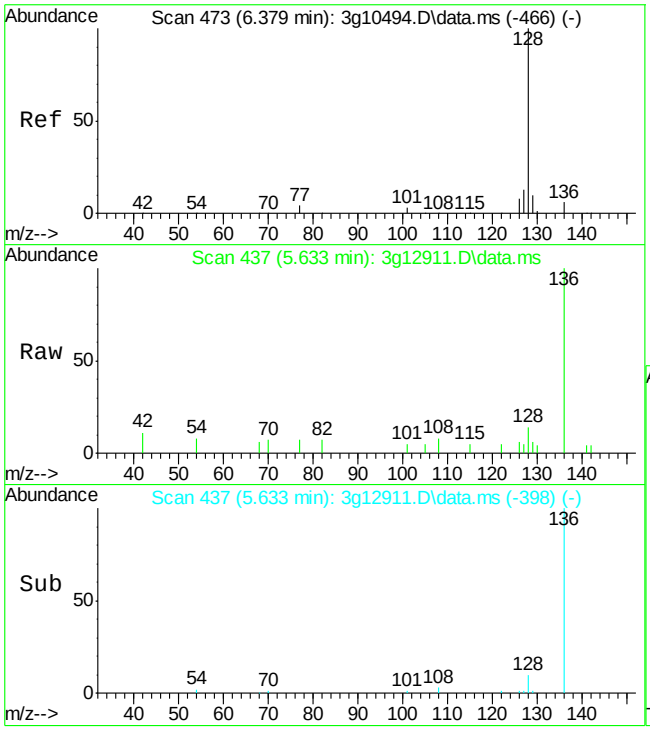


#4
N-Nitrosodi-propylamine
Concen: N.D. ug/mL
Expected RT: 4.79 min

Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion: 70

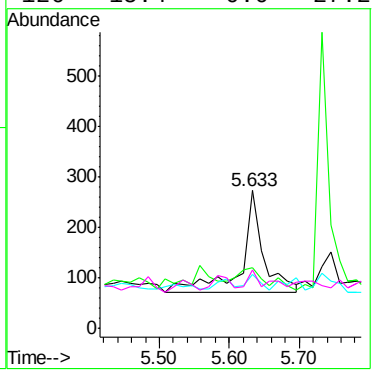
Sig	Exp Ratio
70	100
101	11.9
42	57.4
130	21.7

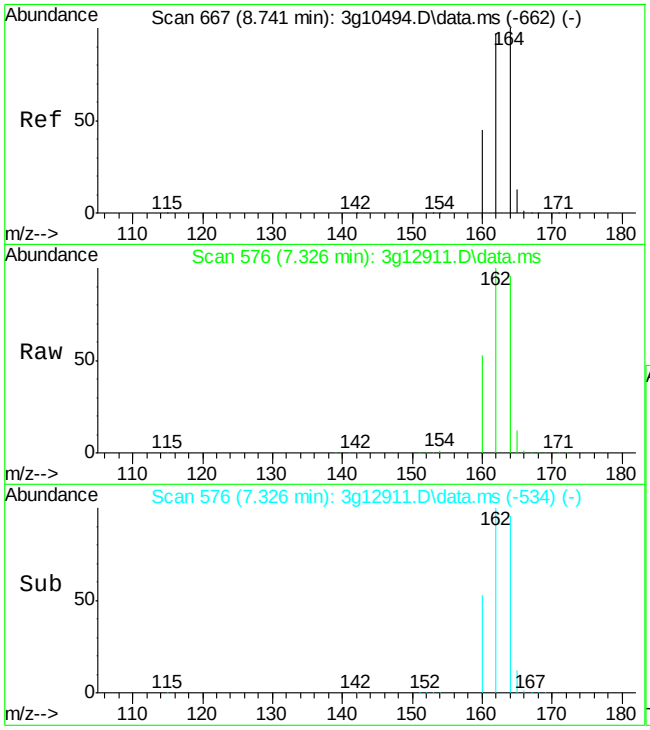


#5
Naphthalene
Concen: Below ug/mL
RT: 5.633 min Scan# 437
Delta R.T. -0.011 min
Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion:128 Resp: 455

Ion	Ratio	Lower	Upper
128	100		
129	27.7	0.0	31.2
127	10.1	0.0	32.4
126	15.4	0.0	27.2

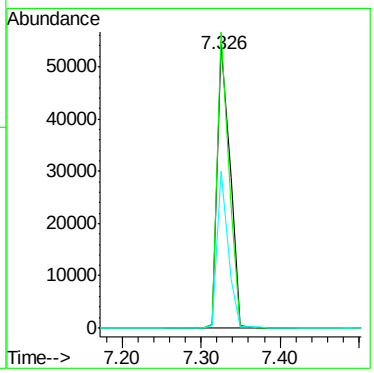


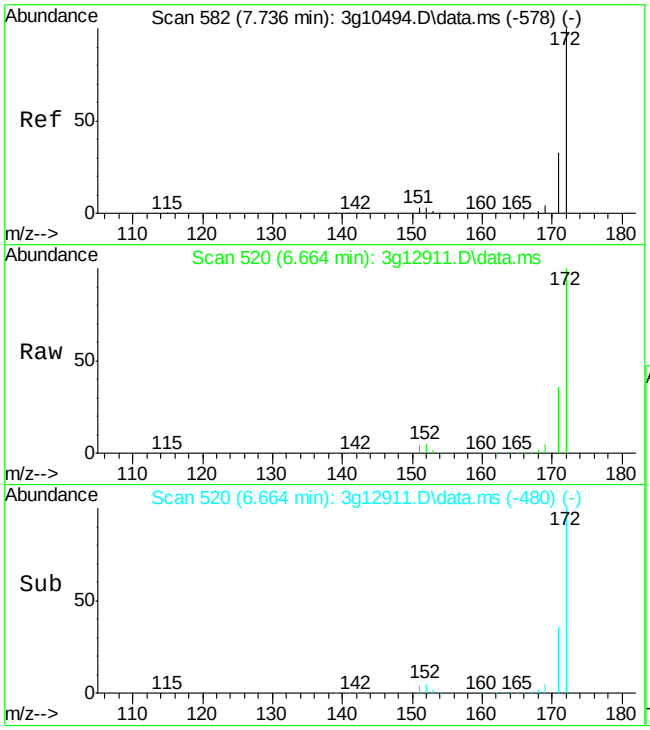


#6
Acenaphthene-d10
Concen: 4.0000 ug/mL
RT: 7.326 min Scan# 576
Delta R.T. 0.000 min
Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion:164 Resp: 59648

Ion	Ratio	Lower	Upper
164	100		
162	95.7	88.1	128.1
160	47.7	38.8	78.8

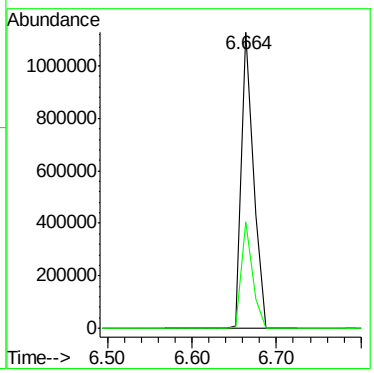


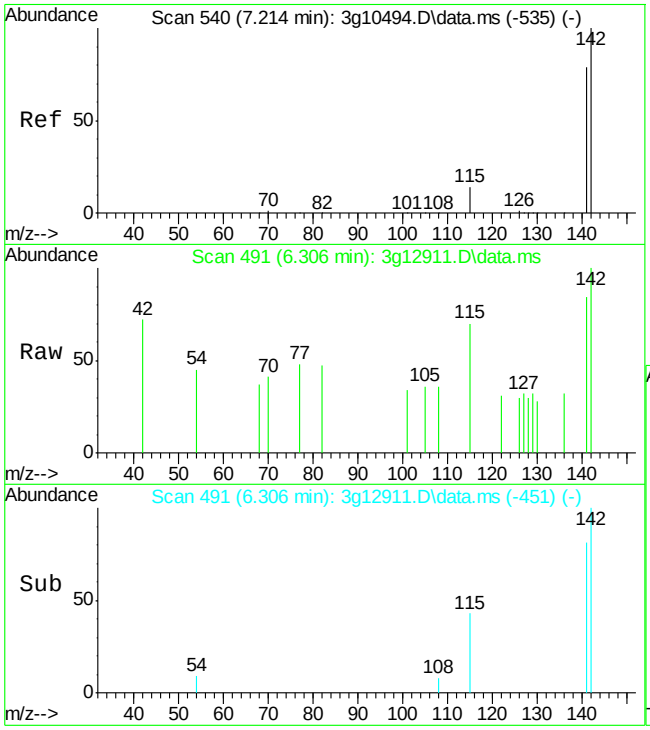


#7
2-Fluorobiphenyl
Concen: 50.4729 ug/mL
RT: 6.664 min Scan# 520
Delta R.T. -0.002 min
Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion:172 Resp: 1123238

Ion	Ratio	Lower	Upper
172	100		
171	32.9	12.2	52.2

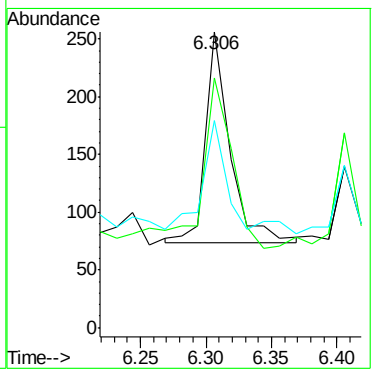


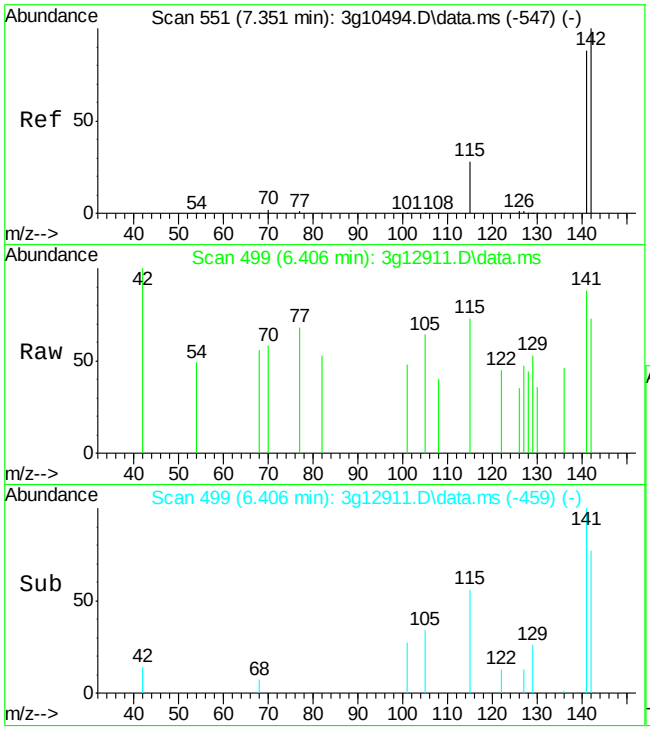


#8
2-Methylnaphthalene
Concen: Below ug/mL
RT: 6.306 min Scan# 491
Delta R.T. -0.004 min
Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion:142 Resp: 230

Ion	Ratio	Lower	Upper
142	100		
141	102.6	62.0	102.0#
115	61.3	11.3	51.3#

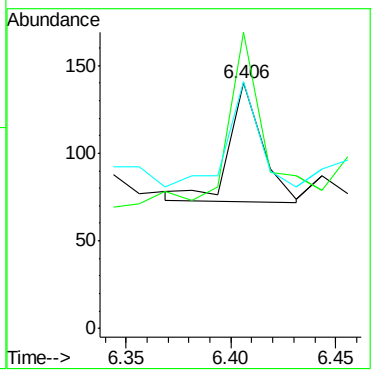


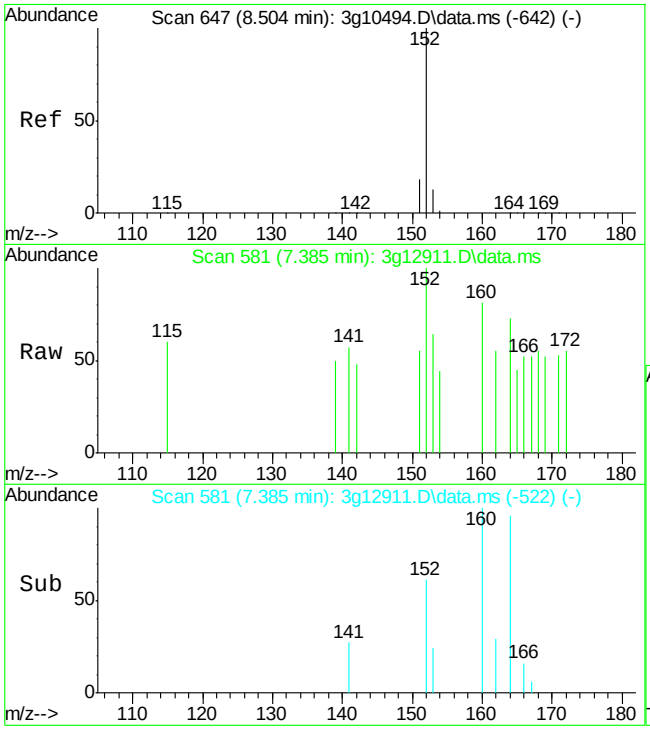


#9
1-Methylnaphthalene
Concen: Below ug/mL
RT: 6.406 min Scan# 499
Delta R.T. -0.004 min
Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion:142 Resp: 73

Ion	Ratio	Lower	Upper
142	100		
141	163.0	67.5	107.5#
115	0.0	19.4	59.4#

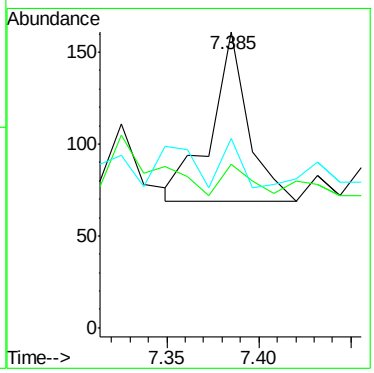


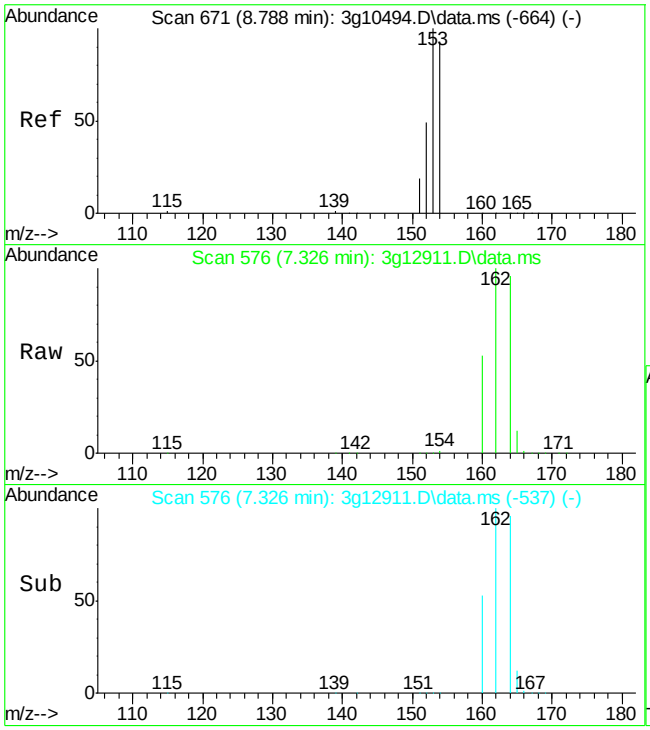


#10
Acenaphthylene
Concen: Below ug/mL
RT: 7.385 min Scan# 581
Delta R.T. 0.201 min
Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion:152 Resp: 128

Ion	Ratio	Lower	Upper
152	100		
151	16.4	0.0	39.2
153	25.0	0.0	32.9

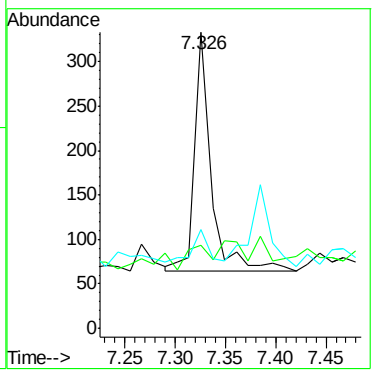


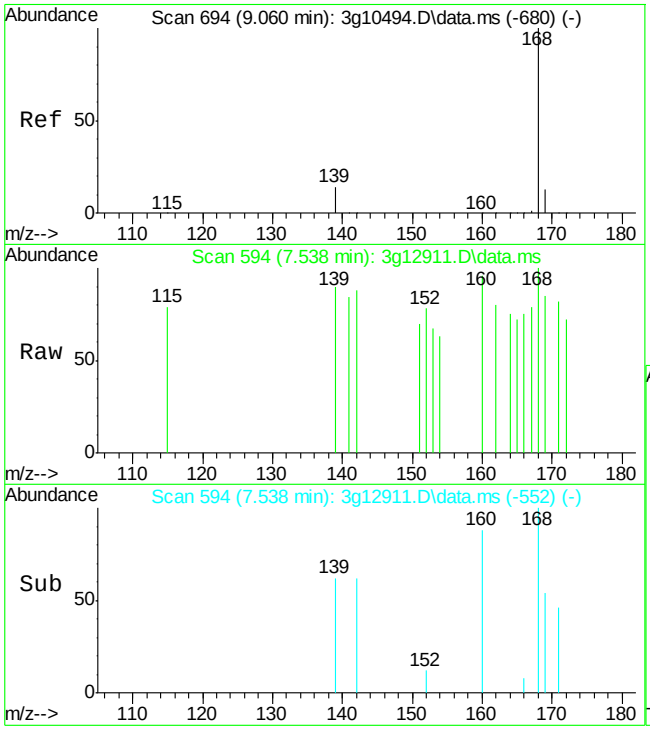


#11
Acenaphthene
Concen: Below ug/mL
RT: 7.326 min Scan# 576
Delta R.T. -0.035 min
Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion:154 Resp: 304

Ion	Ratio	Lower	Upper
154	100		
153	11.5	82.4	122.4#
152	13.2	30.0	70.0#

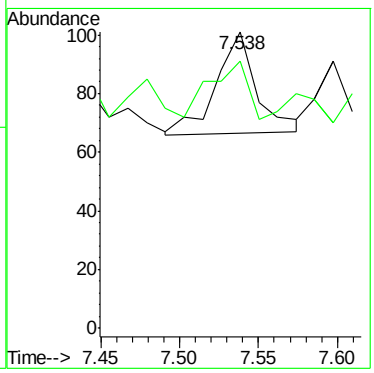


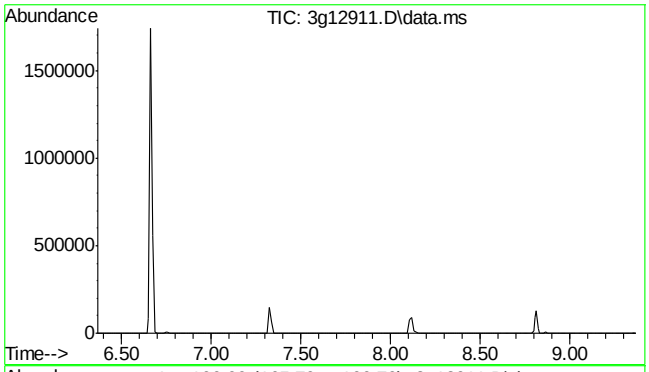


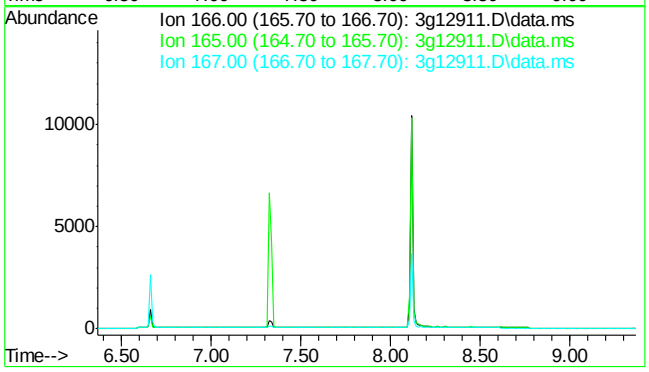
#12
Dibenzofuran
Concen: Below ug/mL
RT: 7.538 min Scan# 594
Delta R.T. 0.001 min
Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion:168 Resp: 61

Ion	Ratio	Lower	Upper
168	100		
139	50.8	13.4	53.4





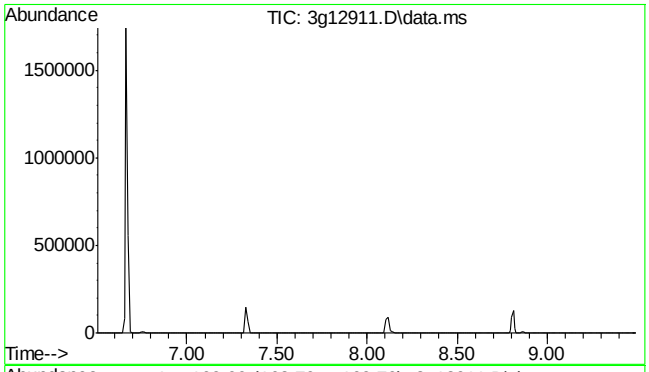


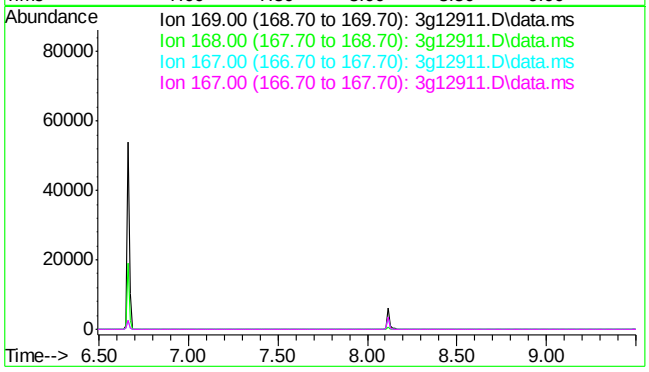
#13
Fluorene
Concen: N.D. ug/mL
Expected RT: 7.87 min

Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion: 166

Sig	Exp Ratio
166	100
165	92.0
167	13.1



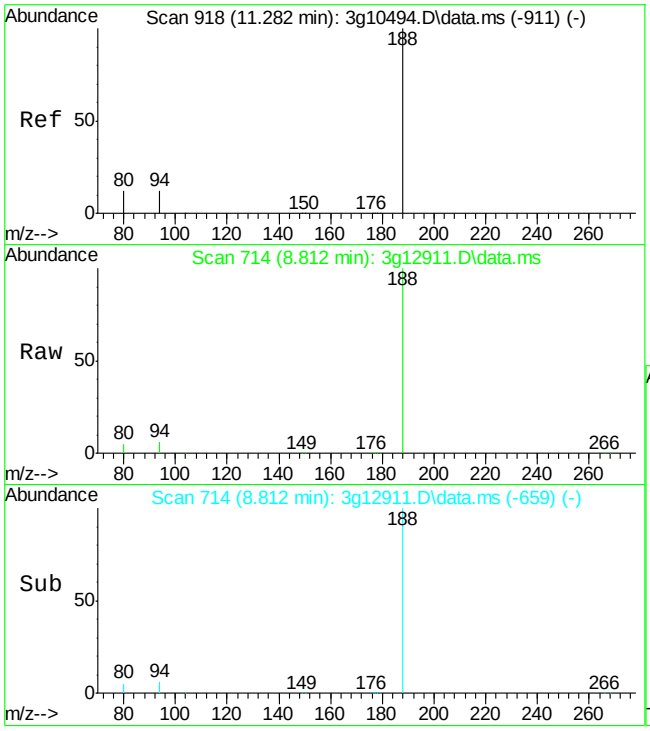


#14
Diphenylamine
Concen: N.D. ug/mL
Expected RT: 8.00 min

Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion: 169

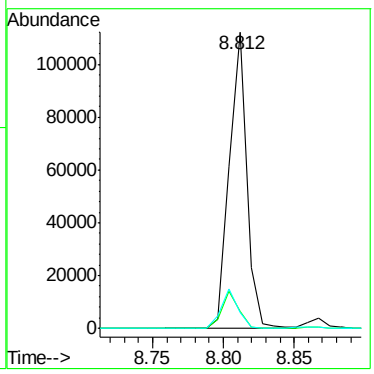
Sig	Exp Ratio
169	100
168	61.7
167	34.1
167	34.1

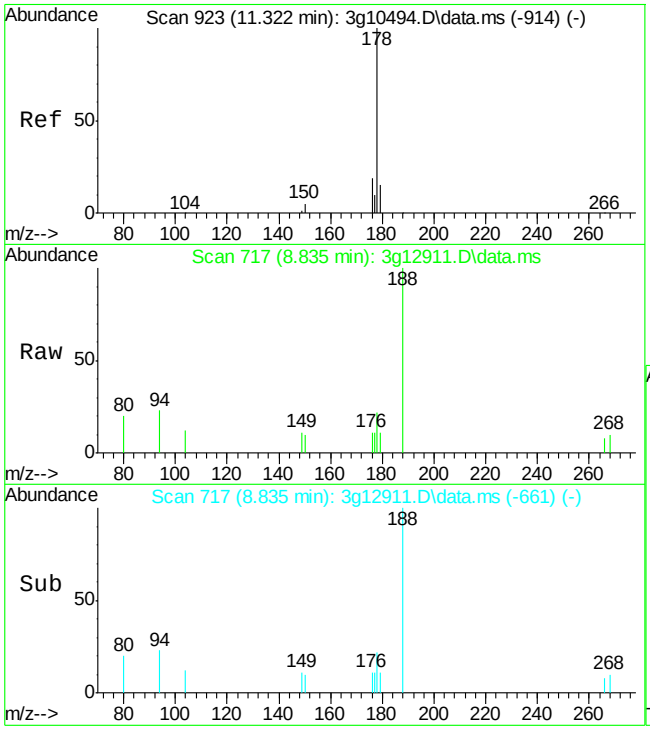


#15
Phenanthrene-d10
Concen: 4.0000 ug/mL
RT: 8.812 min Scan# 714
Delta R.T. 0.000 min
Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion:188 Resp: 94038

Ion	Ratio	Lower	Upper
188	100		
94	12.3	0.0	26.9
80	13.0	0.0	26.3

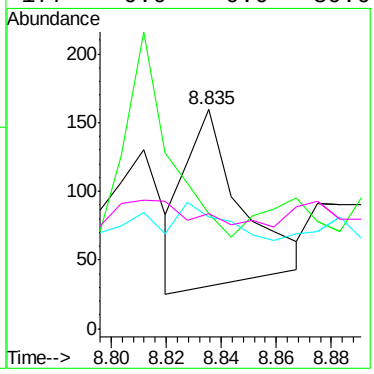


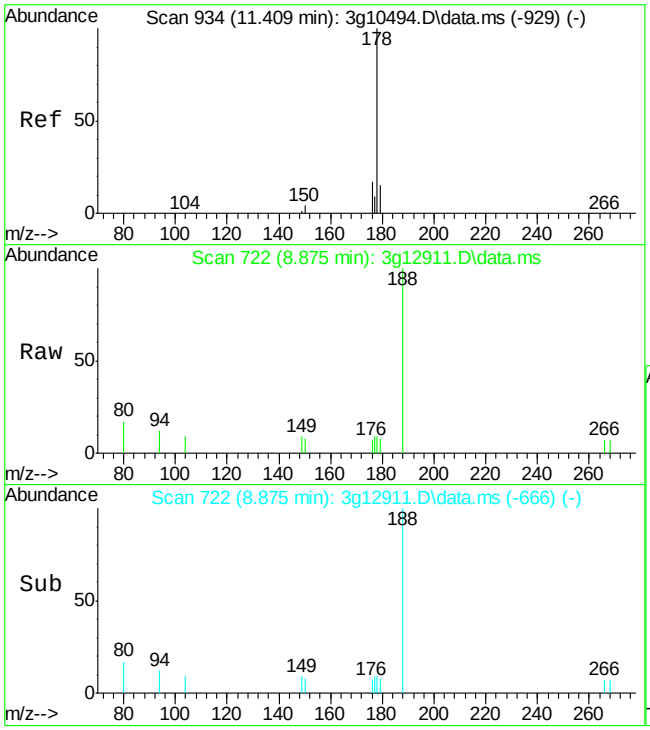


#16
Phenanthrene
Concen: Below ug/mL
RT: 8.835 min Scan# 717
Delta R.T. 0.000 min
Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion:178 Resp: 183

Ion	Ratio	Lower	Upper
178	100		
179	0.0	0.0	35.2
176	0.0	0.0	38.6
177	0.0	0.0	30.0

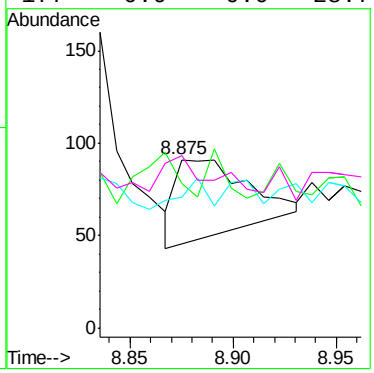


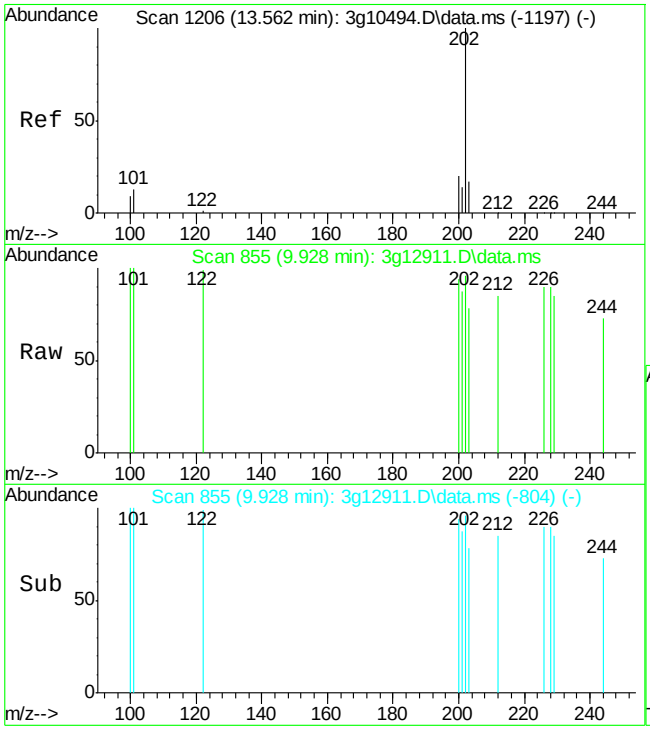


#17
Anthracene
Concen: Below ug/mL
RT: 8.875 min Scan# 722
Delta R.T. -0.015 min
Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion:178 Resp: 102

Ion	Ratio	Lower	Upper
178	100		
179	0.0	0.0	35.1
176	0.0	0.0	38.2
177	0.0	0.0	28.7

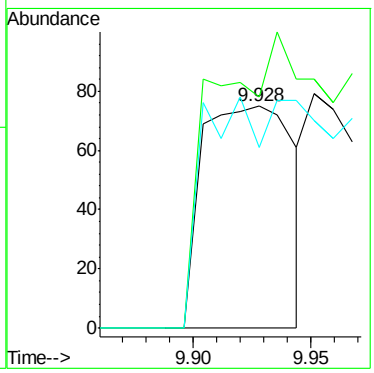


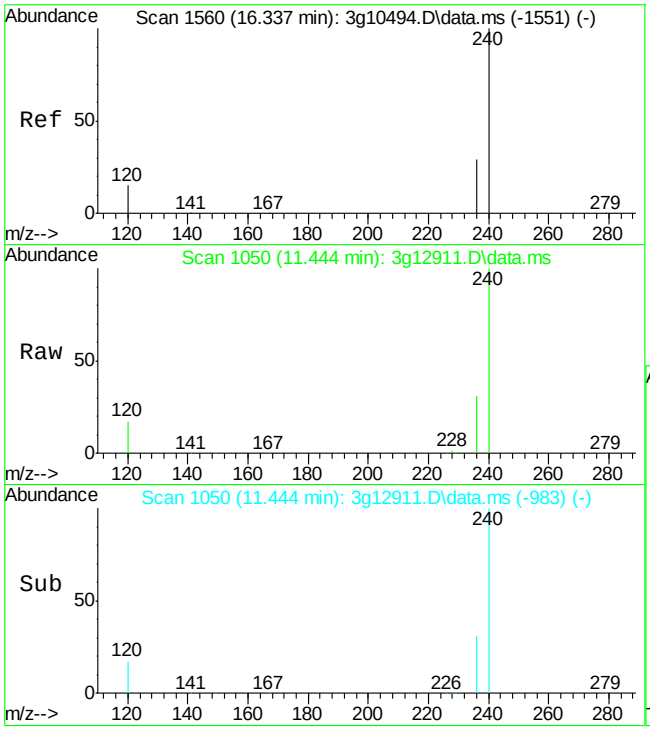


#18
Fluoranthene
Concen: Below ug/mL
RT: 9.928 min Scan# 855
Delta R.T. -0.093 min
Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion:202 Resp: 200

Ion	Ratio	Lower	Upper
202	100		
101	159.5	0.0	32.6#
203	66.0	0.0	37.4#

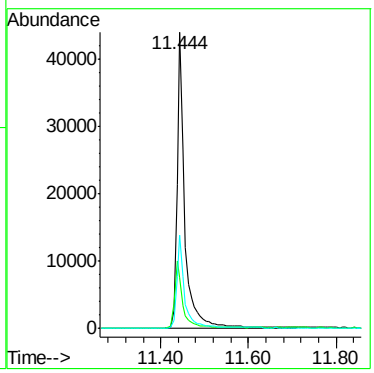


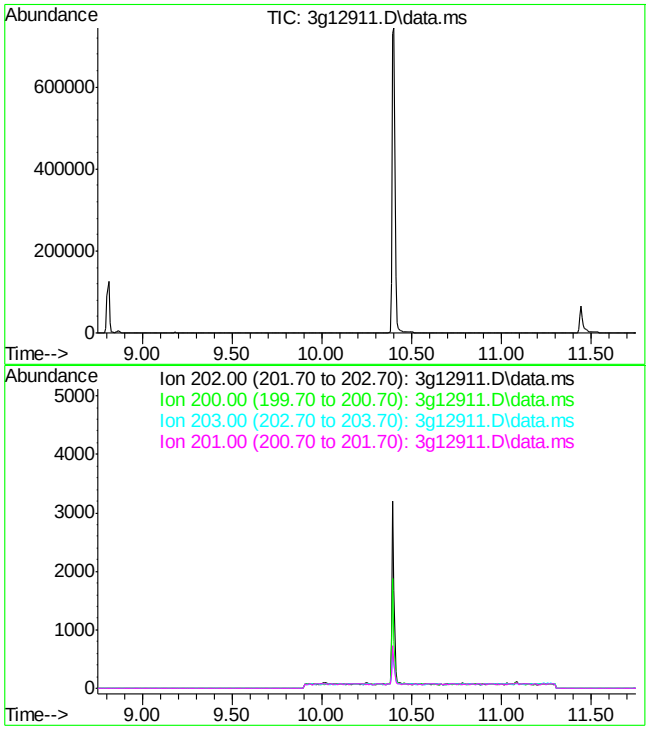


#19
Chrysene-d12
Concen: 4.0000 ug/mL
RT: 11.444 min Scan# 1050
Delta R.T. 0.000 min
Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion:240 Resp: 52962

Ion	Ratio	Lower	Upper
240	100		
120	23.3	0.0	37.3
236	31.6	11.2	51.2



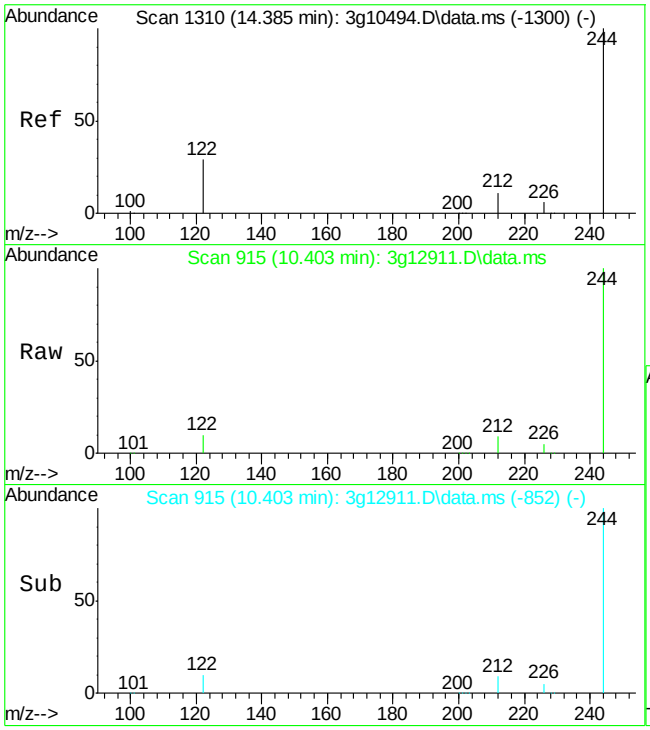


#20
Pyrene
Concen: N.D. ug/mL
Expected RT: 10.25 min

Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion: 202

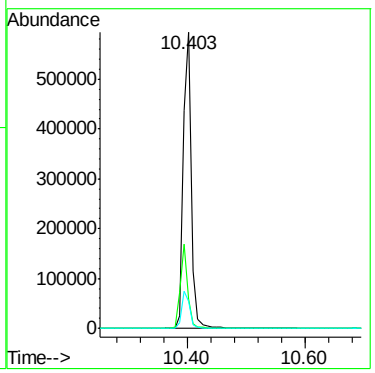
Sig	Exp Ratio
202	100
200	20.2
203	17.8
201	16.6

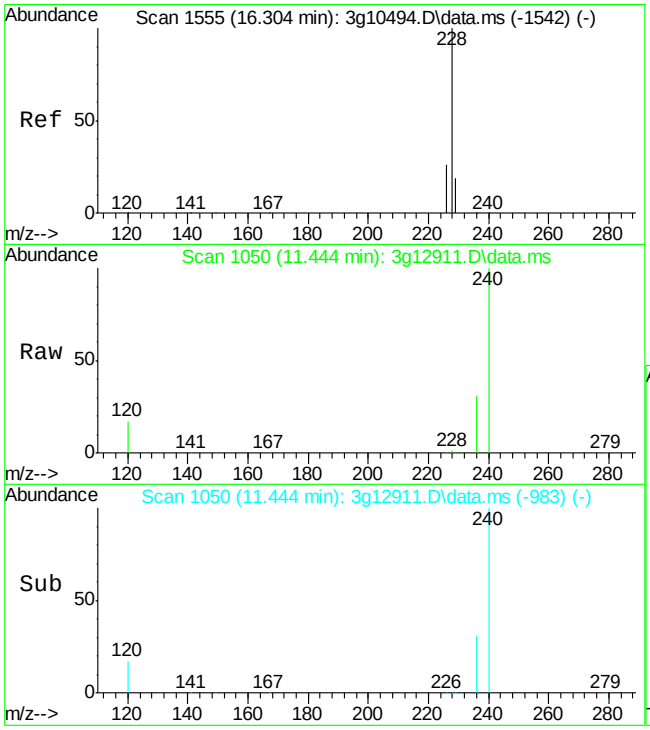


#21
Terphenyl-d14
Concen: 79.8087 ug/mL
RT: 10.403 min Scan# 915
Delta R.T. 0.002 min
Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion:244 Resp: 575142

Ion	Ratio	Lower	Upper
244	100		
122	26.4	7.8	47.8
212	12.4	0.0	32.8

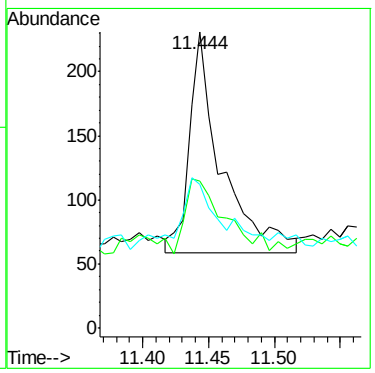


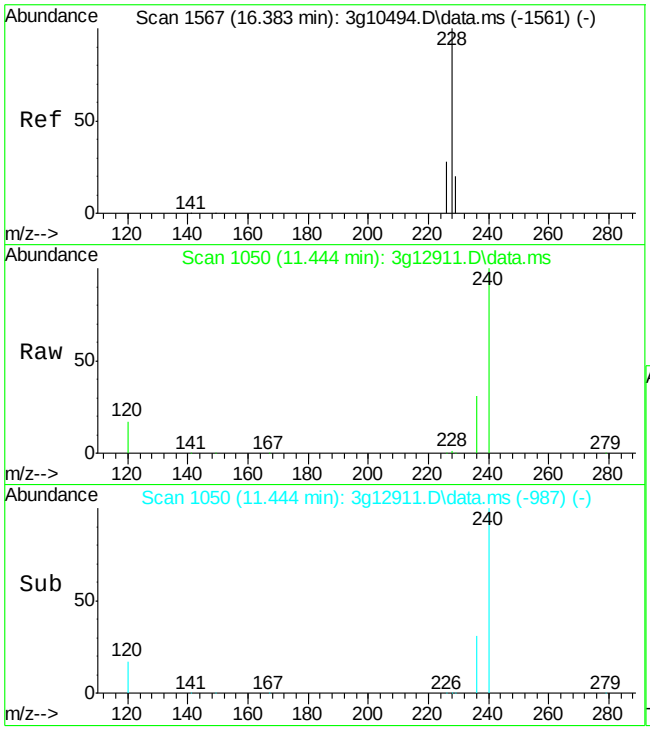


#22
Benzo(a)anthracene
Concen: Below ug/mL
RT: 11.444 min Scan# 1050
Delta R.T. 0.007 min
Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion:228 Resp: 289

Ion	Ratio	Lower	Upper
228	100		
229	43.9	0.0	39.4#
226	44.6	6.6	46.6

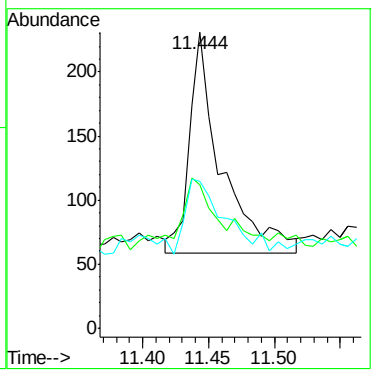


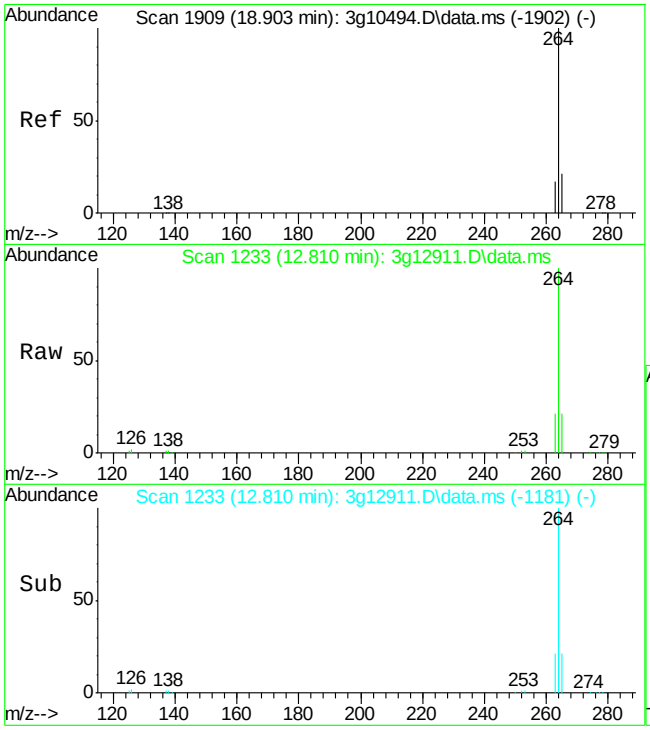


#23
Chrysene
Concen: Below ug/mL
RT: 11.444 min Scan# 1050
Delta R.T. -0.026 min
Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion:228 Resp: 289

Ion	Ratio	Lower	Upper
228	100		
226	44.6	8.6	48.6
229	43.9	0.0	39.4#

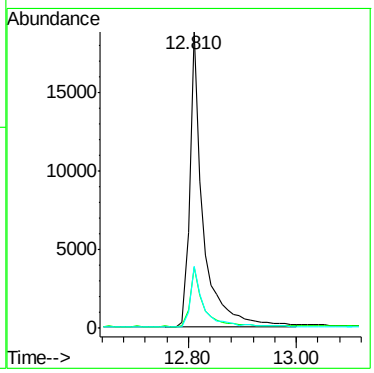


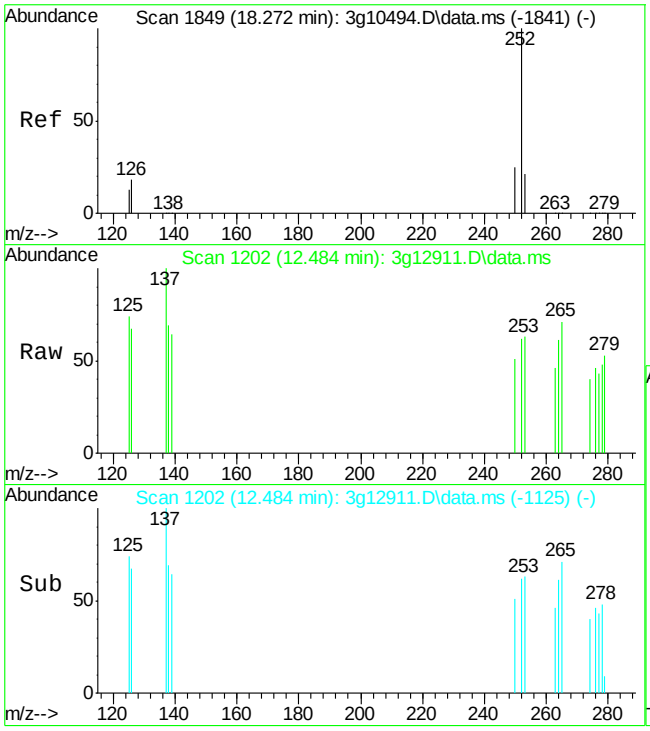


#24
Perylene-d12
Concen: 4.0000 ug/mL
RT: 12.810 min Scan# 1233
Delta R.T. 0.000 min
Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion:264 Resp: 32109

Ion	Ratio	Lower	Upper
264	100		
265	21.0	0.6	40.6
263	21.7	0.0	38.8

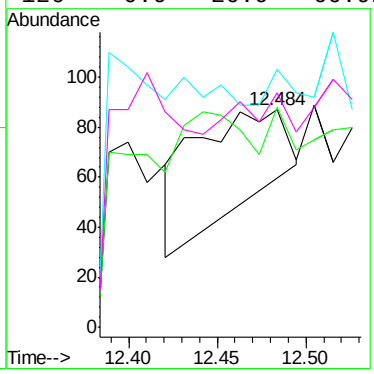


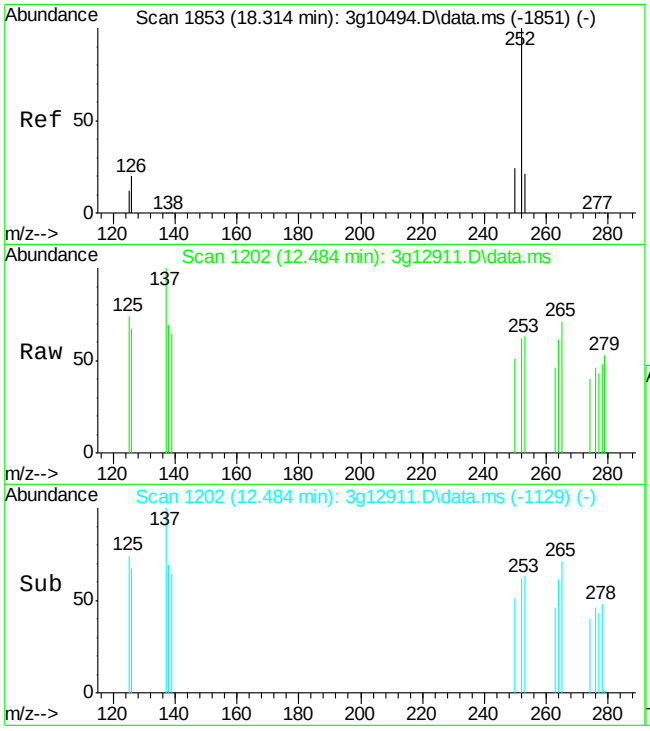


#25
Benzo(b)fluoranthene
Concen: Below ug/mL
RT: 12.484 min Scan# 1202
Delta R.T. 0.042 min
Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion:252 Resp: 140

Ion	Ratio	Lower	Upper
252	100		
253	70.7	31.5	71.5
125	0.0	0.0	33.2
126	0.0	26.9	66.9#

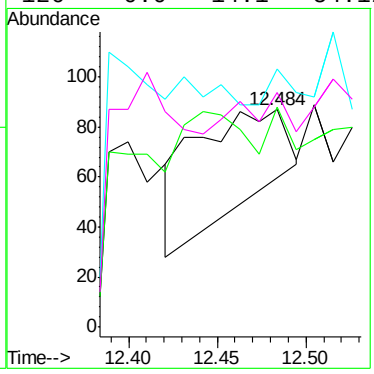


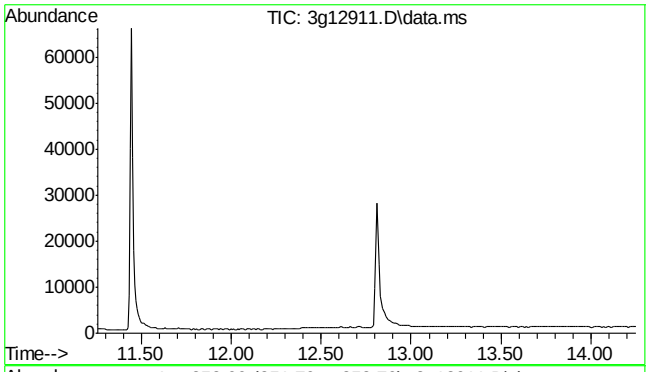


#26
Benzo(k)fluoranthene
Concen: Below ug/mL
RT: 12.484 min Scan# 1202
Delta R.T. 0.021 min
Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion:252 Resp: 140

Ion	Ratio	Lower	Upper
252	100		
253	70.7	17.3	57.3#
125	0.0	0.0	29.6
126	0.0	14.1	54.1#



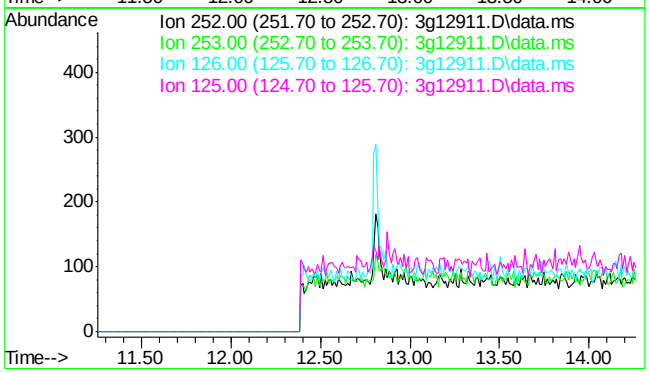


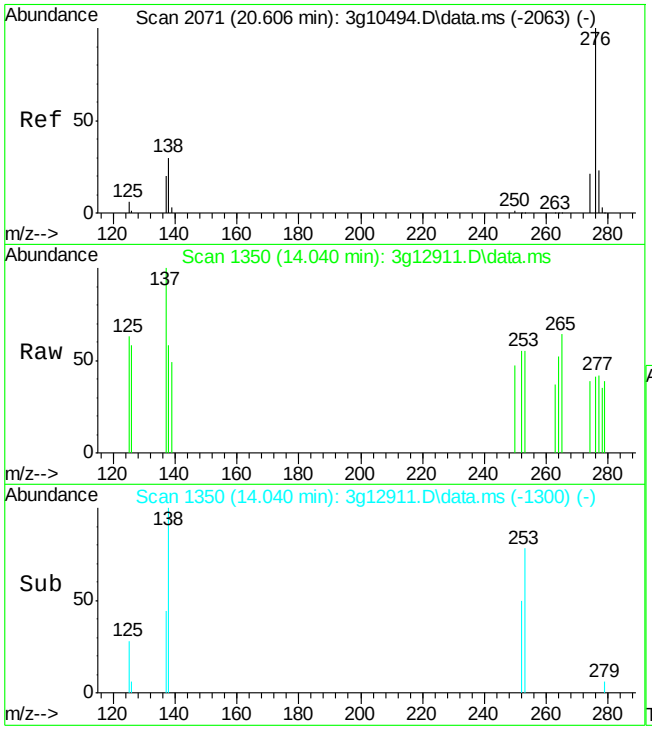
#27
Benzo(a)pyrene
Concen: N.D. ug/mL
Expected RT: 12.76 min

Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion: 252

Sig	Exp Ratio
252	100
253	21.5
126	20.4
125	14.5

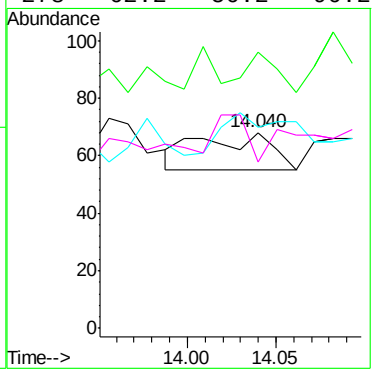


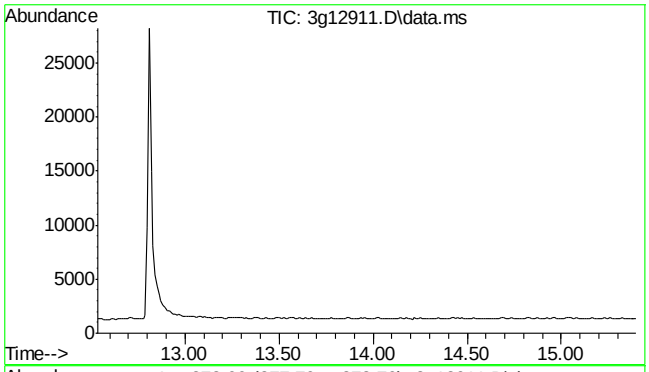


#28
Indeno(1,2,3-cd)pyrene
Concen: Below ug/mL
RT: 14.040 min Scan# 1350
Delta R.T. 0.023 min
Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion:276 Resp: 37

Ion	Ratio	Lower	Upper
276	100		
138	37.8	20.0	60.0
277	159.5	4.8	44.8#
278	62.2	56.2	96.2



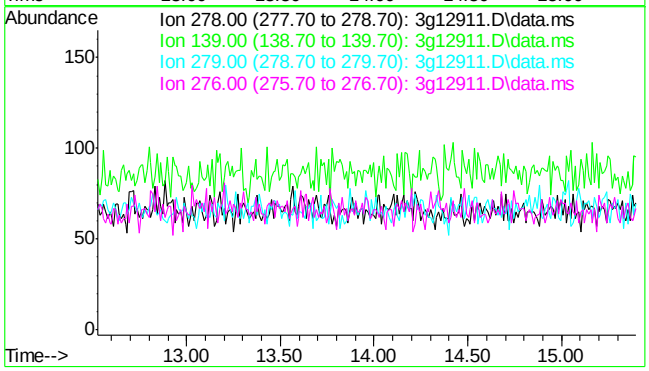


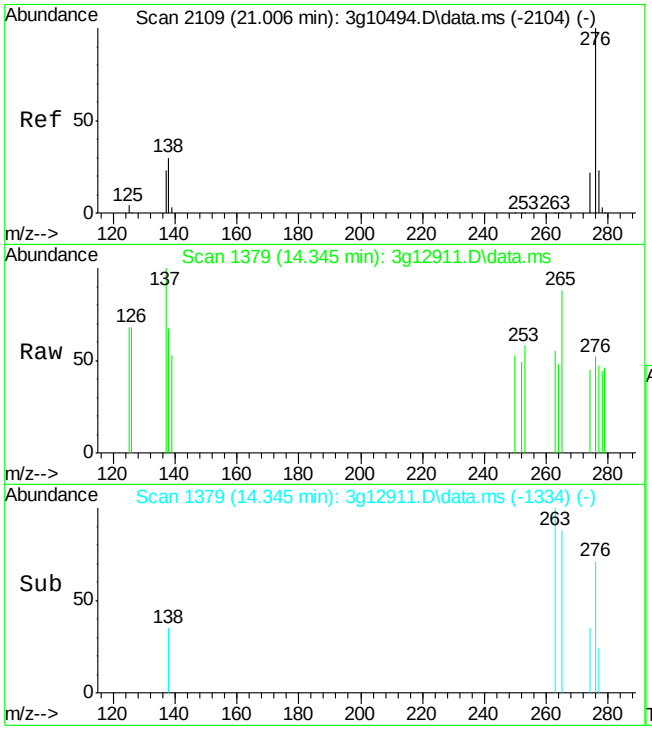
#29
Dibenz(a,h)anthracene
Concen: N.D. ug/mL
Expected RT: 14.03 min

Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion: 278

Sig	Exp Ratio
278	100
139	30.8
279	22.9
276	131.2

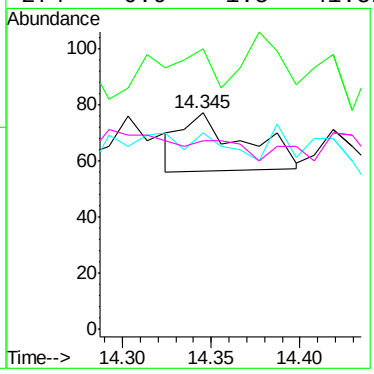




#30
Benzo(g,h,i)perylene
Concen: Below ug/mL
RT: 14.345 min Scan# 1379
Delta R.T. -0.029 min
Lab File: 3g12911.D
Acq: 10 Jan 13 2:44 pm

Tgt Ion:276 Resp: 50

Ion	Ratio	Lower	Upper
276	100		
138	84.0	15.1	55.1#
277	40.0	3.3	43.3
274	0.0	1.5	41.5#



Mountain States ACCUTEST LABORATORIES

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: D42316
Account: XTOKRWR XTO Energy
Project: XTO Love Ranch 8

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1042-MB	GB19076.D	1	01/07/13	SK	n/a	n/a	GGB1042

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

D42316-1

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	85%	60-140%

Blank Spike Summary

Job Number: D42316
Account: XTOKRWR XTO Energy
Project: XTO Love Ranch 8

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1042-BS	GB19077.D	1	01/07/13	SK	n/a	n/a	GGB1042

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

D42316-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	118	107	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	102%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D42316
Account: XTOKRWR XTO Energy
Project: XTO Love Ranch 8

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D42317-1MS	GB19079.D	1	01/07/13	SK	n/a	n/a	GGB1042
D42317-1MSD	GB19080.D	1	01/07/13	SK	n/a	n/a	GGB1042
D42317-1	GB19078.D	1	01/07/13	SK	n/a	n/a	GGB1042

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

D42316-1

CAS No.	Compound	D42317-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		144	158	110	155	108	2	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D42317-1	Limits
120-82-1	1,2,4-Trichlorobenzene	97%	94%	89%	60-140%

10.3.1
10

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC Volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson 01/08/13 09:34

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\010713\GB19081.D\FID1A.CH Vial: 8
Signal #2 : Y:\1\DATA\010713\GB19081.D\FID2B.CH
Acq On : 7 Jan 2013 4:03 pm Operator: StephK
Sample : D42316-1, 50X Inst : GC/MS Ins
Misc : GC3337,GGB1042,5.022,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 07 16:40:41 2013 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Mon Jan 07 12:45:52 2013
Response via : Initial Calibration
DataAcq Meth : TVB4.M

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

	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.36	3841859	122.610	%	m
10) S	1,2,4-Trichlorobenzene (P)	14.36	16537697	101.753	%	m
	Target Compounds					
1) H	TVH-Gasoline	7.23	133314210	2.088	mg/L	
4) T	Methyl-t-butyl-ether	0.00	0	N.D.	ug/L	d
5) T	Benzene	4.16	83088	0.206	ug/L	
6) T	Toluene	7.66	1266424	3.196	ug/L	m
7) T	Ethylbenzene	10.28	1227942	3.630	ug/L	
8) T	m,p-Xylene	10.46	25045415	68.245	ug/L	
9) T	o-Xylene	10.96	4828944	14.706	ug/L	
11) T	Naphthalene	14.54	7972179	40.405	ug/L	m

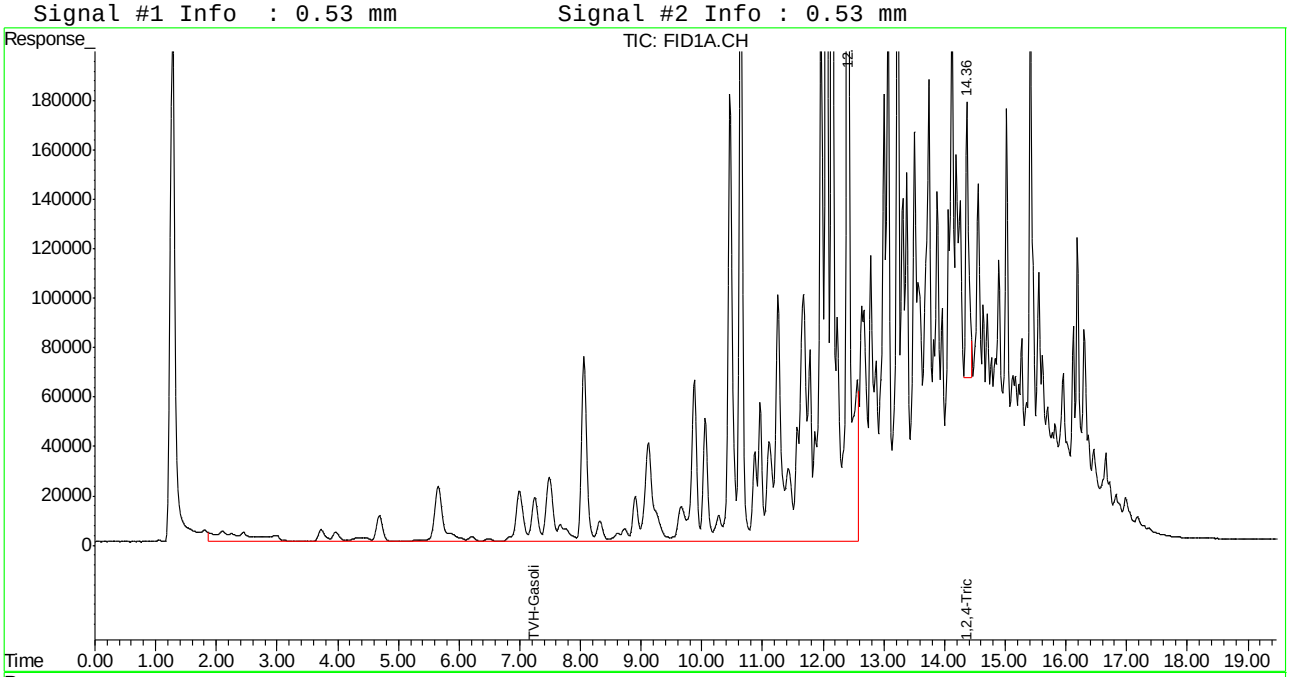
(f)=RT Delta > 1/2 Window (m)=manual int.

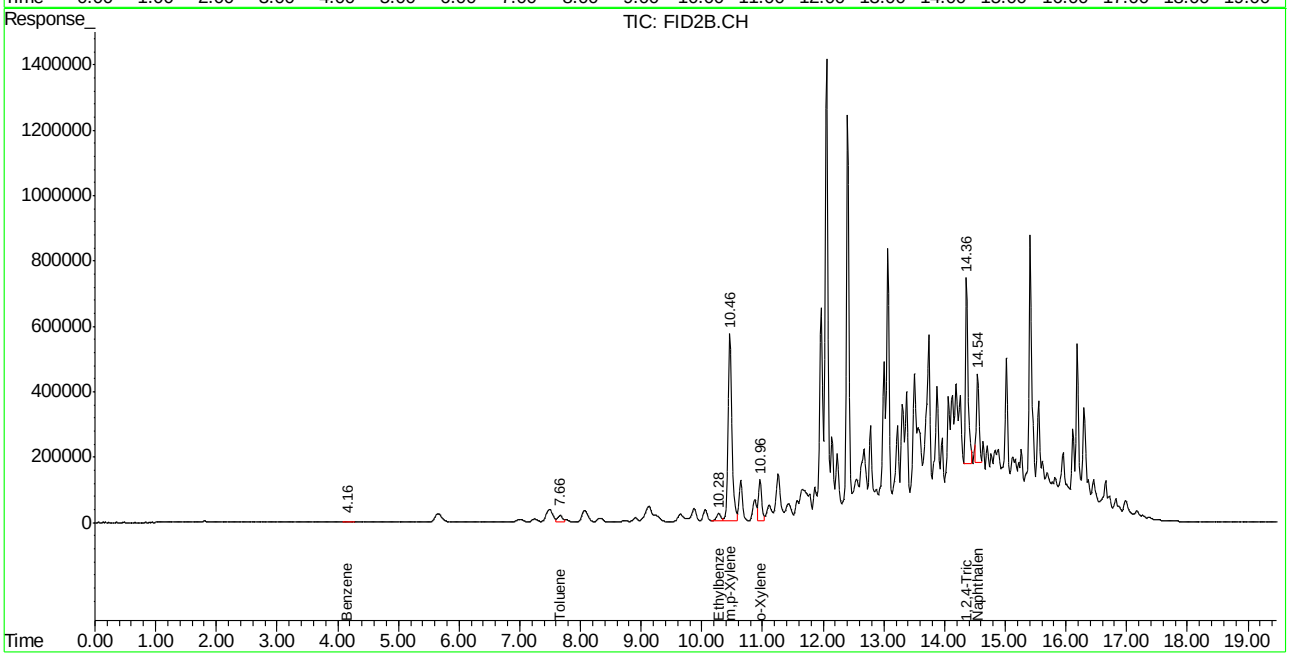
Quantitation Report (QT Reviewed)

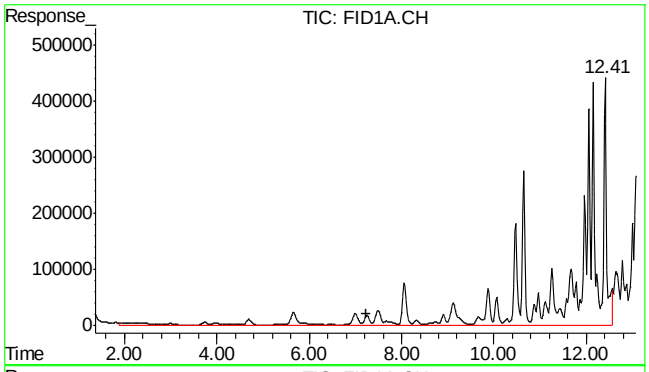
Signal #1 : Y:\1\DATA\010713\GB19081.D\FID1A.CH Vial: 8
Signal #2 : Y:\1\DATA\010713\GB19081.D\FID2B.CH
Acq On : 7 Jan 2013 4:03 pm Operator: StephK
Sample : D42316-1, 50X Inst : GC/MS Ins
Misc : GC3337,GGB1042,5.022,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 7 16:40 2013 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Mon Jan 07 12:45:52 2013
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

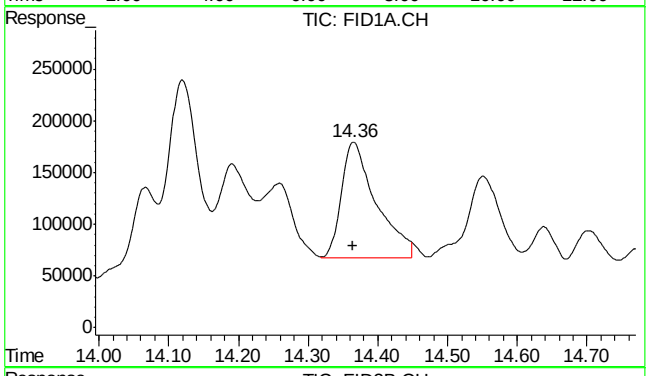






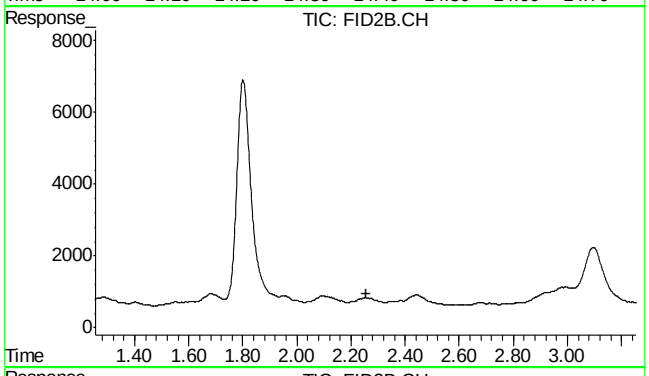
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 133314210
Conc: 2.09 mg/L m



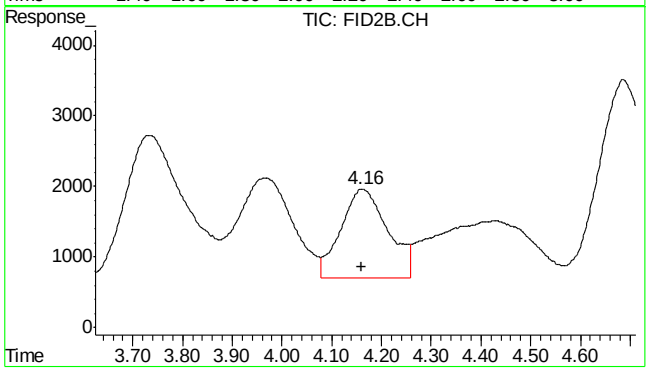
#2 1,2,4-Trichlorobenzene

R.T.: 14.364 min
Delta R.T.: 0.000 min
Response: 3841859
Conc: 122.61 % m



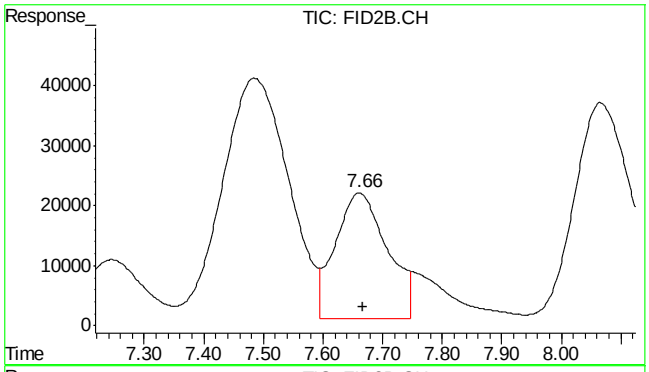
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T. : 2.255 min
Response: 0
Conc: N.D.



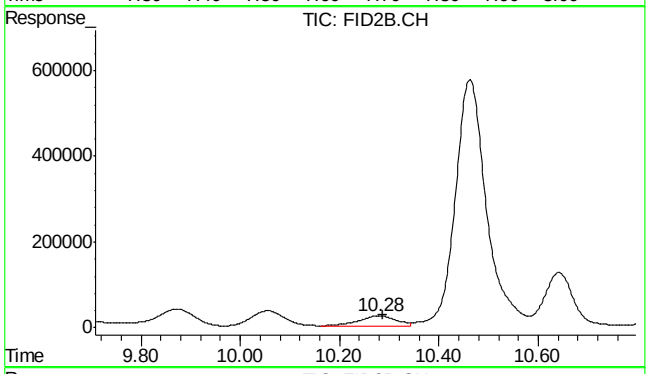
#5 Benzene

R.T.: 4.160 min
Delta R.T.: 0.000 min
Response: 83088
Conc: 0.21 ug/L



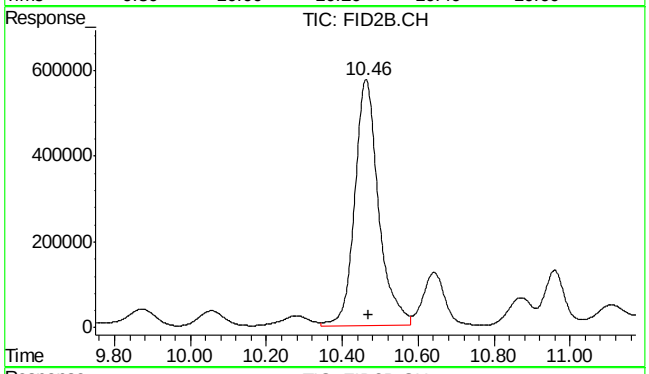
#6 Toluene

R.T.: 7.661 min
Delta R.T.: -0.005 min
Response: 1266424
Conc: 3.20 ug/L m



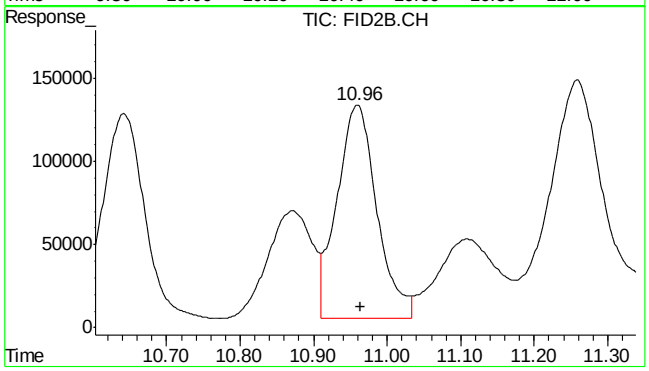
#7 Ethylbenzene

R.T.: 10.279 min
Delta R.T.: -0.009 min
Response: 1227942
Conc: 3.63 ug/L



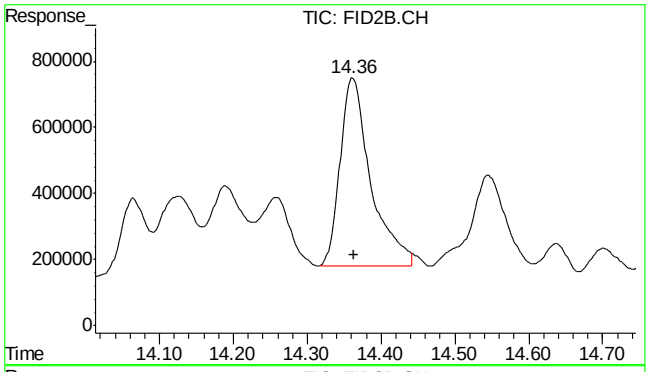
#8 m,p-Xylene

R.T.: 10.463 min
Delta R.T.: -0.005 min
Response: 25045415
Conc: 68.25 ug/L



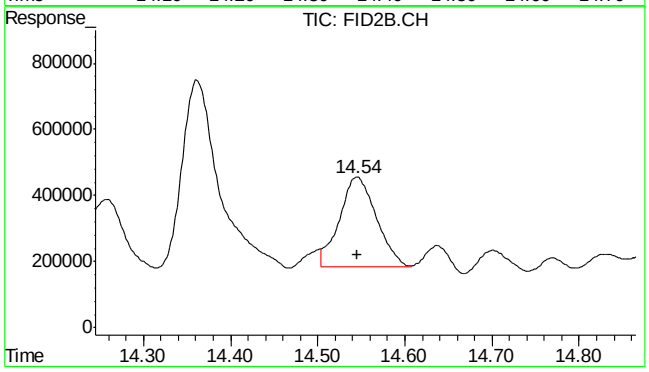
#9 o-Xylene

R.T.: 10.960 min
Delta R.T.: -0.004 min
Response: 4828944
Conc: 14.71 ug/L



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

R.T.: 14.361 min
Delta R.T.: -0.002 min
Response: 16537697
Conc: 101.75 % m



#11 Naphthalene

R.T.: 14.545 min
Delta R.T.: 0.000 min
Response: 7972179
Conc: 40.40 ug/L m

Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson 01/08/13 09:34

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\010713\GB19076.D\FID1A.CH Vial: 3
Signal #2 : Y:\1\DATA\010713\GB19076.D\FID2B.CH
Acq On : 7 Jan 2013 1:06 pm Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC3337,GGB1042,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 07 14:37:39 2013 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Mon Jan 07 12:45:52 2013
Response via : Initial Calibration
DataAcq Meth : TVB4.M

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

	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.37	2667492	85.131	%	
10) S	1,2,4-Trichlorobenzene (P)	14.37	13776254	84.763	%	m
	Target Compounds					
1) H	TVH-Gasoline	7.23	3000971	<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	134125	0.338	ug/L	
7) T	Ethylbenzene	0.00	0	N.D.	ug/L	d
8) T	m,p-Xylene	0.00	0	N.D.	ug/L	d
9) T	o-Xylene	0.00	0	N.D.	ug/L	d
11) T	Naphthalene	14.55	24733	0.125	ug/L	m

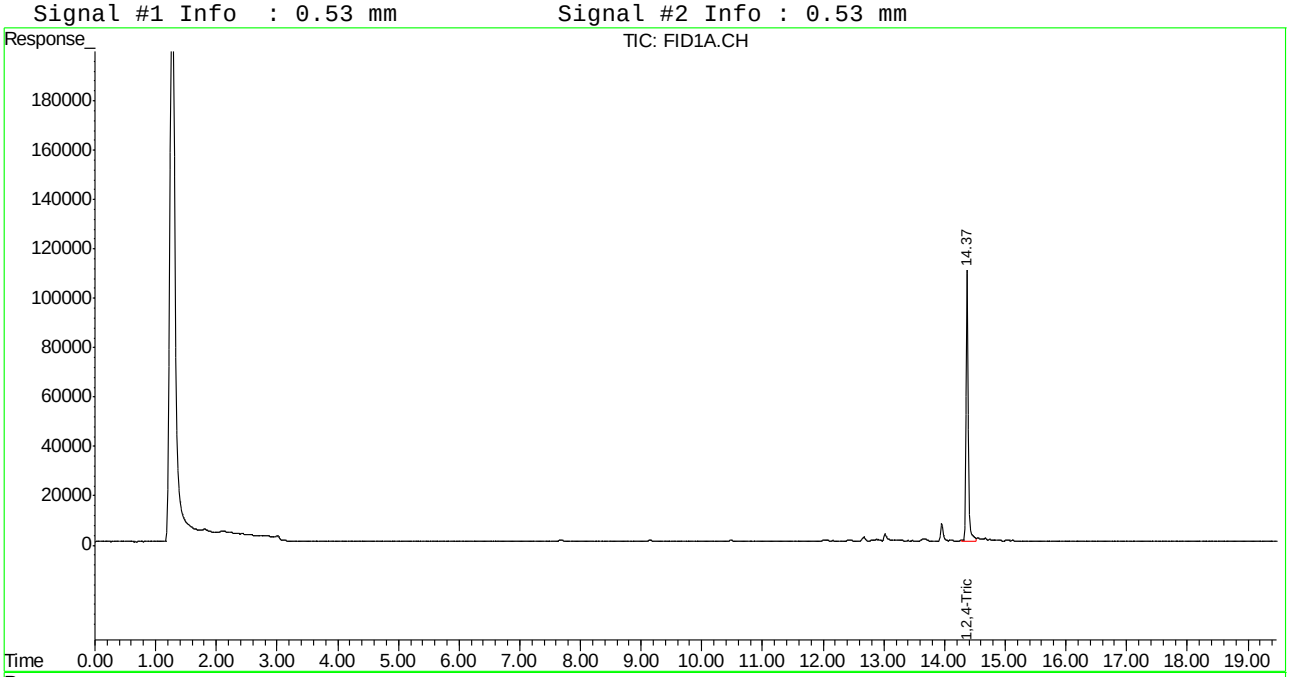
(f)=RT Delta > 1/2 Window (m)=manual int.

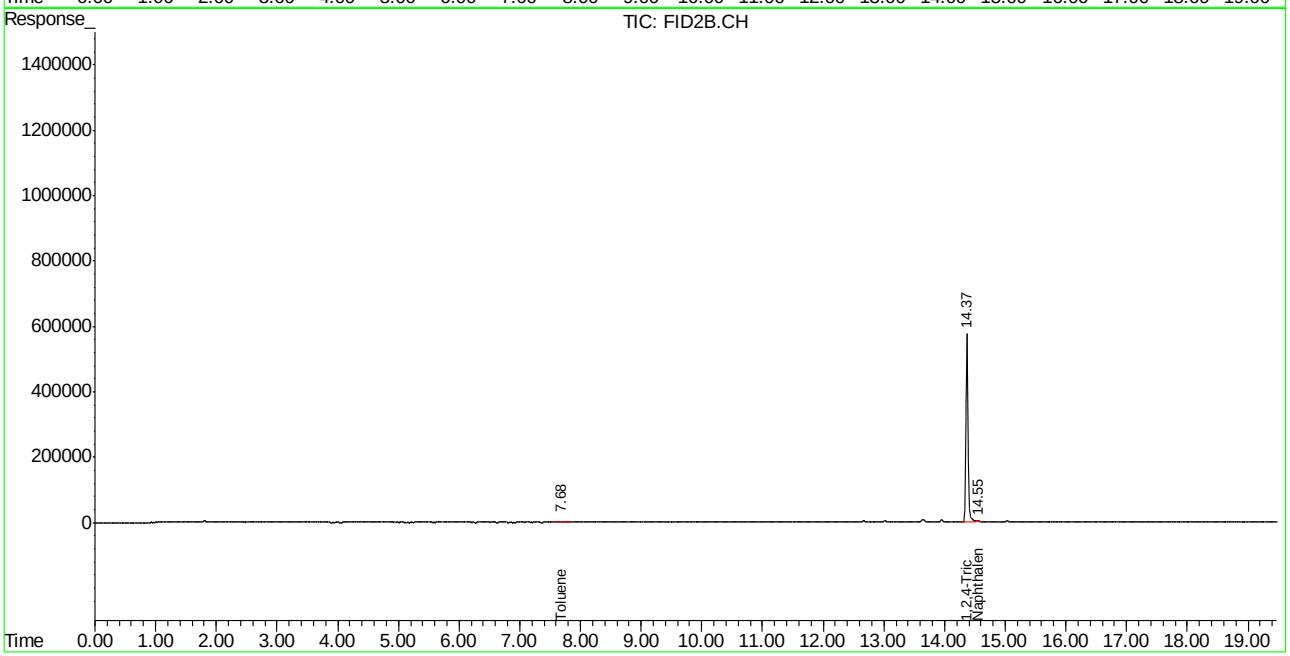
Quantitation Report (QT Reviewed)

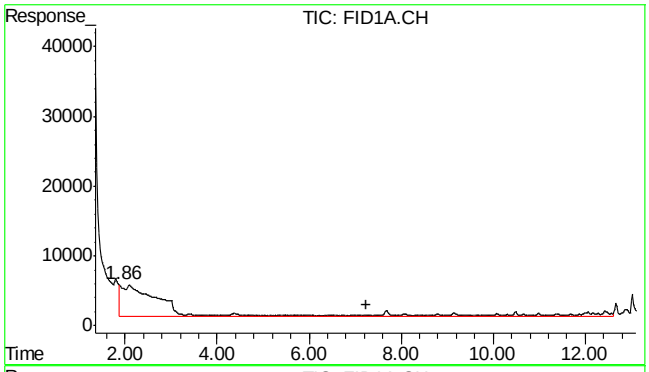
Signal #1 : Y:\1\DATA\010713\GB19076.D\FID1A.CH Vial: 3
Signal #2 : Y:\1\DATA\010713\GB19076.D\FID2B.CH
Acq On : 7 Jan 2013 1:06 pm Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC3337,GGB1042,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Jan 7 14:39 2013 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Mon Jan 07 12:45:52 2013
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

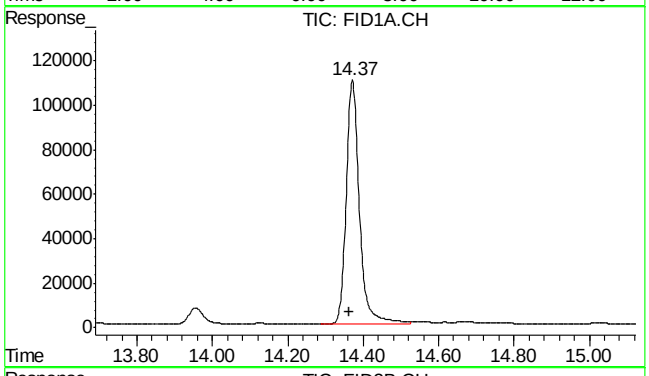






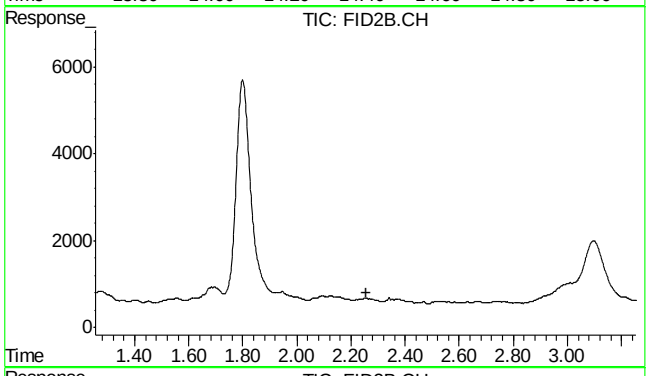
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 3000971
Conc: N.D.



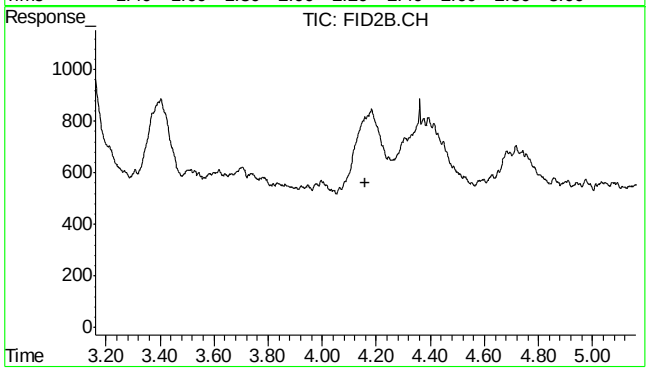
#2 1,2,4-Trichlorobenzene

R.T.: 14.372 min
Delta R.T.: 0.007 min
Response: 2667492
Conc: 85.13 %



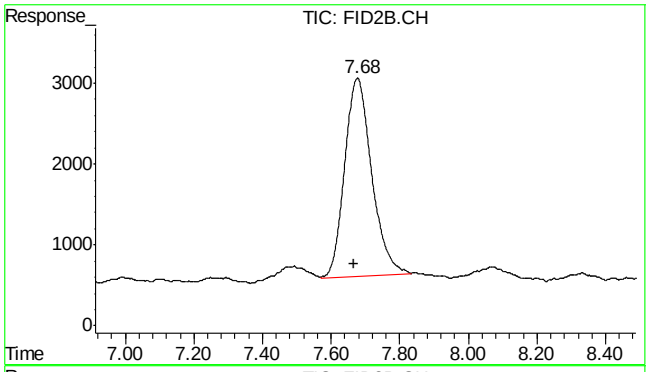
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T. : 2.255 min
Response: 0
Conc: N.D.



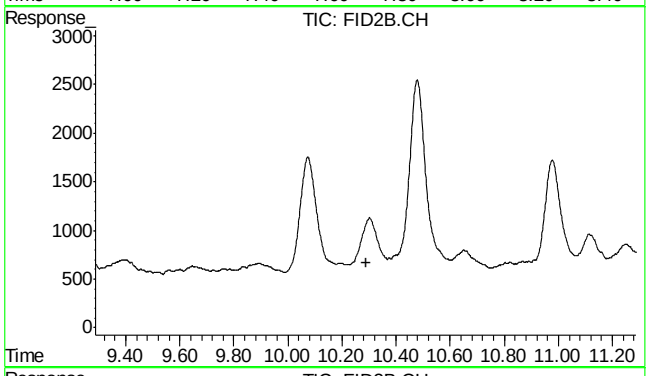
#5 Benzene

R.T.: 0.000 min
Exp R.T. : 4.161 min
Response: 0
Conc: N.D.



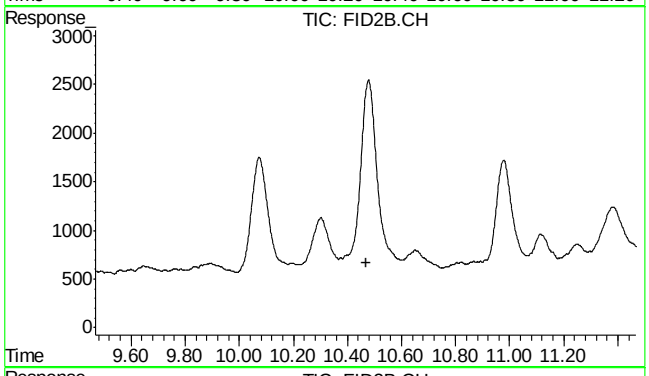
#6 Toluene

R.T.: 7.677 min
Delta R.T.: 0.011 min
Response: 134125
Conc: 0.34 ug/L



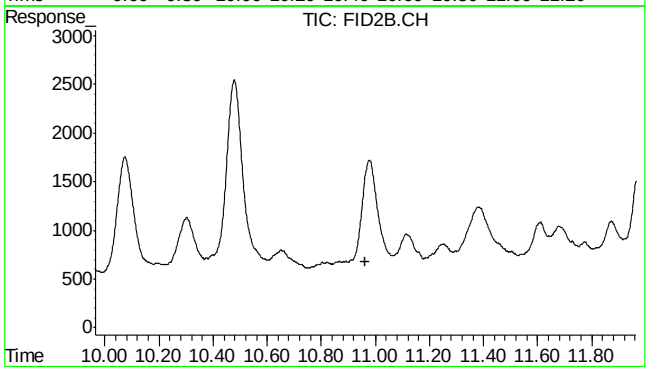
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.288 min
Response: 0
Conc: N.D.



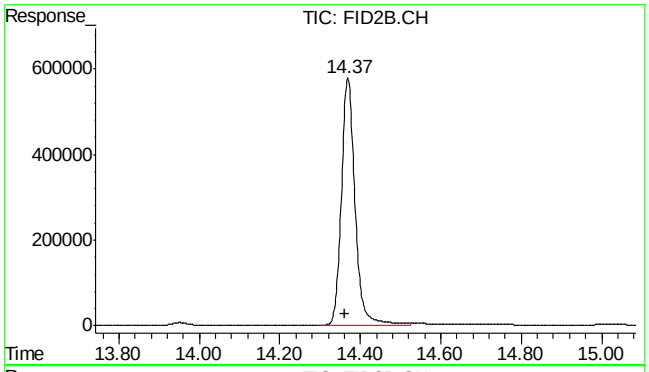
#8 m,p-Xylene

R.T.: 0.000 min
Exp R.T. : 10.468 min
Response: 0
Conc: N.D.



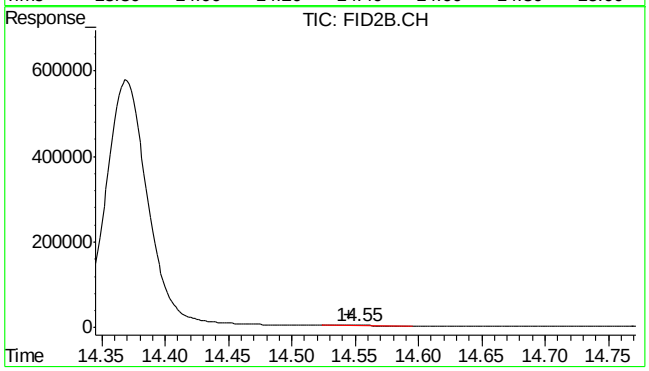
#9 o-Xylene

R.T.: 0.000 min
Exp R.T. : 10.963 min
Response: 0
Conc: N.D.



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

R.T.: 14.369 min
Delta R.T.: 0.006 min
Response: 13776254
Conc: 84.76 % m



#11 Naphthalene

R.T.: 14.552 min
Delta R.T.: 0.007 min
Response: 24733
Conc: 0.13 ug/L m

Mountain States ACCUTEST LABORATORIES

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: D42316
Account: XTOKRWR XTO Energy
Project: XTO Love Ranch 8

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7201-MB	FD21006.D	1	01/09/13	AV	01/09/13	OP7201	GFD1058

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

D42316-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	6.7	4.0	mg/kg	

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

Blank Spike Summary

Job Number: D42316
Account: XTOKRWR XTO Energy
Project: XTO Love Ranch 8

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7201-BS	FD21008.D	1	01/09/13	AV	01/09/13	OP7201	GFD1058

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

D42316-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	597	90	48-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	83%	35-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D42316
Account: XTOKRWR XTO Energy
Project: XTO Love Ranch 8

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP7201-MS	FD21068.D	10	01/10/13	AV	01/09/13	OP7201	GFD1060
OP7201-MSD	FD21070.D	10	01/10/13	AV	01/09/13	OP7201	GFD1060
D42316-1	FD21072.D	10	01/10/13	AV	01/09/13	OP7201	GFD1060

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

D42316-1

CAS No.	Compound	D42316-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	5850		1050	5460	-37* [a]	6050	19* [a]	10	20-168/30

CAS No.	Surrogate Recoveries	MS	MSD	D42316-1	Limits
84-15-1	o-Terphenyl	58%	72%	69%	35-130%

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

12.3.1 12

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC Semi-volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson
01/11/13 09:35

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2013\JAN\FD011013.SEC\FD21072.D Vial: 72
Acq On : 1-10-2013 09:05:02 PM Operator: ashleyv
Sample : D42316-1, 10x Inst : FID5
Misc : OP7201,GFD1060,30.06,,,1,10 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jan 11 08:08:21 2013 Quant Results File: DRO-GFD983R.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD983R.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Tue Jan 08 09:15:06 2013
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	8.96	7064675	138.172 mg/L m
	Target Compounds			
2) H	TPH-DRO (c10-c28)	6.93	411428431	11132.163 mg/L

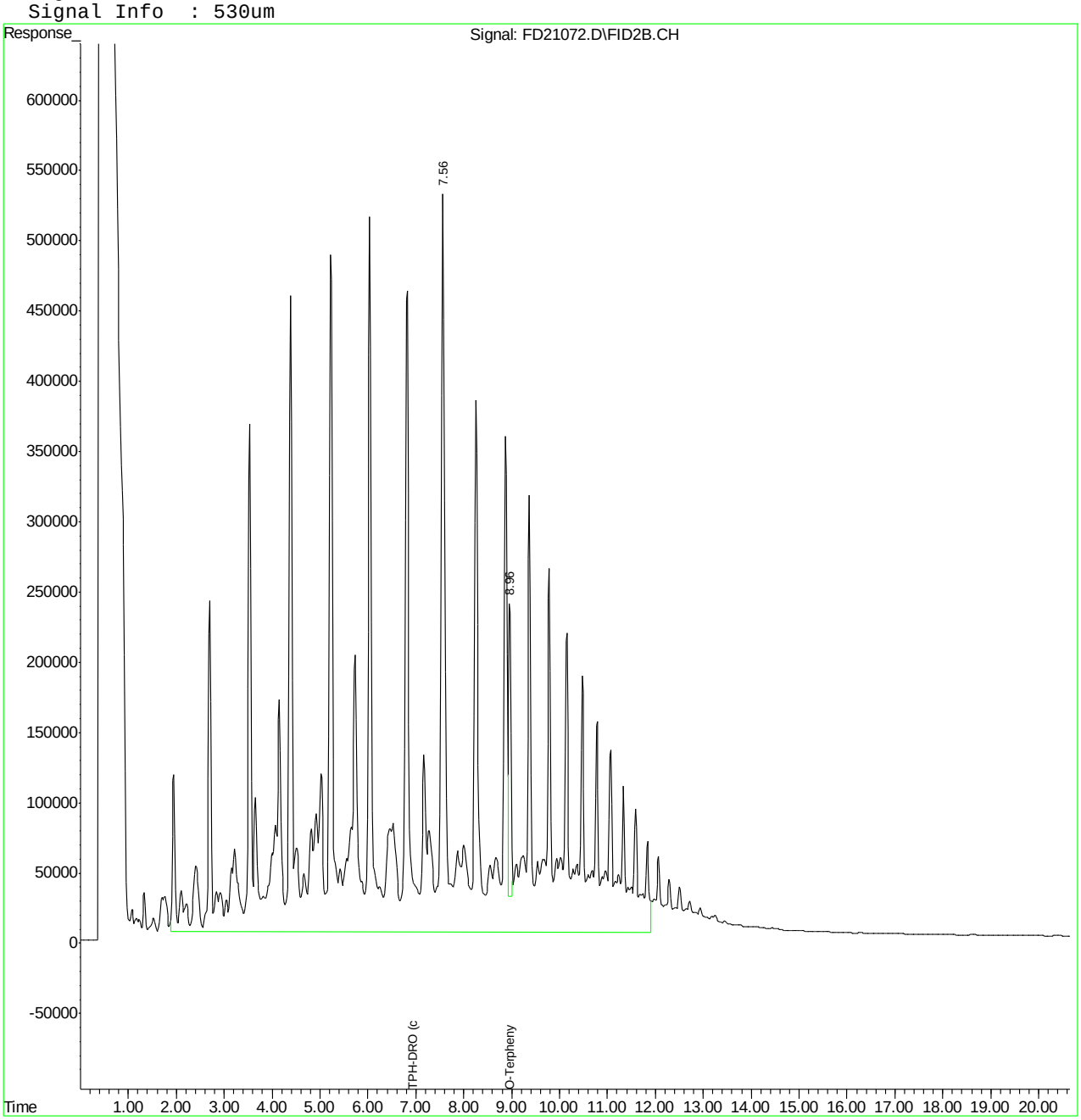
(f)=RT Delta > 1/2 Window (m)=manual int.
FD21072.D DRO-GFD983R.M Fri Jan 11 08:49:40 2013 GC Page 1

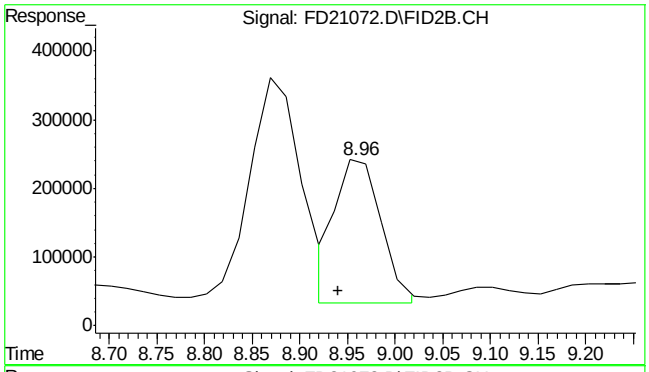
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2013\JAN\FD011013.SEC\FD21072.D Vial: 72
Acq On : 1-10-2013 09:05:02 PM Operator: ashleyv
Sample : D42316-1, 10x Inst : FID5
Misc : OP7201,GFD1060,30.06,,,1,10 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jan 11 8:37 2013 Quant Results File: DRO-GFD983R.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD983R.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Tue Jan 08 09:15:06 2013
Response via : Multiple Level Calibration
DataAcq Meth : DRODUAL.M

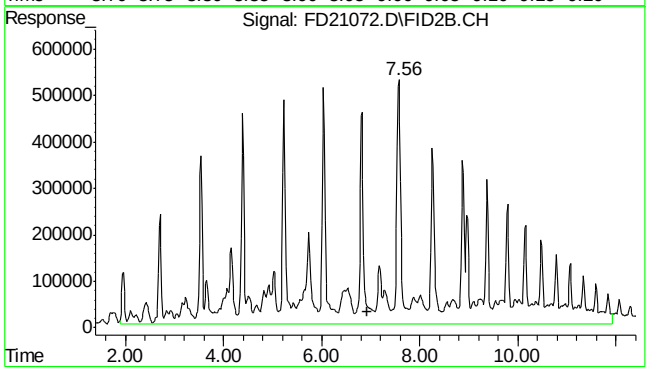
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





#1 O-Terphenyl

R.T.: 8.959 min
Delta R.T.: 0.019 min
Response: 7064675
Conc: 138.17 mg/L m



#2 TPH-DRO (c10-c28)

R.T.: 6.935 min
Delta R.T.: 0.000 min
Response: 411428431
Conc: 11132.16 mg/L m

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2013\JAN\FD010913.SEC\FD21006.D Vial: 53
Acq On : 1-9-2013 05:11:42 PM Operator: ashleyv
Sample : OP7201-MB Inst : FID5
Misc : OP7201,GFD1058,30.00,,,1,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jan 10 11:11:54 2013 Quant Results File: DRO-GFD983R.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD983R.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Tue Jan 08 09:15:06 2013
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	8.98	85813219	1678.342	mg/L
	Target Compounds				
2) H	TPH-DRO (c10-c28)	6.93	1255784	33.978	mg/L

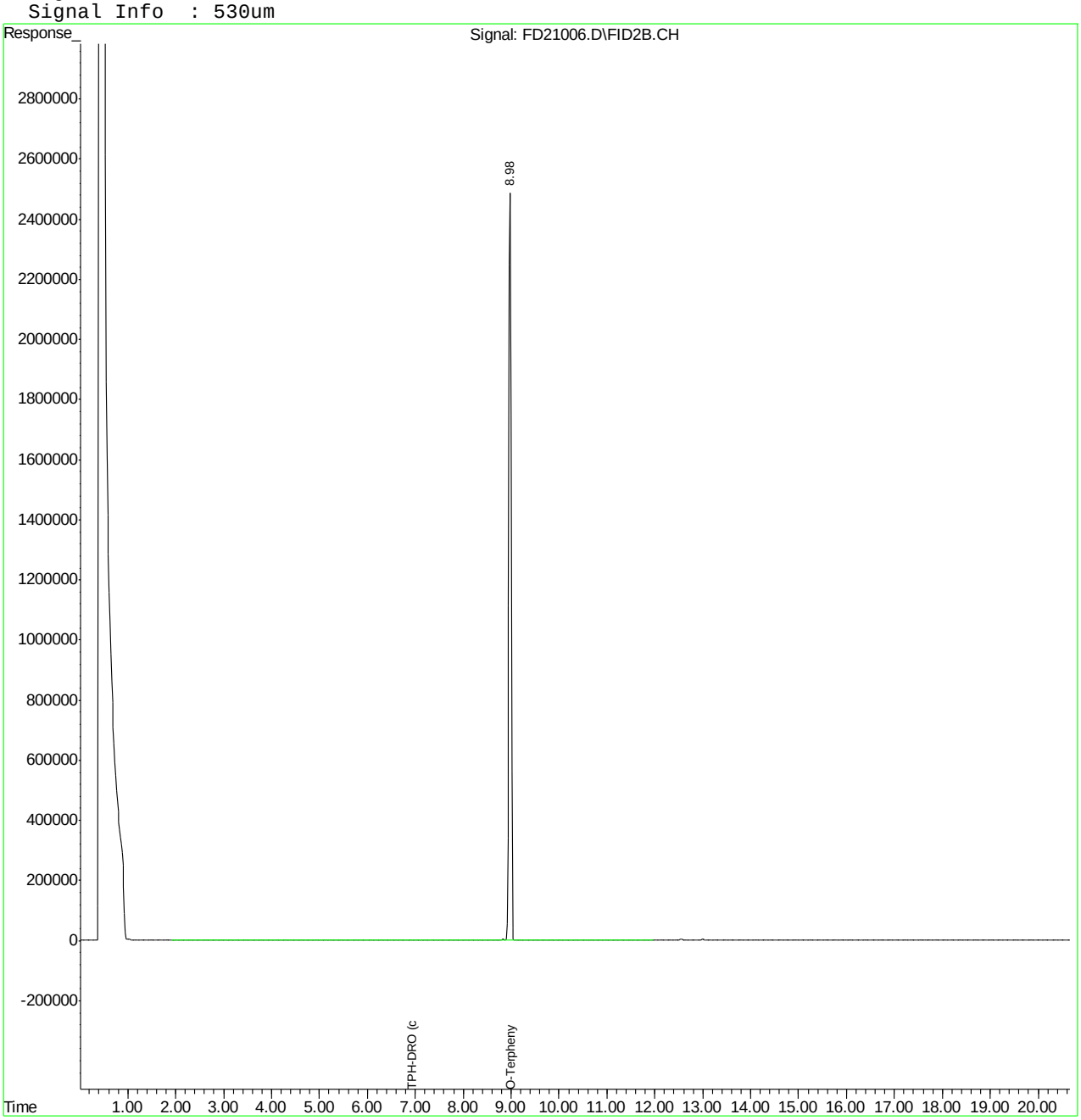
(f)=RT Delta > 1/2 Window (m)=manual int.
FD21006.D DRO-GFD983R.M Thu Jan 10 11:19:30 2013 GC Page 1

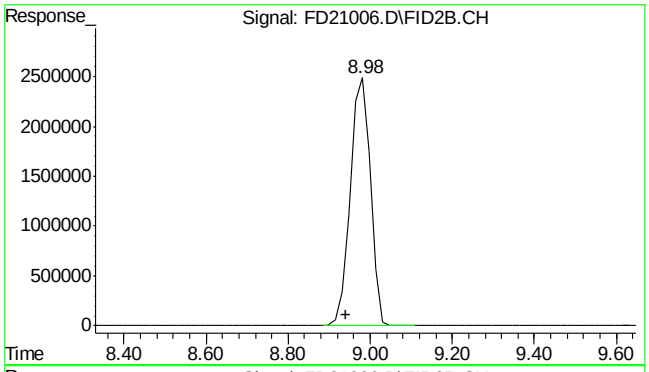
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2013\JAN\FD010913.SEC\FD21006.D Vial: 53
Acq On : 1-9-2013 05:11:42 PM Operator: ashleyv
Sample : OP7201-MB Inst : FID5
Misc : OP7201,GFD1058,30.00,,,1,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jan 10 11:11 2013 Quant Results File: DRO-GFD983R.RES

Quant Method : C:\MSDCHEM\2...\DRO-GFD983R.M (Chemstation Integrator)
Title : 8015B TEH
Last Update : Tue Jan 08 09:15:06 2013
Response via : Multiple Level Calibration
DataAcq Meth : DRODUAL.M

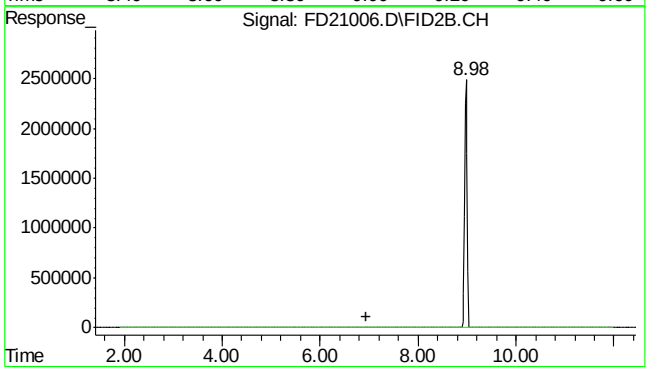
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





#1 O-Terphenyl

R.T.: 8.983 min
Delta R.T.: 0.043 min
Response: 85813219
Conc: 1678.34 mg/L



#2 TPH-DRO (c10-c28)

R.T.: 6.935 min
Delta R.T.: 0.000 min
Response: 1255784
Conc: 33.98 mg/L m

Mountain States ACCUTEST LABORATORIES

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: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9199
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/07/13

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	0.11	<1.0
Beryllium	1.0	.13	.15		
Boron	5.0	.1	.06		
Cadmium	1.0	.06	.036	0.030	<1.0
Calcium	40	.54	9		
Chromium	1.0	.03	.03	0.010	<1.0
Cobalt	0.50	.04	.07		
Copper	1.0	.12	.15	0.0	<1.0
Iron	7.0	.12	.87		
Lead	5.0	.19	.24	-0.30	<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	0.56	<5.0
Silicon	5.0	.29	.37		
Silver	3.0	.04	.06	0.020	<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	0.080	<3.0

Associated samples MP9199: D42316-1

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9199
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9199
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/07/13

Metal	D42292-1 Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	105	291	206	90.1	75-125
Beryllium					
Boron					
Cadmium	0.071	45.3	51.6	87.7	75-125
Calcium					
Chromium	3.4	50.9	51.6	92.1	75-125
Cobalt					
Copper	3.1	49.0	51.6	89.0	75-125
Iron					
Lead	3.2	96.0	103	89.9	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	5.1	49.9	51.6	86.8	75-125
Phosphorus					
Potassium					
Selenium	0.0	88.0	103	85.3	75-125
Silicon					
Silver	0.0	20.1	20.6	97.4	75-125
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	10.3	54.1	51.6	84.9	75-125

Associated samples MP9199: D42316-1

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9199
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9199
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/07/13

Metal	D42292-1 Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	105	291	198	93.8	0.0	20
Beryllium						
Boron						
Cadmium	0.071	43.3	49.6	87.2	4.5	20
Calcium						
Chromium	3.4	48.9	49.6	91.8	4.0	20
Cobalt						
Copper	3.1	47.9	49.6	90.3	2.3	20
Iron						
Lead	3.2	92.2	99.2	89.7	4.0	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	5.1	48.1	49.6	86.7	3.7	20
Phosphorus						
Potassium						
Selenium	0.0	84.1	99.2	84.8	4.5	20
Silicon						
Silver	0.0	19.0	19.8	95.8	5.6	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	10.3	53.0	49.6	86.1	2.1	20

Associated samples MP9199: D42316-1

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9199
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9199
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 01/07/13

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	182	200	91.0	80-120
Beryllium				
Boron				
Cadmium	45.4	50	90.8	80-120
Calcium				
Chromium	48.0	50	96.0	80-120
Cobalt				
Copper	43.8	50	87.6	80-120
Iron				
Lead	93.7	100	93.7	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	46.1	50	92.2	80-120
Phosphorus				
Potassium				
Selenium	91.2	100	91.2	80-120
Silicon				
Silver	19.7	20	98.5	80-120
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	45.2	50	90.4	80-120

Associated samples MP9199: D42316-1

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9199
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9199
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/l

Prep Date: 01/07/13

Metal	D42292-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	1040	1150	11.1*(a)	0-10
Beryllium				
Boron				
Cadmium	0.700	0.00	100.0(b)	0-10
Calcium				
Chromium	33.4	34.0	1.8	0-10
Cobalt				
Copper	30.9	27.5	11.0 (b)	0-10
Iron				
Lead	31.9	10.5	67.1 (b)	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	50.4	53.0	5.2	0-10
Phosphorus				
Potassium				
Selenium	0.00	0.00	NC	0-10
Silicon				
Silver	0.00	2.00	NC	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	102	118	15.3*(a)	0-10

Associated samples MP9199: D42316-1

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9199
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: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9200
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 01/07/13

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	.22	.31		
Antimony	0.20	.0018	.0075		
Arsenic	0.10	.006	.06	0.011	<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 MP9200: D42316-1

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9200
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 01/07/13

Metal	D42292-1 Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	1.2	109	103	104.5	75-125
Barium					
Beryllium					
Boron					
Cadmium	anr				
Calcium					
Chromium	anr				
Cobalt					
Copper	anr				
Iron					
Lead	anr				
Magnesium					
Manganese					
Molybdenum	anr				
Nickel	anr				
Phosphorus	anr				
Potassium	anr				
Selenium	anr				
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	anr				

Associated samples MP9200: D42316-1

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9200 Methods: SW846 6020A
Matrix Type: SOLID Units: mg/kg

Prep Date: 01/07/13

Metal	D42292-1 Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	1.2	100	99.2	99.6	8.6	20
Barium						
Beryllium						
Boron						
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt						
Copper	anr					
Iron						
Lead	anr					
Magnesium						
Manganese						
Molybdenum	anr					
Nickel	anr					
Phosphorus	anr					
Potassium	anr					
Selenium	anr					
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	anr					

Associated samples MP9200: D42316-1

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9200
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 01/07/13

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	103	100	103.0	80-120
Barium				
Beryllium				
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper	anr			
Iron				
Lead	anr			
Magnesium				
Manganese				
Molybdenum	anr			
Nickel	anr			
Phosphorus	anr			
Potassium	anr			
Selenium	anr			
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP9200: D42316-1

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9200
Matrix Type: SOLID

Methods: SW846 6020A
Units: ug/l

Prep Date: 01/07/13

Metal	D42292-1 Original	SDL 5:25	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	11.5	10.7	6.8	0-10
Barium				
Beryllium				
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper	anr			
Iron				
Lead	anr			
Magnesium				
Manganese				
Molybdenum	anr			
Nickel	anr			
Phosphorus	anr			
Potassium	anr			
Selenium	anr			
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP9200: D42316-1

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9202 Methods: SW846 7471B
Matrix Type: SOLID Units: mg/kg

Prep Date: 01/08/13

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.10	.0011	.0009	-0.00031	<0.10

Associated samples MP9202: D42316-1

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9202
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 01/08/13

Metal	D42292-1 Original	MS	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.0062	0.36	0.335	105.6	75-125

Associated samples MP9202: D42316-1

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9202 Methods: SW846 7471B
Matrix Type: SOLID Units: mg/kg

Prep Date: 01/08/13

Metal	D42292-1 Original	MSD	Spikelot HGWSR1	% Rec	MSD RPD	QC Limit
Mercury	0.0062	0.33	0.314	103.0	8.7	20

Associated samples MP9202: D42316-1

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9202
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 01/08/13

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

Associated samples MP9202: D42316-1

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9206
Matrix Type: AQUEOUS

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

Prep Date: 01/08/13

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	10.5	<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	11.5	<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	80.5	<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 MP9206: D42316-1A

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9206
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: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9206
Matrix Type: AQUEOUS

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

Prep Date: 01/08/13

Metal	D42292-1A Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	243000	362000	125000	95.2	75-125
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	57300	184000	125000	101.4	75-125
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	376000	485000	125000	87.2	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP9206: D42316-1A

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9206
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: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9206
Matrix Type: AQUEOUS

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

Prep Date: 01/08/13

Metal	D42292-1A Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium	243000	366000	125000	98.4	1.1	20
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Lithium						
Magnesium	57300	184000	125000	101.4	0.0	20
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium	376000	486000	125000	88.0	0.2	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP9206: D42316-1A

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9206
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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9206
Matrix Type: AQUEOUS

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

Prep Date: 01/08/13

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	133000	125000	106.4	80-120
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	128000	125000	102.4	80-120
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	127000	125000	101.6	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP9206: D42316-1A

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9206
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: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9206
Matrix Type: AQUEOUS

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

Prep Date: 01/08/13

Metal	D42292-1A Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	48500	49200	1.3	0-10
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	11500	11500	0.3	0-10
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	75300	75900	0.9	0-10
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP9206: D42316-1A

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

QC Batch ID: MP9206
Matrix Type: AQUEOUS

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

Prep Date:

Metal

(anr) Analyte not requested

Mountain States ACCUTEST LABORATORIES

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: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP9044/GN18328	1.0	0.0	mg/kg	176.0	160	90.7	80-120%
Specific Conductivity	GP9061/GN18362			umhos/cm	9992	9840	98.5	90-110%
pH	GN18331			su	8.00	7.99	99.9	99.3-100.7%

Associated Samples:
Batch GP9044: D42316-1
Batch GP9061: D42316-1
Batch GN18331: D42316-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP9044/GN18328	D42316-1	mg/kg	0.0	0.0	0.0	0-20%
Redox Potential Vs H2	GN18332	D42316-1	mv	36.3	37.5	3.2	0-20%

Associated Samples:
Batch GP9044: D42316-1
Batch GN18332: D42316-1
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP9044/GN18328	D42316-1	mg/kg	0.0	40.0	38.7	96.8	75-125%

Associated Samples:
Batch GP9044: D42316-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D42316
Account: XTOKRWR - XTO Energy
Project: XTO Love Ranch 8

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chromium, Hexavalent	GP9044/GN18328	D42316-1	mg/kg	0.0	40.0	39.2	1.2	20%

Associated Samples:
Batch GP9044: D42316-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits