



LEGEND

	SOIL SAMPLE LOCATION	2/20/19	DATE SAMPLED
	ABOVE GROUND STORAGE TANK	W Wall@3'	LOCATION and DEPTH (ft)
	FORMER FACILITY	B	BENZENE (mg/kg)
	FENCE LINE	T	TOLUENE (mg/kg)
	CONTAINMENT BERM	E	ETHYLBENZENE (mg/kg)
	CONTAINMENT WALL	X	TOTAL XYLENES (mg/kg)
		N	NAPHTHALENE (mg/kg)
		G	TPH-GRO (mg/kg)
		D	TPH-DRO (mg/kg)
		EC	EC mmhos/cm
		pH	pH Units
		SAR	SAR Units

NA	NOT ANALYZED
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**Figure 1
SITE PLAN**

NOBLE ENERGY, INC. ~ CONNELL 4-2,3,25
 Facility ID ~ 319183
 SESW Sec 4, T4N, R64W ~ 40.33441° -104.56040°
 Weld County, Colorado

API No. 05-123-10832 (#3)	Prepared by	Drawn by TDA	
Date 4/4/19	Reviewed by PH	Filename V407A	

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

February 25, 2019

Paul Henehan

Fremont Environmental

PO Box 1289

Wellington, CO 80549

RE: Noble - Connell 4-2,3,25

Enclosed are the results of analyses for samples received by Summit Scientific on 02/20/19 15:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Muri Premer". The signature is written in a cursive style with a large initial "M" and a long, sweeping underline.

Muri Premer For Ben Shrewsbury

Laboratory Manager



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Connell 4-2,3,25

Project Number: [none]
Project Manager: Paul Henehan

Reported:
02/25/19 11:45

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
W. Wall 3ft	1902202-01	Soil	02/20/19 00:00	02/20/19 15:40
Floor 4ft	1902202-02	Soil	02/20/19 00:00	02/20/19 15:40

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

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (F)

Client: Fremont Environmental	Project Manager: Paul Henehan
Address: P.O Box 1289	E-Mail: paulh@fremontenv.com, ethanb@fremontenv.com
City/State/Zip: Wellington, CO 80549	Bill to: HOWARD
Phone: 303-956-8714	Project Name: NOBLE - CONNELL 4-2,3,25
Sampler Name: HENEHAN	Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX	Naphthalene	GRO	DRO	SAR	EC	
1	W. WALL 3 FT	2/20/19		1			✓			✓				✓	✓	✓	✓	✓	
2	FLOOR 4 FT	"		1			✓			✓				✓	✓	✓	✓	✓	
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Relinquished by: <i>PAH/FE</i>	Date/Time: 2/20/19 15:40	Received by: <i>[Signature]</i>	Date/Time: 2-26-19 1540	Turn Around Time (Check)	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day <input type="checkbox"/> 72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	48 hours <input type="checkbox"/>	
				Sample Integrity:	
				Temperature Upon Receipt: 18.1	
				Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

Sample Receipt Checklist

S2 Work Order 1902202

Client: Fremont Client Project ID: Noble - Connell 4-2,3,25

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other A.D. Airbill #: _____

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

Temp (°C)	<u>18.1</u>
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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.	/			
Were all samples received intact ⁽¹⁾ ?	/			
Was adequate sample volume provided ⁽¹⁾ ?	/			
If custody seals are present, are they intact ⁽¹⁾ ?			/	
Are samples with holding times due within 48 hours sample due within 48 hours present?			/	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	/			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	/			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	/			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	/			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			/	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			/	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			/	
If dissolved metals are requested, were samples field filtered?			/	

Additional Comments (if any):

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

CP
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

2.20.19 1645
Date/Time



Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Connell 4-2,3,25

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 02/25/19 11:45

W. Wall 3ft
1902202-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/20/19 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	1902257	02/21/19	02/22/19	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: **02/20/19 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		99.0 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		99.4 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.3 %		21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/20/19 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	1902258	02/21/19	02/22/19	EPA 8015M	

Date Sampled: **02/20/19 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		109 %		30-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **02/20/19 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	706	10.9		mg/kg dry	1	1902274	02/21/19	02/22/19	EPA 6020B	

Summit Scientific

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 PO Box 1289
 Wellington CO, 80549

Project: Noble - Connell 4-2,3,25

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 02/25/19 11:45

**W. Wall 3ft
 1902202-01 (Soil)**

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Magnesium	112	5.43	mg/kg dry	1	1902274	02/21/19	02/22/19	EPA 6020B	
Sodium	26.2	5.43	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/20/19 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.242	0.100	units	1	1902284	02/22/19	02/22/19	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/20/19 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.1		%	1	1902251	02/21/19	02/21/19	Calculation	
pH	8.53		pH Units	"	1902253	02/21/19	02/21/19	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **02/20/19 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.328	0.0100	mmhos/cm	1	1902252	02/21/19	02/21/19	EPA 120.1	

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 Wellington CO, 80549

Project: Noble - Connell 4-2,3,25

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 02/25/19 11:45

Floor 4ft
1902202-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/20/19 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1902257	02/21/19	02/22/19	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: **02/20/19 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		95.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.0 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/20/19 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1902258	02/21/19	02/22/19	EPA 8015M	

Date Sampled: **02/20/19 00:00**

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

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Connell 4-2,3,25

Project Number: [none]
Project Manager: Paul Henehan

Reported:
02/25/19 11:45

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1902257 - EPA 5030 Soil MS

Blank (1902257-BLK1)

Prepared: 02/21/19 Analyzed: 02/22/19

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	0.0393		"	0.0400		98.2	23-173				
Surrogate: Toluene-d8	0.0403		"	0.0400		101	20-170				
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.6	21-167				

LCS (1902257-BS1)

Prepared: 02/21/19 Analyzed: 02/22/19

Benzene	0.100	0.0020	mg/kg	0.100		100	70-130				
Toluene	0.107	0.0050	"	0.100		107	70-130				
Ethylbenzene	0.113	0.0050	"	0.100		113	70-130				
m,p-Xylene	0.235	0.010	"	0.200		117	70-130				
o-Xylene	0.107	0.0050	"	0.100		107	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0392		"	0.0400		98.0	23-173				
Surrogate: Toluene-d8	0.0400		"	0.0400		99.9	20-170				
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.8	21-167				

Matrix Spike (1902257-MS1)

Source: 1902204-01

Prepared: 02/21/19 Analyzed: 02/22/19

Benzene	0.101	0.0020	mg/kg	0.100	0.00372	97.7	70-130				
Toluene	0.106	0.0050	"	0.100	0.00357	103	70-130				
Ethylbenzene	0.115	0.0050	"	0.100	ND	115	70-130				
m,p-Xylene	0.235	0.010	"	0.200	0.00312	116	70-130				
o-Xylene	0.106	0.0050	"	0.100	ND	106	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0403		"	0.0400		101	23-173				
Surrogate: Toluene-d8	0.0389		"	0.0400		97.3	20-170				
Surrogate: 4-Bromofluorobenzene	0.0389		"	0.0400		97.2	21-167				

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Connell 4-2,3,25

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 02/25/19 11:45

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

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

Batch 1902257 - EPA 5030 Soil MS

Matrix Spike Dup (1902257-MSD1)

Source: 1902204-01

Prepared: 02/21/19 Analyzed: 02/22/19

Benzene	0.101	0.0020	mg/kg	0.100	0.00372	97.4	70-130	0.326	30	
Toluene	0.106	0.0050	"	0.100	0.00357	103	70-130	0.113	30	
Ethylbenzene	0.112	0.0050	"	0.100	ND	112	70-130	2.45	30	
m,p-Xylene	0.229	0.010	"	0.200	0.00312	113	70-130	2.57	30	
o-Xylene	0.105	0.0050	"	0.100	ND	105	70-130	0.654	30	
Surrogate: 1,2-Dichloroethane-d4	0.0406		"	0.0400		101	23-173			
Surrogate: Toluene-d8	0.0396		"	0.0400		99.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0400		98.9	21-167			

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Connell 4-2,3,25

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 02/25/19 11:45

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1902258 - EPA 3550A

Blank (1902258-BLK1)

Prepared: 02/21/19 Analyzed: 02/22/19

C10-C28 (DRO) ND 50 mg/kg

LCS (1902258-BS1)

Prepared: 02/21/19 Analyzed: 02/22/19

C10-C28 (DRO) 445 50 mg/kg 500 89.1 70-130

Matrix Spike (1902258-MS1)

Source: 1902189-01

Prepared: 02/21/19 Analyzed: 02/22/19

C10-C28 (DRO) 528 50 mg/kg 500 72.0 91.1 70-130

Matrix Spike Dup (1902258-MSD1)

Source: 1902189-01

Prepared: 02/21/19 Analyzed: 02/22/19

C10-C28 (DRO) 556 50 mg/kg 500 72.0 96.8 70-130 5.20 20

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Connell 4-2,3,25

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 02/25/19 11:45

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis - Quality Control

Summit Scientific

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

Batch 1902274 - General Preparation

Blank (1902274-BLK1)

Prepared: 02/21/19 Analyzed: 02/22/19

Calcium	ND	10.0	mg/kg wet							
Magnesium	ND	5.00	"							
Sodium	ND	5.00	"							

LCS (1902274-BS1)

Prepared: 02/21/19 Analyzed: 02/22/19

Calcium	481	10.0	mg/kg wet	500		96.1	70-130			
Magnesium	467	5.00	"	500		93.5	70-130			
Sodium	469	5.00	"	500		93.7	70-130			

Duplicate (1902274-DUP1)

Source: 1902189-01

Prepared: 02/21/19 Analyzed: 02/22/19

Calcium	1330	10.3	mg/kg dry		1360			2.12	20	
Magnesium	465	5.14	"		461			0.783	20	
Sodium	254	5.14	"		253			0.270	20	

Matrix Spike (1902274-MS1)

Source: 1902189-01

Prepared: 02/21/19 Analyzed: 02/22/19

Calcium	1830	10.3	mg/kg dry	514	1360	92.9	70-130			
Magnesium	973	5.14	"	514	461	99.5	70-130			
Sodium	756	5.14	"	514	253	97.7	70-130			

Matrix Spike Dup (1902274-MSD1)

Source: 1902189-01

Prepared: 02/21/19 Analyzed: 02/22/19

Calcium	1830	10.3	mg/kg dry	514	1360	92.1	70-130	0.225	25	
Magnesium	946	5.14	"	514	461	94.2	70-130	2.81	25	
Sodium	749	5.14	"	514	253	96.4	70-130	0.866	25	

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Connell 4-2,3,25

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 02/25/19 11:45

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

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

Batch 1902251 - General Preparation

Duplicate (1902251-DUP1)		Source: 1902189-01			Prepared & Analyzed: 02/21/19			
% Solids	97.2		%		97.2		0.00	20

Batch 1902253 - General Preparation

LCS (1902253-BS1)					Prepared & Analyzed: 02/21/19			
pH	9.25		pH Units	9.23		100	95-105	
Duplicate (1902253-DUP1)		Source: 1902189-01			Prepared & Analyzed: 02/21/19			
pH	7.53		pH Units		7.54		0.133	20

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Fremont Environmental
 PO Box 1289
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Project: Noble - Connell 4-2,3,25

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 02/25/19 11:45

Specific Conductance by EPA Method 120.1 - Quality Control
Summit Scientific

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

Batch 1902252 - General Preparation

Blank (1902252-BLK1)

Prepared & Analyzed: 02/21/19

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (1902252-BS1)

Prepared & Analyzed: 02/21/19

Specific Conductance (EC) 0.790 0.0100 mmhos/cm 0.750 105 90-110

Duplicate (1902252-DUP1)

Source: 1902189-01

Prepared & Analyzed: 02/21/19

Specific Conductance (EC) 7.91 0.0100 mmhos/cm 7.92 0.0632 20

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Connell 4-2,3,25

Project Number: [none]
Project Manager: Paul Henehan

Reported:
02/25/19 11:45

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