Mountain States ACCUTEST LABORATORIES

11/26/12

Technical Report for

XTO Energy

PCU 297-10B

1105-20A

Accutest Job Number: D41024

Sampling Date: 11/14/12

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: **37**

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

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Sample Summary

XTO Energy

Job No: D41024

PCU 297-10B
Project No: 1105-20A

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D41024-1	11/14/12	10:50	DS	11/16/12	SO	Soil	RAMP EXCAVTD MAT'L (11/4)

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

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	XTO Energy	**Job No**	D41024
Site:	PCU 297-10B	**Report Date**	11/26/2012 8:47:35 AM

On 11/16/2012, 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 D41024 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 GC By Method SW846 8015B

Matrix SO **Batch ID:** GGB1010

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D41015-1MS, D41015-1MSD were used as the QC samples indicated.

Extractables by GC By Method SW846-8015B

Matrix SO **Batch ID:** OP6979

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D41044-9MS, D41044-9MSD were used as the QC samples indicated.

Wet Chemistry By Method SM19 2540B M

Matrix SO **Batch ID:** GN17740

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

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: D41024
Account: XTO Energy
Project: PCU 297-10B
Collected: 11/14/12

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D41024-1	**RAMP EXCAVTD MAT'L (11/4)**					
TPH-DRO (C10-C28)		1700	15	9.7	mg/kg	SW846-8015B

Mountain States ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Client Sample ID: RAMP EXCAVTD MAT'L (11/4)
Lab Sample ID: D41024-1
Matrix: SO - Soil
Method: SW846 8015B
Project: PCU 297-10B

Date Sampled: 11/14/12
Date Received: 11/16/12
Percent Solids: 88.9

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB18517.D	1	11/17/12	SK	n/a	n/a	GGB1010
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	12	6.2	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	95%		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: RAMP EXCAVTD MAT'L (11/4)
Lab Sample ID: D41024-1
Matrix: SO - Soil
Method: SW846-8015B SW846 3546
Project: PCU 297-10B

Date Sampled: 11/14/12
Date Received: 11/16/12
Percent Solids: 88.9

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD19711.D	1	11/19/12	AV	11/19/12	OP6979	GFD990
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	1700	15	9.7	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	92%		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

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

ACCUTEST LABORATORIES

CHAIN OF CUSTODY

PAGE 1 OF 1

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

FED-EX Tracking #:
Bottle Order Control #:
Accutest Quote #:
Accutest Job #: D41024

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 POW 297-10B
Street:
City: State:
Project #: 1105-20A
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)

TPH - GRO/DRO

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	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Bisulfate	LAB USE ONLY
	RAMP EXCAVTD MAT'L (11/14)		11-14-12	10:50	DS	SO	2					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 Albin	11/15/12 17:00	Rifle Service Center	CO →		11-16-12 1300
2						
3						
4						
5						

Custody Seal #: Intact / Not Intact
Preserved where applicable
On Ice
Cooler Temp: 4.0

D41024: Chain of Custody
Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D41024 **Client:** KRW CONSULTING **Immediate Client Services Action Required:** No

Date / Time Received: 11/16/2012 1:00:00 PM **No. Coolers:** 1 **Client Service Action Required at Login:** No

Project: XTO PCU 297-10B **Airbill #'s:** HDCO

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
4036 Youngfield Street
F: (303) 425-6854
Wheat Ridge, CO
www/accutest.com

D41024: Chain of Custody
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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: D41024
Account: XTOKRWR XTO Energy
Project: PCU 297-10B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1010-MB	GB18499.D	1	11/16/12	SK	n/a	n/a	GGB1010

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

D41024-1

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	92%	60-140%

Blank Spike Summary

Job Number: D41024
Account: XTOKRWR XTO Energy
Project: PCU 297-10B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1010-BS	GB18500.D	1	11/16/12	SK	n/a	n/a	GGB1010

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

D41024-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	124	113	70-130

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

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D41024
Account: XTOKRWR XTO Energy
Project: PCU 297-10B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D41015-1MS	GB18502.D	1	11/16/12	SK	n/a	n/a	GGB1010
D41015-1MSD	GB18503.D	1	11/16/12	SK	n/a	n/a	GGB1010
D41015-1	GB18501.D	1	11/16/12	SK	n/a	n/a	GGB1010

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

D41024-1

CAS No.	Compound	D41015-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		128	146	114	146	114	0	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D41015-1	Limits
120-82-1	1,2,4-Trichlorobenzene	109%	111%	93%	60-140%

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC Volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson 11/20/12 08:59

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\111612\GB18517.D\FID1A.CH Vial: 21
Signal #2 : Y:\1\DATA\111612\GB18517.D\FID2B.CH
Acq On : 17 Nov 2012 4:28 am Operator: StephK
Sample : D41024-1, 50X Inst : GC/MS Ins
Misc : GC3242,GGB1010,5.026,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 17 09:40:42 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Sat Nov 17 09:40:14 2012
Response via : Initial Calibration
DataAcq Meth : TVB4.M

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

	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
2) S	1,2,4-Trichlorobenzene	14.37	2969629	94.773	%	m
10) S	1,2,4-Trichlorobenzene (P)	14.37	21576181	132.754	%	
	Target Compounds					
1) H	TVH-Gasoline	7.23	5883229	<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	87616	0.221	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	14.57	10048121	50.926	ug/L	

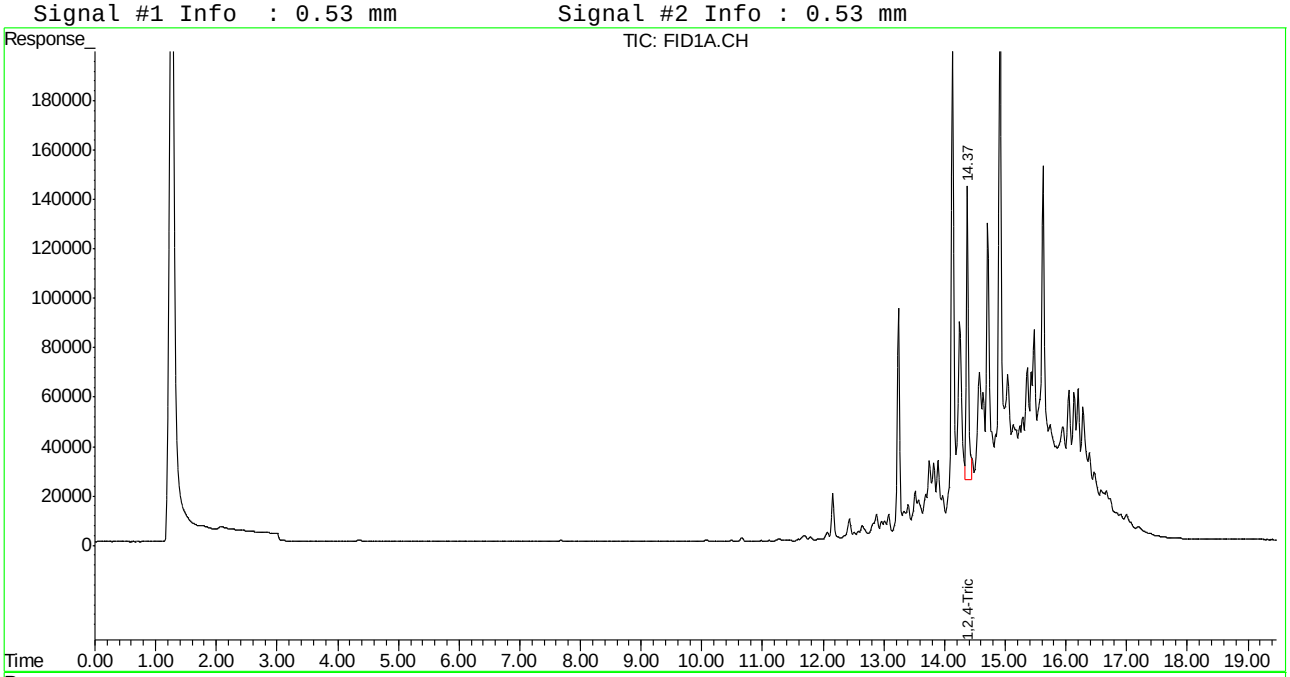
(f)=RT Delta > 1/2 Window (m)=manual int.

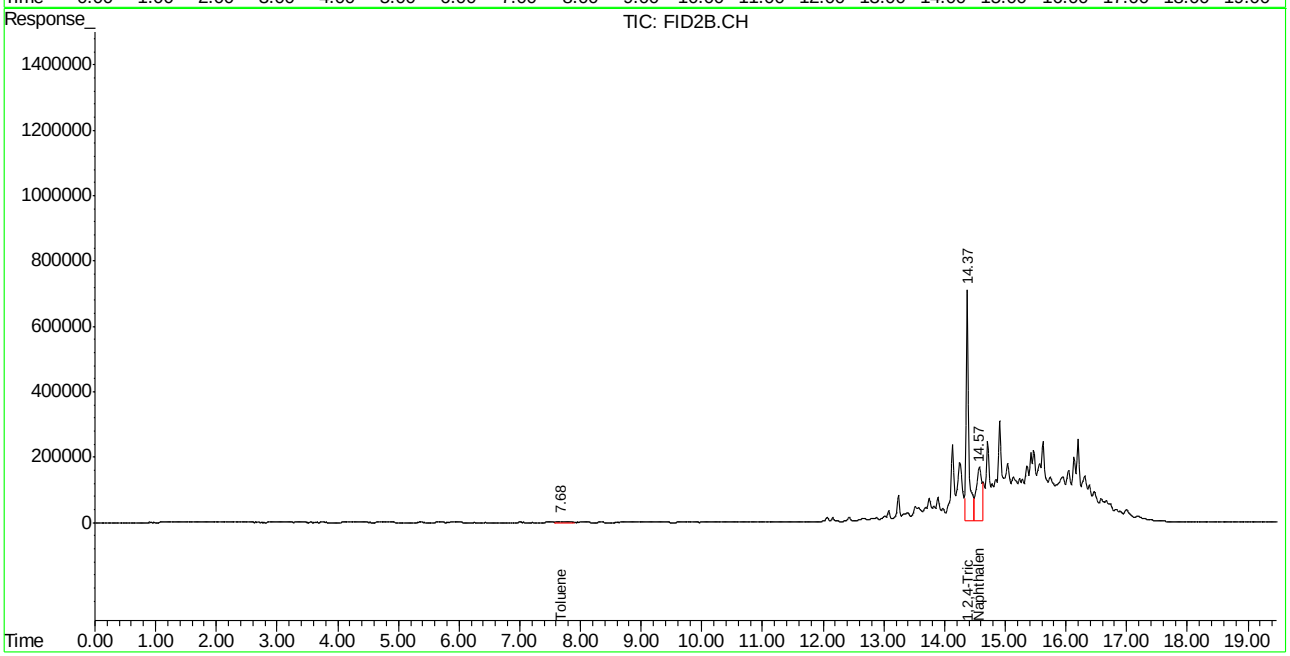
Quantitation Report (QT Reviewed)

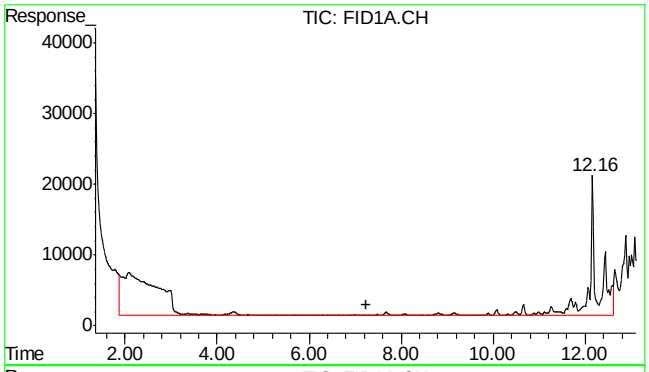
Signal #1 : Y:\1\DATA\111612\GB18517.D\FID1A.CH Vial: 21
Signal #2 : Y:\1\DATA\111612\GB18517.D\FID2B.CH
Acq On : 17 Nov 2012 4:28 am Operator: StephK
Sample : D41024-1, 50X Inst : GC/MS Ins
Misc : GC3242,GGB1010,5.026,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 17 9:45 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Sat Nov 17 09:40:14 2012
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

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

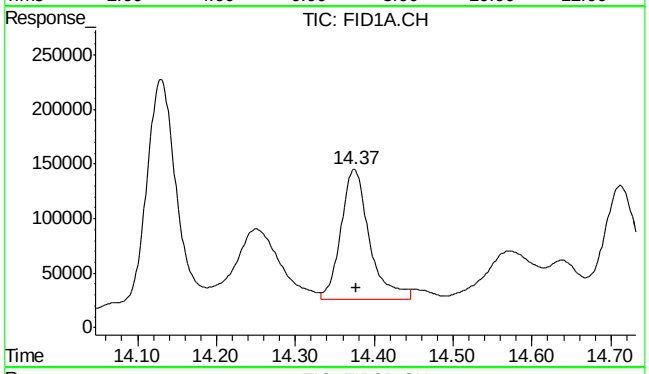






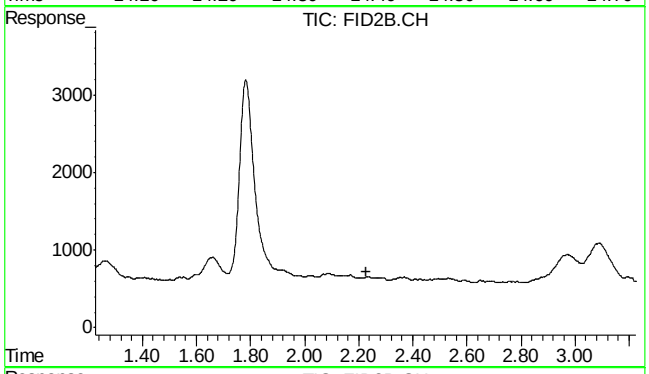
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 5883229
Conc: N.D.



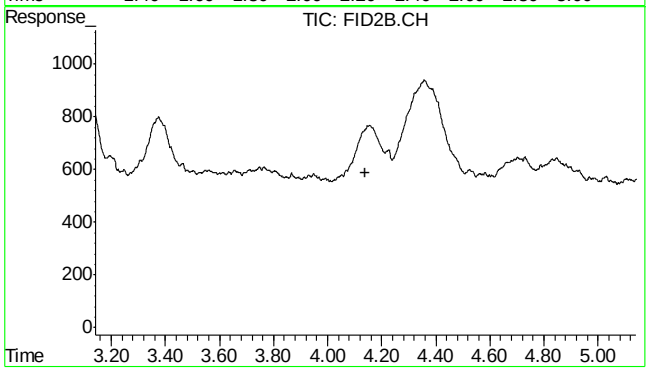
#2 1,2,4-Trichlorobenzene

R.T.: 14.374 min
Delta R.T.: -0.004 min
Response: 2969629
Conc: 94.77 % m



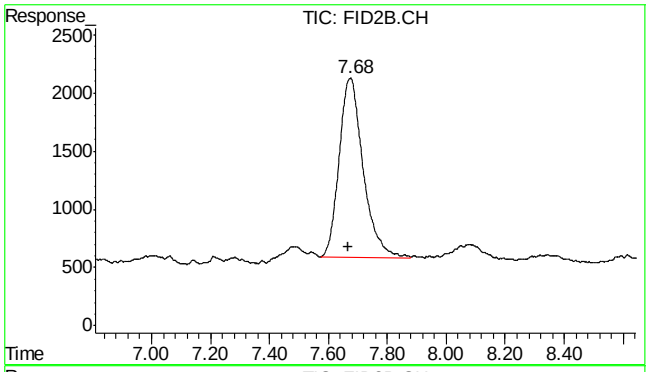
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T. : 2.226 min
Response: 0
Conc: N.D.



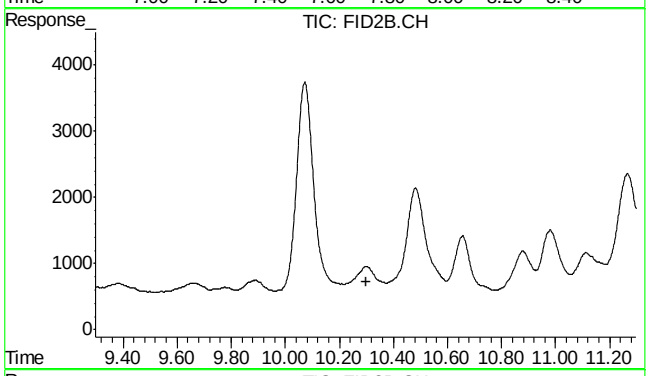
#5 Benzene

R.T.: 0.000 min
Exp R.T. : 4.140 min
Response: 0
Conc: N.D.



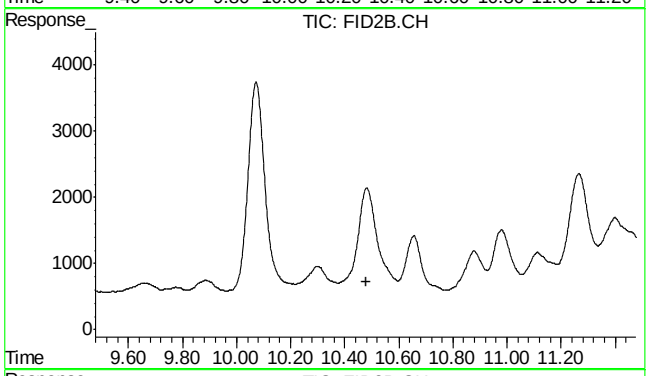
#6 Toluene

R.T.: 7.675 min
Delta R.T.: 0.006 min
Response: 87616
Conc: 0.22 ug/L



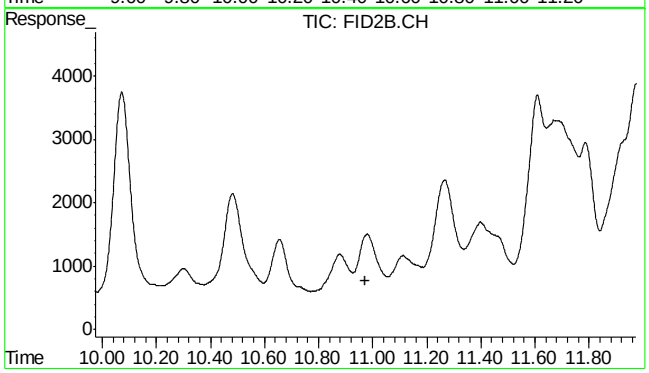
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.298 min
Response: 0
Conc: N.D.



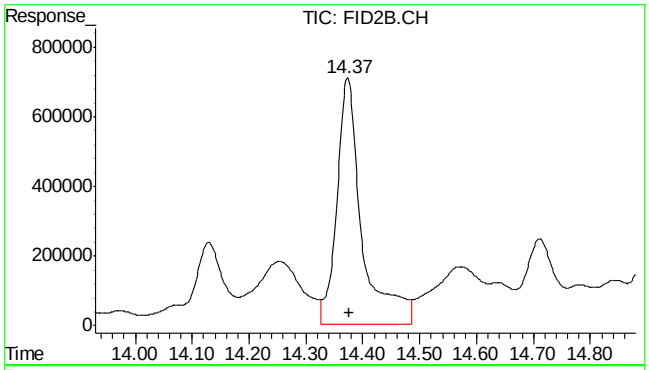
#8 m,p-Xylene

R.T.: 0.000 min
Exp R.T. : 10.478 min
Response: 0
Conc: N.D.



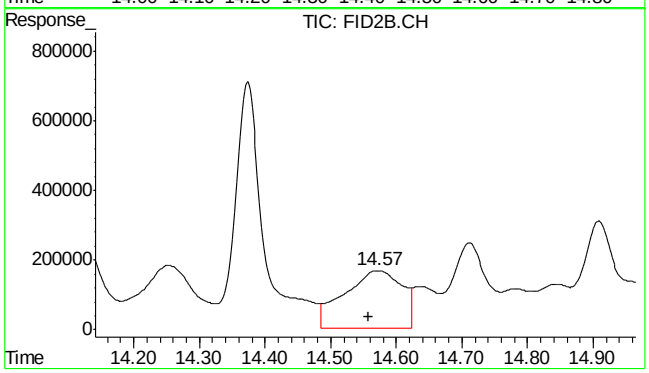
#9 o-Xylene

R.T.: 0.000 min
Exp R.T. : 10.974 min
Response: 0
Conc: N.D.



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

R.T.: 14.373 min
Delta R.T.: -0.003 min
Response: 21576181
Conc: 132.75 %



#11 Naphthalene

R.T.: 14.572 min
Delta R.T.: 0.014 min
Response: 10048121
Conc: 50.93 ug/L

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\111612\GB18499.D\FID1A.CH Vial: 3
Signal #2 : Y:\1\DATA\111612\GB18499.D\FID2B.CH
Acq On : 16 Nov 2012 5:51 pm Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC3242,GGB1010,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 16 18:15:12 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Fri Nov 16 18:14:55 2012
Response via : Initial Calibration
DataAcq Meth : TVB4.M

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

	Compound	R.T.	Response	Conc	Units
	System Monitoring Compounds				
2) S	1,2,4-Trichlorobenzene	14.38	2895056	92.393	%
10) S	1,2,4-Trichlorobenzene (P)	14.38	15453853	95.085	%
	Target Compounds				
1) H	TVH-Gasoline	7.23	4428413	<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	166985	0.421	ug/L
7) T	Ethylbenzene	0.00	0	N.D.	ug/L d
8) T	m,p-Xylene	0.00	0	N.D.	ug/L d
9) T	o-Xylene	0.00	0	N.D.	ug/L d
11) T	Naphthalene	14.56	187354	0.950	ug/L

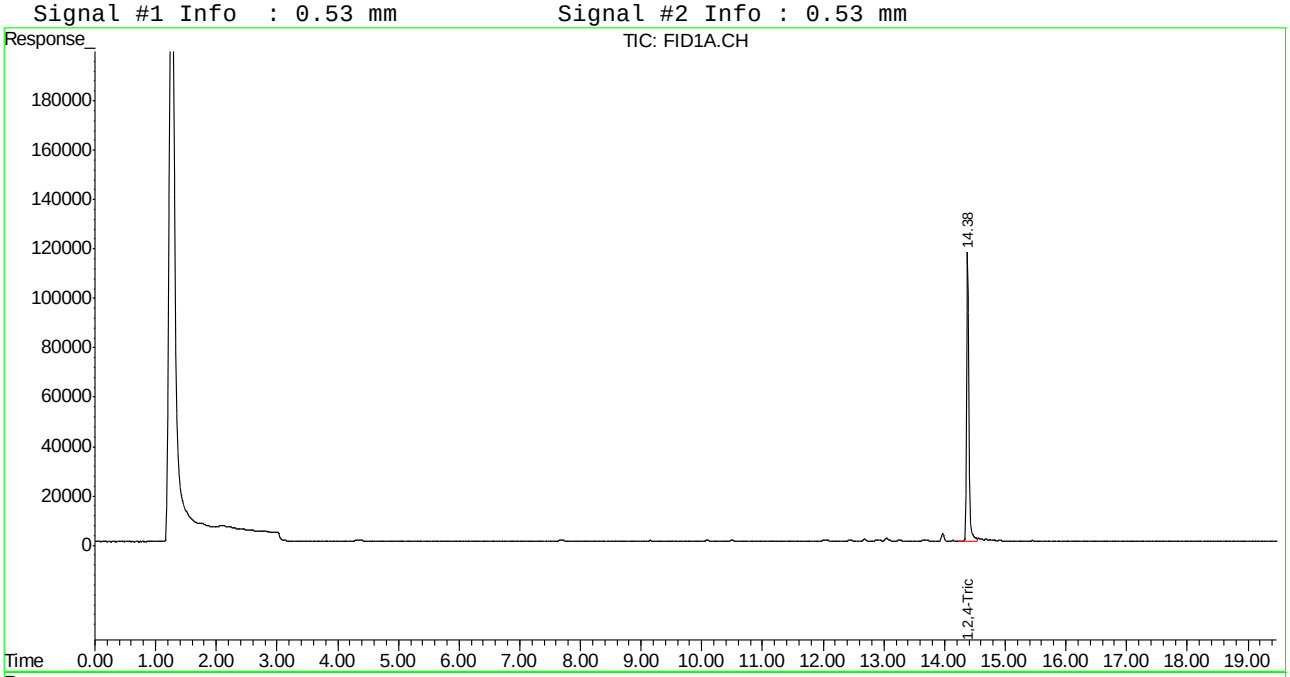
(f)=RT Delta > 1/2 Window (m)=manual int.

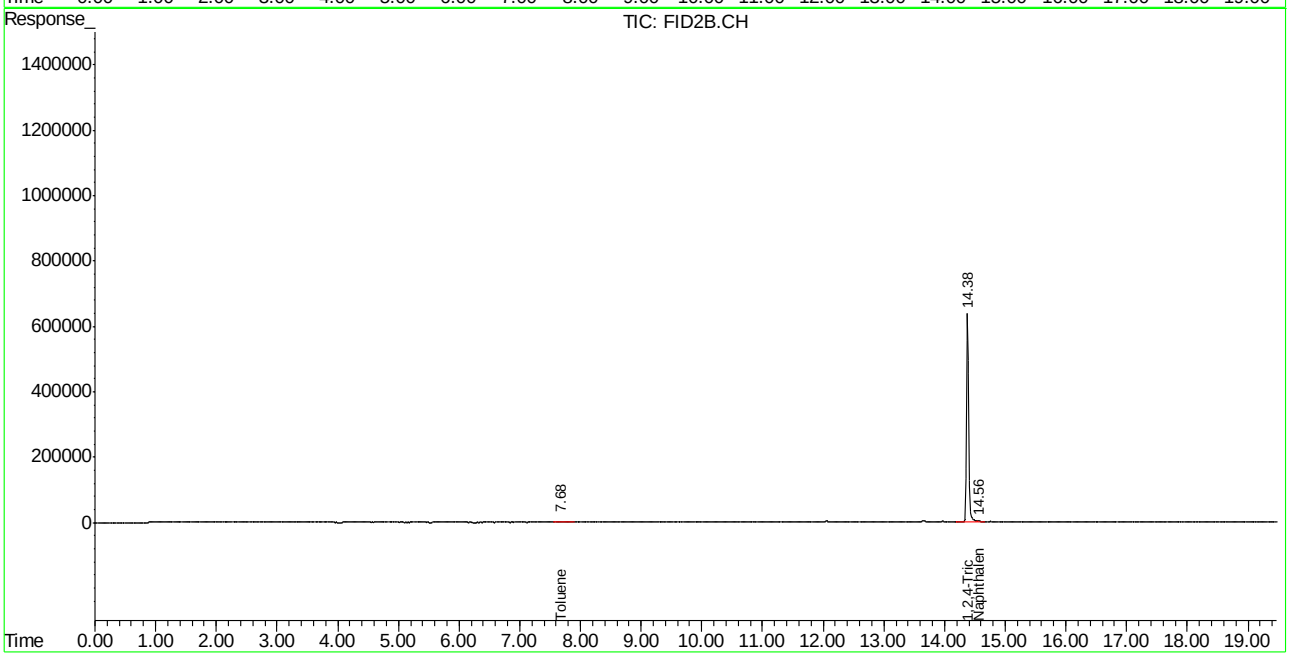
Quantitation Report (QT Reviewed)

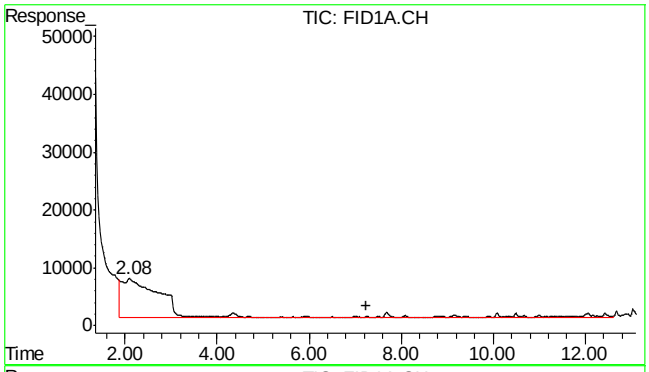
Signal #1 : Y:\1\DATA\111612\GB18499.D\FID1A.CH Vial: 3
Signal #2 : Y:\1\DATA\111612\GB18499.D\FID2B.CH
Acq On : 16 Nov 2012 5:51 pm Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC3242,GGB1010,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Nov 16 18:14 2012 Quant Results File: TB868GB868SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB868GB868SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Fri Nov 16 18:14:55 2012
Response via : Multiple Level Calibration
DataAcq Meth : TVB4.M

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

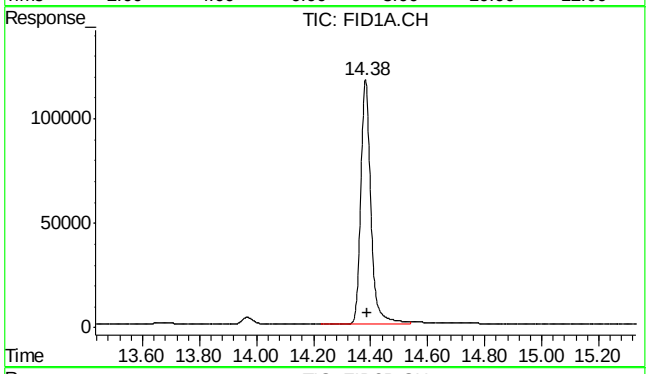






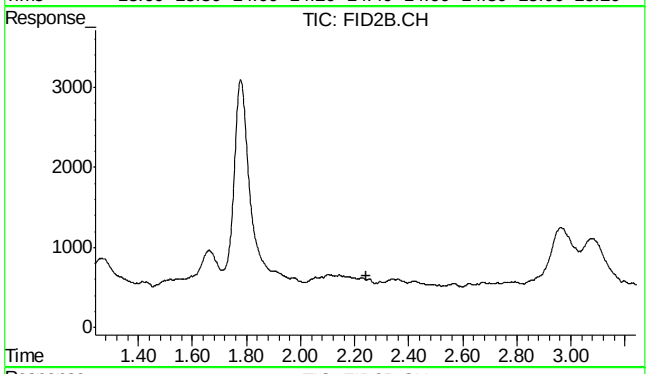
#1 TVH-Gasoline

R.T.: 7.230 min
Delta R.T.: 0.000 min
Response: 4428413
Conc: N.D.



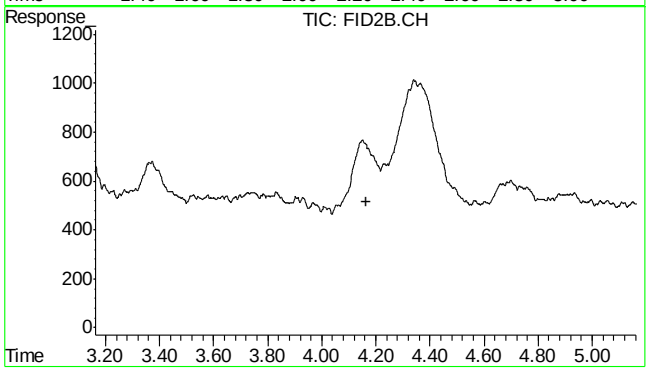
#2 1,2,4-Trichlorobenzene

R.T.: 14.382 min
Delta R.T.: -0.006 min
Response: 2895056
Conc: 92.39 %



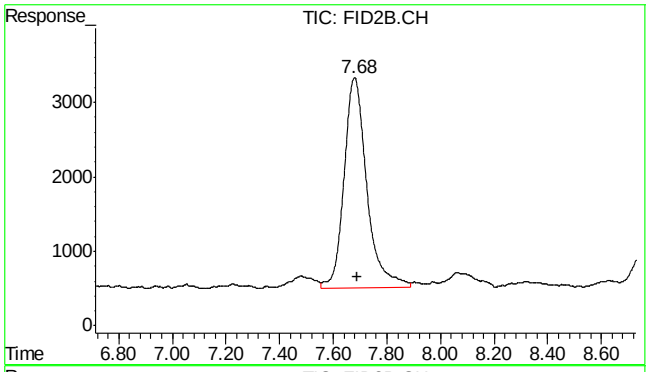
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T. : 2.242 min
Response: 0
Conc: N.D.



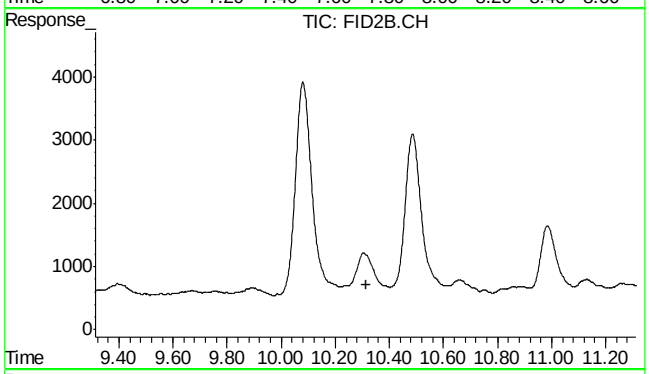
#5 Benzene

R.T.: 0.000 min
Exp R.T. : 4.163 min
Response: 0
Conc: N.D.



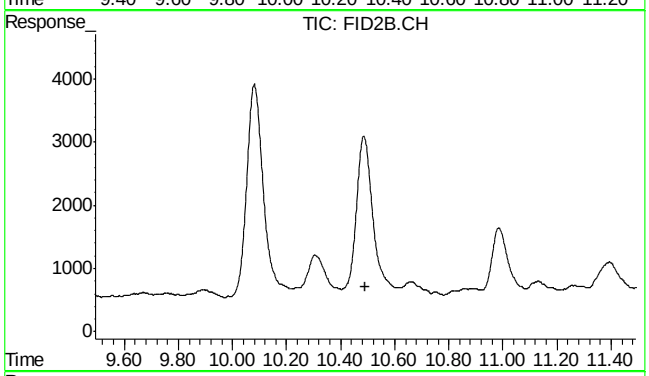
#6 Toluene

R.T.: 7.680 min
Delta R.T.: -0.009 min
Response: 166985
Conc: 0.42 ug/L



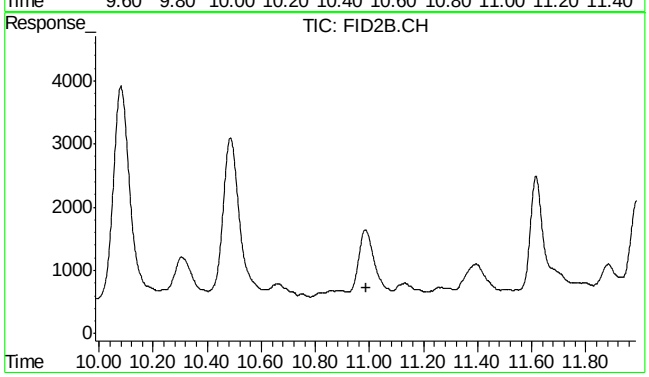
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.313 min
Response: 0
Conc: N.D.



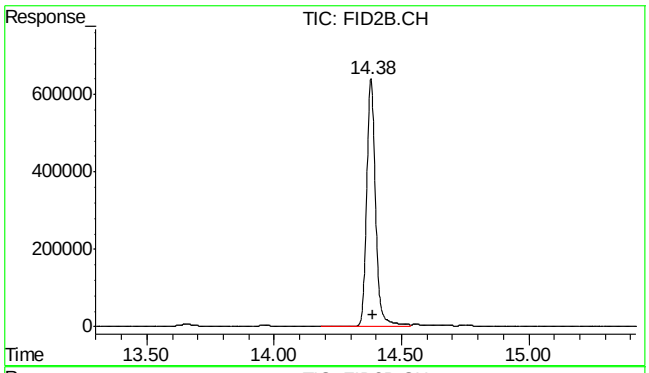
#8 m,p-Xylene

R.T.: 0.000 min
Exp R.T. : 10.492 min
Response: 0
Conc: N.D.



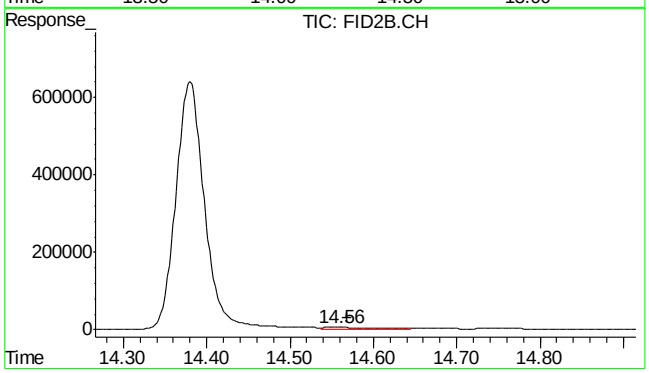
#9 o-Xylene

R.T.: 0.000 min
Exp R.T. : 10.986 min
Response: 0
Conc: N.D.



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

R.T.:	14.380 min
Delta R.T.:	-0.006 min
Response:	15453853
Conc:	95.08 %



#11 Naphthalene

R.T.:	14.558 min
Delta R.T.:	-0.010 min
Response:	187354
Conc:	0.95 ug/L

7.2.1

7

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: D41024
Account: XTOKRWR XTO Energy
Project: PCU 297-10B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6979-MB	FD19679.D	1	11/19/12	AV	11/19/12	OP6979	GFD990

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

D41024-1

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

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	88%	35-130%

Blank Spike Summary

Job Number: D41024
Account: XTOKRWR XTO Energy
Project: PCU 297-10B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6979-BS	FD19681.D	1	11/19/12	AV	11/19/12	OP6979	GFD990

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

D41024-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	689	103	48-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	95%	35-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D41024
Account: XTOKRWR XTO Energy
Project: PCU 297-10B

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP6979-MS	FD19683.D	1	11/19/12	AV	11/19/12	OP6979	GFD990
OP6979-MSD	FD19685.D	1	11/19/12	AV	11/19/12	OP6979	GFD990
D41044-9	FD19687.D	1	11/19/12	AV	11/19/12	OP6979	GFD990

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

D41024-1

CAS No.	Compound	D41044-9 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	80.3		738	764	93	734	89	4	20-168/30

CAS No.	Surrogate Recoveries	MS	MSD	D41044-9	Limits
84-15-1	o-Terphenyl	80%	80%	65%	35-130%

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC Semi-volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Judy Melson 11/21/12 10:07

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD111912\FD19711.D Vial: 19
Acq On : 19 Nov 2012 10:09 pm Operator: ashleyv
Sample : D41024-1 Inst : FID5
Misc : OP6979,GFD990,30.01,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Nov 20 15:14:59 2012 Quant Results File: DRO-GFD982F.RES

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

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

	Compound	R.T.	Response	Conc Units
	System Monitoring Compounds			
1) S	O-Terphenyl	8.94	50629447	915.039 mg/L m
	Target Compounds			
2) H	TPH-DRO (c10-c28)	6.89	859234174	22625.904 mg/L

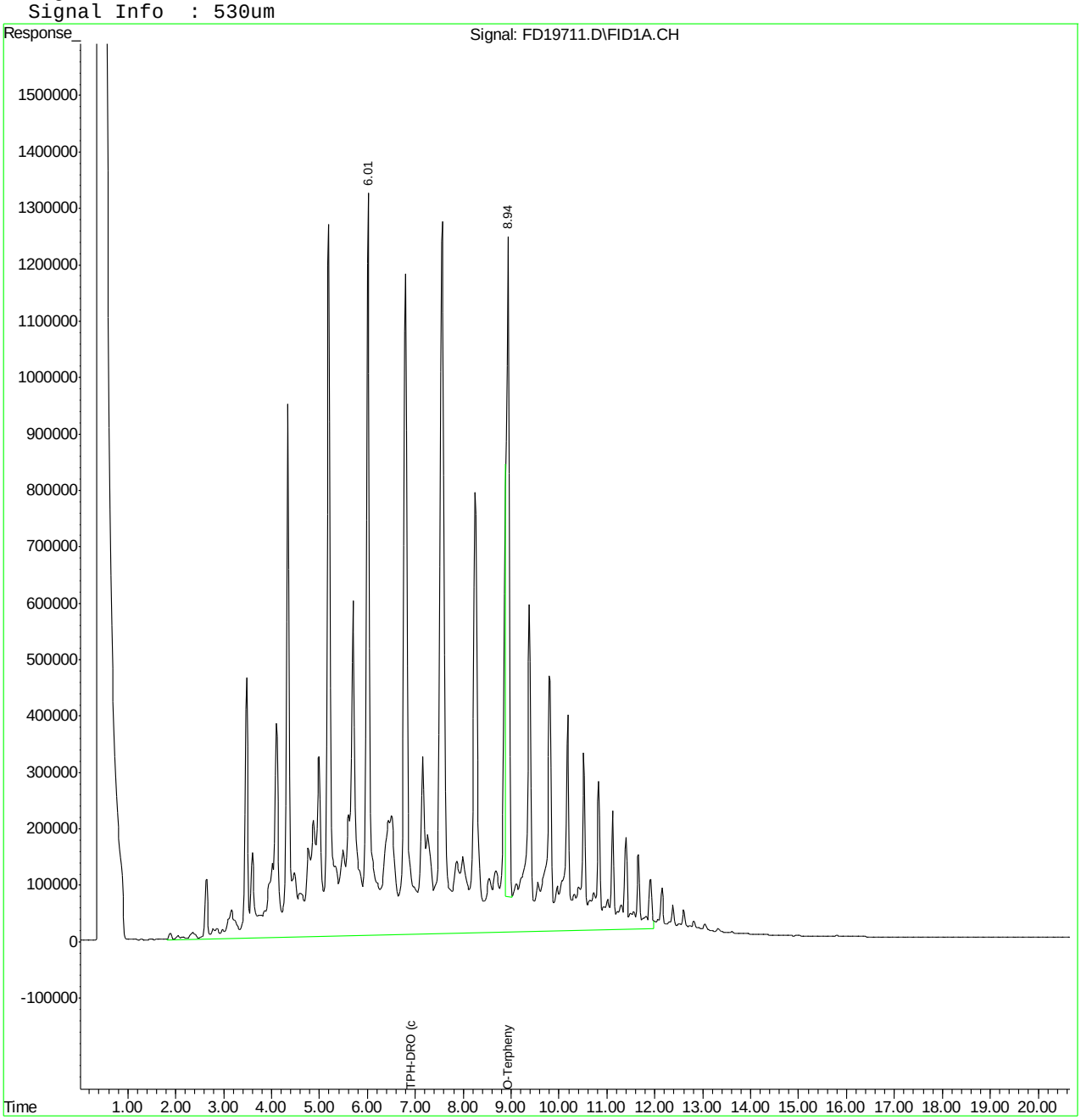
(f)=RT Delta > 1/2 Window (m)=manual int.
FD19711.D DRO-GFD982F.M Wed Nov 21 09:05:55 2012 GC Page 1

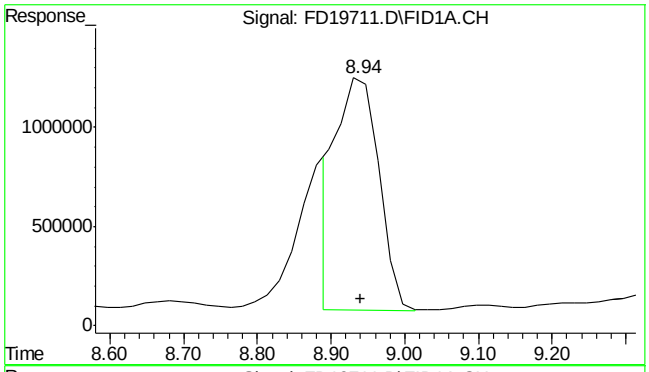
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD111912\FD19711.D Vial: 19
Acq On : 19 Nov 2012 10:09 pm Operator: ashleyv
Sample : D41024-1 Inst : FID5
Misc : OP6979,GFD990,30.01,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Nov 20 15:15 2012 Quant Results File: DRO-GFD982F.RES

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

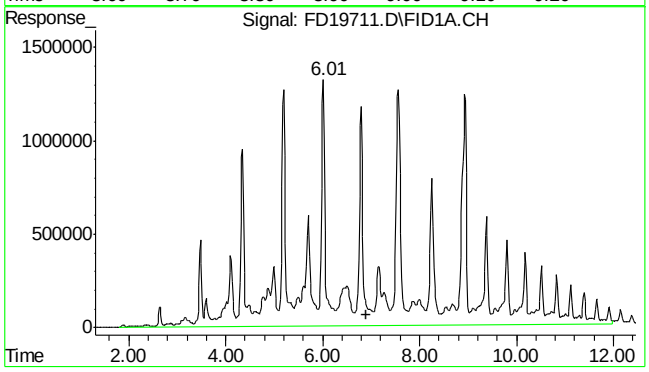
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





#1 O-Terphenyl

R.T.: 8.937 min
Delta R.T.: -0.003 min
Response: 50629447
Conc: 915.04 mg/L m



#2 TPH-DRO (c10-c28)

R.T.: 6.895 min
Delta R.T.: 0.000 min
Response: 859234174
Conc: 22625.90 mg/L m

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD111912\FD19679.D Vial: 3
Acq On : 11-19-2012 02:55:37 PM Operator: ashleyv
Sample : OP6979-MB Inst : FID5
Misc : OP6979,GFD990,30.00,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Nov 20 15:02:12 2012 Quant Results File: DRO-GFD982F.RES

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

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

	Compound	R.T.	Response	Conc	Units
	System Monitoring Compounds				
1) S	O-Terphenyl	8.97	48861805	883.092	mg/L
	Target Compounds				
2) H	TPH-DRO (c10-c28)	6.89	2183565	57.499	mg/L

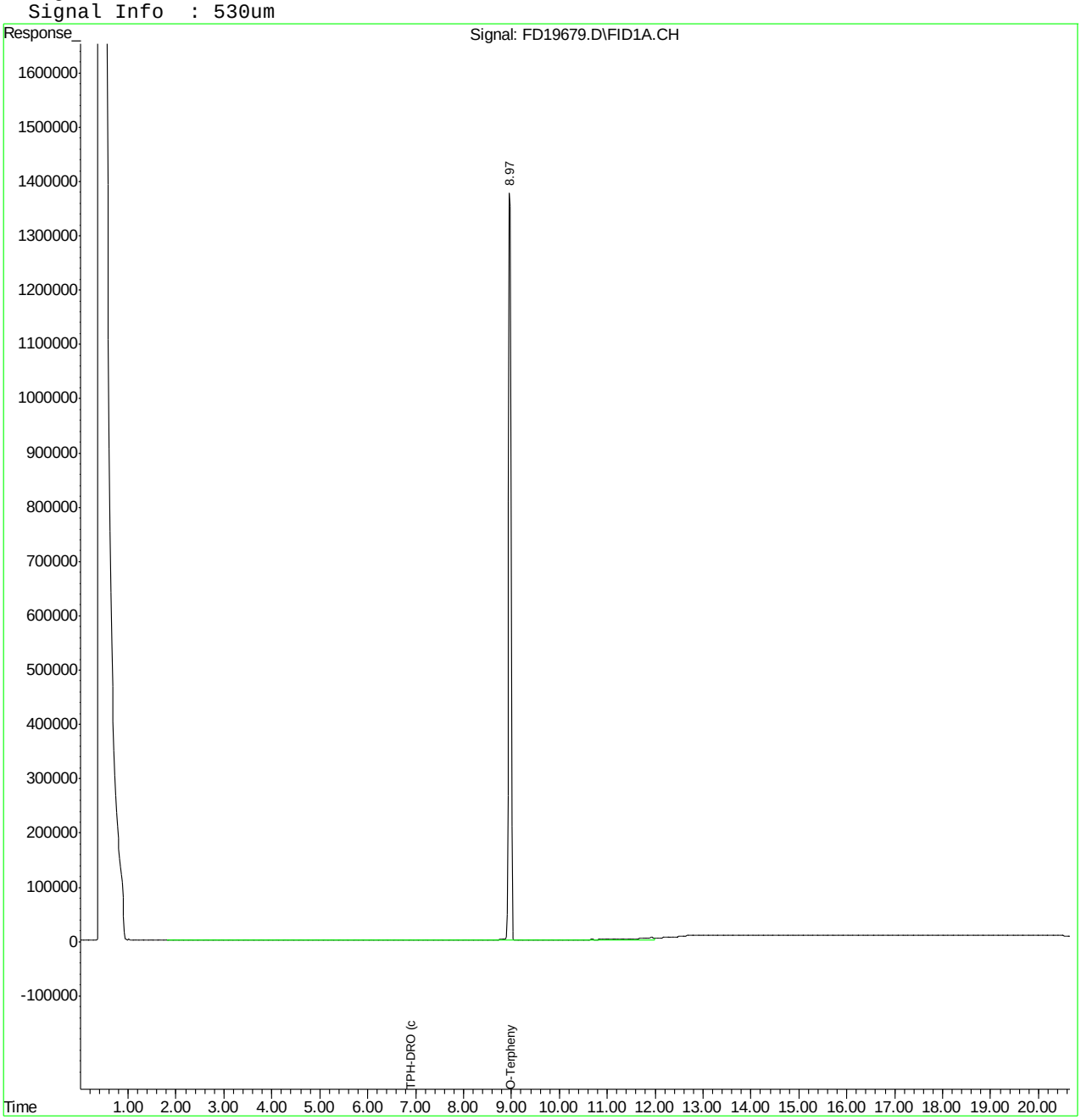
(f)=RT Delta > 1/2 Window (m)=manual int.
FD19679.D DRO-GFD982F.M Wed Nov 21 09:05:39 2012 GC Page 1

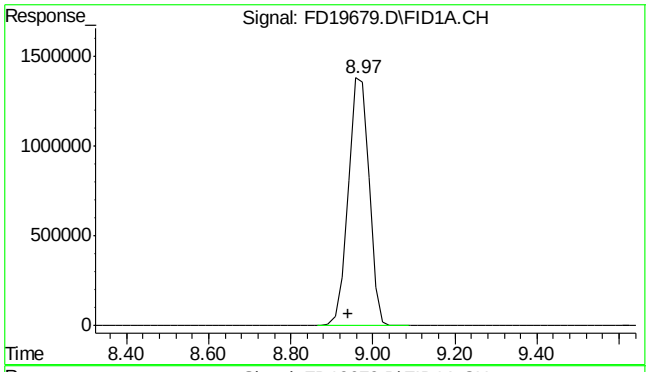
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\2012\NOV\FD111912\FD19679.D Vial: 3
Acq On : 11-19-2012 02:55:37 PM Operator: ashleyv
Sample : OP6979-MB Inst : FID5
Misc : OP6979,GFD990,30.00,,,2,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Nov 20 15:02 2012 Quant Results File: DRO-GFD982F.RES

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

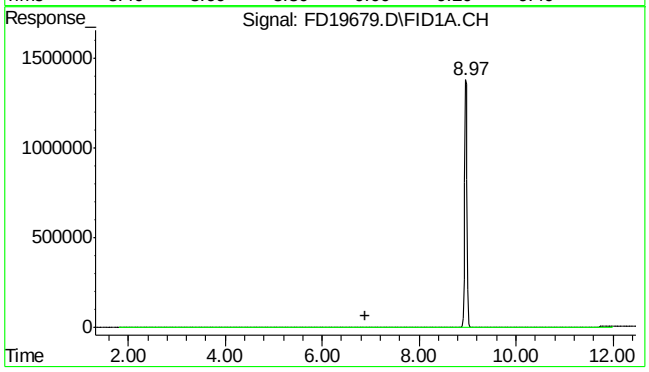
Volume Inj. : 1ul
Signal Phase : RTX-5
Signal Info : 530um





#1 O-Terphenyl

R.T.: 8.972 min
Delta R.T.: 0.032 min
Response: 48861805
Conc: 883.09 mg/L



#2 TPH-DRO (c10-c28)

R.T.: 6.895 min
Delta R.T.: 0.000 min
Response: 2183565
Conc: 57.50 mg/L m