Mountain States ACCUTEST LABORATORIES

02/23/12

Technical Report for

XTO Energy

FRU 197-33A

1103-03A

Accutest Job Number: D32018

Sampling Date: 02/16/12

Report to:

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

Total number of pages in report: **36**

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)

Test results relate only to samples analyzed.

Sections: 1 2 3 4 5 6 7 8

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Sample Summary

XTO Energy

Job No: D32018

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

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D32018-1	02/16/12	12:50	DS	02/18/12	SO	Soil	CUT 1 MB DAY 3 2/15

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

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	XTO Energy	**Job No**	D32018
Site:	FRU 197-33A	**Report Date**	2/23/2012 9:55:05 AM

On 02/18/2012, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4.8 °C. The sample was intact and properly preserved, unless noted below. An AMS Job Number of D32018 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:** GGB843

- The sample was analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D32018-1MS, D32018-1MSD were used as the QC samples indicated.

Extractables by GC By Method SW846-8015B

Matrix SO **Batch ID:** OP5387

- The sample was extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D32018-1MS, D32018-1MSD were used as the QC samples indicated.

Wet Chemistry By Method SM19 2540B M

Matrix SO **Batch ID:** GN13746

- 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.

Mountain States ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Client Sample ID: CUT 1 MB DAY 3 2/15
Lab Sample ID: D32018-1
Matrix: SO - Soil
Method: SW846 8015B
Project: FRU 197-33A

Date Sampled: 02/16/12
Date Received: 02/18/12
Percent Solids: 87.7

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB14971.D	1	02/20/12	SK	n/a	n/a	GGB843
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)	53.5	13	6.4	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	104%		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: CUT 1 MB DAY 3 2/15
Lab Sample ID: D32018-1
Matrix: SO - Soil
Method: SW846-8015B SW846 3546
Project: FRU 197-33A

Date Sampled: 02/16/12
Date Received: 02/18/12
Percent Solids: 87.7

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH001511.D	1	02/22/12	TR	02/18/12	OP5387	GFH76
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	405	15	9.9	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	84%		43-136%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

PAGE 1 OF 1

ACCUTEST LABORATORIES

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

FED-EX Tracking #: | Bottle Order Control #:
Accutest Quote #: | Accutest Job #: D32018

Client / Reporting Information

Company Name: KRW Consulting Inc
Street Address: 8000 W. 14th Ave Ste 200
City: Lakewood State: CO Zip: 80214
Project Contact: Dwayne Knudson E-mail:
Phone #: 970 488 1098 Fax #:
Sampler(s) Name(s): David Sanders Phone #: 9704881098

Project Information

Project Name: XTO FRU 197-33A
Street:
City:
Project#: 1103-03A
Client PO#:
Project Manager: Joe Hess

Billing Information (If different from Report to)

Company Name: XTO Energy
Street Address: 21459 CR 5
City: Rifle State: CO Zip: 81650
Attention: Jessica Dooling PO#:

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	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Bisulfite	TPH (GRO/DRO)	LAB USE ONLY
	Cut 1 MB Day 3 2/15		2/16/12	12:50	SD	DS	2					2					X	01
																		2/18/12

Data Deliverable Information

- Commercial "A" (Level 1)
- Commercial "B" (Level 2)
- Commercial "B" +Narrative
- FULLT1 (Level 3+4)
- State Forms
- EDD Format
- PDF

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary

Comments / Special Instructions

Please email results to KRW Dicanna Cr Team

Turnaround Time (Business days)

Approved By (Accutest PM): / Date:

- Std. 10 Business Days
- Std. 5 Business Days (By Contract only)
- 5 Day RUSH
- 3 Day EMERGENCY
- 2 Day EMERGENCY
- 1 Day EMERGENCY

Emergency & Rush T/A data available VIA Labfax

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	David Sanders	2/17/12 1700	Rifle Service Center		2/17/12	FedEx
2						
3						
4						
5						

Custody Seal # | Intact | Not Intact | Preserved where applicable | On Ice | Cooler Temp. 4.8

D32018: Chain of Custody
Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D32018 **Client:** KRW CONSULTING, INC **Immediate Client Services Action Required:** No

Date / Time Received: 2/18/2012 9:20:00 AM **No. Coolers:** 1 **Client Service Action Required at Login:** No

Project: XTO FRU 197-33A **Airbill #'s:** FedEx

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

D32018: Chain of Custody
Page 2 of 2

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: D32018
Account: XTOKRWR XTO Energy
Project: FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB843-MB	GB14969.D	1	02/20/12	SK	n/a	n/a	GGB843

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

D32018-1

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	117%	60-140%

Blank Spike Summary

Job Number: D32018
Account: XTOKRWR XTO Energy
Project: FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB843-BS	GB14970.D	1	02/20/12	SK	n/a	n/a	GGB843

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

D32018-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	116	105	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	119%	60-140%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D32018
Account: XTOKRWR XTO Energy
Project: FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D32018-1MS	GB14972.D	1	02/20/12	SK	n/a	n/a	GGB843
D32018-1MSD	GB14973.D	1	02/20/12	SK	n/a	n/a	GGB843
D32018-1	GB14971.D	1	02/20/12	SK	n/a	n/a	GGB843

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

D32018-1

CAS No.	Compound	D32018-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	53.5		141	186	94	188	96	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D32018-1	Limits
120-82-1	1,2,4-Trichlorobenzene	110%	107%	104%	60-140%

Mountain States ACCUTEST LABORATORIES

GC Volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
James Rhudy 02/21/12 16:19

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\022012\GB14971.D\FID1A.CH Vial: 7
Signal #2 : Y:\1\DATA\022012\GB14971.D\FID2B.CH
Acq On : 20 Feb 2012 1:06 pm Operator: StephK
Sample : D32018-1, 50X Inst : GC/MS Ins
Misc : GC2620,GGB843,5.007,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Feb 20 13:43:00 2012 Quant Results File: TB791GB791SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB791GB791SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Mon Feb 20 10:16:40 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	14.34	3043382	104.029	%	m
10) S	1,2,4-Trichlorobenzene (P)	14.34	29739924	129.394	%	
	Target Compounds					
1) H	TVH-Gasoline	7.32	59574372	0.837	mg/L	
4) T	Methyl-t-butyl-ether	2.23	242017	1.296	ug/L	
5) T	Benzene	4.11	2095716	3.664	ug/L	
6) T	Toluene	7.61	18715194	33.027	ug/L	
7) T	Ethylbenzene	10.25	4171119	8.559	ug/L	
8) T	m,p-Xylene	10.43	18274477	32.394	ug/L	
9) T	o-Xylene	10.93	1743747	3.479	ug/L	
11) T	Naphthalene	14.52	6265985	24.344	ug/L	

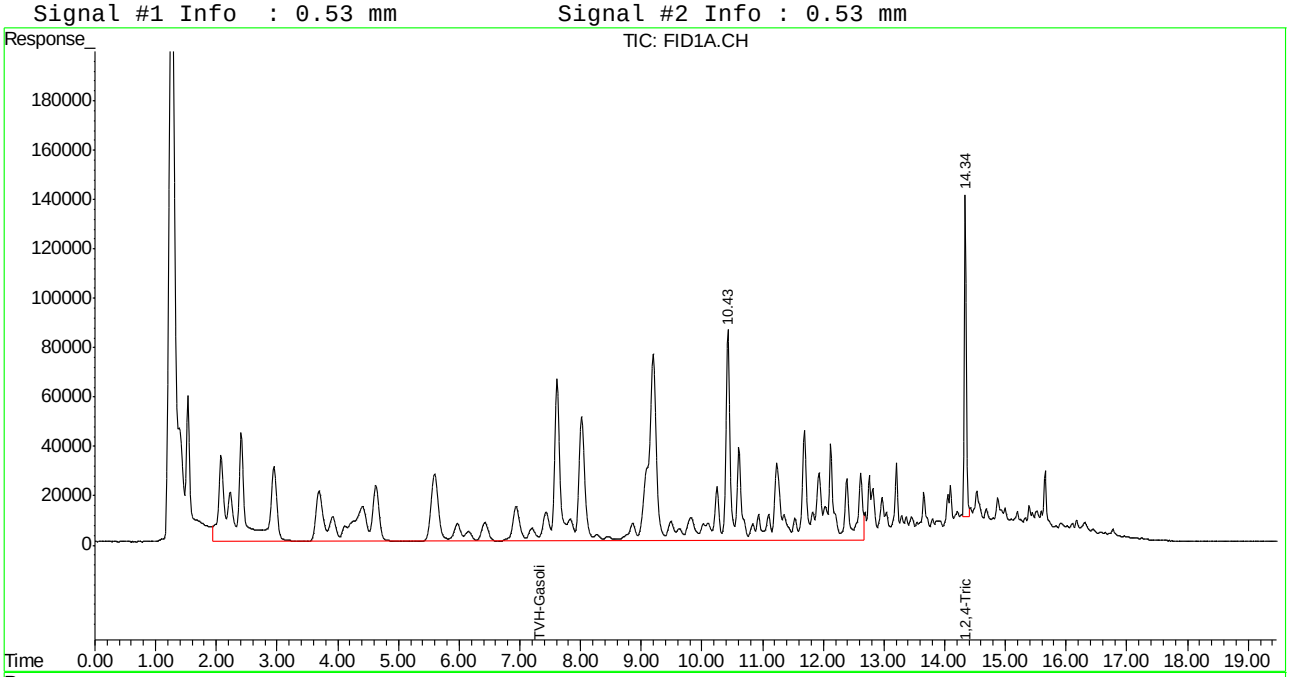
(f)=RT Delta > 1/2 Window (m)=manual int.
GB14971.D TB791GB791SOIL.M Tue Feb 21 08:53:45 2012 GC Page 1

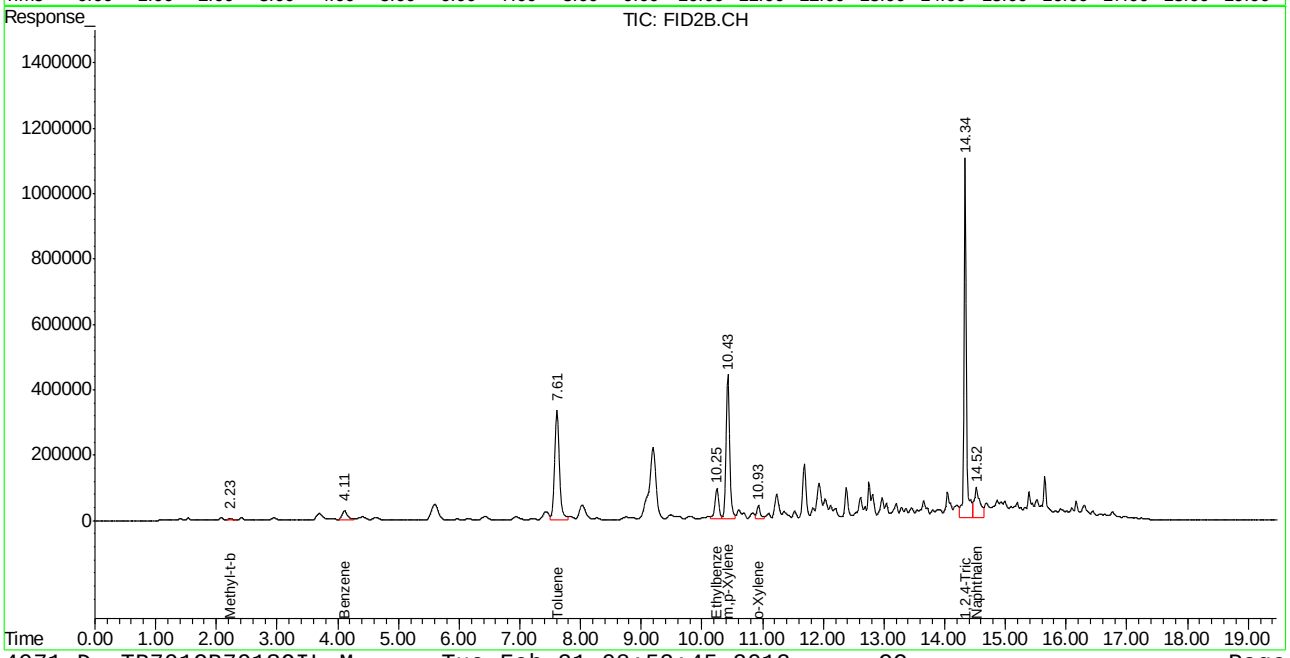
Quantitation Report (QT Reviewed)

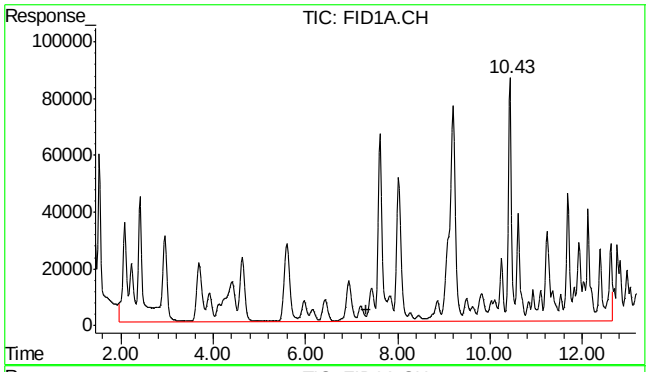
Signal #1 : Y:\1\DATA\022012\GB14971.D\FID1A.CH Vial: 7
Signal #2 : Y:\1\DATA\022012\GB14971.D\FID2B.CH
Acq On : 20 Feb 2012 1:06 pm Operator: StephK
Sample : D32018-1, 50X Inst : GC/MS Ins
Misc : GC2620,GGB843,5.007,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Feb 20 12:42 2012 Quant Results File: TB791GB791SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB791GB791SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Mon Feb 20 10:16:40 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

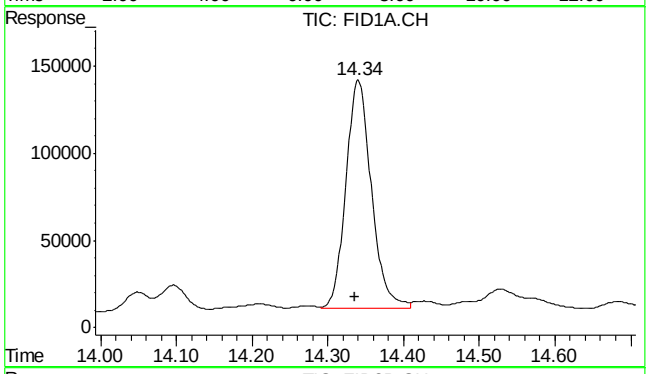






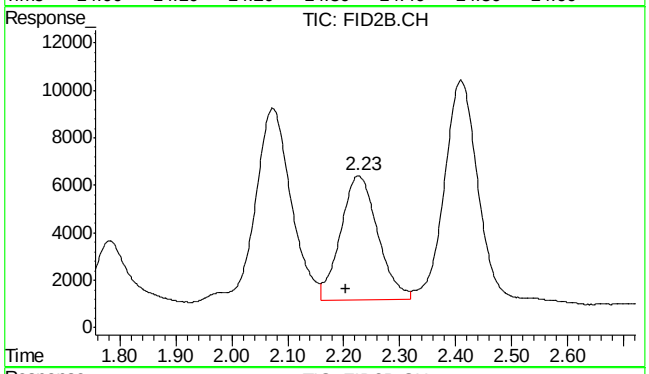
#1 TVH-Gasoline

R.T.: 7.315 min
Delta R.T.: 0.000 min
Response: 59574372
Conc: 0.84 mg/L m



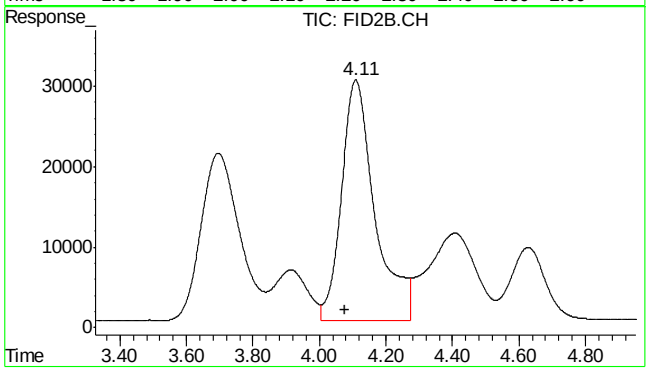
#2 1,2,4-Trichlorobenzene

R.T.: 14.340 min
Delta R.T.: 0.004 min
Response: 3043382
Conc: 104.03 % m



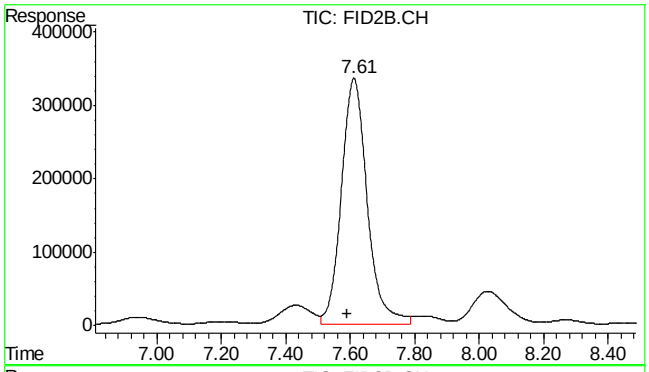
#4 Methyl-t-butyl-ether

R.T.: 2.226 min
Delta R.T.: 0.023 min
Response: 242017
Conc: 1.30 ug/L



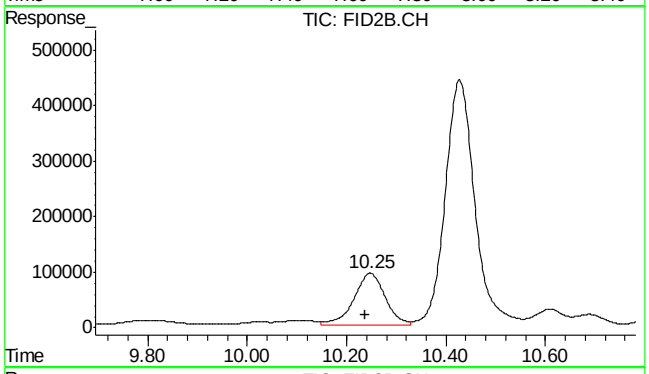
#5 Benzene

R.T.: 4.110 min
Delta R.T.: 0.033 min
Response: 2095716
Conc: 3.66 ug/L



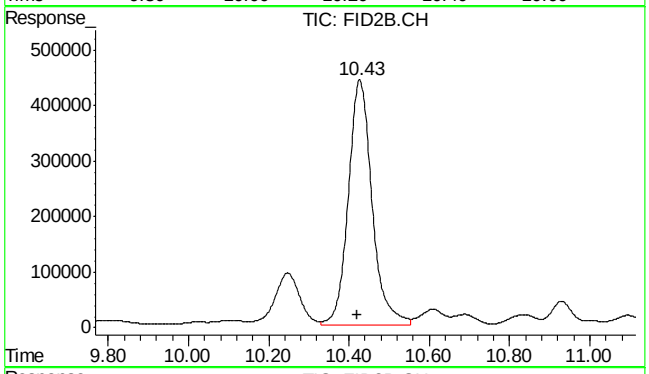
#6 Toluene

R.T.: 7.612 min
Delta R.T.: 0.020 min
Response: 18715194
Conc: 33.03 ug/L



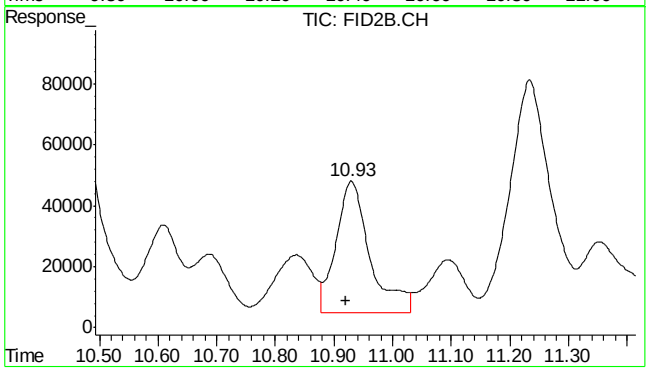
#7 Ethylbenzene

R.T.: 10.248 min
Delta R.T.: 0.010 min
Response: 4171119
Conc: 8.56 ug/L



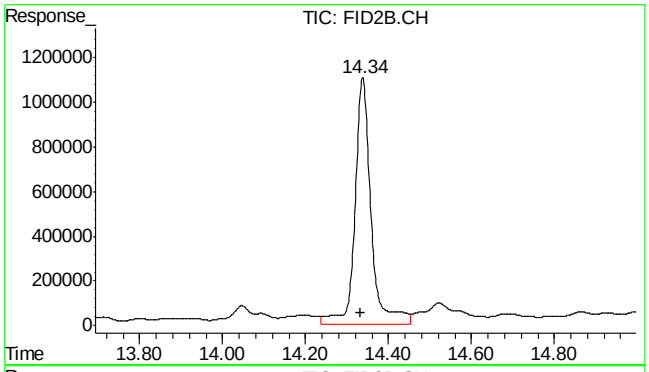
#8 m,p-Xylene

R.T.: 10.428 min
Delta R.T.: 0.007 min
Response: 18274477
Conc: 32.39 ug/L



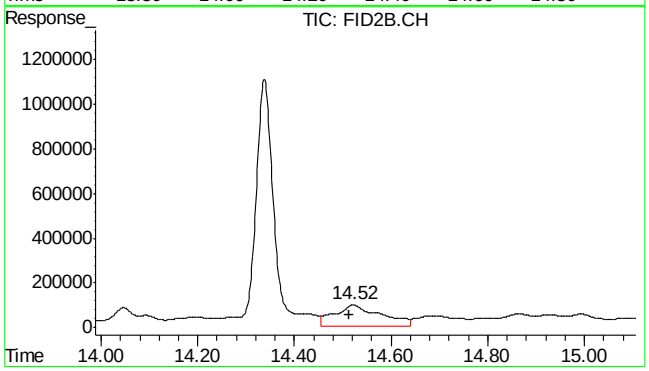
#9 o-Xylene

R.T.: 10.930 min
Delta R.T.: 0.009 min
Response: 1743747
Conc: 3.48 ug/L



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

R.T.: 14.338 min
Delta R.T.: 0.005 min
Response: 29739924
Conc: 129.39 %



#11 Naphthalene

R.T.: 14.523 min
Delta R.T.: 0.008 min
Response: 6265985
Conc: 24.34 ug/L

Quantitation Report (QT Reviewed)

Signal #1 : Y:\1\DATA\022012\GB14969.D\FID1A.CH Vial: 5
Signal #2 : Y:\1\DATA\022012\GB14969.D\FID2B.CH
Acq On : 20 Feb 2012 11:51 am Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC2620,GGB843,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Feb 20 12:59:39 2012 Quant Results File: TB791GB791SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB791GB791SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Mon Feb 20 10:16:40 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	14.34	3424193	117.046	%
10) S	1,2,4-Trichlorobenzene (P)	14.34	27102756	117.920	%
	Target Compounds				
1) H	TVH-Gasoline	7.32	5296448	<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	7.62	155762	0.275	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	14.52	372883	1.449	ug/L

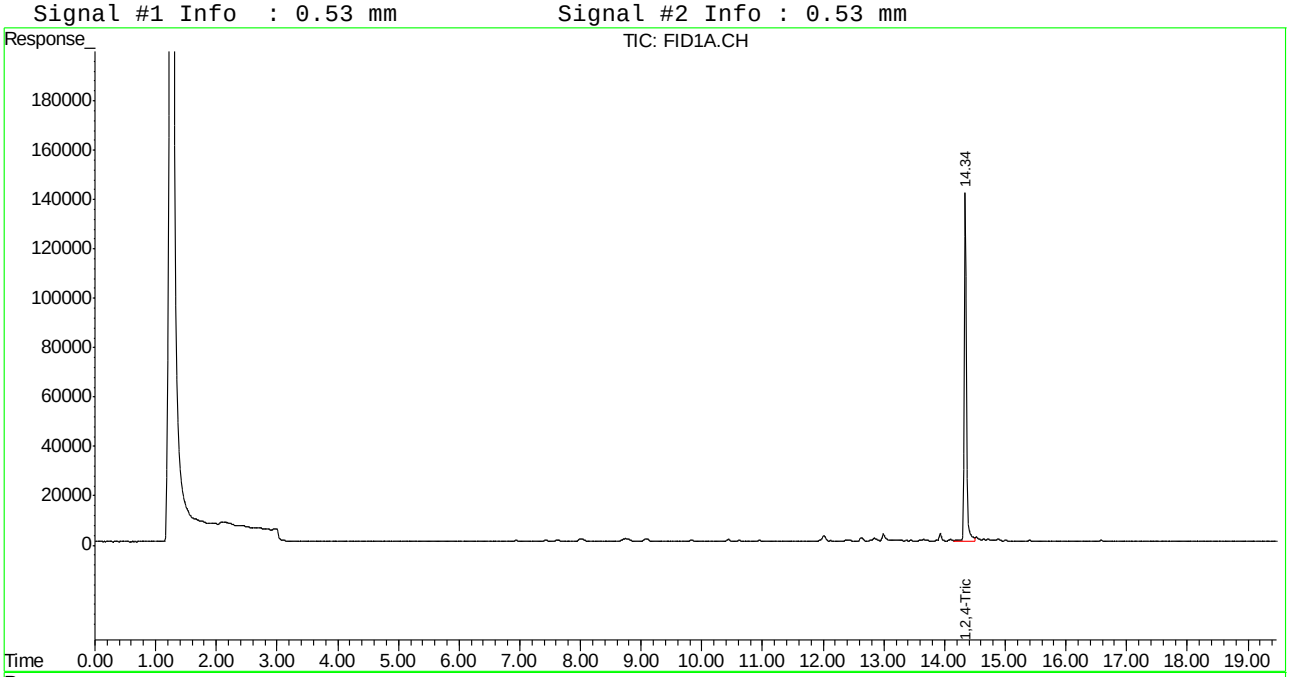
(f)=RT Delta > 1/2 Window (m)=manual int.
GB14969.D TB791GB791SOIL.M Tue Feb 21 08:53:39 2012 GC Page 1

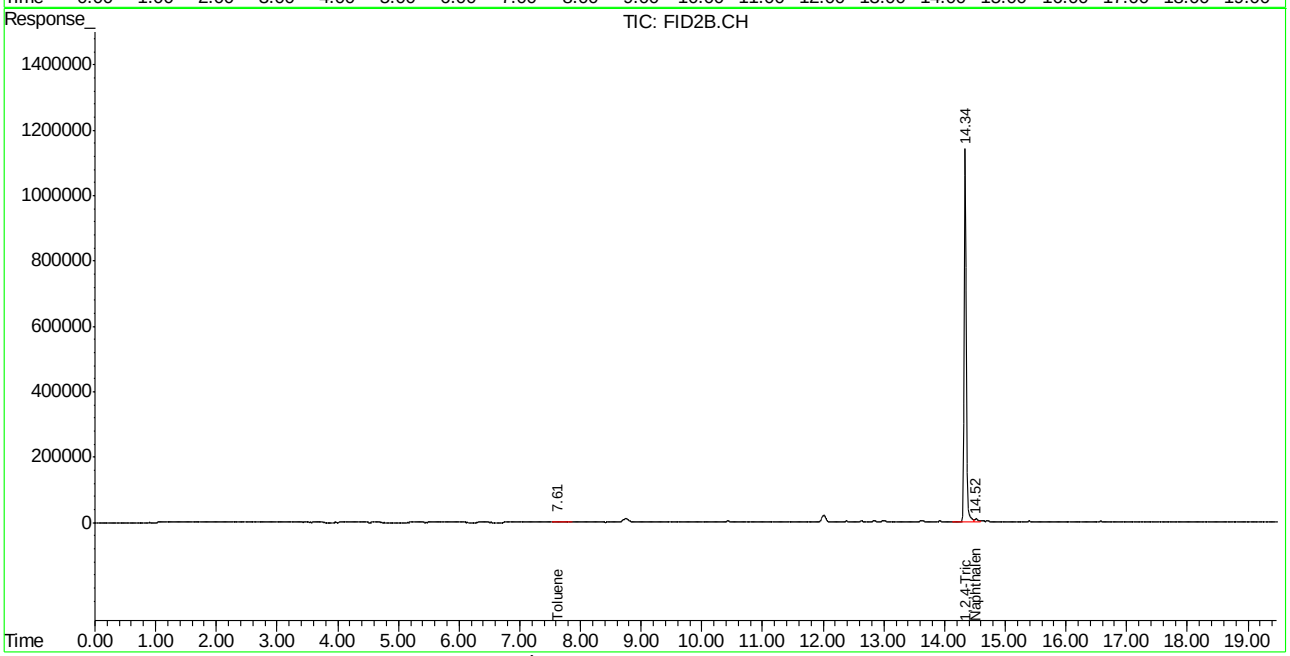
Quantitation Report (QT Reviewed)

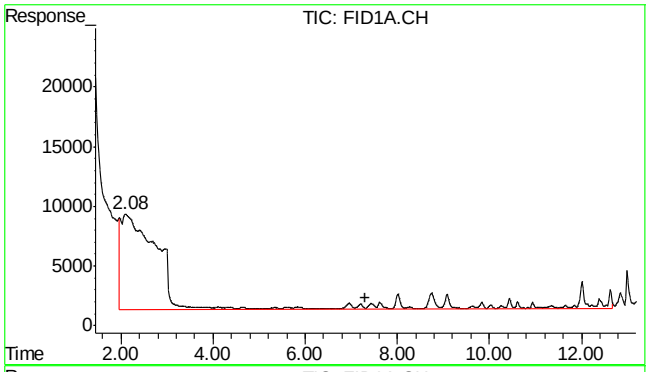
Signal #1 : Y:\1\DATA\022012\GB14969.D\FID1A.CH Vial: 5
Signal #2 : Y:\1\DATA\022012\GB14969.D\FID2B.CH
Acq On : 20 Feb 2012 11:51 am Operator: StephK
Sample : MB Inst : GC/MS Ins
Misc : GC2620,GGB843,5.000,,100,5,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Feb 20 11:58 2012 Quant Results File: TB791GB791SOIL.RES

Quant Method : C:\MSDCHEM\1...\TB791GB791SOIL.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Mon Feb 20 10:16:40 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

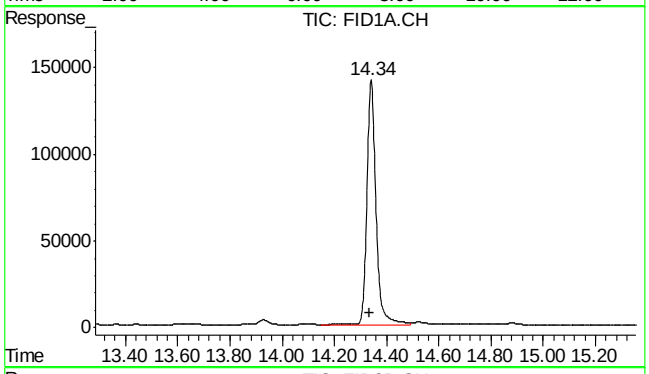






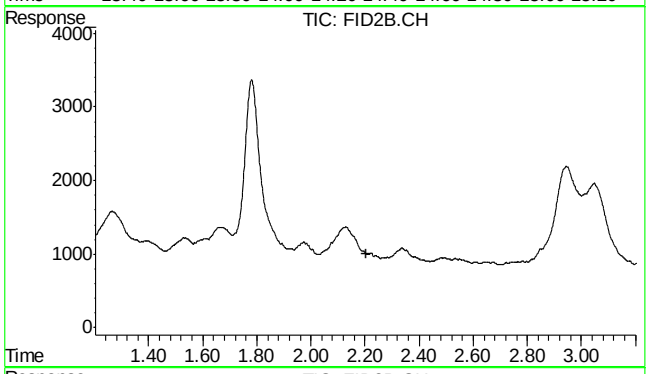
#1 TVH-Gasoline

R.T.: 7.315 min
Delta R.T.: 0.000 min
Response: 5296448
Conc: N.D.



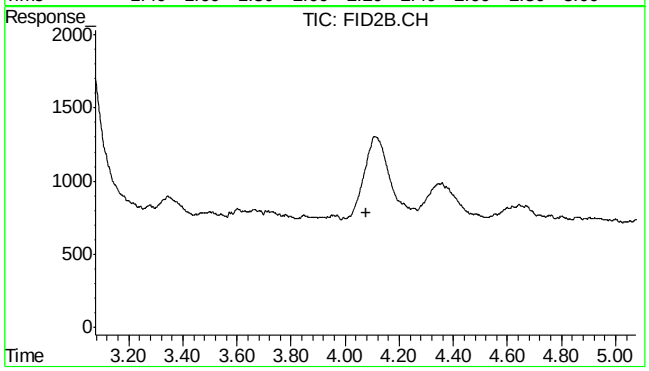
#2 1,2,4-Trichlorobenzene

R.T.: 14.341 min
Delta R.T.: 0.006 min
Response: 3424193
Conc: 117.05 %



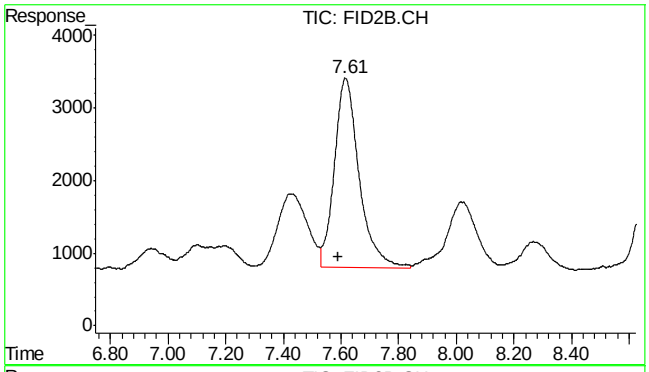
#4 Methyl-t-butyl-ether

R.T.: 0.000 min
Exp R.T. : 2.203 min
Response: 0
Conc: N.D.



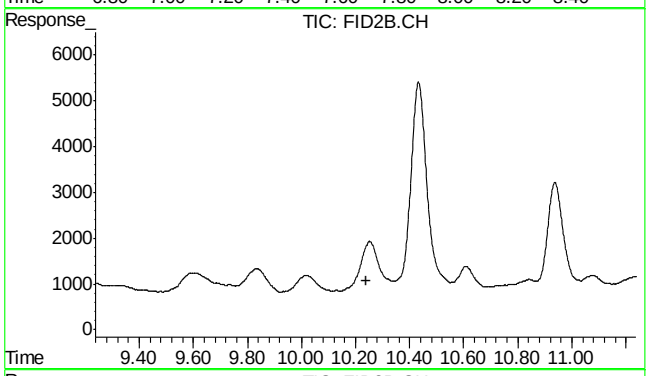
#5 Benzene

R.T.: 0.000 min
Exp R.T. : 4.076 min
Response: 0
Conc: N.D.



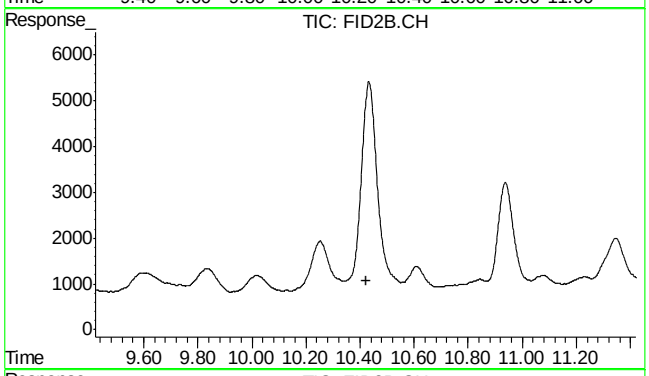
#6 Toluene

R.T.: 7.615 min
Delta R.T.: 0.023 min
Response: 155762
Conc: 0.27 ug/L



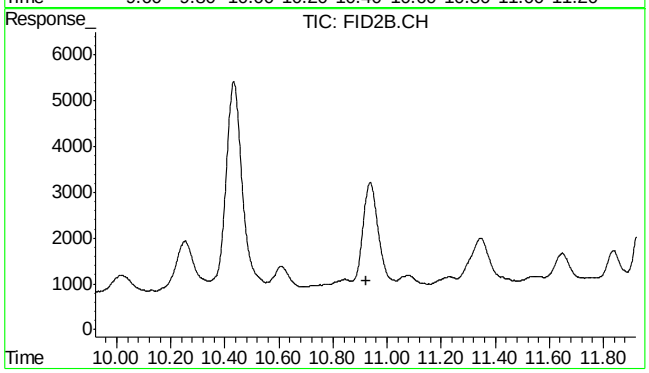
#7 Ethylbenzene

R.T.: 0.000 min
Exp R.T. : 10.238 min
Response: 0
Conc: N.D.



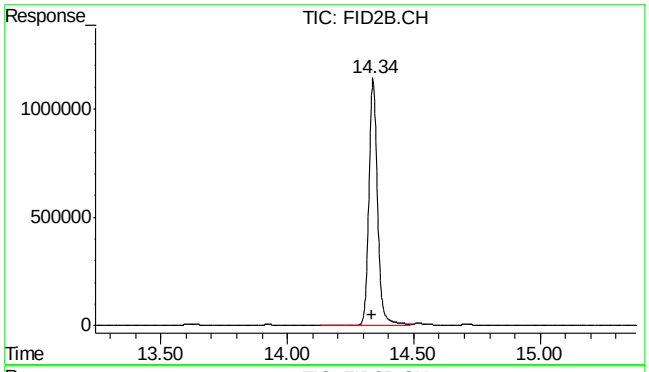
#8 m,p-Xylene

R.T.: 0.000 min
Exp R.T. : 10.421 min
Response: 0
Conc: N.D.



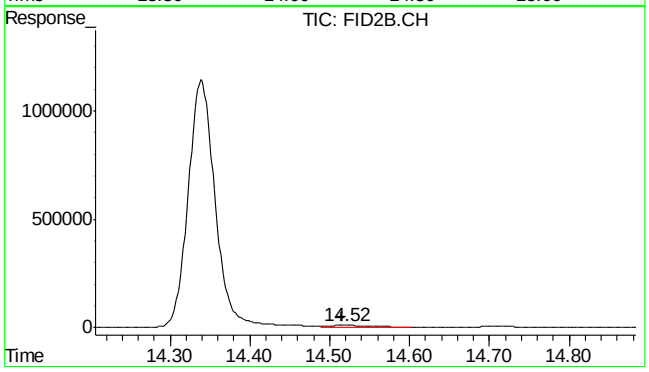
#9 o-Xylene

R.T.: 0.000 min
Exp R.T. : 10.922 min
Response: 0
Conc: N.D.



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

R.T.: 14.339 min
Delta R.T.: 0.006 min
Response: 27102756
Conc: 117.92 %



#11 Naphthalene

R.T.: 14.520 min
Delta R.T.: 0.005 min
Response: 372883
Conc: 1.45 ug/L

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: D32018
Account: XTOKRWR XTO Energy
Project: FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5387-MB	FH001503.D	1	02/22/12	TR	02/18/12	OP5387	GFH76

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

D32018-1

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	66%	43-136%

Blank Spike Summary

Job Number: D32018
Account: XTOKRWR XTO Energy
Project: FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5387-BS	FH001505.D	1	02/22/12	TR	02/18/12	OP5387	GFH76

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

D32018-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	507	76	58-130

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

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D32018
Account: XTOKRWR XTO Energy
Project: FRU 197-33A

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5387-MS	FH001507.D	1	02/22/12	TR	02/18/12	OP5387	GFH76
OP5387-MSD	FH001509.D	1	02/22/12	TR	02/18/12	OP5387	GFH76
D32018-1	FH001511.D	1	02/22/12	TR	02/18/12	OP5387	GFH76

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

D32018-1

CAS No.	Compound	D32018-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	405		758	714	41	661	34	8	20-183/43

CAS No.	Surrogate Recoveries	MS	MSD	D32018-1	Limits
84-15-1	o-Terphenyl	65%	62%	84%	43-136%

Mountain States ACCUTEST LABORATORIES

GC Semi-volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH022212.SEC\
Data File : FH001511.D
Signal(s) : FID2B.ch
Acq On : 22 Feb 2012 8:33 pm
Operator : tedr
Sample : D32018-1
Misc : OP5387,GFH76,30.05,,,2,1
ALS Vial : 7 Sample Multiplier: 1

Integration File: events.e
Quant Time: Feb 23 08:26:18 2012
Quant Method : C:\msdchem\1\METHODS\DRO-GFH33R.M
Quant Title : DRO-ORO REAR
QLast Update : Tue Jan 31 11:32:12 2012
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc Units
System Monitoring Compounds				
2) s	o-Terphenyl	12.290	1240160735	844.880 ug/ml
Target Compounds				
1) H	TPH-DRO (C10-C28)	9.850	6628468822	5330.250 ug/ml

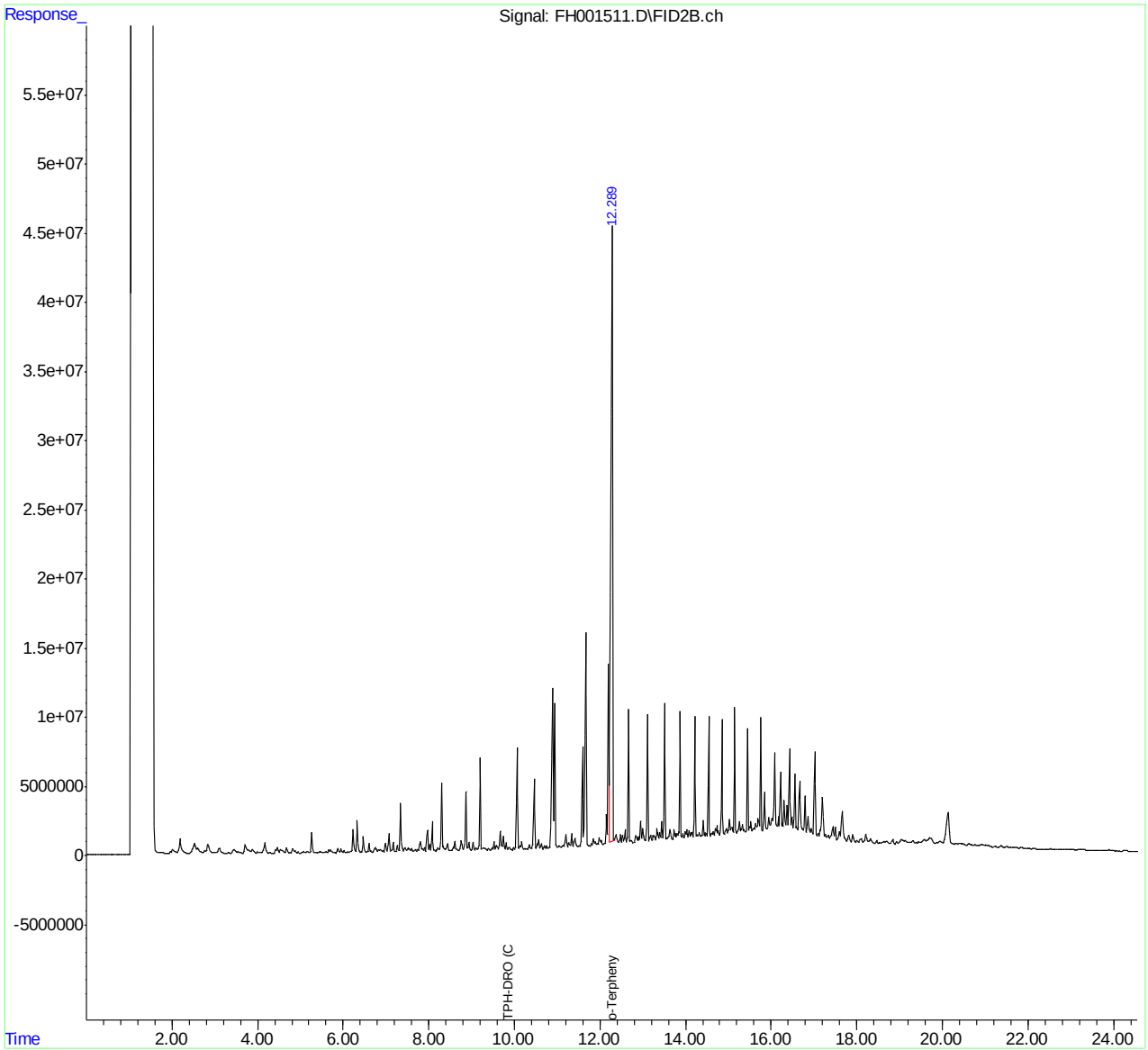
(f)=RT Delta > 1/2 Window (m)=manual int.

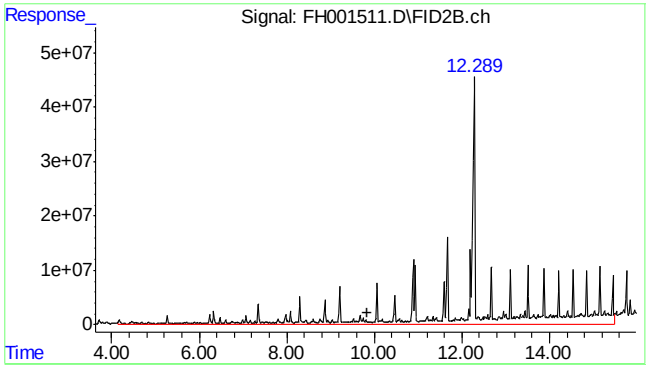
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH022212.SEC\
Data File : FH001511.D
Signal(s) : FID2B.ch
Acq On : 22 Feb 2012 8:33 pm
Operator : tedr
Sample : D32018-1
Misc : OP5387,GFH76,30.05,,,2,1
ALS Vial : 7 Sample Multiplier: 1

Integration File: events.e
Quant Time: Feb 23 08:26:18 2012
Quant Method : C:\msdchem\1\METHODS\DRO-GFH33R.M
Quant Title : DRO-ORO REAR
QLast Update : Tue Jan 31 11:32:12 2012
Response via : Initial Calibration
Integrator: ChemStation

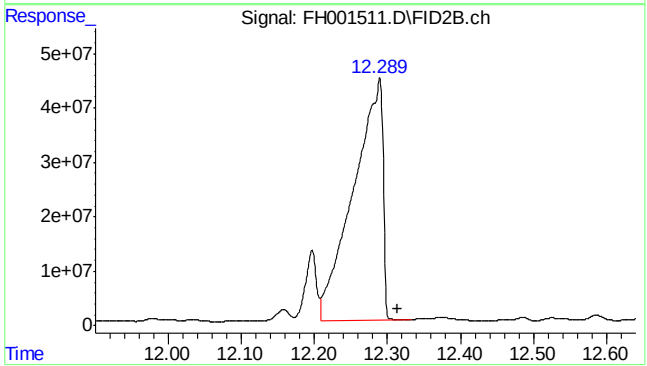
Volume Inj. :
Signal Phase :
Signal Info :





#1 TPH-DRO (C10-C28)

R.T.: 9.850 min
Delta R.T.: 0.000 min
Response: 6628468822
Conc: 5330.25 ug/ml m



#2 o-Terphenyl

R.T.: 12.290 min
Delta R.T.: -0.024 min
Response: 1240160735
Conc: 844.88 ug/ml

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH022212.SEC\
Data File : FH001503.D
Signal(s) : FID2B.ch
Acq On : 22 Feb 2012 6:10 pm
Operator : tedr
Sample : OP5387-MB
Misc : OP5387,GFH76,30.00,,,2,1
ALS Vial : 3 Sample Multiplier: 1

Integration File: events.e
Quant Time: Feb 23 08:23:22 2012
Quant Method : C:\msdchem\1\METHODS\DRO-GFH33R.M
Quant Title : DRO-ORO REAR
QLast Update : Tue Jan 31 11:32:12 2012
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc Units
System Monitoring Compounds				
2) s	o-Terphenyl	12.276	962067749	655.425 ug/ml
Target Compounds				
1) H	TPH-DRO (C10-C28)	9.850	41648703	33.492 ug/ml

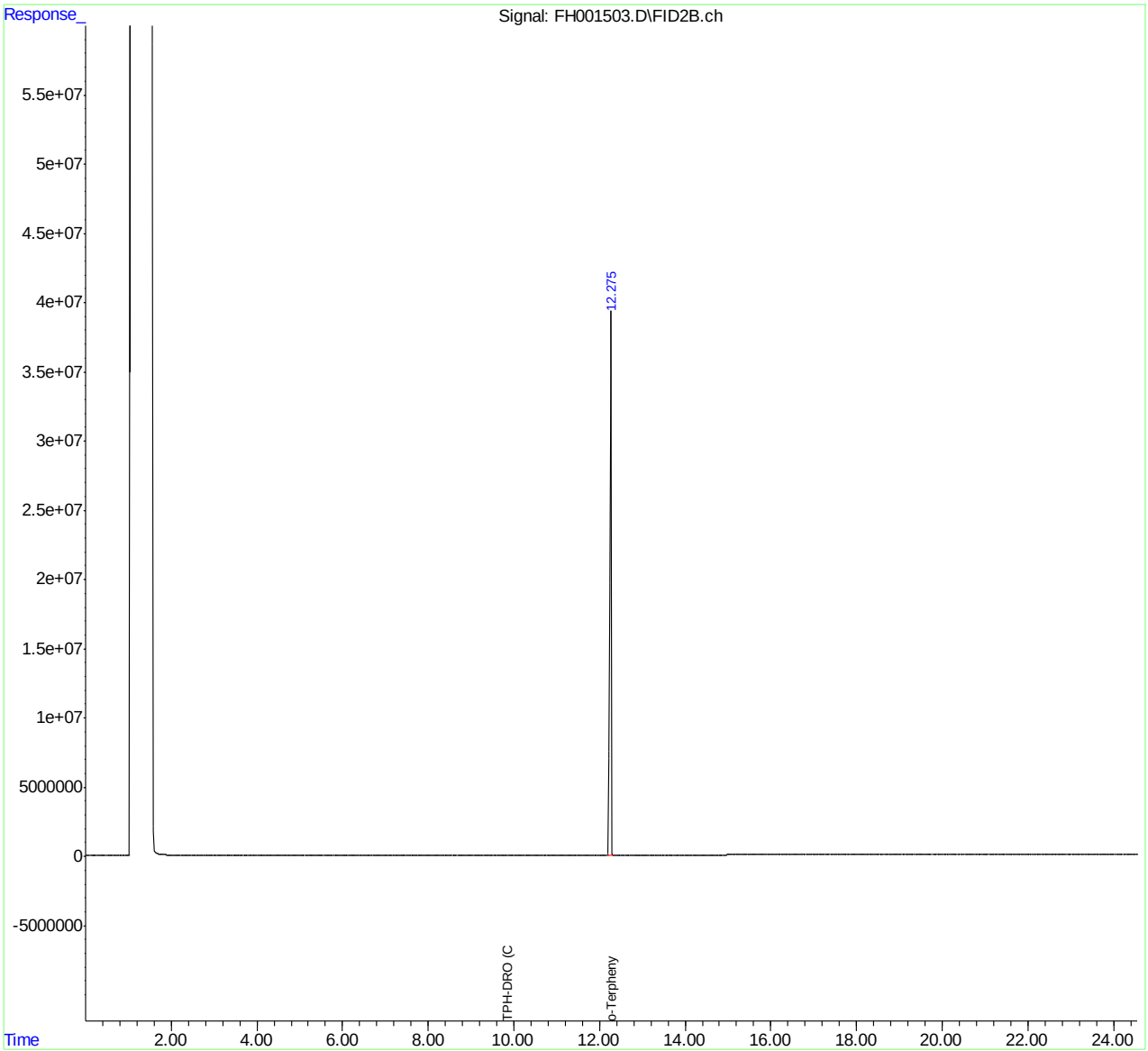
(f)=RT Delta > 1/2 Window (m)=manual int.

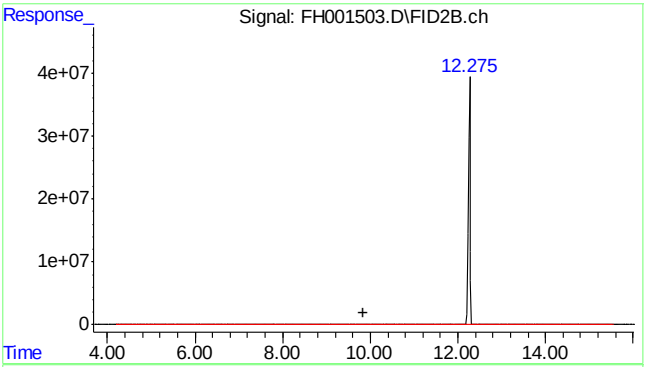
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\FH022212.SEC\
Data File : FH001503.D
Signal(s) : FID2B.ch
Acq On : 22 Feb 2012 6:10 pm
Operator : tedr
Sample : OP5387-MB
Misc : OP5387,GFH76,30.00,,,2,1
ALS Vial : 3 Sample Multiplier: 1

Integration File: events.e
Quant Time: Feb 23 08:23:22 2012
Quant Method : C:\msdchem\1\METHODS\DRO-GFH33R.M
Quant Title : DRO-ORO REAR
QLast Update : Tue Jan 31 11:32:12 2012
Response via : Initial Calibration
Integrator: ChemStation

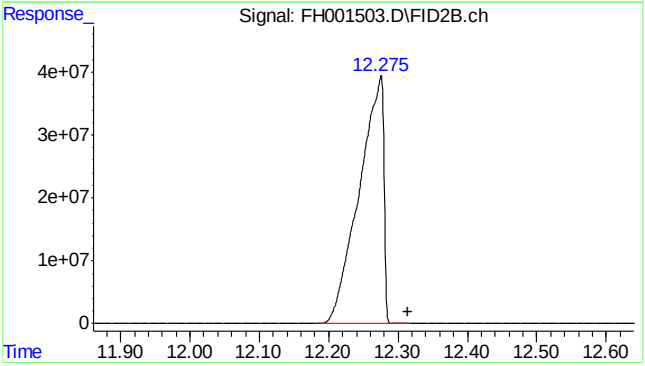
Volume Inj. :
Signal Phase :
Signal Info :





#1 TPH-DRO (C10-C28)

R.T.: 9.850 min
Delta R.T.: 0.000 min
Response: 41648703
Conc: 33.49 ug/ml m



#2 o-Terphenyl

R.T.: 12.276 min
Delta R.T.: -0.038 min
Response: 962067749
Conc: 655.42 ug/ml