

# **FREMONT ENVIRONMENTAL INC.**

November 23, 2015

Mr. Jacob Evans  
Noble Energy Inc.  
2115 117<sup>th</sup> Ave,  
Greeley, CO 80634

Subject:     **Excavation Report**  
              Johnson 34-14i7  
              API # 05-123-18173  
              SESW Sec 34, T4N, R67W  
              Weld County, Colorado  
              Fremont Project No. C015-025  
              Facility #329996 (Location), Spill #441638

Dear Mr. Evans:

Enclosed please find a copy of the above referenced Excavation Report for the Johnson 34-14i7 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.**



Paul V. Henehan, P.E.  
Senior Consultant

Enclosure

**EXCAVATION REPORT**  
**NOBLE ENERGY INC.**  
**JOHNSON 34-1417**  
**WELD COUNTY, COLORADO**  
**FREMONT PROJECT NO. C015-025**  
**FACILITY #329996, SPILL #441638**

**Prepared by:**

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

**November 23, 2015**

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**EXCAVATION REPORT**  
**NOBLE ENERGY INC.**  
**JOHNSON 34-14I7**  
**WELD COUNTY, COLORADO**  
**FREMONT PROJECT NO. C015-025**  
**FACILITY #329996, SPILL #441638**

**1.0 INTRODUCTION**

The purpose of this document is to present information collected during the excavation of petroleum-impacted soil at the Johnson 34-14i7 dump line release location in Weld County, Colorado. This excavation project was completed between August 18 and 27, 2015.

**2.0 BACKGROUND INFORMATION**

**2.1 Site Location**

The Johnson 34-14i7 site is located approximately four miles northwest of Platteville, Colorado in Weld County as shown on Figure 1. The site is located approximately 0.3 miles east of the intersection of County Road 38 and County Road 19. The location is further described as the SE  $\frac{1}{4}$  of the SW  $\frac{1}{4}$  of Section 34, Township 4N, Range 67W.

**2.2 Site History**

The site consists of the aboveground storage tank, dump line and water vault for the Johnson 34-14i7 natural gas well. The well was drilled in 1994 to a depth of approximately 7,248 feet.

Soil impacts were observed at the location during routine maintenance on the dump line at this location. 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 four feet. The sandy clay was underlain by sand to a depth of at least seven feet, which was the maximum depth of the excavation. Ground water was encountered during the excavation work at approximately six feet. The excavated area, which is approximately 35' x 70', is shown on Figure 3.

Excavation was initiated near the location of the concrete water vault on August 18, 2015 and proceeded to the northeast until clean soil was observed on the northern edge of the overall dig. The soil removal continued to the west until the extent of impact was completely identified and removed on August 27, 2015.

A total of 840 cubic yards of petroleum impacted soil were removed by B&G Oilfield Services Inc. from the location. The impacted soil was disposed of at the Waste Management Inc. landfill in Keenesburg, 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, 13 soil samples were collected from the side walls of the excavation to determine whether the impacted soil had been removed. The laboratory analyses indicated that the outermost sidewall samples had concentrations that were less than the Colorado Oil and Gas Conservation Commission (COGCC) limits. Two of the internal sidewall samples exceeded the COGCC Table 910-1 limits. These two samples indicated that additional excavation was needed in those areas.

The sidewall samples were collected as grab samples near the lower portion of the excavation wall at a depth of four to six feet. Since ground water was encountered, one water sample (W1) was collected during the excavation of this site.

The soil samples were analyzed by eAnalytics Laboratory, Inc. of Loveland, 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 the outermost soil samples collected from the sidewalls achieved the COGCC Table 910-1 limits. Table 2 presents the ground water analytical data; water sample (W1) exceeded the COGCC Table 910-1 allowable limits for benzene and xylenes. The benzene concentration in sample W1 was 740 ug/L.

Gypsum was placed at the water table during backfilling to promote biodegradation of any residual petroleum in the soil and ground water. Gypsum, which is also known as hydrated calcium sulfate, releases sulfate into the ground water which can enhance anaerobic biodegradation of petroleum constituents. Above the gypsum layer, the excavation was backfilled with clean soil and compacted.

#### **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 840 cubic yards of impacted soil were removed and transported to the landfill.

Ground water was encountered during the excavation of the site and one sample (W1) was collected and analyzed for BTEX. The benzene and xylenes concentrations exceeded the COGCC Table 910-1 limits in this water sample. The benzene concentration in sample W1 was 740 ug/L.

Since the ground water samples had dissolved petroleum constituent concentrations that exceeded the COGCC limits, monitoring wells will need to be installed at this site to delineate the horizontal extent of ground water impacts. Installation and monitoring of the wells will be discussed in separate reporting.

### **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.**

 For MVA

11/23/15

Date \_\_\_\_\_

\_\_\_\_\_  
Mark Taylor

Construction Consultant

Reviewed by:



11/23/15

Date \_\_\_\_\_

\_\_\_\_\_  
Paul V. Henehan, P.E.

Senior Consultant

## TABLES

TABLE 1  
SUMMARY OF SOIL CHEMISTRY DATA  
NOBLE ENERGY INC.  
JOHNSON 34-14i7  
FREMONT PROJECT NO. C015-025

Map ID#	Sample Name	Depth (ft)	Date Sampled	Location	Pass or Fail	Benzene mg/kg	Toluene mg/kg	Ethyl-Benzene mg/kg	Xylenes mg/kg	Naphthalene mg/kg	TPH GRO mg/kg	TPH DRO mg/kg
1-4'	S. Wall 4 ft	4	8/18/2015	Sidewall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
2-4'	E of DCP 4 ft	4	8/18/2015	Sidewall	<b>Fail</b>	<b>0.37</b>	0.0056	0.36	6.1	0.016	83	<50
3-4'	E Auger 4 ft	4	8/18/2015	Sidewall	Pass	0.026	<0.005	<0.005	<0.01	<0.01	<50	<50
4-4'	S of SEP 4 ft	4	8/18/2015	Sidewall	<b>Fail</b>	<b>4.0</b>	0.99	3.2	30	0.80	<b>1700</b>	<b>690</b>
5-5'	E of DCP 5 ft	5	8/24/2015	Sidewall	Pass	0.044	<0.005	0.0081	0.032	<0.01	<50	<50
6-5'	NW Water 5 ft	5	8/24/2015	Sidewall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
7-5'	E Central 5 ft	5	8/26/2015	Sidewall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
8-5'	SE Corner 5 ft	5	8/26/2015	Sidewall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
9-5'	NE Corner 5 ft	5	8/26/2015	Sidewall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
10-5'	NW Corner 5 ft	5	8/27/2015	Sidewall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
11-5'	NW Central 5 ft	5	8/27/2015	Sidewall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
12-5'	N of Meter 5 ft	5	8/27/2015	Sidewall	Pass	0.082	<0.005	<0.005	<0.01	0.011	<50	<50
13-5'	N Central 5 ft	5	8/27/2015	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

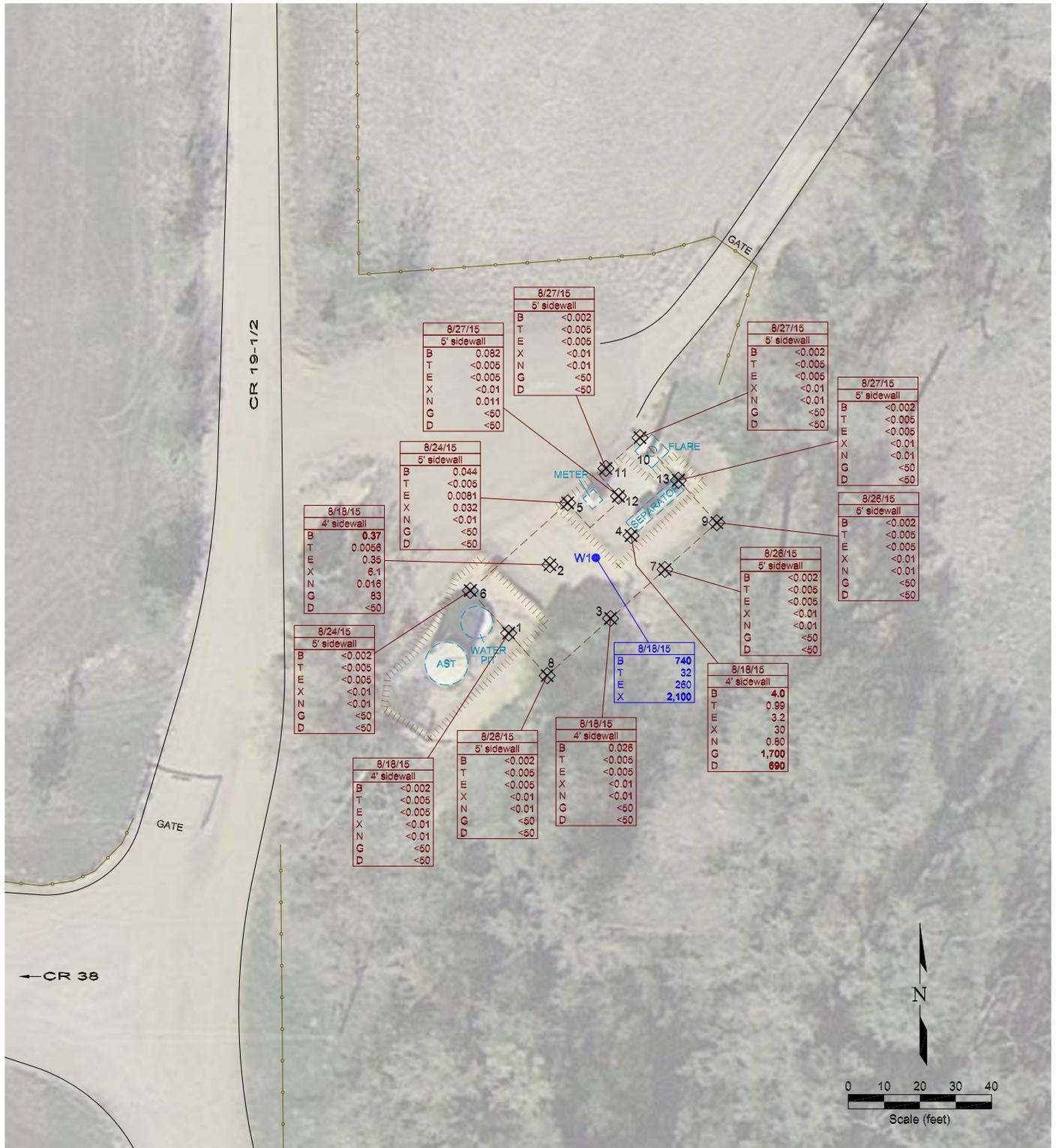
Bold faced values exceed the COGCC Table 910-1 concentrations

**TABLE 2**  
**SUMMARY OF GROUND WATER CHEMISTRY DATA**  
**NOBLE ENERGY INC.**  
**JOHNSON 34-14i7**  
**FREMONT PROJECT NO. C015-034**

<b>SAMPLE LOCATION</b>	<b>DATE</b>	<b>BENZENE (µg/L)</b>	<b>TOLUENE (µg/L)</b>	<b>ETHYL BENZENE (µg/L)</b>	<b>TOTAL XYLENES (µg/L)</b>
W1	08/18/15	<b>740</b>	32	260	<b>2,100</b>
Table 910-1 Limits		5	560	700	1,400

Bold face values exceed the COGCC limits

## FIGURES



**LEGEND**

	CONTAINMENT BERM		FENCE LINE
	FORMER FACILITY		SOIL SAMPLE LOCATION
	WATER SAMPLE LOCATION		SOIL SAMPLE LOCATION

8/18/15		8/18/15	
4' sidewall		4' sidewall	
B	<0.002	B	740
T	<0.005	T	32
E	<0.005	E	280
X	<0.01	X	2,100
N	<0.01		
G	<50		
D	<50		

8/18/15		8/18/15	
5' sidewall		5' sidewall	
B	<0.002	B	<0.002
T	<0.005	T	<0.005
E	<0.005	E	<0.005
X	<0.01	X	<0.01
N	<0.01	N	<0.01
G	<50	G	<50
D	<50	D	<50

Figure 3  
EXCAVATION SOIL & WATER CHEMISTRY

Noble Johnson 34-1417  
SW SW Section 34, T4N, R67W  
Weld County, Colorado

Project No. <b>C015-025</b>	Prepared by	Drawn by <b>JMA</b>
Date <b>9/1/15</b>	Reviewed by	Filename <b>15025Q</b>



APPENDIX A

LABORATORY DOCUMENTATION

# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

August 20, 2015

Paul Henehan  
Fremont Environmental  
1630 South College Avenue  
Ft. Collins, CO 80525  
RE: Noble - Johnson-34-14

Enclosed are the results of analyses for samples received by Summit Scientific on 08/19/15 16:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury  
President



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

Project: Noble - Johnson-34-14

Project Number: [none]  
Project Manager: Paul Henehan

**Reported:**  
08/20/15 07:06

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
W1	1508151-01	Water	08/18/15 00:00	08/19/15 16:50
S. WALL 4FT	1508151-02	Soil	08/18/15 00:00	08/19/15 16:50
E. of DCP 4FT	1508151-03	Soil	08/18/15 00:00	08/19/15 16:50
E. AUGER 4FT	1508151-04	Soil	08/18/15 00:00	08/19/15 16:50
S. of SEP 4FT	1508151-05	Soil	08/18/15 00:00	08/19/15 16:50

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



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

Project: Noble - Johnson-34-14

Project Number: [none]  
Project Manager: Paul Henehan

Reported:  
08/20/15 07:06

# Summit Scientific

S<sub>2</sub>

1508151

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

Page 1 of 1

Client: FREMONT/NOBLE Project Manager: HENEHAN  
Address: \_\_\_\_\_ E-Mail: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Project Name: NOBLE - JOHNSON - 34-14  
Sampler Name: \_\_\_\_\_ 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	GRE/DOO	NAPHTH.	
1	W1	8/10/15		3	✓				✓							
2	S. WALL 4 FT			1			✓		✓				✓	✓	✓	
3	E. OF DCP 4 FT			1			✓		✓				✓	✓	✓	
4	E. AUGER 4 FT			1			✓		✓				✓	✓	✓	
5	S. OF SEP 4 FT			1			✓		✓				✓	✓	✓	
6																
7																
8																
9																
10																

Relinquished by: <u>[Signature]</u>	Date/Time: <u>8/18/15 16:50</u>	Received by: <u>[Signature]</u>	Date/Time: <u>8-19-15 16:50</u>	Turn Around Time (Check)	Notes:
Relinquished by: <u>[Signature]</u>	Date/Time: <u>8-19-15 18:00</u>	Received by: <u>[Signature]</u>	Date/Time: <u>8/19/15 18:00</u>	Same Day <input checked="" type="checkbox"/> 72 hours <input type="checkbox"/>	Sample Integrity: <u>WED AM PZ.</u>
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____	24 hours <input type="checkbox"/> Standard <input type="checkbox"/>	
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____	48 hours <input type="checkbox"/>	
				Temperature Upon Receipt: <u>14.8°c</u>	Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

www.s2scientific.com

Summit Scientific

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

Project: Noble - Johnson-34-14

Project Number: [none]  
Project Manager: Paul Henehan

**Reported:**  
08/20/15 07:06

**W1**  
**1508151-01 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **08/18/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>740</b>	1.0	ug/l	1	1508136	08/20/15	08/20/15	EPA 8260B	E
<b>Toluene</b>	<b>32</b>	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>260</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>2100</b>	1.0	"	"	"	"	"	"	E

Date Sampled: **08/18/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		98.6 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		302 %	45-149		"	"	"	"	S-02
<i>Surrogate: 4-Bromofluorobenzene</i>		595 %	45-146		"	"	"	"	S-02

Summit Scientific

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

Project: Noble - Johnson-34-14

Project Number: [none]  
Project Manager: Paul Henehan

Reported:  
08/20/15 07:06

**S. WALL 4FT**  
**1508151-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/18/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1508145	08/19/15	08/20/15	8015M	

Date Sampled: **08/18/15 00:00**

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

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **08/18/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1508144	08/19/15	08/20/15	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: **08/18/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		118 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Johnson-34-14

Project Number: [none]  
Project Manager: Paul Henehan

Reported:  
08/20/15 07:06

**E. of DCP 4FT  
1508151-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/18/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1508145	08/19/15	08/20/15	8015M	

Date Sampled: **08/18/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		97.3 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **08/18/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Naphthalene</b>	<b>0.016</b>	0.010	mg/kg	1	1508144	08/19/15	08/20/15	EPA 8260B	
<b>Benzene</b>	<b>0.37</b>	0.0020	"	"	"	"	"	"	
<b>Toluene</b>	<b>0.0056</b>	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.36</b>	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>6.1</b>	1.0	"	100	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>83</b>	50	"	1	"	"	"	"	

Date Sampled: **08/18/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Johnson-34-14

Project Number: [none]  
Project Manager: Paul Henehan

Reported:  
08/20/15 07:06

**E. AUGER 4FT  
1508151-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/18/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1508145	08/19/15	08/20/15	8015M	

Date Sampled: **08/18/15 00:00**

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

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **08/18/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1508144	08/19/15	08/20/15	EPA 8260B	
<b>Benzene</b>	<b>0.026</b>	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **08/18/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Johnson-34-14

Project Number: [none]  
Project Manager: Paul Henehan

Reported:  
08/20/15 07:06

**S. of SEP 4FT  
1508151-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/18/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>690</b>	50	mg/kg	1	1508145	08/19/15	08/20/15	8015M	

Date Sampled: **08/18/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		103 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **08/18/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Naphthalene</b>	<b>0.80</b>	0.10	mg/kg	10	1508144	08/19/15	08/20/15	EPA 8260B	
<b>Benzene</b>	<b>4.0</b>	0.20	"	100	"	"	"	"	
<b>Toluene</b>	<b>0.99</b>	0.50	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>3.2</b>	0.50	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>30</b>	1.0	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>1700</b>	50	"	"	"	"	"	"	

Date Sampled: **08/18/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		115 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		135 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		113 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Johnson-34-14

Project Number: [none]  
Project Manager: Paul Henehan

**Reported:**  
08/20/15 07:06

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1508145 - EPA 3550A**

**Blank (1508145-BLK1)**

Prepared & Analyzed: 08/19/15

C10-C28 (DRO)	ND	50	mg/kg								
<i>Surrogate: o-Terphenyl</i>	12.3		"	12.2		101	30-150				

**LCS (1508145-BS1)**

Prepared & Analyzed: 08/19/15

C10-C28 (DRO)	469	50	mg/kg	499		93.9	73-134				
<i>Surrogate: o-Terphenyl</i>	12.2		"	12.2		100	30-150				

**Matrix Spike (1508145-MS1)**

Source: 1508150-01

Prepared & Analyzed: 08/19/15

C10-C28 (DRO)	492	50	mg/kg	499	ND	98.6	50-148				
<i>Surrogate: o-Terphenyl</i>	12.2		"	12.2		100	30-150				

**Matrix Spike Dup (1508145-MSD1)**

Source: 1508150-01

Prepared & Analyzed: 08/19/15

C10-C28 (DRO)	463	50	mg/kg	470	ND	98.5	50-148	6.13	13		
<i>Surrogate: o-Terphenyl</i>	11.7		"	11.5		102	30-150				

Summit Scientific

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

Project: Noble - Johnson-34-14

Project Number: [none]  
Project Manager: Paul Henehan

Reported:  
08/20/15 07:06

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

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

**Batch 1508136 - EPA 5030 Water MS**

**Blank (1508136-BLK1)**

Prepared & Analyzed: 08/20/15

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>14.0</i>		<i>"</i>	<i>13.2</i>		<i>106</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>12.5</i>		<i>"</i>	<i>13.3</i>		<i>93.8</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>12.8</i>		<i>"</i>	<i>13.3</i>		<i>95.9</i>	<i>45-146</i>			

**LCS (1508136-BS1)**

Prepared & Analyzed: 08/20/15

Benzene	47.0	1.0	ug/l	50.0		94.0	51-132			
Toluene	36.4	1.0	"	50.0		72.8	51-138			
Ethylbenzene	48.4	1.0	"	50.0		96.7	58-146			
m,p-Xylene	93.9	2.0	"	100		93.9	57-144			
o-Xylene	48.5	1.0	"	50.0		97.0	53-146			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>13.5</i>		<i>"</i>	<i>13.2</i>		<i>102</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>10.1</i>		<i>"</i>	<i>13.3</i>		<i>75.5</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>12.7</i>		<i>"</i>	<i>13.3</i>		<i>95.5</i>	<i>45-146</i>			

**Matrix Spike (1508136-MS1)**

Source: 1508123-01

Prepared & Analyzed: 08/20/15

Benzene	48.0	1.0	ug/l	50.0	ND	96.0	34-141			
Toluene	49.3	1.0	"	50.0	ND	98.6	27-151			
Ethylbenzene	51.0	1.0	"	50.0	ND	102	29-160			
m,p-Xylene	100	2.0	"	100	ND	100	20-166			
o-Xylene	50.8	1.0	"	50.0	ND	102	33-159			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>12.6</i>		<i>"</i>	<i>13.2</i>		<i>95.5</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>12.8</i>		<i>"</i>	<i>13.3</i>		<i>96.4</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>12.7</i>		<i>"</i>	<i>13.3</i>		<i>95.0</i>	<i>45-146</i>			

Summit Scientific

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

Project: Noble - Johnson-34-14

Project Number: [none]  
Project Manager: Paul Henehan

Reported:  
08/20/15 07:06

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

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

**Batch 1508136 - EPA 5030 Water MS**

**Matrix Spike Dup (1508136-MSD1)**

Source: 1508123-01

Prepared & Analyzed: 08/20/15

Benzene	48.1	1.0	ug/l	50.0	ND	96.3	34-141	0.333	32	
Toluene	49.2	1.0	"	50.0	ND	98.4	27-151	0.203	25	
Ethylbenzene	51.6	1.0	"	50.0	ND	103	29-160	1.01	50	
m,p-Xylene	101	2.0	"	100	ND	101	20-166	0.397	36	
o-Xylene	50.5	1.0	"	50.0	ND	101	33-159	0.494	26	
Surrogate: 1,2-Dichloroethane-d4	12.2		"	13.2		92.4	37-154			
Surrogate: Toluene-d8	12.7		"	13.3		95.2	45-149			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		95.8	45-146			

**Batch 1508144 - EPA 5030 Soil MS**

**Blank (1508144-BLK1)**

Prepared & Analyzed: 08/19/15

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	0.0434		"	0.0396		110	23-173			
Surrogate: Toluene-d8	0.0396		"	0.0400		99.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		100	21-167			

**LCS (1508144-BS1)**

Prepared & Analyzed: 08/19/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.104	0.0020	"	0.100		104	58-130			
Toluene	0.0997	0.0050	"	0.100		99.7	61-134			
Ethylbenzene	0.108	0.0050	"	0.0992		108	74-139			
m,p-Xylene	0.214	0.010	"	0.200		107	73-137			
o-Xylene	0.111	0.0050	"	0.0984		112	73-141			
Surrogate: 1,2-Dichloroethane-d4	0.0422		"	0.0396		107	23-173			
Surrogate: Toluene-d8	0.0406		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		100	21-167			

Summit Scientific

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

Project: Noble - Johnson-34-14

Project Number: [none]  
Project Manager: Paul Henehan

Reported:  
08/20/15 07:06

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

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

**Batch 1508144 - EPA 5030 Soil MS**

**Matrix Spike (1508144-MS1)**

Source: 1508150-01

Prepared: 08/19/15 Analyzed: 08/20/15

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.104	0.0020	"	0.0990	ND	105	30-131			
Toluene	0.101	0.0050	"	0.0990	ND	102	30-134			
Ethylbenzene	0.108	0.0050	"	0.0982	ND	110	22-153			
m,p-Xylene	0.218	0.010	"	0.198	ND	110	10-159			
o-Xylene	0.113	0.0050	"	0.0974	ND	116	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0431		"	0.0392		110	23-173			
Surrogate: Toluene-d8	0.0394		"	0.0396		99.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0396		102	21-167			

**Matrix Spike Dup (1508144-MSD1)**

Source: 1508150-01

Prepared: 08/19/15 Analyzed: 08/20/15

Naphthalene	ND	0.010	mg/kg		ND		10-158			42
Benzene	0.100	0.0020	"	0.0958	ND	105	30-131	3.94		34
Toluene	0.0975	0.0050	"	0.0958	ND	102	30-134	3.58		30
Ethylbenzene	0.109	0.0050	"	0.0950	ND	115	22-153	1.67		24
m,p-Xylene	0.220	0.010	"	0.191	ND	115	10-159	0.954		68
o-Xylene	0.114	0.0050	"	0.0943	ND	121	31-151	1.21		38
Surrogate: 1,2-Dichloroethane-d4	0.0426		"	0.0379		112	23-173			
Surrogate: Toluene-d8	0.0375		"	0.0383		97.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0383		103	21-167			

Summit Scientific

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

Project: Noble - Johnson-34-14

Project Number: [none]  
Project Manager: Paul Henehan

**Reported:**  
08/20/15 07:06

### Notes and Definitions

- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
- 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

# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

August 25, 2015

Paul Henehan  
Fremont Environmental  
1630 South College Avenue  
Ft. Collins, CO 80525  
RE: Noble - Johnson-34-14

Enclosed are the results of analyses for samples received by Summit Scientific on 08/24/15 18:07. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury  
President



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

Project: Noble - Johnson-34-14

Project Number: [none]  
Project Manager: Paul Henehan

**Reported:**  
08/25/15 06:56

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E. of DCP, 5'	1508173-01	Soil	08/24/15 00:00	08/24/15 18:07
NW Water Vault, 5'	1508173-02	Soil	08/24/15 00:00	08/24/15 18:07

Summit Scientific

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

Project: Noble - Johnson-34-14

Project Number: [none]  
Project Manager: Paul Henehan

Reported:  
08/25/15 06:56

# Summit Scientific 1508173

S<sub>2</sub>

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

Page 1 of 1

Client: FREMONT / NOBLE Project Manager: HENEHAN  
Address: \_\_\_\_\_ E-Mail: paulh@fremontenv.com  
City/State/Zip: \_\_\_\_\_  
Phone: 303/956 8714 Fax: \_\_\_\_\_ Project Name: NOBLE JOHNSON 34-1417  
Sampler Name: \_\_\_\_\_ 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	CRD/DRD	VAPORPH.		
1	E. of DCP, 5 FT	8/24/15		1			✓		✓				✓	✓	✓		
2	NW WATER VAULT, 5 FT	"		1			✓		✓				✓	✓	✓		
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Relinquished by: <u>[Signature]</u> Date/Time: <u>8/24/15 15:11</u>	Received by: <u>[Signature]</u> Date/Time: <u>8-24-15 15:11</u>	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours — 24 hours — Standard — 48 hours —	Notes: <u>TUES. AM PLZ.</u> Temperature Upon Receipt: <u>23.1°</u> Intact: <input checked="" type="checkbox"/> Yes No
Relinquished by: <u>[Signature]</u> Date/Time: <u>8-24-15 15:50</u>	Received by: <u>[Signature]</u> Date/Time: <u>8/24/15 1750</u>		
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 - Johnson-34-14

Project Number: [none]  
Project Manager: Paul Henehan

**Reported:**  
08/25/15 06:56

**E. of DCP, 5'**  
**1508173-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/24/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1508182	08/24/15	08/24/15	8015M	

Date Sampled: **08/24/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		106 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **08/24/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1508181	08/24/15	08/24/15	EPA 8260B	
<b>Benzene</b>	<b>0.044</b>	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.0081</b>	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.032</b>	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **08/24/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		118 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Johnson-34-14

Project Number: [none]  
Project Manager: Paul Henehan

Reported:  
08/25/15 06:56

**NW Water Vault, 5'**  
**1508173-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/24/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1508182	08/24/15	08/24/15	8015M	

Date Sampled: **08/24/15 00:00**

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

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **08/24/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1508181	08/24/15	08/24/15	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: **08/24/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		120 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Johnson-34-14

Project Number: [none]  
Project Manager: Paul Henehan

**Reported:**  
08/25/15 06:56

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1508182 - EPA 3550A**

**Blank (1508182-BLK1)**

Prepared & Analyzed: 08/24/15

C10-C28 (DRO)	ND	50	mg/kg							
<i>Surrogate: o-Terphenyl</i>	13.1		"	12.2		107	30-150			

**LCS (1508182-BS1)**

Prepared & Analyzed: 08/24/15

C10-C28 (DRO)	476	50	mg/kg	499		95.4	73-134			
<i>Surrogate: o-Terphenyl</i>	12.3		"	12.2		100	30-150			

**Matrix Spike (1508182-MS1)**

Source: 1508171-01

Prepared & Analyzed: 08/24/15

C10-C28 (DRO)	469	50	mg/kg	480	ND	97.7	50-148			
<i>Surrogate: o-Terphenyl</i>	11.9		"	11.7		101	30-150			

**Matrix Spike Dup (1508182-MSD1)**

Source: 1508171-01

Prepared & Analyzed: 08/24/15

C10-C28 (DRO)	459	50	mg/kg	480	ND	95.7	50-148	2.08	13	
<i>Surrogate: o-Terphenyl</i>	11.8		"	11.7		100	30-150			

Summit Scientific

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

Project: Noble - Johnson-34-14

Project Number: [none]  
Project Manager: Paul Henehan

Reported:  
08/25/15 06:56

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

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

**Batch 1508181 - EPA 5030 Soil MS**

**Blank (1508181-BLK1)**

Prepared & Analyzed: 08/24/15

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	"						
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0415</i>		<i>"</i>	<i>0.0396</i>		<i>105</i>		<i>23-173</i>	
<i>Surrogate: Toluene-d8</i>	<i>0.0394</i>		<i>"</i>	<i>0.0400</i>		<i>98.6</i>		<i>20-170</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0411</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>		<i>21-167</i>	

**LCS (1508181-BS1)**

Prepared & Analyzed: 08/24/15

Naphthalene	ND	0.010	mg/kg					66-138	
Benzene	0.0963	0.0020	"	0.100		96.3		58-130	
Toluene	0.0954	0.0050	"	0.100		95.4		61-134	
Ethylbenzene	0.104	0.0050	"	0.0992		105		74-139	
m,p-Xylene	0.207	0.010	"	0.200		104		73-137	
o-Xylene	0.105	0.0050	"	0.0984		107		73-141	
Xylenes (total)	0.313	0.010	"					0-200	
Gasoline Range Hydrocarbons	2.02	0.50	"					30-150	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0424</i>		<i>"</i>	<i>0.0396</i>		<i>107</i>		<i>23-173</i>	
<i>Surrogate: Toluene-d8</i>	<i>0.0399</i>		<i>"</i>	<i>0.0400</i>		<i>99.7</i>		<i>20-170</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0410</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>		<i>21-167</i>	

**Matrix Spike (1508181-MS1)**

Source: 1508171-01

Prepared & Analyzed: 08/24/15

Naphthalene	ND	0.010	mg/kg		ND			10-158	
Benzene	0.0955	0.0020	"	0.0973	ND	98.1		30-131	
Toluene	0.0950	0.0050	"	0.0973	ND	97.6		30-134	
Ethylbenzene	0.106	0.0050	"	0.0965	ND	110		22-153	
m,p-Xylene	0.215	0.010	"	0.194	ND	111		10-159	
o-Xylene	0.112	0.0050	"	0.0957	ND	117		31-151	
Xylenes (total)	0.326	0.010	"		0.00			0-200	
Gasoline Range Hydrocarbons	2.00	0.50	"		ND			0-0	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0425</i>		<i>"</i>	<i>0.0385</i>		<i>110</i>		<i>23-173</i>	
<i>Surrogate: Toluene-d8</i>	<i>0.0389</i>		<i>"</i>	<i>0.0389</i>		<i>100</i>		<i>20-170</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0408</i>		<i>"</i>	<i>0.0389</i>		<i>105</i>		<i>21-167</i>	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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

Project: Noble - Johnson-34-14

Project Number: [none]  
Project Manager: Paul Henehan

Reported:  
08/25/15 06:56

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

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

**Batch 1508181 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (1508181-MSD1)</b>	<b>Source: 1508171-01</b>			<b>Prepared &amp; Analyzed: 08/24/15</b>						
Naphthalene	ND	0.010	mg/kg	ND	ND	102	10-158		42	
Benzene	0.0994	0.0020	"	0.0977	ND	102	30-131	4.02	34	
Toluene	0.0996	0.0050	"	0.0977	ND	102	30-134	4.72	30	
Ethylbenzene	0.109	0.0050	"	0.0969	ND	113	22-153	2.75	24	
m,p-Xylene	0.220	0.010	"	0.195	ND	113	10-159	2.42	68	
o-Xylene	0.113	0.0050	"	0.0961	ND	118	31-151	1.46	38	
Xylenes (total)	0.333	0.010	"	0.00	ND		0-200	2.09	200	
Gasoline Range Hydrocarbons	2.14	0.50	"	ND	ND		0-0	6.93	0	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0431</i>		<i>"</i>	<i>0.0387</i>		<i>112</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0389</i>		<i>"</i>	<i>0.0391</i>		<i>99.6</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0401</i>		<i>"</i>	<i>0.0391</i>		<i>103</i>	<i>21-167</i>			

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



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

Project: Noble - Johnson-34-14

Project Number: [none]  
Project Manager: Paul Henehan

**Reported:**  
08/25/15 06:56

### 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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Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

August 27, 2015

Paul Henehan  
Fremont Environmental  
1630 South College Avenue  
Ft. Collins, CO 80525  
RE: Noble - Johnson-34-14i7

Enclosed are the results of analyses for samples received by Summit Scientific on 08/26/15 17:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury  
President



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

Project: Noble - Johnson-34-14i7

Project Number: [none]  
Project Manager: Paul Henehan

**Reported:**  
08/27/15 06:51

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E. Central 5 FT	1508199-01	Soil	08/26/15 00:00	08/26/15 17:45
SE Corner 5 FT	1508199-02	Soil	08/26/15 00:00	08/26/15 17:45
NE Corner 5 FT	1508199-03	Soil	08/26/15 00:00	08/26/15 17:45

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



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

Project: Noble - Johnson-34-14i7

Project Number: [none]  
Project Manager: Paul Henehan

Reported:  
08/27/15 06:51

# Summit Scientific 1508199

S<sub>2</sub>

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

Client: FREMONT / NOBLE Project Manager: Henehan Page 1 of 1  
Address: \_\_\_\_\_ E-Mail: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: 303-956-8704 Fax: \_\_\_\_\_ Project Name: NOBLE - JOHNSON 34-14i7  
Sampler Name: Henehan Project Number: \_\_\_\_\_

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested				Special Instructions
					HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	BTEX	GRE/DRO	NAPHTH	
1	E. CENTRAL 5 FT	8/26/15		1												
2	SE CORNER 5 FT	↓		1			✓		✓				✓	✓	✓	
3	NE CORNER 5 FT	↓		1			✓		✓				✓	✓	✓	
4																
5																
6																
7																
8																
9																
10																

Relinquished by: <u>PHH</u> Date/Time: <u>8/26/15 16:20</u>	Received by: <u>PHH</u> Date/Time: <u>8-26-15 16:20</u>	<b>Turn Around Time (Check)</b> Same Day <input checked="" type="checkbox"/> 72 hours ___ 24 hours ___ Standard ___ 48 hours ___ <b>Sample Integrity:</b> <u>TECHS. AM PLZ</u> Temperature Upon Receipt: <u>18.4°C</u> Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes:
Relinquished by: <u>PHH</u> Date/Time: <u>8-26-15 17:45</u>	Received by: <u>PHH</u> Date/Time: <u>8-26-15 17:45</u>		
Relinquished by: _____ Date/Time: _____	Received by: _____ Date/Time: _____		

www.s2scientific.com



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

Project: Noble - Johnson-34-14i7

Project Number: [none]  
Project Manager: Paul Henehan

Reported:  
08/27/15 06:51

**E. Central 5 FT  
1508199-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 08/26/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1508209	08/26/15	08/26/15	8015M	

Date Sampled: 08/26/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		101 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 08/26/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1508207	08/26/15	08/26/15	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: 08/26/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		93.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.9 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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

Project: Noble - Johnson-34-14i7

Project Number: [none]  
Project Manager: Paul Henehan

Reported:  
08/27/15 06:51

**SE Corner 5 FT  
1508199-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 08/26/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1508209	08/26/15	08/26/15	8015M	

Date Sampled: 08/26/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		99.8 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 08/26/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1508207	08/26/15	08/26/15	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: 08/26/15 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		91.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.2 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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

Project: Noble - Johnson-34-14i7

Project Number: [none]  
Project Manager: Paul Henehan

Reported:  
08/27/15 06:51

**NE Corner 5 FT  
1508199-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/26/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1508209	08/26/15	08/26/15	8015M	

Date Sampled: **08/26/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		108 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **08/26/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1508207	08/26/15	08/26/15	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: **08/26/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		89.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.9 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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

Project: Noble - Johnson-34-14i7

Project Number: [none]  
Project Manager: Paul Henehan

**Reported:**  
08/27/15 06:51

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1508209 - EPA 3550A**

<b>Blank (1508209-BLK1)</b>				Prepared & Analyzed: 08/26/15							
C10-C28 (DRO)	ND	50	mg/kg								
Surrogate: <i>o</i> -Terphenyl	12.6		"	12.2		103	30-150				
<b>LCS (1508209-BS1)</b>				Prepared & Analyzed: 08/26/15							
C10-C28 (DRO)	485	50	mg/kg	499		97.3	73-134				
Surrogate: <i>o</i> -Terphenyl	12.5		"	12.2		103	30-150				
<b>Matrix Spike (1508209-MS1)</b>				Source: 1508199-01		Prepared & Analyzed: 08/26/15					
C10-C28 (DRO)	416	50	mg/kg	450	ND	92.4	50-148				
Surrogate: <i>o</i> -Terphenyl	11.1		"	11.0		101	30-150				
<b>Matrix Spike Dup (1508209-MSD1)</b>				Source: 1508199-01		Prepared & Analyzed: 08/26/15					
C10-C28 (DRO)	451	50	mg/kg	450	ND	100	50-148	7.95		13	
Surrogate: <i>o</i> -Terphenyl	12.0		"	11.0		109	30-150				

Summit Scientific

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

Project: Noble - Johnson-34-14i7

Project Number: [none]  
Project Manager: Paul Henehan

Reported:  
08/27/15 06:51

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

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

**Batch 1508207 - EPA 5030 Soil MS**

**Blank (1508207-BLK1)**

Prepared & Analyzed: 08/26/15

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	50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0430</i>		<i>"</i>	<i>0.0396</i>		<i>108</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0393</i>		<i>"</i>	<i>0.0400</i>		<i>98.2</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0405</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>21-167</i>			

**LCS (1508207-BS1)**

Prepared & Analyzed: 08/26/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.104	0.0020	"	0.100		104	58-130			
Toluene	0.0965	0.0050	"	0.100		96.5	61-134			
Ethylbenzene	0.106	0.0050	"	0.0992		107	74-139			
m,p-Xylene	0.217	0.010	"	0.200		109	73-137			
o-Xylene	0.109	0.0050	"	0.0984		111	73-141			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0430</i>		<i>"</i>	<i>0.0396</i>		<i>108</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0408</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>21-167</i>			

**Matrix Spike (1508207-MS1)**

Source: 1508198-01

Prepared & Analyzed: 08/26/15

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.109	0.0020	"	0.100	ND	109	30-131			
Toluene	0.101	0.0050	"	0.100	ND	101	30-134			
Ethylbenzene	0.114	0.0050	"	0.0992	ND	114	22-153			
m,p-Xylene	0.227	0.010	"	0.200	ND	114	10-159			
o-Xylene	0.116	0.0050	"	0.0984	ND	118	31-151			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0451</i>		<i>"</i>	<i>0.0396</i>		<i>114</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0399</i>		<i>"</i>	<i>0.0400</i>		<i>99.8</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0412</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>21-167</i>			

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



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

Project: Noble - Johnson-34-14i7

Project Number: [none]  
Project Manager: Paul Henehan

**Reported:**  
08/27/15 06:51

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

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

**Batch 1508207 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (1508207-MSD1)</b>	<b>Source: 1508198-01</b>			<b>Prepared &amp; Analyzed: 08/26/15</b>						
Naphthalene	ND	0.010	mg/kg	ND	ND	107	10-158		1.17	42
Benzene	0.107	0.0020	"	0.100	ND	100	30-134	0.358		34
Toluene	0.100	0.0050	"	0.100	ND	117	22-153	1.99		24
Ethylbenzene	0.116	0.0050	"	0.0992	ND	117	10-159	3.23		68
m,p-Xylene	0.121	0.0050	"	0.0984	ND	123	31-151	3.97		38
o-Xylene										
Surrogate: 1,2-Dichloroethane-d4	0.0454		"	0.0396		115	23-173			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0409		"	0.0400		102	21-167			

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



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

Project: Noble - Johnson-34-14i7

Project Number: [none]  
Project Manager: Paul Henehan

**Reported:**  
08/27/15 06:51

### 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

---

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

August 28, 2015

Paul Henehan  
Fremont Environmental  
1630 South College Avenue  
Ft. Collins, CO 80525  
RE: Noble - Johnson-34-14i7

Enclosed are the results of analyses for samples received by Summit Scientific on 08/27/15 15:03. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury  
President



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

Project: Noble - Johnson-34-14i7

Project Number: [none]  
Project Manager: Paul Henehan

**Reported:**  
08/28/15 06:59

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
NW Corner 5FT	1508214-01	Soil	08/27/15 00:00	08/27/15 15:03
NW Central 5FT	1508214-02	Soil	08/27/15 00:00	08/27/15 15:03
N. of Meter 5FT	1508214-03	Soil	08/27/15 00:00	08/27/15 15:03
N. Central 5FT	1508214-04	Soil	08/27/15 00:00	08/27/15 15:03

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



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

Project: Noble - Johnson-34-14i7

Project Number: [none]  
Project Manager: Paul Henehan

Reported:  
08/28/15 06:59

# Summit Scientific 1508214

S<sub>2</sub>

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

Page ( of )

Client: FREMONT / NOBLE Project Manager: HENEHAN  
Address: \_\_\_\_\_ E-Mail: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: 303/956-8714 Fax: \_\_\_\_\_ Project Name: NOBLE - JOHNSON 34-14:7  
Sampler Name: \_\_\_\_\_ 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/DRD	NAPHTH			
1	NW CORNER 5 FT	8/27/15		1														
2	NW CENTRAL 5 FT			1														
3	N. OF METER 5 FT			1														
4	N. CENTRAL 5 FT			1														
5																		
6																		
7																		
8																		
9																		
10																		

Relinquished by: [Signature] Date/Time: 8/27/15 15:03 Received by: [Signature] Date/Time: 8-27-15 15:03  
 Relinquished by: [Signature] Date/Time: 8-27-15 18:00 Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Turn Around Time (Check)  
 Same Day  72 hours \_\_\_\_\_  
 24 hours \_\_\_\_\_ Standard \_\_\_\_\_  
 48 hours \_\_\_\_\_  
 Sample Integrity: FRI. AM PLZ.  
 Temperature Upon Receipt: 207°C  
 Intact:  Yes  No

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

Project: Noble - Johnson-34-14i7

Project Number: [none]  
Project Manager: Paul Henehan

**Reported:**  
08/28/15 06:59

**NW Corner 5FT  
1508214-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/27/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1508223	08/27/15	08/27/15	8015M	

Date Sampled: **08/27/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		100 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **08/27/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1508212	08/27/15	08/27/15	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: **08/27/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		116 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Johnson-34-14i7

Project Number: [none]  
Project Manager: Paul Henehan

**Reported:**  
08/28/15 06:59

**NW Central 5FT  
1508214-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/27/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1508223	08/27/15	08/27/15	8015M	

Date Sampled: **08/27/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		100 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **08/27/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1508212	08/27/15	08/27/15	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: **08/27/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

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

Project: Noble - Johnson-34-14i7

Project Number: [none]  
Project Manager: Paul Henehan

**Reported:**  
08/28/15 06:59

**N. of Meter 5FT  
1508214-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/27/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1508223	08/27/15	08/27/15	8015M	

Date Sampled: **08/27/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		98.0 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **08/27/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Naphthalene</b>	<b>0.011</b>	0.010	mg/kg	1	1508212	08/27/15	08/28/15	EPA 8260B	
<b>Benzene</b>	<b>0.082</b>	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **08/27/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		125 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		116 %	21-167		"	"	"	"	

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

Project: Noble - Johnson-34-14i7

Project Number: [none]  
Project Manager: Paul Henehan

**Reported:**  
08/28/15 06:59

**N. Central 5FT  
1508214-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/27/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1508223	08/27/15	08/27/15	8015M	

Date Sampled: **08/27/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		98.2 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **08/27/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1508212	08/27/15	08/27/15	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: **08/27/15 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

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

Project: Noble - Johnson-34-14i7

Project Number: [none]  
Project Manager: Paul Henehan

**Reported:**  
08/28/15 06:59

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1508223 - EPA 3550A**

**Blank (1508223-BLK1)**

Prepared & Analyzed: 08/27/15

C10-C28 (DRO)	ND	50	mg/kg								
<i>Surrogate: o-Terphenyl</i>	12.5		"	12.2		102	30-150				

**LCS (1508223-BS1)**

Prepared & Analyzed: 08/27/15

C10-C28 (DRO)	479	50	mg/kg	499	95.9	73-134					
<i>Surrogate: o-Terphenyl</i>	12.6		"	12.2		103	30-150				

**Matrix Spike (1508223-MS1)**

Source: 1508214-01

Prepared & Analyzed: 08/27/15

C10-C28 (DRO)	505	50	mg/kg	480	19.6	101	50-148				
<i>Surrogate: o-Terphenyl</i>	13.2		"	11.7		113	30-150				

**Matrix Spike Dup (1508223-MSD1)**

Source: 1508214-01

Prepared & Analyzed: 08/27/15

C10-C28 (DRO)	459	50	mg/kg	480	19.6	91.6	50-148	9.43	13		
<i>Surrogate: o-Terphenyl</i>	11.8		"	11.7		101	30-150				

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

Project: Noble - Johnson-34-14i7

Project Number: [none]  
Project Manager: Paul Henehan

**Reported:**  
08/28/15 06:59

### 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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