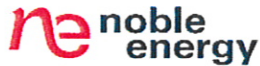


1625 Broadway
Suite 2200
Denver, CO 80202

Tel: 303.228.4000
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www.nobleenergyinc.com



North America Division

February 29, 2012

Ms. Jenny Turley
16423 Weld County Road 20
Ft. Lupton, CO 80621

RE: Water Well Sampling Results – Well 36205-A

Dear Ms. Turley:

On February 7, 2012, Noble Energy, Inc. (Noble) conducted sampling of your domestic water well and submitted these samples for laboratory analysis to Accutest Mountain States Laboratory (Accutest) in Wheat Ridge, Colorado and Isotech Laboratories Inc. (Isotech) in Champaign, Illinois. The purpose of the sampling was to collect a representative sample of the water in your water well per your request.

The February 20, 2012 Accutest report and February 29, 2012 Isotech report containing all sample results for your domestic water well is attached.

Should you have any questions regarding domestic water well matters, please consider contacting the Colorado State Engineer's Office at (970) 352-8712. Should you have any questions regarding water quality considerations, please consider contacting the Colorado Department of Public Health and Environment (CDPHE), Water Quality Control Division at (307) 692-3500. Additionally, should you have any questions regarding oil and gas activities in your vicinity, consider contacting the Colorado Oil and Gas Conservation Commission at (303) 894-2100. Finally, the respective agency websites, which may be found at www.water.state.co.us, www.cdphe.state.co.us, and www.cogcc.state.co.us, may also provide you with additional relevant information.

Sincerely,
NOBLE ENERGY, INC.

A handwritten signature in blue ink, appearing to read 'R Bruner', written over a horizontal line.

Ryan Bruner
Environmental Coordinator

Attachment

ATTACHMENT 1

LABORATORY ANALYTICAL SUMMARIES

Accutest Mountain States		Feb 20, 2012 10:48 am	
Job Number:	D31670		
Account:	LT Environmental		
Project:	Noble Baseline Sampling		
Project Number:	NEP0605.02		
		Legend:	Hit
Client Sample ID:		TURLEY 36205--A	TURLEY 36205--A
Lab Sample ID:		D31670-1	D31670-1F
Date Sampled:		02/07/2012	02/07/2012
Matrix:		Drinking Water	Drinking Water Filt
GC/MS Volatiles (SW846 8260B)			
Benzene	ug/l	ND (0.50)	-
Toluene	ug/l	ND (1.0)	-
Ethylbenzene	ug/l	ND (0.50)	-
Xylene (total)	ug/l	ND (2.0)	-
GC Volatiles (RSK175 MOD)			
Methane	mg/l	3.08	-
Metals Analysis			
Calcium	mg/l	-	145
Iron	mg/l	-	<0.070
Magnesium	mg/l	-	46.2
Manganese	mg/l	-	0.11
Potassium	mg/l	-	6.7
Selenium	mg/l	-	0.020
Sodium	mg/l	-	440
General Chemistry			
Alkalinity, Bicarbonate as CaCO ₃	mg/l	382	-
Alkalinity, Carbonate	mg/l	<5.0	-
Alkalinity, Total as CaCO ₃	mg/l	382	-
Chloride	mg/l	159	-
Nitrogen, Nitrate	mg/l	11.2 ^a	-
Nitrogen, Nitrite	mg/l	0.60	-
Solids, Total Dissolved	mg/l	2200	-
Specific Conductivity	umhos/cm	2450	-
Sulfate	mg/l	1010	-
pH	su	7.45	-
Footnotes:			
^a Sample exceeds MCL for nitrate for drinking water.			

TABLE 2

**BART POPULATION TABLE
TURLEY RESIDENCE
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.**

BART Analysis	Approximate Population (cfu/mL)
Iron Related Bacteria (IRB)	25 - 500
Sulfate Reducing Bacteria (SRB)	1,200 - 5,000
Slime Forming Bacteria (SLYM)	66,500

Notes:

cfu/mL - colony forming units per milliliter

ATTACHMENT 2
LABORATORY ANALYTICAL REPORTS



02/20/12

Technical Report for

LT Environmental

Noble Baseline Sampling

NEP0605.02

Accutest Job Number: D31670

Sampling Date: 02/07/12

Report to:

LT Environmental
4600 West 60th Avenue
Arvada, CO 80003
bforkner@ltenv.com; bchristopher@ltenv.com

ATTN: Brett Forkner

Total number of pages in report: **58**



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: 303-425-6021

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

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

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Sample Summary

LT Environmental

Job No: D31670

Noble Baseline Sampling
Project No: NEP0605.02

Sample Number	Collected		Matrix Code	Type	Client Sample ID
	Date	Time By			
D31670-1	02/07/12	13:45 BC	02/07/12	DW Drinking Water	TURLEY 36205--A
D31670-1F	02/07/12	13:45 BC	02/07/12	DW Drinking Water Filt	TURLEY 36205--A

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: LT Environmental

Job No D31670

Site: Noble Baseline Sampling

Report Dat 2/20/2012 10:41:07 AM

On 02/07/2012, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 8 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D31670 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 AQ

Batch ID: V3V933

- All samples were analyzed within the recommended method holding time.
- Sample(s) D31623-1MS, D31623-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Volatiles by GC By Method RSK175 MOD

Matrix AQ

Batch ID: GFB209

- All samples were analyzed within the recommended method holding time.
- Sample(s) D31926-2MS, D31926-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D31670-1 have surrogates outside control limits. Probable cause due to dilution.

Metals By Method EPA 200.7

Matrix DW

Batch ID: MP6814

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D31673-1MS, D31673-1MSD were used as the QC samples for the metals analysis.

Metals By Method EPA 200.8

Matrix DW

Batch ID: MP6813

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D31657-2MS, D31657-2MSD were used as the QC samples for the metals analysis.

Wet Chemistry By Method EPA 300

Matrix DW

Batch ID: GP6477

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D31682-1MS, D31682-1MSD were used as the QC samples for the anions analysis.
- D31670-1 for Nitrogen, Nitrate: Sample exceeds MCL for nitrate for drinking water.

Wet Chemistry By Method SM20 2320B

Matrix AQ

Batch ID: GN13688

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D31697-2DUP, D31697-2MS, D31697-2MSD were used as the QC samples for the Alkalinity, Total as CaCO₃ analysis.

Matrix AQ

Batch ID: GN13689

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Matrix AQ

Batch ID: GN13690

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method SM20 2510B

Matrix AQ

Batch ID: GP6481

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D31630-1DUP were used as the QC samples for the Specific Conductivity analysis.

Wet Chemistry By Method SM20 2540C

Matrix AQ

Batch ID: GN13615

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Matrix DW

Batch ID: GN13615

- Sample(s) D31588-1DUP were used as the QC samples for the Solids, Total Dissolved analysis.

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.

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	TURLEY 36205--A	Date Sampled:	02/07/12
Lab Sample ID:	D31670-1	Date Received:	02/07/12
Matrix:	DW - Drinking Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	Noble Baseline Sampling		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V16084.D	1	02/08/12	BR	n/a	n/a	V3V933
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
71-43-2	Benzene	ND	5.0	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1000	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	700	2.0	0.50	ug/l	
1330-20-7	Xylene (total)	ND	10000	4.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	105%		67-131%
2037-26-5	Toluene-D8	89%		65-130%
460-00-4	4-Bromofluorobenzene	89%		65-130%

ND = Not detected MDL - Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range

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

Accutest Laboratories

Report of Analysis

Page 1 of 1

Client Sample ID:	TURLEY 36205--A	
Lab Sample ID:	D31670-1	Date Sampled: 02/07/12
Matrix:	DW - Drinking Water	Date Received: 02/07/12
Method:	RSK175 MOD	Percent Solids: n/a
Project:	Noble Baseline Sampling	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FB05622.D	10	02/16/12	JY	n/a	n/a	GFB209
Run #2							

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
74-82-8	Methane	3.08		0.00080	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
74-98-6	Propane	0% ^a		50-141%

(a) Outside control limits due to dilution.

ND = Not detected MDL - Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
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: TURLEY 36205--A
Lab Sample ID: D31670-1
Matrix: DW - Drinking Water
Project: Noble Baseline Sampling

Date Sampled: 02/07/12
Date Received: 02/07/12
Percent Solids: n/a

General Chemistry

Analyte	Result	MCL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	382		mg/l	1	02/14/12	JD	SM20 2320B
Alkalinity, Carbonate	< 5.0		mg/l	1	02/14/12	JD	SM20 2320B
Alkalinity, Total as CaCO ₃	382		mg/l	1	02/14/12	JD	SM20 2320B
Chloride	159		mg/l	10	02/08/12 10:22	GH	EPA 300
Nitrogen, Nitrate ^a	11.2	10	mg/l	50	02/08/12 10:33	GH	EPA 300
Nitrogen, Nitrite	0.60	1.0	mg/l	5	02/08/12 09:58	GH	EPA 300
Solids, Total Dissolved	2200		mg/l	1	02/09/12	JD	SM20 2540C
Specific Conductivity	2450		umhos/cm	1	02/09/12	JK	SM20 2510B
Sulfate	1010		mg/l	50	02/08/12 10:33	GH	EPA 300
pH	7.45		su	1	02/08/12 14:30	CT	EPA 150.1

(a) Sample exceeds MCL for nitrate for drinking water.

MCL = Maximum Contamination Level (40 CFR 141)

Report of Analysis

Client Sample ID: TURLEY 36205--A
Lab Sample ID: D31670-1F
Matrix: DW - Drinking Water Filt
Project: Noble Baseline Sampling

Date Sampled: 02/07/12
Date Received: 02/07/12
Percent Solids: n/a

Dissolved Metals Analysis

Analyte	Result	MCL	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	145		0.40	mg/l	1	02/08/12	02/09/12 JB	EPA 200.7 ²	EPA 200.7 ⁴
Iron	< 0.070		0.070	mg/l	1	02/08/12	02/09/12 JB	EPA 200.7 ²	EPA 200.7 ⁴
Magnesium	46.2		0.20	mg/l	1	02/08/12	02/09/12 JB	EPA 200.7 ²	EPA 200.7 ⁴
Manganese	0.11		0.0050	mg/l	1	02/08/12	02/09/12 JB	EPA 200.7 ²	EPA 200.7 ⁴
Potassium	6.7		1.0	mg/l	1	02/08/12	02/09/12 JB	EPA 200.7 ²	EPA 200.7 ⁴
Selenium	0.020	0.050	0.00080	mg/l	2	02/08/12	02/08/12 GJ	EPA 200.8 ¹	EPA 200.8 ³
Sodium	440		0.40	mg/l	1	02/08/12	02/09/12 JB	EPA 200.7 ²	EPA 200.7 ⁴

(1) Instrument QC Batch: MA2170

(2) Instrument QC Batch: MA2172

(3) Prep QC Batch: MP6813

(4) Prep QC Batch: MP6814

RL = Reporting Limit

MCL = Maximum Contamination Level (40 CFR 141)

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



CHAIN OF CUSTODY

PAGE 1 OF 1

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

FED-EX Tracking #	Shipment Order Control #
Accutest Quote #	Accutest Job # D31670

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE sheet)												Matrix Codes	
Company Name LT Environmental		Project Name Noble Baseline Sampling															
Street Address 4600 West 60th Ave		Street															
City Denver		City															
State CO		State															
Project Contact bforkner@ltenv.com, bchristopher@ltenv.com		Project # NEP0605.02															
Phone # 303-962-5538		Client Purchase Order #															
Sampler(s) Name(s) Brian Christopher		Project Manager Brett Forkner															
Attention:																	
Accutest Sample #		Collection															
Field ID / Point of Collection Turrey 36205		MECHDI Val #															
Date 2/7/12		Time 1345															
Sampled by BC		Matrix DW															
# of bottles 13		Number of preserved bottles															
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HC501		HC502															
HC503		HC504															
HC505		HC506															
HC507		HC508															
HC509		HC510															
HC511		HC512															
HC513		HC514															
HC515		HC516															
HC517		HC518															
HC519		HC520															
HC521		HC522															
HC523		HC524															
HC525		HC526															
HC527		HC528															
HC529		HC530															
HC531		HC532															
HC533																	

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D31670

Client: LTE

Immediate Client Services Action Required: No

Date / Time Received: 2/7/2012 3:45:00 PM

No. Coolers: 1

Client Service Action Required at Login: No

Project: NOBLE BASELINE SAMPLING

Airbill #'s: HD

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

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

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

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

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

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

Comments

GC/MS Volatiles

5

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: D31670**Account:** LTENCODE LT Environmental**Project:** Noble Baseline Sampling

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V933-MB	3V16067.D	1	02/08/12	BR	n/a	n/a	V3V933

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

D31670-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	4.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
17060-07-0	1,2-Dichloroethane-D4	87% 67-131%
2037-26-5	Toluene-D8	91% 65-130%
460-00-4	4-Bromofluorobenzene	89% 65-130%

Blank Spike Summary

Page 1 of 1

Job Number: D31670

Account: LTENCODE LT Environmental

Project: Noble Baseline Sampling

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V933-BS	3V16068.D	1	02/08/12	BR	n/a	n/a	V3V933

The QC reported here applies to the following samples:

Method: SW846 8260B

D31670-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	49.4	99	70-130
100-41-4	Ethylbenzene	50	49.1	98	70-130
108-88-3	Toluene	50	48.8	98	70-130
1330-20-7	Xylene (total)	150	151	101	56-138

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	83%	67-131%
2037-26-5	Toluene-D8	90%	65-130%
460-00-4	4-Bromofluorobenzene	96%	65-130%

Blank Spike Summary

Job Number: D31670
Account: LTENCODE LT Environmental
Project: Noble Baseline Sampling

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V933-BS	3V16069.D	1	02/08/12	BR	n/a	n/a	V3V933

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

D31670-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
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CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	81%	67-131%
2037-26-5	Toluene-D8	91%	65-130%
460-00-4	4-Bromofluorobenzene	93%	65-130%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D31670

Account: LTENCODE LT Environmental

Project: Noble Baseline Sampling

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D31623-1MS	3V16074.D	20	02/08/12	BR	n/a	n/a	V3V933
D31623-1MSD	3V16075.D	20	02/08/12	BR	n/a	n/a	V3V933
D31623-1	3V16073.D	10	02/08/12	BR	n/a	n/a	V3V933

The QC reported here applies to the following samples:

Method: SW846 8260B

D31670-1

CAS No.	Compound	D31623-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	107	1000	1100	99	1090	98	1	61-133/30
100-41-4	Ethylbenzene	29.9	1000	1030	100	1010	98	2	70-130/30
108-88-3	Toluene	775	1000	1790	102	1690	92	6	70-130/30
1330-20-7	Xylene (total)	277	3000	3300	101	3280	100	1	56-138/30

CAS No.	Surrogate Recoveries	MS	MSD	D31623-1	Limits
17060-07-0	1,2-Dichloroethane-D4	79%	91%	80%	67-131%
2037-26-5	Toluene-D8	90%	89%	90%	65-130%
460-00-4	4-Bromofluorobenzene	95%	98%	87%	65-130%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D31670
Account: LTENCODE LT Environmental
Project: Noble Baseline Sampling

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D31623-1MS	3V16076.D	20	02/08/12	BR	n/a	n/a	V3V933
D31623-1MSD	3V16077.D	20	02/08/12	BR	n/a	n/a	V3V933
D31623-1	3V16073.D	10	02/08/12	BR	n/a	n/a	V3V933

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

D31670-1

CAS No.	Compound	D31623-1 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
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CAS No.	Surrogate Recoveries	MS	MSD	D31623-1	Limits
17060-07-0	1,2-Dichloroethane-D4	93%	94%	80%	67-131%
2037-26-5	Toluene-D8	90%	89%	90%	65-130%
460-00-4	4-Bromofluorobenzene	98%	98%	87%	65-130%

GC/MS Volatiles

Raw Data



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3020712.S\
Data File : 3V16084.D
Acq On : 8 Feb 2012 1:17 pm
Operator : brianr
Sample : D31670-1
Misc : MS3364,V3V933,,,,,1
ALS Vial : 48 Sample Multiplier: 1

Quant Time: Feb 08 18:07:58 2012
Quant Method : C:\msdchem\1\METHODS\V3AP918TVH918.M
Quant Title : 8260
QLast Update : Fri Feb 03 12:43:40 2012
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.882	168	189472	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.678	114	330452	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.312	117	310875	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.305	152	179126	50.00	ug/l	0.00

System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	12.270	102	29371	52.42	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	104.84%
61) Toluene-d8	14.073	98	421331	44.75	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	89.50%
69) 4-Bromofluorobenzene	16.265	95	140430	44.40	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	88.80%

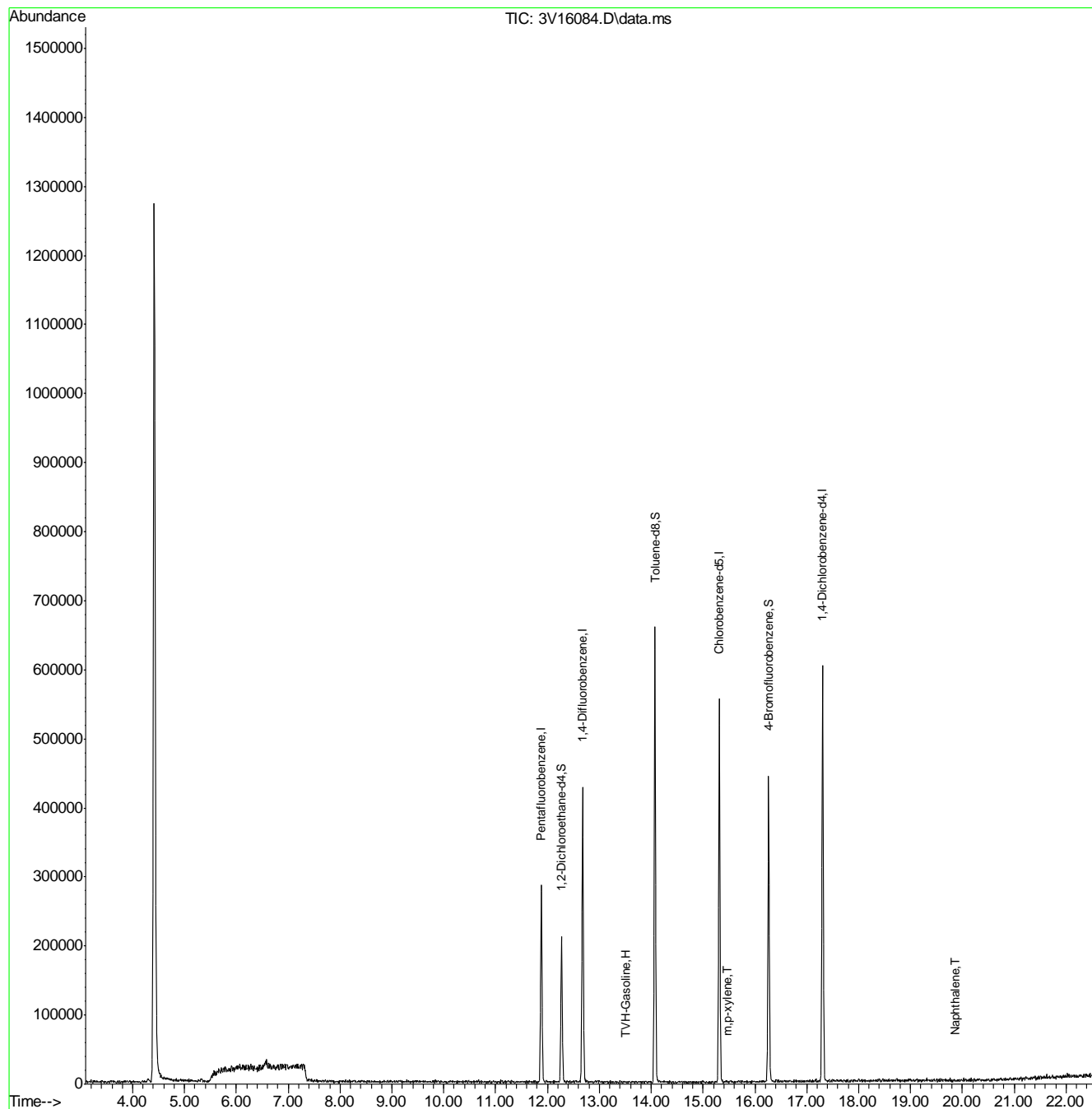
Target Compounds					Qvalue
1) TVH-Gasoline	13.516	TIC	46699m	5.13	ug/l
72) m,p-xylene	15.466	106	255	0.49	ug/l
91) Naphthalene	19.869	128	212	0.65	ug/l

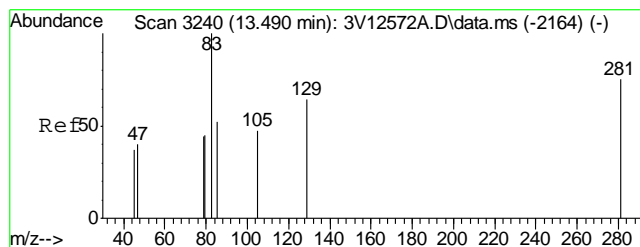
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3020712.S\
Data File : 3V16084.D
Acq On : 8 Feb 2012 1:17 pm
Operator : brianr
Sample : D31670-1
Misc : MS3364,V3V933,,,,,1
ALS Vial : 48 Sample Multiplier: 1

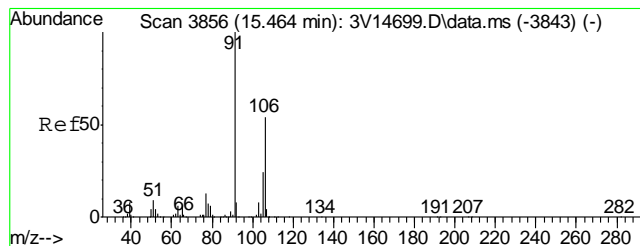
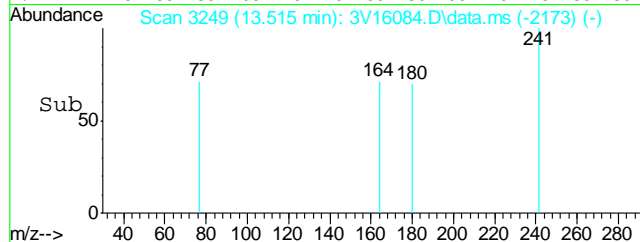
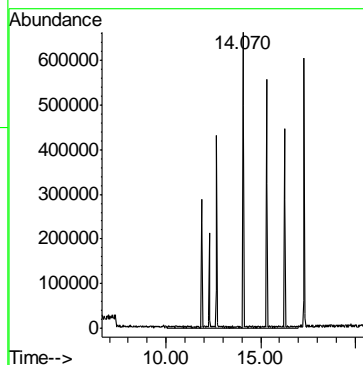
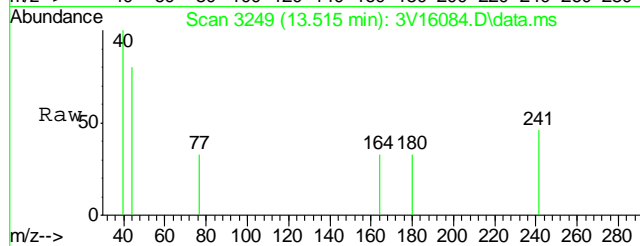
Quant Time: Feb 08 18:07:58 2012
Quant Method : C:\msdchem\1\METHODS\V3AP918TVH918.M
Quant Title : 8260
QLast Update : Fri Feb 03 12:43:40 2012
Response via : Initial Calibration





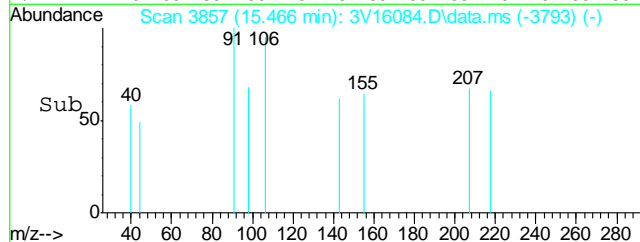
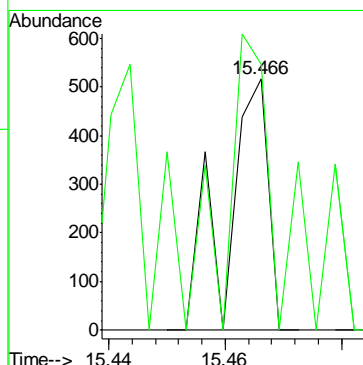
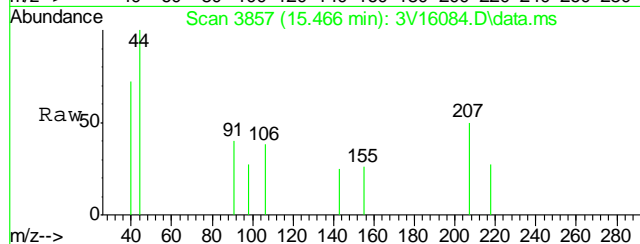
#1
TVH-Gasoline
Concen: 5.13 ug/l m
RT: 13.516 min Scan# 3249
Delta R.T. 0.000 min
Lab File: 3V16084.D
Acq: 8 Feb 2012 1:17 pm

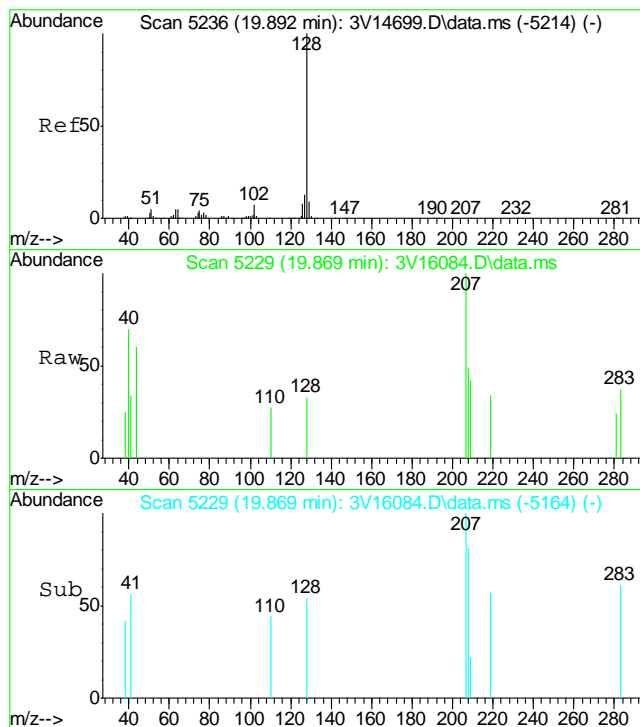
Tgt Ion:TIC Resp: 46699



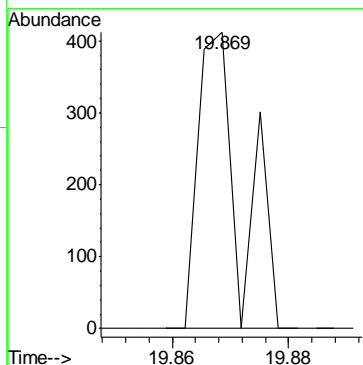
#72
m,p-xylene
Concen: 0.49 ug/l
RT: 15.466 min Scan# 3857
Delta R.T. 0.007 min
Lab File: 3V16084.D
Acq: 8 Feb 2012 1:17 pm

Tgt Ion:106 Resp: 255
Ion Ratio Lower Upper
106 100
91 164.7 164.6 204.6





#91
 Naphthalene
 Concen: 0.65 ug/l
 RT: 19.869 min Scan# 5229
 Delta R.T. 0.010 min
 Lab File: 3V16084.D
 Acq: 8 Feb 2012 1:17 pm
 Tgt Ion:128 Resp: 212



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3020712.S\
Data File : 3V16067.D
Acq On : 8 Feb 2012 3:13 am
Operator : brianr
Sample : MB
Misc : MS3364,V3V933,,,,,1
ALS Vial : 31 Sample Multiplier: 1

Quant Time: Feb 08 17:45:09 2012
Quant Method : C:\msdchem\1\METHODS\V3AP918TVH918.M
Quant Title : 8260
QLast Update : Fri Feb 03 12:43:40 2012
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) Pentafluorobenzene	11.880	168	247134	50.00	ug/l	0.00
35) 1,4-Difluorobenzene	12.676	114	401826	50.00	ug/l	0.00
53) Chlorobenzene-d5	15.313	117	372772	50.00	ug/l	0.00
74) 1,4-Dichlorobenzene-d4	17.303	152	209584	50.00	ug/l	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4	12.274	102	31816	43.54	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	87.08%
61) Toluene-d8	14.071	98	512478	45.39	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	90.78%
69) 4-Bromofluorobenzene	16.263	95	169142	44.60	ug/l	0.00
Spiked Amount	50.000	Range	70 - 130	Recovery	=	89.20%

Target Compounds

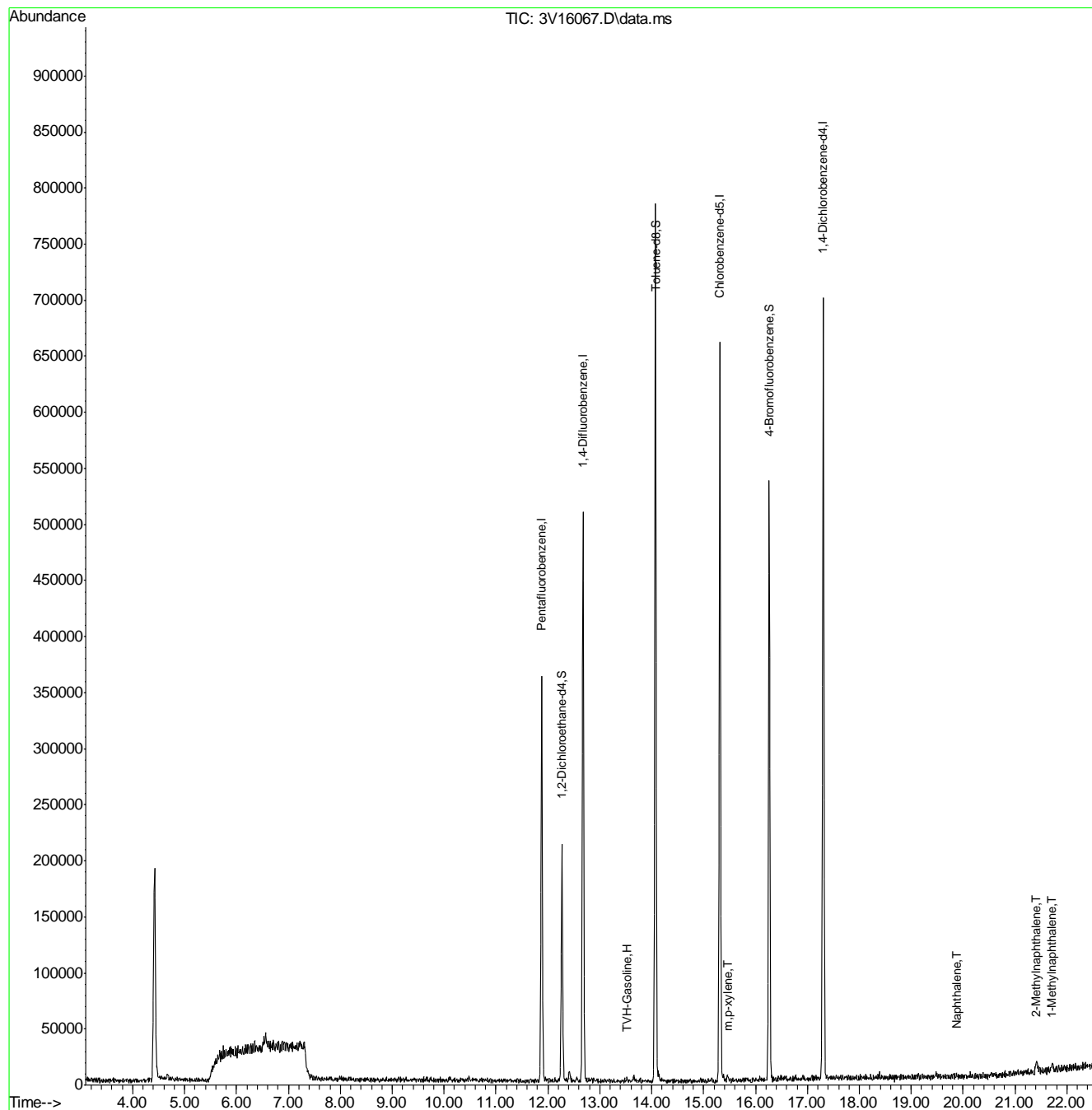
					Qvalue
1) TVH-Gasoline	13.516	TIC	231545m	14.98	ug/l
72) m,p-xylene	15.467	106	1413	0.67	ug/l # 68
91) Naphthalene	19.866	128	2495	0.86	ug/l 100
94) 2-Methylnaphthalene	21.403	142	4984m	1.58	ug/l
95) 1-Methylnaphthalene	21.712	142	2511	1.07	ug/l # 91

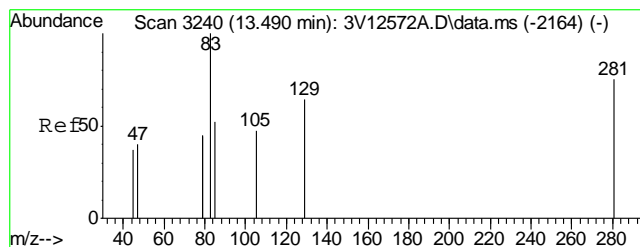
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\V3020712.S\
Data File : 3V16067.D
Acq On : 8 Feb 2012 3:13 am
Operator : brianr
Sample : MB
Misc : MS3364,V3V933,,,,,1
ALS Vial : 31 Sample Multiplier: 1

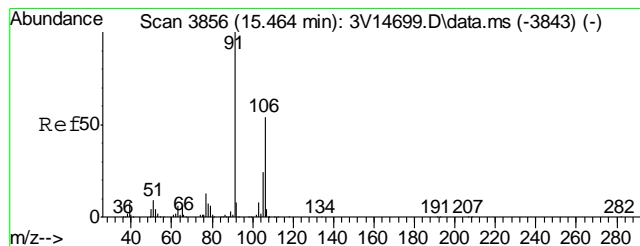
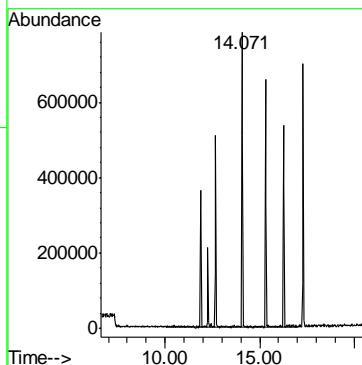
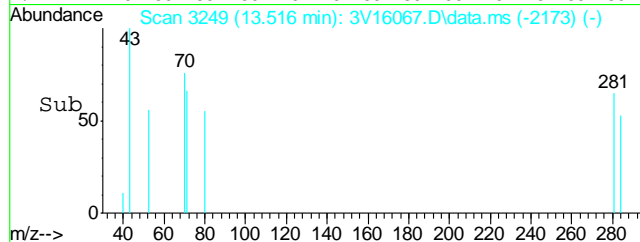
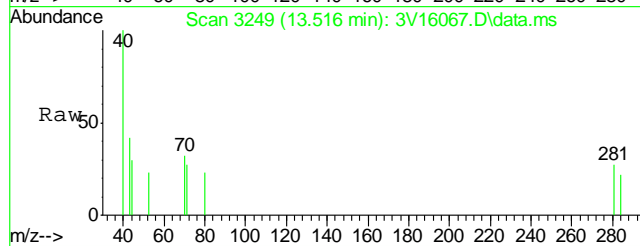
Quant Time: Feb 08 17:45:09 2012
Quant Method : C:\msdchem\1\METHODS\V3AP918TVH918.M
Quant Title : 8260
QLast Update : Fri Feb 03 12:43:40 2012
Response via : Initial Calibration





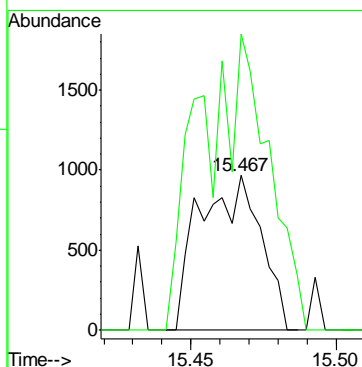
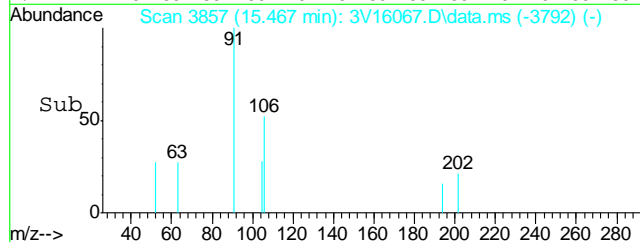
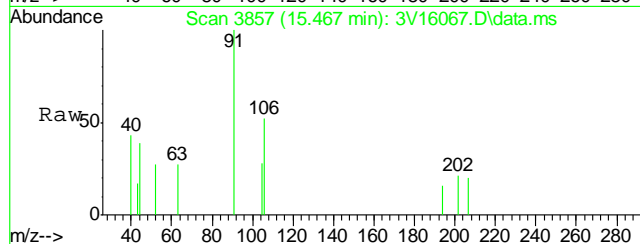
#1
TVH-Gasoline
Concen: 14.98 ug/l m
RT: 13.516 min Scan# 3249
Delta R.T. 0.000 min
Lab File: 3V16067.D
Acq: 8 Feb 2012 3:13 am

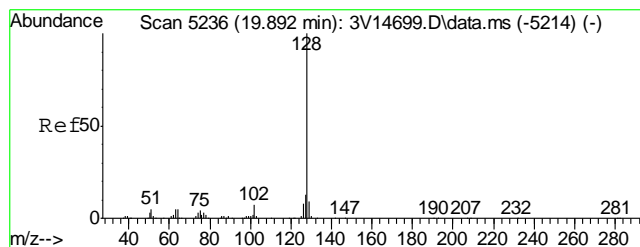
Tgt Ion:TIC Resp: 231545



#72
m,p-xylene
Concen: 0.67 ug/l
RT: 15.467 min Scan# 3857
Delta R.T. 0.008 min
Lab File: 3V16067.D
Acq: 8 Feb 2012 3:13 am

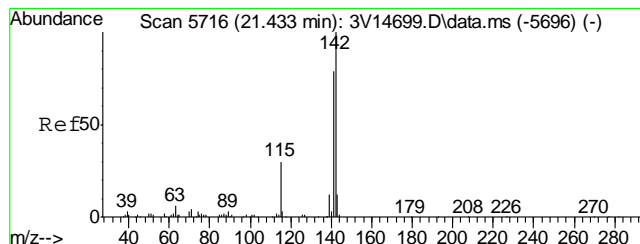
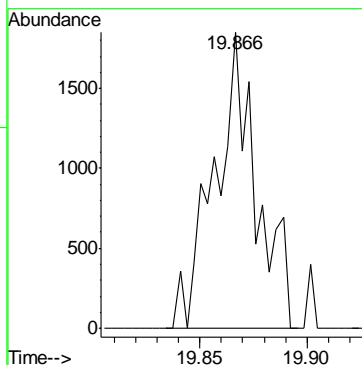
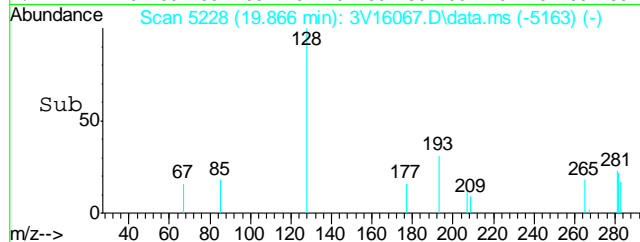
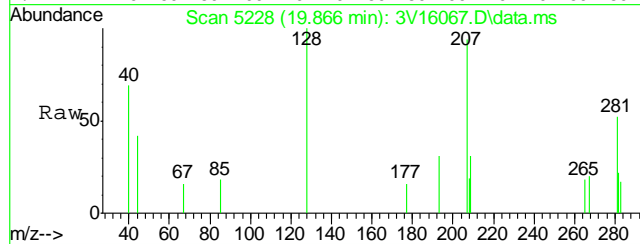
Tgt Ion:106 Resp: 1413
Ion Ratio Lower Upper
106 100
91 138.9 164.6 204.6#





#91
Naphthalene
Concen: 0.86 ug/l
RT: 19.866 min Scan# 5228
Delta R.T. 0.008 min
Lab File: 3V16067.D
Acq: 8 Feb 2012 3:13 am

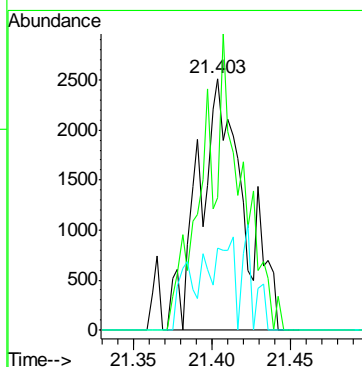
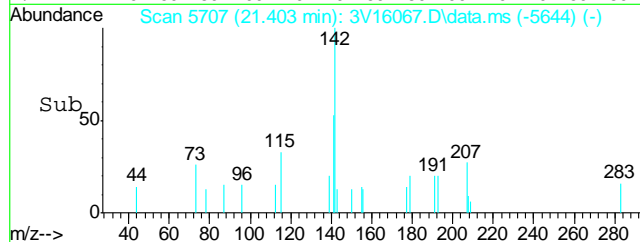
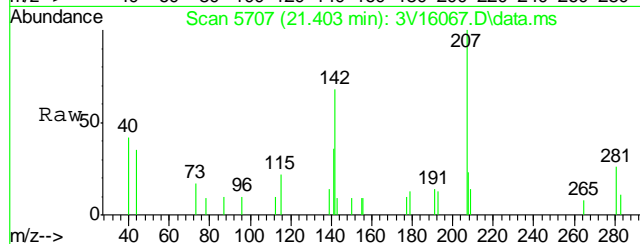
Tgt Ion:128 Resp: 2495

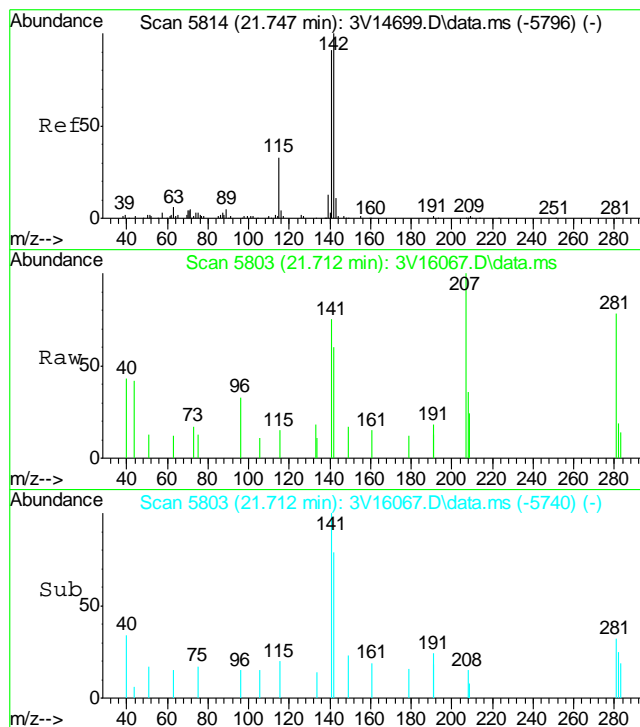


#94
2-Methylnaphthalene
Concen: 1.58 ug/l m
RT: 21.403 min Scan# 5707
Delta R.T. 0.001 min
Lab File: 3V16067.D
Acq: 8 Feb 2012 3:13 am

Tgt Ion:142 Resp: 4984

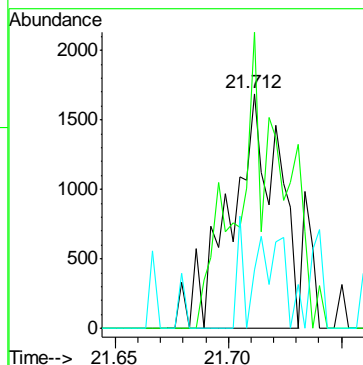
Ion	Ratio	Lower	Upper
142	100		
141	55.3	67.4	101.2#
115	20.0	24.3	36.5#





#95
1-Methylnaphthalene
Concen: 1.07 ug/l
RT: 21.712 min Scan# 5803
Delta R.T. 0.001 min
Lab File: 3V16067.D
Acq: 8 Feb 2012 3:13 am

Tgt Ion	Ratio	Lower	Upper
142	100		
141	84.5	72.6	109.0
115	23.0	26.2	39.2



GC Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: D31670**Account:** LTENCODE LT Environmental**Project:** Noble Baseline Sampling

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GC2614-MB	FB05613.D	1	02/16/12	JY	n/a	n/a	GFB209

The QC reported here applies to the following samples:**Method:** RSK175 MOD

D31670-1

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.00080	0.00040	mg/l	

CAS No.	Surrogate Recoveries	Limits
74-98-6	Propane	93% 50-141%

Blank Spike Summary

Job Number: D31670
Account: LTENCODE LT Environmental
Project: Noble Baseline Sampling

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GC2614-BS	FB05614.D	10	02/16/12	JY	n/a	n/a	GFB209

The QC reported here applies to the following samples: Method: RSK175 MOD

D31670-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
74-82-8	Methane	0.509	0.676	133	70-149

CAS No.	Surrogate Recoveries	BSP	Limits
74-98-6	Propane	96%	50-141%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D31670
Account: LTENCODE LT Environmental
Project: Noble Baseline Sampling

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D31926-2MS	FB05626.D	10	02/16/12	JY	n/a	n/a	GFB209
D31926-2MSD	FB05627.D	10	02/16/12	JY	n/a	n/a	GFB209
D31926-2	FB05617.D	1	02/16/12	JY	n/a	n/a	GFB209

The QC reported here applies to the following samples: Method: RSK175 MOD

D31670-1

CAS No.	Compound	D31926-2 mg/l	Spike Q	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
74-82-8	Methane	ND	0.509	0.590	116	0.545	107	8	70-149/30

CAS No.	Surrogate Recoveries	MS	MSD	D31926-2	Limits
74-98-6	Propane	87%	81%	85%	50-141%

7.3.1
7

GC Volatiles

Raw Data

∞

Quantitation Report (QT Reviewed)

Data File : V:\FB021612\FB05622.D Vial: 11
Acq On : 16 Feb 2012 1:03 pm Operator: JennY
Sample : D31670-1, 10X Inst : FID 4
Misc : 50uL|GC2614,GFB209,,,,,10 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Feb 16 15:18:23 2012 Quant Results File: MEEP-GFB202A.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB202A.M (Chemstation Integrator)
Title : RSK 175 Methane, Ethene, Ethane, and Propane
Last Update : Wed Jan 25 08:01:42 2012
Response via : Initial Calibration
DataAcq Meth : GAS.M

Volume Inj. : 100ul
Signal Phase : Porapak Q 80/100
Signal Info : 1/8 in

Compound	R.T.	Response	Conc Units

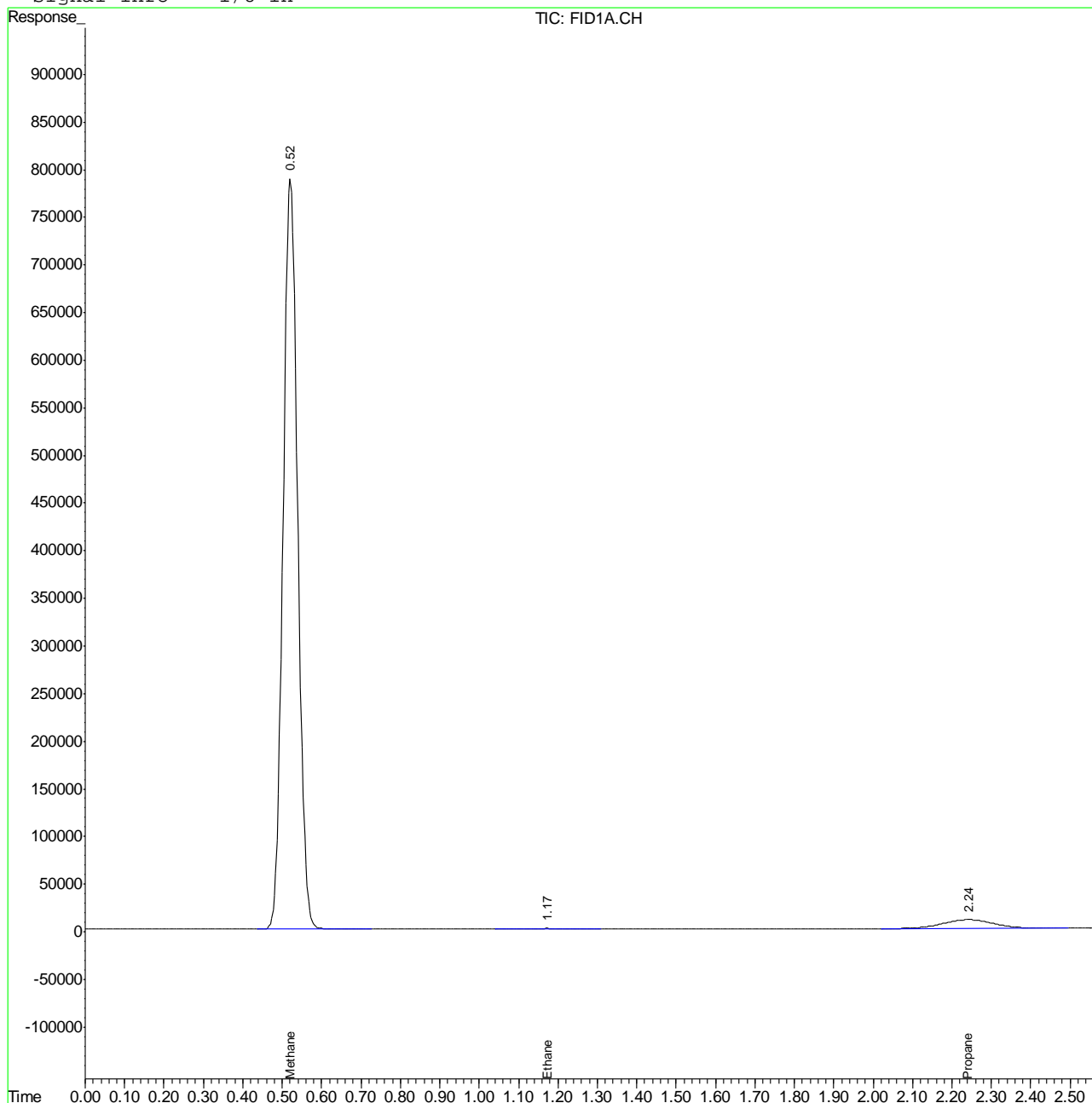
System Monitoring Compounds			
4) S Propane	2.24	826405	29.511 rawvp
Target Compounds			
1) Methane	0.52	20189436	2071.261 rawvp
2) Ethene	0.00	0	N.D. rawvpd
3) Ethane	1.17	29432	1.596 rawvp

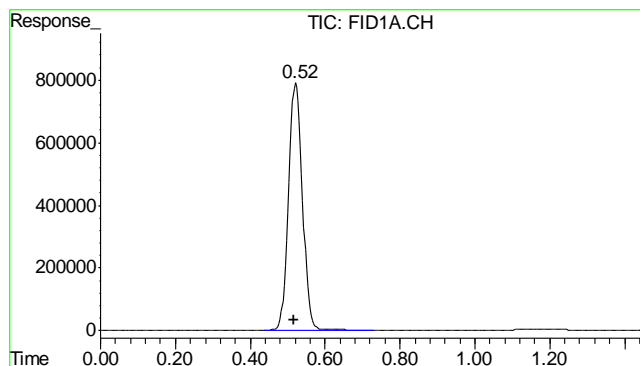
Quantitation Report (QT Reviewed)

Data File : V:\FB021612\FB05622.D Vial: 11
 Acq On : 16 Feb 2012 1:03 pm Operator: JennY
 Sample : D31670-1, 10X Inst : FID 4
 Misc : 50uL|GC2614,GFB209,,,,,10 Multiplr: 1.00
 IntFile : autoint1.e
 Quant Time: Feb 16 15:49 2012 Quant Results File: MEEP-GFB202A.RES

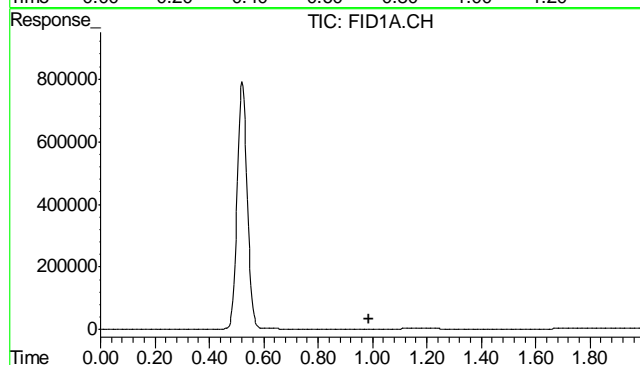
Quant Method : C:\MSDCHEM\2...\MEEP-GFB202A.M (Chemstation Integrator)
 Title : RSK 175 Methane, Ethene, Ethane, and Propane
 Last Update : Wed Jan 25 08:01:42 2012
 Response via : Multiple Level Calibration
 DataAcq Meth : GAS.M

Volume Inj. : 100ul
 Signal Phase : Porapak Q 80/100
 Signal Info : 1/8 in

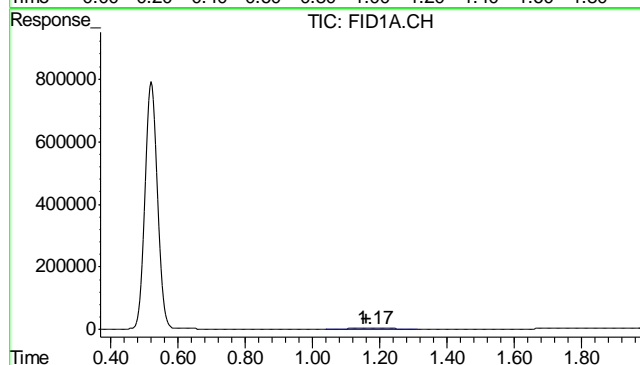




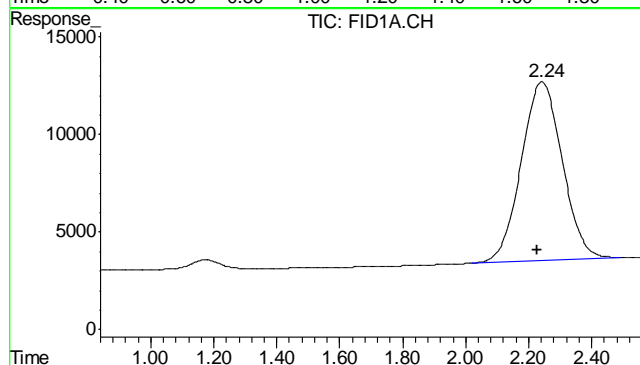
#1 Methane
 R.T.: 0.521 min
 Delta R.T.: 0.004 min
 Response: 20189436
 Conc: 2071.26 rawvppm



#2 Ethene
 R.T.: 0.000 min
 Exp R.T.: 0.989 min
 Response: 0
 Conc: N.D.



#3 Ethane
 R.T.: 1.175 min
 Delta R.T.: 0.012 min
 Response: 29432
 Conc: 1.60 rawvppm



#4 Propane
 R.T.: 2.243 min
 Delta R.T.: 0.016 min
 Response: 826405
 Conc: 29.51 rawvppm

8.1.1

8

Quantitation Report (QT Reviewed)

Data File : V:\FB021612\FB05613.D Vial: 2
Acq On : 16 Feb 2012 12:15 pm Operator: JennyY
Sample : GC2614-MB Inst : FID 4
Misc : 500uL|GC2614,GFB209,,,,,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Feb 16 15:18:04 2012 Quant Results File: MEEP-GFB202A.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB202A.M (Chemstation Integrator)
Title : RSK 175 Methane, Ethene, Ethane, and Propane
Last Update : Wed Jan 25 08:01:42 2012
Response via : Initial Calibration
DataAcq Meth : GAS.M

Volume Inj. : 100ul
Signal Phase : Porapak Q 80/100
Signal Info : 1/8 in

Compound	R.T.	Response	Conc Units

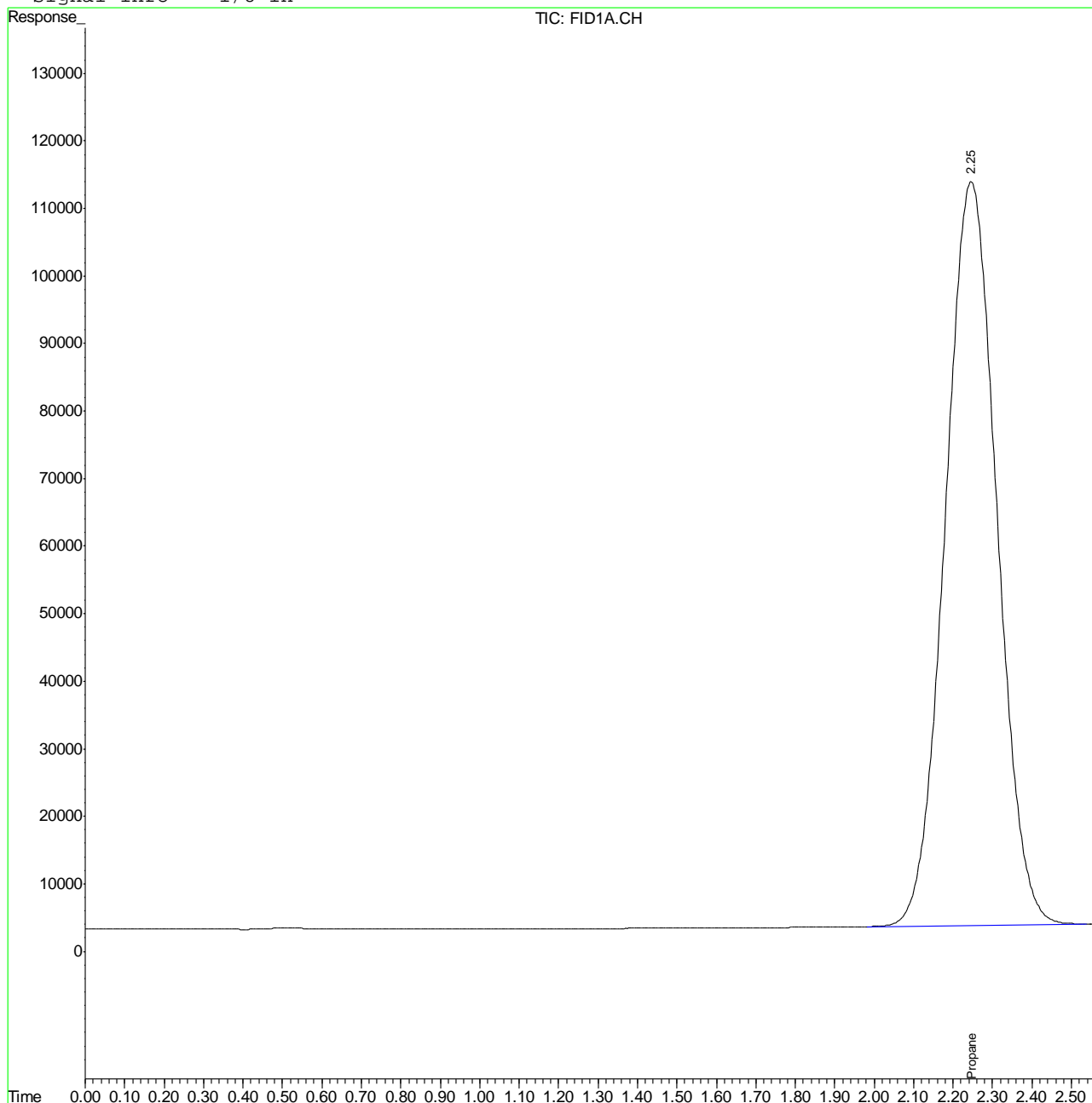
System Monitoring Compounds			
4) S Propane	2.25	10001128	357.143 rawvp
Target Compounds			
1) Methane	0.00	0	N.D. rawvpd
2) Ethene	0.00	0	N.D. rawvpd
3) Ethane	0.00	0	N.D. rawvpd

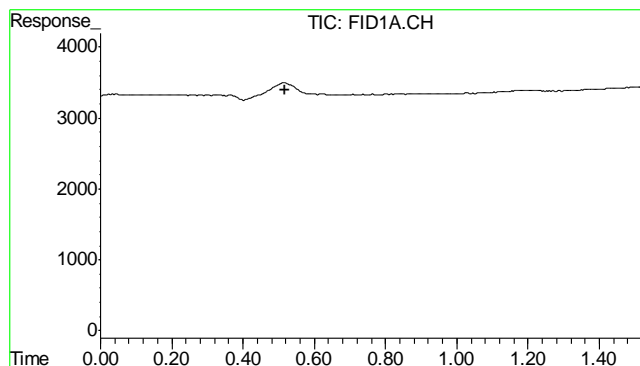
Quantitation Report (QT Reviewed)

Data File : V:\FB021612\FB05613.D Vial: 2
Acq On : 16 Feb 2012 12:15 pm Operator: JennY
Sample : GC2614-MB Inst : FID 4
Misc : 500uL|GC2614,GFB209,,,,,1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Feb 16 15:33 2012 Quant Results File: MEEP-GFB202A.RES

Quant Method : C:\MSDCHEM\2...\MEEP-GFB202A.M (Chemstation Integrator)
Title : RSK 175 Methane, Ethene, Ethane, and Propane
Last Update : Wed Jan 25 08:01:42 2012
Response via : Multiple Level Calibration
DataAcq Meth : GAS.M

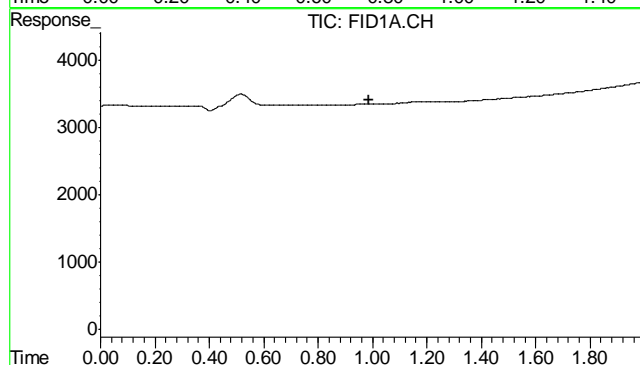
Volume Inj. : 100ul
Signal Phase : Porapak Q 80/100
Signal Info : 1/8 in





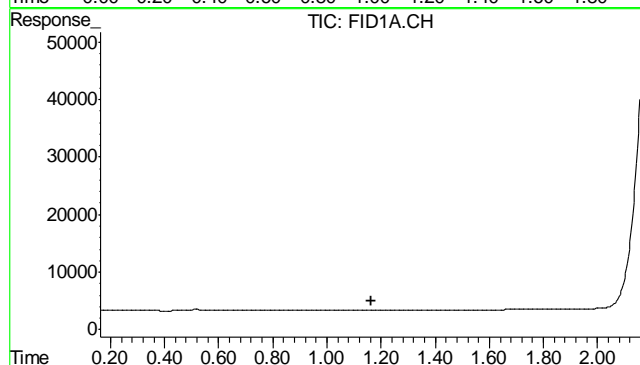
#1 Methane

R.T.: 0.000 min
Exp R.T.: 0.518 min
Response: 0
Conc: N.D.



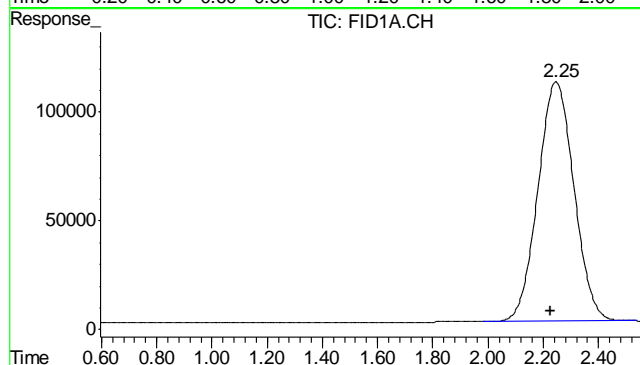
#2 Ethene

R.T.: 0.000 min
Exp R.T.: 0.989 min
Response: 0
Conc: N.D.



#3 Ethane

R.T.: 0.000 min
Exp R.T.: 1.162 min
Response: 0
Conc: N.D.



#4 Propane

R.T.: 2.247 min
Delta R.T.: 0.020 min
Response: 10001128
Conc: 357.14 rawvppm

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: D31670
Account: LTENCODE - LT Environmental
Project: Noble Baseline Sampling

QC Batch ID: MP6813
Matrix Type: DRINKING WATER

Methods: EPA 200.8
Units: mg/l

Prep Date: 02/08/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	0.050	.00028	.0013		
Antimony	0.00040	.000002	.000015		
Arsenic	0.00080	.000098	.00009		
Barium	0.0020	.000007	.0001		
Beryllium	0.00020	.000015	.000052		
Boron	0.040	.0019	.0008		
Cadmium	0.00010	.000045	.000063		
Calcium	0.40	.0036	.02		
Chromium	0.0020	.000041	.0001		
Cobalt	0.00020	.0000065	.000015		
Copper	0.0020	.000021	.000038		
Iron	0.040	.0016	.0048		
Lead	0.00050	.0000024	.000021		
Magnesium	0.10	.00013	.0014		
Manganese	0.0010	.000014	.000036		
Molybdenum	0.0010	.0000087	.00006		
Nickel	0.0020	.0000057	.000054		
Phosphorus	0.060	.0036	.018		
Potassium	0.20	.004	.006		
Selenium	0.00040	.00015	.00034	0.00013	<0.00040
Silver	0.00010	.0000016	.000052		
Sodium	0.50	.0016	.004		
Strontium	0.020	.0000079	.000016		
Thallium	0.00020	.000029	.00001		
Tin	0.010	.000012	.00018		
Titanium	0.0020	.000069	.00012		
Uranium	0.00020	.00000076	.00001		
Vanadium	0.0010	.0001	.0002		
Zinc	0.010	.000077	.00024		

Associated samples MP6813: D31670-1F

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: D31670
Account: LTENCODE - LT Environmental
Project: Noble Baseline Sampling

QC Batch ID: MP6813
Matrix Type: DRINKING WATER

Methods: EPA 200.8
Units: mg/l

Prep Date: 02/08/12

Metal	D31657-2 Original MS	Spikelot MPICPAL % Rec	QC Limits
Aluminum			
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Boron			
Cadmium	anr		
Calcium			
Chromium	anr		
Cobalt			
Copper	anr		
Iron			
Lead	anr		
Magnesium			
Manganese			
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium			
Selenium	0.00068 0.21	0.20 104.7	70-130
Silver			
Sodium	anr		
Strontium			
Thallium	anr		
Tin			
Titanium			
Uranium	anr		
Vanadium			
Zinc			

Associated samples MP6813: D31670-1F

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: D31670
 Account: LTENCODE - LT Environmental
 Project: Noble Baseline Sampling

QC Batch ID: MP6813
 Matrix Type: DRINKING WATER

Methods: EPA 200.8
 Units: mg/l

Prep Date: 02/08/12

Metal	D31657-2 Original	MSD	Spikelot MPICPAL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Boron						
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt						
Copper	anr					
Iron						
Lead	anr					
Magnesium						
Manganese						
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium	0.00068	0.22	0.20	109.7	4.7	14
Silver						
Sodium	anr					
Strontium						
Thallium	anr					
Tin						
Titanium						
Uranium	anr					
Vanadium						
Zinc						

Associated samples MP6813: D31670-1F

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: D31670
Account: LTENCODE - LT Environmental
Project: Noble Baseline Sampling

QC Batch ID: MP6813
Matrix Type: DRINKING WATER

Methods: EPA 200.8
Units: mg/l

Prep Date: 02/08/12

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper	anr			
Iron				
Lead	anr			
Magnesium				
Manganese				
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium				
Selenium	0.21	0.20	105.0	85-115
Silver				
Sodium	anr			
Strontium				
Thallium	anr			
Tin				
Titanium				
Uranium	anr			
Vanadium				
Zinc				

Associated samples MP6813: D31670-1F

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: D31670
Account: LTENCODE - LT Environmental
Project: Noble Baseline Sampling

QC Batch ID: MP6814
Matrix Type: DRINKING WATER

Methods: EPA 200.7
Units: mg/l

Prep Date: 02/08/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	0.10	.0059	.0059		
Antimony	0.030	.0031	.0031		
Arsenic	0.025	.0059	.0059		
Barium	0.010	.0011	.0011		
Beryllium	0.010	.00044	.0014		
Boron	0.050	.0048	.0048		
Cadmium	0.010	.00027	.0005		
Calcium	0.40	.0096	.0096	0.0045	<0.40
Chromium	0.010	.00018	.00056		
Cobalt	0.0050	.00035	.00035		
Copper	0.010	.00085	.0011		
Iron	0.070	.0034	.0035	0.0050	<0.070
Lead	0.050	.0016	.0023		
Lithium	0.0020	.00028	.00036		
Magnesium	0.20	.0058	.01	0.0010	<0.20
Manganese	0.0050	.000053	.00034	0.0	<0.0050
Molybdenum	0.0050	.00045	.00075		
Nickel	0.030	.00043	.00085		
Phosphorus	0.10	.011	.015		
Potassium	1.0	.055	.055	0.019	<1.0
Selenium	0.050	.0038	.0038		
Silicon	0.050	.0038	.0038		
Silver	0.030	.00018	.00057		
Sodium	0.40	.11	.11	-0.060	<0.40
Strontium	0.050		.00012		
Thallium	0.010	.0029	.0035		
Tin	0.050	.0055	.019		
Titanium	0.010	.00011	.00044		
Uranium	0.050	.0015	.0033		
Vanadium	0.010	.00016	.0003		
Zinc	0.030	.00028	.0013		

Associated samples MP6814: D31670-1F

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D31670
Account: LTENCODE - LT Environmental
Project: Noble Baseline Sampling

QC Batch ID: MP6814
Matrix Type: DRINKING WATER

Methods: EPA 200.7
Units: mg/l

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D31670
 Account: LTENCODE - LT Environmental
 Project: Noble Baseline Sampling

QC Batch ID: MP6814
 Matrix Type: DRINKING WATER

Methods: EPA 200.7
 Units: mg/l

Prep Date: 02/08/12

Metal	D31673-1 Original MS		SpikeLot MPICPALL % Rec		QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	21.6	66.0	50.0	88.8	70-130
Chromium					
Cobalt					
Copper					
Iron	0.029	9.1	10.	90.7	70-130
Lead					
Lithium					
Magnesium	3.7	48.1	50.0	88.8	70-130
Manganese	0.00070	0.87	1.0	86.9	70-130
Molybdenum					
Nickel					
Phosphorus					
Potassium	0.91	47.3	50.0	92.8	70-130
Selenium					
Silicon	anr				
Silver					
Sodium	8.5	53.1	50.0	89.2	70-130
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP6814: D31670-1F

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D31670
Account: LTENCODE - LT Environmental
Project: Noble Baseline Sampling

QC Batch ID: MP6814
Matrix Type: DRINKING WATER

Methods: EPA 200.7
Units: mg/l

Prep Date:

Metal

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D31670
Account: LTENCODE - LT Environmental
Project: Noble Baseline Sampling

QC Batch ID: MP6814
Matrix Type: DRINKING WATER

Methods: EPA 200.7
Units: mg/l

Prep Date: 02/08/12

Metal	D31673-1 Original	MSD	Spikelot MPICPAL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium	21.6	66.4	50.0	89.6	0.6	20
Chromium						
Cobalt						
Copper						
Iron	0.029	9.2	10.	91.7	1.1	20
Lead						
Lithium						
Magnesium	3.7	48.1	50.0	88.8	0.0	20
Manganese	0.00070	0.87	1.0	86.9	0.0	20
Molybdenum						
Nickel						
Phosphorus						
Potassium	0.91	47.2	50.0	92.6	0.2	20
Selenium						
Silicon	anr					
Silver						
Sodium	8.5	52.9	50.0	88.8	0.4	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP6814: D31670-1F

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D31670
Account: LTENCODE - LT Environmental
Project: Noble Baseline Sampling

QC Batch ID: MP6814
Matrix Type: DRINKING WATER

Methods: EPA 200.7
Units: mg/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: D31670
Account: LTENCODE - LT Environmental
Project: Noble Baseline Sampling

QC Batch ID: MP6814
Matrix Type: DRINKING WATER

Methods: EPA 200.7
Units: mg/l

Prep Date: 02/08/12

Metal	BSP Result	Spikelot MPICALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	45.8	50.0	91.6	85-115
Chromium				
Cobalt				
Copper				
Iron	9.0	10.	90.0	85-115
Lead				
Lithium				
Magnesium	44.7	50.0	89.4	85-115
Manganese	0.85	1.0	85.0	85-115
Molybdenum				
Nickel				
Phosphorus				
Potassium	46.6	50.0	93.2	85-115
Selenium				
Silicon	anr			
Silver				
Sodium	45.6	50.0	91.2	85-115
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP6814: D31670-1F

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D31670
Account: LTENCODE - LT Environmental
Project: Noble Baseline Sampling

QC Batch ID: MP6814
Matrix Type: DRINKING WATER

Methods: EPA 200.7
Units: mg/l

Prep Date:

Metal

(anr) Analyte not requested

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: D31670
Account: LTENCODE - LT Environmental
Project: Noble Baseline Sampling

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Bicarbonate as CaC	GN13689	5.0	0.0	mg/l	100	94.2	94.2	90-110%
Alkalinity, Carbonate	GN13690	5.0	0.0	mg/l	100	94.2	94.2	80-120%
Alkalinity, Total as CaCO3	GN13688	5.0	0.0	mg/l	100	94.2	94.2	90-110%
Chloride	GP6477/GN13600	0.50	0.0	mg/l	20	19.7	98.5	90-110%
Nitrogen, Nitrate	GP6477/GN13600	0.010	0.0	mg/l	4.52	4.10	90.7	90-110%
Nitrogen, Nitrite	GP6477/GN13600	0.0040	0.0	mg/l	6.09	6.09	100.0	90-110%
Solids, Total Dissolved	GN13615	10	0.0	mg/l	400	401	100.3	90-110%
Specific Conductivity	GP6481/GN13613	1.0	<1.0	umhos/cm	99.4	98.8	99.4	90-110%
Sulfate	GP6477/GN13600	0.50	0.0	mg/l	30	29.4	98.0	90-110%
pH	GN13606			su	8.00	7.97	99.6	99.3-100.7%
pH	GN13606			su	8.00	7.97	99.6	99.3-100.7%

Associated Samples:

Batch GN13606: D31670-1
Batch GN13615: D31670-1
Batch GN13688: D31670-1
Batch GN13689: D31670-1
Batch GN13690: D31670-1
Batch GP6477: D31670-1
Batch GP6481: D31670-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D31670
Account: LTENCODE - LT Environmental
Project: Noble Baseline Sampling

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO ₃	GN13688	D31697-2	mg/l	28.6	24.5	15.5	0-20%
Solids, Total Dissolved	GN13615	D31588-1	mg/l	588	598	1.7	0-25%
Specific Conductivity	GP6481/GN13613	D31630-1	umhos/cm	1640	1640	0.2	0-20%

Associated Samples:
Batch GN13615: D31670-1
Batch GN13688: D31670-1
Batch GP6481: D31670-1
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D31670
Account: LTENCODE - LT Environmental
Project: Noble Baseline Sampling

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO ₃	GN13688	D31697-2	mg/l	28.6	100	119	89.9	80-120%
Chloride	GP6477/GN13600	D31682-1	mg/l	17.5	10	27.7	102.0	80-120%
Nitrogen, Nitrate	GP6477/GN13600	D31682-1	mg/l	0.097	0.565	0.68	103.2	80-120%
Nitrogen, Nitrite	GP6477/GN13600	D31682-1	mg/l	0.0	0.305	0.27	88.7	80-120%
Sulfate	GP6477/GN13600	D31682-1	mg/l	2.7	10	12.9	102.0	80-120%

Associated Samples:

Batch GN13688: D31670-1

Batch GP6477: D31670-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D31670
Account: LTENCODE - LT Environmental
Project: Noble Baseline Sampling

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Alkalinity, Total as CaCO ₃	GN13688	D31697-2	mg/l	28.6	100	123	3.5	20%
Chloride	GP6477/GN13600	D31682-1	mg/l	17.5	10	27.7	0.0	20%
Nitrogen, Nitrate	GP6477/GN13600	D31682-1	mg/l	0.097	0.565	0.68	0.0	20%
Nitrogen, Nitrite	GP6477/GN13600	D31682-1	mg/l	0.0	0.305	0.27	0.0	20%
Sulfate	GP6477/GN13600	D31682-1	mg/l	2.7	10	12.9	0.0	20%

Associated Samples:

Batch GN13688: D31670-1

Batch GP6477: D31670-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

10.4
10

Lab #: 237562 Job #: 17521
 Sample Name/Number: Turley 36205-A
 Company: LT Environmental
 Date Sampled: 2/07/2012
 Container: Dissolved Gas Bottle
 Field/Site Name: Noble Baseline
 Location: Weld County, Colorado
 Formation/Depth:
 Sampling Point:
 Date Received: 2/23/2012 Date Reported: 2/29/2012

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Hydrogen Sulfide -----	na			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	0.683			
Oxygen -----	1.73			
Nitrogen -----	60.55			
Carbon Dioxide -----	2.82			
Methane -----	34.20	-70.58	-277.1	
Ethane -----	0.0210			
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 347

Specific gravity, calculated: 0.847

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.64

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.

GRAPHICAL PLOT OF METHANE GAS ORIGIN (Turley 36205--A)

