

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 31, 2025

Paul Henchan  
Fremont Environmental  
PO Box 1289  
Wellington, CO 80549

RE: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Work Order #2502407

Enclosed are the results of analyses for samples received by Summit Scientific on 02/24/25 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 read "Natalie Tessier". The signature is written in a cursive, flowing style.

Natalie Tessier For Paul Shrewsbury  
President



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
Project Manager: Paul Henchan

**Reported:**  
03/31/25 07:52

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WWall01 12Ft	2502407-01	Soil	02/24/25 13:10	02/24/25 16:30
EWall01 12Ft	2502407-02	Soil	02/24/25 13:20	02/24/25 16:30
NBase01 13Ft	2502407-03	Soil	02/24/25 13:30	02/24/25 16:30
NBase02 13Ft	2502407-04	Soil	02/24/25 13:40	02/24/25 16:30

Summit Scientific

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Send Data To:		Send Invoice To:	
ent: Fremont Environmental	Project Manager: Paul Henehan	Company: Chevron (Nobles)	
dress: 8305 6th St.	E-Mail: Chevron Dist. List, PDC Dist List, Civitas Dist List, Fremont Dist List, paulH, mikeG,	Project Name/Location:	
y/State/Zip: Wellington, CO	nickL, ethanB, jeffG, chrisL, stanG, aaronO, joshB, jordanS, tammyA (@fremontenv.com)	AFE#: UWRWF-44021-ENV	
me: 864-423-2068	Project Name: Coleman Volkens Lang T4N-R64W-522 L01	PO/Billing Codes:	
ampler Name: Jordan Suttles	Project Number: 2024-121	Contact: Dan Peterson	

Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions	
				HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Full Table 915-1 (Soil)	Full Table 915-1 (GW)				
W1101 12 FT	2/24/25	13:10	2			X				X							
E1101 12 FT	↓	13:20	↓			↓				↓							
Nbase 01 13 FT	↓	13:30	↓			↓				↓							
Nbase 02 13 FT	↓	13:40	↓			↓				↓							

Delivered by: Jordan Suttles	Date/Time: 2/24/25 16:30	Received by: S2 North office	Date/Time: 2/24/25 16:30	TAT Business Days	Field DO	Notes: Dist. Report to parties circled in the email line(s) only.
Delivered by: S2	Date/Time: 2/24/25	Received by:	Date/Time:	Same Day <input checked="" type="checkbox"/>	Field EC	
Delivered by:	Date/Time:	Received by:	Date/Time:	1 Day <input type="checkbox"/>	Field ORP	
Delivered by:	Date/Time:	Received by:	Date/Time:	2 Days <input type="checkbox"/>	Field pH	
Delivered by:	Date/Time:	Received by:	Date/Time:	3 Days <input type="checkbox"/>	Field Temp.	
Temperature Upon Receipt: 2.4	Corrected Temperature: 8	IR gun #:	HNO3 lot #:	Standard <input type="checkbox"/>	Field Turb.	

S<sub>2</sub>

S2 Work Order# 2502407

Sample Receipt Checklist

Client: Fremont

Client Project ID: Coleman Volkers long THN-R69W-522 W1

Received Via: H.D./P.U./FedEx/UPS/USPS/Other  Airbill #: \_\_\_\_\_

Matrix (Circle all that apply) Air/Soil/Water/Other  Temp (°C) 24 Thermometer #

Bottle ware (Circle all that apply) Glass/Jar/Voa/Amber/Poly/Other

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? <sup>(1)</sup> <b>NOTE:</b> If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	-			on 2/26
If custody seals are present, are they intact? <sup>(1)</sup>	-			
Are samples due within 48 hours?	-			Same day
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/ Nitrite, Ferrous Iron (Fe <sup>2+</sup> ), Hexavalent Chromium (Cr <sup>6+</sup> , Cr VI), COD, Total Residual Chlorine (TRC)		-		
Is a chain-of-custody (COC) form present and filled out Completely? <sup>(1)</sup>	-			
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	-			
Were all samples received intact? <sup>(1)</sup>	-			
Was adequate sample volume provided? <sup>(1)</sup>	-			
Were samples provided in appropriate bottle ware?	-			
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	-			
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	-			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			-	
Are any samples/bottles preserved (excluding cooling)? <sup>(1)</sup> Note the type of preservative in the comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.			-	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> Record the pH in Comments.			-	
If dissolved metals are requested, were samples field filtered?			-	
Are there requested analysis that cannot be performed by S2? Note analysis in the comments column		-		
<u>Additional Comments (if any):</u>				

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

Control Form #: SRC-001

SN  
Custodian Printed Name

2/24/25  
Date/Time



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
Project Manager: Paul Henchan

**Reported:**  
03/31/25 07:52

**WWall01 12Ft**  
**2502407-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/24/25 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BIB1372	02/24/25	02/25/25	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.0051</b>	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>1.6</b>	0.038	"	10	"	"	02/24/25	"	
<b>Gasoline Range Hydrocarbons</b>	<b>380</b>	5.0	"	"	"	"	"	"	

Date Sampled: **02/24/25 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0440	110 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0296	74.1 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0336	84.1 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/24/25 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>290</b>	50	mg/kg	1	BIB1376	02/24/25	02/24/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/24/25 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.85	62.8 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project Manager: Paul Henchan

**Reported:**  
03/31/25 07:52

**WWall01 12Ft**  
**2502407-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/24/25 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BIC0365	03/06/25	03/18/25	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.00846</b>	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.0774</b>	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
<b>Pyrene</b>	<b>0.00656</b>	0.00500	"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>6.76</b>	0.0500	"	10	"	"	03/22/25	"	E
<b>2-Methylnaphthalene</b>	<b>7.37</b>	0.0500	"	"	"	"	"	"	E

Date Sampled: **02/24/25 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0147	44.1 %	40-140		"	"	03/18/25	"	
Surrogate: Fluoranthene-d10	0.0155	46.4 %	40-140		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **02/24/25 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIB1377	02/25/25	02/25/25	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/24/25 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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PO Box 1289  
Wellington CO, 80549

Project: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
Project Manager: Paul Henchan

**Reported:**  
03/31/25 07:52

**WWall01 12Ft**  
**2502407-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.94	0.200	mg/kg dry	1	BIB1405	02/25/25	02/25/25	EPA 6020B	
Barium	59.6	0.400	"	"	"	"	"	"	
Cadmium	0.200	0.200	"	"	"	"	"	"	
Copper	4.86	0.400	"	"	"	"	"	"	
Lead	7.33	0.200	"	"	"	"	"	"	
Nickel	4.76	0.400	"	"	"	"	"	"	
Silver	0.0349	0.0200	"	"	"	"	"	"	
Zinc	18.1	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/24/25 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIB1401	02/25/25	02/25/25	EPA 7196A	

**Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction**

Date Sampled: **02/24/25 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	30.1	0.0500	mg/L dry	1	BIB1373	02/24/25	02/26/25	EPA 6020B	
Magnesium	6.95	0.0500	"	"	"	"	"	"	
Sodium	45.5	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/24/25 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.94	0.00100	units	1	BIB1536	02/26/25	02/26/25	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/24/25 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Number: UWRWE-A4021-ENV  
 Project Manager: Paul Henchan

**Reported:**  
 03/31/25 07:52

**WWall01 12Ft**  
**2502407-01 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

% Solids	82.6	%	1	BIB1379	02/25/25	02/25/25	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **02/24/25 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.240	0.0100	mmhos/cm	1	BIB1375	02/24/25	02/25/25	EPA 120.1	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **02/24/25 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.83		pH Units	1	BIB1374	02/24/25	02/25/25	EPA 9045D	

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Project: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
Project Manager: Paul Henchan

**Reported:**  
03/31/25 07:52

**EWall01 12Ft**  
**2502407-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/24/25 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.10</b>	0.0020	mg/kg	1	BIB1372	02/24/25	02/25/25	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.19</b>	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.24</b>	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	<b>0.022</b>	0.0050	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>1.7</b>	0.38	"	100	"	"	02/24/25	"	
<b>Gasoline Range Hydrocarbons</b>	<b>670</b>	50	"	"	"	"	"	"	

Date Sampled: **02/24/25 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0404	101 %	50-150		"	"	"	"	
<i>Surrogate: Toluene-d8</i>	0.0312	77.9 %	50-150		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0511	128 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/24/25 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>450</b>	50	mg/kg	1	BIB1376	02/24/25	02/24/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/24/25 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>	6.11	48.9 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project Number: UWRWE-A4021-ENV  
Project Manager: Paul Henchan

**Reported:**  
03/31/25 07:52

**EWall01 12Ft**  
**2502407-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/24/25 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.0474	0.00500	mg/kg	1	BIC0365	03/06/25	03/19/25	EPA 8270D SIM	
Anthracene	0.248	0.00500	"	"	"	"	"	"	E
Benzo (a) anthracene	0.0270	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	0.0231	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.0139	0.00500	"	"	"	"	"	"	
Fluorene	0.0877	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.00883	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	11.3	0.100	"	20	"	"	03/22/25	"	E
2-Methylnaphthalene	12.6	0.100	"	"	"	"	"	"	E

Date Sampled: **02/24/25 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0227	68.0 %	40-140		"	"	03/19/25	"	
Surrogate: Fluoranthene-d10	0.0192	57.5 %	40-140		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **02/24/25 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIB1377	02/25/25	02/25/25	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/24/25 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Number: UWRWE-A4021-ENV  
Project Manager: Paul Henchan

**Reported:**  
03/31/25 07:52

**EWall01 12Ft**  
**2502407-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.56	0.200	mg/kg dry	1	BIB1405	02/25/25	02/25/25	EPA 6020B	
Barium	42.5	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.13	0.400	"	"	"	"	"	"	
Lead	3.97	0.200	"	"	"	"	"	"	
Nickel	2.60	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	11.1	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/24/25 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIB1401	02/25/25	02/25/25	EPA 7196A	

**Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction**

Date Sampled: **02/24/25 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	23.3	0.0500	mg/L dry	1	BIB1373	02/24/25	02/26/25	EPA 6020B	
Magnesium	6.00	0.0500	"	"	"	"	"	"	
Sodium	112	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/24/25 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.35	0.00100	units	1	BIB1536	02/26/25	02/26/25	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

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**Reported:**  
 03/31/25 07:52

**EWall01 12Ft  
 2502407-02 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/24/25 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.5		%	1	BIB1379	02/25/25	02/25/25	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **02/24/25 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.544	0.0100	mmhos/cm	1	BIB1375	02/24/25	02/25/25	EPA 120.1	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **02/24/25 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.22		pH Units	1	BIB1374	02/24/25	02/25/25	EPA 9045D	

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
Project Manager: Paul Henchan

**Reported:**  
03/31/25 07:52

**NBase01 13Ft**  
**2502407-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/24/25 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Benzene</b>	<b>0.023</b>	0.0020		mg/kg	1	BIB1372	02/24/25	02/25/25	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.25</b>	0.0050		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.20</b>	0.010		"	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	<b>7.5</b>	0.50		"	100	"	"	02/24/25	"	
<b>1,3,5-Trimethylbenzene</b>	<b>0.57</b>	0.50		"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.71</b>	0.38		"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>780</b>	50		"	"	"	"	"	"	

Date Sampled: **02/24/25 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0397	99.2 %		50-150		"	"	"	"	
<i>Surrogate: Toluene-d8</i>	0.0315	78.8 %		50-150		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0487	122 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/24/25 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>C10-C28 (DRO)</b>	<b>400</b>	50		mg/kg	1	BIB1376	02/24/25	02/24/25	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/24/25 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<i>Surrogate: o-Terphenyl</i>	7.10	56.8 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
Project Manager: Paul Henchan

**Reported:**  
03/31/25 07:52

**NBase01 13Ft**  
**2502407-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/24/25 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BIC0365	03/06/25	03/19/25	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
<b>Benzo (a) anthracene</b>	<b>0.0165</b>	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.0127</b>	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.0858</b>	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
<b>Pyrene</b>	<b>0.0113</b>	0.00500	"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.921</b>	0.00500	"	"	"	"	"	"	E
<b>2-Methylnaphthalene</b>	<b>0.876</b>	0.00500	"	"	"	"	"	"	E

Date Sampled: **02/24/25 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0222	66.5 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0204	61.2 %	40-140		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **02/24/25 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIB1377	02/25/25	02/25/25	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/24/25 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
Project Manager: Paul Henchan

**Reported:**  
03/31/25 07:52

**NBase01 13Ft**  
**2502407-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.52	0.200	mg/kg dry	1	BIB1405	02/25/25	02/25/25	EPA 6020B	
Barium	45.2	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.37	0.400	"	"	"	"	"	"	
Lead	4.13	0.200	"	"	"	"	"	"	
Nickel	2.87	0.400	"	"	"	"	"	"	
Silver	0.0236	0.0200	"	"	"	"	"	"	
Zinc	12.7	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/24/25 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIB1401	02/25/25	02/25/25	EPA 7196A	

**Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction**

Date Sampled: **02/24/25 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	74.3	0.0500	mg/L dry	1	BIB1373	02/24/25	02/26/25	EPA 6020B	
Magnesium	19.4	0.0500	"	"	"	"	"	"	
Sodium	138	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/24/25 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.69	0.00100	units	1	BIB1536	02/26/25	02/26/25	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

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 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
 Project Manager: Paul Henchan

**Reported:**  
 03/31/25 07:52

**NBase01 13Ft**  
**2502407-03 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **02/24/25 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.9		%	1	BIB1379	02/25/25	02/25/25	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **02/24/25 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.990	0.0100	mmhos/cm	1	BIB1375	02/24/25	02/25/25	EPA 120.1	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **02/24/25 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.37		pH Units	1	BIB1374	02/24/25	02/25/25	EPA 9045D	

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Project: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
Project Manager: Paul Henchan

**Reported:**  
03/31/25 07:52

**NBase02 13Ft**  
**2502407-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/24/25 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BIB1372	02/24/25	02/24/25	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	<b>0.0088</b>	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.016</b>	0.0038		"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>4.1</b>	0.50		"	"	"	"	"	"	

Date Sampled: **02/24/25 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0390	97.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0349	87.2 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0398	99.4 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/24/25 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BIB1376	02/24/25	02/24/25	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/24/25 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.02	64.2 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
Project Manager: Paul Henchan

**Reported:**  
03/31/25 07:52

**NBase02 13Ft**  
**2502407-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/24/25 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BIC0365	03/06/25	03/19/25	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.0103</b>	0.00500	"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.0186</b>	0.00500	"	"	"	"	"	"	

Date Sampled: **02/24/25 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.00899	27.0 %	40-140		"	"	"	"	S-04
Surrogate: Fluoranthene-d10	0.00853	25.6 %	40-140		"	"	"	"	S-04

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **02/24/25 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIB1377	02/25/25	02/25/25	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/24/25 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
Project Manager: Paul Henchan

**Reported:**  
03/31/25 07:52

**NBase02 13Ft**  
**2502407-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	3.79	0.200	mg/kg dry	1	BIB1405	02/25/25	02/25/25	EPA 6020B
Barium	106	0.400	"	"	"	"	"	"
Cadmium	0.280	0.200	"	"	"	"	"	"
Copper	6.31	0.400	"	"	"	"	"	"
Lead	9.05	0.200	"	"	"	"	"	"
Nickel	6.01	0.400	"	"	"	"	"	"
Silver	0.0448	0.0200	"	"	"	"	"	"
Zinc	23.7	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 02/24/25 13:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIB1401	02/25/25	02/25/25	EPA 7196A	

**Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction**

Date Sampled: 02/24/25 13:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	94.7	0.0500	mg/L dry	1	BIB1373	02/24/25	02/26/25	EPA 6020B	
Magnesium	24.6	0.0500	"	"	"	"	"	"	
Sodium	106	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 02/24/25 13:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.51	0.00100	units	1	BIB1536	02/26/25	02/26/25	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 02/24/25 13:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
 Project Manager: Paul Henchan

**Reported:**  
 03/31/25 07:52

**NBase02 13Ft  
 2502407-04 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

% Solids	73.8	%	1	BIB1379	02/25/25	02/25/25	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **02/24/25 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>0.900</b>	0.0100	mmhos/cm	1	BIB1375	02/24/25	02/25/25	EPA 120.1	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **02/24/25 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	<b>7.85</b>		pH Units	1	BIB1374	02/24/25	02/25/25	EPA 9045D	

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Project: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
Project Manager: Paul Henchan

**Reported:**  
03/31/25 07:52

### Volatile Organic Compounds by EPA Method 8260B - Quality Control

#### Summit Scientific

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

#### Batch BIB1372 - EPA 5030 Soil MS

##### Blank (BIB1372-BLK1)

Prepared: 02/24/25 Analyzed: 02/25/25

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
Naphthalene	ND	0.0038	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
Surrogate: 1,2-Dichloroethane-d4	0.0394		"	0.0400		98.6	50-150				
Surrogate: Toluene-d8	0.0403		"	0.0400		101	50-150				
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		98.8	50-150				

##### LCS (BIB1372-BS1)

Prepared: 02/24/25 Analyzed: 02/25/25

Benzene	0.0935	0.0020	mg/kg	0.100		93.5	70-130				
Toluene	0.0964	0.0050	"	0.100		96.4	70-130				
Ethylbenzene	0.101	0.0050	"	0.100		101	70-130				
m,p-Xylene	0.178	0.010	"	0.200		89.1	70-130				
o-Xylene	0.0879	0.0050	"	0.100		87.9	70-130				
1,2,4-Trimethylbenzene	0.0815	0.0050	"	0.100		81.5	70-130				
1,3,5-Trimethylbenzene	0.0857	0.0050	"	0.100		85.7	70-130				
Naphthalene	0.0810	0.0038	"	0.100		81.0	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0400		"	0.0400		100	50-150				
Surrogate: Toluene-d8	0.0429		"	0.0400		107	50-150				
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.0400		97.5	50-150				

##### Matrix Spike (BIB1372-MS1)

Source: 2502405-03

Prepared: 02/24/25 Analyzed: 02/25/25

Benzene	0.575	0.0020	mg/kg	0.100	0.205	370	70-130				QM-05
Toluene	1.02	0.0050	"	0.100	0.714	305	70-130				QM-05
Ethylbenzene	0.197	0.0050	"	0.100	0.0758	121	70-130				
m,p-Xylene	0.691	0.010	"	0.200	0.411	140	70-130				QM-05
o-Xylene	0.324	0.0050	"	0.100	0.208	116	70-130				
1,2,4-Trimethylbenzene	0.202	0.0050	"	0.100	0.112	89.6	70-130				
1,3,5-Trimethylbenzene	0.0774	0.0050	"	0.100	0.0468	30.6	70-130				QM-05
Naphthalene	0.122	0.0038	"	0.100	0.0420	80.0	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0386		"	0.0400		96.5	50-150				
Surrogate: Toluene-d8	0.0432		"	0.0400		108	50-150				
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.6	50-150				

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Project: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
 Project Manager: Paul Henchan

**Reported:**  
 03/31/25 07:52

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

**Summit Scientific**

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

**Batch BIB1372 - EPA 5030 Soil MS**

Matrix Spike Dup (BIB1372-MSD1)	Source: 2502405-03			Prepared: 02/24/25 Analyzed: 02/25/25						
Benzene	0.629	0.0020	mg/kg	0.100	0.205	424	70-130	8.94	30	QM-05
Toluene	1.03	0.0050	"	0.100	0.714	320	70-130	1.39	30	QM-05
Ethylbenzene	0.192	0.0050	"	0.100	0.0758	116	70-130	2.55	30	
m,p-Xylene	0.655	0.010	"	0.200	0.411	122	70-130	5.32	30	
o-Xylene	0.322	0.0050	"	0.100	0.208	114	70-130	0.743	30	
1,2,4-Trimethylbenzene	0.209	0.0050	"	0.100	0.112	97.2	70-130	3.69	30	
1,3,5-Trimethylbenzene	0.0920	0.0050	"	0.100	0.0468	45.2	70-130	17.3	30	QM-05
Naphthalene	0.124	0.0038	"	0.100	0.0420	82.0	70-130	1.68	30	
Surrogate: 1,2-Dichloroethane-d4	0.0408		"	0.0400		102	50-150			
Surrogate: Toluene-d8	0.0418		"	0.0400		105	50-150			
Surrogate: 4-Bromofluorobenzene	0.0377		"	0.0400		94.3	50-150			

Summit Scientific

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
 Project Manager: Paul Henchan

**Reported:**  
 03/31/25 07:52

**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 BIB1376 - EPA 3550A**

**Blank (BIB1376-BLK1)**

Prepared: 02/24/25 Analyzed: 02/25/25

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	11.9		"	12.5		95.1	30-150				

**LCS (BIB1376-BS1)**

Prepared: 02/24/25 Analyzed: 02/25/25

C10-C28 (DRO)	648	50	mg/kg	500		130	70-130				
Surrogate: <i>o</i> -Terphenyl	11.7		"	12.5		93.2	30-150				

**Matrix Spike (BIB1376-MS1)**

Source: 2502405-03

Prepared: 02/24/25 Analyzed: 02/25/25

C10-C28 (DRO)	552	50	mg/kg	500	28.0	105	70-130				
Surrogate: <i>o</i> -Terphenyl	7.75		"	12.5		62.0	30-150				

**Matrix Spike Dup (BIB1376-MSD1)**

Source: 2502405-03

Prepared: 02/24/25 Analyzed: 02/25/25

C10-C28 (DRO)	583	50	mg/kg	500	28.0	111	70-130	5.44	20		
Surrogate: <i>o</i> -Terphenyl	7.15		"	12.5		57.2	30-150				

Summit Scientific

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
Project Manager: Paul Henchan

**Reported:**  
03/31/25 07:52

**PAH by EPA Method 8270D SIM - Quality Control**

**Summit Scientific**

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

**Batch BIC0365 - EPA 5030 Soil MS**

**Blank (BIC0365-BLK1)**

Prepared: 03/06/25 Analyzed: 03/18/25

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0162</i>		<i>"</i>	<i>0.0333</i>		<i>48.6</i>	<i>40-140</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0179</i>		<i>"</i>	<i>0.0333</i>		<i>53.8</i>	<i>40-140</i>			

**LCS (BIC0365-BS1)**

Prepared: 03/06/25 Analyzed: 03/18/25

Acenaphthene	0.0258	0.00500	mg/kg	0.0333		77.4	40-140			
Anthracene	0.0254	0.00500	"	0.0333		76.3	40-140			
Benzo (a) anthracene	0.0271	0.00500	"	0.0333		81.3	40-140			
Benzo (a) pyrene	0.0266	0.00500	"	0.0333		79.8	40-140			
Benzo (b) fluoranthene	0.0273	0.00500	"	0.0333		82.0	40-140			
Benzo (k) fluoranthene	0.0262	0.00500	"	0.0333		78.7	40-140			
Chrysene	0.0254	0.00500	"	0.0333		76.2	40-140			
Dibenz (a,h) anthracene	0.0255	0.00500	"	0.0333		76.4	40-140			
Fluoranthene	0.0276	0.00500	"	0.0333		82.7	40-140			
Fluorene	0.0260	0.00500	"	0.0333		78.1	40-140			
Indeno (1,2,3-cd) pyrene	0.0175	0.00500	"	0.0333		52.4	40-140			
Pyrene	0.0251	0.00500	"	0.0333		75.4	40-140			
1-Methylnaphthalene	0.0284	0.00500	"	0.0333		85.3	40-140			
2-Methylnaphthalene	0.0317	0.00500	"	0.0333		95.1	40-140			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0215</i>		<i>"</i>	<i>0.0333</i>		<i>64.4</i>	<i>40-140</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0214</i>		<i>"</i>	<i>0.0333</i>		<i>64.2</i>	<i>40-140</i>			

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
Project Manager: Paul Henchan

**Reported:**  
03/31/25 07:52

**PAH by EPA Method 8270D SIM - Quality Control**

**Summit Scientific**

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

**Batch BIC0365 - EPA 5030 Soil MS**

<b>Matrix Spike (BIC0365-MS1)</b>	<b>Source: 2502414-02</b>			Prepared: 03/06/25 Analyzed: 03/18/25					
Acenaphthene	0.0151	0.00500	mg/kg	0.0333	ND	45.3	40-140		
Anthracene	0.0151	0.00500	"	0.0333	ND	45.3	40-140		
Benzo (a) anthracene	0.0164	0.00500	"	0.0333	ND	49.3	40-140		
Benzo (a) pyrene	0.0154	0.00500	"	0.0333	ND	46.1	40-140		
Benzo (b) fluoranthene	0.0162	0.00500	"	0.0333	ND	48.6	40-140		
Benzo (k) fluoranthene	0.0156	0.00500	"	0.0333	ND	46.8	40-140		
Chrysene	0.0151	0.00500	"	0.0333	ND	45.3	40-140		
Dibenz (a,h) anthracene	0.0143	0.00500	"	0.0333	ND	42.9	40-140		
Fluoranthene	0.0165	0.00500	"	0.0333	ND	49.4	40-140		
Fluorene	0.0158	0.00500	"	0.0333	ND	47.3	40-140		
Indeno (1,2,3-cd) pyrene	0.0147	0.00500	"	0.0333	ND	44.1	40-140		
Pyrene	0.0153	0.00500	"	0.0333	ND	45.9	40-140		
1-Methylnaphthalene	0.0170	0.00500	"	0.0333	ND	51.1	40-140		
2-Methylnaphthalene	0.0188	0.00500	"	0.0333	ND	56.4	40-140		
Surrogate: 2-Methylnaphthalene-d10	0.0128		"	0.0333		38.5	40-140		QM-05
Surrogate: Fluoranthene-d10	0.0120		"	0.0333		35.9	40-140		QM-05

<b>Matrix Spike Dup (BIC0365-MSD1)</b>	<b>Source: 2502414-02</b>			Prepared: 03/06/25 Analyzed: 03/18/25					
Acenaphthene	0.0191	0.00500	mg/kg	0.0333	ND	57.2	40-140	23.2	30
Anthracene	0.0183	0.00500	"	0.0333	ND	54.9	40-140	19.0	30
Benzo (a) anthracene	0.0202	0.00500	"	0.0333	ND	60.6	40-140	20.5	30
Benzo (a) pyrene	0.0192	0.00500	"	0.0333	ND	57.7	40-140	22.3	30
Benzo (b) fluoranthene	0.0202	0.00500	"	0.0333	ND	60.5	40-140	21.8	30
Benzo (k) fluoranthene	0.0197	0.00500	"	0.0333	ND	59.0	40-140	23.1	30
Chrysene	0.0191	0.00500	"	0.0333	ND	57.2	40-140	23.4	30
Dibenz (a,h) anthracene	0.0180	0.00500	"	0.0333	ND	54.0	40-140	22.9	30
Fluoranthene	0.0200	0.00500	"	0.0333	ND	60.1	40-140	19.6	30
Fluorene	0.0197	0.00500	"	0.0333	ND	59.2	40-140	22.5	30
Indeno (1,2,3-cd) pyrene	0.0181	0.00500	"	0.0333	ND	54.3	40-140	20.8	30
Pyrene	0.0189	0.00500	"	0.0333	ND	56.6	40-140	20.9	30
1-Methylnaphthalene	0.0220	0.00500	"	0.0333	ND	66.1	40-140	25.5	30
2-Methylnaphthalene	0.0240	0.00500	"	0.0333	ND	71.9	40-140	24.2	30
Surrogate: 2-Methylnaphthalene-d10	0.0168		"	0.0333		50.4	40-140		
Surrogate: Fluoranthene-d10	0.0154		"	0.0333		46.1	40-140		

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
 Project Manager: Paul Henchan

**Reported:**  
 03/31/25 07:52

**Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control**  
**Summit Scientific**

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

**Batch BIB1377 - EPA 3050B**

**Blank (BIB1377-BLK1)**

Prepared & Analyzed: 02/25/25

Boron ND 2.00 mg/L

**LCS (BIB1377-BS1)**

Prepared & Analyzed: 02/25/25

Boron 4.66 2.00 mg/L 5.00 93.3 80-120

**Duplicate (BIB1377-DUP1)**

Source: 2502403-32

Prepared & Analyzed: 02/25/25

Boron 0.521 2.00 mg/L 0.514 1.39 20

**Matrix Spike (BIB1377-MS1)**

Source: 2502403-32

Prepared & Analyzed: 02/25/25

Boron 5.02 2.00 mg/L 5.01 0.514 90.1 75-125

**Matrix Spike Dup (BIB1377-MSD1)**

Source: 2502403-32

Prepared & Analyzed: 02/25/25

Boron 5.32 2.00 mg/L 5.01 0.514 96.1 75-125 5.86 25

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Wellington CO, 80549

Project: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
Project Manager: Paul Henchan

**Reported:**  
03/31/25 07:52

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BIB1405 - EPA 3050B**

**Blank (BIB1405-BLK1)**

Prepared & Analyzed: 02/25/25

Arsenic	ND	0.200	mg/kg wet							
Barium	ND	0.400	"							
Cadmium	ND	0.200	"							
Copper	ND	0.400	"							
Lead	ND	0.200	"							
Nickel	ND	0.400	"							
Silver	ND	0.0200	"							
Zinc	ND	0.400	"							
Selenium	ND	0.260	"							

**LCS (BIB1405-BS1)**

Prepared: 02/25/25 Analyzed: 02/26/25

Arsenic	36.2	0.200	mg/kg wet	38.5	94.1	80-120
Barium	37.7	0.400	"	38.5	98.0	80-120
Cadmium	1.92	0.200	"	1.92	99.7	80-120
Copper	39.5	0.400	"	38.5	103	80-120
Lead	18.9	0.200	"	19.2	98.4	80-120
Nickel	39.0	0.400	"	38.5	101	80-120
Silver	1.90	0.0200	"	1.92	98.7	80-120
Zinc	37.5	0.400	"	38.5	97.5	80-120
Selenium	4.12	0.260	"	3.85	107	80-120

**Duplicate (BIB1405-DUP1)**

Source: 2502407-01

Prepared & Analyzed: 02/25/25

Arsenic	3.29	0.200	mg/kg dry	2.94	11.0	20
Barium	66.7	0.400	"	59.6	11.1	20
Cadmium	0.215	0.200	"	0.200	7.19	20
Copper	5.31	0.400	"	4.86	8.77	20
Lead	8.56	0.200	"	7.33	15.5	20
Nickel	5.26	0.400	"	4.76	10.0	20
Silver	0.0404	0.0200	"	0.0349	14.6	20
Zinc	19.6	0.400	"	18.1	7.90	20
Selenium	ND	0.260	"	ND		20

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 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
 Project Manager: Paul Henchan

**Reported:**  
 03/31/25 07:52

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BIB1405 - EPA 3050B**

<b>Matrix Spike (BIB1405-MS1)</b>	<b>Source: 2502407-01</b>			<b>Prepared: 02/25/25 Analyzed: 02/26/25</b>								
Arsenic	50.8	0.200	mg/kg dry	49.6	2.94	96.5	75-125					
Barium	115	0.400	"	49.6	59.6	112	75-125					
Cadmium	2.72	0.200	"	2.48	0.200	101	75-125					
Copper	35.0	0.400	"	49.6	4.86	60.6	75-125					QM-05
Lead	32.4	0.200	"	24.8	7.33	101	75-125					
Nickel	34.6	0.400	"	49.6	4.76	60.2	75-125					QM-05
Silver	2.50	0.0200	"	2.48	0.0349	99.5	75-125					
Zinc	48.8	0.400	"	49.6	18.1	61.9	75-125					QM-05
Selenium	5.18	0.260	"	4.96	ND	104	75-125					

<b>Matrix Spike Dup (BIB1405-MSD1)</b>	<b>Source: 2502407-01</b>			<b>Prepared: 02/25/25 Analyzed: 02/26/25</b>								
Arsenic	49.5	0.200	mg/kg dry	49.2	2.94	94.5	75-125	2.74	25			
Barium	109	0.400	"	49.2	59.6	101	75-125	5.34	25			
Cadmium	2.80	0.200	"	2.46	0.200	106	75-125	3.05	25			
Copper	34.8	0.400	"	49.2	4.86	60.8	75-125	0.490	25			QM-05
Lead	34.6	0.200	"	24.6	7.33	111	75-125	6.50	25			
Nickel	33.8	0.400	"	49.2	4.76	59.0	75-125	2.42	25			QM-05
Silver	2.50	0.0200	"	2.46	0.0349	100	75-125	0.0127	25			
Zinc	49.7	0.400	"	49.2	18.1	64.3	75-125	1.85	25			QM-05
Selenium	4.93	0.260	"	4.92	ND	100	75-125	4.99	25			

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
 Project Manager: Paul Henchan

**Reported:**  
 03/31/25 07:52

**Hexavalent Chromium by EPA Method 7196 - Quality Control**  
**Summit Scientific**

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

**Batch BIB1401 - 3060A Mod**

**Blank (BIB1401-BLK1)**

Prepared & Analyzed: 02/25/25

Chromium, Hexavalent      ND      0.30 mg/kg wet

**LCS (BIB1401-BS1)**

Prepared & Analyzed: 02/25/25

Chromium, Hexavalent      22.6      0.30 mg/kg wet      25.0      90.4      80-120

**Duplicate (BIB1401-DUP1)**

**Source: 2502324-01**

Prepared & Analyzed: 02/25/25

Chromium, Hexavalent      ND      0.30 mg/kg dry      ND      20

**Matrix Spike (BIB1401-MS1)**

**Source: 2502324-01**

Prepared & Analyzed: 02/25/25

Chromium, Hexavalent      27.0      0.30 mg/kg dry      27.0      ND      100      75-125

**Matrix Spike Dup (BIB1401-MSD1)**

**Source: 2502324-01**

Prepared & Analyzed: 02/25/25

Chromium, Hexavalent      26.0      0.30 mg/kg dry      26.4      ND      98.2      75-125      3.80      20

Summit Scientific

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
 Project Manager: Paul Henchan

**Reported:**  
 03/31/25 07:52

**Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control**

**Summit Scientific**

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

**Batch BIB1373 - General Preparation**

**Blank (BIB1373-BLK1)**

Prepared: 02/24/25 Analyzed: 02/26/25

Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							

**LCS (BIB1373-BS1)**

Prepared: 02/24/25 Analyzed: 02/26/25

Calcium	5.10	0.0500	mg/L wet	5.00	102	70-130				
Magnesium	4.49	0.0500	"	5.00	89.7	70-130				
Sodium	4.50	0.0500	"	5.00	89.9	70-130				

Summit Scientific

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
 Project Manager: Paul Henchan

**Reported:**  
 03/31/25 07:52

**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 BIB1379 - General Preparation**

**Duplicate (BIB1379-DUP1)**

**Source: 2502403-29**

Prepared & Analyzed: 02/25/25

% Solids	93.9		%		94.0			0.180	20	
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Summit Scientific

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
 Project Manager: Paul Henchan

**Reported:**  
 03/31/25 07:52

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control**

**Summit Scientific**

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

**Batch BIB1375 - General Preparation**

**Blank (BIB1375-BLK1)**

Prepared: 02/24/25 Analyzed: 02/25/25

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BIB1375-BS1)**

Prepared: 02/24/25 Analyzed: 02/25/25

Specific Conductance (EC) 1.40 0.0100 mmhos/cm 1.41 99.6 95-105

**Duplicate (BIB1375-DUP1)**

Source: 2502407-01

Prepared: 02/24/25 Analyzed: 02/25/25

Specific Conductance (EC) 0.240 0.0100 mmhos/cm 0.240 0.00 20

Summit Scientific

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
 Project Manager: Paul Henchan

**Reported:**  
 03/31/25 07:52

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control**

**Summit Scientific**

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

**Batch BIB1374 - General Preparation**

**LCS (BIB1374-BS1)**

Prepared: 02/24/25 Analyzed: 02/25/25

pH	9.24	pH Units	9.18	101	95-105
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**Duplicate (BIB1374-DUP1)**

Source: 2502407-01

Prepared: 02/24/25 Analyzed: 02/25/25

pH	8.81	pH Units	8.83	0.220	20
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*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 - Coleman Volkens Lang T4N-R64W-S22 L01

Project Number: UWRWE-A4021-ENV  
Project Manager: Paul Henchan

**Reported:**  
03/31/25 07:52

### Notes and Definitions

- S-04 A sample matrix effect prevented complete surrogate recovery.
- QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. Sample results were accepted based on LCS and/or LCSD recoveries and/or RPD values.
- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference