

FREMONT ENVIRONMENTAL INC.

March 24, 2015

Mr. Jacob Evans
Noble Energy
1625 Broadway, Suite 2000
Denver, CO 80202

Subject: **Excavation Report**
 Trebor B2-10 & 15
 API # 05-123-13381
 NWSE Sec 2, T5N, R64W
 Weld County, Colorado
 Fremont Project No. C015-010
 Spill #441027

Dear Mr. Evans:

Enclosed please find a copy of the above referenced Excavation Report for the Trebor B2-10 & 15 release site in Weld County, Colorado. The enclosed report describes excavation actions to remove impacted soil from the site. Please contact me at (303) 956-8714 if you require any additional information.

Fremont appreciates the opportunity to provide this service.

Sincerely,
FREMONT ENVIRONMENTAL INC.

A handwritten signature in blue ink, appearing to read "Paul V. Henahan", with a stylized flourish at the end.

Paul V. Henahan, P.E.
Senior Consultant

Enclosure

EXCAVATION REPORT
NOBLE ENERGY INC.
TREBOR B2-10&15
WELD COUNTY, COLORADO
FREMONT PROJECT NO. C015-010
SPILL #441027

Prepared by:

Fremont Environmental Inc.
1759 Redwing Lane
Broomfield, CO 80020
(303) 956-8714

March 24, 2015

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EXCAVATION REPORT
NOBLE ENERGY INC.
TREBOR B2-10&15
WELD COUNTY, COLORADO
FREMONT PROJECT NO. C015-010
SPILL #441027

1.0 INTRODUCTION

The purpose of this document is to present information collected during the excavation of petroleum-impacted soil at the Trebor B2-10&15 release location in Weld County, Colorado. This one day excavation project was completed on March 10, 2015. Since ground water was not impacted and the soil impacts have been removed, a No Further Action (NFA) determination should be provided by the Colorado Oil and Gas Conservation Commission.

2.0 BACKGROUND INFORMATION

2.1 Site Location

The Trebor B2-10&15 site is located approximately five miles northeast of Kersey, Colorado in Weld County as shown on Figure 1. The site is located in an agricultural area and is approximately 0.3 miles west of the intersection of County Road 59 and County Road 60.5. The location is further described as the NW $\frac{1}{4}$ of the SE $\frac{1}{4}$ of Section 2, Township 5N, Range 64W.

2.2 Site History

The site consists of the water vault and aboveground storage tank for the Trebor B2-10 & 15 natural gas wells. The Trebor B2-10 well was drilled in 1987 to a depth of approximately 6,912 feet. Soil impacts were recently observed adjacent to the water vault on a failed dump line during routine maintenance activities. These soil impacts initiated this excavation effort.

3.0 FIELD ACTIVITIES

Remediation efforts consisted of the excavation of petroleum-impacted soil at this site. The soil consisted of roadbase which was underlain by sandy clay to a depth of approximately five feet; fine sand is then present to a depth of 15 feet. Ground water entered the excavation at approximately 15 feet. The excavated area, which is approximately 20' x 25', is shown on Figures 2 and 3.

Excavation was initiated near the northern end of the water vault on March 10, 2015 and proceeded to the south until clean soil was observed on all sides of the overall dig based on field observations. The soil removal was completely identified and removed on March 10, 2015.

A total of 160 cubic yards of petroleum impacted soil were removed by B&G Oilfield Services Inc. from the location over the course of the one day project. The impacted soil was disposed of at the Waste Management Inc. landfill in Ault, Colorado as non-hazardous waste.

A photoionization detector (PID) was used to field screen soil samples during the excavation. The instrument was calibrated with a 100 ppm isobutylene standard. Based on the field screening results, five soil samples were collected from the side walls of the excavation to confirm that impacted soil had been removed. The laboratory analyses indicated that all of the samples had concentrations that were less than the Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1 limits.

The sidewall samples were collected as grab samples near the lower portion of the excavation wall at depths of nine to 14 feet. Since ground water was encountered, one water sample (W1) was collected.

The soil samples were analyzed by Summit Scientific, Inc. of Golden, Colorado for benzene, toluene, ethylbenzene and xylenes (BTEX), naphthalene, Total Petroleum Hydrocarbons – Gasoline Range Organics (TPH-GRO) by EPA method 8260C, and TPH – Diesel Range Organics (TPH-DRO) by EPA method 8015. The ground water sample was analyzed for BTEX by EPA method 8260C. The laboratory reports and chain-of-custody documentation are included in Appendix A.

Summaries of the laboratory data are included in Tables 1 and 2. Table 1 presents the laboratory analyses for each soil sample. In addition, a column stating whether the laboratory analyses passed or failed the COGCC limits is provided. The laboratory analyses indicated that all of the soil samples collected from the sidewalls achieved the COGCC Table 910-1 limits. Table 2 presents the ground water analytical data; the water sample (W1) had BTEX concentrations that were less than the COGCC Table 910-1 allowable limits. The benzene concentration in sample W1 was 1.3 ug/L.

A daily summary of the excavation work is provided below:

March 10, 2015 (Day 1 and Final Day) – Excavation of the impacted area was initiated in the northern portion of the overall dig and continued south while maintaining a clean west and east wall based on PID observations. Petroleum impacted soil was present to a depth of approximately 14 feet. Further, ground water was encountered at a depth of approximately 15 feet.

Five wall samples (NW Wall 9', NE Wall 9', South Wall 14', SW Wall 14' and SE Wall 14') were collected and submitted to the laboratory. These samples defined the extent of the overall excavation as well as the maximum depth of the dig. A ground water sample (W1) was also collected at a depth of approximately 15 feet and submitted to the laboratory.

Approximately 160 cubic yards of impacted soil were removed using an excavator and transported to the landfill. The locations of the soil samples are illustrated on Figure 3. The laboratory analyses are provided on Tables 1 and 2.

4.0 DISCUSSION

As demonstrated by the soil sampling, the petroleum impacted soil was removed from the site by excavation. This was confirmed by the analyses of the soil samples collected from the excavation sidewalls which were below the COGCC Table 910-1 concentrations. Approximately 160 cubic yards of impacted soil were removed and transported to the landfill.

Ground water was encountered during the excavation and one sample (W1) was collected and analyzed for BTEX. The BTEX concentrations were less than the COGCC Table 910-1 limits for this sample. The benzene concentration in sample W1 was 1.3 ug/L.

Since the impacted soil has been removed and the ground water sample was less than the COGCC Table 910-1 limits, Noble should request that a no further action (NFA) determination be provided by the COGCC.

5.0 REMARKS

The discussion and conclusions contained in this report represent our professional opinions. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

This report was prepared by **FREMONT ENVIRONMENTAL INC.**



3/24/15

Date_____

Paul V. Henahan, P.E.

Senior Consultant

TABLES

TABLE 1
SUMMARY OF SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
TREBOR B2-10 & 15, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C015-010

Sample	Depth (ft)	Date Sampled	Location	Pass or Fail	Benzene mg/kg	Toluene mg/kg	Ethyl- Benzene mg/kg	Xylenes mg/kg	Naphth- alene mg/kg	TPH GRO mg/kg	TPH DRO mg/kg
NE Wall	9	3/10/2015	Sidewall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
NW Wall	9	3/10/2015	Sidewall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
SW Wall	14	3/10/2015	Sidewall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	82
South Wall	14	3/10/2015	Sidewall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
SE Wall	14	3/10/2015	Sidewall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
COGCC Table 910-1 Limits					0.17	85	100	175	23	500	500

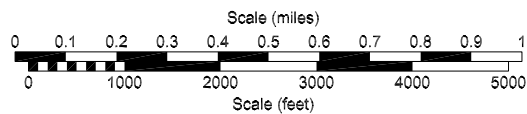
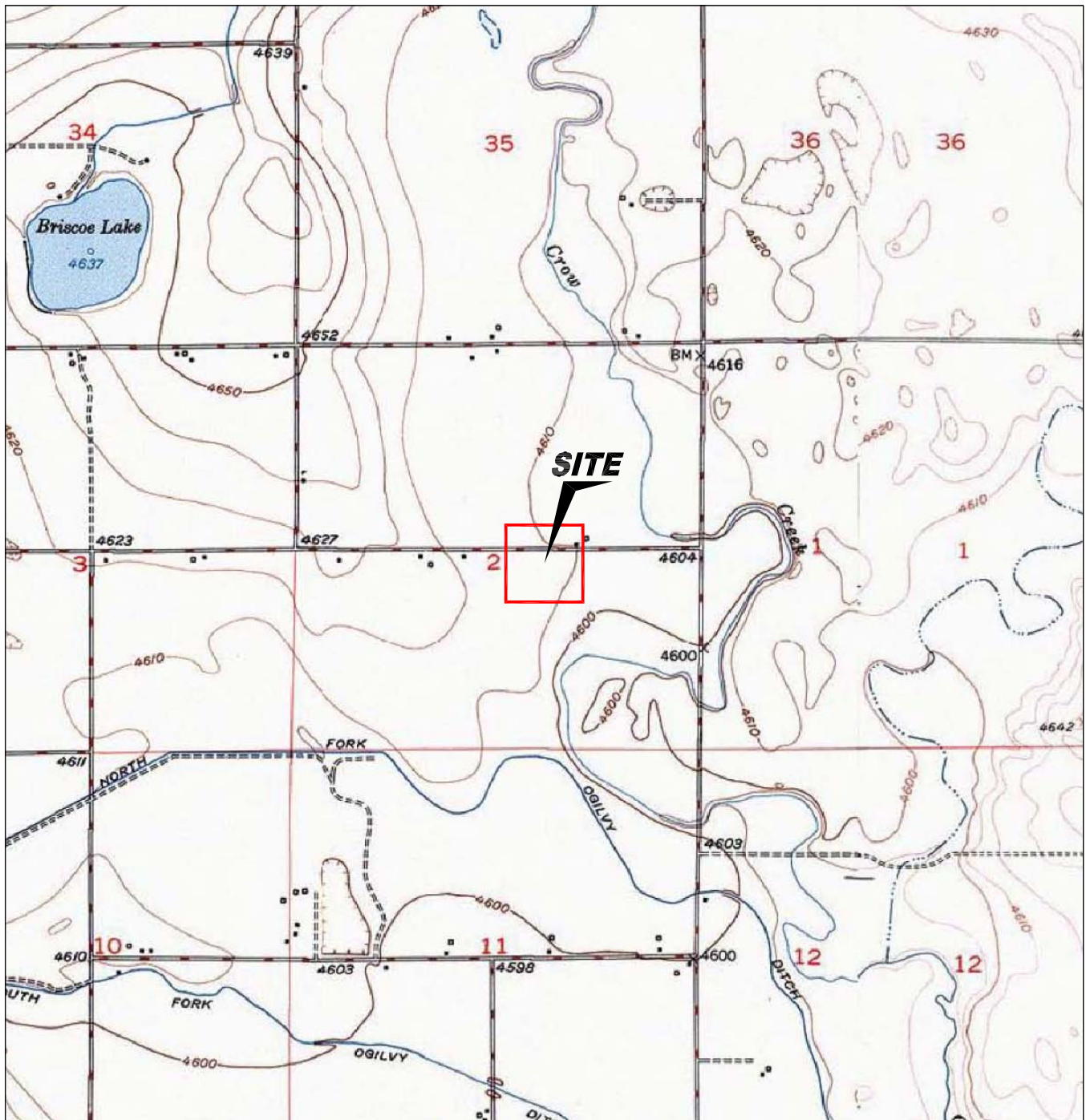
Bold faced values exceed the COGCC Table 910-1 concentrations

TABLE 2
SUMMARY OF GROUND WATER CHEMISTRY DATA
NOBLE ENERGY INC.
TREBOR B2-10 & 15
FREMONT PROJECT NO. C015-010

SAMPLE LOCATION	DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL BENZENE (µg/L)	TOTAL XYLENES (µg/L)
W1	03/10/15	1.3	1.2	3.8	150
Table 910-1 Limits		5	560	700	1,400

Bold face values exceed the COGCC limits

FIGURES



USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1
SITE LOCATION MAP

Noble Trebor B2-10 & 15
NW SE Section 2, T5N, R64W
Weld County, Colorado

Project No. C015-xxx	Prepared by	Drawn by JMA
Date 3/10/15	Reviewed by	Filename 15xxxT





LEGEND



Figure 2
SITE MAP

Noble Trebor B2-10 & 15
NW SE Section 2, T5N, R64W
Weld County, Colorado

Project No.
C015-010

Prepared by

Drawn by
JMA

Date
3/19/15

Reviewed by

Filename
15010Q





LEGEND



3/10/15	DATE SAMPLED	3/10/15	DATE SAMPLED
9'	SAMPLE DEPTH (ft)	1.3	BENZENE (ug/L)
B	BENZENE (mg/kg)	1.2	TOLUENE (ug/L)
T	TOLUENE (mg/kg)	3.8	ETHYLBENZENE (ug/L)
E	ETHYLBENZENE (mg/kg)	150	TOTAL XYLENES (ug/L)
X	TOTAL XYLENES (mg/kg)		
N	NAPHTHALENE (mg/kg)		
G	TPH-GRO (mg/kg)		
D	TPH-DRO (mg/kg)		

Figure 3
 EXCAVATION SOIL CHEMISTRY

Noble Trebor B2-10 & 15
 NW SE Section 2, T5N, R64W
 Weld County, Colorado

Project No. C015-010	Prepared by	Drawn by JMA
Date 3/19/15	Reviewed by	Filename 15010Q



APPENDIX A

LABORATORY DOCUMENTATION

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

March 11, 2015

Paul Henehan
Fremont Environmental
1630 South College Avenue
Ft. Collins, CO 80525
RE: Noble - Trebor B2-10 & 15

Enclosed are the results of analyses for samples received by Summit Scientific on 03/10/15 16:52. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury
President



Fremont Environmental
1630 South College Avenue
Ft. Collins CO, 80525

Project: Noble - Trebor B2-10 & 15

Project Number: [none]
Project Manager: Paul Henehan

Reported:
03/11/15 06:18

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
NE WALL 9 FT	1503074-01	Soil	03/10/15 00:00	03/10/15 16:52
NW WALL 9 FT	1503074-02	Soil	03/10/15 00:00	03/10/15 16:52
SW WALL 14 FT	1503074-03	Soil	03/10/15 00:00	03/10/15 16:52
SOUTH WALL 14 FT	1503074-04	Soil	03/10/15 00:00	03/10/15 16:52
SE WALL 14 FT	1503074-05	Soil	03/10/15 00:00	03/10/15 16:52
W1	1503074-06	Water	03/10/15 00:00	03/10/15 16:52

Summit Scientific

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Fremont Environmental
1630 South College Avenue
Ft. Collins CO, 80525

Project: Noble - Trebor B2-10 & 15

Project Number: [none]
Project Manager: Paul Henehan

Reported:
03/11/15 06:18

Summit Scientific 1503074

2

741 Corporate Circle, Suite J&K ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933

Page (of)

Client: FREMONT / NOBLE

Project Manager: PAUL HENEHAN

Address:

E-Mail:

City/State/Zip:

Phone: 303 956-8714 Fax:

Project Name: NOBLE - TREBOR B2-10 & 15

Sampler Name: P

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions
					HCl	HNO3	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	BTEX	GRD (DRO)	NAP&PAHs		
1	NE WALL 9 FT	3/10/15		1													
2	NW WALL 9 FT			1													
3	SW WALL 14 FT			1													
4	SOUTH WALL 14 FT			1													
5	SE WALL 14 FT			1													
6	VW1			3													
7																	
8																	
9																	
10																	

Relinquished by: <i>[Signature]</i>	Date/Time: 3/10/15 4:52P	Received by: <i>[Signature]</i>	Date/Time: 03/10/15 4:52P	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard 48 hours <input type="checkbox"/>	Notes: CAN WE GET A BIT BEFORE 7AM SO WE KNOW IF WE CAN BACKFILL? THANKS
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity: Temperature Upon Receipt: 15.4C Intact: Yes No	
Relinquished by:	Date/Time:	Received by:	Date/Time:		

www.s2scientific.com

Summit Scientific

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Fremont Environmental
1630 South College Avenue
Ft. Collins CO, 80525

Project: Noble - Trebor B2-10 & 15

Project Number: [none]
Project Manager: Paul Henehan

Reported:
03/11/15 06:18

NE WALL 9 FT
1503074-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 03/10/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1503106	03/10/15	03/10/15	8015M	

Date Sampled: 03/10/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		124 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 03/10/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1503105	"	03/10/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 03/10/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.3 %	21-167		"	"	"	"	

Summit Scientific

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Fremont Environmental
1630 South College Avenue
Ft. Collins CO, 80525

Project: Noble - Trebor B2-10 & 15

Project Number: [none]
Project Manager: Paul Henehan

Reported:
03/11/15 06:18

NW WALL 9 FT
1503074-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/10/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1503106	03/10/15	03/10/15	8015M	

Date Sampled: **03/10/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		120 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/10/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1503105	"	03/10/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **03/10/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		91.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

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Fremont Environmental
1630 South College Avenue
Ft. Collins CO, 80525

Project: Noble - Trebor B2-10 & 15

Project Number: [none]
Project Manager: Paul Henehan

Reported:
03/11/15 06:18

SW WALL 14 FT
1503074-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/10/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	82	50	mg/kg	1	1503106	03/10/15	03/10/15	8015M	

Date Sampled: **03/10/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		122 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/10/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1503105	"	03/10/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **03/10/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		84.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

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Fremont Environmental
1630 South College Avenue
Ft. Collins CO, 80525

Project: Noble - Trebor B2-10 & 15

Project Number: [none]
Project Manager: Paul Henehan

Reported:
03/11/15 06:18

SOUTH WALL 14 FT
1503074-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/10/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1503106	03/10/15	03/10/15	8015M	

Date Sampled: **03/10/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		107 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/10/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1503105	"	03/10/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **03/10/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

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Fremont Environmental
1630 South College Avenue
Ft. Collins CO, 80525

Project: Noble - Trebor B2-10 & 15

Project Number: [none]
Project Manager: Paul Henehan

Reported:
03/11/15 06:18

SE WALL 14 FT
1503074-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/10/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1503106	03/10/15	03/10/15	8015M	

Date Sampled: **03/10/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		124 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/10/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1503105	"	03/10/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **03/10/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %	21-167		"	"	"	"	

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Fremont Environmental
1630 South College Avenue
Ft. Collins CO, 80525

Project: Noble - Trebor B2-10 & 15

Project Number: [none]
Project Manager: Paul Henehan

Reported:
03/11/15 06:18

W1
1503074-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/10/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	1.3	1.0	ug/l	1	1503107	03/10/15	03/10/15	EPA 8260B	
Toluene	1.2	1.0	"	"	"	"	"	"	
Ethylbenzene	3.8	1.0	"	"	"	"	"	"	
Xylenes (total)	150	1.0	"	"	"	"	"	"	

Date Sampled: **03/10/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		112 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		105 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		98.9 %	45-146		"	"	"	"	

Summit Scientific

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Fremont Environmental
1630 South College Avenue
Ft. Collins CO, 80525

Project: Noble - Trebor B2-10 & 15

Project Number: [none]
Project Manager: Paul Henehan

Reported:
03/11/15 06:18

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1503106 - EPA 3550A

Blank (1503106-BLK1)

Prepared & Analyzed: 03/10/15

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	13.5		"	12.2		111	30-150			

LCS (1503106-BS1)

Prepared & Analyzed: 03/10/15

C10-C28 (DRO)	525	50	mg/kg	501		105	73-134			
Surrogate: o-Terphenyl	13.6		"	12.2		111	30-150			

Matrix Spike (1503106-MS1)

Source: 1503071-01

Prepared & Analyzed: 03/10/15

C10-C28 (DRO)	484	50	mg/kg	491	24.1	93.6	50-148			
Surrogate: o-Terphenyl	12.3		"	12.0		103	30-150			

Matrix Spike Dup (1503106-MSD1)

Source: 1503071-01

Prepared & Analyzed: 03/10/15

C10-C28 (DRO)	491	50	mg/kg	491	24.1	95.0	50-148	1.43	13	
Surrogate: o-Terphenyl	12.5		"	12.0		104	30-150			

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Project: Noble - Trebor B2-10 & 15

Project Number: [none]
Project Manager: Paul Henehan

Reported:
03/11/15 06:18

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1503105 - EPA 5030 Soil MS

Blank (1503105-BLK1)

Prepared & Analyzed: 03/10/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0357		"	0.0396	90.1	23-173				
Surrogate: Toluene-d8	0.0398		"	0.0400	99.4	20-170				
Surrogate: 4-Bromofluorobenzene	0.0452		"	0.0400	113	21-167				

LCS (1503105-BS1)

Prepared & Analyzed: 03/10/15

Naphthalene	ND	0.010	mg/kg			66-138				
Benzene	0.0910	0.0020	"	0.100	91.0	58-130				
Toluene	0.0888	0.0050	"	0.100	88.8	61-134				
Ethylbenzene	0.0940	0.0050	"	0.0992	94.7	74-139				
m,p-Xylene	0.193	0.010	"	0.200	96.9	73-137				
o-Xylene	0.0911	0.0050	"	0.0984	92.6	73-141				
Surrogate: 1,2-Dichloroethane-d4	0.0356		"	0.0396	89.8	23-173				
Surrogate: Toluene-d8	0.0395		"	0.0400	98.7	20-170				
Surrogate: 4-Bromofluorobenzene	0.0410		"	0.0400	102	21-167				

Matrix Spike (1503105-MS1)

Source: 1503071-01

Prepared & Analyzed: 03/10/15

Naphthalene	ND	0.010	mg/kg		ND	10-158				
Benzene	0.0905	0.0020	"	0.0996	ND	90.9	30-131			
Toluene	0.0881	0.0050	"	0.0996	ND	88.5	30-134			
Ethylbenzene	0.0953	0.0050	"	0.0988	ND	96.4	22-153			
m,p-Xylene	0.198	0.010	"	0.199	ND	99.4	10-159			
o-Xylene	0.0927	0.0050	"	0.0980	ND	94.6	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0350		"	0.0394	88.7	23-173				
Surrogate: Toluene-d8	0.0394		"	0.0398	98.9	20-170				
Surrogate: 4-Bromofluorobenzene	0.0423		"	0.0398	106	21-167				

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Project: Noble - Trebor B2-10 & 15

Project Number: [none]
Project Manager: Paul Henehan

Reported:
03/11/15 06:18

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1503105 - EPA 5030 Soil MS

Matrix Spike Dup (1503105-MSD1)

Source: 1503071-01

Prepared & Analyzed: 03/10/15

Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.0872	0.0020	"	0.0940	ND	92.8	30-131	3.78	34	
Toluene	0.0834	0.0050	"	0.0940	ND	88.8	30-134	5.46	30	
Ethylbenzene	0.0876	0.0050	"	0.0932	ND	94.0	22-153	8.37	24	
m,p-Xylene	0.180	0.010	"	0.188	ND	95.9	10-159	9.41	68	
o-Xylene	0.0828	0.0050	"	0.0925	ND	89.5	31-151	11.3	38	
Surrogate: 1,2-Dichloroethane-d4	0.0323		"	0.0372		86.9	23-173			
Surrogate: Toluene-d8	0.0373		"	0.0376		99.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0385		"	0.0376		102	21-167			

Batch 1503107 - EPA 5030 Water MS

Blank (1503107-BLK1)

Prepared & Analyzed: 03/10/15

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	14.2		"	13.2		107	37-154			
Surrogate: Toluene-d8	13.4		"	13.3		101	45-149			
Surrogate: 4-Bromofluorobenzene	13.8		"	13.3		103	45-146			

LCS (1503107-BS1)

Prepared & Analyzed: 03/10/15

Benzene	22.1	1.0	ug/l	33.3		66.3	51-132			
Toluene	27.0	1.0	"	33.3		80.9	51-138			
Ethylbenzene	29.8	1.0	"	33.1		90.0	58-146			
m,p-Xylene	59.3	2.0	"	66.5		89.1	57-144			
o-Xylene	31.3	1.0	"	32.8		95.3	53-146			
Surrogate: 1,2-Dichloroethane-d4	14.4		"	13.2		109	37-154			
Surrogate: Toluene-d8	13.7		"	13.3		103	45-149			
Surrogate: 4-Bromofluorobenzene	13.6		"	13.3		102	45-146			

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Project: Noble - Trebor B2-10 & 15

Project Number: [none]
Project Manager: Paul Henehan

Reported:
03/11/15 06:18

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1503107 - EPA 5030 Water MS

Matrix Spike (1503107-MS1)		Source: 1503068-01			Prepared & Analyzed: 03/10/15					
Benzene	22.6	1.0	ug/l	33.3	ND	67.9	34-141			
Toluene	27.3	1.0	"	33.3	ND	81.8	27-151			
Ethylbenzene	30.2	1.0	"	33.1	ND	91.5	29-160			
m,p-Xylene	60.1	2.0	"	66.5	ND	90.4	20-166			
o-Xylene	32.0	1.0	"	32.8	ND	97.6	33-159			
Surrogate: 1,2-Dichloroethane-d4	14.5		"	13.2		110	37-154			
Surrogate: Toluene-d8	13.7		"	13.3		103	45-149			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		101	45-146			
Matrix Spike Dup (1503107-MSD1)		Source: 1503068-01			Prepared & Analyzed: 03/10/15					
Benzene	22.6	1.0	ug/l	33.3	ND	67.8	34-141	0.0885	32	
Toluene	27.7	1.0	"	33.3	ND	83.1	27-151	1.56	25	
Ethylbenzene	31.0	1.0	"	33.1	ND	93.7	29-160	2.48	50	
m,p-Xylene	61.6	2.0	"	66.5	ND	92.6	20-166	2.48	36	
o-Xylene	32.6	1.0	"	32.8	ND	99.2	33-159	1.64	26	
Surrogate: 1,2-Dichloroethane-d4	15.1		"	13.2		115	37-154			
Surrogate: Toluene-d8	14.0		"	13.3		105	45-149			
Surrogate: 4-Bromofluorobenzene	13.6		"	13.3		102	45-146			

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Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

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A handwritten signature in black ink, appearing to be 'MSM'.

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