

FREMONT ENVIRONMENTAL INC.

May 19, 2017

Mr. Jacob Evans
Noble Energy Inc.
2115 117th Ave,
Greeley, CO 80634

Subject: **Excavation Report**
 Shafto J27-9, 10
 API # 05-123-15599
 SESE Sec 25, T7N, R65W
 Weld County, Colorado
 Fremont Project No. C017-067
 Facility #328139, Spill #450215

Dear Mr. Evans:

Enclosed please find a copy of the above referenced Excavation Report for the Shafto J27-9, 10 release site in Weld County, Colorado. The enclosed report describes excavation actions to remove impacted soil from the site.

Since the excavation project has removed the subsurface petroleum impacts, Noble Energy Inc. should request that a No Further Action (NFA) determination be provided by the Colorado Oil and Gas Conservation Commission (COGCC) for this 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

1759 REDWING LANE, BROOMFIELD, CO 80020
(303) 956-8714 (DIRECT)

EXCAVATION REPORT
NOBLE ENERGY INC.
SHAFTO J27-9,10
WELD COUNTY, COLORADO
FREMONT PROJECT NO. C017-067
FACILITY #328139, SPILL #450215

Prepared by:

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

May 19, 2017

TABLE OF CONTENTS

1.0 INTRODUCTION	1
2.0 BACKGROUND INFORMATION	1
2.1 Site Location	1
2.2 Site History	1
3.0 FIELD ACTIVITIES	2
4.0 DISCUSSION	3
5.0 REMARKS	3

Table

Table 1: Summary of Petroleum Constituents in Soil Chemistry Data

Figures

Figure 1: Site Location Map

Figure 2: Site Map

Figure 3: Excavation and Sample Locations for Laboratory Analyses

Appendices

Appendix A: Laboratory Documentation

EXCAVATION REPORT
NOBLE ENERGY INC.
SHAFTO J27-9,10
WELD COUNTY, COLORADO
FREMONT PROJECT NO. C017-067
FACILITY #328139, SPILL #450215

1.0 INTRODUCTION

The purpose of this document is to present information collected during the excavation of petroleum-impacted soil at the Shafto J27-9, 10 release location in Weld County, Colorado. Impacted soil was identified at this site due to a historical release from the facility's water vault. This multi-day excavation project was completed on May 12, 2017.

2.0 BACKGROUND INFORMATION

2.1 Site Location

The Shafto J27-9, 10 site is located approximately one mile west of Evans, Colorado in Weld County as shown on Figure 1. The site is located in a residential area 0.5 miles northwest of the intersection of 49th Avenue and 47th Street. The location is further described as the SE ¼ of the SE ¼ of Section 25, Township 7N, Range 65W.

2.2 Site History

The site consists of the former water vault for the Shafto J27-9, 10 natural gas well. The Shafto J27-9 well was drilled in 1992 to a depth of approximately 7,410 feet. Soil impacts were identified at the former water vault during maintenance operations. 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 at least 21 feet. Ground water was not encountered during the excavation work. The 60' x 80' excavated area is shown on Figure 3.

Excavation was initiated at the location of the former water vault on April 25, 2017. Soil removal took place in the area adjacent to and below the former water vault and aboveground storage tank to a depth of approximately 21 feet. Excavation continued until all soil impacts were removed on May 12, 2017. Eighteen sidewall samples and five floor samples collected during the excavation work indicated that no residual petroleum impacts were present.

The sidewall samples were collected as grab samples near the lower portion of the excavation wall at a depth of 14 to 19 feet. Five floor samples were collected at a depth of 21 feet. 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 laboratory report and chain-of-custody documentation are included in Appendix A.

A summarization of the laboratory data is included in Table 1, which presents the laboratory analyses for each soil sample. The laboratory analyses indicated that all 23 soil samples collected from the sidewalls and floor achieved the COGCC Table 910-1 limits.

A total of 1,260 cubic yards of petroleum impacted soil were removed by Wells Trucking Services Inc. from the location during the course of this project. The impacted soil was

disposed of at the Waste Management Inc. Northern Colorado landfill in Ault, Colorado as non-hazardous waste. The site was re-contoured to match the surrounding surface after backfilling was completed.

4.0 DISCUSSION

Site remediation of the Shafto J27-9, 10 location was completed on May 12, 2017 by excavation and disposal of impacted soil. Approximately 1,260 cubic yards of impacted soil were excavated and removed from this site.

As demonstrated by the soil sampling and analyses, the petroleum impacted soil has been removed from the site by excavation. This was confirmed by the analyses of the soil samples collected from the excavation floor and sidewalls which were below the COGCC Table 910-1 limits. Therefore, Noble should request a no further action (NFA) determination from 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.**

 For MWA

5/19/17

Date_____

Mark Taylor

Construction Consultant

Reviewed by:



5/19/17

Date_____

Paul V. Henahan, P.E.

Senior Consultant

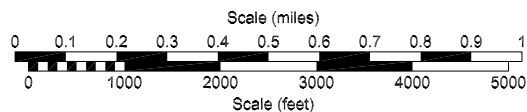
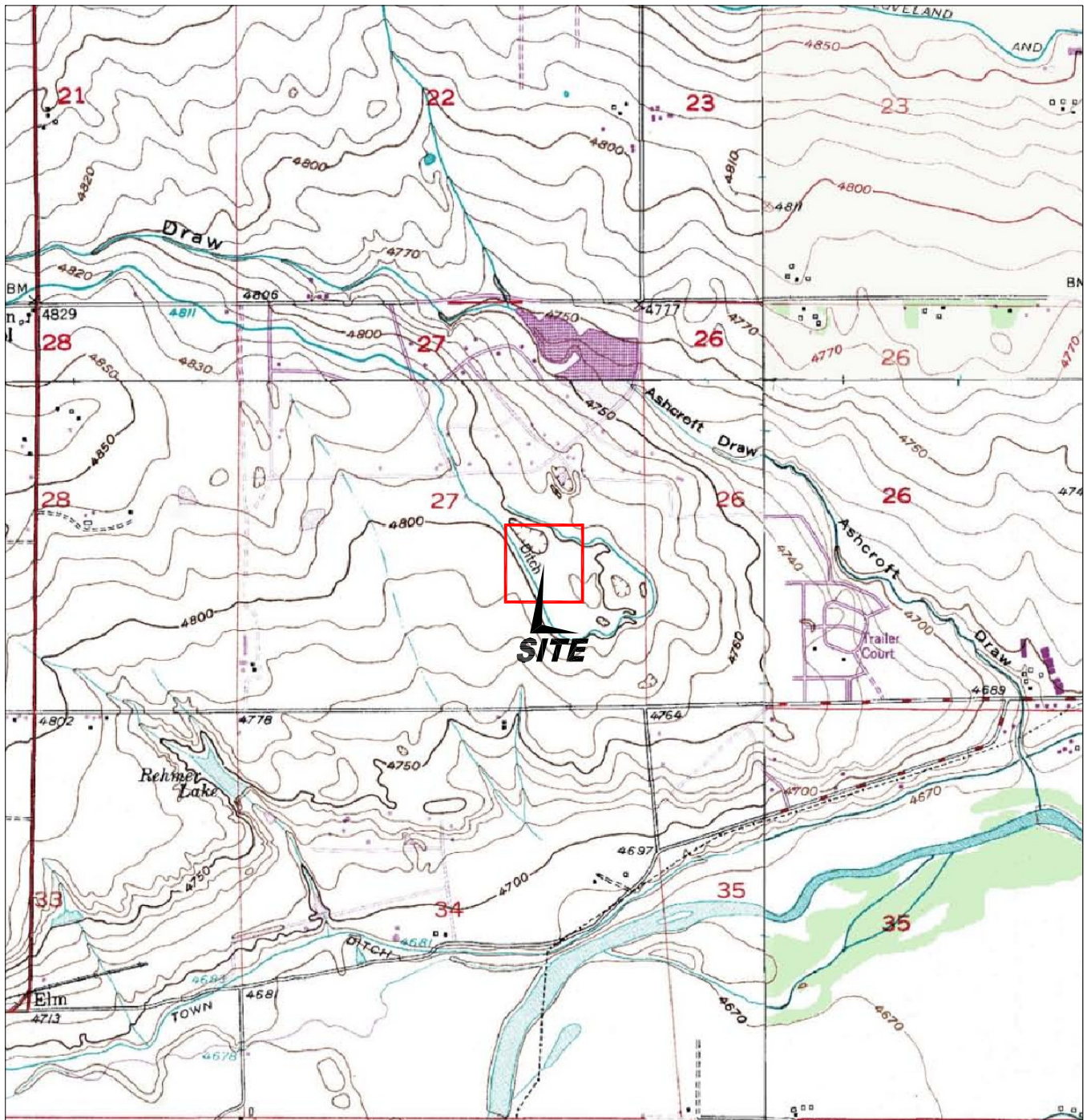
TABLE

TABLE 1
SUMMARY OF SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
SHAFTO J27-9, 10, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C017-067

Sample	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
1-21'	21	5/8/2017	Floor	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
2-18'	18	5/8/2017	Wall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
3-18'	18	5/8/2017	Wall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
4-18'	18	5/8/2017	Wall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
5-18'	18	5/8/2017	Wall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
6-14'	14	5/11/2017	Wall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
7-18'	18	5/11/2017	Wall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
8-16'	16	5/11/2017	Wall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
9-18'	18	5/11/2017	Floor	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
10-16'	16	5/11/2017	Wall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
11-16'	16	5/11/2017	Wall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
12-18'	18	5/12/2017	Wall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
13-21'	21	5/12/2017	Floor	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
14-18'	18	5/12/2017	Wall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
15-16'	16	5/12/2017	Wall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
16-21'	21	5/12/2017	Floor	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
17-19'	19	5/12/2017	Wall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
18-16'	16	5/12/2017	Wall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
19-17'	17	5/12/2017	Wall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
20-21'	21	5/12/2017	Floor	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
21-16'	16	5/12/2017	Wall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
22-18'	18	5/12/2017	Wall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
23-18'	18	5/12/2017	Wall	Pass	<0.002	<0.005	<0.005	<0.01	<0.01	<50	<50
COGCC Table 910 Limits					0.17	85	100	175	23	500	500

Bold faced values exceed the COGCC Table 910-1 concentrations

FIGURES



USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1
SITE LOCATION MAP

Noble Shaft J27-9, 10
SE SE Section 25, T7N, R65W
Weld County, Colorado

Project No.
C017-067

Prepared by

Drawn by
JMA

Date
5/6/17

Reviewed by

Filename
17067T





LEGEND

	FENCE LINE		
	CONTAINMENT BERM		FORMER FACILITY
	CONTAINMENT WALL		

Figure 2
SITE MAP

Noble Shaft J27-9, 10
SE SE Section 25, T7N, R65W
Weld County, Colorado

Project No. C017-067	Prepared by JMA	Drawn by JMA	
Date 5/6/17	Reviewed by	Filename 17067Q	



LEGEND

FENCE LINE
CONTAINMENT BERM
CONTAINMENT WALL
LIMITS OF EXCAVATION

FORMER FACILITY



SOIL SAMPLE LOCATION

DATE SAMPLED	
5/8/17	
DEPTH (ft) and LOCATION	
18' - Wall	
B	<0.002
T	<0.005
E	<0.005
X	<0.01
N	<0.01
G	<50
D	<50

BENZENE (mg/kg)
TOLUENE (mg/kg)
ETHYLBENZENE (mg/kg)
TOTAL XYLENES (mg/kg)
NAPHTHALENE (mg/kg)
TPH-GRO (mg/kg)
TPH-DRO (mg/kg)

Figure 2
SITE MAP

Noble Shafto J27-9, 10
SE SE Section 25, T7N, R65W
Weld County, Colorado

Project No.
C017-067

Prepared by

Drawn by
JMA

Date
5/19/17

Reviewed by

Filename
17067Q



APPENDIX A

LABORATORY DOCUMENTATION

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

May 09, 2017

Paul Henehan
Fremont Environmental
1759 Redwing Lane
Broomfield, CO 80020
RE: Noble - Shafto J27-9,10

Enclosed are the results of analyses for samples received by Summit Scientific on 05/08/17 18:01. 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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: CO17-067
Project Manager: Paul Henehan

Reported:
05/09/17 06:25

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
1-21' Floor	1705075-01	Soil	05/08/17 00:00	05/08/17 18:01
2-18'	1705075-02	Soil	05/08/17 00:00	05/08/17 18:01
3-18'	1705075-03	Soil	05/08/17 00:00	05/08/17 18:01
4-18'	1705075-04	Soil	05/08/17 00:00	05/08/17 18:01
5-18'	1705075-05	Soil	05/08/17 00:00	05/08/17 18:01

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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shaft J27-9,10

Project Number: CO17-067
Project Manager: Paul Henehan

Reported:
05/09/17 06:25

Summit Scientific 1705075

S₂

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

Page 1 of 1

Client: Fremont Environmental

Noble

Project Manager: Paul Henehan

Address: P.O. Box 1289

E-Mail: paulh@fremontenv.com

City/State/Zip: PO Box 1829 Wellington, CO 80549

Phone: 303-956-8714

Fax:

Project Name: *Noble - Shaft 27-9,10*

Sampler Name: *Mark T*

Project Number: *CO17-067*

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	BTEX	GRO/DRO	Naphthalene	SAR	EC	Ph	
1	1-2' Floor	5/8/17																	
2	2-18'																		
3	3-18'																		
4	4-18'																		
5	5-18'																		
6																			
7																			
8																			
9																			
10																			

Relinquished by: <i>[Signature]</i>	Date/Time: 5/8/17 1530	Received by: <i>[Signature]</i>	Date/Time: 5/8/17 1530	Turn Around Time (Check) <input checked="" type="checkbox"/> Same Day <input type="checkbox"/> 24 hours <input type="checkbox"/> 48 hours Sample Integrity: Temperature Upon Receipt: 22.9°C Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Notes: Tue AM Please
Relinquished by: <i>[Signature]</i>	Date/Time: 5/8/17 1715	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

www.s2scientific.com

Summit Scientific

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Fremont Environmental
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shaft J27-9,10

Project Number: CO17-067
Project Manager: Paul Henehan

Reported:
05/09/17 06:25

Sample Receipt Checklist

S2 Work Order: 1705075

Client: Fremont/Noble

Client Project ID: Noble - Shaft 27

Shipped Via: Hand

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #:

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Cooler ID					
Temp (°C)	<u>22.9</u>				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?			<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.			<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

Nakita
Custodian Printed Name

[Signature]
Signature or Initials of Custodian

5/8/17 1815
Date/Time



Fremont Environmental
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10
Project Number: CO17-067
Project Manager: Paul Henehan

Reported:
05/09/17 06:25

1-21' Floor
1705075-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/08/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705084	05/08/17	05/08/17	8015M	

Date Sampled: **05/08/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		104 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/08/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705083	"	05/08/17	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: **05/08/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10
Project Number: CO17-067
Project Manager: Paul Henehan

Reported:
05/09/17 06:25

2-18'
1705075-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/08/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705084	05/08/17	05/08/17	8015M	

Date Sampled: **05/08/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		104 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/08/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705083	"	05/08/17	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: **05/08/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

Summit Scientific

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Fremont Environmental
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10
Project Number: CO17-067
Project Manager: Paul Henehan

Reported:
05/09/17 06:25

3-18'
1705075-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/08/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705084	05/08/17	05/08/17	8015M	

Date Sampled: **05/08/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		112 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/08/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705083	"	05/08/17	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: **05/08/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.5 %	21-167		"	"	"	"	

Summit Scientific

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Fremont Environmental
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10
Project Number: CO17-067
Project Manager: Paul Henehan

Reported:
05/09/17 06:25

4-18'
1705075-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/08/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705084	05/08/17	05/08/17	8015M	

Date Sampled: **05/08/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		102 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/08/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705083	"	05/08/17	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: **05/08/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10
Project Number: CO17-067
Project Manager: Paul Henehan

Reported:
05/09/17 06:25

5-18'
1705075-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/08/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705084	05/08/17	05/08/17	8015M	

Date Sampled: **05/08/17 00:00**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/08/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705083	"	05/08/17	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: **05/08/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10
Project Number: CO17-067
Project Manager: Paul Henehan

Reported:
05/09/17 06:25

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 1705084 - EPA 3550A

Blank (1705084-BLK1)

Prepared & Analyzed: 05/08/17

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 13.4 " 12.5 107 30-150

LCS (1705084-BS1)

Prepared & Analyzed: 05/08/17

C10-C28 (DRO) 546 50 mg/kg 499 109 73-134

Surrogate: o-Terphenyl 13.9 " 12.5 111 30-150

Matrix Spike (1705084-MS1)

Source: 1705075-01

Prepared & Analyzed: 05/08/17

C10-C28 (DRO) 577 50 mg/kg 499 27.3 110 50-148

Surrogate: o-Terphenyl 16.2 " 12.5 129 30-150

Matrix Spike Dup (1705084-MSD1)

Source: 1705075-01

Prepared & Analyzed: 05/08/17

C10-C28 (DRO) 574 50 mg/kg 499 27.3 110 50-148 0.461 20

Surrogate: o-Terphenyl 15.8 " 12.5 127 30-150

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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10
Project Number: CO17-067
Project Manager: Paul Henehan

Reported:
05/09/17 06:25

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 1705083 - EPA 5030 Soil MS

Blank (1705083-BLK1)

Prepared & Analyzed: 05/08/17

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	"							
Surrogate: 1,2-Dichloroethane-d4	0.0396		"	0.0400	99.1	23-173				
Surrogate: Toluene-d8	0.0379		"	0.0400	94.8	20-170				
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400	101	21-167				

LCS (1705083-BS1)

Prepared & Analyzed: 05/08/17

Naphthalene	ND	0.010	mg/kg			66-138				
Benzene	0.0841	0.0020	"	0.100	84.1	58-130				
Toluene	0.0897	0.0050	"	0.100	89.7	61-134				
Ethylbenzene	0.0810	0.0050	"	0.0992	81.6	74-139				
m,p-Xylene	0.152	0.010	"	0.200	76.3	73-137				
o-Xylene	0.0769	0.0050	"	0.0980	78.4	73-141				
Surrogate: 1,2-Dichloroethane-d4	0.0367		"	0.0400	91.6	23-173				
Surrogate: Toluene-d8	0.0456		"	0.0400	114	20-170				
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0400	101	21-167				

Matrix Spike (1705083-MS1)

Source: 1705075-01

Prepared & Analyzed: 05/08/17

Naphthalene	ND	0.010	mg/kg		ND	10-158				
Benzene	0.0948	0.0020	"	0.100	ND	94.8	30-131			
Toluene	0.101	0.0050	"	0.100	ND	101	30-134			
Ethylbenzene	0.0996	0.0050	"	0.0992	ND	100	22-153			
m,p-Xylene	0.188	0.010	"	0.200	ND	94.3	10-159			
o-Xylene	0.0948	0.0050	"	0.0980	ND	96.7	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0388		"	0.0400	96.9	23-173				
Surrogate: Toluene-d8	0.0419		"	0.0400	105	20-170				
Surrogate: 4-Bromofluorobenzene	0.0411		"	0.0400	103	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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10
Project Number: CO17-067
Project Manager: Paul Henehan

Reported:
05/09/17 06:25

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 1705083 - EPA 5030 Soil MS

Matrix Spike Dup (1705083-MSD1)		Source: 1705075-01			Prepared & Analyzed: 05/08/17					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.106	0.0020	"	0.100	ND	106	30-131	11.0	34	
Toluene	0.112	0.0050	"	0.100	ND	112	30-134	10.6	30	
Ethylbenzene	0.119	0.0050	"	0.0992	ND	120	22-153	17.4	24	
m,p-Xylene	0.222	0.010	"	0.200	ND	111	10-159	16.3	68	
o-Xylene	0.112	0.0050	"	0.0980	ND	115	31-151	16.9	38	
Surrogate: 1,2-Dichloroethane-d4		0.0400	"	0.0400		99.9	23-173			
Surrogate: Toluene-d8		0.0398	"	0.0400		99.6	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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: CO17-067
Project Manager: Paul Henehan

Reported:
05/09/17 06:25

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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

May 12, 2017

Paul Henehan
Fremont Environmental
1759 Redwing Lane
Broomfield, CO 80020
RE: Noble - Shafto J27-9,10

Enclosed are the results of analyses for samples received by Summit Scientific on 05/11/17 17:45. 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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/12/17 06:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
6-14'	1705111-01	Soil	05/11/17 00:00	05/11/17 17:45
7-18'	1705111-02	Soil	05/11/17 00:00	05/11/17 17:45
8-16'	1705111-03	Soil	05/11/17 00:00	05/11/17 17:45
9-18'	1705111-04	Soil	05/11/17 00:00	05/11/17 17:45
10-16'	1705111-05	Soil	05/11/17 00:00	05/11/17 17:45
11-16'	1705111-06	Soil	05/11/17 00:00	05/11/17 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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shaft J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/12/17 06:24

Summit Scientific 170511

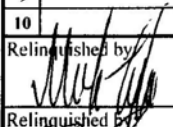
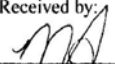
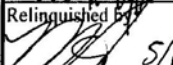
S₂

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

Page 1 of 1

Client: Fremont Environmental (noble) Project Manager: Paul Henehan
Address: P.O. Box 1289 E-Mail: paulh@fremontenv.com
City/State/Zip: PO Box 1829 Wellington, CO 80549
Phone: 303-956-8714 Fax: Project Name: Noble-shaft J27-9,10
Sampler Name: Mark T Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested							Special Instructions
					HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	BTEX	GRO/DRO	Naphthalene	SAR	EC	Ph	
1	6-14'	5/11/17																	
2	7-18'																		
3	8-18'																		
4	9-18'																		
5	10-16'																		
6	11-16'																		
7																			
8																			
9																			
10																			

Relinquished by: 	Date/Time: 5/11/17 1630	Received by: 	Date/Time: 5/11/17 1630	Turn Around Time (Check) <input checked="" type="checkbox"/> Same Day <input type="checkbox"/> 24 hours <input type="checkbox"/> 48 hours Standard Sample Integrity: Temperature Upon Receipt: 9.4°C Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes: Fry Am Please on ice
Relinquished by: 	Date/Time: 5/11/17 1800	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

www.s2scientific.com

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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shaft J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/12/17 06:24

Sample Receipt Checklist

S2 Work Order: 1705/11

Client: Fremont/Noble

Client Project ID: Noble - Shaft J27-9,10

Shipped Via: P/U

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: _____

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____ (Describe)

Cooler ID					
Temp (°C)	<u>9.4</u>				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?			<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.			<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

Nakita
Custodian Printed Name

[Signature]
Signature or Initials of Custodian

5/11/17 1800
Date/Time



Fremont Environmental
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10
Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/12/17 06:24

6-14'
1705111-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 05/11/17 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705125	05/11/17	05/11/17	8015M	

Date Sampled: 05/11/17 00:00

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 05/11/17 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705116	05/11/17	05/11/17	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: 05/11/17 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.4 %	21-167		"	"	"	"	

Summit Scientific

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Fremont Environmental
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/12/17 06:24

7-18'
1705111-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/11/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705125	05/11/17	05/11/17	8015M	

Date Sampled: **05/11/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		104 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/11/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705116	05/11/17	05/11/17	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: **05/11/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.6 %	21-167		"	"	"	"	

Summit Scientific

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Fremont Environmental
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/12/17 06:24

8-16'
1705111-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/11/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705125	05/11/17	05/11/17	8015M	

Date Sampled: **05/11/17 00:00**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/11/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705116	05/11/17	05/11/17	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: **05/11/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.2 %	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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/12/17 06:24

9-18'
1705111-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/11/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705125	05/11/17	05/11/17	8015M	

Date Sampled: **05/11/17 00:00**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/11/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705116	05/11/17	05/11/17	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: **05/11/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		97.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.8 %	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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/12/17 06:24

10-16'
1705111-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/11/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705125	05/11/17	05/11/17	8015M	

Date Sampled: **05/11/17 00:00**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/11/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705116	05/11/17	05/11/17	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: **05/11/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.9 %	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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10
Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/12/17 06:24

11-16'
1705111-06 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/11/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705125	05/11/17	05/11/17	8015M	

Date Sampled: **05/11/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		105 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/11/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705116	05/11/17	05/11/17	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: **05/11/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.8 %	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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/12/17 06:24

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 1705125 - EPA 3550A

Blank (1705125-BLK1)

Prepared & Analyzed: 05/11/17

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 13.7 " 12.5 109 30-150

LCS (1705125-BS1)

Prepared & Analyzed: 05/11/17

C10-C28 (DRO) 471 50 mg/kg 499 94.5 73-134

Surrogate: o-Terphenyl 12.9 " 12.5 103 30-150

Matrix Spike (1705125-MS1)

Source: 1705109-01

Prepared & Analyzed: 05/11/17

C10-C28 (DRO) 469 50 mg/kg 499 27.0 88.5 50-148

Surrogate: o-Terphenyl 12.9 " 12.5 103 30-150

Matrix Spike Dup (1705125-MSD1)

Source: 1705109-01

Prepared & Analyzed: 05/11/17

C10-C28 (DRO) 512 50 mg/kg 499 27.0 97.1 50-148 8.77 20

Surrogate: o-Terphenyl 12.7 " 12.5 102 30-150

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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/12/17 06:24

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 1705116 - EPA 5030 Soil MS

Blank (1705116-BLK1)

Prepared & Analyzed: 05/11/17

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	"							
Surrogate: 1,2-Dichloroethane-d4	0.0397		"	0.0400		99.2	23-173			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0385		"	0.0400		96.2	21-167			

LCS (1705116-BS1)

Prepared & Analyzed: 05/11/17

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.106	0.0020	"	0.100		106	58-130			
Toluene	0.117	0.0050	"	0.100		117	61-134			
Ethylbenzene	0.119	0.0050	"	0.0992		120	74-139			
m,p-Xylene	0.224	0.010	"	0.200		112	73-137			
o-Xylene	0.113	0.0050	"	0.0980		115	73-141			
Surrogate: 1,2-Dichloroethane-d4	0.0392		"	0.0400		97.9	23-173			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0384		"	0.0400		96.1	21-167			

Matrix Spike (1705116-MS1)

Source: 1705104-01

Prepared & Analyzed: 05/11/17

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.108	0.0020	"	0.100	ND	108	30-131			
Toluene	0.119	0.0050	"	0.100	ND	119	30-134			
Ethylbenzene	0.126	0.0050	"	0.0992	ND	127	22-153			
m,p-Xylene	0.237	0.010	"	0.200	ND	119	10-159			
o-Xylene	0.119	0.0050	"	0.0980	ND	121	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0398		"	0.0400		99.6	23-173			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.0400		97.6	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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/12/17 06:24

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 1705116 - EPA 5030 Soil MS

Matrix Spike Dup (1705116-MSD1)		Source: 1705104-01			Prepared & Analyzed: 05/11/17					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.110	0.0020	"	0.100	ND	110	30-131	1.43	34	
Toluene	0.121	0.0050	"	0.100	ND	121	30-134	1.28	30	
Ethylbenzene	0.130	0.0050	"	0.0992	ND	131	22-153	2.93	24	
m,p-Xylene	0.245	0.010	"	0.200	ND	123	10-159	3.33	68	
o-Xylene	0.123	0.0050	"	0.0980	ND	126	31-151	3.84	38	
Surrogate: 1,2-Dichloroethane-d4	0.0402		"	0.0400		101	23-173			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.3	20-170			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.8	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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/12/17 06:24

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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

May 14, 2017

Paul Henehan
Fremont Environmental
1759 Redwing Lane
Broomfield, CO 80020
RE: Noble - Shafto J27-9,10

Enclosed are the results of analyses for samples received by Summit Scientific on 05/12/17 18:30. 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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/14/17 13:15

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
12-18'	1705119-01	Soil	05/12/17 00:00	05/12/17 18:30
13-21'	1705119-02	Soil	05/12/17 00:00	05/12/17 18:30
14-18'	1705119-03	Soil	05/12/17 00:00	05/12/17 18:30
15-16'	1705119-04	Soil	05/12/17 00:00	05/12/17 18:30
16-21'	1705119-05	Soil	05/12/17 00:00	05/12/17 18:30
17-19'	1705119-06	Soil	05/12/17 00:00	05/12/17 18:30
18-16'	1705119-07	Soil	05/12/17 00:00	05/12/17 18:30
19-17'	1705119-08	Soil	05/12/17 00:00	05/12/17 18:30
20-21'	1705119-09	Soil	05/12/17 00:00	05/12/17 18:30
21-16'	1705119-10	Soil	05/12/17 00:00	05/12/17 18:30
22-18'	1705119-11	Soil	05/12/17 00:00	05/12/17 18:30
23-18'	1705119-12	Soil	05/12/17 00:00	05/12/17 18:30

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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shaft J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/14/17 13:15

Summit Scientific 1705119.1

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

Client: Fremont Environmental

(mble)

Project Manager: Paul Henehan

Page 1 of 2

Address: P.O. Box 1289

E-Mail: paulh@fremontenv.com

City/State/Zip: PO Box 1829 Wellington, CO 80549

Phone: 303-956-8714

Fax:

Project Name: Noble-Shaft J27-9,10

Sampler Name: Mark T

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	GRO/DRO	Napthalene	SAR	EC	
1	13-18'	5/12/17																
2	13-21'																	
3	14-18'																	
4	15-16'																	
5	16-21'																	
6	17-18'																	
7	18-16'																	
8	19-17'																	
9	20-21'																	
10	21-27'																	

Relinquished by: [Signature]	Date/Time: 5/12/17 1630	Received by: [Signature]	Date/Time: 5/12/17 1630	Turn Around Time (Check) <input checked="" type="checkbox"/> Same Day <input type="checkbox"/> 24 hours <input type="checkbox"/> 48 hours Sample Integrity: Temperature Upon Receipt: 24.1°C Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Notes: Sat Am please on ice
Relinquished by: [Signature]	Date/Time: 5/12/17 1745	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

www.s2scientific.com

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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shaft J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/14/17 13:15

Summit Scientific 1705119.2

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

Page 2 of 2

Client: Fremont Environmental

(Noble)

Project Manager: Paul Henehan

Address: P.O. Box 1289

E-Mail: paulh@fremontenv.com

City/State/Zip: PO Box 1829 Wellington, CO 80549

Phone: 303-956-8714


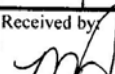
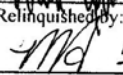
Fax:

Project Name: Noble Shaft J27-9,10

Sampler Name: Mark T

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	GRO/DRO	Naphthalene	SAR	EC	Ph	
1	22-18'	5/12/17		1															
2	23-18'																		
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Relinquished by: 	Date/Time: 5/12/17 1630	Received by: 	Date/Time: 5/12/17 1630	Turn Around Time (Check) <input checked="" type="checkbox"/> Same Day <input type="checkbox"/> 24 hours <input type="checkbox"/> 48 hours Sample Integrity: Temperature Upon Receipt: 24.1°C Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Notes: Sort Am Please on ke
Relinquished by: 	Date/Time: 5/12/17 1745	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

www.s2scientific.com

Summit Scientific

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Fremont Environmental
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/14/17 13:15

Sample Receipt Checklist

S2 Work Order: 1705119

Client: Fremont/Noble

Client Project ID: Noble - Shafto J27-910

Shipped Via: Hand

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: _____

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Cooler ID					
Temp (°C)	<u>24.1</u>				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?			<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.			<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

Nakita
Custodian Printed Name

PHH
Signature or Initials of Custodian

5/12/17 1545
Date/Time



Fremont Environmental
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/14/17 13:15

12-18'
1705119-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 05/12/17 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705141	05/12/17	05/13/17	8015M	

Date Sampled: 05/12/17 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: 05/12/17 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705140	05/12/17	05/12/17	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: 05/12/17 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/14/17 13:15

13-21'
1705119-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705141	05/12/17	05/13/17	8015M	

Date Sampled: **05/12/17 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: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705140	05/12/17	05/12/17	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: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/14/17 13:15

14-18'
1705119-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705141	05/12/17	05/13/17	8015M	

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		105 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705140	05/12/17	05/12/17	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: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.4 %	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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/14/17 13:15

15-16'
1705119-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705141	05/12/17	05/13/17	8015M	

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		102 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705140	05/12/17	05/12/17	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: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10
Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/14/17 13:15

16-21'
1705119-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705141	05/12/17	05/13/17	8015M	

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		99.4 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705140	05/12/17	05/12/17	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: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

Summit Scientific

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Fremont Environmental
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/14/17 13:15

17-19'
1705119-06 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705141	05/12/17	05/13/17	8015M	

Date Sampled: **05/12/17 00:00**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705140	05/12/17	05/12/17	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: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Summit Scientific

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Fremont Environmental
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/14/17 13:15

18-16'
1705119-07 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705141	05/12/17	05/13/17	8015M	

Date Sampled: **05/12/17 00:00**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705140	05/12/17	05/13/17	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: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Summit Scientific

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Fremont Environmental
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/14/17 13:15

19-17'
1705119-08 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705141	05/12/17	05/13/17	8015M	

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		104 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705140	05/12/17	05/13/17	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: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Summit Scientific

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Fremont Environmental
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10
Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/14/17 13:15

20-21'
1705119-09 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705141	05/12/17	05/13/17	8015M	

Date Sampled: **05/12/17 00:00**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705140	05/12/17	05/13/17	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: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Summit Scientific

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Fremont Environmental
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10
Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/14/17 13:15

21-16'
1705119-10 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705141	05/12/17	05/13/17	8015M	

Date Sampled: **05/12/17 00:00**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705140	05/12/17	05/13/17	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: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

Summit Scientific

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Fremont Environmental
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/14/17 13:15

22-18'
1705119-11 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705141	05/12/17	05/13/17	8015M	

Date Sampled: **05/12/17 00:00**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705140	05/12/17	05/13/17	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: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Summit Scientific

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Fremont Environmental
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/14/17 13:15

23-18'
1705119-12 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705141	05/12/17	05/13/17	8015M	

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		99.9 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705140	05/12/17	05/13/17	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: **05/12/17 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

Summit Scientific

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Fremont Environmental
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/14/17 13:15

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 1705141 - EPA 3550A

Blank (1705141-BLK1)

Prepared & Analyzed: 05/12/17

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 13.2 " 12.5 105 30-150

LCS (1705141-BS1)

Prepared & Analyzed: 05/12/17

C10-C28 (DRO) 509 50 mg/kg 499 102 73-134

Surrogate: o-Terphenyl 12.8 " 12.5 102 30-150

Matrix Spike (1705141-MS1)

Source: 1705117-01

Prepared & Analyzed: 05/12/17

C10-C28 (DRO) 426 50 mg/kg 499 52.0 75.0 50-148

Surrogate: o-Terphenyl 12.6 " 12.5 101 30-150

Matrix Spike Dup (1705141-MSD1)

Source: 1705117-01

Prepared & Analyzed: 05/12/17

C10-C28 (DRO) 422 50 mg/kg 499 52.0 74.1 50-148 1.10 20

Surrogate: o-Terphenyl 12.5 " 12.5 99.8 30-150

Summit Scientific

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Fremont Environmental
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/14/17 13:15

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 1705140 - EPA 5030 Soil MS

Blank (1705140-BLK1)

Prepared & Analyzed: 05/12/17

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>0.0411</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0411</i>		<i>"</i>	<i>0.0400</i>		<i>103</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 (1705140-BS1)

Prepared & Analyzed: 05/12/17

Naphthalene	0.00642	0.010	mg/kg				66-138			
Benzene	0.0883	0.0020	"	0.100		88.3	58-130			
Toluene	0.100	0.0050	"	0.100		100	61-134			
Ethylbenzene	0.112	0.0050	"	0.0992		113	74-139			
m,p-Xylene	0.208	0.010	"	0.200		104	73-137			
o-Xylene	0.104	0.0050	"	0.0980		107	73-141			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0411</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0410</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0406</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>21-167</i>			

Matrix Spike (1705140-MS1)

Source: 1705117-01

Prepared & Analyzed: 05/12/17

Naphthalene	0.00639	0.010	mg/kg		0.00621		10-158			
Benzene	0.0874	0.0020	"	0.100	ND	87.4	30-131			
Toluene	0.101	0.0050	"	0.100	ND	101	30-134			
Ethylbenzene	0.115	0.0050	"	0.0992	ND	116	22-153			
m,p-Xylene	0.212	0.010	"	0.200	ND	106	10-159			
o-Xylene	0.108	0.0050	"	0.0980	ND	111	31-151			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0425</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0403</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0415</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>21-167</i>			

Summit Scientific

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Fremont Environmental
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/14/17 13:15

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 1705140 - EPA 5030 Soil MS

Matrix Spike Dup (1705140-MSD1)		Source: 1705117-01			Prepared & Analyzed: 05/12/17					
Naphthalene	0.00639	0.010	mg/kg		0.00621		10-158	0.00	42	
Benzene	0.0885	0.0020	"	0.100	ND	88.5	30-131	1.19	34	
Toluene	0.100	0.0050	"	0.100	ND	100	30-134	0.747	30	
Ethylbenzene	0.116	0.0050	"	0.0992	ND	116	22-153	0.547	24	
m,p-Xylene	0.214	0.010	"	0.200	ND	107	10-159	1.24	68	
o-Xylene	0.108	0.0050	"	0.0980	ND	111	31-151	0.0830	38	
Surrogate: 1,2-Dichloroethane-d4	0.0436		"	0.0400		109	23-173			
Surrogate: Toluene-d8	0.0401		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0417		"	0.0400		104	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
1759 Redwing Lane
Broomfield CO, 80020

Project: Noble - Shafto J27-9,10

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/14/17 13:15

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