

TABLE 1
SUMMARY OF SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
DUNCAN D11-13, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C018-100

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
N Wall 9 Ft	9	8/14/2018	Wall	Pass	<0.002	<0.005	<0.005	<0.005	<0.010	<50	<50
S Wall 9 Ft	9	8/14/2018	Wall	Fail	<0.002	<0.005	0.064	3.6	0.71	240	1100
E Wall 10 Ft	10	8/14/2018	Wall	Fail	0.0047	<0.005	0.11	1.3	0.68	64	1300
W Wall 9 Ft	9	8/14/2018	Wall	Fail	0.012	0.021	0.45	1.4	1.3	280	1600
Floor 13 Ft	13	8/14/2018	Floor	Fail	0.42	0.0068	0.63	15	0.34	<50	1600
TP-1 13 Ft	13	8/14/2018	Floor	Pass	<0.002	<0.005	<0.005	<0.005	<0.010	<50	<50
TP-2 13 Ft	13	8/14/2018	Floor	Pass	<0.002	<0.005	<0.005	<0.005	<0.010	<50	<50
TP-3 13 Ft	13	8/14/2018	Floor	Pass	<0.002	<0.005	<0.005	<0.005	<0.010	<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

Duncan D11-13
SWSW Sec 11, T3N, R64W
40.23424/104.52533
05-123-15936
Fac # 328396

Produced Water
Vault



Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

August 15, 2018

Paul Henehan
Fremont Environmental
PO Box 1289
Wellington, CO 80549
RE: Noble - Duncan D11-13

Enclosed are the results of analyses for samples received by Summit Scientific on 08/14/18 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to be 'BS' with a long, sweeping horizontal line extending to the right.

Ben Shrewsbury
Laboratory Manager



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/15/18 18:25

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N. Wall 9 FT	1808187-01	Soil	08/14/18 00:00	08/14/18 16:30
S. Wall 9 FT	1808187-02	Soil	08/14/18 00:00	08/14/18 16:30
E. Wall 10 FT	1808187-03	Soil	08/14/18 00:00	08/14/18 16:30
W. Wall 9 FT	1808187-04	Soil	08/14/18 00:00	08/14/18 16:30
Floor 13'	1808187-05	Soil	08/14/18 00:00	08/14/18 16:30
TP-1 13'	1808187-06	Soil	08/14/18 00:00	08/14/18 16:30
TP-2 13'	1808187-07	Soil	08/14/18 00:00	08/14/18 16:30
TP-3 13'	1808187-08	Soil	08/14/18 00:00	08/14/18 16:30

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.

Summit Scientific

S₁

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

1808157

Page 1 of 1

Client: Fremont Environmental

Project Manager: Paul Henahan

Bill to Henahan

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 - DUNCAN D11-13

Sampler Name: HENNELAN

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	Ph		
1	N. WALL 9 FT	8/14/18		1			✓			✓				✓	✓	✓				
2	S. WALL 9 FT																			
3	E. WALL 10 FT																			
4	W. WALL 9 FT																			
5	FLOOR 13 FT																			
6	TP-1 13 FT																			
7	TP-2 13 FT																			
8	TP-3 13 FT																			
9																				
10																				

Relinquished by: <u>PA/KE</u>	Date/Time: <u>8/14/18 16:30</u>	Received by: <u>PA</u>	Date/Time: <u>8-14-18 16:30</u>	Turn Around Time (Check) Same Day _____ 72 hours <u>24 hours</u> _____ Standard 48 hours _____ Sample Integrity: Temperature Upon Receipt: <u>21.3</u> Intact: <u>Yes</u> No	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Sample Receipt Checklist

S2 Work Order 1806187

Client: FREMONT Client Project ID: NORLE-DUNCAN D11-13

Shipped Via: H.D. Airbill #: _____
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

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

Temp (°C)	<u>21.3</u>
-----------	-------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<u>X</u>			
Were all samples received intact ⁽¹⁾ ?	<u>X</u>			
Was adequate sample volume provided ⁽¹⁾ ?	<u>X</u>			
If custody seals are present, are they intact ⁽¹⁾ ?			<u>X</u>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<u>X</u>			
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<u>X</u>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<u>X</u>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<u>X</u>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<u>X</u>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<u>X</u>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			<u>X</u>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			<u>X</u>	
If dissolved metals are requested, were samples field filtered?			<u>X</u>	
Additional Comments (if any): 				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

Muri
Custodian Printed Name or Initials

8-14-18
Signature of Custodian

16:45
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/15/18 18:25

N. Wall 9 FT
1808187-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1808183	08/14/18	08/15/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.8 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1808184	"	08/15/18	EPA 8015M	

Date Sampled: **08/14/18 00:00**

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

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/15/18 18:25

S. Wall 9 FT
1808187-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1808183	08/14/18	08/15/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.064	0.0050	"	"	"	"	"	"	
Xylenes (total)	3.6	1.0	"	100	"	"	08/15/18	"	
Naphthalene	0.71	0.010	"	1	"	"	08/15/18	"	
Gasoline Range Hydrocarbons	240	50	"	"	"	"	08/15/18	"	

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	08/15/18	"	
Surrogate: Toluene-d8		86.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		486 %	21-167		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1100	50	mg/kg	1	1808184	"	08/15/18	EPA 8015M	

Date Sampled: **08/14/18 00:00**

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

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/15/18 18:25

E. Wall 10 FT
1808187-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0047	0.0020	mg/kg	1	1808183	08/14/18	08/15/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.11	0.0050	"	"	"	"	"	"	
Xylenes (total)	1.3	0.010	"	"	"	"	"	"	
Naphthalene	0.68	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	64	50	"	"	"	"	"	"	

Date Sampled: **08/14/18 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		98.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		248 %	21-167		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1300	50	mg/kg	1	1808184	"	08/15/18	EPA 8015M	

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		117 %	30-150		"	"	"	"	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/15/18 18:25

W. Wall 9 FT
1808187-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.012	0.0020	mg/kg	1	1808183	08/14/18	08/15/18	EPA 8260B	
Toluene	0.021	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.45	0.0050	"	"	"	"	"	"	
Xylenes (total)	1.4	0.010	"	"	"	"	"	"	
Naphthalene	1.3	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	280	50	"	"	"	"	08/15/18	"	

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		114 %	23-173		"	"	08/15/18	"	
<i>Surrogate: Toluene-d8</i>		97.2 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		536 %	21-167		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1600	50	mg/kg	1	1808184	"	08/15/18	EPA 8015M	

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		113 %	30-150		"	"	"	"	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/15/18 18:25

Floor 13'
1808187-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.42	0.0020	mg/kg	1	1808183	08/14/18	08/15/18	EPA 8260B	
Toluene	0.0068	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.63	0.0050	"	"	"	"	"	"	
Xylenes (total)	15	1.0	"	100	"	"	08/15/18	"	
Naphthalene	0.34	0.010	"	1	"	"	08/15/18	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		138 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		176 %	21-167		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1600	50	mg/kg	1	1808184	"	08/15/18	EPA 8015M	

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		113 %	30-150		"	"	"	"	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/15/18 18:25

TP-1 13'
1808187-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1808183	08/14/18	08/15/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.8 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1808184	"	08/15/18	EPA 8015M	

Date Sampled: **08/14/18 00:00**

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

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/15/18 18:25

TP-2 13'
1808187-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1808183	08/14/18	08/15/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.2 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1808184	"	08/15/18	EPA 8015M	

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		107 %	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
PO Box 1289
Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/15/18 18:25

TP-3 13'
1808187-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1808183	08/14/18	08/15/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.4 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/14/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1808184	"	08/15/18	EPA 8015M	

Date Sampled: **08/14/18 00:00**

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

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/15/18 18:25

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1808183 - EPA 5030 Soil MS

Blank (1808183-BLK1)

Prepared: 08/14/18 Analyzed: 08/15/18

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0400		"	0.0396		101	23-173			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.7	20-170			
Surrogate: 4-Bromofluorobenzene	0.0373		"	0.0400		93.2	21-167			

LCS (1808183-BS1)

Prepared: 08/14/18 Analyzed: 08/15/18

Benzene	0.0797	0.0020	mg/kg	0.100		79.7	70-130			
Toluene	0.0920	0.0050	"	0.100		92.0	70-130			
Ethylbenzene	0.101	0.0050	"	0.100		101	70-130			
m,p-Xylene	0.156	0.010	"	0.200		78.0	70-130			
o-Xylene	0.0962	0.0050	"	0.100		96.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0395		"	0.0396		99.7	23-173			
Surrogate: Toluene-d8	0.0397		"	0.0400		99.3	20-170			
Surrogate: 4-Bromofluorobenzene	0.0379		"	0.0400		94.7	21-167			

Matrix Spike (1808183-MS1)

Source: 1808186-01

Prepared: 08/14/18 Analyzed: 08/15/18

Benzene	0.0797	0.0020	mg/kg	0.100	ND	79.7	70-130			
Toluene	0.0916	0.0050	"	0.100	ND	91.6	70-130			
Ethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130			
m,p-Xylene	0.158	0.010	"	0.200	ND	78.9	70-130			
o-Xylene	0.0974	0.0050	"	0.100	ND	97.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0410		"	0.0396		104	23-173			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		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
PO Box 1289
Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/15/18 18:25

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 1808183 - EPA 5030 Soil MS

Matrix Spike Dup (1808183-MSD1)	Source: 1808186-01			Prepared: 08/14/18 Analyzed: 08/15/18						
Benzene	0.0818	0.0020	mg/kg	0.100	ND	81.8	70-130	2.56	30	
Toluene	0.0935	0.0050	"	0.100	ND	93.5	70-130	1.98	30	
Ethylbenzene	0.100	0.0050	"	0.100	ND	100	70-130	0.477	30	
m,p-Xylene	0.156	0.010	"	0.200	ND	78.0	70-130	1.19	30	
o-Xylene	0.0969	0.0050	"	0.100	ND	96.9	70-130	0.463	30	
Surrogate: 1,2-Dichloroethane-d4	0.0439		"	0.0396		111	23-173			
Surrogate: Toluene-d8	0.0401		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.5	21-167			

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/15/18 18:25

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 1808184 - EPA 3550A

Blank (1808184-BLK1)

Prepared: 08/14/18 Analyzed: 08/15/18

C10-C28 (DRO) ND 50 mg/kg

LCS (1808184-BS1)

Prepared: 08/14/18 Analyzed: 08/15/18

C10-C28 (DRO) 520 50 mg/kg 500 104 70-130

Matrix Spike (1808184-MS1)

Source: 1808186-01

Prepared: 08/14/18 Analyzed: 08/15/18

C10-C28 (DRO) 537 50 mg/kg 500 26.7 102 70-130

Matrix Spike Dup (1808184-MSD1)

Source: 1808186-01

Prepared: 08/14/18 Analyzed: 08/15/18

C10-C28 (DRO) 537 50 mg/kg 500 26.7 102 70-130 0.0266 20

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
PO Box 1289
Wellington CO, 80549

Project: Noble - Duncan D11-13

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/15/18 18:25

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.
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